

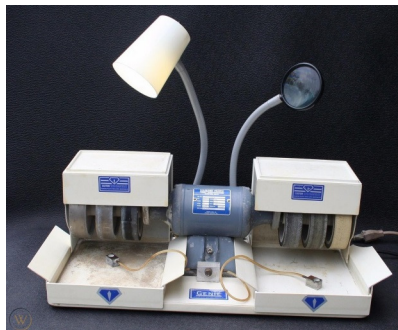
Cuyuna Rock, Gem and Mineral Society

The Agate Explorer

February 2020

February Meeting

Come anytime between 10 a.m. and noon to face polish on the Genie polisher. Bring several small (inch or less in diameter) agates/jaspers. You can work one or more, depending on how many people attend.



Franklin Art Center



Kids' Program

What IS that mystery rock?
You can learn how to make a mineral identification kit to find out.

Rock Wrappers

An open gathering for wire wrappers starting at 10 a.m. on meeting Saturdays. Hang out with other wrappers, and work on your projects. (Bring all supplies needed.) Learn tricks to make wrapping easier, a new design, or perhaps a new place to find supplies. All skill levels welcome!



Club Calendar



February 8—Rock Wrappers at 10, Genie work from 10-12; Board Meeting at noon; General Meeting at 2:00; Kids' Program at 2:00.

March 14—Meeting

April 4—Meeting Note change of date due to Easter weekend.

May 2—Meeting Note change of date due to show.

May 9-10 -Annual Rock Show

Information subject to change.

Club Information

Website-www.cuyunarockclub.org
Email-cuyunarockgemclub@gmail.com

Meeting Place

Lower level
Franklin Arts Center
1001 Kingwood St, Brainerd, MN 56401

Directions

.4 mile east of Business Hwy. 371
& Hwy. 210 intersection.
(Castle turret water tower.)

Date/Time

the 2nd Saturday of each month
at 2 p.m. unless otherwise noted.

Club Dues

\$20/ family
Free /unaccompanied juniors
Membership runs
from Jan. 1-Dec. 31st.

Club Purpose:

To foster an interest (& encourage young & old) to study earth science, enjoy the art of lapidary, hunting for rocks, and semi-precious stones. We also strive to use what we know and acquire to further educate everyone who has an interest in our hobby.

We are a not-for-profit organization.

Mineral Encyclopedia



Charoite

Charoite is the name of a purple to violet silicate mineral with a striking appearance. Its vibrant purple color grabs a person's attention. Then, upon closer examination,

the viewer discovers interesting banding, swirls, scales, or radial and parallel habits.

Many rocks that contain abundant charoite will accept a beautiful polish. As a result, high-quality pieces of charoite can be cut into spectacular purple cabochons, or used as an ornamental stone to veneer a delightful jewelry box. A pearly luster or chatoyance often increases the beauty of this gem.

Charoite is a rare mineral, found in commercial quantities only in a few small and closely spaced deposits in the Sakha Republic of eastern Russia. It received its name from the Chara River, which drains that geographic area.

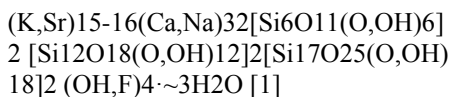
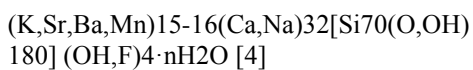
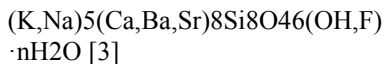
Geologic Occurrence

The charoite of the Sirenevsky Kamen ("purple stone") deposit of eastern Siberia is thought to have formed when an alkali syenite intrusion encountered a dolomite containing a significant amount of terrigenous clastic sediment. The result was a complex geochemical environment of hydrothermal metasomatism.

Mineral-rich fluids permeated the dolomite and surrounding rocks, forming charoite and a variety of other rare minerals with complex chemical compositions. The charoite in these rocks is impure and intimately mixed with microscopic particles of other rare minerals.

Charoite's Chemical Composition

Charoite is a complex silicate mineral. Published chemical compositions are in disagreement. We checked numerous references, and each one presented a different composition. The compositions reported below are from the Glossary of Geology [3], the International Mineralogical Association [4], and Mindat.org [1].



Determining a composition for this mineral might be difficult for two reasons: 1) well-formed crystals and specimens of pure charoite have not been found; and, 2) charoite is always intimately associated with and intergrown with numerous other minerals.

Charoite is only known from rocks that are either charoite-rich or charoite-dominated. The name used for these rocks is "charoite". Most people in the gem and lapidary trades simply refer to them as "charoite" and may not suspect that they are a rock which contains a variety of rare minerals.

