



# THE GOLDRUSH LEDGER



CHARLOTTE GEM & MINERAL CLUB

OCTOBER 2016

## THE PRES SAYZ

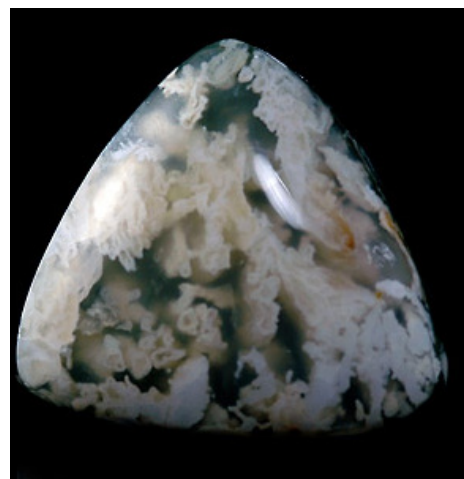
I taught a class in cabochon at the Dairy last week and, as always, took great pleasure in seeing the look of excitement on the faces of students who have never cabbed before. Many neophytes come into this workshop expecting it to be rather complicated and difficult. They half expect to either fail or turn out relatively inferior stones. The opposite is true. Putting together a committed student with a dedicated instructor, good equipment and quality raw materials will typically



result in an individual who has a new level of confidence in his/her capabilities and a few beautiful cabs to take home and brag about.

A cabochon workshop starts promptly at 9AM with a half hour lunch around noon, and finishes at approximately 4PM. The first hour or so involves an explanation of the process, how to properly use the equipment and what to look for in selecting good raw materials. Once students have selected their raw materials (slabs), the teaching process becomes totally hands-on. The instructor demonstrates each step with his/her own slab followed by the students duplicating the procedure at their own workstation. Under the ongoing supervision of the instructor, a student can typically turn out a finished piece in an hour and a half to two hours; most finish the day having completed two or three cabochons.

I am admittedly biased in my enthusiasm for cabbing, but it



## TABLE OF CONTENTS

1-2	The Pres Sayz
4	Workshop Sched.
5-8	Fluorescent Rocks
9	Field Trips
10	Upcoming Shows



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does offer a variety of benefits for those who take the time to learn how to do it:

√ Within a few hours of initial instruction, you have a beautiful hand-made piece to admire and exhibit.

√ Cabbing is very relaxing and an effective way to reduce stress.

√ There's a lot of satisfaction to be gained from a relatively modest effort.

√ Learn how to do settings and you have a "gift that keeps on giving".

Cabbing classes at the Dairy are available on alternate Saturdays each month. Go to the club website, click on "Workshops at the Dairy" and sign up to begin a wonderful new hobby. I look forward to seeing you there.

**Murray Simon**

*President*

*Charlotte Gem and Mineral Club*





# **Charlotte Gem and Mineral Club Monthly Meeting**

**Thursday October 20, 2016**

**Snack/Social Hour from 6:00 - 7:00**

**Meeting to Start at 7:00**

## **Location:**

*Tyvola Senior Center*

*2225 Tyvola Rd. Charlotte, NC 28210 (704) 522-6222*

## **Our Monthly Presentation:**

**GEOLOGICAL DEAD THINGS:  
AS SCARY AS ROCKS CAN GET**

**By: Colin Bulla**

**Naturalist and CGMC Member**



# WORKSHOPS AT THE DAIRY

## Location:

Art in The Dairy  
7701 Tuckaseegee Rd.  
Charlotte, NC 28214



## Currently scheduled classes:

Faceting Classes are available on an “as available” basis. If you are interested in learning to facet, contact Kim at [gwynkim@gmail.com](mailto:gwynkim@gmail.com) to arrange a time(s).

