

GEM & MINERAL JOURNAL

Official Monthly
Publication of the Gem &
Mineral Society of
Lynchburg, VA, Inc
www.lynchburgrockclub.org

MAY 2016

VOLUME 25~ ISSUE 5

President's Message:

Hello To All,

It's in the plans for the GMSL to participate in the Uncle Billy's Day Festival on the first Saturday, the 4th of June. We plan to set up only the sluice and geode cracker. It will take less time to set up and will only need to rent two spaces. We hope we can count on a number of people to help set up, sell and take down that day. We always have a lot of fun as well as educate ourselves on mineral and rock identification.

There were several club members from Lynchburg and Roanoke that came to the Geo-science Museum at Radford University at the invitation of Dr. Steve Lenhart on Saturday April 23rd. The Museum is not finished as of yet, but we got to see a lot of nice specimens and life-like reproduction models of

Dinosaurs and other large creatures that use to roam the earth. We also took a tour of the old museum. A lot of it will end up displayed in the new facility along with a number of new specimens.

We were also lucky enough to come in about the time for a showing of the new Planetarium, which is located in the same building. It was quite a show with a close up view of all the planets plus a lot more. It is a must see when you are there.

I believe the program this month will be presented by Ed Blackford about his trip and collecting experience in the Africa. I hope you will all attend the May 18th meeting.

That's all for now.

Keep Looking Down,
John Haskins

From the First V.P.

Ed Blackford will be our speaker for the May meeting. He's a member of the Roanoke club and has recently returned from a trip to Ethiopia where he was interested in the opals they mine there. He'll tell us about his adventures in Africa and will have some opals to show us. Ed's a very interesting fella who has invested in a mining venture himself. We're looking forward to welcoming him.

Remember that earthquake we had almost 5 years ago now? Well it turned out to be something special. The shaking from that magnitude 5.8 earthquake whose epicenter was near Mineral, Virginia where many of us went on gold panning field trips was felt by more people than any other earthquake in U.S. History! This according to the U.S. Geological Survey. How about that!

The following report details what happened geologically.

Likely cause for recent southeast US earthquakes:
Underside of the North American Plate peeling off

Date: May 3, 2016

Source: University of North Carolina at Chapel Hill

Credit: USGS

Shaking from the magnitude 5.8 earthquake near Mineral, Virginia on August 23, 2011 was felt by more people than any other earthquake in U.S. history, according to the U.S. Geological Survey.

FULL STORY

The southeastern United States should, by all means, be relatively quiet in terms of seismic activity. It's located in the interior of the North American Plate, far away from plate boundaries where earthquakes usually occur. But the area has seen some notable seismic events -- most recently, the 2011 magnitude-5.8 earthquake near Mineral, Virginia that shook the nation's capital.

Continued on page 14



April Meeting Minutes

Meeting: Wednesday, April 20, 2016
@ 7:00 PM

Attendance: 45 members

Host: Pam and Eric Routon were hosts for tonight's meeting and Dave and Noel will host the May meeting.

On Time Drawing Winners: Cindy Reed, Joel Follmeyer, Jean Midkiff, Dave Callahan, Isabel Littke, Kendra Turner, Nona Haskins, Nathan Lester, and Tony Shields.

50/50 drawing winner: Dave Callahan.

**President - John Haskins-
New Business:** Dave Woolley announced the Franklin New Jersey fluorescent mineral dig is the end of April for anyone interested in going.

John received a call from the Altavista Chamber of Commerce wanting to know if the club is going to rent spaces for Uncle Billy's Day Festival the first weekend in June.

Club members decided to rent two spaces and only set up the Sluice and Geodes this year and not take items to sell. There will be a sign up sheet available next month for club members wishing to help with this event.

Dr. Steve Lenhart will open Radford University Geology Museum on April 23, 2016 for any club members wishing to tour what is currently ready.

First VP: Jack Curtin-announced tonight's program - Video

Second V.P. – Dave Callahan: Upcoming field trips: 4/23: American Rutile; 5/28: Radford and VT Mineral Museums possibly confederate iron mine in Floyd, VA. Jim Mizzio will try to contact someone at Luck Stone Quarry to see if he can get a contact for field trips.

Treasurer: Frank Midkiff- the current balance of \$5565.20, and announced that we received a reimbursement check for \$363.50 from the Southeast Federation.

Warren Darling provided items for the silent auction.

