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 64 No. 2
Mar 2024

CSMS General Assembly

Thursday, Mar 21, 2024 7:00 PM
Colorado Springs Christian School
4855 Mallow Road

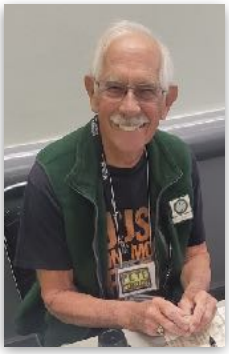
Dr. Pete Modreski

"Tools you can use to Identify Gems and Minerals"

Bring your samples for live testing

Society members are always encouraged to bring specimens to general assembly to share and/ or for help with identification

In This Issue …



Dr. Pete Modreski is a longtime mineral collector, since college days at least. He has a B.A. in chemistry (Rutgers, 1968) and an M.S. and Ph.D. in geochemistry from Penn State (1971, 1972). After some years in the USAF and at Sandia National Laboratory, he worked for the U.S. Geological Survey from 1979 onward, doing research on mineral deposits and later becoming responsible for public and educational outreach, retiring after 41 years in 2020. He is a member of the Geological Society of America and Mineralogical Society of America and belongs to quite a few local and other mineral clubs, including being a member of CSMS for about the past 20 years. Pete was a coauthor of *Minerals of Colorado* (1997). If asked to name his favorite mineral, he might choose tourmaline.

Pete's presentation will be about techniques you can use to identify help gems and minerals. After a short presentation and demonstrations, Pete will invite club members to bring up specimens (crystals or mineral specimens, and rough, cut or polished, and mounted stones) and we'll practice using some of the techniques to do our best to identify them, or at least to narrow down what they may or may not be.

We'll talk about the standard mineral identification techniques, by test or observation; color, luster, crystal form, hardness, cleavage, magnetism, streak, chemical tests (a drop of HCl) and the like. Then we'll discuss, and use, techniques with various kinds of instruments or equipment:

- **Specific gravity;** can be done with any inexpensive digital gem scale that weighs to an accuracy of 0.01 gram.
- **Refractive index;** We'll use a "Jemeter Digital 90." Testing requires a flat, polished surface, normally on a faceted stone.
- **Thermal conductivity;** We'll demonstrate using a Presidium Gem Tester II.
- **Fluorescence;** using both long-wave and short-wave UV.
- **Other optical properties;** including dichroism or pleochroism, and birefringence (observed in polarized light).

CSMS Group Calendar

Mar '24	Apr '24						
13 Mar	10 Apr	Fossil Group	2nd Wed	6:00 PM	East Library Annex	Kristine Harris Richard Villareal	719-593-1524 831-760-6985
7 Mar	4 Apr	Board Meeting	1st Thur	6:00 PM	Zoom	Alex Field	719-351-4897
5 Mar	2 Apr	Pebble Pups	1st Tue	4:15 PM	East Library	David St. John	719-424-9852
21 Mar	18 Apr	General Assy	3rd Thur	7:00 PM	Co Sp Christian Sch	Alex Field	719-351-4897
28 Mar	25 Apr	Crystal Group	4th Thur	7:00 PM	Co Sp Christian Sch	Kevin Witte	719-638-7919
By appt	By appt	Faceting Group	By appt	By appt		John Massie	719-338-4276
By appt	By appt	Lapidary Group	By appt	By appt	Sharon's House	Sharon Holte	719-217-5683

Community Events (Pete Modreski)

Mar 22-24: Fort Collins Gem and Mineral Show, 4-8 PM Fri, 9-6 Sat, 10-4 Sun, at The Ranch/Larimer County Fairgrounds, Thomas M. McKee 4-H Building; the Fort Collins Rockhounds Club 61st annual show.

Apr 12-14: Colorado Mineral and Fossil Spring Show, Crowne Plaza DIA, 15500 E 40th Ave., Denver CO 80239. No admission charge.

May 4: 12:00-3:00 PM, Colorado Mineral Society Silent Auction, held at Wheat Ridge United Methodist Church, Exhibition Hall, 7530 W. 38th Ave. (just east of Wadsworth). All are welcome to attend, and to bring specimens to sell in the auction (minimum donation of 20% of selling price to the club). Setup begins at 11 AM; there will be a vocal auction as well as silent auction tables.

May 18: 12:00-3:00 PM, Colorado Chapter, Friends of Mineralogy Silent Auction, held at Wheat Ridge United Methodist Church, Exhibition Hall, 7530 W. 38th Ave. (just east of Wadsworth). All are welcome to attend, and to bring specimens to sell in the auction (minimum donation of 20% of selling price to the club). Setup begins at 11 AM; there will be a vocal auction as well as silent auction tables.

June 7-9: Pikes Peak Gem and Mineral Show, at the Norris Penrose Event Center, 1045 Lower Gold Camp Road, Colorado Springs, sponsored by the Colorado Springs Mineralogical Society. Fri 10 AM-6 PM, Sat 10-5, Sun. 10-4.

June 13-16: A Mineralogical Symposium, sponsored by the Colorado Chapter, Friends of Mineralogy: "Mineral Oddities: Pseudomorphs, Twinning, Inclusions, and more." As has been previously announced, the Friends of Mineralogy Colorado Chapter will be hosting a symposium in 2024. The 2024 Symposium webpage is now live, with dates and preliminary details: https://friendsofmineralogycolorado.org/symposium/. The symposium will include field trips on June 13, a mineral photography workshop on June 14 conducted by Jeff Scovil plus an evening reception at the Colorado School of Mines Museum, and lecture sessions on June 15 + half day June 16. The lecture sessions will take place in Berthoud Hall, CSM campus. All interested persons will be welcome to register to attend. For more information about the symposium as it becomes available please see the FMCC website.

July 25-28: Fairplay Gem, Mineral, and Jewelry Show; Platte Drive, ½ mile west of US-285, Fairplay, CO; free admission and parking.

Aug 8-11: Buena Vista Contin-Tail Gem, Mineral, and Fossil Show, Buena Vista Rodeo Grounds; free admission and parking.

