EARTHQUAKE

e-Newsletter about what's movin' and shakin' at the Earth Science Museum

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August 2015
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ESM NEWS and EVENTS

By Shirley Cote, Ray Grant and Harvey Jong

OUTREACH REPORT – August 2015

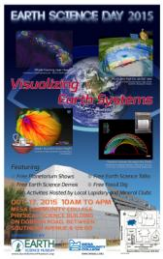
By Mardy Zimmermann, Outreach Coordinator

Stem Journals is a local video show produced by Cox Communications that airs on Cox 7 Arizona. The program travels the state searching for interesting scientific discoveries to get students excited about careers in Science, Technology, Engineering and Math (STEM).

One of Earth Science Museum's outreach volunteers, Lynne Dyer, along with fellow members of the Mineralogical Society of Arizona (MSA) starred in a *STEM Journal's* episode. Lynne, fellow MSA members, and ASU geologists worked with "Paint It Black" TV Productions producer David Routt, to produce two episodes - "Rocks & Minerals" and "Rockhounding with Lynne Dyer". Some of the filming was made near Potts Canyon off Queen Valley Road where Lynne provides Brad Piccirillo, a *STEM Journals* Investigator, with tips on collecting rocks. Here are some links to the episodes:

1. "Rocks & Minerals" http://www.cox7.com/video/rocks/
2. "Rockhounding with Lynne Dyer" http://www.cox7.com/video/rockhound/

EARTH SCIENCE DAY
OCTOBER 17, 2015
MESA COMMUNITY COLLEGE
Southern & Dobson Campus
Physical Science Building
10 a.m. - 4 p.m.



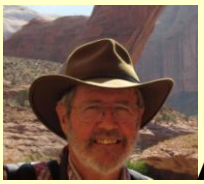
Join in this fun-filled family event and become amoung the first to view a special screening of the upcoming, three-part NOVA-PBS series "Making North America". The series, which will air on November 4, 11, and 18, 2015, on **PBS** presents a sweeping exploration of how the North American continent was formed. Dr. Kirk Johnson, renouned paleontologist and current Director of the Smithsonian National Museum of Natural History, hosts a spectacular road trip that traces the geological development of our continent.

FREE ADMISSION—FREE PARKING

PLANETARIUM SHOWS
10:15 a.m., 12:30 p.m. & 2:30 p.m.
(Seating is limited and free tickets should be picked up at the information table)

"ROCK, MINERAL & FOSSIL ROADSHOW"
Have up to five rocks, mineral or fossil specimens identified for free

BOOTHS BY LOCAL MINERAL AND LAPIDARY CLUBS
Featuring spinning wheels with rock, mineral or fossil prizes and hands-on rock art petroglyphs A small fee is charged for these activities.



Arizona Rocks 27

Text and photos by Ray Grant

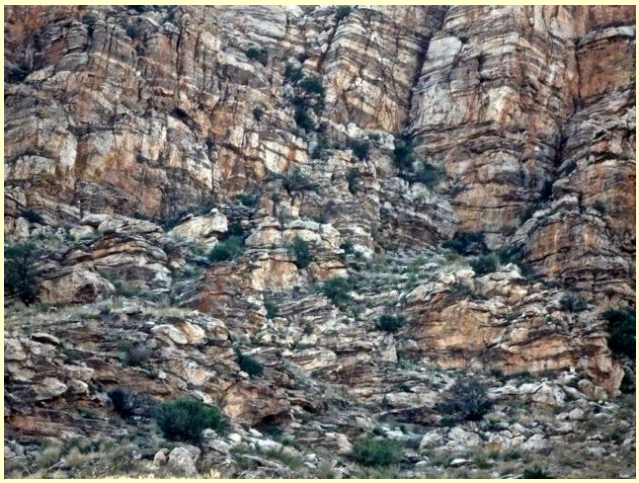
The last foliated metamorphic rocks are ones with a banded texture. It is a combination of foliated and massive textures with a coarse grain size. Some of the minerals present are platy or needle like and some are irregular. This gives the rock a banded look with bands that are foliated and alternating bands that are massive and the name is gneiss (pronounced nice).

Gneiss forms mainly from the metamorphism of igneous rocks. If granite is put under pressure any mica in the granite will line up, the foliated part, while the quartz and feldspar will form the massive bands. This rock would be referred to as granite gneiss. Basalt or gabbro that is metamorphosed to a fairly high grade will contain amphibole the foliated bands, and plagioclase the massive bands. This rock is amphibole gneiss that is often shortened to amphibolite.

