OCTOBER 2026 **ROCK TALK** PAGE 1
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White Mountain Gem & Mineral Club
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PRESIDENT'S LETTER ∞ OCTOBER 4, 2026

The year is almost over, where does the time go? This month we spent a good deal of time discussing nominations for the coming year, both elected officers and volunteer positions. I had hoped to impress upon our members in attendance the importance of this issue. A healthy club needs involved members. Any involvement, no matter how limited in time and energy, helps our club maintain its existence. As you are reading this letter, nominations for elected positions are over. We will vote on the members who stepped up to lead for 2027, at the November 2026 meeting. Should you want to put in a write-in vote, please do so at the November meeting. Volunteer positions, because they do not need to be elected, are still open, and the list will be again posted at the November meeting. Our thanks to everyone who has already stepped up to cover elected and volunteer positions.

Our November meeting will include our Trunk 'R Treat event in the VFW parking lot. In celebration of Halloween, our members, if they choose, bring rocks and minerals from home to share with the group. This is a free event, no buying or selling involved. In your trunk, back seat, back of a pick-up, all is fair game to find that perfect take-home rock or rocks.

We will elect our new officials for 2027 at the November meeting. There is a ballot in this newsletter. If you attend the meeting, bring this ballot with you. Should you forget, there will be extra ballots at the meeting. **If not attending, please mail the ballot to WMGMC PO Box 3504 Show Low, AZ 85902, as soon as possible so it reaches the club by November 1.** Volunteer positions are available and include educational planning, and Chamber of Commerce liaison both for Snowflake and Show Low. These positions are ongoing and can be filled at a later date if not filled soon.

December 6 is our final meeting of the year and our Christmas and Holiday Party. There will be a fine meal, with turkey and ham platters, and various special dishes and desserts brought by our members. Please consider what you could contribute, from rolls to dessert, any contribution would be welcome. With music, camaraderie, and a gift exchange, it should be a pleasant ending to a fine year. Remember, give a gift, get a gift. Sandra will also be presenting various end-of-the-year prizes.

Thank you to all members of the organization. It would not work without our consistent membership.

Donna L. Pollard, President WMGMC

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HAPPY OCTOBER BIRTHDAYS

Othello Ayem Darren Begly Debbie Christmas
Kerri Clement Bexleigh Dietert Lynne Erickson
Carl Hickman Brenda Hogarth Sherry Martin
Kelly Morrow Rhoni Paladino Valerie Pickett
Cheryl Pietsch Jeannine Russ Richard Russ
Joy Ann Schuman John Shearer Dick Turpin
Mary Alice Vertz

Monthly Potluck for November:

Last Names A through L

LET'S DO LUNCH

The Let's Do Lunch Club will meet at Tipsy Hippy Grill, 2251 W White Mountain Blvd, Lakeside, AZ, on Thursday, October 29 at 12 Noon. Going from Show Low, it is on the right just as you pass Rainbow Lake. Please let Hope Rubi know if you would like to be added to her text reminders at (928)228-8851.

CALL FOR ARTICLES

If you have a favorite rock, geologic topic, lapidary technique, or DIY project you would like to share with your fellow club members, we welcome your contributions to our knowledge of the wonderful world of rocks. See page 3 for submission details.

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TREASURER'S REPORT

September Expense: Member Badges

Upcoming Expense: ***Rock Talk*** Printing & Postage, Meeting Supplies, Historian Ink

Income This Month: No September income

As we look ahead to 2027, we have a wonderful opportunity to build, strengthen, and grow our Club. Every member brings something of value—ideas, opinions, talents—and each contribution deserves to be heard.

Take a moment to imagine our Club one year from now… five years… even ten. What do you see? What kind of group do you hope we become?

Some possibilities we might explore include:

- More field trips, including accessible outings for all members
- Meeting on a different day to accommodate more schedules
- Expanding our educational programs for both the community and our members
- Awarding scholarships to local students
- Creating activities for children of all ages and forming a Junior Club Member group
- Growing our membership and engaging younger rockhounds
- Offering training classes in various lapidary skills
- Hosting occasional events where members can sell their creations or equipment

And of course, this list is only a beginning. What would you add? Your ideas, your energy, and your unique gifts are not only welcome—they're essential. Together, we can shape the future of our Club and ensure it thrives for years to come.

