Micromineralogists of the National Capital Area, Inc.

MNCA Website dcmicrominerals.org

The Mineral Mite

Vol. 51 – No. 7 **Washington D.C. – A Journal for Micromineralogists** **September 2018**

September 26 Time: 7:30 pm – 10 pm

Long Branch Nature Center, 625 S. Carlin Springs Rd. Arlington, VA 22206

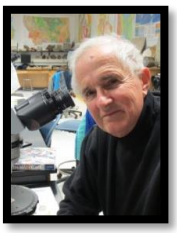
Program: Penn-MD Quarry

By Dave Fryauff, Vice president

At the September meeting of MNCA, Dave Fryauff will present a program on the Penn-MD Quarry, near Peach Bottom, PA. The quarry lies just north of the boundary of Maryland and Pennsylvania, north of Havre de Grace, at the mouth of the Susquehanna River, at the top of the Chesapeake Bay. Unlike most of the limestone/traprock quarries in the National Capital Area, this is a serpentine quarry, with some interesting minerals, like Mcguinnessite and Chromite. There are several similar quarries nearby, including the better-known Cedar Hill Quarry. Here is the Mindat locality: www.mindat.org/loc-167699.html. The full name on Mindat is: Haines & Kibblehouse Penn-Maryland Materials Quarry, Fulton Township, State Line Chromite District, Lancaster County, Pennsylvania, USA.

President's Message:

By Dave MacLean

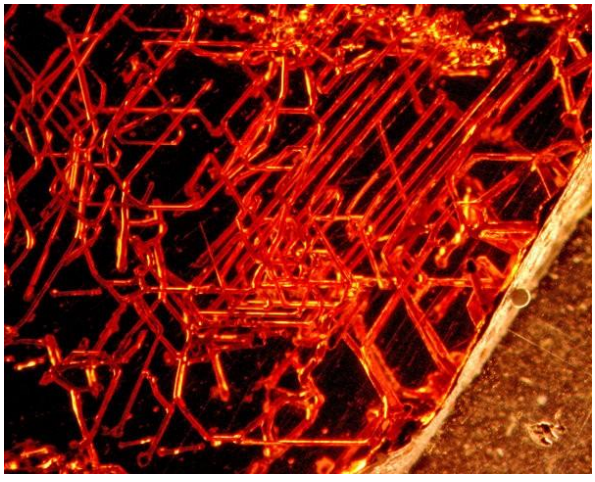


I am most interested in all our finds from our summer adventures. Our summer residence in Buffalo Creek sits on the northern end of the Pike peak batholith of granite, which has few vugs or cracks for micros. The sands from the granite contain lots of magnetite, and few zircons and a mineral that neither I nor Andrew Gross can identify at 50 power. Reportedly the zircons are 1.047 billion years old as measured by uranium/lead isotope ratio analysis.

Again, we have the opportunity to demonstrate our craft at the Northern Virginia Mineral Club show on November 17-18 in the Hub at George Mason University.

Also, the Baltimore Mineral Society's Desautels Micromount Symposium is coming up soon on October 19-21 at the Friends School in Baltimore.

Photo of the Month



Garnet: Microscopic tubular structures found within red garnets may be caused by the burrowing of micro-organisms. Credit Ivarsson et al, 2018

Open link for article

https://www.nytimes.com/2018/08/08/science/garnets-tunnels-microorganisms.html?em_pos=medium&emc=edit_sc_20180814&nl=sciencetimes&nl_art=7&nlid=51211879emc%3Dedit_sc_20180814&ref=headline&te=1

Submitted by Pete Chin. "Don't turn off the lights at night: they're coming after you."

Previous Meeting Minutes: 6/27/18

By Bob Cooke, Secretary

In the absence of the president who was on travel to Colorado, Vice President David Fryauff called the meeting to order at 8:15 PM on June 27, 2018. No past presidents were present. Monica Amparo returned as a guest. Eight members were present. Minutes of the May meeting were approved as published in the Mineral Mite.

