LGGMC Newsletter



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Postal Address:

Lake George Gem & Mineral Club PO Box 171 Lake George, CO 80827

Website:

<u>LGGMC website</u> LGGMC on facebook

Meeting Location:

Lake George Community Center (summer venue) 39141 Hwy 24 Lake George, CO 80827

Map to Lake George Community Center

Lake George Gem & Mineral Club

November 2024

About Us

The Lake George Gem and Mineral Club is a group of people interested in rocks and minerals, fossils, geology 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, fossils, lapidary work, 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 normally meets on the second Saturday of each month at the Lake George Charter School gym, located on the south side of US Highway 24 approaching the town of Lake George from Florissant. Between Oct – Mar, our meetings start at 10 AM. From Apr-Sep, our meetings start earlier, 9 Am, to allow for more time for any subsequent field trips.

Club Officers

2024 introduces a lot of new faces to our club management team. Following are the LGGMC Officers for 2024. Please reach out if you need any help.

President	Dave Bruess	david@bruess.me
Vice President	Bart Zobel	bezobel@gmail.com
Secretary	Steve Kahler	pipprophet@gmail.com
Treasurer	Karen Vogl	bigmabe@hotmail.com
Newsletter Editor	Betty Bowles	bbowles2@gmail.com
Field Trip Coordinator	Dave Alexander	dave@davealex.com
Show Coordinator	Carol Kinate	<u>kinatec@aol.com</u>
Pebble Pups Coordinator	Betty Merchant	betty.merchant@yahoo.com

As of Sept 14, 2024 Cathy McLaughlin stepped down as Treasurer of our club for the last 8 years. We all thank Cathy for her dedication and effort. We also welcome in our new Treasurer, Karen Vogl, who was voted in unanimously at the Sept meeting, as well.

Club Officer Biography: Treasurer, Karen Vogl

This month, we would like to introduce you to our new Treasurer, Karen Vogl:

I am a sixty-six-year-old Colorado Native. I have deep roots to this area. I have had rocks in my pocket my whole life, much to my mother's distress when doing laundry. After a divorce, I meet Gary with our main common interest-rock collecting. He moved from New Mexico where we collected in many areas. We moved from Peyton where I had a cattle ranch in 2014. I feel like I moved home. My father was raised in Taryall and my grandmother was the last teacher along with my father and his sisters to live in the little teacher house behind the school. My Aunt Glayds is who applied to have the little school made historic. So, I have always been keeping my eyes to the ground in this area. I enjoy taking kids and club for field trips to our mining claims, Blue Sky, Blue Moon, Blue Show and Blue Dandy. Thanks to the excellent education from our geologists and experts in our club, I now know so much more about the geology around our home.

To Join Our Club - (Membership is officially closed for 2024)

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 gather monthly as a club to share information including guest speaker presentations, workshops, and rock specimen show and tell discussions. We coordinate and supervise amazing field trips for club members that cover a broad spectrum of geological, archeological, rock, and mineral interests. We also sponsor the annual Gem and Mineral Show at Lake George, where collectors and others may purchase or sell rocks, minerals, fossils, gems, or jewelry.

Annual Membership

Current year membership application and/or renewal and application occurs only during January 1-March 31. Membership is closed for the current year after this time and last years membership list will be purged April 1. Please note that all memberships must be current in order to participate on any field trip or to use any club claim.

How to Apply

One may apply for membership in person at our monthly meetings, or visit our club website at <u>https://lagmclub.org</u> to obtain a membership application, or go directly to <u>https://lagmclub.org/LGGMc_Member24v.pdf</u> to download the application in PDF format. The application will need to be filled out and submitted to the club along with the appropriate membership dues. The mailing address to submit the application is provided in the <u>Error! Reference source not found.</u> section of this newsletter. Remember to get your application in before April 1, 2024!

