

Friends of Mineralogy, Colorado Chapter Newsletter – May 2015

FM-Colorado Chapter Annual Silent Auction
Saturday, May 9, 2015, 12 noon – 3 p.m. (setup at 10:30 a.m.)
Clement Community Center, 1580 Yarrow St., Lakewood CO
See flier & more info within the newsletter

and

May Meeting – Thursday, May 14, 7:30 pm (Board meeting 6:30-7:30)
Denver Museum of Nature and Science – VIP Room *Enter the Museum through the Security/Staff entrance to the left of the main entrance.*

Carbonatites and Weathered Carbonatites: What are they and why do we love them so? by Mandi Hutchinson

Carbonatites are currently recognized as volcanic or plutonic rocks which contain greater than 50 modal percent carbonate minerals. Historically, the nomenclature used to describe carbonatites has been somewhat inconsistent and confusing; carbonatites are more recently classified by the International Union of Geological Sciences (IUGS) into subtypes, such as ferrocarbonatite or calciocarbonatite, based on mineralogy or geochemistry.

Carbonatites have recently gained more attention for their role in the formation of rare earth element (REE) deposits. The process of REE-enrichment required to form these deposits is one which involves the concentration of REE in an evolved carbonatitic magma through fractional crystallization and liquid immiscibility. Primary igneous REE-mineralization in carbonatites is rarely substantial enough to generate economic concentrations, an exception being Mountain Pass, USA. Rare earth element content is commonly enhanced by late- or post-magmatic hydrothermal reworking and/or weathering. Hydrothermal rare earth mineralization can produce disseminated and pseudomorphic replacements, most typically involving the rare earth minerals ancylite, bastnäsite, parisite, synchysite, and monazite. Weathering of carbonatites and hydrothermally reworked carbonatites can further increase the REE-concentration due to rock volume loss during weathering and also supergene rare earth mineralization, as is observed at the Mt. Weld, Australia;

Araxá, Brasil; and Bear Lodge, USA deposit localities. Supergene rare earth minerals at these deposits include monazite, churchite, crandallite, goyazite, florencite, gorceixite, apatite cerianite, bastnäsite, and parisite.

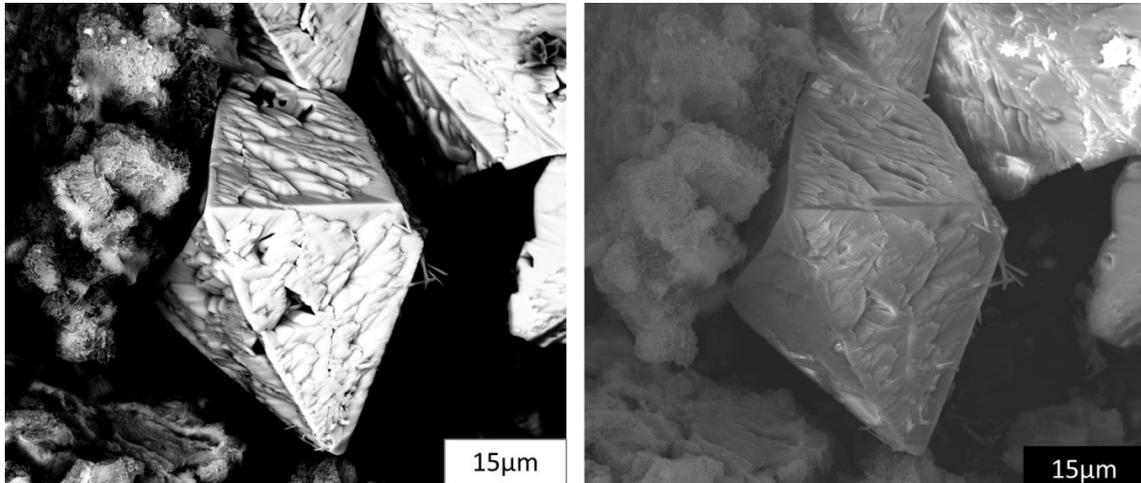


Figure 1. Scanning electron microscope images of hydrothermal ancylite (center of images) surrounded with feathery blades of supergene manganese oxides. Backscatter electron (*left*) and secondary electron (*right*) images are shown.

The REE-bearing minerals in carbonatite-hosted and weathered carbonatite deposits are often very small, sometimes occurring no larger than 1µm in size. While carbonatites are not a great source of minerals for the esteemed collector, the minerals found in carbonatites, hydrothermally reworked carbonatites, and weathered carbonatites are fascinating and beautiful when viewed through the eyes of an electron microscope. Carbonatites can contain abundant fluorite and sulfide gangue minerals, which lend an aesthetic appearance. The REE-bearing minerals and gangue minerals in carbonatites can display fluorescence with shortwave and longwave UV lamps. Additionally, alkaline provinces containing carbonatites can produce interesting assemblages and fine quality minerals, such as those from Mt. Malosa in Malawi.



Figure 2. Fresh carbonatite from Bear Lodge, shown in ambient light (*left*) and in filtered shortwave UV light (*right*). Pink fluorescence of igneous manganese calcite contrasts with the quenching of light displayed by rare earth pseudomorphs and sulfide minerals. Blue fluorescence may be secondary calcite.

Carbonatites can be elusive and volatile creatures, capable of generating mind-blowing questions in the thoughts of the amateur and the experienced alike. With further study, one can find himself wrapped up in the

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curious nature of their genesis and life-stories. This talk will provide a synthesis of global research on carbonatites and their weathering products, including not yet published extras from the author's thesis research from Bear Lodge.

