

# ROCK N ROSE

Volume 46 Issue 9

**TYLER • TEXAS**

September 2020



Cover Photo: Margaret Kilanski

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## ROCK N ROSE

THE EAST TEXAS GEM & MINERAL SOCIETY NEWSLETTER

### UPCOMING EVENTS

January 22 - 24, 2021  
 East Texas Gem & Mineral Society  
 Texas Rose Garden Center  
 Tyler, Texas

Check for cancellations  
 prior to attending



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 David Russ  
 Julia Toombs

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 (Kids Camp)

#### Rock-N-Rose Newsletter

231 Scott Street  
 Nacogdoches, TX 75961



# PRESIDENT'S MESSAGE

*David Russ*

Your Board of Directors and other volunteers have been busy this summer. With the addition of an outside storage container much of the inside clutter has been eliminated. Excess donated equipment has been disposed of and usable equipment has been moved into the container. Numerous boxes of material for our show silent auction has been consolidated into

more manageable boxing and also stored. It has been something of a roller-coaster ride trying to read the virus situation in regards to our upcoming annual show. We received feedback that the Ft. Worth show was a recent success and has given us encouragement for going ahead with 2021. We are hoping for an October general meeting. Please be looking forward as to how you can

assist as you might have in previous capacities or in new ways. We have plenty of critter making material for anyone willing to put your creative energy to work. I am looking forward to us getting back together soon. We have other projects in the works to tell you about.

David Russ

It is with great pleaseure that the board annoucnes there WILL BE an Oct 5th regular club meeting beging at 6:45 pm. We will have the Annual Club Action, so please bring something you would like someone else to own. You the need space for new treasuers you might purchase at the auction. There will not be any food and you will need to bring your own beverage if you want something other than the water bottles on hand. See you there!!!



## THE EAST TEXAS GEM AND MINERAL SOCIETY

PRESENTS

### *The 25th Annual* Gemstone and Jewelry Show

**JANUARY**  
**22, 23, and 24, 2021**  
[WWW.ETGMS.ORG](http://WWW.ETGMS.ORG)



**TYLER ROSE**  
**GARDEN CENTER**  
420 SOUTH ROSE PARK DRIVE  
TYLER, TEXAS

**Gemstones • Jewelry • Minerals • Fossils • Supplies**

**SHOW HOURS:**  
Friday: 9 am - 5 pm  
Saturday: 10 am - 6 pm • Sunday: 10 am - 5 pm

**ADMISSION:**  
Adults: **\$5.00**  
Children and Students: **\$1.00**



**Lonestar Gemological Laboratory, LLC**  
AGA Certified Gem Lab #51  
Professional – Ethical – Independent  
(903) 426-7859  
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Appraisals – Gem Identification – Quality Grading  
Richard D. Armstrong, CSM, ASG, GG, GP, AJP

# Looking Forward to OCTOBER (arrival of container)

By: JULIA TOOMBS



to begin the work of organizing by moving things into our container. Marcia brought her truck as she had offered to take things to recycling. It was full by the time she left. David brought his flat-bed trailer to carry off a large item. Kept equipment were the first items to be moved into the container. It also houses chairs that, we hope, may find someone to repair them or an upholsterer. Do we have one among our members?

*Picture credits:  
container arrival - Margaret Kilanski  
Marcia's truck - Marcia Graham  
group on trailer - Julia Toombs  
group in clubhouse - Julia Toombs*

Many thanks and pats on the back go to Rick Walker for his connections in acquiring the ocean container mentioned in the August newsletter. It arrived on August 19, and Rick, Jerry Sudderth, Ed Grounds, Joe Smith, and David Russ were there to help with the installation. With no choice in color allowed, it is the same as the Clubhouse!!

When the Board had a rough idea of when the container would make its arrival, we met over several days to empty and sort through donated items in the show trailer. Once we knew what we wanted to keep, sell, and recycle, we started making clearer plans to organize the Clubhouse. The sale of items occurred over four days. The equipment that we put up for sale at mind-blowing, jaw-dropping prices went quickly. A lot of jewelry items will have rocks attached for use on the Wheel and Dice games, Silent Auction, and regular club meetings. Four members are working on these projects.

