



MNCA Website dcmicrominerals.org
The Mineral Mite



Vol. 49 – No. 4

Washington D.C. – A Journal for Micromineralogists

April 2016

April 27 Time: 7:30 p.m. – 10 p.m.
Long Branch Nature Center, 625 S. Carlin Springs Rd. Arlington, VA 22206

Program: "Exploring the Mines of Dal'Negorsk, Siberia"

By David Fryauff, Vice President



Club members will view a DVD presentation by Rock Currier from the Dallas Mineral Collecting Symposium 2012. He passed away just this past year and was a legendary collector. Thanks to Jim Kostka for the DVD that contains this presentation. Members who have Dal'Negorsk mineral specimens in their collections are invited to bring them in to the meeting so we can see some of these natural wonders. Cynthia Payne had a good number of Dal'Negorsk specimens in her collection, and I believe I have several of these. Details on page 2.

Photo of the Month



Grossular (garnet), Jeffrey Mine, Asbestos, Quebec. FOV 7 mm. Photomicrograph by Michael Pabst. This specimen will appear at the Live Auction at the Atlantic Micromounters Conference April 23.

President's Message:

By: Dave MacLean



I am glad to hear that our demo of micromineralogy at the GLMSC show went well and drew a large interest. Thank you demonstrators.

We are all aware of our big event, the Midatlantic Micromounters Conference evening 22 April and all day Saturday 23 April at the Springhill Marriott in Alexandria. We need volunteers for setup at about 4PM Friday 22 April and take down at about 8PM Saturday 23 April. Please bring your excess micro material for the freebie table and be prepared to bid loudly and often at the micro auction. High bidders will win a print of micro photo of the mineral and the micro mineral itself.

My recent rock hunting near in a long abandoned basalt quarry near Tolpuca -Diszer north of Lake Balaton, Hungary showed us again how micros are abundant when larger crystalline minerals are not found. We found calcite, aragonite, and smectite? in vugs in this quarry and the 10X loupe.

Atlantic Micromounters' Conference
April 22-23, 2016

Marriott SpringHill Suites
Alexandria, Virginia
Please join us in welcoming

Speaker: Tony Nikischer

Details on page 6



"Exploring the Mines of Dal'Negorsk, Siberia" February Program

By David Fryauff, Vice President

The Dalnegorsk ore field in a nut shell: Mineralogy: Complex sulphide & calc silicate deposits, sometimes rich in boron silicates

Crystal Size: Crystals of hedenbergite, calcite and fluorite (and possibly Danburite and Dato-lite?) may all reach sizes of up to 1 m (confirmed). There are also giant, leather like aggregates of dannemorite, which may cover several square meters!

Geology & formation: Complex skarn type mineralization, rich in sulfide and boron.

Current status: Ongoing mining activity in both the sulfide and boron deposits.

Remarks: Mineralogically extremely rich with splendid and large mineral specimen. Easily one of the most spectacular mining districts both in terms of mineralogy and geology. Mindat.org lists 231 entries & 167 valid mineral species, no Type Locality species.

Previous Meeting Minutes: 3/23/16

Recorded by Bob Cooke for George Reimherr, secretary

In the absence of President Dave MacLean (who is Hungary), Vice President Dave Fryauff called the meeting to order at 7:40 PM, March 23rd, 2016.

Dave announced field trip opportunities for: April 2: Dinosaur Park in Laurel, Prince Georges County, MD April 23-24: Sterling Hill Super Dig & Franklin, New Jersey Mineral Show May 7: 8 AM – 12 PM Field trip to Stafford Quarry, Garrisonville, VA

