



Volume 67 ◊ Number 11-12 ◊ November-December 2021 ◊ A monthly newsletter for and by the members of MAGS



# MAGS PRESENTS

## HOLIDAY Open House with Rocks

**Saturday, November 13**  
**11 am–1 pm at the church**



- **Open House**—food and treats provided by MAGS
- **Holiday gifts for all**
- **Activities/games**  
Rocks Around the Clock (club-provided prizes)  
Agate Concentration (NEW) 
- **Door Prizes**
- **Wear something with a holiday theme (includes your mask) and get an extra turn with Rocks Around the Clock**





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**HOLIDAY OPEN HOUSE**

This year’s holiday party will be a little different from previous years. First, it will be in November instead of December, and it will be during the day on Saturday instead of Friday evening. You don’t need to bring a dish to share. And no business meeting.

There will be no formal structure. Just



W.C. MCDANIEL

drop in. Come when you want and leave when you want. We encourage Members to spread out their arrival times. Fun will continue during the entire two hours. MAGS will provide all the food and treats. Of course there will be gifts, and you won’t have to wait for your name to be called to come up and get your gift; pick it up

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# MEMPHIS ARCHAEOLOGICAL AND GEOLOGICAL SOCIETY

MAGS Rockhound News ♦ A monthly newsletter for and by the members of MAGS

## 2019-2020 MAGS BOARD

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(901) 274-7706 ♦ [w.c.mcd@att.net](mailto:w.c.mcd@att.net)

**1st VP (Field Trips)—James Butchko**

(901) 743-0058 ♦

**2nd VP (Adult Programs)—Dave Clarke**

(901) 308-0334 ♦ [dclarke@fieldmuseum.org](mailto:dclarke@fieldmuseum.org)

**Secretary—Mike Coulson**

(901) 907-9441 ♦ [mike.coulson@comcast.net](mailto:mike.coulson@comcast.net)

**Treasurer—Bonnie Cooper**

(901) 444-0967 ♦ [rocks4us@hotmail.com](mailto:rocks4us@hotmail.com)

**Director (Asst. Field Trips)—Vacant**

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**Lybanon**

(901) 757-2144 ♦ [lybanon@earthlink.net](mailto:lybanon@earthlink.net)

**Director (Youth Programs)—Mike Baldwin**

(901) 853-3603 ♦ [mbaldwin05@gmail.com](mailto:mbaldwin05@gmail.com)

**Director (Asst. Youth Prog.)—James**

**Butchko**

(901) 743-0058 ♦ [butch513j@yahoo.com](mailto:butch513j@yahoo.com)

**Director (Librarian)—Nannett McDougal-**

**Dykes**

(901) 634-9388 ♦ [redchesty@yahoo.com](mailto:redchesty@yahoo.com)

**Director (Asst. Librarian)—Kay**

**MacLaughlin**

(901) 465-6343 ♦ [celticcatssilver@att.net](mailto:celticcatssilver@att.net)

**Director (Membership Services)—Bob**

**Cooper**

(901) 444-0967 ♦ [rocks4us@hotmail.com](mailto:rocks4us@hotmail.com)

**Director (Historian)—Jane Coop**

(901) 685-8103 ♦ [dogsandrocks3@gmail.com](mailto:dogsandrocks3@gmail.com)

**Newsletter Editor—Matthew Lybanon**

(901) 757-2144 ♦ [lybanon@earthlink.net](mailto:lybanon@earthlink.net)

**Assistant Newsletter Editor—Carol Lybanon**

(901) 757-2144 ♦ [sgcarol@earthlink.net](mailto:sgcarol@earthlink.net)

**Webmaster—Mike Baldwin**

(901) 853-3603 ♦ [mbaldwin05@gmail.com](mailto:mbaldwin05@gmail.com)

**Assistant Webmaster—Mike Coulson**

(901) 907-9441 ♦ [mike.coulson@comcast.net](mailto:mike.coulson@comcast.net)

**Show Chairman—James Butchko**

(901) 743-0058 ♦ [butch513j@yahoo.com](mailto:butch513j@yahoo.com)

**Past President—Charles Hill**

(901) 626-4232 ♦ [hunter3006@aol.com](mailto:hunter3006@aol.com)

## MAGS AND FEDERATION NOTES

Memphis Archaeological and Geological Society,  
Memphis, Tennessee

The objectives of this society shall be as set out in the Charter of Incorporation issued by the State of Tennessee on September 29, 1958, as follows: for the purpose of promoting an active interest in the geological finds and data by scientific methods; to offer possible assistance to any archaeologist or geologist in the general area covered by the work and purposes of this society; to discourage commercialization of archaeology and work to its elimination and to assist in the younger members of the society; to publicize and create further public interest in the archaeological and geological field in the general area of the Mid-South and conduct means of displaying, publishing and conducting public forums for scientific and educational purposes.

