

THE BACKBENDER'S GAZETTE

NEWSLETTER OF THE HOUSTON GEM & MINERAL SOCIETY



RUBIES - JULY BIRTHSTONE

They're hotter than July, on Page 10

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About Us: <https://hgms.org/>

Upcoming Meetings and Events: <https://hgms.org/events/>

Calendar: <https://hgms.org/calendar>

Officers and Contact Information: <https://hgms.org/contact-us/>

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BACKBENDER'S GAZETTE SUBMISSION DEADLINES

Articles are due on the 15th day of the month before the date on the BBG issue.

Copy is due for the next issue by the 15th of this month. Email content to editor@hgms.org



The BACKBENDER'S GAZETTE



The Newsletter of the Houston Gem & Mineral Society

PRESIDENT'S MESSAGE

by Nancy English

Decisions, decisions: what do I pack, what do I give away, what do I sell and how, what do I keep? We are honestly selling our house! Just getting ready for the photographer takes days of clearing out and rearranging. Those of you who have been to our home for Volunteer Appreciation Parties know how fortunate we have been to have this wonderful space to share. Tom and I spent a week looking at local apartments to get an idea of what's out there. We are committed to a different kind of retirement now.

In September I want to be spending less time at home and more time at the shop making decisions about which templates to use on which rocks to make more cabochons. I want to take advantage of the classes HGMS is offering to hone my skills. In the meantime, I will be deciding how to fit my rock stash into an apartment walk-in closet. (Pause for laughter.)

The HSE Committee is moving forward with the list of improvements and upgrades in the shops. I am so thankful that Michele Marsel offered her project management skills to oversee the scope of our plans. The Committee decided to interview General Contractors to implement the growing list of varied developments. New committee members, Sharon Halton and Randy Carlson, lent their time to find and call contractors so Michele and I could meet with them. Richard Good and Ray Kizer logged some hands-on time to complete smaller projects on our list. For me, chairing this committee is a welcome distraction from the stress of moving.

The outside of the building is getting a facelift, too. As part of the Dunn Southwest resolution to repaint the entire property, the Kirkconnell painters will be in the parking lot on Monday, July 11, and Tuesday, July 12 to power wash and paint the building. So do not plan to use the shops or have meetings those days. When you come to the July 25 General meeting check out the HGMS sign painted a vibrant Sherwin Williams 6884 Obstinate Orange. Have a happy 4th of July. Have fun. Stay safe, hydrated, and cool.

SECTION REPORTS

As always, please see the [Upcoming Programs](#) section under Events on the HGMS website to learn more about planned future meetings.

BEADING SECTION (3RD SATURDAY AT 12:30 PM)

Beading Section members had great fun making a Celtic Knot Leather bracelet at the last

meeting. Each member left wearing their creation and requested more projects that can be completed in one or two sittings. Thanks to Ann Money for teaching this class.

On Saturday, July 16th from 12:30 PM to 3 PM Beading Section members will be making Peyote stitch cylinders with small tassel-pins as shown in the photo at right. You are welcome to join in the fun. Just show up.



When we meet, plan to bring your beading mat, scissors, wire and wire cutter, round nose and needle nose pliers, thread and beading needles if you have them.

Would you like to receive notifications about upcoming Beading Group activities? E-mail beading@hgms.org to be added.

NOTICE: Do you have a bracelet or necklace that needs restringing? The Beading Section will carefully restring your piece at an hourly rate of \$15.00 + materials. Contact beading@hgms.org to make arrangements. All funds will go to the Beading Section.

DAY LIGHT SECTION (1ST WEDNESDAY AT 1:00 PM)

On June 1st we made slump glass coasters. At the upcoming July 6th meeting of the Day Light Section, Neal Immega will teach us how to make clasps and bails.

GEMSTONES AND FACETING (2ND THURSDAY AT 6:30 PM IN PERSON AND VIA ZOOM)

For our July 14th meeting we will continue with the study of Facet Diagrams that we began in June.

We'll likely have two classes in July. "Equipment maintenance and use" will be the first class and the second class will begin with "reading facet diagrams, picking, shaping and cutting material." Classes will be held when enough interested people sign up. Email us at Faceting@hgms.org.

We would all like to congratulate John Lee in winning 2 gold metals and 1 silver metal at the International Faceting Challenge, a world-class faceting competition which is run and sponsored by the Australian Facetors' Guild. See John Lee's medals, at right:



For more information: <https://www.facetorsguild.com.au/IFC>

LAPIDARY AND SILVERSMITHING SECTION (3RD MONDAY AT 7:00 PM)

In July, we will make a pendant setting for the turquoise cabochon made in last month's meeting. If you were not there, please just bring a cabochon no larger than 30 x 22 oval for the pendant project. The stone can be oval or freeform, just not geometric or with sharp corners (no squares or rectangles). The section will have enough material kits for 10 participants at \$20 each (cash or check at the meeting). The material kit contains silver sheet, bezel strip and wire to make the bail - everything except your cabochon. We will also have Stone of the Month material for everyone and we'll pick a shape at the meeting.



Here's Tony showing a partially finished piece, and special guest Neal Immega working on his stone.

Neal Immega



MINERAL SECTION (3RD WEDNESDAY AT 7:30 PM (VIA ZOOM))

News about the July Mineral meeting will be sent out before the meeting.

PALEO SECTION (3RD TUESDAY AT 7:30 PM)



For the Paleo meeting June 21, we discussed where to find Dino foot Prints and what they mean. We also had a special presentation. Ken Stasney brought the mammoth femur he found in the Brazos River. What a great show and tell item!

