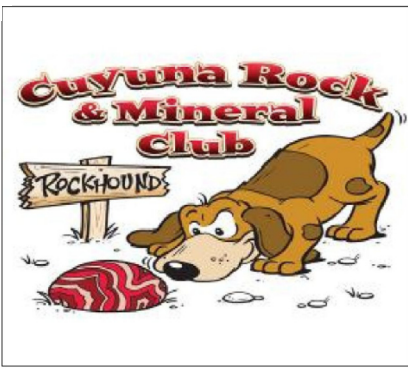


The Agate Explorer

May, 2024



Meeting Sat., May 4 at _____

- Check trailer and load.
- Check signs.
- Check sand and sluicing equipment.



Franklin Art Center

Needed for Show!

- Small, unpolished Lake Superior agates for the kids' rock pile.
- Wheelchairs and walkers for customers to borrow.
- Bring to the May meeting or call Ed Opatz at 320-250-1363.

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.



Pebble Pup Day Camp

This event will be held all day Friday, June 7, and the morning of Saturday, June 8.

Do you have ideas for topics related to rocks that could be taught to 6-12 year olds in a fun way? Games? Demonstrations? Crafts?

Or, if you are interested in volunteering that day, most likely co-teaching a station with a geology topic (information and supplies provided) to small groups of 3-5 kids several times that day, please contact Marcia Opatz at theisma@hotmail.com, or text 320-250-8120.

2024 Field Trips



Field trip to Tamarack, Minnesota to tour Talon Metals On June 21.

Tentative trip to the Upper Peninsula of Michigan for late summer/fall.

Trip to Missouri over MEA weekend (October 17-20) for Missouri Lace, druzy, copper minerals, barite, and galena.

Lake Superior Agate picks are more spontaneous, Emails are sent to members when conditions are favorable.

If you are interested in any trip, please contact Ed Opatz at 320-250-1363.

Club Calendar

- May 4**—meeting date—show prep
- May 10**—show set up
- May 11-12**—Cuyuna Agate and Mineral Show
- June 7**—Pebble Pup Day Camp
- June 8**—Pebble Pup Agate Pick and Club meeting date
- July 20**—Club picnic



Information subject to change.

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.

Board Meeting

The meeting was called to order at 11:57am by President Ed Opatz (by phone). Present were Vice-President Lori DuBois, Treasurer Kevin Martini, Secretary Joanie Hanson and Board Members Vern Iverson, Mike Stanwood, Alan Busacker.

A motion passed to approve the minutes from the February meeting.

Treasurer's Report- Kevin- The club received a donation of equipment from Kingsley North. The Genie rock polisher is not fixable so the board voted to buy a new one.

Dan Hammond volunteered to help with club rock picking activities. He will update the board as needed.

Joanie will create a packet for rock picks and other activities i.e.: signup sheets, rules/hold harmless form, new member forms.

Show Business: Timing of deadlines for show- We are reviewing the deadlines for vendor signups. Pecking order for vendor signups- previous vendors first, then all others.

Sharon's Memorial- There will be a memorial for Sharon at the rock show on Sunday morning before the show starts in the mezzanine area of the curling club. Information will be available at the show.

Security- The club is looking at hiring an off-duty police officer during the rock show.

Volunteers- All members are expected to volunteer to help at the rock show if you are able.

Show Banners- Ed wants the big banner put up Saturday out in front of Franklin Arts Center.

General Meeting

Call to Order- The meeting was called to order at 2:05pm by Vice-President Lori DuBois. There were 34 members present and 1 guest.

Welcome new members.

Treasurer's Report- will be posted at the rock club.

Machinery repair update- Jim Albers- The Genie is not able to be fixed, so the board voted to order a new one.

Dan Hammond will help with rock picking activities/ rules of club activities. Only paid-up members are eligible to go on group activities.



Gem Encyclopedia Humite

Humite lends its name to a mineral group as well as a series within that group. The humite series includes

norbergite, chondrodite, humite, and clinohumite.