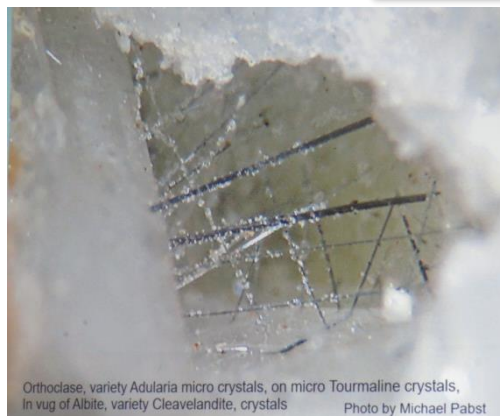
Kathy Hrechka provided an update on the Atlantic Micromounters Conference for April 22-23, 2016. To date, she has received attendance fees for 17 people. Michael Pabst previewed the 22 photographs he has prepared for the auction. He has also prepared photographs for 23 micromounts in the silent auction. Kathy reviewed support issues to include electrical cables, micromounts for sale and for the give-away table, and soliciting more

attendees. Dave Fryauff and Bob Cooke reported that the MNCA Demonstration Table at the GLMS Mineral Show on March 19 & 20 was well attended. The club's microscope and micromount wheel provided entertainment and education to potential micromounters of all ages. Unfortunately, the wheel has suffered long term wear and tear damage and required a maintenance overhaul after the show. Micromounts from the Cynthia Payne collection were offered for sale at the Demonstration Table and generated \$59.05. Meeting adjourned at 8:20 PM.

Previous Program Reviewed: 3/23/16

Former MNCA member, Scott Duresky gave a Power Point presentation on the Historic Rutherford Mine, Pegmatite #2, of Amelia Courthouse Virginia.

Photomicrography
by Michael Pabst



Above: Orthoclase, variety Adularia micro crystals on micro Tourmaline crystals, in vug of Albite, variety Cleavelandite, crystals. **Below Fluorapatite (pink)**



Uvarovite and Shuiskite

By Michael Pabst

Uvarovite is a *real* chromium mineral, unlike Chromian Clinocllore or Chromian Titanite shown in earlier articles. Uvarovite is a chromium garnet, in which Cr^{3+} occupies more than 50% of particular sites in the crystal lattice. The chemical formula is $\text{Ca}_3\text{Cr}_2(\text{SiO}_4)_3$. There are other green garnets where Cr^{3+} is less than 50%, and so we have to call those garnets by their correct names, based on which ions are in the majority. These other green garnets include Grossular $\text{Ca}_3\text{Al}_2(\text{SiO}_4)_3$, which forms a series with Uvarovite, having Al^{3+} instead of Cr^{3+} .

The formula for Chromian Grossular garnets would be written $\text{Ca}_3(\text{Al,Cr})_2(\text{SiO}_4)_3$, indicating that Al^{3+} exceeds Cr^{3+} . Some Chromian Grossular garnets have a good green color, like this example from Mindat: www.mindat.org/photo-474123, or this group of Chromian Grossular garnets from the Jeffrey Mine, Asbestos, Quebec, shown below. Other Grossular garnets come in a variety of colors from colorless (as in the photo below) to brown or orange.



Chromian Grossular from Jeffrey Mine, Asbestos, Quebec. Field of view 3 mm. Dave Fryhauff specimen.



Colorless Grossular from Jeffrey Mine, Asbestos, Quebec. Field of view 4 mm. Dave Fryhauff specimen. The blue background is artificial.

The Demantoid variety of Andradite can also be green. Andradite has Fe^{3+} in place of Al^{3+} or Cr^{3+} : $\text{Ca}_3\text{Fe}_2(\text{SiO}_4)_3$. But in the Demantoid variety of Andradite, chromium sneaks in to produce a green color: $\text{Ca}_3(\text{Fe,Cr})_2(\text{SiO}_4)_3$. See this example from Mindat: www.mindat.org/photo-268180. These examples of Grossular and Demantoid were selected to show good green color. However, in general, Grossular or Andradite garnets containing Cr^{3+} are less intensely green compared with true Uvarovite, which has a higher content of Cr^{3+} . Compare this example of Uvarovite: www.mindat.org/photo-389369. The photo below shows a nice “lawn” of Uvarovite crystals from the type locality. Andradite and Grossular can sometimes appear to be *dark* green, due to inclusions of Chromite (FeCr_2O_4), which is black, or Heazlewoodite (Ni_3S_2), which is dark bronze. But true Uvarovite is not just *dark* green, but *deep* green, due to the high content of Cr^{3+} .