References:

Chakhmouradian, A.R., Zaitsev, A.N., 2012. Rare Earth Element Mineralization in Igneous Rocks: Sources and Processes: Elements, v. 8, no. 5, p. 347-353.

Le Maitre, R.W. (ed.), 2002. Igneous Rocks: a Classification and Glossary of Terms. Cambridge University Press, Cambridge, U.K., 252 p.

Lottermoser, B.G., 1990. Rare Earth Element Mineralization within the Mt. Weld Carbonatite Laterite, Western Australia: Lithos, v. 24, p. 151-167.

Speaker Mandi Hutchinson's background:

Mandi Hutchinson's interest in geology and mineral collecting began while spending her childhood roaming the streambeds and forests of the Northeast Georgia Mountains. She developed a passion for the mineral and jewelry trade during her first of many stints at the Tucson Gem and Mineral Show in 2000. This ignited further interest in pursuing the study of geology, and she graduated with a B.S. in Geology from Georgia State University in 2007. During her time at Georgia State University, she had the opportunity of assisting in experiments designed to test strain in quartz at The National Synchrotron Light Source at Brookhaven National Laboratory in Upton, New York under the supervision of Dr. Pamela Burnley. She also served as Geology Club president. In 2007, she began working with the Georgia Department of Transportation, monitoring the quality of crushed stone and sand aggregate resources throughout the Southeastern U.S. for use in GDOT projects. She became an avid rock climber during that time and also fueled her passion for gemstones and jewelry with an apprenticeship under the esteemed jewelry designer, Lainey Papageorge.



Mandi is currently a graduate student at Colorado School of Mines, where she is completing her Master's research on REE-enrichment in weathered carbonatite at the Bear Lodge, WY REE-deposit. She is also working in conjunction with the Critical Materials Institute and the CSM Geology Museum to develop a Critical Materials museum exhibit as well as educational outreach tools for Critical Materials. She continues to design and make jewelry in her spare time. She enjoys exploring and digging in the dirt with her husband, William.



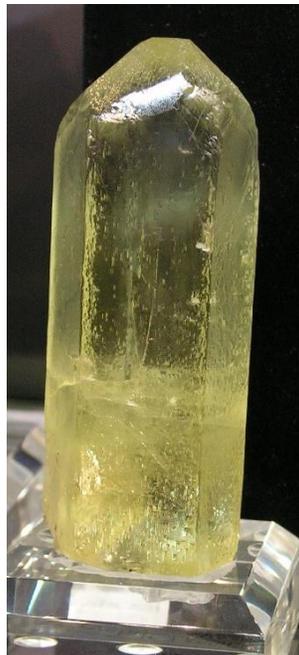
Colorado Mineral Specimen of the Month:

A Jesse S. Randall smoky quartz specimen from Crystal Peak, Colorado. Collected circa 1882, possibly by Abram J. Randall, Jesse's father and sold in 1893 to the Colorado School of Mines Geology Museum. CSM number 210:15:2, 5 x 3 inches crystal. Original Randall label and specimen number glued on specimen. (Photo by Mark Jacobson)

Below—Mineral Quiz!

---Pete Modreski, newsletter editor

Here are 5 photos of mineral specimens that were on display in Tucson; as you can see, I was struck by all these crystals of yellow to green minerals. All were approximately thumbnail-size (about one inch or so), and all were on display by dealers at the Westward Look Resort show. So here is your challenge: write back to me with your best guesses as to, for each specimen: (1) Mineral identity; (2) Locality; and, for extra credit, (3) your guess as to the labeled price of the specimen. You may write down and bring your guesses to the May meeting, or email them to pmodreski@aol.com. We'll print the "answers" (in most cases, photos showing full specimen labels) in the next newsletter. I'm looking forward to seeing/hearing your responses! Please don't be afraid to take some guesses. (If you answer—let me know whether you were, or were not, in Tucson to see any of these in person.)



(number specimens clockwise, starting from lower left across top to lower right; A, B, C, D, E)

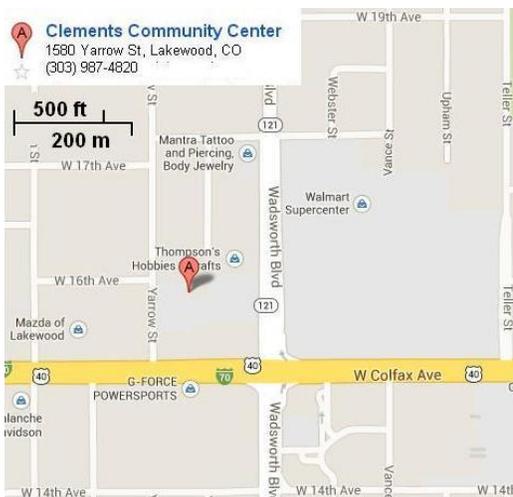
Friends of Mineralogy, Colorado Chapter-- Silent Auction

Saturday, May 9, 2015

Friends of Mineralogy is having its silent auction of mineral specimens, rocks, fossils, books, faceted stones, jewelry, lapidary pieces and mining memorabilia. Please bring your auction materials for setup beginning at 10.30 AM. All (members or not) are invited to bring specimens to sell, and to participate as bidders/buyers. Items brought to the auction may be designated as a 20%, 50%, or 100% donation to FMCC.