Gemstones cut from members of the humite series can have very rich colors. Faceting poses no great difficulty. With hardness ranging from 6 to 6.5, they also make durable jewelry stones. However, they'll still be susceptible to scratching from household dust. To prevent scratches, use protective settings and reserve any jewelry pieces for occasional wear.

All the minerals in the humite series are rare, but chondrodite is the most abundant member of this series. Unfortunately, rough suitable for cutting is virtually unobtainable and could only yield tiny gems, so faceted chondrodites are almost unknown. Norbergite and humite itself also face a similar situation.

Although scarcer, clinohumites are more commonly faceted than their fellow series members. Gem-quality, transparent, slightly brownish yellow to reddish orange crystals have been found in the Pamir Mountains, primarily in what is now Tajikistan. This material can yield beautiful, flawless gems.

All members of this group have poor cleavage, vitreous luster, and a biaxial (+) optic character. Typically, they show yellowish brown colors. Clinohumites from China have been found with reddish orange color, and some clinohumites from Tanzania show yellow-green colors.

Clinohumite fluoresces slightly orangey yellow in shortwave (SW) ultraviolet light (UV). Humite may fluoresce slightly yellow in SW UV. Chondrodite may fluoresce yellow in SW UV and slightly orange in longwave (LW) UV. Norbergite may fluoresce bright yellow to golden yellow in SW UV.

Scientists have synthesized the humite series members using a variety of methods. However, there's no known jewelry use for this lab-created material nor any known enhance-

ments for the natural stones. Although rare, humite series members occur across the globe.

The most well-known source for gem-quality clinohumite is Tajikistan, in the Pamir Mountains. Russia also produces gem-quality clinohumite in the Lake Baikal and Taymyr regions.

Tilly Foster Mine in Brewster, New York produces fine crystals of reddish brown, gemmy chondrodite, associated with humite and clinohumite. This is the principal source of most gem-quality chondrodite.

Afghanistan, China, and Tanzania produce gem-quality clinohumite and chondrodite.

Other notable clinohumite sources include the following: Ala, Italy; Malaga, Spain; California, United States. Norberg, Sweden and, in the United States, Franklin, New Jersey and Orange County, New York produce norbergite.

Myanmar produces norbergite and chondrodite.

Vietnam yields humite, clinohumite, and chondrodite.

Notable humite sources include the following: Ontario, Canada; Pargas, Finland (yellowish material); Loolekop, South Africa (in carbonatite); Kafveltorp, Orebro, Sweden (yellowish material).

Cut humite series members were long known as small gems, usually from 1 to 3 carats in size. Crystals tended to be dark and filled with inclusions and fractures, so larger cut gems were extremely rare.

The discovery of gem-quality clinohumites since the 1980s has yielded material for larger gemstones. Faceted Tajikistani clinohumites of 36.56 cts and even 84.23 cts have been documented.

Since humite series gems may have many inclusions, including two-phase inclusions, don't place them in ultrasonic or other mechanical cleaning systems. Clean them only with a soft brush, mild detergent, and warm water.

<https://www.gemsociety.org/article/humite-jewelry-and-gemstone-information/>

Sunday Agate Pick is for small agates for the rock pile at the show. We are also looking for donations of small unpolished agates for the rock pile. Please consider donating if you have some. Thank you.

Signup sheets for summer volunteer opportunities will be available soon.

Show updates- We still need more volunteers for the rock show. Looking for wheel chairs for the show.

Show and tell- several people brought rocks

to show the group.

Door Prizes- won by: Bev Williams, Gary Stevenson, Keith Lorensen.

Speaker- Jon Hellmers on photographing stones.

Respectfully submitted,
Joanie Hanson

Florida State Fossil

Fossil: Agatized Coral (Anthozoa)
Age: Eocene
Year Designated: 1979
 (Designated State Stone)



Currently, Florida does not officially recognize a state fossil but its state stone is actually a fossil, so we'll count it. The state stone, err fossil is agatized coral and the most commonly found type found in Florida is Anthozoa. "Agatized" is a common name given to fossils that have been replaced by silica and contaminate minerals which provide the color. Agate replaced, fossil coral is found in several Florida locations and may have been formed when runoffs of silt rich is clay and silica buried an Eocene aged Coral reef. Some of the first inhabitants of Florida some 5,000 years ago used this agatized coral as a material for making stone tools and points.