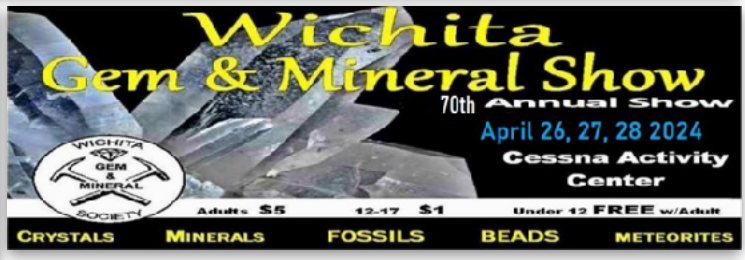
Aug 15-18: Woodland Park Gem & Mineral Show; located outdoors off US-24; free admission and parking.

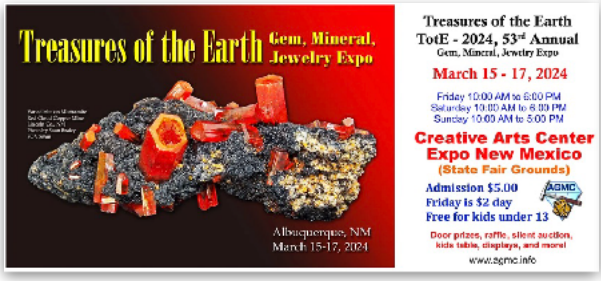
Aug. 16-18: Lake George Gem & Mineral Show; located outdoors off US-24; free admission and parking. Sponsored by the Lake George Gem & Mineral Club.

Federation News Post

American Federation of Mineralogical Societies
Rocky Mountain Federation of Mineralogical Societies

Visit the new AFMS Juniors Website! https://www.juniors.amfed.org/





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.

Secretary's Spot
John McGrath

2024 CSMS Officers

Alex Field, President
Shane Riddle, Vice-President
John McGrath, Secretary
Ann Proctor, Treasurer
Adelaide Bahr, Membership Secretary
John Emery, Editor
Chris Burris, Member-at-Large
William Meyers, Member-at-Large
John Massie, Past President

2024 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
Tina Cox, Social Committee Chair
Ann Proctor, Store Keeper
Lisa Cooper, Show Chairman
Lisa Cooper, Webmaster
Lisa Cooper, Facebook Keeper
Mike Nelson, Federation Rep
Vacant, Federation Rep

CSMS General Assembly Minutes
7 PM, Thursday 15 Feb, Colorado Springs Christian School

Address: 4855 Mallow Rd, Colorado Springs CO 80907
Board Attendance: President: Alex Find, Vice President: Shane Riddle, Past President: John Massie, Secretary: John McGrath, Member-at-large: Chris Burris, Editor: John Emery, Membership Secretary: Adelaide Bahr.
Agenda:

I. Meeting was called to order by our President Alex Field at 7:04 PM
II. The Pledge of Allegiance was led by our President
III. Introduction of Guests: None
IV. Intro of New Members: Phil Sevenants, Teresa and Jaden Hewston, Angie Herrley
V. Program Speaker - Steve Veatch and Sawyer Blizzard spoke on Garden Park Area Fossil Discoveries. Garden Park is located north of Canon City on State Road 9.
VI. Meeting - 57 members/guests in attendance and 8 minerals were given out.
VII. Officer Reports
  A. President - Alex Fields, No Report
  B. Vice - President - Shane Riddle, VP, Absent
  C. Treasurer Ann Proctor- Absent
  D. Secretary John McGrath - Present
    1. Reported on signing of the WMMI MOU which would occur on 24 Feb 24 at 0900 and allow the Club to hold annual picnics at the facility. During the picnic 20 members from club would be provided free admission.
    2. Presented the first "Recent Finds" portion of the program displaying finds from a local area.
  E. Membership Secretary - Adelaide Bahr
    1. Emphasized members should pay annual membership by end of March
    2. Displayed some of the club merchandise that is for sale.
  F. Editor - John Emery. Present and stated that he was receiving lots of excellent articles for publication in the P&P.
  G. Members at Large
    1. Bill Myers - Absent
    2. Chris Burris - Present. No report
  H. Past President - John Massie, Present, no report.
  I. Website and Show Coordinator - Lisa Cooper, present
    1. She stated that she was working on updating the Website
    2. She distributed cards for the Gem and Mineral Show.
    3. She spoke about the SOCO Mineral Show which is scheduled for May and will provide us with a free booth. We will use it to advertise our Show, Club and sell discounted admission tickets.
VIII. Satellite Groups
  A. Crystal Group - Kevin Witte present. Reported that next meeting would occur on Thursday night at CSCS at 7pm.
  B. Faceting Group - John Massie reiterated that you only need to contact him to bring the machine to your house. He also stated that he has a donated display case looking for a good home.
  C. Pebble Group -David St John, Present.
    1. Club will continue to meet at East Library at 4:15 pm which parents have told him is the best time period.
    2. Looking for rock donations for the upcoming Geology Day and other outreach programs.
  D. Fossil Group -Kristine Harris and Richard Villareal stated that meetings are held the 2nd Wednesday of the month from 6-7:30 at the East Library Annex.
  E. Jewelry Group - still in need of a Chairperson.
  F. Lapidary Group - Sharon Holte, Present
    1. She is looking for old CSMS club records
    2. Call her Sunday night after 6:30 pm to schedule an appointment. She has limited availability until mid March.
IX. Liaisons
  A. Claims - Frank Rosenberg. Absent
  B. Field Trip Coordinator - Kyle Atkinson, Present. He is working on a Pueblo Baculite Mesa trip.
  C. Social Coordinator - Tina Cox, Present. She thanked everyone for their participation in the Chili Cook-off and recognized Lisa Cooper as having the winning chili.
  D. Store Keeper - Ann Proctor. Absent
X. Unfinished Business - None discussed.
XI. New Business - None discussed
XII. Meeting adjourned by President Alex Field at 9:07pm

RESPECTFULLY SUBMITTED by **John M McGrath** MD COL (RET) USA

President's Corner

Alex Field
CSMS President

2024 Satellite Group Chairs

Kevin Witte/ Bob Germano, Crystals
John Massie/ Bertha Medina, Faceting
K. Harris/ R. Villareal, Fossils
Vacant, Jewelry
Sharon Holte, Lapidary
Vacant, Micro-mount
Vacant, Photography
David St. John Pebble Pups

2024 Liaisons

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

Presidential Matters

A message from CSMS President Alex Field:

Rockhounds!

I hope your March is off to a good start! I believe some of you have been out prospecting for minerals on the warmer days during the last month—and if so, please let us know what you found at the next meeting. I know all of us are excited for the upcoming field trip season, which is just around the corner. I'm sure there'll be much more to share about late Spring and Summer trips in the coming month or so.

