



MNCA Website [dcmicrominerals.org](http://dcmicrominerals.org)  
**The Mineral Mite**



Vol. 50 – No. 1

Washington D.C. – A Journal for Micromineralogists

January 2017

50 Years 1967 - 2017

**January 25 Time: 7:30 p.m. – 10 p.m.**

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

**Program: Snow Crystals  
101, a Lesson in Snow  
Crystal Photomicrography**

Kathy Hrechka will demonstrate her unique techniques of photographing snowflakes while using her Olympus microscope, camera, and cell phone. Snow crystal article on page 3.

**Workshop:** Dave Fryauff will bring micro material.



**President's Message:**

By: Dave MacLean



While I was in Hungary I met with Erzsebet Toth, director of the mineral museum at the University in Budapest. She told me that a new complex metallic sulfide was found at the exit vent from oxidizing coal in waste rock pile from an abandoned coal mine near Pecs in southern Hungary. She said that the "new mineral is undergoing tests to satisfy the criteria for recognition as a new mineral by a European group. In the meantime the reclamation of the waste rock pile had hauled away the site where the mineral was found. When I asked if a thorough search of the waste rock piles for minerals at vents due to oxidizing coal from the coal mines near Pecs had been done, she asked me "do you want to go there and look". Gathering minerals at the end of vents in waste rock pile of coal mines may yield some unusual minerals.

In 1980 and 1982 spring conferences a young man from Scranton, PA described how he gathered a plethora of unusual minerals at hot exit vents from burning coal mines near Scranton PA. the mines and waste rocks piles have burned for 60+ years. the US Federal government has spent tens of millions to try to dig out and put out the fires

There is a well told 19th century story by Joseph Conrad about a small English ship taking coal from England to Calcutta India. The coal got wet while loading and in an Atlantic storm. During the long voyage the coal got hot and began to smoke and in the Indian Ocean took fire. The crew was rescued. The ship was a total loss. Continued on next page.

**Photo of the Month**



**Snow crystals** by Kathy Hrechka 30x

**President's Message continued**

We did not elect officers at the Christmas party on 19 December because only three MNCA members were present. I request we hold elections for 2017 officers on Wednesday 25 January.

MNCA and NVMC are scheduled to visit Lance and Cindy Kearns at JMU on Saturday 28 January. Let's hope for no snow or ice. The trip to Harrisonburg is 125 miles or 2.5 hours. Let's carpool.

MNCA and NVMC are scheduled to visit GMU Geology on Saturday 18 February.

The GLMSMC show at the Rockville Fair grounds in MD. I will request a table to demo micromineralogy like we have in previous years. We will need volunteers.

**Election of Officers - January 25**

**2017 MNCA Officer Nominations:**

- Karen Pabst agreed to serve on the Nominating Committee for 2017 officers. She reported nominations:
- Dave MacLean for President
- Dave Fryauff for Vice president
- Michael Pabst for Treasurer
- Bob Cooke for Secretary



\*\*\*\*\*

**Membership Dues are Due: 2017**



Payable to MNCA - Michael Pabst, Treasurer  
270 Rachel Drive  
Penn Laird, VA 22846

**Previous Meeting Minutes: 12/19/16**

By: Dave MacLean for Bob Cooke, Secretary

We did not elect officers at the Christmas party on 19 December because only three MNCA members were present. I request we hold elections for 2017 officers on Wednesday 25 January.



**Previous Program Reviewed: 12/19/16**

By: Kathy Hrechka for Bob Cooke, Secretary

The Micromineralogists of the National Capital Area and the Northern Virginia Mineral Club jointly hosted a holiday party at the Long Branch Nature Center. NVMC provided barbeque from Red Hot & Blue. MNCA club provided drinks. In the holiday spirit, club members, exchanged mineral related micro mount gifts.



The Crystallography Tree was originally constructed Cynthia Payne during the earlier years of our club's history.

We enjoy our monthly meetings, while Dave MacLean presides as our club president. This photo was taken at our November meeting.