Micromineralogists of the National Capital Area, Inc.



Uvarovite on purple Amesite from Saranovskii Mine, Urals, Russia. FOV 15 mm.

Like all garnets, Uvarovite is isometric (cubic system) ($m\bar{3}m$). Dodecahedrons and icosahedrons are common. The type locality for Uvarovite is Saranovskii Mine, Permskaya Oblast', Urals, Russia. Uvarovite was named for Count Sergei Semenovich Uvarov, Minister of Education, and President of the Russian Academy of Sciences from 1818 to 1855.

Individual crystals can be better observed if the crystals are bigger and better separated, as in this specimen below: **Uvarovite on Amesite** with minor purple Shuiskite from Saranovskii Mine, Urals, Russia. FOV 15 mm.



The specimen below includes purple Shuiskite, which is a fibrous chromium silicate:
 $\text{Ca}_2\text{MgCr}_2(\text{Si}_2\text{O}_7)(\text{SiO}_4)(\text{OH})_2 \cdot 2\text{H}_2\text{O}$. Shuiskite is monoclinic $\beta = 98^\circ$. It is the chromium-containing member of the Pumpellyite Group. Here below is a close-up photo of the Shuiskite.



Shuiskite and Uvarovite from Saranovskii Mine, Urals, Russia. FOV 1.5 mm.

I have another specimen of Shuiskite from the Saranovskii Mine, containing Shuiskite that is mostly gray, with just a tinge of lavender.



Shuiskite and Uvarovite from Saranovskii Mine. FOV 1.5 mm.

Continued on next page.

Uvarovite and Shuiskite

I took a photo of Shuiskite at the Fersman Mineral Museum in Moscow, using my pocket camera. I must admit that the Fersman specimen is somewhat larger and richer than my own (actually ~100 times better):



Shuiskite and Uvarovite from Saranovskii Mine. FOV ~10 mm (guess). Fersman Museum specimen, taken in Moscow with my pocket camera.

Millerite (NiS) is found associated with Uvarovite at the Saranovskii Mine. Here is another photo from the Fersman Museum, taken with my pocket camera. The Millerite is just a thin golden rod in the upper left of the picture. The presence of Millerite invites the question whether Ni²⁺, instead of, or in addition to, Cr³⁺, might cause the green color in some garnets. Think of the beautiful green color of Annabergite, Ni₃(AsO₄)₂·8H₂O. However, Pete Dunn published a paper about Chromian Garnets from Canada in which he concluded that Ni was not present in significant amounts (“On the composition of some Canadian green garnets”, Pete J. Dunn, *Canadian Mineralogist* **16**:205-206, 1978). However, the presence of Heazlewoodite (Ni₃S₂) with the Chromian Grossular at the Jeffrey Mine in Canada, and the presence of Millerite (NiS) with the Uvarovite at the Saranovskii Mine in Russia, makes me wonder about nickel sneaking into garnets and coloring them, even though the preferred oxidation state for nickel is 2+, rather the 3+ that is usually found garnets due to Al³⁺, Fe³⁺, and Cr³⁺.



Millerite on Uvarovite, Saranovskii Mine, Urals, Russia. (I guess the FOV is about 100 mm.) Specimen photo taken at the Fersman Mineralogical Museum in Moscow.

The Saranovskii Mine has also produced crystals of K ammererite, reminiscent of those from the Kop Krom Mine in Turkey. For example: www.mindat.org/photo-588682.

