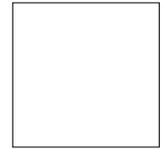


Michiana Gem & Mineral Society
Jason Hefner, Editor
229 East State St
Etna Green, IN 46524



March 2017

Volume 57 Number 3

THE ROCKFINDER

We're on the Web! See us at: www.MichianaGMS.org

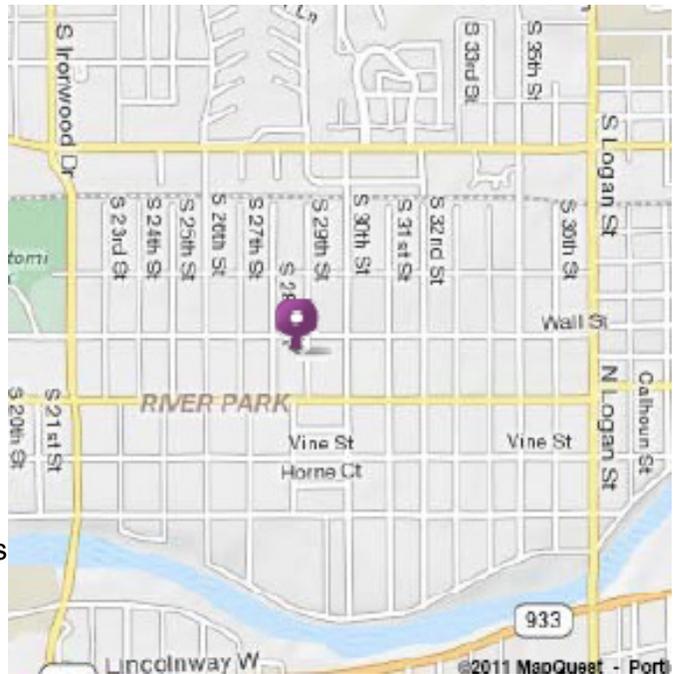
The purpose of the Michiana Gem & Mineral Society is to promote the study and enjoyment of the earth sciences and the lapidary arts, and to share lapidary knowledge and techniques. General meetings are usually held the fourth Sunday of each month at 2:00 p.m. at,

Our Redeemer Lutheran Church
805 S. 29th St.,
South Bend, IN.
Please see the map to the right.

Doors usually open at 1:30 for meet & greet time.

Regular meeting exceptions include May (third Sunday), July (Club Picnic), August (Club Show) and the November/December meeting and Christmas party.

Board meetings are held before the monthly meetings. The annual club show is in late August.



DUES

Yearly Membership Dues are payable by December 15th of each year. Please choose type of membership below.

- Individual \$15.00 Family \$20.00
- Junior \$1.00 Subscriber \$7.50

Please indicate areas of special interest.

- General Geology Gems & Minerals
- Fossils Micro mounts
- Crystals Field Trips
- Cabochons Faceting
- Carving Beads
- Jewelry Making

Name(s) _____
 Street _____
 City, ST, Zip _____
 Phone(s) _____
 Email _____

Please send your dues and the bottom half of this form to:



Please read and sign this section

With my signature I hereby release the Michiana Gem and Mineral Society, Inc., and its individual members and the owners of any premises upon which I enter under permit granted to the society, absolutely free of any liability whatsoever, to my person or property, and further I will respect the equipment and property of the aforesaid owners.

Signed _____ Date _____
 Signed _____ Date _____

Family Information:

Name: _____ Birthday: _____
 Name: _____ Birthday: _____
 Name: _____ Birthday: _____
 Name: _____ Birthday: _____
 Name: _____ Birthday: _____

Michiana Gem & Mineral Society
 c/o Nancy Foreman
 58456 Kimberly Ct.
 South Bend, IN 46619

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Michiana Gem and Mineral Society www.MichianaGMS.org is a not-for-profit organization affiliated with the Midwest Federation of Mineralogical Societies <http://www.amfed.org/mwff/> and with the American Federation of Mineralogical Societies www.amfed.org

The *Rockfinder* is published monthly except July and August.

