

The Petoskey Stone

OAKLAND COUNTY EARTH SCIENCE CLUB
WWW.OCESC.COM

JUNE 2018

Our June 6th Banquet Starts Early -6:30

Hi everyone,

Our June 6th banquet will be the last meeting for the club until September. We will start early, at 6:30 PM. Bring a dish to pass, and the club provides the meat, beverages, and table service.

Bring a mineral, rock or fossil to the meeting to talk about. After June 6th, our next meeting will be September 5th. There will be no meeting in July or August. However we do have a club potluck picnic, held jointly with the Livingstones club, on July 22. (See details in the meeting minutes) Watch for a reminder email as that date approaches.

Tony's Rocky Garage Sale will be on June 7-9th and June 14-17th, from 9am-5pm. Lots of rocks and minerals, beaded jewelry and related items, and household items. Also, a 20" lapidary saw and a 14" Diamond Drop saw. Tony West's address is 3679 Milford rd, Highland, 2miles North of M-59.

OCES GENERAL MEETING FOR MAY 2, 2018: No Board Meeting this month. Dwight Keith called General Meeting to order at 7:30 pm. No Minutes from the April Auction.

Leon Pearson gave the Treasurer's Report. We made **\$1,846 from the Silent Auction**; Treasurer's Report was motioned and approved. The Grinding Room has been well attended with lots of regulars; having trouble with one of the saws. Talked to Lori at Waterford Parks & Rec about putting up a poster advertising our club. The **Summer Potluck Picnic will be on Sunday, July 22** at the Drayton Plains Fish Hatchery; starts at 8:00 am with lunch at 12:00 noon. Our **June Banquet** will be on **JUNE 6th**; the club will furnish the meat, so bring a **dish to pass**. Also, please bring a specimen to talk about. Possible trip to Kentucky to look for **geodes** with Jim & Pat Rives this summer. **Tony's Rocky Garage Sale** will be on June 7-9th and June 14-17th. Welcome to our visitor, **Patricia Smith**. A big thank you to the birthday girls, **Jackie and Monica** for the great table of food treats. Adjourned at 8:00 pm.

Respectfully submitted, Chris Shull, Secretary.

New Petoskey Stone Format

Well, my old computer is limping along and I am in the process of moving our newsletter to a new computer, and a new type software. So please bear with me during the process! Birthdays won't appear this issue, so Happy Birthday to all our summer folks! Please refer to previous June issues for some of the folks who celebrate in summer. The club officers page isn't converted yet, and should return in September. So please see any previous newsletter for that info. Newsletters are posted on www.OCESC.com (thanks to Dave Whitehead for that!)— Laura Sheffer

OAKLAND COUNTY EARTH SCIENCE CLUB
Christ Lutheran Church
5987 Williams Lake Road

Waterford MI 48329 Club Web Site—www.OCESC.com

Editor: Laura Sheffer, e-mail: lsheffer1@comcast.net note that the first email ID character is a lower case 'l' as in 'Laura', and the last character is the digit '1' as in '1-2-3'

Midwest Federation Library: Rentals are open to all club members. \$5 each DVD- contact Pat Powers, e-mail SLCNewsletter@aol.com

General Meeting: First Wednesday each month (except December), September through June at 7:30 PM Board Meeting: Same day as General meeting, at 6:30 PM General and Board meeting are held at Christ Lutheran Church.

Purpose: To associate the member families, to promote activities that help families learn about Earth sciences and lapidary arts, and to cooperate with other similar organizations.

Grinding classes and workshops are held at the Waterford Recreation Center building- 5640 Williams Lake Rd.

Open hours in the grinding room- \$3.00/person/day.

UV Lamp Safety from GEOLOGY.COM

Ultraviolet wavelengths of light are present in sunlight. They are the wavelengths that can cause sunburn. UV lamps produce the same wavelengths of light along with shortwave UV wavelengths that are blocked by the ozone layer of Earth's atmosphere. Small UV lamps with just a few watts of power are safe for short periods of use. The user should not look into the lamp, shine the lamp directly onto the skin, or shine the lamp towards the face of a person or pet. Looking into the lamp can cause serious eye injury. Shining a UV lamp onto your skin can cause "sunburn."

