



Western Dakota Gem & Mineral Society
P.O. Box 1944
Rapid City, South Dakota
57701-1954

Remember: October is elections. Please consider helping the club by stepping up and possibly becoming officers of the club.



THE AMMONITE

Affiliated with RMFMS & AFMS

Next meeting:

6:00 p.m.

September 11, 2025

Minneluzahan Senior Citizen Center

315 North 4th Street

It is always rock hunting time!

The Purpose of our Non-Profit Club is to promote interest and education in geology, mineralogy, paleontology, archaeology and lapidary, to sponsor and promote the coordination of work efforts between groups and individuals.





The Ammonite Western Dakota Gem and Mineral Society

2024-25 Officers

President:	Kelli Wold	605 381-6418	kelliwold24@gmail.com
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CLUB Mailing: Western Dakota Gem and Mineral Society, PO Box 1954, Rapid City, SD 57709-1954

CLUB Website: www.WDGMS.org

CLUB Facebook: Western Dakota Gem and Society/groups

CLUB Email: westdakota.rocks@gmail.com

Meetings: Second Thursday of each Month (except August) at 6:00 PM (times can change)

At: Minneluzahan Senior Citizen Center, 315 North 4th Street, Rapid City, SD 57701

ANY SUBMISSIONS FOR THE NEWSLETTER SHOULD BE IN BY THE 25TH OF EACH MONTH

Any questions about the material found in the Ammonite please contact the editor:

Deborah Vick, 265 Stumer Rd Apt 7, Rapid City, SD 57701

If you change your address, email address or have a problem receiving a newsletter:

Please Contact the Treasure at westdakota.rocks@gmail.com

Dues: \$15.00 per person - \$20 per family with children under 16 years – Includes 12 newsletters by e-mail. If you chose to receive the newsletter by mail, there is an additional \$10.00 fee. Dues cover the RMFMS insurance and an electronic copy of the newsletter.

Send dues to Treasurer, PO Box 1954, Rapid City, SD 57709-1954

Brief August Minutes

The Western Dakota Gem and Mineral Society meeting was held August 14, 2025 at Old Storybook Island picnic shelter. After eating a variety of tasty dishes, a short business meeting was held.

Kelli reported on the Board meeting held August 3rd:

- Debbie won't be able to go to the RMFMS Convention, but Rob Wills and Solomon will be able to attend. Solomon won Best of Show for his display at our annual show and will enter his display in the convention display competition.
- 39 new members signed up at the show.
- We will send 5 scholarship amounts to the WDGMS/Bill Roberts Scholarship at School of Mines and \$500 to the American Federation Mineral Society scholarship fund.
- Rapid City has decided not to have display banners. We will be looking at alternate ways to advertise. Rob Wills said he will be able to do the advertising next year and has added a WDGMS Instagram account.

Kelli asked the members if they thought adding the GenPro was a positive move, and if we should rent again next year. All ayes.

The geode cracker went over well at the show. Should the club buy the geode cracker for \$100? All ayes.

Treasurer Leslie gave a report on the Show figures. We made a nice profit. All bills have been paid, taxes submitted to the South Dakota Department of Revenue, and Silent Auction checks handed out or mailed.

Kelli reminded the members that elections are coming up and to consider holding a position. It's not hard or time-consuming and help is available if there are questions.

Please sign up for the upcoming field trips. The September field trip is to the Vore Buffalo Jump and it's important to get the number of attendees to them about a week before we go.

The short meeting was adjourned at 7:00 p.m.

Board Meeting Minutes August 3rd

Kelli called the meeting to order at 11:22 am. Attending the meeting were Kelli, Debbie, Rod, Lori B, Leslie, Larisa, Debra, John and Phillip.

The club needs a delegate to replace Debbie at the convention. Spoke with Rob W earlier since he was going to the convention with his son. Leslie motioned to replace delegate with Rob. Debbie seconded Motion was approved. Will contact convention to inform them of change. Will reimburse Debbie \$70 and write checks out to Rob (\$200) and Lori L (\$245).

A person signed up during the show. Was concerned that their contact information was made "public". Information is not public but our membership list is shared with our club members. Kelli motioned that we should add a section where you check "Do or Do Not" wish to share name, address, phone number, and email on the new member application. Debbie seconded. Motioned approved.

Adding Membership chair (Larisa) and Social Media persons (Mimi and Rob) to the Ammonite. Add "Save the Date" for next year's show on the website. Need to change the old yellow logo with the blue logo on website. Need to update website with all of this year's Ammonites and field trip adventures.

While picking up the street banners Leslie was informed that Rapid City will no longer offer street banners to be hung for events. Will need to consider other options to inform the public of our show.