Annual Membership Fee

Annual membership dues are collected (Jan. 1 through Mar. 31). They are as follows:

LGGMC Annual Membership Dues 2024				
\$15.00	Individual	Age 18 and over		
\$25.00	Family	Parents + kids under age 18		

Look Forward to Nov Meeting (10 AM Nov 9, 2024 @ Lake George Community Center)

October Meeting Summary

At our Oct meeting, Dr. Pete Modreski provided a great presentation of "Pegmatites around Lake George, and some advice about how to identify minerals in them". He reviewed some of the basics about what the Pikes Peak Batholith is, where and how pegmatites occur within it, and what minerals occur in the pegmatites. He talked about and demonstrated some of the methods and instruments one can use to identify and distinguish between those minerals. These included some tests that anyone can make, such as hardness, streak, crystal shape, specific gravity, and fluorescence. He also talked about and demonstrated some tests that require more specialized instruments, such as refractive index and thermal conductivity. Club members were invited to bring in any specimens they had that they would like to show and test in order to determine what they were.

Bio for Dr. Pete Modreski

Dr. Pete Modreski is a longtime mineral collector, since college days at least. He has a B.A. in chemistry (Rutgers, 1968) and an M.S. and Ph.D. in geochemistry from Penn State (1971, 1972). After some years in the USAF and at Sandia National Laboratory, he worked for the U.S. Geological Survey from 1979 onward. He did research on mineral deposits and later, became responsible for public and educational outreach. He retired after 41 years in 2020. For several years, he was the USGS resource specialist on the geological occurrence of gemstones. Pete has held volunteer positions with the Denver Museum of Nature and Science, Colorado School of Mines Museum, Rocks & Minerals magazine, and Mineral Almanac. He is a member of the Geological Society of America and Mineralogical Society of America and belongs to quite a few local and other mineral clubs, including being a life member of the Littleton Gem and Mineral Club. Pete was a coauthor of *Minerals of Colorado* (1997). If asked to name his favorite mineral, he might choose tourmaline.

Next, November Meeting

We will be wrapping up 2024 in the November meeting with our Annual Towel Show. Please bring some of your favorite minerals, fossils, and jewelry from the year to show off limited only by what can fit on a bath-sized towel. Also we will be sharing stories from individual members about their favorite field trips and specimens found. If you have some time, please think about what special story you would like to share at the meeting. This will provide everyone with a sense of what the membership appreciates most in our field trips and help the club plan more trips accordingly. It also will let those members who could not make the trip, hear about it, and enjoy your moments. So, gather your stories and your specimens, and let us share! Afterwards, a holiday silent auction will occur. Help the club by donating some of your extra specimens and/or by purchasing specimens which make great holiday gifts for yourself and others.

For the business part of the meeting, we will elect officers for 2025. Nominations from the floor are invited, but nominees must be present.

A December meeting will not be held, so people can have more time to focus on their families during the holidays. If people would like to bring some holiday treats, I am sure that they would be happily consumed.

Please remember that LGGM Club enrollment/renewal runs Jan 1st through Mar 31st, 2025. Mark it on your calendar so that you don't forget.

Upcoming Events

<u>Fire Prevention at Home</u> (Jan 25, 2025) Florissant Public Library 334 Circle Dr, Florissant, CO 80816 The free informational sessions give insight into reasons why some homes survived and others burned in recent fires like the Marshall fire. The session also presents many ideas to make homes safer in case of wildfires.

Meet Our Neighbors

Here is a list of nearby gem, mineral, fossil, and geology club meetings that you may enjoy. Go to each club's website for more information.

Cañon City Geology Club

Meets on the 2nd Monday of the month at 6PM at United Methodist Church, Cañon City.

Pueblo Rockhounds

Meets on the 3rd Thursday of each month at 6:30PM at

Westminster Presb. Church, 10 University Circle, Pueblo

Columbine Gem & Mineral Society

Meets on the 2nd Thursday of each month, 6:30PM at meeting room, Mt. Shavano Manor, 525 W. 16th, Salida

Colorado Springs Mineralogical Society

Meets on the 3rd Thursday of each month at 7PM Colorado Springs Christian School, 4855 Mallow Rd, Colorado Springs.

