

PICK & PACK

THE BULLETIN OF THE COLORADO SPRINGS MINERALOGICAL SOCIETY Published Since 1960

Colorado Springs Mineralogical Society

Founded 1936
~ Lazard Cahn ~
Honorary President
"Pick & Pack"
Volume 65 No. 4
May 2025

CSMS General Assembly

Thursday, May 15, 2025 7:00 PM
Colorado Springs Christian School
4855 Mallow Road

~ Pete Modreski ~
"Tucson Shows This Year"

Members are encouraged to bring specimens for help with
identification or to share with us

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Everyone who goes to the Tucson Gem and Mineral Show(s) looks for different things and has a different kind of experience. Pete Modreski, CSMS Life Member, was at the Tucson Show for what he is pretty sure was his 51st consecutive time this February. His own main interest is mineral specimens plus "a little of everything." He'd like to share with the club his photos and stories about the spectrum of things he and Bonnie saw at the many shows there this year.



COLORADO SPRINGS MINERALOGICAL SOCIETY PO BOX 2 COLORADO SPRINGS, COLORADO 80901-0002
Visit our website: <http://www.csms1936.com/>

President's Corner

Alex Field
CSMS President



2025 CSMS Officers

Alex Field, President
Shane Riddle, Vice-President
Tina Cox, Secretary
Kevin Witte, Treasurer
Adelaide Bahr, Membership Secretary
John Emery, Editor
Mark Mann, Member-at-Large
Austin Cockell, Member-at-Large
John Massie, Past President
Lisa Cooper, Show Chairwoman

2025 Liaisons

Florissant Fossil Beds National Monument:
S.W. Veatch
Western Museum of Mining and History:
S.W. Veatch

2025 Satellite Group Chairs

Austin Cockell, Crystals
John Massie, Faceting
K. Harris/ R. Villareal, Fossils
Ann Schmechel, Jewelry
Sharon Holte, Lapidary
Vacant, Micro-mount
Fran Anderson, Photography
David St. John Pebble Pups

2025 CSMS Chairpersons

Shane Riddle, Program Coordinator
John Massie, Show Vol Coordinator
Kyle Atkinson, Field Trip Coordinator
Vacant, Science Fair Chair
Frank and Ellie Rosenberg, Librarians
Phil Sevenants, Social Chair
Mark Mann, Store Keeper
Lisa Cooper, Webmaster
Shane Riddle, Facebook Keeper
Mike Nelson, Federation Rep
Vacant, Federation Rep

Non-officer Positions

Mark Mann, Creative Director



Presidential Matters



Rockhounds,

It's May already and field trip season is upon us, even though it's snowing as I type this! Colorado really keeps us on our toes.

Go check out our CSMS field trip site at CSMS.tectonictreks.com to find out more information about this summer's upcoming trips! On this website you can sign up for field trips, find directions to the field trip meeting spots, and get an idea of what minerals may be found on each trip.

And if you have trouble signing into the field trip website, please email me directly and I'd be happy to help you get set up. My email address is: alexfield1@gmail.com.

As a reminder, this month we are also starting our brand new Photography Group on May 12th at 6:30 pm, meeting at Library 21c. Please join us with your cameras, your mineral or field trip photos, and any questions you may have. The group is being led by CSMS member Fran Anderson, and you can reach out to her for more details at whenearthspeaks@gmail.com.

Finally, if you'd like to help out with a mineral identification day at a school in Widefield this month, please contact David St. John at fossilfun14@gmail.com.

Thanks Rockhounds, and enjoy your summer!

Warm Regards,
Alex

Alexander Field
Alexfield1@gmail.com

CSMS Group Calendar

| May '25 | June '25 | | | | | | |
|---------|-----------------|---------------|----------|---------|---------------------|--------------------------------------|------------------------------|
| 14 May | 11 June | Fossil Group | 2nd Wed | 6:00 PM | East Library | Kristine Harris Richard Villareal | 719-593-1524 831-760-6985 |
| 1 May | 5 June | Board Meeting | 1st Thur | 7:00 PM | Zoom | Alex Field | 719-351-4897 |
| 6 May | 3 June | Pebble Pups | 1st Tue | 4:15 PM | East Library | David St. John | 719-424-9852 |
| 15 May | 19 June | General Assy | 3rd Thur | 7:00 PM | Co Sp Christian Sch | Alex Field | 719-351-4897 |
| 28 May | 25 June | Jewelry Group | 4th Wed | 6:00 PM | Library 21c | Ann Schmechel | 719-205-5816 |
| 29 May | Not Jun- Aug | Crystal Group | 4th Thur | 7:00 PM | Co Sp Christian Sch | Austin Cockell Kevin Witte (Alt) | 719-323-4132 |
| By appt | By appt | Faceting Grp | By appt | By appt | Your house | John Massie | 719-338-4276 |
| By appt | By appt | Lapidary Grp | By appt | By appt | Sharon's Garage | Sharon Holte | 719-217-5683 |
| Kickoff | Kickoff | Photography | 12 May | 6:30 PM | Library 21c, ENT | Fran Anderson | 719-494-7776 |

Community Events

pmodreski@gmail.com

May 12: Kickoff meeting of the new photography group with Fran Anderson, photographer and designer. First meeting will happen at the ENT Conference Center, Library 21c at 6:30 PM. Members are encouraged to bring photos to share, any photography gear, and specimens to shoot.

May 17: FMCC will hold a Silent Auction (and some vocal stuff too) of minerals, rocks, fossils, books, etc. Saturday afternoon at Wheat Ridge United Methodist Church, 7530 W. 38th Ave.; approx. noon to 4 PM, all welcome, see their website for details.

Denver Museum of Nature and Science, 2025 Earth Sciences Colloquium schedule. Talks are in-person-only, from 2–3 pm, usually in the 3rd Floor Community Room. The Community Room is on the 3rd floor at the entrance to the diorama hall. Museum admission not required to attend. Enter through Staff/Volunteer entrance, 50' east of main visitor entrance, and let Security know you're attending the talk, they will direct you to the location. All are welcome to attend. For the full year's schedule see: [Home](#) The next Colloquium presentation will be:

May 13: What defines a paleontologist? Using modern plant-insect interaction to connect past, present, and future; Lauren Azevedo-Schmidt, Univ. of California, Davis.

May 15: Late Cretaceous dinosaurs from central Patagonia, Argentina; Mathew Lamanna, Carnegie Museum of Natural History.

June 26: Colorado is a geologist's candy store!; Peter Barkmann, Colorado School of Mines (in Ricketson Auditorium)

June 6-8: 61st annual Pikes Peak Gem, Mineral and Jewelry Show, Norris Penrose Event Center, Colorado Springs, hosted by the Colorado Springs Mineralogical Society. This year's theme is beryl.

June 12-16: FMCC is also sponsoring a symposium, Specimen Mines of the United States, to be held on the Mines campus. For information see: <https://friendsofmineralogycolorado.org/symposium/>



Secretary's Spot

Tina Cox



CSMS General Assembly Minutes 7 PM, Thursday Apr 17, Colorado Springs Christian School

Address: 4855 Mallow Rd, Colorado Springs CO 80907

Board Attendance: President: Alex Field, Vice President: Shane Riddle, Secretary: Tina Cox, Past President: John Massie, Treasurer: Kevin Witte, Show Chair: Lisa Cooper, Member-at-Large: Austin Cockell.

