

The Golden Nugget

he Newsletter of the Florida Gold Coast Gem and Mineral Society



Next Monthly Meeting:

Our next meeting will be August 21st at 7:30 PM The speaker will be Dr. Steven Haggerty, a distinguished mineralogist from FIU. Dr. Haggerty's presentation is titled: **Diamond in Kimberlites: Age, Origin and Global Distribution.** Please make every effort to attend and bring all your family and guest.

Monthly Meeting Minutes



Take I-95 to Pembroke Road, (Exit 19),

- Go West 1/2 blk.
- Turn Right just befor the RR tracks.
- Turn Right after the 1st building,
- Then Left at the fence.
- Ye Olde Rock Shoppe will be on the left 50 feet up.

Visitors & Members are encouraged to attend!

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	Date:	7/17/2024		
	Time Start:	7:40pm		
	Time End:	9:30pm		
	Minutes taken By:	Susan Anderson		
	Previous Months Minutes Accepted by:	Julio Lopez		
ore 1st	Attending Officers:	Julio Lopez - President Don Titman - VP Susan Anderson -	T T T T T	
ce. pe 0		Secretary Beverly Norona - Treasurer	U E 7 3 W6-7 3 3 7 -6	
	Guest and New Members:	No Guest Mason Patrey - New Members	Faceting Diagram	
	Treasurer's Report:	Beverly indicated that the bank has 2899.25 and there is \$450.0 in petty case 17 members attended Raffle - \$68.00, Coffee \$2.00 The shop is doing well. Some cabbing wheels were purchased and should last a while. A small saw is giving the shop is having issues but Don is on it		
	Other Notes/ Reports			
ued	Shop Report:			
and	Committee Reports:	Sunshine Chair - Mirtha Rimarachin submitted two cards for signatures and sent to Audrey and Jeff on behalf of the club. Thank you Mirtha		
s, n	Program Presentation By:	Steve Ackerman presented July's program on faceting. Steve gave a great presentation starting with a very interesting history on faceting. He then moved on to a show and tell on what is expected and logistic when		

taking a faceting class. Sign-up soon!



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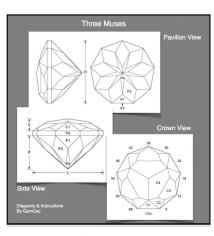
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Monthly Meeting Minutes (Continued)







Source: IGS – Quartz cuts

Program Notes:

Three members from this meeting requested to be on the list for taking the class, At the August 21st meeting we will be asking other members if they too are interested in signing up for the class

On other Agenda topics:

We initiated the conversation to get nominees for treasurer and secretary. Beverly and Susan will not seek another term. They spoke to the club on what they do. The Bylaws outline a description of what the positions entail. At the August meeting will be asking again for nominees so that we can get the new nominees some on-the-job training prior to November when Beverly and Susan vacate their positions. Please contact Julio Lopez if interested.

The club has decided that our club would be responsible for booking and pay for the picnic. Palm Beach and Miami are invited and are ask to bring their traditional plates/meats. The picnic will scheduled for September 29th 2024. More to come from reminders and flyers.

A discussion of the current bylaws was also initiated. There are some changes that our president Julio Lopez will workshop with a select Committee. These changes will be voted on come our November Elections. Presently, we have Julio Lopez and Mary Alice Manella on the committee. Please let Julio know if you are interested. We would like 5 committee members to provide sufficient voices to workshop the changes. We hope to hold two workshop meetings. Here are proposed steps.

- Step 1 A week before August Meeting, Julio Lopez will email proposed changes to committee members –
- Step 2 Workshop One A week before September meeting committee members can add, delete, change.
- Step 3 Workshop two A week before October meeting -Finalize any changes agreed upon
- Step 4 November vote on proposed changes.

Committee workshops will be setup both virtually (Zoom) and in person so all committee members can attend.