With that in mind, I want to let all of you know that a few of us have been working hard on a NEW Field Trip Website exclusively for use by the CSMS. We plan to share more details with all of you at our next general assembly meeting.

Also at the next general assembly meeting on Thursday, March 21, the society will bring in a couple brand new boxes of mineral giveaways, which we reserve for first-time visitors and new members and the raffle we do at the end of the meeting. Join us and put your name in for a chance to win something cool. In addition, we will also host a silent auction including some special minerals that everyone can bid on to get the chance to take something home.

Once again, I want to remind you, if you've been out rockhounding or prospecting in the last month or two, bring your "Recent Finds" to the March meeting, and we'll take a moment to share about them before our break midway through the meeting.

Finally, if you'd like to get more involved in the CSMS, come see me or one of our other leaders or board members at the meeting, or feel free to shoot me an email. We always need help shaping the future of this society. See you soon!

Warm Regards,
Alex

Alexfield1@gmail.com

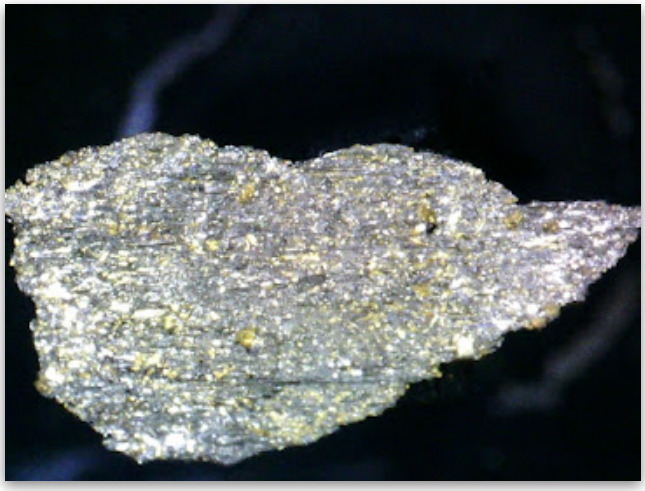
Melonite, a Rare Nickel Telluride from Cripple Creek

Mike Nelson
csrockguy@yahoo.com

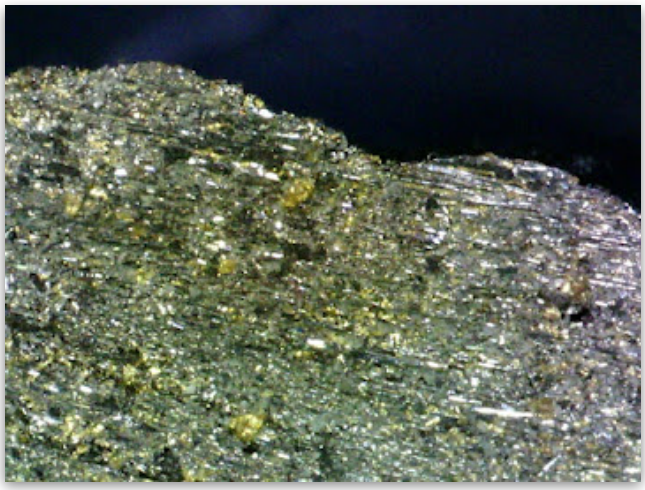
Tellurium is a rare (71st in abundance in the Earth's crust) and interesting element—many rockhounds recognize the name but few really know about its origin and uses. However, the rockhounds in Colorado are a big exception to this statement as it seems the major gold minerals at our famous Cripple Creek Gold Camp are the telluride minerals calaverite ($AuTe_2$) and sylvanite ($AuAgTe_4$).

The element tellurium is a silver-white metalloid (possesses properties of both metals and non-metals) with the symbol Te and the atomic number of 52 (number of protons in the nucleus of the atom). Tellurium exhibits oxidation states of 6+, 5+, 4+, 3+, 2+. 1+, 1-, 2-; however, only 6+, 4+ and 2- are stable. Tellurium can act as a cation with a 4+ oxidation state (IV) or a 6+ oxidation state (VI). However, the most common tellurium minerals are the tellurides, minerals that have the telluride anion with a 2- charge as a main component.

Again, the most common tellurides are sylvanite and calaverite but there are other rather uncommon tellurides of gold, silver, bismuth, mercury, copper, platinum, palladium, and nickel for the rockhounds to dream about. For example, coloradoite is an uncommon telluride where tellurium (2- oxidation state) combines with mercury (2+ oxidation state) and the result is HgTe (see Pick & Pack March 2021). The specimen that I recently acquired is the quite rare mineral melonite, a nickel telluride [$NiTe_2$]. Although listed as "rare" it has been identified from mines around the world and especially in Colorado. However, the mineral specimens are quite tiny and uncommon in any mine or dump. The chances of an ole plugger like me finding a melonite specimen is, well I have a better chance of being run over by a rabid zebra. That is why I was happy to purchase this specimen collected (by a person named "Earles") from the Cresson Mine at Cripple Creek and mounted by Art Smith in 1971. Brian Kosnar in 2006 stated on MinDat "These specimens are very difficult to obtain, and considering that the majority of them were mined over 100 years ago, the only source for specimens is old collections."



Above: A very rich plate of melonite pseudomorphing calaverite ($AuTe_2$) crystals that is nicely accented by a small flakes/hunks of free gold, and one crystal of chalcopyrite. The photomicrograph above is ~9 mm width FOV. **Below:** The photomicrograph below is a closer view, and the foliation is better observed. The light reflection from the specimen does not allow really good images. *Photos: M. Nelson*



It is difficult to describe melonite other than small, mostly indistinct crystals, that together comprise foliated plates. The luster is metallic and produces a reddish white color/sheen. The foliation seems to give the specimen a granular appearance. It is quite soft at ~1.5 (Mohs) and has a faint pink color in reflected light.

The Cripple Creek specimens are unique (and rare) in that the plates of melonite pseudomorph calaverite and the best specimens also have native gold scattered on the surface.

Good luck is when opportunity meets preparation.

- Eliyahu Goldratt

I was prepared for my "luck" in finding this dusty old perky box—I was an early bird and had a $10 bill ready in my pocket and whipped it out.