With admiration for each of you,
Cathy Cargile, WMGMC Member

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Rock Talk Newsletter

Our newsletter is published monthly by the White Mountain Gem & Mineral Club, Inc. Any information or comments members wish to include in the monthly newsletter must be given to the editor at the general membership meeting or call the editor no later than Tuesday following the meeting.

Membership Dues

Membership dues are $20 for a single membership and $25 for a couple/family. ($5 less if you receive newsletter by email.) Dues are paid in January each year along with a completed application form. Memberships initiated in November or later in a given year are also good for the following year.

Meetings

We meet the first Sunday of the month (unless it falls on a holiday) at the VFW Post 9907, 381 North Central Avenue in Show Low. Turn north off the Deuce of Clubs at Burger King. Social half hour at 1:00 PM, meeting starts at 1:30 PM.

Elected Officers

OFFICE	NAME	PHONE	EMAIL
PRESIDENT	Donna Pollard	(480)600-2714	tdpollard@msn.com
VICE PRESIDENT	Sandra Angelo	(928)537-3726	sandra_angelo@hotmail.com
2ND VICE PRESIDENT	Debbie Trimble	(520)400-6527	dltrimble076@aol.com
SECRETARY	Shelly Applegate	(928)245-4300	shellylynn@gmail.com
TREASURER	Kim Whitley	(928)853-4455	kimwhitley@gmail.com
EDITOR	Bea Kennedy	(330)391-1916	bea.bullwinkl@gmail.com
FIELD TRIPS	Dick Turpin	(480)240-0995	dickturpinaz@gmail.com
	Ursula Wilson	(928)532-5703	uewilson@yahoo.com

Members At Large

Hope Rubi	(928)228-8851	Terry Pollard	(480)431-0686
Ursula Wilson	(928)532-5703	Carl Hickman	(928)536-3744

Volunteer Positions

Website Maintenance/Facebook	Jamie Konopacky	(715)498-7121	konopacky25@gmail.com
Show Chairman	Sandra Angelo	(928)537-3726	sandra_angelo@hotmail.com
Assistant Show Chairman	Ursula Wilson	(928)532-5703	uewilson@yahoo.com
Sunshine	Donna Pollard	480-600-2714	tdpollard@msn.com
Education, Schools	Open		
Greeter/Door Prizes/Raffle	Thelma Gray		
Auctioneer	Donna and Terry Pollard		
Highway Cleanup	Brookie/ Larry Embry	(928)537-0760	
Bonus Prizes	Sandra Angelo	(928)537-3726	
Historian	Donna Pollard	(480)600-2714	tdpollard@msn.com
Librarian	Rick Palmer	(928)333-5019	palmer57@frontiernet.net
Meeting Room Setup/Cleanup	Shelly Applegate	(928)245-4300	shellylynn@gmail.com

Chamber of Commerce Liaisons

Show Low: Donna Pollard	Snowflake/Taylor: Karen Hickman
Springerville/Eager: Open	Heber/Overgaard: Loren Wright

It's Harvest Fest Time!

Sponsored by the Snowflake/Taylor Chamber, this is our chance to reach out to their community. We'll have our Spinning Wheel and Debbie will bring her Sponge Bob Bean Bag Toss. As usual, we will have lots of rocks to give away. For those participating in set up, meet at the storage unit this Saturday (10/10) at 7:30 am or Pioneer Park at 8:15 am. Booth Community times are 9 am – 12 pm and 12 pm – 2 pm. Take down happens at 2 pm. We will have club information available too. Join the fun. Sandra [928.240.2344]

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WHITE MOUNTAIN GEM & MINERAL CLUB MEETING MINUTES SEPTEMBER 6, 2026

The October 4, 2026 General Meeting was called to order by President Donna Pollard at 1:30 pm. After the Pledge of Allegiance, everyone was greeted and new members and guests welcomed. Welcome guests Kimberly Bordgin and Debbie Rolph. Welcome new member Jim Hare.

Show and Tell began with guest Kimberly sharing rocks she found in a relative's yard. She was attracted first by the colors and then by the uniqueness of the rocks. Loren showed some unique specimens he acquired that looked like double geodes and also a flat geode. Donna showed the Show Low magazine that will be distributed throughout the State. We have a half page ad. The Dinosaur Museum is also on the page and a geology related word find on the opposite page. These magazines are available at the Show Low Chamber of Commerce.

