

# THE GOLD NUGGET

Feb 2023

**It's that time of year again for ANNUAL GPR membership renewal.**  
**More information will be forthcoming soon.**

## **The Prez Sez!** by **Bobby Manning**



January came really cold and so snowy that we didn't get much done, but better to be safe than sorry. The board has lots of work to do on a lot of issues from dues to gold buying.

Right now, no one has any gold to sell and I may need to go somewhere to get some before the next meeting. I have been cleaning the shop finding things that are really neat from ore samples and rock samples and dirt that may have gold in it or not. The other day, I found out what chlorine gas will do to you! It's not fun, takes your breath away and your nose runs and eyes water and you can't move fast enough, because you can't see it. Found things that you would only see if you did an assay. I found some samples that I will run at work, and others that I will do at home. With the work that takes a lot of my time, I then do other thing for other people. So our first show will be some of the Gold that I saw at a rock show and it was wonderful to see. I received a phone call the other day that is going to result in the Board needing to resolve. All I can say at the moment is simply a caution to the membership. When you get two people together you need to think before you act! Your actions could have a lasting effect on someone. Please be respectful to all members at all TIME! Now let's take the frown off and talk about some snow. I have lots of it if anyone wants some I have all you can take. With all the snow, I think of Joe in his window looking out and holding his metal detector. I know how he feels. I got a new one and only got to use it once. I am now looking for all this snow to go away so I can get out and do other things! May we always smile as it's better than a frown. Those face wrinkles and laughter is your best medicine for you. **IF YOU HAVE A PROBLEM PLEASE CALL ME..** Keep your pan up and fill it with GOLD! May your Pan stay shiny with GOLD!. (bobbyslawnsprinkler@gmail.com or 303-420-8830).

## **Vice President's Corner!** by **Mike Stevens**



Winter time is upon us and I really am looking forward to spring. I envy people who can travel and leave for lengths of time to enjoy the warmer weather in other places and avoid the cold, snow, shoveling, and the thought of having to break ice to get a little panning in. Sticking my hands into freezing creek water and risking frostbite just doesn't appeal to me. Running through cons and black sands has even been a challenge as my garage feels like a freezer at times. I have been able to check out some new screens and pan much smaller classifications than ever before and it's been quite the eye opener for retrieving super fine gold. I anxiously wait for Spring's arrival, but first I need to bundle up and head out to shovel the driveway again! Golden Smiles for All.

## **From the Treasurer/Secretary Ledger** by **Joe Kafka**



It was nice to see everyone at the Christmas Program. The Club remains in the black and members may request to see the financial report at any time which I have at my table in the back whenever you wish to see it. Hope to see you all at the next meeting in February since our January Meeting got snowed out. We will start our nugget giveaways again in February when we will be giving away more gold nuggets, the largest of which may be close to 2 grams....!! Don't forget to buy your 'Special nugget tickets as well. See you all at our next meeting and Happy New Year !



## Board Meeting Minutes From Jan 2023

Joe Johnston	Andy Doll	Robert Ahr	Gordon Smith
Mike Stevens	Joe Kafka	Kathy Lemuel	Mike Hurtado
Bobby Manning	Chris Kafka	Kevin Singel	Joe Johnson

There was no official Board Meeting for the month of January 2023 due to the inclement weather causing a cancellation of the Meeting. See you all on February 15.

### QUESTION OF THE MONTH

Amid recession fears, the price of gold topped \$1,000 an ounce for the first time in history in what month and year?

#### 2023 GPR Board of Directors Members

##### President

Bobby Manning

##### Vice President

Mike Stevens

##### Secretary/Treasurer

Joe Kafka

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Robert Ahr (2024)

Andy Doll (2024)

Gordon Smith (2024)

##### 1 Year Board Members

Kevin Singel

Roger Schlenger

Vacant

Vacant

##### Past President

Joe Johnston

## General Meeting Minutes From Jan 2023

Due to inclement weather, the Board had to cancel the January Meeting and there are no official minutes to be reported. We hope to see you all back on February 15 with fairer skies and golden sunsets!

### A Miner's Laugh

A mining engineer was crossing a road one day, when a frog called out to him and said, "If you kiss me, I'll turn into a beautiful princess."

