

TAR HEEL



ROCKHOUND

AUGUST 2024

Catawba Valley Gem & Mineral Club, Inc.

2024 Officers and Committees

President:	Tracie Jeffries 828-430-1341	Education:	George Max 828-328-9107
Vice President:	Rick Glover 828-446-7634	Show Chairman:	Dean Russell 828-303-1448
Treasurer:	Terry Russell 828-303-1563	Scholarship:	George Max 828-328-9107
Secretary:	Dean Russell 828-303-1448	Eastern Fed. Liaison:	
Editor:	Tracie Jeffries 828-430-1341	Southeastern Fed. Liaison:	
Field Trip:	Tina Lakhotia 727-688-1068		

Club Address: PO Box 2521, Hickory NC 28603-2521
 Regular Meetings: Second Tuesday, 7:00 PM
 St. Aloysius Catholic Church, 921 2nd St. NE Hickory, NC
 Annual Dues: Family, \$25, Individual, \$18

The purpose of the Club is to increase the individual's knowledge of the earth sciences and to aid in the development of lapidary and related arts and skills; to promote fellowship and exchange of ideas; to hold exhibitions, contests, lectures and demonstrations for educational purposes; to help interest more people in the gem and mineral hobby; and to capture and preserve the beauty of nature, the arts, and the works of man.

CATAWBA VALLEY GEM AND MINERAL CLUB, INC.

Web Master: Mike Streater

<http://www.cvgmc.com>

Editor: Tracie Jeffries,
 3118 Barus Street, Valdese, NC
 botanynerd89@gmail.com

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PRESIDENT'S REPORT

Hello Fellow Members,

It is time to start planning and getting ready for our October Gem and Mineral Show, October 18th – 20th. It will be here before we know it! For the month of August, you need to start thinking and planning about how you can help and participate, and start marking important dates and times in your calendars. In September and October, we will finalize our lists of volunteers and their responsibilities. Remember, it takes a lot of planning and work to do a show as large and as awesome as our show is! Many people have already been working behind the scenes for months to get the show organized but they need other club members to step up and help during the show to ensure it is successful! Below is a list of areas where we will need volunteers. Which ones can you help with?

- Making Grab Bags:
 - September 21, 9:00 – 12 Noon,
 - See announcement in August newsletter

- Selling Grab Bags:
 - Friday, Saturday, and Sunday, October 18 – 20th
 - Terry R. will have signs ups later.

- Ticket Sells:
 - Friday, Saturday, and Sunday, October 18 – 20th
 - Terry R. will have signs ups later.

- Show Cases:
 - If you plan on doing a show case be thinking about what color you plan to exhibit and how many and what size case(s) you need. There will be a form in September's newsletter for you to fill out to inform George M.

- Demonstrations:
 - We need volunteers to demonstrate lapidary arts such as cabbing, faceting, and wire wrapping for Saturday only. If you are interested, please see Tracie J.

- Mini Mine :
 - We need volunteers to help run the mini mine on Saturday and if possible, on Sunday. This is a very popular activity with the smaller children. If you are interested, please see Tracie J.

- Kid's Corner:
 - Friday, Saturday, and Sunday, October 18 – 20th
 - We would like to run this all three days if possible. The children love this area, where they can touch, explore, and ask questions about rocks, minerals, and fossils. If you are interested, please see Tracie J.
- Set up:
 - We need volunteers to help set up Thursday Oct. 17th in the afternoon, especially tables and exhibit cases.
- Take Down :
 - We need volunteers to help take down tables, exhibit cases, and pack materials for storage on Sunday October 20th in the afternoon.

There will also be lots of small jobs people can help with through-out the show. So, as you can see there is a lot of planning and work that goes into running and making a show successful. That is why we need you!

“Volunteers do not necessarily have the time; they have the heart.” -Elizabeth Andrew

Tracie Jeffries

CVGMC MINUTES FOR JULY 9, 2024

Due to unforeseen circumstances the July minutes will be sent later for members to read.

AUGUST PROGRAM

Our next meeting will be August 13th at 7:00 PM. The program will be a quiz bowl format. Your knowledge of geology will be tested with various questions and there will be prizes. This will be a different and fun program!

GRAB BAG WORKDAY

Mark your calendars! We will pack grab bags for the show on **Saturday, September 21** from **9:00 AM to 12 noon**. We will meet at the **St. Andrew's Lutheran Church 629 Eighth Street NE, Hickory**. We will work in Fellowship Hall on the bottom floor so park in the lot at the back.

Please bring a variety of different rocks, minerals, and fossils which are clean and of appropriate size (no larger than a baseball.) Remember everything has to fit into a small paper bag. Grab bags are a very popular item at our rock shows especially with the children and we need as many as we can make.

We also need to keep in mind that we have another show next March. That gives us very little time to collect for more grab bags. So please when you go on trips gather as much material as you can. Depending on how many bags we make, we may want to discuss holding some bags back for the show in March.

Even if you don't have material, you can still come to help and join the fun!

