



Volume 59 ♦ Number 06 ♦ June 2013 ♦ A monthly newsletter for and by the members of MAGS

# Collecting Mimetoliths

*Shoes, canoes, frogs, and space capsules*

**W. C. McDaniel**

The June membership program will feature a presentation on mimetoliths followed by a field trip the next to day to collect mimetoliths and other rocks in Arkansas. The word “mimetolith” was developed in the 1980s by R. V. Dietrich, Professor at Central Michigan University, and he describes the mimetoliths as: “a natural topographic feature, rock outcrop, rock specimen, mineral specimen, or loose stone the shape of which resembles something else...or the surface pattern of which resembles [something else] such as an animal, a flower, a person.”

The key words in the above definition are *natural*, *shape*, and *resembles*. For a rock to be considered a mimetolith the shape must



be natural and original to the rock, no alterations in shape or appearance, although in some situations a cut rock will reveal a mimetolith not previously observed in the original rock. Resembles, which is an open ended and subjective description, is essentially in the eye of the beholder. If a rock resembles a cow to you and a horse to the next person, you both are correct.

The June program will feature a PowerPoint presentation and exhibit of mimetoliths collected over the years by W. C. McDaniel. Be part of the program by bringing your rocks that resemble something else, especially hearts. Help fill up an “Elvis Rocks” heart shaped display tin. *Continued, P. 7*

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## MAGS ARCHAEOLOGY INTEREST GROUP—MAY 25 MEETING

RON BRISTER

The MAGS Archaeology group, including Walter and Peggy Davis, Matthew and Carol Lybanon, Scarlett Brimingham, Amber Dunn, Tamie Dunn, and Ron Brister met at Chucalissa at 10:00 on Saturday morning, May 25, 2013. The group has a wonderful mix of people including an art student, a geology student, an educator, MAGS board members, and MAGS members, all with a deep interest in educa-

tion and archaeology. This mix of expertise resulted in a lively, creative, and productive planning session.

We discussed three projects that Dr. Connolly suggested:

1. an exhibit on archaeology for the Lincoln County, Tennessee, museum
2. a portable exhibit using stone tools

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# MEMPHIS ARCHAEOLOGICAL AND GEOLOGICAL SOCIETY

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

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## PRESIDENT'S MESSAGE

Hi, MAGS Rockhounds,

We had another excellent mineral and gem show this year. I hope that all who attended found the specimens they couldn't do without. There was such a variety that it's really hard to choose. I saw people that I haven't seen in years, and met some new folks as well. This has really been a great show. Thanks to all who helped to put the Show on or contribute in small or large ways, physically or monetarily. Also a big "thank you" to all the dealers that provided such wonderful displays of wares and specimens. And a big "thank you" to the educators for programs and information.

Origin-Ally yours,

MAGS President

*W. Paul Sides*

**Do any of your friends (MAGS Members) complain that they don't get *MAGS Rockhound News*? There's a simple reason: we don't have a good email address. We know that some of the addresses on the membership roster are bad, but there's nothing we can do if we don't get the correct information. Please help if you can.**

Please contribute articles or pictures (everybody likes 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).

## June DMC Field Trip

WHERE: Mason Farm Staurolite Prospect, Brasstown, NC (fee site)

WHEN: Saturday, June 8, 9:00 A. M.-dusk

COLLECTING: Staurolite crystals (Maltese and St. Andrew's crosses), Gold

INFORMATION: Tim Barton (828) 885-8248 home, (828) 577-4505 cell (NO CALLS AFTER 10:30 P.M.)

## 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)

## Rome Rocks!

Amber Dunn



Recently fellow MAGS Member Paul Pufahl and I took an exciting trip halfway around the globe to visit some of mankind's greatest creations, most of which were made entirely of rock. I'm talking rock everything: huge granite baths, towering travertine buildings, magnificent marble sculptures, and lava stone paved streets; even the invention of concrete, which in those days was a combination of volcanic ash or lime used as mortar mixed with broken pottery and other debris. The best example of how Roman engineers mastered the skill of concrete can be found in the Pantheon. Still extensively studied today this structure is composed almost entirely of concrete up to 12 feet thick at its lower level and gradually tapering with lighter materials to support its circular seven story ceiling.



To build such colossal structures almost entirely of stone and concrete, Roman architects developed and mastered the perfect arch, which came to a slight point at the top but distributed the weight of the stones evenly. One visit to Vatican City and you'll understand the power of the Roman arch; it can be seen everywhere, including St. Peter's Basilica. That Roman buildings have stood the test of time can be attributed to the sturdy construction and genius of the arch.