In the Phoenix area the Estrella Gneiss is present in the western half of South Mountains, the Sierra Estrella Mountains, and the White Tank Mountains. In these mountain ranges, the Estrella Gneiss consists of amphibole gneiss, biotitic gneiss, and granite gneiss. The Elves Chasm Gneiss is found in the Precambrian rocks in the Grand Canyon, and there are many other scattered locations around the state with gneiss including the Santa Catalina Mountains. The Arizona Geology blog has a connection to a story about gneiss in Sabino Canyon in the Santa Catalina Mountains, http://arizonageology.blogspot.com/2011/04/sabino-canyons-gneiss-rocks.html. Next time, the massive metamorphic rocks.

Estrella Gneiss from South Mountain Park

Gneiss in Cottonwood Canyon north of Florence, AZ



Granitic gneiss of the Santa Catalina Mountains
Photo by S. Coté

AZ Rock & Gem Shows

Mingus Gem & Mineral Club
ANNUAL SHOW
October 2, 3, 4, 2015
Elks Club Lodge
100 S. Broadway
Clarkdale, AZ
Fri. & Sat. 9-5, Sun. 10-4
Adults $2; Children Free w/paid adult

West Valley Rock & Mineral Club
HELZAROCKIN' GEM & MINERAL SHOW
October 9, 10, 11, 2015
Helzapoppin' Arena
802 N. 1st Street (Miller Road)
Buckeye, Arizona
9 a.m. – 4 p.m. daily
Adults $3; kids under 12 free

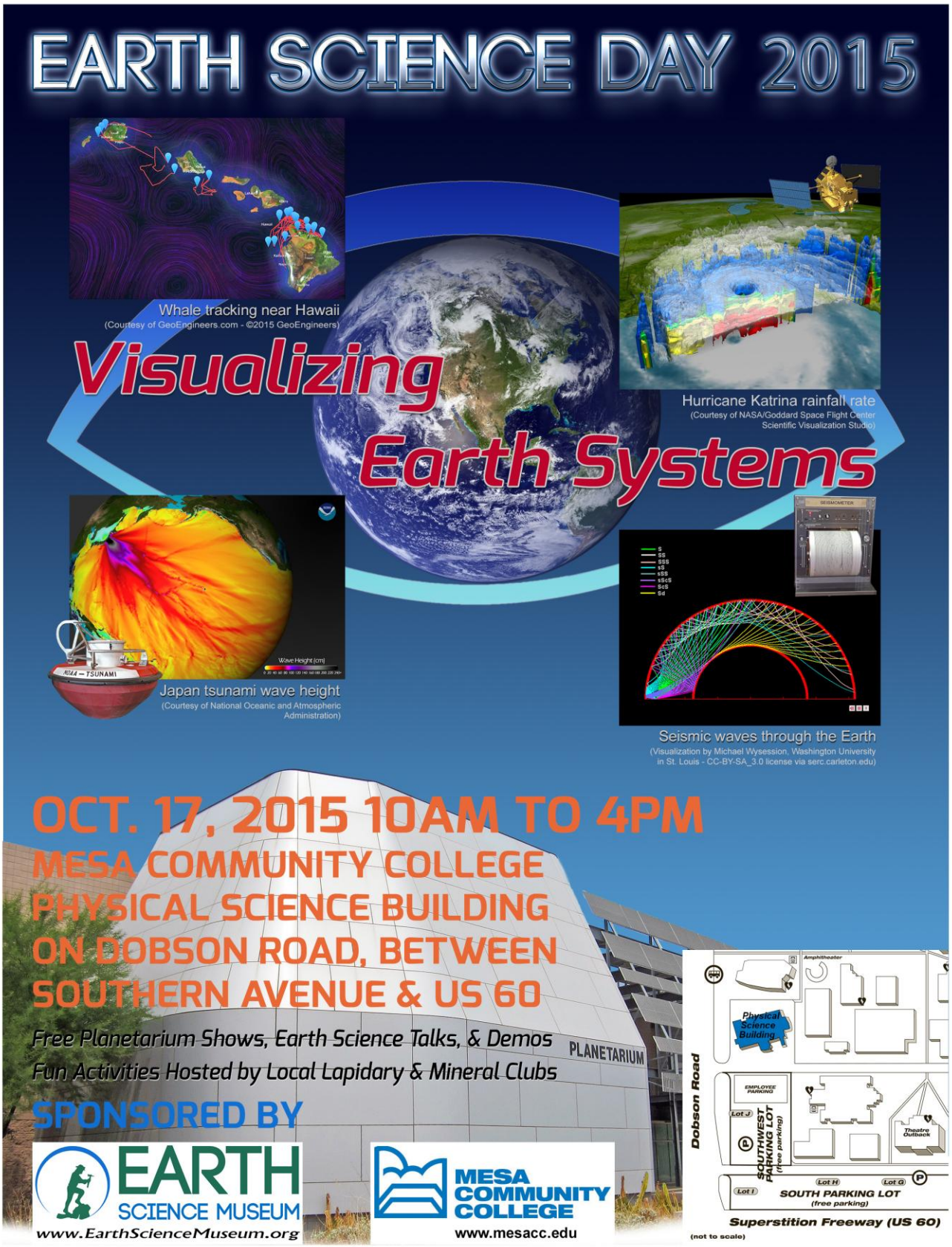
Huachuca Mineral and Gem Club
41st Annual Gem, Mineral & Jewelry Show
October 10, 11, 2015
Cochise College
901 N. Colombo Ave.
Sierra Vista, AZ
9 a.m. – 5 p.m.
Free admission & parking