Time: Our auction will be Saturday, May 9; setup will begin at 10:30 a.m., auction to begin at 12 noon, finished (including a live auction of special items) by 3:00 p.m., checkout to be finished by 4:00 p.m.

Location: Clements Community Center, 1580 Yarrow St., Lakewood, located one block northwest of the intersection of West Colfax Ave. and Wadsworth Blvd. The entrance and parking lot are on the south side, facing Colfax.



Auction bid slips are attached on a separate page, and will also be available at the auction during setup. Sellers can get copies of our bidding slips at our website:

www.friendsofmineralogycolorado.org

Any questions about the auction should be directed to Peter Modreski, pmodreski@aol.com, 720-205-2553.

Please tell all your friends about the auction, bring some specimens, and all are invited to help bring food or beverage items to share for refreshments at the auction. A selection of special items, donated by local dealers, will be included in the "live" auction.

Important notes about FM this month:

Our Chapter's ***Annual Silent Auction*** will take place ***Saturday, May 9, 12:00 noon-3 p.m., at the Clements Community Center, 1580 Yarrow St., Lakewood, CO. Please remind all your friends and think about donating some specimens to the auction!***

Some of our members will be speaking to local mineral dealers, asking them to donate a few special specimens to the auction. ***We greatly appreciate all the past donations from dealers and individuals!*** Bidding sheets for auction specimens are included in this newsletter. Room setup will begin at 10:30 a.m. (please come to help if you can), and seller setup will begin at 11 a.m.

Last year, the following dealers at the Colorado Mineral and Fossil Show all graciously donated specimens for our FM Silent Auction. When you see them at this year's, or any other, mineral show, please mention that you are an FM member and giving them an extra "thank you" for their past donations!

Collector's Edge Wholesale (Bryan Lees)
Colorado Minerals (Robert Stoufer)
Costigan's Minerals West (Brian Costigan)
Dan's Used Rocks (Dan Unruh)
Dave Bunk Minerals
Dennis Beals Minerals
Donald K. Olson & Associates
Glory Design
Great Basin Minerals (Scott Kleine)
Healing Force Design Studios
Lime Regis Fossil Shop
Malachite and Gems of Africa
Marty Zinn
Momtaz – Mineria
Persson Rare Minerals (Phil Persson)
Pinnacle 5 Minerals (Joe Dorris)
Prospector's Choice Minerals (Ron Anderson)
Self-A-Ware Minerals (Jeff Self & Donna Ware)

Pegmatite Field Trip, July 18: FM Colorado Chapter members have been invited to join the RAMS (Mile-Hi Rock and Mineral Society) for a picnic and field trip to their pegmatite claim in the Crystal Peak area, Saturday, July 18, 2015. We appreciate this nice offer! Information about the trip is on a following page of this newsletter. You must be a current paid-up member of FMCC to participate in this trip.

Annual Dues to Friends of Mineralogy, Colorado Chapter are \$13.00; this includes membership in the national organization, Friends of Mineralogy, Inc.. You may pay your dues now for 2015, please see our website, <http://friendsofmineralogycolorado.org> , or send a check for \$13 to FM-Colorado Chapter, P.O. Box 254, Littleton CO, 80160-0254.

See our Colorado Chapter website: <http://friendsofmineralogycolorado.org/>

Biographies of some of our chapter members are being compiled by Lou Conti for publication in this newsletter beginning with the next issue. If you are asked by Lou to help provide information about yourself, your interest in mineralogy, and your collection—we thank you for your cooperation!

Dates for upcoming FM Colorado Chapter activities:

Meetings are normally held at 7:30 p.m. on the 2nd Thursday of alternate (odd-numbered) months, at the VIP Room in the Denver Museum of Nature and Science. (Subject to change depending on conflicts.) Visitors are *always* welcome at our meetings! Our planned 2015 meeting dates are:

- May 9 FM Silent Auction, Clements Community Center, Lakewood CO**
- May 14 FM meeting – Mandy Hutchinson, “Carbonatites”**
- July 18 Field trip & picnic together with RAMS club at their pegmatite claim**
- Sept. 18-20 2015 Denver Gem and Mineral Show**
- Sept. 24 FM meeting – speaker TBA**
- Nov. 12 FM meeting – Dan Wray, “Cave Minerals in 3-D”**

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Symposiums upcoming

July 10-13, 2015, a symposium on the **Mines and Minerals of the Gunnison, Colorado Area** is being planned by the Friends of the Colorado School of Mines Geology Museum, to include both lectures and field trips. The meeting HQ will be on the Western State Colorado University campus in Gunnison; there will be a welcoming party Friday evening, July 10, lectures on Saturday, a choice of three field trips on Sunday, and repeats of some field trips will continue on Monday, July 13. For more information about the symposium please see <https://www.facebook.com/LikeCSMGeoMuseum?fref=ts> .

2016 Colorado Mineral Symposium

The topic will be **Colorado Pegmatites** and the symposium will be cosponsored by the Friends of the Colorado School of Mines Geology Museum and the Colorado Chapter, Friends of Mineralogy. Location of the lecture programs and of the field trips is still to be determined; probable dates will be a weekend in August, 2016. Stay tuned for more information to come!