<https://www.fossilera.com/pages/state-fossils>



Ed O'Rocks! Sale

Rocks by the piece
Rocks by the pail
Rocks by the pound
Volume Discounts

Cash or Credit

ATM
 .3 mile

Clearance section!

New agates from around the world: German, Polish, Chinese Fighting Blood, Turkish, Kentucky, Snakeskin, Oregon Eye, Pigeon Blood
Jaspers Petrified Wood Kyanite Selenite Slabs
Specimens Coral Fossils Geodes Spheres Celestite
Bismuth Amethyst Crystals Indian artifacts
Coprolite Fountain rocks Septarians
Dino Bone Aragonite Cabochons 3-D Frames
Jade Vintage belt buckles, bolo ties, rings Carvings

Equipment and Equipment parts
New pieces from collections. New SW U.S. material.
Rock cutting available.

Thur., Fri., Sat., May 23-25 9 a.m.—5 p.m.
Sun. and Mon., May 26-27 10 a.m.—4 p.m.

43330 125th Ave., Holdingford, Minnesota
For questions, call/text 320-250-1363.



The Rock & Art Shop

Rocks, minerals, jewelry, books,
 lapidary equipment/supplies,
 artwork, & education.
 320-217-2757

1700 W. St. Germain St. St. Cloud, MN

www.therockartshop.com

The human body is made of 70% water which is considered a "liquid crystal", so the human body itself is actually a crystalline structure.

May 2024

Upcoming Midwest Shows

3-5—KALAMAZOO, MI: Kalamazoo Geological & Mineral Society; Kalamazoo County Expo Center; Fri. 2-8, Sat. 10-6, Sun. 10-5; \$5, under 13 free; Dave Haas, (269) 370-3656
3-5—MCPHERSON, KS: McPherson Gem & Mineral Club; 4-H Fairgrounds; Fri. 9:30-5:30, Sat. 9-5:30, Sun. 10:30-3; Free; Website: www.mcphersongemandmineralclub.org
4-5—HIXSON, TN: TN Valley Rock & Mineral Society; Chester Frost Park Pavilion; Sat. & Sun. 10-4; Website: bit.ly/TVRMS_Rocks
10-12—MOUNT IDA, AR: Travelin Rocks; Quartz Capital Of The World, 1210 Hwy 270

E; Fri. 12-5, Sat. 9-5, Sun. 10-5; Free; Chris Wood, (870) 490-2997
10-12—COLUMBIA, MO: Central MO Rock & Lapidary Club; Knights of Columbus Hall; Fri. 12-7, Sat. 9-5, Sun. 10-4; \$6; Sr/12-18-\$3, under 12 free; Website: cmrlc.org
18-19—WAUKESHA, WI: Wisconsin Geological Society; Waukesha Expo Center; Sat. & Sun. 10-4:30; \$3 ea/2 for \$5 Website: www.wigeo.org
25-26—ST. CHARLES, IL: Chicagoland Gems & Minerals Association; Kane County Fairgrounds; Sat. 10-6, Sun. 10-5; \$5, sr/students \$3, under 13 free; Website: www.CGMAShow.com



SeashellsbyShelly Rock & Crystal Shop
 2625 County Road 37 NE
 Monticello, MN
 Open Mon 12-4, Fri 3-6
 Sat 11-5, Sun 12-3
 ph 763-295-2440
 Huge shop with tons of inventory!
 Rock cutting services and a dark room with fluorescent minerals!
Seashellsbyselly.com