Sedona Gem & Mineral Club
16th Annual Show and Sale
October 17, 18, 2015
Sedona Red Rock HS
995 Upper Red Rock Loop Rd.
Sat. 10-5, Sun. 10-4
Adults $3, Children under 12 free

High Desert Helpers
ROCK-A-RAMA
39th Annual Gem and Mineral Show
October 30, 31, November 1, 2015
High Desert Park
19001 Jacie Lane
Black Canyon City
9 a.m. – 4 p.m. daily
Free Admission and Parking

Apache Junction Rock & Gem Club
JEWELRY, GEM & ROCK SHOW
November 21, 22, 2015
Apache Junction High School
2525 S. Ironwood Dr.
Apache Junction, AZ 85120
Sat. 9 – 5, Sun. 10-4
Adults $3 ($2.50 with coupon)
Teenage students (with student ID) $1
Children 12 and under free

Flagg Mineral Foundation
44th Annual
Phoenix Area's Largest
Gem & Mineral Show
FLAGG GEM AND MINERAL SHOW
January 8, 9, 10, 2016
Mesa Community College
Dobson Rd. North of the Superstition Freeway (Route 60)
Mesa, AZ
Southwest parking lot
9 – 5 daily
Free Admission & Parking



Harvey Jong Poster Creations

ESM's Upcoming Meeting

The Earth Science Museum's next scheduled Board meeting on September 9, 2015, at the Burton Barr Library, located near Central Ave. and McDowel in Phoenix at 6:30 p.m. in Rm. B. Everyone is welcome to attend.

BECOME A MEMBER!
Join the Earth Science Museum's

esi: Earth Science Investigation team

MANY THANKS TO OUR MAJOR DONORS!

AZ Leaverite Rock & Gem Society
www.azleaverite.org

Flagg Mineral Foundation
www.flaggmineralfoundation.org

Friends of the AZ Mining & Mineral Museum

Maricopa Lapidary Society
http://maricopalapidarysociety.com/

Mineralogical Society of AZ
www.mineralogicalsocietyarizona.org

White Mountain Gem & Mineral Club
www.whitemountain-azrockclub.org

Wickenburg Gem & Mineral Society
http://www.wickenburggms.org
www.facebook.com/pages/Wickenburg-Gem-and-Mineral-Society/111216602326438

Staples Foundation
www.staplesfoundation.org

Anita Aiston
Stan & Susan Celestian
Russ Hart
Will & Carol McDonald
Debbie Michalowski
Dennis & Georgia Zeutenhorst

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ESM Earth Science Investigation Team Membership Form

_____ New Member _____ Renewal

Membership levels:

_____ **ESI Family $20**

_____ **ESI Individual $10**

_____ **ESI Student** (16 & under) **$5**

Membership benefits:

- Monthly e-newsletter *Earthquake*
- Official team membership card
- Knowledge that your contribution is making a difference in earth science education.

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Name: _____

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Mail form & payment to: Earth Science Museum
3215 W. Bethany Home Rd., Phoenix, AZ 85017

For Office Use Only

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MINERAL WORD SEARCH

E	A	L	K	B	S	H	Z	A	Q	A	K	Q	J	S	L	C	N	Z	O	O	M	T	J
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CORAL
DIAMOND
DOLOMITE
EMERALD
EPIDOTE
GARNET
GYPSUM
JADE
JASPER
LAPIS LAZULI
MOONSTONE
OPAL
PEARL
PERIDOT
PYRITE
QUARTZ
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We're on the Web!

Visit us on *and at:*

www.earthsciencemuseum.org

Mission
Our Mission is to excite and inspire all generations about earth sciences through educational outreach.
Vision
We envision a community where students and the general public have curiosity about, passion for, and understanding of the underlying principles of earth sciences.

For more information about the ESM, how to become a member or how to arrange for a school visit or Community function, go to: www.earthsciencemuseum.org.

Please join us at the next ESM Board meeting Wednesday, September 9, 2015, at the Burton Barr Library in Phoenix at 6:30 p.m. Rm. B.

THANK YOU FOR YOUR CONTINUING INTEREST & SUPPORT!!!

EARTH SCIENCE MUSEUM
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