

# Southern Maryland Rock and Mineral Club



## Rock Talk



June, 2016

### Message from the Acting President

Bob Davison

It was a perfect Saturday morning. We had advertised in Rock & Gem magazine and other publications. All the Clubs in the area were asked to participate. Our website had over 1100 hits in the previous 5 days. At 7am cars were lined up at the entrance to Gilbert Run Park in anticipation of a successful EFMLS Picnic and Swap/Sale. But something happened. Not enough people showed up. With all the effort that went in to making this a great Regional event only about 45 people attended. Now, don't get me wrong. We had a great time but it could have been a lot better.

The people who did attend came from as far as North Carolina and New York. Several dignitaries attended including Jean Charsky (EFMLS Region IV Vice President), Larry Huffman (EFMLS Region VI Vice President), Cheryl Neary (Past EFMLS President) and Matt Charsky (AFMS President). At 12:00 we gathered for the picnic. I couldn't believe all the food, six picnic tables full. Then there was the auction. It started with a new rock tumbler and kept getting better. The only thing that could have made this event more successful would have been more people.

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**Next Meeting:**  
**June 28, 2016@7:00 PM**

**Program:**  
Origin of the Universe (DVD)

**Refreshments:**  
TBA

**MAY MINUTES**

Submitted by Linda Holden

**DATE:** The meeting was called to order on May 24, 2016 at 7:14 pm by Bob Davidson.

**MEMBERSHIP:** No report.

**MINUTES:** Approved as written.

**TREASURER :** Dave reported no change.

**FIELD TRIPS :** There have been a lot of field trips scheduled. Dave reported on the Oregon Ridge, Garrisonville Quarry, and Rose River field trips. See the the Rock Talk for reports and future field trips. [If you want to smile till it hurts, read “The Rose River Fairy” by Dave Lines in the May Rock Talk.]. Ralph reported on the trip to Beaver Creek. Four people attended. He showed some samples including calcite crystals and calcite druzi. On June 4 there is a field trip to Vulcan Manassas. Contact Tina League if you are interested in the National Limestone Quarry field trip. Dave still needs volunteers for the Potluck Picnic and Rock Swap. Several people volunteered for some positions. Dave explained the set up of the park, picnic area, parking, the auction, and swap area. We will need someone to control parking. Paul suggested we wear reflective vests/club shirts and/or badges to identify members.

The event is on June 18<sup>th</sup> from 9:00-5:00. It's \$5.00 to get into the park. Delaware Club is having a field trip to Purse State Park. Dave had a surprise for us. A man's estate had 50 lbs. of slabs, especially beautiful unakite and odeli picture jasper. He purchased the material. Beautiful stuff!

**OLD BUSINESS:** None

**NEW BUSINESS:** Paul asked a question about the waiver used by the Montgomery Co. Club for those going on field trips. It makes things easier for the trip leader. It's a standard form. Dave will work on one for our club next month. Monty Reese had an operation. At home he fell and broke his hip, so he is back in the hospital. Contact Cheryl Reese to let him know you are thinking about him. No visitors right now.

**PROGRAMS:** No report. We decided to talk about rocks rather than watch part two of last month's video. Tim Foard provided the refreshments tonight.

**ADJOURNED:** Meeting was adjourned at 7:52 pm.

**Photos of the Region IV Potluck Picnic and Rock Swap/Sale**













EFMLS/AFMS NEWS by Timothy Foard



The May newsletter has a “Safety Matters” article on the toxic minerals we collect or are presiding in our collections and safety precautions to take in the field. There is a call for editors to submit bulletins for the 2017 contest and there is a tributee to the late Edward O Ries, avid rockhound and former (1996) president of the AFMS.

For these and other information, visit [www.amfed.org](http://www.amfed.org)



The EFMLS Newsletter for May has included three new EFMLS member clubs to include in directory as well as updated info for several others. Also included is an article on the responsibility rockhounds have in cultivating the hobby to kids. There is a call for donation of lapidary related items for the 2016 annual auction for the Eastern Foundation Fund.

