



A monthly publication of the Clear Lake Gem & Mineral Society

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NUMBER 9

**HAPPY
LABOR
DAY**

NEXT MEETING: Tuesday, Sep 19, 2023

TIME: 7:00 p.m.
LOCATION: Helen Hall Library
100 W Walker St.
League City, Tx 77573

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MINUTES OF THE August CLGMS GENERAL MEETING

The August Newsletter was accepted with no changes needed.

Treasury report.

Mr. Henry Marek gave an awesome presentation about "Locating, Digging, and Cleaning Arkansas Quartz".

The club have several large display cases that are no longer being used during our annual show. We are giving them away for free to whoever want them.

The club will start awarding The James Brittenham Scholarship next year (2024) and the year after (2025). The funds was received after we awarded the 2023 scholarships.

MINUTES OF THE September CLGMS BOARD MEETING.

Some of the large display cases had been taken to the new homes and some large cases are still available to be picked up on Saturday, September 30th at the storage location, tentative hours 7 am – 12 noon.

The address for the storage is: ***4806 Marie Lane, Deer Park, Tx 77536.***

We are also planning to clean and reorganize the storage facility. We will need some extra volunteers to help. Lunch will be provided.

Christina (Sapphire) and Becki (Zultanite) will give a quick 5 minutes show and tell.

Christina will be redoing Charlie's letter for the Advancement of Earth Sciences \$500 grant for school libraries.

Our next show will be February 24-25, 2024.

Upcoming events - We are looking forward to the following programs.

Casey Renner will give an awesome talk about her 17 days field trip experience to the Northern and Western States in search of finding fossils. She travelled to Northwestern Texas, New Mexico, Colorado, Utah and Wyoming. She will bring some findings to the meeting and will be cracking those rocks and hopefully will find some fossils in them.

Please check out our Facebook page: **Clear Lake Gem and Mineral Society.**

Field Trips Announcement

Currently we do not have any field trip announcement (most clubs in our area do not have any field trips due to a hot weather)

If you have a good location for our club field trip – please contact:
annabel.brownfield@gmail.com or call/text: 281-486-1866.

Sapphire Quality Factors

From GIA



This sapphire from Kashmir has an intense velvety blue color. – Photo: Robert Weldon/GIA.

Sapphire is one of the Big three of jewelry colored gemstones—the other two are ruby and emerald. A durable stone that's designated as a birthstone for September, it captures jewelry buyers with its practicality and aura of romance.

Corundum is the mineral species that includes both sapphire and ruby as varieties. Red corundum is known as ruby and all other colored corundum (including colorless, or white sapphire as it is known in the trade) is sapphire, although blue is the most well-known.

COLORS OF SAPPHIRE:

Sapphire is generally known as a blue gemstone but surprisingly it comes in a wide range of colors and quality variations. In general, the more intense and uniform the color is, the more valuable the stone.

Sapphires that are not blue are known as fancy sapphires, and may be any color—except red (which is a ruby). The fancy sapphire colors are: pink, orange, yellow, green, purple, and violet. There truly is a different color of sapphire to suit anyone's taste!

Blue Sapphires

Color has the greatest influence on a sapphire's value, and preferred sapphires have strong to vivid color saturation. The most valued blue sapphires are velvety blue to violetish blue, in medium to medium-dark tones. Sapphires with these qualities command the highest prices per carat. Less valuable blue sapphires might also be grayish, too light, or too dark.



(Left)-Madagascar is a relative newcomer as a major sapphire source, but its stones can have an intense blue color that rivals the finest from more traditional sources. - Copyright: GIA & Tino Hammid
(Right)-Some pink sapphires have intensely saturated color. -- Photo: Lydia Dyer, gem courtesy of John Dyer & Co.

What is a Padparadscha Sapphire?

An extremely rare and collectible variety that is a mix of pink and orange is known in the trade as padparadscha. Such gems typically have a high value—much higher than many other types of fancy sapphires. Their color can be hard to describe. Some people say padparadscha sapphire colors should be called salmon or sunset. But the word padparadscha itself derives from the Sanskrit language and refers to the rich color of a lotus blossom.

Those who deal in these gemstones usually agree that padparadscha sapphires should range from light to medium pinkish orange to orange-pink.

