



THE
NORTHERN
VIRGINIA

MINERAL CLUB
INC

Crystals are the flowers of the Mineral Kingdom



The Mineral Newsletter

Meeting: September 24 Time: 7:30-10 p.m.

Long Branch Nature Center, 625 S. Carlin Springs Rd. Arlington, VA 22204

Program: Mineral Auction

By Barry Remer, Vice President

Come for the FUN! Everyone wins when you upgrade your collection by selling some pieces--and someone upgrades theirs by buying them! Our Autumn Auction on September 24th gets our season of meetings off to an exciting start. The meeting will start promptly at **7:30pm** (note that this is 15 min. earlier than usual) and typically we move through the business fast so that there is time for the auction. Sellers, come early to help set up the room and your items. Bid slips, which you may copy if more are needed, are parts of this newsletter. Don't hesitate to bring a guest or invite non-members. The meeting and auction is open to all (but only members can sell).

**** Note Current Club Auction Rules****

- * Any member may offer up to 20 specimens or up to 4 flats for auction.
- * Each flat is one auctionable item.
- * The Club gets 15% of the purchase price; the remainder goes to the seller.
- * Anyone may donate items to the auction to fully benefit the Club (no money back to donor).
- * Minimum bid is \$2 on any item.
- * Bids from \$2 to **\$20** increase by **\$2**; bids above **\$20** increase by **\$5**.
- * We start with a silent auction, so look carefully and start bidding. Items with multiple bids during the silent auction will be brought sooner to the vocal auction.
- *Winning bidders must pay for the item promptly, with cash or check.

Auctioneers, accountants, and runners are volunteers--help us out here, folks! *Bring small bills, bid early and often, and move on to the next item.* We need to be out of our meeting room by ~10pm.

Volume 53 No. 9

September 2012

Also find information on our Club website:

<http://www.novamineralclub.org/>

President's Collected Thoughts:

By Sue Marcus, President



What memories did you make this summer? I hope your collecting days were safe and fruitful! We've had some particularly busy members. Long-term members (I didn't say older!) may be familiar with mineral/lapidary federations, though they may be less well-known to newer collectors. The American Federation of Mineralogical Societies (AFMS) comprises regional groups, ours being the Eastern Federation of Mineralogical and Lapidary Societies (EFMLS). These organizations were established to build national and region networks of collectors and lapidarists. Their conventions feature opportunities to show and share, trade and purchase, and most of all to learn. Most federation conventions offer speakers and displays, so we may learn by listening and watching presentations, and by observing odd and wonderful specimens. No matter what level collector you are, there is something to enjoy at federation shows. If you are so inclined, check out the federation website--click around, and you will find our club listed, as well as the names of some of our members. The sites include information on shows, Wildacres, and clubs you may visit during next summer's travels.

AFMS: <http://www.amfed.org/>

EFMLS: <http://www.amfed.org/efmls/>

Northern Virginia Mineral Club

(President's Collected Thoughts continued)

Several club members are active with the AFMS and EFMLS. Matt Charsky, Wayne Sukow, and Kathy Hrechka participated in the AFMS Show and meeting in Minnesota. These folks were there on their own (not representing our Club.) Matt is now EFMLS Convention Advisory Chair, Show Committee Chair, and Chair of Nominating Committee. In November, Matt becomes the AFMS 1st Vice President, representing the ELMLS to the national federation. We're glad when he takes the time to be an auctioneer at our Club auctions! Barbara Sky is the EFMLS representative on the AFMS Rules Committee.. Wayne presented a seminar on *copper replacement agates* at the AFMS/MWF Show. Preceding the show was an international seminar of agate connoisseurs, called a "Celebration of Agates," where Wayne spoke on *Iris Agates*. Gerry Cox is Secretary of the EFMLS. Peter Chin (hey, Peter, we haven't seen you in a while), is a board member the Fluorescent Mineral Society. Sheryl Sims will represent our Club at the EFMLS convention in Harrisburg, PA in mid-September. Did I miss someone? If so, it was unintentional. More honors: Sheryl Sims won Second Place from the AFMS for the fabulous scrapbook she created for the Club last year. We look forward to displaying the scrapbook at our Show, to encourage potential new members to join the Club after seeing the fun she documents for us.

