



The Mineral Newsletter

Next meeting: December 1 Time: 6:30 p.m.

Dunn Loring Fire Station, 2148 Gallows Road, Dunn Loring, VA



Zoisite

Merelani Hills, Manyara Region, Tanzania

Source: Mindat

Photo: Edward Rosenzweig.

Volume 65, No. 10
December 2025
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December Meeting:
Holiday Party
Details on page 8

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Mineral of the Month Zoisite, Part 2

by Sue Marcus

This is the second part of my column from last month on the mineral zoisite, also known as thulite (the pink variety) or tanzanite (the blue to purplish variety from Tanzania). For the first part of this article, see the [November issue](#) of this newsletter. It introduces the co-type localities in Austria and Germany, explains the geologic environment of zoisite in certain metamorphic rocks, and explores zoisite localities in the Americas and Europe. Here, I turn to localities in Asia, Africa, and elsewhere. I also give prices and the sources I used for both parts of this article.

Afghanistan

Gemmy zoisite from Afghanistan has been found in the [Laghman](#) region, along with spodumene (variety kunzite) in pegmatites. The pale violet color of the zoisite can seem gray unless the specimens are well-lit. Backlighting shows off the color best. Terminated crystals were found, though many specimens had broken terminations. A 13-centimeter (5-in) crystal with a smaller attached crystal was posted on Mindat in 2013. The discovery seems to have been small, possibly occurring before 2008.

Zoisite (thulite?) from Badakhshan has been reported by online dealers, although I could not confirm this from authoritative sources. Clinozoisite from Badakhshan closely resembles zoisite from Laghman.



Merry Christmas!

Happy Hanukkah!



Northern Virginia Mineral Club members,

Happy holidays! We will hold our annual holiday party at the Dunn Loring Fire Station (our usual meeting place) on **December 1, 6:30 p.m.**

See details on page 8.



Left, top: Zoisite specimens from Laghman, Afghanistan.
Source: Mindat; photos: Rob Lavinsky.

Pakistan

The Shigar Valley, particularly a site called [Alchuri](#), is a source of gem-quality zoisite. Colors include pale shades of pink, green, blue-gray, cinnamon brown, and smokey brown, with colorless crystals also found. Darker shades, opaque unless strongly backlit, also occur. Euhedral crystals were found with and without matrix. The matrix consists of calcite or quartz and cleavelandite, with epidote as an accessory mineral on some specimens. Single crystals up to 14.2 centimeters (5.6 in) in length have been extracted.

Another Shigar locality, [Hasupa](#), has not been as prolific in producing zoisite crystals as the Alchuri locality, though the Hasupa specimens are also lovely. Colorless to smokey transparent crystals have been found up to 12 centimeters (4.7 in) long. Thin pencils of zoisite extend from the white quartz matrix in some specimens.

Tanzania

Tanzania is the country most associated with zoisite. Flashy bright green massive zoisite hosting corundum, variety ruby, crystals hit the collectors' market decades ago. More recently, dazzling blue tanzanite has become the best known form of zoisite. Tanzanian deposits are the world's best sources of both of these forms of zoisite.



Zoisite, var. tanzanite, Merelani Hills, Manyara Region, Tanzania. Source: Mindat; photo: Rock Currier.



Above: Zoisite specimens from Alchuri, Shigar Valley, Pakistan. Source: Mindat; photos: Rob Lavinsky.



*Zoisite, var. tanzanite, in various hues, Merelani Hills, Manyara Region, Tanzania.
Source: Mindat; photo: Michael Roarke.*

According to the government of Tanzania, tanzanite was originally discovered in January 1967 by Jumanne Mhero Ngoma, who found specimens on the ground in the [Merelani Hills](#). Other sources state that the original discovery was made by Manuel de Souza. No matter, by the end of that year the mineral had come to the attention of Tiffany & Co. The story goes that Tiffany founder Henry B. Platt, the company vice president and great-great-grandson of the company founder, named the Merelani material “tanzanite” after its country of origin. In 1968, Tiffany & Co. started marketing this new gemstone with a campaign that advertised it as only available in Tanzania—or from Tiffany’s!

This is one mineral variety for which all reserves (the unmined “ore”) come from one country. In 2018, reserves were reported to be 109 million carats (21,800 kilograms (48,100 lb)). Tanzanian mining law continues to evolve since tanzanite mining was nationalized in 1971. Specimens of more than 1 gram (0.04 oz) cannot be exported. The [largest raw tanzanite specimen](#), found in 2020, weighed 46,350 carats (9.27 kilograms

(20 lb 6.9 oz)). It is hard for me to imagine a gemstone of that weight!



Tanzanian miner in 2020 celebrating his discovery of the largest tanzanite specimens ever found. Source: The Rare Gemstone Company, [Gem & Jewelry Blog](#).



Zoisite, var. tanzanite, Merelani Hills, Manyara Region, Tanzania. Source: Mindat; photo: Jeff Scovil.

A [703-carat carving](#) was created in 2024, becoming the largest stone fashioned ever from tanzanite. (It did not come from the stone found in 2020.)

Is tanzanite heat-treated to cause the sought-after blue color? From what I've read, almost all blue tanzanite has been heat-treated. Most of that treatment occurred after the mineral was mined, but miners are also reported to have treated it before it came out of the mines. Some material may have even been heated in small onsite fires.

Some blue tanzanite might have been heated naturally. For example, wildfires might have heated samples lying on the ground; less likely is natural heating by Earth's radioactivity or increasing temperatures below the surface. For collectors like me, it is best to assume that blue zoisite has been anthropogenically heat-treated. Treatment is undetectable and cannot be reversed.

According to Harris and others (2014), vanadium causes the blue coloration in tanzanite. I could not discover why heating causes the vanadium to activate the color change. Vanadium causes the green color in the rare garnet tsavorite, which also occurs in the Merelani Hills.