The Bible makes reference to Rome as being the city which sits on seven hills, but not only are there hills, Italy itself has over ten different volcanos. One of the most famous—and still active, Mt. Vesuvius—was a key factor in teaching us about their ancient life. In 79 A. D. it violently erupted, covering entirely the ancient cities of Herculaneum and Pompeii with pumice, lava rock, and ash, killing every living creature but preserving most of the cities. We also had a chance to visit these sites (I actually brought back a few small pumice pebbles). Seeing the bodies of people who died in the eruption preserved in ash was one highlight, but just

walking down the ancient city streets was amazing.

## Chunky Gal Mountain Adventure

Charles Hill



In late February, Lou White, my wife Emily, and our boxer Genie and I made a trip to Chunky Gal Mountain in Clay County, North Carolina. The trip was long and uneventful: When traveling, uneventful is always good. Our plan was to camp on the mountain and hunt for rubies at night, since those stones are fluorescent. It had been raining all that Friday; but when we arrived, it was only drizzling off and on. Emily and I started setting up our campsite. Since Lou was camping in his truck, he gathered wood. I got a fire going, Emily started cooking, and Lou and I began looking around. After we ate, we took an ultraviolet headlamp and set out through the dark. The fact that we found two rubies on the path by our camp made us anticipate dawn even more keenly.

After a good night's sleep to the sound of rain, we awoke to find that our new tent had leaked, and some of our clothes had gotten wet. It was still raining lightly, so we abandoned the idea of starting a fire and settled for a breakfast of Pop Tarts, without any coffee. One advantage was that the rain had made the dirt muddy so that it was soft and

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*Chunky Gal Mountain Adventure*  
*Continued from P. 3*



easy to work. We found a good spot and began to dig up rocks and check them for corundums. The place where we started digging was one that I had found last year. Still holding plenty of good specimens, the zoisite matrix was dotted with rubies and sapphires. In addition, zoisite itself is a beautiful green stone that takes an excellent polish. You typically have to crack the boulders open to see what is in them, so we alternated between digging rocks and cracking them with a small sledgehammer. However, you can also find some good specimens just by looking around. All in all it was a productive day. We collected several bucketfuls and then were faced with the task of lugging them down the mountain—a very rewarding task.



By mid-afternoon we decided to call it quits and head back toward camp to start a fire for supper. After a meal of grilled tenderloin, potatoes, carrot and celery sticks, and toasted marshmallows, we returned to our site and used the headlamp to search for rubies. We were delighted to discover

that by inspecting the rock we had discarded earlier, we were able to double our finds.

That night the low temperature was predicted to be 28 degrees, so we snuggled down under a thick blanket of sleeping bags. Sometime after midnight, we were awakened when something large passed behind our tent en route to the ice chest. To this day, Emily believes it was a bear; I, on the other hand, think it was a boar. In any event, some shouting and slapping on the side of the tent scared it off; and it did not get into the ice chest. And where was Genie, you will ask. She was hiding behind me! In the morning we got up in the bitter cold, cooked breakfast, ate, broke camp, and started home. All in all, it had been a good trip with lots of treasures!

### **Another Adventure**

Blue Springs and 20 Mile Creek  
*Kim Hill*

It was a gray, cloudy, sprinkly rain kind of morning. My husband Richard, three of our grandsons—Beto, Louis, and Ricardo—and I were ready for an adventure...and running late as always. I couldn't wait to dig!

We took my truck since I knew we would get 'messed' and wet, and his car does not do 'messed' or wet. He was driving and driving carefully on the wet slick roads, and we did have precious cargo on board! I was so anxious to get there and start digging I actually accused him of not hurrying on purpose. Finally we arrived at Blue Springs and I rushed to start digging.

This was mine and Beto's second trip to Blue Springs. I found some nice little crabs and some other treasures then, and was really hoping this trip would be a good one, too—and it was! I found my first ever shark tooth there, and it's really neat. I also found some nice crabs and shells. The grandsons dug for a little bit, then proceeded to find the muddiest place there—and that's saying a lot because there was a good bit of mud around—and apparently went swimming in it. I found mud in funny places on Ricardo, and Louis's clothes were so soaked they weighed him down.

We dug for awhile; it's never long enough. Then it was time for lunch. I felt sorry for the McDonald's we visited! I'm sure they had to mop up a lot after the group left. We had a nice lunch discussing our finds and the next part of the trip.