On Wednesday, August 26, five Board members – David Russ, Terry Roberts, Marcia Graham, Julia Toombs, and Rick Walker, and six members – Allison and Jim Kitchen, Ed Grounds, Jerry Sudderth, Joe Smith, and Dave Metzner met at 8 AM

The Board had a follow-up workday on Saturday, the 29th, to go through the boxes stacked against the wall, packing some items, and repacking others. Fred Mahaffey was the Board member not present, but we also had Jerry Sudderth and Randy Harmon helping. To the right and standing left to right are: Terry, Jerry, Rick, Margaret, and David. Marcia is seated. Julia took the picture.

It is too early to say that October meetings are a positive GO, but that is what we are planning for. We will have plenty of chairs and space for our members at the annual Club auction on October 5. We will give you enough notice to know if you need to bring an item to be auctioned off. We hope you will join us to reconnect with old friends and have a fun time!!

- Pictures -

- Marcia's truck full of recycling
- Group: Back row: Allison & Jim Kitchen, Ed Grounds, Jerry Sudderth, Marcia Graham, David Russ, & Dave Metzner. Seated: Joe Smith, Terry Roberts, & Rick Walker.
- Not pictured: Julia Toombs, behind the camera.



# A Look into the Past

By Julia Toombs

It has been many months since I have been able to write this column. I want to focus on Ed Grounds who has been quite active since joining ETGMS. He has been to all our workdays and recently helped Terry Roberts clean up the Clubhouse yard. Terry mows with a push mower and it takes him about one and a half hours. It took Ed the same time to edge and trim. Each of you give Ed a thanks and pat on the back the next time you see him. I asked Ed if he would give me bio notes so we could get to know him.

Ed was born in Shreveport, Louisiana, and spent the first 22 years of his life there. He has also lived in Baton Rouge and Bossier City, Louisiana, and Hillsboro, Texas. He worked for 40 years in the retail grocery business in retail management, merchandising, and as a manufacturing sales manager and retired in 2017. He has been married for 49 years to Joyce, and they have five children, eight grandchildren, and one on the way. He is active in his church, and his hobbies are gardening, fishing, rock hunting, and lapidary work.

Like most of us, his interest in rocks started early in life. During childhood vacations to the Hot Springs area in Arkansas, he found quartz and slate. In his early adult years,

he would walk the dirt roads around Toledo Bend finding petrified wood and Indian artifacts. In the mid-1950s, he used rocks as accents in flower gardens. He has been collecting seashells on Sanibel Island since 2011.

After retirement, Ed worked part-time for Hiland Dairy. They purchased property behind the plant on Erwin Street for expansion. There was a “rock house” on the property. (The owners had been plastering 10” to 14” iron-ore rocks around the house but never got higher than four feet.) Ed was given permission to collect the rocks and plants for personal use in gardening. While loading the large pieces of rock, he noticed pieces of petrified wood and various unique-looking stones. After numerous trips and several hundred pounds of rock and stone, he began to examine what he had taken home.

His first piece of lapidary equipment was a Dremel for cleaning and polishing to see better the colors of the rocks. The next tool was a Harbor Freight wet-tile saw to see what the inside looked like. He is now hooked and has even more equipment. Tumblers, a rock saw, a cab machine, recently purchased, and several various power tools occupy his workspace to show the beauty and variety of rocks.

At present, his favorite activity is taking his grandchildren rock hounding. They enjoy Ruck’s Pit, the Potomac and Paluxy



Rivers, Mineral Wells Fossil Park, and Ore Car Mine on Lake Mead. With the guidance of ETGMS club members, he has begun cabbing and wire-wrapping stones to share with family and friends. Two granddaughters have started wire-wrapping with polished stones from PawPaw’s collection.





# Kids

## Texas East Camp at ETGMS

By Margaret Kilanski

Photographer: Rick Walker

## JURASSIC PARK CAMP

In May, ETGMS received a request from Texas East Kids to help with their Dino Camp. The restraints of COVID19 did not prevent Fossil sub-group leader David Russ and member Rick Walker from stepping up to the challenge. On June 7, 2020, David took the small campers on a journey of discovery with his talk on the many dinosaurs of Texas. He gave them incite to prehistoric times and some cool facts about all types of different dinosaurs. David had several specimens for the campers to view and hold. Rick provided several specimens for the kids to “uncover” during their own dinosaur dig. The kids’ second experience was on July 8.