Several theories about the genesis of tanzanite in the Merelani Hills have been presented, and there is no

consensus. Metamorphism is generally agreed upon, but there is no agreement on the origin of fluids coursing through the metamorphic rock to form tanzanite. Black shales, rich in vanadium and chromium, were metamorphosed into the graphitic gneiss that hosts the deposits. Retrograde metamorphism facilitated zoisite formation.

On a Mindat forum, [Jesse Fisher](#) posted:

Zoisite is naturally strongly pleochroic. The tanzanite variety will show two colors, usually purple and teal at right angles when rotated about the c-axis of the crystal and a third color, often a yellow-brown or reddish purple, when viewed down the c-axis. These pleochroic colors are usually easy to see with the unaided eye, though viewing the crystal through a polarizing filter will enhance the effect.

Heating changes the brownish coloration, rendering the sample more valuable for marketing. Heat-treating tanzanite increases rather than decreases its value and is not considered a negative manipulation by gemologists.

Specimens of [rubies in zoisite](#) are favorites of mine. The opaque, bright red ruby crystals contrast with massive bright green zoisite, forming colorful specimens. The metamorphic rocks usually have a minor pargasite component and have been given the unofficial name of



Zoisite, var. tanzanite, Merelani Hills, Manyara Region, Tanzania. Source: Mindat; photo: Weinrich Minerals, Inc.



Zoisite with corundum, var. ruby, Mundarara Mine, Arusha, Tanzania. Source: Mindat; photo: John St. John.

[anyolite](#) from the Masai word for green. The [Mundarara Mine](#), along with a locality reported on Mindat as “ruby occurrence” in the [Muriatata Hills](#) (30 kilometers (19 mi) east of the Mundarara Mine), are the sources of specimens. Both deposits are in the Longido District of the Arusha Region.

Exploitation of the deposit began in the mid-20th century. The attractive rocks lend themselves to lapidary creations like eggs, carvings, cabochons, and other items. As an added bonus, the rubies, frequently euhedral, fluoresce deep red under ultraviolet light.

One specimen of white, granular zoisite has also been reported. The specimen was analyzed by optical and chemical methods.

Namibia

Namibia is a source of massive thulite, locally called [lavitsolite](#), which forms veins and granular masses in what appears to be amphibolite (based on images). The specific location within Namibia is unknown, although Wikipedia states that green zoisite and, less frequently, thulite are found throughout the Namib Desert.

New Zealand

Tiny zoisite crystals from New Zealand will delight micromounters. Colors range from pale pink to yellow and yellowish-green. Crystals are transparent and found in quartz at a locality near Colville on the North Island.

Other Countries

Reports of minor zoisite deposits are noted by Mindat, but no precise locations are given and images show only one or two low-quality specimens. The countries include [Japan](#), Kenya, [Madagascar](#), [Poland](#), [Portugal](#),



Zoisite, var. tanzanite, gem from Tanzania. Source: [Smithsonian Geogallery](#); photo: Greg Polley.

and possibly Sri Lanka. Other sources note that zoisite occurs in India as the matrix for rubies. Without more specific information, it could be that this is Tanzanian material imported to India for fabrication into jewelry and figurines.

Uses

We enjoy zoisite in mineral specimens and as a gemstone. It has no other commercial or industrial uses.

Gems

The various forms of zoisite are used in jewelry and to create art objects. Rocks composed of rubies in zoisite are tumbled, shaped into cabochons, and carved into animals and other figures. Perhaps the best known zoisite gem is tanzanite. [Tanzanite can rival sapphire](#) (a variety of corundum) as a blue faceted stone, but sapphire is harder and thus more durable. With a refractive index higher than tanzanite, sapphire also has more sparkle. Blue zoisite, marketed as tanzanite, is almost certainly treated to enhance its color. Some material may be treated at the mine site or even before coming to the surface from underground using fires and other means within the depth of the mine. Since all tanzanite is assumed to be treated, the value is considered to increase rather than decrease, which sounds backwards to me.

Prices (2025)

You can spend what you want (or more) for a zoisite specimen, cut stone, or object like a polished egg. Massive zoisite with rubies is on the lower end of the price scale, while tanzanite, either as crystals or as faceted stones, will cost the most. Thulite specimens may be the hardest to find but fall in the middle of the zoisite price range. Prices start at less than \$5 for a small tumbled piece of ruby in massive zoisite from Tanzania—even less if you buy in bulk or at wholesale prices. A

tiny egg, smaller than a quarter coin, was listed for 99 cents, while cabochons were listed by an Etsy seller for about \$4.

If you care to spend \$8,500, you can buy a lovely violet 11.7-centimeter (4.6-in) terminated crystal from Afghanistan. Or there's the 9.4-centimeter-long (3.8-in-long) terminated [crystal from Merelani](#) that is labeled "Request Price," meaning that it is probably valued at more than \$25,000. I don't know how much more, and I'm not asking.

A [rectangular faceted tanzanite](#) weighing 9.46 carats and measuring 1.4 centimeter (0.6 in) long can set you back \$8,500. It is reported to weigh almost 0.5 kilogram (1 lb)

Prices were found online on October 12, 2025.

Technical Details

Chemical formula..... $\text{Ca}_2\text{Al}_3[\text{Si}_2\text{O}_7][\text{SiO}_4]\text{O}(\text{OH})$
(International Mineralogical Association);
 $\text{Al}(\text{Al}_2\text{O})(\text{Al}_2\text{O})_2(\text{SiO}_4)_3(\text{BO}_3)$ (Mindat);
 $\text{Ca}_2\text{Al}_3(\text{SiO}_4)(\text{Si}_2\text{O}_7)\text{O}(\text{OH})$ (Wikipedia)
Crystal form..... Orthorhombic
Hardness 6-7
Specific gravity 3.10-3.38 (Wikipedia); 3.15-3.36 (Mindat)
Color Colorless, yellow, shades of brown, green, gray, pink, or purple; some zoisite turns blue when heated
Streak White
Cleavage 1 perfect
Fracture Conchoidal
Luster Vitreous, pearly, matte (dull)

Acknowledgments

Hutch Brown always provides his excellent editing skills to polish my articles into maybe not beautiful gems but more readable columns. For this zoisite piece, he also contributed his German language skills to help me understand several sources that were written in that language.

