

# LGMC October Meeting

Time and Place:

October 19, 12:00 PM, **7077 S. Simms St., Littleton, CO 80127**

*We will have no meeting this month because of the silent auction.*



## Presidents Message

**October 2019**

Get those bidding pens and pencils ready! Our annual **Silent and Verbal Auction on October 19<sup>th</sup> at Heritage United Methodist Church** is quickly approaching. We expect to have lots of minerals, faceted stones, jewelry, equipment, books and more on the bidding tables this year. Our Board and volunteers have been busy getting our resources, supplies and new facility ready for the big day. Good luck to everyone looking and bidding for those special items.

We will also have a brief club meeting during the auction. The purpose of the meeting will be to hold nominations for:

**President Elect** (for president in 2021)- This is a voting position on the club board. This is a role that prepares the President Elect for a one-year term before becoming President the following year.

**Trustee**- This is a 2-year term board role. Trustees assist with organizing and conducting club business and activities.

**Elections for these positions will be held at the November meeting. Nominations will be open up to the election.**

We are very fortunate to have an active membership that volunteers to keep the club running smoothly. I'm extremely thankful for all the officers, trustees and member volunteers who make our club successful and fun! Occasionally, we have roles that need to be filled. This year we are looking for enthusiastic volunteers to serve as:

**Hospitality Chairperson**- Meet and greet guests, maintain the guest book, introduce guests, and inform new members of club activities and opportunities.

**Historian**- Keep a historical record of the club including any awards given or received by the club.

**Assistant Field Trip Leaders**- Jim Hooten will continue to schedule field trips but he could use assistant field trip leaders. Volunteer to lead your favorite field trip!

I encourage all new members to become more involved in our club activities and volunteer for open positions and roles. It's a great way to meet club members, learn more about the club and have a positive impact our activities. Don't worry about experience, we will support and work with you to learn and be successful in these roles. The support and friendships that I've built as a volunteer over the past 5 years is a major benefit of being a LGMC club member. Members who are interested in these roles should contact me.

Congratulations to our members who were winners of the Special Competitions at this year's Denver Gem & Mineral Show! A complete listing of the winners and their categories is listed later in this newsletter. Congratulations to : Nick North; Lesley Sebol; Nick Kimber; Randy Kokkinen, Bill Mahnken; Kent Havens and Jim Hooten/Nicole Bolger/Field Trip Leaders.

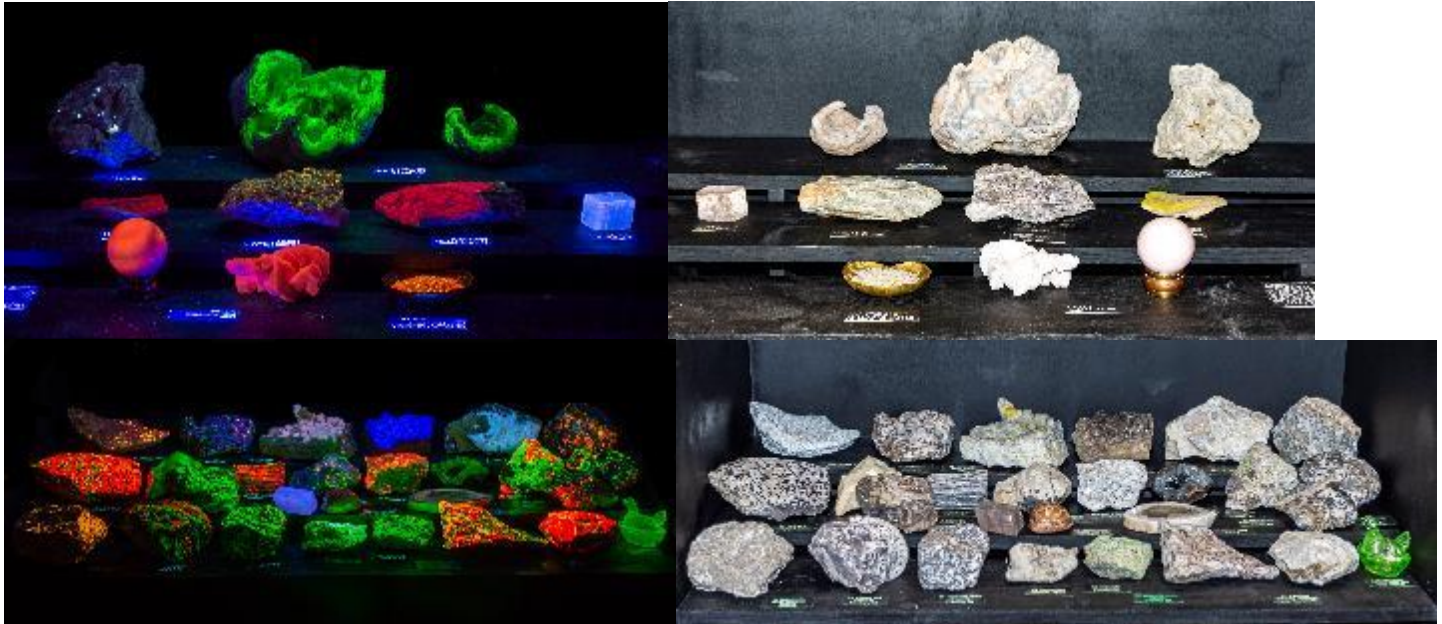
A big thanks to all the board and member volunteers who have organized this year's auction. Your efforts are indispensable. I'm excited to see the unique mineral specimens, lapidary and equipment is at the auction this year. I always see something that I've never seen before at these auctions. Good luck to everyone and I hope to see you there!

