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Message from the President

Summer is upon us and the snow caps are melting. Several weeks ago, I taught a field course near Silverton and came upon this amazing array of ice stalagmites that formed in an old mine tunnel. The perspective gives off a spooky feeling as the crystals fade into the darkness about 200 feet inside the mine. An interesting phenomenon reflecting the change from winter to summer. And, speaking of summer, in just over a month we will celebrate our 69th Gem and Mineral Show! Read on for the inside scoop and the awesome opportunities!





2023 Gem and Mineral Show!

Cindy Pugsley is organizing the 2023 Gem Show. There will be a meeting this month on June 21st at the Club at 6pm - what better way to spend your summer solstice?! If you can contribute to the organization and planning for the Show, please contact Cindy at cindypugsley@sbcglobal.net. Also, we are always accepting donations for the Silent Auction. So, if you want to donate a useable piece of lapidary equipment, an art piece, rocks and minerals or something else, please contact Cindy.

Sunday, June 4th at 4 pm there is a gathering at the Shop to collect, identify, and help price items for the Silent Auction. Cindy is also interesting in obtaining river rocks for kids to paint during the Show, and items for a kid's "treasure box."

Get Registered to Volunteer Now for Your Choice Slot!

If you are interested in volunteering for the Show, visit the [Club's volunteer registration page](#). Volunteers receive free entrance to all 3 Show days. If you are new to this registration site, *please verify your email within 30 minutes after signup* to hold your spot.

Volunteer jobs at the Gem Show include:

- Setup (erect tables, chairs, signs, etc. in indoor and outdoor locations before the event)
- Info and Check (briefly orient volunteers and explain the Club to the public)
- Entrance (greet the public and accept entry fees)
- Silent Auction (set up items for sale, accept payment from winning bidders)
- Gold Panning and Kids Activities
- Door Monitor (direct visitors to main entry to pay entry fee)
- Runner (assist dealers and Gem Show chair)
- Class Assistant (assist teachers leading lapidary and metal smith arts)
- Finances (collect income and sales tax, prepare deposits)
- Take down (remove tables, chairs, signs, etc. in indoor and outdoor locations after the event)

Gem Show Classes

The Club is pleased to announce an exciting lineup of classes at the Gem Show from July 6 to 9. This is a great opportunity to learn a wide range of lapidary and metalsmith skills. Classes are small, and with both a skilled instructor and an assistant, you can expect plenty of personal attention. The classes cost less because our instructors agree to volunteer their time as a fundraiser for the Gem Club, and we wish to make these classes especially affordable for regional residents. Some classes will sell out quickly so register early at www.durangorocks.org/gemshowclasses.

Donations Needed for Gem Show

This year we are looking for donations to help support our Gem Show Classes, a Club fundraiser, and our Silent Auction. Donations can be dropped off at the Club during business hours posted at [www.https://www.durangorocks.org/location--hours.html](https://www.durangorocks.org/location--hours.html). Specifically, we need the following:

- approximately 18 tear-drop shaped cabochons for wire wrapping
- approximately 9 small cabochons (1/2"-3/4") for bracelets with stones

- approximately 9 medium sized cabochons (1"-1.5") for tab settings
 - natural stone or wood beads for three beading classes
 - other donations of rocks, tools, and books for our silent auction
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Scholarship Assistance Program for Gem Club Classes

Scholarships funds are still generously available, thanks to the City of Durango Lodger's Tax Fund. A scholarship pays 2/3 the cost of tuition, both for weekend classes offered during the year or for classes at the Gem Show. If your cost of living is high but wages are low, these funds can help you learn new, valuable skills and make beautiful objects. Scholarship applications are available at www.durangorocks.org/classscholarship.

Upcoming Classes in June

A few classes are being offered in June including Lost Wax Casting. In addition, there are training sessions for soldering and kiln safety - important AND informative!

You can check on upcoming events at the [Four Corners Gem and Mineral Club Events Calendar - Four Corners Gem & Mineral Club \(durangorocks.org\)](http://www.durangorocks.org/events).

Field Trip Open for Registration!

Karen Hubley is leading a field trip to the Last Chance mine on Sunday, June 25. This is a great place to collect banded quartz which is known as "Sowbelly" agate. Meet the group at the Creede Visitor Center at 10:30 am. In addition to the Club charge for the trip, there is also a fee of \$2 per pound for any stone you want to take home from the mine.

On Monday, June 26 Karen is planning a visit to the Underground Mining Museum at Creede followed by a trip to the Bulldog mine. A personal tour of the Museum by a former miner will be given at 9:45 am. After a lunch break from 11 and 11:45 am the group will meet again at the Visitor's Center. After lunch the group will proceed to the Bulldog Mine where there will be a presentation on this mine and the Creede Mining District, as well as a couple hours to pick through the mine tailings. A great place to collect barite, silver sulfides, quartz, and if you are very lucky, native silver.