He bent over, picked up the frog, and put it in his pocket.

The frog spoke up again and said, "If you kiss me, I'll turn back into a beautiful princess and stay with you for one week."

The engineer took the frog out of his pocket, smiled at it and returned it to the pocket.

The frog then cried out, "If you kiss me and turn me back into a princess I'll stay with you for one week and do anything you want."

Again, the engineer took the frog out, smiled at it and put it back into his pocket.

Finally, the frog asked, "What's the matter? I've told you I'm a beautiful princess, I'll stay with you for one week and do anything you want. Why won't you kiss me?"

The engineer said, "Look, I'm a mining engineer. I don't have time for a girlfriend. But a talking frog - now that's cool."

*(Taken from the internet and revised just for all us 'old miners')*



### The Finds of the Month 2023:

There was no meeting in January so the Finds of the Month will accept in February, any find made since November 17, 2022.



## **A 15-metric ton Meteorite crashed in Africa. Now 2 New Minerals have been Found in it** *taken from several internet news sites*

It has been reported through various news sources and outlets that Scientists have identified two minerals never before seen on Earth in a meteorite weighing 15.2 metric tons (33,510 pounds). The minerals came from a 70-gram (nearly 2.5-ounce) slice of the meteorite, which was discovered in Somalia in 2020 and is the ninth-largest meteorite ever found, according to a news release from the University of Alberta. A curator of the university's meteorite collection received samples of the space rock so they could classify it. As they were examining it, something unusual caught their eye — some parts of the sample weren't identifiable by a microscope. They then sought advice from the head of the university's Electron Microprobe Laboratory, a man who has experience describing new minerals. The very first day that he did some analyses, he reported that there were at least two new minerals present. Most of the time it takes a lot more work than that to say there's a new mineral. One mineral's name — elaliite — derives from the space object itself, which is called the "El Ali" meteorite since it was found near the town of El Ali in central Somalia. The other mineral is named elkinstantonite after Lindy Elkins-Tanton, vice president of Arizona State University's Interplanetary Initiative. Elkins-Tanton is also a regents professor in that university's School of Earth and Space Exploration and the principal investigator of NASA's upcoming Psyche mission, a journey to a metal-rich asteroid orbiting the sun between Mars and Jupiter, according to the space agency. It was said that Elkins-Tanton has done a lot of work on how the cores of planets form, how these iron nickel cores form, and the closest analogue we have are iron meteorites, and that it just made sense to name a mineral after her and recognize her contributions to science. The International Mineralogical Association has approved of the two new minerals in November of this year. All of this is very exciting in that in this particular meteorite you have two officially described minerals that are new to science. The quick identification was possible because similar minerals had been synthetically created before, and scientists were able to match the composition of the newly discovered minerals with their human-made counterparts. It was said that material scientists do this all the time, They can create new compounds — one, just to see what's physically possible just as a research interest, and others ... will say that they were seeking a compound that has certain properties for some practical or commercial application, like conductivity or high strain or high melting temperature. It was just fortuitous that a researcher would find a mineral in a meteorite or a terrestrial rock that hasn't been known before, and then very often, that same compound will have been created previously by material scientists. Both new minerals are from phosphates in iron meteorites which are actually secondary products: They form through oxidation of phosphides ... which are rare primary components of iron meteorites. The two new phosphates tell us about oxidation processes that occurred in the meteorite material. It remains to be seen if the oxidation occurred in space or on Earth, after the fall, but as far as is known, many of these meteorite phosphates formed in space. In either case, water is probably the reactant that caused the oxidation. The findings were presented in November at the University of Alberta's Space Exploration Symposium. The revelations are said to have broadened our perspective on the natural materials that can be found and can be formed in the solar system. The El Ali meteorite that the minerals came from appears to have been sent to China in search of a buyer. Meanwhile, the researchers are still analyzing the minerals — and potentially a third one — to find out what the conditions were in the meteorite when the space rock formed. And newly discovered minerals could have exciting implications for the future. And, of course, whenever there's a new material that's known, material scientists are interested too because of the potential uses in a wide range of things in society.