Bob Cooke displayed the new name tag design developed by Northern Virginia Mineral Club. MNCA members discussed whether we should have a new name tag. Interest was subdued but Kathy Hrechka agreed to prepare some designs for consideration at the September meeting.

Dave Fryauff announced three field trips for July with details to be provided in emails to members:

*July 7 to National Limestone Quarries #1 and 2 (Middleburg and Mt Pleasant Mills, PA)

*July 14 to HK Penn-Md Q (Peach Bottom, PA)

*July 28 to Vulcan Materials Q (Manassas, VA)

Kathy Hrechka reviewed plans for the 2019 Atlantic Micromounters Conference (AMC). The date is now set for April 5th & 6th, 2019. The Holiday Inn is offering their conference room at a reduced rate and Kathy will lock in that deal next week. Now that the date is set, Kathy will follow up with our guest speaker, Robert Lauf, to confirm his attendance.

Michael Pabst gave a Treasurer's report and announced that the balance decreases slightly each year, primarily due to the cost of renting the meeting room at Long Branch Nature Center. Michael suggested the club consider some money-raising ventures to stabilize the bank accounts. The meeting adjourned at 8:50 PM.

Previous Program Reviewed: 6/27/18

By Bob Cooke, Secretary

Members then watched a DVD video from the 2014 Dallas Mineral Collecting Symposium in which Dr. Robert Hazen discussed "The Great Oxidation Event – Diversity of Colorful Mineral Species." A brief workshop followed with micros from the Ulinsky collection.

Field Trip to Willis Kyanite Mine, VA

By David Fryauff Vice President

September 29: Willis Kyanite mine at Sprouses Corner in Buckingham Co., VA will hold its once-yearly open dig on Saturday, September 29th, starting at 0830 and ending at 1pm. Limited to 150 rock hounds in full standard safety gear. Must RSVP to David Ball at <gmalveditor@gmail.com>

Penn-MD Quarry program Sept. 26

Sign at the quarry entrance. *Photo by Michael Pabst.*

A seam of serpentine and associated minerals on a ~3 ft wide boulder in the Penn-MD quarry. *Photo by Michael Pabst.* Regrettably, this boulder was too heavy to bring home.

Rhodochrosite "Emperor of China"

By Michael Pabst PhD, Treasurer

In my last article, we examined the rhombohedral Rhodochrosite ($MnCO_3$) from the Sweet Home Mine in Alma, Colorado. There were photos of the "Alma King" Rhodochrosite from the Denver Museum, and another large rhombohedral specimen from the Smithsonian. And, best of all (because it's mine), there was the little micromount of rhombohedral Rhodochrosite on a shaft of Quartz (article available on dcmicrominerals.org under Newsletters, June 2018 issue).

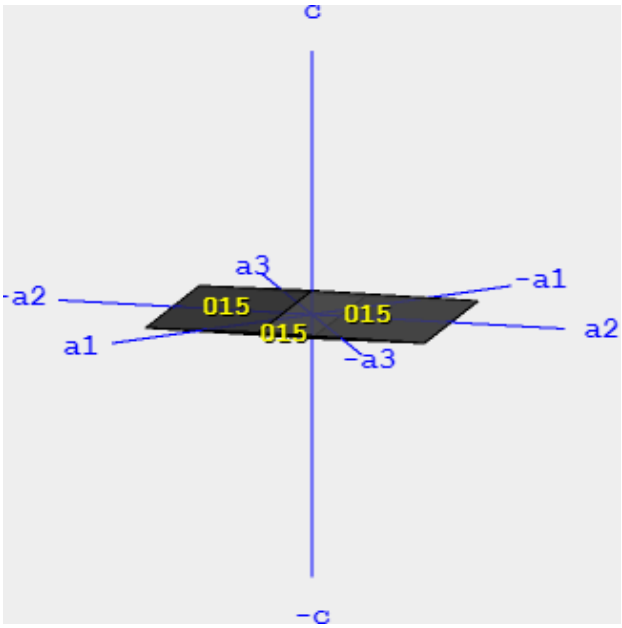
However, Rhodochrosite comes in many forms, just like its cousin Calcite. We might as well start with another spectacular Rhodochrosite specimen, the "Emperor of China". I was fortunate to see and photograph this specimen at the Tucson Gem and Mineral Show in 2011. There is an article about the Emperor of China and the Empress of China, and lesser members of the dynasty, on The Collector's Edge website: https://collectorsedge.com/pages/the-wutong-rhodochrosite-mine-guangxi-zhuang-autonomous-region-china. This article gives the size as 40 cm x 60 cm, with a weight 63.5 kg (or 140 pounds, which could be the weight of a lean Chinese emperor).

