

Tar Heel Tailings

A newsletter for Gem and Mineral enthusiasts in and around the Raleigh, North Carolina area.

Special Interest Articles:

- President's Report
- Junior Rockhounds
- Huge Asteroids Brought Gold to Infant Earth
- Aragonite

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President's Report

Happy New Year Everyone!
Yes, it's 2012! I hope everyone has had merry holidays and a good vacation.

At the time of writing this I have no idea what the program will be for the January meeting so if you have any new rock or jewelry acquisitions that you would like to show off please bring them with you to the meeting and we'll

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Junior Rockhounds

By Barbara Green, SFMS President

Last month, I talked about what SFMS does for the local club. At the Annual Meeting in September, we voted on a benefit for the younger members. The SFMS voted to pay for subscriptions to Mini Miners Monthly from Diamond Dan Publications for each club with Junior Members. This is a newsletter for Junior Rockhounds. The publication has special activities as well as a lot of information written for the kids.

A website to explore

for Junior Rockhounds is www.kidsloverocks.com. This is an education resource for young rock and mineral collectors. Use these materials to help your Junior members learn more

about a hobby that they can be involved in for the rest of their lives.

If you go to the Junior Rockhound of the Year section on the

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We're on the Web!
See us at:
www.tarheelclub.org

Program & Refreshments

REFRESHMENT SCHEDULE:	
Coordinator: Jeanette Baugh (919) 522-9044 villagegems@yahoo.com	
January	Eileen Breckstein
September	Walt Milowic
October	Cyndy and Corinne Hummel
PROGRAM SCHEDULE:	
January	Show and Tell

We are starting to get some volunteers to supply refreshments for this year's meetings. Let's get some people who never have picked a month to sign up with Jeanette at this meeting. You can be reimbursed up to \$40 for volunteering to bring refreshment to a meeting.

Thank you, Jeanette Baugh

November & December Treasurer's Report

November/December Treasurer's Report
October Ending /
Nov. Beginning Balance \$11,508.84

Deposits (+)
N/A

Sub total \$11,508.84

Checks Written (-)
NC Craft Center Donation \$400.00
2 Months Storage 196.00
Newsletter 155.32
Meeting Food 40.00
Supplies 82.57

Sub Total \$863.89

Nov. Ending /
Dec. Beginning Balance \$10,644.95

Deposits (+)
N/A

Sub total \$10,644.95

Checks Written (-)
Geology Club Donation \$2,500.00
Wm. Holland Donation 500.00
Wild Acres Donation 500.00
Quicken Books 31.00
Insurance (Field Trips) 76.00
Insurance (Show) 175.00
Charge for New Checks 30.25

Sub Total \$3,812.25

Dec. Ending /
Jan. Beginning Balance \$6,832.70

January B-Day Members

- Roxanne Alexander
- Marion Broadway
- Ken Carlson
- Christa Ennis
- Jack L. Fried
- Peter Glud
- Cyndy Hummel
- Bernadette James
- Jason Jin
- Carrie Jones
- Walt Milowic
- John Nigro
- Mary Obenchain
- Mimi Quick
- Greag & Rita Wase



Membership applications may be mailed to:

Tarheel Gem & Mineral Club
Attention: Treasurer
10609 Chelsea Drive
Raleigh, NC 27603

Tar Heel G & M Club November Meeting Minutes

Tuesday, November 15, 2011

Joe Moylan informed the club of an article in the News and Observer with a picture of Greg on the front page. The article was about a forthcoming law to regulate limiting dredging regarding the impact of the dredging.

Joe reminded the club about the subscriptions to Rock and Gem magazine where the club received a donation of part of the subscription fee from the magazine.

Old Business: The club will be keeping the storage unit for another year and will prepay for a year to get a reduced rate.

There was a discussion about possible donations to be made by the club to meet regulations. All such donations had to be made by year end.

There was a discussion about show hours for the club show in the spring, due to requests from dealers. It was decided to change the Friday open hours to be 3:00 pm to 8:00 pm. Also, there will NOT be a catered dinner on Friday night as has been done in the past. Folks (dealers and members) will be able to order from (and pay for) food ordered from outside.