## **Fun Ways to Teach your Kids about Minerals and More** . By Alexandra Porto

Rather than bringing Netflix or having everyone retreat to separate bedrooms, I have a better idea in mind. How about getting your children (*grandkids*) more engaged in our favorite hobby of prospecting and treasure hunting? When it comes to learning about prospecting, knowledge about geology and minerals is fundamental. According to nonprofit Mining Matters, now is the perfect opportunity to teach your kids/grandkids about minerals and gems. In addition to the extra time at home, many new virtual resources are popping up as well. We're not talking about reading lengthy textbooks, but rather fun interactive tools and activities that are also educational. It's time to show your kids/grandkids



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that earth science is anything but boring, and you might even learn something new yourself. There's a reason recreational vehicles and camping gear sales are up lately. More and more people are rediscovering the spacious comfort and never-ending excitement of the great outdoors. Your kids/grandkids can revel in the adventure of outdoor exploration while having fun learning about minerals and more. Get started by asking them to collect rocks they find in the backyard or a nearby park. Inspect the rocks under a magnifying glass to discover their unique features and then ask them to figure out which are sedimentary, metamorphic or igneous rock. Check out the local Natural History Museum's mineralogy exhibit (some even have on-line exhibits) if you need to brush up on your own classifying skills. Elemental Science suggests painting old egg cartons and using them so the kids/grandkids can proudly display their new rock collection. Level up this activity with a rock tumbler so they can turn their growing collection into shiny stones. According to STEM Supplies Blog, rock tumblers allow kids to learn new vocabulary like 'weathering' and to experience natural effects that typically take a very long time in just a few days of tumbling. Once the polished stones are removed from the rock tumbler, you can have a night of family fun crafting them into jewelry. Earth Science Jr. recommends planning a fossil-finding adventure in your backyard using the National Audubon Society Field Guide to North American Fossils as a reference guide. Take this a step farther with a play excavation kit such as the Smithsonian's Super Dig Kit or Dig It Up from Mindware to ensure that their digging doesn't come up empty handed. Skip the lines and embark on a virtual museum tour from the comfort of your own home. Start the day with a dinosaur fossil virtual field trip or a live guided tour of the Meteorite Hall at the American Museum of Natural History (AMNH). Next, marvel at the digital mineral and gem collection and the GeoGallery at the Smithsonian. Explore the multifaceted wonders of opals at the mineralogical and Geological Museum of Harvard University through a Google Arts and Cultural virtual tour. Then, say on that site to view the fluorescent minerals through the eyes of the Brooklyn Children's Museum's 1930's mineral club. Next, visit the Gold Fever! virtual experience at the Oakland Museum of California. Other great museums to check out online include the Geology Museum at the south Dakota School of Mines and Technology, the Sterling Hill Mining museum, the Yale Peabody Museum of Natural History and the Klondike Gold Rush National Historical Park Museum. If your kids/grandkids have more of a sweet tooth, there is plenty of fun with minerals to be had in the kitchen too. Get cooking with science by allowing them to learn about crystal formation. Stir up a recipe for rock candy and let them enjoy both the process and the tasty results. Indulge in Left Brain Craft Brain's Chocolate Rock Cycle recipes while also presenting your kids with visuals of those different rock formations mentioned earlier. For those who are little bookworms, consider giving them an activity book like Mining Matters' newly released volume, filled with puzzles and games to teach kids about mining and minerals. Other favorites include 'A Rock is Lively' by Dianna Hutts or Scholastic's 'The Magic School Bus: Inside the Earth'. Whether you select one idea from this list or plan a weekly activity, kids of all ages are sure to have fun learning the ins and outs of minerals, gems and more. From exploring outdoors to embarking on virtual tours or having fun in the kitchen, these exciting and interactive programs are sure to create family memories to last a lifetime. Who knows, maybe prospecting will even become your new shared hobby.

## Gold Mining in Colorado

From Wikipedia, the free encyclopedia

*(We have covered this before but always good to refresh your history)*



Gold mining in Colorado has been an industry since 1858. It also played a key role in the establishment of the state of Colorado. Explorer Zebulon Pike heard a report of gold in South Park, present-day Park County, Colorado, in 1807.

Gold discoveries in Colorado began around Denver; prospectors traced the placer gold to its source in the mountains west of Denver, then followed the Colorado Mineral Belt in a southwest direction across the state to its terminus in the San Juan Mountains. The Cripple Creek district, far from the mineral belt, was one of the last gold districts to be discovered and is still in production.

