

Wayne County Gem and Mineral Club News

December, 2017

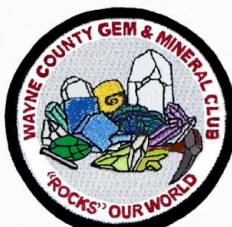
Always Looking for Places to Dig!



Like a kid in a
candy store!



Bill Lesniak admires some Arkansas quartz.
Photo by Rita Lesniak



<http://www.wcgmc.org/>
FACEBOOK link



WCGMC Workshop Saturday: November 4, 2017



Next workshop is December 2nd.

WCGMC Christmas-Holiday Celebration Friday December 8th, 6:30 PM

Party, Buffet, Gifts, Games, and More
Bring a dish to pass

Club provides ham, potatoes, and drinks
*If you have not yet informed us that you will attend,
please send note with headcount
to Fred Haynes (fredmhaynes55@gmail.com)*

WCGMC December Workshop Saturday, December 2nd

**Complete that Christmas gift piece.
Come see some massive Arkansas quartz.
Enjoy a winter Saturday with special friends.**

When: 10:00 AM til mid afternoon

Where: The Weiler's Barn and Club Workshop
6676 E. Port Bay Rd, Wolcott, NY

Rules: BYOR (Bring your own rocks) to saw, grind,
polish or even facet. Training on equipment
is available. Eye protection is required.
\$5/adult to offset maintenance costs.

One January workshop will be January 13th.
A second Saturday may be added later in the
month.

Arkansas Quartz by Fred Haynes

3300 miles and 3300 pounds of Arkansas quartz: the miles are accurate, but the weight may be a bit of an understatement. Once someone started putting large clusters and quartz-covered pieces into the trailer (I think it was Glenn!) it seemed contagious. Everyone simply needed more! Buckets were filled at three sites, half bushel baskets with crystals encased in red Arkansas mud were purchased, we traded for yet more, and eventually even the spaces under the seats in the van were dedicated to Arkansas quartz. And we hadn't even headed to North Carolina yet!



Seemed like we were doing this a lot on the way down, and even more often on the way home!!

Twelve WCGMC rockhounds made the nine day trip. Rick and Denise Leszczenski flew on ahead of us, Ed and Donna Smith followed or led in their Subaru, and the rest of us (Glenn, Eva Jane and Matt Weiler, Bill and Rita Lesniak, Bob Linderbery, Linda Schmidtgal and Fred Haynes) found positions in the two-part monstrosity pictured above. We all rode in the front part,

although there were times when we might have wanted to put someone in the back, you know, to protect the minerals, but we won't go there. And those 3300 miles, Glenn drove every last one of them. We owe him a really big attaboy for that.

Quartz was easy to find. Identifying leaverite was not as easy. Not everything was museum quality or even undamaged, but after driving over 1300 miles in two days, it seems like we were obligated to fill the buckets and containers we had brought and then go out looking for more. Single points, cluster pieces, and matrix pieces of all sizes were waiting to be discovered. We visited mines on three consecutive days, Sweet Surrender, Ron Coleman's Mine, and Twin Creek. Very different locations, but none disappointed us.

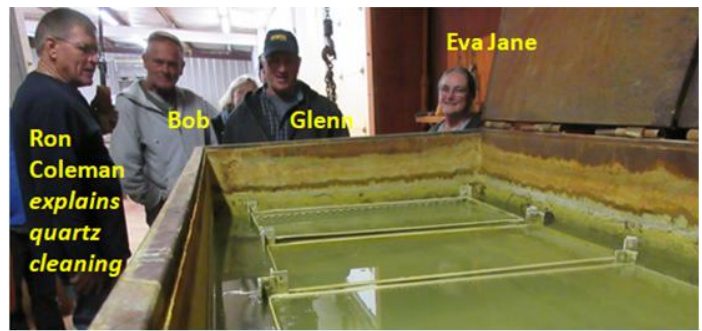


Shirt sleeve weather in mid-November greeted us on Monday morning at [Sweet Surrender](#). Look at the beauty Rick dug out.

Tuesday morning Fred had set up a visit with "John Be Crystals" at his home/workshop in Story, AR. Quartz was everywhere, on pallets, on tables, and in large vats of heated oxalic acid. We admired and we purchased.



John (johnbecrystals.com) shows us some of his cleaned pieces on one of many tables. He was prepping for an upcoming show. Photo by R. Lesniak



Ron Coleman Mining

Nov. 14, 2017



Tuesday at Ron Coleman's Mine in Jessieville, AR.