This was our first time to 20 Mile Creek and I couldn't wait to find sharks teeth since it was my first time ever looking for any—plus we got to wade in a creek!! What could be more fun!? My husband decided not to join us this time. He stayed on the cliff to watch the fun. I jumped—well actually kinda slipped and slid into the creek—and immediately found a deep hole. AAHHH COLD!—at first, anyway. After you were in it was fine. I think I know where the holes came from, 'cause I know I left at least two when I was finished.

The grandkids quickly got rid of their mud coating, and found places to jump from and vines to swing on. I don't

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*Blue Springs and 20 Mile Creek* think they did much searching this time at all.

The rest of the group spread out up and down the creek. A snake surprised us swimming downstream, but it was only a small water snake and wasn't interested in us.

I was lucky and found some

nice and interesting teeth and other goodies, and I can't wait till our next meeting to find out what I have!!!!

While we were there a number of military trucks went past. Most of them honked and waved at the strange group wading in the creek with our screen boxes, sieves, and shovels. Can you imagine how proud they must be, knowing their

sense of duty to our country and way of living allows people like us to enjoy our favorite pastimes: digging in mud and wading in creeks with our sieves and shovels.

Well, that's my 'few' words about the field trip. If you have never been on a MAGS field trip you really need to come!!!

IT IS FUN!!!!

## Membership Meeting Displays

Over the next couple of months the display component of the Membership Meetings will undergo some changes and enhancements.

### June

1. Regular display—bring some of your collections and recent finds
2. Field trip—displays of recent field trips (Sugar Creek, Blue Springs, 20 Mile Creek)
3. Program display—The June program is on rocks that resemble something else. Be part of the program by bringing your rocks that resemble something else, especially hearts. Help fill up an 'Elvis Rocks' heart shaped display tin.

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# MEMPHIS ARCHAEOLOGICAL AND GEOLOGICAL SOCIETY

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*Membership Meeting Displays  
Continued from P. 5*

## July

1. Expanded display themes and areas
2. New display award program

## Rock Garden

*Mary Helen Butler*



Thanks to support from MAGS, Memphis Botanic Garden has a new feature that will excite young rockhounds! The Rock Garden is adjacent to the “House

of Rock” playhouse in Playhouse Lane. It was created by Connor Hvasta as an Eagle Scout project with support from MAGS Members W. C. McDaniel, Carol & Matthew Lybanon, and Melba Cole.



Rocks in the collection include quartz, limestone, granite, fossils, and petrified wood. The exhibit has become a focal point in My Big Backyard and the collection will be enjoyed by thousands of children for years to come. The Garden wishes to ex-

press their sincere thanks to MAGS and will gladly accept any future donations that Members would like to add this collection.



*Mary Helen Butler is the MBG Director of Administration.*

## Jewelry Bench Tips by *Brad Smith*

### EASIER PRONG SETTING

When setting stones in a prong mount, the tool is less likely to slip off the prong if you grind a groove into its face or rough up the face *Continued, P. 8*

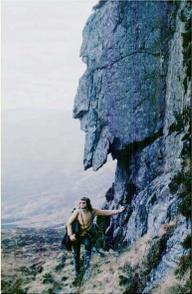
## MAGS 2013 Upcoming Field Trips

Month	Date(s) and Location	Trip Status
June	<b>June 15</b> Crow Creek Near Forrest City, Arkansas Mimetoliths and Agates	Trip bulletin to be published
July	<b>July 13</b> Behind the Scene Tour at the Pink Palace Admission required	Trip bulletin to be published
August	<b>August 10</b> (late day and night) Rainwater Observatory and Planetarium French Camp, Mississippi Admission required	Trip bulletin to be published
September	1. <b>August 30-September 2</b> (Labor Day weekend) East Texas, Ammonites 2. Additional trip to be planned	Trip bulletin to be published
October-December	In planning stages	Trip bulletin to be published