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- FMCC 2015 Officers:** President, Mark Jacobson, markivanjacobson@gmail.com , 1-337-255-0627
Vice-President, Jim Hurlbut, jfhu@earthlink.com , 303-757-0283
Treasurer, Gloria Staebler, gastaebler@aol.com
Secretary, Alan & Norma Keimig, alan.keimig@gmail.com, 303-755-9604
Directors: Bill Chirside (2015-16), billdozer@mho.com , 303-989-8748
Don Bray (2014-15), don-bray@copper.net , 303-681-3646
Larry Havens (2014-15), lghavens@aol.com , 303-757-6577
Chairpersons: Newsletter, Pete Modreski, pmodreski@usgs.gov, 303-202-4766
Preservation, Jeff Self and Donna Ware, selfawareminerals@gmail.com
Liaison for DMNS, Alan Keimig
Liaison for RMFMS, Jim Hurlbut
Membership/Hospitality - ? (open!)

Mile Hi Rock & Mineral Society
February 5, 2014
Mark Jacobson, President
Friends of Mineralogy, Colorado Chapter
markivanjacobson@gmail.com.



Mark,

Each year the Mile Hi Rock & Mineral Society (RAMS) has an annual picnic at their claims near Crystal Peak. We usually invite another club to join the claims and picnic. At our January meeting, we decided to invite the Friends of Mineralogy, Colorado Chapter to our claims and picnic this year, which will be at noon on Saturday, July 18th. The RAMS club provides the following items for the picnic: meat (hamburgers, hot-dogs, maybe other meat for the BBQ), all the fixings for the BBQ (catsup, mustard, pickles, relish, etc), chips, and drinks (pop, iced-tea, lemon-aide, etc). We request each person or family attending to bring a potluck dish to be shared with the group. The picnic is held rain or shine. Some years we have had rain, but with sufficient tarps strung from trees and a nice fire, we have had an enjoyable time. Your club is invited to dig for minerals (smoky quartz, amazonite, fluorite, goethite, etc.) on both Saturday and Sunday. Camping is welcome at the claims; however, there are no water supplies or toilet facilities. We consider this a social event to get to know the members of the FM, Colorado Chapter better, have a great picnic, and an opportunity to explore for mineral specimens. Please reply to the invitation soon so we can begin planning the weekend. We are currently creating our schedule for field trips for 2015 and would like to schedule the picnic with you this year. If planning to attend, please indicate approximately how many will come to the picnic, so we can plan accordingly.

Ronald N Knoshaug

Ron Knoshaug , Picnic coordinator & Newsletter Editor , 303-423-2923 , jrknoshaug@comcast.net

All our FM Chapter members are welcome to attend this picnic, camping, and collecting trip. If you are interested in coming, please reply to Mark Jacobson, markivanjacobson@gmail.com, as far in advance as is convenient for you. Directions to the claim, which is located about 5 miles north of Lake George, will be supplied to those who sign up to go. A high clearance vehicle is preferable to get to the claim; Ron Knoshaug from the RAMS club writes,

“The road into the RAMS claim as far as the picnic area has always been doable by 2 wheel drive vehicles. Very low-clearance vehicles, such as sportcars, etc. is not a very wise choice. Beyond the picnic area is a road that may require 4-wheel drive due to steep sections. However, walking from the picnic area to do mineral exploration is possible since the picnic area is in within the claims. Since each year the road changes due to erosion during the spring runoff, I will not know the current road conditions. If the road changes, I will certainly let you know.”

* * * * *

COLLEAGUES WANTED – from Dr. James Hagadorn, Denver Museum of Nature and Science

The DMNS Earth Science team seeks to grow its team. Two volunteer positions are available: 1) We're seeking people interested in conducting geological and paleontological research; M.S. in earth sciences or equivalent master's degree required, as well as interest in conducting fieldwork or labwork. 2) We're also looking for help making geological thin-sections; experience with art, mechanics, or a laboratory setting preferred. Details about the positions as well as instructions for applying are listed below. If additional questions, please contact James Hagadorn at jwhagadorn@dmns.org

<http://www.dmns.org/join/volunteering/earth-sciences-citizen-scientist/>
<http://www.dmns.org/join/volunteering/earth-sciences-thin-section-technician/>



Obituary: John Hurst, 1944 – 2015. John Thomas Hurst, 70, died Tuesday March 3, 2015, at his home in Boulder. He was born May 23, 1944, in Lamar, CO, the son of William Thomas Hurst and Mary Elizabeth Harrell. He grew up in Lamar and Boulder and graduated from Boulder High in 1961. He graduated from Colorado University with a Bachelor's and Master's degree in Russian with minors in German and Geology. After his schooling he taught German and Russian at Boulder High for 28 years until he retired in 1996. On September 11, 1966, he married Jeanne Louise Hawkins in Boulder. He was a world traveler who loved his many trips through Europe, Russia and Australia. He enjoyed traveling through the United States playing Russian balalika music and collecting rocks, agates and fossils. His knowledge of rocks he loved to share with anyone he could through his gem and jewelry business, The Best Little Ore House. His love and passion for agates inspired him to write the book *Dryhead Agate* which was published in 2012. He was preceded in death by his parents, and two sisters Florence Rowe and Joan Gylling. He is survived by his beloved wife Jeanne, Boulder; two sons, Shawn (Genevieve) Hurst, Boulder; Shane (Hassie) Hurst, Longmont; two grandchildren, Buddy Curby and Grace Hurst; two brothers, William Hurst, Longmont; Harrell Hurst, Auburn WA.; two sisters, Helen Dunkel, Longmont; Lucinda Vail, Santa Rosa, CA. Donations may be mailed to: Flatirons Mineral Club Scholarship Fund, PO Box 3331, Boulder, CO 80307-3331; or the charity of your choice. Crist Mortuary 3395 Penrose Place Boulder, CO 80301 (303) 442-4411 - See more at:

<http://www.legacy.com/obituaries/dailycamera/obituary.aspx?n=johnhurst&pid=174333464#sthash.iYGOJVe.dpuf>.