Pink and Purple Sapphires

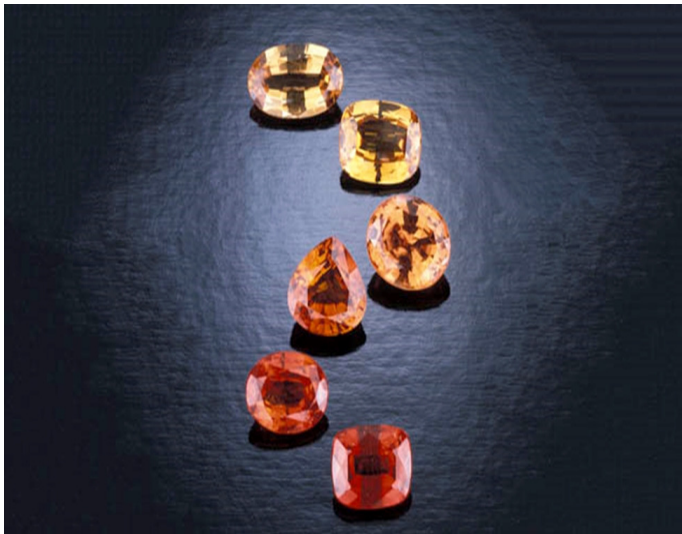
Pink sapphires range from light red (pink) to light purple with weak to intense color saturation which fall out of the color ranges for ruby or purple sapphire. Purple sapphires always have purple as the dominant color. They range from medium to dark reddish purple to violetish purple with weak to vivid color saturation. The major fancy sapphire color categories are padparadscha, pink and purple, orange and yellow, green, and colorless and black. Each category has its own color range, causes of color, and market.

Yellow to Orange Sapphires

Yellow sapphire is also available in a variety color saturations from yellow to orangy yellow and in light to dark tones, while orange sapphires have deep golden, to mandarin, and deep orange colors.

Yellow sapphires may be affected by other colors within the same gem and can range from light to dark greenish yellow to orangy yellow with weak to intense color saturation. The finest yellow sapphire is yellow to orangy yellow with vivid saturation.

Orange sapphires range from yellowish orange to reddish orange. The finest orange sapphires are strong, pure orange to red-orange with medium tone and vivid saturation.



These sapphires range from yellow to a deep yellow-orange color called golden to highly saturated reddish orange. - Copyright: GIA & Tino Hammid. Courtesy: Varujan Arslanyan.

Green Sapphires

Commercial-grade sapphires may contain a less desirable greenish blue color or strong greenish blue that is visible as you view the gem. Uniformly green sapphires that are saturated in color are actually rare and many collectors prize them. In green sapphires, a mix of yellow and blue sapphire accounts for the color a person sees.

Color Change Sapphires

Color-change sapphires are corundum's chameleons—stones that change color under different lighting. Under daylight equivalent (fluorescent or LED daylight-balanced) light, the typical color-change sapphire's basic color ranges from blue to violet. Under incandescent light, it ranges from violetish purple to strongly reddish purple. Some rare color-change sapphires change from green in daylight to reddish brown in incandescent light.

When gem experts judge color-change sapphires, they describe the color change as weak, moderate, or strong. The strength of the stone's color change is the most important quality factor affecting its value.

The color of star corundum has a great effect on its value, though it is understood that miniscule inclusions are the cause of the asterism. They can affect transparency and color, and only very rare, exceptional gems exhibit transparency, depth of color and asterism. As such, the best star corundum has a crisp, distinct star against strongly saturated color. If the color is too light, it doesn't provide enough contrast for the star's rays, and the star will be less visible.

Star corundum can be red, pink, blue, black, gray, brown, purple, or yellow—practically every color under the sun. The term “star sapphire” encompasses all colors of star corundum except red, which is called star ruby.

Naturally, some colors of star corundum are valued more highly than others. In general, the most prized colors are the same as the colors most valued in non-phenomenal corundum: red and blue.

Trade terms based on sources can represent certain colors and qualities that are associated with a stone's source, generally they refer to the finest stones from that source. But a single source never consistently yields gems that are all the same color and quality. In fact, the descriptive term might represent only a small percentage of its production.

New sources can produce material that is very similar to gems from classical sources or with a slightly different, but just as beautiful, appearance.

SAPPHIRE CLARITY:

Blue sapphires typically have some inclusions, but they generally have better clarity than rubies. Blue sapphires with extremely high clarity are rare, and very valuable.