MAGS General Membership Meetings and MAGS Youth Meetings are held at 7:00 P. M. on the second Friday of every month, year round. The meetings are held in the Fellowship Hall of Shady Grove Presbyterian Church, 5530 Shady Grove Road, Memphis, Tennessee.

MAGS Website: [memphisgeology.org](http://memphisgeology.org)

MAGS Show Website: [www.theearthwideopen.com](http://www.theearthwideopen.com) or <https://earthwideopen.wixsite.com/rocks>

We aren't kidding when we say this is a newsletter for and by the members of MAGS. An article with a byline was written by a MAGS Member, unless explicitly stated otherwise. If there is no byline, the article was written or compiled by the Editor. Please contribute articles or pictures on any subject of interest to rockhounds. If it interests you it probably interests others. The 15th of the month is the deadline for next month's issue. Send material to [lybanon@earthlink.net](mailto:lybanon@earthlink.net).

All 2021 DMC field trips have been cancelled and rescheduled to 2022. The next MAGS-sponsored trip is currently scheduled for October 2024.

### Links to Federation News

- ➔ AFMS: [www.amfed.org/afms\\_news.htm](http://www.amfed.org/afms_news.htm)
- ➔ SFMS: [www.amfed.org/sfms/](http://www.amfed.org/sfms/)
- ➔ DMC: [www.amfed.org/sfms/dmc/dmc.htm](http://www.amfed.org/sfms/dmc/dmc.htm)

*Holiday Open House* when you like.  
*Continued from P. 3* Aside from the old favorite Rocks Around the Clock there will be a new game: **Agate Concentration**, based on the old TV show "Concentration."

There will be a few restrictions, all to protect your health and safety. There will only be a few tables, and limited seating. Members only, and face masks are required.

### Denver Trip

*Jane Coop*

Finally, a trip.

No more watching Dino Hunters on TV. The compulsion to dig overwhelmed me. I got a COVID booster, N-95 mask, Clorox wipes, and got on the plane to Denver, Colorado. My real paleontologist friend, Melissa, came down from Wyoming for the 2021 Denver Gem, Mineral and Fossil Show. Forget Fifth Avenue in New York City or Rodeo Drive in Beverly Hills. This was WAY more fun and looking was free. If I ever could "shop-til-you-drop," this would be the place to do it!

There were not as many fossils as in previous years; however, there always seems to be a mineral or two that is new to me. Most vendors will let you take pictures. Astrophyllite (Figure 1) is a sparkling metallic "hydrous potassium, iron, titanium, silicate mineral" with radiating stellate blades. First discovered in Norway, now it is mostly from Kola Peninsula in Russia. They have rock-collecting tours where this is found...above the Arctic Circle!



Figure 1

Would you be in heaven surrounded by emeralds? The vivid green, tubular, hexagonal crystals on blazing white or silvery schist were small but as pricey as the gems. There was a whole counter of trapiche emeralds. (Figure 2 is one trapiche crystal cut in successive slices.) Found only in Muzo, Colombia, these were named after a multi-spoked wheel that were rotated by oxen to grind sugar cane. They occur when the emerald crystal is forming and black shale (laminar lutite) forms between each of the six growing sections of the hexagonal crystal. The center can be a small hexagon but as the crystal grows it is squeezed down to nothing. Notice in the picture that the bottom slice has the largest center. The top right slice has no center and is the youngest part of the crystal. There were greener emeralds, but this one showed the growth pattern best. Extremely cool!

The most fun part was the dig near Lusk, Wyoming, in the Lance formation (Late Cretaceous). It is rare when you are lucky enough to dig up a specific or even partially-articulated specimen. We were at a site where bones from different animals washed down to end up in a "bone bed." They call the quarry



Figure 2

Promise Hill because we always find more bones than we can safely get out in a week. A couple of years ago, this is where I found a triceratops rib. We mostly found hadrosaur limb bones and ribs and triceratops frill. We were having so much fun that when we got home, we realized that we had not taken any good pictures. Sorry!

