

# THE GOLD NUGGET

February 2021

## The Meeting for February is Cancelled!

"Due to the current covid uptick, I seriously doubt right now, that we will be getting a meeting in any time soon. This means all of our planned events for the rest of the year are cancelled. However, I will of course let everyone know should things change. Until then, maintain your social distancing, wear those hated masks, and hope this madness goes away, the sooner the better."

When we are able to meet again, Club Elections will be foremost on the agenda. I have stepped down as President after 10 years at the helm. Board members J. Fortunato, J. Johnson, J. Schubert and B. Luchtenburg have also informed me of their intentions to step down as well. That leaves plenty of room for some new blood on the Board. I hope that someone of you out there is willing to step up and take the reins forward. You will have ample help getting things done and the jobs are not really very difficult.

**Notice:** The Board of Directors has approved the following for 2021: Any member who paid their dues for 2020 are paid up for 2021 and do not have to repay. If you did not pay your dues in 2020, you will need to pay for 2021. 2020 was pretty much a bust so let's hope that we can have a much better 2021.... See you all soon!

## The Prez Sez by Jim Long



You can't say I didn't warn you, but I distinctly recall that I did....several times in fact. And now it has come to pass. With the stunning election of Joe Biden, it didn't take long. On his first day in Office, he issued some 17 Presidential Executive Orders in an attempt to undo what ever Pres. Trump had done. Now, that in itself is not really any big deal as most incoming Presidents in the past have done so and many more in the future will probably do so. And so far in his first week in Office, he has issued no less than 37 Executive Orders. But here is where it is going to start getting interesting.

As I have reported in the past, the mining community has been trying to overcome the massive and complex regulations affecting mining that the liberals have enacted steadily over the last decade or so. AMRA, PLP, the folks at the ICMJ and others have been working tirelessly to cut those regulations back to allow for small-scale mining being able to eke out a living, or to at least just enjoy some panning and sluicing, as it were. Pres. Trump was strong on America first and immediately went to work hammering China who has managed to secure a tremendous amount of our necessary minerals and metals for technology and manufacturing, to include gold and silver and other rare earth minerals. And he definitely impacted China's ability to put a stranglehold on our resources. He was steadily removing the over regulation of a number of governmental agencies such as the BLM and the US Forest Service and US Wildlife Service, all agencies under the control of the Department of the Interior, who had been steadily removing our public land access away from the people.

But with the few strokes of a pen, Pres. Biden has undone some of success that had been achieved. And with the selection of **Deb Haaland**, the current State Attorney General for New Mexico, to head up the Department of Interior in his Administration, he is sending a clear message. Haaland is a Native American and a member of the Pueblo Laguna tribe of Arizona. She is highly educated and has a strong reputation of being a strong environmentalist. She publicly stated that, "A voice like mine has never been a Cabinet secretary or at the head of the Department of Interior. I will be very fierce for all of us, our planet, and all of our protected land." Though her selection to this post is fairly extraordinary, it may not bode well for those of us in the mining community. She is one of those who is strongly convinced that miners and mining only pollute the environment. Biden has also named **Michael S. Regan** to become the first Black man to head the Environmental Protection Agency. Regan hails from North Carolina where he served as that state's environmental regulator. He has indicated in his dealings with coal entities in North Carolina, that he is willing to work with and even compromise in order to work together to do the 'right thing'. These nominees were made in part as a concession to the democratic progressives, but they will play a key role in his promises to combat climate change, embrace green energy and address environmental 'racism'. (Yup, that is what he said all right...!)



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This much I know to be true...in the past decade or more, these aforementioned governmental agencies have slowly and steadily created a bureaucracy designed and intended to create as many blocks and hurdles as they could get away with and deliberately intending, often maliciously, to prevent access of public lands to miners and mining in general. I strongly suspect that all the inroads made in the last four years will shortly go up in smoke. Though I firmly support taking care of the environment and doing the 'right thing', I think my definition and theirs differs considerably. I have never been one to mince too many words when I think I am right or on the right side. I truly don't know how things are going to work out but I do fear the worst. I would love to be wrong. But I don't think so.