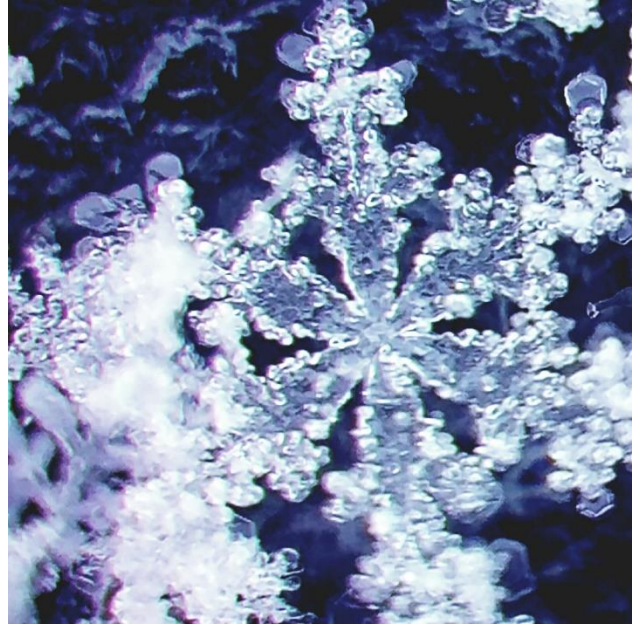
*Photo courtesy of David Fryauff*



## Snow Crystals 101, a Lesson in Snow Crystal Photomicrography

By Kathy Hrechka, Editor

On January 7, while anticipating two inches of snow in Alexandria, VA, I was determined to photograph snowflakes through my microscope. First, I set up my Olympus microscope outdoors, on the front porch. I had created portable 5"x 5" snow collecting stages, topped with light blue or royal blue felt panels. My digital camera is a Canon Power Shot ELPH 110 HS, 16.1 mega pixels. I simply held it up to the microscope's left eye piece, with a coupling to block out light between the microscope and camera.



The temperature at 9am was 27 degrees Fahrenheit. I knew the temperature was just right for great crystal definition. I had to get started, as the snowflakes were clustered and falling fast. My portable stages were rapidly collecting snow. My microscope was set between 25-30 power magnifications, as the snowflakes were tiny. My hands were chilled, while constantly adjusting the microscope and camera, above freshly collected snow crystals. I was in awe at my camera screen, for crystal dendrites and hexagonal shapes landed on my stages as my first subjects. Interestingly, the snow crystals did not melt, but some had tiny spheres of water under the crystal extensions. I snapped my first photos.



At times, I turned my microscope light off to reduce glare on the ice. Many forms of ice crystals were interconnected, while landing on my stages. I had much work to do, as the snow and temperature continued to drop. While freezing outdoors myself, I continued until 1 pm when the temperature dropped to 25F. While awaiting for more perfect crystals, the snow abruptly stopped.

I was grateful that I began my snow crystal photography early in the morning, as mother nature is unpredictable. Finally, the snow fall ended by 1pm, and my work ended. I shall be waiting, and ready for the next snow crystal storm.





## Molybdoformacite

By Michael Pabst

In an earlier article, I promised to write about Molybdoformacite, because it is such a beautiful mineral. Molybdoformacite is a chromium *and* molybdenum mineral:



$Pb_2Cu(MoO_4,CrO_4)(AsO_4,PO_4)(OH)$ . Molybdenum lies just above chromium in the Periodic Table, so it is not surprising that there could be substitution of molybdenum for chromium in a mineral. The formula implies that molybdenum exceeds chromium, and that arsenic exceeds phosphorus. Whether this is always true is not clear to me. Molybdoformacite is isostructural with Vauquelinite:  $Pb_2Cu(CrO_4)(PO_4)(OH)$ , and with Fornacite:  $Pb_2Cu(CrO_4)(AsO_4)(OH)$ .

Molybdoformacite is monoclinic prismatic  $2/m$ , with  $\beta = 109.17^\circ$ . Crystals are light green and transparent, with an adamantine luster. The type locality is the Tsumeb Mine, Namibia, where it is a rare mineral, often found in association with Dioptase and Wulfenite. Molybdoformacite also occurs in Arizona, Nevada, and New Mexico.

You might not be able to appreciate how magnificent Molybdoformacite can be, just by looking at my pictures of a tiny crystal of Molybdoformacite from Tsumeb. (But please try.) The first photo is of the entire specimen, showing blue-green Dioptase, and light green Molybdoformacite on a matrix containing Dolomite  $CaMg(CO_3)_2$  and a translucent, blocky, light-green mineral, perhaps Duftite  $PbCuAsO_4(OH)$ .