Donna talked about the slate for the 2027 elections and the importance of having the elected positions filled. We are a 501(c)(3) and to maintain our nonprofit status, we must have an elected Board of Directors. She reminded us that in order for our club to continue to exist, we need members to step up and volunteer. In addition to the elected officers, there are a number of volunteer positions to be filled. The same small group of people cannot continue to do the all the work of the Club. Donna had a poster that showed all the positions and places for members to sign up. It was placed on the back table. During the break people were able to ask questions and sign up for the different positions.

Dick Turpin gave a talk on "How Old is This Rock?"

Trunk R' Treat will be held on November 1. Bring rocks to share during the break.

Harvest Fest is October 10 at Pioneer Park in Snowflake. We will pick up what we need for our booth from the storage unit at 7:30 am. Set up will happen at the park at 8:15 am for a 9 am event start.

The Christmas party will be December 6. Donna will cook a turkey and Sandra will cook a ham. Bring a $10 gift to exchange. Year end prizes will be drawn.

Brookie reported we had 11 people at the highway clean-up.

Hope announced that the Let's Do Lunch Club will meet on 10/29 at noon at Tipsy Hippy.

Brookie announced that her sister, Billie, had a tumbler and rock saw she wanted to sell. Contact Brookie if you are interested and she will put you in contact with Billie.

In the business meeting, Minutes were approved. Motion and second provided by Terry and Loren. Treasurer's report was approved. Motion and second provided by Sandra and Loren.

A discussion was held about show promotion. Dick has been working on signs. Using post cards was also discussed.

We also discussed how to make meetings more welcoming and family friendly. Meeting adjourned at 4:15 pm.

Respectfully submitted. Sandra Ann Angelo, Secretary Pro Tem

OCTOBER FIELD TRIP

October 2026 Field Trip Announcement: Double J Ranch

Field Trip Leaders: Ursula Wilson and Charles Frayer (Chooch)

Date: Saturday, October 24, 2026

Location of the Field Trip Site: Double J Ranch Road – East of Alpine, AZ

Where and When We Will Meet: We will meet at 8 AM at the "Y" (Hwy 60 and 61). Chooch will join the group at the Alpine Post Office between 9:30 and 10:00 AM

Recommended Vehicle: Any high-clearance vehicle can reach the collecting location; however, parts of the road may be badly eroded due to recent rains. The five-mile dirt road into the collecting site may be difficult for some drivers.

What we will collect: Clear and Luna Blue Agates. Also some quartz crystals. See examples in the rock club group on Facebook.

Recommended Things to Take: Buckets, rock hammer, grabber, digging tools, camera, water, lunch, sunscreen. Wear sturdy shoes or boots. The collecting area is generally flat and grassy.

Cell Phone Service: Limited cell service at the collecting site.

WMGMC Ballot 2027

Officers

President	**Sandra Angelo**	_____	**Write-In** _____
1st Vice President	**Dick Turpin**	_____	**Write-In**_____
2nd Vice President	**Cathy Cargile**	_____	**Write-In**_____
Secretary	**Shelly Applegate**	_____	**Write-in**_____
Treasurer	**Kim Whitley**	_____	**Write-In**_____
Newsletter Editor	**Bea Kennedy**	_____	**Write-In**_____

Council-Persons At Large

Loren Wright	_____	**Write-In**_____
Carl Hickman	_____	**Write-In**_____
Carol Glick	_____	**Write-In**_____
Ursula Wilson	_____	**Write-In**_____

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ROCK OF THE MONTH ∞ MOLYBDENITE, MOLYBDENUM DISULFIDE (MOS2)

Submitted by Donna Pollard

The word molybdenite derives from the Greek *molybdos* meaning "lead–like". Before it's true nature was revealed, this mineral was mistaken for graphite, a crystalline form of carbon (C), or galena, a lead (Pb) ore. The reason was because it looks similar to both, has a greasy feel, and leaves a dark mark on surfaces. First described in the early 16th century, it was not until 1778 that Swedish chemist Karl Wilhelm Scheele recognized it as a distinct mineral. He came to the conclusion that it had a separate element, not lead, so he named the element molybdenum (Mo). The mineral was isolated in 1781 by Peter Jacob Hjelm and then named molybdenite.

Molybdenite is soft, H. 1 ½, but heavy, S.G, 4.62-5.06. The color is lead gray, with a streak color of dark blue/gray, and perfect basal (bottom) cleavage. Opaque, with a metallic luster, it is considered flexible but not reactive to outside forces. It is not brittle. Minerals confused with molybdenite such as graphite, specular hematite, or galena, are harder and more brittle. Molybdenite forms hexagonal barrel-shaped crystals, and tabular crystals with a hexagonal outline on them. It also may be found as foliated masses, scales and grains.



