

**FRIENDS OF MINERALOGY  
COLORADO CHAPTER**



**September 2018 Newsletter  
Meeting: Wednesday, Sept. 19,  
7:30 p.m.**

**All are welcome!**

**At our new meeting place:**

**Lakeview Event Center, 7864 W. Jewell Ave. Lakewood CO**

***Chapter's new meeting place: Lakeview Event Center, Lakewood CO***

At 7864 W. Jewell Ave.; on the south side of Jewell Ave., 1/5 mile west of Wadsworth, west of the King Soopers shopping plaza. Turn south across the street from Wendy's, into Lakewood Village Center; the front entrance of the building faces west. **NOTE: This month's meeting is on *Wednesday*, not our usual *Thursday*.**

## **Granitic pegmatites – Formation and mining; A storehouse of industrial materials and colored gems**

**Mark Ivan Jacobson,  
Denver, CO**

Granitic pegmatites are understood to be rocks composed dominantly of quartz, feldspar and mica with variable single-crystal grain sizes from sugary to more than 1 meter in diameter. This presentation will describe how they formed, what they have been mined for and what pegmatites are present in Wyoming. Although pegmatites are of major interest for industrial applications, the production of gems and attractive mineral specimens from them has been the driving force for the numerous people spending time digging in them.

Researchers have been challenged to study pegmatites due to the mystery of how giant crystals and open space cavities with lustrous, colorful crystals are formed. Theories for their origin have been numerous since the late 1800s but by 1988, several research approaches coalesced into a united theory backed by field observations and laboratory experiments that have replicated the features of pegmatites. Their origin has been ascribed by David London (2008, 2014) to disequilibrium “subsolidus isothermal fractional crystallization.”

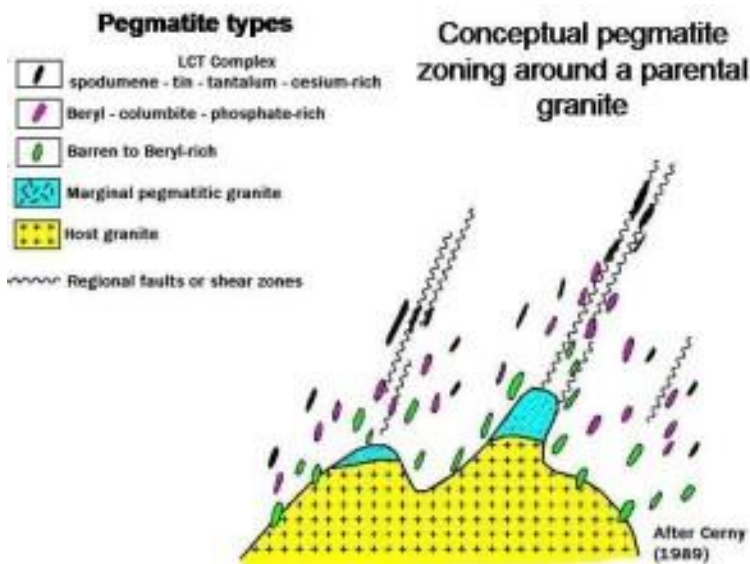


Figure 1. Conceptual cross section of how pegmatites emanate from a parental granite. Modified from Cerny (1989).

The basic elements of this process recognize that pegmatites have the same composition as granites (Jahns 1953, Jahns and Burnham 1969). They start their crystallization after the molten, liquid magma has been “supercooled”, meaning chilled up to 200 °C below their crystallization temperature (London 2008). Pegmatites do need to contain some water and volatiles (also called fluxes) but are undersaturated in both at the start of crystallization. No separate vapor (fluid) phase was present, if no vugs are observed (London 2008, Nabelek, Whittington and Sirbescu 2010). Pegmatites crystallize very fast on the order of 1 to 100 years (Webber, Simmons, and Falster 2005, Webber and Simmons 2007, Simmons and Webber 2008, Sirbescu et al. 2008). Pegmatites can intrude up to 10 km from their parental pluton into cooler metamorphic rocks (Baker 1998, Brisbin 1986).



Figure 2. Pink beryl (morganite) on albite with lepidolite from the Stewart lithia mine, Pala, San Diego County, CA. Tucson Gem and mineral show, February 1982. Specimen about 5 inches in diameter. MIJ photograph.

