

PNWFM NEWSLETTER



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Pyromorphite. Yangshu, Guangxi, China. {Ex J. Daly via M. Shannon --> B. Heesacker, 2025}. Photo copyright Beth Heesacker.





President's Message

Jessica Robertson

It's almost time!

Our biggest event of the year— our **2026 Symposium (theme: Mines and Minerals of the Great Basin)** is in just **a few weeks—the weekend of October 16!** We are excited to return to Ellensburg and CWU. This newsletter is packed full of essential information as well as speaker abstracts.

Register and make your room reservation now because we have some deadlines related to hotel reservations and the count for boxed lunches on Saturday. We have a full roster of exciting speakers planned as well as a return to our evening Banquet (held at CWU!), and I can't wait to see you there!

We are still looking for more donations of auction material, and folks to help with set up and take down at CWU. Our symposium and event planning team meets monthly via Zoom. If you'd like to help or even just watch and weigh in, please contact me to be added to the planning email list. See you soon!



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MINES AND MINERALS OF THE GREAT BASIN

2026 SYMPOSIUM EVENTS OCTOBER 16-18, 2026



Talks by:

Mike Wise: Nevada pegmatites
Scott Werschky: Round Mountain gold
Brent Thorne: North Star Mine
Dan Evanich: Culver Antimony Mine
Rick Kennedy: Virginia Valley opals
Jeremy Fuller: Thomas Range
Graham Sutton: Specimen Mining Adventures
Simon Kocher: Sulfosalt minerals
Plus: NW Mineral Updates session

Symposium Events

ALL daytime events on Saturday and Sunday will be held at Discovery Hall on the Central Washington University campus, including:

- Saturday and Sunday talks in the large lecture hall
- Mineral displays and silent auctions in the Intro Geology Lab classroom
- CWU geology student poster session
- Catered boxed lunch! Lunches will include a sandwich/wrap, chips, cookie, and water. We will also have a selection of soda available. If you'd like a boxed lunch, choose either a Southwest Turkey Wrap or a Hummus and Quinoa wrap during registration. Boxed lunches will be delivered for lunch break to our CWU Discovery Hall location .

Saturday banquet dinner and live auction--returning for 2026!

- Catered buffet on the CWU campus

Saturday Evening vendor hall at SureStay Hotel by Best Western Ellensburg

- 1500 Canyon Road, Ellensburg, WA. (Same hotel as last year!)
- You will need to call the hotel directly at 509-962-6888 and reference Friends of Mineralogy to make your reservation for October 17 and 18. Club rate prices are \$160/night plus tax.
- The cutoff date for club rate pricing is September 19.
- It is very important that all room dealers have a reservation by September 19 and have communicated with Thea Stendar (theasmineralworld@hotmail.com),
- Continental breakfast is included.

Detailed Schedule to Come-Register at pnwfm.org



Symposium Checklist

Karen Hinderman

Are you ready for the symposium?



Have you registered?



Just go to our website pnwfm.org and the registration information is available on the site.

Have you reserved a room at the hotel?



Hotel Information: We are staying at the same hotel as last year. SureStay by Best Western, 1500 S. Canyon Rd., Ellensburg. CALL this number to make your reservation: **509-962-6888**.

Let them know you are with Friends of Mineralogy.

If you are going to be selling minerals out of your room, let them know you are a vendor. There are a limited number of rooms for vendors, so the sooner you make your reservation, the more likely you will get a room alongside the other vendors. Our room rate is \$159.77. If you use a third party, such as Expedia to reserve your room, you are not guaranteed to be placed with our vendor group.

Have you gone through your collection and picked out a nice specimen for the auction?



The nicer the better! This is how we make our money for next year's symposium.

Have you volunteered?