On behalf of all the members of the Northern Virginia Mineral Club, thanks for serving our collecting community! If you aren't sure what this is all about, ask these folks about how the federations help all of us.

Warm regards, Sue Marcus



AFMS/MWF Show, Minnesota, July, 2012

AFMS/MWF Combined Show A Celebration of Agates Minnetonka, MN July 2012



Congratulations!

BEAC Contest Original Adult Articles
8. Women Rock Stars
by **Sheryl Sims**
The Northern Virginia Mineral Club
(EFMLS)
From: The Mineral Newsletter, 4/11



Competitive Exhibit Results

Trophy 9 (Restricted Minerals 4)
Barbara Sky, Show Me Gem & Minerals Club
(MWF) – 93.4 points



AFMS Club Rockhounds of the Year Eastern Federation

Joe Murter has been named Rockhound of the Year by the Northern Virginia Mineral Club. Joe is generous with his specimens, hobby materials, time and patience while encouraging others to enjoy all aspects of our hobby. Joe excels as a faceter, microscopist, specimen collector and creator of his miniatures of a rock shop and show. These latter two exhibits combined his craftsmanship as a master woodworker and carver with his mineral interests. Joe is a founding member of the Gem and Mineral Hunters and the Micromineralogists of the National Capitol Area.
submitted by Sue Marcus, President NVMC

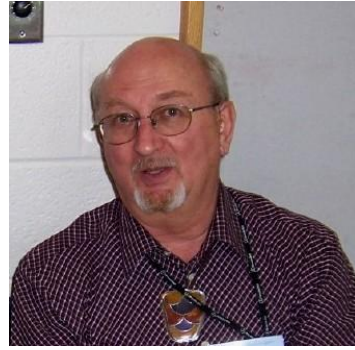
**RED-GOLD AND POLISHED
AGATES: UPPER MICHIGAN'S
HIDDEN TREASURES**

by
Wayne W. Sukow

The program takes you on a treasure hunting field trip to Upper Michigan's famed Copper Country via a sailing vessel that stops at Copper Harbor, MI just in time to see a red-gold sunset. The red-gold theme continues during the drive from Copper Harbor to the Wolverine 2 Mine. Then, viewing the treasure...copper replacement agates begins.

Treasures are divided into four collecting bags:

- 1). The first is labeled Collector Agates, which are some of the showiest. They include some showing detailed and faithful reproduction of portions of fortifications bands.
- 2). Then comes a bag with both native copper and unusual copper minerals as inclusions. The unusual copper minerals are related to possible conditions during their formation.
- 3). Collecting bag 3 is small but gives an unusual peek inside these marvelous agates. It is accomplished by etching away calcite with sulfamic acid; the calcite often appears water clear and you can look through it to see the inside of the backside of the agate.
- 4). Necessity drives exploration. Bag 4 has more marvelous copper agates from a second source, the Kearsarge Lode mines. They have a remarkable combination of pastel colors: cream, pink, tan and green bands with diverse forms of copper from flecks, to garden pea size masses, to fine detailed replacement of the agate's fortification bands.



Before the sun sets on the program there's a last quick look at more collector copper replacement agates. You'll want to add several of these rare copper agates to both your lapidary or mineral collection. They are unusual, they are rare, and the supply is definitely nearing exhaustion as the mine dumps are crushed for road fill. This is a slightly abridged version of the 2011 AFMS award winning program...first place with highest honors.



Wayne Sukow, NVMC presented "Red-gold and Polished Agates: Upper Michigan's Hidden Treasures" at the AFMS/MWF Show. He promised to bring some Keweenaw Peninsula micro agates with copper inclusions for the micromounter members.