About the Author

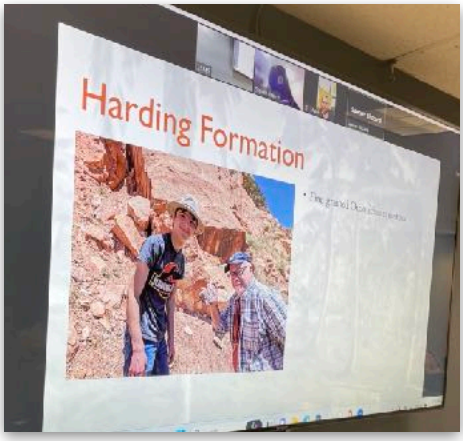
Mike is a former University professor and administrator who enjoys outdoor activities, and writing articles for the *Pick & Pack,* other rock and mineral clubs, and the Newsletter of the Rocky Mountain Federation of Mineralogical Societies (www.rmfms.org). He also writes, and occasionally speaks, about 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). In CSMS he heads up the Undergraduate Research Committee as introducing students to geology research is a long-time passion. But mostly he just tries to enjoy life with frosty IPAs, travel, and collecting mundane facts and pretty rocks/ minerals.

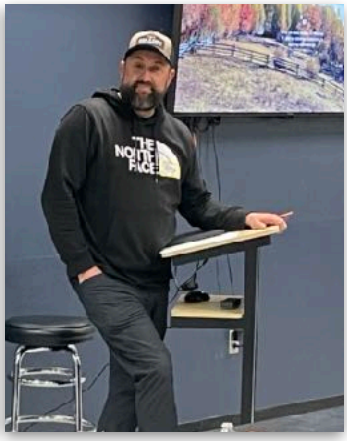
Private Land & Collecting

Brian Walko

The best rock, mineral, and fossil collecting is on private land. The problem is, how does one get access to it? Some private landowners charge a fee. Some will deny access. Here are some tips on how I get private land access. First, identify where you want to collect. Then research who owns the land. This can be done electronically via the local county clerk and recorders or assessor's office. The Boulder County Assessor [CSMS Ed. Note: perhaps yours also] has a good property search site. You can also purchase a landowner app for your smart phone. I use onXmaps. Once you identify the owner, you need to contact the party. This could be as simple as driving by and seeing if the owner is home, asking neighbors, or mailing a letter introducing yourself and your wish to collect on their property. When contact is made, bring a map of the area in which you want to collect. The landowners generally tell you what areas are off limits. After collecting, always show the landowner what you found and give your first pick as a thank you. Never post your private property adventures on social media unless you can hide the location. Some people are very good at identifying locations by looking at the background landscape. Serendipity sometimes helps. Recently I was coming out of one of my gold claim access roads at the same time as another person was entering the adjacent private property. He stopped to check me out, and I went over to introduce myself. After talking and explaining what I do, he had a need for my services. We exchanged contact information. Within two weeks I was conducting a workshop for the Environmental Education Center's staff on uranium geology with a field trip to an old uranium exploration pit where we found autunite. You never know when your lucky prospecting break will come.

Reprinted with permission from the author. First appearance in *Flatirons Facets*, Volume 66, Number 6, November - December 2023, Ed. Dennis Gertenbach. *Flatirons Facets* is the newsletter of the Flatirons Mineral Club of Boulder County, Colorado.





REPORT
General Assembly
15 Feb 24

57 hardy rockhounds gathered on a chilly night at Colorado Springs Christian School to see Steven Wade Veatch and partner Sawyer Blizzard talk to us about their adventures and the wonders of Garden Park in Colorado. Thanks Steven and Sawyer!

We also had a chili cook-off! Seven chilis were brought in by members and we taste-tested and voted. The winning chili was #7 by Lisa Cooper. Her secret ingredient - Dr. Pepper. You heard it here first. Thanks to Tina Cox for putting the event together.

Many specimens were brought in by members to show and we gave away several free specimens to new members and winners of the drawing.

Everyone seems to like the new meeting place.

Rocks in Balance:
A Closer Look at the Geological Marvels of Precariously Balanced Rocks

By Steven Wade Veatch

Balanced Rock, in Colorado Springs' Garden of the Gods Park, is an example of a type of geologic feature called "precariously balanced rocks," or PBRs. These interesting rocks are common in the American West, where dry climates preserve them. They are also found worldwide in other climates.

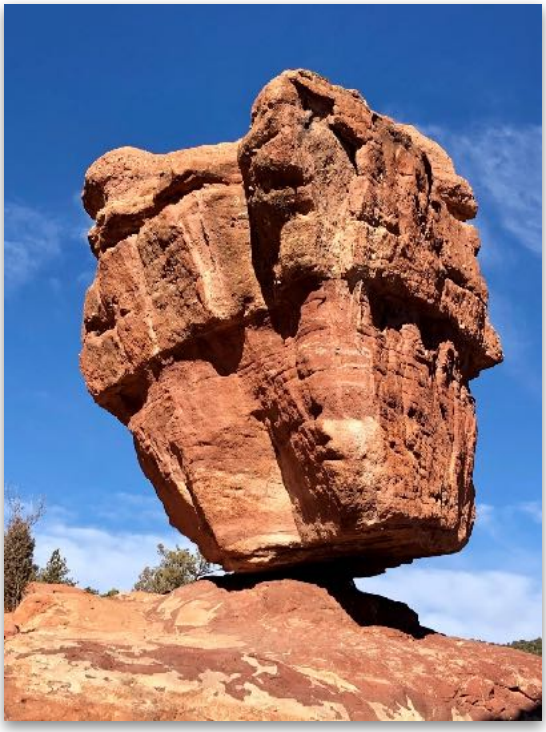


Fig 1: Balanced Rock is a famous PBR in the Garden of the Gods Park, Colorado Springs, Colorado. The rock appears to defy gravity by balancing on a small base. This rock is an erosional remnant of the Fountain Formation. *Photo date 2021 by S. W. Veatch.*

PBRs can vary in size from small boulders to massive stone monoliths weighing thousands of pounds —and many are precariously perched on a pedestal. They look like they could topple over in a strong wind.

People have long been fascinated by PBRs. In the past, certain cultures linked these rocks to spiritual or supernatural realms and used them in religious rituals. Balanced rocks also held spiritual significance in Native American culture as markers for guiding mystical journeys. They were also used by early Anglo settlers as they made their way to new homes in the west. In addition to their spiritual significance, PBRs have become popular tourist attractions, and in many cases are surrounded by parks where tourists come to see these incredible geological wonders and marvel at their implausible balancing acts.