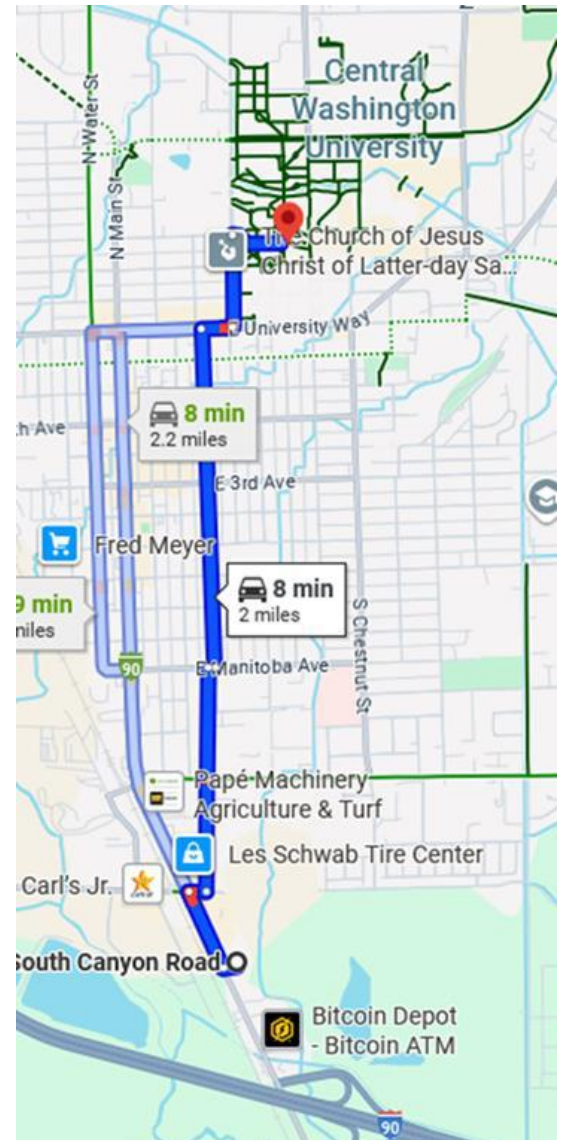
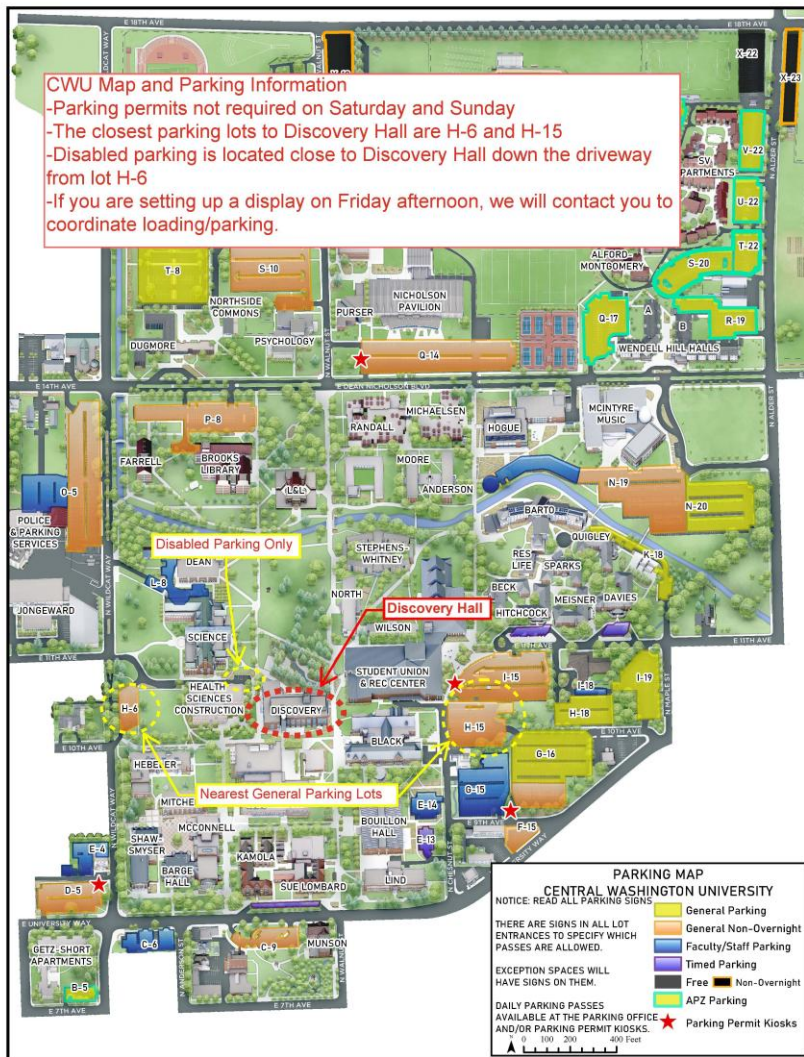


We always need helpers on Friday with transportation of cases, set up of cases and then the reverse at the end of the show on Sunday. I will need help moving specimens from the geology building to the ballroom where our dinner will be held. If you want to assist with the silent auction or live auction, talk to Gary or me. We welcome some more participation in these areas as we are stepping back at the end of this year.

Are you enthusiastic?



Let's get together and have some fun!



Map from SureStay motel to CWU



PACIFIC NORTHWEST FRIENDS OF MINERALOGY
2026 Symposium
Great Basin Mines and Minerals
October 16-18, 2026
Discovery Hall, Central Washington University (CWU)
Ellensburg, Washington

FRIDAY, OCTOBER 16, 2026

3:00 pm Dealer setup: SureStay by Best Western & EXHIBITOR DISPLAY SETUP: CWU
5:00 pm Dealers open: SureStay by Best Western
10:00 pm Dealers close for day 1