I haven't yet heard from the folks at PLP and AMRA concerning their battles on behalf of the mining community but I do expect to be hearing from them in the very near future. Much will depend on what this administration and its picks, if and when confirmed, establish as their policies, procedures and practices. Sometimes you just have to let the storm blow awhile before you can tell how fierce the teeth of the wind may be, or how cold or warm it may be, and what destructive forces may or may not be in play. Sort of a waiting game if you will. It is going to be interesting for sure and only time will tell. And I will, of course, keep you up to date on the important matters as they surface and as best I can.

Anyway.... that is the view from here and I wish you all Good Luck in your endeavors, no matter what they may be! And until we meet again, keep your sunny sides up and may the bottoms of your pans turn bright with that treasured 'Yaller Gold'!

You may contact me at 303-452-6087 or at [jnslong945@msn.com](mailto:jnslong945@msn.com). Happy and safe prospecting to all.!!!

## The V.P. Corner by "Joe Fortunato



Hello again, fellow prospectors. It's time for another V.P. Corner article. A month has passed since I managed to get out to do some detecting, and I haven't done any panning or sluicing for longer than I care to admit. I have been slacking at my shop for weeks, and that has caused me to miss several prospecting and detecting opportunities. I don't have anybody to blame but myself, if I would have buckled down and done the work, then I wouldn't have missed out on some outdoor fun. I think the winter months combined with this covid-19 thing, have caused me to be less motivated than I usually

am. One thing that has helped my attitude is that the daytime hours are getting noticeably longer. That equates to more time for prospecting and detecting, along with warmer temperatures. I received an interesting Facebook message a couple of months ago. It was from four people (two gals and two guys) in California, that I met while detecting for gold in Alaska years ago. One of the gals had spotted a picture that I had posted of the gold I found in Nevada last October. Her name is Toni and she is a good detectorist. She asked if I knew of any place in California or Arizona that offered metal detecting for gold nuggets (for a fee) these days. I have never heard of any such operations in the lower (48) states, and let her know in a return message. I didn't hear anything more from her, and figured that was likely the last I would hear from her. A few weeks later, I received another message from Toni. She said that the four of them were interested in taking a gold detecting vacation to Nevada, but had no firsthand knowledge of the area. Then she said that they would be happy to pay me to show them around the area and share any techniques or tips that I had learned.

I was really surprised (and somewhat flattered) by their request, and I feel awkward telling this story right now. I graciously thanked them for their offer and referred them to one of my friends that now lives in the Reno, Nevada area, and he does guided trips and detector training for a fee. I have owned and operated a small business for more than (42) years, it's a machine shop. If I owned a prospecting or metal detector business, it would be different. I just can't take money for showing someone how to pan gold, set-up a sluice box, or operate a metal detector. I am no expert, but I have learned from some people that have this prospecting and metal detecting thing down pretty good. I have been learning, listening, and doing this stuff for nearly (18) years. I am happy to share anything that I have learned with anyone who is interested enough to ask. Well, I guess that is about all I have for this month. Until next time..... MAY ALL YOUR ADVENTURES BE GOLDEN!!!!!! Questions or comments..... call or text me..... 303-263-7204 Joe Fortunato

## From the Treasurer/Secretary Ledger by Joe Kafka



The Coronavirus has disrupted everything so whenever we are able to reconvene, the next Meeting will feature a nine (9) nugget giveaway, which will include a 2.4 gram nugget. We hope to have a new "Special Nugget" by then as well. Be sure and bring extra cash for the nugget giveaways. We will hopefully present the February 2020 winner of the special nugget their beautiful prize. The Club remains in the black and



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members may request to see the financial report at any time which I have at my desk in the back whenever we finally get to reconvene. Hope to see you all there at the next meeting.!!