Northern Virginia Mineral Club

IRIS AGATE

by

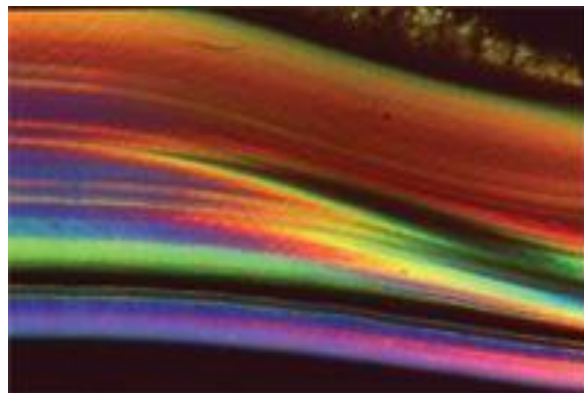
**Wayne W. Sukow with
Photography by Pete Rodewald**

In Greek mythology, **Iris** was identified as Goddess of the Rainbow. The rainbow was her shimmering robes as she carried messages from the Gods on high to mortals on earth. We suggest that Iris Agate was her abode on earth and to the discoverers she granted views of the more colorful and intense “Extreme Iris” in agates from around the world.

The program begins with an explosion of color from a variety of agates and continues with close up views of these agates to see the extreme iris. Extreme iris’s intensity, and hues, continually amaze as do the new colors and color changes that appear as the camera is slightly moved will continue to amaze. Another feature of some extreme iris patterns is their three-dimensionality, which adds a new insight into agate structure and perhaps formation.

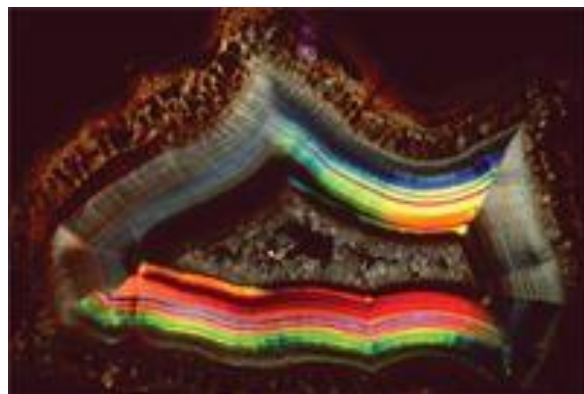
Although most Iris agates reveal their extreme iris colors when white light is transmitted through a very thin slice of the agate a very few (3) shows extreme iris when light is simply reflected from the agate's surface. The author has photos of one in his collection.

Numerous authors have stated that the iris effect is evidence that the density of fortification bands is 15,000 to 21,000 bands per inch. In this program we present a new model for the cause of iris in agate that enables an understanding of how the wide array of new colors is produced. Naturally, this has implications for understanding how agates are formed and the essential need for a mechanism for long-range pattern control. The program closes with a final explosion of extreme iris colors.



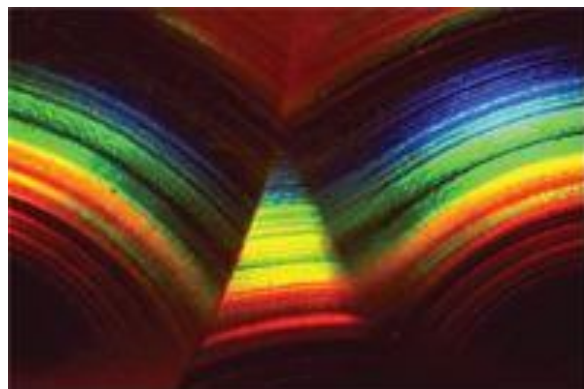
Extreme Iris in a Montana agate

More colors that you've ever seen in a rainbow. Where do the lavender hues come from? Field of view 23 mm x 10 mm