After visiting with John, we headed for the mecca of Arkansas quartz mines. [Ron Coleman Mining](#) more resembles an open-pit copper mine than a quartz mineral location and the processing "plant" is perhaps as impressive as the large hole in the ground. Ron, himself, gave us a tour of the warehouse and oxalic acid bath units. It was there that Bill was caught oogling one of literally hundreds of large clusters (see page 1). Enough of this though, and we soon headed for the dumps to find our own. No hammers here though. That sort of cramped our style, but we persisted. Did anyone ever tell you the Arkansas red clay is sticky? It is.

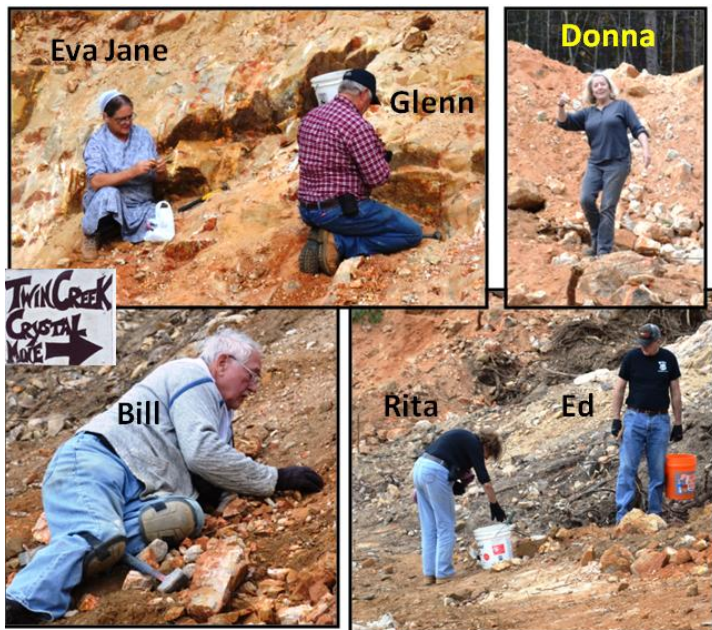


Do we look tired? Well, we were!

Wednesday morning we slept in: enough of those 5:30 AM wake-up calls. We snoozed til 7:00 and cleaned rocks. [Twin Creek Mine](#) was only 20 minutes from "home" and opened at 9 AM. Of course we got there just as the owners were arriving. Some things cannot wait and digging is at the top of that list.



Wednesday was day 3 and Twin Creek was on the agenda. Bob's little friend on the left was not with us, but we let him join us for the picture.



"Action" shots from Twin Creek. We thought Donna was holding up a big crystal for all to see, but instead she was coming down to show us her cut finger and in search of a bandaid. Quartz can fight back.

I should mention that we found a wonderful house to rent for four nights just 10 miles east of Mt. Ida. The home had beds for all and a wonderful living area for us to cook together while swapping lies about our massive finds. Cards were dealt, a game called Five Crowns. I was told there was no gambling involved and that there were only winners. However we did use the cards to divide the spoils at times and there were certainly winners and losers then. The location was so civilized that Sunday and Monday night football was available for those interested. The house even had a carport that serviced as quartz cleaning central. The ["Pine Ridge Cabin"](#) airbnb sure beat a motel for our stay in quartz country, USA. Check them out and tell them we referred you.



Ed cooks 12 hot dogs



Bill manages to cook one!

Cookout on Tuesday: Ed Smith brought venison and chili for our first night so we put him in charge of the hot dogs on day 3. He managed to cook 12 hot dogs at once. Bill, however, had to do his own to get it just right.



All of this and much more needed to get packed into the trailer. Well, we let Bob and Linda ride in the van!

On arrival in Mt Ida early Sunday evening we had dropped off a dozen buckets of personally collected minerals and fossils with Larry at Atlantis Found. Linda had set up a swap and we returned late Wednesday to find him most generous. The large slabs on the carport floor and others even larger came from Larry in trade. If you are ever in Mt. Ida we recommend you stop at [Atlantis Found](#). Tell Larry you heard about him from us.

We packed the trailer and headed east on Thursday morning. Visions of crinoids, kyanite and garnets danced in our minds as Glenn drove us across Tennessee. But you will have to wait until the next newsletter to learn what we found on the second half of the trip!



THE ORIGIN OF THE ELEMENTS

by Fred Haynes



Have you ever sat down to think about where the chemical elements in all those neat minerals we collect came from? I mean in the grand scheme of things, like as the universe forms and evolves.