**Minutes submitted by
Linda Noble, Secretary**



2016 ELECTED OFFICERS

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**Members At Large-
Bernardino Rivera &
Eric Routon**

COMMITTEE CHAIR PERSONS:

Field Trips– David Callahan
Hospitality- Monthly Volunteers
News Articles– Natalie Darling
Silent Auction– Warren Darling
Swap for Rocks–Warren Darling
Website– Casper Voogt
Workshops– Dave Callahan
FRA Adult Liaison- OPEN
Membership- Thom Noble

PROGRAMS

The Program for the April meeting was a video. The May meeting program will feature Ed Blackford, Roanoke club member, who will talk about his recent adventures in Africa, where he went in search of Ethiopian opals. Please join us on Wednesday, May 18th @7:00PM/

Bench Tips By Brad Smith

“Bench Tips for Jewelry Making” and “Broom Casting for Creative Jewelry” are available on Amazon

DRILLING SMALL ITEMS

Small pieces need to be held securely while drilling to prevent them from spinning if the drill catches. Having sliced my fingers occasionally in my younger days, I avoid band-aids now by using flat-jaw pliers or a ring clamp. Pliers also save you if the piece gets hot. Put a little tape over the jaws of the pliers if needed to avoid scratches.



DRILLING A STONE

One of the things my students often ask to do is drill a hole through a piece of gemstone. The usual thought is to get a diamond drill, but I've been disappointed with them. I think the reason is that the tip of the drill is just pivoting in the hole and does not cut well. When it looks like the drill isn't cutting, the tendency is to push with

more force. The drill gets hot, and the diamond grit falls off.

A much better approach is to use a core drill. This is a small hollow tube with a coating of diamond grit at the business end. The diamonds easily carve out a circular arc without undue pressure or heat buildup.

Core drills are readily available from lapidary and jewelry supply companies. They come in sizes as small as 1mm and are very reasonable in price. For instance, a 2mm diameter drill is about \$6.

Chuck up the core drill in a drill press, Dremel or Foredom and be sure to keep the drilling zone wet to cool the tool and to flush out debris. Also, if you're drilling a through hole, go very easy on the pressure as the drill is about to cut through. Otherwise you will usually chip off some of the stone surface around the hole.



FIELD TRIP REPORT...



Past Field Trip American Rutile Quarry Saturday, April 23, 2016

Our April 23rd field trip to the old rutile quarry in Nelson County was well represented with 25 members about equally divided between the two clubs. Most were new members or their first time to this site. The weather was very pleasant and everyone enjoyed the outing.

I observed a lot of very pretty material being collected and everyone appeared to be pleased with their finds. This material is beautiful cut into cabochons or simply displayed as found. The blue quartz, black ilmenite and dark red rutile contrast beautifully against the white feldspar background. If you want to create something from your finds, both clubs have a workshop available to the members. If you have any workshop questions please ask an officer at the meeting.

This event is always held in April as the kudzu by this time is likely knee deep. If you missed this trip, hopefully we will be able to return in April next year.



Contact Information
for Field Trips
David Callahan,
Field Trip Chairman

Home phone: 540-297-1853

Cell Phone- 540-874-5201

E-mail dbc11@aol.com

Photographs from the Preview of the Radford University Geology Museum

Submitted by Linda Noble

***Thank You, Dr. Lenhart, for sharing your work
and passion for Geology with our clubs.***

Be sure to attend the May 28, 2016 Field Trip to see
these items and more.

(Field Trip info begins on next page.)

Up Coming Field Trips



For additional information or to sign up for field trips, please contact Dave Callahan, Field Trip Chairman

Home phone: 540-297-1853

Cell Phone- 540-874-5201

E-mail dbcall1@aol.com

May Field Trip

OFFICIAL COMBINED RADFORD UNIVERSITY (RU) and VIRGINIA TECH (VT) MUSEUM FIELD TRIP

The Gem and Mineral Society of Lynchburg, VA. Inc.
(GMSL)

The Roanoke Valley Mineral and Gem Society, Inc.
(RVMGS)

SATURDAY, MAY 28, 2016

This is a go on your own trip... Meeting at the museum parking lots...see all the details below.

BY SPECIAL ARRANGEMENT THE FREE MUSEUMS
WILL BE OPENED FOR OUR GROUP ON THIS DAY.

**Arrival times at the museum. RU...11am and
VT...1pm (DO NOT BE LATE) We must enter the
locked building as a group.**

There is no age limit so members and youth are
welcome.

Sign-up required...Call me...email me...or sign up at
the meeting

RADFORD UNIVERSITY MUSEUM: Radford, VA. On
campus in the new ***Center for the Sciences*** building.

ADDRESS: 801 Main Street (US Route 11) This
address is in front of the Center. Campus buildings have
no address.

PARKING: There is a free parking area adjacent to the
building. There is open parking on campus Saturday
except handicap areas.