GEODE PROGRAM AT THE MAIDEN LIBRARY

On July 24th Meridith T. and I (Tracie J.) gave a program on geodes for young children at the Maiden Public Library. The program was well attended with close to 35 or more children and their parents. Originally 20 children registered but on the day of the program there were at least 6 walk-ins at the last minute. We did a short informational session on what is a geode and how they form. Then we showed lots of examples and let the children and parents ask questions. I was surprised at how many questions were asked from both children and parents! Everyone was excited and curious about geodes. Then came the fun part! All the children got a geode and we went out into the parking lot to crack them open. The children were very engaged, enthusiastic, and happy with their geodes. There were several duds but we had plenty of extras to ensure everyone was happy. I would like to give a special thanks to the Maiden Library, especially librarian Allison M. for inviting us, helping to arrange the program, providing geodes, and assisting with the children. I would also like to thank our club members Meridith T. for helping with the program and children and Shawn O. for getting us such a good deal on some awesome geodes!

GEOLOGY MADE SIMPLE: ULEXITE

By Tracie J.

Ulexite is a boron silicate mineral ($\text{NaCaB}_5\text{O}_6(\text{OH})_6 \cdot 5 \text{H}_2\text{O}$). It was discovered around 1850 by German chemist G. L. Ulex and named after him. The basic traits of this sedimentary mineral are shown in table one. Ulexite is naturally formed in evaporation pools and deposits. It is an important source of boron which has many industrial uses. Boron and boron compounds such as borax, boric acid, and boric oxide, are used in the production of glass, ceramics, fiberglass, detergents, fertilizers, insecticides, and many other products. It is found around the world, but most notably in Boron, California in the US, Catamarca Province of Argentina, and the Balikesir Province of Turkey.

TRAIT	ULEXITE
Color	Colorless to white
Moh's	2.5
Luster	Vitreous, silky or satiny in fibrous aggregates
Fracture	Uneven across fibers
Cleavage	Perfect
Specific Gravity	1.95–1.96
Streak	White
Diaphaneity	Transparent - opaque
Crystal Form/ Habit	Acicular to fibrous, triclinic crystal system
Other	Slightly soluble in water May be fluorescent depending on impurities

TABLE 1: Basic Characteristics of Ulexite

Most forms of Ulexite are fibrous or acicular (needle-like) in habit but there are also other unique forms, (see images 1-5). However, the most recognizable form is known as 'TV Stone' or 'TV Rock'. In this form the thin acicular crystals are arranged in parallel bundles (see image 6) and give the mineral some very unique optical properties.



IMAGE 1: These flower like growths of Ulexite crystals are known as Clam Shell Ulexite and only found at Boron, California.

<http://www.lehighminerals.com/B%20MINERAL%20OF%20THE%20MONTH%20p1.htm>



IMAGE 2: A complex mass of acicular Ulexite from Turkey

https://www.mindat.org/a/best_ulexite



IMAGE 3: A form of Ulexite commonly called “Cotton Ball Ulexite”, from Turkey.

<https://www.etsy.com/listing/1587174897/cotton-ball-ulexite-tv-rock?gpla=1&gao=1&>



IMAGE 4: Acicular Ulexite with Calcite and Colemanite from Boron, Kern Co., California

<https://www.mineralauctions.com/items/calcite-colemanite-on-ulexite-kay-robertson-coll-83146>



IMAGE 5: Fibrous Ulexite before being cut and polished.

https://www.etsy.com/listing/1573045060/fibrous-crystalline-ulexite-tv-rock?ga_order=most_relevant&ga_search_type=all&ga_view_type=gallery&ga_search_query=ulexite&ref=sr_gallery-3-3&frs=1&sts=1&content_source=01bbeff26283782ae9ed961695aaec65dbf26cab%253A1573045060&organic_search_click=1



IMAGE 6: The Ulexite fibrous form known as "TV STONE".

<https://www.mindat.org/min-4085.html>

So, what is so unique about ulexite? The long parallel bundles of thin cylindrical crystals act like a natural fiber optic cable. Ulexite is capable of an optical phenomenon called 'total internal reflection'. This is how it transmits an image through the specimen in such a way that it gives the illusion the stone has no depth (see image 7 and 8).