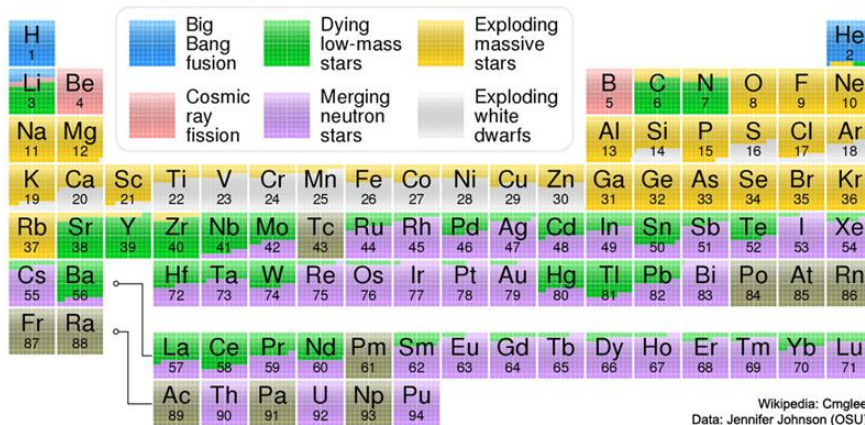
We collect metallic minerals, like copper (Cu) in chalcopyrite and bornite and in colorful carbonate secondary minerals like malachite and azurite. The latter require carbon (C) as does calcite with its calcium (Ca) cation and dolomite when there is sufficient magnesium (Mg). WCGMC has travelled to Cobalt, Ontario in search of silver (Ag) in its pure form as well as cobalt in arsenic minerals (Co, As).

In other places we seek simple rock forming silicate minerals like quartz and feldspar and mica. They contain sodium (Na), potassium (K), aluminum (Al), and, of course, silica (Si). There are oxides like magnetite, which has both the metal element iron (Fe) and oxygen, and we love the form and color of fluorite, which contains fluorine (F).

Geologists study how these minerals form in earth's local and unique environment. Water plays a big role in many and nearly all have temperature and pressure ranges within which they are stable. But none of the stable chemical elements on earth were actually created on earth. Therefore, it is astronomers who have given us the clues as to where the elements that ended up being "trapped" and concentrated on the planet we call home were created. And some of what they tell us is extremely fascinating.

For example, the hydrogen in your body and present in every molecule of water originated from the "Big Bang" event when the universe was first formed. Incredibly there appear to be no appreciable sources of hydrogen

since that event. The carbon in your body and in all creatures and plants was generated by nuclear fusion in the interior of stars, as was the oxygen. Iron found in the minerals on our planet and some other metals were made during supernovas of stars that occurred long ago and very far away (Johnson, 2017).



You are likely familiar with the Periodic Table of the Elements, but have you ever seen one displaying the ultimate origin of the elements? Professor Jennifer Johnson of The Ohio State University designed this version to illustrate just that. Note that some elements show multiple origins. Some, like copper, are displayed in this manner because we just are not certain how and where they formed (Johnson, 2017).

It has been speculated for some time that the formation of gold and many other heavy and more exotic elements requires the collision of neutron stars, themselves a rare phenomenon. Neutron stars are extremely dense accumulations of neutrons left behind after stars collapse during supernovas (Chang, 2017). The pressure is so intense that electrons and protons are squeezed together into neutrons. A single thimbleful of a neutron star can weigh as much as several million elephants (Chang, 2017), or a whole lot of pick-up trucks full of rocks.

You may have read recently that this theory was significantly advanced when astronomers actually observed the energy and light emitted by the collision of neutron stars 130 million light years away which had finally reached the earth. "By studying the fireball from this explosion, astronomers conclude that the collision created a cloud of gold many times more massive than the earth" (Overbye, 2017). Proof, they claim, that kilonovas (a collision/merger of neutron stars or black holes) are truly agents of cosmic alchemy!

It all started on August 17th, 2017 when alarms at the Hanford Laser Interferometer Gravitational-Wave Observatory (LIGO) in Richland, Washington alerted astronomers of a highly unusual and very distant event (Burthick, 2017). Two seconds later, the

orbiting Fermi Gamma-Ray Space Telescope recorded a flash of gamma rays which carried characteristics of a neutron star collision, but where? A frantic search began. Night skies were searched by telescopes around the world. Operators of the Swope telescope high in the mountains of Chile had to wait 11 hours for darkness, but despite this delay they are apparently credited with first detecting the event as a bluish pinprick of light (Overbye, 2017). The light was coming from within the Hydra constellation in a galaxy 130 million light years from earth. The event they were recording had occurred during the Jurassic Period of earth's history while dinosaurs like Stegosaurus and Allosaurus roamed the land and Plesiosaurs ruled the sea. Only now was its light reaching us.