## MEMPHIS ARCHAEOLOGICAL AND GEOLOGICAL SOCIETY

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*Collecting Mimetoliths*  
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	<p>This "frog" is a remnant of a fossil solitary rugose coral; the cobble is a limestone with shale partings, apparently derived from the Devonian Traverse Group of the Michigan Basin Sequence near Rockport, Michigan.</p>
	<p>"Duck"—This bas-relief form, which resembles the head and neck of a duck, consists of chert on dolostone. The specimen was found in a deposit that probably represents a former lakeshore environment in the area, now several feet above lake level, near the Straits of Mackinac, Michigan.</p>
	<p>"Grey Man of the Merrick" rock exposure on the northwestern side of a niche near Newton-Stewart in the Dumfries and Galloway Region of the Southern Uplands of southwestern Scotland.</p>
	<p>"Marshmallow rabbit" (greatest width 6.5 cm) Easter treat—calcite-cemented sandstone.</p>

*MAGS Archaeology Interest Group*  
Continued from P. 1

from the Robert Ford collection and pottery vessels from the Chucalissa collections for use by MAGS

3. organizing a reference collection of common Indian artifacts.

After review of the three recommendations, the group selected the portable archaeology exhibit project. Ron asked us to develop a

concept statement defining the audience, type of display case, contents, and budget for the exhibit. We agreed to:

1. Design for a general (family) audience.
2. Select artifacts to cover the entire span of time dating from first Native American arrival to modern Indian society.
3. Group artifacts by use (leather crafting, hunting, personal adornment, flint knapping, re-

ligious objects and symbols, woodworking) and accompanied by modern analogs (knives, scrapers, awls, arrowheads) to help visitors understand their use. The modern examples also can be used in a participatory matching game.

4. Investigate use of brochures, teacher's guides, activity sheets, the MAGS and Chucalissa web sites, and other media to augment the displays.

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# MEMPHIS ARCHAEOLOGICAL AND GEOLOGICAL SOCIETY

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## *MAGS Archaeology Interest Group* *Continued from P. 7*

5. Explore the use of glass-topped cases, perhaps connected by hinges, to protect the artifacts.
6. Design the cases for secure and safe containment of the artifacts.
7. A small drawer cabinet could be used for touch items.
8. Use free-standing and side panels to contain explanatory text and illustrations.
9. Build the panels and cases that can be used independently or linked together.

10. Store the exhibit at Chucalissa.
11. Use the panels to promote MAGS and Chucalissa.
12. The exhibit will be available for use by MAGS for the Earth Wide Open show and other events sanctioned by the club.
13. Scarlett and Amber will construct a scale model of an Indian house, using natural materials, to accompany the display cases and panels. They will meet with Ron on Tuesday mornings at Chucalissa.

After agreeing on the exhibit concept, we selected artifacts

from eight boxes from the Robert Ford collection and the Chucalissa pottery collection. We will continue artifact selection from the Robert Ford collection and the Chucalissa pottery collection during our next meetings on June 22 and July 27.

Ron suggested reading the sections in Charles Hudson's *The Southeastern Indians* for background on pottery manufacturing and use and the religious symbols of the Indians.

***Editor's Note: Interested in becoming involved? Contact Ron at (901) 388-1765.***

*Jewelry Bench Tips* a bit with sand-  
*Continued from P. 6* paper. Some folks prefer a prong pusher for doing this, and others like a set of pliers.

Easiest way to cut a slot on the pusher is with a file, and the easiest way to create a slot on one jaw of your pliers is with a cutoff wheel and then do a rough polish with a knife-edge silicone wheel.

### FANCY RIVET HEADS

For a nice looking rivet head, use brass escutcheon pins. You'll have perfectly rounded heads that are all the same size and shape. The pins are a little hard to find, so try the best hardware stores first. Be sure to get solid brass pins, not brass plated steel. If unsure, test them with a magnet.

The pins are readily available online. Lee Valley Tools has them in 14-18 gauge and lengths from 1/4 inch to 1 inch. Go to [www.LeeValley.com](http://www.LeeValley.com) and do an item search on "brass escutcheon pin"



For best results, select a drill that gives you a hole with a close fit to the rivet. Trim the rivet to leave a little less than one diameter sticking out the back side. Place the head on a scrap of hard plastic on the anvil so as to not flatten the head. I prefer a ball peen hammer (with a small 3/8 inch ball) for setting the rivet.

More BenchTips by Brad Smith are at [facebook.com/BenchTips/](https://www.facebook.com/BenchTips/) or see the book *Bench Tips for Jewelry Making* on Amazon.

Contact W. C. McDaniel at [w.c.mcd@att.net](mailto:w.c.mcd@att.net) or (901) 274-7706 for details on upcoming field trips.