Rhodochrosite "Emperor of China", Wutong Mine, Liubao, Cangwu Co., Wuzhou Prefecture, Guangxi Zhuang Autonomous Region, China.

The entire specimen is 60 cm high; picture shows the top ~43 cm (~17 inches). Photo taken with a pocket camera, Canon PowerShot SD850 IS at 1/60 second F2.8. This is a handheld shot, taken on Thursday, Feb 10, 2011 at the main Tucson Gem and Mineral Show. Background converted to black with Photoshop version 14. *Photo by Michael Pabst.*

There is another picture of this specimen on Mindat: https://www.mindat.org/photo-372300.html.
The Mindat photo was taken by Jake Slagle; the specimen has minID VDF-CD0.

So what crystal form is the Emperor? From a photograph I can only guess, but a possibility is shown in the diagram below:



Kristall Nr. R066ae by Ulrich Baumgärtl. Diagram from the Mineralien Atlas website: https://www.mineralatlas.eu/lexikon/index.php/MineralData?mineral=Rhodochrosit. (You should click on this link, because the cover photos are spectacular.)
In a two-dimensional diagram, it is a little hard to visualize this form but try to see a flat chip. This flat form is still in the Trigonal System $\bar{3}\ m$ - Hexagonal Scalenohedral.

So now you are wondering, where is the micromount equivalent? Try the specimen below, although it is almost thumbnail size, but it does require magnification to see it properly.

Rhodochrosite continued

Rhodochrosite, American Tunnel, Standard Mine, Silverton, Colorado. FOV 18 mm. Specimen and photo by Michael Pabst.
Next time, still more Rhodochrosite.

About the author: Michael Pabst is our MNCA club treasurer who is dedicated each month to writing mineral articles for our newsletter. He enjoys photomicrography with his new camera, along with stacking photos using CombineZP. Each spring, Michael photographs microminerals which are auctioned at our Atlantic Micromounters' Conference.

Photomicrography by Michael Pabst

GeoWord of the Day and its definition:

chlormanganokalite (chlor-man"-ga-no-ka'-lite) A yellow rhombohedral mineral: K_4MnCl_6 . The manganese analogue of rinneite.

grimselite (grim'-sel-ite) A yellow hexagonal mineral: $K_3Na(UO_2)(CO_3)_3 \bullet H_2O$.

initial ratio [radioactivity] The atomic ratio of two isotopes of an element at the time of crystallization of a mineral containing one or more radioactive elements.

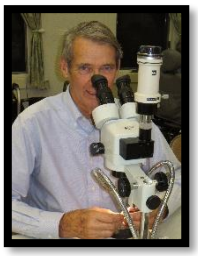
rutheniridosmine (ru"-then-ir"-id-os'-mine)
A metallic white hexagonal mineral: (Ir,Os,Ru) .

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

Minerals of Aris, Namibia

Submitted by Tom Tucker, Past President MNCA



I think most of us enjoy little crystals, and especially great photos of them. Below is a link to a defining article about the minerals from the Aris phonolite, in Namibia. It was originally published by AMI - Associazione Micromineralogica Italiana, Cremona (Italy) and has been posted on the web at ResearchGate. It includes numerous fine quality photographs which should be an aid in identifying many of the 90 or so species found at Aris:
https://www.researchgate.net/publication/306361470_Aris_-_Mineralogy_of_the_famous_alkaline_phonolite