Please note that all items for a given issue of the *Rockfinder* are due to the **Editor** no later than the 5th day of the previous month. This means that the due date for the March Issue will be February 5th. Advance items are appreciated. Material may be e-mailed to hefner_family@hotmail.com or submitted via the U.S. Mail.

Editor:
Jason Hefner
229 East State St
Etna Green, IN 46524

Permission is hereby granted to reprint any original *Rockfinder* articles as long as recognition is given along with the reprint.

REMEMBER – Items in The Rockfinder that are **BLUE & UNDERLINED** are links to the internet or email addresses. Just click on them for more information.



Taking Earth's inner temperature

Excerpted from [Woods Hole Oceanographic Institution](http://www.whoi.edu/page.do?pid=35&tid=3&cid=10000), 3/2/17.

A new study led by Woods Hole Oceanographic Institution (WHOI) suggests the mantle -- the mostly solid, rocky part of Earth's interior that lies between its super-heated core and its outer crustal layer -- may be hotter than previously believed. The new finding, published March 3 in the journal *Science*, could change how scientists think about many issues in Earth science including how ocean basins form.

"At mid-ocean ridges, the tectonic plates that form the seafloor gradually spread apart," said the study's lead author Emily Sarafian, a graduate student in the MIT-WHOI Joint Program. "Rock from the upper mantle slowly rises to fill the void between the plates, melting as the pressure decreases, then cooling and re-solidifying to form new crust along the ocean bottom. We wanted to be able to model this process, so we needed to know the temperature at which rising mantle rock starts to melt."

Continued on Page 6

Up & Coming

Next Meeting: March 26, 2017 Visitors are always welcome. Doors open at 1:30. Meeting starts at 2:00.

Place:

Our Redeemer Lutheran Church
(29th & Wall)
South Bend, IN. (This is in River Park)

Program:

Host & Hostesses:

Bill & Nancy Foreman
Danielle Wilborn
Norma Cherry, Al Alstott
Jesse Zeiger

February Meeting minutes from previous page

Membership: Nancy Foreman / The Directory is now on the website. Please check for accuracy. If you do not have access to a printer, please let Nancy know so she can provide a hard copy.

Programs: / Kathy Miller / Everett Harrington will be rescheduled. In its place, John Jaworski presented details from his National Geographic Expedition to the North Pole.

Publicity: Josh / First article has been submitted for publication.

Safety: Jennifer Hefner and Julie Wieger / No Report

Show Chair: John Davis & Joe Perry / Contract has been received for August 18-20. John also proposed the purchase of 40 black table covers to be discussed by the board.

Sunshine: - Kathy Miller / Sympathy card to the family of Stan Jacobs on his passing, and to Julie Wieger on the loss of her father Get Well card to Miriam Jacobs

Webmaster: Joe Perry / Please visit the website.

Old Business

Science Alive: Bill Nelson / Set was done the night before. We ran out of bags before the end. We forgot to put out the membership info, but the show flyers have the website on them.

New Business

MWF Council Meeting: Bill Foreman / A delegate is needed to go to Brainard MN for three days. Joshua Klosinski volunteered to serve as the representative.

New Museum: John Davis / The owner of the South Bend Chocolate Shop is opening a museum and rock shop next door. He has invited members to volunteer on Saturdays in 4 hour shifts: 8-12 and 12-4. A training was scheduled for Saturday, March 4 at 8 am. In exchange for staffing, members can sell materials, and 15% of the sale price will go to the club.

Volunteer Needed: Diann Gonsorek / A volunteer is needed to cut marble pieces into thin slabs.

MG&MS Embroidered Patches: Bill Foreman / Patches in storage were offered for sale with price at member discretion. All were sold and \$51.00 was collected in care of Nancy Foreman.