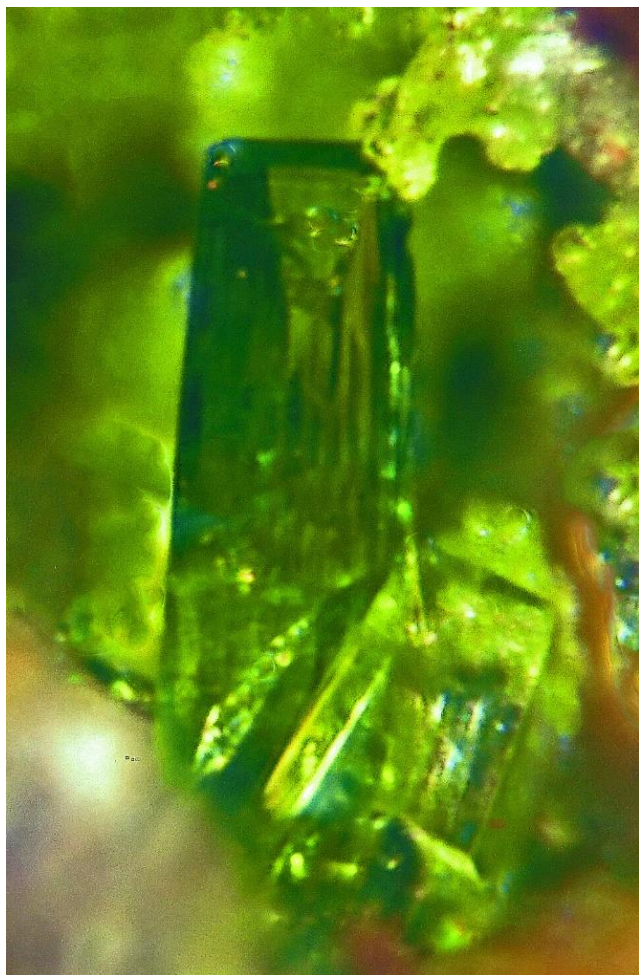
Molybdoformacite (green) and Dioptase (blue) from Tsumeb, Namibia. Photo by Michael Pabst. FOV 12 mm. Image prepared from a stack of 4 photos taken with a 60 mm Olympus macro lens, processed with CombineZP and Photoshop Elements, version 14. My specimen shown here is a micromount prepared by E. R. Quick.

Molybdoformacite from Tsumeb. Photo by Michael



Pabst. FOV 0.6 mm. Image from a stack of 6 photos, taken with a Mitutoyo 10X infinity-focus lens and a telephoto lens on a bellows. (sorry about the glare)

## Molybdoformacite continued



The same crystal photographed through my stereo microscope, stacking 6 images. FOV 0.4 mm.

To really appreciate how beautiful Molybdoformacite can be, you must click on these links to Mindat:

[www.mindat.org/photo-283006.html](http://www.mindat.org/photo-283006.html).

Molybdoformacite crystal from Tsumeb, photo taken by Christian Rewitzer. An impressive photo, considering the field-of-view (FOV) is just 1 mm.

[www.mindat.org/photo-345897.html](http://www.mindat.org/photo-345897.html).

Another crystal group from Tsumeb, photo taken by Vincent Bourgoin, also just 1 mm FOV.

The next two photos come from the Alice Mine, Goodsprings, Clark County, Nevada:

[www.mindat.org/photo-729622.html](http://www.mindat.org/photo-729622.html).

Photo by Pierre Clolus, FOV 1.2 mm.

[www.mindat.org/photo-443612.html](http://www.mindat.org/photo-443612.html).

Photo by Jerry A. Baird, showing Molybdoformacite with Rosasite, and with a nice hemimorphic crystal of Hemimorphite. The crystal is 0.4 mm tall.

The quality of these Mindat photos is wonderful, considering the minute size of the specimens, which are all less than 1 mm. To get a better impression of the tiny size of these Molybdoformacite crystals, consider that my entire specimen fits easily into a small micromount box (20 mm x 20 mm). The close-up photo with the stereomicroscope was taken at maximum magnification (140X, from 20X eyepieces times 7X zoom). On my computer monitor, the picture of the tiny crystal stands about 100 mm tall (your monitor may differ); in real life, the crystal is about 0.4 mm tall. So, a rough estimate of magnification:  $100 \text{ mm} \div 0.4 \text{ mm} = 250\text{X}$ .

This Molybdoformacite crystal is about the tiniest crystal I can photograph with my current equipment. The three photos in this article were taken with my new camera, an Olympus OM-D E-M5 Mark II, which is a 16 mega-pixel mirrorless camera. The first photo, showing the entire specimen, was done with the camera's "focus bracketing" ability, where the camera automatically takes a series of pictures at different planes of focus, using an electronically driven 60 mm macro lens.