SATURDAY, OCTOBER 17, 2026

8:30 am	DISPLAYS OPEN - CWU	
9:00 am	Welcome and Opening Remarks	Jessica Robertson and Markus Raschke
9:10 am	<i>Distribution and regional assessment of granitic pegmatites in Nevada</i>	Mike Wise, Smithsonian
10:00 am	Break	
10:15 am	<i>Minerals and active mining in the Thomas Range, Juab County, Utah</i>	Jeremy Fuller, Utah Mineral Mining Inc.
11:00 am	Break	
11:10 am	<i>Mineral specimen mining in the American West</i>	Graham Sutton
12:00 pm	Lunch Student poster session Silent Auction	
2:00 pm	<i>Gold from the Round Mountain mine, Nye County, Nevada</i>	Scott Werschky, Miner's Lunchbox
2:45 pm	Break	
3:00 pm	Mineral News from the Pacific Northwest: <i>Exotic sulfosalt mineralization at the Pedro breccia pipe, Washington</i> <i>Tellurobismuthite and the gold metallogenesis of the Lone Jack Mine, Washington</i> <i>Prospector's Roundup</i>	Simon Kocher, Colorado School of Mines, Golden Markus Raschke, University of Colorado, Boulder John Lindell, Bellingham
4:30 pm	End afternoon session	
5:00 pm	Banquet at CWU	
7:00 pm	Dealers open day 2	

SUNDAY, OCTOBER 18, 2026

8:30 am	Displays open - CWU	
9:00 am	<i>Opal from Virgin Valley, Nevada</i>	Rick Kennedy
9:50 am	Break	
10:00 am	<i>Culver antimony mine, Pershing County, Nevada</i>	Daniel Evanich, Bay Area Mineralogists
10:50 am	Break	
11:00 am	<i>North Star Mine, Mammoth, Tintic Mining District, Juab County, Utah</i>	Brent Thorne
11:50 am	Closing remarks	Jessica Robertson

**Pacific Northwest Friends of Mineralogy
2026 Symposium Abstracts
Mines and Minerals of the Great Basin**



**Program committee: Markus Rasche, University of Colorado
John Lindell, Bellingham**

2026

Distribution and regional assessment of granitic pegmatites in Nevada: an overview

Michael A. Wise

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The Basin and Range Province in Nevada is host to a wide array of granitic pegmatites, with some containing gem- and collectable-quality mineral specimens. With a few exceptions, little is known about Nevada pegmatites, and while some pegmatites were previously mined for beryl, chrysoberyl, and sheet mica, most Nevada pegmatites remain poorly studied. Pegmatites are scattered throughout the state with most occurring in a roughly NW-SE trending belt extending from western Pershing County to southern Nye County along the Nevada- California border, and in southern and northeastern Clark County near the Nevada-Arizona border. The majority of pegmatites are distributed largely within and near the margins of Precambrian- to Tertiary-age granitic plutons which range in composition from granite to granodiorite to quartz monzonite.

The pegmatites of Nevada vary from bodies containing primarily quartz, microcline, albite and muscovite to modestly mineralized types hosting Be, Ta and REE-minerals. Rare-element mineralization throughout the Basin and Range Pegmatite Province is characterized mostly by beryl which is widespread compared to chrysoberyl which occurs less frequently. Schorl occurs as the main tourmaline species, and columbite-tantalite is the dominant Nb-Ta mineral reported from pegmatites although neither are common in most pegmatite areas. Phosphate minerals are notably absent except for the rare occurrence of monazite reported from the Gold Butte pegmatites. Lithium-rich pegmatites are notably absent in Nevada although lepidolite has been reported from a few localities. Fluorine mineralization is defined by primary topaz and fluorite, however, a unique assemblage of secondary aluminofluorides (e.g., cryolite, pachnolite, elpasoite) is known only from the amazonite-bearing Zapot pegmatite in Mineral County.

Local calcium enrichment is noteworthy in some pegmatites of the Searchlight district in southern Clark County as evidenced by the crystallization of primary epidote and calcite. Additional accessory minerals reported from Nevada pegmatites includes minor to rare zircon, spessartine, magnetite, titanite, scheelite, pyrite and molybdenite. Overall, the mineralogy of pegmatites within the Basin and Range indicates primitive (barren) to modestly evolved, peraluminous compositions that display largely NYF-like geochemical signatures. The accessory mineral assemblage of Nevada pegmatites is consistent with those found worldwide that are associated with I- and A-type granitoids that are emplaced in subduction and rift-related geologic settings like those found in Nevada's Basin and Range Province.

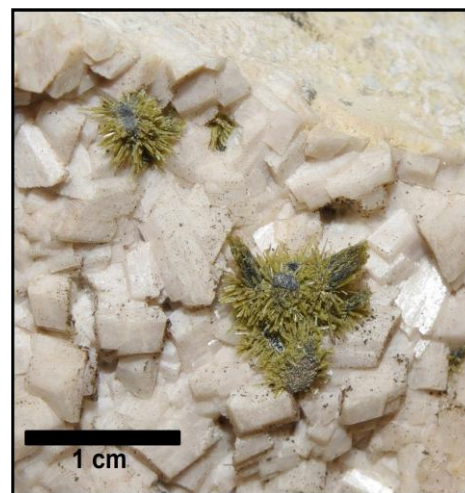


Fig. 1. Epidote on microcline, southern Clark County, Nevada.