Adjournment – Motion made by Nick Pellus, and seconded by Patty Enos

Program: Nick Pellus “The Other White Gold” Next Meeting: March 26, 2017 at 2:00 pm



2008 Marion Kentucky fun

picture by Jason Hefner,
Editor

American Federation of Mineralogical Societies News

Be on the Lookout by Ron Carman, President excerpted from [AFMS Newsletter Volume 70, Number 4 – March 2017](#)

First, I want to thank all those who send me newsletters from various clubs and federations every month. I only regret that I can't reply to all of them, but I can show that I read at least some of them. Last month's AFMS Newsletter contained an article written by Mark Nelson, Bulletin Editors' Advisory chair, about how thieves attempt to steal club funds by sending bogus e-mails pretending to be from the club president. The phony e-mail is sent to the treasurer, asking him or her to make an expenditure or funds transfer that wasn't expected or in the budget. Of course the real president doesn't know about this e-mail, and if any money is sent out, it disappears. I saw this same article reprinted in the California Federation newsletter, and all clubs and federations would do well to reprint it, since this trick has been attempted on our own AFMS treasurer, Pat LaRue. A few weeks ago she forwarded such an e-mail to me asking if I had really sent it, and of course I hadn't. Pat was alert, as usual, and recognized the signs of a bogus communication. A couple of weeks later she forwarded me another e-mail she had received asking if she could initiate a bank transfer for me. This particular scammer wasn't too careful, since he used my name, but it showed a return e-mail address as one very different from mine, which Pat again recognized as being phony. Continued next page

Midwest Federation of Mineralogical Societies News President's Message by Tom

Whitlatch, MWF President, excerpted from [MWF News April 2017 - Issue No. 561](#)

Well, spring has sprung for most of us. It is a good time to take the temperature of your club. Is it hot and growing, or cold and stagnant? I remember when I first got interested in the club, I was one of the young ones. Now, more than 25 years later, I'm seeing my role now is that of one of the "old ones" who has served in many positions. I have come to know what a commitment it takes to keep a club growing and in good health. It has been worth every minute; I have several good friends and the satisfaction of seeing several younger people step up to continue the work needed to keep the club going strong for many years to come.

We work hard to plan club activities that are fun, and where we can learn about rocks, minerals, or geology. But sometimes we forget that there might be others who would also enjoy these activities. What a good opportunity to add a new club member or two.

This is what is needed to keep each club growing and healthy. Also needed are people to come forward and serve the organization, passing along some of their knowledge and experience. Don't be afraid try; it can be very rewarding experience for you.

Continued on page 6



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.

www.amfed.org



Purpose of the MWF

To promote interest and education in geology, mineralogy, paleontology, archaeology and lapidary, and to sponsor and provide means of coordinating the work and efforts of groups interested in these fields.

www.amfed.org/mwf

Upcoming Events

APRIL

1: LOVES PARK, IL Rock River Valley Gem & Mineral Society Open House. 10 am - 3 pm. North Suburban Library, 6340 N. 2nd St., Loves Park. Contact John Wood, (815) 978-6960; gotwood63@gmail.com

1-2: DES PLAINES, IL Des Plaines Valley Geological Society Annual Show. Sat 9:30 am - 5 pm; Sun. 10 am - 4 pm. Des Plaines Park District Leisure Center, 2222 Birch St., Des Plaines. Contact Lois Zima, (847) 298-4653.