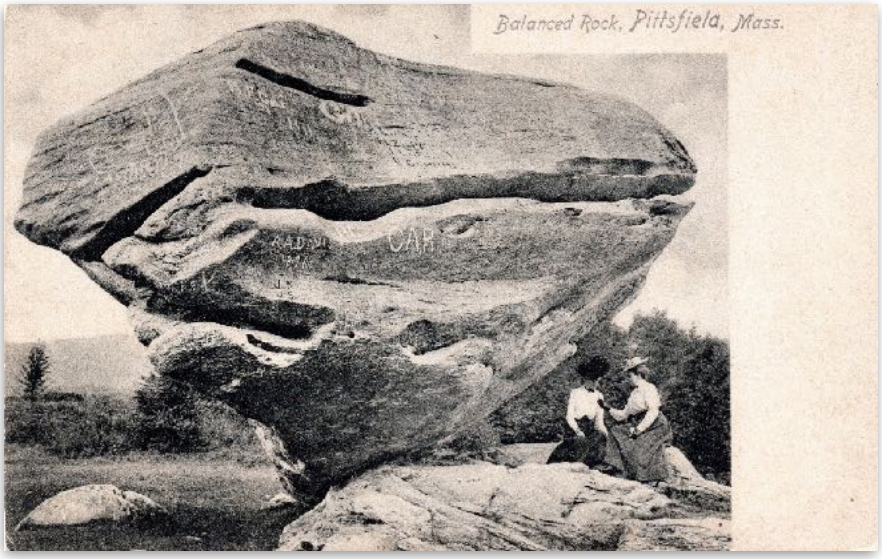


Fig 2: An old postcard view of graffiti-covered Balanced Rock, Pittsfield, Berkshire County, Massachusetts. A creation of the last glacial era, this 25 x 15 x 10-foot boulder balances on a small rock below it. *Postcard circa 1902, from the collection of S. W. Veatch.*

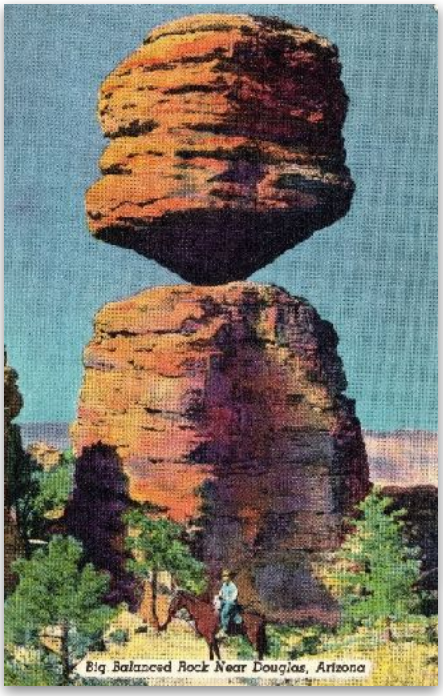


Fig 3: Big Balanced Rock Near Douglas, Arizona. *Postcard circa 1948. From the collection of S. W. Veatch.*

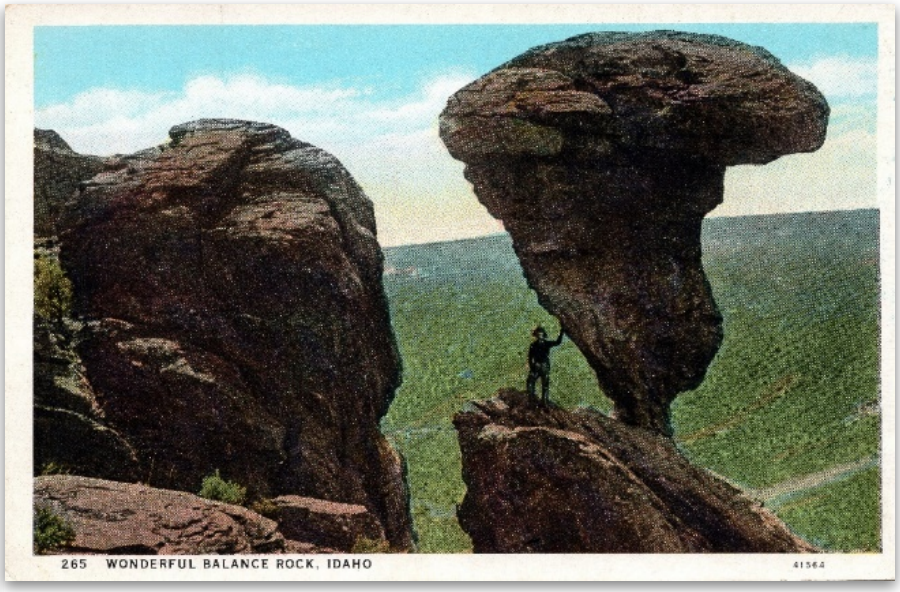


Fig 4: Balance Rock, Idaho. *Postcard circa 1940s, from the collection of S. W. Veatch.*

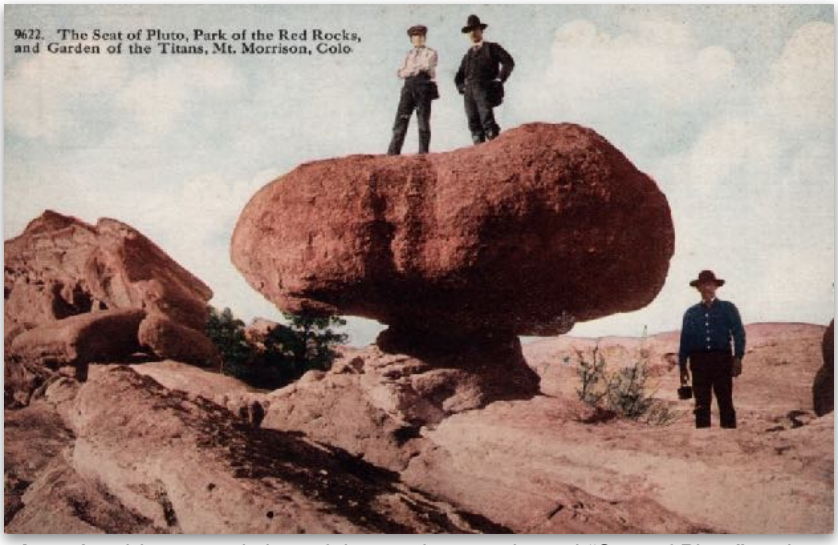


Fig 5: An old postcard view of the mushroom-shaped “Seat of Pluto” rock formation in the Red Rocks Park, Morrison, Colorado. *Postcard circa 1912, from the collection of S. W. Veatch.*