Molybdenite can form in various situations: hydrothermal veins with quartz, cassiterite, and chalcopyrite, in granitic or dioritic rocks including pegmatites, in high temperature pneumatolytic (formed or changed by hot vapors from magma) formations or veins, and in contact metamorphic deposits associated with limestones, known as scheelite skarns, with garnet, pyrite, and scheelite. Its main element, Molybdenum, is also produced as a byproduct of copper mining.

In North America, abundant molybdenite is found in Climax, Colorado, as disseminated particles in quartz veins, and with quartz and beryl at the Urad Mine, Clear Creek County, Colorado. Excellent crystals are found in quartz near Lake Chelan, Okanogan and Chelan Counties, Washington, as well as in Ogden Mine, Edison, New Jersey. Molybdenite is found in metamorphic formations with scheelite, garnet, and epidote on Pine Creek, Inyo County, California. Aldfiel, Pontiac, Quebec has three-inch molybdenite crystals, and sites are also known in Sonoran and Guanajuato, Mexico. Outside North America, excellent crystals are known from Australia, Italy, Norway, and Bolivia.

Molybdenite is the main ore of the element Molybdenum (Mo, #42), a very versatile element. Molybdenum has one of the highest melting points of all the elements, 2623 degrees Celsius, which is 4753.4 degrees Fahrenheit. Considering this element, it is a key component in the production of steel. It is used to produce high-strength alloys for aircraft, missile parts, spacecraft components, and in the construction of nuclear reactors. It is used in the production of steel cookware, amour plating, and protective coatings because of its durability and resistance to wear.

It is a catalyst in the petroleum industry in the process of removing sulfur from crude oil. It is a superconductor with great electrical conductivity at low temperatures. In renewable technologies, it is a critical component in wind turbines and solar panels.

In biological organisms, it plays a vital role in the metabolism of nitrogen and sulfur. Regarding human health, it plays a crucial role in enzyme function and metabolic processes. It is an essential micronutrient for plants aiding in nitrogen fixation and healthy growth. Molybdenum catalysts are used in the production of acrylic acid, a key component in the manufacture of adhesives and plastics.

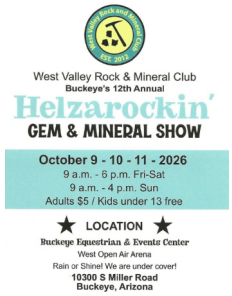
As the main ore of Molybdenum, Molybdenite is a sought-after mineral. While not as abundant as some minerals, it is not considered rare. From industry, to agriculture, to healthcare, it is a very important mineral, and its main element Molybdenum is, and has been, an important ingredient in human history, even recognized, if not named, in the early Egyptian and Roman civilizations.

Information for this essay comes from Smithsonian, Simon and Schuster, Barrons, and Audubon Gem and Mineral books, and Britanica Encyclopedia. Image sourced from US Geological Survey (public domain).

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ROCKIN' SHOWS COMING UP!

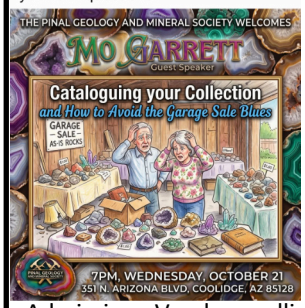
OCTOBER 2026



October 9-11—BUCKEYE, ARIZONA: 12th Annual Helzarockin' Gem and Mineral Show. Friday 9AM-6PM, Saturday 9AM-6PM, Sunday 9AM-4PM. Buckeye questrian & Events Center, 10300 S Miller Road. Free Parking. $5 Entry.

October 15-18—TUCSON, ARIZONA: Annual Fall Tucson Gem & Mineral Show; Capistrano Mining Company; Mineral City Complex, 531 W Plata Street, C12; daily 10-5; No Cost; Open to the public. 30+ participating sellers around town. Will have handouts with all sellers open around town; contact Wayne Schrimp, (714) 305-0135; Email: wschrimp@aol.com; Website: www.capistranomining.com

Contact me at dsminerals@aol.com if you have questions!



