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Member meeting

**Monday, October 17th
at 7 pm**

We hope you can make it to the member meeting this month.

If you have a rock, gem, or mineral, specimen that you would like to share, please bring it to the meeting.



Botswana agate

Masks are optional now

The Board thanks all of you for wearing a mask inside the building. Many members have expressed appreciation for how we all made the effort to protect others from Covid for such a long time. Now, the Board has voted to no longer require masks; members may of course continue to wear them, as they prefer.

Banner photo

The banner image is tourmaline on quartz. Usually, tourmaline is black, but it can be colorless, brown, or any shade of the rainbow. One color often fades gently into another as you see in this specimen.

Lapidary Shop

Our lapidary shop is reserved for our members to use. Inside are five slab saws, three CabKing™ machines for cutting cabochons, and two trim saws.

Sign up for shop time

All shop users must sign up for a time slot at least a day before the session. On their first visit, new shop users will be trained on shop procedures and safety before being able to use any equipment.

You can [sign up for shop time online](#). The system will send you a confirmation email which you should save until after your session. You will need the email if you want to cancel your reservation. Each Thursday we have shop sessions available:

- Session 1: 3:00 to 5:30 pm
- Session 2: 5:30 to 8:00 pm (except on the first Thursday of each month)

How to cancel

If you sign up for shop time online and later realize you won't be able to make it to the session, you need to cancel your reservation no later than the day before the session. This enables someone else to sign up. If you do not cancel, you will be charged for the session. To cancel, click the link in the confirmation email you received after you signed up for that time slot.



What to bring

Shop users will need to bring their own

- Face mask to not breathe rock dust or for Covid protection
- Apron to protect your clothes from oil lubricant in the saws, rock dust, water, and possibly more messy elements
- Hearing protectors
- \$7 cash or check to pay for each session

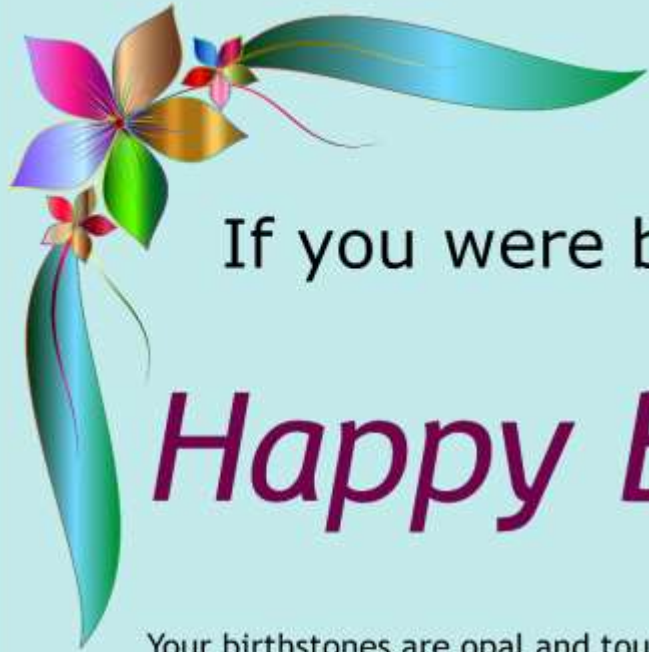
Before you leave the shop

The shop stewards are volunteers who generously give 6 hours a week to enable us to use the tools. Before you leave a tool station, please wipe it down and leave it in the same condition as you found it. If you discover a problem with a saw or tool, please let the Shop Steward know.

Shop Stewards

Paul Strawn
Rich Osborne
Bruce Samuels

Email:
Shop@maplewoodrockclub.com



If you were born in October...

Happy Birthday!

Your birthstones are opal and tourmaline. Both of these gemstones are treasured for their colors. Opal can show a play of iridescent colors and tourmaline comes in every color of the rainbow.

The name, tourmaline, is from the Sinhalese words "tura" and "mali" which means "a stone of mixed colors". It is sometimes found with one color blending into another along the crystal length.

