


September 2017



MONTANA GEOLOGICAL SOCIETY NEWSLETTER

Vol. 61 No. 12



Inside this Issue:



P2 / PRESIDENT'S LETTER

Our President discusses
geologic time and its
effects on perspective.



P5 / MINING & MINERALS

Read the details for the
2017 Mining & Mineral
Symposium to be held
in Butte.



P8 / ELECTIONS

The MGS will be
holding the annual
officer election very
soon -- don't miss out!



P8 / MGMG

Sign up for one or both
field trips hosted by
the MBMG coming up
in mid-October.



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President's Letter

Dear Membership,

It's nice to see the mountains again now that the smoke has cleared with the recent rain and snow. For me it meant going from choking on the thick smoke in Butte on Wednesday to shivering in the wet rain snow-rain mix on Thursday and Friday. All the doomsday fire predictions and assessments ended in a matter of hours. All the rhetoric of who's to blame for the fires, what could have been done, and all the millions spent will soon be a thing of the past. We race around in panic as the natural system is disturbed like ants on an anthill someone has kicked. Perhaps we would find more comfort, and see the world more realistically if we would just think geologically. Fires, storms, earthquakes, and man's activities merely scratch the surface, and in geologic time are insignificant.



In that mindset, the interaction between fires and geology may be more mutualistic than destructive. A local example started September 5th 1996 when the East Rosebud fire quickly raced down the canyon to Roscoe. In many eyes, all was “destroyed” as the forests burned. I was fortunate to lead several field trips to the area after the fire. The first earth science trip was only a few weeks after it burned. It was fascinating to see how the fire had changed the rocks. There had been intense heat where the fuel was thick causing flaking and cracking of boulders on the talus slopes. The sharp angular corners of large boulders heated and cooled quickly leaving large flakes draping off rounded boulders. The fire rounded the granitic rocks in hours producing weathering that would have taken normal seasonal changes and precipitation many years. The students could see how the processes of weathering and soil formation normally so slow to notice. Piles of Lodgepole pine seeds had already fallen from the charred cones that need fire to open, and were in place for spring germination.

The following year I led a biology trip the canyon to see how the plant life had recovered from the fire. The most interesting thing we found were several large landslide deposits sourced by the north lateral moraine and now a part of a large fan deposit. The slides occurred after a significant precipitation event the week before our trip. The amount of material that moved was impressive. There were

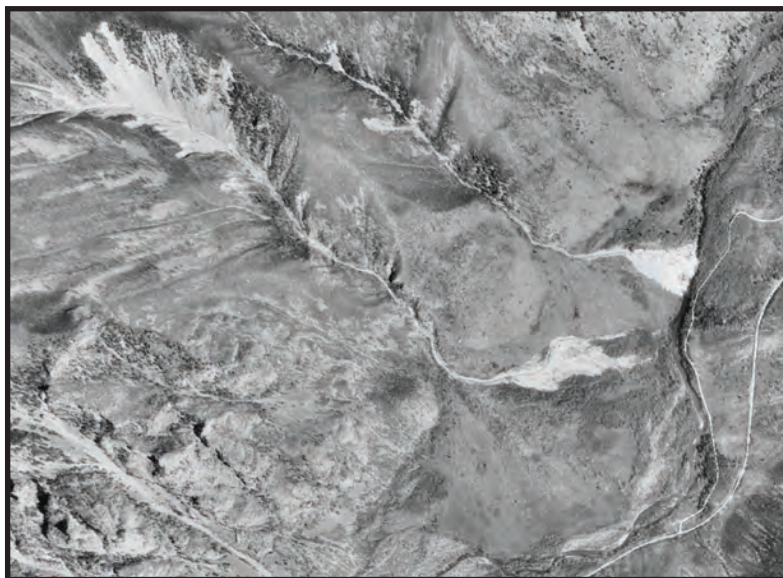
cont. on page 3

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large logs in the deposit, stripped of branches and peeled as if they were carrots. The south deposit covered more than 12 acres and was up to 10 feet deep. One of the two slides dammed up the creek as can be seen in the Google Earth Image from 1998. The fire had created conditions necessary for rapid geologic change and the extension of an alluvial fan. This observation led us to speculate that the 100 acre fan deposit down gradient of this small canyon may be a product fire and mass movements more so than normal stream erosion. In that case, the fan may be a record past fires and landslides. The lack of material sorting in the fan, and zones of different plant communities provided some supporting evidence for this idea.