My family, Roger and Genny Haskins, found the digital maps I needed to locate some of the U.S. locations mentioned in older references.

Thanks to all three of you for your prompt support. These articles are never mine alone, though I take all the blame for any unintentional inaccuracies.

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Holiday Party December 1, 6:30–9:00 p.m.



The NVMC and the Micromineralogists of the National Capital Area are jointly hosting a holiday party this year, continuing a seasonal tradition. We will start setting up at 6 p.m.

We're holding the party at the Dunn Loring Fire Station, 2148 Gallows Road, Dunn Loring, VA. The clubs will furnish the main course and drinks; we ask you to [sign in here to RSVP and to volunteer to bring a side dish or dessert](#).

For anyone interested, we'll do our traditional gift exchange. If you want to participate, please bring a wrapped gift valued at \$5 to \$20 and related to geology, rocks, fossils, or minerals. We'll have a gift exchange for those who want to participate. ↗

meetings, especially whether and where we are meeting for dinner beforehand.

Craig reminded members to pay their club dues for 2026 by January 1. They can pay Treasurer Roger Haskins in December or January. Dues are \$20 for an individual and \$25 for a family (see page 20).

Field Trip Co-Chair Katy Johnson announced that no more official trips were lined up for 2025 but that an unofficial Odessa field trip would be on the Saturday after Thanksgiving, sponsored by the Calvert Marine Museum. Katy will confirm that our group can join, then send out an email with details. She thanked those who attended the recent field trips to Flag Pond for sharks' teeth and to Franklin, NJ, for fluorescent rocks, which was AWESOME! Jeff Guerber brought specimens from the Franklin trip to show everyone.

Program: Minerals of Peru

Craig introduced our speaker, junior club member Maria Nopo, a junior at Bethesda-Chevy Chase High School. Maria's family is from Peru, where she started collecting minerals as a child.

Early civilizations in what is now Peru show evidence of mining and metal working. Incas mined for silver, gold, and other metals. Spaniards exploited the people and minerals, destroying artifacts to extract gold.

Peru is now known for high-quality minerals, thanks to famous collectors like Rock Currier. But large-scale industrial mining for precious metals is destroying certain towns and the nearby environment.

The Huancala Mine is Peru's best known mineral locality and main specimen producer. It is also known as one of the best pyrite localities in the world. Maria showed lovely images of Peruvian rhodonite, barite, fluorite, chrysocolla on quartz, halite, and gypsum. She also showed specimens from her own collection, some of them fluorescent. Andean opals are very unique, though opal (a hydrated form of silicon dioxide) is not considered a separate mineral.

Although Peru has no mineral clubs, it does have something like the annual Tucson show. People come to display and sell their minerals so the public can see and learn.

Maria showed images of the Mineral Museum Andrés del Castillo in Lima, which has the largest collection of Peruvian minerals in the world and displays them for public viewing. Maria concluded her presentation

Club Meeting Summary November 3

by Almas Eftekhari, Secretary

President Jason Zeibel opened the meeting by showing off old club patches to be sold at the NVMC mineral show in November. He asked members what to charge for them, suggesting \$5 each and three for \$10.

New club members introduced themselves, including Nancy Osborne, a newly retired science teacher who loves collecting fossils and minerals. A fourth-grader, Laslo, introduced himself, saying that his favorite rock is watermelon tourmaline.

Announcements

Jason thanked those who joined for dinner at Inca Social in honor of Maria Nopo, who gave a presentation on the minerals of Peru at the club meeting. Jason also invited members to our holiday party coming up on December 1 (see details above). We will hold elections then for club officers for 2026, and Jason called on members to volunteer for leadership positions.

Vice President Craig Moore announced that he is still looking for speakers at next year's January and February club meetings. He asked members to consult page 2 of every newsletter for details on upcoming club



with a quote from Guido del Castillo about how important it is to share your minerals with the public for educational purposes. She said that it was important to her to share the minerals of her country with as many people as possible.

Following Maria's presentation, we held a raffle for door prizes. Newcomer Laslo won the youth raffle and Almas won the raffle for adults.

Upcoming Club Show

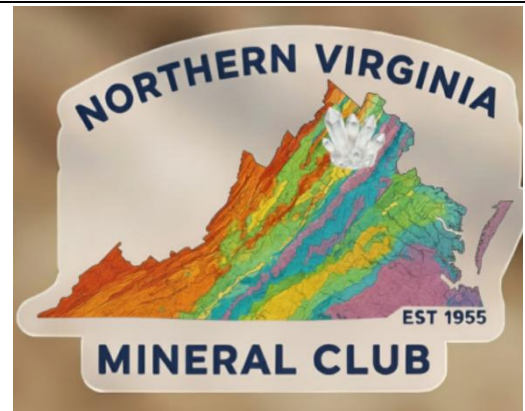
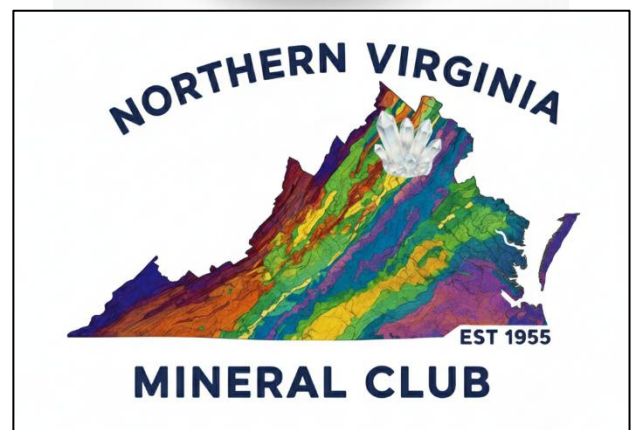
Jason announced that the club has 10 new display cases and that 6 display cases would be available for our November club show at George Mason University. He invited club members to use the cases to showcase some of their own minerals. Katy invited members with fossils or minerals collected on club field trips to submit them for a club display case at the November show. Katy also wanted to set up a display case for fluorescent rocks. That won't happen, but maybe next year.