Table1. Mineralogy of Nevada Pegmatites.

Aegirine	Columbite-(Mn)	Microcline	Schorl
Albite	Cryolite	Molybdenite	Sillimanite
Allanite-(Ce)	Cryolithionite	Monazite	Simmonsite (T)
Almandine	Dumortierite	Mottramite	Spessartine
Andalusite	Elbaite	Muscovite	Stibiotantalite (?)
Apatite	Elpasolite	Orthoclase	Stilbite
Aragonite	Epidote	Pachnolite	Tantalite-(Mn)
Autunite (?)	Euxenite-(Y)	Phenakite	Thomsenolite
Beidellite	Fluorite	Phlogopite	Thorite
Beryl	Goethite	Plumbobetafite	Titanite
Betafite	Grayite	Plumbopyrochlore	Topaz
Biotite	Hambergite	Prosopite	Torbernite
Brookite	Helvite	Pyrite	Uraninite
Chevkinite-(Ce)	Hematite	Quartz	Weberite
Chrysoberyl	Ilmenite	Ralstonite	Xenotime-(Y)
Chrysocolla	Lepidolite	Rutile	Zinnwaldite
Clinocllore	Magnetite	Samarskite-(Y)	Zircon
Columbite-(Fe)	Meta-autunite	Scheelite	



Michael Wise is a mineralogist in the Department of Mineral Sciences at the National Museum of Natural History, Smithsonian Institution in Washington, D.C. His research focuses on the mineralogy, petrology, and geochemistry of granitic pegmatites to better understand the geological processes responsible for the genesis and evolution of granitic pegmatite melts. Mike has several decades of field-based experience studying pegmatites and has long been active in projects related to the classification of pegmatite types, the regional mineralogical and geochemical patterns of large pegmatite populations and the exploration of critical minerals associated with pegmatite deposits. In addition to his

research program on pegmatites, Mike is also highly active in education and outreach activities and is heavily involved in the management of the Smithsonian's Mineral and Gem Collections.



Minerals and Active Mining in the Thomas Range, Juab County, Utah

Jeremy F. Fuller

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The Thomas Range of Juab County, Utah, is internationally recognized for its remarkable diversity of rare and collectible minerals, including red beryl, topaz, bixbyite, pseudobrookite, hematite, garnet, and other unusual mineral species. While the region has a long history of mineral exploration and collecting, several of its historic localities continue to be actively explored and mined today. This presentation will provide an overview of current mineral collecting and mining activities at several privately operated localities within the Thomas Range, with particular emphasis on the geology, mineral assemblages, and characteristics that make these deposits significant to both researchers and mineral collectors.

The presentation will highlight ongoing work at the Searle Canyon Red Beryl and Topaz Mine and the Solar Wind Bixbyite and Pink Topaz Mine, along with other mineral-producing areas associated with the Thomas Range. Particular attention will be given to the occurrence and quality of red beryl, topaz, bixbyite, pseudobrookite, and other associated minerals, as well as observations from recent mining and excavation. Examples of newly recovered specimens will be used to illustrate variations in mineralization and the continued potential for significant discoveries.



Fig. 1. Red Beryl with Bixbyite and Topaz, Searle Canyon Red Beryl Mine Owner: Jeremy Fuller
Photo: Laszlo Kupi

Beyond the minerals themselves, this presentation will discuss the practical challenges and opportunities involved in maintaining active mineral mines in a historically important collecting district. Modern exploration, extraction methods, specimen recovery, and responsible access to private mineral localities are helping to preserve the Thomas Range as an active source of exceptional Utah minerals. The goal is to provide an update on what is currently being found in the district and offer insight into the continuing mineralogical potential of one of Utah's most famous mineral-producing regions.

References:

[1] Holfert, Mroch, Fuller – A Field Guide to Topaz Mountain and Associated Minerals of the Thomas Range, Juab Co. (1997).



Jeremy F. Fuller Since 1997, Jeremy has dedicated his entire adult life to the rigorous exploration, mining, and scientific study of the diverse mineralogy and mining prospects throughout the Thomas Range in Juab County, Utah. As the primary owner and operator of several premier active mining claims—including Maynard’s Topaz Mine (the iconic type locality for both red beryl and bixbyite), the Solar Wind Bixbyite and Pink Topaz Mine, and the Searle Canyon Red Beryl & Topaz Mine—he maintains a hands-on approach to specimen extraction and geological research. Continuously actively mining, prospecting, and staking new claims across the region, Jeremy remains a central figure in Utah’s mineral community. Through Utah Mineral Mining, he also facilitates public access to these world-class locations by hosting guided gem hunting and fee-dig mineral collecting experiences by reservation at TheGemTours.com.