Agenda:

- I. Meeting was called to order by our President, Alex Field at 7:05 PM.
- II. The Pledge of Allegiance was led by Alex.
- III. Meeting - attendance was 46; 6 visitors; 5 minerals given away.
- IV. Program Speaker - Rob Eldridge of Minerals in Motion, "Making Spheres"

V. Officer Reports

- A. President - Alex Field
 1. There is a supply of old Rock and Gem magazines free for the taking.
 2. We are distributing a survey to be completed during break to get feedback on some fundraising topics and input for future meetings.
 3. The lapidary equipment for loaners has arrived and is on display at the meeting (trim saw, dop station and slant lap). Shane and Phil provided the following info: Loans will be for two weeks and cost \$20. Email csmscabber@gmail.com or call Pat to make a reservation. The equipment will be delivered, and the user will be provided a two-hour lesson. There will be required reading material. Two starter slabs will also be provided to each user the first time they check out the equipment. There is a demonstration scheduled at Library 21C on May 12 at 5pm to do an introduction to cab making. Lisa suggested having a members-only sign-up option on the website.
 4. Volunteer needs - We still need more volunteers for the June show. Also looking for field trip co-coordinator.
 5. Micromount group needs a leader. Anyone who is interested in starting it up again, please talk to Alex.
 6. Fran Anderson will be starting up the photography group again. First meeting is May 12 at Library 21C at 6:30pm, Ent Conference Center.
 7. Distribution day for show postcards and posters that was scheduled for Saturday, April 19 has been postponed due to predicted snow. It is rescheduled for Saturday, April 26.
- B. Vice President - Shane Riddle
 1. If you send Rob (the speaker) a rough rock to have a sphere made, specify if you want to scrap returned. These scraps would be great for our lapidary loaner program or for users to make cabs. Jan in our club also makes spheres.
 2. Annual picnic will be Sept 6 at WMMI. There will be a slant lap demonstration. Austin commented that this date conflicts with the Denver Gem and Mineral show.
- C. Secretary- Tina Cox. No report.
- D. Treasurer- Kevin Witte -He has been on vacation, so nothing to report. No expenses have come in or out for a few weeks.
- E. Membership Secretary - Adelaide Bahr - absent
- F. Editor - John Emery - absent
- G. Members at Large - Austin Cockell. If anybody has any questions about the club, particularly new members, feel free to come to Austin or Mark Mann.
- H. Past President - John Massie. Sign up to volunteer for the show. Members get in free if they volunteer.
- I. Website and Show Coordinator - Lisa Cooper. The show is full with about 57 vendors, there are about two dozen on the wait list.

VI. Satellite Groups

- A. Crystal Group - Kevin Witte and Austin Cockrell - Joe Dorris will be talking about his best finds over the past quarter century, including the largest amazonite pocket ever found in the world. Meeting is at CSCS high school, Thurs. April 24, 7pm.
- B. Faceting Group - John Massie - Club inherited a machine that needs to be rebuilt. He thinks we can send it to the manufacturer in Denver. He will obtain a cost estimate. This would provide a 2nd machine to lend out.
- C. Pebble Pups Group - David St John - Busy time of year. Averaging about two school events per week including upcoming STEAM Night and Dinosaur Easter Egg hunt. In May will do Space Geology. Janitell Junior High teacher is retiring, but on May 17 from 9AM - 1PM she will host another identification day. We need more expertise than amateurs at this event, because the easy items were identified at the last session. She will be donating surplus to Pebble Pups.
- D. Fossil Group -Kristine Harris and Richard Villareal- Have regular meetings at East Library at 6pm 2nd Wednesday of the month.
- E. Jewelry Group - Ann Schmechel - Next meeting is Wednesday, April 23 at Library 21C at 6pm. John will be bringing the club's faceting machine.
- F. Lapidary Group - Sharon Holte. Absent.

VII. Liaisons

- A. Claims and Librarian -.Frank Rosenberg and Mike McCarty. No report
- B. Field Trip Coordinator - Kyle Atkinson. Planning Creede/Sawatch area July 26 weekend. He needs input from people familiar with the area to identify good dig areas. Last Saturday Randy led a trip to our claims. There may be some out-of-state trips this year with Arkansas, Utah and Wyoming as possibilities.
- C. Hospitality Coordinator - Phil Sevenants. Absent.
- D. Scholarship Coordinator- Maureen Richardson. She distributed the grant information to UCCS and Colorado College professors.

VIII. Unfinished business - none discussed.

IX. New Business

- A. David said Sawyer is going to start college in the fall, intending to major at geology at Fort Hayes. Could the board talk about a small donation to our graduating high school seniors who are going into earth studies?
- B. We need a ¾ ton pick up to haul a trailer from Falcon into the show and then back out.

X. Meeting adjourned by Alex ~ 8:45 PM

Respectfully Submitted by Tina Cox
CSMS Secretary

Alex Field
CSMS President



Federation News Post

American Federation of Mineralogical Societies
Rocky Mountain Federation of Mineralogical Societies



Crack the News: The AFMS Newsletter for Kids and Teens

Adapted from an article by Dennis Gertenbach, CTN Editor

The latest edition of *Crack the News*, the AFMS newsletter written by kids and teens for kids and teens, is now available at <https://www.juniors.amfed.org/juniors-newsletter>. In this edition, juniors from around the country wrote about wire wrapping, Petoskey stones, field trips to collect zeolites, thunder eggs, and trilobites, uraninite, obsidian, *Sacabambaspis* (a jawless fish from the Ordovician seas), and Cambrian trace fossils. It's wonderful to see the variety of rockhounding interests of the juniors in our clubs. Every junior who contributes to *Crack the News* receives a patch featuring George the Geode, the mascot of the newsletter. Be sure to send every junior in your club a copy to read. And encourage the kids and teens in your club to send an article, poem, artwork, or photos for the next edition. Details about where to send your contribution are at <https://www.juniors.amfed.org/juniors-newsletter>; just scroll down to the section "Calling all junior journalists, writers, poets, photographers, and artists..." Not only will your juniors receive a George the Geode patch, but they can share their knowledge and excitement about rocks, minerals, and fossils with kids and teens across the country.

Reminder:

Advertise your Show in as many Free locations as possible!

- Local newspapers
- Current events sections!
- Local TV stations
- Community Calendars
- Other local shows

Advertise in the *Rock & Gem Magazine!*

Send the information in early so it's published in the magazine as well as online:

www.rockngem.com/showdate-submissions/

Above from *CFMS Newsletter*, April 2024

About the AFMS - A non-profit educational federation of seven similar regional organizations of gem, mineral and lapidary societies. The purpose of AFMS is to promote popular interest and education in the various Earth Sciences, and in particular the subjects of Geology, Mineralogy, Paleontology, Lapidary and other related subjects, and to sponsor and provide means of coordinating the work and efforts of all persons and groups interested therein; to sponsor and encourage the formation and international development of Societies and Regional Federations and by and through such means to strive toward greater international good will and fellowship. Founded in 1947.

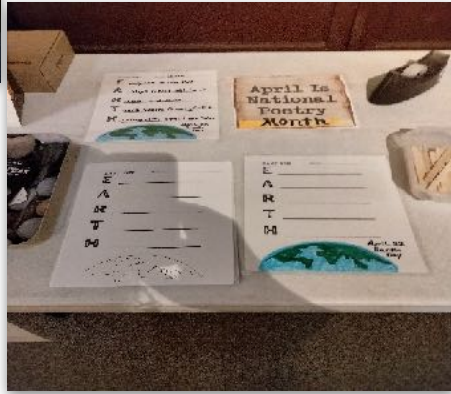
About the RMFMS - A non-profit educational organization. The purpose of the Rocky Mountain Federation is to have a close association of all clubs in the Society to promote the study of earth sciences, including the lapidary arts, the study of fossils and paleontology, and related crafts. The RMFMS was organized in 1941, and held its first annual convention at the Argonaut Hotel in Denver, Colorado. There were 16 organizations in attendance. The RMFMS became one of the original four founders of the American Federation of Mineralogical Societies when it was organized in 1947.



Fossilfun14@gmail.co

April Fool's Day

Pebble Pups and Earth Scholars April 1 (April fools' day) was really fun this month and yes, we had pyrite in honor of all the fools for minerals. We also received dino eggs, made Earth Day poems, and picked out real egg-shaped eggs to enjoy from the rock hound bunny.



Edison Elementary Science Fair

Science Fair at Edison Elementary was a great way to support our budding

science students and I learned so many cool things with them. Our club has been judging for over five years now.

Twain Elementary STEM Night

STEM night at Twain elementary was a big success over 80 students came through our booth on Colorado mining past and present. The students received pyrite samples and picked out three gems from our mining dig.



WMMI Art Day

The Art Day Super Saturday Series was a new outreach for us and we met many new people and made many new contacts.