Minnesota Rock Shops

Agate City 721 7th Ave., Two Harbors 218-834-2304
Agate Trails of Fellerer Creations 471 Arrowhead Ln, Moose Lake 320-279-3553
AM Rock Shop 710 E River Rd, Anoka 763-421-2807
Art & Soul 5124 202 Main St Stillwater, 651-275-0255
Beaver Bay Agate Shop 1003 Main St., Beaver Bay 218-226-4847
Christy's Crystals 407 N Riverfront Dr, Mankato 507-720-1061
Designed In Stone 841 Forest Ave E Suite 110, Mora 651-248-8768
Dream in Jasper Crystal Shop 107 N Meridian St, Belle Plaine 763-301-1058
Enchanted Rock Garden 1228 E 66th St, Richfield 612-866-1140
Jon's Gem Emporium 184 North Hwy 10, Motley 218-640-1047
Magic Mushrooms in the Crystal Garden 171 Lake St N, Big Lake 612-805-7111
MO'R Designs 2100 Snelling Ave N Suite 13, St Paul 651-294-3069
Naturally Unique 137 Western Ave N, Park Rapids 701-429-0409
Rock and Art Shop 1700 W St. Germain, St. Cloud 320-217-2757
Rocks and Things 201 N Rum River Dr, Princeton 763-389-0979
Rocks & Tools SeashellsbyShelly Rock and Crystal Shop 2625 County Rd 37 NE, Monticello 763-295-2440
Sacred Sage and Crystals 118 Broadway E, Little Falls 320-360-3611
Sample's Agates Gem and Mineral Shop 18581 MN-371, Brainerd 218-821-6623
Taylor's Falls Bead Store 364 Bench St, Taylor's Falls
Those Blasted Things 924 Kniss Ave., Luverne 507-283-4027
Twin Pines Trading Post 31049 Front St, Pequot Lakes 218-839-0829
Uncle Tom's Rock Shop 2746 Hoffman Dr. NW, Owatonna 507-451-2254
ZRS Fossils and Gifts 3018 Lyndale Ave S, Minneapolis 612-824-1068

Rocks Gems Fossils Minerals

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70 Million-Year-Old Giant Dinosaur Skeleton Found

A chance discovery made in southern France has revealed a rare specimen — an almost complete dinosaur skeleton found connected from its hind skull to its tail.

Researchers estimated the age of the newly discovered fossil to be around 70 to 72 million years old, but Titanosaurs roamed around on four legs from the Late Jurassic Epoch to the end of the Cretaceous Period, approximately 163.5 million to 66 million years ago.

Titanosaurs belong to a larger group of dinosaurs known as sauropods, a family of long-necked herbivores that were some of the largest dinosaurs of their time, according to Britannica.

The massive fossil came to light in May 2022, after now 25-year-old amateur paleontologist Damien Boschetto and his dog stumbled across something unusual while walking in a forest in Montouliers, France. Boschetto had noticed a cliff edge that had recently collapsed and decided to take a closer look, when he spotted an exposed bone sticking out of the ground, local media outlet France Bleu first reported on February 13.

The Archaeological and Paleontological Cultural Association at the Cruzy Museum, in collaboration with the French National Center for Scientific Research, identified the nearly

10-meter-long (32.8-foot-long) fossil as a Titanosaur skeleton upon excavation. Boschetto, who has been a member of the association for eight years, told CNN that while unearthing dinosaur remains is “always exciting and interesting for scientific research and the understanding of the ecosystems of that time,” finding the bones in their almost original anatomical position is what makes this find extraordinary.



“From a museography point of view, it will make it possible to present to the general public animals almost complete in anatomical positions, which is something great,” Boschetto added via email.

A group of history and archaeology enthusiasts created the Archaeological and Paleontological Cultural Association in 1975 to safeguard the heritage around the village of Cruzy, with several members becoming enlightened amateurs in paleontology due to the areas’ wealth of dinosaur fossils, said Jean-Marc Veysières, a member of the group and

one of the fossil preparers for this discovery. Today, the association is made up of inhabitants of the region, including a few scientists as well as students.

