GEM SCOOPS

Vol. 53, No. 2 Pendleton District Gem and Mineral Society February 2015

The Geology of the Grand Canyon

President's Remarks

We are being treated by another program this month by Scott Brame, "Geology of the Grand Canyon from the Water Up." In Scott's words, "A trip down the Colorado River through the Grand Canyon is a whitewater and geologic dream journey. Starting at Lees Ferry, it is a 215 mile long trip through a 5000 foot deep gorge with over 100 rapids that cuts through Paleozoic sandstones, shales, and limestones into metamorphic and igneous crystalline basement rocks composed of the Vishnu Schist." Scott, a faculty member in the Clemson geology group, is a fabulous presenter. It's sure to be fascinating.

The March program promises another geologic delight. Dr. Richard Warner, Professor Emeritus, also from the Clemson geology group, will present "Mt. St. Helens, Lassen Peak, and Katmai: Three 20th Century Explosive Eruptions." And in April, Jocelyn Campbell, a professional wire-wrapper and teacher will demonstrate her skills. I am looking forward to turning some fairy crosses into pendants as a result of watching her.

We are in the process of developing a "Right Beneath Your Feet" display at the Bob Campbell Geology Museum. Please bring your ideas Tuesday of what local minerals should be displayed and from where. Another "Right Beneath Your Feet" display is in the process of being moved from the Seneca Public Library.

Carol

FEBRUARY MEETING

WHEN: February 17, 2015 at 7:00 p.m.
WHERE: The Olli Classroom Building
SPEAKER: Scott Brame, Faculty at Clemson
TOPIC: THE GEOLOGY OF THE GRAND CANYON

A trip down the Colorado River through the Grand Canyon is a whitewater and geologic dream journey. Starting at Lees Ferry, it is a 215 mile long trip through a 5000 foot deep gorge with over 100 rapids that cuts through Paleozoic sandstones, shales, and limestones into metamorphic and igneous crystalline basement rocks composed of the Vishnu Schist.

Scott Brame is a member of the faculty at Clemson, who has led several geologic field trips to Southern Utah. He organizes and creates geologic field trips for the annual Clemson Hydrogeology Symposium and mentors an undergraduate mapping research group.

Refreshments will be served. Visitors are always welcome.

Abbreviated Minutes

The January meeting of the PDGMS was a presentation on the geology of Southern Utah by Scott Brame. Twenty members and visitors were present. The "Right Beneath Your Feet" display was discussed.

SFMS 2015 Workshop Schedule

Session One – William Holland
SUNDAY, June 7-13, 2015

Session Two – Wildacres
MONDAY, August 17-23, 2015

Session Three – Wildacres
MONDAY, September 21-27, 2015

MARCH MEETING

The next meeting of the PDGMS will be on MARCH 17, 2015. Put it on your calendar.

Fluorite Gemstones and Minerals

Fluorite is one of the most fascinating minerals in the world, with many intriguing properties. It is a material with important industrial applications, as well as a great favorite of mineral collectors. It is also popular as a gemstone, though it has to be cut, set and worn with care. In fact fluorite is such a special mineral that it was the official theme of the Tucson Gem & Mineral Society at the Tucson gem show in 2013.

By chemical composition, fluorite is calcium fluoride. It is an isometric mineral that usually forms in cubic crystals, though octahedral and more complex isometric forms are seen as well. Because fluorite produces well-formed crystals in several different habits, interesting specimens are very popular with collectors. Cubic crystals are the most recognized, followed by the octahedral. Fluorite has perfect octahedral cleavage with 4 identical directions of cleavage, and cleaved fluorite octahedrons can be found in many mineral shops. Another distinctive characteristic of fluorite is the fluorescence that it displays under ultraviolet light. In fact, fluorite was one of the first fluorescent minerals studied, and the very term fluorescence comes from "fluorite." The visible light emitted is most commonly blue, but red, purple, yellow, green, and white also occur. The fluorescence of fluorite is thought to be due to mineral impurities in the crystal lattice. Fluorite has generated interest as a gemstone because of its wide range of colors and its attractive luster. Fluorite is found in nearly every color, ranging from purple and blue to green, yellow, orange, red, pink, and brown. Banded multi-colored specimens are common, and a color-change variety is rare but known. The color-change can be well-defined, typically showing a change from blue under natural light to purple under incandescent light.

Because fluorite is a relatively soft material --- rating on 4 on the Mohs scale --- it is suitable mainly for earrings and pendants. It can be challenging to cut because of its perfect cleavage and it has to be handled carefully when set in jewelry.

http://www.ajsgem.com/articles/fluorite-gemstones-and-minerals.htm