This is the mammoth femur that was found on the Brazos River with Mike Dawkins for scale. This is a real mammoth-size bone from a Mammoth. Remember, this is from a Southern Mammoth that did not have fur (just like the modern ones from Africa). Dawkins likewise does not have much fur because

he is derived from primates that evolved in hot Africa.

In other Paleo news:

A [virtual visit](#) to the Smithsonian's new Paleontology Hall. See what you have been missing!

Here is a [link](#) to a nice article on the murals that decorate the Paleontology Hall at the Houston Museum of Natural Science.

YOUTH SECTION (1ST AND 3RD SATURDAYS FROM 10:00 AM TO 12:00 PM)

We will continue our regular activities working in the shop.

NEWS FROM NEAL

Ages ago I was appointed Clubhouse Chairman which means that I try to keep the shops working, but I am planning to step down. The Board of Directors will have to find someone else to repair, upgrade, and clean the equipment. When you find something wrong in the shop, please hang an OUT OF ORDER sign on it (find them in the box on the side on the Shop table) and report it to president@hgms.org. I am going to finish the upgrades I have been doing to the trim saws (see below). I will continue to handle the air tools room since that is Paleo. I will continue to be the Paleo president and librarian.

Trim Saw Repair: I am working on upgrades to our trim saws to make the maintenance easier. That includes stainless steel hold down nuts and bolts, stainless steel arbor nuts and shaft clamps and non rusting flanges. I am going to see if I can make the flanges out of micarta - a phenolic and fiber product.

The Air Abrasive machine has been repaired by the factory and sent back to me. The factory was most interested in my report that we have given up using their screened dolomite powder (at 4x the price) in favor of unsorted ground material from the Ceramic Store. I expect to get the unit installed by next week.

Hot! The painters asked that the sun screens on the front porch be removed. I put them up 15 years ago to cool the lecture hall and they have been a marvelous help. New ones will be put in place after the painting is finished.

Gary Anderson asked me to drill and hang some pieces of agate he has been polishing. This is one corner of a 1 1/2 inch slab. To get the area magnified, I shot through a hand held magnifier. I think it worked very well. Try it. Photography doesn't have to be hard.

I want to alert you that the Dreher Carvings at the Houston Museum of Natural Science are back. These are hardstone carvings and they are spectacular. Here is my favorite carving of a toad sitting in a puddle. Note that the feet in the water are



carved **NEGATIVELY** so they show up properly meaning that they are carved into the back of the sculpture. There are more than 100 pieces on display. Don't miss it!



Note negative carving of Toad's feet

One final bit of news:

The Catalytic Converter in my car was stolen out of our parking lot on the 4th of June. An article in the Houston Chronicle says it can take only 2 minutes to cut a converter out and that 99% of the thieves are not caught. 8,000 stolen in 2021. Lucky me.

Do not try to confront these thieves! They are dangerous.

WHAT'S OLD IS NEW IN THE LIBRARY

I have found a New/Old book, the faceting book you wanted but did not know, **Handbook for the Amateur Lapidary by Harry Howard, 1940**. I see the faceting people struggling with their machines and I want to help them. I have to find a new approach since my big hammer and wrench method is not working.

The answer has been in the library all the time. This book shows how to build a faceting machine, EASY. I will not keep you in suspense.

We could make these in the shop, particularly if we used the 3D maker unit in development by one of the Logans (They all look alike to me). I particularly like that the power transfer for the grinder is a wide leather belt like what is used on steam engines and not the modern V belt. This is great. We all can become faceters. The book is in the faceting section.

I wonder where we can find a steam engine? We could borrow the one from the science museum, put it in the parking lot, and cut a hole through the wall to get the power take off belt inside. I bet we could run 10+ of these units off one belt. We would just have to sync the changing of the disks but that would perfect for a class. EASY!

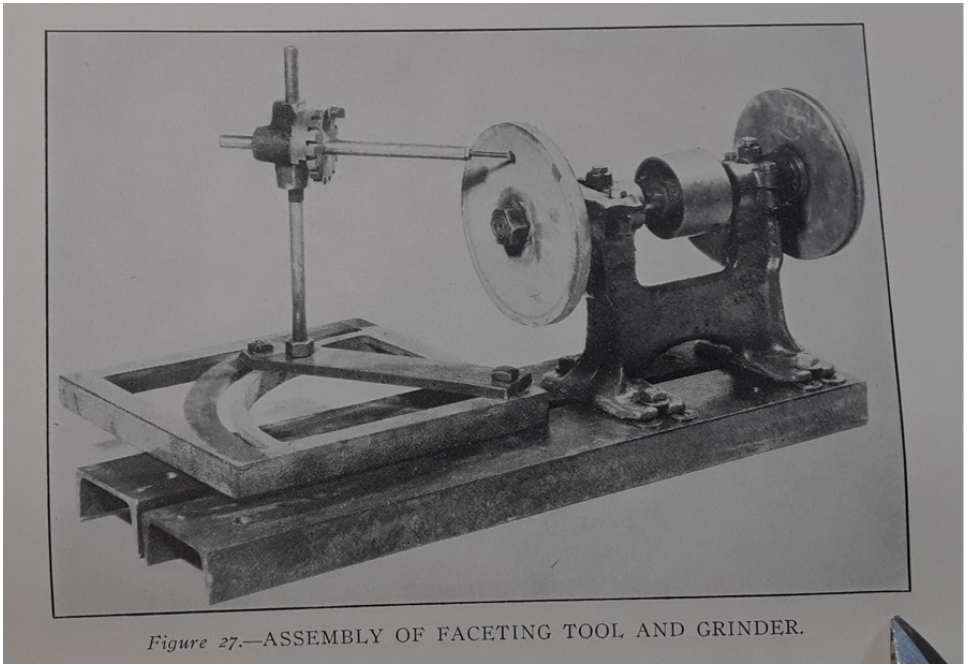


Figure 27.—ASSEMBLY OF FACETING TOOL AND GRINDER.

