Lake George Gem & Mineral Club





LGGM Club Memberships

The period for club membership applications (January 1 through March 31st) is now closed. Although both members and non-members are welcome to attend the presentations at our monthly club meetings when those meetings resume, only members may attend club field trips.

LGGM Club Meetings & Programs:

Why can't we have our regular meetings?

The officers reviewed the rules and regulations imposed by the Park County Facilities Department and Health Department and reluctantly agree that we cannot hold a reasonable meeting at this time with those conditions.

We would be restricted to no more than 40 persons total, even though our membership is nearly 400. Each person attending would need to be signed in with contact information for possible contact tracing and that list would need to be left available on the counter of the Community Center. We would need to keep all individuals or family groups separated by at least 6 feet. Attendees would need to wear a proper mask (not a bandana) in a proper manner (covering both the nose and mouth). If any specimens were to be shown they would have to be sanitized as they proceeded from one person to another. We would need several people to come early to use sanitizer/disinfectant on the counters, tables, all chair seatbacks, doorknobs, bathrooms and we would need to do the same sanitizing after the meeting.

These rules would be hard to follow and a risk to privacy leaving the list of contacts. It would also make viewing slides or listening to a presentation difficult. I will continue to stay in contact with Park County and hopefully we'll see relief to these rules this summer and we can get back to some educational meetings.

John Rakowski

Upcoming LGGM Club Events

Although programs and presentations at the monthly meetings are cancelled until further notice, our Field Trip Coordinators are developing a full schedule of field trips.

SCHEDULE OF LGGM CLUB EVENTS					
Date(s)	Event Title	Event Summary	Event Leader(s)		
Sa 4/10/21	April Club Meeting	Cancelled			
Sa 4/17/21	Thomas Range, (near	Joint trip with Mile Hi RAMS &	Dave Alexander (303) 641-5567		
Su 4/18/21	Delta, Utah)	Littleton Clubs. Topaz, bixbyite,	Chris Rayburn (303) 503-8637		
M 4/19/21	Field Trip (8-9 hr drive	pseudobrookite, red beryl, garnets,			
	from Lake George)	amethyst			

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Sa 4/24/21	Baculite Mesa	Collect fossils near Pueblo, CO	Laura Canini (719) 964-2763		
	Field Trip		Dave Alexander (303) 641-5567		
M 4/26/21	Arroya Gulch	Collect small blood red garnets in	Linda Watson (719) 651-7604		
	Field Trip 1	Fremont County, CO			
Sa 5/1/21	Learn to Rockhound	Learn to prospect for crystals at	John Rakowski (719) 748-3861		
	(Day 1)	our Club Claims near Wigwam	Dave Alexander (303) 641-5567		
il .		Creek trailhead.			
		Clear & smoky quartz, green &			
I		purple fluorite, amazonite, topaz			
Su 5/2/21	Learn to Rockhound	Learn to prospect for crystals at	John Rakowski (719) 748-3861		
	(Day 2)	our Club Claims near Wigwam	Dave Alexander (303) 641-5567		
		Creek trailhead.			
		Clear & smoky quartz, green &			
Sa 5/8/21	May Meeting	purple fluorite, amazonite, topaz			
Sa 5/8/21	(tentative) Lake	Castle Rock rhyolite presentation by Steve Veatch			
	George Community	by Sieve vealon			
	Center				
Sa 5/15/21	South Park Barite	Blue barite collection from Dave	Steve Kahler (719) 338-0014		
3a 3/13/21	Field Trip	Harvey's claim near Hartsel	Linda Watson (719) 651-7604		
Sa 5/22/21	Arroya Gulch	Collect small blood red garnets in	Linda Watson (719) 651-7604		
Ou 0/22/2 .	Field Trip 2	Fremont County, CO	Linda Watson (710) 001 700 1		
Sa 6/12/21	June Meeting	Program to be determined			
Cu 0/ 12/2 :	(tentative) Lake	1 Togram to be determined			
	George Community				
	Center				
Sa 6/19/21	Smoky Hawk	Date to be confirmed			
il .	(tentative)				
Sa 6/26/21	The Time Assassin	Collect amazonite, smoky quartz,	Taylor Harper (901) 652-6740		
	Claim (Field Trip 1)	fluorite, etc. near Lake George, CO	Steve Kahler (719) 338-0014		
Su 6/27/21	The Time Assassin	Collect amazonite, smoky quartz,	Taylor Harper (901) 652-6740		
	Claim (Field Trip 2)	fluorite, etc. near Lake George, CO	Dave Alexander (303) 641-5567		
Sa 7/10/21	July Meeting				
	(tentative) Lake				
	George Community				
	Center				
Additional Presentations, Classes and Field Trips will be added after they are confirmed.					