Oct 15 – Polymer Clay (1 openings) with Linda Simon

– \$20 class fee – 1/2 day

Oct 15 – Cabochon Making ( 0 openings) with Murray Simon

– \$40 class fee



**Contact Martha Rodgers to register for a class.**

**Email: [charlottegem@hotmail.com](mailto:charlottegem@hotmail.com)**

**Call: 704-543-6651.**



# ROCK OF THE MONTH

## FLUORESCENT MINERALS

From: <http://geology.com/articles/fluorescent-minerals/>

### What is a Fluorescent Mineral?

All minerals have the ability to reflect light. That is what makes them visible to the human eye. Some minerals have an interesting physical property known as “fluorescence”. These minerals have the ability to temporarily absorb a small amount of light and an instant later release a small amount of light of a different wavelength. This change in wavelength causes a temporary color change of the mineral in the eye of a human observer.

The color change of fluorescent minerals is most spectacular when they are illuminated in darkness by ultraviolet light (which is not visible to humans) and they release visible light. The photograph above is an example of this phenomenon.

### Fluorescence in More Detail

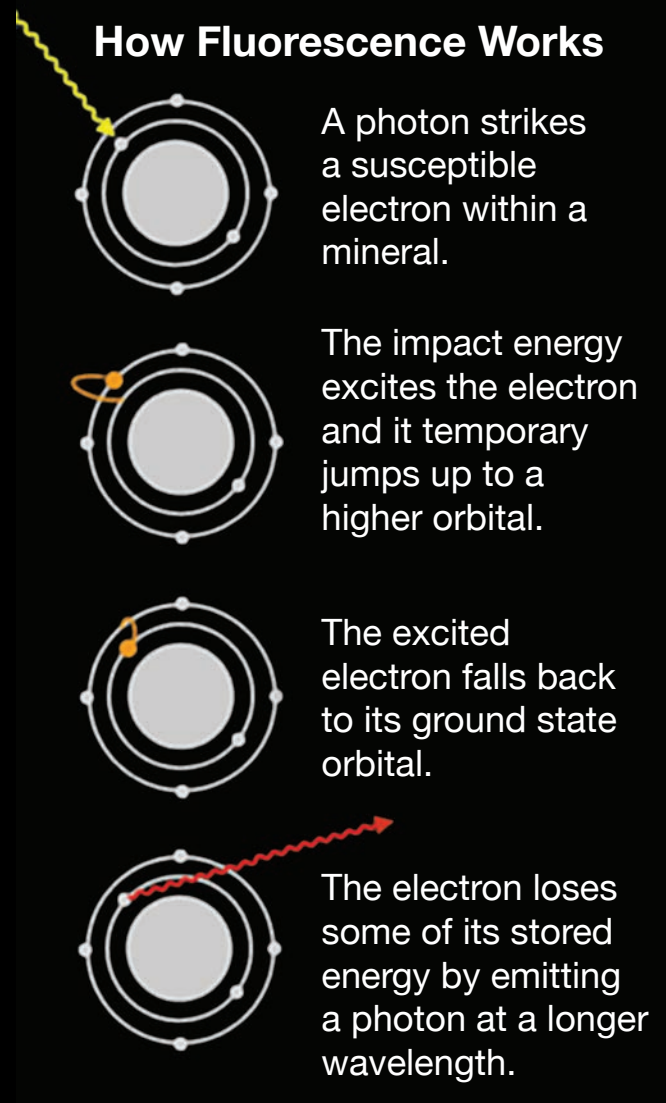
Fluorescence in minerals occurs when a specimen is illuminated with specific wavelengths of light. Ultraviolet (UV) light, x-rays and cathode rays are the typical types of light that trigger fluorescence. These types of light have the ability to excite susceptible electrons within the atomic structure of the mineral. These excited electrons temporarily jump up to a higher orbital within the mineral’s atomic structure. When those electrons fall back down to their original orbital a small amount of energy is released in the form of light. This release of light is known as fluorescence.

The wavelength of light released from a fluorescent mineral is often distinctly different from the wavelength of the incident light. This produces a visible change in the color of the mineral. This “glow” continues as long as the mineral is illuminated with light of the proper wavelength.