Two artist renditions of a kilonova. Upper: NASA/Dana Berry, from Burtnyk, 2017. Lower: Robin Dienel/Carnegie Institution for Science, from Overbye, 2017.

Incredibly, they were observing the first optical photons man has ever witnessed from a kilonova. When first observed, the fireball was

the size of Neptune's orbit, and was radiating about 200 million times as much energy as our sun (Overbye, 2017). A mere nine days later it had faded from blue to red and had lost much of its energy. Had it taken that long to locate the event, many of the learnings that have been made and will continue to be made would not have been possible. University of Columbia physicist David Metzger estimated that an amount of gold equal to 40-100 times the mass of the earth was created in a matter of 2-3 days and then spewed into space to be incorporated into new stars and planets: food for thought for sure.

Next time you venture out on a WCGMC collecting trip in search of a metal-bearing mineral, or sit down to polish your jewelry, take a minute to think about what those metal molecules have been through to get into your hands. Somehow, the earth just doesn't seem so big anymore.

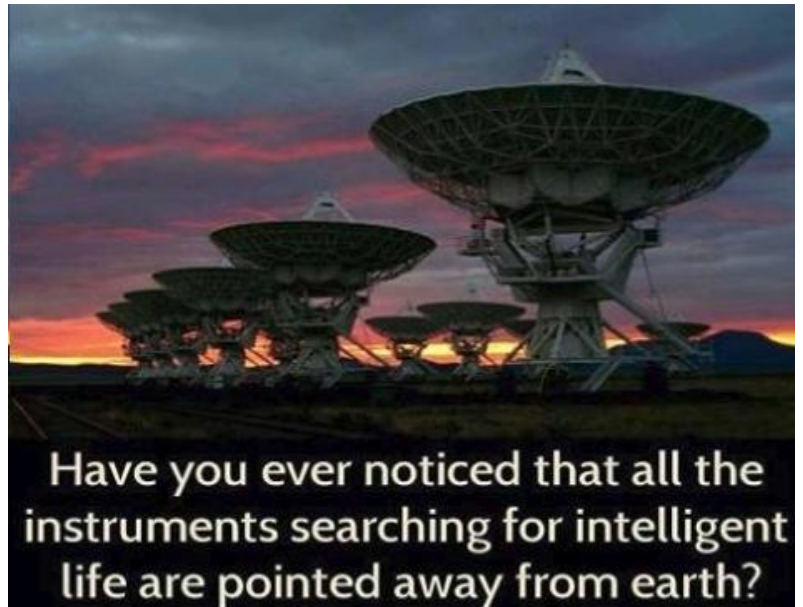
REFERENCES:

Burtnyk, K.M., 2017, LIGO Detection of Colliding Neutron Stars Spawns Global Effort to Study the Rare Event, LIGO News Release, October 16, 2017 ([LINK](#))

Chang, K., 2017, It was a Universe-Shaking Announcement: But what is a Neutron-Star Anyway?, New York Times, October 16, 2017 ([LINK](#))

Johnson, J., 2017, Where Your Elements Came From , NASA - Astronomy Picture of the Day, October 24, 2017 ([LINK](#))

Overbye, D., 2017, LIGO Detects Fierce Collision of Neutron Stars for the First Time, New York Times, October 16, 2017, ([LINK](#))