COMING EVENTS OUTSIDE THE LGGM CLUB: (Nearby gem, mineral, fossil and geology events that you may enjoy.)

- Cañon City Geology Club https://www.canoncitygeologyclub.com/ April 12, 2021 Meeting location: via Zoom, 6:30 PM- Business Meeting; Program immediately following at approx. 7:00 PM - Program South Canon Trails by Harold Taylor
- Columbine Gem & Mineral https://rockaholics.org/ Meetings 2nd Thursday of every month (April 9) at 6:30pm MT. Locations at Salida or Buena Vista (see flyers or website.)
- Colorado Springs Mineralogical Society http://www.csms1936.com _ .
 - General Assembly 3rd Thursday 7pm,
 Fossil Group 1st Tuesday 7pm

 - Crystal Group and Faceting Group 4th Thursday, 7pm
- Pueblo Rockhounds http://www.pueblorockhounds.org Cancelled until further notice.

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Online Events

- Rocky Mountain Map Society For further information see: http://rmmaps.org/
- Western Interior Paleontological Society (WIPS) See http://westernpaleo.org/ for more info.

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Upcoming Gem & Mineral Shows

May 21-23 Colorado Mineral and Fossil Spring Show

Hours: Friday & Saturday 10AM-6PM Sunday 10AM-5PM

Location: Crowne Plaza DIA Convention Center

15500 E. 40th Ave., Denver 80239 Website: http://www.rmgmpromotions.com/

May Pikes Peak Gem, Mineral & Jewelry Show – Postponed – may occur in October

Aug 12-15 Buena Vista Contin-Tail Rock, Gem & Mineral Show -- Tentative

For more information, check https://bvrockshow.com/.

Location: Buena Vista Rodeo Grounds (1 mile south of Buena Vista, CO)

Sept 10-18 Colorado Mineral and Fossil Denver Fall Show

Location: Crowne Plaza DIA Convention Center 15500 E. 40th Ave., Denver 80239

Sept 10-19 Denver Coliseum Mineral Fossil Gem Show

Location: Denver Coliseum, Denver

Sept 10-19 Denver Mineral, Fossil, Gem & Jewelry Show

Hours: 10 a.m. -6 p.m.

Location: National Western Complex

Sept 16-19 The 2021 Denver Gem & Mineral Show Is A Go!

The Greater Denver Area Gem & Mineral Council is pleased to announce that it will be hosting the 2021 Denver Gem & Mineral Show in conjunction with the Hardrock Summit, to be held at the Colorado Convention Center (located in downtown Denver at 700 14th Street) September 16-19, 2021.

The closing of the Denver Mart necessitated that we find a new venue. Numerous ideas were floated and organizers from a number of shows generously offered us space. The Council and Show Committee decided that the Hardrock Summit was the best fit, allowing the Original Denver Gem & Mineral Show to retain its identity and include some of the defining aspects of our show and organization.

The new high end Evolution show (Sept 16-19) as well AGTA Denver (Sept 18-21) will also fall under the Hardrock Summit umbrella, providing marketing potential that the Denver Gem & Mineral Show cannot offer as a stand-alone show.

The Denver Gem & Mineral Show will occupy the space on the upper, entry level of the Convention Center. The 2021 show will include club tables, speakers, special exhibits, and 40 to 70 dealers. Everything will be scaled back as a result of space limitations; we are nonetheless grateful for the opportunity to be part of the debut year of the Hardrock Summit, which is positioned to be Denver's premier gem, mineral, and fossil show.