John Hurst was to have been the speaker at our September 24, 2015, Friends of Mineralogy-Colorado Chapter meeting; he would have given a program about the topic of his book, Dryhead Agate.



Obituary: Peter Laux, Feb. 6, 2015. John Peter "Pete" Laux, 76, passed away peacefully on February 6, 2015. Pete was a geologist, avid hiker, and Native Plant Master. He was an active volunteer with Roxborough and Castlewood Canyon State Parks and the DMNS. He was also a member of the CO Mountain Club, the Denver Archeological Society, Schlaraffia, and MEPSI. Pete will be deeply missed by his wife of 53 years, Lila, and his two daughters, Kristin and Lauren. Pete is now hiking in heaven, where he will know the names of all the plants as he passes them. A memorial service is being planned for March. In lieu of flowers, donations may be made to Castlewood Canyon State Park, 2989 South State Highway 83, Franktown, CO, 80116 or to Roxborough State Park, 4751 East Roxborough Drive, Roxborough, CO 80125 with "in memory of Pete Laux." Published in Denver Post on Feb. 8, 2015- See more at:

<http://www.legacy.com/obituaries/denverpost/obituary.aspx?n=john-peter-laux&pid=174087364#sthash.5BgTOAjW.dpuf>

Pete Laux was a member of Friends of Mineralogy, Colorado Chapter. Our records show that he was an FM member from at least 1994, and he was a current member at the time of his death. Pete was a coauthor, with Jack Murphy, of an historical article about R.C. Hills (1848-1923), geologist, mining engineer, discoverer of the tellurium mineral emmonsite, and Honorary Curator of Geology at the Colorado Museum of Natural History (later to become the Denver Museum of Nature and Science), that appeared in the January, 2014 issue of our chapter newsletter, pp. 5-8 (available online at the Chapter website).

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On a happier note, we welcome recent new members to the FM-Colorado Chapter:

Ryan Bowling, Littleton, CO
David Bunk, Indian Hills, CO

Meghan Funk, Boulder, CO
Corey Neumeier, Indian Hills, CO

*Announcing an Amazing
Mineral, Fossil and Book Sale!*



CSM Museum



1310 Maple Street, Golden, CO

**Saturday and Sunday,
April 25+26, 2015
9 A.M. - 4 P.M.**

Thousands of minerals, rocks, books,
fossils, maps, journals, etc.

Prices will vary by item or box.
Most prices will be reduced
throughout the event.

Information: 303-273-3815

**Colorado
Mineral & Fossil Show**

APRIL 24 - 25 - 26

Ramada Plaza - Denver Central

4849 Bannock St. (where I-25 meets I-70)

70 Dealers - Retail & Wholesale

Free Admission - Open to the Public

10 am - 6 pm Fri. & Sat., 10 am - 5 pm Sun.

*Minerals - Fossils - Gems - Jewelry
Meteorites - Beads - Lapidary - Gifts
Decorator Items - Door Prizes*

Fun for the whole family!

www.mzexpos.com facebook.com/mzexpos



Calendar of Coming Events

Fri.-Sat., April 24-26, Colorado (Spring) Mineral and Fossil Show, Ramada Plaza Hotel (formerly Holiday Inn - Central Denver), 4849 Bannock St, Denver, CO; 10-6 Fri. & Sat., 10-5 Sun.; see http://www.mzexpos.com/colorado_spring.html

Sat. – Sun., April 25-26, Mineral, Fossil, and Book Sale, Colorado School of Mines Geology Museum, 1310 Maple St., CSM campus, Golden; 9 a.m. – 4 p.m. All are welcome; “Hundreds of books, minerals, rocks, maps, USGS folios, fossils, etc. Prices vary by item or box; most prices will be reduced during the course of the event”.

Mon, Apr. 27, 4:00 p.m., Dept. of Astrophysical and Planetary Science Colloquium at CU-Boulder, **Reassessing impact risk after the airburst over Chelyabinsk, Russia**, by Mark Boslough (Sandia National Laboratories, Albuquerque, NM). JILA Auditorium (Refreshments served 30 minutes prior to start of talk in CASA C324) [*see the similar talk at CSU, May 1, below*]

Tues., Apr. 28, 10:30 a.m., USGS Rocky Mountain Science Seminar; **Colorado’s stratigraphy: Do all the pages fit into 8 chapters?**, by Bob Reynolds, Denver Museum of Nature and Science. Building 25 Auditorium, Denver Federal Center; all are welcome.

Wed., Apr. 29, 4:00 p.m., CU Geological Sciences Seminar, Boulder, Methane Emissions from Oil and Gas Operations: Reconciling Measurement-Based and Inventory-Based Estimates, by Jerry Boak, CSM. Benson Earth Sciences Building Auditorium (room 180). Refreshments will be served at 3:30 p.m. just outside Benson Room 380. Everyone is welcome! Last CU seminar this semester.

Wed., Apr. 29, 7:00 p.m., Dinosaur Ridge Evening Lecture, **Meat-Eating Dinosaurs**. “Join us for an evening lecture on theropods, meat-eating dinosaurs! Have you ever wondered about which of these awesome creatures lived in your backyard? Come on over this evening to see a presentation done by Erin LaCount on what theropods are and what we know about these critters! FREE! 7:00-8:30 p.m. at the Dinosaur Ridge Visitor Center (C470 and Alameda Parkway). Recommended for adults only (12 years and older)”.