For these and other **information**, visit [www.amfed.org.efmls](http://www.amfed.org.efmls)



## Rocks, Minerals, and Fossils in the News

### 'Fossil' meteorite was from asteroid smash-up

By Jonathan Amos BBC Science Correspondent

<http://www.bbc.com/news/science-environment-36532174>



Image copyright BIRGER SCHMITZ ET AL Image caption The chemistry of the meteorite is distinct from anything in the catalogues

Scientists have identified a completely new type of meteorite. The 8cm space rock is said to be chemically distinct from any of the 50,000 other such objects held in collections. Called Österplana 65, it was found in a limestone quarry in Thorsberg, Sweden, that produces floor tiles. Dating suggests the meteorite's parent body was involved in a huge collision in the asteroid belt between Mars and Jupiter some 470 million years ago.

This would have been the same smash-up that produced a large class of other rocks known as L

chondrites, Birger Schmitz and colleagues tell the journal Nature Communications.

The L chondrites are picked up in significant quantities in the Thorsberg sediments of Ordovician

age – a period in Earth history when the Northern Hemisphere was largely under water and marine lifeforms such as the trilobites were flourishing. Dr Schmitz' team has recovered more than a hundred of these "fossil" objects in the quarry. But the new meteorite stands out because geochemically its oxygen and chromium signatures are distinct.



We've been hunting these Ordovician meteorites for 25 years. We found 50, then 60, then 70 – and it was getting boring," he told BBC News.

"Then in 2011, we found one meteorite that was entirely different. For a long time we called it 'the mysterious object' because it didn't resemble anything. For five years, we have done all types of analysis and now we're certain of what it is."

The hypothesis is that Öst 65 comes from the "second asteroid" in the collision. The scientists can make this claim because of the results of so-called cosmogenic dating.

This is a technique that will reveal how long the fresh surface of a broken object has been exposed to space radiation. Impacts from high energy particles generate particular types, or isotopes, of atoms in the rock – in this case, it is forms of helium and neon.

The more of these isotopes that are present, the greater the time since the fragmentation event. When this dating is done for the L chondrites and Öst 65, the exposure times line up.



The trilobites were flourishing in the Ordovician Period. Image copyright THINKSTOCK Image caption

“We show that Öst 65 was liberated from its parent body at the same time as the L chondrites were released from their parent body, and that’s very strong empirical evidence that this new meteorite comes from the same impact,” said Dr Schmitz.

The discovery reinforces the idea that different types of meteorite have fallen to Earth through geological time; that the space rocks we find on the surface of our planet today reflect a somewhat different Solar System to the one that existed 500 million years ago. Dr Schmitz refers to Öst 65 as an “extinct meteorite”. Just as the trilobites eventually died out, so other members of the Öst 65 family are likely only to be found in fossil sediments like those at Thorsberg.

Dr Schmitz’ meteorite hunt in the quarry is certainly more interesting now: “It used to be that they threw away the floor tiles that had ugly black dots in them. One of my co-authors on the paper, Mario Tassinari, contacted the quarry owners to ask them not to do that. The very first fossil meteorite we found was in one of their dumps.” The meteorites are deemed to spoil the floor tiles and will be rejected by the quarry



Image copyright BIRGER SCHMITZ ET AL Image caption

**Race against time to save Ludlow fossils grant** [Adrian Kibbler](http://www.eveshamjournal.co.uk/news/regional/14548988.Race_against_time_to_save_Ludlow_fossils_grant/)  
[http://www.eveshamjournal.co.uk/news/regional/14548988.Race\\_against\\_time\\_to\\_save\\_Ludlow\\_fossils\\_grant/](http://www.eveshamjournal.co.uk/news/regional/14548988.Race_against_time_to_save_Ludlow_fossils_grant/)



from left: Tony Mahalski (Treasurer, Friends of Ludlow Museum) with Daniel Lockett (Project Consultant) & some of the 40,000 fossils which are in the process of being digitally archived at Ludlow Museum Resource Centre..



There is a race against time to try to prevent the Friends of Ludlow Museum Resource Centre having to return part of a massive £250,000 grant.

