



ROCKHOUND RAMBLINGS

APRIL 2024 • PASADENA LAPIDARY SOCIETY® EDITOR: MARCIA GOETZ

DIAMOND—THE 75TH ANNIVERSARY GEM

Most of the earth's diamonds start their life deep in the earth's mantle as carbon under extreme temperatures and pressures. Some diamonds have been found in meteor impact areas and others have been found within meteorites. However, most diamonds on earth are delivered from miles deep in the earth to the surface through kimberlite pipes formed by deep volcanic activity. It is thought that the trip from the deep mantle to the surface of the earth was very quick. Otherwise, if it took too long and too slow it would turn to graphite.

Diamond is considered the hardest natural material on earth (Mohs scale 10), however, it has been found that there are different hardnesses of diamonds. A rare form of diamond recently found is called Lonsdaleite which is an even harder crystal. The Lonsdaleite has a hexagonal crystal structure. It is formed by meteorites that contain carbon that impact the earth, and the heat and pressure alter the carbon to diamond. Diamonds are also found within meteors (space diamond) and most of them are tiny.

The diamond has a cubical lattice structure, and is an octahedron (a polyhedron with eight sides). Sometimes when looking at a diamond you can see tiny triangle shapes called trigons which are visible when looking at the surface of the rough diamond.



Diamond crystal

Diamonds come in all colors and most found are cloudy and included but on occasion a beautiful one is found. The Hope Diamond seems to be the most popular recently because of the movie 'Titanic'. However, a quick look at a list of famous larger diamonds shows various colors. The largest red diamond was found in Brazil named Moussaieff; the Tavernier Blue was the largest blue but was lost and is thought to have been recut into the Hope diamond; the largest yellow was found in Canada but not named; the largest gem quality diamond is the Cullinan Diamond, when found was 3,106 carats and is a blue-white color. This rough stone was cut into nine large stones and about 100 smaller stones.



Faceted Diamond

Most diamonds found are used for industrial purposes because they are heavily included and not a desirable color for use in jewelry. Lab grown diamonds which have the same crystal and chemical qualities are prevalent in the jewelry marketplace now and the difference can't be seen by the naked eye, but it can be detected by instruments. The big difference is the cost and depends on if you want the real gem. The 4 C's would still apply to the lab grown stone, just like diamonds from the earth. The 4 C's for evaluating a stone are Carat Weight, Clarity, Cut and Color.

A side note: On display through April 21 at the Los Angeles Natural History Museum is a collection of gemstones **100 carats: Icons of the Gem World**. Included in the display is the 125 carat Jonker 1 Diamond. The Jonker 1 was cut from a 726 carat diamond found in South Africa in 1934. More information about the display can be found at <https://NHM.org>. Also included in the display are aquamarine, tanzanite, topaz, emerald, tourmaline, and sapphire.

Happy 75th Anniversary Pasadena Lapidary Society



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Editor: Marcia Goetz marcia.pls.emails@gmail.com Send articles by the 15th of the previous month for publication in next month's issue. However, no article is guaranteed to be published.

Membership!

We are delighted to have new and former rockhound(s) join our society in March 2024. Alexandro Cruz, Iyari Diaz (*Jr.), Jan Easter, Aria Easter (*Jr.), Ana Escalante, and Xander Mauermann (*Jr.). Note: *JR denotes Junior member.

Invite a friend to join PLS! There is a \$10.00 initiation fee for new members. Please pay in person or send in via US postal service to our PO Box. Extra membership donation is always welcome. Reminder! Your membership expires in December. If you haven't renewed your 2024 membership, please send in your dues ASAP, otherwise your membership will be terminated.

\$25.00+\$10.00 for adult member.

\$15.00+\$10.00 for 2nd adult member.

\$10.00+\$10.00 for additional adult or Junior member.

~Sue Pang, Membership Chairman

Meetings

Board Meetings – 1st Thursday of the month. Members welcome.

General Meetings – Every 3rd Tuesday of the month.