The show added the GenPro building to this year's event. We had positive feedback from vendors and attendees. Debbie motioned that we continue with both the Nurdy Nuts Expo Hall and GenPro buildings for next year's show. Rod seconded. Motion was approved.

Club's membership numbers are up. The club is growing. Should we be looking at different locations for general meetings? We will continue to review this as not all members attend meetings. Several members are from out of state. Debra asked about changing pinned name tags to lanyards and letting club members keep their name tags. In the past the club asked that they return their name tags at the end of the meetings. There are so many name tags that it takes up the whole table to present them. We will use the lanyards from past shows used for the vendors. No additional expense.

Carl Milner had to cancel from the show due to a health issue. Debbie motioned to refund him \$200. Leslie seconded. Motion was approved. K&K worked the show Identifying Rocks/Minerals for the club. Rod motion to refund \$100 to K&K. Debbie seconded. Motion was approved.

Board is looking to give the SDSMT Bill Roberts scholarship \$2630 and AFMS Scholarship Foundation \$500. The odd dollar amount for SDSMT includes tax.

Elections- officers are talking with possible club members for officer positions. Rebecca H would like to head the Jr Jr Rockhounds section of the show next year. Renee may want to chair fieldtrips for the club. Review board directors time left: Lori B- 2 years, Rod W- 1 year and Jason H – 1 year.

Meeting adjourned at 12:30 pm.

Upcoming field trip:

September – Vore Buffalo Jump. Please Note -if intersted MUST notify a week in advance because requires \$6.00 per person

October – TBD

November – TBD

Other possibilities – New Castle Petroglyphs, Tepee Buttes fossils, Custer Lithium mine

Guest speakers:

September – Diane Gates (?)

October – TBD

November - TBD

President's message

Thank you to all that came out for the August picnic. Great food and great people.

Just a reminder that elections are in October. If you are wanting to volunteer your time to the club. Please let one of us know.

If you are interested in going on the September field trip to the buffalo jump. Please let Don Bailey know.

If anyone has suggestions on how the club can do better, reach out to Kelli Wold.

Thank you again for being part of the best rock club around.

Treasurer Notes:

Please consider taking over the Club Treasurer position. It's not difficult – pay rent at the monthly meetings, deposit membership dues, raffle money, pay trailer expenses and occasional club purchases. Please see Leslie for more information.

Club Account – The CLUB account had show deposits of membership and sale of canvas bags.

Show Account – Lots of money deposited from the Silent Auction and admittance. All show bills have been paid, including taxes and silent auction 80%. If you want to see the exact figures they will be out for display at the September meeting.

CANVAS BAGS FOR SALE!!! **\$10.00 at meeting.**
Support the club and gain an attractive, sturdy tote-bag.

SHOP TIPS

Reprinted from the September 2015 Ammonite

Which Saw? Which Coolant?

- To cut rough rock into slabs use a slab saw; choose the smallest saw that can accommodate your rock. To trim slabs or cut small pieces use a trim saw.
Choose a thin blade for precious rock such as opal, ruby, tourmaline, etc. to minimize waste;
Choose a thicker, more robust blade for less expensive rock such as agate, jasper, marble, etc.
- Thin blades wear out fast but save expensive stone; thick blades last long, but eat more stone.
- Saws are characterized by the diameter of the saw blade and whether they have a vise to hold the rock and move it into the cutting edge. Slab saws are vise fed, trim saws are hand fed.
- Rock saws must use liquid to flush rock dust away from the cutting edge and to cool the blade.
- Thin blades up to 10 inches diameter can often use water with additives, but oil is a more effective coolant. Thicker and/or larger diameter blades require oil as a coolant.
- Some rocks are porous and might discolor or otherwise be adversely affected by oil. Use oil cooling unless there is a compelling reason to use water or other liquid. Oil always gives longer blade life. Choose the type of oil for low toxicity, high flash point, and rapid heat transfer.

- Oil is messy, so keep a container handy of absorbent clay or other product (kitty-litter works well) to absorb the oil from the fresh cut rock, oily hands and floor drips and spills.

2015 Ed.note: The most common oil used in saws is “Almag Oil”. For those who are allergic to petroleum products, try Mineral Oil, which is available by gallon at “Runnings”. I use a regular Oil Cleaner solution from automotive dealer to cleaning up mineral oil and regular oil off of hands and rocks or Dawn soap.

Tile Saws: Tile saws tend to run at a higher speed than trim saws, making it much more difficult to properly hold onto the stone, making tile saws more dangerous to use if you are not very experienced. One article suggested the user of a trim saw to fasten a vise grip pliers to your rock to hold it.

Club member Alan Dorland has wonderfully wrote an article on Fluorescence. It will be presented in several Ammonties as a series. This month is the first part.