## Federation News

### A. F. M. S. Newsletter

*October Issue Summary*

"You Had Better Get Your Lapis Before It Becomes Extinct.....," by John Martin, Conservation and Legislation chair, talks about a bill submitted in the current Congress, H. R. 5088, the "Stopping Terrorist Minerals Trade Act." This proposal, submitted by Representative Paul A. Gosar (R-AZ), is a bill "To prohibit the importation into, or transit through, the United States of any mineral, or product produced with minerals, from Afghanistan, and for other purposes."

Afghanistan is a country with vast mineral wealth. For millennia the country was renowned for its gemstones—rubies, emeralds, tourma-

*Continued, P. 4*

*A. F. M. S. Newsletter* lines, and *Continued from P. 3* lapis lazuli. These minerals continue to be locally extracted, both legally and illegally, in mostly small, artisanal mines. Far more value, however, lies with the country's endowments of iron, copper, lithium, rare earth elements, cobalt, bauxite, mercury, uranium, and chromium.

It can be argued that cutting off U.S. access to these minerals—in a vain attempt (other countries will buy the minerals) to prevent Afghanistan's new Taliban government from benefiting financially from this mineral wealth—is an overreaction to recent events. But it doesn't look like this bill is going anywhere, at least not soon. It was referred to the Committees on Ways and Means and Foreign Affairs on August 24, and hasn't gone any farther since then.

Another article of interest is "Life Before The Cambrian Explosion," by Larry Johnson. Also of interest, "Dangers of Rock Dust," by Glen Kuban.

The *A. F. M. S. Newsletter* is available online. There are links to the current issue and the newsletter archives on this page: [http://www.amfed.org/afms\\_news.htm](http://www.amfed.org/afms_news.htm) (that link is on P. 2 of every issue of *MAGS Rockhound News*).

**Having Fun: Junior Activities**

*By Jim Brace-Thompson, AFMS Juniors Program Chair*

*AFMS Juniors Mascot & Oath Contests—A Reminder, a Link, & a Request*

My column this month is

short-and-sweet. I write to provide a reminder and a couple of links, along with a request. As I announced last month, the American Federation of Mineralogical Societies Future Rockhounds of America Program (AFMS/FRA) is hosting two new one-time contests. One is to come up with an official mascot to represent kids enrolled in the AFMS/FRA program. The other is to develop an oath or pledge that newly enrolling kids would take when joining the juniors group of a rock club.

Winners of each contest will earn \$100 and a Certificate-of-Achievement from AFMS and will have their accomplishments announced at the 2022 AFMS Show & Convention, posted to the AFMS website, and incorporated into the AFMS/FRA Program and Badge Manual. Kids participating in these contests must be members of local clubs or societies holding an affiliation with AFMS via one of the seven regional federations.

We published rules for both contests in last month's AFMS Newsletter, which you can find on our AFMS website at [https://www.amfed.org/afms\\_news.htm](https://www.amfed.org/afms_news.htm). Full rules also are posted as a pdf on the AFMS website at [https://www.amfed.org/fra/AFMS\\_Juniors\\_Mascot\\_and\\_Oath\\_Contests.pdf](https://www.amfed.org/fra/AFMS_Juniors_Mascot_and_Oath_Contests.pdf). The deadline for both contests is May 1, 2022, with results to be announced at the AFMS Show in New Orleans next October. Should you have questions about either contest, please contact me at [jbraceth@roadrunner.com](mailto:jbraceth@roadrunner.com).

Now for the request. I hope anyone reading this column will

reprint it in their regional and local club newsletters to spread the word and help maximize participation by kids within your clubs and societies. As Art Linkletter always said, "Kids say the darndest things." (Does that date me?) Here's looking forward to seeing what creative and darndest things our pebble pups and junior members come up with!



*Rock & Gem Magazine* burst on the scene in 1971 with the aim of serving the needs and goals of anyone with an interest in rocks, gems, and minerals, fossils, and general lapidary. That means the magazine has reached a milestone: 50 years of publication.

From their website: "Since reaching a 50-year-milestone of any kind is something special, we're celebrating all year long. The celebration will fuse our past, present, and future of service to the rockhounding, lapidary, and mineralogy community we love. The curiosity, boundless spirit of camaraderie, and life-long passion for learning that is ever-present in this community is why we do what we do.

"Throughout 2021 we'll be presenting various activities and new elements ..." For more details, go to that web page: <https://www.rockngem.com/rock-gem-celebrating-50-years/>. It will tell you what the plans are, and give you an opportunity to sign up for a free weekly newsletter.