### How Many Minerals Fluoresce in UV Light?

Most minerals do not have a noticeable fluorescence. Only about 15% of minerals have a fluorescence that is visible to people and some specimens of those minerals will not fluoresce. Fluorescence usually occurs when specific impurities known as “activators” are present within the mineral. These activators are typically cations of metals such as: tungsten, molybdenum, lead, boron, titanium, manganese, uranium and chromium. Rare earth elements such as europium, terbium, dysprosium, and yttrium are also known to contribute to the fluorescence phenomenon. Fluorescence can also be caused by crystal structural defects or organic impurities.

In addition to “activator” impurities, some impurities have a dampening effect on fluorescence. If iron or copper





are present as impurities they can reduce or eliminate fluorescence. Furthermore, if the activator mineral is present in large amounts, that can reduce the fluorescence effect.

Most minerals fluoresce a single color. Other minerals have multiple colors of fluorescence. Calcite has been known to fluoresce red, blue, white, pink, green and orange. Some minerals are known to exhibit multiple colors of fluorescence in a single specimen. These can be banded minerals that exhibit several stages of growth from parent solutions with changing compositions. Many minerals fluoresce one color under short-wave UV light and another color under long-wave UV light.

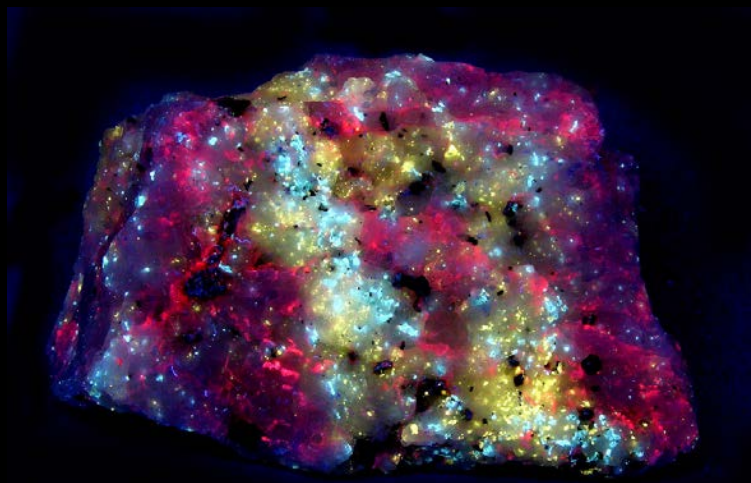
### Fluorite: The Original “Fluorescent Mineral”

One of the first people to observe fluorescence in minerals was George Gabriel Stokes in 1852. He noted the ability of fluorite to produce a blue glow when illuminated with invisible light “beyond the violet end of the spectrum”. He called this phenomenon “fluorescence” after the mineral fluorite. The name has gained wide acceptance in mineralogy, gemology, biology, optics, commercial lighting and many other fields.

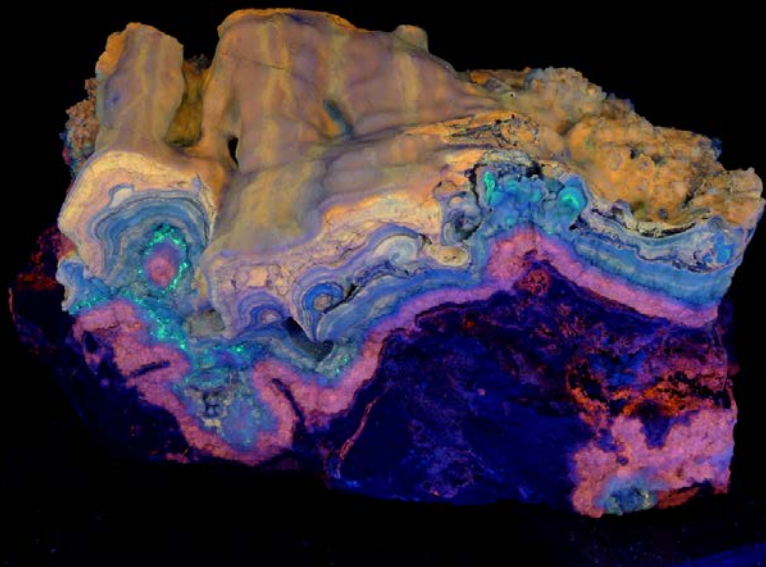
Many specimens of fluorite have a strong enough fluorescence that the observer can take them outside, hold them in sunlight then move them into shade and see a color change. Only a few minerals have this level of fluorescence. Fluorite typically glows a blue-violet color under short-wave and long-wave light. Some specimens are known to glow a cream or white color. Many specimens do not fluoresce. Fluorescence in fluorite is thought to be caused by the presence of yttrium, europium, samarium or organic material as activators.