As you can see from these pictures David had a very enthusiastic audience!



*Note: These pictures were provided by Texas East Kids and ETGMS as their written permission to reprint the pictures in our newsletter and to use on etgms.org.*

# Shop Time

By: Terry Roberts



Figure 1

I have attached photos of two cabs showing the front (Figures 1 and 2) and the back of each cab (Figures 3 and 4) that I made from one small biscuit-shaped nodule that I collected on the Walker Ranch about 10 years ago. I had to grind off the surface of each half of the nodule to get down to the colorful portion to see what pattern was hidden beneath it before cutting it. What surprised me when I finished grinding the shape of the cabs were the strange plume-like structures in it and the highly fractured orange-colored areas among the white and clear

crystallized areas. Although not noticeable in the photos, several pieces of the fractured orange material popped out while I was grinding it. Due to the fracturing of the cabs, I was surprised that they held together throughout the cabbing process and that I was able to get a reasonable polish on the cabs.

I consulted two more knowledgeable and experienced agate collecting friends to find out if this was truly an agate with some thin plumes in it. They told me that the cabs were composed of common or "potch" opal and was the only one that they had seen with plumes in it. Also, the biscuit was probably composed of agate originally and later was altered to opal via hydration. The cracking or crazing of the opal probably occurred when enough water was lost due to the high heat and arid conditions of this area of west Texas after the biscuit was eroded from basalt enclosing it. They also mentioned that such opal-filled biscuits were more common in the area south of Marfa, TX than on the Walker Ranch south of Alpine, TX. This find is a first for me and I think I will hold onto these cabs for my personal collection.



Figure 2



Figure 3

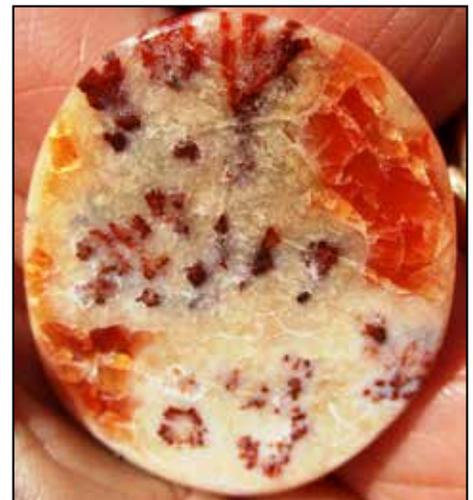


Figure 4

# LONESTAR GEMOLOGICAL LABORATORY, LLC

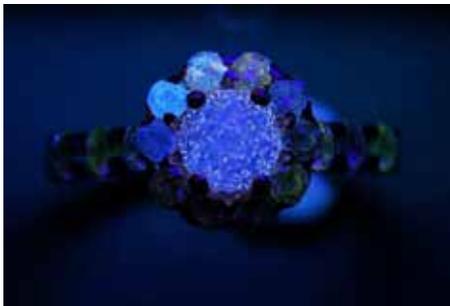
AGA Certified Gem Lab #51



## FLUORESCENCE IN DIAMONDS

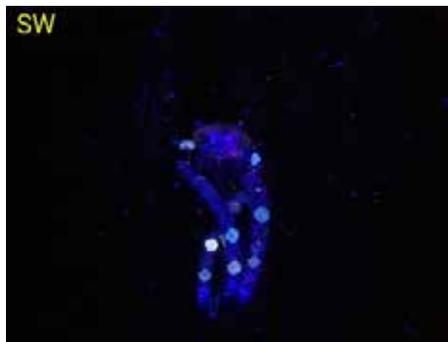
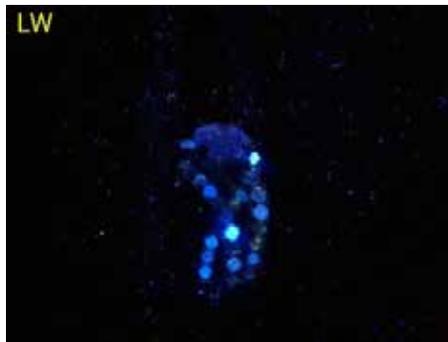
**Richard D. Armstrong, Certified Senior Member, NAJA  
Accredited Senior Gemologist, Graduate Gemologist  
CEO Lonestar Gemological Laboratory, LLC**