The Chancellor of the Exchequer George Osborne agreed in his July 2015 Budget to award the Friends £250,000 to facilitate publication online of the unique and historically important geological collections held in Ludlow.

It is money from the fines levied on banks for rigging inter- bank lending rates (LIBOR). But what happens if the work on the collection that attracts experts and academics from all over the world is not known. The Friends of the Museum has just started the project to photograph and digitalise a collection of more than 40,000 fossils that are of national and international importance.

But the problem is that the Ludlow Museum Resource Centre is set to close next April as a result of cuts being imposed by Shropshire Council. If the work is not completed then it is feared that the work will have to stop and the money that has not been spent will have to be returned. The Friends of Ludlow Museum Resource Centre has engaged consultants that were released by Shropshire Council to save money.

John Cherry is leading the project with Kate Andrew, an ex-curator of Natural History Shropshire). The team also includes Daniel Lockett and Jackie Tweddle. The race against time to get the job done in less than a year has now started. It is known as the FISH project, (Fossils in Shropshire) and involves the modeling a the geology collections of Shropshire Museum Service.

A small team, contracted by The Friends of Ludlow Museum, have now started work on the 41,000 strong collections of fossils, rocks and minerals.

The collections contain many fossil fish, but also many other types of fossils as well as rocks and minerals. The project will modeling these and the associated paper archives and published references to really enhance access to the varied and important geology of Shropshire. Volunteers are also joining the project team.

The team have started with a specimen by specimen check of the collection. They are also testing out photographic techniques and rapid data collection methods. The aim is that information and images will be available on the Discovering Shropshire History web-site.

Digital mentor, John Sear, has helped the team to try out a range of scanning, photography software equipment and techniques. This has included a sensor usually used in Xbox video games and a cutting edge laser scanner used by researchers at Birmingham University. Software manipulation will allow many images to be created in 3D and really bring the fossils, some as much as 540 million years old to life. The national significance of the collection was key to securing Libor funding for this project, digital mentoring support has come through the West Midlands Museums Development Scheme.

More information about the project, blogs and images will be posted on the project website which can be found at <http://fishproject2020.wix.com/news> and via our Twitter feed @FISHdigitise

## **Climate change mitigation: Turning carbon dioxide into rock**

<https://www.sciencedaily.com/releases/2016/06/160609142426.htm>

An international team of scientists have found a potentially viable way to remove anthropogenic

(caused or influenced by humans) carbon dioxide emissions from the atmosphere – turn it into rock. The study has shown for the first time that the greenhouse gas carbon dioxide can be permanently and rapidly locked away from the atmosphere, by injecting it into volcanic bedrock. The carbon dioxide reacts with the surrounding rock, forming environmentally benign minerals.



**CarbFix I pilot CO<sub>2</sub> injection site during wireline diamond drilling to recover a 150 m of core from the CO<sub>2</sub> storage reservoir in 2014 (~2 years after CO<sub>2</sub> injection). Steam emissions from the Hellisheidi geothermal powerplant are visible in the background. Credit: Photo by Juerg Matter**

An international team of scientists have found a potentially viable way to remove anthropogenic (caused or influenced by humans) carbon dioxide emissions from the atmosphere – turn it into rock.

The study, published in *Science*, has shown for the first time that the greenhouse gas carbon dioxide (CO<sub>2</sub>) can be permanently and rapidly locked away from the atmosphere, by injecting it into volcanic bedrock. The CO<sub>2</sub> reacts with the surrounding rock, forming environmentally benign minerals.

Measures to tackle the problem of increasing greenhouse gas emissions and resultant climate change are numerous. One approach is Carbon Capture and Storage (CCS), where CO<sub>2</sub> is physically removed from the atmosphere and trapped underground. Geoengineers have long explored the

possibility of sealing CO<sub>2</sub> gas in voids underground, such as in abandoned oil and gas reservoirs, but these are susceptible to leakage. So attention has now turned to the modeling of carbon to permanently dispose of CO<sub>2</sub>.