Gold from the Round Mountain Mine, Nye County, Nevada

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The Round Mountain Mine began its modern history in the mid 1970's. The mine was one of the early discoveries of what was to become a major gold rush in the Great Basin of Western America. While numerous high-grade deposits were discovered and put into production, the Round Mountain mine was remarkable in that it was an extremely low-grade deposit, and nearly devoid of visible gold. This changed in March 1992 when a blast-hole encountered significant amounts of coarse gold along a narrow (10cm) vein structure. Since that time, the mine has produced an impressive amount (more than 10 metric tonnes) of crystalline gold with a surprisingly diverse array of crystal habits. This paper will present information on the gold occurrences and habits.

Scott Werschky: Upon completing undergraduate and graduate studies at the University of Colorado, Scott worked as an exploration geologist for 16 years. During this time he explored for gold in the Western Hemisphere from Northern Alaska to Chile. He has worked in grass-roots exploration as well as resource development of a multimillion ounce gold deposit. In the mid-1990's, a downturn in the mining industry allowed Scott to change focus and pursue his hobby of mineral collecting. What was once avocation, became vocation. Scott created Miner's Lunchbox, Inc., a company specializing in investment quality mineral specimens. Scott's home base of Reno, Nevada places him in the center of the gold producing regions of California and Nevada. This fortunate geographic location combined with previous scientific interest prompted a focus on gold specimens. Scott is now one of the leading gold specimen dealers in the world.



Exotic sulfosalt mineralization at the Pedro breccia pipe, Washington

Simon Kocher¹ and Markus Raschke²

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Sulfosalts constitute a group of minerals with a general formula of $la A_m B_n X_p$, where A sites are occupied by metal cations, B sites by semi-metals, and X sites by sulfur. The crystal lattice of sulfosalts comprises relatively simple structural domains which, stacked and slightly rotated produce increasingly complicated structures. Their formation is typically associated with low to medium temperature hydrothermal activity.

The Pedro breccia pipe, along with several other breccia pipes associated with porphyry Cu mineralization, forms part of the Middle Fork area in the Snoqualmie mining district, Washington. It is known amongst mineral collectors for its iridescent chalcopyrite crystals and Japan law quartz twins which form in open spaces within the breccia. Rather inconspicuous stalactitic aggregates, measuring to 4 cm in length associated with chalcopyrite, were previously identified as galena. Recent investigations using high-resolution scanning electron microscopy and electron probe microanalysis revealed that these stalactites comprise an outer rim of galena-matildite. The core of the stalactites is composed of a complex assemblage of sulfosalts of the gustavite-lillianite, and aikinite-bismuthinite series. Identified phases include aikinite, berryite, bismuthinite, eskimonite, friedrichite, gladite, gustavite, krupkaite, lillianite, tarutinoite, and vikingite. Some of these minerals are reported for the first time in Washington and in fact the USA. Native gold forms isolated grains within the sulfosalts. Bismuth occurs as fine-grained inclusions and along fractures in altered Bi sulfosalts.

Acknowledgement: The authors gratefully acknowledge support from John Lindell, James Zigras, Ed Molsee, Lew Landers, and Sal Noeldner.

Simon Kocher: Simon is a research associate in the School of Minerals and Subsurface Energy at the Colorado School of Mines. His research focuses on the mineralogy and geochemistry of ore deposits, and on the processes and resulting textures of mineral precipitation. Simon holds an MSc degree in economic geology from the University of Tuebingen, and a PhD in geochemistry from Imperial College London. He has worked as near mine exploration geologist in Sweden, and as a curator and researcher at the Natural History Museum London.



Tellurobismuthite and the gold metallogenesis of the Lone Jack Mine, Washington

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The Lone Jack Mine, located in the Mount Baker Mining District of northwestern Washington, is among the most significant documented gold-telluride occurrences in the North Cascades. The deposit is situated within the Northwest Cascades crystalline terrane, where Early Cretaceous metamorphic rocks, including schists and phyllitic schists, have been affected by prolonged deformation, uplift, and hydrothermal activity. Mineralization is localized within a system of steeply dipping quartz fissure veins developed along fractures and shear zones, with the principal Lone Jack, Lulu, and Whist veins exhibiting characteristic pinch-and-swell geometries and high-grade ore shoots.

The Lone Jack Mine comprises a structurally controlled gold-bearing quartz vein system hosted by metamorphic rocks of the North Cascades crystalline terrane. Mineralization occurs in steeply dipping quartz fissure veins with pinch-and-swell geometries and is characterized by a distinctive Au-Bi-Te assemblage. Although the deposit shares features with both mesothermal (orogenic-style) quartz-vein systems and intrusion-related gold mineralization, its precise genetic classification remains uncertain, and it is most conservatively described as a polymetallic Au-Ag-Bi-Te quartz-vein deposit. The occurrence of gold associated with telluride and bismuth minerals places the Lone Jack deposit within a broader class of Te-enriched hydrothermal gold systems, whose characteristics and ore-forming processes have been reviewed by Cook et al. (2009), while acknowledging that its structural setting also shares some similarities with mesothermal gold-quartz vein deposits discussed by Goldfarb et al. (2010).