Show Chair Tom Taaffe stressed that the show needed lots more volunteers, and he asked members to use sign-up genius for different roles. We especially needed Kids' Room volunteers, including for setup on Friday night. We also needed help on Friday night with moving in vendor materials and setting up display cases and on Sunday night with breaking everything down and moving it back to storage. For parking, volunteers needed to register online for a parking pass paid for by the club. Volunteers get free admission.

Club members ended the meeting by voting on a new club logo design, with a final version to come. ↗



Scene from the NVMC show in 2024. Dave Hennessey (the club member and mineral dealer on the right) found records confirming that the NVMC was founded in 1955.



Ideas for a new club logo from Almas Eftekhari. The original club emblem—the profile of Virginia within the logo (see the story on pages 8-9 of the [October 2023](#) newsletter)—was a simple line drawing (in black and white) from the 1980s. A replacement, adopted in the 2010s (shown in the nameplate for this newsletter on page 1), was also a simple black-and-white line drawing. Almas drafted a series of ideas for a color replacement, including the three shown above. President Jason Zeibel will send a survey to club members with these and more ideas for a logo, inviting club members to vote.

President's Message

by Jason Zeibel

Greetings, NVMC members, and welcome to the end of another amazing year with our club! When I look back on all the exciting activities that we shared this year, I'm truly impressed with the breadth and diversity of what

our members are up to!

At our meetings, we enjoyed hearing about the mines of Peru, Mars's Arcadia Planitia, amorphous crystallography, the minerals of the Marvel Universe, and more. We took field trips to find trilobites, wavellite, and willemite (among other minerals). We picnicked, partied, and of course will have held an amazing mineral show, introducing many children and adults to the natural wonders of our hobby.

Personally, I spent a large part of November continuing my trial run at retirement, courtesy of the federal government shutdown. While I got a lot of random chores done during this unplanned adventure, the uncertainty was quite frustrating.

One of the things I accomplished was moving the club's storage to a larger unit in order to accommodate more stuff. In truth, this was possible thanks to behind-the-scenes work by our treasurer, Roger, and the good financial management of our club, along with a lot of help with lifting and dragging things from my daughter Celia (fig. 1). The club has grown and received more donations, and we are in the process of securing at least 10 new wooden display cases. So we were bursting at the seams in our old storage space and had to upgrade. The new unit is much closer to the door as well, meaning that load-out for our annual show will be much simpler.

At our November meeting, we heard about the minerals of Peru from our own Maria Nopo. To get us prepared for her presentation, we had a lovely dinner ahead of time at a local Peruvian restaurant. Whenever we have an in-person speaker, we go out beforehand to share a meal, with the club picking up the tab for our speaker. This is a nice tradition that I am happy that our club celebrates. If you haven't had an opportunity to join us yet, please try to make it. Our club vice president organizes our dinners, and all you must do is show up and enjoy some camaraderie.



Figure 1—Jason and Celia Zeibel moving all of the NVMC storage items from a very cramped locker to a spacious new one. All photos: Jason Zeibel.

Furthermore, if you would like to get a free dinner on the club, the price is volunteering to give a presentation! I call it the “will present on rocks for food” incentive. I was thinking of soon putting a presentation together myself if the government shutdown kept on going!

Maria's presentation was very extensive and informative (fig. 2), and all present enjoyed it!



Figure 2—*Maria Nopo's presentation on Peruvian minerals at the November NVMC meeting. Top: Maria discussing her slides. Center: Peruvian mineral specimens from Maria's collection. Bottom: Maria and her parents with Peruvian mineral specimens.*

One of the positive outcomes from the government furlough for me was a chance to spend some time with my parents doing some projects and bouncing around my secondary-school stomping grounds outside of Charlotte, NC. Readers of my previous columns may



Figure 3—*NVMC President Jason Zeibel winning an award for being a junior rockhound with the Charlotte Gem and Mineral Club (circa 1986).*

recall me discussing my time as a youth in the Charlotte Gem and Mineral Club. Although I never had the confidence or opportunity to deliver the level of presentations that I have seen this year from Mickey, Linus, Jason K., Celia, and Maria, I was fortunate in that the Charlotte club provided an opportunity for a precocious kid to talk with knowledgeable adult geologists and experts in a supportive and encouraging environment (fig. 3).

Looking back on it, those experiences served me quite well in preparing for my future professional career. I would guess that we have all had the experience of talking about a subject with people who clearly know more than we do. It can be quite intimidating, but that is how we learn and grow in our knowledge. I thank the Charlotte club for letting me do that in a safe environment in the 1980s, and I am very proud of our club today for giving that opportunity to our own youth! I propose that we appoint a youth coordinator under the age of 21 to be the voice of youth within our club. This would be a new club officer position, and we would encourage youth members to volunteer for it.

I got into this hobby partly by preparing exhibits for our annual club show. I have been to many shows and always enjoyed the exhibits, appreciating how much time and effort went into making them informative and beautiful. Although I love our show and am very proud of the extravaganza that we put on, I wanted to expand our exhibit space this year. The club funded the construction of 10 collapsible wooden showcases (fig. 4), a huge improvement on the white plastic ones we had in the past.

The first 6 of these cases will have made their debut at our 2025 show, and we will try for all 10 next year. Please consider putting together an exhibit for next year's show, and look for "best in show" awards in 2026. Our members have collections and educational exhibits that rival the best ones from other clubs, so let's show them off! I know where we can order even more cases, and we can surely expand our exhibits without sacrificing dealer space.

Because the show is so late in November this year, we had to finalize our December newsletter before I could report on how the show went—so, dear readers, you must wait until next month's newsletter to see the pictures and read the story.