Mineral of the Month Quiz - Bob Carnein

Monthly Mineral for October, 2024 (Carnein photos and collection)



Well, this one should be easy! This month's mineral is commonly crystallized, so collectors like it. Beware, though, of its Jeckyll and Hyde properties. Some specimens are unstable and will spontaneously decay, releasing sulfuric acid that may attack other minerals nearby. I have even had samples eat through labels and storage boxes. It used to be a major source of acid rain, and deposits of this mineral in old mines leach sulfuric acid into streams that causes serious environmental effects. Crystals are isometric-commonly cubes, octahedra, and combinations of the two (as shown above). The mineral closely resembles several less common ones, but the crystal habit, hardness (6 ½ to 7), SG (4.8 to 5) and conchoidal fracture, combined with its abundance, should make you suspect its identity when you find it (and you will find it!). It occurs in all 3 major rock types and is very common in hydrothermal deposits, where it works its magic, catalyzing all sorts of reactions that form other minerals (such as last month's unknown). Occurrences in Colorado are too numerous to count. What is this extremely abundant mineral?

Last Month's Mineral: Hemimorphite, Zn₄Si₂O₇(OH)₂.H₂O

Also sometimes called *calamine*, last month's unknown is a moderately common secondary mineral found in the oxidized

zone (above the water table) in mixed sulfide deposits containing primary sphalerite (ZnS, the primary ore of zinc). If crystallized, it commonly exhibits a bladed habit. The crystals are orthorhombic. Color, luster, and habit are very varied but SG is about 3.5 and H varies from 4 ½ to 5. This specimen came from a mine on the flanks of Mt. Sherman and contains some copper, which gives it its color. Mindat.org (accessed September, 2024) lists about 70 Colorado localities, but there are probably many more where the mineral has not yet been confirmed.



Interesting Reads

In this section, we provide unique submissions from our club members and fun rock, mineral, and geology news and information to enjoy from several of our favorite magazines.

This month we have a Haiku poem and accompanying beautiful painting submitted by Stephen Veatch. Here is the Haiku poetry about *Archaeopteryx lithographica*, the famous dinosaur with wings and feathers.



Haiku and watercolor pencil drawing by Steven Wade Veatch

Found in the Jurassic Solnhofen Limestone of southern Germany, Archaeopteryx is a transitional fossil between dinosaurs and birds.

WHAT'S THIS ROCK?

Do You Know What These Are?



image: Stan Celestian

These are a unique type of fossil, created when tree limbs and other organic wood structures become buried in sediment such as volcanic ash. Over time, the wood decays and silica-rich groundwater permeates the cavity left by the decaying limb.

This water deposits minerals, primarily silica, inside the void, which then crystallizes and hardens into quartz, often preserving the original shape of the limb.



terry_the_fossil_hunter/IG

These casts can vary in color, typically displaying earthy tones of red, yellow, brown, and white, depending on the mineral content of the water that filled the mold.

Do you know what they are? You can find out here.

GEOLOGY FACTS: The Three Types of Rocks Rocks are categorized into three main types based on their formation processes: igneous, sedimentary, and metamorphic. Igneous rocks form from the cooling of molten magma, sedimentary rocks are created from the accumulation of sediments, and metamorphic rocks arise from existing rocks undergoing transformation due to heat and pressure. Each type has distinct characteristics that help geologists understand Earth's history and the processes that shape our planet.

Learn more about the fundamentals of rocks



Sovereign Photography

- 1. What type of coral formed Petoskey stones?
- A) Scleractinia
- B) Hexagonaria percarinata
- C) Acropora
- D) Montipora

Answer

2. Which activity of glaciers contributed to the movement and smoothing of Petoskey stones?

- A) Melting
- B) Erosion
- C) Scraping and pushing portions of ancient reefs
- D) Deposition of sediment

<u>Answer</u>

3. Which mineral commonly fills in the spaces of the fossilized coral that makes up Petoskey stones?

- A) Quartz
- B) Calcite
- C) Hematite
- D) Fluorite

<u>Answer</u>

4. What is the origin of the name "Petoskey"?

- A) A famous geologist
- B) An Ottawa Chief named Petosegay

- C) A local town named after a mineralogist
- D) A type of bird found in the area

Answer

- 5. What is the distinctive feature that helps identify a Petoskey stone?
- A) Iridescent sheen
- B) Hexagonal corallite patterns with a central "eye"
- C) Bright red coloration
- D) Angular fractures
- <u>Answer</u>

VIDEO OF THE DAY

Journey to Arizona's Hidden Marvel: Discover Tee Pee Rocks



AZ Rockhound Expeditions

If you're fascinated by unique geological formations, then this video of Camp Verde's hidden geologic treasure—Tee Pee Rocks, is a must see. This captivating site, nestled just a mile south of Highway 260 near Fossil Creek, is a remarkable example of nature's artistry, beauty and mystery.