Twenty years later, much of the geologic features are once again hidden under a thick veil pine and aspen trees. The “destroyed” valley is vibrant with life and the landslides are partially vegetated. The human ants crawling on the pile are still racing around and building their nests in the forest. How many more years before a fire races down the canyon again, resetting the plant succession, and scratching at the geology. The forest managers at that time will likely be blamed as the valley is once again “destroyed”, but the geology will remain with only subtle changes. So if you are feeling stressed about the current conditions of the world, think geologically, realize that it won’t matter in geologic time, and as the song goes “don’t worry, be happy.”



Kevin Chandler
MGS President

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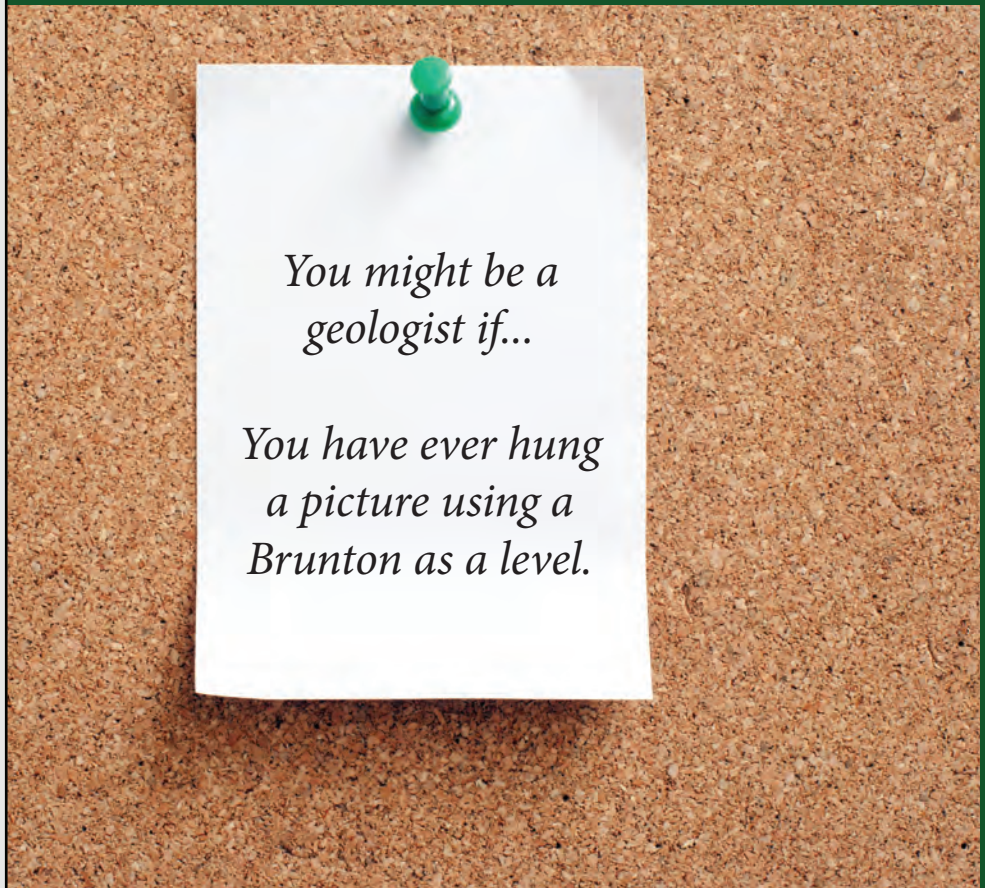
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OCTOBER 11-14, 2017 2017 MINING AND MINERAL SYMPOSIUM

BUTTE, MONTANA

FOR MORE INFORMATION, SEE OUR WEBSITE:
WWW.MBMG.MTECH.EDU



TALK MINERALS IN BUTTE, MONTANA: THE RICHEST HILL ON EARTH

The 2017 Montana Bureau of Mines and Geology Mining and Mineral Symposium will provide a forum where professionals, students, and amateurs interested in mineralogy and economic geology can share knowledge about mineral occurrences in the northern Rocky Mountain Region.