GREETINGS, MAGS MEMBERS

After an uncertain year for MAGS Members due to COVID, the MAGS Board voted to reinstate annual dues for 2022. The 2022 annual membership is from January 1 to December 31 and should be paid before January 1, 2022. Since in person membership meetings have been inconsistent, you should mail your renewal dues to me at: Bob Cooper, 8695 Baylor Rd., Bartlett, TN 38002. Please make your check payable to MAGS. The 2022 MAGS dues are:

Individual \$15
Family \$25

This year's early renewal prize has not been selected as of this date but will be soon. When you renew your 2022 MAGS membership, you will be entered into a drawing for the prize. As an incentive to renew early, any Member that renews before the end of November will receive an extra chance in the drawing. You have to the end of December 2021 to renew in order to be in the drawing. Since the Friday night Membership Meetings are still uncertain, I will mail the prize to the winner. Therefore, when you renew, make sure that I have a good address and phone number.

Thanks, Bob Cooper

MAGS Membership Director



Cascadia Earthquakes

Matthew Lybanon, Editor

Paul Edison-Lahm's October MAGS meeting program, "Portland Basin Geology," was an out-

standing example of how to give a presentation. He presented real science at a level accessible to non-specialists without dumbing it down. He even made it fun with a little humor.

One of his last slides, Cascadia Earthquake Time Line, jogged our memory. MAGS Rockhound News has published articles on earthquakes in the Cascadia Subduction Zone in three previous issues: November 2016, November 2017, and August 2018. What's called a full-margin earthquake along the Cascadia Subduction Zone could cause major damage over an area of 140,000 square miles—Seattle, Tacoma, Portland, Eugene, Salem (Oregon's capital), Olympia (Washington's capital)—affecting seven million people.

The potential for another major (magnitude 9) earthquake in the Pacific Northwest was great enough for the University of Washington to establish the M9 Project: "The M9 Project's goal is to reduce the catastrophic impact of Cascadia subduction zone earthquakes on the social, built, and natural environments through research advancements in methods, early warnings, and community planning."

Back issues of the MAGS newsletter are available on the MAGS website, www.memphisgeology.org. The direct link to the back issues page is http://www.memphisgeology.org/newsletter.htm.



What's up with that rock!!!!

W.C. McDaniel

Rockhounds visiting a rock show are sometimes overwhelmed by the sure visual presentation of rocks. Colors are one the primary attractions, leaving the rockhound to wonder what is real, enhanced/modified or just a fake. One of the starting points is to look at some of the common terms used in describing rocks. The caveat to that is that it can be challenging unless you are familiar with the material and vendors. so here goes with a few copied from dakotastones.com.



Natural

A stone that has had no treatment other than cutting, drilling, and polishing.

Man-Made

Gemstones created by artificial means in a laboratory, many times

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*Roadcut* to simulate a natural stone's characteristics.

*Continued from P. 5* **Heated**

The stones are subjected to the use of heat to alter color or increase clarity. Heating can also be used to lighten or darken a stone.

### **Dyed**

Stones are treated with a dye to alter or enhance their color.

### **Composite**

The creation of a gemstone by assembling and cementing several materials together.

### **Stabilized**

Stones undergo a process that involves putting them under pressure, forcing them to absorb a filler, such as an epoxy, resulting in a harder stone. Sometimes, stabilization also prevents a stone's color from fading.

## **Fabulous Tennessee Fossils**

*Dr. Michael A. Gibson,  
University of Tennessee at Martin*

### **FTF 82**

#### **Mimetoliths**



It is October and the holiday season of trickery and disguises. To celebrate Halloween, I will review the topic of mimetoliths, a term derived from combining “mimetes” (meaning an imitator) and “lithos” for rock. The term was reportedly coined by T.O. MacAdoo and made it into the print medium in 1989 when used by Central Michigan University geologist R.V. Dietrich to describe mineral shape phenomena. Mimetoliths belong to a category of phenomena in people referred to as *pareidolia* or *apophenia*, which is the tendency to perceive patterns, see images, or recognize sounds where there are none. They are the rock equivalent of seeing animal shapes in clouds or faces in the wood grain of doors, toast, etc. Sometimes you will see these referred to as “geofact” (which combines geology + artifact), but this term is confusing with true facts so its usage should be avoided. Examples of landform mimetoliths include the famous “Face on Mars”

and the “Great Stone Face” in New Hampshire.