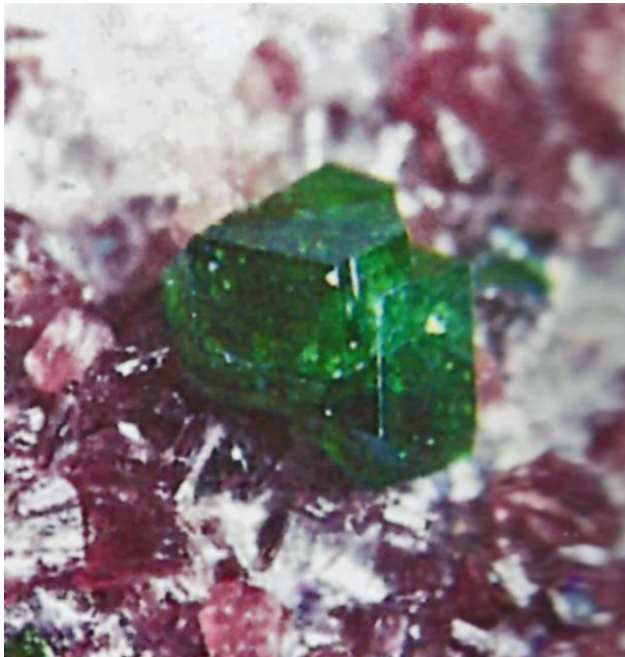
In the wonderful book, “Minerals First Discovered on the Territory of the Former Soviet Union” by Igor V. Pekov, Ocean Pictures Ltd, Moscow, 1998, there is a photo of two 1 mm crystals of Uvarovite on K ammererite from Biserskoye, Urals (see scanned photo below). This locality is in the same area (Gornozavodskii area) as the Saranovskii Mine. The photo of this combination piece in the Pekov book looks similar to specimens found at the EMMCo mine in California, which we saw first in my February article, and then again last month, where an EMMCo mine K ammererite on Uvarovite was used to demonstrate the power of my new Mitutoyo Infinity Focus lens.

Continued on next page.

**Atlantic Micromounters' Conference
April 22-23, 2016**

Marriott SpringHill Suites
Alexandria, Virginia
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Speaker: Tony Nikischer



Uvarovite on Kämmererite from Biserskoye, Urals, Russia. I scanned this photo from the book by I.V. Pekov cited in the text. The Uvarovite crystals are said to be 1 mm, so the FOV should be about 2 mm.

Don't forget that a stunning example of EMMCo Uvarovite and Kämmererite will be auctioned at the upcoming Atlantic Micromounters Conference. There will also be a whisky-colored Grossular cluster from the Jeffrey Mine in Quebec. The live and silent auctions will also include about 40 other fine specimens.



Tony's interest in minerals was stimulated by an early visit to Franklin, NJ in the 1960s. Today, he is founder and president of Excalibur Mineral Corp., arguably the largest provider of systematic minerals in the United States. The company has specialized in rare minerals for researchers, museums and private collectors worldwide since 1974. He operates an in-house analytical laboratory and is also the publisher of the monthly periodical, *Mineral News*.

He is the founder and chairman of The Hudson Institute of Mineralogy, a not-for-profit foundation devoted to study, preservation and public education pertaining to the mineral kingdom. The Institute is now the parent organization of Mindat.org, the most prolific and widely viewed mineralogical website in the world. Tony has served as a director of the Friends of Mineralogy and is a Life Member of the Mineralogical Society of American, and is also a member of both the Mineralogical Association of Canada and the Mineralogical Society of Great Britain.

In 2001, the new mineral "nikischerite" was named in his honor. Tony has contributed over 200 articles to publications such as *Mineralogical Record*, *Rocks & Minerals*, *Mineral News* and *Applied Spectroscopy*, and he has co-authored descriptions of a number of new mineral species. He was awarded the Salotti Earth Science Education award in 2013.

Nikischerite Huanuni
Tin Mine, Dalence
Province, Bolivia.



Registration details at
www.dcmicrominerals.org

Submitted by Kathy Hrechka, Conference Chair



Shoebox Adventures: Rackstraw

By Mike Seeds

What would be the perfect job if you collected minerals but couldn't be a mineralogist, miner or prospector? You would want to live in a small town with a big mine nearby, and the mine should contain lots of different minerals. You would want to know lots of people, and you would want them to like you and respect you so they might bring you nice minerals from the mine. That's the job Rev. George Rakestraw had. He was the pastor at the Methodist church in Cornwall, Pennsylvania, and many of his parishioners worked in the giant Cornwall Iron Mine.