Ore formation is interpreted to have resulted from the ascent of hydrothermal fluids through structurally prepared conduits, transporting gold together with silver, bismuth, tellurium, and subordinate base metals. Precipitation of the ore assemblage was likely driven by cooling, pressure changes, and fluid-rock interaction within the vein system. The resulting mineralization includes native gold, pyrrhotite, chalcopyrite, calaverite (AuTe_2), and a variety of Bi-Te minerals.

Of particular mineralogical interest is tellurobismuthite (Bi_2Te_3), a member of the tetradymite group and one of the principal telluride minerals identified from the Lone Jack and Lulu veins. Occurring in association with native gold and calaverite, tellurobismuthite records elevated tellurium and bismuth activities during ore formation and provides evidence for a chemically evolved hydrothermal system. The Au-Bi-Te mineral assemblage preserved at the Lone Jack Mine offers important insights into telluride mineralization processes and represents one of the most notable examples of tellurium-enriched gold mineralization presently known in Washington State.

References:

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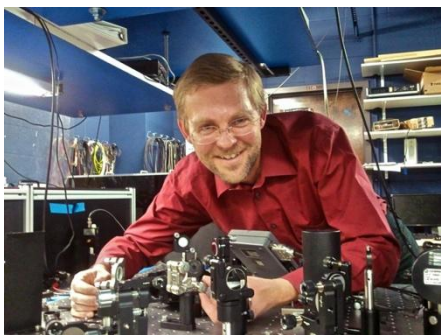
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Robert J. Cole Collection of Lone Jack Mine Records (1923-1965) Western Washington University Archives.

Cook, N.J., Ciobanu, C.L., Spry, P.G., & Voudouris, P. (2009). Understanding gold-(silver)-telluride-(selenide) mineral deposits. *Episodes*, **32**, 249-263.

Goldfarb, R.J., Groves, D.I., & Santosh, M. (2010). Orogenic gold deposits: A proposed classification in the context of their crustal distribution and relationship to other gold deposit types. *Ore Geology Reviews*, **37**, 1-52.

Markus Raschke is professor at the Department of Physics at the University of Colorado at Boulder. His research is on the development of novel nano-optical spectroscopy and microscopy techniques with applications to single molecules, quantum materials, and fundamental control of light matter interaction. Based on a long personal interest in field collecting minerals his research also ventured into geology and mineralogy, with projects in Washington, Colorado, and the Sichuan Mountains in Tibet/China. He



received his PhD in 2000 from the Max-Planck Institute of Quantum Optics and the Technical University in Munich, Germany. Following research positions at the University of California at Berkeley, and the Max-Born-Institute in Berlin, he became faculty member at the University of Washington, followed by his appointment in Boulder in 2010. He is fellow of the Optical Society of America, the American Physical Society, the American Association for the Advancement of Science, and The Explorers Club.



Opal from Virgin Valley, Nevada

Rick Kennedy

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The finest opals ever found in the United States come from a region in the Sheldon Natural Area, a high desert wetland called Virgin Valley in far northwestern Nevada. Since their discovery in the early 1900's, the entire region has been prospected and mined for precious opals.

The opal occurs as replacement of petrified wood. In addition to the petrified wood, there are numerous other fossils including, but not limited to: Camels, Rhinoceros, Horses, and other diverse mid Miocene flora and fauna. There were four caldera forming eruptions between 16.5 and 15.5 million years ago that caused the depressions that later became lakes and highly forested areas. Subsequent eruptions buried the trees in the lake beds and shores. Over time, groundwater percolated through the porous volcanic ash, dissolving silica that replaced the cellular structure of the wood. Not all of the wood was replaced, and not all of the opal is precious (Has play of color). In fact, even at these mines, a large majority of the opal is common opal with no play of color, and there is plenty of petrified wood that has only partially (or not at all) been replaced by opal.

There are a number of mines in Virgin Valley, three of them have options for the public. The Royal Peacock, Bonanza and Rainbow Ridge are the mines open to the public. All of them have a tailings dig option, Royal Peacock has a virgin bank dig and Rainbow Ridge has a virgin load option where the owner delivers a full front loader bucket full of virgin untouched material.

In this talk I will do a brief geological explanation, talk about the history of the deposit and about the Sheldon Natural Area where all of the mines are. The term "High Desert Wetland" will be explained! Then I will discuss the many trips my friends and I have made to the mines, discuss how we mine and show off the many different types of opal, petrified wood and other fossils that can be found in the area.