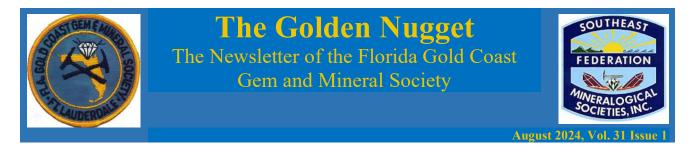
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Editorial:

Before I held office, I was unware who and how snacks were provided for our monthly meetings. I recall Sean asking volunteers to bring snacks. At almost all meetings, I would select a snack and my added my small contribution to the cup. As I receive the monthly minutes, I now see a section of the meeting minutes were the cup contributions are tallied. I am not sure if the cost to the volunteers is ever recovered by the amount in the contribution cup. I hope so! I do also see the leftover snacks at the end of our meeting and these are given away so as not to waste the food. Therefore, I want use this editorial to do three things.

- 1. I want to encourage all attending members to take advantage of the fabulous tasting snacks. As with the raffle, your contribution goes directly to the club. Let us hope that those contributions match the volunteers cost.
- 2. I want to thank Ariel Helman for doing a fantastic job performing his chair duties. Arial ensures that he calls the volunteers and keeps me and other officers updated on status of the list.
- 3. Finally, I want to *thank all present and past snack volunteers*. Last month we enjoyed some great tasting Italian style pastries. Thank you Stephanie Strauss.

The proceeds from your contribution is what truly really goes to help the club through further contribution by the members enjoying them. Thank you all again, I look forward to tasting the next great snack.



August Birthstone - August has three birthstones, Peridot, Spinel and Sardonyx.) Source Geology.com and GeologyScience.com and GIA



COURTESY:DR. EDUARD J. GÜBELIN COLLECTION (LEFT SPINEL), WILD & PETSCH LAPIDARIES (PERIDOTS), GIFT OF SUSAN GOLDSTEIN (SARDONYX), ROLAND SCHLUESSEL (RIGHT SPINEL)

Peridot (Olivine)



Peridots are a variety of **olivine**. Olivines are Magnesium Iron Silicate (MgFE₂SiO₄). Olivines form deep in the Earth's mantle and rise up to the surface via volcanic and tectonic activity as silica poor ultramafic rocks called Basalts and Peridotites. Olivines (peridot) also arrive to the earth via meteorites call pallasites. Peridot is mineral that forms in series where the chemistry forms a different mineral depending the percent content of magnesium and iron. This group of minerals are call a solid solution series. The magnesium rich end member is Fosterite and the iron rich end member is Fayalite. Peridot contains an average of 85% magnesium and about 15% Iron and about and give it the green color. Trace elements or impurities such as chromium and nickel can also yield a greenish colors.





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Physical Properties of Olivine			
Chemical Classification	Silicate		
Color	Usually olive green, but can be yellow-green to bright green; iron-rich specimens are brownish green to brown		
<u>Streak</u>	Colorless		
<u>Luster</u>	Vitreous		
Diaphaneity	Transparent to translucent		
Cleavage	Poor cleavage, brittle with conchoidal fracture		
Mohs Hardness	6.5 to 7		
Specific Gravity	3.2 to 4.4		
Diagnostic Properties	Green color, vitreous luster, conchoidal fracture, granular texture		
Chemical Composition	Typically (Mg, Fe) ₂ SiO ₄ . Ca, Mn, and Ni rarely occupy the Mg and Fe positions.		
Crystal System	Orthorhombic		
Uses	Gemstones, a declining use in bricks and refractory sand		

This August birthstone has also come to Earth via pallasite (made of nickel-iron and olivine) meteorites. Thousands of meteorites have hit the earth, many of them containing olivine, but only a few have had gem-quality peridot.



Transparent peridots can be seen scattered throughout this pallasite meteorite. Photo: Eric Welch/GIA. Courtesy: Magic Mountain Gems





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Spinels

Spinel is the name of a magnesium aluminum oxide mineral with a composition of MgAl₂O₄ and an isometric crystal structure. Spinel is economically important as a gemstone and can easily be confused with rubies (red corundum) and sapphires (blue corundum), because of their many similarities, but it was not recognized as a distinct mineral until 1783

Spinel is typically found in three geologic situations: 1) as crystals in marbles or dolomites that have been subjected to contact metamorphism; 2) as irregularly shaped grains in basic igneous rocks; and, 3) as water-worn crystals and pebbles in alluvial deposits. Like corundum (rubies), their resistance to weathering is the reason they also are found in alluvial deposits.