We also celebrated Stegosaurus Day with several crafts based on our state fossil and dino. We made fossils, puppets, and other cool art activities. Recently retired teacher Jen Johnson is a wonderful volunteer that comes to most of our Pups meetings and adds so much to our club. Thank you for all you do.



wonderwoman627 at Pixabay



wonderwoman627 at Pixabay

Visit the CSMS Pebble Pup website: <http://pebblepups.blogspot.com/>

CSMS Pebble Pups and Earth Science Scholars (Con't)

Pebble Pups at the upcoming June Show

We need volunteers/Parents for the June Show for our booth and other positions and get into the show free if you help. Donations are also needed like polished stones small minerals ½ -1 size and fossils for our digs. Thank you to all that donated so far this year Shane, Sharon, Jan, Dan, Phil, and Ted. If I left off others, please know everything is appreciated. David

May 6 Meeting

May 6th meeting is on Space Geology with a surprise special project at the East Library 4:15 PM - 5:15 PM (F1) please remember that this is for K-12 students and not all activities may be appropriate for younger children. I will have a fun spot for younger siblings that may get bored or lose interest.



Stain glass stegosaurus by David St. John



wonderwoman627 at Pixabay

May 2025

Visit the CSMS Pebble Pup website: <http://pebblepups.blogspot.com/>



wonderwoman627 at Pixabay

CSMS Pick & Pack

7

Finding Zircons in North Cheyenne Cañon

By Steven Wade Veatch

A long-forgotten Colorado Springs rockhounding memory reawakened for me as I looked at a vintage postcard (figure 1) that shows the crossroads of High Drive and the Colorado Springs and Cripple Creek District Railroad, also known as the Short Line Railroad. It was just a short distance from here that I had stepped away from my motorcycle

to take a deeper look at the area. On the edge of a steep slope, the shape of some crystals leaped to eye and mind.

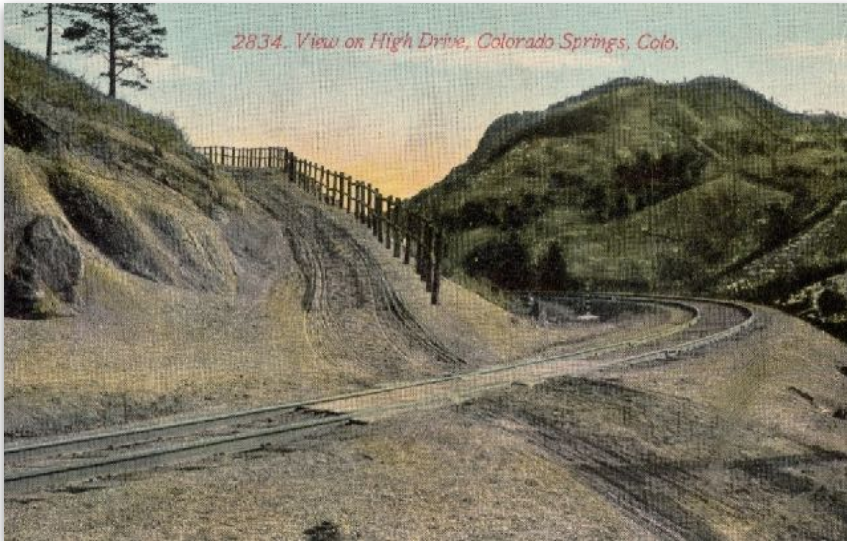


Fig 1: Intersection of High Drive and the Short Line railroad. Note buggy tracks on High Drive. Postcard from the collection of S. W. Veatch.

I thought about the rich history of the area. Workers completed the Short line in 1901. Today, the Gold Camp Road follows the old route of the railroad as it winds its way up the mountain to the goldfields of Cripple Creek.

Both the Short Line and High Drive were used to access the Bruin Inn (figure 2), which was located near Helen Hunt Falls.

General William Jackson Palmer, founder of Colorado Springs, commissioned the construction of the High Drive in 1903 as a scenic carriage route. Gold Camp Road follows the old Short Line Railroad between Colorado Springs and Cripple Creek. The railroad went bankrupt in 1919. W. D. Corley purchased the line in 1922, removed the rails, and converted the right-of-way to a toll road (known as the Corley Mountain Highway) for cars in 1926.

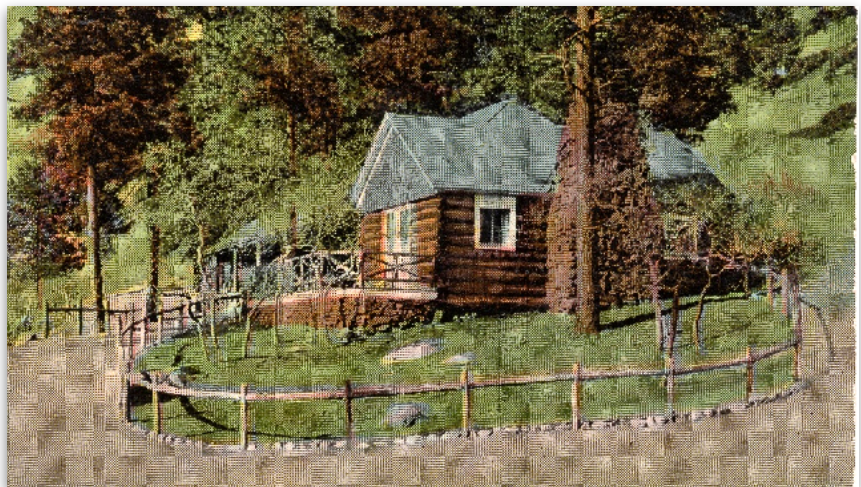


Fig 2: Bruin Inn (circa 1910) located at the base of Helen Hunt Falls in North Cheyenne Cañon Park. Built in 1881, it was originally intended to be the home of Edward Payson Tenney, then-President of Colorado College. Over time, it became a popular tourist attraction. It burned down in 1957. Postcard from the collection of S. W. Veatch.

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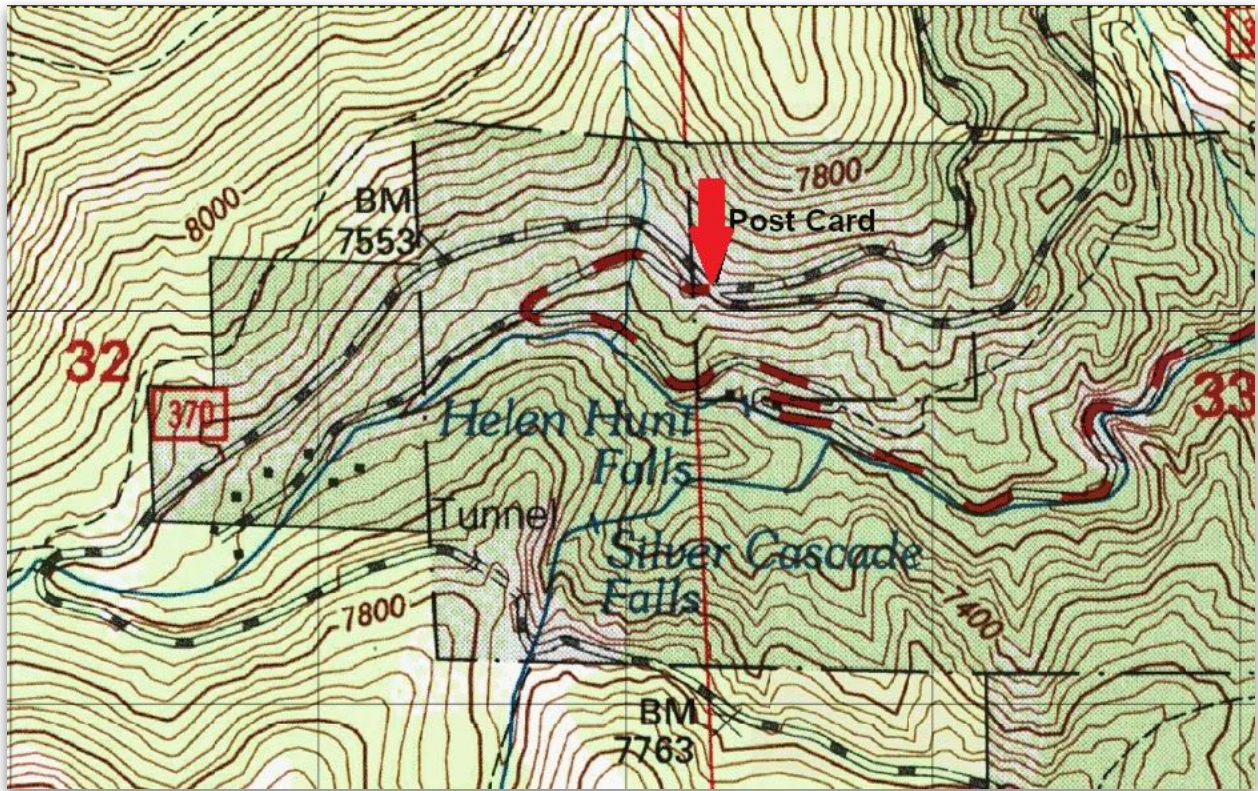


Fig 3: The red arrow on the topographic map shows the intersection shown in figure 1. The post card photo was taken a short distance north of Helen Hunt Falls and the Bruin Inn.