Fluorescence in diamonds has been known for many years but until recently was only an interesting phenomenon seen in about one third of all diamonds. For many years, the effect of blue fluorescence has been controversial for pricing in the marketplace. Prior to the development of the modern color grading systems of the GIA and the AGS many diamond merchants and jewelers considered blue-white diamonds as the best or highest color grade. Experts speculate that the blue-white diamonds were probably equivalent to the modern color grades of D to F but enhanced by a strong blue fluorescence. The GIA considers fluorescence an identification property rather than a quality factor. Today's market does generally discount diamonds that show blue fluorescence as much as 30 percent depending on the strength of the fluorescence with very-strong fluorescence bringing the greatest discount. There is no data on the effect on prices with other colors of fluorescence.



Fluorescence, particularly a moderate to very-strong blue or yellow fluorescence, can affect color grading

of diamonds and must be accounted for in some way. Blue fluorescence can give the appearance of a better color grade while yellow fluorescence can give the appearance of lower color grade. To provide an accurate color grade I use a daylight equivalent, 5500K, grading light with a filter to block any ultraviolet from the grading light



LW & SW photos in the Jewelry Inspector of the same ring.

In recent decades with the introduction of lab-created diamonds into the marketplace research into diamond fluorescence has become important. Fluorescence differs between natural earth-mined diamonds and lab-created diamonds. Fluorescence has become one property that enables gemologists

to identify lab-created diamonds. Earth mined diamonds may fluoresce in longwave UV and will either be inert or weaker in shortwave UV. Lab-created diamonds that fluoresce will generally be inert or weak in longwave UV and stronger in shortwave UV. Lab-created diamonds may also phosphoresce after exposure to SW UV while phosphorescence is rare in earth-mined diamonds except for the rare chameleon diamonds or blue diamonds. The photos of the ring were taken with an instrument called the Jewelry Inspector which contains LW and SW light sources so that fluorescence of diamonds in jewelry can be compared in LW and SW to identify potential lab-created diamonds.

Scientists have found there are 4 main types of diamonds. The 4 types are based on the trace elements found in diamonds specifically nitrogen and boron. Fluorescence and type are related. Fluorescence can be an indicator of type. Normally diamond types are determined using expensive advanced equipment specifically the FTIR (Fourier Transform Infra-Red) spectroscopy. However, if a diamond is fluorescent the color of the fluorescence is a clue to diamond type. Understanding the diamond types is vital to understanding the fluorescence of diamonds.

## DIAMOND TYPES:

There are 4 types of diamonds based on the presence or lack of nitrogen and how the nitrogen is distributed within the crystal lattice and the presence of boron in one of the types.

Nitrogen is a common element found in over 98 percent of all diamonds. Diamonds containing nitrogen are formed in the upper mantle starting at about 150 km below the surface.

Diamonds without nitrogen are formed deeper at about 600 to 650 km below the surface. Diamonds with nitrogen are types 1a and 1b. Nitrogen makes diamonds opaque to shortwave ultraviolet. Nitrogen is also the activator for fluorescence but too much nitrogen can inhibit fluorescence. Nitrogen also imparts a yellow color to diamonds.

In type 1a diamonds, which comprise about 98 percent of all-natural diamonds, the nitrogen is found in aggregates where several nitrogen atoms are found together within the crystal lattice replacing carbon atoms. There are 2 types of nitrogen aggregates, A aggregates and B aggregates. Another nitrogen group is called an N3 center which is a group of 3 nitrogen atoms. The A aggregate is 2 nitrogen atoms together replacing carbon atoms. The A aggregates are the most common. Diamonds with A aggregates form sub-type 1aA. The B aggregate is 3 nitrogen atoms with a vacancy. B aggregates are rare, and type 1aB diamonds are less than 1 percent of all diamonds. Most diamonds are type 1aAB which has both A and B aggregates. Type 1a diamonds occur in almost every color, colorless, yellow, brown, pink, red, orange, and green.