Pegmatites have been of scientific interest since the 1830s but were of economic interest prior to that. Pegmatites at various times have been a source of feldspar for ceramics (pottery and porcelain), quartz for glass making, mica for transparent windows and insulation, beryl for beryllium in metal alloys, nuclear power plants, and non-sparking electrical devices, lithium for chemical applications, batteries, and glass making, tantalum for metallic alloys and electrical devices, cesium for electrical devices and heavy-density hydrocarbon well completion fluids, and best of all for the gemstones of blue, yellow and green beryl, red and green tourmalines, smoky quartz, spodumene, topaz and others.



Figure 3. The faceted “Agnus Dei Tribute Topaz”, weighs 1,345.15 carats or just over half a pound. The stone was cut from a pegmatitic topaz found on Cameron Cone, El Paso County, Colorado circa 2014 by Jean Cowman and Richard Frettard. MIJ photograph.

Wyoming pegmatites have had scattered mining for mica, beryl, rare-earth/uranium minerals, and feldspar at various times. Significant prospecting has been done in the Copper Mountain district, Black Mountain spodumene pegmatite, Silver Springs Creek beryl pegmatites, Haystack Range mica pegmatites, Big Creek pegmatite district, and a scattering of other pegmatites in Albany, Laramie and Converse counties. Only

the Catherine no. 1 pegmatite on Casper Mountain has been profitably mined for feldspar since the 1970s. All other pegmatite mining activity in Wyoming has been abandoned, although some people never give up, so prospecting does continue.

Within the western United States since the 1970s, the major use of pegmatites has been for gemstones and mineral specimens. Within Wyoming, gem quality pegmatite minerals have been quite rare with only beryl and sometimes quartz being faceted or polished.

## Speaker: Mark Ivan Jacobson



Mark Ivan Jacobson is a geologist-mineralogist specializing in pegmatites. He obtained a BS in mineralogy-geochemistry from Pennsylvania State University in 1973 and a MS in sedimentary geology from the University of California at Berkeley in 1976. After graduate school, he worked for Amoco and Chevron in oil and gas development as an earth scientist, completing 35 years with Chevron before retiring in 2013. He has published numerous articles on the geology, mineralogy, and mining-collecting histories of pegmatites since 1978 as well as two major books: “Guidebook to the pegmatites of Western Australia (2007)” and “Antero Aquamarines: Minerals from the Mount Antero – White Mountain region, Chaffee County, Colorado (1993).” He has been a consulting editor for *Rocks & Minerals* since 1984 and a member of FM- Colorado Chapter since 1982.

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Hello all

I hope everyone had a good summer, collecting, vacations and just enjoying the warm weather. There has already been snow in the high country, which means the Denver Gem and Mineral Show is right around the corner. Speaking of which our club could use some more volunteers. We always need help at the Friends of Mineralogy mineral ID booth. Please contact Pete Modreski to sign up. If mineral ID is not your forte, there is no shortage of general volunteer jobs available. Remember this show is run by volunteers. To volunteer please check in at the loading dock, (located on the east side of the building) sign in as FM member. Volunteers receive free admission to the show for the entire event! I look forward to seeing everyone there!

On August 4th and 5th Friends of Mineralogy Colorado Chapter partnered with the Colorado School of Mines Geology museum and the Friends of the Colorado School of Mines Geology museum to present a symposium! The title was *Minerals from Metallic Ore Deposits of the American Southwest*. The symposium had more than 60 attendees! The talks were fantastic! The abstract book is available as a free download on our FMCC website.

The presentations were recorded by the school of mines museum and will be available through their website.

Again, see you all at the mineral show.

Jeff Self,  
Friends of Mineralogy, Colorado Chapter, President

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**Report on the Colorado Chapter Symposium:  
Minerals from the metallic ore deposits of the American Southwest  
August 3-5, 2018, Berthoud hall, Colorado School of Mines, Golden, CO**

By Jeff Self and Donna Ware

The Friends of Mineralogy- Colorado Chapter, Friends of the CSM Geology Museum and the Colorado School of Mines Geology Museum in August sponsored a two day symposium on the campus of the Colorado School of Mines. The symposium was a success.

The event started off with a Friday evening open house at the Geology Museum. For the presentations, we had a total of 63 attendees, 48 paid attendees, and 31 at the Saturday evening banquet at the nearby Table Mountain Inn, Golden. After the banquet, the museum auctioned off several de-accessioned mineral specimens from the museum to attendees to benefit the museum. The presentations lasted a day and a half.

Two underground mine tours (Phoenix mine, Trail Creek district; Hidee Mine, Central City district) were made available for Sunday afternoon for symposium attendees. Eleven speakers covered minerals (tellurides, uranium minerals, fluorite, smithsonite, gold, sphalerite, rhodochrosite, quartz, and calcite), mining methods, collecting stories, and mining history. Geographically, the states of Colorado, New Mexico, Utah, Arizona and Nevada were covered.