Ron Wankner

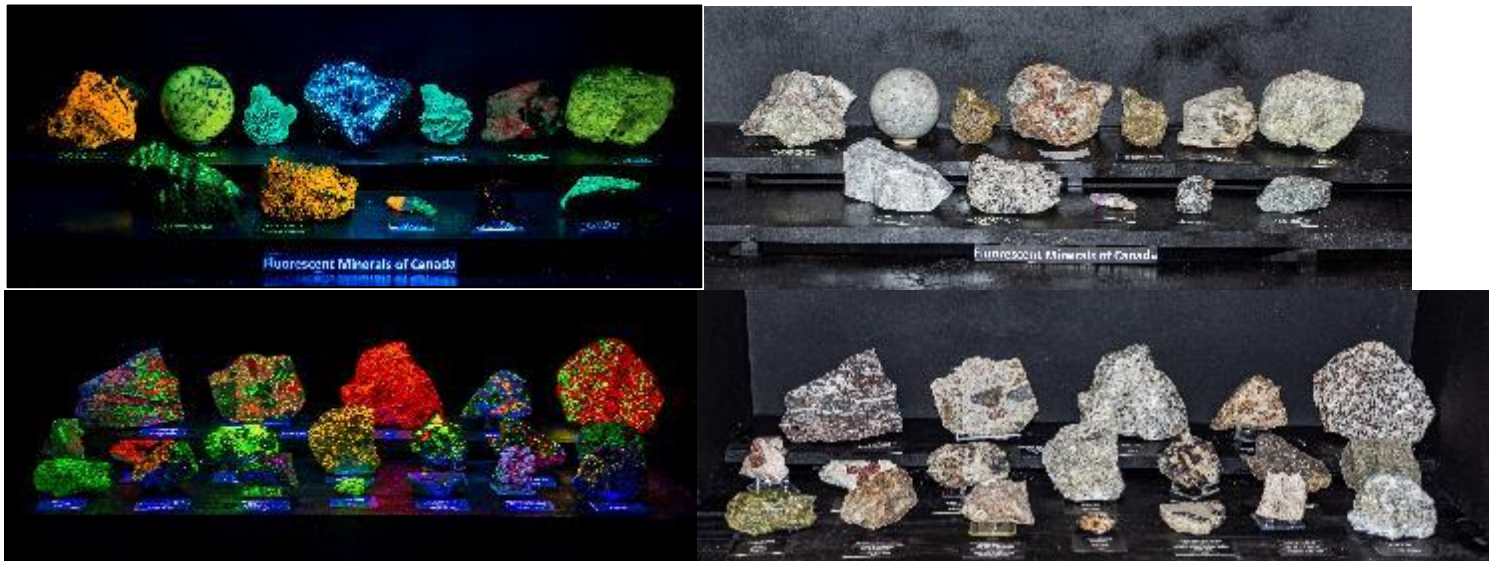
President

# Denver Mineral Show Pictures

U-V Room photos from the 2019 Show from Brian Walko



Jerry Magoughlin (a professor at CSU in Fort Collins)'s s-w case.



Ed Raines Case

## Denver Mineral Show Pictures Continued

### Club Case



Mineral specimens courtesy of: Steve Cable, Lou Conti, Kent Havens, Larry Havens, Bill Jones, Nancy Kimber, Nick North, Lesley Sebol and Bob Zartman.

## Denver Gem & Mineral Show 2019 - Winners in the Special Competitions

**Richard M. Pearl Award:** Phil Gregory (Elbaite on Quartz, Himalaya Mine, San Diego County, California)

**C. E. Withers Award:** 1st Place(a Tie): Eldon Hunewell (50 Years of Hunting Rocks in Colorado and Beyond)  
Carolyn Manchester (Worldwide Tourmalines)

3rd Place: Judy and Ron Knoshaug (Worldwide Miniatures)

4th Place (a Tie): Dan and Dianne Kile (Amethyst from Thunder Bay, Ontario, Canada)  
John Warn (Worldwide Tourmalines)

### **Donna Chirnside Memorial Museum Trophy:**

1st Place: Royal Ontario Museum (Minerals of Canada)

2nd Place: Canadian Museum of Nature (Minerals of the Canadian Arctic)

3rd Place: Smithsonian Institution (Minerals of Canada)

### **Best of Species Trophy:**

**Thumbnail:** Carolyn Manchester (Serandite, Poudrette Quarry, Mont Saint-Hilaire, Quebec, Canada)

**Toenail:** Nick North (Rhodochrosite, Poudrette Quarry, Mont Saint-Hilaire, Quebec, Canada)

**Miniature:** Nick North (Vesuvianite, Jeffrey Mine, Asbestos, Estrie, Quebec, Canada)

**Cabinet(a Tie):** Lesley Sebol (Selenite, Red River Spillway, Winnipeg, Manitoba, Canada)  
Nick North (Selenite, Red River Spillway, Winnipeg, Manitoba, Canada)