“The most exciting thing was to realize that we had at least one anatomically connected animal and that it was a titanosaur, a long-necked dinosaur,” said Veysières in an email. “(Boschetto) is an enlightened enthusiast and curious about nature, he spends a lot of time surveying the region in search of new areas. ... He became an expert on the Late Cretaceous fauna of our region.”

The association has been excavating the site, which Boschetto referred to as a bone bed, a term used by paleontologists to describe a dense area of animal bones and other fossilized remains, for the past two years. And the newly announced find was not Boschetto’s first.

The recently revealed 70% complete Titanosaur skeleton was retrieved during the excavation along with several fossils of various dinosaurs and other vertebrates, including some in anatomical connection and near complete. Other remains

identified included those of a Rhabdodon — a herbivore, or plant-eater, like the Titanosaur — and fragments from skeletons of carnivores such as Theropods and crocodiles, according to Boschetto.

The Titanosaur skeleton currently resides in the Cruzy Museum’s laboratory, where it will be further studied, Veysières said.

<https://www.cnn.com/2024/03/07/europe/dinosaur-connected-fossil-discovery-france-titanosaur-scn/index.html>

The World of Jasper Whiskey Creek Jasper Owyhee Mountains, Idaho

Whiskey Creek Jasper was initially discovered in 2000 on the Idaho side of the Owyhees, but it wasn’t until 2021 that through a coordinated mining effort the deposit became a reality and produced enough to be introduced at the January 2023 Quartzsite PowWow. The material was in high demand and quickly sold out.

Some of the jasper has characteristics very much like orbled Black Bruneau while other has a wildly brecciated pattern; both of which



display rich earth tones in oranges, yellows, reds, greens, and browns.

This material is super hard and will take an exceptional polish

creating impressive cabs or display pieces.

<https://drockshop.com/collections/whiskey-creek-jasper>

Bench Tip



A dead blow mallet has a head filled with steel shot and two nylon faces. It has a similar function to a rawhide mallet in that it won’t mar your metal but it has extra weight and power. This mallet delivers strong blows with minimal rebound, reduces vibration transfer to the user’s hand and arm, and its nylon heads leaves little to no marks on a piece and won’t stretch the metal. Bend, shape, and flatten metal by gently working harder.

<https://tips.metalsmithsociety.com/tips>

2024 Show Volunteer Lists

To volunteer, call
Joanie Hanson at 218-831-2665
or Ed Opatz at 320-250-1363

Show Set up Starts on Fri, May 10 at 8 am

Vern Iverson Lisa Hughes
Lilly Peterson Becky Sovde
Joanie Hanson Joe Lanmore
Mike Stanwood (and helper) Bev Williams
Paulette Wosniak Daryl Tasler
Mike Ott
Bruce Curley
Merlin Thorn