For a landform mimetolith in Tennessee, we can point to what is called “The Battleship Outcrop”, which occurs a few miles west of Cookeville along I-40. In the late 1960s, when I-40 was being constructed near Cookeville, the Highway Department constructed a split in the interstate with a large outcropping of Mississippian-age limestone interbedded with some shale in between the eastbound and westbound lanes. Travelers heading east up the Eastern Highland Rim were treated to a landform mimetolith consisting of a wedge-shaped “bow” as the road split, followed by a quarter-mile-long outcrop consisting of nearly horizontal beds weathering into a stair-stepping pattern that consisting of several partially isolated features that resembled the gun turrets and deck levels of a World War II battleship. The outcrop still exists; however, it is obscured

by over 50 years of vegetation growth, so it is difficult to see unless you know exactly where and when to look.

One of my duties as a university professor is to field queries from the public about mineral, rock, and fossil finds that they may have. I receive several of these each week. Some of these are actual specimens; however, many of the specimens are actually not what the finder thinks them to be. I often get objects that the finders thinks are dinosaur eggs, horns on a Triceratops, meteorites, or skulls of early humans; most want to know how much the object is worth. Overwhelmingly, these objects turn out to be mimetoliths and I am tasked with explaining to the finder that the object is not what they thought it was and why. Some are disappointed, some think I am misleading them for some odd reason, and others are just happy to get an explanation. Over the

*Continued, P. 7*

*Fabulous Tennessee Fossils* years I have seen chert or other rocks weathered into the vague form of monkey heads with eyes and muzzle, solid dinosaur or bird eggs, bird heads, footprints, horns, teeth, even a supposed wrinkled brain. I even has one photograph of an outcropping that looks like the famous “plumber’s butt crack”! All of these mimetoliths were fossils in vague outer shape only. Once you investigate the smaller scale details of the fossil, it becomes apparent that the objects lack the fine details that these actual organisms should possess, especially internal features. Still, even though they are not fossils, they are fascinating objects of nature worthy of collection and display.

An example of a common West Tennessee fossil that is often mistaken for other objects, although it is a real fossil, is the root bulb (lobolith) of the crinoid *Scyphocrinites* (see Dr. Rhenberg’s MAGS Newsletter program from Sept. 2019 (vol. 65, no. 9)). As a rooting structure, loboliths are unique as they are inflated balls rather than branching stem anchors like most crinoids have. Loboliths usually are found in abundance and often broken open. Internally, they are comprised of a series of individual chambers that taper to a single opening on the top of the root bulb that connected to the stem of the living animal. After burial, they become infilled with muddy sediment or were later occluded by the growth of generations of minerals to form a geode-like occurrence. The name “root bulb” is a good indicator of

how confusing their appearance could be as we normally think of plants having roots, not animals (although we do refer to animals as being “rooted” to a substrate).

In Hardin County, loboliths are common in the rocks of Upper Silurian to Lower Devonian age. Prior to knowledge of these enigmatic crinoid structures becoming widespread (thank you Internet), it was common for people to find them and conclude they were some type of fruit, especially grapefruit. In 2007, an Internet article surfaced describing a “Grapefruit Rock” (Figure 1) from West Tennessee (the original Internet link appears to have been removed). Collector Robert Mansfield’s original Internet post describes the specimen saying it “... breaks in the ‘segments’ display a reddish color, ... [and thus it is off-color so far as its grapefruit-like appearance, this specimen (diameter ~13 cm)] resembles in size, shape ... a partially peeled grapefruit with five segments and a rind”. Mansfield evidently sent the specimen (or images of the specimen) to paleontologist Dr. Thomas Dutro at the U.S. National Museum for confirmation that he had indeed found a fossilized grapefruit. Dutro easily recognized it was not a grapefruit; however, even Tom was fooled by this mimetolith. Dutro was quoted by Mansfield as recognizing that the sample belong to the Echinodermata, but Dutro thought it to be the “internal mold of a spatangoid echinoid”. Spatangoid echinoids are what we call sea biscuits today. They are hollow echinoderms that resemble the lobolith in shape only. So, this particular mimetolith

fooled expert Dutro as well leading to his misidentification of the true echinoderm group to which it belonged.

Halloween is the time of dressing-up to mimic something else. Fossil preservation is a process that can be complex and extensive. When fossicking, we often “see” things we want to see in the curiosities of nature. Fossils, too, get to enjoy dress-up and we celebrate them this Halloween! These “tricks” of fossilization or weathering are truly “treats” for us to collect. Do you have mimetoliths in your collection? If so, send me some images and we can highlight them in future Fabulous Tennessee Fossils.



**Figure 1.** Photograph of the *Scyphocrinites* lobolith “mimetolith” that was mistakenly thought to be a fossilized grapefruit based upon its overall shape, size, and internal segmentation (Image by Robert Mansfield, 2007).