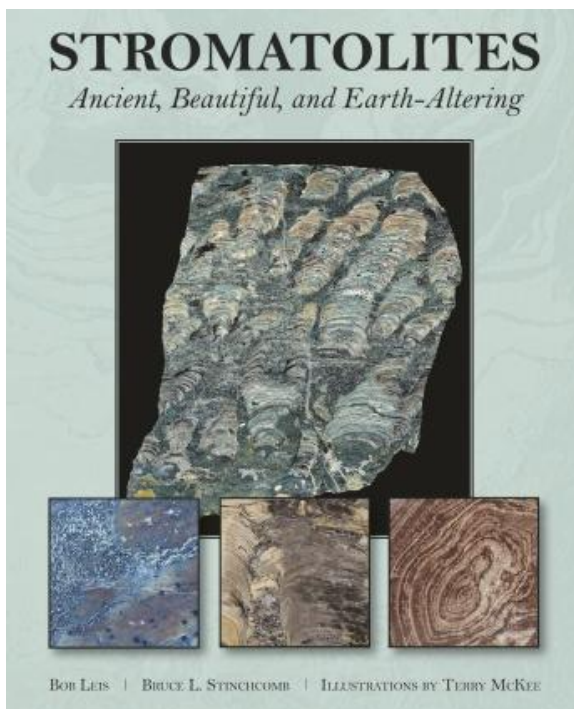


BOOK REVIEW: STROMATOLITES

BY FRED HAYNES



Bruce Leis has been an enthusiastic collector and researcher of stromatolites for over two decades. He has visited them worldwide, photographing their distinctive patterns and studying their geologic setting. In 2015 he teamed up with retired professor Bruce Stinchcomb and paleo-artist Terry McKee to produce a unique book detailing these wonderful and important geologic features. Anyone interested in earth's geologic history and the development of life on this planet should enjoy their wonderfully illustrated 176 full page size treatise.



The full title of the book is **Stromatolites: Ancient, Beautiful, and Earth-Altering**. The introductory chapter defines and describes stromatolites as the earliest undeniable fossil evidence of life on earth, somewhere around 3.4-3.5 billion years ago. Stromatolites are actually not fossils in that they do not preserve actual body parts of ancient organisms. Rather they are trace fossils, indirect evidence of cyanobacterial organisms that once coated surfaces in a tidal zone marine environment. But that certainly does not detract from their geologic importance or inherent beauty.

Leis' first encounter with stromatolites was in northern Minnesota when he purchased a polished slab of 1.8 billion year old, colorful Banded Iron Formation, affectionately named "Mary Ellen Jasper". That piece, and others acquired soon after, set him off on a two decade mission to understand and document stromatolites, first locally, then nationally, and eventually globally. Interestingly, several WCGMC members can recall our pleasure in collecting this same red banded material west of Thunder Bay, Ontario two summers ago. We've also collected stromatolites in Cambrian rocks at Ace of Diamonds and in Silurian rocks in our own backyards at Walworth and Penfield Quarries. I wonder if this book and these encounters will inspire any of us to become hooked. As Leis likes to say, "Pond Scum Rules."

Stromatolites are found in the world's oldest sedimentary sequences. Although less widespread, they remain around today. The first half of the book progresses through the style, role and environments of stromatolite occurrence through geologic history. You can also learn how the cyanobacteria that produced stromatolites is responsible for the introduction of free oxygen into the atmosphere. Ironically, this led to the proliferation of life forms that fed on the bacteria thus limiting the environments where cyanobacteria could thrive.

One of the most wondrous aspects of this book is its photographs and illustrations. There are 636 figures and illustrations distributed purposely throughout the text (and 636 is not a mistype). Almost all are in color and most depict the unique character, color, style and layering of the subject stromatolites. All are carefully and completely identified by location and age. Chapter 10 details where you can find stromatolites in museums, in rock shops, and in the field. Armed with this book no one should have any trouble finding and identifying these unique and important trace fossils.

Full reference:

Leis, B., and Stinchcomb, B.L., (illustrations by McKee, T.), 2015, **Stromatolites: Ancient, Beautiful, and Earth-Altering**, Schiffer Publications Ltd., 176 p.

For more info on New York stromatolites, see article in [WCGMC newsletter January, 2016](#), p 6-7.



Next time you seek fluorite at Walworth, take a second look at these features. Yes, they are stromatolites.



Wayne County Gem and Mineral Club 2017 Field Trips

The 2017 collecting season is coming to a close and it is time to start planning for 2018. But before we do that let's reflect a moment on the year that still is. Did you know that WCGMC planned and/or participated in 28 separate trips this year? Or that these trips totalled 64 total days? No one participated in all these trips, but a few folks came pretty close. We joined forces with three other clubs this year (the Buffalo Geological Society, the Niagara Peninsular Geological Society, and the Rochester Academy of Science Fossil Section). In doing all this travelling we collected in eleven states (NY, PA, NJ, MA, CT, OH, KT, IN, AR, TN, and NC). Ten trips involved overnight stays including a pair of one-week trips into Ontario. It was, indeed, a busy year.

Take a look at this trip list. Which trips did you take? What trips did you miss that you would like to make in 2018? Is there something missing that you know about that you would like to do? We may have a hard time matching this in 2018, but we are going to try. Can anyone offer to help lead a trip? Help us by telling us what you would like to do.