The MBMG will formally publish the Symposium Proceedings. If you are interested in submitting an abstract or paper, please contact:

Stanley Korzeb
Economic Geologist
406-496-4171
skorzeb@mtech.edu

Kaleb Scarberry
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Visit page 6 for a list of abstracts

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MBMG MINING AND MINERAL SYMPOSIUM

October 11-14, 2017

Butte, MT

FIELD TRIPS

History and geology of the Silver Star Mining District, MT Jenna Kaplan, Chris Gammons, Stan Korzeb

History and geology of the Highlands Mining District, MT Kaleb Scarberry, Stan Korzeb, Tony Roth; Montana Bureau of Mines and Geology, Butte, MT, Dave Stratton, Water Environmental Technologies, Butte MT

LECTURES

In the field with the Hard Rock Mining Bureau: An update on mining in Montana Garrett Smith, Montana Department of Environmental Quality, Helena MT

New concepts in understanding Montana sapphire genesis Dick Berg, Montana Bureau of Mines and Geology, Butte, MT

Geology and mineralogy of the eastern margin of the Butte Pluton, Montana Richard Gibson, Geologist, Butte, MT

New mineralogy, fluid inclusion, and S-isotope data for the Heddleston porphyry Cu-Mo deposit, Montana Chris Gammons and Benjamin Schubert, Montana Tech, Butte, MT

Pipestone Ringing Rocks: A modern gas diapir? John Gabelman, Geologist, Butte, MT

Eocene ignimbrite flare-up in Montana: Timing and style of emplacement of the Lowland Creek volcanic field Kaleb Scarberry, Montana Bureau of Mines and Geology, Butte, MT

The geology and development of the Black Butte Copper project, Montana Jerry Zieg, Tintina Montana, Inc., White Sulfur Springs, MT

Petrology and mineralogy of the Mount Rosa Complex, Colorado Philip Persson, Colorado School of Mines, Fort Collins, CO

Using your smartphone for field work Jesse Mosolf, Montana Bureau of Mines and Geology, Butte, MT

Regional tectonic model and discovery methods of the mineralization at the Clementine Prospect in the Northern Pioneer Mountains of southwest Montana George Brimhall, Clementine Exploration, Wise River, MT

Experiments on the hydrothermal solubility of gold and iron and the origin of iron-oxide-copper-gold (IOCG) deposits Chris Gammons, Montana Tech, Butte, MT

Exploration at the Madison gold Au-Cu-Ag skarn Jenna Kaplan, Broadway Gold Mining, Silver Star, MT

Supergene minerals from the Mayflower mine, Madison County Montana Richard Gibson, Butte, MT

Copperopolis, Copper City, and Copper Cliff - Microminerals from three of Montana's obscure copper deposits Mike Goble, U.S. Bureau of Reclamation, Denver, CO

Structural controls on gold and antimony mineralization in the Yellow Pine deposit, Stibnite Gold Project, Idaho Austin Zinnser, Midas Gold, Idaho

MBMG's abandoned and inactive mines inventory and sampling program - 8000 mines and so little time Phyllis Hargrave, Montana Bureau of Mines and Geology

Geology, history, and remediation in the Carpenter-Snow Creek Mining District: Neihart, MT Sara Edinberg, Montana Department of Environmental Quality, Helena MT

Early history of Butte mine flooding John Metesh, Montana Bureau of Mines and Geology

cont. on page 7

POSTERS

Thermochemical arsenite reduction and the origin of hydrothermal arsenide minerals Nick Allin

Identifying environmental tracers using water chemistry and stable isotopes, Moulton road area, Butte, Montana Matt Berzel, Montana Bureau of Mines and Geology, Butte, MT

Mapping alteration halos related to precious metal ore deposits using handheld instruments (pXRF) Phillip Dalhof, Colorado State University, Fort Collins, CO