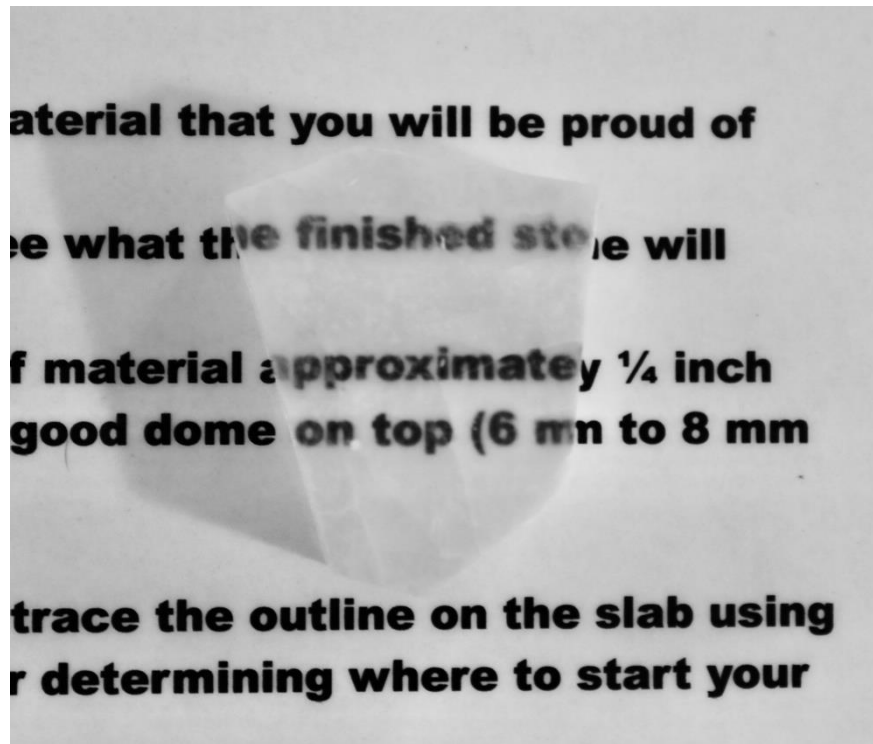


IMAGE 7: Note the clear transmission of the image through the Ulexite specimen. The image appears to be at the top of the specimen.
Photo by Tracie J.

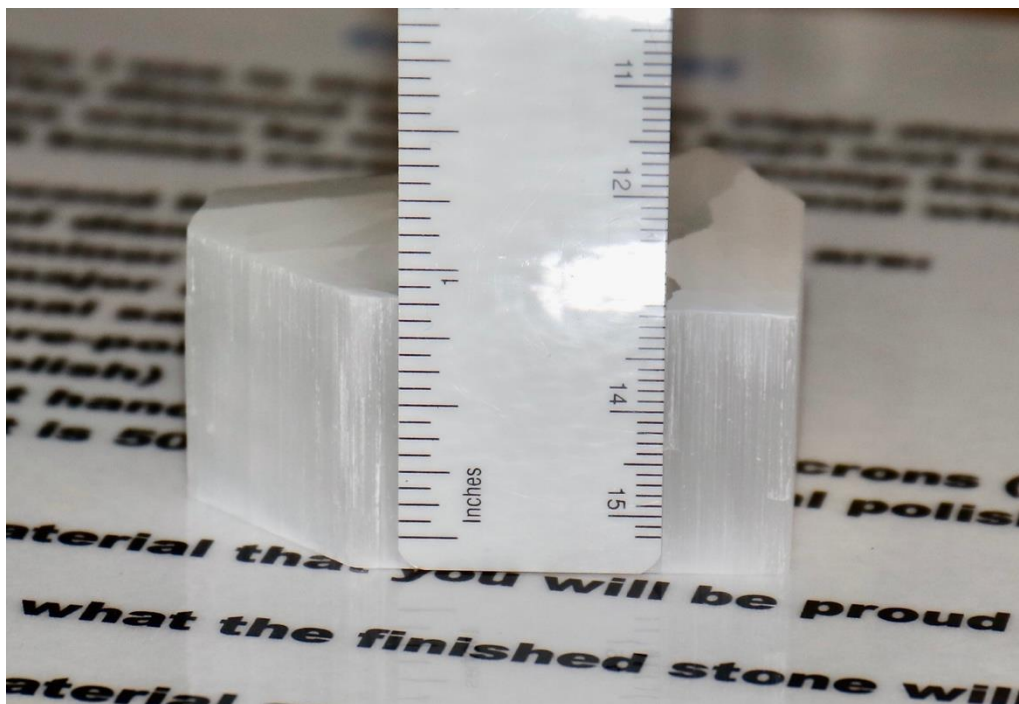


IMAGE 8: This is the same specimen seen in image 7 above. Note that the specimen is approximately 1 inch thick but the writing is easily and clearly transmitted with the illusion of no depth or thickness. Also note the parallel crystal fibers.
Photo by Tracie J.

There is a lot of interesting physics involved in how Ulexite/TV Stone works and it is the same physics behind fiber optic technology. Most children learn in school about reflection and refraction. When light rays travel through one medium into another medium of a different density the light rays will bend or refract (see figure 1). This is because the light rays will change speed as they travel through different media. The light rays will speed up if they enter a less dense or rarer medium, and they will slow down when they enter a denser medium. The change in speed is what causes the light rays to bend.