Charoite is a contact metamorphic rock that usually contains a variety of alkaline calcium silicate accessory minerals. These can include miserite, benstonite, canasite, tinaksite, pectolite, and fedorite. These are often associated with textural varieties of charoite and include: massive (miserite), parallel fibers (benstonite), and radially fibrous (canasite and tinaksite).

Uses of Charoite

Rocks containing abundant charoite with a pleasing color and interesting pattern are often cut into gems or used as an ornamental stone. Charoite cabochons, beads, tumbled stones and other items made of high-quality material can sell for high prices. Charoite is also used to make small sculptures and small utilitarian items that include vases, spheres, goblets, desk sets, small boxes, and decorative tiles.

High-quality charoite rough and items made from charoite are not abundant in the marketplace because the material is rare, costly, not regularly mined, and much of what is produced is consumed in Russia.

<https://geology.com/minerals/>

Physical Properties of Charoite

Chemical Classification Silicate

Color Purple to violet, light brown.

Weathers to chalky white. Color caused by the presence of manganese.

Streak White

Luster Vitreous to pearly to silky

Diaphaneity Semi-translucent to opaque

Cleavage Three directions of cleavage, but rarely seen because of the material's texture. Breaks with a conchoidal fracture.

Mohs Hardness 5 to 6

Specific Gravity 2.5 to 2.6

Diagnostic Properties Purple to violet color; fibrous to swirly color pattern, sometimes chatoyant, almost always impure.

Chemical Composition $(K,Na)_5(Ca,Ba,Sr)_8Si_8O_{46}(OH,F) \cdot nH_2O$

Crystal System Monoclinic

Uses Rocks containing abundant charoite with a pleasing color and interesting pattern are often cut into gems or used as an ornamental stone.

The World of Jaspers

Calligraphy Jasper

The term calligraphy might be somewhat familiar to you, but how about calligraphy stone – have you heard of this before?



The calligra-

phy stone frequently appears as a triangular shaped stone and might be found in a golden-yellow color that has streaks of brown, red, or green on it. The calligraphy stone is also called the elephant jasper, cobra stone, Miriam stone, and Arabic stone. It is called its name due to the fossilized shells that it has that appear somewhat like calligraphy.

The huge reserves of the stone may be found in the Himalayan Mountains of India.

https://gemstagram.com/_trashed/

Don't forget :

**Your dues
are due!**

Dancing Dragon Dinosaur Discovered

About 120 million years ago, a "dancing dragon" lived in China's Jehol Province. The discovery of a fossil belonging to the small feathered dinosaur is new to science and helps bridge the gap between dinosaurs and birds.

Researchers named the dinosaur Wulong bohainensis, which translates to "a dancing dragon."

The dinosaur was about the size of a raven but double its length with a long, bony tail.



Its entire body was covered with feathers, complete with two plumes at the tail's end.

Despite its small size, it had a fierce, narrow face and a mouth full of sharp teeth. Like a bird, it had small, light bones and wing-like forelimbs. And there were also a number of feathers on its legs.

The fossil was initially discovered in the fossil-filled Jehol Province a decade ago by a farmer and was placed in China's Dalian Natural History Museum.

<https://www.cnn.com/2020/01/20/world/new-dinosaur-bird-discovery-science-trnd/index.html>

Six Most Expensive Fancy Colored Diamonds



Believed to have been discovered in India in the 1600s, the Hope Diamond was

bought by King Louis XIV in 1668. After hundreds of years of grinding, cutting and

polishing, the stone weighs 54.52 carats, and is classified as a Fancy Dark Grayish-Blue diamond. (For more on the cursed history of the Hope Diamond, read our post on the topic here.) The third most expensive colored diamond in the world, the Hope Diamond is valued at an incredible \$250 million and sits amid high security at the Smithsonian's National Museum of Natural History.

<https://www.truefacet.com/guide/6-expensive-fancy-colored-diamonds/>

Jewelry Making Tip

By Brad Smith
www.BradSmithJewelry.com

Secret Ingredient

Those of us who use paste solders sometimes find an old tube has dried out. There should be some way to recondition it, but what to use? Calling tech support at the suppliers didn't work for me. Either they don't know what the ingredient is or won't tell you the secret.

None of us likes to waste an expensive material, especially at \$16 - 20 a tube, so I've often experimented with ways to rejuvenate it. Mixing in a liquid flux doesn't work. When the liquid starts to boil off, it spatters the solder in all directions.

But after several failed experiments I finally

found a way that does work. My secret ingredient is Vaseline petroleum jelly. Mix in just enough to restore the consistency to something that's usable. If you use too much, the lump of solder will flow over a wide area as soon as the torch starts heating it.