GeoWrite - A Digital Field Notebook Jonathan, DuPuis, Montana Tech, Butte, MT

Mineralogy and stable isotope geochemistry of the Apex gold deposit near the Golden Sunlight mine, Montana Hamadou Gnanou, Montana Tech, Butte, MT

Mineralogy of mines in the Cobalt Belt, Idaho Francis Grondin, Montana Tech, Butte, MT

New fluid inclusion and stable isotope investigations of the origin of hydrothermal talc and chlorite deposits in southwest Montana Garrett Hill, Montana Tech, Butte, MT

Geochronology of mineralization related to the Boulder Batholith Stan Korzeb, Montana Bureau of Mines and Geology

Geochemical modeling of hydrothermal fluids at Yellowstone Shanna Law, Montana Tech

Montana lamprophyre occurrences Jake McCane, Colorado School of Mines, Fort Collins, CO

SPECIAL EVENTS

MEET AND GREET - Following the field trip, enjoy an informal social hour in the MBMG Mineral Museum.

MAP CHAT AND PIZZA - Sample great beers from the Butte Brewing Company, meet our MBMG geologists, and learn about their current geology and mapping projects. Be sure to bring your mineral samples and try to stump our geologists.

BANQUET/POSTER AWARD - A no host bar followed by the banquet and best poster presentation award.

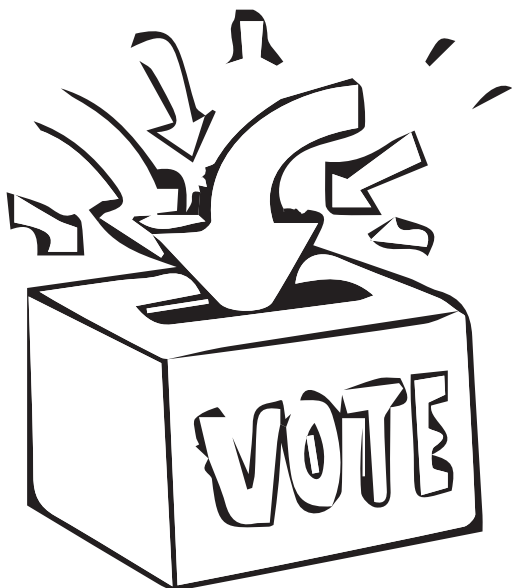
FEES AND REGISTRATION

For more information or to register, please go to (<http://mbmg.mtech.edu/2017symposium-registration.asp>). Follow us on Facebook and LinkedIn, too.

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your ballot, which will be sent
via email.



MBMG MINING AND MINERAL SYMPOSIUM
October 11-14, 2017 Butte, MT

<http://mbmg.mtech.edu/2017symposium.asp>

SCHEDULED FIELD TRIPS

JOIN US!

Wednesday, Oct. 11th

Silver Star Mine Field Trip:



This mine, the third largest in the Silver Star district in Madison County, produced 144,000 ounces of gold from the 1880s to the 1950s. Join Jenna Kaplan, Broadway Gold Mining, and Chris Gammons, Montana Tech, and learn about the geology that created this rich deposit and current drilling, sampling, and geophysics occurring at the mine. Bring your picks and sample bags to collect samples and native copper nuggets.

Saturday, Oct. 14th

Highlands Mining District Field Trip:



Visit the Highlands Mining District south of Butte to the discovery site of the Highland Centennial Gold Nugget. The nugget, weighing 27.5 troy ounces, was found by the Stratton family in 1989 while placer mining.

Dave Stratton, a descendant of the original Stratton family, will discuss the area's colorful history; Nick Tucci, hydrogeologist at Water Environmental Technology, will highlight the unique water system of the area; and MBMG staff will describe the area's geology. Ample time will be available to collect samples. Bring your gold pans, sample bags, and cameras!





Upcoming Meeting on October 5!

Visit billingsgemclub.com or Facebook for more information.

If you'd like to share a geological experience (trip, hike, etc.) or an upcoming event in next month's newsletter, please submit your text & images to montanageologicalsociety@gmail.com.

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