UPCOMING CLASSES

GENERAL EDUCATION UPDATES:

We are seeking teachers to expand our class selections. Specifically: PMC, Dichroic Glass, Enameling, Mosaics, and bead weaving instructors are needed. Contact Classes@HGMS.org for more information on teaching or taking classes. We are planning to offer more short & easy summer-time classes for those interested in making some fun projects.

CLASS POSTINGS:

CABOCHONS 101 CLASS: Sharon Halton is offering 2 different Cabochon 101 Classes over the summer months. One will be held on July 18th and the other will be on August 31st. Register for the one that suits your schedule the best:

CABS101-071822-SH - Wednesday, July 20 th from 6:00 PM to 10:00 PM

OR

CABS101-083122-SH – Wednesday, August 31 st from 6:00 PM to 10:00 PM.

Sharon Halton, Shop Manager's cabochon making class includes a discussion of how to create cabochons and examples of cabochons in various stages of development. Stu-

dents will choose a small slab, draw a design from HGMS templates, and learn to use the trim saws. Each student will choose a pre-dopped stone for hands-on experience using the grinding machines while their own dopped stones “set”. Students will leave with one or two beautiful cabochons and the information and comfort level needed to work on their own time during HGMS open shop times. No previous experience is needed.

Cost is \$45.00 for members and \$60.00 for non-members, including all materials; or, you may bring your own stone slab. Minimum of 3-students and maximum of 5 students. Class is held in the Lapidary Shop and Center Classroom.

CHAIN MAILLE CLASS – (CM-073022-CF)

Carmen Fraticelli will teach chain maille in two-part sessions on Sunday, July 31st and continued on Sunday, August 7th from 11:00 AM to 3:00 PM. The first class will cover general chain maille fabrication terms and background, making a 2-to-1 Chain Maille sample and making European style 4-in-2 diamond shaped earrings. The second class will cover how to make a continuous short-spiral chain and a Byzantine Bracelet.



Chain Maille earrings and bracelet (below)



Spiral 4-in-1 chain

These projects may require finishing at home due to time constraints. Carmen will use overhead projection and one-on-one instruction to teach this simple to more complex styles of chain maille.

Cost is \$65.00, including materials for members; \$80.00 for non-members. Minimum 2 students; maximum 6 students. Tools can be provided, or bring your own pliers, if preferred. Beading mats are helpful.

Carmen has been making and selling her chain maille projects for over 3-years. She often combines chain maille with her silversmith work. She looks forward to teaching her 1 st class for HGMS.

RUBY - JULY BIRTHSTONE

by Sigrid Stewart

What is a ruby? To be sure it is a crystal of the mineral corundum– hardness 9 on the Mohs scale and therefore quite durable – but so is sapphire. To be classified as ruby rather than sapphire it must be red or deep pink of the precious shade called pigeon's blood. Even purple stones must be classified as sapphires, which claim all other shades. Some of what were called rubies in the past are now considered too pink or too purple to be rubies and instead have been reclassified as sapphires. The very name “ruby” comes from the Latin word for red, *ruber*.



*Photo by Humanfeather - Own work, CC BY 3.0,
<https://commons.wikimedia.org/w/index.php?curid=6969673>*

Faceted ruby gemstones vary widely in their quality and are judged on cut (quality of faceting), color, and clarity. And of course, the larger a high-quality stone is, the more valuable it is going to be.

Ruby, the most popular birthstone for July, has an ancient history and is mentioned in the Bible. In Proverbs 31:10 it says, “Who can find a virtuous woman? for her price is far above rubies.” In Job 28:18, the verse says, “No mention shall be made of coral, or of pearls: for the price of wisdom is above rubies.” Rubies represent wealth, royalty, good fortune and courage, and their color obviously hints at love and passion. Warriors carried rubies into battle and mounted them on their sword hilts and scabbards. Metaphysically, they are considered to be protective stones which can bring the wearer happiness and love, vitality, and energy. As such rubies make perfect gifts for both the July-born and for Valentine’s Day. Just ask representatives of the jewelry industry!

The chemical formula of ruby is Al_2O_3 and it owes its color to the presence of chromium replacing some of the aluminum ions in the crystal structure. The compound, called alpha-alumina, is very stable because three electrons of each aluminum ion are shared with a nearby octahedral group of O^{2-} ions. Due to the distortion of the larger chromium atom, light absorption in the yellow-green wavelengths results in fluorescent emission of red light. This also allows rubies to fluoresce under ultraviolet light; a few even fluoresce in daylight due to the presence of ultraviolet light in sunlight.

Natural rubies have imperfections in their color and clarity, often in the form of rutile crystals in parallel arrangement, called “silk” for its optical effect. This silk can be reduced by heating, which improves clarity. It can also be a feature, if prevalent enough, because the silk can result in 3- or 6-point star or asterism, producing a star ruby, cut en cabochon, rather than faceted. Other treatments include filling fractures with colored leaded glass. Lab-created rubies are also very popular in jewelry. They are made by the flame fusion process, by melting potash alum using an oxyhydrogen flame to create a boule, or synthetic crystal. These crystals also form the basis of ruby laser technology. However, natural rubies can command much higher prices, especially if they have not been heat-treated.