Fig. 1. Entry gate to the Rainbow Ridge Opal Mine, Photo: Rick Kennedy.

References:

[1] Matthew A. Coble; Gail A. Mahood, Geology of the High Rock Caldera complex, northwest Nevada, and implications for intense rhyolitic volcanism associated with flood basalt magmatism and the initiation of the Snake River Plain- Yellowstone trend.

[2] Glen Hodson, personal communication.



Rick Kennedy is a professional miner, mineral prepper and mineral dealer out of Reno, Nevada. He has a BS in Earth Sciences from the University of California, Santa Cruz in 1994 and has been an active field collector and miner for most of his life. He is a partner at Hallelujah Partners, mining Quartz scepter from the location known as Petersen Mountain or also referred to as Hallelujah Junction. He is also a partner at the Jackson's Crossroads Amethyst Mine in Wilkes County, Georgia.



Culver Antimony Mine, Pershing County, Nevada

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In 2009 author DE with members of Bay Area Mineralogists (BAM) conducted a mineral collecting field trip to Pershing County, Nevada, to investigate the mineralogy of several defunct mining localities located in this region of typical Basin and Range public BLM lands. The Redbird mine and Hollywood mine were two of the well-known localities for scheduled visits. While exploring some of the many desert roads in route to the Hollywood mine, we noticed three mounds of rock material oddly piled near an intersection of one of these roads leading up to the top of an uplifted ridgeline. At the time, we speculated that the only reason this material might have been consolidated at this point was for high-grade ore pickup to be loaded and sent for processing of antimony and mercury. Historic research pointed to this site as the Culver Antimony Mine first prospected sometime before 1950. We collected several specimen samples from the site showing a fibrous yellow mineral filling open cavities and fractures lined with quartz and calcite in silicified rock. In 2019, we sent the first of several samples to University of Arizona for XRD and SEM/EDS analysis. The results showed that the mineral was oxyplumboroméite (formerly bindheimite), an antimonate secondary mineral that frequently forms in oxidation and weathering zones of primary occurring antimony-bearing lead deposits.

Over the course of several return visits to further study the mineralogy of the site, a wider variety of colorful micro-crystalline specimens were collected and sent for subsequent analysis. We expected to see additional antimony oxide species and there were several confirmed. In addition, samples from a massive quartz vein included tetrahedrite, malachite, native gold, and a relatively rare complex hydrous copper chloro-sulfate mineral, connellite. Examples of these minerals with their descriptions are provided here along with a brief description of the geologic conditions in the region.



Sheaf like yellow oxyplumboroméite with aragonite and quartz. 1.2cm fov.

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Stratigraphy of the Star Peak Group (Triassic) and overlying Lower Mesozoic rocks, Humboldt Range, Nevada. US professional paper 592. Tingley, J. V., and J. Quade. 1985.

Daniel Evanich is an independent mineralogy researcher and active field collector of rare mineral specimens. Since 1998 he has been an integral part in the coordination of many Bay Area Mineralogists (<http://www.baymin.org/>) field collecting trips throughout the Western U.S. including the states of California, Nevada, Arizona, New Mexico, Colorado, Utah, and Idaho. The main focus of his personal mineral collection is on Western U.S. minerals, specifically from Butte, Montana, along with several other classic localities including Tiger and Bisbee, Arizona, San Benito County, California, and Pershing County, Nevada. In addition to BAM, he is an active member of Northern California Mineralogical Association (NCMA), Mineralogical Society of Southern California (MSSC), and Crystal Gazers of San Francisco.



North Star Mine, Mammoth, Tintic Mining District, Juab County, Utah

Brent Thorne

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Geology: The ore deposits were contained in the Fish Haven Dolomite and Ajax Dolomite - Opohonga and Ajax limestones where they were metamorphosed, and the contact is also close to the shaft. The crystallized areas of the contact contained quartz, garnet, and wollastonite. The limestone is intersected by fissures, with principal ones trending north, and north 25° east, along with many easterly cross fissures. Associated rocks include Oligocene-Late Ordovician monzonite of the Silver City Stock. The tunnel intersects the main monzonite contact not far from the portal. A porphyry dike 100 feet wide is intersected 400 feet west of the shaft. On the surface an ore bearing fissure was traced for 1,500 feet and it begins at the gulch above the shaft, and continues south to the crest of a nearby ridge. It trends southwest toward the contact and is vertical. The same fissure was discovered on the 300 and 400 foot levels, but no valuable ore bodies were discovered along it. Local alteration includes argillization and contact metasomatism.

Ore: Principal ore bodies extended east of the shaft for 1,000 feet continually, and followed steep north-northeasterly fissures with local offsets on easterly breaks. The ore bodies were irregular, and varied in width from being a small seam, up to 30 feet wide. The stoped ore bodies did not extend very far below the 300 foot level, or more than 500 feet south-southwest, and north-northeast of the shaft.