THE TRIP: From Lynchburg... **allow 2 ½ hours
minimum**, From **Roanoke allow 1 hour**. Drive US 460
West toward Roanoke. Turn right on US 220 Alt N,
Cloverdale Rd to I-81 South. Note: there is a traffic light
at this intersection with a Walmart and Lowe's on your
right. Continue on to I-81 South and drive to Exit 109

(Radford Exit). Go to the fourth traffic light (Main Street
and US 11) and turn right and then right at the first traffic
light into the parking area. This parking area is adjacent
to the new **Center for the Sciences** building. The
museum is inside and we will assemble in this parking
lot. Steve Lenhart will meet our group here and we will
enter as a group. The museum is not quite finished but
there are some interesting things to see. From all reports
I have heard, everyone is quite impressed with the
progress so far and we are honored to have this
preliminary preview. The official grand opening has been
set for October 15th 2016. This is also the date for the
Geo Fair at VT (10-4pm)

CAMPUS MAP: I will have maps at the meeting or go to
the Radford University web site and view your own
campus map.

MUSEUM VIEWING TIME: Since the all the displays
are not yet completed, our stay here will be no more than
an hour. We will assemble in the parking lot for the 20
minute drive to Blacksburg and the VT museum. Steve
Lenhart may lead our group but see the directions below.

*Below: Radford Museum photo, submitted by Linda
Noble, Article continued on next page.*



Up Coming Field Trips



continued from page 5

VIRGINIA TECH GEOSCIENCES MUSEUM: Blacksburg, VA. On campus at 2062 Derring Hall second floor.

ADDRESS: 1405 Perry Street off West Campus Drive and opposite Duck Pond Road. Derring Hall is beside a building under construction.

PARKING: There is a free parking area adjacent to the building. There is open parking on campus Saturday except handicap areas.

THE TRIP: Driving directions from RU museum to the VT museum:

~From the parking lot, turn left onto Main Street (Rt. 11-South)

~Follow US-11 S across the New River, then 1.1 miles to Peppers Ferry Blvd (Rt. VA-114). Turn right on Peppers Ferry Blvd.

~Drive 4.46 miles and turn left onto Prices Fork Rd.

~Drive 7.47 miles and turn right on West Campus Dr. in Blacksburg.

~At .18 miles, turn left on Perry Street.

~1405 Perry Street, Derring Hall is on the right and the new construction is on your left. Try to find a parking area in the lot. There are a few additional places in the rear of the building. Nothing is reserved on weekends except handicapped. **CAMPUS MAP:** I will have maps at the meeting or go to the Va. Tech web site and view your own campus map.

MUSEUM VIEWING TIME: We must be in the parking lot and ready to enter the front door of Derring Hall **no later than 1pm.**

Museum director Llyn Sharp has made special arrangements to open the museum for our large group on this Saturday. The front door will be locked so any stragglers cannot get in. There may be some traffic congestion on this day so I will assign a member to stand by the door until about 1:15 minutes to let you in.

I would think that we should be able to see the museum and depart by 3pm. There are places in Blacksburg where we can eat a late lunch unless you bring your own.

CONTACT: David Callahan, Field Trip Chairman for The Gem and Mineral Society of Lynchburg, VA. Inc. and The Roanoke Valley Mineral and Gem Society Inc. Landline: [540-297-1853](tel:540-297-1853) Cell: [540-874-5201](tel:540-874-5201) (day of trip only) email: dbc11@aol.com

Derring Hall- 1405 Perry St., Blacksburg, VA





Dixie Mineral Council Field Trips

The Southeast Federation of Mineralogical Societies, Inc



The Friendly Federation - Founded in 1976 to serve
DMC Program of the SFMS Field Trip Committee
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**An Official Field Trip of the Henderson
County Gem and Mineral Society
(Hendersonville, NC) (HOST)
An Official Field Trip of the GMSL AND
RVMGS**

Friday, May 20, 2016

**Vulcan Quarry and Mineral and Lapidary Museum
Hendersonville, NC**

Saturday, May 21, 2016

**Treasure Valley the former Lookadoo Gold Mine (Fee
Site)**

TRIP (May 20): Vulcan Quarry and Hendersonville Mineral and Lapidary Museum. Hendersonville Vulcan Quarry is where they mine the beautiful Henderson Augen Gneiss which is unique to this area.

NO COLLECTING: A Vulcan Quarry employee will lecture on materials they find, collection methods and other interesting facts. After a short hike we will see a working pit mine. Pictures below.

FEE: There is no cost.

SPECIAL CONDITIONS: Participants will walk about a half mile to the quarry from the lecture room.