Although they are found in many localities, crystals of the quality to become gemstones are rare. Traditionally, Thailand, Cambodia, Myanmar (previously known as Burma), Afghanistan, Sri Lanka, Australia, Columbia, India, Namibia, Mozambique, Nepal, Pakistan, Tajikistan, Tanzania, and Vietnam all produce gem-quality stones.

Some localities, such as Burma, appear to be playing out. Some recently discovered localities appear to have huge reserves, such as Pakistan.

There have even been recent discoveries in Greenland. Interestingly, these may be the oldest rubies, at three billion years old. Rubies in great quantities were discovered in Mozambique only in 2009, but already it produces the most gem-quality stones. They are also found in small quantities in the states of Montana, Wyoming, North Carolina, and South Carolina.

Imitation rubies are quite common. They include garnet, red spinel, and glass. Many famous rubies of the past were spinels. See next month's birthstone article!

See the Sunrise Ruby, most valuable gem in the world:

<http://www.abc.net.au/news/2015-05-13/ruby-sells-for-record-breaking-price/6465382>

A famous carving in ruby of the Liberty Bell:

https://en.wikipedia.org/wiki/Liberty_Bell_Ruby

References: [Wikipedia.com](#)



Ruby crystal from North Carolina

Photo by Will Heierman

Pretty as a polished gemstone!

FULGURITES

by Charles "Wooly" Wooldridge
Reprinted from The Pick and Shovel

Newsletter of the Lincoln Gem & Mineral Society



I recently discovered a fulgurite while helping a friend sort through her collection of rocks. She had inherited a rock shop from her husband's deceased uncle. Harold Hargens had owned several rock shops in the Norfolk, Nebraska area. I assume he found the fulgurite as I found it among other Nebraska rocks he had collected.

A fulgurite, sometimes referred to as petrified lightning, occurs when a bolt of lightning strikes the ground and there is sufficient heat and pressure to fuse the silicon dioxide in sand or occasionally rock material into a glass resembling obsidian. The result is a tube with glass on the inside and remnants of sand and/or rock on the outside. (See photograph.) Most lightning strikes measure 2500 degrees Celsius, which is more than sufficient to turn sand into glass.

Rock type fulgurites are quite rare. While sand fulgurites are more common, they are generally small, measuring an inch or two in diameter.

As you can see, this particular fulgurite is especially large, making it both rare and valuable. I once had one about this same size that ended up in a museum in Texas. I wanted this one to be on display in the sandhills of Nebraska where it had most likely been found,

so I donated it to the fossil collection at the Heritage House Museum in Long Pine, Nebraska. It can be seen there, along with other fossils and artifacts from North Central Nebraska.

BENCH TIPS FOR JULY

by Brad Smith

HOMEMADE WAX TOOLS

Save your used X-Acto or scalpel blades for utility work on the bench. They're wonderful for delicate wax work. Use a cutoff wheel or other type of grinding wheel to shape the blades to what you need.

For instance, you can carve away excess metal on the spine to make yourself some narrow carving knives that do a great job of detailing small pierced areas of your waxes.



Modifying tools to use with waxes

REMOVING A STONE FROM A BEZEL

If you've forgotten to use dental floss and got your stone caught in a bezel, there's one thing you can try before starting to pry.

Find some sticky wax or beeswax. Roll it into a pencil-sized cylinder and stick the end onto the top of the stone. Mold it on well and yank.

But if the stone is really stuck, there are two other tricks - but each with risks and consequences. The first is to pry open the bezel with a sharp knife blade being very careful not to wrinkle or tear the bezel. If you try this, make sure to pry gently in several passes around the stone.

The last solution is to drill a small hole into the bezel setting from the back side so that you can push the stone out. Note that this does leave a hole, but in some cases you can use it to saw out a design under the stone.

Imagine a dino silhouette on the back of a dinosaur bone gem set in silver!

MORE SMART SOLUTIONS FOR YOUR JEWELRY MAKING PROBLEMS CAN BE FOUND AT:
[Amazon.com/author/bradfordsmith](https://www.amazon.com/author/bradfordsmith)

TIPS AND TRICKS FROM BRAD'S BOOKS



ORTHOCLASE FELDSPAR – IT'S SIX-Y!

By Prof. Philip R. Kesten, Ph.D.,

Department of Physics, Santa Clara University

Reprinted from BRECCIA, the Newsletter of the
Santa Clara Valley Gem and Mineral Society

Volume 70 Number 6, June 2022

I first came to know the Mohs hardness scale back when I was just becoming interested in rocks and minerals. “The Girls Can Flirt And Other Queer Things Can Do” – Talc, Gypsum, Calcium, Fluorite, Apatite, Orthoclase feldspar, Quartz, Topaz, Corundum, and Diamond. Cool stuff, but I must admit that I was rather unimpressed by orthoclase there in the middle. Talc and gypsum were interesting because they are so soft. Others in the list – calcium and fluorite, topaz and corundum – were interesting because of their crystal shapes. And diamond, well... it sits atop the list and it's valuable. But orthoclase feldspar? Kind of boring.

Boring? How could I have been so wrong?!

Orthoclase feldspar, or more commonly “orthoclase,” is one of a number of varieties of feldspar, a mineral that makes up around sixty percent of Earth's crust. At almost two thirds of the Earth's crust, feldspar is the single most abundant mineral group on Earth. That alone makes feldspar interesting. But there's more, especially for a rock hound.

First, a little background. Feldspar is an igneous rock, formed when magma from Earth's core cools and crystalizes. Feldspar is, for example, the primary constituent of granite, which is both abundant in Earth's continental crust and also igneous in origin. And because feldspars are so abundant, they are also found as inclusions in both metamorphic and sedimentary rocks.