We wanted to get the news to you as quickly as possible and have not had a chance to update our Lake George Gem & Mineral Club April, 2021 websites or social media, but in the coming weeks, we invite you to visit hardrocksummit.com and <a href="https://deventue.gov/gev/deventue.gov/gev/deventue.gov/gev/deventue.gov/gev/deventue.gov/gev/deventue.gov/gev/deventue.gov/gev/deventue.gov/gev/deventue.gov/gev/deventue.gov/gev/deventue.gov/gev/deventue.gov/gev/deventue.gov/gev/devent

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LGGM Club News:

Bob Carnein reports that an article about LGGM Club member Larry Bertram's cryolite find of 2018 (described previously in this newsletter) has appeared in "Mineral News". The complete reference is:

Carnein, Carl R. (Bob), Philip M. Persson, and Markus Raschke, 2021, An occurrence of cryolite and related aluminofluoride minerals near the Lake George ring complex, Pikes Peak batholith, Colorado: Mineral News, vol. 37, no. 2, p. 1-2, 7, 11-12.

Bob will provide a copy of the article on request.

Links to Interesting Gem, Mineral & Paleontology Articles Online:

Bob Carnein sent us an overview and incredible photo of a volcanic eruption near Reykjavik, Iceland.

Space Weather News for March 25, 2021

https://spaceweather.com https://www.spaceweatheralerts.com

AURORAS OVER AN ERUPTING VOLCANO: Yesterday, a photographer celebrating his birthday in Iceland captured an outburst of green auroras over the erupting Geldingadalur volcano, not far from Reykjavík. The once-in-a-millennium shot could be the first of many to come as lava continues to flow and geomagnetic activity picks up with the wakening of Solar Cycle 25. Full story @ Spaceweather.com.

Auroras alerts: Don't miss the next display. Sign up for <u>Space Weather Alerts</u> and receive a realtime text message when geomagnetic storms erupt.



Auroras over Iceland's Geldingadalur volcano on March 24, 2021. Photo credit: Christopher Mathews

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Wayne Orlowski sent these three links:

• The world's weirdest volcano: https://www.geologyin.com/2017/11/mountain-of-god-weirdest-volcano-in.html?fbclid=IwAR1pXSDr0q537k0Hvx0Av227q2kFG43Bqjhl-93V5yfJza0fgfa4rnOfH1U





Inside the Rainbow Tunnel. Credit: Jeff Glover

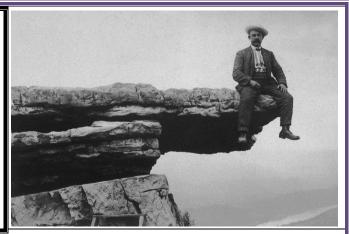
• A marble quarry video: https://fb.watch/40DhAb-_ux/

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Notes from the Editors

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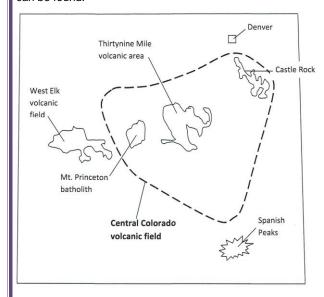
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"This month, we are reprinting a slightly modified article by Larry Frank, Editor of the Pueblo Rockhounds' newsletter, "Chips from the Rockpile". It deals with the Wall Mountain Tuff and how the tuff was used to build a Pueblo landmark. The article originally appeared in March."

The Pink House by Larry Frank

How would a volcano located somewhere in the area of Mt. Antero have had a connection to Pueblo, Colorado? The volcano was located over one hundred miles away in the upper Arkansas River Valley, and erosion left no sign of its exact location. Erosion by the Arkansas River and other forces has most likely carried the eroded alluvium from the volcano site through Pueblo, but another indirect connection can be found.



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Fig.1, Location of the central Colorado volcanic field. Adapted from Geochronology of the central Colorado volcano field by McIntosh and Chapin.

About 36.7 Mya (Millions of years ago) the Central Colorado Volcanic Field began to form. The field is located as remnants from the Wet Mountains on the south, north to Castle Rock, and west to Grizzly Peak, which is between Clear Creek and Summit counties. Basically, this area is shaped like a bell (Fig.1).