BRING: No special equipment other than walking shoes are needed as this is not a collecting trip. Water bottle might be a good idea.



DIRECTIONS AND WHERE TO

MEET: Interstate 26 exit 49 (Hwy 64 East/Batcave) continue .6 miles and meet in Ingles Grocery Store parking lot near the corner of Hwy 64 and Howard Gap Road at 12:30.

After the Quarry visit at 3:30 you are invited to a meet and greet at 400 N Main St Hendersonville at the Mineral and Lapidary Museum.

CONTACT: Margaret Gilbert
8 2 8 - 6 7 4 - 1 6 2 5
gilbert3487@att.net

Continued on page 12

UPCOMING EVENTS



May 2016

May 21- 27th annual Chesapeake Gem & Mineral Show presented by the Chesapeake Gem & Mineral Society. Roll Armory, York Rd. at Baltimore I-695, Tonson, MD. Info: www.chesapeakegemandmineral.org

May 27-29- Treasures of the Earth Gem, Mineral, Jewelry, Fossil and Bead Show and Sale- Salem Civic Center in Salem, VA. www.toteshows.com for details.

June 4-5- Annual Mineral, Gem, Jewelry, Fossil Show, Sell & Swap sponsored by the Orange Co. mineral Society. Museum Village, 1010 Rt 17M; Monroe, NY. Contact: [<clynefrancis@gmail.com](mailto:clynefrancis@gmail.com)

June 18, 9-5- Region IV Potluck Picnic and Rock Swap/Sale. See flyer on next page or contact Dave Lines at 240-427-7062 or dave.lines@earthlink.net

June 24-26- Treasures of the Earth Gem, Mineral, Jewelry, Fossil and Bead Show and Sale- Fishersville VA at The Augusta Expo Center. (I-64, exit 91) www.toteshows.com for details.



SUN	MON	TUES	WED	THURS	FRI	SAT
1	2	3	4	5	6	7
8	9	10	11	12	13	14 Workshop at Calalahans
15	16	17	18 Meeting 7PM	19	20 Field Trip	21 Field Trip
22	23	24	25	26	27	28 Field Trip
29	30 Memorial Day	31			<p>Congrats Graduates!</p>	

REMINDER...

Club workshops are held on the second Saturday of each month at Dave Callahan's home. Workshops are open to members only, and all members are encouraged to attend when possible.

There will be some discussion at this months meeting about possibly offering other days for the workshops also.

This is a great learning & fellowship opportunity, as well as a way to contribute to your club. You can "learn" while helping to fabricate items for sale at our fall festival, then use the equipment available to complete your own personal pieces.

Please consider coming out, regardless of your level of experience. All help is needed and appreciated!



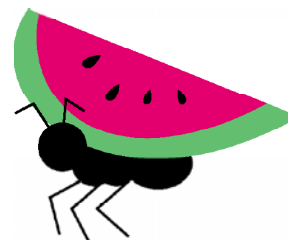
The Southern Maryland Rock & Mineral Club is proud to sponsor the 2016
Eastern Federation of Mineralogy and Lapidary Societies (EFMLS)

Region IV Potluck Picnic and Rock Swap/Sale



Gilbert Run Recreational Park
 Charlotte Hall, MD

Saturday, June 18, 2016
9 am - 5 pm



Admission to the Park is \$5 per carload
(No charge for swapping or selling)

"This is an old-fashioned rock swap where people who collect rocks, minerals and fossils will be selling and trading specimens"

Details

This is a free event for all EFMLS rock club members and their families and friends. In addition to minerals, fossils and lapidary for swap/sale each attendee/family is asked to bring a potluck dish to share, and one labeled specimen donation for an auction that will take place after lunch. The auction will help defray the cost of the event. There is ample parking for tailgate swapping/selling. Please bring your own tables and chairs. There are onsite restrooms and handicap access. Donations of excess rocks and related tools to the "Treasure Box" are welcomed and are free for anyone to take. The Southern Maryland Rock and Mineral Club will provide plates, cups, plasticware, sodas, and bottled water.

Schedule of Events

9:00 - 12:00 Swap and sell
 12:00 - 1:30 Potluck Lunch and Auction
 1:30 - 5:00 Swap and sell

Contact Person: Dave Lines (240)-427-7062

Dave.Lines@earthlink.net

Address:
**Gilbert Run
 Recreational Park**
 13140 Charles Street
 Charlotte Hall, MD,
 20622

Directions:

From the D.C. Beltway:

Take Rt. 5 South (Exit 7A) towards Waldorf
 Go 12.3 miles and turn left onto Mattawoman Beantown Rd. (Rt.5)
 Go 3.2 miles and turn left onto Leonardtown Rd. (Rt.5).
 Go 4.9 miles and turn right on Olivers Shop Rd.
 Go 5.9 miles and turn left onto Charles St. (Rt 6)
 Go 1 mile and turn left into Gilbert Run Recreational Park

OR

Take Rt. 301 to La Plata, turn left onto Charles St (Rt 6 East) and go 8.6 miles to Gilbert Run Recreational Park
 Turn left into Gilbert Run Park and follow the signs to the Hilltop Pavilion Parking lot.