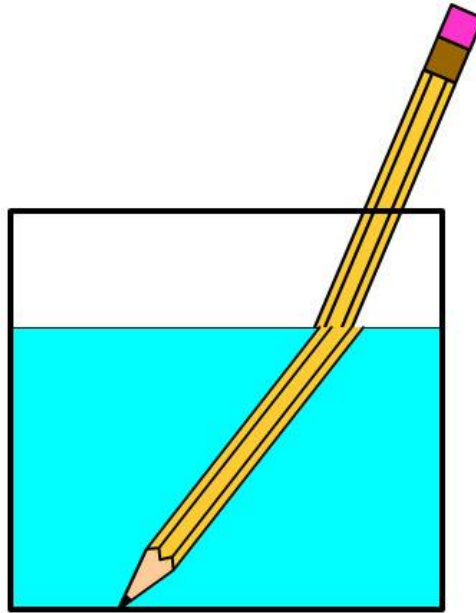


FIGURE 1: Refraction of light as it passes from air (rarer) to water (denser).

<https://stickmanphysics.com/stickman-physics-home/electromagnetic-waves/refraction-of-light/>

Sometimes the light rays bend so much they don't even leave the medium they are travelling through and total internal reflection can occur. First let's look at a couple of definitions. In very simple terms, the angle of incidence is the angle at which a light ray intercepts or hits a surface. The critical angle is the minimum angle of incidence for total internal reflection to occur.

For example, the critical angle of glass is 42° . If the angle of incidence is less than 42° , light rays will pass through the medium/glass and bend or refract as expected (see figure 2). If the angle of incidence is equal to the critical angle of the glass, the light ray will travel along the surface of the glass (see figure 3). If the angle of incidence is greater than the critical angle then there is no refraction (see figure 4). All the light will be reflected back into the denser

glass material and this is known as ‘total internal reflection’. The light rays will then travel along the long axes of the medium and out the other end. This is how Ulexite transmits images through its fibrous crystals and the same concept of how fiber optics transmit images along fiber optic cables (see figures 5 and 6).

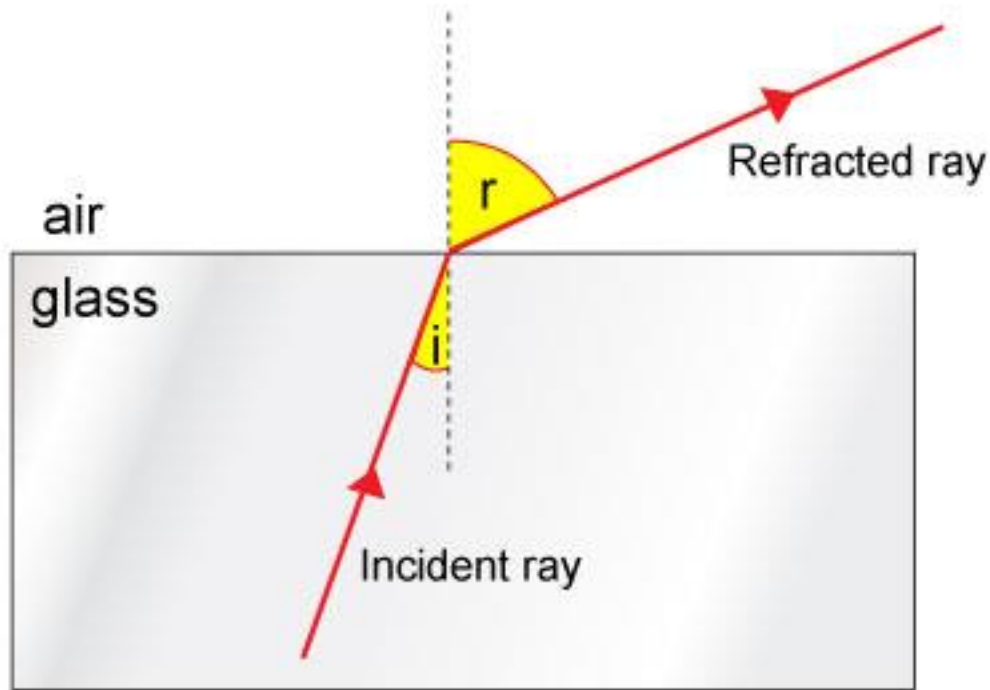


FIGURE 2: The angle of incidence is less than the critical angle.
Light passes through normally with some refraction.
http://www.passmyexams.co.uk/GCSE/physics/total-internal_reflection.html