These spinels represent several different hues and countries. From left to right: a 10.92 ct oval red spinel from Mogok, a 20.08 ct cushion cut violet spinel from Myanmar, a 13.78 ct oval violet spinel from Myanmar, and a 7.92 oval dark blue spinel from Ratnapura, Sri Lanka. Photo: Robert Weldon/GIA





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Physical Properties of Spinel

Chemical Classification	Oxide
Color	The colors of spinel span the spectrum: red, pink, orange, yellow, green, blue, violet and purple. White, black, gray, and colorless spinels also exist. Red and blue spinels have often been confused with ruby and sapphire.
Streak	Colorless (harder than the streak plate)
Luster	Vitreous on fracture surfaces. Subadamantine on polished surfaces.
Diaphaneity	Opaque through transparent.
Cleavage	None
Mohs Hardness	8
Specific Gravity	Normally 3.5 to 3.61. Rare zinc-rich spinel can be as high as 4.40. This relatively high specific gravity causes spinel to be concentrated in sedimentary deposits - which are sometimes rich enough to mine.
Diagnostic Properties	Hardness, octahedral crystals, isotropic, bright luster, lack of cleavage, relatively high specific gravity.
Chemical Composition	MgAl2O4
Crystal System	Isometric
Uses	The only significant use of natural spinel is as a gem - but it makes a wonderful gem. Synthetic spinels are often made into gems or into transparent sheets for use as a more durable substitute for glass.





These hot pink spinel crystals came from Man Sin, in Myanmar's Mogok Stone Tract. Photo: Vincent Pardieu

A 2007 discovery in Tanzania of pinkish and orangy red spinel captivated gem collectors. Mines there also produce the August birthstone in purple and blue hues.





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Sardonyx

Sardonyx is a gemstone that forms when layers of silica (SiO2) are deposited into gas cavities in lava rock. The layers pick up different minerals at specific temperatures, creating bands of sard and chalcedony in varying colors. **Sardonyx is a type of agate**, which is a member of the chalcedony (cryptocrystalline quartz family). The name sardonyx comes from the words "sard" and "onyx", which refer to the ancient Persian city of Sardis (present-day Turkey) and the Greek word for "nail or claw" respectively.

Sardonyx is translucent or opaque, and can be light to dark brown in color with alternating white bands. The most attractive sardonyx has a high contrast between the reddish sard layers and white onyx bands. Sardonyx can also be black and white if it has been enhanced with dye.

Sardonyx is moderately priced and widely available in sizes up to 10 carats. It is often used in cameos and intaglios, and was once more valuable than gold, silver, or sapphire.



The exact geological formation of sardonyx involves the following processes:

- 1. **Silica Deposition**: Silica-rich solutions, often containing dissolved quartz, flow through rock cavities and fractures. These solutions may be sourced from hydrothermal fluids, which are hot water solutions carrying minerals in suspension.
- 2. Layer Formation: As the silica-rich solutions flow through cavities and fractures in the host rock, they start to deposit layers of chalcedony. The color of the chalcedony layers depends on the presence of various mineral impurities. In the case of sardonyx, the reddish-brown or orange-brown color comes from iron oxide (hematite) or iron hydroxide, while the white or black layers are typically caused by the presence of organic matter, manganese, or other minerals.
- 3. **Crystallization**: Over time, the silica in the solutions starts to crystallize and form microcrystals of quartz. These crystals gradually grow within the deposited chalcedony layers, creating the characteristic banded pattern.
- 4. Mineralization and Replacement: In some cases, sardonyx forms as a result of mineral replacement. The silica-rich solutions can replace existing minerals in the host rock, gradually transforming it into layers of chalcedony.







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Sardonyx can be found in various geological settings, including:

- Veins and Fractures: Sardonyx often forms within veins and fractures in other rocks. These veins can cut through a variety of host rocks, such as limestone, basalt, and granite.
- Agate Geodes: Sardonyx can also form within the hollow cavities of geodes, which are spherical rock formations lined with crystals. The banding in sardonyx geodes can create stunning and intricate patterns when they are cut and polished.
- Sedimentary Rocks: Sardonyx may be found within certain sedimentary rock formations where chalcedony deposits have accumulated over time.
- **Hydrothermal Deposits**: In some cases, sardonyx can form as a result of hydrothermal activity, where hot mineral-rich fluids circulate through the Earth's crust and deposit minerals as they cool.