## Board Meeting Minutes From Jan 2020

James Long	Joe Shubert	Joe Fortunato	John Johnson
Mike Stevens	Joe Johnston	Chris Kafka	Brandon Luchtenburg
Joe Kafka	Bobby Manning	Andy Doll	Gary Hawley

THERE WAS NO BOARD MEETING FOR Nov DUE TO THE CORONAVIRUS PANDEMIC.  
HOPE TO SEE YOU NEXT MONTH.

### QUESTION OF THE MONTH FOR THE NEXT TIME WHENEVER WE MEET?

Subtract the # of electrons in an atom of gold from its atomic weight and that number is the answer to this month's question.

#### 2020 GPR Board of Directors Members

##### President

James 'JJ' Long

##### Vice President

Joe Fortunato

##### Secretary/Treasurer

Joe Kafka

##### 2 Year Board Members

Joe Johnston (2017)

Joe Shubert (2018)

##### 1 Year Board Members

Andy Doll

Brandon Luchtenburg

John Johnson II

Bobby Manning

Chris Kafka

Mike Stevens

##### Past President

Gary Hawley

## General Meeting Minutes From Jan 2020

1. DUE TO THE CORONAVIRUS PANDEMIC, THERE WAS NO Dec MEETING.
2. Since it is highly unlikely that we will be meeting anytime in 2020, Club Elections will be postponed until we do meet again. There will be several openings on the Board. If you are interested in running for one of the Offices, please contact President Long at 303-907-3540 or [jnslong945@msn.com](mailto:jnslong945@msn.com) and let him know of your interest. You can nominate yourself.
3. Positions that will be available are President, Vice President, and three Board positions; two one year positions and one two year position.. Each of these positions are quickly and easily trainable!!!

## A Miner's Laugh

A little old silver haired lady phoned her neighbor, who happened to be an old retired miner, and asked him to come over to give her a hand. She said she had a killer jig saw puzzle that she just couldn't figure out how to start. He asked her what it was supposed to be and she told him that according to the picture on the box, it was supposed to be a rooster. Thinking it a little odd, he agreed and went over to visit. She let him in and showed him where she had the puzzle parts all laid out on the kitchen table. He studied the pieces for several minutes, then turned and picked up the puzzle box and stared at it for a few more moments. He then slowly turned to the little old gal and softly said, "First of all, no matter what we do, we are not going to be able to assemble all those pieces into anything remotely resembling a rooster." He then took her hand and said, "Secondly, I want you to just relax. Let's have a nice cup of coffee together, and then," he said with a deep sigh, "Let's put all the Corn Flakes back in the box!!!"





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

### **The finds of the Month 2021:**

Since we have been unable to meet since March 2020 and are unlikely to meet again this year, we will restart this event whenever we can get another meeting. So hang onto whatever you have until that day comes and we will start anew.

### **Tom's Baby**

There has been tons of gold found in Colorado over the years, but it isn't particularly well-known for producing large gold nuggets. Most of the gold-bearing creeks and rivers have fine placer gold, with some bigger flakes and occasional small nugget. They may be few and far between, but there have been some huge gold nuggets found in Colorado. The largest piece ever unearthed comes from the Gold Flake Mine in Summit County, Colorado. The mine is located in French Gulch near the famous mining town of Breckenridge.

It was found in 1887 by two men named Tom Groves and Harry Lytton, and it was named "Tom's Baby". It weighs an exceptional 156 troy ounces! This wasn't the only large nugget to come from the rich vein that the men were working; in fact it was said that they extracted over 240 ounces from that same pocket! Tom's Baby isn't a waterworn placer nugget like most nuggets you may have seen. It was actually removed from a hard rock pocket, and has a crystalline texture.

The nugget was donated to the Denver Museum of Nature and Science, and is the centerpiece of the mineral collection on display there. Aside from Tom's Baby, there really haven't been a whole lot of exceptionally large nuggets known to have been mined in Colorado. Since the state is primarily comprised of lode mining districts, most of the gold in the state is not in nugget form. That isn't to say that there are no large gold nuggets left to find in the state. On the contrary, some of the areas that have historically produced some good nuggets will still have potential for more. Some of the nicest crystalline gold specimens in the world come from Colorado. Not necessarily large in size, but they are exceptionally intricate, and command a very high value to rare mineral collectors. Many of them have sold for 100x more than the spot value of the metal itself!