Type 1b diamonds have isolated single nitrogen-replacing carbon atoms in the crystal lattice and are about 1 percent of all diamonds. They are usually yellow or brown in color. Brown type 1b diamonds can be treated using High Pressure High Temperature (HPHT) to turn them colorless. Some researchers theorize that all type 1 diamonds started as type 1b but over time the nitrogen migrates in the crystal lattice to form A and B aggregates and N3 centers.

Type 2a diamonds have no detectable nitrogen and are transparent to Shortwave UV. They are usually brown in color and can be HPHT treated to make them colorless. A few may have very weak blue fluorescence from a small amount of nitrogen below detectable limits.

Type 2b diamonds have boron which gives them a gray to blue color. The Hope Diamond is the best-known type 2b diamond. The boron is believed to come from seawater carried down in the mantle by subduction. The boron makes these diamonds electrically conductive.



```

C C C C C N N C C C C N N C C
C C N C C C C C C N C C C C C
C C N C C C N N C N C C C C C
    
```

Schematic of Type 1aA  
Diamond Lattice with A  
aggregates of Nitrogen atoms.

```

C C C C C N N C C C C N N C C
C C C C C N C C C C N C C
C C N C C C C N N C C C C C
C C N N C C C C N C C C C C
    
```

Schematic of Type 1aB  
Diamond Lattice with B  
aggregates of Nitrogen atoms.

```

C C C C C N C C C C C N C C C
C C N C C C C C C C C C C N C
C C C C C C C C N C C C C C C
C C N C C C C C N C C C C C C
    
```

Schematic of Type 1b  
Diamond Lattice with isolated  
Nitrogen atoms.

```

C C C C C C C C C C C C C C
C C C C C C C C C C C C C C
C C C C C C C C C C C C C C
C C C C C C C C C C C C C C
    
```

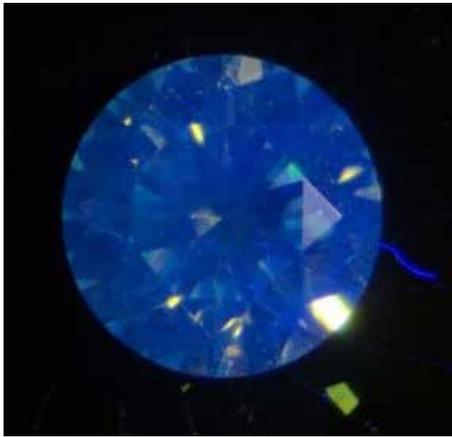
Schematic of Type 2a Diamond  
Lattice with no Nitrogen atoms.

```

C C C C C B C C C C B C C C B
C C B C C C C B C C C C C C C
C C C C C C C C C B C C C C C
    
```

Schematic of Type 2b Diamond  
Lattice with Boron.

## ACTIVATORS OF FLUORESCENCE:



Blue Fluorescence LW  
Type 1a diamond with N3

Blue fluorescence is the most common color. The activator is N3 centers in type 1a diamonds. Diamonds with N3 centers are known as Cape Diamonds and usually have a trace of yellow and are most likely type 1aAB. They can be positively identified from the 415nm absorption line in the spectrum referred to as the Cape Line.

Green fluorescence is activated by either an H3 center or an H4 center. An H3 center is 2 nitrogen atoms associated with a vacancy. In essence it is an A aggregate with a vacancy. An H4 center is 3 nitrogen atoms associated with a vacancy, i.e. a B aggregate. A type 1aB diamond will fluoresce green. Type 1aB diamonds are also low-nitrogen type and will be transparent to shortwave UV. Recently I had in my lab a diamond from Arkansas that had green fluorescence and tested as transparent to SW UV. I identified it as a type 1aB and had it confirmed with FTIR done by Stone Group Lab. If a diamond fluoresces green but is opaque to SW UV it will be an H3 center, i.e. type 1aA.

Yellow fluorescence is activated by carbon platelets or hydrogen impurities in type 1a diamonds.

Orangy-yellow fluorescence is activated by single nitrogen atoms replacing carbon in type 1b diamonds.

Orange fluorescence is activated by NV<sup>0</sup> centers, a single nitrogen trapped by a vacancy with zero charge. This will show a 575 nm absorption line in the spectrum.