The color changes happen because the minerals seeping into the cavity where the crystal is growing change in composition over time. Small changes in the impurities can change the color of the stone.



Watermelon tourmaline is a gemstone that forms with a green outer ring and red interior.

This image is by Anne Peterson and it is published here under the license, CC BY-NC-ND 2.0. <https://creativecommons.org/licenses/by-nc-nd/2.0/>

Juniors – Opals

Opals are usually colorful stones that sometimes give off flashes of colors. Opals are grouped into two types: precious and common. You can probably guess that the ones that reflect flashes of colors are precious and the others are common. And you can probably also guess which ones are more valuable.

Opals is not a mineral, like diamond and ruby. It is like a mineral, so we call it a mineraloid. The reason it's not a mineral is that the individual molecules don't join together to form crystals. Crystals grow in specific shapes like cubes. Because they don't form crystal shapes, opals are amorphous which means *without a shape*. The word can be broken down into it's ancient Greek roots: *a* means *without* and *morphe* means *shape*.

Another interesting thing about opal is it contains water – up to 21%, although it's usually between 6% and 10%. This means we call it a hydrated amorphous mineraloid.



Precious opal

Common opal



Pink opal in a thunderegg



Opalized petrified wood

Thundereggs and petrified wood often have common opal within them. Although they do not give off flashes of color, common opal is usually gorgeous.

Precious opal

The flashes of color given off by precious opal is called iridescence. When you look at an iridescent object it reflects more than one color when you look at it from different angles. Precious opals, as well as pearls, peacock feathers, soap bubbles, and oil on water are iridescent.



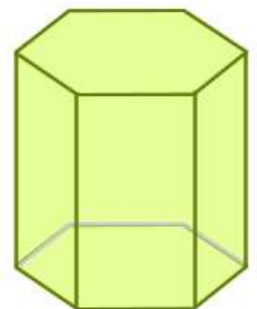
Opal seams in ironstone from Australia

In addition to the iridescence, another characteristic that we use to group opals are its opacity (how much light goes through it) and background color. Transparent opal lets light shine through like an agate. Opaque opal does not let light through, like the thunderegg on the previous page. The Australian opal shown here is transparent with a milky quality that makes it somewhat opaque.

The background color can be black, white, gray, green, or other colors. Black opal is the rarest (hardest to find), and so it's the most valuable.

Iridescence

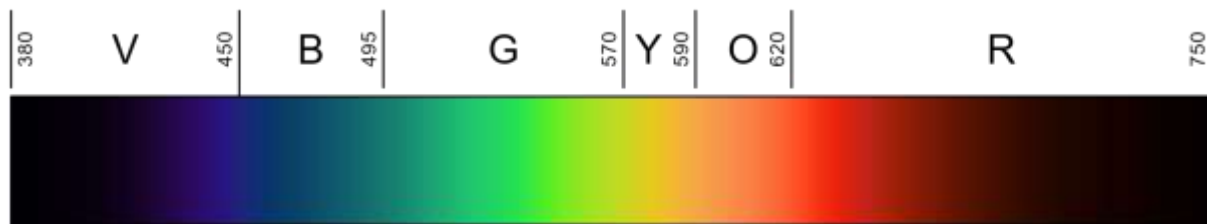
If you look at precious opal through a powerful microscope, you could see it is made of spheres (balls) of silica. These spheres are tiny: 150 – 300 nanometers. This is close to the wavelengths of light which range from 400 nanometers (violet) to 700 nanometers (red). These spheres form a close packed lattice in sheets stacked to form a cube or hexagon prism. (Still, opal is considered to not form crystals, and I cannot explain how it forms a shape without being a crystal. We need to ask a geologist or gemologist.)