There are dozens of varieties of feldspar, although most common are orthoclase and its close relative, microcline. Both are silicates (three silicon atoms (Si3) bonded to eight oxygen atoms (O8)) to which an aluminum atom (Al) and a potassium atom (K) are bonded. (The molecular description of both microcline and orthoclase is KAISi_3O_8 .) Because they are similar, orthoclase and microcline feldspar share certain common properties. They

differ, however, in ways that make them easy to tell apart.

First, the similarities between orthoclase and microcline. As is the case with all feldspars, both have a Mohs hardness of around 6. Drag a piece of feldspar across a plate of glass – glass has a Mohs hardness of about 5.5 – and it will leave a noticeable scratch. Drag the end of a steel file, which has a Mohs hardness of about 6.5, across a specimen of feldspar, and that will leave a noticeable scratch... on the face of the feldspar. (So choose an inconspicuous place on your feldspar specimen to make this test.) Harder than glass and not as hard as a steel file? Yes, feldspar has a Mohs hardness of about 6.

As is the case with all feldspars, orthoclase and microcline have two cleavage planes that intersect at right angles. (The name “orthoclase” comes from the ancient Greek *orthós*, meaning “right” (as in angles) and the ancient Greek *klásis*, meaning “breaking” or “fracture.”) For this reason, specimens of these minerals tend to form rectangular blocks, often blocks embedded in other blocks.

Specimens of orthoclase and microcline are both most commonly pink in color. Although less abundant, both microcline and orthoclase can also be found in a variety of other colors, for example, hues of white, yellow, and green. One variety of microcline – amazonite – is a spectacular light blue or green-blue; it is rare to find specimens of orthoclase of this color. So... orthoclase and microcline are similar. But they can be distinguished one from the other, principally by their crystal shapes.

Orthoclase is “monoclinic.” Two of the three axes that define the crystal are parallel to each other, forming a box shape in which all pairs of opposite faces are parallel but in which one side of one of the face pairs is pushed ahead of its opposite side. Two sides of the crystal are therefore trapezoidal while the other four faces are rectangular. All three axes that define a monoclinic crystal are of different length.

Microcline is “triclinic.” None of the three axes which define the crystal are parallel to each other, resulting in a box shape in which each of the three pairs of opposite faces are parallel but in which one side of each of the face pairs is pushed ahead of its opposite side. This makes all six sides of the crystal trapezoidal in shape. As in a crystal of orthoclase feldspar, all three axes that define a triclinic crystal are of different length.

A sketch of a monoclinic and triclinic crystal is shown in the figures below:



Figure: Left, a monoclinic crystal. Right, a triclinic crystal.

Back to orthoclase, the star of this story. A specimen of orthoclase is striking, both in terms of its blocky, crystal shape and its coloring. But moonstone, a variety of orthoclase, has a particularly interesting feature. Moonstone forms when orthoclase feldspar and albite, another variety of feldspar, merge together in thin, alternating layers. (Albite is a sodium potassium aluminum silicate, so it is identical to orthoclase except that the potassium atom found in orthoclase (the K in KAlSi_3O_8) has been replaced by a sodium atom (Na); albite is $\text{NaAlSi}_3\text{O}_8$. The name “albite” comes from the Latin *albus* meaning “white” – albite is usually white in color.)

Moonstone tends to be translucent. Light passing through a specimen of moonstone scatters as it traverses the boundaries between the alternating layers of orthoclase and albite. That scattering results in an optical phenomenon known as “adularescence” – a shimmering light that appears to originate from inside the stone. A shimmering light not dissimilar to the appearance of the moon on a cloudless night – hence the name of the stone! Because of this wonderful optical property, moonstone is considered a semi-precious gemstone, and specimens of moonstone are often polished and set into jewelry.

Orthoclase. Six on the Mohs hardness scale. Abundant in the Earth. Shimmering moon-like light. Orthoclase is not boring. But wait, there's more! Orthoclase feldspar has been found on the Moon and on Mars. Traces of orthoclase feldspar have been found in the nearly one-thousand pounds of lunar rock returned to Earth by American, Russian, and Chinese missions to the Moon. (Although it's worth noting that other varieties of feldspar, notably plagioclase, are found in greater abundance.) All of that feldspar on the Moon helps tell the story of the Moon's molten past. And NASA's Mars rover discovered orthoclase on the Martian surface, in large quantities in some places. You probably won't be able to add a specimen of lunar or Martian orthoclase to your collection. But its exciting, I think, to know that that blocky, pink specimen in your collection, and those pink flecks in your specimen of granite, are no different than rocks found on the surfaces of the Moon and Mars.

So I think that you have to admit... orthoclase, there in the middle of the Mohs hardness scale, is kind of “six-y!”

For some photos, please see <https://www.mindat.org/min-3026.html>

DINOSAUR NATIONAL MONUMENT ROAD TRIP

*by Sigrid Stewart and Steve Blyskal
From a talk given at General Meeting*

We go to Colorado often but once in a while, we look for something different. You know, you get tired of snow-capped mountains and spruce trees... not really! But the northwest corner of Colorado is also interesting with its canyons, rivers, and pinon trees.