Somewhere between Salida and Buena Vista was a caldera (collapsed volcano) that erupted large amounts of ignimbrite or ash-flow tuff, called by geologists the Wall Mountain Tuff. When the caldera was formed, the area was relatively flat as a result of Eocene erosion, which allowed the pyroclastic material to flow

long distances (in this case about 60 to 80 miles) down existing valleys at speeds of 160 kilometers per hour or more. The ignimbrite was distributed over an area of about 3,500 square miles in central Colorado and averages between 15 and 30 feet thick. However, the thickness can be over 500 feet in paleovalleys near Trout Creek and between Browns Canyon and Waugh Mountain (Fig.2). Wall Mountain Tuff is found widely distributed at the base of the Thirtynine Mile volcanic field. Since the eruption of the ignimbrite, other volcanic activity has covered it or erosion has removed a good portion of it, and only remnants can be found today (editor's note: e.g. Barksdale picnic area, in Florissant Fossil Beds National Monument).

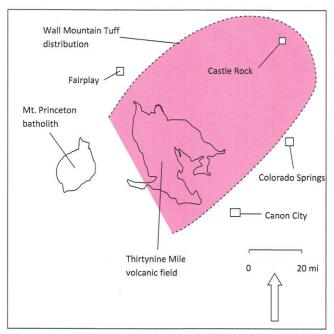


Fig. 2, Central Colorado volcano field showing the distribution of the Wall Mountain Tuff. Adapted from Geochronology of the central Colorado volcano field by McIntosh and Chapin.

The Wall Mountain Tuff is chemically a rhyolite in composition. Minerals include quartz, sanidine, and argillized plagioclase. Of the dark mafic minerals, biotite is the most abundant, followed by clinopyroxene and hornblende. Other minerals are orthopyroxene, magnetite, sphene, allanite, apatite, and zircon. Freshly broken Wall Mountain Tuff is a pleasing gray to pink color. Upon weathering, the tuff becomes reddish brown to yellowish buff. The tuff is a hard cliff former, and, when broken, has a conchoidal fracture similar to that of glass. Iron inclusions result in staining and deterioration of the tuff. The Wall Mountain Tuff is very durable and has lasted over 100 years in buildings constructed of quarried stone. It also makes a very good road base and concrete aggregate.

In the 1800s, Silas W. Madge had a ranch about two miles southeast of Castle Rock, Colorado. He decided to excavate a number of pits on the high point of his property to see what was under the soil or alluvium, which was about twelve feet thick. At the bottom of the pit was a very hard rock of unknown origin and type. Silas sampled the rock and sent it to Denver for assay and analysis. The assay report indicated that no precious metals were present but that it would make an excellent building stone. He didn't know that it was the Wall Mountain Tuff, and the local name became "Castle Rock Rhyolite".

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In 1872, Silas started a quarry to mine dimension stone for buildings. Construction was going crazy in Denver at that time. He had to build a road to the quarry site and strip the overburden from the area to be mined. The site was located about 500 feet above the valley floor, and all of this work was done by hand with hired local ranch hands.

By 1871, the Denver and Rio Grande Railroad had built a rail line through Castle Rock heading south towards Colorado Springs and Pueblo. In 1872, Silas convinced the railroad to build a siding called Douglas so that he could ship his dimension stone. Quarried stone was brought by wagon to the siding for shipment. Shipments in 1873 were about 1,200,000 pounds, or about 600 tons, and by 1874 the shipments increased by 500 percent (Fig. 3).

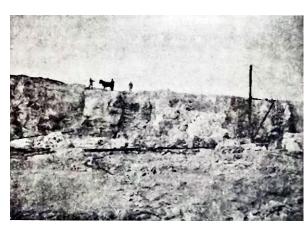


Figure 3. Rhyolite quarry belonging to Silas Madge, near Castle Rock. Douglas County Library digital collection.

After the town site of Douglas was laid out, Silas built a boarding house for his men. The Denver and Rio Grande Railroad built a 2.6-mile spur to the quarry, allowing the dimension stone to be shipped directly from the quarry.

By 1882, a crew of 70 men worked at the Madge Quarry. They were a rough bunch of Swedes who could speak little English. Their social life was the boarding house, and the food wasn't all that good until P.J. Muzan rented the boarding house and set up a first-class kitchen, which made the Swedes happy.