### **Henry Gordier's Cache of Gold**

Henry Gordier was a Frenchman who joined the rush of prospectors to the California gold fields in the 1850s. Gordier was one of the lucky ones who staked a claim and managed to extract a sizable fortune in gold. The Frenchman had no intention of remaining in the mines all of his life and in 1857 he purchased a large plot of land in Honey Lake valley, intent on becoming a rancher. A herd of cattle was soon purchased to graze on his land and he built a ranch house, barns, and the necessities of a working ranch.

Gordier was highly regarded by most of his neighbors with the exception of three living in a nearby cabin situated on Lassen creek. Two of these men were suspected of various nefarious activities and a fourth soon joined them, claiming an interest in acquiring some of Gordier's herd. This man, William Thorrington, visited the area in the spring of 1858. A known gambler and card sharp, Thorrington did not approach Gordier about buying his cattle, instead the two men who had originally occupied the cabin, Asa Snow and John Mullen, approached him about a possible purchase.

Gordier declined to sell any of his stock, and in March, Asa Snow moved into Gordier's home, informing the other neighbors in the area that Henry had returned to France. Later that spring the citizens of the area grew suspicious of the activities of Snow, Mullen, and a third man hiding out with them, Bill Edwards. When Gordier's body was found stuffed in a bag and sunk into the Susan River, Snow was arrested and hanged after a quick trial. Eventually the accomplices, including Thorrington, were tracked down and hanged, except for Mullen, who vanished.

Locals were aware of the source of Gordier's wealth, and that he had brought a large amount of gold with him in the form of nuggets. It wasn't long after the events of 1858 that those neighbors were exploring the late Frenchman's property



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looking for the gold. For many years nothing was found, or at any rate nobody claimed to have found any gold, until 1877, when several nuggets of varying size turned up near where Gordier's long vanished cabin had once stood.

Nothing else has turned up since, though Gordier was known to have about \$40,000 worth of gold with him on the property (a little over \$1.1 million today). Other than the few nuggets, which turned up in the dust in 1877, none of his fortune has been claimed to have been found. It is likely still buried on the property today, though knowledge of the exact location seems to have died with Gordier. It is one of many buried caches of considerable wealth in the west, waiting patiently to create a fortune for some lucky explorer.

*"Honey Valley, California Treasure", by Kathy Weiser, Legends of America, May, 2017*

## **11 Workers are Rescued from China Gold Mine**

**Beijing** - Eleven workers trapped for two weeks inside a Chinese gold mine were brought safely to the surface on Sunday, Jan. 24, a landmark achievement for an industry long blighted by disasters and high death tolls. State Broadcaster CCTV showed workers being handed up one by one in baskets on Sunday afternoon, their eyes shielded to protect them from the sun after so many days in utter darkness. Some brought their hands together in gratitude and many appeared almost too weak to stand. They were quickly covered in coats amid freezing temperatures and loaded into ambulances. Rescue workers and officials stood at attention and applauded as the workers were brought up from the mine in Qixia, in the eastern province of Shandong. One worker was reported to have died from a head wound following the explosion that deposited massive amounts of rubble in the shaft on Jan. 10 while the mine was still under construction. The cause of the accident is under investigation. The explosion was large enough to release 70 tons of debris that trapped the workers who were working some 1000 feet underground. The next day, on Jan. 25, another 9 miners who had died in the explosion were found and recovered.