If you are interested in signing up for these trips use the link [Four Corners Gem and Mineral Club Field Trips - Four Corners Gem & Mineral Club \(durangorocks.org\)](https://www.durangorocks.org/field-trips)



Open Shop Hours

Tuesday 1-4 pm

Tuesday 6:30-9 pm

Wednesday 9am-noon

Wednesday 1-4 pm

Thursday 1-4 pm

Thursday 6:30-9 pm

First & Third Saturdays 10am-2pm

See [calendar](#)

Open Shop Punch Card

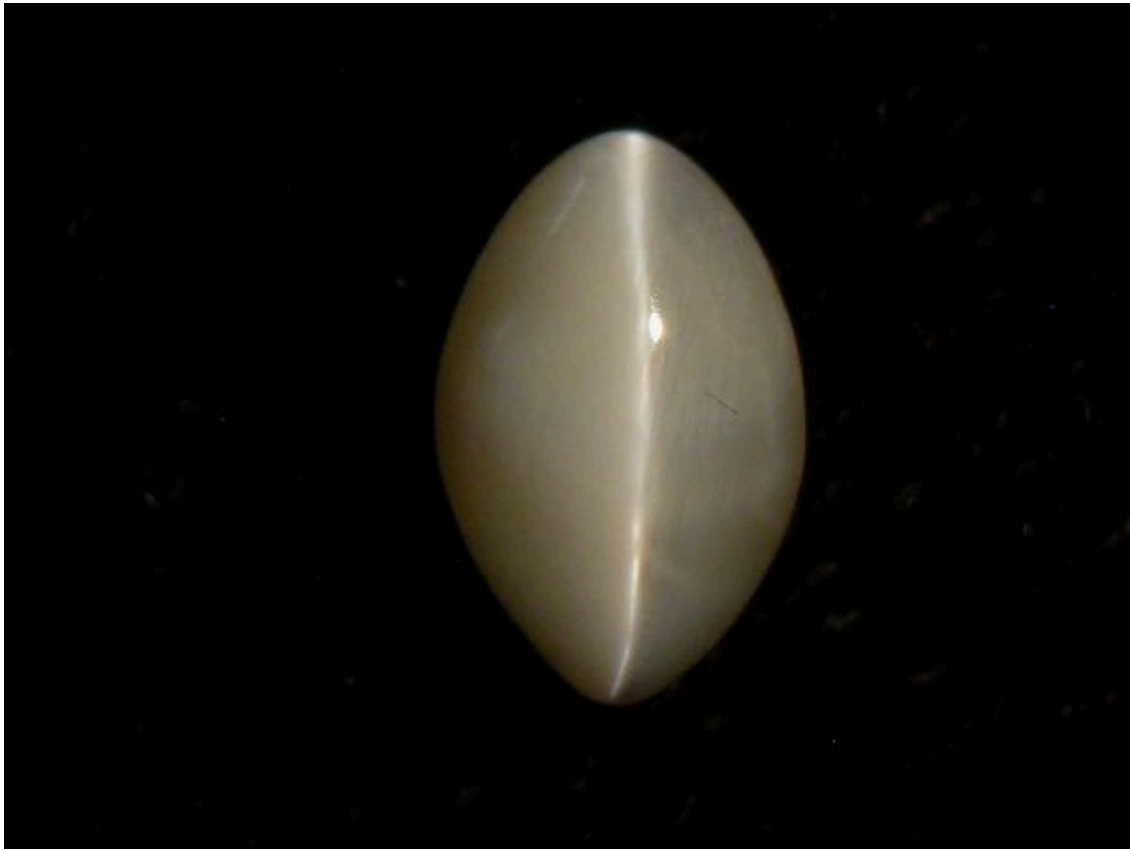
If you like using open shop, remember we have a punch card for multiple use. [Prepurchase](#) 10 visits for \$45 - a \$5 savings - and don't worry about having your "shop fee" when you come in!

Rock On: **Eye of the Cat in Stone**

This month, as I was searching for inspiration on a topic to write about, I was watching my cat, Payday, and was reminded of the term "cat's eye." This term applies to certain cabochons distinguished by a narrow band of light that moves across the stone. The phenomenon, referred to as chatoyancy (pronounced she-TOY-en-see) or cat's-eye effect is analogous to how a cat's pupils narrow to a thin slit under bright light. The name "chatoyance" originates from the French word chat oeil (or oeil-de-chat), which means cat's eye or "chatoyer," which means "to shine like a cat's eye."

Chatoyance is created by a concentrated beam of light that is reflected by fine, slender parallel-aligned (i.e., silk) mineral fibers, aligned inclusions like hematite and rutile or numerous minute elongated parallel cavities, channels, or fluid-filled tubes. What makes this effect so stunning is how the narrow and luminous silky band of light created by the reflection moves on the polished curved surface of the stone. In a chatoyant gemstone, the band of light will move back and forth as the cabochon is turned under a beam of incident light, or the position of the light is moved, or the position of the observer is changed. The motion of the cat's-eye across the top of the gem is one aspect that makes these stones so interesting, beautiful, and desired by people. The band of light always occurs at right angles to the length of the aligned features. An analogy for this effect is how light reflects to form a line across the surface of a spool of silk thread.