Rakestraw was born in 1827, and was ordained in 1856. He served with distinction in the Civil War as Chaplain for the 201st Pennsylvania Volunteers. In 1878, he was sent to serve the Methodist church in Cornwall, Pennsylvania, which must have made him smile. He was of Cornish descent meaning his ancestors came from Cornwall, England site of many underground mines. Expert miners from Cornwall, England were brought to Pennsylvania to work the giant iron mine thus gave the town its name. Miners brought Rev. Rakestraw beautiful minerals from the mine.

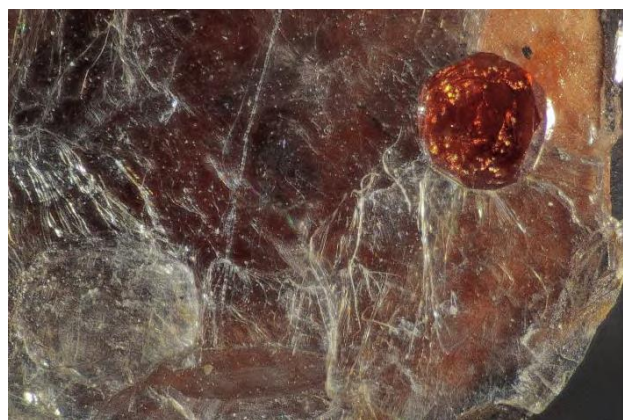
Mindat lists 68 valid minerals found in the mine. Somehow Rakestraw become interested in the microscopic appearance of his minerals, and he purchased a state of the art Zentmeyer binocular microscope, which had come on the market in 1876. In the 1880s, Rakestraw was transferred to a Philadelphia church where he met other collectors such as G. W. Fiss and C. S. Bement, both of whom became serious collectors of micromounts. Rakestraw evidently became a well-known collector because he was invited to speak to the Brooklyn Institute of Arts and Science in 1888 where he gave those present a chance to look through his microscope. As a result several members of the Institute began their own collections of microscopic minerals. George Rakestraw is recognized as the modern founder of micromounting and was among the first members of the Micromounters Hall of Fame elected in 1981.

What did Rakestraw see? Although the bulk of his collection went to Harvard, a few hundred came to the hands of BMS member Paul Seel, who gave them to the Baltimore Mineral Society as the core of the BMS Historical Collection. We can see from those minerals some of the beauty that Rakestraw saw. Here are just a few of those choice Rakestraw minerals still in their more than century old paper boxes.



Calcite on descloizite, Georgetown, New Mexico. The calcite crystals are about 3 mm across.

Collectors in Rakestraw's time do not seem to have been very concerned about location. They found it enough to give a town and state or even just a state. Modern micromounters can become a little obsessive about locations giving the name of a mine or even the level within a mine. The locations given under these photos are the complete locations given on Rakestraw's boxes. Note that the Copper Queen Mine is located in Bisbee, Arizona and tourists can take tours through its underground workings. In Rakestraw's time, it was an active mine.



Garnet in mica, Delaware County, Pennsylvania. The garnet is about 0.7 mm in diameter.

