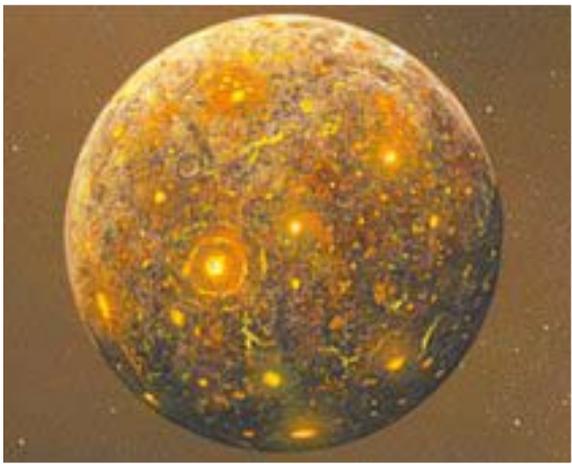




Arctic Rocks May Contain Oldest Remnants Of Earth

MATTHEW LYBANON: Evidence for the survival of the oldest terrestrial mantle reservoir “Oceanic island lavas with high $^3\text{He}/^4\text{He}$ ratios are thought by some to sample a primordial terrestrial reservoir preserved in the Earth since it accreted from the solar nebula about 4.5 billion



Remnants of the early Earth have been discovered in Arctic rocks.

years ago, but these lavas have never been found to exhibit the primitive lead-isotopic compositions associated with such an early formation age. Now Matthew Jackson and colleagues show that Baffin Island and West Greenland lavas, previously found to host the highest terrestrial mantle $^3\text{He}/^4\text{He}$ ratios, have primitive lead-isotope ratios that are consistent with an ancient mantle source age of 4.55 billion to 4.45 billion years. The combined helium, lead and neodymium isotopic compositions in these lavas suggests that their source is the most ancient accessible reservoir in Earth’s mantle—and it may be parental to all mantle reservoirs that give rise to modern volcanism.”

This is the editor’s summary of a letter (short paper) published in the August 12 issue of *Nature*, one of the world’s premier scientific journals. Dr. Matthew Jackson of the Boston University Department of Earth Sciences and the Carnegie Institution of Washington’s Department of Terrestrial Magnetism, and his international team, collected lava samples from Greenland and Baffin Island in the Canadian Arctic. The lava formed from a huge volcanic eruption 62 million years ago where the continents were splitting apart to form the North Atlantic Ocean, about where Iceland is today. But they contain a chemical signature of a far more ancient source. The signatures found in the Arctic lavas are more than 4.45 billion years old (the Earth is only slightly older). The sample has the highest proportion of the isotope helium-3 relative to helium-4 of any rocks known.

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Comments or Questions Regarding MAGS

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Or visit MAGS at
www.memphisgeology.org

September President's Note

Nominating Committee

A nominating committee for the 2011-12 officers has been appointed. They are Ron Brister, Alan Schaffer and Nanett McDougal -Dykes. Over the next several weeks they will be recruiting members to serve the club. As you are the club, I look forward to hearing you name placed in nomination on November 12. My vote is ready.

The 2011 Show

The show committee is in the process of ramping up for the April 23-24, 2011 show. The show will face two unique challenges. First our net rent will increase about 20%. Also, the show is on Easter weekend. Be prepared to participate in the show.

Donations

MAGS recently acquired two donations: The first donation was two fossil cast provided by the Mississippi Museum of Natural Sciences through their paleontological curator, George Phillips. The second donation was a collection of micro mounts and thumbnail mineral specimens, including many from Arkansas. This donation was from the estate of Gene Newsom, a geologist from Arkansas. Come see both of these acquisitions at the September membership meeting..

W.C. McDaniel

Memphis

Mineral Fossil Jewelry Show

April 23-24, 2011

Memphis Agricenter

www.theearthwideopen.com

901-274-7706

Memphis Rocks

Friday, October 1

Memphis Botanical Gardens

MAGS and MBG will join forces to present Memphis ROCKS, a special event scheduled for October 1 at the Gardens. Students in grades 2-6 will be the targeted audience. This program is a continuation of several years of collaboration between MAGS and MBG. MAGS assisted with the development of the Hyde and Seek Prehistoric Plant Trail and MBG has been a show partner with the paint your rock activities in the Rockzone. The stars of the event are rocks and fossils that will be on display in several stations, some are educational while others will be activity and fun related. MAGS members are requested and encouraged to help.