October 21—COOLIDGE, ARIZONA: Cataloguing Your Collection and How to Avoid the Garage Sale Blues. The Pinal Geology and Mineral Society Welcomes Mo Garrett, Guest Speaker. 7:00 PM. 351 N. Arizona Blvd. Email: dsminerals@aol.com

NOVEMBER 2026



November 7—MIAMI, ARIZONA: Show and sale; Gila County Gem & Mineral Society; Bullion Plaza Cultural Center & Museum Yard, 150 Plaza Circle; Sat. 9-2; Free Admission; Vendors selling a variety of gems, minerals, jewelry, rocks and more. Visit with rockhounds & jewelry makers. Popcorn & water are available for purchase. contact Beverly Hawkins; Email: gilagem.show@gmail.com

November 14-15—LAKE HAVASU CITY, ARIZONA: Annual Lake Havasu Gem & Mineral Show, Note new location this year: Windsor Beach State Park, 699 London Bridge Road, Lake Havasu City. Hours: 9:00 am to 5:00 pm Saturday, 9:00 am to 4:00 pm Sunday. Full Weekend Admission $5. Website: https://lakehavasugms.com/blog/annual-gem-mineral-show/



November 28-29—WICKENBURG, ARIZONA: Annual show; Wickenburg Gem & Mineral Society; Hassayampa Elementary School, 201 S Tegner; Sat. 9-5, Sun. 10-4; Free Admission & Parking; Over 40 vendors. Something for everyone. Gold panning, kids' table; contact Kerri Crawford, (303) 916-3884; Email: wickenburggemmineral@gmail.com; Website: http://wickenburggms.org/



DECEMBER 2026

December 4-6—MESA, ARIZONA: Apache Junction Annual Rock and Gem Show, Mesa Marketplace Swap Meet, 10550 E Baseline Road, 8:00 AM-4:00 PM. https://ajrockclub.com/annual-club-rock-shows/

VARIOUS DATES 2026-2027

APACHE JUNCTION ROCK AND GEM SHOW - November 7, January 2, February 6, March 6, April 3. See announcement to right.



WHITE MOUNTAIN GEM & MINERAL CLUB CALENDAR OF EVENTS





FIELD TRIPS WANTED!!

PLEASE LET US KNOW OF ANY

GREAT PLACES FOR OUR OUTINGS!

MONTH	MEETING DATE	FIELD TRIP DATE	NOTES
JANUARY	4	17	Gila County Show
FEBRUARY	1	21	
MARCH	1	21	Mellon Center Show—14th
APRIL	12	25	
MAY	3	23	Highway Cleanup—16th
JUNE	7	27	
JULY	5	25	ANNUAL SHOW 10-11-12
AUGUST	2	22	
SEPTEMBER	6 (Picnic)	26	Highway Cleanup—19th
OCTOBER	4	24	Harvest Fest—10th
NOVEMBER	1	21	
DECEMBER	6	CHRISTMAS PARTY	

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HOW OLD IS THAT ROCK?

Submitted by Dick Turpin

How Do Geologists Determine the Age of a Rock?

A rockhound's guide to the laboratory clocks that reveal Earth's history

When we pick up a rock that looks ancient, how do we know whether it is 10 million years old, 500 million years old, or 3 billion years old? Geologists don't usually measure the rock directly. Instead, they measure the amounts of radioactive isotopes inside the minerals. These atoms decay at a predictable rate, providing a natural clock. Laboratory techniques measure the ratio of parent and daughter isotopes, and then use the known decay rates (half-lives) to calculate the age.

The Basics: Parent → Daughter

Radioactive atoms are unstable. They break down into more stable atoms over time. The original atom is called the parent; the new atom is the daughter. The time it takes for half of the parent atoms to decay is the half-life. Because the rate of decay does not depend on temperature, pressure, or location, it provides a reliable clock.

Zircon: One of Geology's Best Clocks

Zircon ($ZrSiO_4$) is a key mineral for dating very old rocks. It can contain uranium when it forms, but it generally excludes lead. This makes it ideal for U-Pb dating. Two uranium isotopes are used:

- **U-238 → Pb-206** (half-life ~ 4.5 billion years)
- **U-235 → Pb-207** (half-life ~ 704 million years)

Modern labs use SIMS, SHRIMP, or laser-ablation ICP-MS to measure tiny areas of individual zircon crystals. A single crystal can record multiple growth events. U-Pb concordia diagrams help confirm the age and reveal if later events disturbed the system.

U-Pb dating is useful from millions of years to the oldest rocks on Earth — well over 4 billion years.