Fri., May 1, 4:00 p.m., Colorado State University, Department of Geosciences Seminar, **Destructive Airbursts: from Tunguska to Chelyabinsk and beyond** by Mark Boslough, Sandia National Laboratories. Warner College of Natural Resources (NR) Building, Room NR 113, Fort Collins.

Sat., May 2, 11:00 a.m. – 3:00 p.m., **Colorado Mineral Society Silent Auction**; Holy Shepherd Lutheran Church, 920 Kipling St., Lakewood. All are welcome. “There will also be a children's auction, along with a live auction that will be held at 1:00pm. Door prizes and refreshments.”

Thurs., May 7, 7:00 p.m.: The Friends of the Colorado School of Mines Geology Museum "First Thursday" lecture series continues with "**Mineral Zoning, Geochemical Homogeneity, and Regional Structural Control of Mineralization in the Silverton Mining District, Southwestern Colorado U. S. A.**" by Dr. John E. Dreier. In the Geology Museum Conference Room (GRL 201), 1310 Maple Street, Golden, CO 80401. Socializing and munchies begin at 6:30 PM; the talk will start at 7:00. Admission is free and all are welcome.

May 8-10, Mining and Mineral Symposium, Butte, Montana, sponsored by Montana Bureau of Mines and Geology; see <http://www.mbmgs.mtech.edu/2015symposium.asp> .

Sat., May 9, 10 a.m. – 2 p.m., **first “Dinosaur Discovery Day” of the year at Dinosaur Ridge, Morrison**; also featuring Boy Scout Day. Guides are stationed all along the ridge to show and explain the fossils and

geology, plus educational booths and activities by the Visitors Center. Walk up & down the ridge, or ride a tour bus for \$4. See www.dinoridge.org.

Sat., May 9, 12:00-3:00 p.m., Friends of Mineralogy Silent Auction, Clements Community Center, Lakewood CO, 1580 Yarrow St., 1 block west of Wadsworth and 1/2 block north of Colfax. Minerals, rocks, books, gems, etc. Live auction of high-quality donated items at about 1 p.m. Refreshments. All are welcome.

May 9-10, Grand Junction Gem & Mineral Club, 68th Annual Gem Mineral, & Jewelry Show; Two Rivers Convention Center, Grand Junction, CO.

Tues., May 12, 10:30 a.m., USGS Rocky Mountain Science Seminar; Investigating stable isotope fractionation in rare earth elements: a case study with cerium, by Kate Scheiderich, USGS; Building 25 Auditorium, Denver Federal Center; all are welcome.

Tues., May 12, 3:00 p.m., Denver Museum of Nature & Science, VIP Room, DMNS Earth Science Seminar, "Early Earth vs. The origin of life", by Steve Mojzsis, U. of Colorado. Free lecture, is museum admission not required.

May 14, 7:00 p.m., FM Colorado Chapter bimonthly meeting; speaker, Mandy Hutchinson, “**Carbonatites and Weathered Carbonatites: What are they and why do we love them so?**” Denver Museum of Nature & Science, VIP Room.

Sat., May 16, 10 a.m. – 4 p.m., “Dan's Used Rocks Annual Open House and Mineral Sale” will be on Saturday, May 16 at 12296 W. Mississippi Ave., Lakewood. For info call Dan at 303-986-3647.

Sat., May 16, Hartville/Sunrise, Wyoming, “Archaeology at Sunrise Mine”, “a guided tour of Powars II archaeological site. Paleoindian red ochre mine & historic town of Sunrise mine tours; proceeds to benefit the Western History Center.” 3-hour mine & town tour leaves at 1:00 p.m.; \$20 for adults, \$25 for family; “Don’t miss the once in a life-time opportunity (wear old shoes—they will get stained red). Call George Zeimens for more info, 307-575-2010. [Located just north of Guernsey, WY, the Sunrise was a major iron mine that supplied ore to the CF&I steel mill in Pueblo.]

May 16-17, Cheyenne, WY Mineral, Fossil, Gem & Rock Show, hosted by Cheyenne Mineral & Gem Society; Archer Complex – Building M, south of I-80 exit #370, 6 miles east of Cheyenne; 9-6 Sat., 10-4 Sun.

May 17, monthly field trip of the Florissant Scientific Society. “Our May meeting will be a hike/field trip led by Mark Izod (Pikes Peak Community College) around Cheyenne Mountain in Colorado Springs. Details to follow.” FSS is an informal group for anyone who would like to attend lectures or field trips about geology; membership simply consists of giving your name & email address to Beth Simmons to be put on their mailing list; for more info contact Beth at cloverknoll@comcast.net. Meetings are NOT limited to “Florissant”; the group holds either a lecture meeting or a field trip each month, and these can take place anywhere between Colorado Springs/Canon City, Woodland Park/Florissant, Fairplay, Denver/Golden/Morrison, Boulder—in fact, anywhere in the Colorado Front Range area. At least once a year there is a multi-day weekend field trip, too.

May 17, 10:00 a.m., Bailey, Colorado; Pete Modreski, USGS, will lead a hike for the Park County Historical Society, to the top of Mt. Bailey, to examine the geology of the Precambrian rocks in the area. For more info contact Jim Glenn, jimglenncolorado@gmail.com, or Pete at pmodreski@usgs.gov.