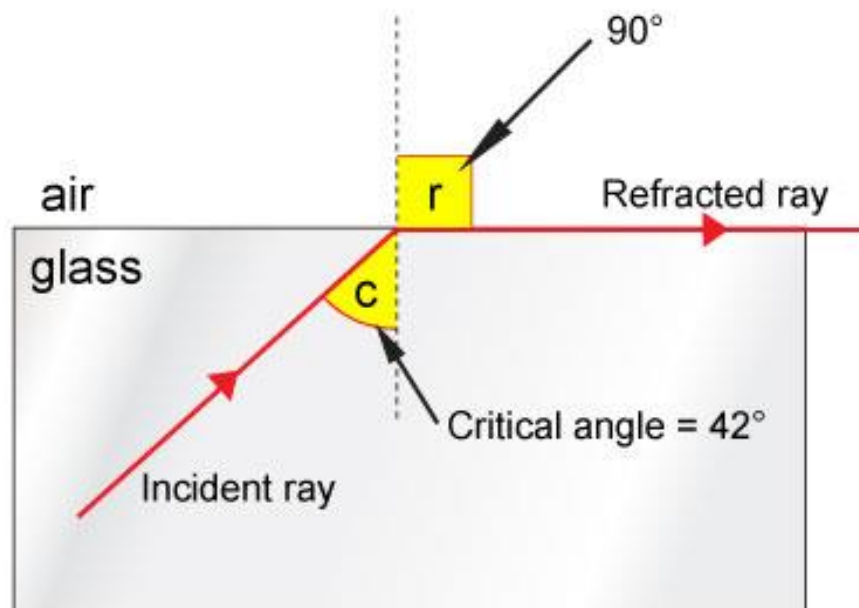


FIGURE 3: The angle of incidence is equal to the critical angle.
The light travels along the surface of the glass.
http://www.passmyexams.co.uk/GCSE/physics/total-internal_reflection.html

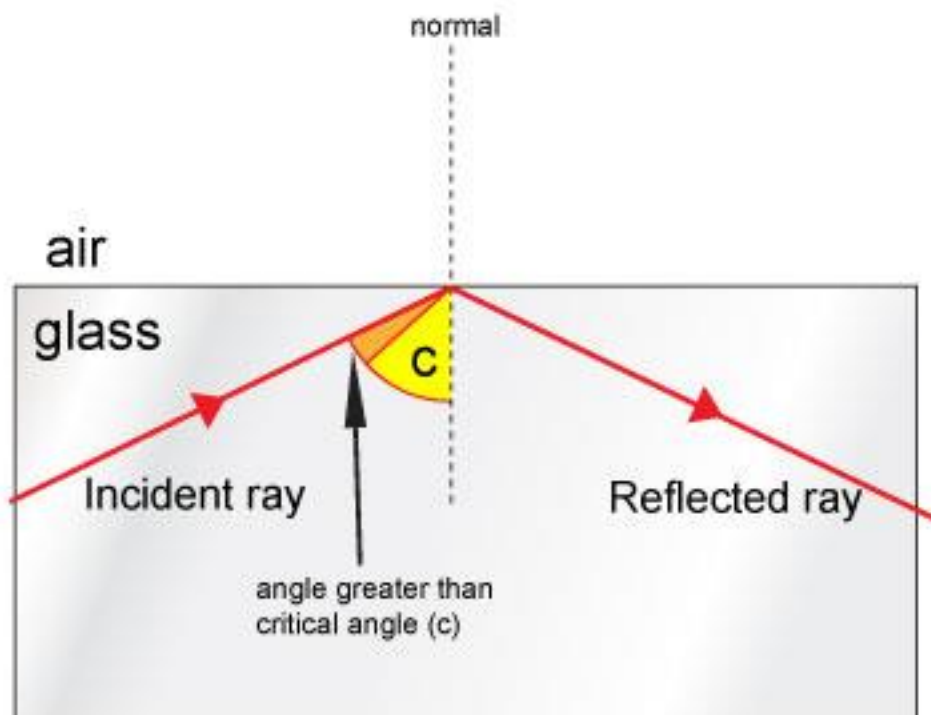


FIGURE 4: The angle of incidence is greater than the critical angle.
The light is bent back into the glass and travels through it internally.
http://www.passmyexams.co.uk/GCSE/physics/total-internal_reflection.html

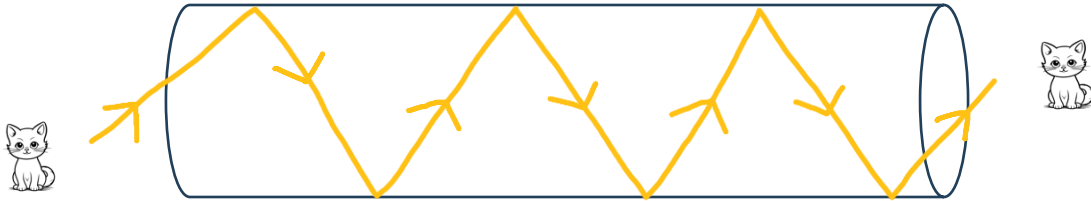


FIGURE 5: This illustrates light entering a single crystal fiber in Ulexite at an angle greater than the critical angle, thus transmitting light by total internal reflection.