Wages at the quarry were \$2.50 per day. The men worked long hours, starting at 6:30 A.M. After a one-hour lunch at the boarding house, the crew returned to the quarry until 6 P.M. In October of 1881, the wage was reduced to \$2.00 per day. Due to the cut in wages, 30 men walked off the job, and the quarry was shorthanded until help was brought in from Denver. The quarry men had to pay \$4.50 per week for room and board.

Hand drills were used to drill 20 feet into the formation which took about a day and a half. Then the holes were filled with black powder and blasted. Once the stone was loose from the formation, stone masons squared the rock. Much of the stone was shipped rough, and the rubble was used for "chinking-in", another word for fill material. Heavy pieces were loaded with a wood pole derrick.

Silas secured a contract in November of 1881 to provide stone for the Antlers Hotel in Colorado Springs. That contract alone required 1,000 railroad cars of stone--a huge contract in those days.

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Silas W. Madge became known as the "Father of the Lava Stone Industry". As in the case of any successful business, others tend to follow. In 1881, another quarry was opened called "Girardot", but the deposit of lava rock was not large enough and the quarry closed by July 1882.

In December of 1881 the Colorado Stone Company acquired a lease on land owned by Pleasant O'Brien, and this was the largest outcropping of lava rock (Wall Mountain Tuff) in the area. Another spur was laid up Sellers Gulch by the Denver and Rio Grande Railroad to the O'Brien Quarry. Because the quarry was uphill from the railroad, a tramway was built to carry the stone down the hill to the rail siding. Stripping of the O'Brien Quarry was finished in May of 1882.

Production from the two quarries was reaching its height during the summer of 1882. Between the two quarries, about 100 men were employed and 30 to 40 carloads of stone were shipped each day. The stone was shipped to Pueblo, Colorado Springs, Denver, Omaha, Cheyenne, and Kansas City. The quarries did very little business from 1884 to 1886.



Fig. 4, Santa Fe quarry, Douglas County, Colorado, Note the overburden at the top and the hardness of the Wall Mountain Tuff. Douglas County Library digital collection.

J.M. Curry of Denver leased the Madge and O'Brien quarries in 1887 and renamed the quarries A.H Garfield and Curry. Curry was a good businessman and secured contracts which increased the production to ten carloads per day by April of 1887. During November of that year, 350 carloads were shipped.

During the years 1888 and 1889, ten to fifteen carloads of stone were shipped each day. Also during this time, another quarry was opened west of Castle Rock called the Santa Fe Quarry (Fig. 4). A one-mile spur was constructed to the quarry by the Atchison, Topeka, and Santa Fe Railroad. This quarry was owned by Jonathan Thomas of Kansas City.

In 1890, James A. Gonigle, a contractor from Leavenworth, Kansas, was given the contract to build a new house for John A. Thatcher at the corner of 15th Street and Greenwood Avenue in Pueblo, Colorado (Fig. 5). The house was planned to be 16,000 square feet, with 37 rooms, 10 fireplaces, and

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a total of three and one half stories. The house was to be built in the Queen Anne-Richardsonian Romanesque-revival style, and was designed by Henry Hudson Holly and Horatio Jelliff. Holly died in 1893, and this was the last house he designed. Total cost of construction was to be \$60,750.



Fig. 5, The Thatcher Mansion now called the Rosemount Museum, Denver Library digital collection.

The dimension stone of choice was the Castle Rock Lava Rock aka Castle Rock Rhyolite aka Wall Mountain Tuff. Bids were taken for the dimension stone until December 11, 1890 by Gonigle. Work started on the house in April of 1891 and was completed in March of 1893. This was the finest private home in Colorado at that time and was called the "Pink House" due to the pink color of the Castle Rock Rhyolite or Wall Mountain Tuff (Fig. 5). The pink color has since faded due to weathering, turning the stone a buff color.

The Silver Panic of 1893 caused the tuff quarries to slow down and close. Business did improve from 1897 to 1900, and new and improved rails were laid to the quarries. During the year 1900 the output of stone was 1,800 flatbed-railroad-car loads. The Santa Fe Quarry took over the dimension stone business, causing the other quarries to close. By 1906 the Castle Rock quarries were pretty much out of business due to a new building material called "concrete".