### Lamps for Viewing Fluorescent Minerals

The lamps used to locate and study fluorescent minerals are very different from the ultraviolet lamps (called “black lights”) sold in novelty stores. The novelty store lamps are not suitable for mineral studies for two reasons: 1) they emit long-wave ultraviolet light (most fluorescent minerals respond to short-wave ultraviolet); and, 2) they emit a significant amount of visible light which interferes with accurate observation, but is not a problem for novelty use.



Ultraviolet Wavelength Range			
	Wavelength	Abbreviations	
Short-wave	100-280nm	SW	UVC
Mid-wave	280-315nm	MW	UVB
Long-wave	315-400nm	LW	UVA



Scientific-grade lamps are produced in a variety of different wavelengths. The table above lists the wavelength ranges that are most often used for fluorescent mineral studies and their common abbreviations.

The scientific-grade lamps used for mineral studies have a filter that allows UV wavelengths to pass but blocks most visible light that will interfere with observation. These filters are expensive and are partly responsible for the high cost of scientific lamps.

We offer a 4 watt UV lamp with a small filter window that is suitable for close examination of fluorescent minerals. We also offer a small collection of shortwave and longwave fluorescent mineral specimens.

### UV Lamp Safety

Ultraviolet wavelengths of light are present in sunlight. They are the wavelengths that can cause sunburn. UV lamps produce the same wavelengths of light along with shortwave UV wavelengths that are blocked by the ozone layer of Earth's atmosphere.



Small UV lamps with just a few watts of power are safe for short periods of use. The user should not look into the lamp, shine the lamp directly onto the skin, or shine the lamp towards the face of a person or pet. Looking into the lamp can cause serious eye injury. Shining a UV lamp onto your skin can cause "sunburn".

Eye protection should be worn when using any UV lamp. Inexpensive UV blocking glasses, UV blocking safety glasses, or UV blocking prescription glasses provide adequate protection when using a low voltage ultraviolet lamp for short periods of time for specimen examination.

The safety procedures of UV lamps used for fluorescent mineral studies should not be confused with those provided with the "blacklights" sold at party and novelty stores. "Blacklights" emit low intensity longwave UV radiation. The shortwave UV radiation produced by a mineral study lamp contains the wavelengths associated with sunburn and eye injury. This is why mineral study lamps should be used with eye protection and handled more carefully than "blacklights".

UV lamps used to illuminate large mineral displays or used for outdoor field work have much higher voltages than the small UV lamps used for specimen examination by students. Eye protection and clothing that covers the arms, legs, feet and hands should be worn when using a high voltage lamp.



## Practical Uses of Mineral and Rock Fluorescence

Fluorescence has practical uses in mining, gemology, petrology and mineralogy. The mineral scheelite, an ore of tungsten, typically has a bright blue fluorescence. Geologists prospecting for scheelite and other fluorescent minerals sometimes search for them at night with ultraviolet lamps.