MAGS field trips for 2010

Sept 25/26	Arkansas	<ul style="list-style-type: none">• Crater of Diamonds [Diamonds, agates and jaspers]• Coleman quartz mine [Quartz crystals]
Oct 2	Mississippi	Memphis Stone and Gravel, specific site to be determined <ul style="list-style-type: none">• Agate, chert, fossil gravel, petrified wood• Possible rock swap with Mississippi clubs
Oct 22-24	Tennessee	Davis and Pharis Farms (fee) Ledbetter Farm (no fee) <ul style="list-style-type: none">• Geodes Dale Hollow Lake <ul style="list-style-type: none">• Crinoids and other fossils (will need to confirm exact dates with landowners for geode collecting)
Nov 6	Tennessee	Cumberland Furnace Dickson fossil coral site <ul style="list-style-type: none">• Slag glass* Fossil coral
Nov 19-20	Missouri	Park Hills area <ul style="list-style-type: none">• Barite, quartz, limonite
Dec 11	Tennessee	Richardson Landing, Millington, Tn Agates, lake superior agates, fossils, petrified wood, ice age fossils river artifacts

Trip notes

- * Specific trip information will be provided via email or at membership meetings
- * Field trips are only opened to MAGS members

Arctic Rocks May Contain Oldest Remnants Of Earth

[continued from page 1]



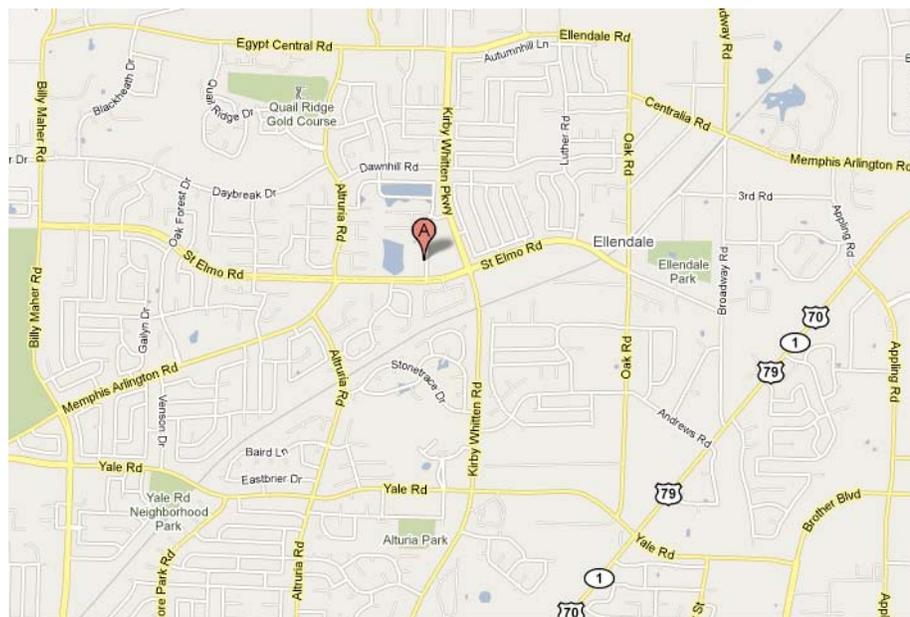
The lavas of Canada's Baffin Island may come from rock 2900 kilometers down that is nearly as old as Earth.

The lava samples show that beneath the Arctic today are small pieces of mantle—the toffee-like layer below the crust—that have survived unchanged since shortly after the formation of the Earth. Dr. Richard Carlson of the Carnegie Institution, a co-author on the study, remarked that, “this was a key phase in the evolution of the Earth. It set the stage for everything that came after”. If proven, the new discovery would challenge our understanding of the early Earth. The ancient mantle source discovered has a different chemical make-up to that predicted by theory. It suggests that the Earth had a more complicated early history than previously thought.