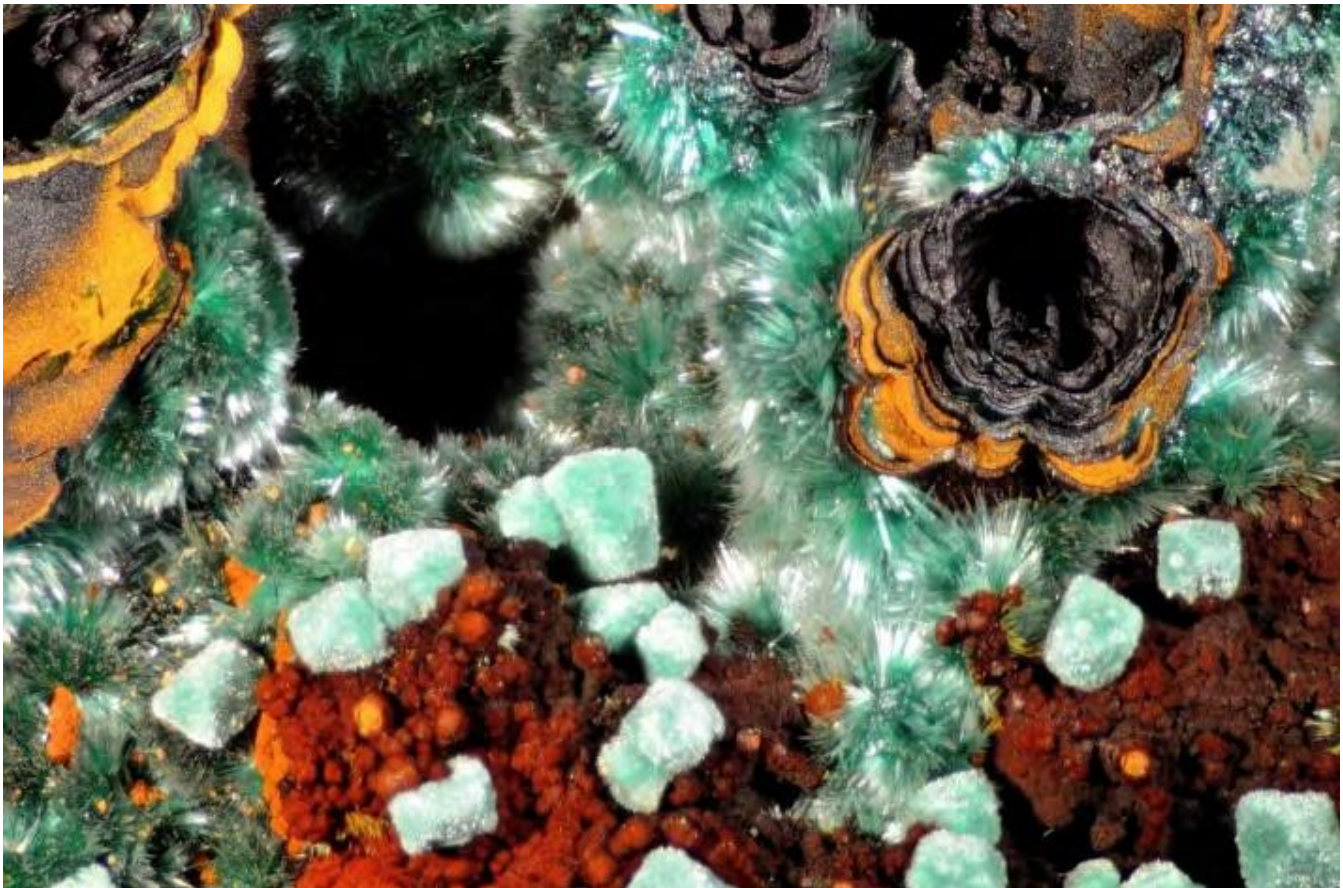
Rackstraw continued

The garnet in mica specimen is glued to the top of a cork and the glue and cork are plainly visible. Rakestraw and other micromounters in his time were not as careful to hide the glue and cork because the field of view of their microscopes was quite small. Most of the time, they didn't see the cork. Modern mounters work hard to hide the cork and make the mineral appear to float against the dark background inside the box.

Below: Cuprite octahedrons with malachite coating on goethite with malachite. Field of view 8 mm.

The cuprite/malachite specimen is only a small part of a larger specimen that nearly fills Rakestraw's little paper box. It is very unlikely that Rakestraw visited Bisbee, Arizona, so we can conclude the he traded minerals with other collectors just as do modern collectors. The micromount symposium was not invented until 1957 (by BMS), so it is likely that Rakestraw worked with mineral dealers and traded with friends. It is possible that he traded by mail with more distant collectors.

Micromounting hasn't changed very much in 135 years. Microscopes are better, light sources are brighter, and there are more dealers and more micromounters. We have minerals from around the world to share with friends, but the hobby is really unchanged; we still enjoy the beauty of minerals in little boxes.



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Photomicrography by Mike Seeds

Micromineralogists of the National Capital Area, Inc.