Some of the best examples of sardonyx with sharp contrasts between the layers can be found in India, but other deposits include Brazil, Germany, Czechoslovakia, Madagascar, Uruguay, and the United States. The specific appearance and coloration of sardonyx can vary depending on the mineral impurities present and the local geological conditions in which it forms.

In ancient times, sardonyx was a popular stone for Roman seals and signet rings, as hot wax would not stick to it. For millennia, the bands of color in this August birthstone have made it a popular carving material for cameos and intaglios.



An early 19th century Italian sardonyx cameo mounted in gold as a pendant, by Giuseppe Girometti. Courtesy: The Metropolitan Museum of Art





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A flat oval polished sardonyx tablet showing varying orange and white banding. Photo: Robert Weldon/GIA. Courtesy: Gift of Susan Goldstein.

Physical Properties of Sardonyx

Chemical Classification	Silicate
Color	yellowish-red to reddish-brown – depending on amount of oxide.
Streak	White
Luster	vitreous to waxy luster when polished
Diaphaneity	Translucent, Waxy, Dull
Cleavage	None, Conchoidal to Sub-Conchoidal
Mohs Hardness	6.5 - 7
Specific Gravity	2.6
Diagnostic Properties	Alternating layers of sard and onyx; hence its name
Chemical Composition	SiO2 - Silicon Dioxide
Crystal System	Microcrystalline - Chalcedony does not have a crystal structure, but instead consists of tiny crystals that are packed tightly together.
Uses	Due to its attractive appearance and durability, sardonyx has been historically used for cameos, intaglios, beads, cabochons, and other forms of jewelry and ornamentation. It has been a popular material for carving due to its layered structure, which allows for intricate designs to be created





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What is it? (New Section of Rock and Minerals Identification) Tip #3 - Grain Size & Shape, and Foliation or Banding, Layering

Grain Size & Shape

When people think about rocks with grains they usually think about <u>sedimentary rocks</u>. Clastic sedimentary rocks will often have visible grains of varying sizes, but in some rocks like shales and mudstones the grains are too small to see with the naked eye. You may need a magnifying glass or <u>gem loop</u> in order to see very fine grains. Most chemical and evaporate sedimentary rocks will not have visible grains.

Igneous rocks are subdivided into two categories that are expressed by grain size. Intrusive igneous rocks generally have large, visible crystals because they cooled underground and the crystals had time to organize and grow. Extrusive igneous rocks cooled more rapidly on the surface, and therefore they won't have any visible grains.

For <u>metamorphic rocks</u>, the presence and size of grains is mostly determined by the protolith (the original, unaltered rock) and the degree of metamorphism. Sometimes when grains are present in a metamorphic rock they are the same crystals as were present in the protolith, but other times they are completely new crystals with different mineralogies, sizes, and orientations.

If visible grains are present, **take note of the size distribution**. Some rocks will be made up of grains that are all the same size (or very close), while others will have a variety of grain sizes. In sedimentary rocks, we refer to uniform grain sizes as 'well-sorted' while rocks with a variety of grain sizes are referred to as 'poorly-sorted'.

It's also important to **observe the shape of the grains**. Grains can be round, sharp or angular, or everything in between. This property is particularly important in the description of sedimentary rocks.



Breccia with varied grain sizes and subangular grain shape

One of the most important observations you should make about your rock is about the presence, size, and shape of its grains.





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Foliation or Banding

The presence of foliation or banding is a very strong indicator that your rock is metamorphic. The rock will display what looks like banding, caused by the compaction and elongation of crystal grains.

This type of banding is only present in metamorphic rocks, so it can really help narrow down what type of rock you have. If there is no foliation or banding present then it is much more likely that you have a sedimentary or igneous rock, because the grains are still more or less unchanged from their original shape.

It is important to distinguish between foliation and layering. Foliation refers to the orientation of elongated crystal grains. All of the grains will be stretched, and they will be lined up in one direction. If you look closely you will see that there are no consistent layers that run through the rock. Instead, the rock is fairly uniform with the elongated grains interlocking with one another.