Watch The Video

WHAT'S THIS ROCK?

Are You Familiar With This Stone?



image: Wild Superior Gems

This is a rare and fascinating variety of chalcedony in which copper has chemically replaced some of the original minerals within the agate structure.



image: Wild Superior Gems

The results are vibrant and intricate patterns, which combines the beauty of agate with the striking colors and metallic sheen of copper.

Identification Tips:

Classification: Variety of chalcedony (agate) with native copper inclusions

Chemical Composition: SiO_2 (silicon dioxide) with native copper (Cu) inclusions

Color: Typically colorless, white, gray, or brown with coppercolored inclusions

Streak: White

Hardness: 6.5-7 on the Mohs scale

Cleavage: None

Fracture: Conchoidal

Luster: Vitreous to sub-vitreous, with metallic sheen from copper inclusions

Transparency: Translucent to opaque

Crystal System: Hexagonal (trigonal, due to its quartz composition)

Do you know what it is? You can find out here.

Gemstones That Change Color In Different Light



Some gemstones, like alexandrite and garnets, have the ability to change colors, depending what type of light they're in. This occurs due to the gemstone's unique ability to absorb different wavelengths of light depending on the light source. For example, alexandrite appears green in daylight and red under incandescent light. This optical effect is caused by the gemstone's specific chemical composition and the way it interacts with light, making color-changing gemstones highly prized and sought after by collectors.

Learn more about color changing gemstones

JUST FOR FUN!

Theme: Mining



blast	mineral	tunnel	
drill	ore	vein	
dynamite	quarry		
excavate	shaft		

PICTURE OF THE DAY



I love the color on this. Found in the Pacific Northwest by r0ckula. He thinks it looks like Spike from the movie Gremlins. He's not wrong! <u>Be sure to check him out on</u> <u>Instagram!</u>

WHAT'S THIS ROCK? Think You Know What This Is?



Stan Celestian

This happens to be one of nature's most versatile minerals, playing a vital role in everything from agriculture to jewelry and even human biology.

It's probably best known as the primary source of phosphorus in fertilizers, but it also forms beautiful, colorful crystals that are great for adding to any collection.



Stan Celestian

This mineral can appear in a variety of colors, ranging from green, blue, yellow, and violet to pink, brown, and even colorless.

Physical Characteristics:

- Chemical Classification: Phosphate
- **Color:** Green, brown, blue, yellow, violet, pink, colorless (transparent specimens with excellent clarity and vivid color are used as gemstones)
- Streak: White
- Luster: Vitreous to sub-resinous
- Cleavage: Poor to indistinct
- Mohs Hardness: 5
- Specific Gravity: 3.1 to 3.3
- Crystal System: Hexagonal

Think you know what it is? Find out here!

GEOLOGY FACTS

Darvaza Gas Crater - The "Door To Hell"



The Darvaza Gas Crater, also known as the "Door to Hell," is a massive burning pit located in Turkmenistan. This natural gas field collapsed into a crater during a drilling accident in 1971. To prevent the release of toxic gases, geologists set it on fire, expecting it to burn out in a few weeks. However, it has continued to burn for over 50 years, creating a surreal and fiery spectacle in the desert landscape.



This is a Namibian Shattuckite sphere handmade by Corey Beer from <u>lakerslapidary</u>. Absolutely beautiful and very impressive craftsmanship!

TEST YOUR KNOWLEDGE

How Much Do You Know About...The Difference Between Fluorite and Amethyst?



1. True or False: Fluorite fluoresces under black light, while Amethyst does not.

Answer

2. What is a key difference in the crystal structure between Fluorite and Amethyst?

A) Fluorite forms cubic crystals, while Amethyst forms hexagonal crystals.