1-2: LINCOLN, NE Lincoln Gem & Mineral Club Annual Show. Sat 9 am - 6 pm; Sun 10 am - 5 pm. Lancaster Event Center, 84th & Haylock, Lincoln. Contact Jayne Beer, (402) 466-6628; jbeer60070@aol.com

6-8: WYOMING, MI Indian Mounds Rock & Mineral Club Annual Show. Thurs & Fri 9:30 am - 9 pm; Sat 9:30 am - 8 pm. Roger's Plaza Town Center, 28th St. at Clyde Park, Wyoming. Contact Kreigh Tomaszewski, (616) 243-5851; kreigh@gmail.com

8: WOODBURY, WI St. Croix Rockhounds Annual Show. 9 am - 2 pm. Valley Creek Mall, Weir Dr. at Valley Creek Rd., Woodbury. Contact David Rusterholz, (715) 760-0479; d.b.rusterholz@uwrf.edu

8-9: MARION, IL Southern Illinois Earth Science Annual Show. Sat 10 am - 6 pm; Sun 10 am - 5 pm. Pavilion of the City of Marion, 1602 Sioux Dr., Marion. Contact Mike Chontofalsky, (618) 532-0455; chontofalsky@att.net

8-9: COLUMBUS, OH Columbus Rock & Mineral Society Annual Show. Sat 10 am - 6 pm; Sun 11 am - 5 pm. Northland Performing Arts Center, 4411 Tamarack Blvd., Columbus. Contact Craig Kramer, (614) 214-5779; craigkramer@wowway.com

See page 9 for more

AFMS President's message continued from previous page

Thanks for being vigilant, Pat!

Everyone in all clubs and all federations should watch for this kind of fraud and report it should it occur. Be especially wary if someone asks for a direct transfer of funds. Usually the treasurer writes checks, which can leave a paper trail where the money goes, but a bank transfer just sends funds to an account number the scammer gives, and when it comes through the recipient can take it and transfer it somewhere else, and no one else knows where it was sent – it's gone! Most treasurers know the president (and other officers as well) and should always question an unexpected request, especially if it's not in the budget. Our gem & mineral clubs are probably not the only targets of these fraudsters, but as Mark said in his article, if we watch out for them we can foil them and keep our money safe.

Another phony e-mail I recently received addressed to "president@amfed.org" said it was from the USPS and the subject line was "unable to delivery package" spelled just like that. The message was addressed "Dear Customer" and told me that my package had been sent and I should check the attached delivery label. Since I hadn't ordered anything, I knew this was also phony and deleted it, as I suspected the attachment contained either a virus or spyware. This is another method that hackers use to get into other people's computers. If you receive messages like this, I recommend deleting them without opening any attachments. If you delete them, they go away harmlessly, but if you open the attachment and it contains a virus, you could lose valuable data or even give outsiders access to your computer. Hackers also steal e-mail lists and then send a message to all the addressees with nothing more than just a link to some website. I wouldn't click on any unknown link, since the link could also contain a virus or spying software. If you just delete the messages they can't do any harm.

You may already know about some of these sneaky tricks hackers use to invade other people's computers; these are some of the things I always look for, since I know that the crooks are out there looking to steal our personal information and our websites are not immune to them.

On a more pleasant note, the AFMS and CFMS websites now contain information on the AFMS convention and show to be held in Ventura, California in June. Registration forms are available; you can use your computer to print them. I better send mine in too, since I hope to see many of you there!

MWF President's message from page 4

Now it is time for me to also promote the MWF. We have many hobbyists who give a lot of time and effort to keep the federation running smoothly. Why not join them by offering your time to volunteer for one of the open chairman positions, like Environment and Legislation, or any other position listed in the directory. It is rewarding to know you are doing your part to keep our hobby going strong. Thank you and have a great spring rockhounding.

Taking Earth's inner temperature, Continued from Page 1

But determining that temperature isn't easy. Since it's not possible to measure the mantle's temperature directly, geologists have to estimate it through laboratory experiments that simulate the high pressures and temperatures inside Earth.

Water is a critical component of the equation: the more water (or hydrogen) in rock, the lower the temperature at which it will melt. The peridotite rock that makes up the upper mantle is known to contain a small amount of water. "But we don't know specifically how the addition of water changes this melting point," said Sarafian's advisor, WHOI geochemist Glenn Gaetani. "So there's still a lot of uncertainty."