A little information about the Monument:

- Back in 1909, Earl Douglas of the Carnegie Museum in Pittsburgh went west to search for dinosaur fossils for the museum. He discovered the first fossils on a sandstone ridge.
- Next, he opened a quarry to excavate fossils, and sent them to the Carnegie Museum.
- In 1915, President Wilson designated the 80 acres of quarry as a National Monument
- In 1938, President Roosevelt designated an additional 200,000 + acres to the Monument, protecting the canyons of the Yampa and Green Rivers.
- In the 1950s, early environmental activists fought successfully to prevent a dam from being built on the Green River which would have flooded the canyons in the Monument. Congress eventually passed a law forbidding the destruction of National Parks and Monuments by dams and other construction.
- The Quarry Exhibit Hall opened to the public to show dinosaur fossils as found. The Exhibit Hall re-opened in 2011 after some foundation problems were remediated.
- The animals were fossilized after being deposited on a river point bar after a flood, leaving the bones jumbled together. For a list of dinosaurs found at the Monument,



The Dinosaur National Monument Exhibit Hall

Petroglyphs have been analyzed and are believed to have been made 1000 years ago by the Fremont people. Using sharp tools, they removed the desert varnish on the rock surface to reveal the light-colored sandstone beneath.



Lizard Petroglyphs

Commonly found fossils are those of Allosaurus (Jurassic) Deinonychus, a relative of Velociraptor, Stegosaurus, Apatosaurus and Diplodocus.



Dinosaur femur



Dinosaur skull

The exposed rocks of Dinosaur National Monument are sedimentary and range in age from Precambrian (about 1,100 million years ago) to Miocene (about 25 to 10 million year ago), according to the same NPS reference above.



Here are some more pictures from the Wall of Bones.

You can see how the bones of many individuals are jumbled together.

The scenery is fabulous and the rivers that flow through the Dinosaur National Monument are famous for rafting adventures.



Confluence of the Green and Yampa Rivers



*"Petrified" Sand
Dunes - aeolian
sandstone - on
the side of Split
Mountain*

Steve Mlyskal copyright 2019

Now for the funny part: on our way back to Edwards, my sister called and said that I-70 was closed due to a landslide. We decided to spend the night in Meeker, Colorado and then drive back over the Flat Tops. That's a whole other adventure!

HOUSTON GEM & MINERAL SOCIETY BOARD OF DIRECTORS MEETING MINUTES

June 7, 2022
By Sharon Halton

X	President— Nancy English	x	Beading— Maggie Manley
X	1st Vice President—Sarah Metsa	X	Day Light—Fred Brueckner
X	2nd Vice President—Beverly Mace		Gemstones & Faceting—Randy Carlson
X	Treasurer—Michele Marsel	X	Lapidary & Silversmithing—Richard Good
X	Secretary—Sharon Halton		Mineral—Ray Kizer
	Past President —Sigrid Stewart	X	Paleontology—Mike Dawkins

President Nancy English called the Zoom meeting to order at 7:33 p.m.
A quorum was present. There were no non-voting members in attendance.
Approval of Minutes:

Maggie Manley moved via email to approve the minutes of May 3, 2022, Board of Directors' Meeting. Ray Kizer seconded the motion. It was voted on via email and passed on May 11, 2022.

Treasurer's Report: Treasurer Michele Marsel emailed the Treasurer's Report to members on June 1, 2022.

- Effective May 11 the interest on the Club's Live Oak savings account increased to 0.8%
- Effective immediately (June 2022) the Treasurer will pick up mail (bills and checks sent to the Club) and hard copy reimbursement requests every two weeks on the Sundays she is working as Shop Supervisor. Payments will be processed once each week, typically on Saturday mornings. This includes email payment requests which may come in during the week electronically.
- Nancy suggested posting this on the weekly e-blast and Michele will provide directions for how to complete payment requests via email.

COMMITTEE REPORTS

BBG Notice: Beverly Mace notified the members on June 1, 2022, that the online version of the June BBG is available on the HGMS Website.

Donations, Sales, Auction Committee (DSAC): Michele Marsel

Helm donation: A check for 50% of the April 23 and Faceting Section sales of Helm items was sent to Richard and Elizabeth Helm. They would like us to continue to offer the items we have for sale as we are able to, and they understand we have limited resources. They closed the sale of Victor Helm's former home in late May and they do not currently have space to store the items we have as they had to bring what was left at the residence to their home. Michele will make her best effort from June-August to list items on eBay and request close out from the donors by September 2022.

The 2019 Saxman donation is now closed. As discussed in previous BOD meetings, the Mineral Section paid the determined wholesale value of the remaining collection to the HGMS General Fund (\$500) and that amount was sent to the donor.

Trade Show Tables: All 17 of the old Trade Show tables have been sold.

President English thanked Michele for her tireless work to complete the Saxman donation and for being able to enlist some help to get an accurate donation value from Steve Blyskal and Ray Kizer.

Education Committee: Maggie Manley

Maggie has been in talks with Carmen Fraticelli who wants to do a chain maille class and Sharon Halton has confirmed a dichroic glass class for the nights of June 29th and 30th from 6:30-9:30. The minimum number of students has been set at two students and a maximum of four.

Health Safety & Environmental Committee: Nancy English

Change in Chairman: Due to Sarah Metsa's overwhelming work schedule, Nancy English offered to be HSE Chairman until another person volunteers. Sarah will remain on the committee to help guide the direction of the project.

Randy Carlson has joined the committee to help find companies to bid on the work projects.

Structural Engineers' forensic investigations: Randy Carlson is contacting structural engineering firms to set up forensic investigations. Randy states that he has tried to reach some engineering companies but cannot reach a person, just a phone recording.

During the Santhoff walk through it was noticed that the sheetrock behind the grinding

machines is deteriorating. The studs showing through may be rotting. The wall behind that is concrete. Repair and renovation of the lapidary shop will need to be evaluated. Thank you Sharon Halton for finding Santhoff Plumbing for us. Nancy English and Neal Immega met with Joe Santhoff on May 26, 2022. President English received their preliminary bid. Michele suggested that we not spend time in this meeting to discuss bids until after additional bids come in that cover the full scope of the work that needs to be done.