On June 22, 1850, a wagon train bound for California crossed the South Platte River just north of the confluence with Clear Creek followed Clear Creek west for six miles. Lewis Ralston dipped his gold pan into a stream flowing into Clear Creek and found about a quarter of a troy ounce (worth almost \$5, equivalent to \$500 today) in his first pan. John Lowery Brown, who kept a diary of the party's journey from Georgia to California, wrote on that day: "Lay bye. Gold found." In *Ralston Creek (center of picture) at its confluence with Clear Creek in Arvada* a notation above the entry, he wrote, "We called this Ralston's Creek because a man of that name found gold here." Ralston continued to California, but returned to 'Ralston's Creek' with the Green Russell party eight years later. Members of this party founded



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Auraria (later absorbed into Denver City) in 1858 and touched off the gold rush to the Rockies. The confluence of Clear Creek and Ralston Creek, the site of Colorado's first gold discovery, is now in Arvada, Colorado.

A gold discovery in 1858 in the vicinity of present-day Denver sparked the Pike's Peak Gold Rush. In 1858, prospectors focused on the placers east of the mountains in the sands of Cherry Creek, Clear Creek, and the South Platte River. However, the placer deposits on the plains were small, and when the first rich discoveries were made in early 1859 in the mountains farther west, the miners abandoned the placers around Denver.

Although the economic portions of the gold placers around Denver were quickly exhausted, producers of construction aggregate in the area sometimes recover small amounts of gold from their sand and gravel washing. The plains counties of Adams, Arapahoe Douglas, Denver, Elbert and Jefferson are each credited with having produced small amounts of gold.

## Central City-Idaho Springs District

On January 5, 1859, during the Pike's Peak Gold Rush, prospector George A. Jackson discovered placer gold at the present site of Idaho Springs, where Chicago Creek empties into Clear Creek. It was the first substantial gold discovery in Colorado. Jackson, a Missouri native with experience in the California gold fields, was drawn to the area by clouds of steam rising from some nearby hot springs. *Chinese-American miners in the Colorado School of Mines' Edgar Experimental Mine near Idaho Springs, circa 1920.*



Jackson kept his find secret for several months, but after he paid for some supplies with gold dust, others rushed to Jackson's diggings. The settlement was later renamed Idaho Springs, after the hot springs. In May 1859, John H. Gregory found a gold-bearing vein (the Gregory Lode) in Gregory Gulch between Black Hawk and Central City. Within two months, many other veins were discovered, including the Bates, Gunnell, Kansas, and Burroughs. Other early mining towns in the district included Nevadaville and Russell Gulch. Hardrock mining boomed for a few years, but then declined in the mid-1860s as the miners exhausted the shallow parts of the veins that contained free gold and found that their amalgamation mills could not recover gold from the deeper sulfide ores. Nathaniel P. Hill built Colorado's first successful ore smelter in Blackhawk in 1868. Hill's smelter could recover gold from the sulfide ores, an achievement that saved hardrock mining in the district. Other smelters were built nearby. Through 1959, the district produced about 6,300,000 troy ounces (200 t), mostly from sulfide veins in gneiss and granodiorite. The early gold discoveries were at the northeast end of the Colorado Mineral Belt, a large alignment of mineral deposits that stretches northeast-southwest across the mountainous part of Colorado. From Idaho Springs, prospectors followed the Colorado Mineral Belt west along Clear Creek, then over the mountain passes to South Park and to the headwaters of the Blue River.

## Breckenridge District



Placer gold was discovered in the Breckenridge, or Blue River district, in 1859 at Gold Run by the Weaver Brothers, at Georgia, American, French, and Humbug Gulches on the Swan River, on the Blue River itself, and at the confluence of French Gulch and the Blue River.

Harry Farncomb found the source of the French Gulch placer gold on Farncomb Hill in 1878. His strike, Wire Patch, consisted of alluvial gold in wire, leaf and crystalline forms. By 1880, he owned the hill. Farncomb later discovered a gold vein, which became the Wire Patch Mine. Other vein discoveries included Ontario, Key West, Boss, Fountain, and Gold Flake.