Baker Ranch Thunderegg Iris

Field of view 60 mm x 40 mm



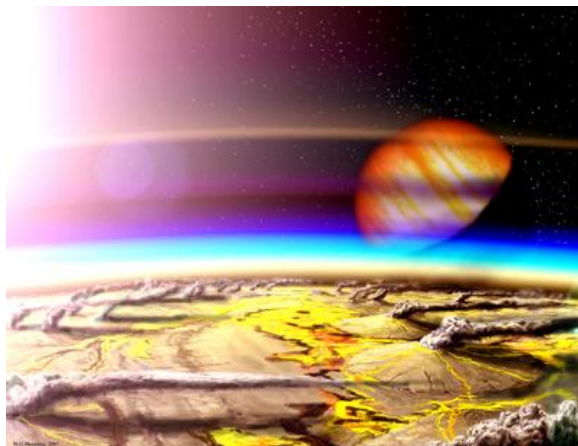
Brazil iris-1

Field of view 12 mm x 5 mm

Tides, Convection, and Geology in Exoplanets

Why the Earth Sciences are not just for Earth - by Alec Brenner

For six weeks this summer, I participated in the National Space Club Scholars Program at NASA's Goddard Space Flight Center in Greenbelt, Maryland. For this program, I conducted research on exoplanets under the supervision of Dr. Wade Henning and Dr. Terry Hurford, both of whom study tides and how they affect planetary bodies. Our results have surprised us, and may have major implications in our search for earthlike planets.



Tidal Exoplanet

Geology is a field that all of us immediately associate with what we call the "Earth Sciences." This title is appropriate, but it is by no means all-inclusive. Since the mid-twentieth century, geologists have expanded their studies to worlds beyond our Earth, and have scrutinized all the bodies of our solar system.

But this giant leap for geology, it turns out, is just a small step.

In the past 15 years, meticulous searches have revealed planets in *entirely new solar systems*. These "exoplanets" are just emerging on geologists' radar. And there are lots of them - as of this printing, some 777 exoplanets have been detected and confirmed by planetary scientists, with thousands of candidates awaiting further study. A few of these are about the same size as Earth, and we call these the "terrestrial" exoplanets. Such planets attract significant

attention, as these are the most likely to host extraterrestrial life - or even humans in the far future.

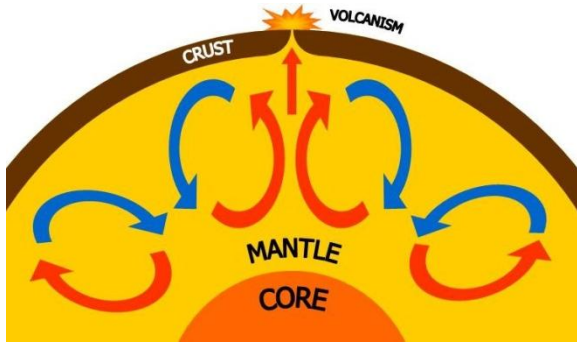
Some terrestrial exoplanets have the potential to experience extreme tides. These tides are the same as the ones which change sea levels periodically here on Earth, but on a far more massive scale. While our moon's gravitational "tug" is only powerful enough to move the water on Earth's surface, the gravity of a star can be powerful enough to move the rock within a planet's mantle. Under the right conditions, this movement and warping generates enormous amounts of friction - and heat. This "tidal heat" is enough to cause a planet's surface to melt, spawning magma oceans and supervolcanoes. If that seems hard to believe, large-scale tidal heating has been observed right here in our solar system on a moon of Jupiter called Io. Io's surface is a crust of sulfur compounds, ejected from its 150 active volcanoes and lava lakes.

But under what conditions does a planet become so hellish? For one, it must orbit close to its host star, as this is where gravitational variation is strong enough to create major tides. It must also follow an orbit that is not quite circular (planetary scientists call this kind of orbit "eccentric"), varying the gravitational tug from the host star and amplifying tides. Finally, its mantle must have the correct viscoelastic properties ("viscoelastic" means not quite solid and not quite liquid; the correct viscoelasticity leads to the most friction and therefore the most heat).

These conditions seem fairly specific, so you might expect that tidal exoplanets would be uncommon. What my mentors and I found, however, is just the opposite; of the planets we studied, at least half met the requirements to become tidal, and many had the potential to become just the kind of magma ocean world described above. Among these possible magma worlds were some of the most recently discovered exoplanets, including many of those discovered by NASA's Kepler mission.