For the 2012 show, the price of the grab bags will remain \$1.00

With an eye on expanding the space for education, there will be 9 member display cases in the future instead of 12 cases in the past. Beginner education will fill the space made available by this change. New Business:

Dr. Mike Franklin spoke of plans for the education and an aid of a raised topology map showing NC minerals and the locations where they are found.

Dues in 2012 are now \$20 per individual, plus \$5 per family member after the first.

Election -- Joe asked for nominations for the various offices. After discussion, a motion was made that the existing officers would remain in office for another year. The motion was made by Jack Fried and seconded by Eileen Breckstein. The motion carried unanimously.

Eileen Breckstein volunteered to help Corrine as a treasurer's assistant.

Becky Heally won the raffle and picked an aragonite and calcite cluster, from China.

The meeting was closed.

Respectfully Submitted

Bob Bendelow

President's Report

Continued from page 1

make some time for a little Show and Tell. Membership renewals are also due. You can print a copy of the Membership Application from the club website and mail it or bring it to the meeting. Applications will also be available at the meeting.

Also, I would like to remind you that Raleigh is still a growing metropolis. I get a call a week from some new Rockhound or hobbyist that has recently moved to the area and has questions about our club. Some may be showing up at our meetings, so please keep an eye out for those new faces in the crowd and do your best to make them feel welcome.

The club went on a total of 9 fieldtrips last year thanks to the efforts of Fieldtrip Chair Tom Todaro. If this is not a record it is a pretty good benchmark to try and equal again this year. I hope there will be something on the 2012 calendar soon.

Huge Asteroids Brought Gold to Infant Earth

Study Says Pluto-size space rocks may have put precious metals in the mantle

By Brian Handwerk, National Geographic News

Just as wise men are said to have brought gold to baby Jesus, huge asteroids may have brought gold and other precious metals to infant Earth, new research suggests.

Scientists have long known that there's a mysterious amount of siderophile ("iron-loving") metals in Earth's mantle. Such metals, including gold, tend to affiliate with iron in their liquid forms. The best explanation has been that some sort of space object brought the elements to the planet just after it formed its core, but the exact nature of the impactor has been a matter of debate. Based on computer simulations, the new study says that a small number of enormous, random impacts roughly 4.5 billion years ago are the sources of Earth's iron-loving materials.

Of course, getting ready for the show the last weekend of March will be our main focus these first few months. The March meeting will be our next and last Grab Bag assembly before the show so be getting those Grab Bag goodies all cleaned up and ready for donation. I will also have the sign-up sheets for the different areas volunteers are needed at all our meetings between now and showtime.

We are also in need of finding a replacement for our Secretary, Walt Milowic, who will be unable to keep up with those duties this year. If you think you are ready to make a commitment to the club and the duties of this important office, please feel free to volunteer.

Hope to see you all there,

Joe Moylan

These impactors were rocky objects left over from our solar system's planet-formation phase. The largest one that hit Earth was roughly the size of Pluto—up to 2,000 miles (3,220 kilometers) wide, the study suggests. And young Earth wasn't the only recipient: Cataclysmic collisions delivered iron-loving metals to the moon and Mars around the same time, the study authors say. What's more, the impacts may have been the source of water on the moon.

"These elements are telling us about what was hitting these worlds in sort of the 'last gasp' growth spurt that they had," said study leader William Bottke, of the Southwest Research Institute in Boulder, Colorado.

Impact Odds Like Rolling the Dice.



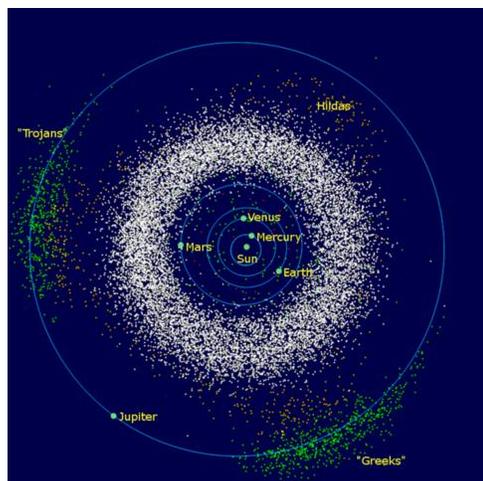
spurred the still forming Earth to develop its mostly iron core. When this happened, iron-loving metals should have followed molten iron down from the planet's mantle and into the core. But we know that gold and other iron-lovers are found in modest abundances in Earth's mantle. (Explore Earth's insides.) Using a mathematical approach called Monte Carlo analysis, Bottke's team calculates that iron-loving metals were delivered in a limited number of massive impacts that just happened to miss the moon. In cross section, the moon is about one-twentieth Earth's size, so one might expect the moon to have one-twentieth as many precious metals in its mantle, if the materials were delivered by impacts.