Lode deposits were developed in the 1880s, as prospectors followed the gold to its source veins in the hills. Gold in some upper gravel benches north of the Blue River was recovered by hydraulic mining. Gold production decreased in the late 1800s, but revived in 1908 by gold dredging operations along the Blue River and Swan River. *The Remains of the Swan River gold dredge, 2007.* Breckenridge mining district is credited with production of about 1,000,000 troy ounces (31t) of gold. The gold mines around Breckenridge are all shut down although some are open to tourist visits. The characteristic gravel ridges left by the gold dredges can still be seen along the Blue River and Snake River, and the remains of a dredge are still afloat in a pond off the Swan River.



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### South Park Districts

Placer mine workers use water to mine for gold and other minerals near Fairplay, Colorado, in the early 1900s. Mine worker uses water hose to assist with placer mining operations in Fairplay, Colorado, early 1900s. Prospectors discovered rich placer deposits on the west side of South Park in 1859. The deposits were in valleys on the east side of the Mosquito Range. The town of Alma, Colorado, the heart of this district, was established on December 2, 1872 by miners working the area, though that area had been actively mined since 1860. The principal districts were the Alma-Fairplay district on the headwaters of the South Platte River, and the Tarryall district along Tarryall Creek northwest of Como, Colorado. Important lode gold deposits were later discovered above Alma.



*South Platte Dredging Co., Dredge No. 1 or the Fairplay Dredge.* A floating dredge worked the floor of the South Park valley east of Fairplay from 1941 to 1952, leaving the distinctive gravel ridges that can still be seen. Production from the Tarryall district was 67,000 troy ounces (2.1t), almost all from placers. The Alma-Fairplay district produced 1,550,000 troy ounces (48 t), more than two-thirds of which came from lode deposits. This bucketline gold dredge operated from 1941 until 1951. Capable of excavating 15,000 cubic yards of gravel per day, it produced 9,000 ounces of gold in its first year of operation, and a total of 120,000 ounces before dismantlement. Before any prospectors in Park County began excavating the mountains, they used placer mining to extract gold from the local waterways. Placer mines began to appear all over Park County after 1861. Placer gold was found in Tarryall, Fairplay, Alma, Breckenridge, and Leadville. A notable amount came from the beds of the South Platte River. Many placer claims existed to the south and west of Alma. The mining town of Montgomery in Hoosier Pass had another small placer gold operation in 1911. Two notable placer mines in the Alma mining district are Snowstorm, home of the famous Snowstorm Dredge, and Cincinnati. In 1882, the Alma Placer Mining Company owned roughly 640 acres of placer mines. The only hindrance is that this type of mining can only be conducted during the short summer months. After prospectors established placer mines all over Park County's gulches, they moved on to the more difficult mountain veins to plunge the depths for riches. Lode mining costs more than surface mining, and there are also significant risks to this method including a loss of air supply, explosions, and implosions. Like everyone who came West had hoped, gold was found in the lode mines. The first lode mine in the Alma district was located in Buckskin Gulch, and it was explored by local icon Joseph Higginbottoms, aka Buckskin Joe. That first claim was called the Phillips Lode Mine. In the first two years, the mine produced \$300,000 worth of ore. Once the gold had dried up in Buckskin Gulch, they moved on to quartz. The Paris Mine, also located off Buckskin Gulch, is another lode mine producing oxidized gold. Off Mosquito Gulch, the London Lode Mine produced gold, silver, and copper. Magnolia Mine in Montgomery was well known for producing gold, lead, silver, and copper, but it also produced quartz, pyrite, and limonite.

### Leadville District

The history of the Leadville district began in April 1860, with one of the richest discoveries of Colorado placer gold at California Gulch, the site of Oro City. Another rich discovery was made at McNulty Gulch along the headwaters of Tenmile Creek. The placers were exhausted within four years, but lode gold was discovered in 1868. The gold discoveries led to the discovery of the silver deposits in 1877, and the founding of the city of Leadville. The Little Johnny silver and lead mine, dating from 1879, was further developed in 1893, by John F. Campion and James Joseph Brown, which resulted in the production of large deposits of high-grade gold-copper ore. The Leadville district produced 3,200,000 troy ounces (100 t) of gold, mostly as a byproduct of silver mining.