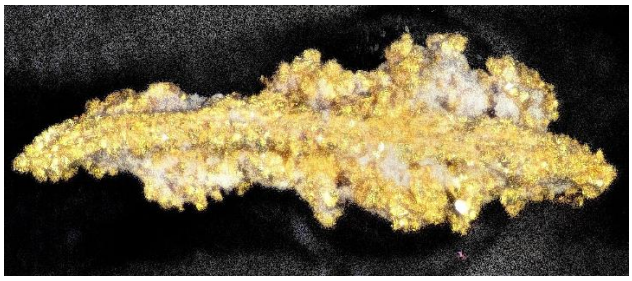
The Aris phonolite is similar to the alkaline rocks at Stoutameyer Branch and the mineralogy of the two localities is similar. We have approximately 60 species identified at Stoutameyer Branch, many of which are also known at Aris.

Making Precious Gold

By Mike Seeds, Editor BMS
Adapted from *The Conglomerate*, newsletter of the Baltimore Mineral Society - July 2018

There is a problem with gold that goes beyond you not having enough. Astronomers don't quite know how the universe made gold. Further, they aren't sure how nature made other heavy elements like platinum and uranium. Some recent discoveries may hold the secret.

Since the middle of the 20th century, astronomers have known that stars cook up elements heavier than helium as they age. The big bang happened too fast for nature to make anything more massive than helium. Rather most elements have been cooked up by slow nuclear processes that build light elements like hydrogen and helium into heavier and heavier elements. Stars like the sun can't get hot enough to fuse carbon, so they don't make significant amounts of heavy elements like gold, platinum, and uranium.

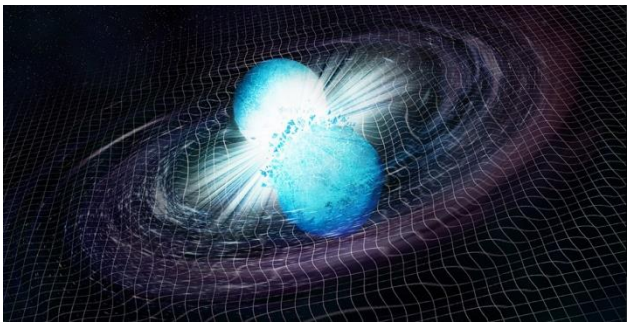


Earth's crust contains heavy elements such as this crystalized gold on quartz from Round Mountain, NV Field of View 13 mm. *Photomicrography by M. Seeds*

Stars more massive than the sun can get hotter and fuse elements heavier than carbon. Those slow, step by step processes can cook up most of the elements we are made of, but iron is a dead end. No nuclear reactions that start with iron produce energy, so when a massive star develops an iron core, it is doomed. It collapses and explodes as a supernova. For many years, astronomers believed that rapid nuclear reactions occurring in the few minutes when the exploding supernova was at maximum temperature and density could produce the heavy elements including gold.

But, the bad news is that there aren't enough supernovae exploding in our galaxy to produce the amount of gold detected in Earth and in the stars of the Milky Way galaxy. New observations suggest something even more exciting than supernovae.

Both theory and observation show that at least some supernova explosions leave behind neutron stars. These are about 10 km in diameter and contain the mass of the sun so tightly squeezed by gravity that atoms cannot exist. A neutron star is just a ball of fluid composed of neutrons. About half of all stars are binary – two stars orbing each other. Two massive stars in a binary system will evolve and eventually form a binary neutron star system with two neutron stars orbiting each other. Such pairs of neutron stars may be the gold makers of the universe.



The above artwork shows a pair of neutron stars whirling around it each other at nearly the speed of light and emitting gravity waves as they merge to form a black hole. CXC/M. Weiss; X-ray: NASA/CXC/Trinity University/D. Pooley et al.

The theory of relativity predicts that these orbiting neutron stars radiate away orbital energy as gravity waves and spiral toward each other orbiting faster and faster. Finally, they come so close their tides tear each other apart with most of the matter plunging into a black hole and the rest being blasted into space as a super supernova.

In the last few years, specialized telescopes have detected gravity waves coming from merging black holes. On August 17, 2016, those telescopes detected the kind of gravity waves produced by a pair of merging neutron stars.