In March 1982, I was riding my Yamaha all-terrain motorcycle with a rock-hunting friend, Jerry Odom, who was also on a motorcycle. I was working for 7-Eleven then, and had the day off. Jerry was an officer with the Colorado Springs Police Department. We rode past the intersection of High Drive and the Gold Camp Road, continued on the Gold Camp Road, and entered North Cheyenne Cañon, a 1,000-foot-deep cut into the billion-year-old granite. With its hidden geological wonders, the area has long been a treasure trove for gem and mineral hunters. We did not make it far, as the road was soon filled with snow and we had to stop. We turned our motorcycles around and then stepped off of them to stretch our legs.

We lost the sun as it sank below the canyon rim. Shadows lengthened as the afternoon moved on, and the air was cold. Some snowflakes under a pine tree swirled about on a lofting breeze. Below, a stream flowed over immensities of time and through cycles of erosion and deposition.

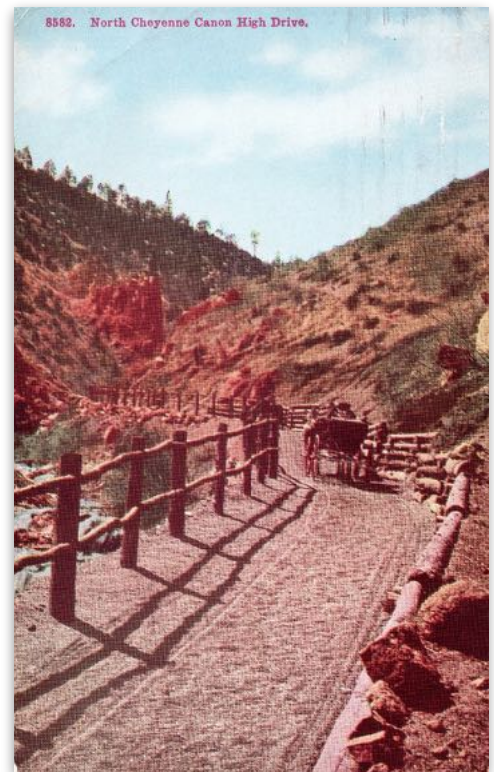


Fig 4: High Drive in North Cheyenne Cañon. Postcard from the collection of S. W. Veatch.

Continued ...

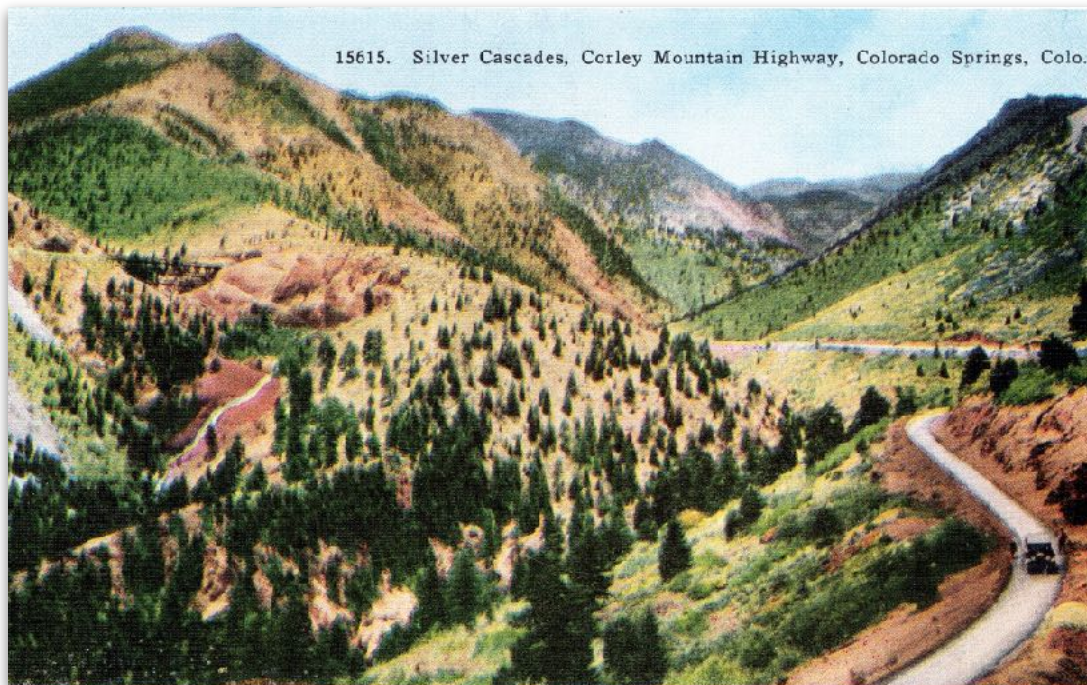


Fig 5: View of the Corley Mountain Highway, now known as the Gold Camp Road, on the southwest side of Colorado Springs. *Postcard from the S. W. Veatch collection.*

I looked at the ground and saw, next to the road, near the edge of the canyon, a hunk of Pikes Peak granite that had been broken loose by a road grader. I noticed that it had a long cavity running through it. I looked a little closer and found crystals that resembled two tiny Egyptian pyramids that had been glued together. I had stumbled on a pocket of zircon crystals!

The discovery of the zircon crystals' unique shapes among the granite rocks was exciting—a moment of wonder that linked me to Earth's ancient past. These reddish-brown crystals held a billion years of history, adding deep time to my early spring adventure. The excitement continued beyond the discovery as we rode back down the mountain and then into Colorado Springs.

Collectors continue to find zircons at a half-dozen sites in the area. At the nearby Eureka mine— where prospecting is more intentional—collectors use a black light in the dark tunnel that causes zircons to fluoresce a vibrant yellow, making them easy to find.