Basic Operation of an Optical Fiber

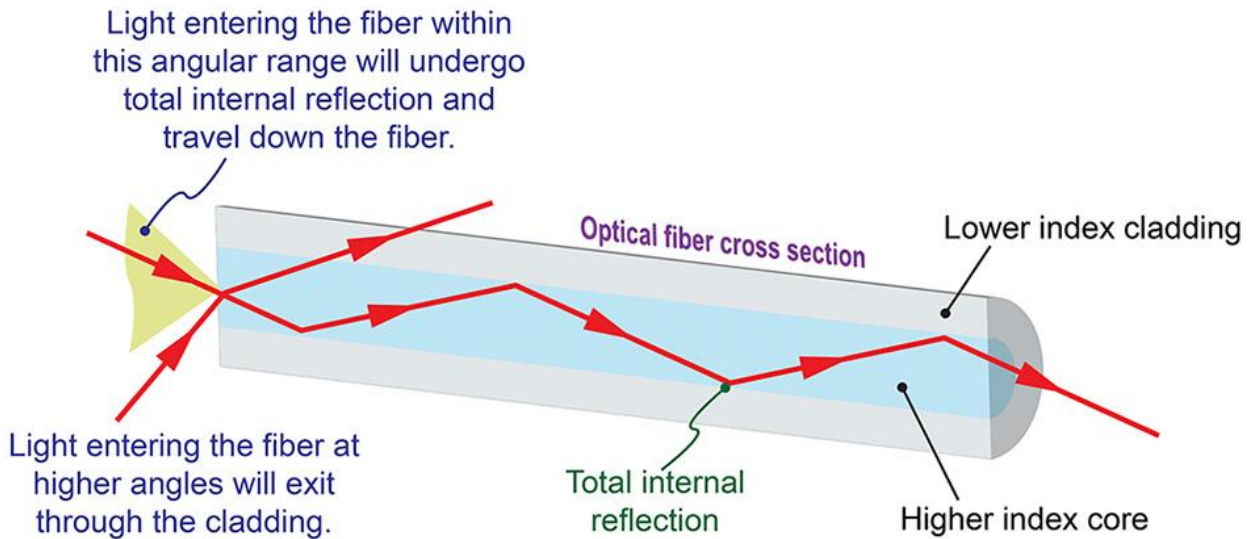


FIGURE 6: This image shows the basic concept of how fiber optics work.
<https://www.coherent.com/news/glossary/optical-fibers>

Ulexite, in its “TV Stone” habit is an interesting and fun specimen to have in your collection. But be careful, some dealers are selling Satin Spar, a form of gypsum, as TV Stone. Satin Spar does have parallel fibers that act similar to Ulexite but the quality of the image is not as good as Ulexite. So, make sure you get the real deal and have fun exploring science with your Ulexite!

WHAT'S HAPPENING IN OUR AREA

WHAT	WHEN	WHERE
Grassy Creek Mineral and Gem Show	July 28 thru Aug 4, 2024	Parkway Fire and Rescue Events Grounds, 136 Majestic View, Spruce Pine, NC
Body Mind Spirit Expo	Aug. 17-18, 2024 Sat. 10 – 7 Sun. 10 - 6	NC State Fairgrounds - Exposition Center Address: 1025 Blue Ridge Rd Raleigh , NC Website: https://www.bmse.net/
Treasures of the Earth	Aug. 30 – Sept. 2 Friday 12 - 6 Sat.-Sun. 10 - 5 Mon. 10 - 4	North Carolina State Fairgrounds Address: 4285 Trinity Rd Raleigh , NC 27607 Website: http://treasuresoftheearth.com/
Gem & Mineral Spectacular	Aug. 30 – Sept. 2 Fri. – Sun. 10 – 6 Mon. 10 - 5	Whitmire Activity Building Address: 310 Lily Pond Rd Hendersonville , NC Website: http://wp.hcgms.com/

North Carolina is home to multiple museums, many of which specialize in mining, gems, minerals, and fossils. The Colburn Hall of Minerals is located in the Asheville Museum of Science (AMOS) at 43 Patton Avenue in downtown Asheville. The museum has a wide variety of displays and is very child friendly with lots of hands-on exhibits. The Colburn Hall of Minerals is a small two room section that focuses on North Carolina gems and minerals. It would be a great place to take younger children and grandchildren! The museum is open all days except Tuesday. Hours are 10:00 AM – 5:00 PM except on Sunday, which is 1:00 AM to 5:00 PM. Children two and under are free and for three and over it costs \$10.50 per person.

<https://ashevillescience.org/history/>

FIELD TRIP OPPORTUNITIES

August 17th - Sink Hole Mine:

Meet at the Silver Chapel church at 9 AM. Address: 4654, HWY 80 S, Bakersville. Bring rock hammers, crack hammers, and buckets. You may also want to bring sunscreen and bug spray. There are no bathroom facilities at the site. Also bring something to eat and plenty of water. You may find pegmatite with garnets, apatite crystals, mica, feldspar, and maybe some moonstone. Look for boulders with all three of the pegmatite minerals in them (smoky quartz, feldspar, mica) and then crack those bad boys open!

August 21 - King's Mountain Lithium Mine Tour

A couple of months ago I did a tour of the Albemarle King Mountain Lithium Mine. You may remember the site as the old Foote Mine which has been closed for many years. The quarry pit is currently being drained in preparation for future mining. Draining the quarry is estimated to take about 16 months! But there is still a lot of activity at the site! I was amazed and impressed with what I saw. I learned a lot about lithium, its uses, and the history of the quarry. SPOILER ALERT, Did you know that the Foote Mine was originally used to mine lithium to help build the hydrogen bombs used in WWII!