The HSE Committee will discuss getting a General Contractor. President English conferred with Michele and Sarah. They agreed that the project is big enough to warrant a general contractor to complete all of it. Nancy is contacting Santhoff to see if they have any suggestions. Please let Nancy English know if you have any additional contact. Exterior lighting: Michele – has not heard back specifically but believes that the bulbs are taking longer to come in than expected.

Exit path lighting was to be discussed by Richard Good but he is not here to give an update.

Membership Committee: Beverly Mace reported new and renewed memberships in May.

Member counts	New
Singles	4
Couples	0
Families	1
Youth	2

Scholarship Committee: Mike Sommers sent thirteen applications to committee members last week. President English stated that she has not finished reviewing them as of this date. It was recommended that we not wait longer than the beginning of August to make our decision so that the recipients will be able to apply the money to their Fall tuition by the 16th of August.

Show Committee: Scott Singleton/ Sigrid Stewart Nancy English reported that the committee met on May 10th and Tom English has volunteered to create a video to run in a loop during the show in November. He will be videoing the shops, people working in the shops, classes, and interviews with key leaders of HGMS for a video to be projected on the wall near the Dino Dig. The committee will be speaking to the Humble Civic Center to see if it can also be run on the video kiosks during the show around the facility. A release form has been created and he will obtain permission to film a person prior to using their image.

Website Committee: Scott Singleton, no report.

SECTION DATES

Beading Section in person: third Saturday, 12:30 p.m., June 18, July 16, August 20, 2022.
Day Light Section in person: first Wednesday, 1:00 p.m., July 6, August 3, September 7, 2022
Gemstones and Faceting Section Zoom Hybrid: second Thursday, 6:30 p.m., June 9, July 14, August 11, 2022.

Lapidary and Silversmithing Section in person: third Monday, 7:00 p.m. June 20, July 18,

August 15, 2022.

Mineral Section Zoom program: third Wednesday, 7:30 p.m., June 15, July 20, August 17, 2022.

Paleo Section in person: third Tuesday, 7:30 p.m., June 14, July 19, August 16, 2022.

Youth Section: first and third Saturdays, 10:00 a.m. to Noon., June 18, July 2, July 16, August 6 and 20, 2022

OLD BUSINESS

Access Lock Policy & Report: Michele Marsel

Access Lock - Michele Marsel sent the updated policy document for review along with the lock access report for the past year as requested. She asked that we review it before the meeting. It was noted that there are times when some people check in but do not check out.

There are 3 items that were clarified in the new Access policy:

1. adding information about HGMS member instructors having codes,
2. access code holders must be performing club business (as opposed to using the Club for personal purposes, and
3. if an instructor or supervisor doesn't have at least 2 dates per month to be in the club, their access code is suspended until needed again.

Sharon Halton made the motion to approve the new Access Lock Policy as presented by Michele Marsel and Maggie Manley seconded the motion. It was approved.

Dunn SW Painting - Dunn SW returned the assessment paid for painting and signage; it has been deposited into the Prosperity Capital Repairs/Improvements account. We are now expected to paint our own building as it was last painted in 2009. Nancy English received the updated specifications (paint type/color) on June 7 and the timeframe from Dunn SW to complete the painting is within 90 days or roughly by the end of August 2022.

Sharon Halton volunteered to make phone calls to get estimates. Randy Carlson said that there was an additional contractor's name and phone number that he could send to Sharon Halton.

NEW BUSINESS

General Meeting Refreshments: A member suggested the BOD increase the reimbursable amount for General Meeting refreshments from \$35 to \$55 and ask Foster Kneeland to be the primary person to provide the monthly snacks. Whenever he is not available, he will arrange for another person to bring the refreshments. Foster has agreed to take this on beginning with the June 2022 meeting provided the reimbursement increase is approved. Sharon Halton made a motion to increase the amount for General Meeting refreshments from \$35 to \$55, it was seconded by Maggie Manley and the motion passed.

Chairperson Change for DASC Committee: Michele notified the Board in January that she will step down as Chairperson of the DASC Committee at the earliest occurrence of the

following two events:

- o A new Chairperson is found
 - o The Helm donation closes out (whether a new Chairperson steps up or not); close out target is September 2022
- Michele agreed to help train or coach any volunteer who signs on as the new DASC Chairperson during the transition.

Sunday Shop Change - effective June 2022, Michele will only serve as Shop Supervisor on the 2nd and 4th Sundays of each month. Paula Smith has volunteered to work the alternate Sundays beginning June 5 and her Shop Hours will be 10:00-3:00.

Shop Fees - Neal Immega is concerned that the Shop is not generating enough revenue to pay for itself and would like to consider raising the fees. HGMS has kept the shop price at \$2.00 per hour and \$0.25 per square inch saw use for more than 10 years. The cost of shop supplies (blades, bearings, oil, etc.) has gone up a lot. It was suggested that we contact other organizations and find out what their fees are to see what a fair cost increase would be. Other points of information from other clubs should include descriptions of their facilities, are there paid employees, and training requirements for shop use. Training and enforcement for certification of members were part of the recommendations that the Pathfinders' report wants to see done.

Sharon volunteered to help try to gather some of this information and President English said that she would forward the information that she has.