## An 8th Continent?

*Matthew Lybanon, Editor*

About 3,500 feet under the south Pacific sits a piece of land adjacent to New Zealand 2 million square miles in size—about half as big as Australia. But scientists can't agree on whether this submerged land mass—a collection of submerged chunks of crust called Zealandia (or the Maori name Te Riu-a-Māui) that broke off an ancient *Continued, P. 8*

*An 8th Continent?* supercontinent *Continued from P. 7* called Gondwana about 85 million years ago,—is a continent or not. A team of geologists declared it one in 2017, but not all researchers are convinced.

Nick Mortimer, a geologist from New Zealand's GNS Science who led the 2017 group, explains that a continent should have clearly defined boundaries, occupy an area greater than 1 million square kilometers, be elevated above the surrounding ocean crust, and have a continental crust thicker than that oceanic crust.

Zealandia meets all those stipulations. The problem, however, was that until recently, the oldest crust and rock ever sampled from Zealandia was just 500 million years old, whereas all the other continents contain crust that is 1 billion years old or more. But a recent study found that part of the submerged continent is twice as old as geologists previously thought, which could boost Mortimer's argument.

Tiny mineral grains taken from granite rocks have led to a potential breakthrough in ancient continental reconstructions. The geologists behind the recent research (published in *Geology*) looked at 169 chunks of Zealandia granite, which were found under New Zealand's South and Stewart Islands.

Granite forms when magma crystallizes deep within the Earth's crust. The granites were brought to the surface by uplift of the Zealandia continent in response to earthquake activity along a plate boundary over millions of years.

By extracting microscopic crystals from the granite, the team was able to determine both the age of the crystals themselves and of the crust in which they formed. The results showed that crust was once part of another supercontinent known as Rodinia, which formed between 1.3 billion and 900 million years ago—far earlier than 500 million years ago.

Dr Rose Turnbull (also of GNS Science, and one of the authors of the *Geology* article) says that a key finding in this study was the unique isotopic signature measured in microscopic grains of zircon (ZrSiO<sub>4</sub>), a mineral that is found in all granites. The isotopic composition of zircon is used in geology to understand deep time and can be used to reveal what the Earth's crust looked like both at and deep below the surface.

“To use a human analogy, all of today's eight continents have older ancestors such as Gondwana, Laurasia, and Pangea.

“The new study has enabled scientists to place Zealandia in the ‘family tree’ of continents descended from Rodinia.”

With this new information, Zealandia may yet turn out to be a ‘missing link’ between South China, Australia, and North America—and this opens up the position of South China and Zealandia within Rodinia to new international scrutiny, Dr Turnbull says.

**References**

*Ringwood, M.F., et al., 2021, Phanerozoic record of mantle-dominated arc magmatic surges in the Zealandia Cordillera: Geology, v. 49, p. 1230–*

*1234, <https://doi.org/10.1130/G48916.1>*  
*Mortimer, N., et al., 2017, Zealandia: Earth's Hidden Continent: GSA TODAY, v. 27(3), p. 27-35, <https://doi.org/10.1130/GSATG321A.1>*



**Programs**

*November & December:* Combined meeting, Holiday Party, Saturday, November 13, 11 am-1 pm

*January 14, 2022:* TBD

**November Birthdays**

- 1 W.C. McDaniel
- 13 Matthew Lambert
- 15 Douglas Maki
- 16 Chris Scott
- 17 Gabriella Wrasse
- 18 Cathie Jacobs
- 19 Nina Riding
- 20 Will Kitkowski
- 21 Tabitha Lambert
- 22 Melba Cole
- 23 Shirley Ruth Chrisman
- 24 Charles Carter
- 27 Dylan George
- 28 Alan Parks
- 29 Nedra Baum
- 30 Robert Neill

**December Birthdays**

- 5 Tracey Thomas
- 6 David McAlister

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# Fossil Road Show & Geology Fest



**Saturday, Nov. 6, 2021, 10am to 3pm**

Oren Dunn City Museum 689 Rutherford Rd. Tupelo, MS

At Ballard Park Adm. Free

Professionals on hand to ID your fossil/rock

Fun Activities Displays Grab Bags Food Truck

For more Information: [www.nmqms.org](http://www.nmqms.org)



ODCM: 662-841-6438



*MAGS Notes*

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- Juliette Browning
- 8 Tina Wallace
- Alan Schaeffer
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- 13 Hongbing Wang
- 14 Danny Baker
- 15 Kathy Baker
- Jerry Seamans
- 19 Paula Gunter
- 20 Wingfield Bouchard
- 21 Cheryl Crews
- 23 Jim McNeil
- 24 Michael Browning