Other Laboratory Methods

Different isotope systems work best for different materials and time ranges. Some methods, like K-Ar and Ar-Ar, are ideal for volcanic rocks. Others, like Rb-Sr and Sm-Nd, are better for very old igneous and metamorphic rocks. Younger materials such as cave deposits, corals, and organic remains are dated with U-series and radiocarbon. Additional methods include fission tracks, (U-Th)/He, cosmogenic nuclides, and luminescence. Each technique has its own strengths and ideal age range.

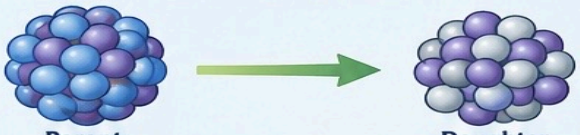


Zircon crystal (about 1 mm)

A tiny zircon crystal can preserve the age of the magma from which it formed — sometimes billions of years old!

The Radioactive Clock

A parent atom decays to a daughter atom at a constant rate (half-life).



Parent (unstable) → **Daughter** (stable)

By measuring the amounts of parent and daughter isotopes, geologists can calculate how long ago the decay began.

Major Dating Methods and Their Time Ranges

Method	Parent → Daughter (or signal)	Approximate Useful Range	Common Materials / Notes
U-Pb	U-238/U-235 → Pb-206/Pb-207	~1 million to 4.5+ billion years	Zircon, monazite, baddeleyite; igneous & metamorphic rocks
K-Ar	K-40 → Ar-40	~100,000 years to billions of years	Volcanic rocks & potassium-bearing minerals
Ar-Ar	K-40 → Ar-40	~10,000 years to billions of years	Volcanic rocks, mica, feldspar, amphibole
Rb-Sr	Rb-87 → Sr-87	~10 million to billions of years	Igneous and metamorphic rocks
Sm-Nd	Sm-147 → Nd-143	~100 million to billions of years	Very old igneous/ metamorphic rocks, Earth's mantle
Re-Os	Re-187 → Os-187	~10 million to billions of years	Sulfides, ores, meteorites
U-Th series	U → Th + daughters	~1,000 to ~500,000 years	Carbonates, cave deposits, corals
Radiocarbon	C-14 → N-14	~100 to 50,000 years	Organic material, charcoal
Fission track	Uranium fission damage	~20,000 to ~1.5 billion years	Zircon, apatite, volcanic glass
(U-Th)/He	U/Th → He	~10,000 to hundreds of millions of years	Apatite, zircon; cooling/erosion histories
Cosmogenic nuclides	Cosmic-ray-produced isotopes	~1,000 to several million years	Exposed surfaces, glacial deposits
Luminescence	Stored radiation energy	~100 to several hundred thousand years	Sediments; time since last sunlight or heating

** These are approximate ranges, not hard limits. The useful range depends on the mineral, lab technique, sample history, and required precision.*

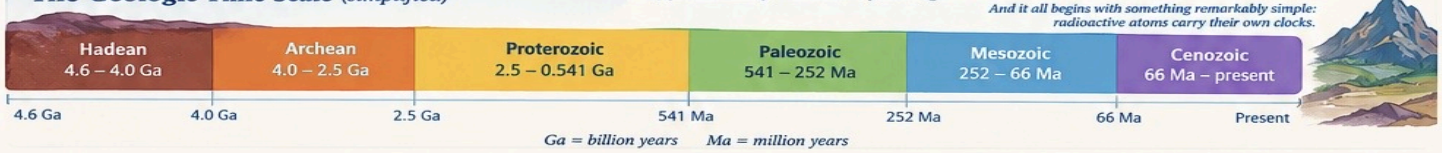
So, How Old Is Your Rock?

There is rarely a single "rock-dating machine." The geologist first determines what event is being dated — a crystallization, a metamorphism, a volcanic eruption, or a period of surface exposure. The sample is carefully prepared and analyzed in a laboratory. Measured isotope ratios are entered into mathematical models based on known decay constants. Often, more than one method or mineral is used. When independent clocks agree, the result is much more reliable.

Radiometric dating has transformed geology from a science that could only say "older than" or "younger than" into one that can often say, "this rock formed approximately 1.2 billion years ago."

And it all begins with something remarkably simple: radioactive atoms carry their own clocks.

The Geologic Time Scale *(simplified)*



Ga = billion years Ma = million years

AROUND AND ABOUT

Field Trip and Meeting Photos
(Many thanks to Claire and Donna for submitting pictures.)





