May 21-23, Geological Society of America, Rocky Mountain Section Meeting, Casper, WY.

May 22-23, Mineral Show/Sale, “Four Denver-area mineral dealers will host a new Gem & Mineral Show on May 22-23. The Rocky Mountain Gem & Mineral Co-Op will host a wine & cheese reception from 5-8pm on Friday May 22. The show and reception will be held at the “Here To Play Baseball Facility” at 601 E. 64th Avenue, Denver, CO 80229 (6 blocks north of the Denver Mart, near intersection of Washington and 64th). Please refer to the website www.rockygems.com/ or contact Bill Jones with any questions. The four dealers (so far) from the Rocky Mountain Gem & Mineral Co-Op are:

Sandra Gonzales (Rocky Mountain Gems & Minerals)

Bill Jones (Sidewinder Minerals)

Sherman Marsh (GAEA Minerals)

Craig Hazelton (Rock Out)

--Bill Jones, Sidewinder Minerals, Aurora, Colorado, 303-503-6288, <http://www.rockygems.com/> , sidewindermin@comcast.net .

Tues., May. 26, 10:30 a.m., USGS Rocky Mountain Science Seminar; **Anatomy of a subduction complex: Architecture of the Franciscan at multiple lengths and time scales**, by John Wakabayashi, California State University, Fresno. Building 25 Auditorium, Denver Federal Center; all are welcome. [Last USGS seminar for the season.]

Thurs., May 28, 6:00 p.m., a **short hike to an old copper mine prospect** at the base of Lookout Mountain, Golden, CO. This will be an “Even-tide Adventure” short field trip sponsored by the Denver Gem and Mineral Guild, but other interested persons are welcome to join us. We will meet at Parking Lot F at the edge of the CSM campus—located on the south side of 19th St., Golden, just east of 6th Avenue; from there we will drive together the short distance (1 mile) up Lookout Mtn. Dr. to park where a short walk across fields and up a hillside & gully will take us to the site of the old mine adit & dump. We’ll see traces of copper minerals, plus garnet crystals in the metamorphic rocks nearby. Led by Pete Modreski; email pmodreski@usgs.gov or call 720-205-2553 with any questions or for more info.

May 31-June 3, American Association of Petroleum Geologists Annual Meeting, Denver, CO.

Thurs., June 4, 3:00 p.m., DMNS Earth Science Seminar, " **Shiver me timbers! A look into the bones of high-latitude seabirds**", by Laura Wilson, Fort Hays State Univ., Kansas. Free lecture, is museum admission not required.

Fri., June 5, 3:00 p.m., DMNS Earth Science Seminar, "**Birth of huge rivers: The Rocky Mountains' impact on the filling of the Gulf of Mexico**", by Bill Galloway, Univ. of Texas. Free lecture, is museum admission not required.

June 5-7, Pikes Peak Gem and Mineral Show, at Western Museum of Mining & Industry, Colorado Springs; 9-5 Fri. & Sat., 9-4 Sun.; adult admission to show & museum is \$5. Sponsored by the Colorado Springs Mineralogical Society; theme is “Topaz from Around the World”. We’ll have a USGS booth here at the show all weekend (come say hello!), featuring education about rocks & minerals.

June 11-14, “Contin-Tail at Fairplay”, a new “rock swap” type rock & mineral show; see www.coloradorocks.org or gregtunncliff@yahoo.com

Sun., June 14, “The June meeting of the **Florissant Scientific Society** will be an adventure into human history and use of nature. John Anderson, former sheriff of El Paso County, will present his research on Culturally Modified Trees. We will meet at Fox Run Park, at the Roller Coaster Road Trail head, Colorado Springs, where there is a lovely picnic area, a restroom, and easy hiking (walking) trails. Meet at 12:00 for lunch.” “I’ll work with Vince Matthews to organize our annual two-day (3-day) jaunt into north central Colorado with overnight accommodations somewhere near Steamboat Springs—Beth Simmons, cloverknoll@comcast.net.”

June 19-21, “Dinosaur Train” comes to Dinosaur Ridge. “Based on the television program Dinosaur Train™, an officially licensed event with characters, music and themes from educational show will be held at the Dinosaur Ridge Visitor Center. Activities will be directed at 2 to 7 year olds but siblings and adults can play and ride along too.” For more information see www.dinoridge.org.

Sat., June 20, 9 a.m. to 3 p.m., “GEOdyssey’s annual inventory reduction sale”, 15339 W. Ellsworth Drive, Golden, CO 80401. “Lots of new mineral and fossil specimens from around the world. All specimens are a minimum of 10% off, with bigger discounts for volume purchases. We'll have many new specimens priced at 50% off. Drinks and snacks provided. See www.geodysey-rocks.com. Directions: from West 6th Avenue, exit onto Indiana Street and go south on Indiana. Drive into Mesa View Estates. Turn right at the first street (McIntyre Circle) and right at the next street (Ellsworth Drive). We are about midway down the street on the left. Thanks, Pat & Zelda Tucci, GEOdyssey.”

June 21, “Geology Train” on Cumbres & Toltec Scenic Railroad, Antonito, CO. “On June 21st, join a cadre of distinguished geologists for a truly extraordinary day on the Cumbres and Toltec Scenic Railroad! Explore the Toltec Gorge Rock as you've never seen it before. Walk through Rock Tunnel and then photograph the train as she comes through the tunnel. Receive a mile by mile Geologic Rail Log. This special train will stop at many outcrops and rail cuts along the right of way, to mingle, marvel and collect photographs, samples and experiences only accessible on the train route.” For details see <http://cumbrestoltec.com/geology-train/>. [Cost is approximately \$161.]