If your solder is in a syringe, it can be a little difficult to get the plunger out. I find the easiest way is to poke a hole through the solder from the tip to the rubber plunger (a burr shaft was the right size for my tube). The hole allows air to enter between the solder and the plunger, allowing the plunger to be slowly withdrawn. Once the solder is out of tube, you can easily add the Vaseline, mix it up, and spoon it back into the syringe.



We're on Facebook!

**Cuyuna Rock,
Gem & Mineral Society**

*is a closed group, so you must ask to join.
After being approved you can follow
the members' posts and add
your own information.*

Cuyuna Rock, Gem & Mineral Society Board Meeting Minutes Saturday December 14, 2019

Meeting brought to order by President Ed Opatz at 1:37 pm. Board members present were- Ed Opatz, Joanie Hanson, Vern Iverson, Lilly Peterson, Lori DuBois.

Motion passed to approve minutes from the November meeting.

Treasurer's Report- Kevin not present today- tabled until January.

Motion passed to approve expenditure for auction posters to Ed.

Motion passed to change meeting date for April due to Easter. New date is April 4th, 2020.

The club will be looking at options for updating website at January meeting.

Ed signed the new contract for the May show at the fairgrounds. \$2000.00 for 2020.

Julie Jo Larson- our newest board member will help Sharon as "Show Chair Assistant".

The club will have a pile of rocks laced with agates at the show for kids to hunt in for a fee.

Ed and Sharon are working on food vendors for the show.

The club gave Matt Metzler a scholarship for his 3rd year of Geology at U of M Duluth.

General Meeting Saturday December 14, 2019

Today is the Christmas party potluck and white elephant gift exchange.

All of the rock for the auction was prepared today.

Looking for ideas for the 2020 field trips.

Respectfully submitted,
Joanie Hanson, Secretary



Agates From Around The World

*Nolte Agate
Green Lake, Wisconsin*

There are some parts of the limestone around Green Lake, Wisconsin that contain the geodes with orange to yellow agates rims and few solid agates had been found there. They were apparently collected only once and are scarcely available. This locale is known for bright red drusy quartz as well.

The dolostone in the Morris Pit contains drusy quartz crystals as well as brown to orange jasper, and thin pink to orange to white banded "cold water" agates termed "Nolte agate" by local rockhounds.

<https://www.worthpoint.com/worthopedia/piggyepete-coldwater-agate-specimen-1811838463>

<https://wgnhs.wisc.edu/minerals/quartz/>

<http://www.sailorenergy.net/Agates/AgatesWisconsinNolteAgateGreenLake01.html>

February Rock Shows

1-2—MERRITT ISLAND, FL: Central Brevard Rock & Gem Club; Kiwanis Recreation Center; Sat. 10-5, Sun. 10-4; \$5, under 12 free; Website: www.centralbrevardgems.org

8-9—OAK HARBOR, WA: Whidbey Island Gem Club; Oak Harbor Senior Center; Sat. 9-5, Sun. 9-4; free; contact Keith Ludemann, (360) 675-1837; Email: rock9@whidbey.net

14-23—INDIO, CA: San Geronio Mineral & Gem Society; Riverside County Fair & National Date Festival, Gem & Mineral Building; Daily 10-10; Adults \$11, seniors \$10, youth 6-12 \$9, under 6 free; Website: <https://www.facebook.com/sangorgoniogem>

15-16—ANTIOCH, CA: Antioch Lapidary Club; Contra Costa County Fairgrounds; Daily 10-5; \$6, under 13 free; Website: www.antiochlapidaryclub.com

15-16—GEORGETOWN, TX: Williamson County Gem & Mineral Society, Inc.; Georgetown Community Center at San Gabriel Park; Sat. 10-6, Sun. 10-5; \$3, ages 6-12 \$2, under 6 free; Website: www.wcgms.org

22-23—VALLEJO, CA: Vallejo Gem & Mineral Society; Solano County Fairgrounds; Daily 10-5; \$6, under 12 free; Website: vjgems.org

22-23—ALBANY, NY: New York State Academy of Mineralogy & Capital District Mineral Club; New York State Museum; Daily 10-5; \$5, under 12 free; Website: ny-sam.org

22-23—PASADENA, TEXAS: Clear Lake Gem & Mineral Club; Pasadena Convention Center; Sat. 10-6, Sun. 10-5; \$7, ages 6-12 \$3, under 6 free; Website: <http://www.clgms.org/page2.html>