With the close-up photos, I could control the camera with a laptop computer, while looking at the laptop screen, making focusing more accurate. The camera has an electronic shutter, which eliminates microscopic vibration caused by mechanical shutters. Scott Braley showed us this camera last year at one of our MNCA meetings. His photos persuaded me to ask Santa for this camera and lens for my Christmas present.



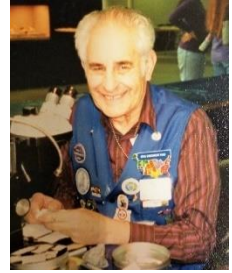
**Micromineralogists of the National Capital Area, Inc.**

**50<sup>th</sup> Anniversary Pyrite – Fool’s Gold**

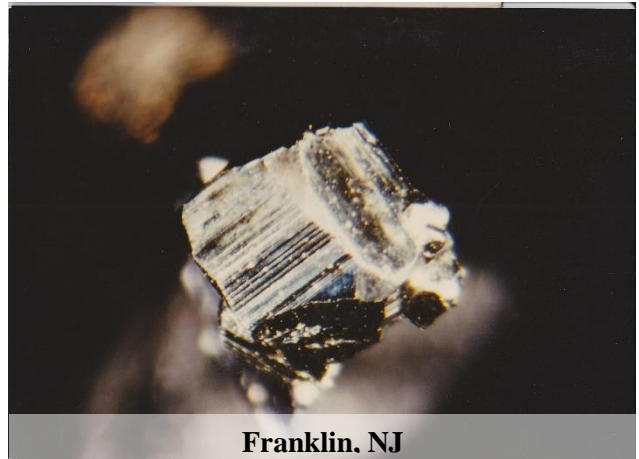
Our Memory of Fred Schaefermeyer’s Exhibit  
By Kathy Hrechka

Muriel mailed photos to me in memory of Fred. These were part of his AFMS Trophy showcase. Photomicrography by Paul Smith.

Fred was a member of our club for thirty years. His area of micromineral interest was “pyrites”. He earned an EFMLS Trophy, as well as an AFMS Trophy for his exhibit. He also collected gold. To be continued...