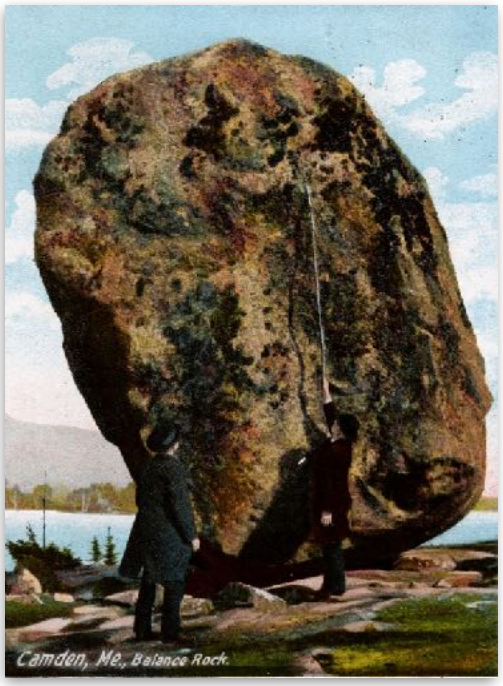


Fig 6: An old postcard view of Balance Rock, Camden, Maine. This glacial erratic is located on Fernald's Neck peninsula near Lake Megunticook. *Postcard circa 1910s, from the collection of S. W. Veatch.*

PBRs are formed in several ways. Some PBRs result from weathering and erosion. When water percolates through fractures in rock, those fractures can grow and ultimately break the larger rocks into several smaller pieces. Over thousands of years, as erosion lowers the ground level, the rocks are exposed at the surface, and are frequently stacked on top of one another. Weathering and erosion of the exposed rock by wind, rain, and relentless cycles of freezing and thawing removes rock material around the balanced rock, leaving the harder rock behind. Over time, a rock pedestal is formed as the softer material erodes away, leaving only a small base of support protected by the more resistant rock.

Continued …

Fig 7: A sandstone PBR at Garden of the Gods, Colorado Springs, Colorado. *Photo date 2020 by L. Canini.*

Fig 8: A sandstone PBR at Red Rocks Open Space, Colorado Springs, Colorado. *Photo date 2020 by L. Canini.*

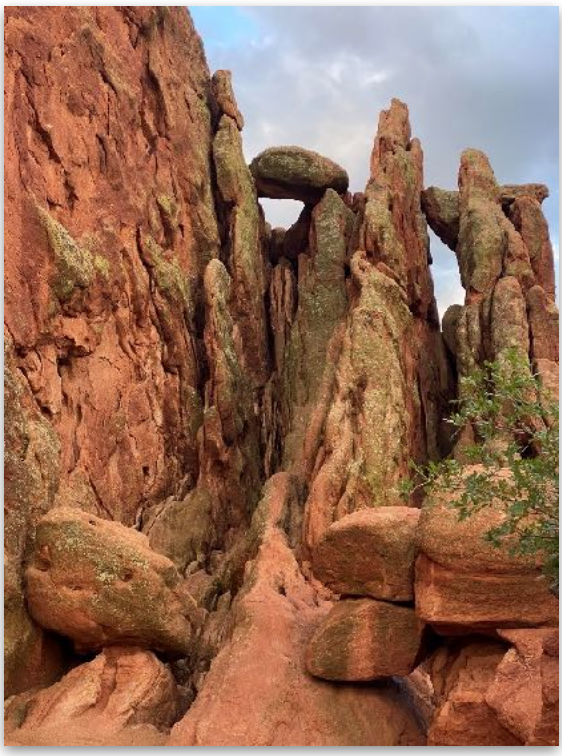


Fig 9: A sandstone PBR at Garden of the Gods, Colorado Springs, Colorado. *Photo date 2020 by L. Canini.*

Fig 10: A sandstone PBR at Palmer Park, Colorado Springs, Colorado. *Photo date 2020 by L. Canini.*

A glacier can create a PBR when it snatches up a boulder and carries it away in the moving ice. When the glacier melts, it drops the entrained boulder onto its new location (see fig. 2, 6, and 15). Glacial meltwater then removes the softer till and outwash, leaving larger rocks (erratics) perched on smaller rocks. Gravity is another way of creating a PBR when it pulls a larger rock down a slope that comes to rest precariously on another rock or rocks (figure 11).

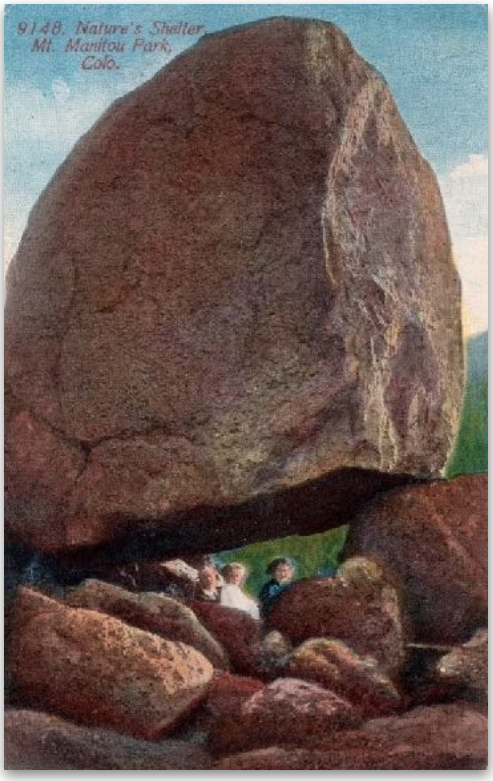


Fig 11: A PBR in Mount Manitou Park, Colorado. A large boulder of Pikes Peak Granite has moved downhill and rests on a smaller boulder. *Postcard circa 1912, from the collection of S. W. Veatch.*

Fig 12: A granite PBR. Devils Head area, part of the Rampart Range of the Rocky Mountains of Colorado. *Photo date 2020 by L. Canini.*