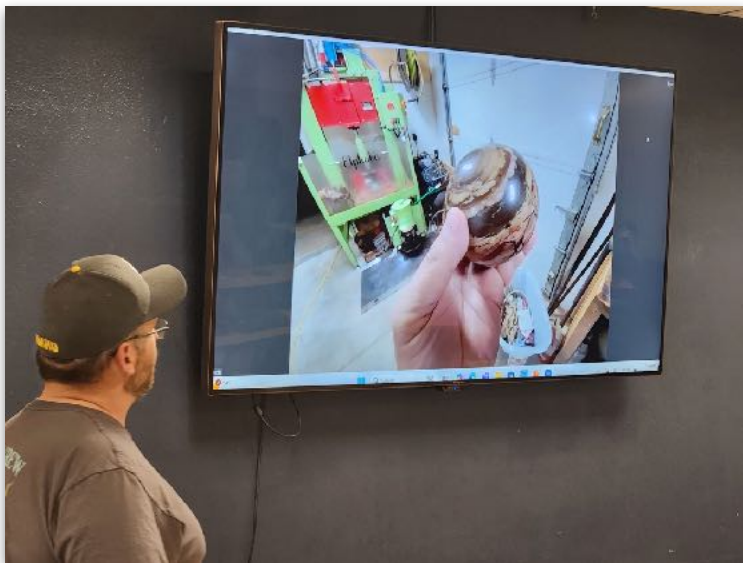
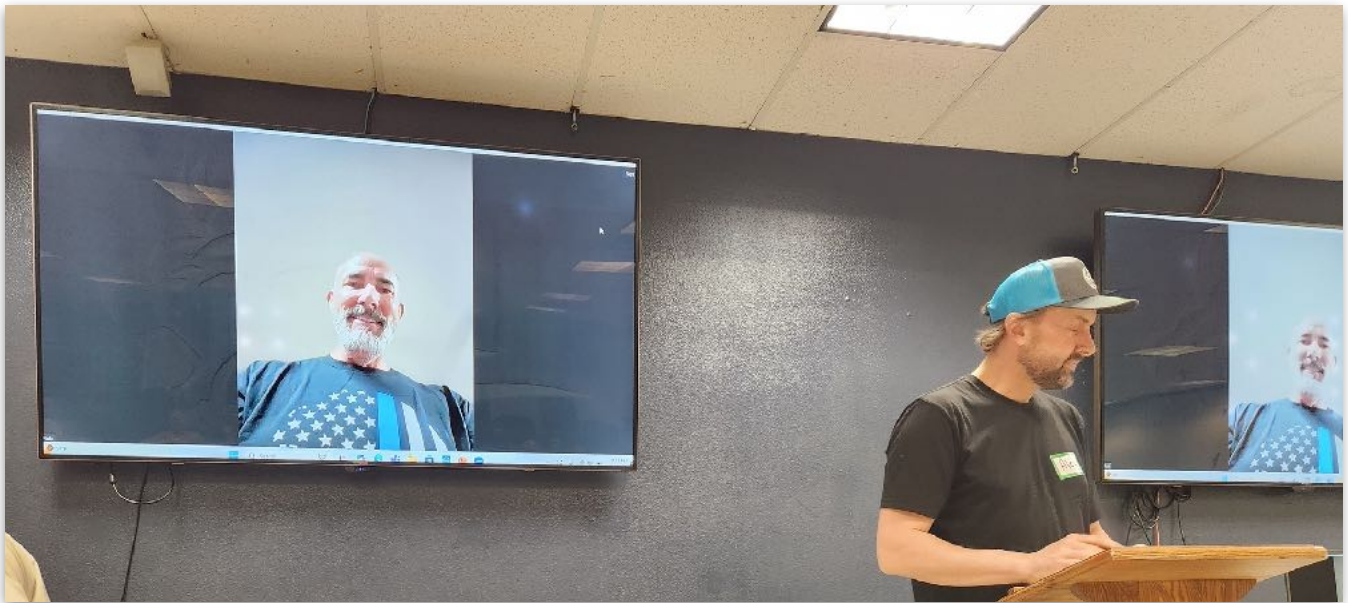
This is an experience that I vividly remember nearly 44 years later. It is just one of many adventures for me hunting for rocks, minerals, and fossils in the Pikes Peak region. For both expert geologists and amateur rock collectors, finding a zircon crystal sparks a passion for rockhounding and searching for local mineral treasures that are part of El Paso County's rich geological heritage.

Acknowledgments:

The author thanks Eric Swab for his assistance with this manuscript. Bob Carnein improved this manuscript. Many thanks to his years and years of editing my work.



Fig 6: Zircon specimen from the North Cheyenne Cañon, El Paso County, Colorado. *Courtesy of the Denver Museum of Nature and Science. DMNS EGM.10328.*



General Assembly 17 Apr 25

46 rockhounds gathered on a cool Colorado Springs evening at Colorado Springs Christian School to see Robert Eldridge from Cedar City, Utah talk to us about making spheres out of raw material. Visit www.mineralsinmotion.net to make a purchase, or Robert can make a sphere out of a sample you provide. VP Shane brought lots of samples for us to look at and Robert gave away one free sample to the person who guessed the right number between 1-1000. Thanks Robert!

We conducted business as usual and gave out five free minerals.



Worms, a Blood Moon, and Mercury

Mike Nelson
csrockguy@yahoo.com

*The moon stared at me through sprinkled
nighttime stardust and I smiled.*

— Jay Long

As I start writing this article on Thursday the 13th of March 2025, my mind keeps wandering to the celestial event of the month—the Worm Moon, a Full Moon. The name, according to the Old Farmer’s Almanac, is due to warming soil and the appearance of worm casts or even the appearance of earth worms. But hold on, up here in the Northland the temperature may be a tad too cool for earthworms in a normal mid-March. Does 22 degrees F sound like earthworm nirvana? So, there are a couple of more appropriate names for the March moon. One is Crow Moon since Poe’s favorite bird is very busy cawing and telling the country that Spring is on the way. That certainly seems the case in our plethora of trees around here. In northern Wisconsin the native Ojibway refer to the March moon as Snow Crust Moon. Sounds good as 40 degrees during the day tends to melt snow while 22 degrees at night freezes it over and a crust forms.

But the big event is this Full Moon is also a Blood Moon, a total lunar eclipse—and it was a dandy. In this arrangement the moon, earth, and sun are lined up and the earth’s shadow begins to creep across the moon until the moon is completely covered but is still visible. What happens is that the earth’s atmosphere scatters some sunlight across the lunar surface and at “totality” the moon

appears a copper red or even a blood red. Really spooky but also a spectacular, almost supernatural, event.

Here in the Northland, sometime shortly after 11:00 CDT the earth’s shadow started to



Above: The March 2025 Lunar Eclipse and Blood Moon at Minneapolis, MN. Courtesy of Tom Ruin and released to the Public Domain.

creep across the moon, slowing getting larger and larger until totality was reached about 1:30 AM. I observed the process until about 2:00 AM but totality lasted until about 2:30 AM when the earth’s shadow started to withdraw. The “neat” thing about the event is that we were in a short term, major warming event in Wisconsin, so I was able plop myself on the porch rocking chair with only a light jacket and my binocs and experience this celestial event with a clear sky and quietness. Wow, and double wow, since Thursday the 20th is the Spring Equinox.

The copper red moon rang a little bell in my head that reminded me of a Perky box containing the mercury mineral corderoite that needed examination. The red connection

is not copper related but because many mercury minerals display some sort of a red color.

Although mercury has not been legally mined in the U.S. since 1992, at one time our country had a substantial number of operating mines. Most of these mines were in the far western US (see map) although in terms of production per mine the Terlingua fields in the Big Bend area of west Texas was substantial. I could not easily locate past production figures before 1992. In winding down the lack of mine production, much of the production needed in the early 1990s was from catching mercury as a byproduct in gold mining operations. The U.S. also imported mercury and recovered the metal from recycling efforts. Today the use of mercury in the US has greatly decreased due to its toxicity, environmental concerns, and human health conditions. As noted on the map, most mercury mines were located in California, Nevada, and Oregon.

Mercury was mined in Nevada from about 1907 (discovered then at Antelope Springs and with mining beginning in 1914) until the early 1990's. The District mines produced from veins in Triassic limestone, dolomite, conglomerate, and shale (Gray and others, 1969). Evidently these veins were emplaced during the Miocene because of extensional magmatism (Noble and others, 1988). That is, Miocene extensional tectonics involved the stretching of the earth's crust producing what we know today as the Basin and Range physiographic province.

One of the best-known mercury mining locations of later years was the Cordero--McDermitt Mines, Opalite District, Humbolt

County, Nevada. The McDermitt (including



Above: Mercury mines in the U.S. None are active today. Map courtesy of Land Matters, a non-profit 501c3 charitable educational organization found at www.mylandmatters.org.