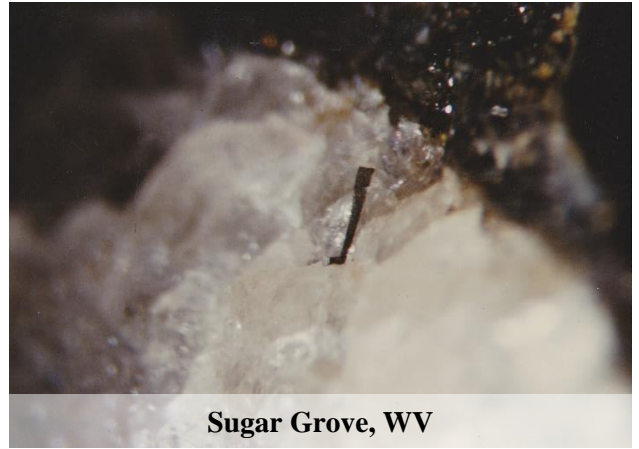
**Culpeper, VA**



**Franklin, NJ**



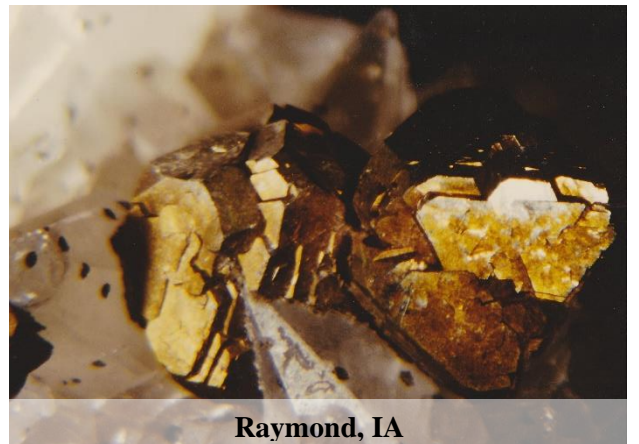
**Sugar Grove, WV**



**Sugar Grove, WV**



**Cornwall, PA**



**Raymond, IA**



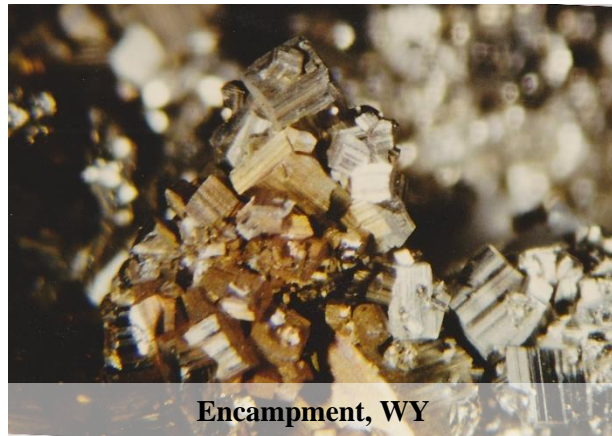
**50<sup>th</sup> Anniversary Pyrites continued**



**Rockville, MD**



**Sugar Grove, WV**



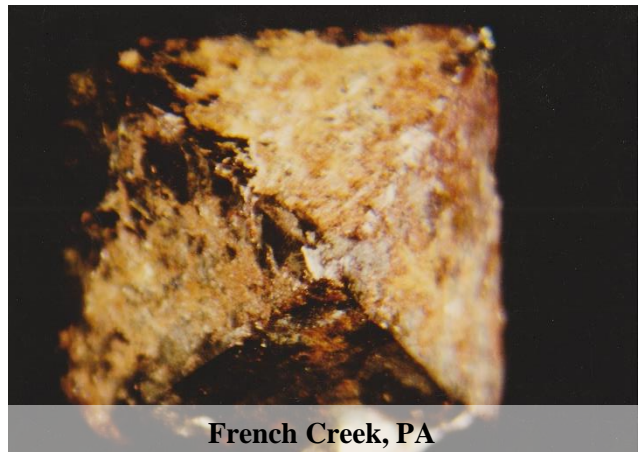
**Encampment, WY**



**Baraga County, MI**



**Marriotsville, MD**



**French Creek, PA**

## Joe Murter Remembered

By Erich Grundel



Photos courtesy of Kathy Hrechka

Joe Murter, a long time MNCA member and friend, died on December 16. Among his many attributes and achievements were his remarkably inquisitive mind that was combined with great creativity and superb artistic skills.

His miniature rock shop and miniature collectors exhibits have been staples of local rock and mineral shows for decades. The carousel of micromounts he built continues to be used by our group when we demonstrate our hobby at club shows. His interactive mineral identification exhibit was used just last month at the Northern Virginia Mineral Club show. Before they became common and inexpensive, Joe built the equivalent of a digital microscope. He had a separate screen that showed in real time how silver crystals grew from an evaporating solution. These are a miniscule fraction of the things he made over his long life.

Joe loved being a teacher and never missed an opportunity to set up demonstrations at club and mall shows. He enjoyed talking to people, especially children. He tried to instill in everyone an interest in the entire natural world, of which minerals were just one part, that he so thoroughly embraced.

He is survived by three very devoted sons, many grand and great-grandchildren and countless friends.

Joe was a veteran of WWII. He served in the Army Air Corps where he was a radio operator on bombers. He flew on more than 40 missions in the Pacific.

He will be buried next to his wife Ruth in a private ceremony at Quantico National Cemetery.

Joe was 95.



Joe's hand crafted, miniature rock shop



### GeoWord of the Day and its definition:

**piemontite** (pie'-mont-ite) A reddish-brown, deep red, purplish-red or black monoclinic manganese-bearing mineral of the *epidote* group:

$(\text{Ca}, \text{Pb}, \text{Ce})_2(\text{Mn}^{3+}, \text{Fe}^{3+})\text{Al}_2(\text{Si}_2\text{O}_7)(\text{SiO}_4)(\text{O}, \text{OH})_2$ .

Cf: *withamite*. Also spelled: *piedmontite*. Syn: *manganese epidote*.

All terms and definitions come from the [Glossary of Geology, 5th Edition Revised](#).



## 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)  
[www.amfed.org/efmls](http://www.amfed.org/efmls)

### Fred C. Schaefermeyer

January 28, 1919 – October 9, 2016

Fred Schaefermeyer, Past President of the AFMS (1994-95) passed away at age 97 following a brief illness. B o r n in Hayden, CO, Fred enlisted in the Army Air Corps in 1940 and served in numerous administrative roles at the Pentagon before retiring in 1968. He then attended electronics school and became a service representative for 3M Company until he retired from that position in 1982. Looking around for “something to do”, Fred enrolled in college courses in chemistry and geology and became involved in numerous local rock and mineral clubs in the D.C. area. Never one to be “just a member”, Fred soon found himself to be the editor of a club bulletin, president of several of his clubs, including the Northern Virginia Mineral Club, the Micromineralogists of the National Capital Area and the Mineralogical Society of the District of Columbia.