2017 Field Trips (28) -- red for fossils (# days)

Jan 21 – Lake Ontario shoreline

Feb 24 – Ilion travertine

March 30 – Bethany Center

April 1 – Ace of Diamonds

April 10 – Lake Ontario shoreline

April 29-30 – Super Dig – Sterling Hills, NJ (2)

April 26-30 – Cincinnati Area Fossil Trip
(with BGS) (4)

May 5 –7 Central PA Quarries and **Fossils** (3)

May 6 – Penfield Quarry

May 9 – Ilion Gorge

May 23 – Hooper Mine Garnets

May 27-28 – Hickory Hills for Herks (2)

May 31 – Paradise Falls for Herks

June 16 – Ridgemount for Eurypterids

June 17 – Jaycox Run (with RAS)

June 23-25 – St. Lawrence County (3)

July 15 – Indian Creek + picnic

July 17-24–CANADA– Bancroft, Eganville, Cobalt (8)

August 6 – Green's Landing (joint with RAS)

August 12-17 – CANADA (part with NPGS) (6)

August 16 – Ace of Diamonds

Sept. 16-18 - Star Lake - St. Lawrence Co. (3)

Sept. 23-25 – MA trip (4 sites in western MA) (3)

Oct. 8-9 - Walworth Quarry (2)

Oct. 16-18 – CT trip (SF sites) (3)

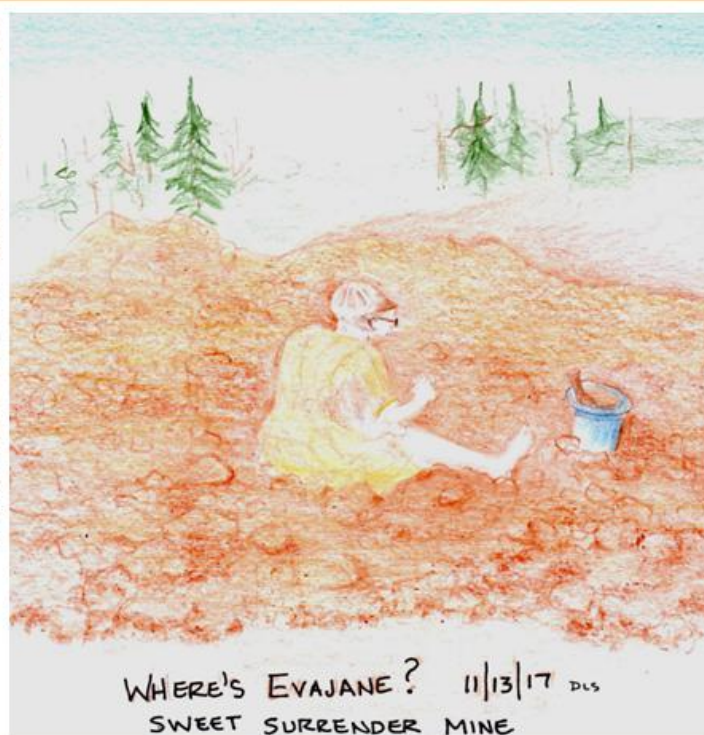
Oct. 22 (Ace of Diamonds)

Nov 8 – Chimney Bluffs (with NPGS)

Nov. 11-19 (Arkansas, TN, NC) (9)



I thought I had caught Rita and Donna resting midday at Sweet Surrender in Mt. Ida, Arkansas. But Donna was busy sketching the collecting scene which included Eva Jane digging in some nice Arkansas red clay in search of quartz points.



WHERE'S EVAJANE? 11/13/17 DLS
SWEET SURRENDER MINE

Wayne County Gem & Mineral Contacts

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Visit us on Facebook:

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Bill Lesniak – Website Coordinator

Glenn Weiler – Workshop Coordinator

Linda Schmidtgal – Collection Curator

Eric Elias: GEMFEST Show Chair

thecrystalnetwork@hotmail.com

Fred Haynes – Facebook Administrator

Club meets 2nd Friday of each month starting in Sept.
Social meeting at 6:30 PM.

Regular meeting at 7:00 PM

Park Presbyterian Church, Maple Court, Newark, NY

Website – <http://www.wcgmc.org/>

Dues are only \$15 individual or \$20 family for a full season
of fun. Renewal is in October. Send to:

WCGMC, P. O. Box 4, Newark, NY 14513

The Public is always welcomed
First Class: Dated, Meetings & Time Values



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