Layering

This leads us to the next important physical property to look for – layering. The layers you're looking for are parallel beds that may be straight or curved. The layers may be very thin (about 1mm) or up to several inches thick.

Most layered rocks are sedimentary, but some are metamorphic. Layering is seen only rarely in igneous rocks. Sedimentary rocks are often layered because of the way they are formed, and metamorphic rocks can sometimes be layered if their protolith was. The presence and appearance of layering can be a big clue when trying to identify your rock.



Shale with characteristic layering





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Hardness

The hardness of a rock can be hard to quantify because most rocks are made up of several minerals which all have different hardnesses. Still, some basic tests can help narrow down what kind of rock you have.

In order to perform these simple tests, you'll need a piece of glass and a steel nail (or other piece of steel). You'll also be using your fingernails, but I'll assume you already have those.

You can determine the general hardness of your rock by whether or not it can scratch or be scratched by your fingernail, glass, and steel. Try to scratch one of your fingernails with the rock. If it leaves a scratch, move on to the glass and do the same thing, (keep the glass on a flat surface and take care not to break it). If your rock scratches the glass, move on to the steel and see if the nail will scratch the rock.

- Very Soft Rocks: Won't scratch your fingernail, glass, or steel
- Soft Rocks: Will scratch your fingernail, but won't scratch glass or steel
- Medium Rocks: Will scratch your fingernail and glass, but won't scratch steel
- Hard Rocks: Will scratch your fingernail, glass, and steel
- The hardness of individual minerals and the Mohs scale will be covered in future identification sections

Weight and Density

For purposes of identifying your rock, all you usually need to do is **take note of how heavy the rock feels compared to other rocks its size**. When you pick it up, does it feel heavier than normal, lighter than normal, or about like you'd expect?

If you really want to get fancy you can perform specific gravity tests on your rock, but this is usually unnecessary. Because the mineralogy of rocks of a single rock type can vary, the density and weight will vary correspondingly. For example, the specific gravity of granite typically varies from 2.7 to 2.8 depending on the amount of quartz, feldspar, mica, and accessory minerals present. Again, for our purposes, just hold the rock in your hand and see if it seems unusually light or heavy. This is usually enough to help with the identification process.

Texture and Feel

This test is a pretty easy one, but it's also a little subjective. Run your fingers over the surface of the rock and see what you feel. Some rocks have textures that are unique enough that they can aid in identification.

Most rocks will simply feel coarse or rough, but if you feel something different be sure to make a note of it. Some rocks may feel glassy, slippery, greasy, or gritty. If you do not feel anything notable, that is okay, too.

Unique Identifiers

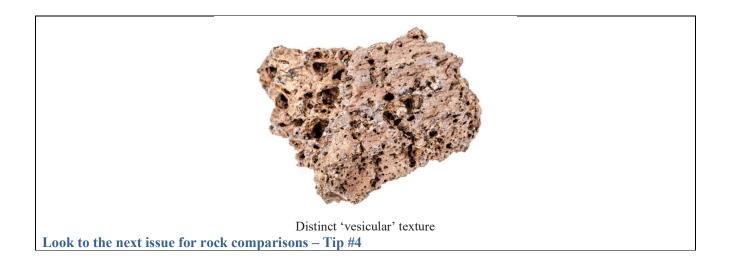
There are all sorts of other unique identifying characteristics that can help you identify your rock. Most of them are pretty specific and aren't seen in very many rocks, so I've grouped them together here.

We're looking for **anything abnormal or that seems distinct about your rock**. Things like bubbles in your rock, the presence of fossils, a reaction with weak acids, or interesting fracture trends can all help you figure out what sort of rock you have. These types of features are especially useful if you've already narrowed down your possibilities and you're looking for anything else that can refine your choices.





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On the Punny Side:

Not to get too "sedimental", but we are so excited to share these with you that we might shed a tear or two—from laughter, of course! If you have a funny ones please share. You just might make the newsletter.

Sorry, but here are two, which I have already used. I hope that you liked.

I was "faceted-nated" with his presentation"

I will not take you for "granite"

Four more;

My rock collection has so much "sedimental" value to me.

Did you hear about the drunk geologist? He finally hit rock bottom.