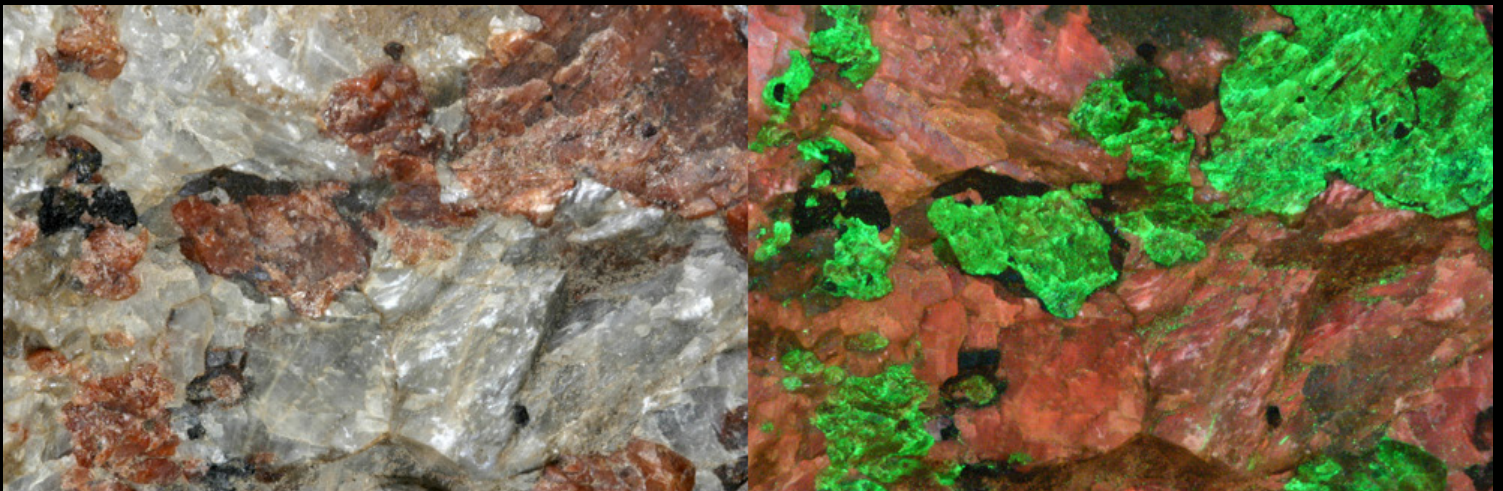
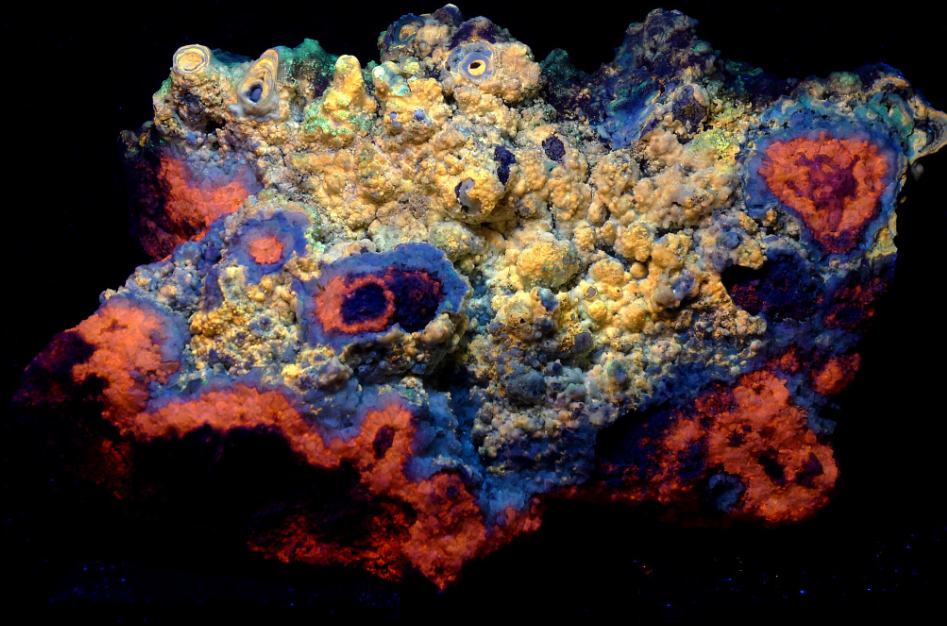
Geologists in the oil and gas industry sometimes examine drill cuttings and cores with UV lamps. Small amounts of oil in the pore spaces of the rock and mineral grains stained by oil will fluoresce under UV illumination. The color of the fluorescence can indicate the thermal maturity of the oil, with darker colors indicating heavier oils and lighter colors indicating lighter oils.