Pasadena Lapidary Society®

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April Program: Stone Stories By Janie Duncan

Every stone has a story. Maybe it is how it was formed or why it has a specific shape or color. Sometimes a rock tells a story that is sentimental. Do you remember the day you found the rock or perhaps someone gave it to you as a gift. Some stones have ancient fables or myths passed down for hundreds of years attached to them. Almost everyone owns a few rocks that are special to them in some way. This program is about stones and the stories they tell.



WAVELLITE is a Phosphate mineral with a 3.5–4 on the Mohs scale. It has a crystal habit of spherical and when broken in half you can see the spherical layers.



Workshop - April 13, 2024

The next workshop will be held on Saturday April 13, door opens at 9 am and we need to be cleaned up and out by 3 pm. Cost is \$5 for the full day or \$3 for a half day.

Saws, grinders, and other equipment and help using them will be available as usual.

We will do a bit of preparing rock for grab bags and help would be welcome.

The workshop is open to members age 9 and above. Minors must be accompanied by a member parent/guardian. First timers and anyone who needs an orientation or help with learning to make cabochons needs to rsvp a few days in advance to Marcia at marcia.pls.emails@gmail.com to get directions to the workshop and allow us to schedule an instructor. Orientation will start about 9:30 am but come a little early.

Access the workshop by walking up the alley on the west side of the building and use the sliding door there. Please do not use the door at the loading dock.

Member-to-Member

2018 Forest River Wildwood X-lite travel trailer for sale. 23'x8', sleeps 5. Call or text Elizabeth at [8189263163](tel:8189263163).

Flat Lap Table, 24-inch for sale, \$150. Needs electrical work. Contact Armando [8189263163](tel:8189263163)

HP 16-inch vibrating flat lap. Needs new motor. \$100 to PLS. Contact Philip Lahr [8189263163](tel:8189263163)

Tumblers for sale by PLS. Most are rotary, some vibratory. All in good condition. Can include some nice rock (needs breaking) if you like. Contact Phil plkslahr@att.net.

Do you want to advertise your equipment here? Submittals for the next bulletin should be sent to Phil by the 15th of the month.



Making Lemonade by Barna Laszlo

The Lemon

Sometime last year I stumbled upon a seller on Etsy advertising Botswana Agate. Nice, wavy, colored chunks, 1-2 pieces in a pound for (as I remember) \$15. Say "Hello!" to a good buy. I ordered two pounds. When the package arrived I counted five pieces plus two walnut-sized ones, a tidbit less than two pounds. I would have forgiven the missing one ounce, but the pieces lacked the nice coloration shown in the seller's ad. All in all, I got banded agate instead of Botswana. That is a lemon! But if I looked at them as banded agate, they were AAA quality. That was a sweet lemon.

The Lemonade

My agate chunks showed excellent swirls but lacked color. That piqued the chemist in me; I decided to try and add color to them. The bands of an agate have different porosity. When soaked in a coloring agent, the different layers absorb different amounts of color, that's how agate dyeing works. It is a slow process, it takes days while the dye penetrates the microscopic pores in the agate bands but requires no interaction - just patience.

I decided on dyeing my pieces black. The recipe is simple: saturate the agate with sugar then turn the sugar into carbon. If you use agate slices instead of chunks, the saturation takes days instead of weeks/months. I put the slices into a glass jar, covered then in a syrup (20 grams of sugar in 80 grams of water), put them into a pressure cooker (I have an Instant Pot for this) and run it for four days, three times a day for four hours at high pressure. The syrup started to caramelize, i.e. turned brown on the second day, but that's OK. By the end of this treatment some bands of the agate will turn brown or nearly black.

The second step of the dyeing process is to turn the sugar into carbon. There are two ways of doing this. The original recipe calls for cooking the slices in hot sulfuric acid. Don't do it inside your house or when small creatures are present!

Flush the slices with water, pat them dry and make sure they are **completely** dry under the sun or in an oven. Completely! Then put the slices into an oven-proof glass or ceramic bowl, cover them with concentrated sulfuric acid and cook them around 300F for half a day - it can be done in several sessions (an "impossible to clean" toaster oven is perfectly good for such a purpose).

!!Be extremely careful with sulfuric acid! It may burn you, burn holes in your dress, may blind you if you don't wear safety glasses!!