If you would like to do a tour and learn more about the mine and lithium, go to their site, <https://albemarlekingsmountain.com>, and register for a tour. You will meet in the town of King's Mountain for a safety briefing, do a short drive in a van to the mine, and then the actual tour is about 45 minutes. The tour consists of two main components, the first part is driving around the site in an air conditioned van to see and learn about various activities and research at the site. The second component is visiting the actual quarry pit and while standing on the rim you can view the "lake" and learn more about the history of the mine, geology of the area, lithium, and future plans for the quarry. There are lots of opportunities to ask questions. Just remember, there is **absolutely no collecting allowed!** The trip is just for information but I still found it well worth the time.

The next scheduled tour of the is August 21st from 12 noon to 2 PM. If this one is full keep checking the website for future trips. If there are enough people interested let me know and maybe we can get a tour just for club members.



Old Foote Mine and future site of the Albemarle King Mountain Lithium Mine

August 31 – September 2, 2024 - Labor Day Weekend Trip to Kentucky

The club will do its annual collecting trip to Kentucky over Labor Day weekend,

AGENDA AND WHERE TO STAY

SATURDAY:

Early Saturday morning we will travel to a local quarry to collect until lunch, then we will travel to a second location in the afternoon to collect geodes. Many participants will spend Friday and Saturday night at the Red Roof Inn Plus in Danville.

Red Roof Inn Plus, Danville

Address: 210 Brenda Ave, Danville, KY 40422

Phone: (859) 236-5525

SUNDAY:

Very early Sunday morning we will car caravan to a second quarry to collect. You may leave to go home after collecting on Sunday or you can stay another night and return to the same quarry on Monday to collect more material. People who are staying to collect on Monday plan to stay Sunday night in Elizabethtown. Some people are staying at the Wingfield Inn and Suites in Elizabethtown.

Address: 1043 Executive Dr, Elizabethtown, KY 42701

Phone: (270) 769-3030

Usually in the afternoons people meet in the parking areas of the motels to talk and have a small sell and swap meeting.

No matter where you decide to stay just make sure you have the time and meeting place for each morning so you can follow the lead car to the quarries! Do not be late, they will not wait on you!

WHAT YOU NEED:

You will need to bring your own collecting tools and buckets. Some basic tools would be a geology hammer, a crack hammer, one or more chisels, and a pry bar. Some people also bring portable rock saws. In addition, you will need to have your own safety gear to wear into the quarries. **In the quarries you have to wear long pants, safety helmets, safety vests, and steel toed shoes/boots. You will not be allowed in if you do not have the proper safety equipment!** In addition, you should wear goggles to protect your eyes and gloves to protect your hands from sharp rocks. Make sure you also bring plenty of water to stay hydrated and snacks.

If you have any questions, you can contact Slade.



DMC Field Trip Sharing Program

The Southeast Federation of Mineralogical Societies, Inc



The Friendly Federation - Founded in 1976 to serve
www.southeastfed.org
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An Official Field Trip of the Pendleton District Gem and Mineral Society (Seneca, SC) (HOST)

An Official Field Trip of the Georgia Mineral Society

Saturday, September 28, 2024

Sunday, September 29, 2024

9 a.m. to 5 p.m. Eastern

Seneca, SC

No Attendance Limit

Registration Required (Link is below)

Fee: \$20





TRIP: This will be a dig on one of our members' own land, as such it has had very little activity there. There are no tailings available, it's mainly virgin.

COLLECTING: The owner of the property (and a very serious collector) has found epidote, garnet, quartz (in its various forms), quartz arrowheads, actinolite, hematite, magnetite, and other iron minerals.

BRING: This is basically pasture land with a few trees thrown in so no mountaineering equipment is needed, just the standard shovel and pick and screen stuff. Muddiness is entirely dependent on the weather. Clothes, footwear and mosquito repellent is up to you. Bring safety glasses if you want to break rocks.

REQUIREMENTS: This is private property, so please be respectful of the owner and the property.

FEE: \$20 per person

REGISTRATION: Click [here](#) to fill out a registration form. If you register and are unable to attend the trip, **please be considerate** to your fellow

rockhounds and let us know as soon as possible so someone on a potential waiting list can take your slot(s).

CHILDREN: Yes, but as per common sense: you're the custodian, not us.

PETS: No, unless you want to keep them in your car with it running and the AC on, so essentially **NO**.

FACILITIES: There will be an upscale porta-potty on site (with a sink) and easy parking.

ACCOMMODATIONS: Clemson University is very close, so there are many hotels/motels available in Clemson and in nearby towns.

DIRECTIONS AND WHERE TO MEET: Registered participants will be sent a confirmation email with directions and meeting place details.

CARPPOOLING: The registration form has a place for you to indicate if you **need** a ride; if you can **offer** a ride; or if you would like to **drive or share** a carpool ride. If you choose any of these options, your **name, email address,** and **club name** will be shared with other members who also choose one of the options. Then, you can communicate with one another to arrange carpools. **Parking is limited, so carpooling is highly recommended for this trip.**

CONTACT: John Palmer, charon13.5@gmail.com, [864-557-5958](tel:864-557-5958), just leave a message in case I've put my phone down and forgotten where.