Our December holiday party is coming up rapidly after our show and the Thanksgiving holiday. Because the first Monday in December falls on December 1, there is not much time to pivot to the party. But the holiday party is a great time to get together, share a buffet-style meal, and have a little geologic fun. I will once again bring a host of games and geologically themed puzzles. We'll take turns competing with them to win prizes!

In addition, if you are interested in participating in the holiday gift exchange, please bring a wrapped gift valued at under \$20. We will take turns picking them and unwrapping them, with a little competitive spirit thrown in as well.

For those who have not been to our holiday party before, we ask that you bring a side dish or dessert to share. The club will furnish the main course; the MNCA will bring drinks. You can [sign up here to RSVP and list the item you plan to bring](#).

We will also hold our annual club officer elections at the December party. Some of our officers are willing to stand again, but we need at least two people to step up and volunteer to help lead our club. One of the key open positions is vice president. Craig Moore has done an amazing job for the last 3 years in organizing our programs and speakers. We need someone to volunteer to take on this role in 2026. The good news is that Craig has already organized several speakers for early 2026, giving the new vice president a rolling start. I ask that you consider giving back to our club! I thank you and the club thanks you!

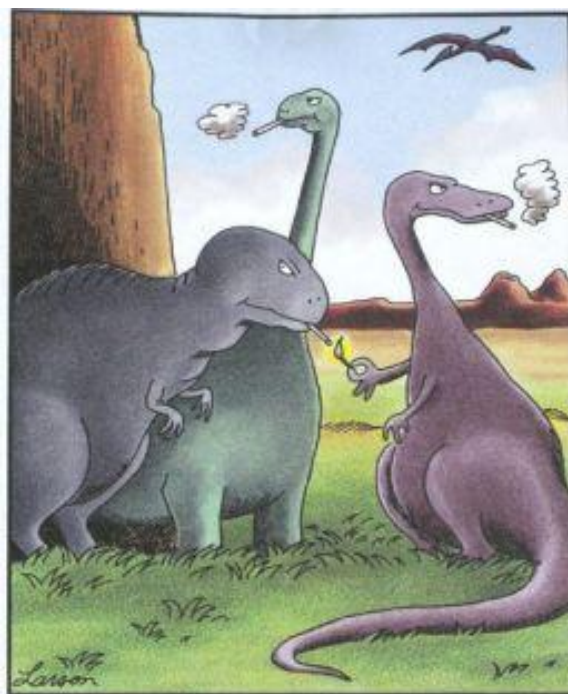
November was quite a month for our club, and I thank everyone for all the hard work you will have put into making the show successful this year. Come join us for



Figure 4—One of 10 new showcases that the NVMC has acquired. The cases will help us expand the educational outreach of our annual club show.

the holiday celebration on Monday, December 1. We'll swap some stories about the show, have some good-natured fun with puzzles, and share a nice meal. I look forward to seeing everyone there. In the meantime, enjoy the rest of this fast-paced holiday season. The new year will be here before you know it!

Jason



The real reason dinosaurs became extinct

2026 Club Officer Elections

Our December 1 holiday party will include a short business meeting to elect club officers for 2026. We have many club officers (see the list on the last page of this newsletter), but only four positions are elected each year:

- The **president** presides over club meetings and helps to coordinate club activities, ranging from auctions and the annual club show to field trips and the club newsletter.
- The **vice president** assists the president and coordinates programs/speakers for the monthly club meetings, including club dinners with speakers.
- The **secretary** takes minutes at club meetings for the newsletter and summarizes presentations at club meetings, again for the newsletter.
- The **treasurer** collects club dues, keeps records of club members, and handles all club financial transactions.

Almas Eftekhari and Roger Haskins have agreed to stand again as secretary and treasurer, respectively. Jason Zeibel will again stand as president, but Craig Moore is stepping down as vice president, so we need a volunteer to fill his capable shoes. If you would like to put your name into the hat for any of the four positions—but especially for vice president—please do so!

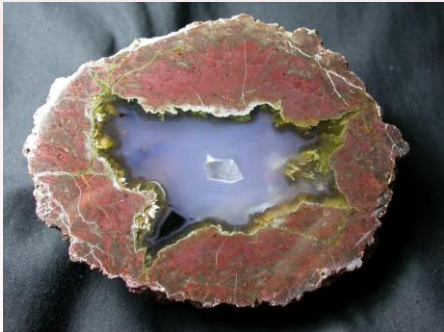
We also have a number of unelected club officers (see the list on the last page of this newsletter). Please consider volunteering for any position—or making up

GeoWord of the Day
(from the *American Geoscience Institute*)

thunder egg

A popular term for a small geodelike body of chalcedony, opal, or agate that has weathered out of the welded tuffs of central Oregon.

(from the [Glossary of Geology, 5th edition, revised](#))



your own position (such as club photographer) if you see a need to be filled.

Previous vice presidents, including Craig Moore and Sue Marcus, will always be there to support the next vice president. If you might be interested in volunteering—or just finding out more—please contact Jason Zeibel at president@novamineralclub.org or Craig Moore at vicepresident@novamineralclub.org. ↗

NVMC Hall of Fame: Elected Club Officers, 2016–2025

Year	President	Vice President	Secretary	Treasurer
2025	Jason Zeibel	Craig Moore	Almas Eftekhari	Roger Haskins
2024	Jason Zeibel	Craig Moore	Almas Eftekhari	Roger Haskins
2023	Jason Zeibel	Craig Moore	<i>Vacant</i>	Roger Haskins
2022	Tom Kim	Sue Marcus	David MacLean	Roger Haskins
2021	Tom Kim	Sue Marcus	David MacLean	Roger Haskins
2020	Tom Burke	Ti Meredith	David MacLean	Roger Haskins
2019	Sue Marcus	Ti Meredith	David MacLean	Roger Haskins
2018	Bob Cooke	Ti Meredith	David MacLean	Roger Haskins
2017	Bob Cooke	Ti Meredith	David MacLean	Rick Reiber
2016	Bob Cooke	Ti Meredith	David MacLean	Rick Reiber

Final Field Trips for the Year

by Katy Johnson, Field Trip Co-Chair

After our geology walk in Alexandria's Holmes Run Gorge in August, the NVMC rounded out our field trips for the year with a hunt for sharks' teeth at Flag Ponds Nature Park in Maryland, followed by a trip to Sterling Hill in New Jersey.