September/October Rock Swap

Sunday, Oct 3, 1:00 to 5:00 PM at Lou White's house
3805 Melanie June Drive, Bartlett, TN 38135

Follow the map below to find your way to the home of Lou White on Sunday, October 3, from 1:00 until 5:00 pm for a special Sunday rock swap. A great big thank to Lou for opening his backyard and allowing us to invade with our rocks and goodies. If you plan to bring rocks to swap or sell, don't forget to bring a folding table [card table works great] for your wares. Whether you plan to set up shop or not, you will still need to bring folding chairs and drinks enough for your crew and a pot luck dish large enough to share with everyone. Your dish can be anything from a main dish, salad, to a side dish, to chips and dip to dessert. MAGS will provide the paper plates, napkins and cutlery. Lou's number is 937.8522.



DISPLAY THEMES

SEPTEMBER-NOVEMBER 2010

We've had some very nice displays at Member Meetings so far this year. We only have a few meetings left in 2010 and we would like for you to bring your displays to share with us. Bring your display to the September, October or November meeting. Because of the holiday party, there will be no displays in December.

Here are the themes for those months. There's no penalty for not following the suggestions (you're still eligible to win a prize), but these themes are keyed to MAGS field trips that are scheduled to take place not long before these meetings.

September:

Arrowheads and other specimens found in Mississippi



October:

Quartz from Hot Springs and Mt. Ida, Arkansas

November:

Fossil Coral from Dickson, Tennessee, Honeymoon Island, Florida, and Tampa Bay



DMC September Field Trip

An Official Field Trip of Augusta Gem & Mineral Society, Augusta, GA

Saturday, September 25, 2010 • 9:00am-3:00pm EST

Amos Cunningham Farm Due West/Antreville Area, South Carolina

What: Mineral Collecting Trip - good sized beryl crystals, amethyst and smokey quartz. This site has the best South Carolina beryl specimens of any site that I know how to get access to. The crystals are well shaped hexagons with flat ends. The color is green though most have a blue cast. The beryl ranges from translucent to opaque. Most crystals are specimen quality though some gem quality is present.

Where: The Amos Cunningham Farm is between Antreville and Due West, SC. From Anderson, SC drive 18 miles down route 28 East (really south) to Antreville. Turn left on route 184 East heading toward the town of Due West. Travel for 4 miles and turn left on the George Alewine Road. Drive for less than 1 mile. You will pass a trash/recycling site on the right, cross a bridge over a small creek and turn into the first land on the right. If you pass the Cunningham Backhoe Service on the left you have gone too far.

Digging Conditions: The site is flat to rolling land of South Carolina red clay. The digging areas have been machine trenched down to white kaolite veins that have the beryl and quartz crystals. Dirt and rock removed from the trenches and piled up, also contain beryl and are good places to search.

What to Bring: Picks, shovels, rock hammers and scratching tools. Large hammers will not be very useful. Also bring plenty of drinks and a picnic lunch unless you want to drive a few miles for lunch.

Cost: \$25.00 per person. Children 13 years old and under are \$15.00. Children and pets must be supervised by an adult. Everybody attending the dig must be a member of a Southeast Federation Club and must sign a Release Form. Mr. Cunningham will also have good specimens for sale at his Cunningham Backhoe and Bushhogging Service building.

Lodging: There are many motels in and around Anderson, SC. There is no lodging in Antreville or Due West.

Contact Person: Any questions call Steve Huffman at 706-210-2988 or email steve.huffman@dsm.com. On the day of the field trip call 706-288-6771.

This field trip is for MAGS/DMC members only. No visitors. Children are welcome.

MAGS adult programs

September 10: Bill Gilbert, Fire Agates and the Morrenic Copper Mine

October 8: Dr. Gerrit Verschuur, Journey To The Top Of The World (about the polar caps). Verschuur is a radio astronomer who has written about astronomy, natural disasters, and earth sciences, among other things. He lives in Lakeland (Wikipedia says he is a Lakeland Commissioner) and is currently associated with Rhodes College. He has been an adjunct professor with U. Memphis (his wife is a U. Memphis physics professor) and has other associations.

November 12: Dr. Julie Morrow, The Sloan Dalton Cemetery (the oldest known cemetery in the Western Hemisphere). Julie Morrow is the Station Archaeologist at the Arkansas State University-Jonesboro station of the Arkansas Archaeological Survey. In addition to conducting research in Paleoindian and Mississippian archaeology, she teaches two classes each spring semester, investigate archeological sites in Arkansas in co-ordination with landowners and the Quapaw Tribe of Oklahoma, gives public lectures, and provides information to agencies and individuals seeking knowledge about the pre-contact era of the Central Mississippi Valley. (A Google search found a book titled Sloan: A Paleoindian Dalton Cemetery in Arkansas. The description says that Sloan is a Native American burial site in northeast Arkansas that dates back 10,500 years.)