Continued next page

Making Precious Gold continued

Only 1.7 seconds later an orbiting telescope detected a burst of gamma rays coming from the same place in the sky, and within hours still other telescopes detected visible light from the expanding cloud of gas. At last, a super supernova had been detected.

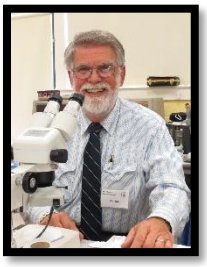
So, what about gold? Calculations show that these merging neutron stars can produce an explosion so hot and so dense it can make plenty of heavy elements like gold, platinum, and uranium. A single one of these super supernovas can produce 200 Earth masses of gold.

The explosions spew those new elements out into space where they pollute the gas between the stars. About 4 billion years ago, a cloud of that polluted interstellar gas contracted to form the sun and the planets. Earth formed contaminated with those heavy elements. That's where the gold, platinum, and uranium in earth's crust came from.

So, if you buy someone a gold ring, and they say, "Wow, where did that come from?" you can tell them. "The gold was born over billions of years in titanic super supernova explosions triggered by neutron stars colliding to form black holes." You don't need to say anything else. Walmart had almost nothing to do with it.

Desautels Micromount Symposium

October 19-21, 2018



By Mike Seeds,
Conference Chair

Please join us at the Friends School on Charles Street in Baltimore. Details are on our website.

https://www.baltimoremineralsociety.org/desautels-symposium.html

The program includes:
Round Minerals given by Hall of Fame Inductee Janet Clifford
Aspects of the Morphology of Quartz given by Pete Richards, HOF
Micromounting and Science given by Quintin Wight, Hall of Famer

Friday, October 19
7:30 PM Registration, Dessert and Coffee
8:00 PM Fellowship with other Micromounters and informal programs given by participants
Saturday, October 20
9:00 AM Symposium Opens – Trading, Give-aways, Mineral sales, Silent and Voice Auctions and lots of free time!
10:00 AM Silent Auction
12 Noon Light Lunch (provided)
2:00 PM Voice Auction
3:00 PM Micromounter's Hall of Fame Induction Ceremony: Phillip Foster and Janet Clifford Presentation: Janet Clifford, "Round Minerals"
5:00 PM Dinner (at local restaurants on your own)
7:30 PM Presentation: Pete Richards, "Aspects of Morphology of Quartz"
9:00 PM Workshop Closes for the Day
Sunday, October 21
9:00 AM Symposium Opens – Trading, Give-aways, Mineral Sales and lots of free time!
10:30 AM Presentation: Quintin Wight, "Micromounting and Science"
12 Noon Symposium Closes
Note: Please bring a cloth or plastic table cover to protect the wooden tables.

Registration materials can be downloaded from the BMS website. They were recently mailed to you.

Mysteries of the Hope Diamond Solved

By Kathy Hrechka, Editor

On August 7, I volunteered for event called Side Door Launch Party: a podcast about the Hope Diamond from the Smithsonian. Dr. Jeffrey Post and Dr. Richard Kurin narrated an audio podcast, in advance for invited guests to hear in the Q?rius theater. Dr. Post, Curator of the Mineral Collection spoke for the audio podcast about the diamond's chemical properties. After the audio podcast, Dr. Kurin promoted his book The Hope Diamond: The Legendary History of a Cursed Gem. He presented in detail the diamond's three-hundred-year history.

Beginning in the 1600's Kollur mine in the Golconda Region of India, the 112-carat diamond's ownership passed through Jean Baptiste Tavernier, King Louis XIV of France and Marie Antoinette, King Louis XV, King George IV, Henry Philip Hope, Mrs. Evalyn Walsh McLean, of Washington D.C., then finally to Harry Winston, who donated the (downsized) 45.56-carat blue diamond to the Smithsonian. Today the Hope Diamond is featured in a display revolving clockwise for maximum viewership in the Harry Winston Gallery, with its own personal security guard. Side Door guests were also guided by Dr. Kurin to view the Hope Diamond in the Harry Winston gallery.