American Federation of
Mineralogical Societies

(AFMS)
www.amfed.org



Eastern Federation of
Mineralogical Societies

(EFMLS)
www.amfed.org/efmls

Northwest Federation to host the 2016 AFMS Convention – Show July 27-August 1 in Albany, Oregon

Endowment Fund

By Cheryl Neary, Chairperson

The 2016 AFMS Convention is being held in late July of 2016. So what does that mean to you? Hopefully, it means you will purchase your tickets (yes, you need to be in it to win it!) before July for the AFMS Endowment Fund drawing! Why the raffle? The money collected is for the AFMS Endowment Fund. The interest from the monies generated is used for AFMS special projects, such as, junior badges, judges training, digitizing of slide programs, to name a few. Before the clock runs out – why not Purchase tickets? You can also donate an item or two! Why not both options! The tickets are \$5.00 a piece or \$20.00 for five! What a bargain!! Where can you purchase tickets? Great questions- you can always send me a request for the tickets at my email at . I will send you an email version of the tickets and I will fill in all the details on the original ticket, once I receive the money for the tickets. Or better yet- you can purchase them from your Federation's representative!

EFMLS Representative - Carolyn Weinberger
PO Box 302 Glyndon, MD 21071-0302

Email address - editor@amfed.org

Official Magazine of the AFMS



Communication and Involvement
Are the Keys to Our Success!

Geology Events:

April:

6: MSDC Meeting at the Smithsonian 8pm
Dr. Jeffrey Post, Curator Geology Gems & Minerals

14-17: Rochester Mineralogical Symposium

Micromounter's Playroom Radisson Hotel
175 Jefferson Road, Rochester, New York, 14623

22-23: Our Atlantic Micromounters' Conference – Speaker: Tony Nikischer of Excalibur Minerals

Location – **Marriott SpringHill Suites
Alexandria, VA 22303**

25: NVMC Meeting LBNC Casper Voogt -
Mindat.org trip to Madagascar

27: MNCA Meeting at LBNC "Exploring the Mines
of Dal'Negorsk, Siberia"

April 29-May 1

Canadian Micro Mineral Association 53rd Spring
Symposium Brock University, St. Catharines, ON
For more info contact ruehlicke@rogers.com

May:

9-15: EFMLS Wild Acres Little Switzerland, NC.
Helen Serras Herman, "speaker in residence" is a
world renowned glyptographer (gem stone carver).

September 5 – 11 will feature Alfredo Petrov as the
"speaker in residence". Alfredo has traveled the
world and is extremely knowledgeable about
minerals. \$400 plus materials fee; registration begins
Jan 1; information at <http://efmls-wildacres.org/>
Steve Weinberger, EFMLS Wildacres Committee
Chair

Collecting the Arkansas Quarries

By Dr. Henry Barwood



Fluorite with minor siderite from the quartz syenite at Jones Mill Quarry near Magnet Cove, Arkansas. These cavities have fluorite, siderite, quartz, feldspar, mica (species ?), aegirine, amphibole (species ?), chlorite (?) and rutile. The fluorite is VERY difficult to image because of its transparency and they look a lot more interesting viewed under the scope. FOV is about .7 X .8 mm. Imaged with a Canon 40D, 23mm Nikon objective and Canon 300mm telephoto lens used in a tube configuration. Stacked using Combine Z.



Interesting fluorite cube from Jones Mill Quarry, Magnet Cove, Arkansas. Surface has odd etch tracks on it and the interior has "clouds" of dark purple color. Imaged with a Canon 40D, 30mm B&L lens and stacked with Combine Z. FOV about 1.5 X 2mm
Editor's pick: interesting minerals reprinted from MICRONEWS CANADIAN MICRO MINERAL ASSOCIATION INC. Vol. 50, No. 1, January 2016

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.

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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 for 2016
\$15 (single) or \$20 (family)

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



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

AFMS Editor's Award
First Place 2011 - Mini Bulletins
Second Place 2015 - Small Bulletin

Member inputs:

*Michael Pabst
* Mike Seeds