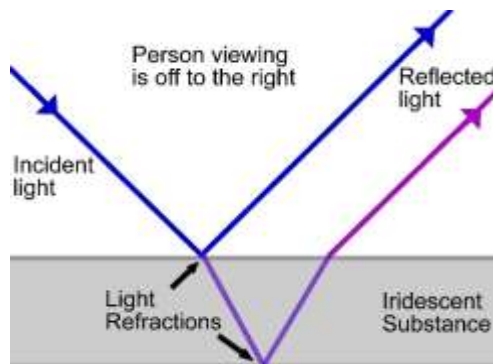
Hexagon prism

Sometimes we think of light being the colors of the rainbow: red, orange, yellow, green, blue, and violet. If you think about it, you know that between any two of those is another color that is a blend of the rainbow colors on either side of it.

For example, aqua is a greenish blue, so teal light has a wavelength between green and blue. And, you could find a color somewhere between aqua and green. We might call it aqua-green. But, we don't really have names for every color of light because there are infinite colors. This image shows light waves for the colors are really ranges, like blue is between 450 and 495 nanometers.



As light goes through the lattice of spheres in opal, it refracts (bends) around them. If the space between spheres is about half the length of a light wave, that light wave might bounce off and go in a different direction, like back out of the opal to the person looking at it. That means the person sees a flash of that color.



As you move your head or the opal, you are looking at it in a different direction, and so the light refracting out is coming from a different path through the opal which means that a different wavelength of light could be bounced out to your eye.

In this image of light bouncing out of an iridescent specimen, you might think of the top and bottom of the gray area as sheets of spheres. The depth of the gray shows that many sheets are stacked on top of each other. Light can refract (bounce off in a different direction) whenever it hits a surface. This can be the outside surface of the opal or the surface of a sphere.

Another thing that is happening is that when light travels from air into the opal, the speed of light slows down and this changes makes the wavelength of light change. Because the wavelength of light determines the color, the color of light changes. It might enter the opal as blue and leave the opal as violet.



Iridescent abalone shell

Field trips

Contact the host a week before the trip to get details. Be sure you obtain the required parking pass, such as a Discover Pass. Arrive at the meeting site 30 minutes before the scheduled time and be sure to have everything you might need including a full tank of gas, tools, food, water, appropriate clothes, rain gear, and first aid supplies. The trips hosted by All Rockhounds Pow Wow have a small fee, but you get breakfast, so it's a great deal.

Below are the remaining field trips planned for 2022.

Date	Rock	Details
Oct. 15	Picture Jasper	Skykomish Meet: Money Creek Campground, Hwy 2 at 9 am Tools: Rock and crack hammer Host: Ed Lehman; wsmced2@outlook.com; 425-760- 2786 or 425-334-6282
Nov. 12	Dalmation Stone (stilpnomelane)	Alger I-5 exit 240 at 9 am Hard rock Host: Ed Lehman; wsmced2@outlook.com; 425-760- 2786 or 425-334-6282

Stilpnomelane from Blanchard Hill

Blanchard Hill, south of Bellingham is a place to find Stilpnomelane that looks like Dalmation stone. Specimens from this area often have blackish spots of the mineral stilpnomelane in a matrix of light colored minerals, such as quartz. The term, *dalmation stone*, is usually used to mean, *dalmation jasper*, which is a misnomer; it's not a jasper. Stilpnomelane is a somewhat rare mineral, and we are fortunate that it is found so close to us.

[Mindat.org](https://www.mindat.org) reports that it has been found at 48.614434496533136,-122.38002777274235 on Blanchard Hill. For more about this mineral, go to the Everett Rock Club's page, <https://everettrockclub.com/Stilpnomelane> and Alex Strekeisen's page, <https://www.alexstrekeisen.it/english/meta/stilpnomelane.php>.