## **EPA Plans to Drill into Collapsed Mine Entrance near Silverton**

**Durango** - The US Environmental Protection Agency plans to drill this summer into the collapsed entrance of a mine in Colorado that is at risk of a blowout. Erosion at the Bandora Mine, which has not been used for decades, has caused dirt and rock to pile over it, the Durango Herald reported on Thursday, Jan. 14. An unknown amount of water is backed up in the mine's entrance and runs the risk of rupturing. "It could be a real mess," said Bill Simon, co-founder of the now defunct Animas River Stakeholders Group. "There could be serious injury." While the EPA said there is no indication the mine will rupture soon, the risk to the surrounding community and the thousands of campers that visit the South Mineral Creek area in summer makes the initiative necessary. The Bandora Mine produced gold and silver on and off from 1890 to 1940 and is about 9 miles west of Silverton. The EPA, in 2015, drilled too far into a loose pile of dirt and rocks that covered the entrance of the Gold King Mine, which caused a blowout that released 3 million gallons of water laced with heavy metals into the Animas River. - The Associated Press

*(Now where have I heard all this before..? The EPA said they could handle the Gold King and proved they couldn't. Now they want to try the BanDora...? If I lived downstream of the Bandora, I would be moving to high ground pronto. If history has taught us anything, when the government tells us not to worry, you had better by damn start worrying.!!! Leave the mining and the reclamation of mining to the professionals to do the job right. And that would be the miners who have time and time again tried to convince the government that we can get the job done and do it right.....!! Pres. JJ)*

## **Bureau of Land Management LR2000 System is no More**

The BLM's LR2000 software system has been used by thousands of miners across the country and even the world, to assist in the research of mining claims. But as of this moment, it is no more, thanks to a 'Cozy Bear'. This time, the dang Russians really did do it for a fact..! According to the federal Cybersecurity and Infrastructure Security Agency (CISA), they issued an emergency directive in December ordering all federal agencies that utilized computer programs and products provided by a company called "Solar Winds" and their network software called "Orion", to immediately shut down those networks. The BLM's LR2000 system is just one of the federal government's networks that used the Orion software. According to the folks at fedscoop.com, "Solar Winds" has been supplying the agencies for a long time, first developing tools to help them understand how their servers were doing, and then branching out to other networks and infrastructure monitoring. At least 32 federal agencies have been using this software that was first purchased in 2006.



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Unfortunately, miners wishing to research mining claim status became handicapped by the forced shutdown of the LR2000 system last month. The *Washington Post* was the first to report that a Russian hacking group identified as APT29, or “Cozy Bear”, used the Orion software updates from March through June 2020 to introduce malware into governmental networks. Miners now have a new system that they will need to learn how to use. It is called the “Mineral and Land Records System”, or MLRS, and I received word this week that it is up and running as of Jan 25, 2021. It is hoped that this new MLRS will be a little easier to navigate through by the less computer savvy mining community than the LR2000 proved for some to be. You can access the new system for yourself and check its status at <https://www.blm.gov/services/land-records/mlrs>. This resource has been especially valuable to the mining community and especially so to those trying to figure out how and where to file mining claims or to determine if an old claim may still be available or not and who owns them. Of course, you still need to coordinate between the MLRS and the County Assessor’s Office wherever your research leads you.

## **Birdwatcher Discovers \$1million worth of ancient Celtec gold coins:** By Hannah Sparks

Christmas came early in September for one British birder who stumbled upon a million dollar cache of ancient Celtic gold coins while tracking a ‘dogfight’ in the English countryside. The gold medallions, almost mistaken for an old machinery part, date back over 2000 years to the age when the fierce Celtic queen Boudicca was at war with Rome, according to appraisers who estimated the prize to be worth &845,000 pounds, or \$1,144,000 dollars. It is a life changing sum for the lucky finder, reportedly in his 50’s, who has chosen to remain anonymous in recent interviews. “That evening, I was doing a bit of bird watching,” he said. “After watching a dogfight between a buzzard and a pair of magpies, I stared down and spotted something lying in a bit of the deep ploughed soil which ran around the edge of the field.” He nearly walked on, thinking the metal chip was no more than an old washer. But he picked it up and rubbed it and felt its thickness. “That is when I saw the gleam of gold and realized that it was a beautiful Celtic gold stater, which made me sit down in utter shock,” he said. “I then spotted the second coin some two feet away and rushed back home to get my metal detector.” It gave him a really strong signal that more was just beneath the surface. After about 18 inches of digging, he unearthed a copper bangle, likely the handle of a pitcher. He then gently lifted the vessel and out came a cascade of coins of gold, “A vision that will remain with me for the rest of my life,” he recalled. “I had to just sit down and get my breath back.