Eye protection should be worn when using any UV lamp. Inexpensive UV blocking glasses, UV blocking safety glasses, or UV blocking prescription glasses provide adequate protection when using a low-voltage ultraviolet lamp for short periods of time for specimen examination.

The safety procedures of UV lamps used for fluorescent mineral studies should not be confused with those provided with the "blacklights" sold at party and novelty stores. "Blacklights" emit low-intensity longwave UV radiation. The shortwave UV radiation produced by a mineral study lamp contains the wavelengths associated with sunburn and eye injury. This is why mineral study lamps should be used with eye protection and handled more carefully than "blacklights."

UV lamps used to illuminate large mineral displays or used for outdoor field work have much higher voltages than the small UV lamps used for specimen examination by students. Eye protection and clothing that covers the arms, legs, feet and hands should be worn when using a high-voltage lamp.

Difference between fluorescence and phosphorescence- **Fluorescence** is a type of luminescence that emits visible light as long as there is a supply of excitation energy. Chemicals in the exoskeleton of a scorpion will glow as long as a **black light** (light that emits UVA) shines

on the scorpion. Turn off the light, and the exoskeleton stops glowing. Thus, the chemicals in the scorpions exoskeleton are **fluorescent**.

Phosphorescent materials produce light in a similar way as does **fluorescence** materials. A visible difference between these two types of luminescence, the ability of **phosphorescence** materials to glow after the excitation energy source is removed. Some **phosphorescence** phosphors glow for a few minutes, while other may glow for days. An example-Glow in the dark toys that, when exposed to sunlight, glow when placed in a dark room.

How Many Minerals Fluoresce in UV Light?

Most minerals do not have a noticeable fluorescence. Only about 15% of minerals have a fluorescence that is visible to people, and some specimens of those minerals will not fluoresce. [2] Fluorescence usually occurs when specific impurities known as "activators" are present within the mineral. These activators are typically cations of metals such as: tungsten, molybdenum, **lead**, boron, titanium, manganese, uranium, and chromium. **Rare earth elements** such as europium, terbium, dysprosium, and yttrium are also known to contribute to the fluorescence phenomenon. Fluorescence can also be caused by crystal structural defects or organic impurities.

In addition to "activator" impurities, some impurities have a dampening effect on fluorescence. If iron or **copper** are present as impurities, they can reduce or eliminate fluorescence. Furthermore, if the activator mineral is present in large amounts, that can reduce the fluorescence effect.

Most minerals fluoresce a single color. Other minerals have multiple colors of fluorescence. Calcite has been known to fluoresce red, blue, white, pink, green, and orange. Some minerals are known to exhibit multiple colors of fluorescence in a single specimen. These can be banded minerals that exhibit several stages of growth from parent solutions with changing compositions.

The extended after glow time for **phosphorescent** materials is due to the excited electrons jumping to higher energy levels than do excited electrons for **fluorescence** luminescence.

Excited electrons can be compared to a ball sitting on a stair step above the ground level. The higher the step the more energy needed to raise the ball to that level. The stair steps for **fluorescence** can be visualized as being flat, like any steps on stairs. A ball on these flat steps could easily roll down the stairs. The same is true for excited electrons producing **fluorescence** luminescence.

For **phosphorescence** think of stair steps with raised edges. It would be more difficult for a ball to roll down these steps. In like manner, excited electrons that produce **phosphorescence** luminescence are trapped temporarily on each energy level. Photons continue to be emitted as the excited electron moves around until it finally has a path back to its ground state. (from geology.com and wikipedia)

For more on fluorescent minerals see <https://uvminerals.org/fms/minerals>

Oakland County Earth Science Club
c/o Christ Lutheran Church
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What a beautiful, sunny morning. It makes you happy to be alive, doesn't it? We can't let the sun outshine us! We have to beam, too!

Takayuki Ikkaku, Arisa Hosaka and Toshihiro Kawabata,
Animal Crossing: Wild World, 2005