Set up Display late Friday afternoon

Mike Stanwood (and helper)
Sue Mott
Lyndon Johnson
Joe Lanmore

Security—Back Gate

Sat., 6-9 Lyndon Johnson

Sat., 9-12 Bruce Curley

Sat., 12-3

Sat., 3-5 Alan Busacker

Sun., 9-12:30 Maria Rosa

Sun., 12:30-4

Security –Show

**Volunteers STRONGLY urged
to attend free Fri. night meal and hear
speaker on security and theft.**

Sat., 9-12 Dan Hammond
Mike Stanwood
Phil Gotsch—inside only

Sat., 12-3 Mike Ott
Les Tix

Sat., 3-5 Joe Lanmore

Sun., 10-1 Dan Hammond
Kathy Peterson
Judi Laurence
Roger Laurence

Sun., 1-4 Becky Sovde
Judi Laurence
Roger Laurence

Exit Gate

Sat., 9-12 Laurie Harris

Sat., 12-3 Alan Busacker

Sat., 3-5

Sun., 10-1 Becky Sovde

Sun., 1-4 Bryce Eggert

Door Admissions

Sat., 9-12 Vern Iverson
Ann Espland
Keith Lorensen 10-12
Erich Ess

Sat., 12-3 Michael Maddox
Keith Lorensen 2-5
Merlin Thorn 1-5

Sat., 3-5 Melissa Jewison
Bryce Eggert

Sun., 10-1 Vern Iverson
Mike Windey
Diane Windey

Sun., 1-4 Kathy Peterson
Marie Rosa
Michael Maddox

Club Table

Sat., 9-1 Lilly Peterson
Joanie Hanson
Meredith Sternaman &
Dick Salzwedel

Sat., 1-5

Sun., 10-1 JoAnn Moe

Sun., 1-4 Lilly Peterson

Vendor Survey

Keith Lorensen

Rock Saw/Geode Cracker

Times can be split into shorter increments

Sat., 9-12 John Krebs
Ed Walton
Daryl Tasler

Sat., 12-5 Ed Walton
Daryl Tasler

Sun., 10-4 Alan Busacker
Ray Strassburg
Marge Strassburg
Ed Walton

Spinning Wheel

Sat., 9-12 Kathy Krebs
Ed Shaw & Ruby Shaw

Sat., 12-3 Mike Stanwood
Kathee Stanwood

Sat., 3-5 Rosalie Wolff
Wolff kids

Sun., 10-1 Mike Stanwood
Kathee Stanwood

Sun., 1-4 Sue Mott

Kids' Corner/Sluice Box

Sat., 9-1 Rudy & Lynette Fellman
Justin & Christine Reisz

Sat., 1-5 Marie Rosa

Kathy Peterson

Sun., 10-1 Joy & Frank Ruzich
Paulette & Brayden Wozniak

Sun., 1-4 Bruce Curley
Tim Stevens

Wizard of Rocks

Sat., 9-12 Lyndon Johnson

Sat., 12-3 Bryce Eggert

Sat., 3-5

Sun., 10-1 Dave Moe

Sun., 1-4 Lyndon Johnson

Saturday Admissions Count—Sat. night

Sherri Moening
Steve Moening

Show Tear Down Starts Sun., May 12 at 4

Lilly Peterson Cindy Horbach
Mike Stanwood (and helper)
Joe Lanmore Becky Sovde
Paulette Wozniak

Bruce Curley

Les Tix

Mike Ott

Gary Pecham

Bev Williams

Tim and Sandra Murray

Lisa Hughes

Alan Busacker

Show Clean up Mon. May 13

Mike Stanwood (and helper)
Merlin Thorn

**It's not too late to
pass the word!**

Show cards and show flyers are
available at the Clubhouse.
PLEASE pass these out to friends,
co-workers, and neighbors, and
stop at local businesses to ask to
display a flyer. You can give them
a few show cards too.

Sharon Smith Memories

February 26, 1956-November 26, 2023



Sunday, May 12th
8:00-9:45 a.m.

**Curling Club building
Mezzanine level**

A gathering will be held
on Sunday to remember the Cuyuna
Rock, Gem, and Mineral Society's
long time show coordinator,
Sharon Smith.

Please feel free to bring any photos
or other memorabilia to share.

Ancient Diamonds Shine Light on The Evolution of Earth

The analysis of ancient, superdeep diamonds dug up from mines in Brazil and Western Africa, has exposed new processes of how continents evolved and moved during the early evolution of complex life on Earth.

These diamonds that were formed between 650 and 450 million years ago on the base of the supercontinent Gondwana, were analyzed by an international team of experts, and have shown how supercontinents such as Gondwana were formed, stabilized, and how they move around the planet.

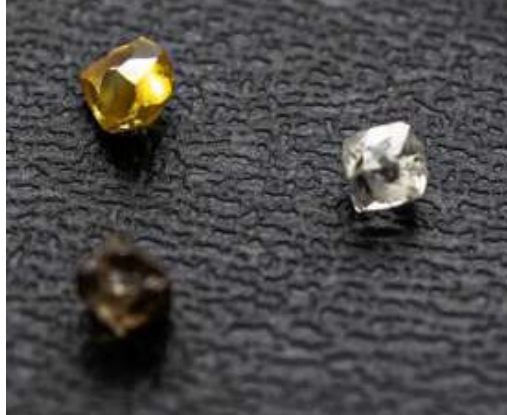
"Superdeep diamonds are extremely rare and we now know that they can tell us a lot about the whole process of continent formation," says Dr. Karen Smit of the Wits School of Geosciences, who was part of the study. "We wanted to date these diamonds to try and understand how the earliest continents formed."