Rock shows near and far

Date and Time	Host and Location	Details
Oct. 15, 9 am – 5 pm Oct. 16, 9 am – 4 pm	Surry Rockhound Club Sullivan Hall 6306 152 nd Street Surry, BC	Display cases, vendors, kids' corner, door prizes, snacks demonstrations
Nov. 5, 10 am – 5 pm Nov. 6, 10 am – 5 pm	South Delta Recreation Centre 1720 56 th Street Delta (Tsawwassen), BC	
Nov. 19, 10 am - 5 pm Nov. 20, 10 am - 5 pm	Kitsap Mineral and Gem Society The President's Hall 1250 NW Fairgrounds Road Bremerton, WA	
Feb. 25, 10 am - 6 pm Feb. 26, 10 am - 5 pm	Idaho Gem Club Expo Idaho 5610 Glenwood Boise, ID	

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Washington State Mineral Council

Our club, along with many other rock and gem clubs in the state, is a member of the Washington State Mineral Council. This organization helps us by

- advocating for access to public lands
- advocating for beneficial land use policies
- compiling and sharing maps and other information
- publicizing shows and field trips so members learn about and can participate in events at other clubs

Read their latest [Newsletter](#).

Grit for sale

The Shop Stewards sell grit on Thursdays when the shop is open. Please let them know a day ahead that you will stop by to purchase grit.

To contact the Shop Stewards, email shop@maplewoodrockclub.com

Each grit package is \$3.50, and this is what they sell:

- 1 lb of 60/90
- 1 lb of 120/220
- ¾ lb of pre-polish
- ½ lb of polish

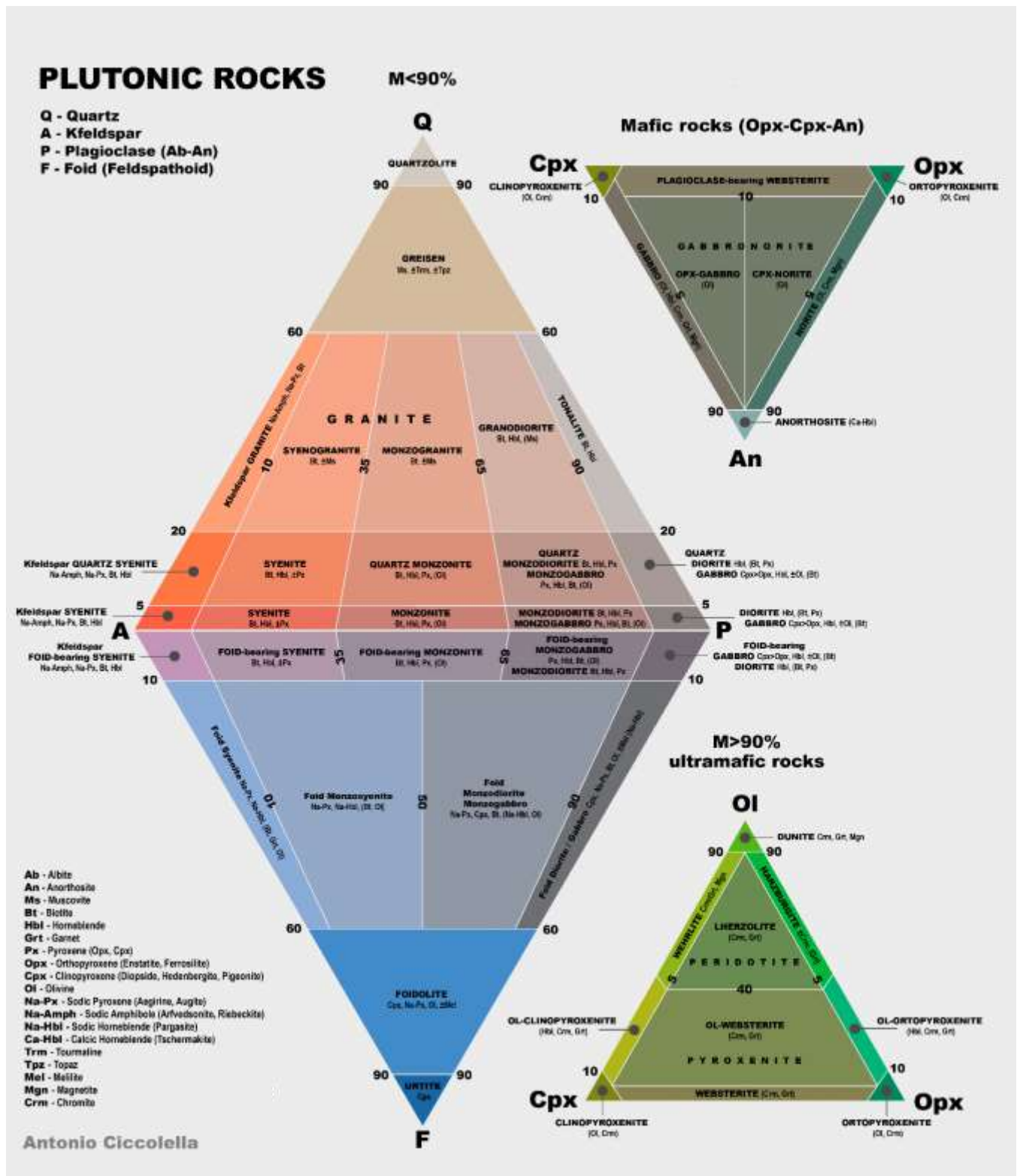
Plutonic Rocks

Plutonic rocks are igneous rocks that form deep underground below the Earth's crust. As the magma rises minerals and precious metals, like gold, get caught up in the flow which then fill cracks in existing rocks. Within the cracks the magma cools very slowly, perhaps over tens of thousands of years. This is the most common type of rock on earth. It forms the base of mountains and continents

Because the magma cools so slowly, crystals have time to form and grow into coarse grains. The resulting plutonic rock has embedded crystals large enough to see without magnification (1-5 mm). The crystals of each mineral cluster together in a crowded space which prevents them from growing in perfect crystal shapes. Every bit of the rock is part of a mineral crystal of approximately the same size. These rocks look like granite, although not all of them are. Building suppliers often call all plutonic rock *commercial granite*.

Gold and silver are sometimes found in veins of plutonic rock which is named for Pluto the Roman god of wealth and the underworld. Before you plan your next rockhounding trip to Pluto, you'll want to know that that dwarf planet is mostly comprised of frozen nitrogen, methane, and carbon dioxide.

On the following page is a Streckeisen diagram which is used to classify plutonic rock depending on the mix of its component minerals: quartz, alkali feldspar, and plagioclase.



Plutonic Rocks – a Streckeisen diagram by Antonio Cicciolla; [CC BY-SA 4.0](https://creativecommons.org/licenses/by-sa/4.0/)

Connect with us

Website: <http://www.maplewoodrockclub.com/>

Facebook page: Maplewood Rock & Gem Club

Facebook group for members: MRGC Sales and Trades

Email us: info@maplewoodrockclub.com

Address: 8802 196th St SW, Edmonds, Washington 98026

Our Board

Our club is run entirely by volunteers; and we are grateful for the time, energy, and expertise they give to our community.

President: open position

Vice President: Ali Rizvi

Secretary: Carla James

Treasurer: Bruce Samuels

Members at large: James Davison, Nancy Ross, Paul Anderson, Paul Strawn, Rich Osborne, Nancy Samuels



Image license attributions

We use abbreviations in the license attributions. Here are the definitions.

CC: Creative Commons license

BY: attribute the author, link to the license, and indicate if changes were made.

SA: share alike - If you publish the image, you must use the same license.

ND: no derivatives - You may not alter the image.

NC: non-commercial use - You may not use the image for commercial use.

3.0 or other number: version of the license

Sister Club in Australia

Our sister club in Australia is the Atherton-Tableland Mineral & Lapidary Club in Tolga, Queensland. Connect to them on Facebook:

www.facebook.com/groups/197340266987276

One hundred million years ago the eastern edge of the Australian continent extended much farther to the east. Tectonic forces broke off and submerged the eastern section into the ocean while a rising mantle caused the remaining land to lift.

Beginning 4 million years ago large basalt flows filled river valleys and formed a relatively flat landscape. Following that period the volcanoes became more gaseous spewing lava in violent eruptions. This landscape is now called the Atherton Tablelands. You can learn more on Wikipedia.



News to share?

Please send news ideas and images you'd like to share to the newsletter editor, Nancy Samuels at MRGC@nancysamuels.com.

This issue

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