Flag Ponds

The club ordered up perfect weather (along with free parking, usually \$20 per vehicle) for our field trip on October 18 to Flag Ponds Nature Park. Almost 20 members joined us for a magnificent day on the Chesapeake Bay. We started at the visitor center for a look at displays of bird nests, horseshoe crabs, and lots of fossils. Center staff then gave us a quick history of the park and guidance on the fossils that we might find.

It could not have been a more perfect day, partly because we had the place pretty much to ourselves. I am pretty sure that everyone left with full buckets of wonderful fossils and full collecting hearts. We were super excited to have a few new members join us!

Fluorescent Mineral Capital of the World

Our trip to Sterling Hill, NJ—the Fluorescent Mineral Capital of the World—was originally planned for July. We had to postpone the trip due to low participation. I can honestly say it was well worth the wait!

We started the day off at the Sterling Hill Mining Museum. The tour started in a large locker room where



Scenes from the NVMC's Flag Ponds collecting trip for sharks' teeth and other Miocene fossils. **Top:** Club members at the visitor center. **Center/bottom:** Visitor center displays of horseshoe crabs and other fossils. **Left:** Field trip participants collecting on a Chesapeake Bay beach at Flag Ponds. All photos: Katy Johnson.



*Display cases in the Sterling Hill Mining Museum. **Left:** Photos and paraphernalia from when the mine was active, along with stalagmites/stalactites. **Right:** Mineral specimens from the mine.*

miners would have stored their gear. In the main room, along with the lockers, were mineral displays alongside antique mining paraphernalia. Old lunch boxes and mining clothes hung from the ceiling, and the displays included signs from the New Jersey Zinc Co. as well as stalactites and stalagmites from the old workings of the Sterling Hill Mine. The old shower hall is now lined with amazing mineral-filled display cases. We could have spent the whole 2-hour tour in that one room alone and still not seen it all!

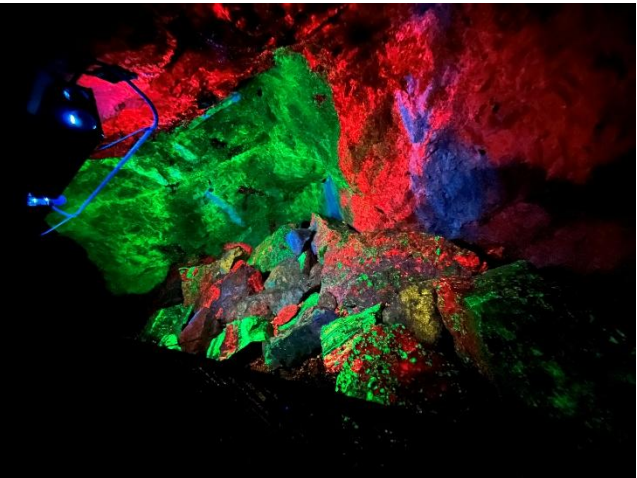
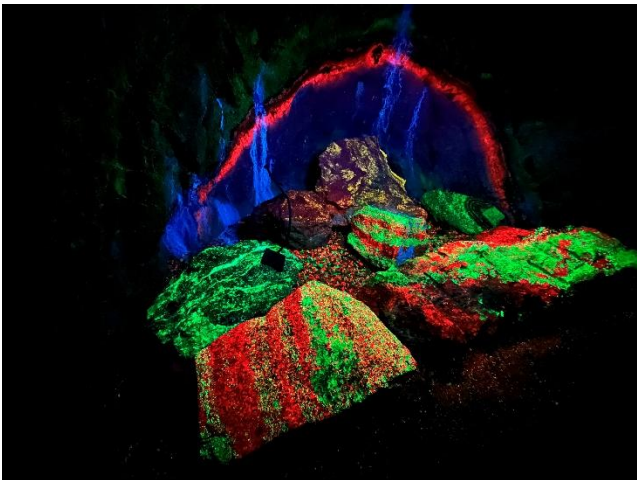
We then went outside and stopped just in front of the doors to the mine while our guide explained the mine's geology. Finally inside the mine, we were told more at each stop and turn down another corridor. We stopped in the workroom where the miners checked in and picked up their medallions and lights.

We learned about the history of the lights worn by the miners from the early 1900s to 1986, when the mine was finally closed. The lights went from tiny pitchers filled with oil fastened to a hat and with a lit flame,



to Edison lamps and eventually to lights with lithium ion batteries.

The most famous of the corridors, the Rainbow Room, did not disappoint. Walls and rocks that looked ordinary came aglow with color under ultraviolet (UV) light.



Sterling Mine walls coming alive with color under UV light.

We had a blasting demonstration, and I am sure that Sue Marcus made our guide a little bit nervous when she proudly declared that her husband Roger Haskins had his blasting license.

When we left the mine, we were led into rooms filled with fluorescent minerals, more mining paraphernalia, and a history of UV lamps as well as meteorites and a surprise that we all rubbed and made a wish on.

We bid farewell and thanked our wonderful guide, then made our way to the dig pit. Each rock we picked up held such potential as we excitedly carried it into the darkshed to see if it would glow under UV light. We gleefully filled our buckets, and with only about 15 minutes to spare we made our way to the gift shop to pay \$2 per pound for our finds before the shop closed.

How could the day possibly get any better? We then made our way over to the Franklin Mineral Museum. We had just an hour to get to the dig pit, which was much larger than at Sterling Hill, with a giant hill to traverse to get to the darkshed with UV lamps. We filled our buckets just in time to pay for our finds.