The ore contained gangue minerals of quartz and baryte, with the ore minerals being galena, cerussite, and enargite along with its alteration products. The ore contained silver and unusually large quantities of gold, more than most other mines in the district. The lower levels contained greater amounts of lead and silver with less baryte than the upper levels. The gold was mainly associated with fine grained baryte. On the upper levels the baryte is coarse and crystallized. The ore shoots dipped west and pitched north. Three of these ore shoots were distinctly gold rich, with one of them carrying lead and silver. Copper ore was also found at the south end of the vein.

Workings: The workings include surface and underground openings with a length of 457.2 meters and an overall depth of 152.4 meters, and are comprised of a shaft and adit and a large open stope trending NE that is visible above the dump. The mine was worked on the southernmost extension of the Godiva ore channel, within 500 feet of a nearby limestone-monzonite contact where it ends. The mine was worked on 6 levels developed at 100 foot intervals. A 900 foot tunnel opens the mine around the 200 foot level (level 2) from a gulch west of the shaft, the tunnel being at 6,745 feet in altitude. The workings extend 500 feet north-northeast, and 700 feet south-southwest. On the 300 foot level a crosscut extended east under the veins worked by the nearby Dragon Mine, and drifts extend far north and south. On the 600 foot level there was a lot of prospecting with large crosscuts running east and west.

Brent Thorne: I am a retired Clinical Pharmacist. I worked for 30 years with IHC. I was able to take two years of geology at the University of Utah. I am currently interested in tellurium minerals which the North Star Mine has an abundance of.



Yugawaralite. FOV 4mm. Seigoshi Mine, Toicho, Shizuoka, Japan. Arthur E. Smith {Ex J. Daly via M. Shannon --> B. Heesacker, 2025}. Photo copyright Beth Heesacker.



Arsenopyrite. Fov 8mm. Ina?? Mine, Aichi Prefecture, Japan. Ex Arthur E Smith, {Ex J. Daly via M. Shannon --> B. Heesacker, 2025}. Photo copyright Beth Heesacker.

FIELD TRIP !!



Hey everyone! I will be leading a field trip for 5 members to my claim, "Black Tuesday", in Wenatchee, Washington on Saturday, October 24.

THE HIKE: From the trailhead, it is 2.8 miles with an elevation gain of 1,300 ft.

Here, we find a rare amphibole that is called magnesio-hastingsite. The crystals formed in an intrusive andesite dike that protrudes out of the Chumstick sandstone formation. These crystals are black and have a monoclinic prismatic habit which is common in amphiboles, often showing well-developed prism faces. There are other minerals that occur at our claim as well including stilbite and calcite.

I will have 5 slots available for the field trip and the sign-up sheet will be in the exhibit room at the college.

If you would like to sign up but aren't sure about it yet, feel free to email me with any questions at:
Theasmineralworld@hotmail.com

There will be more information at the sign-up sheet in the exhibit room during the PNW Friends of Mineralogy Symposium.

Sign-ups are first come, first serve. Meeting spot will be discussed with the 5 attendees after sign-ups are done.

This is not a camping trip so we will be meeting up in the morning at 7:00 am before going to the trailhead.

We hope to see you there!

Thea Stender - Vice President





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Mon-Tues: Closed

Weds-Sun: 10am-5pm



Please email articles and photos
to heesacker@coho.net

The next deadline will be December 12, 2026

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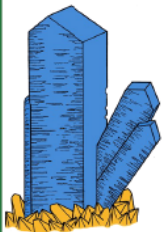
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Axinite. FOV 5mm. Obira Mine, Bungo-Ohno City, Oita, Japan.
Ex Robert Bao, {Ex J. Daly via M. Shannon --> B. Heesacker, 2025}. Photo copyright Beth Heesacker.

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Editor, Beth Heesacker
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heesacker@coho.net

MINERAL MEETING CALENDAR

2026:

PNWFM Symposium – October 16-18

Central Washington University and SureStay Hotel by Best Western, Ellensburg
Discovery Hall
Ellensburg, WA

NW Micro Mineral Study Group - Nov 14

Sons of Norway Columbia Lodge
2400 Grant St., Vancouver, WA 98660

2027:

Pacific Micromineral Conference (MSSC) – TBD

Fallbrook Gem & Mineral Museum
123 W. Alvarado St., Fallbrook, California

NW Micro Mineral Study Group - May 8

10 am - 4 pm
Sons of Norway Columbia Lodge
2400 Grant St., Vancouver, WA 98660

Seattle Mineral Market – TBD

SATURDAY 10:00AM-6:00PM
SUNDAY 11:00AM-5:00PM
The Hangar 30 building at Magnuson Park
7400 Sand Point Way NE, Seattle, WA 98115

Northern Mineralogical Association (NCMA) – May 21-23

Eldorado Community Hall
6139 Pleasant Valley Rd., Eldorado, CA