Several types of inclusions are found in sapphires. Among these are long thin mineral inclusions called needles. Fine needles are called silk when they occur as the mineral rutile in intersecting groups. Other clarity characteristics in sapphire are included mineral crystals, partially healed breaks that look like fingerprints, color zoning, and color banding.



(Left)-These long, thin, intersecting inclusions of the mineral rutile are called silk. This arrangement can produce the star effect in corundum.

(Right)-Tiny inclusions create magnificent reflections of light known as the star effect. - © GIA & Tino Hammid, courtesy Benjamin Zucker

Generally, inclusions make a stone less valuable. Price can drop substantially if the inclusions threaten the stone's durability. Even so, inclusions can actually increase the value of some sapphires. Many of the most valuable Kashmir sapphires contain tiny inclusions that give them a velvety appearance. They scatter light, causing the coveted visual effect without negatively affecting the gem's transparency.

STAR SAPPHIRE:

Star sapphires and star rubies belong to the phenomenal corundum category. The star effect is called asterism. It's caused by reflections from tiny, needle-like inclusions that are oriented in several specific directions. Stars are usually made up of 2, 3, or 6 intersecting bands, resulting in 4, 6, or (rarely) 12 rays.

Star sapphires usually have stars have 6 rays, and 12-rayed stars are quite rare. Two different sets of inclusions—one of rutile and one of hematite—oriented in slightly different directions can cause a 12-rayed star.

Hematite inclusions cause asterism in black star sapphires. The sapphire's color is actually yellow, green, or blue, but the inclusions make it appear dark brown or black.

The finest star is distinct, centered on the top of the stone, and visible from a reasonable distance, about arm's length. The star's quality should be the same when viewed from all directions.

Ideally, the rays should be uniform in strength, reach from girdle to girdle on the cabochon, and intersect at the top center of the stone. The best stars are straight, not fuzzy, wavy, or broken. The reflective stars should contrast strongly against the gemstone's bodycolor. The star should also have elegant

“movement.” This means that, as you rock the stone, the star should appear to move smoothly across the surface.

The best and most expensive star corundum is semi-transparent, with just enough silk to create a well-defined star. Too much silk can harm transparency and also lead to poor color, lowering the value of the stone considerably.

SAPPHIRE CUT:



Oval shapes with triangular and kite-shaped facets on the gem's crown (top portion) and parallel rectangular facets on the gem's pavilion (bottom portion) are very common for corundum of all colors. Photo: Robert Weldon/GIA. Courtesy: Lewis Allen

The shape of a rough sapphire crystal influences the finished stone's shape and size. Rough sapphire's most common crystal form is a barrel- or spindle-shaped hexagonal pyramid. To achieve the best overall color, maintain the best proportions, and retain the most weight possible, cutters focus on factors like color zoning, pleochroism, and the lightness or darkness of a crystal to best determine how to orient the gem during cutting.



(Left)-These sapphires are miniature works of art that have been expertly cut into custom designs. – Photo: Robert Weldon/GIA. Courtesy: Mark Gronlund, Umatilla, Florida.

(Right)-Besides coming in all colors, corundum also comes in all cutting styles. – Photo: Jeff Scovil. Courtesy: Ballerina Gems

Color zoning—areas of different colors in a stone—is a common sapphire characteristic. Blue sapphire often has angular zones of blue and lighter blue. To accommodate color zoning in some sapphires, cutters orient the concentrated color in a location that offers the best visible color in the cut stone.

In Sri Lankan sapphires, the color is often concentrated close to the surface of the crystal. If a cutter can orient the culet within the concentrated area of color, the stone will appear entirely blue in the face-up position.

Pleochroism refers to different bodycolors in different crystal viewing directions. Blue sapphires often have greenish blue and violetish blue pleochroism. It's most desirable to orient the cut so the stone shows the violetish blue color when it is set in jewelry.

Star Sapphire Cut

Star corundum must be cut as a cabochon to display asterism. A finished stone's attractiveness depends on the star's orientation and the cabochon's symmetry, proportions, and finish.

The cabochon must have an appealing appearance, with the star properly centered when the gem rests on its base. The stone's outline should be symmetrical.

For most stones, the dome should be fairly high—about two-thirds of the stone's width—to focus the star sharply. If it's too high, the phenomenon loses its graceful motion when the stone is tilted. Excessive height also makes the stone difficult to mount.