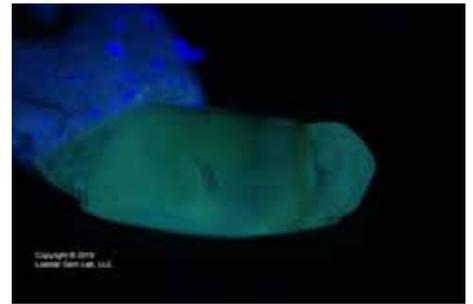
Pink or red fluorescence is activated by NV-centers which are the same as the NV<sup>0</sup> but with a negative charge. This will show a 637nm absorption line in the spectrum.

Red fluorescence can be activated by boron in type 2b diamonds. This can also cause red phosphorescence. Some fancy colored lab-created diamonds fluoresce red in shortwave UV.

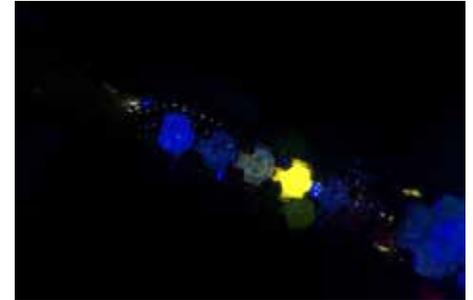
Fluorescence can be quenched by high levels of A aggregates in type 1aA or 1aAB diamonds.

Radiation damage can activate or change fluorescence in diamonds specifically natural or treated-green diamonds. They can have a white, to yellow or yellow-green fluorescence and possible weak phosphorescence.

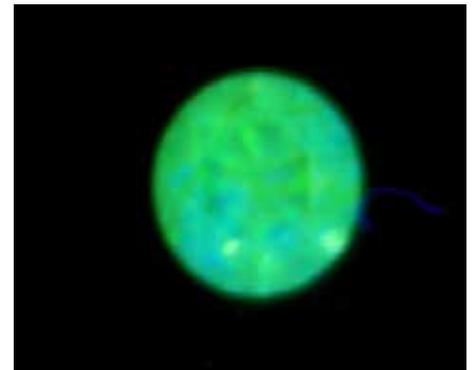
Chameleon diamonds which have a color change from mild heat or storage in the dark can have intense yellow fluorescence in LW, weaker in SW and 30 to 60 seconds of phosphorescence.



Green fluorescence in  
Type 1aB diamond H4



Yellow fluorescence in diamond  
in a ring.



Yellowish-Green fluorescence  
in an irradiated green diamond.



Red fluorescence SW in an  
HPHT Type 1b Lab Created  
pink diamond.

## IMPLICATIONS OF FLUORESCENCE:

Fluorescence has important implications for the gemologist in studying, identifying and grading diamonds. As can be seen from the activators certain colors are associated with specific diamond types. Blue, green, and yellow will strongly indicate a type 1a diamond. Orange-yellow, orange, pink or red may indicate type 1b. Red in a blue or gray will be seen in type 2b. Fluorescence alone is only an indication and should be used with other tests to provide additional evidence of type.

If a diamond shows stronger fluorescence in shortwave UV that will be a strong indication of a lab-created diamond. Lab-created diamonds will never have a blue fluorescence in

LW UV as no type 1a lab-created diamonds have been produced. The majority of lab-created diamonds produced today are type 2, although some HPHT lab-created type 2a diamonds may show blue fluorescence in SW UV. The research and study of using fluorescence to screen for lab-created diamonds is ongoing. As the producers of lab-created diamonds improve and/or change their production methods we will see changes in the fluorescence requiring gemologists to keep up with the changes.

Using ultra SW UV (100 nm or less) DeBeers has developed an instrument, the Diamond View, that uses magnification of fluorescence to reveal the growth patterns in diamonds. Lab-created diamonds show unique growth patterns compared to earth-

mined diamonds. However, this is an expensive instrument (\$50,000+). The GIA uses the DiamondView along with FTIR to identify lab-created diamonds.

Fluorescence alone should not be used to determine diamond type or to identify lab created diamonds. It is one tool among several that should be used. In my lab I use fluorescence in both LW and SW, strain patterns in a polarizing microscope, inclusions, UV transparency, the UV-Vis-NIR spectrometer, and electrical conductivity to identify type and origin, earth-mined or lab-created.