To figure out how the water content of mantle rock affects its melting point, Sarafian conducted a series of lab experiments using a piston-cylinder apparatus, a machine that uses electrical current, heavy metal plates, and stacks of pistons in order to magnify force to recreate the high temperatures and pressures found deep inside Earth. Following standard experimental methodology, Sarafian created a synthetic mantle sample. She used a known, standardized mineral composition and dried it out in an oven to remove as much water as possible.

Until now, in experiments like these, scientists studying the composition of rocks have had to assume their starting material was completely dry, because the mineral grains they're working with are too small to analyze for water. After running their experiments, they correct their experimentally determined melting point to account for the amount of water known to be in the mantle rock.

"The problem is, the starting materials are powders, and they adsorb atmospheric water," Sarafian said. "So, whether you added water or not, there's water in your experiment."

Sarafian took a different approach. She modified her starting sample by adding spheres of a mineral called olivine, which occurs naturally in the mantle. The spheres were still tiny -- about 300 micrometers in diameter, or the size of fine sand grains -- but they were large enough for Sarafian to analyze their water content using secondary ion mass spectrometry (SIMS). From there, she was able to calculate the water content of her entire starting sample. To her surprise, she found it contained approximately the same amount of water known to be in the mantle.

Based on her results, Sarafian concluded that mantle melting had to be starting at a shallower depth under the seafloor than previously expected.

To verify her results, Sarafian turned magnetotellurics -- a technique that analyzes the electrical conductivity of the crust and mantle under the seafloor. Molten rock conducts electricity much more than solid rock, and using magnetotelluric data, geophysicists can produce an image showing where melting is occurring in the mantle.

Taking Earth's inner temperature, Continued from Page 1

But a magnetotelluric analysis published in *Nature* in 2013 by researchers at the Scripps Institution of Oceanography in San Diego showed that mantle rock was melting at a deeper depth under the sea floor than Sarafian's experimental data had suggested.

At first, Sarafian's experimental results and the magnetotelluric observations seemed to conflict, but she knew both had to be correct. Reconciling the temperatures and pressures Sarafian measured in her experiments with the melting depth from the Scripps study led her to a startling conclusion: The oceanic upper mantle must be 60°C (~110°F) hotter than current estimates," Sarafian said.

A 60-degree increase may not sound like a lot compared to a molten mantle temperature of more than 1,400°C. But Sarafian and Gaetani say the result is significant. For example, a hotter mantle would be more fluid, helping to explain the movement of rigid tectonic plates.



In her laboratory experiments, Sarafian used a piston-cylinder apparatus--the red machine behind her--to simulate the high pressures and temperature of the Earth's mantle. The heavy stainless steel plates visible on the table are stacked on the apparatus, with the tiny synthetic mantle sample inside a 'pressure vessel' underneath them. Once the machine is turned on, pistons apply massive pressure from above and below the sample, which is simultaneously heated with electrical current.

Woods Hole Oceanographic Institution. "Taking Earth's inner temperature." ScienceDaily. ScienceDaily, 2 March 2017. <www.sciencedaily.com/releases/2017/03/170302143829.htm>.

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Stuff to do Continued from Page 1

8-9: CANTON, IL Fulton County Rockhunters Annual Show. Sat 10 am - 5 pm; Sun 10 am - 4 pm. Donnelson Center @ Wallace Park, 250 South Avenue D, Canton. Contact George Coursey, (309) 368-2947; 70georgecoursey@gmail.com

22-23: TROY, OH Brukner Gem & Mineral Club Annual Show. Sat 10 am - 6 pm; Sun 10 am - 4 pm. Miami County Fairgrounds, Duke Ludgard Building, North County Rd. 25A, Troy. Contact Dewey Buck, (937) 335-4375; dewey.buck@pcmg.com