### Summitville District

Prospectors found placer gold in 1870 in the Wrightman Fork of the Alamosa River. Gold veins were discovered in 1871, and large-scale production started in 1875 after the construction of a mill. By 1880, the Little Annie vein helped make Summitville Colorado's largest gold producer. Over 100,000 ounces of gold were produced by 1890. Operations were continuous until 1906, then sporadic after that. Gold production up to 1990 was 520,000 troy ounces (16 t). In 1985, Summitville Consolidated Mining Company, a subsidiary of Galactic Resources of Vancouver, British Columbia started open pit heap-leach mining at the Summitville mine. Mining ceased in 1992, and remediation started. However, Galactic Resources declared bankruptcy in December 1992, and the US Environmental Protection Agency stepped in to prevent



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releases of pollution from the property. The EPA declared it a federal Superfund site in May 1993. The total cost of environmental cleanup at the site has been estimated to be between \$100 and \$120 million (equivalent to between \$190 and \$230 million today). In 1998, the general manager and the environmental manager of the mine pleaded guilty to federal pollution charges, and were each sentenced to six month probation and \$20,000 fines (equivalent to \$33,000 today).

### Sneffels-Red Mountain-Telluride District

The Sneffels-Red Mountain-Telluride district, in San Miguel and Ouray counties at the southwest end of the Colorado Mineral Belt, was discovered in 1875. Thomas Walsh developed the Camp Bird Mine in 1896. The district is within and adjacent to a Tertiary volcanic caldera. Deposits are chimneys and veins in Tertiary volcanics and intrusives, and in older sedimentary rocks. Production through 1959 was 6,800,000 troy ounces (210t) of gold, as well as considerable silver, lead, and copper.

### Cripple Creek District

*Cripple Creek (Battle Mountain) Mines, 1906, red-phonolite dikes, red-basic dikes, yellow-veins* Part-time cowboy and full-time drinker"



Robert Womack found gold float in 1879, which led him to digging countless prospecting holes in an attempt to find its lode, earning him the name "Crazy Bob". His efforts finally paid off in 1890, when he found the El Paso lode. Winfield Scott Stratton discovered what became his Portland Mine at the site of Victor. By 1893, 10,000 miners working the district produced one third of Colorado's gold output. Gold cyanidation was introduced in 1895, and used alongside chlorination in the mills for gold extraction. By 1895, half of Colorado's gold production of 660,000 ounces came from the district. In 1897,

half a million Troy ounces of gold was produced, and in 1900, 900,000 troy ounces, two thirds of the US output. By 1920, 41 mines were active, and cumulative gold production was over 500 tons. Located a few miles southwest of Pike's Peak, the Cripple Creek district wasn't discovered until later in the "rush", which was known as the "Pike's Peak Gold Rush", because Pike's Peak was a landmark visible from 100 mi out on the plains. The towns of Cripple Creek and Victor were established to serve the mines and miners of the district. Among the principal mines were the Mollie Kathleen Gold Mine at Cripple Creek and Stratton's Independence mine, at Victor, Colorado. Gold production up to 1990 was 21,000,000 troy ounces (650t) worth about US \$17 billion at 2008 prices), making it the most productive gold-producing district in Colorado, and the third-most productive in the United States (after Carlin, Nevada and Lead, South Dakota). Many of the mines in the district were quite deep and difficult to drain. The almost five-mile Roosevelt Tunnel was a mine drainage tunnel dug between 1907 and 1919 below the Cripple Creek area to drain the mines and simplify ore haulage.

The Cripple Creek mining district covers a Miocene volcanic caldera filled with quartz latite porphyry. The ore bodies are veins and replacement zones within the quartz latite. The ore minerals are gold and silver tellurides, with accessory fluorite. The Cripple Creek & Victor Gold Mining Company formed in 1976 as a joint venture to restart mining in the district. From 1976 to 1989, the company produced 150,000 troy ounces (4.7t) of gold by reprocessing tailings and mining two small surface deposits. The Cripple Creek & Victor Gold Mining Company began the first large-scale open pit mining in the district in 1994. The Cresson mine open pits are located a few miles north of Victor. Mining continues today under the ownership of Newmont Corporation, which boosted gold production from 211,000 troy ounces (6.6t) in 2014 to 451,000 troy ounces (14.0t) in 2017, and 322,000 troy ounces (10.0t) in 2019. Some miners who worked in this district died in different ways including flu, pneumonia, in the mine, at home, or suicide. A list of dead miners has been recorded in a small notebook labeled "Dead". A photocopy of the notebook is held by the Cripple Creek District Museum.