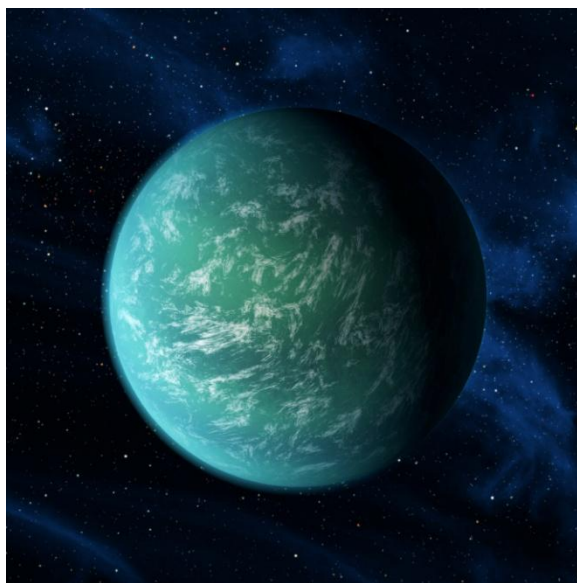
How do these planets' tides compare to those we see on Earth? Tidal heating is measured in units of power, usually Terawatts (TW). The tidal heating of earth is currently about 44TW, which is *almost 20 times* the

Northern Virginia Mineral Club



electrical power consumption of the world. But that's nothing - the tidal heating in 55 Cancri e, an especially tidally susceptible exoplanet, may be over 10^{18} TW (1 million million million Terawatts) of power, or about $5 \cdot 10^{17}$ (500 thousand million million) times the world's electrical power consumption.

That's enormous! But where does all of this heat go? Something must exist to let it escape, and that something is convection. Convection is the process in which mantle material circulates to bring heat from a planet's core to its surface, much as water circulates when you heat it in a pot on a stove. A good portion of my work at NASA involved modeling how this convection operates in exoplanets. When coupled with tidal heating, convection calculations can give us important information about exoplanets, such as surface temperature, mantle temperature, crust thickness, and even some details of planetary evolution. **Habitability**



But there is one more valuable thing that tidal heating and convection may tell us about: habitability. Tidal heating could easily make the difference between an icy planet and a lava planet, and life as we know it cannot thrive at either extreme. In moderation, however, tidal heating could transform an icy surface into a warm one, perfect for sustaining life. Finding a planet just like Earth has been a dream for planetary scientists for decades, and tidal heating is clearly a very important aspect of our search for such a "second Earth." Perhaps one day we will find one, and who knows what exotic geology - or biology - it will harbor. v

Picture Captions (in order):

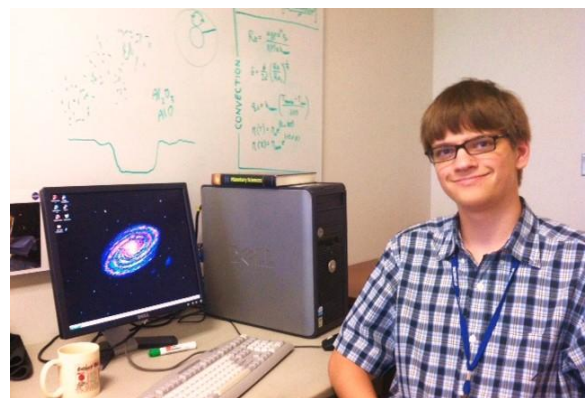
A possible view of the surface of a tidal exoplanet. As tides move magma within the planet, heat is generated, and this drives volcanism on massive scales. Image ©Wade Henning 2007; used with permission.

Tidal heat escapes from a planet through convection, in which mantle material circulates to bring heat to the surface, driving volcanism. Image © Alec Brenner 2012.

Could tidal heating transform a cold, icy planet into a warm one capable of sustaining liquid water and life? We certainly hope so. Image from <http://kepler.nasa.gov/>.