22-23: CUYAHOGA FALLS, OH Summit Lapidary Club Semi Annual Show. Sat 10 am - 6 pm; Sun 10 am - 5 pm. Emidio and Sons Expo Center, 48 East Bata Rd., Cuyahoga Falls. Contact Bob Powers, (440) 237-6170; gemboree@outlook.com

22-23: CUYAHOGA FALLS, OH Akron Mineral Society Semi Annual Show. Sat 10 am - 6 pm; Sun 10 am - 5 pm. Emidio and Sons Expo Center, 48 East Bata Rd., Cuyahoga Falls. Contact Sandy Shorter, (440) 479-0069; gemboree@outlook.com

22-23: DECATUR, IL Central Illinois Gem & Mineral Club Annual Show. Sat 9 am - 5 pm; Sun 10 am - 4 pm. The Lester Building, Progress City, One College Park, Decatur. Contact Tony Kapta, (309) 830-6516; tkapta@comcast.net

MAY

5-7: KALAMAZOO, MI Kalamazoo Geological & Mineral Society Annual Show. Fri 4 - 8 pm; Sat 10 am - 6 pm; Sun 10 am - 5 pm. Kalamazoo County Expo Center, 2900 Lake St., Kalamazoo. Contact Jerry Van Nolker, (269) 979-3348; jervannocker@comcast.net

6: NORTH LITTLE ROCK, AR Central Arkansas Gem, Mineral & Geology Society Rock Swap. 9 am - 3 pm. Elder Johnson Pavilion, Burns Park, Exit 150 off I-40, North Little Rock. Contact Barbara Champagne, (501) 847-0680; cagmagsprez@gmail.com

6-7: BRAINERD, MN Cuyuna Rock, Gem & Mineral Society Annual Show. Sat 9 am - 5 pm; Sun 10 am - 4 pm. Crow Wing County Fairgrounds, 2000 SE 13th Street, Brainerd. Contact Sharon Smith, (218) 343-7037; sharon@agatesrock.com

6-7: MARSHFIELD, WI Heart of Wisconsin Gem & Mineral Society Annual Show. Sat 10 am - 5 pm; Sun 10 am - 4 pm. Marshfield High School Fieldhouse, 1401 Becker Rd., Marshfield. Contact Cynthia Kelman, (715) 387-8782; kelman@tznet.com

6-7: SHARONVILLE, OH Cincinnati Mineral Society Annual Show. Sat 10 am - 6 pm; Sun 11 am - 5 pm. Sharonville Convention Center, 11355 Chester Rd., Sharonville. Contact Jim & Judy Budnik, (513) 575-1990; wisoh@msn.com

12-14: COLUMBIA, MO Central Missouri Rock & Lapidary Club Annual Show. Fri noon - 7 pm; Sat 9 am - 5 pm; Sun 10 am - 4 pm. Knights of Columbus Hall, 2525 N. Stadium Blvd, Columbia. Contact Mary Wozny, (574) 999-3058; lmwoz@msn.com

19-21: JOPLIN, MO Tri State Gem & Mineral Club Annual Show and Rock Swap. Fri 10 am - 6 pm; Sat 10 am - 6 pm; Sun 10 am - 3 pm. Joplin Historical & Mineral Museum, 504 Schifferdecker Ave, Joplin. Contact Chris Wiseman, (417) 623-1180; jmc-cwiseman@sbcglobal.net

20-21: ST. JOSEPH, MI Blossomland Gem & Mineral Society Annual Show. Sat 9 am - 6 pm; Sun 12 - 6 pm. Lake Michigan Catholic Elementary School, 3165 Washington Ave, St. Joseph. Contact Nancy Wolff, (269) 983-4900; nancyswolff@hotmail.com

27-28: ST. CHARLES, IL Chicagoland Gems & Mineral Association Annual Show. Sat 10 am - 6 pm; Sun 10 am - 5 pm. Kane County Fairgrounds, 525 S. Randall Road, St. Charles. Contact Debby Ballot, (630) 272-8275; demarrex1@att.net