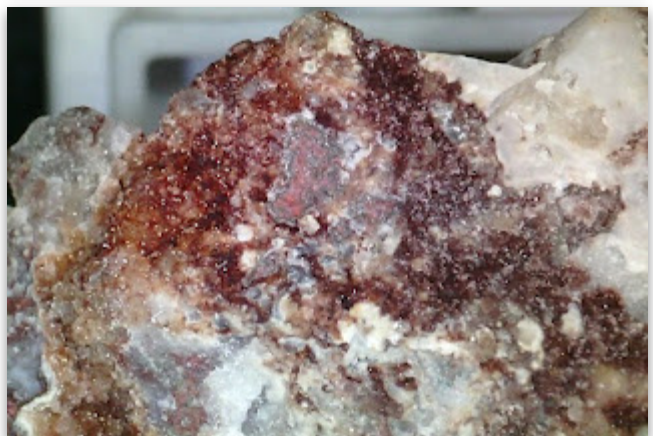
the Cordero and other smaller mines) is just one of several mines that are located in the Opalite Mercury Mining District that straddles the Nevada-Oregon State Line. The District is associated with a volcanic caldera complex where eruption centered around a Miocene age of ~16 Ma (Henry and others, 2016). The original mercury mineralization was in the Cordero Rhyolite, but later hydrothermal action deposited the metal into nearby lake or stream-deposited tuff (volcanic ejecta) (Henry and others, 2016). Mercury in the caldera complex was first mined in the 1970s and the operations ceased in 1990. The McDermitt complex was the most important mercury producer in the Americas during the 20th century producing 279,000 flasks to 1988 (geoconsultancy.com.au). The minerals cinnabar, ~50%, (mercury sulfide HgS) and corderoite, ~50%, (mercury sulfide chloride

$\text{Hg}_3\text{S}_2\text{Cl}_2$) yielded almost all the mercury. However, there are several other mercury minerals present in minor amounts.

Corderoite is another one of those mercury minerals that appeared “later in life” as Eugene Ford and others did not describe it until 1974 from the Cordero Mine. Of course, the Mine was very new at that point, but the mineral had not been noted at other mercury localities. In addition to corderoite, the Cordero Mine (McDermitt complex) is the Type Locality of these other mercury minerals: alexearlite, kenhsuite, mikecoxite, and radtkeite.

When many rockhounds think of a “standard” color for mercury minerals the bright cherry red of cinnabar probably comes to mind, at least it does for me. Cinnabar was the mineral we always studied in mineralogy courses and little did I know, until decades later, that less abundant (that we did not observe in class) mercury minerals are various shades of pink, orange, silvery-gray, brownish red, yellow, and even colorless. Interestingly, many of these mercury minerals begin to darken, some irreversible, when exposed to light sources as they are photosensitive. In the well-studied photosensitive cinnabar (vermillion paint pigment), the first reaction to light, moisture and chloride ions is the change to corderoite: $3\text{HgS} + 2\text{Cl} \rightarrow \text{Hg}_3\text{S}_2\text{Cl}_2 + \text{S}$. Corderoite is also unstable when exposed to light and oxygen and will degrade to calomel: $\text{Hg}_3\text{S}_2\text{Cl}_2 + 2\text{Cl} \rightarrow \text{Hg} + 2\text{S} + \text{Hg}_2\text{Cl}_2$. Finally, calomel will degrade into mercuric chloride and metallic mercury (Keune and Boon, 2005; Radepon and others, 2011). These reactions probably seem rather insignificant to rockhounds except to note that most

corderoite in the rock record is the result of the degradation of cinnabar. However, to art historians and art conservators the chemistry behind this darkening is extremely important. Vermilion, the red coloring pigment made from cinnabar perhaps as far back as 8000 B.C., was the primary red pigment during the Renaissance Era until the 20th Century. So, conservators were greatly concerned about beautiful red paints used by the masters (and others) in their majestic works of art darkening with age.



Above: Cherry red cinnabar degrading to pink corderoite. Matrix is opalite with white quartz and glassy hyalite opal. Bottom width FOV ~ 7mm. Top width FOV ~ 4 mm. Photos: M. Nelson

Continued ...

Keune and Boon (2005) determined that chlorine salts in the atmosphere were the major culprits in darkening during the degradation of cinnabar into elemental mercury. Museums are now able to restrict moist air and chlorine from reaching the paintings and also to chose specific light frequencies for the gallery illumination (Wogan, 2013).

Corderoite is an isometric mineral although individual cubic crystals are quite small, less than 2 mm, and quite rare. Most occurrences of the mineral are as tiny grains, druse-like, on degrading cinnabar. It usually is pink to pink red to orange pink color when fresh but it also degrades in light and moisture to a gray and finally black color. Meanwhile it remains tough to identify except using the pink color and its relationship to the degrading cinnabar. As noted above, the McDermitt complex has produced corderoite (degrading cinnabar) from both the rhyolitic complex rocks and the original tuffaceous lake sediments which today have consolidated to “opalite” with angular fragments of rhyolite and tuff along with secondary amorphous silica and others. In other words, it usually is not a nice looking rockhound mineral but certainly was a critical mineral in the mining and production of mercury.

Want to know more about mercury? I would suggest the USGS Circular 1248, Geologic Studies of Mercury by the U.S. Geological Survey.

<https://clu-in.org/download/contaminantfocus/mercury/geologic-studies-of-mercury-c-1248.pdf>

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Mike is a former University professor and administrator who enjoys outdoor activities, and writing articles for the *Pick & Pack*, other rock and mineral clubs, and the Newsletter of the Rocky Mountain Federation of Mineralogical Societies (www.rmfmfms.org). He also writes, and occasionally speaks, about members of the Colorado Cavalry/Infantry who participated in the march to Glorieta Pass (1862), helped settle central Kansas (1865), and later fought at Beecher Island (1868). But mostly he just tries to enjoy life with frosty IPAs, travel, and collecting mundane facts and pretty rocks/minerals.

How to do a Case for the Show

Bob Landgraf - recipient, DGMG People's Choice Award

Adapted from Denver Gem and Mineral Guild

THE BASICS

- You only have to fill a space that is about 35" x 23" with specimens. That means you will probably need about 15 to 25 specimens.
- Don't be concerned that your specimens "are not worthy" – the presentation is the thing.
- Here are the major tasks you have to accomplish – in sequential order:
 1. Build a set of "liners" for each case you want to exhibit. A set of liners consists of:
 - A "Back Panel"
 - A "Floor Panel"
 - Two "Side Panels"
 - Each of the panels needs to be covered with cloth.
 2. If you wish, you can add risers, steps, "floating" platforms, or other items to help display your specimens.
 3. Choose the specimens you want to display.
 4. Create labels for each specimen and for the case.
 5. Create the desired layout at home.
 6. At the show, add the liners to the case and adjust the liners if necessary. Clean the liners before adding the specimens.
 7. Carefully add your specimens to the case.
 8. Clean the glass front panel and secure it to the case.

THE ROCKS

- One really good rule is to avoid putting too many specimens in the case!
- If you have more specimens than will fit in a case, make another case!
- Most people have a tendency to try to put too many in, even when they think about it.
- Taking two or three specimens out and spreading the remaining specimens will often make a dramatic improvement in a case's appearance.
- Having several steps or separate risers in a case will allow you to put in more rocks without things looking as crowded.
- Though it is always best to lay out the case ahead of time at home, take an extra specimen or two to "fine tune" the arrangement with different specimens while setting up the case.
- After you make the arrangement at home be sure to number the bottom or back of the labels so that you can remember the order you planned.
- After you have finished and are absolutely sure it is right, try taking a specimen or two out of the case to see if that improves the look.
- Without trying to be slavishly tied to a symmetry a generally balanced appearance (color, brightness and especially size) helps. A trick to check this is to step back and squint, such that details aren't noticeable, but just the general form and colors.
- It is best that the case contains specimens that are approximately the same size. An alternative that may work is to have one or more large specimens surrounded by smaller ones.

Tips about specimens

1. If you plan to wash specimens before setting up your display, allow a few days for them to dry thoroughly. Otherwise, heat from the lights can cause moisture to form inside the case.
2. Wear thin white gloves when setting up your display to avoid getting fingerprints on crystal faces and other shiny surfaces.
3. Bring paper towels and glass cleaner, tape for removing lint, a ruler to check your spacing and alignment, and extra mounting materials.

LINERS

OVERVIEW

- Liners are required for any cases you do for the CSMS show.
- The best way to carry the liners is probably one or more large black plastic garbage bags.
- Make sure the liner pieces all fit snugly together so you can't see gaps or the wood of the case between the panels.