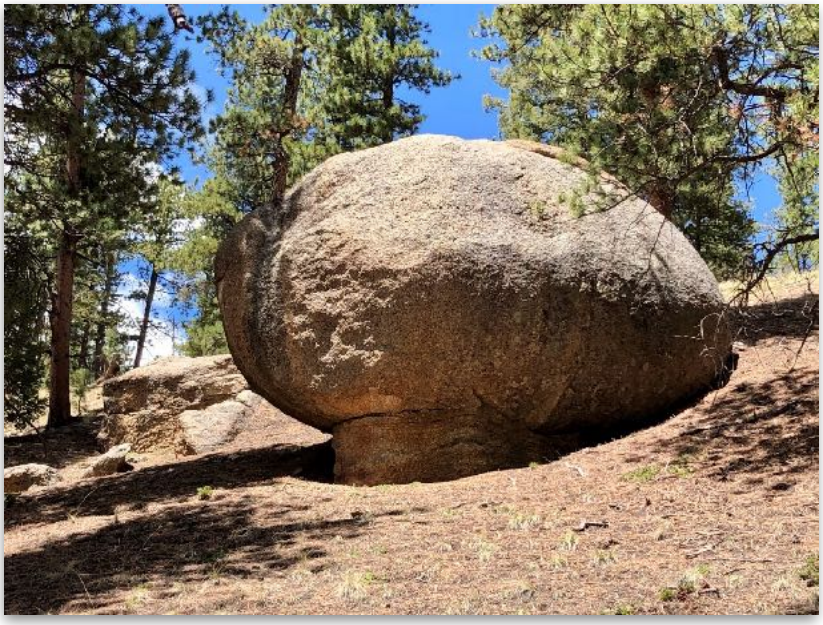


Fig 14: This PBR is made of an egg-shaped piece of Pikes Peak Granite and is located on Ute Lakes Fishing Club property, about 6 miles north of Divide, Colorado. The 1.08-billion-year-old Pikes Peak Granite often forms rounded and even dome-shaped structures as it erodes. This is due to three main factors: ice, water, and the release of pressure from the overburden. *Photo date 2020 by S. W. Veatch.*

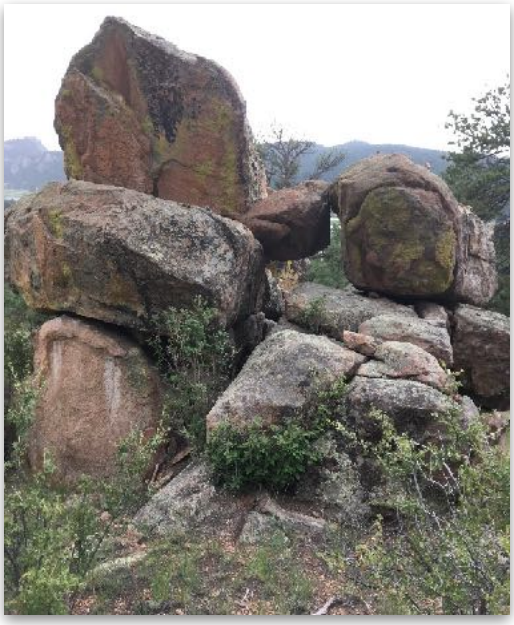


Fig 13: A PBR perched on granite at the Lake George Community Park, Lake George, Colorado. *Photo date 2020 by L. Canini.*

Continued …

PBRs are not only fascinating sights, but by remaining balanced, reveal a lack of regional seismic activity from the past (Rood, et al., 2020). These balanced rocks also indicate the maximum intensity of past earthquakes (Brune, 1996; Imbler, 2020). By collecting data on PBRs, seismologists examine uniquely valuable data on the rates of rare, large-magnitude earthquakes.

Over time, erosion, weight changes, or earthquakes will cause PBRs to topple. Tragically, acts of vandalism can destroy PBRs, as seen in 2012 when a scout leader and a friend pushed over a small PBR in Goblin Valley State Park in Utah (Botelho and Watkins, 2014).

PBRs show the power of nature and add to the incredible beauty that is found in the natural world. These rocks are a reminder that the forces of nature can transform even the most stable objects. Whether seen as cultural artifacts, geological curiosities, or sources of seismic information, precariously balanced rocks never fail to fascinate and inspire awe.

Fig 15: A balanced rock on Azure Mountain in the Adirondacks. This glacial erratic was set in this precarious position by a continental ice sheet about 19,000 to 14,000 years ago as the ice gradually melted. *Photo USGS, Public Domain.*

Fig 16: A PBR stands as a lonely sentinel in Arches National Park, Utah. *Photo date 2013 by S. W. Veatch.*

Acknowledgments
The author greatly appreciates the help of Laura Canini of the Colorado Springs Mineralogical Society, who provided interesting discussions and photos of Colorado PBRs.

References and Further Reading

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About the author: Steven is a geologist who joined the CSMS when he was 10, in 1965. The club met at that time at the old IBEW hall near the west side of the city. His complete profile is available at:

https://www.blogger.com/profile/06566101278318062273

Pebble Pups
David St. John

CSMS Pebble Pups and Earth Science Scholars

Fossilfun14@gmail.com

Pebble Pups and Earth Science Scholars

The last two months have been awesome for our outreach programs we have done all day events at local schools, and Geology Day at the Western Museum of Mining and Industry.

Pups Meetings

With using the East Library for free, sometimes the rooms and schedule dates can change. We wish it could be set for the year but only three months at a time with multiple staff setting it up.

March 5th meeting 4:15 - 5:15 crystal theme room F1, April 2 meeting 4:15 - 5:15 Annex room, May 7 4:15 - 5:15 room F1. Please email me if confused of location 1 day before meeting.

Garden Park Bone Beds

Near Cañon City, Colorado
By Steven Wade Veatch

The sun burns in a blue, cloudless sky over bone beds.
Everything is quiet in the heat of Garden Park. A coyote darts by,
following a scent like a moth to light.

Dinosaurs once roamed here in ancient marshlands.
In Late Jurassic times, a long-necked *Camarasaurus* and *Diplodocus*
reached up high in trees for sweet Mesozoic greenery to eat.
A *Stegosaurus* tried to move, mired in mud;
a *Ceratosaurus* looked at her nested eggs and sniffed the humid air.

Fossil hunters and scientists have dug here since 1877,
among the hills and cliffs along the Fourmile Creek Canyon.
Cope and Marsh[1] staged part of their Bone Wars here,
where their rivalry played out at a heated pace.