I had only come out for a short walk and found a Celtic hoard.” As if written for a film, a nearby dog walker passed the man and yelled out jokingly, “You found any gold yet?” “Ha, if only you knew,” he thought. The man prayed that the two plastic shopping bags he had brought with him and stuffed with 1300 gold coins, each worth up to \$880 dollars apiece, would hold up on the walk home without tearing open. He then notified the local coroner’s office, which oversees protocol in accordance with the UK’s Treasure Act of 1996, including the decision of who gets to keep the coinage, the finder, the landowner or a local museum. The editor of *Treasure Hunting*, Julian Evans-Hart said in a statement, “The coins come from a substantial if not enormous contribution to our academic numismatic knowledge and will undoubtedly be subject to much assessment over the coming year. It is possible that they may have formed a ‘war chest’ for Queen Boudicca’s eastern campaigns. The previous record was 850 coins and that was the Wickham Market Hoard found in 2008. At this stage it seems highly likely that the discovery might well knock that one off the first spot.”

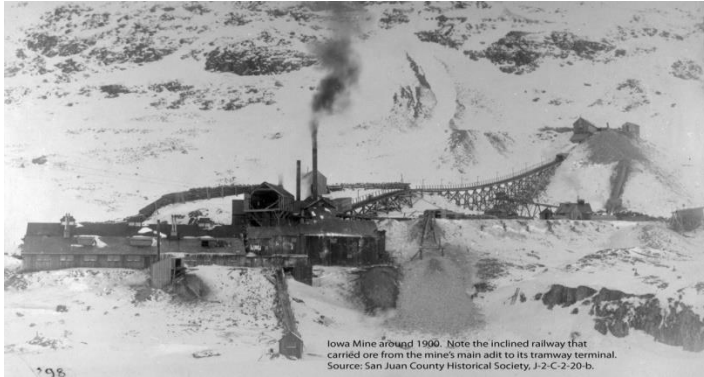
## **The Silver Basin:** A Colorado Chronicle (Part 3 cont.)

Edward Stoiber built a third boarding house at the Silver Lake, five stories high including the basement, which saw completion in 1897. At that time the mine employed about 300 workers, many of them immigrants from Austria, Italy, and Finland. The newest structure featured the same luxurious amenities as its predecessors and, in addition, a ventilation system, barbershop, laundry room, library, and reading room, as well as bathrooms and spacious “sleeping apartments” that accommodated no more than four men each. The dining room could seat 250 at a time. Stoiber piped in fresh water and collected and burned kitchen trash in a dedicated furnace. Dishwashing machines, drying tables, and two brick ovens ventilated by chimneys adorned the cooking area. The *Silverton Standard* proclaimed it “the best boarding house in the state, if not in the United States.” Unlike the other mine owners in the basin, Edward Stoiber was concerned enough with the lake’s water quality to install a primitive sewer system, virtually unknown on the mining frontier, for his boarding houses at the Silver Lake. Mill tailings covered the septic tanks. By the end of 1897, the Stoiber brothers had transformed



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Silver Lake Basin into an industrial landscape. Their three mines, from which an octopus of roads radiated outward, took on the appearance of massive factories, creating noise audible within all the surrounding basins. San Juan County's well-capitalized mining companies, such as the Silver Lake, had utilized electric hoists for raising cages between the various levels within the vertical shafts as early as 1895. Ever the progressive, since his mine already had an electrical infrastructure, Edward Stoiber decided to experiment with innovative electric-model drills. By January 1899, miners at the Silver Lake were successfully using these tools in its stopes, drawing the attention of industry experts, although the



Iowa Mine around 1900. Note the inclined railway that carried ore from the mine's main adit to its tramway terminal. Source: San Juan County Historical Society, J-2-C-2-20-b.