From La Plata, Md

From Rt. 301, take Rt. 6 East (Charles St) 8.6 miles
 Turn left into Gilbert Run Park and follow the signs to the Hilltop Pavilion Parking lot.

Safety Matters- Terribly Toxic Treasures

by Ellery Borow, Safety Chair,

Reprinted from EFMLS News, May 2016

Tightly tucked toward the top of our trinket trunks are treasures too toxic to touch, tempting us though as they tease our thoughts.

Yes, tis true! Tossed throughout our treasure trunks are things that are toxic to the touch and taste, even in this totally tantalizing, yet tranquil, task of teaching there are terrors taken my task.

Well, enough of these terrible Thesaurus taking "t's." The message this month is a mention that there are dangers lurking among our mineral treasures and what to do about that. Think for a moment, if you will, about the chemical compositions of some of the minerals we collect- autunite, arsenopyrite, cinnabar, betafite, thorite, cuprosklodowskite, malachite, even beach shells for the jewelry we make have within them chemistries that, under certain conditions of working, handling, or storage can present concerns about their part in maintaining our health. Think of the conditions in which we find our mineral treasures—conditions that hide biting, stinging insects, or rash causing plants, or offer precarious physical conditions which may impact ones health.

Our hobby is associated with great joys but also has within it certain dangers with which we should not be touched with bare hands and fingers. There are minerals that should not be worked dry. There are minerals that produce slivers that, oh so easily, penetrate the skin. There are minerals of a radioactive nature as well. Each of those situations requires certain protective measures.

We encounter many specimens of fauna and flora along the way as we walk to our favorite collecting localities. Many of those same fauna and flora are ones which bite, sting or scratch us. Some things just lay in wait to dig into our delicate hides, or scratch and tear us. We don't



usually encounter hiding tigers or crouching dragons on our trips but those perky little eight and six legged things sure can mess with our enjoyments.

What is a body to do to protect oneself? Glad you asked! We have a hobby based on sharing, giving, and teaching! Most of the hobby's enthusiasts out there, ones I've met over the years, follow those practices in all ways. There are folks in our clubs who have all manner of experiences with our hobby's related dangers and hazards. What I would like to offer here is a thought for your consideration. I would like to offer a suggestion that we encourage our members with the most experience to share, give, and teach not just about their knowledge with rocks, minerals, and fossils, but also share, give an teach what they have learned about being safe—safe mineral handling, safe storage, safe caring and feeding of our treasures, and when we are traipsing on quarry roads, safe avoidance of biting insects and so on.

I'd like to broaden the sharing approach of our hobby to all things safety. indeed, if your club does not have a safety coordinator, I would recommend your investigation of the benefits to your club with having a dedicated safety person. And, if you already have such a dedicated person in your club, I applaud your forethought! If you have a safety coordinator making safety fun, interesting, and a learning experience, you are well ahead of the safety curve!

Please be safe, and think safety.

Welcome New Members...

Ken &
Cindy

Reed, John Stephenson,
Ken Hayes from
Concord, VA

Kenny,

Stephanie, Kody & Killian
Silverman from
Evington, VA

Minerals in the U.S.A.

In this word search are the names of minerals found in the United States of America. The names can run left to right, right to left, top to bottom, bottom to top or diagonally. When you are done, use the internet and find information and pictures of each mineral.

R	A	R	S	T	A	U	R	O	L	I	T	E	F	T
Q	H	P	E	T	I	R	A	B	A	M	W	T	R	O
U	R	O	C	V	T	O	P	A	Z	U	A	G	A	U
A	F	R	D	G	L	K	T	A	B	S	V	B	N	R
R	F	L	U	O	R	I	T	E	U	C	E	Z	K	M
T	N	A	I	L	C	X	S	L	P	O	L	E	L	A
Z	E	J	E	D	S	H	F	Y	G	V	L	T	I	L
O	P	M	E	R	C	U	R	Y	Y	I	I	I	N	I
S	T	B	V	I	R	I	U	O	P	T	T	O	I	N
K	U	N	Z	I	T	E	T	S	S	E	E	T	T	E
B	N	I	E	E	S	H	I	Z	U	I	K	I	E	T
D	I	A	M	O	N	D	L	B	M	E	T	N	N	R
E	T	I	L	A	H	P	E	C	O	P	F	E	R	O
D	E	T	I	C	L	A	C	V	D	W	R	B	A	N
D	A	T	O	L	I	T	E	A	N	E	L	A	G	A