The proceeding from this symposium are available digitally for free from the Friends of Mineralogy, Colorado Chapter website. Nicholas Iwanicki, from the Mining Archives library at the Colorado School of Mines video recorded all the talks which after digital reformatting will also be available for watching for free on the CSM library-Geology Museum website.

The success of the symposium is due the great efforts made by the speakers, many of whom came from out-of-state for the meeting, and the different society volunteers and CSM employees who helped organize the event.



Figure 1. Nicholas Iwanicki, interim CSM Geology Museum director, and Erin Delvanthal, a FMCC symposium organizer attending the Friday evening museum open house.



Figure 2. View of Berthoud Hall, CSM campus. Attendees listening to the presentation on Sunday, the last day of the symposium.

**Denver Gem & Mineral Show Mini Report September 2018**

**It's show time!!** Yes, that's right. Set up for the Denver Gem & Mineral Show happens in less than 2 weeks! Are you ready? Set up begins on Wednesday, September 12th at 9 a.m. in the morning. Do you have all your stuff prepared? Have you completed your labels and the finishing touches on your exhibit? On your club's exhibit? Maybe you are entering a competitive exhibit or a specimen in the species competition. Have you inventoried your collection so you know what you will be searching to purchase at the show? Are you volunteering in some way for the show? Maybe you are helping to set up on Wednesday, selling or taking tickets during the show, walking security detail, selling grab bags, checking in volunteers, serving snacks and beverages in the hospitality room, assisting with exhibits, working in your club's booth, checking in dealers, or helping to tear down the show. There are so many ways in which club members can volunteer at the show. There is sure to be one that fits your talents. A list of all the volunteer positions and the contact person is attached. Please, please, please, we need your help!!

The Denver Gem & Mineral Show takes place September 14 - 16, 2018 at the Denver Mart, 451 E. 58th Avenue (I-25 and 58th Avenue, exit 215). The theme for the show is "Minerals of Mexico". The Show Chair is Lesley Sebol, lesleysebol@gmail.com or 720-999-1372. The show is always a fabulous exciting event and this year will be no exception. Exhibits Chair Larry Havens enthusiastically reports the exhibits will dazzle us all.

Please be sure to advertise the show among your friends and relatives. There are several postcards and flyers which can be used for that purpose. In addition, if you received the e-newsletter, you can forward it to any interested persons. The e-newsletter contains much impressive information about the show. If you did not receive a copy of the first e-newsletter, let me know at jrknoshaug@comcast.net and I will forward it to you. The August mini report explained how to sign up for the e-newsletters. You can do it easily at <http://eepurl.com/dB6yKH>. So this is it!!

It's your show folks! Let's make it the greatest!  
Respectfully submitted, Judy Knoshaug, Show Secretary

Events this week at the Denver mineral shows, and beyond:

**Sept. 7-15, Colorado Mineral and Fossil Fall Show**, Crowne Plaza Hotel - Airport, 15500 E. 40th Ave. Denver, CO. 10 a.m. – 6 p.m. daily (wholesale areas open at 9 a.m.); hours are 10-4 on the last day, Sept. 15); see <https://www.coloradomineralandfossilshows.com/> . Free admission. See <https://www.coloradomineralandfossilshows.com/guest-lecture-speakers.html> for the free guest lecture series, 11 a.m. – 5 p.m. on Monday, Sept. 10.

**Sept. 8-16, Denver Coliseum Mineral, Fossil, and Gem Show**, Denver Coliseum; see <http://www.coliseumshow.com/> . 10 a.m. – 6 p.m. daily; free parking & admission. (5 different locations at the Denver Coliseum and National Western Complex, 3 of which open on the 7<sup>th</sup>.)

**Sept. 12-15, Denver Fine Mineral Show**, Denver Marriott West, 1717 Denver West Blvd.; see <http://finemineralshow.com/denver/>. Free admission. 10 a.m. – 6 p.m., 10-5 on last day 9/15. See <https://www.facebook.com/photo.php?fbid=10100137338240240&set=a.523800023770&type=3&theater> f or the schedule of special speakers, with a presentation held at 2 p.m. each day.

**Wed., Sept. 12, 6-9 p.m., Open House and Reception at the Colorado School of Mines Geology Museum**, 1310 Maple Street, CSM campus, Golden. Everyone is welcome; free appetizers and cash bar. This will also be an opportunity to meet Renata Lafler, the new Executive Director of the Colorado School of Mines Geology Museum.