The dig pit closed an hour before the museum, which was much smaller than its Sterling Hill counterpart. The first room was filled with magnificent local minerals, some found only in New Jersey. The second room was filled with fluorescent minerals from around the world.

The museum closed, and we dispersed to our hotel rooms, then met for dinner at a local Italian restaurant suggested to us by museum staff. It was good food and even better company.

With our bellies full, we could not have imagined the trip getting even better, but it did. We then made our way to the Franklin Mineral Museum to check in for the night dig. It was dark down at the dig pit. Our UV flashlights illuminated not only many of the rocks around us but also the dirt we were walking on, which glowed as though powered by some internal energy source. The massive hill seemed even longer in the dark than at Sterling Hill, but again it was no match for determined club members hauling glowing rocks that make all other rocks seem, well, ordinary.

What an amazing trip with some amazing people to wrap up our 2025 field trips!

Acknowledgments

Special thanks to Sue Marcus and Adam Duncan for helping to coordinate this trip!



The Rocks Beneath Our Feet Another Quartz Outcrop in Our Area

by Hutch Brown

I wrote about large quartz outcrops in northern Virginia in the [October 2024 newsletter](#), including the only outcrop shown on the USGS geologic map for Arlington County. That celebrated outcrop, called Brandywine Castle, is in Arlington's Madison Manor Park just off the W&OD Trail near Four Mile Run. It has white quartz boulders up to about 5 feet in height.

Last winter, I discovered another quartz outcrop in Arlington through a fellow Arlington Regional Master Naturalist. The outcrop is described in a 2006 inventory of the "geologic features of Arlington County" by USGS geologist Tony Fleming (Fleming 2006).

This particular outcrop is in Fort C.F. Smith Park on a ridge overlooking the Potomac River. The park, named for a Civil War general, was part of a string of fortifications built in 1861-63 around Washington, DC, to defend the nation's capital from attack by Confederate forces. The park's main house is part of a visitor center with Civil War artifacts and information, open on weekends.

The quartz outcrop became a rock garden behind the house. It's a jumble of white quartz boulders on a slope; the boulders are up to about 5 feet high and 5 feet thick covering an area of about 30 by 50 feet.

Like Brandywine Castle and other quartz outcrops in our area, the boulders are part of a quartz lens that formed in metamorphic rock during the Ordovician Period, perhaps during the Taconian Orogeny about 474-450 million years ago. Quartz (silicon dioxide) has a relatively low melting point; dissolved in hydrothermal fluids, the silica filled gaps in the buckling bedrock and precipitated out as solid quartz, leaving veins and lenses, some of them huge.

The sugary white quartz at Fort C.F. Smith Park is beautifully tinged with hues ranging from yellowish-brown to a deep red. The colors come from iron, aluminum, and other impurities in the quartz. If you like quartz (as I do), it's well worth a visit! ↗

Source

Fleming, T. 2006. Geological features inventory of Arlington County—project summary. Report. 30 December.



*Fort C.F. Smith in Arlington, part of the Civil War defenses around Washington, DC, now a county park. **Top:** The main house, part of a visitor center with Civil War displays. **Center:** Part of the jumble of quartz boulders behind the house, a huge quartz lens exposed by erosion of the metamorphic bedrock, which is far more erodible than quartz. **Bottom:** White quartz face with tinges of yellow and red from iron, aluminum, and other impurities. Photos: Hutch Brown.*



The Rocks Beneath Our Feet Island Arcs: Why on Earth an Arc?

by Hutch Brown

Island arcs play an important role in the story of geology in the mid-Atlantic region. At least two of the three orogenies (mountain-building events) in our area in the last half billion years (the Taconian and Acadian) were preceded by island arcs and the associated deep-sea trenches. Grafted by tectonic processes onto proto-North America, the arcs helped to form today's Piedmont and Coastal Plain bedrock.

Island arcs take shape when a continental plate collides with an oceanic plate. During the Taconian Orogeny about 474-450 million years ago, the Laurentian (proto-North-American) plate slid under the approaching Taconian microplate in a process called subduction. Through contact and friction, the subducting continental plate formed a deep-sea trench in the subduction zone. Rising temperatures caused the subducting plate to melt, sending plumes of magma to the Earth's surface. The rising magma erupted as lava on the ocean floor, forming an arc (curved line) of volcanic islands in the Taconian microplate behind the deep-sea trench.

A current example is the Aleutian volcanic island arc in the North Pacific (fig. 1). As the Pacific Plate moves northwestward, it subducts under the North American Plate (fig. 1, top). It forms the Aleutian Trench at its leading edge and a line of volcanic islands where the diving plate reaches a point deep enough in the Earth's upper mantle to melt and send up plumes of magma. The line, about 200 miles north of the trench, takes the classic shape of an arc parallel to the curving trench (fig. 1, bottom).

The reason for the shape, I learned from reading John McPhee's excellent books on geology, has to do with Earth's curvature—and the fact that the subducting plate dives into Earth's mantle at an angle of about 45 degrees. As McPhee explains:

Take a knife and cut into an orange at forty-five degrees. To cut straight down would be to produce a straight incision in the orange. If the blade is tilted forty-five degrees, the incision becomes an arc on the surface of the orange.