## Extinction Events: New Evidence

Recent publications have reported new information about two major extinction events. Some 200 million years ago the End-Triassic Extinction resulted in widespread loss of land and sea species that made way for the rise of the dinosaurs. Around 65-66 million years ago the Cretaceous-Paleogene (K-Pg) extinction event (formerly known as the Cretaceous-Tertiary—or K-T—extinction) was a mass extinction of three-fourth of plant and animal species, including all non-avian dinosaurs. The K-Pg event marked the end of the Cretaceous period and with it, the entire Mesozoic Era, opening the Cenozoic Era which continues today.

### A. End-Triassic Extinction

Terrence J. Blackburn, a geologist at the Carnegie Institution for Science, and colleagues published a paper in *Science* that asserts a set of major eruptions

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# People of the Show



A few pictures of workers, dealers,  
and demonstrators at the 2013 Show

*Extinction Events* spanning from  
*Continued from P. 8* what is now

New Jersey to Morocco occurred very close to the time of the End-Triassic Extinction. The idea that such volcanic activity and the resultant climate change were responsible for this extinction is not new. But Blackburn's study dates the End-Triassic Extinction to 201.5 million years ago, the same time the eruptions took place.

The eruptions, known as the Central Atlantic Magmatic Province, began when the land on Earth was part of the supercontinent Pangaea. They lasted more than 600,000 years and created a rift that became the Atlantic Ocean. The researchers studied lava from these flows in modern-day Nova Scotia, Morocco, and New Jersey.



*Lava flow from time of End-Triassic exposed in former New Jersey quarry*

This study, which improved the precision of time estimates by an order of magnitude, showed that the oldest massive eruptions were in Morocco, followed by the ones in Nova Scotia 3,000 years later and then those in New Jersey another 10,000 years after that. Animal and plant fossils, along with pollen and spores from the Triassic era, can be found in sediment layers beneath the lava flows,

but not in layers above them. This suggests the eruptions wiped out those species. The organisms that went extinct include eel-like fish called conodonts, early crocodile species, tree lizards, and broad-leaved plants.

Blackburn and his group determined the age of the lavas based on their mineral content. When lava flows cool, the center regions remain hot, and some materials such as zircon fail to crystallize. Zircon incorporates large amounts of uranium, which decays into lead at a specific rate. By measuring the ratio of uranium to lead in lava rock, the scientists could figure out precisely when the eruptions occurred.

Other evidence came from mineral grains that indicate reversals in the Earth's magnetic field, and from climate conditions that result from nutation (wobble as the Earth rotates on its axis), which occur at a known rate. The researchers were able to determine the age of fossil-containing sediments to within 20,000 years.

In related work, Olja Toljagi and Richard Butler of Ludwig-Maximilians-Universität in Germany suggest that the End-Triassic Extinction paved the way for the rise of the crocodiles. Their paper, in *Biology Letters*, found that although nearly all the crocodilelike archosaurs, known as pseudosuchia, died off about 201 million years ago, the one lineage that survived soon diversified to occupy land and sea. The lineage included the ancestors of all modern crocodiles and alligators.

During the Triassic period, two lines of archosaurs lived in the

same environment, which included dinosaurs and the pseudosuchians, a large group of crocodilelike creatures that had short necks, long snouts and massive skulls. But around 201 million years ago something killed off half the known species on Earth. Just one lineage of pseudosuchians, called the crocodylomorphs, survived. That branch would ultimately give rise to modern-day crocodiles and alligators.



*Modern Gharial crocodilian*

The researchers analyzed previous research data on pseudosuchians's skull characteristics, which could provide details about species diversity. After a systematic analysis the team found that the single surviving branch not only survived the extinction, but showed great diversity within a few million years after the extinction. These diversified crocodilelike creatures fanned out into different environments—such as swamps, rivers and oceans—during the Triassic period.

### **B. End-Cretaceous Extinction**

Recently an international group of experts reviewed available evidence and concluded that the asteroid impact at Chicxulub on the Yucatan Peninsula triggered the mass extinctions at the K-Pg boundary, includ-

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*Extinction Events*  
*Continued from P. 10*

ing those of dinosaurs. Evidence for the asteroid impact comes from sediments in the K-Pg boundary layer, but the details of the event, including what precisely caused the mass extinction, are still being debated. New findings using high-precision radiometric dating analysis of debris kicked up by the impact now suggest the K-Pg event and the Chicxulub collision happened no more than 33,000 years apart.

Some scientists have hypothesized that since the ejecta from the impact would have heated up dramatically as it reentered the Earth's atmosphere, the resulting infrared radiation from the upper atmosphere would have ignited fires around the globe and killed everything except those animals and plants that were sheltered underground or underwater.