If the dome is cut too shallow, the star will be visible only from directly above. Black star sapphires, however, are prone to parallel breaks, so they're usually cut very flat to reduce the risk of damage.

A stone should not have excess weight below the girdle that doesn't contribute to the optical effect or reinforce color.

SAPPHIRE CARAT WEIGHT:

Blue sapphires can range in size anywhere from a few points to hundreds of carats, and large blue sapphires are more readily available than large rubies. However, most commercial-quality blue sapphires weigh less than 5.00 carats.



(Left)-Fine-quality blue sapphires in larger sizes are rare, but they're still more available than ruby. The incredible blue sapphire in the center of this ring weighs 18.79 carats. - Vagabonde Bleue Ring © 2011 Fabergé Ltd
(Right)-Sapphires are available in all sizes, shapes, and colors. Photo: Robert Weldon/GIA, Dr. Eduard J. Gübelin Collection.

Large commercial-quality blue sapphires are rare, but more available than large fine-quality ones. As a result, size makes more of a difference in the price of fine-quality sapphire.

Zultanite

Gem Rock Auction (Partial)



Zultanite® is a diaspore gemstone that changes colors under different lighting and only comes from one deposit in Turkey. When you first see its beauty, you may wonder: is Zultanite® a real gemstone? Yep, Zultanite® is a real, naturally occurring gemstone.

Is Zultanite® a rare gem? It's extremely rare, one of the rarest minerals on Earth. Not only does it only come from one country, but it also only forms in a small portion of the Anatolian Mountains.

About Zultanite® Stone

Zultanite® is a semi-precious gemstone that can appear in different shades of pink, yellow, and green. The stone is similar to alexandrite in displaying a natural color change.

Though both alexandrite and Zultanite® are pretty pricey, Zultanite® is a slightly more affordable alternative at around 5-20 percent of alexandrite's cost. This means you can substitute Zultanite® as a June birthstone!

Not only is it less pricey than alexandrite, Zultanite®'s color change has more shades. Alexandrite only shifts in two hues, while Zultanite® displays up to four different hues.

As a diaspore, Zultanite® also serves as a zodiac stone for Libra, Leo, and Pisces. Speaking of, what's the difference between Zultanite® and diaspore? Let's clear up any confusion around Zultanite®, diaspore, and Csarite®.

Zultanite®, Csarite® and Diaspore

Zultanite® may be called a diaspore variety, but it's technically a trademarked name for color-changing diaspores sourced from Turkey. Turkish diaspore gems have the highest quality of any diaspores.

Besides Zultanite®, the name Csarite® is also a trademarked trade name for Turkish diaspore gem material. Global Licensing N.V. owns the trademark, so only material mined and sold by their affiliates can be legally listed as Zultanite® or Csarite®. Other trade names for the stones are "Turkizite" or "Ottomanite," though these aren't trademarked.

Zultanite® Specifications & Characteristics

Zultanite® is an aluminum oxide hydroxide mineral with the formula $\text{AlO}(\text{OH})$. Common impurities are iron, manganese, titanium, and chromium. The crystals usually form without good terminations but often with broken or turned ends.

Why does Zultanite® change color? Most scientists agree that manganese impurities are the cause of Zultanite®'s color change. Internally, the more complicated reason for the color change has to do with light passing through the stone and splitting into different colors.

Not only does Zultanite® change colors under different types of lighting (e.g. fluorescent lighting, candlelight, incandescent light), but it's also pleochroic. That means you'll see different colors by simply turning the stone to view it at different angles under direct light.



Here's the remaining mineral data for Zultanite®:

- Mohs hardness: 6.5-7
- Color: Shades of yellow, pink, and green under different lighting
- Crystal structure: Orthorhombic
- Luster: Vitreous (glassy), pearly on cleavages
- Transparency: Translucent to transparent
- Refractive index: 1.68-1.75
- Density: 3.30-3.539
- Cleavage: Perfect on [010]; Good on [110]
- Fracture: Conchoidal
- Streak: White
- Luminescence: Sometimes
- Pleochroism: Present in gold, green, and pink

Zultanite® Meaning & History

Zultanite® symbolizes confidence and creativity. Its color-changing properties mean it's also associated with transformation or rebirth.

Ancient Eastern philosophers wrote lore about diaspore and it's said that Sultans would wear Zultanite® rings. They also reportedly gifted similar rings to their wives and lovers.