December 10: Holiday party

January 14, 2011: Guy Weaver, Prehistory On The Buffalo River In Perry County, Tennessee. Guy Weaver is Senior Archaeologist of Weaver & Associates, LLC.

HARDNESS AND LUSTER

MOH'S HARDNESS SCALE

- 01 Talc [easily scratched with fingernail]
- 02 Gypsum [scratch with fingernail]
- 03 Calcite [scratch with penny]
- 04 Fluorite [easily scratched with steel]
- 05 Apatite [scratched with steel]
- 06 Orthoclase [scratches grass]
- 07 Quartz [easily scratches glass or steel]
- 08 Topaz [scratches quartz]
- 09 Corundum
- 10 Diamond [scratches everything]

LUSTER

- Dull [no reflection of anykind at all]
- Earthy [looks like dirt or dried mud]
- Fibrous [appears to have fibers]
- Greasy [looks like grease; may feel greasy]
- Metallic [shiny with the looks of metals]
- Pearly [looks like a pearl]
- Silky [looks silky; sometimes hard to differentiate between fibrous]
- Vitreous [the most common luster; looks like glass]
- Waxy [looks like wax]

July 2010 Board Meeting Minutes

Carol and Matthew Lybanon

The MAGS Board of Directors met July 9 at Shady Grove Presbyterian Church. The meeting was called to order at 6:37 P. M. Present were: Mike Baldwin, Ron Brister, Robert Duncan, Carol Lybanon, Matthew Lybanon, Neville Mayfield, W. C. McDaniel, Nannett McDougal-Dykes, and Alan Schaeffer. Excused: Doris Jones and Paul Sides.

W. C. McDaniel reported that Mike Wheeler has resigned as Field Trip Chair because of family commitments.

Secretary: The June minutes were approved as submitted.

Treasurer: Doris Jones is out of town, but she provided the June report, which was approved subject to audit.

Membership: Neville Mayfield reiterated that he is without a computer at the moment, but hopes to have a new laptop very soon so he can get back to Membership business. Until then, W. C. McDaniel is keeping a provisional Membership list. Neville will check with Mike Baldwin concerning Membership and Library cards.

Field Trips: W. C. McDaniel distributed a list of potential upcoming trips. The next scheduled trip is July 31, to Turkey Creek near Starkville, Mississippi. He will email information about this trip to Members. Robert Duncan was approved as the new Vice-President (Field Trips). Robert said that he and W. C. will work together and submit a final list of field trips for the remainder of the year in the next week or so. The Board discussed other ideas for field trips. Nannett McDougal-Dykes said she will work on organizing a field trip to the Dickson, Tennessee, area. Another suggestion was that we should get in touch with George Phillips about Owl Creek. We will look into going back to

Black Rock. Ron Brister suggested some field trips to museums. He recommends the Hemmingway/Pfiffer House in Piggot, Arkansas, and the Arkansas State University Museum in Jonesboro, Arkansas. Mike Mueller was chosen to replace Robert as Assistant Field Trips Chair.

Adult Programs: Matthew Lybanon named the speaker and topic for tonight's program, and reminded the Board that the August Membership Meeting will be the Indoor Rock Swap. No programs have been scheduled beyond August, though Paul Sides is working on several for the rest of the year. W. C. McDaniel will check with Paul.

Junior Programs: Alan Schaeffer said the July program is on rocks. In August Juniors will join the adults for the Indoor Rock Swap.

Show: W. C. McDaniel received an email message from Amy Barton, director of sales and marketing at the Agricenter, regarding rentals for the 2011 Show. The Agricenter will cost us more for the 2011 and later Shows. The Board decided to sign the contract for 2011. W. C. wants the Show Committee to work on ideas for increasing revenue, to cover this increased cost. Dealer contracts will be signed under the present terms.

Library: Ron Brister said everything is going well.

Newsletter: The July issue went out today.

Webmaster: Mike Baldwin said he has updated the website.