Alec Brenner is a senior at Thomas Jefferson High School for Science and Technology in Virginia. For copies of his research at NASA, entitled "Viscoelastic Modeling of Tidal Heating in Terrestrial Exoplanets," contact Alec at rocksforbrains@verizon.net.

Alec Brenner, Junior Member Northern Virginia Mineral Club



Northern Virginia Mineral Club



Geology Merit Badge Day

Eagle Scout, Jim Kostka joined Kathy Hrechka to teach Geology merit badges to Cub Scouts and Boy Scouts on September 8, at the Hartwood Days Festival in Fredericksburg, VA. The local Venture Crew Scouts coordinated the event to include various retail vendors, merit badge counselors, and musical performances for the entire family.



Representing the Northern Virginia Mineral Club, Jim and Kathy checked off geology requirements for numerous boys, while sharing their enthusiasm of the hobby. Jim provided many mineral give-aways to scouts and adults.



Article by Kathy Hrechka

Photos by Jim & Kathy

September 8, 2012

Northern Virginia Mineral Club

Previous Meeting Minutes: 6/25/12

By Kathy Hrechka, Secretary

Northern Virginia Mineral Club Meeting
Minutes of June 25, 2012

President Sue Marcus opened the meeting at 7:45 p.m.

Old Business: Rick and Sue Marcus are working on the membership list. Douglas Lane Brooks volunteered to coordinate and compile membership information for the club.

Adult help with newsletter is needed. Hutch Brown volunteered to help

New Business: A new mineral shop Lapis Valley was reported in Old town, Alexandria.

Steve Johnson created a Facebook page for the Mineralogical Society of Washington D.C. He along, with Sheryl Sims, and other members from MSDC have posted comments, links, and pictures. He is willing to do the same for NVMC.

Jim Kostka, Show Co-chair, spoke about our November club show. He solicited for mineral donations for the Kid's Table, as well as for the Silent Auction. Kostka has been publicizing in the Arlington community papers about the Nov. 17 show and our club meetings. He is also hoping that Ann Cameron Siegal will be able to help advertise in the Washington Post again. Kostka was also seeking large rock donations for landscaping at the Tuscarara Landing High School.

Announcements:

Field Trips: Pat Rehill shared her success story of collecting shark teeth at Cole Point Light House. Vulcan Quarry, Manassas scheduled for Sat. June 30. Contact Ted Carver jtc carve@msn.com.

Geology in the News: Sheryl Sims shared her interest in rare earth minerals, which sparked much discussion.

*Dave MacLean brought up the controversial issue of building the nuclear plant in India.

*Jim Kostka cautioned members of purchasing ivory from Alaska. The use and sale of modern ivory is very strictly regulated.

*Logan Babcock spoke about the Tourmaline Candelabra of the Smithsonian.

NVMC Summer Picnic: Ted Carver agreed to host our Club picnic at his home this July or August.

Break for Refreshments. Three door prizes were awarded to members Rick Reiber, and two others.

Student Mineral Study: Kathy Hrechka passed around mineral study boxes that are available for club members to use in schools for teaching geology. She originally assembled them eight years ago. She also reassembled examples of igneous, metamorphic, sedimentary, and quartz varieties which were part of a program designed by Marie Brown and Art Fletcher. These minerals for study are located in the nature center closet.

Previous Program: 6/25/12

Dave MacLean was our "Mystery Speaker" presenting the "Seven Metals of Antiquity".

Members who receive this newsletter should have received an email message from Douglas Lane Brooks, asking them to complete a simple form so that he can compile a membership list for our club. We currently have no complete list of contact information for our members. Please do your part and return the completed form to Lane. If you have not done so, if you didn't receive it, or if horrors-you deleted it, please contact Lane as soon as possible at:

LaneDBrooks4@aol.com

Northern Virginia Mineral Club

AUCTION BID SLIP

ITEM # _____

DESCRIPTION _____

FROM _____

DATE of FIND _____

Starting Bid

amount: _____

Bidders: You need to bid on this item if you want it to be auctioned! Place bid below.