Like an orange, Earth is a globe. Slice it by subduction at a 45-degree angle, and you get an arc. ➤

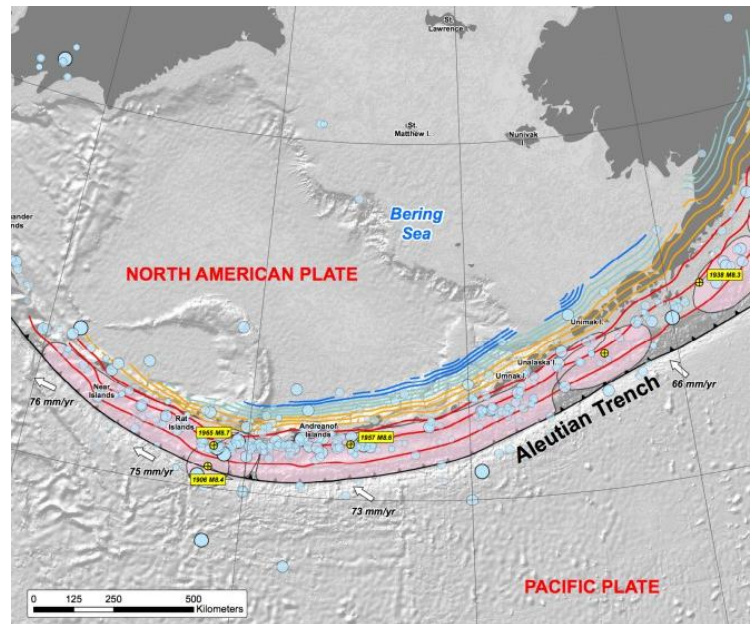
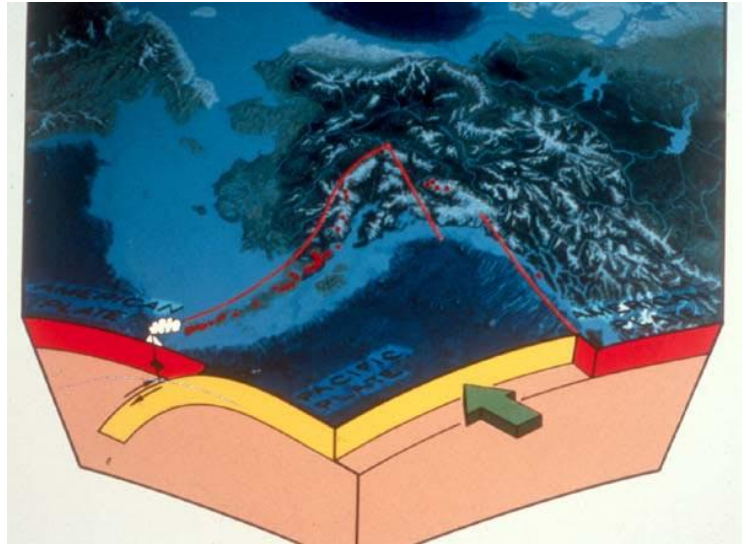


Figure 1—The Aleutian volcanic island chain results from the process of subduction as the Pacific Plate (top, yellow) dives under the North American Plate (red). The Aleutian chain takes the classic shape of an arc (bottom) associated with a parallel deep-sea trench (the black line) in the subduction zone. (Blue circles = earthquakes; red, blue, yellow lines = earthquake depths; pink = aftershock zones.) Sources: [PBS](#) (top); [USGS](#) (bottom).

Sources

- Bentley, C. 2020. [Historical geology: A free online textbook for historical geology courses](#).
 McPhee, J. 1998. *Annals of the former world*. New York: Farrar, Strous and Giroux. 696 p.

December 2025—Upcoming Events in Our Area/Region (see details below)

Sun	Mon	Tue	Wed	Thu	Fri	Sat
	1 Joint club holiday party	2	3 MSDC mtg	4	5	6 Show: Fayetteville, NC
7	8	9	10	11	12 Show: Swannanoa, NC	13 Show: Swannanoa, NC
14 Show: Swannanoa, NC	15 GLMSMC holiday party	16	17	18	19	20
21 Winter begins	22	23	24	25 Christmas	26	27
28	29	30	31			

Event Details

- 1: Dunn Loring, VA**—Northern Virginia Mineral Club/Micromineralogists of the National Capitol Area; holiday party (details on page 8).
- 3: Washington, DC**—Mineralogical Society of the District of Columbia; info: <http://mineralogicalsocietyofdc.org/>.
- 6: Fayetteville, NC**—Annual show; Cape Fear Gem and Mineral Society; Kiwanis Recreation Ctr, 352 N Devers St; Sat 11-4:30; free; info: Mark Wilkins, mallen411@yahoo.com, www.facebook.com/capefearclub.
- 12-14: Swannanoa, NC**—Land of Sky Christmas Show; Mountain Area Gem and Mineral Association; Land of Sky Shrine Club, 39 Spring Cove Rd; Fri 9-6, Sat 9-6, Sun 10-4; free; info: Richard Jacquot, 828-779-4501, rickjacquot@gmail.com, www.AmericanRockhound.com.
- 15: Rockville, MD**—Gem, Lapidary, and Mineral Society of Montgomery County; info: <https://www.glmsmc.com/>.



*Zoisite, var. tanzanite, gem from Tanzania.
Source: [Smithsonian Geogallery](http://SmithsonianGeogallery); photo: Chip Clark.*

The Northern Virginia Mineral Club, Inc.

Visitors are always welcome at our club meetings!



EXPLORE OUR [WEBSITE](#)! FIND US ON [FACEBOOK](#)!

Club purpose: To encourage interest in and learning about geology, mineralogy, lapidary arts, and related sciences. The club is a member of the Eastern Federation of Mineralogical and Lapidary Societies (EFMLS—at <http://www.amfed.org/efmls>) and the American Federation of Mineralogical Societies (AFMS—at <http://www.amfed.org>).

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RENEW YOUR MEMBERSHIP!

SEND YOUR DUES TO:

Roger Haskins, Treasurer, NVMC
4411 Marsala Glen Way, Fairfax, VA 22033-3136

OR

Bring your dues to the next meeting.

Dues: Due by January 1 of each year; \$20 individual, \$25 family, \$6 junior (under 16, sponsored by an adult club member).

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2025 Club Officers

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Tech Support: Tom Burke
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Webmaster: Casper Voogt
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Meetings: At 7:30 p.m. on the first Monday of each month at the Dunn Loring Fire Station, 2148 Gallows Rd., Dunn Loring, VA.* (No meeting in July or August.) September meeting (Labor Day) is Zoom only.

**Changes are announced in the newsletter; we follow the snow schedule of Fairfax County schools.*

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