### Gold Mining Today

Colorado gold production was 270,000 ounces in 1892, 660,000 ounces in 1895, peaked in 1900 at 1,400,000 ounces, and reached over one million ounces in 1916 for the last time. Gold production in 1922 was 300,000 ounces, and 200,000 ounces in 1928. The Gold Reserve Act helped increase production to 370,000 ounces in 1936. Production was 380,000 ounces, before the War Production Board limitation order L-208 stopped





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gold mining in 1942. *Cripple Creek & Victor Gold Mine in 2006*. Production restarted after World War II with 168,000 ounces in 1947. Gold production was 66,000 ounces in 1960 and 22,000 ounces in 1967. Production reached 37,000 ounces in 1972 and 72,000 ounces in 1978. Only one Colorado mine continues to produce gold, the Cripple Creek & Victor Gold Mine at Victor near Colorado Springs, an open-pit heap leach operation owned by Newmont Corporation, which produced 322,000 troy ounces of gold in 2019 and reported 3.45 million troy ounces of Proven and Probable Reserves as at December 31, 2019.

## **Astronomers find rare star system that will lead to gold-producing explosion**

Story by Julia Musto (*More gold coming our way, just wait. Get a bigger Sluice*)

Astronomers at the National Science Foundation's NOIRLab made the first confirmed detection of a star system that will one day form a kilonova, an ultra-powerful and gold-producing explosion created by merging neutron stars.

Researchers said on Tuesday that they used data from the SMARTS 1.5-meter Telescope at Cerro Tololo Inter-American Observatory in Chile to uncover the first example of the phenomenally rare type of binary star system. The findings are published in the journal *Nature*.

The arrangement, known as CPD-29 2176, is so astonishingly rare that only about 10 such systems are believed to exist in the Milky Way galaxy.

CPD-29 2176, is located about 11,400 light-years from Earth and was first identified by NASA's Neil Gehrels Swift Observatory.

Upon further observation with the telescope, the scientists were able to deduce the orbital characteristics and types of stars that make up this system: a neutron star that was created by an ultra-stripped supernova and a closely orbiting massive star that is in the process of becoming an ultra-stripped supernova itself.

An ultra-stripped supernova is the end-of-life explosion of a massive star that has had much of its outer atmosphere stripped away by a companion star.

"The current neutron star would have to form without ejecting its companion from the system. An ultra-stripped supernova is the best explanation for why these companion stars are in such a tight orbit," the paper's lead author, Noel Richardson of Embry-Riddle Aeronautical University, said in a statement. "To one day create a kilonova, the other star would also need to explode as an ultra-stripped supernova so the two neutron stars could eventually collide and merge."

It will take at least **a million years** for the massive star to end its life as a titanic supernova explosion and leave behind a second neutron star. The authors said the stellar remnant and the pre-existing neutron star will need to draw together before merging and noted that the resulting kilonova explosion will produce much more powerful gravitational waves and leave behind a large amount of **heavy elements, including silver and gold**.






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For information to publish your "Ad" in The Gold Nugget, please contact the Editor. **COPY DEADLINE** is due to the editor by the 25th of the month for publication in the following months' issue of the Newsletter.

**Contact the GPR President**

*(Layout Design Subject To Additional Cost)*



**Coming Announcements and Special Events for Mar 2023**

(**WMMI** - Western Museum of Mining & Industry, 225 North Gate Blvd. Colorado Springs, CO 80921  
(<https://www.wmmi.org/>) (Free to GPR Member with badge)

SUN	MON	TUE	WED	THU	FRI	SAT
			1	2	3	4
5	6	7	8	9	10	11
12 <a href="#">Daylight Savings Time Begins</a>	13	14	15 <a href="#">GPR Club Meeting</a>	16	17 <a href="#">St Patrick's Day</a>	18
19	20	21	22	23	24	25
26	27	28	29	30	31	