**Oversize Cabinet:** Nick North (Manganite, Caland Pit, Atikokan, Ontario, Canada)

**Best Fossil:** Nicholas Kimber (Diplomystus dentatus (a fossil fish), Chordata - Actinopterygii, Green River Formation,  
Eocene, Kemmerer, Wyoming)

**Prospector Trophy:** Randall Kokkinen (Amazonite, Fluorite, Cleavelandite combo, Park County, Colorado)

2nd Place: Randall Kokkinen (Fluorite with Amazonite, Park County, Colorado)

3rd Place: Bill Mahnken (Smoky/Amethyst Quartz Crystal, Montana)

### **Junior Prospector Trophy:**

1st Place: Natalya Kent (Smithsonite, Kelly Mine, New Mexico)

2nd Place: Alexandria Kent (Fluorite, Blanchard Mine, New Mexico)

3rd Place: Natalya Kent (Fluorite, Blanchard Mine, New Mexico)

### **Club Prospector:**

1st Place: Colorado Mineral Society

2nd Place: Littleton Gem and Mineral Club

### **Individual Competitive Cases:**

**Worldwide Thumbnails** - Kent Havens (Masters)

**Worldwide Miniatures** - Phil Gregory (Masters)

**Educational, General Audience/Concept:** Erin Delventhal (Advanced, What are Pseudomorph Minerals?)

**Educational, General Audience/Concept:** Michael Gobla (Novice, Minerals from Ontario, Canada)

**Educational, Informed Audience/Concept:** Stanley Korzeb (Advanced, Formation Mechanism of Precious  
and Base Metal Minerals in Epithermal or Hot Springs Systems)

## DGMS Littleton Club Booth Recap

The club booth had a new look this year. We had a Facebook Selfie Station, thanks to Nicole Bolger; the Mineral Study group filled the booth display case with some outstanding personal minerals; Dan Lovitt brought a display of lovely cabs and talked to people about cabbing; John Kleber demonstrated his faceting machine and gave many people a chance to try a hand with faceting (Nancy Kimber and others stepped in at times to help kids try faceting); and we gave away many polished rocks to happy people.

Thanks to Dave Redman, Ann Wankner, Lynette Warren, Paula McIntyre, Stefanie Hughes, Daniel Lovitt, Marge Collum Dale, Mary and Anna Plume, Carol Nielson-Alt, Lesley Sebol, Nancy and Nichols Kimber, and Ketna and Gail Pimentel. Special thanks to Ketna and Gail Pimentel who pitched in on several extra shifts.

Thanks to those who donated polished rocks for our giveaway. Your last-minute donations of those provided enough for the 2019 show with leftovers which probably will hold us for another year.

Overall many people contributed to the success for our booth at this year's show – Sorry if I forgot someone.

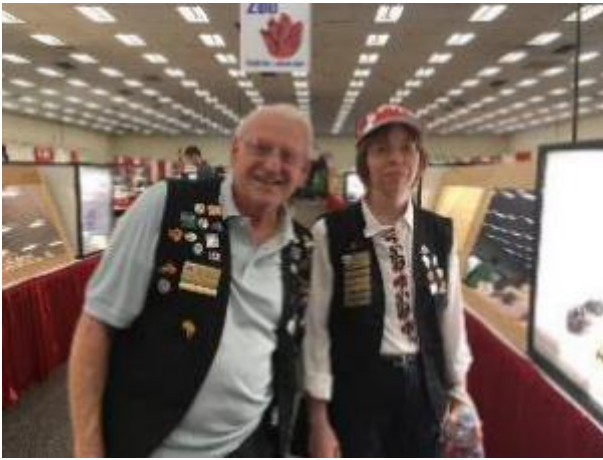
John Kleber



John Kleber demonstrating faceting to the kiddos at the show.



John Kleber at the club booth.



Larry Havens and Lesley Sebol



Ann and Ron Wankner



Chuck and Dave



Carol Nielsen-Alt



Dale



Nicole Bolger and Jim Hooten



Dan, Lynette and Pam



Ian Duncanson, Ketha, and Ann Wankner



Victoria



Lynette Warren



Kent



Dave



Ruth and Bob



Nancy



Joann and Tom



Pam



Nick North

---

# Special Thank You to Our Volunteers!

To all the Club volunteers who lent their helping hand to the 52nd Denver Gem & Mineral Show - BE PROUD! You done good. Every year, no matter the theme, there is the same amount of strong effort and hospitality needed to set up the Show, to keep thing running smoothly, and to take it down. That's a lot of work! And you all did the work with grace and efficiency. Our Club folks contributed hours and fun to such things as taking admissions, skirting tables, setting up cases, providing security, selling grab bags, helping the treasury, chipping in with hospitality, repackaging liners, taking down cases, and all around helping with our beloved patrons, dealers and exhibitors. Thank you volunteers for helping produce a smooth and entertaining show. The rock community is better for your help. And we have you all down for next year - same time, same place, and feel free to bring family and friends. They'll thank you for it.