IMPORTANT: DMC field trips are open only to members of clubs in the SFMS DMC field trip sharing program. SFMS DMC club members are covered by liability insurance and they are bound by the AFMS code of ethics (click [here](#) to read them), but the general public is not and could jeopardize access to a collecting location. **Please do not post DMC field trip information where the general public can access it.**

[Click here for DMC Field Trip Attendance Policies](#)

[Click here for the DMC Field Trip Schedule](#)

Email: dmc@southeastfed.org

Website: <https://www.southeastfed.org/sfms-field-trips/dmc-field-trip-program>

DMC is a program of the Field Trip Committee of the Southeast Federation of Mineralogical Societies, Inc.
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"Earth first... we'll collect on the other planets later"

SOUTHEAST FEDERATION OF MINERALOGICAL SOCIETIES ANNUAL MEETING INFO

Hosted by Georgia Society September 27-29, 2024

Schedule of Events:

Friday, September 27, 2024

7:00 PM – Friday night social/Meet and Greet – Georgia Mineral Society Clubhouse – 4138 Steve Reynolds Rd, Norcross, GA 30093 - Refreshments by GMS - Donations welcome.

Saturday, September 28, 2024

8:30 AM - Registration

9:00 – 12:00 PM, Annual Meeting - Georgia Mineral Society Clubhouse – 4138 Steve Reynolds Rd, Norcross, GA 30093

Google Meet joining info:

- meet.google.com/tip-edqs-fxv
- Dial-in: (US) +1 470-326-0086
- PIN: 829 788 895#

12:00 PM – 1:00 PM – Club Picnic – Luncheon – Will serve as our “Banquet” with Installation of Officers – Pinckneyville Park, Cochran Pavilion – 4758 S Old Peachtree Road, Berkey Lake, GA 30096 – Provided by GMS.

Annual Club Auction – Immediately following, all are invited to attend and participate.

Sunday, September 29, 2024 –

8:00 -9:30 AM – Editor’s Breakfast - Georgia Mineral Society Clubhouse – 4138 Steve Reynolds Rd, Norcross, GA 30093 - Continental Breakfast provided by GMS = Donations welcome

9:00AM – Field Trip with Charles Carter – specific details will be given at the meeting. Be prepared with usual safety equipment, hammers, buckets etc. Travel will be about 100 miles from clubhouse.

Local Hotels:

- Sonesta: \$85 before taxes – 3665 Shackleford Rd, Duluth, GA 30096 – 678-380-0414
- Hampton Inn: \$103 before taxes – 1725 Pineland Rd, Duluth, GA 30096 – 770-931-9800
- Best Western: \$103 before taxes – 3670 Shackleford Rd, Duluth, GA 30096 – 770-935-7171
- Comfort Inn: \$88-94, before taxes - 5200 Peachtree Industrial Blvd, Norcross, GA 30071 – 833-577-3728
- Clarion Suites: \$68 before taxes - 3700 Shackleford Rd, Duluth, GA 30096 – 770-931-9299

REGISTRATION FORM IS ON NEXT PAGE!



SOUTHEAST FEDERATION

OF
MINERALOGICAL SOCIETIES, INC.



Annual Meeting

Sponsored by Georgia Mineral Society

September 28, 2028

Norcross, GA

Please complete and return this information using a **separate form for each attendee**, submitting through mail or email, ensuring receipt by September 22, 2024 for the S.F.M.S. packet processing. You can scan and email, take a picture and text, whatever works to submit your info.

Name _____ email: _____

SFMS Position _____ Club Position _____

Society Affiliations _____

➤ **Attending Friday Social - 7 PM – Georgia Mineral Society - (circle one) Yes / No**

➤ **Attending Saturday Executive Meeting - 9 AM (8:30 AM Registration)–Georgia Mineral Society (4138 Steve Reynolds Rd, Norcross, GA)**

In Person? _____ By Google Meets? _____

Google Meet joining info:
meet.google.com/tip-edqs-fxv
Dial-in: (US) +1 470-326-0086
PIN: 829 788 895#

➤ **Attending Saturday Luncheon (Installation) – 12:00 PM – Pinkneyville Park, Cochran Pavillion - 4758 S Old Peachtree Rd - In Person(circle one) Yes / No**

➤ **Attending Editor’s Breakfast - Sunday 8 AM – Georgia Mineral Society – In Person (circle one) Yes / No**

Date _____ Signature _____

Thank you for your consideration.
Jerri Heer, S.F.M.S. Secretary
9016 122nd AV, Tampa, FL 33637-5321
419-344-9999 – secretary@southeastfed.org

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Club Meeting Tuesday
August 13th, 7:00PM
St Aloysius Catholic Church
921 2nd Street NE Hickory, NC

Tar Heel Rockhound
Tracie Jeffries Editor
PO BOX 2521
Hickory NC 28603-2521
<http://www.cvgmc.com/>