B) Both have identical crystal structures.

C) Amethyst forms in cubic shapes, while Fluorite forms in spheres.

D) Fluorite forms trigonal crystals, while Amethyst forms octahedrons.

Answer

3. Which stone is more likely to show color zoning with multiple shades of different colors?

- A) Fluorite
- B) Amethyst
- C) Both show equal color zoning
- D) Neither stone shows color zoning

Answer

4. True or False: Fluorite has a higher hardness than Amethyst.

Answer

5. What mineral impurity gives Amethyst its purple color?

- A) Copper
- B) Iron
- C) Calcium
- D) Lead
- <u>Answer</u>

VIDEO OF THE DAY

Top Bucket List Destination for Rockhounds: The Magic of Oregon's Spectrum Sunstone Mine



See why this location is considered by many to be one of the top 5 must-visit rockhounding sites in the United States. <u>Watch The Video!</u>

DID YOU KNOW?



Did you know that amber, the fossilized resin of ancient trees, contains trapped air bubbles that give scientists a glimpse into Earth's atmosphere from millions of years ago. In fact, <u>research has shown</u> that amber from the Cretaceous period (around 67 million years ago) holds air with an astonishing 35% oxygen content, compared to today's 21%. This high oxygen level might have been what helped support the massive size of dinosaurs!

How Did a Marine Ammonite Get Stuck in Fossilized Tree Resin?

In a once-in-a-lifetime discovery, scientists uncovered a fossilized ammonite—a marine animal—encased in Burmese amber, dating back 100 million years. But how did an ancient



sea creature end up in fossilized tree sap?

Learn About This Incredible Discovery

WHAT'S THIS ROCK? Can You Correctly Identify This Rock?



Stan Celestian

This one is also known as ruby in zoisite, is a striking and colorful metamorphic rock composed primarily of green zoisite, black hornblende, and vivid red ruby crystals. The juxtaposition of bright ruby against the rich green zoisite makes it an appealing and visually dynamic gemstone. The ruby, being the most valuable component, adds a strong contrast that enhances the overall appearance of the stone.



It forms in metamorphic environments, where high pressures and temperatures cause the alteration of rocks rich in aluminum and calcium. The green zoisite matrix forms as part of the larger zoisite family of minerals, while the ruby crystals are embedded within this matrix, creating a unique combination of minerals.

Identification Tips:

- Color: The distinct green zoisite with red ruby crystals and black hornblende creates a unique color contrast.
- **Hardness**: Hard enough to scratch glass; ruby is much harder than the other components.
- **Luster**: Exhibits a vitreous to pearly luster, especially on polished surfaces.
- **Pattern**: Ruby inclusions are typically scattered throughout the zoisite matrix, with hornblende creating dark veins or spots.

Think you know what this one is? You can find out here.

VIDEO OF THE DAY

Rock Tumbling Hack: How to Polish Only Parts of a Stone Using Hot Glue and a Tumbler



An ingenious way to polish only half a rock in a tumbler!

Ever wondered how to selectively polish parts of a stone while leaving other areas untouched? This how-to-guide breaks down an ingenious method using hot glue and a tumbler to create unique stone specimens.

Watch The Video and See How It's Done!

TEST YOUR KNOWLEDGE

How Much Do You Know About...Diatomite?



1. True or False: Diatomite is also known as diatomaceous earth.

<u>Answer</u>

2. What physical property of diatomite makes it useful in absorbents and filtration?

- A) High density
- B) High porosity and surface area
- C) Electrical conductivity
- D) Elasticity

<u>Answer</u>

- 3. What is the Mohs hardness of diatomite?
- A) 3-4
- B) 1-1.5
- C) 5-6
- D) 7-8

<u>Answer</u>

4. What is the primary reason diatomite is added to Portland cement?
A) To reduce production costs
B) To enhance color variety
C) To boost silica content, improving strength and durability
D) To increase the drying time
Answer

5. What is the primary use of diatomaceous earth in pest control?

- A) Blocking insect breathing
- B) Damaging insect exoskeletons
- C) Attracting insects for traps
- D) Poisoning insects

<u>Answer</u>

What Is Calcite Vs. Dolomite?