Best Regards,  
George Daggett  
2019 Show Chair

---

## Selected upcoming LGMC and Earth Science Events

- Tue, Oct 15** **Faceters and Cabbers** - Faceters and Cabbers group will meet on Tuesday, October 15th, starting at 7:30 PM. Our meeting will be at the St. Philip Lutheran Church, the new location for our club meetings. We will share and discuss our creations and other items. The discussion topics will be Charolite, as the cabbing material and Corundum, as the faceting material. All Littleton members and guests are welcome to join us. If you are planning to attend and not on our email list, send me an email at [jkleber@att.net](mailto:jkleber@att.net) for any last-minute updates.
- Sat Oct 19** **LGMC Silent Auction**, 12:00pm, don't forget we are at our new location, 7077 S. Simms St., Littleton, CO 80127
- Nov 15-17** **Denver Area Mineral Dealers Show.** Jefferson County Fairgrounds. Free admission & parking. Friday & Saturday 10 am - 5 pm. Sunday 11 am - 4 pm.

---

## Junior Rockhounds

**October 2019**

No meeting this month

If your children or family want to join the LGMC Junior Rockhounds and receive the program materials send an email to [rwankner@msn.com](mailto:rwankner@msn.com).





## LGMC Summary Minutes Board Meeting, August 13, 2019

**Location: Clement Park, Shelter N, Littleton**

Called to order at 7:18 pm by President Ron Wankner.

In Attendance: Ron Wankner, Larry Havens, Ian Duncanson, Travis Leach, Lynette Warren, Nicole Bolger, Lesley Sebol, Stefanie Hughes and Jim Hooten.

Minutes of the April meeting were approved as published.

**Treasurer's Report:** Lesley reviewed the report for the financial activity for the period 3/30/19 to 7/31/19. Income was from dues, mini silent auction, bulletin grant from Council, and refreshment donation cup. Expenditures included three checks for door prizes to two local dealers, two speaker honorariums, club claim fees, grab bag party food and founders' day cake.

Motion to accept treasurer's report by Duncanson; second by Leach; motion carried.

*Reminder: Any club member may ask the Secretary to see the treasurer's report at any regular club meeting.*

**Membership:** Ian presented two applicants for membership: Patricia Utrup and Christine Spitznagel.

**Old Business:** Bank account signatures status: agreed that there should be 2 signatories. Secretary will need to prepare letter on letterhead authorizing the designated signers.

**Field Trips:** Jim Hooten outlined the 4 trips left in this year's schedule: Hartsel, Red Feather Lakes, club claims and Wigwam claim. It was proposed that an early field trip planning session be held and to recruit interested members to be assistant trip leaders to reduce the burden on Jim Hooten. This will be pursued in the next several months. It was suggested that members should pay in advance when attending fee sites.

**Programs:** Stefanie Hughes was introduced, and she outlined upcoming speakers: September: Dave Alexander – Pegmatites and how to find and dig them; November: Phil Persson. Stefanie also wants to develop programs for the lapidary arts – jewelry, beading, etc.

**Facebook:** Nicole Bolger continues to post club pictures and much fun and informative hobby related content. She will post info about our competitions (under \$20 and no-limit\$ specimens found at the show).

**Website** – Gus Hansen is now actively managing the website.

**Faceters/Cabbers:** 3<sup>rd</sup> Tuesday of every month at the church.

**Mineral Study Group:** No meeting in September. October ?? Group members will create displays of 2020 show theme mineral (fluorite) and club case display of Colorado minerals.

**New Business:** Lesley will have revised tri-fold info brochure about the club ready for the Show at our booth.

The following topics were discussed at length with emphasis on event planning:

- Picnic planning
- New meeting and auction locations- set-up and procedures
- Forms for Mining claims and Secretary of State have been filed.
- What to do with the club library books and magazines
- President Elect – Since Kollin Olsen's work schedule significantly conflicts with club President's responsibilities, Ron Wankner has agreed to extend his term for one more year, and we will seek a new President elect.
- Club auction to be held October 19. Lynette Warren distributed an eight page, revised version of the auction planning checklist and description of responsibilities. She intends to recruit members to fill all the jobs before the auction rolls around.

Next Board Meeting: 10/7/19 at the new church location – 7 PM

Meeting adjourned 9:04 pm.

Respectfully submitted,

Larry Havens, Secretary

# LITTLETON GEM & MINERAL CLUB SILENT & VERBAL AUCTION

Saturday, October 19, 2019

*Note the NEW LOCATION*

**Heritage United Methodist Church,  
7077 S. Simms Street  
Littleton, CO 80127-3241**

**Seller set up starts at 11 AM,  
Silent auction starts at Noon,  
Verbal auction starts at 1 pm;  
Checkout starts at 3:30 pm**



Bring your minerals, gems, jewelry, fossils, books, and equipment to sell.  
Club retains 20% commission. Non-club members are limited to 2 flats.  
Payment is by cash or check.

Email Lesley Sebol at [Lesleysebol@gmail.com](mailto:Lesleysebol@gmail.com) to pre-obtain a seller/buyer number or get it at the door.

## **NEW SILENT AUCTION LOCATION!!!**

**Silent Auction Date Oct. 19, 2019**  
**Heritage United Methodist Church**  
7077 S. Simms St., Littleton, CO 80127



## Auction Potluck

All members please bring a dish to serve 10 to 12 people.