Today, picks strike rock layers and shovels dig down through deep time
into thick Morrison mudstone to where buried bones of dinosaurs rested for millions of years.
Brushes clean, sifters shake, measurements and photos taken, and flies swatted—
a tooth of the ferocious *Allosaurus* pops up, then fossils of turtles and crocodiles.
More bones, and then a flurry of discovery, wonder, and excitement.

While standing on the brink of time, I peer into the past and learn
some secrets of Earth's ancient times.
As the sun dips down, the day's digging ends.
While listening to the twilight, I let the milkweed fall
from my hand to follow the breeze.

Watching the evening end and the wind tease the tips of grass,
I think about these fossils and wonder what creatures,
in a distant future, will look at our fossil remains.
What will they make of us?

---

[1]Edward Drinker Cope and Othniel Charles Marsh, were preeminent paleontologists who battled each other for dominance in the world of 19th century paleontology.

Classifieds & Announcements

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.

Cattu at Pixabay

VERY TENTATIVE Field Trip Schedule

Definitely will change somehow

13 Apr 24: Maybe Rocky Mountain High
20 Apr 24: Maybe April Fool's
27 Apr 24: Maybe Rocky Mountain High
4 May 24: Maybe Baculite Trip
29 - 30 Jun 24: Maybe Wyoming Fossil Digs
7 Sep 24: Maybe a pilgrimage to Denver for Shows, depending on interest. Denver shows run 6-15 Sep this year.

Contact field trip planner Kyle Atkinson with questions:
atkinson.kyl@gmail.com 719-453-3653

MayaQ at Pixabay

Pike's Peak Gem & Mineral Show

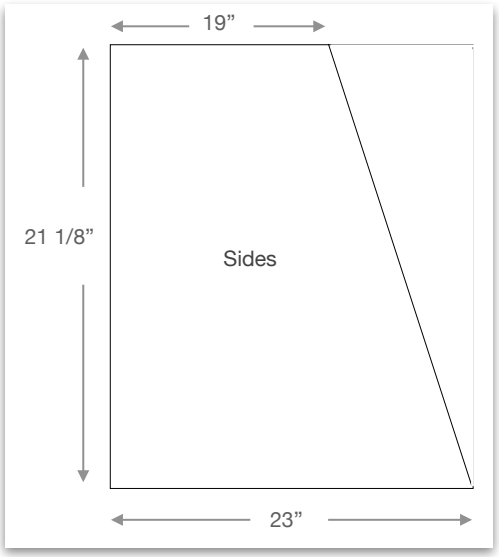
Presented by the Colorado Springs Mineralogical Society
June 7 - 9 2024, Norris Penrose Event Center, 1045 Lower Gold Camp Rd, Colorado Springs
Fri 10 AM - 6 PM, Sat 10 AM - 5 PM, Sun 10 AM - 4 PM

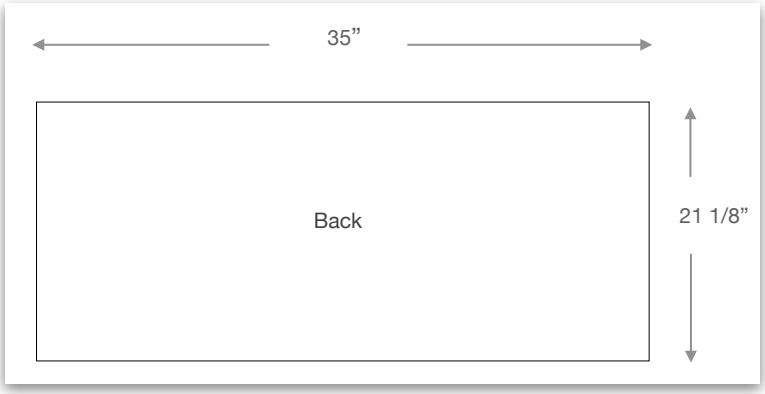
The Pikes Peak Gem, Mineral and Jewelry Show will be June 7-9th for 2024. The theme will be ***petrified wood***. As always, any earth science related exhibit is welcome. There will be a competing for-profit non-club show a month prior to ours. We need every member's help to promote our show as the non-profit club show with exhibits and kid's activities.

Of course, we need your help in exhibiting those neat treasures that you have either dug up, purchased, or created! Please note new Friday hours of show open from 10 AM to 6 PM.

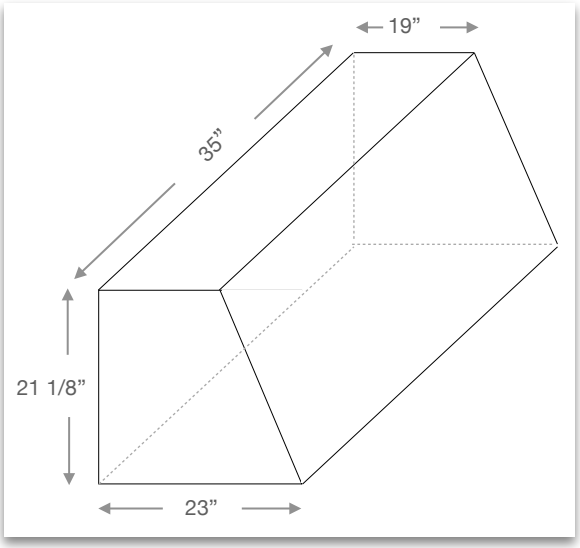
During spring cleaning, those specimens that you have in excess that need a good home would be welcome for both the silent auction and the Pebble Pups booth at our show.

The CSMS Gem, Mineral and Jewelry Show Case





All measurements are inside measurements



Pike's Peak Gem & Mineral Show

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Fri 10 AM - 6 PM, Sat 10 AM - 5 PM, Sun 10 AM - 4 PM

Request for NON-COMPETITIVE Display Space

Name:	Society:

Address:

Phone:	Email:

City:	State:	Zip:

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 June 1st to reserve a case and exhibit space. After June 1st, exhibitors are still welcome based upon availability of cases and space. Return to: Bob Landgraf, 304 Palmer Trail, Manitou Springs, CO 80829 719-658-1364 rmlwp74@aol.com

Presently we are only looking at People's Choice award for best case for judging.

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 their person for any cause and all claims for injury are expressly waived by the exhibitor.

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 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.
- 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!

Established 1936
MINERALOGICAL SOCIETY

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 Mt. Carmel Veterans Service Center; 530 Communication Circle, Colorado Springs, CO 80905
- 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.rmfms.org