Historian/Rock Swap: Nannett McDougal-Dykes said the July 10 rock swap will be at the home of Cornelia and W. C. McDaniel, 9:30 A. M. to 1:30 P. M. The August rock swap will be the Membership Meeting.

Old Business: None.

New Business: None.

The meeting was adjourned at 7:10 P. M.

July 2010 Membership Meeting Minutes

Carol and Matthew Lybanon

The MAGS Membership Meeting was held at Shady Grove Presbyterian Church on July 9. The meeting was called to order at 7:36 P. M. 62 Members and 2 visitors were present. The visitors are George Swihart and Debi Cole.

Neville Mayfield welcomed visitors. W. C. McDaniel informed Members that Robert Duncan will replace Mike Wheeler as First Vice-President (Field Trips), and Mark Mueller will take Robert's place as Director (Assistant Field Trips). The next field trip will go to Turkey Creek, near Starkville, Mississippi, on July 31. A schedule of field trips for the rest of 2010 should be available late next week. The next rock swap will be tomorrow at the home of Cornelia and W. C. McDaniel. There will be a pot luck lunch, and attendees should bring tables and chairs. The event will be highlighted by the world premiere of geode bowling. Mike Baldwin will bring his geode cracker. The August Membership Meeting will be the Indoor Rock Swap.

Presenters described their displays. Adult: Carol Lybanon, "Collected" (Nonconnah); William Gilbert, "Specimens from Moscona Mine, Spain;" Kim Hill, "Material From Nonconnah (Quince & 385)." Junior: Lauren Schaeffer, "Collected" (Nonconnah and Frankstown); Juliet Buckholdt, "Shark Teeth, Clams, & Crinoid Stems, Oh My" (TN, MS, MA); Michael Montgomery, "Unspecified" (home). The adult winner was Carol Lybanon; the Junior winner was Lauren Schaeffer.

MAGS is working on a behind-the-scenes field trip to the Pink Palace, to see the cleaning and preparation of the fossils recently found in Brighton, Tennessee. Marvin Nutt brought some vivianite specimens, to be given away as door prizes.

Juniors then went to their program. Dr. George Swihart of the University of Memphis Geology Department gave the adult presentation, "Formation of Vivianite in Nonconnah Creek, Memphis, Tennessee." Dr. Swihart's presentation was a combination of a chemistry lesson and a detective story. It tried to answer the question of why vivianite is formed at only one location on Nonconnah Creek, and not at other locations where conditions are similar.

The meeting was adjourned at 8:45 P. M.

2009-2010

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The main purpose of Memphis Archaeological and Geological Society is to promote and advance the knowledge of the Lapidary Sciences in the mining, identification, cutting, polishing and mounting of gems, minerals and fossils to the utmost of our geological and lapidary capabilities.

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AFMS NEWSLETTER AWARDS: New Editor 7th—95 • Small Bulletin Honorable Mention—04, 05, 06 • Adult Article 10th—04; Honorable Mention—05 (x2), 06 (x2) • Junior Article 3rd—98; 8th—03 • Special Pub 4th—03

SFMS NEWSLETTER AWARDS: New Editor 1st—86; 2nd—88, 97 • New Editor (Explorer) 4th—03 • Certificate of Excellence—89, 90, 91, 92, 93 • Large Bulletin 1st—87 • Small Bulletin 1st—04, 2nd—06, 4th—03, 3rd—07 • Special Publication 2nd—03 • Art 77, 80, 81, 82, 86 • Junior Article 1st—03, 07 • Adult Article 1st—06, 2nd—89, 90, 04, 06; 3rd—92; 4th—85, 04, 07; 5th—91, 03, 07; 6th—87; 8th—04, 07; Honorable Mention—03, 04, 07 • Adult Poetry—07

DUES: \$25 (Family); \$20 (Single); \$10 (Junior)

Congratulations Bill

Congratulations to new MAGS member, Bill Gilbert for winning an award in the 2010 AFMS Bulletin Editor's Contest. He was in the top 10 (#8) of the Written Features group, for "Collecting Pyrite at Navajun, Spain." He published the article in the November 2009 issue of "The Collecting Bag," the Richmond Gem & Mineral Society's newsletter. Bill presented a program to the MAGS membership about his pyrite collecting in Spain. Each youth member that night received a pyrite specimen to take home with them. Thank you for your program. We're looking forward to seeing more programs and reading articles in MAGS Rockhound News future issues.



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