Calcium carbonate is the most common of the carbonates. But how do we distinguish calcite from dolomite or limestone and dolostone? Here's our guide.

Read More

Calcite Crystals & Acid-Effervescence



Calcite crystals for sale at shows and shops have recently been inexpensive, massive calcite from Mexico. They are not tumbled, but produced by acid immersion. Find out how this works.

Read More

Is Dolomite a Mineral or a Rock?



Dolomite had two meanings, as a crystal and as a rock formation. Today, the rule of thumb is if it's a rock it's dolostone. If it's a crystal, it's dolomite. <u>Read More</u>

WHAT'S THIS ROCK?

Can You Correctly Identify This Mineral?

Here's another identification challenge for you. I'll give you some identification clues along with pictures of the stone. Good luck!

This is a vibrant and intriguing mineral, renowned for its brilliant colors and unique crystal forms. Typically found in vibrant orange, yellow, red, and sometimes even green hues, its crystals are prized for their thin, tabular structure and glassy luster, which make them highly sought after by mineral collectors.





Stan Celestian

This lead molybdate mineral (PbMoO4) is usually formed as a secondary mineral in the oxidation zones of lead deposits, where lead minerals react with oxygen and molybdenumbearing solutions.

The striking, bright colors are due to its high molybdenum content, setting it apart visually from many other minerals.

Identification Tips:

- Color: The bright orange to yellow color is the most distinguishing characteristic, though red and brown variations also exist.
- Crystal Shape: Thin, tabular crystals with square or rectangular faces are common.
- Hardness: Softer than many minerals, easily scratched by harder materials.
- Luster: Adamantine (diamond-like) to resinous, particularly on crystal faces.
- Transparency: Typically translucent, with thinner crystals appearing more transparent.

Do you know what it is? You can find out here.

WHAT'S THIS ROCK?

Think You Know What This Stone Is?

Here is another identification challenge for you. I'll give you some identification clues along with pictures of the stone. Good luck!



Stan Celestian

This mineral is easily recognizable due to its black color and vitreous to submetallic luster. Its hardness and durability make it a popular gemstone despite its lack of color. It typically forms as long, prismatic crystals with vertical striations and is often opaque.



Stan Celestian

Identification Clues:

Color: This mineral is typically jet-black, making it stand out in any collection of rocks and minerals.

Crystal Shape: Its crystals are often long and columnar, forming in a prismatic shape with striations running along their length. Luster: It has a vitreous to slightly resinous luster, giving it a shiny, almost glass-like appearance.

Hardness: This mineral ranks between 7 and 7.5 on the Mohs hardness scale, making it relatively hard and able to scratch glass.

Common Location: You can frequently find this mineral in granite pegmatites and metamorphic rocks.

Chemical Group: It belongs to the tourmaline group of minerals, known for its wide variety of colors.

Do you know what it is? You can find out here.

Cape May Diamonds 101



Cape May diamonds draw beachcombers and rock hunters to Cape May, New Jersey, in search of the sparkle of these quartz pebbles and beloved keepsakes. Learn more about these fascinating finds.

Read More

Arkansas Quartz: Origin and History



Arkansas quartz is a collector's favorite. Here's our guide to this rock crystal from the Ouachita Mountains that has made Arkansas synonymous with quartz.

Read More

Simple Wire Wrapping Techniques



Wire wrapping techniques were used in the earliest forms of handmade jewelry and are still popular today. It is a dynamic way to create jewelry using tension to shape wire.

Read More

Citrine Stone: Faceting Shield of the Heart Design



Faceting citrine stone using the Shield of the Heart design is an interesting beginner design that creates a beautiful gemstone performance with only 31 facets.

Read More

How to Melt Silver for Making Jewelry



How to melt silver for making jewelry at home is a basic skill that can be used to recycle silver and create beautiful and unique pieces. Here's how...

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Vintage Costume Jewelry Types & Value



Vintage costume jewelry has a fascinating history of fabricated jewels for cost-effective and trendy pieces. Find out how it was made and what it's worth today.

Read More