Artist's conception of impact

Other scientists have challenged the global fire hypothesis on the basis of several lines of evidence, including absence of charcoal—which would be a sign of widespread fires—in the K-Pg boundary sediments. They also suggested that the soot observed in the debris layer actually originated from the impact site itself, not from widespread fires caused by reentering ejecta.

In a *Journal of Geophysical Re-*

*search* paper, Robertson et al. show that the apparent lack of charcoal in the K-Pg boundary layer resulted from changes in sedimentation rates: When the charcoal data are corrected for the known changes in sedimentation rates, they exhibit an excess of charcoal, not a deficiency. They also show that the mass of soot that could have been released from the impact site itself is far too small to account for the observed soot in the K-Pg layer. In addition, they argue that since the physical models show that the radiant energy reaching the ground from the reentering ejecta would be sufficient to ignite tinder, it would thereby spark widespread fires. The authors also review other evidence for and against the firestorm hypothesis and conclude that all of the data can be explained in ways that are consistent with widespread fires.

Estimates are that as much as 10kg of debris fell back through the Earth's atmosphere for every square meter of the Earth's surface, and that the infrared pulse would be enough to set every piece of vegetation on the planet ablaze. "No non-aquatic vertebrate much larger than a squirrel survived," the authors note, and all the survivors could have plausibly burrowed underground to survive the conflagration.

References

1. Terrence J. Blackburn, et al., Zircon U-Pb Geochronology Links the End-Triassic Extinction with the Central Atlantic Magmatic Province, *Science* 24 May 2013: 340 (6135), 941-945. Published online 21 March 2013

[DOI:10.1126/science.1234204]

2. Olja Toljagi and Richard Butler, Triassic–Jurassic mass extinction as trigger for the Mesozoic radiation of crocodylomorphs, *Biology Letters*, Published 27 March 2013 doi: 10.1098/rsbl.2013.0095

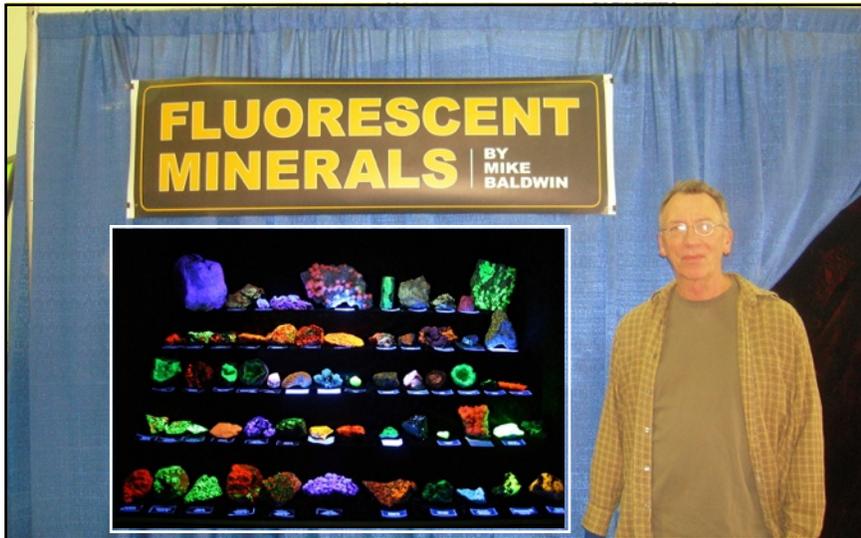
3. Douglas S. Robertson et al., K/Pg extinction: Reevaluation of the heat/fire hypothesis, *Journal of Geophysical Research-Planets*, doi: 10.1002/jgrg.20018, 2013

**More Show Pictures**



# Thanks To All Our Show Volunteers!

It takes a lot of volunteers to put on a successful Show. Thanks to all of you who gave up time and energy to help. This year we even got help from White Station High School ROTC cadets.



## Calendar

**June 6, 2013**

Board Meeting, St. Francis Hospital, Library, 6:30 P.M.

**June 8, 2013**

DMC Field Trip, Brasstown, NC

**June 14, 2013**

Membership Meeting, Shady Grove Presbyterian Church, 7:30 P.M.

**June 15, 2013**

MAGS Field Trip, Crow Creek

**June 22, 2013**

MAGS Archaeology Group Meeting, Chucalissa, 10 A. M.

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