My role after the podcast was to welcome guests into the Mineral Gallery after viewers admired the Hope Diamond before the museum opened. I promoted an educational cart "Periodic Table of Elements in a Smart Phone". I also pointed out a smithsonite specimen, promoting the British chemist, James Smithson, philanthropist and founder of the Smithsonian Institution. My intention was to spark another topic for Side Door about James Smithson. Local mineral club member, Ken Rock also volunteered and gave guests a special tour of the Geology, Gems and Mineral galleries.

Museum goers often ask me about the legend of the Hope Diamond's curse. Now I can share the truth which Dr. Kurin has revealed through his research. There is no curse. That gives me an opportunity to promote the diamond's science and its value to the museum. It is the world's largest faceted blue diamond at 45.56-carats now estimated worth of $350,000,000. The Hope diamond phosphoresces a strong red color, which will last for several seconds after exposure to short wave ultra-violet light. The diamond's blue coloration is attributed to trace amounts of boron in the stone.

When I began volunteering at the museum five years ago, I purchased the book Hope Diamond. I was perplexed as to why Dr. Kurin, an anthropologist would write about the Hope Diamond. After all, he was not a geologist. After reading his book, it made perfect sense to me. His research convinced me there is no such curse, while detailing each person through three hundred years of history, who had owned the big blue diamond. One day, my husband, Ken surprised me with a replica of the Hope Diamond, which I now wear at the museum while volunteering in the Mineral Gallery, "my happy place" where guests are interested in geology, just like me.

Photo: Kathy Hrechka, Mineral Gallery volunteer is holding a replica of the original Hope Diamond parcel which was mailed through the US Post Office, registered fragile on November 8, 1958 from New York to the Smithsonian, attention Dr. Leonard Carmichael, the Secretary of the Smithsonian. Dr. Richard Kurin is featuring his bestselling book, Hope Diamond: The Legendary History of a Cursed Gem, which was published in 2006 by the Smithsonian Books in association with Harper Collins Publishers.

Continued next page

Hope Diamond continued

Photo: Kathy is shown demonstrating the cart "Periodic Table in a Smart Phone" to the Side Door Launch Party attendees. That is her favorite activity while volunteering for the museum. It brings lively discussion about our dependence on mining minerals for our technology. She also had some museum items for discovery; quartz crystal, faceted quartz gem, wulfenite, and a polished bowl carved from unakite. Virginia's state stone.
Photo courtesy of Joshua Contois, Volunteer Coordinator & Mineral Sciences Liaison of the Office of Education and Outreach

Emerald - Haiku

By Gavin Noller, junior member of the Colorado Springs Mineralogical Society - Adapted from the Pikes Peak Pebble Pups & Earth Science Scholars Poetry Chapbook, 2012

Under the gray ground
Emeralds on a blue field
Waiting to be found

Cartoon below by Earston Barnhardt 1998
Rock Buster News Central PA Rock & Mineral Club

American Federation of Mineralogical Societies

(AFMS)
www.amfed.org

Eastern Federation of Mineralogical and Lapidary Societies

(EFMLS)
www.amfed.org/efmls

AFMS Purpose: 2018

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 other related subjects, and to sponsor and provide means of coordinating the work and efforts of all persons and groups interested therein; to sponsor and encourage the formation and international development of Societies and Regional Federations and by and through such means to strive toward greater international good will and fellowship.

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

Subscriptions are $4.50 per year Remit payment to the AFMS Central Office Checks should be made payable to "AFMS"

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Content – Letters Editorial Comments – Submissions Any communication concerning the content or format of the newsletter should be sent to the Editor: Carolyn Weinberger PO Box 302 Glyndon, MD 21071-0302 <editor@amfed.org> 410-833-7926

Deadline is the 1st of each month preceding publication (i.e. April 1 for the May issue)
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Communication and Involvement Are the Keys to Our Success!