That's because, if millions of impacts had occurred, the odds of objects hitting Earth and the moon would likely have evened out to sustain the 1-to-20 ratio.

Instead, the moon has one-thousandth as many iron-loving metals as Earth. According to the study, published Dec 9, 2010 in the journal *Science*, those odds can be explained if a limited number of massive impactors were involved. A lucky roll of the dice could easily have meant that a huge object missed the smaller moon but smashed into Earth—creating the metal discrepancies we see today.

Asteroid Belt Puts Proof in the Pudding?

"It's a cute result, but how do you prove such a thing?" Bottke said. The key, he thinks, is to look at the existing remnants of planet formation in our solar system, aka asteroids.



In the inner asteroid belt, the three largest space rocks—Ceres, Pallas, and Vesta—range from 300 to 600 miles (483 to 966 kilometers) across. These bodies are much larger than the biggest of the rest,

which measure only 150 miles (241 kilometers) across, and no "in between" sizes seem to exist.

"Most of the mass is in the biggest objects," Bottke said. "It's a top-heavy size distribution that is consistent with the kinds of populations needed to make what we see on the Earth and moon." Martian craters tell a similar tale. The sizes of the oldest impact basins on the red planet appear consistent with a theory that Mars was hit by a population of space objects dominated by a few large asteroids, Bottke said.

Weak Links in Chain of Speculation?

While the theory is intriguing, planetary scientist Jay Melosh of Purdue University said he isn't quite convinced. "This is a darn good group of people," Melosh said of the study's authors. "But I find this theory really speculative, and I think some of the links in this chain of speculation are quite weak." For instance, Melosh notes—and the study authors agree—such massive space rocks would themselves have formed cores, which would have trapped their gold and other iron-loving metals.



"The problem, then, is how the impactors' cores gave up their gold and re-implanted it into the mantles of the Earth and Mars," he said. "The only way this can happen is if the metallic iron of the impactor core is oxidized"—but

that would require an abundant source of oxygen, which most models of early Earth don't include.

"So what they need to provide is some mechanism for getting those elements out of the [asteroids'] cores and into the mantle of the Earth," he said. "A mechanism for that is not at all easy and very hard to understand."

The study addresses this problem with simulations showing that the projectiles may have plowed entirely through early Earth—still largely molten—and come out the other side in highly-fragmented states, raining debris back down on the surface over an extended period.

"This allows big collisions to deliver lots of material, but in a manner not so different from small-body accretion," study leader Bottke said. But Purdue's Melosh also thinks it's possible gold exists in Earth's mantle due to unknown but orderly chemical processes and not random collisions. "Observations show that concentrations of these elements on Mars and Earth are about the same, and the moon is a lot lower," he said. "What the model does is make this a complete accident, a matter of who got hit by what and when."

Junior Rockhounds

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SFMS web page,

(http://www.amfed.org/sfms/junior_of_the_year.html) you will find "Organization and Conduct of a Junior Rockhound Club" written by Dr. Albert S. Dix. Bonita Harris, SFMS Junior Rockhound Chairperson for the last several years has put this into a .pdf format that you can download and print out.

If you don't have children in your club, think about ways to bring them in. Contact your local schools and see if they would like your club to come in and do a presentation. Science teachers usually appreciate this extra material to work with their Earth Science and Geology programs.

Another way to encourage families to join your club is to set up a booth at local craft shows. Most times, they will have booths available for public information. Have samples available that you can give children or have small affordable

Aragonite

From Wikipedia

Aragonite is a carbonate mineral, one of the two common, naturally occurring, crystal forms of calcium carbonate, CaCO_3 (the other form being the mineral calcite). It is formed by biological and physical processes, including precipitation from marine and freshwater environments.