Jocelyn Ashurst  
Allen Grewe

29 Bebe Buck

**🎵 Want to Be a Member?**

To become a MAGS Member, just go to our website at [www.memphisgeology.org](http://www.memphisgeology.org) and print out an application form. There is a prorated fee schedule for new Members only. Mail the completed application along with the dues payment to the Membership Director shown on the form. If you are unable to print the application, you can pick one up at the sign-in desk at any of our Friday night

Membership Meetings, or simply join at the meeting. Visitors are always welcome at our Membership Meetings but membership is required to attend our field trips.

The most important benefit of being a MAGS Member is getting to know and make friends with other members who have similar interest in rocks, minerals, fossils, and archaeology. All new Members will receive a New Member Packet, a MAGS ID card, and a monthly newsletter via email. Members are entitled to go on our monthly field trips and get free admission to our annual Show.

**Jewelry Bench Tips** by  
*Brad Smith*

MARKING YOUR TOOLS

It makes sense to mark your tools if you ever lend them to friends or take them out to classes or workshops. Question is how to mark them permanently. For metal tools, I use a very small ball bur running fast in the Dremel or Foredom to "engrave" my initials. Other times I'll form the initials with a number of hits with a center punch.

But for hammer handles and other wooden tools, the country boy in me came back and thought "Why not make a branding iron?" If you'd like to try one, all you need is a little scrap copper or nickel about 22-24 gauge, a piece of heavy brass or copper for a base, about 6 inches of metal rod, and a piece of wood for the handle.

I formed my initials from a couple 4mm strips of sheet nickel. The "S" was one piece, but the "B" was three pieces soldered together with hard. (Remember to form the letters backwards). I then soldered the letters with medium onto a piece of 1/8 inch thick brass bar to act as a heat sink. Finally, I soldered a piece of 1/8 round rod on the back of the brass bar as a shaft to join to a wooden handle.



NO SCRATCH VISE JAWS

If your bench vise has replaceable jaws, there is a simple modification to customize it for bending sheet metal and holding jewelry pieces without worrying about the jaws leaving scratch marks.

I make a duplicate set of jaws from high density plastic such as Nylon or Delrin. Remove the jaws and use them as a template. Cut two pieces from a 1/2 inch sheet of scrap plastic. Then clamp the steel jaw over the plastic and drill through the steel side and into the plastic. Finally, use a larger drill to countersink the plastic for the screw heads.

Plastic can be obtained from the scrap bin at a local plastics store, can be purchased online from ebay, or can be repurposed from an old kitchen cutting board.



Smart Solutions for Your Jewelry Making Problems  
[amazon.com/author/bradfordsmith](https://www.amazon.com/author/bradfordsmith)



**September Board Minutes**  
*Mike Coulson*

Zoom meeting called to order 6:30. Present: W.C. McDaniel, Mike Baldwin, Carol Lybanon, Matthew Lybanon, Bonnie Cooper, Bob Cooper, Dave Clarke, James Butchko, Mike Coulson, Melissa Koontz, Jane Coop.

**Old Business:** None.

**Email vote:** The consensus was to cancel the October Membership Meeting (zoom and in person), and to combine the November/December meetings into a holiday party on Saturday, November 13.

**New Business:**

1. Discussion on continuing Membership Meetings in person and/or Zoom.
2. Dave to send out new zoom link to W.C. for distribution.
3. September presentation will be given first with the Membership Meeting following.
4. Discussion over canceling the Holiday Show. The decision was made to cancel due to Covid reemergence and health risks. Matthew will announce cancellation on Facebook.
5. Board Members agreed to continue in present positions for one more year to complete normal cycle through 2022.

**Show:**

- Dates for Show are April 23-24 with move in on Friday, April 22.
- Jim Butchco is the Show Chairman for 2022.
- Contract has been signed with the Agricenter.

**Secretary:** Copies of the August minutes were distributed via email to the Board and summarized at the meeting. Minutes approved.

**Treasurer:** Treasurer's report submitted and approved. Moderate interest made on the club's CDs and added to balance. Paid for the new printer and

*Continued, P. 11*

*September Board Minutes* the club's  
*Continued from P. 10* portion of  
the Discovery Park outing.

**Membership:** No new Members. The club will return to the membership renewal cycle for 2022, \$25 for a family membership, Individual \$15. September newsletter has been printed and mailed out.