Since the auction begins around the lunch hour, we need to be sure that we have plenty of food for our members and guests that will last the duration of the event.

Last names beginning with A-L bring a desert and M-Z bring a side dish.

Make your favorite pot luck food or consider one of the following: Cheese, vegetable/meat trays, dips & chips, rollups, fruit salad, scalloped potatoes, baked beans, Macaroni/potato/ tossed salad, deviled eggs, and of course, desserts.

The club furnishes coffee, punch, plates, utensils, napkins etc.

### LGMC Auction

On October 19, 2019 the Littleton Gem and Mineral Club will be having its auction at a new location, Heritage UMC, 7077 S. Simms St., Littleton, CO 80127

The auction consists of a Verbal Auctioneer Auction with bidding on a variety of unique and beautiful specimens starting around 1:30 and a Silent Auction for individual bidding on minerals, gems, jewelry, fossils, books, equipment, and more, getting underway at 12:00.

We are having potluck for food. Last names beginning with A-L bring a desert and M-Z bring a side dish.

## Silent Auction Procedures:

### Saturday, October 19th

#### What to Bring:

**Members**, bring your minerals, gems, jewelry, fossils, books, and equipment to sell. **Non-Members** are limited to 2 flats of minerals. Club retains 20% commission.

Bidding Slips (see attachment in this newsletter).

#### What to Do:

A seller must fill out a bid slip for each item. The bid slip should include the name of the item, the location, and the seller's number. Be sure that your seller number is on the bid slip, both TOP and BOTTOM. No number means that 100% of the sale goes to the club. All regular auction slips must be printed on white paper only and blue paper for Children's table. Blue slips are one hundred (100) percent to the club. You may contact **Lesley Sebol**, (contact info is below), for your seller/bidding number prior to the auction. Buyer and seller numbers can be obtained at the auction, but doing this prior to the auction can save some time waiting in line!

**Blue Slips:** Children's Table: This table is reserved for children's purchases only (ages 12 and under). Bidding is by twenty five-cent increments. Please donate a few items to begin or add to a Pebble Pup's collection. (This is 100% donation to the club.) Bring a little rockhound to get them started!

**Bidding:** You must use your bidder number for identification when bidding on an item. **The minimum bid and increment are 50 cents** (the Children's Table is 25 cents), unless a minimum bid is specified. No checkouts will be done until all the tables have been closed and the items distributed into the proper boxes. You may contact **Lesley Sebol** for your seller/bidding number prior to the auction. ([Lesleysebol@gmail.com](mailto:Lesleysebol@gmail.com) preferred, or 720-999-1372 if after 6pm weekdays or after 11am weekends)

**How to Pay:**

Payment must be made with a check or cash.

**NO CREDIT CARDS OR POST-DATED CHECKS.**

**We are still looking for help with the auction**

If you can give us a hand in any of the following areas please contact Lynette Warren at 303-956-4634, or send an email to [flywithle123@comcast.net](mailto:flywithle123@comcast.net).

**Food Set-Up and Clean-Up** – Set up food on tables & clean up when done. Fill drink containers.

**Set-Up** – Set up Tables and Chairs for Check-In, Silent & Verbal Auction Tables, Meeting Chairs, Sorter Tables, Check-Out Tables and Chairs, Food Serving and Eating Tables and Chairs.

**Table Closers** – Announcement of table closing on PA system. Record winning bid amounts and winning bidders number on bid slips using assigned markers. Take auctioned material boxes to Sorters. Take boxes of no-bids to seller pick-up table.

**Sorters** – Pre-number buyer boxes with bidders numbers. Keep extra number slips and markers for duplicate boxes. Sort material brought in by Table Clearers. Retrieve Buyers Boxes for Check-Out.

**Check-Out** - Four pairs are asked to check out the buyers, total up each buyer's items and collect the money (cash or check, no credit cards). You can bring your own calculator and extension cord if you wish.

**Clean-Up** – Table and Chairs returned to their original storage place. Clean up areas used. Take trash to dumpster. Return audio equipment.

**The schedule below is approximate and may need to be adjusted as the day goes on.**

**10:00 Setup-Tables, Chairs, Audio, Food & etc.**

**11:00 Buyer/Seller Check In & Set Up**

**12:00 Silent Auction Start/Food**

**1:00 Business Meeting**

**1:30 Verbal Auction Items**

**2:30 Closing Tables**

**3:30 Check Out**

**3:30-5:00 Clean Up**

**5:00 Finish**

### LGMC Silent Auction Bid Form

Seller's #:

Item Description:

Minimum Bid:	\$
Bidder #	Amount Bid \$

Seller's #	Winning Bidder
Item Desc.:	
	Winning Bid \$

### LGMC Silent Auction Bid Form

Seller's #:

Item Description:

Minimum Bid:	\$
Bidder #	Amount Bid \$

Seller's #	Winning Bidder
Item Desc.:	
	Winning Bid \$

### LGMC Silent Auction Bid Form

Seller's #:

Item Description:

Minimum Bid:	\$
Bidder #	Amount Bid \$

Seller's #	Winning Bidder
Item Desc.:	
	Winning Bid \$

# Calendar of Coming Earth Science Events!

**Oct. 13-19** is the annual **Earth Science Week**. I (Pete Modreski) will be leading a geology hike/field trip for the public sometime during or around this week--details TBA.