I want to make an impact on the world—I do things for the crater good of humanity.

May the quartz be with you!



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August 2024,

Calendar of Events	
July 17 th 2024	FGCG&M Society's Monthly Meeting
August 21 th 2024	FGCG&M Society's Monthly Meeting
September 18th 22024	FGCG&M Society's Monthly Meeting
September 29 th 2024	preliminary schedule for the Tri-county Picnic per Kathryn Foster (KC)
October 16 th , 2024	FGCG&M Society's Monthly Meeting
	At this meeting, the club will open the officer and board of director nominations to the club membership.
November 20 th 2024	FGCG&M Society's Monthly Meeting
	At this meeting the club will accept Officer and Board of Directors nominations from the floor, close the nomination process, create the slate of candidates and start election procedure
December 18 th 2028	FGCG&M Society's Monthly Meeting & Christmas Party
	Seven (7) days prior to the December meeting ballots are due.
	The new Officers/Board of Directors, for the upcoming year, will be announced at the December meeting.





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2024 Snack Volunteers

June	Ernie & Tove Ashurst	
July	Stephanie Struss	
August	Ariel Helman	
September	Julio Lopez	
October	Beverly Norona	
November	Marlene Flores	
December	Christmas Party – No Volunteer(s) needed	
Please contact Ariel Helman @ 305-335-4405 for changes.		

Club Info:

Club's Email: floridagemmineral@gmail.com Club's Website: http://www.fgcgms.org Federation Website: http://www.amfed.org/sfms Mailing Address: 8783 NW 142 Lane, Miami Lakes, FL 33018

List of Officers:

Function	2 nd Function	Name	Phone Number	r E-mail Address	2 nd E-mail Address
President	Database Manager	Julio Lopez	786-603-8081	floridagemmineral@gmail.com	juliolp2059@gmail.com
Vice President	Shop Foreman	Don Titman	305-502-4345	nolewake@yahoo.com	
Shop Foreman	Program Committee	Lucas Bush	954-588-6323	snugglefish22@gmail.com	
Secretary	Program Committee	Susan Anderson	954-559-9198	poochiepawlor@aol.com	pochiepawlor@aol.com
Treasurer		Beverly Norona	954-205-5815	bevn12345@aol.com	
Sunshine Chair		Mirtha Rimarachin	954-948-7657	mrimarac88@gmail.com	
Member Committe	e	Robert Allen	954-981-2307	rca39@yahoo.com	
Refreshment Committee		Ariel Helman	305-335-4405	arielh305@gmail.com	
Game Master / Quiz Committee		Dick Haliburton	954-249-0365	dickhaliburton@gmail.com	
Newsletter Committee		Vacant			
Newsletter Committee		Jeffrey Gross	954-987-0645	jgrossarchitect@gmail.com	





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Advertisers:

Ye Olde Rock Shoppe

Ye Ole Rock Shoppe 1425 S 30 Avenue, Suite C, Hollywood, FL 33020 954-295-0606, 954-610-8084 Yeolderockshoppe@comcast.net https://yeolderockshoppe.com



Crystal Cave Rock and Gem Shop 6835 Stirling Road, Fort Lauderdale Florida 33314, https://thecrystalcaverockandgemshop.com Phone: (954) 585- 8988 Fax: (954) 585-8988 Email: jackiescrystalcave@att.net





The Art School: Offers classes in precious metal clay, metals fabrication, cabochon cutting, enameling and other art jewelry related subjects, as well as drawing, painting, clay and pottery, photography and more. www.bocamuseum.org/theartschool or facebook.com/bocaschool call 561-392-2503.

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IF YOU HAVE ARRANGED A SPEAKER FOR THE CLUB MEETING, PLEASE BE SURE ALL OF THE INFORMATION NOTED BELOW IS INCLUDED.

Email the form to the newsletter editor at juliolp2059@gmail.com

Month the speaker will be speaking:

First Name

Last Name

Title or Self Identifier: (for example rock hound, Geologist, whatever the person calls him/herself.) (no more than five words)

Type self-description here:

Title of Program:

Short paragraph on content of presentation:

Biographical information on presenter:

Phone number of speaker in case further information is needed:

Name of person submitting this form: