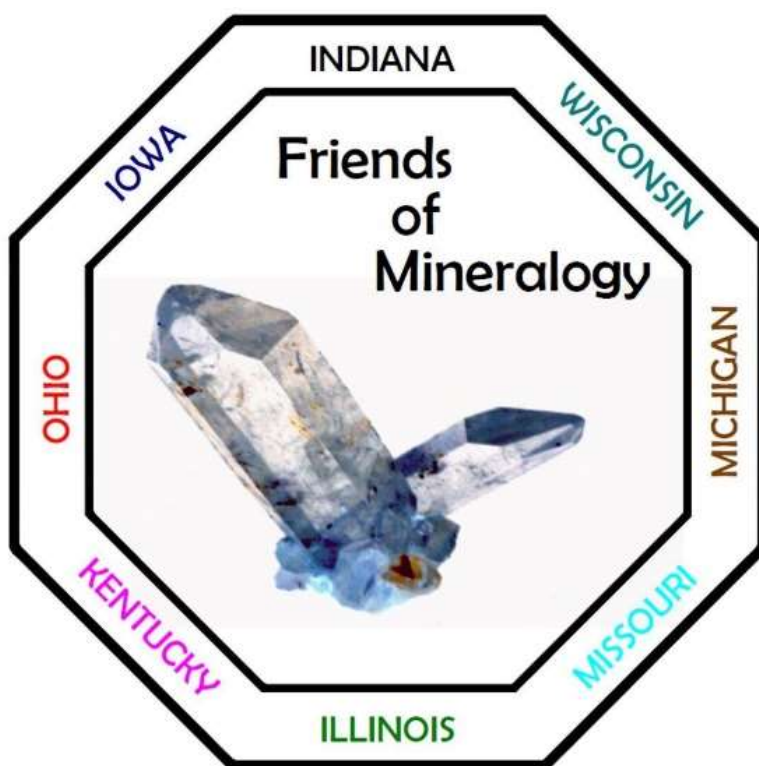


FRIENDS of MINERALOGY

Midwest



*Chapter Newsletter for
May – June 2021*

Treasurer's Report

Treasurer@fommidwest.org

Treasurer's Report – 4/15/2021

Due to our extension of 2020 member registrations we currently have 88 active members. Some of those receiving this newsletter may not have paid 2020 dues and have yet to pay 2021 dues.

Membership registrations and \$20.00 dues payments are still due March 1st for new members or those who did not pay 2020 dues. If you have any questions at all about your status please contact me at Treasurer@fommidwest.org

At last report, we had \$8699.00 in our account. We received an additional \$40.00 in donations and our \$650.00 insurance premium was paid. This leaves us with \$8,089.89.

Jeff Spencer – Treasurer

Friends of Mineralogy Midwest Chapter

513-476-2163

Request for older editions of the FM Newsletter.

Particularly editions from before 2010 would be appreciated. We are trying to get them archived and available on our website. Please scan and send them to tbolka@att.net and I will pass them along.

Friends of Mineralogy, Inc. Midwest Chapter Officers' Meeting Notes- April 3, 2021

Invitations for a meeting to discuss updated information regarding field trips and safety training were distributed to current officers, and also to FM Midwest member Scott Kell, who has provided annual safety training sessions to FM Midwest members, among others, for many years. The meeting was originally scheduled for 7:00 PM on March 31, 2021 but was subsequently rescheduled for 7:00 PM on April 3, 2021. The meeting was convened at 7:08 PM. The following attended the meeting: Treasurer Jeff Spencer, Field Trips/Safety Officer Reggie Rose; Liaison Officer Randy Marsh; Secretary Frank Konieczki; and Scott Kell.

Field trips were discussed first. They have always been an important activity to our members, and the present and future status of collecting trips was discussed at length. Field Trips/Safety Officer Reggie Rose informed the attendees that 2021 field trips are still on hold. There are no confirmed dates for field trips in 2021, but that may change, depending on accessibility to both quarries and training. Reggie noted that the five quarries where FM has most recently enjoyed collecting trips (Auglaize, Genoa, Marblehead, South Rockwood and Williamsport) still have both worker and visitor restrictions in place, so the possibility of field trips in the short term is dim. One quarry's most recent response was "Now, at a time when restrictions are being relaxed our parent company has asked us to stay the course and we have updated a few restrictions in our policy. I am unable to see the future and will not have any idea when these restrictions will be lifted to allow us to get back to any kind of "business as usual". We are struggling with our own inner company meetings and group activities that we host at our facilities."

Training was also extensively discussed. Scott Kell has graciously provided FM Midwest members with in-person, collector specific training for many years, and he also provides safety training to other groups. Unfortunately, although in-person classes have resumed on some Ohio campuses, scheduling rooms for outside groups remains prohibited, so two possible training sites, namely Wittenberg and Miami, are currently unavailable. Randy Marsh noted that the first Ohio show to confirm that it will take place is Mansfield. It was suggested that the Mansfield site could be used as a training site later in the year.

Alternatively, safety training could be done online. This option may be feasible, and there was one past exploration to have an online version of the current module. The 2019 Columbus training session was recorded in hopes that it could be used as a basis for an online course; however, the sound quality was not consistently good, especially when participants were speaking to the instructor and the attendees. There is encouraging news concerning a more recent effort to institute online training. Craig Kramer has developed an eight-section virtual training module that includes a quiz at the end and an affidavit of course completion. The format could also allow for development of a table showing scores and time spent completing the module. Scott indicated he will be meeting with the Columbus club's executives to discuss the virtual training module, with hopes that a virtual training session could be used to meet and document FM's safety training requirements. All attendees agreed this was a good idea. Jeff Spencer stated there are several providers that host this type of platform, but none are free, even for non-profit organizations. One part of the process that

would be more cumbersome with online training would be distribution of the training certification documents, but they could be mailed or distributed onsite if a field trip confirmed.

There was a consensus among the attendees that another meeting should be scheduled after Scott Kell meets with the Columbus executives, and everyone present agreed that further information regarding training and field trips status will be shared with the members as it becomes available.

Meeting adjourned: 8:07 PM.

Respectfully submitted by Frank Konieczki, Secretary

Interesting Responses to UV Radiation by a Calcite Specimen by, Calvin Harris

Introduction

A noteworthy fluorescent calcite specimen from Rosiclare District is featured in this article. This specimen consists of two sections that have distinct crystalline forms and contrasting luminescent responses. Interestingly, they share a response generated by a non-conventional source of ultraviolet radiation.

One section exhibits a tan chromatic value in daylight that approximates the fluorescent response. The other section consists of crystals that are milky-white and the fluorescent response is a variation of white coloration. These fluorescent responses are consistent with reported findings. However, the phosphorescence observed could not be confirmed with published references. Both sections exhibit a red-orange phenomenon known as *flash* or brief intense phosphorescence.

A detailed description the luminescent characteristics of this specimen will be provided. An explanation of the possible causes of these effects will be offered.

Geological Setting

The Rosiclare District is an area, where several mines operated along a vein deposit that runs from Southwest Hardin County to Southeast Pope County. It is located in the far southeast section of Illinois near the Ohio River and is part of the Illinois-Kentucky Fluorspar District. The district is a Mississippi Valley Type deposit (MVT), where low temperature (50°-200° C), lead and zinc ore deposits occur within limestone or dolostone strata. Mineralization takes place far from igneous activity and develops when precipitation from highly saline brine solutions undergo epigenetic emplacement. The Rosiclare District is classified as a fluoritic subtype Mississippi Valley-Type deposit where fluorite deposits are in significant quantity and magma intrusions materialized in this this area over time.

Specimen Description

The specimen measures 14.5cm x 7.0cm x 4.5cm and consists mainly of squat, opaque prism forms with light tan coloration. These crystals are partially formed and measure 0.5cm to 3cm on edge.

Also present are translucent, milky-white, truncated rhombohedral forms. These crystals are partially formed and measure 0.3cm to 4.8cm on edge.

Additionally, the specimen includes several translucent steep scalenohedral forms, which are well-developed and measure up to 0.3cm on edge; they have a similar appearance to the larger rhombohedral forms. Only a few crystals are present and evaluating luminosity with certainty was not possible.



Procedures

The ultraviolet lamps used to determine fluorescence and phosphorescence emit wavelengths measuring 254nm (shortwave), 312nm (mid-wave), 351nm (longwave) and 370nm (longwave). Each lamp was positioned 3-4 inches from the specimen during exposure.

A Vivitar 283 photographic flash unit adjusted to its maximum output setting was used to evaluate *flash*. The emission spectrum of a similar device, the Vivitar 285, indicates that the ultraviolet output consists of approximately 15%, 250nm and some 80%, 350nm-360 nm wavelengths. These flash units are essentially the same regarding lighting performance. The difference is the flash head of Vivitar 285 has greater mobility than the Vivitar 283 unit. The flash unit was held 2-3 inches from the specimen during exposure.

Evaluating phosphorescence preceded fluorescence to avoid eye sensitivity adjustment needed when fluorescence is initially evaluated. All observations were conducted in a dark environment.

Generally, basic techniques used to photograph subjects under low-lighting conditions prove effective when recording fluorescence and phosphorescence. However, when using a digital camera to photograph *flash*, some ambient incandescent light is helpful to produce sharp images.

Results of Exposure to Ultraviolet Radiation

The luminescence displayed by the different crystal forms are tabulated below. The phosphorescent response and *flash* were un-differentiated with respect to both areas of the specimen. A 25-second exposure time was required for meaningful observation of phosphorescence.

Squat, opaque prism forms

<u>Wavelength</u>	Shortwave (254nm)	Mid-wave (312nm):	Longwave (351nm):	Longwave (370nm)	Photographic flash unit
<u>Fluorescence</u>	Tan coloration, moderate intensity.	Similar to SW, except slightly brighter.	Similar to SW, except ~50% reduction in intensity.	Similar to longwave (351nm) except slightly brighter.	N/A
<u>Phosphorescence</u>	Gray coloration, very weak intensity, 3-4 second duration.	Gray coloration, very weak intensity, 6 second duration.	Blue-gray color, low intensity response lasting 6 seconds.	Gray color, very low intensity response lasting 3 seconds.	N/A
<u>Flash</u>	None	None	None	None	Red-orange coloration, moderate intensity.

Truncated rhombohedral forms

<u>Wavelength</u>	Shortwave (254nm)	Mid-wave (312nm):	Longwave (351nm):	Longwave (370nm)	Photographic flash unit
<u>Fluorescence</u>	Light blue color, moderate-bright intensity.	Similar to SW, except slightly brighter.	Similar to SW, except ~50% reduction in intensity.	Similar to longwave (351nm) except slightly brighter.	N/A
<u>Phosphorescence</u>	Gray coloration, very weak intensity, 3-4 second duration.	Gray coloration, very weak intensity, 6 second duration.	Blue-gray color, low intensity response lasting 6 seconds.	Gray color, very low intensity response lasting 3 seconds.	N/A
<u>Flash</u>	None	None	None	None	Red-orange coloration, moderate intensity.

Discussion

The tan, squat opaque prism forms exhibit similar daylight and fluorescent coloration. Four different ultraviolet wavelengths resulted in similar chromatic responses, but the intensity was wavelength specific.

The milky-white, truncated rhombohedral crystals produced a bluish-white fluorescence when exposed to four different wavelengths of ultraviolet light. The intensity of the response was based on a specific wavelength.

The phosphorescent response was uniform regarding both areas of the specimen. Each separate wavelength causes specific results. It should be noted that exposure time needed for careful observation of phosphorescence exceeded 10 seconds.

The *flash* consisted of red-orange coloration with moderate intensity. Curiously, only the photographic flash unit produced this effect. Normally, *flash* is produced when an ultraviolet lamp is quickly passed across the face of a mineral such as calcite, wollastonite, pectolite, etc., but I have discovered that a stationary photographic flash unit can produce the effect with better visibility and results and even when ultraviolet lamps failed to do so. The reason for this dichotomy may be attributed to the wavelength characteristics and intensity of ultraviolet light produced by the photographic flash unit. The *flash* displayed by this specimen is less pronounced compared to other calcite samples.

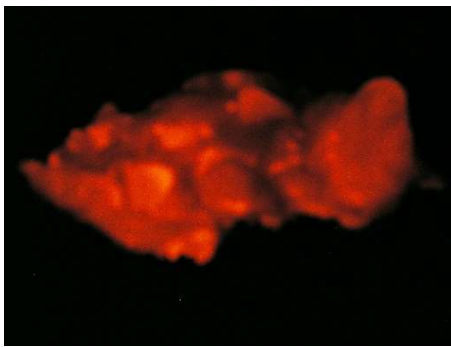
The fluorescence and phosphorescence have a muted, pastel chromatic value and appear to be affected by organic activators such as the calcium salts of fulvic and humic acids. The *flash* is likely due to ionic forms of manganese and lead, which function as coactivators.

Calcite Photos under tested conditions

Flash and white light



Flash



SWUV Light



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Below is a link to a YouTube channel created by Miami Universities' John Rakovan with interesting videos from the 2021 online Rochester Mineralogical Symposium. Please check it out!

<https://www.youtube.com/playlist?list=PL4AllrO7xkRdSoS-4iyXVUKHf98hn34pj>

Liaison officer Randy Marsh reports that National passed a motion to waive Chapter fees for this calendar year. National is still working on some amendments to their by-laws and operating regulations but a new meeting date to progress this father has not yet been announced.

2021 Officers

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www.fommidwest.org

National Website:

www.friendsofmineralogy.org

Affiliations:

THE MINERALOGICAL RECORD
THE MINERALOGICAL SOCIETY OF AMERICA
AMERICAN GEOSCIENCES INSTITUTE
MINERALOGICAL ASSOCIATION OF CANADA
ROCKS & MINERALS MAGAZINE
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Our purpose is to organize and promote interest in and knowledge of mineralogy; to advance mineralogical education; to protect and preserve mineral specimens and promote conservation of mineral localities; to further cooperation between amateur and professional and encourage collection of minerals for educational value; and to support publications about mineralogy and about the programs of kindred organizations.