Mineral names in this word search:

Copper; Fluorite; Galena; Staurolite; Rhodochrosite; Tourmaline; Garnet; Gold; Silver; Pyrite; Halite; Benitoite; Neptunite; Wavellite; Quartz; Barite; Diamond; Mercury; Sulfur; Gypsum; Topaz; Kunzite; Rutile; Trona; Muscovite; Datolite; Calcite; Franklinite.



A Mineral, by definition, is...

1. **Inorganic**, which means that it is not made by a living organism.
2. **A solid**. There is one unusual exception. Native mercury is a mineral and is the only metal that is a liquid at normal temperatures.
3. Has a **regular crystal structure**. The crystal structures are described as crystal systems.
4. **Made by nature**, which means minerals are not made, directly or indirectly from human activity.
5. Has a **predictable chemical formula**.

<http://www.kidsloverocks.com/html/mineral.html>



Dixie Mineral Council Field Trips

The Southeast Federation of Mineralogical Societies, Inc



The Friendly Federation - Founded in 1976 to serve
DMC Program of the SFMS Field Trip Committee
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Continued from page 7

TRIP (May 21): Treasure Valley near Nebo NC. Treasure Valley is only open to scheduled groups. Treasure Valley is located in the South Mtn. gold belt. It was formerly the Lookadoo mine. Lookadoo was a working gold mine in the late 1800's and early 1900's. The owner will give a tour if you are interested in the history.

COLLECTING: Gold and native stones are found in the stream or you may work from dry dirt. Pictures below.
FEE: \$35 each. If we have more than 20 people the cost will reduce to \$30.

For an additional fee: 1 camping site with water and electricity and 2 dry camping spots with electricity for campers are available for Friday night if we have at least 8 people interested. Tent camping would also be available. Facilities are outhouses and you would need to bring your own water.

BRING: To work the material you would need a gold pan, buckets, shovel and classifiers. Water shoes are a must.

DIRECTIONS AND WHERE TO MEET:

Exit 86 off Interstate 40. Meet at Lowes Truck stop at 9am. (Note: Exit number has been corrected)

CONTACT: Margaret Gilbert
828-674-1625 gilbert3487@att.net
If you want to camp let me know and I'll get you the information.



An Official Field Trip of the Columbia Gem and Mineral Society (Columbia, SC) (HOST)
An Official Field Trip of the GMSL AND RVMGS

Thermal City Gold Mine **Union Mills, NC**

Saturday, June 4, 2016

8:30 AM EST

Fee Site

TRIP: Thermal City Gold Mine is a recreational gold and gem mining facility in Union Mills, NC. Thermal City Gold Mine offers a unique experience hosted by people who are real prospectors. They are dedicated to keeping the tradition and history of Gold Mining in North Carolina alive. Anyone who wants to pan or prospect for gold is welcome. They enjoy teaching and talking about mining.

COLLECTING: Gold collecting at Thermal City is done by panning in the flumes or river or by sorting a load of material using the trommel or hi-banker machines and then panning the effluent.

The flumes are covered so you can mine rain or shine. This activity is enjoyed by miners ages 3 to 93. Pans and screens are provided with the panning fee. You can also pan for gold in the river. In this case, bring your own pan and screen, although supplies are available for sale in the mining supplies store.

For the trommel and hi-banker runs, a one-ton load of material is provided. The material is run through the machines to separate the *Continued on next page*

DMC FIELD TRIP

Continued from page 12

large rocks from the fine sandy material that contains the gold. With the trommel, the material is placed in the hopper and a water hose is used to push it through the machine. The larger rocks are moved aside and sand comes out of the end of the sluice which is collected in a wide-mouth bucket. This sand is then panned to sort out the gold. With the hi-banker, the material is delivered near the machine and is shoveled into the hopper which has water running through it. The rocks are held by the grates as the material moves down the sluice and the sand comes out the end, also into a wide-mouth bucket. This sand is then panned to sort out the gold. Typically groups of 3 to 5 share the work and the gold resulting from a trammel or hi-banker run. One trommel and one hi-banker has been reserved for the morning of June 4, from 9:00 to 12:30 for the DMC field trip. Please email or call the contact below if you wish to sign up to share one of the runs. Afternoon runs, from 1:00 to 4:30 are also available. You may reserve these by calling the Thermal City Gold Mine.