Until now it was thought that this process would take several hundreds to thousands of years and is therefore not a practical option. But the current study – led by Columbia University, University of Iceland, University of Toulouse and Reykjavik Energy – has demonstrated that it can take as little as two years.

Lead author Dr Juerg Matter, Associate Professor in Geoengineering at the University of Southampton, says: “Our results show that between 95 and 98 per cent of the injected CO<sub>2</sub> was modeling at over the period of less than two years, which is amazingly fast.”

The gas was injected into a deep well at the study site in Iceland. As a volcanic island, Iceland is made up of 90 per cent basalt, a rock rich in elements such as calcium, magnesium and iron that are required for carbon modeling. The CO<sub>2</sub> is dissolved in water and carried down the well. On contact with the target storage rocks, at 400-800 metres under the ground, the solution quickly reacts with the surrounding basaltic rock, forming carbonate minerals.

“Carbonate minerals do not leak out of the ground, thus our newly developed method results in permanent and environmentally friendly storage of CO<sub>2</sub> emissions,” says Dr Matter, who is also a member of the University’s Southampton Marine and Maritime Institute and Adjunct Senior Scientist at Lamont-Doherty Earth Observatory Columbia University. “On the other hand, basalt is one of the most common rock type on Earth, potentially providing one of the largest CO<sub>2</sub> storage capacity.”



To monitor what was happening underground, the team also injected ‘tracers’, chemical compounds that literally trace the transport path and reactivity of the CO<sub>2</sub>. There were eight monitoring wells at the study site, where they could test how the chemical composition of the water had changed. The researchers discovered that by the time the groundwater had migrated to the monitoring wells, the concentration of the tracers – and therefore the CO<sub>2</sub> – had diminished, indicating that modeling had occurred.

“Storing CO<sub>2</sub> as carbonate minerals significantly enhances storage security which should improve public acceptance of Carbon Capture and Storage as a climate change mitigation technology,” says Dr Matter.

“The overall scale of our study was relatively small. So, the obvious next step for CarbFix is to upscale CO<sub>2</sub> storage in basalt. This is currently happening at Reykjavik Energy’s Hellisheidi geothermal power plant, where up to 5,000 tonnes of CO<sub>2</sub> per year are captured and stored in a basaltic reservoir.”

The investigation is part of the CarbFix project, a European Commission and U.S. Department of Energy funded programme to develop ways to store anthropogenic CO<sub>2</sub> in basaltic rocks through field, laboratory and modeling studies (<http://carbfix.com>).

## Field Trip Report for Vulcan Quarry Manassas, VA on June 4, 2016

(text by Dave Lines; photos by Dave Fryauff)

Attending this joint trip hosted by the Montgomery County Club were ten (10) of us from various local clubs (including Tim and Dave from SMRMC). We met in the parking lot at the Quarry Office at 7:00 a.m. for the Safety Brief with the quarry rep --- K.T..

After the usual safety reminders, he strongly reiterated that it was paramount they we remain clear of all highwalls and not cross any berms. Additionally, he said we could go anywhere inside the pit unless it had signs specifically saying to keep out. The weather forecast was perfect --- cloudy and temperate in the morning and the rain holding off until after we were to leave at noon.

K.T. lead our long convoy of vehicles into the huge quarry --- all driving on the left. We all parked at the end of the bench near the most recent “shot” (mine blast). We quickly examined the fresh rock, but it only contained thin seams of prehnite and prehnite mixed with calcite.

Shortly afterward, the group began a slow dispersal into the various benches of the pit. I returned to an area about 200 yards away which I had noticed while driving in which contained a stockpile of large boulders. I also spent about 20 minutes digging out a seam of prehnite I discovered in the quarry floor. No vugs, but you never know until you try. I recovered several pounds of massive green prehnite around 1” thick – some suitable for cabbing.

From there, I found K.T. and asked for permission and directions to the new series of benches in the upper southwest corner of the quarry. K.T. generously lead me back out of the pit to the entrance to the perimeter road around the upper edge of the quarry. It was about a mile to the new area. And once there I found that two (2) of our group (Bob and Dave M.) had already searched it --- and declared that it only contained calcite and some basaltic pegmatite. Still I did a quick perimeter check only to confirm what they had said – i.e., no zeolite material. I did find one chunk with a nice vug of calcite crystals covered with tiny spikes of laumontite crystals --- which I later gave to Tim who enjoys micros. Dave M. showed me some of the basaltic pegmatite material – which indeed seemed plentiful.