Understanding Fluorescence (Part 1)

Alan Dorland

Years ago I read that once you tug on a single thing in nature you discover that it's attached to everything else. I've always tugged on rocks. They've always been a source of wonder, beauty, and inspiration to me. That recently led to a fascination in things that glowed under UV light – fluorescence! I get questions from lots of people about it and have been asked to share what I'm learning with the club. Author Richard Bach wrote that *“It is good to be a seeker but sooner or later you have to be a finder. And then it is well to give what you have found, a gift into the world for whomever will accept it.”*

This is part 1 of a 3 (or perhaps 4) part series of articles. It introduces the properties of “fluorescence”, its many everyday applications and what causes an object to fluoresce. Future Ammonite issues will get into more depth on this fascinating look at our hobby.

Richard Bach was right, so I'm sharing some knowledge that I've found because after all, that's what we're all about in this club.

What is “fluorescence” and what are the applications?

In its simplest terms, fluorescence is the ability of an electron to absorb electromagnetic energy (like UV light) and then re-emit that energy at a longer wavelength in a color that's visible to humans.

Fluorescence is one category in a much broader category of “luminescence”, and is considered to be a separate category because the emitted light ends *immediately after* the UV light source is removed. Two other categories of luminescence you're probably aware of are “phosphorescence” (the *persistent emission* of light after the end of excitation – the glow that diminishes after the light is turned off), and “bioluminescence” which is caused by biochemical reactions in a living organism such as fireflies and certain types of fish.

Fluorescence has many practical applications. We're surrounded by its uses which include mineralogy, gemology, medicine, chemical sensors (fluorescence spectroscopy), fluorescent labelling, dyes, biological detectors, and LED lamps. It's used in everyday items like security features on banknotes, passports, drivers licenses and other documents, safety signs, paper production and laundry detergents.

Whether used in mineralogy or in everyday life, fluorescence is a lot of fun. It occurs frequently in nature, appearing in some minerals and many biological forms across all kingdoms of life. For example, did you know that an eggshell luminesces in red under 365nm UV light, or that chlorophyll in plants fluoresces, or that old glassware often fluoresces, or that sea shells often fluoresce? Did you know that many insects fluoresce and can see in the UV light range and may thus be drawn to plants because of colors unseen by our human eyes?



Sunflower photographed under UV light

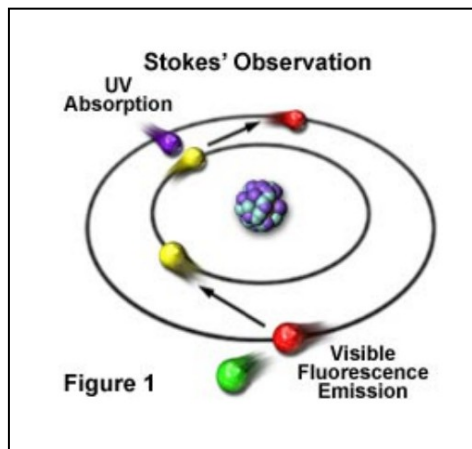
What Causes Fluorescence?

Fluorescence in minerals occurs when a specimen is illuminated with specific wavelengths of ultraviolet light. Not all minerals fluoresce and two seemingly identical pieces of calcite may differ in their ability to fluoresce depending upon the presence of specific impurities known as “activators”. These activators are typically positively charged ions of metals such as tungsten, molybdenum, lead, boron, titanium, manganese, uranium, and chromium. Some rare earth elements are also known to contribute to the fluorescence phenomenon. Fluorescence can also be caused by crystal structural defects or organic impurities. In addition to “activator” impurities, some impurities have a reducing or quieting effect on fluorescence. If iron or copper are present as impurities, they can reduce or eliminate fluorescence altogether.

Minerals that fluoresce can temporarily absorb a small amount of light energy and an instant later emit that small amount of light at a different wavelength. When the emitted wavelength is in the visible spectrum we see the temporary change in the color of the mineral. This fluorescence is most spectacular when the minerals are illuminated in darkness by ultraviolet light energy. Many gemstones and minerals may have a distinctive fluorescence and it's not uncommon for them to fluoresce in different colors under different wavelengths of ultraviolet light. For example, under 365nm UV Labradorite emits dark blue, but the same specimen fluoresces blood red under 255nm UV.

A related term is “tenebrescence” which describes minerals that are capable of a reversible color change by exposure to UV or other energy sources, without any change in their essential composition. For example, a mineral appearing as white under white light is excited by exposure to UV energy and after such exposure, the visible color of the mineral under white light has changed to purple. After the mineral rests under white light it slowly loses its purple color, reverting back to its original white color! Eyeglasses containing silver salts which automatically darken in sunlight are an everyday example.