All photos Copyright © Lonestar Gemological Laboratory, LLC and Richard D. Armstrong

*Update: Richard has been diligently studying for the National Association of Jewelry Appraisers, Appraisal Studies Course and learned on September 8 that he had passed this final test with a score of 90% to earn the title of Certified Master Appraiser (CMA). He should have it early next year. Right now, there are no CMAs in Texas, Arkansas, or Louisiana. There is one each in Tulsa, Oklahoma, and Albuquerque, New Mexico.*

# AN ARTIST AMONG US

By Julia Toombs

During our long months of “prison”, Jerry Sudderth has been busy with his projects of gem and mineral chips on black walnut. He has been selected to be a featured artist with one of his creations at the Lone Star Art Show at the Texas Discovery Gardens at Fair Park, Dallas, Texas. The show runs from September 12 - October 31, 2020. You can follow him on Facebook to see other pieces. Below is his selected art.



# CALENDAR OF EVENTS

## 2020 FIELD TRIP SCHEDULE

### SEPTEMBER 26, 2020

Duncanville, Texas  
• Septarian, Fossils

### NOVEMBER 2020

• Election of Officers

### OCTOBER 5, 2020

• Club Auction and  
Open House

### DECEMBER 7, 2020

Tyler, Texas  
• Christmas Party,  
Clubhouse

## GROUP MEETS

### Lapidary / Jewelry Group

Meets on the second Saturday of each month at 2:00 pm, except December and January.  
Terry Roberts leads this group. Contact Terry to have your name added to the email.

[terry.roberts45@yahoo.com](mailto:terry.roberts45@yahoo.com)

### Mineral Group

Meets every second Tuesday of each month at 6:30 pm.  
Charles Creekmur heads up the group. Contact Charles to have your name added to the email.

[calcite65@gmail.com](mailto:calcite65@gmail.com)

### Fossil Group

Meets every third Tuesday of the month at 6:30 pm.  
David Russ heads up the group. Contact David to have your name added to the email.

[dbruss50@gmail.com](mailto:dbruss50@gmail.com)

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**NEWSLETTER CONTENT**

Please send original articles to [rockrosenewsletter@gmail.com](mailto:rockrosenewsletter@gmail.com).

Please send in a Microsoft Word format that can be edited.

The 10th of the month is the deadline.

Board minutes are not printed in the newsletter. If you would like to see a copy, contact a member of the Board.

**THE EAST TEXAS GEM AND MINERAL SOCIETY**

The purpose of the East Texas Gem & Mineral Society is to promote the study of Geology, Fossils, and the Lapidary Arts. The public is always invited to attend regular monthly club meetings.

**ANNUAL DUES**

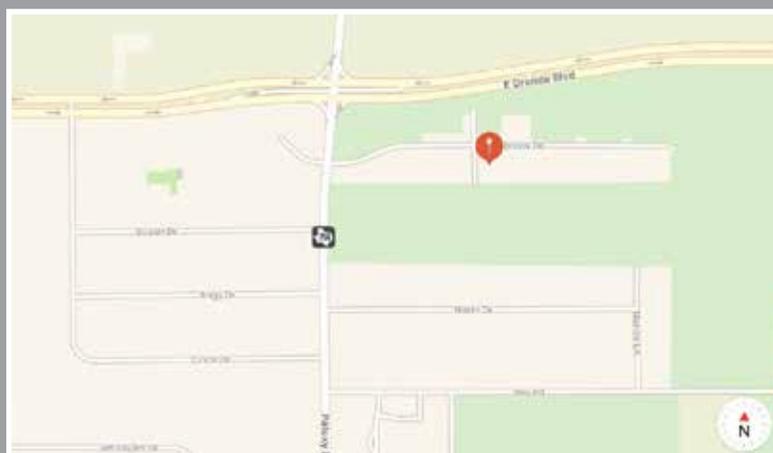
Single: \$10.00 • Family: \$20.00

**MONTHLY MEETING**

WHEN: First Monday of the month unless it's a holiday, then the second Monday, at 6:45 p.m.

WHERE: ETGMS Clubhouse

Check us out on the web • [WWW.ETGMS.ORG](http://WWW.ETGMS.ORG)



**CLUB ADDRESS AND TO SEND DUES**

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**ETGMS CLUBHOUSE**

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