References:

Epis, R. C. and C.E. Chapin, 1974, Stratigraphic Nomenclature of the Thirtynine Mile Volcanic Field, Central Colorado: U.S. Geological Survey Bull. 1395-C

Eriksen, K., May 1993, Rosemount Museum's 100th Anniversary Special Edition, Pueblo, Colorado. Harvey, Mr. and Mrs. James, May 1946, The Quarries of the Castle Rock Area: Colorado Magazine, Vol. 23, No. 2.

McIntosh, W.C. and C.E. Chapin, 2004, Geochronology of the central Colorado volcanic field: New Mexico Bureau of Geology and Mineral Resources, Bull. 160, p. 205 – 237.

Meyer, H., 2003, The Fossils of Florissant: Washington, Smithsonian Books.

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Comment [01]:

Comment [02]:

Comment [03]:

Comment [04]:

Monthly Mineral Quiz



Last Month's Mineral: Olivine, (Mg,Fe)₂SiO₄.

March's mineral is a common rock-forming silicate that, when gemmy, is known as *peridot*, a gemstone for August birthdays. Fine peridot crystals occur in Egypt and Pakistan. Olivine's composition ranges between pure iron silicate (called fayalite) and pure magnesium silicate (called forsterite). On Earth, olivine commonly occurs in mafic (dark colored) igneous rocks rich in iron and magnesium, including olivine basalt and peridotite. Because olivine is a high temperature mineral, it readily alters near Earth's surface to other iron-magnesium silicates, including serpentine and talc. Serpentine deposits in the Appalachians

are interpreted as pieces of the lower crust that were faulted upward into other crustal rocks during the collision between ancestral North America and Africa. Olivine is a common constituent of pallasite meteorites (a type of stony-iron meteorite in which Fe-rich olivine crystals are surrounded by a "matrix" of iron-nickel alloy). Fayalite also occurs near to home in some facies of the Pikes Peak Granite.

This Month's Mineral (Carnein collection and photos).









The monthly mineral for April is a favorite among collectors because of its abundance and occasional occurrence as a beautiful gem mineral. Gemstones cut from this mineral can be literally any color of the rainbow. Like olivine, this is actually a group of minerals. Unlike olivine, this group is chemically very complex, with lots of substitutions—hence the very varied colors and wide occurrence in igneous and metamorphic rocks. Named in 1766, this mineral is hard (H=7), has a slightly above average SG (about 3.0) and has a glassy (vitreous) luster. The shape of its crystals in cross section is a give-away! It's widely distributed in Colorado, mainly in pegmatites (though rare in the Pikes Peak pegmatites of Teller and El Paso counties). If you find this mineral locally, you're probably in the older Silver Plume Granite. What is it?

Eckel, E.B., 1997, *Minerals of Colorado, Updated and Revised by R.R. Cobban, et al.*: Golden, Colorado, Fulcrum Publishing.







The Lake George Gem and Mineral Club is a group of people interested in rocks and minerals, fossils, geography and history of the Pikes Peak/South Park area, Indian artifacts, and the great outdoors. The Club's informational programs and field trips provide opportunities to learn about Earth science, rocks and minerals, lapidary work and jewelry making, and to share information and experiences with other members. Guests are welcome to attend, to see what we are about!

The Club is geared primarily to amateur collectors and artisans, with programs of interest both to beginners and serious amateurs. The Club meets on the second Saturday of each month at the Lake George Community Center, located on the north side of US Highway 24 on the east edge of town, sharing a building with the county highway shops. In the winter, we meet at 10:00AM. From April through October, we meet at 9:00AM, to allow more time for our field trips.

Our organization is incorporated under Colorado law as a nonprofit educational organization, and is a member of the Colorado, Rocky Mountain, and American Federations of Mineralogical Societies. We also sponsor an annual Gem and Mineral Show at Lake George, where collectors and others may purchase or sell rocks, minerals, fossils, gems, or jewelry. Annual membership dues (Jan. 1 through Dec. 31) are \$15.00 for an individual (18 and over), and \$25.00 for a family (parents plus dependents under age 18). New memberships and renewals are only accepted Jan 1 through March 31 each year.

Our Officers for 2021 are:

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