Fluorescent lamps can be used in underground mines to identify and trace ore-bearing rocks. They have also been used on picking lines to quickly spot valuable pieces of ore and separate them from waste.

Many gemstones are sometimes fluorescent including: ruby, kunzite, diamond and opal. This property can sometimes be used to spot small stones in sediment or crushed ore. It can also be a way to associate stones with a mining locality. For example: light yellow diamonds with strong blue fluorescence are produced by South Africa's Premier Mine and colorless stones with a strong blue fluorescence are produced by South Africa's Jagersfontein Mine. The stones from these mines are nicknamed "Premiers" and "Jagers".

In the early 1900s many diamond merchants would seek out stones with a strong blue fluorescence. They believed that these stones would appear more colorless (less yellow) when viewed in light with a high ultraviolet content. This eventually resulted in controlled lighting conditions for color grading diamonds.

Fluorescence is not routinely used in mineral identification. Most minerals are not fluorescent and the property is unpredictable. Calcite provides a good example. Some calcite does not fluoresce. Specimens of calcite that do fluoresce glow in a variety of colors including: red, blue, white, pink, green and orange. Fluorescence is rarely a diagnostic property.







# 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 Memphis Archaeological and Geological Society (Memphis, TN)

**Saturday, October 15, 2016**

**Memphis Stone and Gravel 3745 Highway 51 North, Southaven, MS Desoto County  
8:30 AM to 3:00 PM Central**

- **TRIP:** First trip to new mine that opened in May. MAGS will provide snacks, drinks, door prizes and best finds prizes. MAGS and Memphis Stone and Gravel will provide lunch.
  - **COLLECTING:** Chert gravels with fossils (Mississippian, Devonian, and Silurian), petrified wood, agate, conglomerate, quartz and other rocks and minerals associated the Upland Complex of Pleistocene / Pliocene age. We will be collecting the gravel from stockpiles.
  - **BRING:** Bucket and rock hammer, we will be surface collecting and no digging is necessary. Spray bottle with water is very helpful. Bring plenty of water and sunscreen!
  - **FEE:** Free.
  - **CHILDREN:** Ok with adult attendance and supervisor at all time.
  - **PETS:** Must be leashed at all times.
  - **SPECIAL CONDITIONS:** All safety rules must be followed. A copy of the safety rules can be obtained from the Field Trip Leader. Remember, any time eye hazards may exist, such as hammering or prying, safety glasses MUST be worn. This is an active mine with dangerous areas. All young children must be under CONSTANT ADULT SUPERVISION and NEVER allowed to roam around. Shoes must be closed and laced (no flip-flops or Crocs).
  - **DIRECTIONS AND WHERE TO MEET:**
    - **WHERE:** Memphis Stone and Gravel Company's Desoto Plant facility and we will collect there. The facility is located at 3745 Highway 51 N, Southaven, MS.
- Directions to our meeting place:  
From Northbound or Southbound I-55, take Church Street exit. Travel west to Highway 51. Take a left(south) and travel to 3745 Highway 51 North
- **DRIVE TIME** From I-55 exit about 10 minutes, From Memphis about 45 minutes.
  - **CONTACT:** Alan Parks and/or Charles Hill
  - **PHONE:** 901- 481-973 or 901-624-4232
  - **E-MAIL:** alan.parks@msgravel.com or Hunter3006@aol.com