Tips about liners

1. To make the liners fit tightly, you can make the liners a little smaller – maybe 1/4 inch or so. Then, you can stuff extra cardboard or wrinkled up newspaper as spacer material behind the back and on the outside of the sides such that the spacer material doesn't show.
2. If the liners are too wide on the sides with a relatively soft spacer behind the back, tightening up the front of the case forces the side liners back and makes everything more secure.
3. If you make the back liner deliberately a little too tall and bend it forward, it will act as a reflector and will hold the side panels in place.
4. If you make the liners the proper size so that the back rests on the bottom piece and the sides push against the back piece, the joints/seams are less apparent and any imperfections in the edges are less noticeable.

[Warning:] Don't make the mistake of using backing material that is too heavy. One of our more illustrious members once used dry wall and the back fell over and virtually destroyed some expensive and cherished specimens.

STIFF BACKING MATERIAL

- Cardboard
- Coroplast
 - Corrugated plastic
 - Less likely to bend and break than cardboard
 - Makes it easy to post photos and letters
- Use rubber cement, Weldwood cement, hot melt glue, "tacky glue," or duct tape to attach the cloth to the backing.

COVERINGS USED ON THE BACKING MATERIALS

- Carpet
 - Advantages: easy to clean, lasts forever
 - Cut to fit case
 - Short nap, conservative color
 - Can be glued to liner backing with Super Glue or carpet cement
- Felt
 - Advantages: no wrinkles, lots of stretch
 - Glue to liner backing with spray rubber glue
- Patterned paneling – stones, wood, etc

COLORS FOR THE LINER FABRIC

- Be careful – Garish colors can be an absolute turn-off or "show-stopper".
- Consider the colors of the specimens you are displaying when deciding what color background to use. You need to have good contrast between the specimens and the background color. For example, don't use a bright red background if you are going to display bright red minerals. The minerals will fade into the background.
- Light colors
 - Don't show the lint
 - Do make the cracks/seams between liner components more obvious than dark colors
 - Are harder to keep clean
- Dark colors
 - easier to keep clean
 - do a good job of hiding the cracks/seams between liner components
 - require a lint-picker roller to clean off anything white or light
- Mottled or Tweedy

[Note:] If you only want to make one set of liners, pick neutral colors that will be OK no matter what color specimens you put on them.

TYPE OF FABRICS USED FOR LINERS

Make it easy to clean – and easy to remove from the backing - if you are going to use it a lot.

SMOOTH OR GLOSSY CLOTH

- If you have glossy specimens such as quartz, a rough-textured cloth such as burlap will work.
- With rough rocks such as ore minerals or fossils, a smooth cloth might look better.

RISERS, FLOATERS AND SHAPES

OVERVIEW

- Use all of the case, not just the lower 12 inches.
- Take advantage of all the space.
- Don't put signs or labels on the sides of the case liners.

RISERS

- A 2-tier set of risers is the most common.
- 4 – 6 inches in height seems to be normal.
- You can vary the heights of risers within a case.

FLOATERS

- Use a dark cloth/covering.
- Cover the supports with dark material so they can't be seen.
- Keep the support materials back from the front of the floating shape so they won't be seen. .
- Make the support material for a floating shape big enough so the shape/board won't tip.

Tip about "floaters" - Look around at work or home for riser materials to create new affects. Some large plastic disks at work gave Bob the idea for his and Janie's case with the "floating" round risers.

FREEFORM SHAPES DRAPED WITH CLOTH

- Shapes to consider
 - Bricks
 - Logs
 - Wood blocks
 - Plastic holders
 - Glass jars
 - VCR boxes
 - Rock tumblers
- Possibilities for arrangement of shapes
 - Up & down
 - Ascending size
 - Each specimen sits on top of its own shape
 - Draw the viewers into the center of the case – where the specimens are.
- Avoid wrinkles, pleats and folds if at all possible.

[Note:] It is possible that that irregular, free form riser shapes can work better than shapes that are too geometrically regular. Use your imagination.

LIGHTING

- Make sure the whole case well lit
- Watch out for shadows - especially under any risers
- You might want to consider adding more lights. You can do this without drawing any more current than the standard pair of 75-watt bulbs. Use a Y-type adapter and two bulbs – a 50-watt clear incandescent bulb and a 25-watt fluorescent bulb in each light socket. This combination produces about twice the light of the standard 75-watt incandescent bulbs. The clear bulbs seem to give more "sparkle" to the specimen whether or not you use the fluorescent bulbs.

[Note:] In competition, we are often restricted as to the type of bulb we can use. Check the rules.

[Warning:] If you want to use bulbs other than what is provided, make sure their heat won't damage your specimens.

- Even when using dark risers, you can use white back and side liners to reflect more light on the specimens.

LABELS

OVERVIEW

- Always label your specimens. Viewers learn nothing from specimens that have no labels.
- Make labels the least inconspicuous thing in the case – but not invisible!
- The label should not dominate the case.
- When you look at the display, ask yourself: What is the first thing I see – labels or specimens?
- Case Title label
 - 36 point type or larger
 - Usually centered within the case

[Note:] If the Case Label is on the back panel of the case, make sure it is low enough to be easily read when the glass front is placed on the case.

- After you make the arrangement at home be sure to number the bottom of the labels so that you can remember the order in which you plan to display the specimens.
- Don't put signs or labels on the glass or on the side case liners.

INFORMATION ON LABELS

- Include a location as complete as possible – unless the rocks are all from the same location.
- Often descriptions (crystal class, twinning, type location, or any other information that might be of interest) can be added.
- All labels should be consistent in their layout, typeface, and information contained.
- For more formal/serious shows, check to see if there are specific labeling requirements.

PHYSICAL CONSIDERATIONS FOR LABELS

- Match/blend colors with the case liner.
- Off-white is better than pure white.
- Make the labels uniform in size.
- Legibility – two different points of view:
 - Make the labels legible from 4 feet away
 - Viewers should be able to read the labels when standing in front of the case.
- For computer-generated labels, a 14-point sans serif typeface works best. A sample of this size font is shown below.

This is a 14-point sans serif typeface

- Propping labels up for readability
 - Just fold down the back of a card-stock label.
 - Use folded card stock glued to back of label.
 - Put one or two .” nuts in back of the label.
 - Use a grooved piece of wood or Plexiglas.
 - Allow space on the bottom of the holder label if you use a grooved wood or plastic holder.

[Note:] It is OK to lay labels flat if they can be easily read.

TYPE OF MATERIAL USED FOR LABELS

- Many labels used today are either computer-generated or made on a label maker. If you have a PC and access to Microsoft Word, almost any “computer person” can help you create a template you can use for just about any size label.
- Card Stock with back folded up.
- Laminated.
- Transparent labels on glass slide mounts.

PARTING THOUGHTS

- The best thing to remember is to use your own imagination for your particular display. Often very striking effects can be achieved by using mirrors, back (or underneath) lighting, including artifacts, descriptive text, or whatever.
- One year Francis did a very whimsical (if unscientific) case with rocks and stuffed animals. While this type of thing may offend some sensibilities, it is the sort of thing that is attractive to the average, non-initiated viewer.
- Glen's stamp and mineral case is another example of a different approach that catches the eye.
- Don't be intimidated by what others do or by anything in this handout either. Let your imagination run wild. It will make it more fun for you and the viewer.
- Don't worry about whether your specimens are rare and valuable – the presentation is the thing!



John Emery
Editor

Thanks to our contributors. We encourage everyone to submit articles, photos, illustrations or observations. Share your experiences, your new finds, or simply your enjoyment of our last field trip. Handwrite it, type it, or email it. Format does not matter. All submissions are welcome. The deadline for items to be included in the next Pick & Pack is the **last day of the month**.

To submit an item:

For hardcopy photos or articles, mail to the address below or bring them to the General Meeting. All hardcopy photos remain the property of the submitter and will be returned. Electronic photos can be submitted at resolutions above 200 dpi in any format.

Feature articles can be in MS Word or Mac Pages, preferably not pdf. The newsletter is produced in Mac Pages.

e-mail the editor:
pickandpackeditor@gmail.com

Mail to: Pick & Pack Editor PO Box 2 Colorado Springs, CO 80901

The PICK & PACK is published ten times per year (no issues in January or August). Unless otherwise marked, materials from this publication may be reprinted. Please give credit to the author and CSMS PICK & PACK.