He also served as director of the MNCA’s annual spring micromounters conference. After serving as 1st and 2nd Vice President for the Eastern Federation, he served as President in 1989-90. In 1995 Fred was awarded the Eastern Citation Award - their highest honor- and in 2000 was inducted into both the Micromounters Hall of Fame and the National Rockhound and Lapidary Hall of Fame. Never one to sit idly by, Fred served as a mineral judge for both EFMLS and AFMS, and teacher at the EFMLS Workshop at Wildacres. He was a mentor and friend to many who was always willing to share his knowledge and his love of the hobby with anyone. Following the passing of his wife Geraldine (Gerry), Fred moved to Wheat Ridge, Co where he spent the last happy ten years of his life with his companion, Muriel Frink. He is survived by his daughter Sherry and sons Michael and Martin as well as eight grandchildren and six great grandchildren. Contributions in Fred’s memory may be made to the AFMS Scholarship Fund, % your regional Federation chairperson or directed to Steve Weinberger, EFMLS Chair, PO Box 302; Glyndon, MD 21071-0302. Carolyn Weinberger

Communication and Involvement  
Are the Keys to Our Success!

### Geology Events: 2017

#### January:

**23: NVMC Meeting** 7:30 - 10 p.m. Long Branch Nature Center, Arlington, VA 22206

**25: MNCA Meeting – How to 101: Snow Crystal Photomicrography presented by Kathy Hrechka** 7:30 - 10 p.m. Long Branch Nature Center, Arlington, VA 22206

**28: James Madison trip: 9am – 3pm** Dr. Lance Kearns has again invited MNCA along with MSDC and NVMC, to visit the mineralogy labs at James Madison University, Saturday, January 28, 2017. Details will be as usual. It’s quite possible that this will be our last invitation to JMU, as Lance will be retiring in May, 2017 Details on page 7 MM.

#### February:

**18: MNCA and NVMC** are scheduled to visit GMU Geology on Saturday.

#### March:

**31–April 1: Atlantic Micromounters' Conference - SpringHill Suites Alexandria, VA. 6065 Richmond Highway Alexandria VA 22303. Speakers TBD**

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*Snow Alert: MNCA Meeting is cancelled, when Arlington county schools are closed on the day of our meeting.*

## Micromineralogists of the National Capital Area, Inc.

### MNCA Field Trip to James Madison U Dr. Kearns - Saturday January 28, 2017

By Michael Pabst

Dr. Lance Kearns has scheduled our Field Trip to James Madison University for January 28, 2017 according to our wishes. Note: He will be retiring this spring.



### MINERAL MUSEUM

#### James Madison Univ. - Harrisonburg, Virginia

The room is slightly over 600 square feet in size, hosting sixteen display cases plus a special Ultraviolet display room. Security for the specimens is provided by a multilevel state-of-art security system. Generous gifts from individuals and mineralogical societies around the region allowed for a complete purchase of the mineral display cases. The Grand Opening took place October, 2007.



**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  
Vice Pres: David Fryauff, fryauffd@yahoo.com  
Secretary: Bob Cooke, rdotcooke@verizon.net  
Treasurer: Michael Pabst, Michaeljpabst@yahoo.com  
Editor/ Historian: Kathy Hrechka, kshrechka@msn.com  
Website: Julia Hrechka, dcmicrominerals@gmail.com  
Conference: Kathy Hrechka, kshrechka@msn.com

#### The society is a member of:

- \* Eastern Federation of Mineralogical and Lapidary Societies (EFMLS) [www.amfed.org/efmls](http://www.amfed.org/efmls)
- \* American Federation of Mineralogical Societies (AFMS) [www.amfed.org](http://www.amfed.org) Affiliation

**Dues:** MNCA Membership Dues for 2016  
\$15 (single) or \$20 (family)  
**Payable to 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 5<sup>th</sup> of each month.**  
*The Mineral Mite* will be emailed on 10th.  
No newsletter July/August

**EFMLS Editor's Award**  
**First Place 2016 - Small Bulletins**



**Member inputs:**  
\*Kathy Hrechka  
\*Dave MacLean  
\*Michael Pabst  
\*Erich Grundel  
\* David Fryauff