**Sat., Oct. 19**, 9 a.m. – 3 p.m., “**Girl Scout Day**” at **Dinosaur Ridge**. An event similar to Scout Day on Sept. 28; more info about this day will be forthcoming.

**Mon., Oct. 28**, 3:00-4:00 p.m., Denver Museum of Nature & Science Earth Sciences Colloquium, **Physical processes in carbonate sediments: Ooids, mud, hurricanes, and more**, by Lizzy Trower, CU Boulder. All are welcome. VIP Room at DMNS.

***For more lecture series during the year see:***

**Colorado Beer Talks** (2<sup>nd</sup> Tuesday, 6-8 p.m.), **Windy Saddle Café**, 1110 Washington Avenue, Golden, Golden’s grassroots version of TED talks, **Expand your mind with a beer in your hand**”, <http://goldenbeertalks.org/>

**Colorado Café Scientifique in Denver**, monthly lectures on science topics held either at Blake Street Station or Brooklyn’s, Denver; open to the public, no charge other than refreshments you may choose to purchase; see <http://cafescicolorado.org/>.

**Colorado Scientific Society** (3<sup>rd</sup> Thursday, 7 p.m.), see <http://coloscisoc.org/>. Meets at Shepherd of the Hills Church, 11500 W. 20th Ave., Lakewood CO, except when noted.

**CU Geological Science Colloquium** (Wednesdays, 4 p.m.) see <http://www.colorado.edu/geologicalsciences/colloquium>

**CSU Dept. of Geoscience Seminars** (Fridays, 4 p.m.), see <https://warnercnr.colostate.edu/geosciences/geosciences-seminar-series/>

**Van Tuyl Lecture Series, Colorado School of Mines**, (Thursdays, 4 p.m.): <https://geology.mines.edu/events-calendar/lectures/>

**Denver Mining Club** (Mondays, 11:30), see <http://www.denverminingclub.org/>.

**Denver Museum of Nature and Science, Earth Science Colloquium series**, 3:00-4:00 p.m., VIP Room unless noted, day of the week varies. Museum admission is not required; see <http://www.dmns.org/science/research/earth-sciences/>

**Denver Region Exploration Geologists Society** (DREGS; 1<sup>st</sup> Monday, 7 p.m.), <http://www.dregs.org/index.html>

**Florissant Scientific Society** (FSS); meets monthly in various Front Range locations for a lecture or field trip; meeting locations vary, normally on Sundays at noon; all interested persons are welcome to attend the meetings and trips; see <http://www.fss-co.org/> for details and schedules.

**Nerd Night Denver** is a theater-style evening featuring usually 3 short (20-minute) TED-style talks on science or related topics; held more-or-less monthly at the Oriental Theater, 4335 W. 44<sup>th</sup> Ave., Denver; drinks are available; for ages 18+. Admission is \$6 online in advance, \$10 at the door. See <https://www.nerdnitedenver.com/>.

**Rocky Mountain Map Society** (RMMS; Denver Public Library, Gates Room, 3<sup>rd</sup> Tuesday, 5:30 p.m.), <http://rmmaps.org/>

**Western Interior Paleontological Society** (WIPS); beginning January 2019, WIPS will meet on the 1<sup>st</sup> Monday of the month, 7 p.m., at Lowry Conference Center, 1061 Akron Way, Denver. See <http://westernpaleo.org/>.

***Thank you once again to Pete Modreski for sending us all the upcoming science events!***

# Geology Corner

## Bauxite and Greenhouse Earth

Bauxite is a hard clayey material, generally white to red with dark spots or blotches called pisolites. It looks like it has an illness of some sort. This material was once described as a mineral ( $\text{Al}_2\text{O}_3 \cdot 2\text{H}_2\text{O}$ ). We now know it is a mixture of various aluminum hydroxide minerals

(gibbsite, boehmite, diaspor) with minor amounts of clays and iron oxides. The reason one can still find it discussed in mineralogy classes is that once mineralogists describe something, they hate to let go of it. It is also a handy field name because one can't determine the specific mineral composition of bauxite without sophisticated analytical tests. Bauxite is our major source of aluminum. Aluminum is one of the most common elements in the earth's crust, but it usually occurs in minerals that are difficult to process, such as feldspar. Aluminum is handy stuff. It's light, relatively strong, and corrosion resistant. Charles Martin Hall, an industrial chemist and founder of what was later to become ALCOA, first learned to extract aluminum commercially in 1886. He used a rare mineral called cryolite, found mostly in Greenland.



Cryolite was later supplanted by bauxite as the major aluminum source. The production of aluminum really expanded after World War II, when more uses were found for it.

Bauxite is a type of ancient soil or regolith. It requires tropic to sub-tropical climates in order to form. Bauxite will form only over rocks that are already rich in aluminum but poor in silica - such as nepheline syenites or clay-rich limestone. Then strong weathering is required over a long period of time.