22-23—JACKSON, MS Mississippi Gem & Mineral Society; Mississippi Trade Mart, State Fairgrounds; Sat. 9-6, Sun. 10-5; \$6, Students \$3, under 5 free; Website: <http://missgms.org>

22-23—PLAINVIEW, TX: Hi-Plains Gem & Mineral Society; Ollie Liner Center; Sat. 10-6, Sun. 10-5; \$3, students \$1; contact Bobby & Kitty Shipman, (806) 685-3748; Email: bobcat22@suddenlink.net

22-23—BOISE, ID: Idaho Gem Club; Expo Idaho; Sat. 10-6, Sun. 10-5; \$4, under 12 free; Website: <http://idahogemclub.com/>
22-23—BELLEVUE, WA: Crystallography Gem Mineral Market Bellevue; Daily Sat. 11-6; \$2, under 13 free; Website: <https://tinyurl.com/BellFeb2020>

February 2020-March 2020

27-1—PORTLAND, OR: Oregon Agate & Mineral Society; OMSI Oregon Museum of Science and Industry; Daily Fri. 9-5; free; Website: <http://www.oregonagate.org>

28-1—COSTA MESA, CA: Gem Faire; OC Fair & Event Center; Fri. 12-6, Sat. 10-6, Sun. 10-5; \$7; Website: <http://www.gemfaire.com>

28-1—JACKSONVILLE, FL: Gem Faire; Morocco Shrine Convention Center; Fri. 12-6, Sat. 10-6, Sun. 10-5; \$5 Website: <http://www.gemfaire.com>

28-1—CLARKDALE, AZ: Mingus Gem & Mineral Club; Clark Memorial Clubhouse

Precious or Semi-Precious Gemstones



Like a pearl, turquoise is an opaque gemstone. It is a blue to green (sometimes yellow) mineral consisting of hydrated copper and aluminum

phosphate. Its chemical formula is $\text{CuAl}_6(\text{PO}_4)_4(\text{OH})_8 \cdot 4\text{H}_2\text{O}$. Turquoise belongs to the triclinic crystal system and is a relatively soft gem, with a Mohs hardness of 5 to 6.

<https://www.thoughtco.com/alphabetical-list-of-precious-and-semiprecious-gemstones-4134639>

Auditorium; Fri./Sat. 9-5, Sun. 10-4; free; Website: www.mingusgem.club

29-1—DES PLAINES, IL: Des Plaines Valley Geological Society; Des Plaines Park District Leisure Center; Sat. 9:30-5, Sun. 10-4; \$3, under 12 free; contact Frank Lavin, 60176, 815-222-8197; Email: nival42@hotmail.com

29-1—SEATTLE, WA: North Seattle Lapidary & Mineral Club; Crown Hill Center; Daily 10-5; free; Website: www.NorthSeattleRockClub.org

29-1—MESA, AZ: Apache Junction Rock & Gem Club; Skyline High School; Sat. 9-5, Sun. 10-4; \$3, under 12 free; Website: <https://www.ajrockclub.com/>



The newsletter can include want ads for buying, selling, and trading.

Please contact Marcia Opatz, the newsletter editor,

at theisma@hotmail.com to place a free ad.

Sunshine Requests



If you know someone who could use a little sunshine—birth, illness, surgery, family death—please contact Christi Higgins at 320-224-6650.

Career Information for Jobs Related to Earth Science

Geoscientists

Geoscientists conduct field studies and examine other physical aspects of Earth. They may collect and analyze aerial photographs, rock samples and more to learn about the planet's past and present. Their findings may help to predict future conditions in particular areas. Their findings are also used to create detailed maps and charts of different areas. Geoscientists generally need a bachelor's degree, and may need to acquire a license to work with the public.

Atmospheric, Earth, Marine and Space Sciences Teachers, Postsecondary

Atmospheric, Earth, marine and space sciences teachers at the postsecondary level often conduct independent research projects in addition to teaching courses in their subject and area of expertise. All postsecondary teachers are responsible for creating lesson plans, assignments, tests and other assessments to evaluate their students. Some of these professionals may also advise students and/or oversee the work of graduate students. Most postsecondary teachers hold a Ph.D. to conduct research, but some smaller institutions, like community colleges, may allow teachers to only hold a master's degree.

Hydrologists

Hydrologists focus their research efforts on bodies of water and water quality and availability issues, but also examine how water moves across Earth. They also study the

water cycle and how water eventually evaporates back into the atmosphere and returns to the oceans. Hydrologists may also consult on water-related projects, like hydroelectric power plants, and research ways to minimize pollution or erosion into valuable water resources. These professionals need a bachelor's degree for entry-level jobs, but some may have a master's or higher.