machines, while portable and convenient, were somewhat too lightly constructed for the work required of them. In 1898 Edward commissioned Frey to build a 6,200-foot tramway extension from where the first segment ended at a temporary station just above the Iowa mill, to a massive, newly constructed ore-storage terminal on the south side of the Animas River, west of the mouth of Arrastra Gulch. The project increased the line's capacity from five to thirty tons per hour. This terminal served as a base station for the Silver Lake Mine and included an assay shop and freight yard. The second tram section enabled Stoiber to haul concentrates from his mine on the lake all the way down to a branch of the Silverton Railroad that Otto Mears

constructed especially for him. The two tramway segments together totaled almost 15,000 feet, making it one of the longest systems in the state. Despite the successful operation of his elongated tramway, Edward Stoiber's mill on the lake proved uneconomical. As a result, in 1900 he built a second one at the site of his storage terminal and abandoned the original. The new mill building alone covered two acres and descended from ore-holding bins on flat ground at the top. The product, in various stages of crushing and concentration, proceeded via gravity down a series of ten stair-step terraces to the valley floor. The structure was able to treat 1,000 tons of payrock every twenty-four hours, more than many mines generated in a month. Because of Edward Stoiber's advanced, enlightened concepts of mining, milling, and improving employee worker conditions, his Silver Lake became a model that similar companies across the West imitated by the late 1890s. He created a legacy by which his astute contemporaries could learn and profit. Meanwhile, by 1898 miners at the Iowa had driven around 8,000 feet of underground workings on its four levels. The owners acquired the Black Diamond and other claims and initiated further underground development at their second property, the Royal Tiger. That year they built a tramway segment across the lake that allowed miners at the Royal Tiger, which had no mill, to send its product into the Iowa terminal, where workers coupled the buckets onto the main line. The mobile receptacles then coasted down to the Iowa Mill, where men emptied them and sent them back up to the Royal Tiger and Iowa for filling. In addition, the following year the Iowa partners added another section to their main tramway line. The lengthened system, known as the Iowa-Tiger, extended its reach from the Iowa mill to the company's own ore-storage and - loading terminal located on the Animas River, where Mears constructed a second spur to furnish direct service on his Silverton Railroad. By 1900 the Royal Tiger was producing a greater volume than the Iowa. During this period, Edward and Gustavus together drove the Unity Tunnel, actually an adit, likely named to reflect their fraternal cooperation. Via this ambitious project, the brothers penetrated 3,000 feet of solid rock to undercut the vein systems of both the Silver Lake and Iowa Mines. Their goal was to provide a platform for miners to stope the veins 700 feet upward to the existing operations and to also serve as a central artery through which workers could haul the deep ore out. Although they began boring in 1895, the Stoibers did not complete the connection with the deepest workings in the Silver Lake Mine until 1901. To service the adit, the brothers built another surface plant that included many of the same components found at the two mines. Then in 1900 they linked the portal with the main line by tramway. In 1899 an unnamed partnership leased the Buckeye Mine, the fourth player in Silver Lake Basin, idle since Mears quit his contract ten years earlier. The investors rehabilitated the critical excavations and began production, mainly of lead ore, and activity lasted several years. This venture marked the last known occupation of the site, which lacked a mill. However, individuals or small companies could have worked it for some time after that. In early 1901, after completing the Unity Tunnel, Edward Stoiber sold his Silver Lake mining properties to the Guggenheim family's exploration company for \$2,350,077 (about \$67,708,000 in 2015). He stipulated the corporation would retain him as consultant until the new mill was finished and treating ore successfully, which proved true that May. Then he and Lena retired to Denver and traveled Europe.

(Part 4 next month)



## **There's too much gold in the universe. No one knows where it came from.** By

Rafi Letzter

Something is showering gold across the universe. But no one knows what it is.