This leaches out anything even remotely soluble, leaving behind only the very insoluble aluminum hydroxides. Thus bauxite is a good indicator of areas that have in the past experienced very warm, moist climates. Not surprisingly many economic sources of bauxite are in tropic areas such as Surinam, Brazil, New Guinea and Jamaica.

Bauxite was first described in 1821 for deposits at Les Baux, St Remy, Bouches de Rhone, France. France is not known for a tropic climate, so a good question is why did bauxite form there? The answer is that the bauxite formed when the climate was much different from today.

Much bauxite worldwide formed during the Cretaceous and early Tertiary periods, from 50 million to 150 million years ago. This is when the large deposits in Arkansas formed. Often this is ascribed to the effects of plate tectonics. Areas that are not now in the tropics were moved through such climates as their plates shifted. During the Cretaceous, for example, Minnesota was at the same latitude as present-day Spain. But there is a second factor. During that period of geological time, the earth was experiencing a large-scale greenhouse effect. A startling picture of this period of earth history is emerging from new studies of sediments laid down then on land and in the sea. During this time,  $\text{CO}_2$  levels were over 1000 ppm and perhaps as high 4000 ppm. (For comparison today's values are about 380 ppm, and may go up to 750 ppm by the year 2100.) The source of this ancient  $\text{CO}_2$  is thought to be from excessive volcanism. The world had a very different climate in Cretaceous and early Tertiary times. It was warm enough that continental temperatures may never have dropped below freezing. Crocodiles and palm trees grew at latitudes now occupied by the Arctic Ocean. There was likely no polar ice.

Sea surface temperatures were very warm. In places in the equatorial oceans during the Cretaceous, sea surface temperatures was  $95^\circ\text{F}$ , and locally as high as  $107^\circ\text{F}$ . Today, sea surface temperatures at the equator are about  $82^\circ\text{F}$ . At the latitudes of Newfoundland sea surface temperatures were about  $86^\circ\text{F}$ , compared to  $37\text{-}39^\circ\text{F}$  today. If this sounds good, realize also that the ocean often went stagnant for periods of time, and that sea level was 300 to 600 feet higher than today. This was enough to put a major seaway across the Dakotas, give Minnesota monsoons and

cause Gulf of Mexico waves to lap at to the tip of Illinois. In such a warm climate, weathering conditions to make bauxite were much more widespread, and it's not surprising to find it formed in areas we think of as non-tropic.

Bauxite-like materials that formed at this time can be found in western Minnesota. Glaciers distribute this material widely in gravel pits where rock hounds often pick agates. This turns out not to be true bauxite. It's mostly clays (kaolinite), so weren't leached quite enough to get rid of the silicate minerals. Still, its formation in the local bedrock also speaks to this large- scale climate change, giving us a window into a very different past, and perhaps a model of the future.

- Dr. Bill Cordua, University of Wisconsin-River Falls

#### References:

Jensen, M. and Bateman, A, 1979, Economic Mineral Deposits, John Wiley Publishers, 593 p.

Setterhom, D and Morey, G.B., 1989, An extensive Pre-Cretaceous weathering profile in east central and southwestern Minnesota, U.S. Geological Survey Bulletin, 1989 H, 9p.

Takashima, H. et. al., 2006, "Greenhouse World and the Mesozoic Ocean", Oceanography, vol. 19, #12, p. 94-103

---

## Club Announcements

**Moving?** Change of Address, Email or Phone Number? Ready to go paperless?  
Please notify **Ian Duncanson** of any changes at [idunc@q.com](mailto:idunc@q.com) or 303-798-9174.



**Club Vests** Show your club support at the meetings and other events! **Ian Duncanson** has club vests available for sale. Price includes vest, sewed on club patch (on back) and a club pin

\$18 for small and medium sizes

\$19 for large and X-large sizes

\$20 for XX-large and XXX-large

*Do you know someone who could use some sunshine?* Nobody knows everybody. If you know of a club member or family who is having a health problem or other problem, and who could be encouraged by receiving a thinking-of-you card, please let us know so that we may encourage them. Send a note to our sunshine coordinator and let her know, **Lynette Warren**, [flywithle123@comcast.net](mailto:flywithle123@comcast.net).

---

## Grab Bag News Update

I delivered our filled grab bags at the show. Thank you all.

At the show, several people dropped off donations of specimens for future grab bags and polished rocks for our give away. I remembered Randy Kokkinen, but I probably have forgotten someone, Thanks for the donations.

Bring any grab bag stuff you may have; either rocks, bagged specimens, or extra supplies to the auction. I'll have specimens and supplies you can pick up to bag this winter if you would like to do that.

John Kleber

The Bag Begger





# Field Trip Pictures

Our last field trip of the year was to the Patience/Piety Mining Claims on Sept 28, 2019. This was an exchange field trip hosted by the Lake George Gem and Mineral Club and many thanks go out to them for making this trip possible. We had a few interesting finds and a beautiful day with the aspen showing their wonderful fall colors.



Ann Wankner



Lynette Warren



Ron and Ann Wankner



Dave Alexander and Jim Hooten

## CAN WE BE FRIENDS?



Our LGMC Facebook Page is a great place for club members to hear about upcoming events, learn interesting facts, have a laugh, share mineral and field trip photos, and engage with other rockhounds in Colorado and beyond!