President English introduced the following information from Austin GMS Member Ronald Patillo:

Membership: Austin GMS has a new auto-renewal membership program that logs the member into the system when they become a member. On or around the anniversary date the system lets them know the fee is due. Failure to pay causes the member's access to the member-exclusive part of the club website to be canceled. And of course, other perks to go away. President English knows that our membership system is not integrated into the website yet but this is something to think about.

Classes: Austin GMS has a three-person Education Committee consisting of the President, 2nd VP, and Ronald. They create the class syllabi, and set the dates and prices (with the instructors). They require anyone wanting to use the Lapidary shop to take the \$50.00 Lapidary class and become certified. Same thing with using the slab saws. Only members can take classes.

Ronald recommended cooltools.com for affordable tools and metals. His contact information is available from President English if anyone wants it. President English feels that he has a lot of good information that he is willing to share.

The next Board of Directors Zoom meeting will be on the first Tuesday, 7:30 p.m. July 5, 2022.

The next General Meeting will be on the fourth Tuesday, 7:30 p.m. June 28, 2022. Topic to be determined.

Adjourn: Sarah Metsa moved to adjourn, and Mike Dawson seconded the motion and it passed. The meeting adjourned at 8:42.

HOUSTON GEM & MINERAL SOCIETY

GENERAL MEETING MINUTES

June 28, 2022
by Sharon Halton

President Nancy English called the meeting to order at 7:34. She welcomed 15 attendees in person and Phillis George & Paul Heinrich joined via Zoom. There were no new members or guests in attendance.

PRESIDENT'S COMMENTS

Neal Immega Has resigned as the Clubhouse Chairman. I know I speak for everyone when I thank him for continuing to be a steadfast member of the leadership of HGMS. We are all grateful for years of repair and rebuilding the machines in the shop. Neal taught whoever asked for help. He trained whoever wanted to learn. Neal will continue to be the Paleo Chairman and Librarian for both libraries.

The Board of Directors has reviewed a list of responsibilities that keep the Club functioning. We will be discussing separating those jobs and contacting other members asking them to assume some of the many responsibilities. More to come on that. The speakers used for the hybrid meetings are very sensitive. If you feel the need to have a personal conversation during the meeting or the program, please move to the garage.

Approval of Minutes: Sharon Halton moved to approve the minutes of the May 24, 2022 General Meeting as published in the May BBG. Sarah Metsa seconded the motion and it passed.

COMMITTEE/SECTION REPORTS

Please look for reports of future Section meetings and programs in the BBG calendar, on the Website <https://hgms.org/events>, or by reading the weekly e-blast from Houston Gem and Mineral Society. If you are a member and not on our email list, please contact the Publicity Chair at News@hgms.org, using the Subject Line: "New Member to be added." President English invited other Section Chairs and Standing Committee Chairs to make any additional announcements.

Membership Committee: Beverly Mace reminded everyone that it is time to pay their dues. As of this date, non-paying members have been dropped from the list-serve to receive the eBlast each Sunday and the BBG.

Donations, Sales, Auction Committee (DSAC): Michele Marsel was not here but we were informed that there are a number of trim saws and other equipment currently in the garage priced as marked. There are a great bargain.

Education Committee: President English stated that the Dichroic class, being taught by Sharon Halton, is full but will be offering the class again in the fall. The Health, Safety, Environmental Committee is working diligently to provide a safe environment for members and well-trained leadership to provide it. Michele Marsel has accepted the role of project manager for this project. I will continue to be the Chairman.

Scholarship Committee: The committee received a total of 12 applications due to the help of Daniel who found many colleges to notify. There will be two undergraduate and two post-graduate awards made after the July Board of Directors meeting

Show Committee: Tom English told us that he is in the process of creating a promotional film to be playing during the annual show. He will be seen in the shop filming different groups to give the public an idea The next meeting is scheduled for July 12, 2022.

OLD BUSINESS

President English asked members to look for the progress of Old Business items in the Board of Directors' Meeting Minutes in the latest BackBenders Gazette (BBG) on the HGMS Website <https://hgms.org> under Publications.

Dunn SW painting: The Board chose the proposal from Kirkconnell Maintenance to paint the HGMS building. Painters will powerwash on Monday, July 11, and paint on Tuesday, July 12. So do not plan any meetings or classes on those days. Thank you, Neal, for removing the screens on the north porch. He has new screens to install after the painting is complete.

NEW BUSINESS

President English asked for any further New Business.

The next Zoom Board of Directors meeting will be Tuesday, July 5, 2022, at 7:30 p.m.

The next Hybrid General Meeting will be on Tuesday, July 26, 2022, at 7:30 p.m.

Georgiana Kramer will present "Goodnight Dry Moon". For 50 years it has been known that the moon has no atmosphere and therefore must not have any water but recent discoveries have shown that to not be the case.

Show-n-Tell: Nancy asked for presenters to limit items to 3 – Sharon Halton showed an agate cabochon (heart-shaped) that she made from a piece of discarded stone attached to a board.

Drawing: Georgiana Kramer won the door prize which is a Moroccan agate.

President English announced before we adjourn:

Refreshments were provided by Foster Kneeland. Foster Kneeland agreed to be the regular refreshment provider at General meetings starting this month through the end of the year.

During the break: Feed the Kitty! Your donations go to offset the cost of the snacks. Thank the volunteers who made tonight possible. Thank the volunteers who make all of what HGMS is available.

Adjourn: Sharon Halton moved to adjourn the meeting. Richard Good seconded it. The meeting was adjourned at 7:55 p.m.

President English introduced Vice President Metsa: She presented "Finding Danger - Cautionary Tales for Rock Hounders". Sarah gave away a beautiful crystal specimen to the winner of her quiz after her program.