New Pick & Pack Logos



The new Pick & Pack logos reflect definitive colors and features of Colorado Springs. The outline of the

mountain is an accurate outline of Pikes Peak. Just like our seasons, the Pick & Pack logo will celebrate colors and features depending on the time of year or even time of day. This month's logo shows a quiet starry evening view of Pikes Peak, Venus winking from afar, moonlight shining off a snowy outline — Ed.

Western Museum of Mining and Industry

The CSMS and WMMI have a cooperative agreement. Be sure to visit the WMMI website and learn about this amazing museum.

<https://wmmi.org/>



**WESTERN MUSEUM OF
MINING & INDUSTRY**

Crystal Club Happenings at CSMS

In March the Crystal Club had an informative talk from Phil Persson, geologist and graduate from the School of Mines. An informative presentation on the MIM Museum-Mineral Museum in Lebanon was enjoyed by all. In April an all-time attendance record was noted by CSMS lifetime members when 73 people attended an informative talk by Joe Dorris. Joe is the #1 prospector of the Pikes Peak Batholith and talked about the top 15 of over 200 pockets he's discovered over the years. In May we will have another informative talk by Mark Cross on tourmaline. The way attendance is increasing you may want to get there early to ensure a seat!

— Austin & Kevin

Pike's Peak Gem & Mineral Show

Presented by the Colorado Springs Mineralogical Society
 June 6 - 8 2025, Norris Penrose Event Center, 1045 Lower Gold Camp Rd, Colorado Springs
 Fri 10 AM - 6 PM, Sat 10 AM - 6 PM, Sun 10 AM - 4 PM

Request for NON-COMPETITIVE Display Space

Name:

Society:

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Describe display or cases:

| | | | |
|--|-----------------------------|--------------------|-------------|
| | I will bring my own display | Your case length: | # of cases: |
| | I will need a case* | Case size desired: | # of cases: |

* CSMS cases are approximately 36" by 24" outside measurements. A few 4-foot cases are generally available. There is a hasp on the case that accepts an exhibitor-supplied padlock.

Exhibitors are urged to bring their own cases. A limited number of club cases are available upon request. Exhibitors using club cases will need to furnish any risers, linings, padlock or accessories as needed. **EACH CASE WILL BE LIMITED TO 150 WATTS.**

Setup is from 1 PM to 7 PM on Thursday or 8 AM to 10 AM on Friday before the show opens. Note new show hours for Friday. Tear down is 4 PM to 8 PM on Sunday.

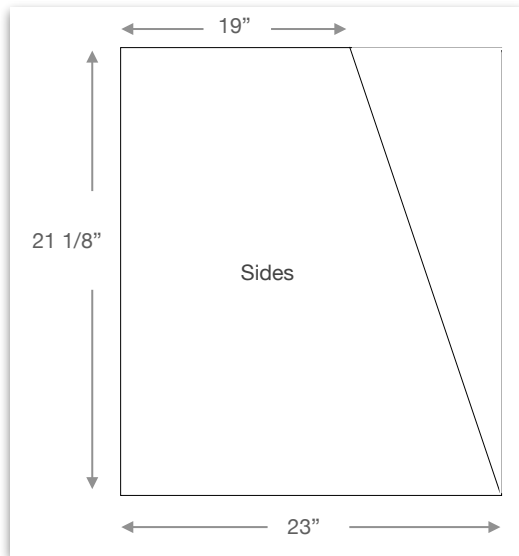
Return by mail or email by May 29th to reserve a case and exhibit space. After May 29th, exhibitors are still welcome based upon availability of cases and space. Return to: Bob Landgraf, 304 Palmer Trail, Manitou Springs, CO 80829 719-685-1364 rmlwp74@aol.com

Signature of Non-Competitive Exhibitor: _____

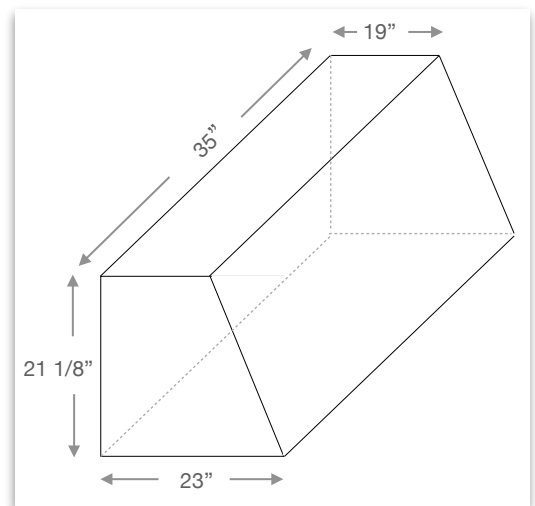
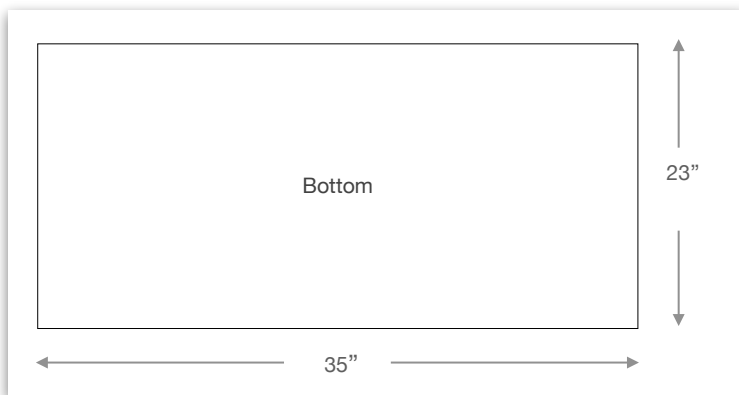
With the signing of this request, email submission of this document or showing up with an exhibit, it is mutually agreed that the Colorado Springs Mineralogical Society and the Norris Penrose Event Center shall not be liable to any exhibitor for damage, loss or destruction of any exhibit or injury to his person for any cause and all claims for injury are expressly waived by the exhibitor.

The Colorado Springs Mineralogical Society Case

All measurements are inside measurements. However, since all cases are handmade there may be some slight variations in the cases. Be sure to bring any necessary tools required to make adjustments to your liners. Also remember to allow for thicknesses of your liners to make the final fit.



All measurements are inside measurements.







Pick & Pack
P.O. Box 2
Colorado Springs, CO 80901-0002



CSMS is an incorporated nonprofit organization with the following goals:

- To promote and disseminate knowledge of the earth sciences, especially as they relate to mineralogy, lapidary, and fossils.
- To encourage study, collection, and fashioning of minerals.
- To accomplish the same through social meetings, lectures, programs, displays, shows, and field trips.
- The Pick & Pack newsletter is published 10 times each year to assist and promote the above.

Joining the Colorado Springs Mineralogical Society (CSMS):

- Meetings are held the third (3rd) Thursday of each month, except January & August.
- 7:00 PM at Colorado Springs Christian School, 4855 Mallow Rd, Colorado Springs CO 80907
- Visitors are always welcome.
- Individuals—\$30, Family—\$40, Juniors—\$15, Corporate—\$100.
- Find the application at the web site: www.csms1936.com. If you are interested in joining CSMS or would like more information, we encourage you to attend our next General Meeting or visit our web site.

Meetings: CSMS also offers Satellite Group meetings that allow more focused attention in specific areas of our members' interests. Our current Satellite Groups consist of the following: Crystal Study Group, Faceting Group, Fossil Group, Lapidary Group, and Pebble Pups/ Juniors. For details on Satellite Group meetings, check out the calendars on page 2 and the web site.

Membership Benefits: Yearly dues include 10 issues of the *PICK & PACK*, all field trips (additional fees may be required on some field trips, and members are responsible for all transportation to and from), participation in all Satellite Groups (some groups may request additional fees to help cover resource costs), a year of learning and enjoyment, plus a lifetime of memories.

Colorado Springs Mineralogical Society is a Member of the following organizations:

- American Federation of Mineralogical Societies (AFMS) www.amfed.org
- Rocky Mountain Federation of Mineralogical Societies (RMFMS) www.rmfm.org