**Field Trips:** October 9: Cobblestone Tour Downtown. WC waiting for further details from Drew Buckner. October 23-24: Trip to Potosi and Eminence, Missouri, for Druze Quarts and Calcite. Led by James Johnson of Missouri. Trip information and itinerary sent out to Members. November 20-21: Field Trip to Hot Springs, crystal collecting. The club will be going to Coleman's Mine on Saturday and Wegner's Mine on Sunday. Two future outings not yet scheduled: Memphis Stone & Gravel and Coon Creek. Nannett will look into the Coon Creek outing.

**Adult Programs:** September 2021: Paul Brinkman, T-Rex Sue (at Field Museum). October 2021: Paul Edison-Lahm, Geology of the Portland Basin. November 12: No meeting. December: Holiday Party. (some of this was superseded by the email vote). January 2022: George Phillips. Museum of Science in Jackson, Mississippi, will talk about important new discoveries.

**Junior Programs:** Melissa will present the October youth program in Mike's absence. Oct 8: Water cycle and the Memphis Aquifer. Nov 12: No meeting in November due to Rock Show. Dec 10: Holiday Party (some of this was superseded by the email vote). Future programs: Native American Arrowheads and Points, Fluorescent Minerals and How Fluorescence Works.

**Library:** No report.

**Rock Swaps:** There will be a Labor Day (Monday September 6) Rock Swap at Lou White's from 10 am-2

pm. Jane will bring temperature-appropriate snacks and drinks. Announcement will be next newsletter.

**Editor:** September Newsletter is out. Please send reports, articles, pics, recipes, and book reviews, anything you can think of to Matthew for possible inclusion in the club's newsletter.

**Web:** Club Website has been updated and *Rockhound News* posted.

Adjourned 7:28.

## September Meeting Minutes

*Mike Coulson*

Meeting and presentation held in person and Zoom. Very low attendance both in person and Zoom.

## Hot and Bothered

*Matthew Lybanon, Editor*

Our planet is getting warmer, but this isn't the hottest it's been. One of the most notable hot flashes came 56 million years ago, during the Paleocene-Eocene Thermal Maximum (PETM), a brief period of rapid, abnormal warming. Temperatures that were already far above normal spiked by around 5°C over a period of just a few thousand years. Tropical conditions prevailed far beyond the equator, and ice caps were entirely absent from the poles.

The effects on life were dramatic. Marine organisms died, unable to contend with warmer waters. Meanwhile, mammals benefited, spreading and diversifying rapidly in the millennia afterwards, setting the stage for future species, including us.

What happened? A group of scientists from the University of Hawaii and Utrecht University now say it was a confluence of as-

tronomical and terrestrial conditions that combined to tip our planet over the edge.

The key is the fact that Earth's orbit isn't the perfect, stable circle we usually imagine. Instead, it's an ellipse whose eccentricity varies predictably over time, which has noticeable, if subtle, effects on the climate, says University of Hawaii oceanographer and study co-author Richard Zeebe.

He and his coauthor Lucas Lourens used a sediment core from the South Atlantic Ocean to track changes in Earth's eccentricity around the time of the PETM. They saw a regular pattern of sediment layers that lined up with cycles of eccentricity from astronomical models. Because sediments change predictably as the climate changes, they're a good proxy for the variations in Earth's orbit, the authors say.

With the method, they were able to pinpoint the sudden temperature spike of the PETM at 56 million years ago, right when Earth's orbit was at its most eccentric. A more eccentric orbit would mean that more solar radiation is hitting Earth, according to Zeebe.

Earth's climate was already hot, so this may have triggered PETM. The stifling conditions persisted for about 170,000 years, more than previous estimates.

**Ref:** Richard E. Zeebe and Lucas J. Lourens, *Solar System chaos and the Paleocene-Eocene boundary age constrained by geology and astronomy*, *Science*, 30 Aug 2019, Vol 365, Issue 6456, pp. 926-929, DOI: 10.1126/science.aax0612

# MAGS At A Glance

## November 2021

SUNDAY	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY	SATURDAY
31	1	2	3	4 Zoom Board Meeting, 6:30 pm	5	6 Fossil Road Show, Oren Dunn Museum, Tupelo, MS
 7	8	9	10	11 THANK YOU VETERANS 	12	13 Holiday Open House With Rocks, 11:00 am-1:00 pm
14	15	16	17	18	19	20
21	22	23	24	25 Happy Thanksgiving 	26	27
 28	29	30	1	2	3	4

Memphis Archaeological and Geological Society  
 2019 Littlemore Drive  
 Memphis, TN 38016