Here's the problem: Gold is an element, which means you can't make it through ordinary chemical reactions — though alchemists tried for centuries. To make the sparkly metal, you have to bind 79 protons and 118 neutrons together to form a single atomic nucleus. That's an intense nuclear fusion reaction. But such intense fusion doesn't happen frequently enough, at least not nearby, to make the giant trove of gold we find on Earth and elsewhere in the solar system. And a new study has found the most commonly-theorized origin of gold — collisions between neutron stars — can't explain gold's abundance either. So where's the gold coming from? There are some other possibilities, including supernovas so intense they turn a star inside out. Unfortunately, even such strange phenomena can't explain how blinged out the local universe is, the new study finds.

Neutron star collisions build gold by briefly smashing protons and neutrons together into atomic nuclei, then spewing those newly-bound heavy nuclei across space. Regular supernovas can't explain the universe's gold because stars massive enough to fuse gold before they die -- which are rare -- become black holes when they explode, said Chiaki Kobayashi, an astrophysicist at the University of Hertfordshire in the United Kingdom and lead author of the new study. And, in a regular supernova, that gold gets sucked into the black hole.

So what about those odder, star-flipping supernovas? This type of star explosion, a so-called magneto-rotational supernova, is "a very rare supernova, spinning very fast," Kobayashi told Live Science.

During a magneto-rotational supernova, a dying star spins so fast and is wracked by such strong magnetic fields that it turns itself inside out as it explodes. As it dies, the star shoots white-hot jets of matter into space. And because the star has been turned inside out, its jets are chock full of gold nuclei. Stars that fuse gold at all are rare. Stars that fuse gold then spew it into space like this are even rarer.

But even neutron stars plus magneto-rotational supernovas together can't explain Earth's bonanza of gold, Kobayashi and her colleagues found.

"There's two stages to this question," she said. "Number one is: neutron star mergers are not enough. Number two: Even with the second source, we still can't explain the observed amount of gold."

Past studies were right that neutron star collisions release a shower of gold, she said. But those studies didn't account for the rarity of those collisions. It's hard to precisely estimate how often tiny neutron stars — themselves the ultra-dense remnants of ancient supernovas — slam together. But it's certainly not very common: Scientists have seen it happen only once. Even rough estimates show they don't collide nearly often enough to have produced all the gold found in the solar system, Kobayashi and her co-authors found.

"This paper is not the first to suggest that neutron star collisions are insufficient to explain the abundance of gold," said Ian Roederer, an astrophysicist at the University of Michigan, who hunts traces of rare elements in distant stars.

But Kobayashi and her colleagues' new paper, published Sept. 15 in *The Astrophysical Journal*, has one big advantage: It's extremely thorough, Roederer said. The researchers poured over a mountain of data and plugged it into robust models of how the galaxy evolves and produces new chemicals.

"The paper contains references to 341 other publications, which is about three times as many references as typical papers in *The Astrophysical Journal* these days," Roederer told Live Science.

Pulling all that data together in a useful way, he said, amounts to a "Herculean effort."

Using this approach, the authors were able to explain the formation of atoms as light as carbon-12 (six protons and six neutrons) and as heavy as uranium-238 (92 protons and 146 neutrons). That's an impressive range, Roederer said, covering elements that are usually ignored in these types of studies.

Mostly, the math worked out.

Neutron star collisions, for example, produced strontium in their model. That matches observations of strontium in space after the one neutron star collision scientists have directly observed.

Magneto-rotational supernovas did explain the presence of europium in their model, another atom that has proved tricky to explain in the past.

But gold remains an enigma.





### Gold Prospectors of the Rockies Page 9

Something out there that scientists don't know about must be making gold, Kobayashi said. Or it's possible neutron star collisions make way more gold than existing models suggest. In either case, astrophysicists still have a lot of work to do before they can explain where all that fancy bling came from.

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**Contact the GPR President**

*(Layout Design Subject To Additional Cost)*



**Coming Announcements and Special Events for Mar 2021**

(**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	13
14 Day Light Time Starts	15	16	17 St Patrick's Day GPR Club Meeting??	18	19	20
21	22	23	24	25	26	27
28 Palm Sunday Passover	29 National Vietnam War Veterans Day	30	31			