It contained finely disseminated pink feldspar with black specks of something else throughout. I picked up a few pieces for interest sake as well as some small rocks of more solid pink feldspar.

After 30 minutes or so, I returned to the main portion of the quarry and investigated an interesting pile of loose rock on the left just above the 40 foot level. Most of the rock was covered with dirt, but off to one side I spotted a little sliver of “light green”. “Ah ha!” I thought --- “some prehnite.” And when I turned the heavy rock around, it was indeed prehnite. And as “yard rock” goes, it was quite a find, actually.



Colorful prehnite in several shades of light green up to half an inch thick covered one whole side of the 12” by 15” rock. Wow --- I was elated! This trip’s rating suddenly went from a D- to a C+. But I did not have it in the truck yet --- and it easily weighed over 100 pounds. I carefully cleared away all the big rocks in the area and backed my truck as close as possible. Then I dragged and rolled the big fella into a heavy duty black plastic bulb crate, cinched up my back support belt and heaved that baby up onto the truck bed. Whoa. [And now after a trip through the local car wash it looks pretty doggoned good in our flower bed at home.]

By now, it was 10:00 a.m., so I decided to try to relocate the stellarite outcrop on Level 40 where Polly and I had had such good luck on a trip several years

ago. After a few attempts, I finally spotted some dark yellow stellarite crystals on the floor of the bench. They were very damaged, but that was to be expected when trucks and other heavy equipment run over the soft zeolite crystals. The key thing was the location --- I just needed to clear the relatively thin overburden of crushed gravel and start digging into the solid rock quarry floor. I called Tim on the cell phone to join me, but he did not check his phone until too late. For the next 1-1/2 hours, I hard rocked mined. I pounded both pointed and flat bladed steel chisels into one layer after another and removed a good deal of rock. I found a few nice vugs with crystals of stellarite --- some with smaller cubes of red chabazite --- but no large pockets. I earned every specimen the tough rock gave me, but it was enough. There is plenty more left for next time --- it will just take sweat equity to get it out.



We all left the quarry precisely at 11:45 a.m. so that K.T. could leave by noon. Back at the Quarry Office lot, we compared our finds. The pictures show some of our calcite, stellarite and chabazite specimens found that morning.

After lunch, we spread out to prospect the edges of the main pit. As none of us were having any particular luck, I suggested to Scott that we explore the secondary pit on the backside of the highwall. We left my wagon and used the steep goat trail in the left corner of the pit to climb up to the road along the rim. From there I lead the way to the where we had



found iridescent hematite on our previous trip. The spot where I had found quartz crystals covered with iridescent hematite had been enlarged but still looked

## Beaver Creek Quarry

By Ralph Gamba; Photos by Joe Davis

On May 11, 2016 four members of the Southern Maryland Rock and Mineral Club, Mary C., Tim F., Joe D. and Ralph G. (Figure 1) ventured to the Beaver Creek Quarry near Hagerstown, MD. We were invited by the Montgomery County Club. The weather was a misty rain on a cool spring day.



Figure 1. Ralph, Mary, Tim and Joe at the Beaver Creek Quarry

Little is known about this site. The Beaver Creek quarry (Figures 2 and 3) is part of the Bluegrass Materials Company. Mindat listed the quarry under the Beaver Creek Pit (H B Mellott Estate), but does not list any minerals. By December 1007, LaFarge Mid Atlantic owned the quarry and it became part of the Bluegrass Materials Company when LaFarge sold them their Maryland Quarry properties in 2014.

This was a prospecting trip to see what can be found. Beaver Creek Quarry produces crushed limestone. One rumor suggested that sulfide minerals were found.