**Sept. 14-16, 51<sup>st</sup> annual Denver Gem and Mineral Show**, Denver Mart, 451 E 58<sup>th</sup> Ave., Denver, CO. **Minerals of Mexico** is the 2018 show theme. See <http://denvershow.org> . A list of special exhibits that will be at the show, as well as a list of the featured lecture presentations, (<https://www.denvermineralshow.com/speakers>) is on the website. This gem and mineral show is sponsored by the Greater Denver Area Gem and Mineral Council, a non-profit consortium of 8 Front Range area gem and mineral clubs. Open 9-6 Fri., 10-6 Sat., 10-5 Sun.

I'll just list a few (of local interest) of the special talks being given at these shows:

Mon., Sept. 10, 11:00 a.m., Karen Wenrich, **The Sweet Home Mine—from Silver to Rhodochrosite**, at the at Colorado Mineral and Fossil Show, Crowne Plaza Airport.

Fri., Sept. 14, 2:00 p.m., Mark Jacobson, **“Crystal Peak, Teller County, Colorado: The First Hundred Years of Mineral Collecting”**.

Sat., Sept. 15, 2:00 p.m., Philip Persson, **“Outstanding Minerals of Colorado’s Metallic Ore Deposits: A Brief Review”**, both at Denver Fine Mineral Show, Marriott Denver West.

See the links given above for their full speaker schedules; there will be some 15 talks at the Denver Gem & Mineral Show (Denver Mart) alone!

More coming events, not connected to the gem and mineral show:

**Sept. 8-15**, David Bunk Minerals will be open for sales at their shop, 5695 Yukon Street, Arvada, throughout the show week: Saturday, September 8 to Saturday, September 15, 10 am to 6 pm daily. They will feature many half-price specimens, including older Mexican specimens from the Midge Leahy collection. See Dave’s website or facebook page, or just drop in.

**Wed. Sept. 19, 7:30 p.m.**, Friends of Mineralogy, Colorado Chapter, bimonthly meeting, **Granitic pegmatites – Formation and mining; a storehouse of industrial materials and colored gems**, by Mark Jacobson. The week after the Denver Gem and Mineral Show; rescheduled so as not to conflict with events the week of the show. Lakeview Event Center, 7864 W. Jewell Ave., Lakewood CO.

**Thurs., Sept. 20**, 5:30 p.m., Colorado Scientific Society monthly meeting, **Short Talks and Poster Papers**, a special display of poster papers from various past geological meetings, with authors present to chat about them, plus several short (15-minute) oral presentations. This meeting will be at the Arbor House, Maple Grove Park, 14600 W. 32<sup>nd</sup> Ave., Golden (Applewood area). Complimentary refreshments & poster viewing beginning at 5:30, oral presentations at 7:00; all are welcome. More info, including abstracts of all the presentations, will be posted on the CSS website, <http://coloscisoc.org/>.

**Sat., Sept. 22**, 2:30 p.m., **Scientific Spelling Stomp**, sponsored by the Friends of Dinosaur Ridge. “An all-ages team spelling bee.” American Mountaineering Center, Golden CO. Entry fee, \$40/adult, students (under 18) \$25; spectator tickets \$20. Includes hot/cold appetizers and non-alcoholic drinks. [Discount team entry/audience tickets if purchased by 9/10.]

**Sun., Sept. 23**, Florissant Scientific Society field trip, “**Glaciation on Pikes Peak**”; led by geologist, Alex Paul. “Meet at 10 a.m. at the entrance to the Pikes Peak Highway toll gate for parking and car-pooling.” Stops will include the Crystal Lake visitor center, distribution and character of glaciers on Pikes Peak, comparing types of moraines, Glen Cove and its moraine, two glacial valleys at the N. French Creek/E. Beaver Creek divide, the “Crater”, and more. Open to anyone interested! No charge other than the toll road fee. If you want to come, please contact Beth Simmons, [cloverknoll@comcast.net](mailto:cloverknoll@comcast.net).

Happy "rocking"!  
Peter J. Modreski, FMCC newsletter editor

With thanks to Mark Jacobson for helping to put this month's newsletter together.

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***If you haven't already contacted up about helping at the FM Mineral Identification Booth at the show—please do so—contact Pete Modreski, [pmodreski@aol.com](mailto:pmodreski@aol.com) or cell 720-205-2553, or just come talk to us (Pete, Jeff, or Mark) at the show and tell us when you can help at the booth! Or just come to the booth when you have the time to help. Thank you!***



FM Wants **YOU**

To help at our Mineral Identification  
Booth! *At the Denver Show, Fri.-Sat.-Sun.,  
Sept.14-15-16*