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

Geology Events:

September

5: Mineralogical Society of DC meeting
Smithsonian's Natural History Museum
Meet 7:30pm Constitution Ave entrance for guard escort to Cathy Kerby room for meeting
www.mineralogicalsocietyofdc.org

10: The Gem, Lapidary and Mineral Society of Montgomery County, Maryland (GLMS-MC)
7:45 pm - Rockville Senior Center, Rockville, MD
www.glmsmc.com

21: The Gem, Lapidary and Mineral Society of Washington, DC (GLMS-DC)
7:00 pm - Chevy Chase Community Center,
5601 Connecticut Ave., NW, Chevy Chase, MD
www.glmsdc.org

24: Northern Virginia Mineral Club meeting
7:30–10pm Long Branch Nature Center,
625 South Carlin Springs Road in Arlington, VA
www.novamineralclub.org

26: MNCA - Micromineralogists of the National Capital Area meeting 7:30–10pm Long Branch Nature Center, 625 South Carlin Springs Road in Arlington, VA www.dcmicrominerals.org

April 5-6, 2019 Atlantic Micromounters' Conference
Holiday Inn, Alexandria, VA
Speaker, Robert Lauf of TN - author of Mineralogy of Uranium and Thorium
www.dcmicrominerals.org

"Earth Rocks" Cub Scout Camporall

Saturday, September 29, 2018
Camp Snyder in Haymarket, VA

Please consider sharing our geology hobby with the scouts at their camping weekend in Haymarket, VA on Saturday, September 29. They need mineral donations of low cost small gems or pieces of quartz, mica, calcite, limestone, etc. to be buried in their "Big Dig" sand pile. The Cubs find rooting around in the sand for treasures to be a load of fun.

You may also volunteer your time, which means simply show up. Kathy Hrechka prepared the teaching stations for "Earth Rocks"; mineral study boxes, Mohs hardness study boxes, geologic state map, and minerals in my home unit. We need a geologist on site for the boys to complete the "Earth Rocks" requirement of visit a geologist. Please call Kathy if you can help at camp 703.407.5393.

You may bring minerals and rocks to donate for the boys at the MVMC September meeting to give to Mike Kaas. Tom Taaffe is coordinating, as a dealer with the scout leadership in purchasing fossils for the boys. Dave Hennessey donated a 5-gallon bucket of amazonite, quartz, mica, etc. Mike Kaas picked up bags of lava basalt, marble, and granite from garden centers. Eagle Scout, Conrad Smith will be at camp all day on Saturday to teach the scouts about geology, including the "Minerals in my Smartphone".

Dave Carlson, Scouting volunteer reached out to Kathy Hrechka this year, because she has previously taught geology along with Jim Kostka to the scouts at Camp Snyder. Dave is expecting over 1,000 scouts. Smithsonian's Udvar Hazy will also be setting up ten simulators, and work stations for the boys. Geology will be taught upstairs in the fort in full sun.

Micromineralogists of the National Capital Area
Meeting: The 4th Wed. of each month 7:30 -10 p.m.
Long Branch Nature Center, (Except Easter & Dec.)
625 S. Carlin Springs Road, Arlington VA 22204

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

Pres: Dave MacLean, dbmaclean@maclean-fogg.com
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Conference: Kathy Hrechka, kshrechka@msn.com

The society is a member of:
* Eastern Federation of Mineralogical and Lapidary Societies
(EFMLS) www.amfed.org/efmls
*American Federation of Mineralogical Societies
(AFMS) www.amfed.org Affiliation

Dues: MNCA Membership dues
$15 (single) or $20 (family)
Payable to MNCA - Michael Pabst, Treasurer
270 Rachel Drive
Penn Laird, VA 22846

S.C.R.I.B.E.

Editor's Note:
By
Kathy Hrechka

Send your articles and photos to your editor.
Club Article Deadline is 5th of each month.
***The Mineral Mite* will be emailed on 10th.**
No newsletter July/August

EFMLS Editor's Trophy Award
First Place 2016 - Small Bulletins
Inducted into Editor's Hall of Fame - 2018

* Mike Seeds
* Dave Fryauff
* Bob Cooke
* Michael Pabst
* Pete Aloha Chin
* Kathy Hrechka
* Dave MacLean
* Tom Tucker