Chatoyancy is just another example of an amazing phenomenon created by the interaction of light and earth materials. Many "stones" exhibit chatoyance; however, it is only displayed in some specimens. Chrysoberyl is prized for creating distinctive cat's eye but other minerals can produce this effect (e.g., actinolite, apatite, beryl, Moonstone, opal and quartz, rutile, ruby, satin spar gypsum, sapphire, spinel, topaz, tourmaline, and zircon). Cymophane, or cat's eye, is a yellowish variety of chatoyant chrysoberyl that displays the clearest cat's eye effect of all gemstones which results from the microscopic rutile needle-like inclusions or tube-like cavities. Chatoyancy created by crocidolite fibers in quartz is known as "hawk's eye" or "blue tiger's eye. More typical tiger's eye is a golden-brown chatoyant metamorphic rock composed of microcrystalline or cryptocrystalline quartz with parallel intergrowths of mainly limonite and altered crocidolite (blue asbestos). In Zimbabwe the gray version is called cat's eye quartz. Besides some natural stones, it is possible to view this effect in some chatoyant carbon fiber and glass such as Cathay stone.



Chrysoberyl cabochon displaying a pronounced chatoyancy that divides the stone symmetrically. Photograph from [Understanding the Cat's Eye Effect in Gemstones \(gem-a.com\)](http://gem-a.com)



Chatoyant tiger's eye created by inclusion of crocidolite and hematite in chalcedony. Photograph from [Understanding the Cat's Eye Effect in Gemstones \(gem-a.com\)](http://gem-a.com)

Some stones with well-developed chatoyancy appear to be made of two different materials when illuminated from the proper direction. In these stones, the cat's-eye will appear to divide the stone into a zone of light-colored material on one side of the eye and dark-colored material on the other. This phenomenon is known as the "milk-and-honey" effect.

Below left: "Milk and honey" chatoyance in chrysoberyl from Sri Lanka. Photograph from [Chatoyant Gems: The Mystery of Cat's-Eye Gems Explained \(geology.com\)](http://geology.com)



Above right: Star sapphire with a distinct color change from violet to purple. Photograph from GIA [Combination of Phenomena in Star and Cat's-Eye Color-Change Sapphire \(gia.edu\)](https://www.gia.edu/combination-of-phenomena-in-star-and-cat-s-eye-color-change-sapphire)

Asterism is a type of chatoyancy that displays an intersection of multiple cat's-eyes, or "stars" rather than a single cat's-eye. Tightly packed, parallel inclusions oriented in two different directions cause a star with four rays. If there are three sets of inclusions, a star with six rays is possible. The most well-known examples of asterism are star ruby and sapphire with inclusions of rutile called Star Ruby or Star Sapphire. Chatoyant Stars can also be found in other gems such as garnet, spinel, diopside, and quartz.

Rare chatoyant specimens will have a coarse silk with just the right spacing to serve as a diffraction grating. These specimens will produce not only a cat's-eye, but also a display of iridescence caused by light passing through the coarse silk and being diffracted into the colors of the spectrum.

The first step in cutting a cabochon to produce a cat's-eye stone is to find a material with the "silk" type of inclusions capable of producing an eye. The

cutter must examine the rough stone and orient the silk parallel to the base of the stone within the finished cabochon, and the parallel inclusions should be aligned perpendicular to the orientation of the band of light, usually along the length of the cabochon unless it is round. The amount of reflected light depends on the cabochon's density, thickness and orientation of the parallel features. Thus, there are varying degrees of reflected light in different chatoyant gems. You need to consider the gemstone's symmetry and ensure the bright or luminous streak runs along the long direction the stone for the most alluring effects. The best cat's-eye gems have an eye which is clearly defined and visible, symmetrical to the cabochon, contrasts sharply on the surface of the stone, and moves across the stone when it is turned.



Cat's eye tourmaline from Brazil in which a silk of coarse tubes creates a distinctive band of light perpendicular to the silk. The pink stone of the left is 8.5 mm round, and the green stone is 10 x 7 mm in dimension. ^[6]

References

1. [Cat's Eye Meaning: Healing, Mineralogy, & History \(moonrisecrystals.com\)](http://moonrisecrystals.com)

2. [Cat's Eye chrysoberyl: The gemstone Cat's Eye information and pictures \(minerals.net\)](#)
3. [Chatoyant Gems: The Mystery of Cat's-Eye Gems Explained \(geology.com\)](#)
4. [Chatoyancy Meaning, Causes, and Stone Examples | Science Drill](#)
5. [Understanding the Cat's Eye Effect in Gemstones \(gem-a.com\)](#)



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