Gem collecting is also offered by sorting through buckets of material. The gem stone material found here is representative of minerals found in NC such as emerald, citrine, moonstone, rubies, aventurine, smoky quartz, rose quartz, and tourmaline. Stones can be inspected and identified free of charge. You may have the stones cut and made into jewelry by their experienced gem cutter.

FEES:

- Panning fees for using the flume are \$10.00 per person per day. The fee includes use of pans and screens.
- Buckets of gem stone material range in price from \$5.00 to \$75.00.
- Trommel and hi-banker runs are \$60.00. One of each of the machines has been reserved for the morning session for this field trip. They can be shared amongst 3 to 5 people. Please email or call the field trip contact below if you wish to reserve a place on the machine.

Mining Supplies: Thermal City Gold Mine offers recreational Gem Mining NC and Gold Panning NC equipment for sale. We are an authorized dealer for Keene engineering. We carry hi-banker/dredge combination, prospecting supplies, a wide variety of prospecting books, sluice boxes, gold pans, pumps, and tons more!

BRING: Lunch and fluids. Pans and screens are provided for gold panning at the sluice. If you are panning at the river, you may bring your own or purchase supplies at the Thermal City mining supplies store. If you are using the trommel or hi-banker you will need a wide-mouth bucket to collect the sand. You may bring your own or purchase one at Thermal City.

DIRECTIONS AND WHERE TO MEET:

The mine opens at 8:30. Meet at the mine at 8:30, tell them you are with the DMC field trip and you may begin when you arrive.

***Thermal City Gold Mine
5240 US 221 North Hwy,
Union Mills, NC 28167***

From Columbia, SC:

- 1 Take I-26 north, take exit 1 for SC14 towards Landrum
- 2 Turn right onto Landum Rd., continue straight onto Sandy Plains Rd. then continue onto Coxe Rd.
- 3 Turn left onto US-221 N/S Main St, continue to follow US-221 N. The mine will be on the right.

From Atlanta, GA:

- 1 Follow I-85 N to Spartanburg County. Take exit 1 from I-26 W
- 2 Keep left at the fork to stay on I-85 N
- 3 Use the right 2 lanes to take exit 70 to merge onto I-26 W toward Asheville
- 4 Take exit 1 for S Carolina 14 toward Landrum
- 5 Turn left onto US-221 N/S Main St, continue to follow US-221 N. The mine will be on the right.

***Accommodations and contact information
on page 15***

From the First V.P.

continued from page 1

Now scientists report in a new study a likely explanation for this unusual activity: pieces of the mantle under this region have been periodically breaking off and sinking down into the Earth. This thins and weakens the remaining plate, making it more prone to slipping that causes earthquakes. The study authors conclude this process is ongoing and likely to produce more earthquakes in the future.

"Our idea supports the view that this seismicity will continue due to unbalanced stresses in the plate," said Berk Biryol, a seismologist at the University of North Carolina at Chapel Hill and lead author of the new study. "The [seismic] zones that are active will continue to be active for some time." The study was published today in the *Journal of Geophysical Research -- Solid Earth*, a journal of the American Geophysical Union.

Compared to earthquakes near plate boundaries, earthquakes in the middle of plates are not well understood and the hazards they pose are difficult to quantify. The new findings could help scientists better understand the dangers these earthquakes present.

Old plates and earthquakes

Tectonic plates are composed of Earth's crust and the uppermost portion of the mantle. Below is the asthenosphere: the warm, viscous conveyor belt of rock on which tectonic plates ride.

Earthquakes typically occur at the boundaries of tectonic plates, where one plate dips below another, thrusts another upward, or where plate edges scrape alongside each other. Earthquakes rarely occur in the middle of plates, but they can happen when ancient faults or rifts far below the surface reactivate. These areas are relatively weak compared to the surrounding plate, and can easily slip and cause an earthquake.

Today, the southeastern U.S. is more than 1,056 miles from the nearest edge of the North American Plate,



which covers all of North America, Greenland and parts of the Atlantic and Arctic oceans. But the region was built over

the past billion years by periods of accretion, when new material is added to a plate, and rifting, when plates split apart. Biryol and colleagues suspected ancient fault lines or pieces of old plates extending deep in the mantle following episodes of accretion and rifting could be responsible for earthquakes in the area.

"This region has not been active for a long time," Biryol said. "We were intrigued by what was going on and how we can link these activities to structures in deeper parts of the Earth."