Formed millions to billions of years ago, diamonds can shine light into the darkest and oldest parts of the Earth's mantle. Continents drift across Earth's surface creating "supercontinents" and destroying them. Collectively, these migrations are known as the "supercontinent cycle" and diamonds are one of the few minerals strong enough to survive and record these ancient cycles of creation and destruction.

Supercontinents can focus deep oceanic plate subduction—the driver of plate tectonics—in very specific regions. Such deep geologic processes, especially in the past, have been very difficult to study directly because the oceanic crust is young, and the continental crust only provides a limited view of Earth's deep workings. Old diamonds offer a direct window into the deep plate tectonic engine and how it might relate to the supercontinent cycle.

By dating the tiny silicate and sulfide inclusions inside the diamonds, the team led by Dr. Suzette Timmerman of the University of Bern, Switzerland, dated the diamonds that formed 300 to 700km deep under the base of Gondwana. The goal was to trace how material was added to the keel of the supercontinent. While doing this, the team recognized a previously unknown geologic process. The research was published in Nature.

"The geochemical analyses and dating of inclusions in the diamonds, combined with existing plate tectonic models of continent migration, showed that diamonds formed at great depths beneath Gondwana when the supercontinent covered the South Pole, be-



tween 650–450 million years ago," says Smit. The host rocks to the diamonds became buoyant during diamond formation, transporting subducted mantle material plus the diamonds. This material was added to the base of the root of Gondwana, in essence 'growing' the supercontinent from below.

"Around 120 million years ago, Gondwana started to break apart to form the present oceans such as the Atlantic. At 90 million years ago, the diamonds, carrying trapped tiny inclusions of the host rock, were brought to Earth's surface in violent volcanic eruptions."

tions."

The current locations for these volcanic eruptions are on the continental fragments of Brazil and Western Africa, two of the key components of Gondwana. Thus, the diamonds must have migrated together with different parts of the former supercontinent as it dispersed, "glued" to their base.

"This complex history of the diamonds shows that they are remarkably well-traveled, both vertically, and horizontally, within the Earth—tracing both the formation of the supercontinent and the latter stages of its evolution. The accretion of relatively young material to the roots of the continents thickens and welds together these ancient continental fragments indicating a potential new mode of continent growth."

Smit conducted the isotope analyses of sulfide inclusions at Carnegie Institution for Science. Smit is now based at the University of the Witwatersrand where she is part of a team developing a new isotope lab and methodologies so that diamond inclusion analyses can ultimately be conducted at Wits.

"We have installed the necessary equipment in 2022 and are working towards getting the highly specialized skills and equipment together so we can do this type of diamond work in South Africa, where previously it could only be done overseas," says Smit. "We need this type of research to understand how continents evolve and move. Without continents there wouldn't be life. This research gives us insight into how continents form, and it links to how life evolved and what makes our planet, Earth, different from other planets."

<https://phys.org/news/2023-10-ancient-diamonds-evolution-earth.html#:~:text=The%20analysis%20of%20ancient%2C%20superdeep,of%20complex%20life%20on%20Earth.>



Agates From Around The World

Temporal Glutch Agates near Patagonia, Arizona

These amygdaloid agates are quite small, and can be found in a hard basalt host rock. The colors are generally white to tan with some purplish and reddish hues. Some agate nodules contain root beer colored quarts, and a few calcite-filled geodes with scepter quartz crystals have been found.

It would be better to just grind down the agate nodules than cutting them in order to get a good agate pattern without exposing the quartz/calcite cores. Tumbling is also recommended, since many agate nodules have eye patterns on their skins.