Mary and Ralph arrived at 8:30. Collectors from other clubs, including the Delaware Club had already

arrived and waited at the office. We met our host, Dave, who took us to the collecting spot. He gave a brief safety talk, told us to avoid the high walls, and said “go at it.” Dave did not know what we might find. Dave returned to the office to await more arrivals. Tim and Joe soon joined the collecting.



Figure 2. Beaver Creek Quarry Collecting Site.



Figure 3. Beaver Creek Quarry Pond

Ralph found a small sample that appeared to contain epidote. Pieces of drusy calcite on the host limestone/dolostone were abundant, but no large crystals. Mary and Ralph found clusters of small crystals of calcite. Joe found a plate of calcite crystals (Figure 4). The calcite appeared to fluoresce under both long and shortwave UV.



Figure 4. Calcite Crystals

Ralph broke apart a boulder containing vugs. The inside of the vugs were coated with a light to dark brown coating resembling goethite. A collector from the Delaware club found a dolomite specimen. Another found dendrites. Tim found calcite, and small crystals of a manganese minerals possibly psilomelane.

It soon was 11:30 and Dave requested that we finish so we could leave by noontime. We thanked Dave for letting us collect and headed home with our specimens.

## Upcoming Shows and Events:

### 2016

**July 9-10** – 50<sup>th</sup> Annual show, Gem and Mineral Society of Syracuse, Onondaga Community College SRC Arena, 4585 W. Seneca Turnpike, Syracuse, NY.

**July 9-10** –Annual show, Oxford County Gem and Mineral Association, Telspar High School, Rte 26, Bethel, ME.

**July 15-17** –Retail show, Treasures of the Earth Gem , Mineral and Jewelry Shows, Virginia Beach Convention Center; 1000 19<sup>th</sup> Street, Virginia Beach, VA.

**July 16-17** –Annual show, Herkimer Business Association, Herkimer High School, 801 W. German St., Herkimer, NY.

**July 30-31** –37<sup>th</sup> Annual Champlain Valley Gem, Mineral & Fossil Show sponsored by the Burlington Gem & Mineral Club. Tuttle Middle School, 500 Dorset St; S. Burlington, VT.

**July 30-31** -- 35<sup>th</sup> Annual Gem, Mineral, and Jewelry Show, sponsored by the Long Island Mineral and Geology Society, Cutchogue East Elementary School, 34900 Main Road (Rte/ 25). Cutchogue, NY



## Member's Finds

A piece from a much larger chunk of unakite collected from the Rose River, Virginia by Paul and Linda Holden and presented to the editor, who was unable to attend the trip. Thanks, Paul and Linda!!



Collected any interesting specimens? Send a photo or two to the editor at [bmorebugman@yahoo.com](mailto:bmorebugman@yahoo.com) for inclusion in the next issue of Rock Talk.

## SMRMC OFFICERS

### PRESIDENT

(position open)

Bob Davidson acting President

### Membership Chairman

Polly Zimmerman

[polly.zimmerman@verizon.net](mailto:polly.zimmerman@verizon.net)

### Programs Chairman

Carole Raucheson

[caroleal@verizon.net](mailto:caroleal@verizon.net)

### Secretary

Linda Holden

[lhholden@aol.com](mailto:lhholden@aol.com)

### Field Trip Chairman

David Lines

[Dave.lines@earthlink.net](mailto:Dave.lines@earthlink.net)

Ralph Gamba

[rgamba@verivon.net](mailto:rgamba@verivon.net)

### Treasurer

David Lines

[Dave.lines@earthlink.net](mailto:Dave.lines@earthlink.net)

### Editor

Timothy Foard

[bmorebugman@yahoo.com](mailto:bmorebugman@yahoo.com)

### Webmaster

Bob Davidson

[Bob.Davidson2@Yahoo.com](mailto:Bob.Davidson2@Yahoo.com)



**The Southern Maryland Rock and Mineral Club**

**Meetings take place on the 4<sup>th</sup> Tuesday of each month at 7:00pm**

**Clearwater Nature Center, 11000 Thrift Road, Clinton, MD.**

**For More information, call:**

**(301) 297-4575**

**We're on the web:  
SMRMC.org**