Fri-Sat-Sun, July 10, 11 & 12, Home Rock Sale, by John Haney, 10:00 AM -- 6:00 PM daily; 303-296-8268, rocksisme@comcast.net, John Haney, 4246 Thompson Court (South of I - 70 & East of York St.), Denver, CO 80216. “200 plus types of rough rock & slabs including amber, copal, enhydros & geodes, gemstone bowls & boxes, designer cabochons, crystals & turquoise, lapidary equipment & supplies, Oscar Branson turquoise books.”

July 10-12, Durango, CO Gem and Mineral Show, La Plata County Fairgrounds, sponsored by Four Corners Gem & Mineral Club; 10 a.m. – 6 p.m. Fri. & Sat., 10-5 Sun. Free admission..

July 10-13, Gunnison Mining & Minerals Symposium, sponsored by the Friends of the Colorado School of Mines Geology Museum. Hosted (including lodging) at the campus of Western State Colorado University, Gunnison, CO. The symposium will include a dinner and keynote speaker on “Mining History of the Gunnison Country”, Friday evening; talks presented on Saturday about mining, geology, and mineralogy of the Gunnison area; and a choice of 3 field trips on Sunday and for those who can stay, on Monday also (so each participant will be able to go on any 2 out of 3 possible field trips). Full information including registration, speaker program, and field trip details will be available very shortly; the best way to see this is to go to the Friends of the CSM Geology Museum facebook page (anyone can access this, you do not have to be a facebook user), <https://www.facebook.com/LikeCSMGeoMuseum?fref=ts>

July 16-18, Rocky Mountain Federation of Mineralogical Societies Convention and Mineral and Gem Show, Cody, Wyoming.

July 31-Aug. 2, Creede Rock & Mineral Show; 10 a.m. – 5 p.m., free admission; at the Underground Mining Museum, Creede, CO. See www.creederocks.com.

Aug. 13-16, Contin-Tail Rock Swap/Gem & Mineral Show, Buena Vista, CO

Tues., Aug. 18, 3:00 p.m., DMNS Earth Science Seminar, " The dynamic early Paleozoic world of Colorado: Faunas, environments, tectonics, and large earthquakes", by Paul Myrow, Colorado College. Free lecture, is museum admission not required.

Aug 21-23, Lake George Gem and Mineral Show (sponsored by the Lake George Gem and Mineral Club) and the **Woodland Park Gem, Mineral, and Jewelry Show**, Aug. 20-23.

Sep. 12-20, Denver Coliseum Mineral, Fossil, and Gem Show, see <http://www.coliseumshow.com/> .

Sep. 13-20, Colorado (Fall) Mineral and Fossil Show, Ramada Plaza Hotel (formerly Holiday Inn - Central Denver), 4849 Bannock St, Denver, CO; see http://www.mzexpos.com/colorado_fall.html .

Tues., Sep. 15, 3:00 p.m., DMNS Earth Science Seminar, ""The WHAT of conodont science: Insights into Permian oceans and beyond", by Charles Henderson, Univ. of Calgary. Free lecture, is museum admission not required.

Sep. 18-20, Denver Gem and Mineral show, at The Denver Mart, 58th Ave. and I-25 (ext 215), sponsored by the Greater Denver Area Gem and Mineral Council; dealers, exhibits by clubs, individuals and museums nationwide, lectures, demonstrations, and kids' activities; theme, "Minerals of the American Southwest". 9-6 Fri., 10-6 Sat., 10-5 Sun. See <http://www.denvermineralshow.com/> .

Sept. 24, Friends of Mineralogy Colorado Chapter bimonthly meeting; speaker TBA.

Nov. 1-4, Geological Society of American Annual Meeting, Baltimore, MD.

Nov. 12, FM Colorado Chapter bimonthly meeting; speaker, Dan Wray, **Cave Minerals in 3-D.**

Nov. 14-15, New Mexico Mineral Symposium, Socorro, NM; see <https://geoinfo.nmt.edu/museum/minsymp/home.cfm> for details.

Nov. 20-22, Denver Area Mineral Dealers Show, Jefferson County Fairgrounds.

Special exhibits continuing in 2015:

Molybdenum and the History of the Climax Mine, at the Western Museum of Mining & Industry, Colorado Springs, Feb. 12th through May 31st, 2015. See <http://www.wmmi.org/exhibits>

Steps in Stone: Walking Through Time, at the University of Colorado Museum of Natural History, CU campus, Boulder. "A new exhibition that features real fossil tracks and trackways from the University of Colorado Museum of Natural History collections". Open 9-5 weekdays, 9-4 Saturdays, 10-4 Sundays; closed on university holidays. Exhibit runs through December 2015; see <http://cumuseum.colorado.edu/> .

For more lecture series during the year see:

CU Geological Science Colloquium (Wednesdays, 4 p.m.) see <http://www.colorado.edu/geolsci/colloquium.htm>
CSU Dept. of Geoscience Seminars (Fridays, 4 p.m.), see <http://warnercnr.colostate.edu/geo-news-and-events/department-seminars>

Van Tuyl Lecture Series, Colorado School of Mines, (Tuesdays, 4 p.m.) see http://inside.mines.edu/GE_Lecture-Series

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

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

Western Interior Paleontology Society (WIPS; 1st Monday, 7 p.m.), <http://westernpaleo.org/>