<http://www.sailorenergy.net/Agates/Agates.ArizonaTemporalGlutchpatagonia01.html>

ROX BOX

A place to advertise rock items to sell or trade and to inquire about items to purchase.



The Cuyuna Rock, Gem, and Mineral Society accepts no responsibility for any dissatisfaction that may occur by either party, sell or buyer. The Society does not profit in any way by sales transactions.



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.



Kids' Corner

Metal Quiz

How much do you know about metal? Take our metal quiz and find out! Use our trivia questions & answers to learn more about elements such as gold, silver and sodium as well as alloys such as bronze and steel. Put yourself to the test with this fun science challenge and see how much general knowledge you have on metals.

1. What is the chemical symbol of gold?
2. True or false? Steel is a chemical element.
3. What is the most common metal found on Earth?
4. True or false? Sodium is a very reactive metal.
5. What three kinds of medals are awarded at the Olympic Games?
6. True or false? Metal bonding with metal is known as a metallic bond.
7. Bronze is made from what two metals?
8. What is the only metal that is liquid at room temperature?
9. True or false? Sterling silver is made up of less than 50% silver by weight.
10. What metal has the chemical symbol Pb?

See answers below.

<https://www.sciencekids.co.nz/quizzes/metal.html>

**Cuyuna Rock, Gem,
& Mineral Society**
on the Web

www.cyunarockclub.org

Metal Quiz Answers

1. Au
2. False—Alloy
3. Iron
4. True
5. Gold, Silver and Bronze
6. True
7. Copper and tin
8. Mercury
9. False—over 92%
10. Lead

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	Colorado	Dino Bone
Oregon Geodes	Snowflake Obsidian	Coyamito Agate
Chalcedony	Utah Petrified Wood	Grape Agate
Plume Agate	African Blue Lace Agate	Root Beer Selenite
Owyhee Picture Jasper	Carnelian Agate	Gold Diggins
Brazilian Agates	Tiger Eye—red and blue	Red Cloud (Fluorescent)
Amethyst	Tiger Eye—gold & blue	Pumice
Hauser Bed Geodes	Variegated	Mookaite
Thundereggs	Miscellaneous Obsidian	
Mexican Geodes	Condor Agates	
Montana Petrified Wood	Blue Forest Petrified Wood	Coming soon!
Montana Moss	Sunset Jasper	Mookaite
Tee Pee Canyon Agate	Noreena Jasper	El Picacho Agate
Slabs of all sizes and types	Tiger Iron	Mexican Geodes with
Septarian Nodules—Utah	Kumerha Jasper	crystals
79 Bed Geodes—Oregon	Swazi Agate	Apache Tears
Moroccan White Agate	Calandria Agate (Mexico)	Laguna Agate
Small Botswana Agate	Bear Canyon Agate	
Smokey Quartz crystals -	Royal Imperial Jasper	

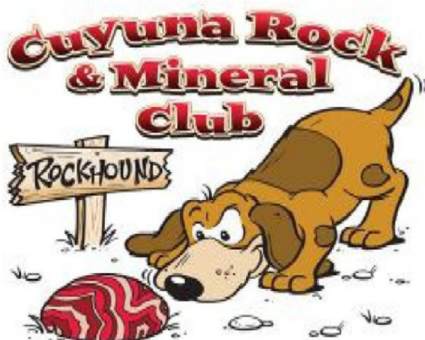
Sunshine Requests

If you know someone who could use a little sunshine— birth, illness, surgery, family death— please contact Joanie Hanson at 218-831-2665.



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Notes from the President

Apparently there is some confusion with members/lapsed members about when dues are due. Membership is from January through December, with dues payable before January 1 of each year. We have always given a grace period for people, so unpaid members still receive a newsletter into the next year for a couple of months. The only exception is when a brand new member joins late in the year—like November and December. Then the dues pay for the next year too.

Not only am I getting ready for our big show, but we also have a huge sale at our house at the end of May. It would be great to see you! We have tons and tons of rocks. No kidding!



Ed Opatz

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