Aragonite's crystal lattice differs from that of calcite, resulting in a different crystal shape, an orthorhombic system with acicular crystals. Repeated twinning results in pseudo-hexagonal forms. Aragonite may be columnar or fibrous, occasionally in branching stalactitic forms called flos-ferri ("flowers of iron") from their association with the ores at the Carinthian iron mines.

Occurrence

rocks that parents can purchase. A geode cracker always gets lots of attention. Most kids love rocks and parents appreciate the chance to have activities that include the whole family.

Bringing families into your group insures that your club will continue to grow. There are a lot of valuable resources in each club and it helps everyone to be able to share these.

I want to take the time to thank Bonita for all of the hard work that she has done in the past. She has resigned this year, and we will miss her dedication to the SFMS youth.

Now it's time to talk about what you can do for SFMS. We are looking for someone who is willing to take on this position. If you feel that working with young folk is right for you, please send me a message by e-mail (greentop@bellsouth.net) or call me.

The type location for aragonite is Molina de Aragón (Guadalajara, Spain), 25 km from Aragon for which it was named in 1797. An aragonite cave, the Ochtinská Aragonite Cave, is situated in Slovakia. In the USA, aragonite in the form of stalactites and "cave flowers" (anthodite) is known from Carlsbad Caverns and other caves. Massive deposits of oolitic aragonite sand are found on the seabed in the Bahamas.

Aragonite forms naturally in almost all mollusk shells, and as the calcareous endoskeleton of warm- and cold-water corals (Scleractinia). Because the mineral deposition in mollusk shells is strongly biologically controlled, some crystal forms are distinctively different from those of inorganic aragonite. In some mollusks, the entire shell is aragonite; in others, aragonite forms only discrete parts of a bimineralic shell (aragonite plus calcite). Aragonite also forms in the ocean and in caves as inorganic precipitates called marine cements and speleothems, respectively. The nacreous layer of the aragonite fossil shells of some extinct ammonites forms an iridescent material called ammonite. Ammonite is primarily aragonite with impurities that make it iridescent and valuable as a gemstone.

Aragonite is metastable and is thus commonly replaced by calcite in fossils. Aragonite older than the Carboniferous is essentially unknown.

Physical properties

Aragonite is thermodynamically unstable at standard temperature and pressure, and tends to alter to calcite on scales of 107 to 108 years. The mineral vaterite, also known as $\mu\text{-CaCO}_3$, is another phase of calcium carbonate that is metastable at ambient conditions typical of Earth's surface, and decomposes even more readily than aragonite.

TAR HEEL GEM & MINERAL CLUB, INC

Membership Application
2012

Date _____ Renewal New Membership

Applicant Name _____

_____ birth month

Additional Names _____ birth month

_____ birth month

_____ birth month

Address _____

Street City

State

Zip

Telephone (____) _____

E-Mail Address _____

Would you like to receive the newsletter via email rather than mail? YES NO

Would you like to be a volunteer in the annual club gem & mineral show? YES NO

Will you be an active participant on field trips and like to be notified about them? YES NO

Please check your interests –

	Applicant	additional members		
Mineral collecting	_____	_____	_____	_____
Fossil collecting	_____	_____	_____	_____
Gold smithing	_____	_____	_____	_____
Silver smithing	_____	_____	_____	_____
Wire wrapping	_____	_____	_____	_____
Cabbing	_____	_____	_____	_____
Faceting	_____	_____	_____	_____
Jewelry making	_____	_____	_____	_____
Other _____	_____	_____	_____	_____

**PLEASE RETURN THIS FORM WITH PAYMENT TO
TAR HEEL GEM & MINERAL CLUB, INC.
10609 CHELSEA DR. RALEIGH, NC 27603**

Annual dues are \$20.00 for the first member and \$5.00 for each additional family member over the age of 12.

UPCOMING SHOWS

January 13-15, 2012: Largo, FL. Pinellas Geological Society 36th Annual Show. Location: Largo Cultural Center, Parkside Room. Contact: Hugh Sheffield at 727-894 -2440 or 727-707-3236.