A less adventurous way of turning sugar into carbon is to bake it gradually by heating the sugar-saturated slices up to 450F and keep them hot for hours until the sugar

caramelizes. The attached picture shows an original piece (1), a sugar-saturated one (2), and three polished pieces after sulfuric acid treatment (3).



Above: Janie Duncan hosted a group of girls who came to see her museum. If you have a group who wants to learn more about rocks give Janie a call.

Gemology on a Shoestring: Review of Visual Optics and Polariscope Use

The Culver City Rock and Mineral Club will present master goldsmith, author, and educator, Charles Lewton-Brain for a **free workshop** on Monday, May 6, 2024 from 7 pm – 9 pm. at the Veterans Memorial Auditorium, in the Rotunda, at 4117 Overland Ave., Culver City, CA 90230. The topic of this workshop will be Gemology on a Shoestring. Materials to bring are: 10x loupe, gemstone tweezers, pen flashlight, and some gems especially larger "faceted" quartz.

Please join Culver City in welcoming this esteemed and inspirational jeweler for his informative workshop "Gemology on a Shoestring."

For more information about the workshop check out Culver City R&M facebook pg <https://www.facebook.com/CCRMCL>

Interesting Diamond facts

The pink and blue diamonds are the rarest on earth.

It is estimated that 25% of diamonds are fluorescent. Other diamonds can be phosphorescent and even triboluminescent..

Arkansas has a state park where you can dig your own diamond. Many colored diamonds have been found here, including some large ones—the largest weighing in at 40.23ct.

Diamond inclusions from another crystals are most often carbon bits.

A Herkimer Diamond is not a diamond, it is quartz.

From Guinness World Record: The smallest faceted diamond weighs 0.0000743ct. It is a brilliant cut with 57 facets 0.16-0.17 mm diameter and 0.11 mm high. Cut by Pauline Willemse, from the Netherlands.

Black diamonds (Carbonado) are the toughest form of natural diamond.



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President's Message

Hi Rockhounds! Again, it has been a busy time since I wrote last. 2024, or at least March, has been one of STEAM/STEM presentations, Some interesting talks on Meteorites and Amethyst and Elestial Crystals, new information on our past presidents and doings of Pasadena Lapidary Society, and other forays into the mountains/deserts for "Hot Rocks". Not a bad start for our 75th year in existence.

Speaking of that, what are your thoughts on the history of PLS? Do we have anyone who can write a fair hand and is willing to help write up some articles of the "You (or "I Was") Are There" type? We need to do Something to celebrate the fact of 75 years in existence, as it's not every day that an organization lasts that long, if any does. I think if we can do this before our August Gem Show, this could be a great handout or inexpensive booklet for sale to members or potential members.

Linking all this to the Show, we/I need some kind of estimate of how many people are interested in helping to get the Show "On The Road" as it were. I particularly am looking for some people to be Security for the Show. What I need are some persons who are good/informed talkers for the "lost and wandering" who show up and good watchers for anything out of the ordinary during the show. Regular Security folks will be around during the show so we don't need to be worried about handling disturbances.

Otherwise, we (PLS members) have been invited to go on a Co-Op member field trip with other CFMS clubs on April 19-21, 2024. Trip is to Hauser Geode Beds, Palo Verde, CA and will be collecting Geodes and/or Porcelain Jasper. As was mentioned at the last General Meeting, if you haven't seen or worked on porcelain jasper you are in for a treat. Stuff can take on a Great polish and, with some luck, has some great figures to boot! Talk to Marcia Goetz or myself (email desired) for further information and Save Me A Place at the collection site.

Just a final thought on the STEAM/STEM presentations. If you haven't been involved in either, you should try it. All it takes is an interest in some lapidary-type "facet" of rock hounding or just the basic type(s) of rock hounding or even a favorite rock. After all, if our Vice-President Barna can hold kids fascinated by showing them fossilized dinosaur "poop", imagine what you can do with a simple quartz crystal or a batch of sparkling stones.

Sincerely, David Lacy, President

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WE'RE ON THE WEB!
PASADENALAPIDARY.ORG