LIKE and FOLLOW us @LittletonGemAndMineralClub

*See you on Facebook! Nicole Bolger*

**Annual Gem & Mineral Show**  
November 15-17, 2019  
Jefferson County Fairgrounds, Exhibit Halls  
15200 W. 6th Ave., Golden, CO  
Hours: Fri. & Sat. 10 AM - 5 PM, Sun. 11 AM - 4 PM

**Public Welcome!**

**Free Admission and Parking!**

Gems, Jewelry, Carvings, Books  
Minerals, Fossils, Lapidary

Artisan Jade	Lithos/Lithographic
Black Stone Lapidary	Mineral Stops
Bright Star Gemstones	Morocco's Fossils
Buckskin Booksellers	Mass Rock Shop
Costigan's Minerals West	ORCA Gems
Cut Edge Gems	O'Dark Thirty Boyz
D & J Rare Gems	Phantom Minerals
Dan's Used Rocks	Pinnacle 5 Minerals
Earthstones-The Solitaire	Porter Minerals International
G & C Creations	Prospector's Choice
Hands of Spirit	riverrun Designs
Jensen Meteorites	Rocky Mtn. Mining
K & M Enterprises	Spirit Whispers

Information: 303-993-6685, 303-986-3647, 303-660-9564

Thanks to everyone who contributed to the newsletter!

~Tammy

☞ 2019 Board of Trustees ☞

President	<i>Ron Wankner</i>	303-618-5549
Vice President and Membership Chairman	<i>Ian Duncanson</i>	303-798-9174
Secretary	<i>Larry Havens</i>	303-757-6577
Treasurer	<i>Lesley Sebol</i>	720-999-1372
President elect	<i>Ron Wankner</i>	303-618-5549
Program Chairman	<i>Stefanie Hughes</i>	720-364-6850
Field Trip Chairman	<i>Jim Hooten</i>	303-770-7177
Highlites Newsletter Editor	<i>Tammy Jacobs</i>	303-680-8830
Trustee (Year of 2019 as past President )	<i>Travis Leach</i>	303-887-9787
Trustee (2 year term 2019 & 2020)	<i>Lynette Warren</i>	303-956-4634
Trustee (2 year term 2018 & 2019)	<i>Dan Lovitt</i>	303-791-3112

☞ Chairpersons & Appointed Officers ☞

Sunshine Chairperson	<i>Lynette Warren</i>	303-956-4634
Refreshments	<i>Anne Jenkins</i>	303-730-7696
Librarian	<i>Mary Davis</i>	303-680-5112
Historian	<i>Open</i>	
Facebook Editor	<i>Nicole Bolger</i>	720 344-5280
Hospitality	<i>Nick North</i>	303-840-1177
Grab Bags	<i>John Kleber</i>	720-851-8510
Web Administrator	<i>Gus Hansen</i>	480-489-3978
Show Committee Representative	<i>Lynette Warren</i>	303-956-4634
RMFMS & AFMS Representative	<i>Larry Havens</i>	303-757-6577
Denver Council Representative	<i>Nick North</i>	303-840-1177
Cabbers & Faceters Group	<i>John Revis</i>	720-569-6685
“ “	<i>John Kleber</i>	720-851-8510
Mineral Study Group	<i>Bob Zartman &amp; Nick North</i>	303-973-0405

**Meetings:** The Littleton Gem & Mineral Club meets the third Friday of each month, September through May, at the St Philip Luthern Church, 7531 S. Kendall Blvd, Littleton, CO 80128. Doors open at 7:00 p.m. and the meetings begin at 7:30 p.m. All meetings are open to the public. Club and section meetings may deviate from their regular schedules due to holidays, shows, inclement weather, etc.

The Littleton Gem and Mineral Club is affiliated with the American Federation of Mineralogical Societies, The Rocky Mountain Federation of Mineralogical Societies, The Colorado Federation of Gem and Mineral Societies, and the Greater Denver Area Gem and Mineral Council.

Any material contained in the HIGHLITES may be reproduced, as long as credit is given, unless otherwise indicated. Contribution articles are welcome.

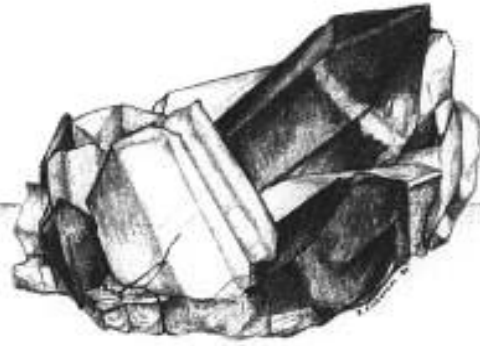
**\*\*The deadline for submissions is the 1<sup>st</sup> Friday of each month.** Please send your material by email to [jacobstammy80@gmail.com](mailto:jacobstammy80@gmail.com).

**Advertising Rates:** \$50 / Full Page. \$30 / Half Page. \$20 / Quarter Page.



# *HighLites*

LITTLETON GEM & MINERAL CLUB



HARRIS PARK AMAZONITE & SMOKY QUARTZ

LITTLETON GEM & MINERAL CLUB  
P.O. Box 283  
Littleton, Colorado 80160

FIRST CLASS MAIL