If you ever get the chance to visit Zultanite®'s locale in the Anatolian Mountains, you'll see that the area is just as stunning as the gem itself. Named after the ancient Greek term for "sunrise," these mountains are truly a sight worth visiting.

History

Zultanite®'s history revolves around two business partners: American master gem cutter Stephen Kotlowski and Turkish jeweler Murat Akgun. In the mid-1990s, the two started their company Golden Land Trading and put diaspore into the public sphere.

By 2005, Akgun acquired the legal mining rights and financial backing to expand the company into Zultanite® Gems LLC. Akgun suggested a trade name that honored the 36 Sultans of the Ottoman Empire (from 1299 to 1923) to set their high-quality gems apart and boost marketing. They went back and forth, from "Ottominite" to "Sultanite" to eventually "Zultanite®."

Zultanite®'s popularity rose, and the public gained a commercial supply of diaspore by 2007. Around 2011, Kotlowski faceted the world's largest Zultanite® into a whopping 96-carat gem named "Sultan's Shield."

Unfortunately, an era of legal drama followed — ending in Akgun losing rights to the company, the “Zultanite®” name, and all the diaspora inventory. Having to start from scratch, Akgun created a new trade name: Csarite®. Eventually, both sides resolved their differences, and they remain amicable.

SCFMS and MEMBER CLUB GEM SHOWS			
	Tri-City Gem & Mineral Society Show - 10/14-15 Sat 9:00-6:00 Sun 10:00-5:00 Frank W Mayborn Civic & Convention Center 3303 N Third Street, Temple, TX https://www.facebook.com/groups/194934397585497/	51st Annual Gem & Mineral Show. – Hosted by the Gem and Mineral Society of Louisiana. October 21- 23, 2023 Alario Center 2000 Segnette Blvd. Westwego, LA 70094. www.gmsofla.org	Fossilmania - 10/27-29 Fri 8:00-6:00 Sat 9:00-6:00 Sun 9:00-4:00 Somervell County Expo Center 202 Bo Gibbs Blvd, Glen Rose, TX 76043 https://www.dallaspaleo.org
Oklahoma Mineral and Gem Show - 10/27-29 Fri/Sat 9:00-6:00 Sun 10:00-5:00 State Fair Park - Modern Living Bldg 608 Kiamichi Place, OK City, OK 73107 http://omgs-minerals.org	Houston Gem, Mineral, Jewelry & Fossil Show November 10-12, 2023 Humblw Civic Center http://www.hgms.org	Dallas Gem & Mineral Show - 11/18-19 Sat 10:00-6:00 Sun 10:00-5:00 Mesquite Conv. Center 1700 Rodeo Drive, Mesquite, TX 75149 http://www.dallasgemandmineral.org	Deridder Rock & Gem Show - 12/09-10 Sat 9:00-5:00 Sun 10:00-4:00 Vernon Parish Fairgrounds 276 H M Stevens Blvd, Leesville, LA 71446 https://www.rockngemswla.com
STONEY STATEMENTS Clear Lake Gem and Mineral Society, Inc PO BOX 891533 Houston, Texas 77289			
Meeting 3rd Tuesday of the Month 7:00 P.M. League City Library 100 W Walker St, League City, Tx 77573			

			
		Member of	
Next Annual Show February 24-25, 2024 Pasadena Convention Center			
CLGMS is on the Web: http://www.clgms.org FACEBOOK: CLEAR LAKE GEM AND MINERAL SOCIETY.		American Federation of Mineral Societies	 South Central Federation of Mineral Societies
Clear Lake Gem and Mineral Society, Inc			
MEMBER: American Federation of Mineralogical Societies and South Central Federation of Mineral Societies			
PURPOSE: To promote education and popular interest in the various earth sciences; in particular in those hobbies dealing with the art of lapidaries and the earth sciences of minerals, fossils and their associated fields.			
2023 OFFICERS:	President Vice President Secretary Treasurer Program Director Board of Directors: Newsletter Editor	Cynthia McGowan David Tjiok Christina Rankin Morgan Davies VACANT Sandra Christiansen Jim Edwards Donna Nelson David Tjiok	281-546-2662 832-423-4802 281-723-5408 281-224-2444 Jim Hawkins John Caldyne
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Membership Dues Jan. to Dec. 2023: Adult \$15:00, Family Dues \$20.00 (4+) at same address. Send Dues to CLGMS, PO BOX 891533, Houston, TX, 77289			