## UPCOMING SHOWS

Oct. 14-16—VIRGINIA BEACH, VIRGINIA: Annual show; Treasures of the Earth Gem, Mineral & Jewelry Shows, Virginia Beach Convention Center; 1000 19th Street; Fri. 12-6, Sat. 10-5, Sun. 10-5; Adults \$5, Students 16 and under free; Vendors from across the United States bring a variety of merchandise. Their items include 14K and sterling silver, classic, estate, fashion and handmade jewelry. Loose stones, beads and findings, pearls, mineral specimens, rocks, crystals, lapidary supplies. Jewelers and wire wrappers who can design, remount and set stones and make repairs on site. Display of rocks and minerals and demonstrations of lapidary arts by the two Gem and Mineral Societies of the area. ; Contact Jane Westbrook, PO Box 59, Gloucester Point, VA 23062, (804)-642-2011; e-mail: [ellen@treasuresoftheearth.com](mailto:ellen@treasuresoftheearth.com); Web site: [www.treasuresoftheearth.com](http://www.treasuresoftheearth.com)

Oct. 14-16—FRANKLIN, NORTH CAROLINA: Show and sale; Gem & Mineral Society of Franklin, NC, Robert C. Carpenter Community Building; 1288 Georgia Road; Fri. 10-6, Sat. 10-6, Sun. 11-4; Adults/Seniors \$2, Students \$1, Children under 12 free; There will be door prizes, demonstrations, and benchwork on site. Finished jewelry (gold & silver), rough & cut gemstones, specimens, beads, minerals, and tools. ; Contact Linda Harbuck, 425 Porter Street, Franklin, NC 28734, (800)-336-7829; e-mail: [lindah@franklin-chamber.com](mailto:lindah@franklin-chamber.com); Web site: [www.visitfranklinnc.com](http://www.visitfranklinnc.com)

Oct. 14-16—KNOXVILLE, TENNESSEE: Annual show; Knoxville Gem and Mineral Society , Kerbela Temple; 315 Mimosa Ave; Fri. 10-6, Sat. 10-6, Sun. 11-5; Adults \$5.00, Children under 12 free; The Gem, Mineral and Jewelry Show will have many vendors that offer great products including a wide variety of jewelry, rare fossil and mineral specimens, meteorites, gems of all colors shapes & sizes, lapidary & jewelry equipment. There will be kids activities and demonstrations.; Contact Teresa Polly, PO Box 51554, Knoxville, TN 37950-1554, (865)-258-0795; e-mail: [teresapolly@bellsouth.net](mailto:teresapolly@bellsouth.net); Web site: [www.knoxrocks.org](http://www.knoxrocks.org)

Oct. 21-23—HARRISONBURG, VIRGINIA: Annual show; Treasures Of The Earth Gem & Jewelry Shows, Rockingham County Fairgrounds; 4808 S Valley Road; Fri. 10 -6 , Sat. 10 -6 , Sun. 11 -5; \$4 Admission, Children under 16 free; Annual show. Jewelry makers, goldsmiths and silversmiths from all over the U.S. who can reconstruct, repair, design or make original jewelry from customer-selected gems, stones, opals and crystals. Wire wrap, wire sculpture, stone beads, pearls, stone setting, amber, opal, mineral and fossil dealers. Hourly door prizes including a Ring with a precious stone that will be given as a Grand Prize. ; Contact Van Wimmer - Show Director, 5273 Bradshaw Road, Salem, VA 24153, 540-384-6047; e-mail: [van@totesshows.com](mailto:van@totesshows.com); Web site: [www.totesshows.com](http://www.totesshows.com)

Nov. 18-20—COLUMBIA, SOUTH CAROLINA: Annual show; The Columbia, SC Gem & Mineral Society , Jamil Temple; 206 Jamil Rd.; Fri. 10-6, Sat. 10-6, Sun. 12-5; Admission \$5, Children under 16 free; Jewelry, beads, loose stones, fossils, minerals, gold, silver, & tools for sale Geodes sold & cut. Club member's rock collections on exhibit & lapidary demonstrations. South Carolina amethyst on display ; contact Sue Shrader, PO Box 6333, Columbia, SC 29260, (803)-736-9317; e-mail: [ashrader@mindspring.com](mailto:ashrader@mindspring.com); Web site: [www.cgams.org](http://www.cgams.org)