NAME BID

AUCTION BID SLIP

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Starting Bid

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NAME BID

Northern Virginia Mineral Club



American Federation of
Mineralogical Societies

(AFMS)

www.amfed.org

AFMS/MWF Combined Show A Celebration of Agates Minnetonka, MN July 2012



In July, agate enthusiasts and novices gathered at A Celebration of Agates, an international symposium and show in Minnetonka MN. The event was held in conjunction with the Midwestern Federation.

Wayne Sukow, NVMC presented "Red-gold and Polished Agates: Upper Michigan's Hidden Treasures". He promised to bring some

Keweenaw Peninsula micro agates with copper inclusions for the micromounter members.



AFMS 2012-13 Officers from left:
Treasurer Pat LaRue,
4th VP Sandy Fuller,
2nd VP Matt Charsky, 1st VP
Marion Roberts,
President-Elect
Richard Jaeger,

President Don Monroe.

.Not present: 5th VP Doug True and 3rd VP Ann James

AFMS Past Presidents

Shirley Leeson (08),
Ruth Bailey (94),
Dee Holland (98),
Bob Miller (11), Ron
Carman (03), Ed
Romack (92),
S Weinberger (02),
E. Tucker (10),
Dr. Bob Carlson (07)



Eastern Federation of
Mineralogical and
Lapidary Societies



(EFMLS)

www.amfed.org/efmls

Communication and Involvement
Are the Keys to Our Success!

EFMLS Annual Convention Theme: Crystals—"Flowers of the Mineral Kingdom" September 14-16, 2012

Harrisburg, Pennsylvania Hosted by
the Central Pennsylvania Rock and
Mineral Club, Inc.

www.rockandmineral.org

AFMS Club Rockhound of the Year

Eastern Federation
Joe Murter has been
named Rockhound of the
Year by the Northern
Virginia Mineral Club.



Competitive Exhibit Results

Trophy 9 (Restricted
Minerals 4)

Barbara Sky, Show Me
Gem & Minerals Club
(MWF) – 93.4 points



AFMS All American Awards
Silver Medal - Northern Virginia
Mineral Club, Eastern Federation
Assembled by **Sheryl Sims**



Bulletin Editor Contest Award
Original Adult Articles

8. Women Rock Stars by **Sheryl Sims**
The Northern Virginia Mineral Club (EFMLS)
From: The Mineral Newsletter, 4/11



PLEASE VISIT OUR WEBSITE:
[HTTP://www.novamineralclub.org](http://www.novamineralclub.org)

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Vice President: Barry Remer
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Secretary: Kathy Hrechka
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Treasurer: Rick Reiber
mathfun34@yahoo.com
Field Trip Chair: Ted Carver
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Show Co-Chair: Jim Kostka
jkostka@juno.com
All American Club: Sheryl Sims
sesims4@cox.net
Greeter/Door Prizes: Ty Meredith
twhtknig@aol.com
Refreshments: Karen Lewis

The Northern Virginia Mineral Club

You can send your Newsletter article to:

7201 Ludwood Ct.
Alexandria, VA 22306

Or via email: news.nvmc@gmail.com

Visitors are Always Welcome at our Club Meetings.

RENEW YOUR
MEMBERSHIP!

SEND YOUR DUES TO:

Rick Reiber
Treasurer, NVMC
PO Box 9851
Alexandria, VA 22304

OR

Bring your dues to the
meeting

Purpose: To promote, educate and encourage interest in geology, mineralogy, lapidary arts and related sciences. The society is a member of Eastern Federation of Mineralogical and Lapidary Societies (EFMLS) <http://www.amfed.org/efmls> and American Federation of Mineralogical Societies (AFMS) <http://www.amfed.org>.

Dues: Due by 1 January of each year; \$15.00 Individual, \$20.00 Family, and \$6.00 Junior (under 16, sponsored by an adult member).

Meetings are held at 7:45 p.m. on the fourth Monday of each month (except

May and December*) at Long Branch Nature Center, 625 Carlin Springs Road, Arlington, VA 22204. Phone (703) 228-6535. (No meeting in July & August.)

(*Changes announced in the newsletter.) Show schedule - Arlington county schools.