Geographers

Geographers study Earth through maps, field observations, satellite images and more. They examine how the land, features and even human geographic features vary across locations. They may work at a local and/or global scale. They collect and analyze geographic data to create maps, graphs and reports of their findings. Geographers rely heavily on geographic information systems (GIS) to collect their information. These scientists need a bachelor's degree, and may need a master's degree for advanced positions.

Surveying & Mapping Technicians

Although they may not directly use Earth science, surveying and mapping technicians must understand some of the basics about

Earth's topography and geography as they survey land. Surveying land involves taking measurements and collecting other data to make detailed maps of particular areas. These technicians are trained to use a variety of surveying instruments and computer programs used to create maps. Most of these workers need a high school diploma, and possibly additional training in areas like geographic information systems (GIS).

Atmospheric Scientists

Atmospheric scientists use different properties of the atmosphere to study and predict weather and climate patterns. They may look at the temperature, dew point, atmospheric pressure, wind speed and more to use computer models to help produce various weather forecasts. These forecasts may be used in times of severe weather to warn people about safety concerns, schedule transportation activities and more. They may also research long-term weather or climate patterns of different areas. Atmospheric scientists need at least a bachelor's degree, but usually need a master's or Ph.D. for research positions.

https://study.com/articles/jobs_related_to_earth_science.html

Earth Science Careers

Job Title	Median Salary (2018)	Job Growth (2018-2028)
Geoscientists	\$91,130	6%
Atmospheric, Earth, Marine & Space Sciences Teachers, Postsecondary	\$90,860	4%
Hydrologists	\$79,370	7%
Geographers	\$80,300	3%
Surveying and Mapping Technicians	\$44,380	5%
Atmospheric Scientists (Including Space Scientists)	\$94,110	8%

Earth's oldest fossils was found in Isua greenstone in Greenland.

There have been claims of evidence dating back as far as 3,850 million years ago, but these are not universally accepted. Scientists continue to refine dating methods to get reliable data on the earliest life on earth.

Rock Room

This Club is unique because it has its own rock store. Here is an inventory of what is available for Club members to purchase. Stop in when you come to the Clubhouse.

Grit and Polish
Montana Petrified Wood
Montana Moss & Blue Agate
Oregon Geodes
Chalcedony
Plume Agate
Bruno Jasper
Owyhee Picture Jasper

Brazilian Agates
Tee Pee Canyon Agate
Hauser Bed Agate Thundereggs
Slabs of all sizes and types
Septarian Nodules—Utah
79 Bed Geodes—Oregon
Moroccan White Agate
Obsidian
Mineral specimens
Dinosaur bone
Mexican Luna Lace Agate
Starolites (Cross Rocks)
Small Botswana Agate
New material will be available soon from a recent donation.

Amethyst

Condor Agate

Cuyuna Rock, Gem, & Mineral Society on the Web

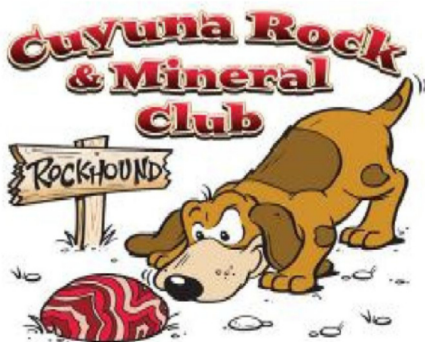
www.cuyunarockclub.org

The website will be taking on a new look in the near future. Make sure you check it out!



Marcia Opatz, Editor
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& Mineral Society
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FIRST CLASS MAIL



The Agate Explorer

February 2020

*Official Publication of the Cuyuna Rock,
Gem & Mineral Society*

Members of AFMS & MWF



Notes from the President

Marcia and I belong to another rock club and were collecting with them while in Quartzsite, Arizona. One of the woman fell and sustained a compound fracture of her wrist, and a cut on her head.

That got me thinking. Would our Club be prepared for a medical emergency when we are far away from a town?

Here were some of my thoughts after the fact:

- know where you are, and how to describe where you are (crossroad street, GPS coordinates) That was part of the issue where we were in Arizona. We were FAR off the beaten track. I needed to climb a hill to get a cell phone signal.
- Bring a well-stocked first aid kit. Hopefully someone has had first aid training.
- Priorities are: don't move a victim, stabilize neck, stop bleeding, prevent shock, cover wound, keep conscious, if possible.
- When in a group, assign jobs.

There was a happy ending to the mishap in the desert. The woman got airlifted to a hospital with an orthopedic unit where she is on the mend.

Ed Opatz



Club Officers & Board of Directors

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