A scientist named George Stokes observed that absorbed UV energy can “excite” susceptible electrons within the atomic structure of the mineral. These excited electrons temporarily jump up to a higher orbital within mineral's atomic structure then almost immediately give the absorbed energy and drop back into their base orbital. They give up that energy in the form of emitted and heat. These two processes are respectively called “excitation” and “emission”. Emission follows excitation extremely rapidly, commonly in nanoseconds (one billionth of a second!), and is known as “fluorescence”. same thing occurs in phosphorescence except that the



the
up
light

The

excited electrons give up their absorbed energy more slowly which is why we see their light diminish over a few seconds after we stop exciting them with UV light.

In next month's Ammonite we'll dive into understanding the Electromagnetic (EM) Spectrum, wavelengths and energy of light, and the visible light range.

Upcoming Area Shows

This information can be found at the www.rockandmineralshows.com. Please check the website current shows across the country and in Canada.

Northwest Nebraska Rock Swap - 08/29/2025

08/29/2025 - 09/01/2025

Hours: 8:00 - 6:00

Venue: Crawford City Park

Website: discovernwnebraska.com/crawford-rock-swap/

Fall Casper Holistic Expo - 09/13/2025

09/13/2025 - 09/14/2025

Hours: Sat 10:00-6:00 Sun 10:00-5:00

Venue: Fairgrounds Industrial Building

Address: 1700 Fairgrounds Rd

Fairgrounds Industrial Building, Casper, WY

Website: www.facebook.com/casperholisticexpo/

Colorado Independent Warehouse Show - 09/01/2025

09/01/2025 - 09/13/2025

Hours: 9:00 - 5:00

Venue: Rock Warehouse

Address: 810 Quail St

Rock Warehouse, Lakewood, CO

Website: www.independentwarehouseshow.com/Colorado_Fall.html

JK Stone Denver Fall Warehouse Show - 09/02/2025

09/02/2025 - 09/13/2025

Hours: 9:00 - 5:00

Venue: JK Stone Denver Warehouse Show

Address: 600 W 48th Ave

JK Stone Denver Warehouse Show, Denver, CO 80216

Website: linktr.ee/jkstoneusa

Hardrock Summit - Outdoor Tent Show - 09/04/2025

09/04/2025 - 09/12/2025

Venue: The Westin Westminster

Address: 10600 Westminster Blvd

The Westin Westminster, Westminster, CO 80020

Website: hardrocksummit.com/

Denver's Original Denver Gem & Mineral Show - 09/04/2025

09/04/2025 - 09/07/2025

Venue: Westin Hotel

Address: 10600 Westminster Blvd

Westin Hotel, Westminster, CO 80020

Website: www.denvermineralshow.com/member-clubs

Denver Mineral, Fossil, Gem & Jewelry Show - 09/05/2025

09/05/2025 - 09/14/2025

Hours: 9:00 - 6:00

Venue: National Western Complex including the Events Center

Address: 4655 Humboldt St

National Western Complex including the Events Center, Denver, CO 80216

Website: <https://denver.show/>

Miner's Co-Op Show - 09/05/2025

09/05/2025 - 09/14/2025

Hours: 9:00 - 5:00

Venue: National Western Complex (outside)

Address: 4655 Humboldt St

National Western Complex (outside), Denver, CO 80216

Website: www.therockminers.com/index.html

Denver Expo Show - 09/05/2025

09/05/2025- 09/14/2025

Hours: 9:00-6:00 Final day is 9:00-4:00

Venue: National Western Complex (Main/Old Bldg, Level 2)

Address: 4655 Humboldt St

National Western Complex (Main/Old Bldg, Level 2), Denver, CO 80216

Website: www.as-shows.com/

Denver coliseum colorado minerals fossils and gems show - 09/05/2025

09/05/2025 - 09/14/2025

Hours: 10 am to 6 pm

Venue: DENVER COLISEUM

Address: 4600 N Humboldt St

DENVER COLISEUM, DENVER, CO 80216

Website: <https://colorado.show/>

Grand Junction Gem & Mineral Club Show - 09/20/2025

09/20/2025 - 09/21/2025

Venue: Mesa County Fairgrounds

Address: 2785 Hwy 50

Mesa County Fairgrounds, Grand Junction, CO 81501

Website: www.grandjunctionrockclub.org/

Colorado Mineral and Fossil Fall Show - 09/05/2025

09/05/2025 - 09/13/2025

Hours: 10:00 - 6:00 Daily, 10:00-4:00 last day

Venue: Delta Hotels Denver

Address: 10 E 120th Ave

Delta Hotels Denver, Northglenn, CO 80233

Website: www.coloradomineralandfossilshows.com/