A CAT scan of the Earth

To find out what was happening deep below the surface, the researchers created 3D images of the mantle portion of the North American Plate. Just as doctors image internal organs by tracing the paths of x-rays through human bodies, seismologists image the interior of the Earth by tracing the paths of seismic waves created by earthquakes as they move through the ground. These waves travel faster through colder, stiffer, denser rocks and slower through warmer, more elastic rocks. Rocks cool and harden as they age, so the faster seismic waves travel, the older the rocks.

The researchers used tremors caused by earthquakes more than 2,200 miles away to create a 3D map of the mantle underlying the U.S. east of the Mississippi River and south of the Ohio River. They found plate thickness in the southeast U.S. to be fairly uneven -- they saw thick areas of dense, older rock stretching downward and thin areas of less dense, younger rock.

"This was an interesting finding because everybody thought that this is a stable region, and we would expect regular plate thickness," Biryol said.

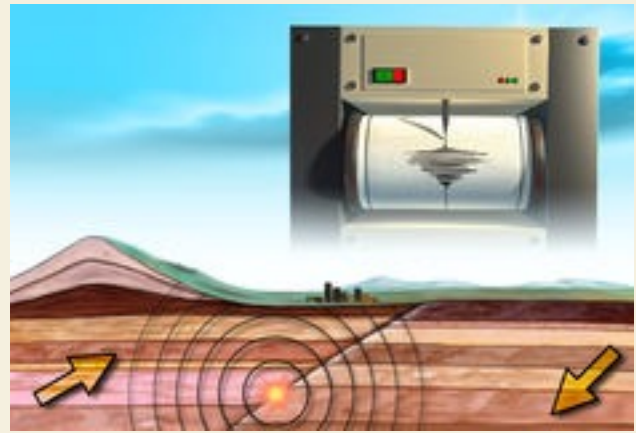
Continued on next page

From the First V.P.

continued from page 14

At first, they thought the thick, old rocks could be remnants of ancient tectonic plates. But the shapes and locations of the thick and thin regions suggested a different explanation: through past rifting and accretion, areas of the North American Plate have become more dense and were pulled downward into the mantle through gravity. At certain times, the densest parts broke off from the plate and sank into the warm asthenosphere below. The asthenosphere, being lighter and more buoyant, surged in to fill the void created by the missing pieces of mantle, eventually cooling to become the thin, young rock in the images.

The researchers concluded this process is likely what causes earthquakes in this otherwise stable region: when the pieces of the mantle break off, the plate above them becomes thinner and more prone to slip along ancient fault lines. Typically, the thicker the plate, the stronger it is, and the less likely to produce earthquakes. According to Biryol, pieces of the mantle have most likely been breaking off from underneath the plate since at least 65 million years ago. Because the researchers found fragments of hard rocks at shallow depths, this process is still ongoing and likely to continue into the future, potentially leading to more earthquakes in the region, he said.



Story Source:

The above post is reprinted from materials provided by University of North Carolina at Chapel Hill. The original item was written by Lauren Lipuma. Note: Materials may be edited for content and length.

Journal Reference:

1 C. Berk Biryol, Lara S. Wagner, Karen M. Fischer, Robert B. Hawman. Relationship Between Observed Upper Mantle Structures and Recent Tectonic Activity Across the Southeastern United States. *Journal of Geophysical Research: Solid Earth*, 2016; DOI: 10.1002/2015JB012698

DMC FIELD TRIP

Continued from page 13

ACCOMMODATIONS:

Cabins and campsites are available at Thermal City Gold Mine.

Americas Best Value Inn, 4248 Us 221 S, Marion, NC 28752

Hampton Inn Marion, 3560 U.S. 221 South, Marion, NC 28752

Holiday Inn Express Forest City, 200 Holiday Inn Dr., Forest City, NC 28043

Comfort Inn, 178 Hwy 70 W, Marion, NC 28752

Travelers Inn and Suites Forest City, 2600 Hwy 74a, Forest City, NC 28043

CONTACT: Angela Valvasori, President,
Columbia Gem and Mineral Society
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The purpose of the Gem & Mineral Society of Lynchburg, VA is to promote education in The Earth Sciences, including: Mineralogy, Geology, Gemology, Paleontology, and Crystallography



Lynchburg Rock Raiders is the official Future Rockhounds of America association of the The Gem & Mineral Society of Lynchburg, VA. Inc.



MEETING LOCATION

*DIRECTIONS: Fairview Center;
3621 Campbell Ave., Lynchburg, VA 24501
434-847-1751~ From Route 29 expressway or Route 460, take the Campbell Avenue Exit. Follow Campbell Ave. to 3621, which is across the street from a Citgo Gas Station. There is a fence around the building and parking on both streets running along the sides of the property as well as a lot in the back. We will be looking for you!*