January 15-16, 2012: DeLand, FL. 39th annual show; Tomoka Gem & Mineral Society; Volusia County Fair Grounds, State Rte. 44; Sat. 10-6, Sun. 10-5; adults \$4, children 12 and under free. Contact Florence D. Nordquist (386) 226-4032; [e-mail: fn设计@aol.com](mailto:fn设计@aol.com); Web site: www.tomokagms.org

January 28 & 29, 2012: Panama City, FL. Panama City Gem & Mineral Society 21st Annual Show. Location: Bay County Fairgrounds. Contact: Joseph Schings at 850-871-1846 or by [email: mojo3002@comcast.net](mailto:mojo3002@comcast.net).

February 11-12, 2012: Merritt Island, FL.- The Central Brevard Rock & Gem Club. Symphony of Gemstones Festival, Kiwanis Island Park, 951 Kiwanis Island (on Hwy 520 west of Walmart). Hours: Sat & Sun 10-5. Adults \$4/day. Demos, door prizes, & lapidary exhibits. Contact show chair Ray Huntington 321-799-8536.

February 25, 2012: Lakeland, FL. Imperial Bone Valley Gem, Mineral & Fossil Society, 8th Annual Gem, Mineral & Fossil Show & Sale; Sat: 10-4, First Presbyterian Church, 175 Lake Hollingsworth, Lakeland. Show contact: Jim Reed, 863-644-6665. [Email: rocks57@tampabay.rr.com](mailto:rocks57@tampabay.rr.com)
<http://www.bonevalley.net>

February 29– March 1, 2012: Panama City , FL. Panama City Gem & Mineral Society. Bay County Fairgrounds, 2230 E. 15th St. Contact: Joseph Schings, 850-871-1846 or [e-mail: mojo3002@Comcast.net](mailto:mojo3002@Comcast.net)

March 2-4, 2012: St. Petersburg, FL - The Suncoast Gem & Mineral Society. 42nd Annual Gem, Jewelry & Mineral Show and Sale, Minnreg Building 6340 126th Ave. N., Largo, FL 33773. Hours: Fri & Sat 10-6, Sun 10-5. Free parking. Contact Bill Schmidt, Show Chair, 727 822-8279 or [e-mail: SGAMSGemshow@gmail.com](mailto:SGAMSGemshow@gmail.com). See <http://www.sgams.com/Shows/show.html>

Mar 9-11, 2012: Augusta, GA - Aiken Gem, Mineral & Fossil Society. 23rd Annual Aiken-Augusta Gem, Mineral and Fossil Show, Julian Smith Casino, 2200 Broad St. Hours: Fri & Sat 10am-7pm, Sun 10am-4 pm. Admission: \$3 Adult, children under 16 FREE with an adult. Information and Group Reservations: H. Kunis (706) 855-7357
<http://www.aikengmfs.org> or www.augustagemandmineralsociety.org.

March 16-18, 2012: Rome, GA. Valley and Ridge Gem and Mineral Show. Rome Georgia Mineral Society, Fri-Sat 10am-6pm; Sun 11am-5pm. The Forum, 2 Government Plaza, Rome, GA. Minerals, gems, fossils, jewelry, crystals, demonstrations, door prizes, exhibits. Show contact: Jose Santamaria 770.606.5700 ext 401 [Email: rogams.show@gmail.com](mailto:rogams.show@gmail.com)
<http://rogams.wordpress.com/gem-and-mineral-show/>

March 24-25, 2012: Tampa, FL. "Fossil Fest 2011"; Tampa Bay Fossil Club; Florida State Fairgrounds, US 301 and I-4; Sat. 9-6, Sun. 10-4; fossils, artifacts, gems, minerals, shells, exhibits, "how to" seminars, kids' games, fossil mine, raffles, door prizes, silent auction; contact Barbara Fite, (813) 977-0892; [email: bfite@tampabay.rr.com](mailto:bfite@tampabay.rr.com); Web site: www.tampabayfossilclub.com

Vugsites

The following are some links to Web-Sites that may interest some of our members:

<http://www.amfed.org/> / <http://www.amfed.org/sfms> These are the official sites for the organizing body that the Tar Heel Gem & Mineral Club is founded under. I would strongly urge all members to check them out on a regular basis.
http://www.amfed.org/sfms/lodestar_newsletter.html The SFMS Lodestar Newsletter
<http://www.carolinageologicalsociety.org/CGS/Home.html> This site provides numerous downloadable field-trip guide books, maps, and charts of the Carolinas. It will prove to keep any avid rock hound busy for years. Great Site!
http://www.ncminerals.com/ncmineralswebsite_files/page0011.htm And while we are on the subject, try this link. Its titled: Links of Interest to Rock hounds in NC; It will take you to a list of links for North Carolina gems and minerals.
<http://www.rocksforkids.com/> Just like the name says, A nice place to steer the younger members.
information & photographs of over 6300 specimens from the Glenn & Martha Vargas Gem & Mineral Collection.
<http://www.rockhoundlounge.com> Scott Laborde, a club member maintains his own web site that might be of interest to people collecting in and around Wake County.
http://www.msnbc.msn.com/id/29726500/ns/technology_and_science-science This site highlights a half dozen of the most recent significant fossil finds.
<http://appmodo.com/13971/mole-quest-for-the-terracore-gem-app-review-for-the-iphone-and-ipod-touch/> If you have an iphone or an ipod touch, this rock-hounding may be the game for you.

I would like to encourage all members of the THG&MC that maintain their own presence on the internet to send me a link to their site to be published in future Vugsites so that other club members may learn and enjoy the craft, the art, the interests that many of us have in common.

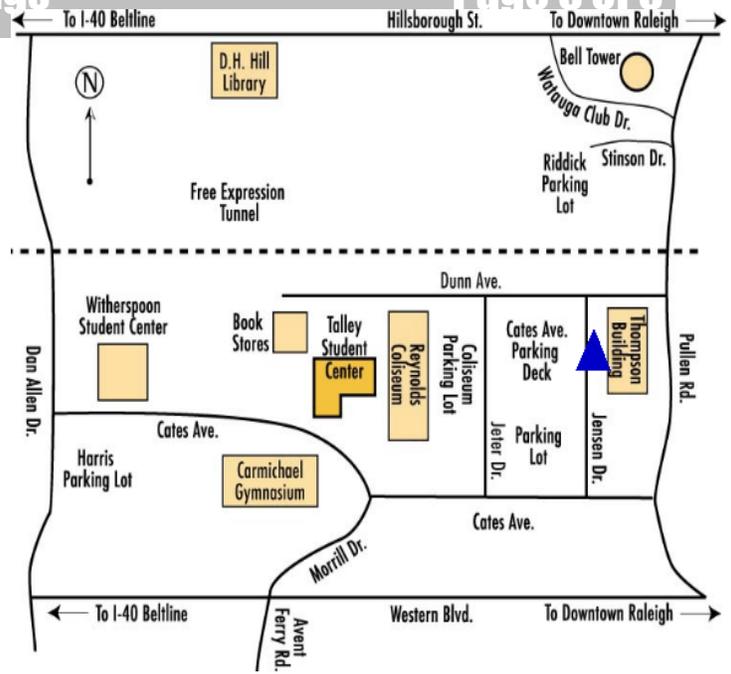
Park in the Cates Ave. Parking Deck off Jensen Dr. Enter Thompson Building directly across from the parking lot.

Our Next Meeting is January 17, 2012 @ 7:30PM Thompson Building / NCSU Campus.

About Our Organization...

The Tar Heel Gem and Mineral Club was formed in 1974 as a nonprofit educational organization for people who enjoy the lapidary arts, earth sciences, and related subjects. The main objectives of the club are to investigate, preserve, and share knowledge of rocks, minerals, and precious stones, and to promote interest in mineralogy, paleontology, earth sciences, and lapidary techniques, among club members and among the general public. The club pursues these goals through publications, meetings, lectures, field trips, exhibits, demonstrations, and other activities.

Come and be a part of the Fun!



TAR HEEL GEM & MINERAL CLUB
10609 Chelsea Drive
Raleigh, NC 27603

