PACIFIC NORTHWEST CHAPTER
FRIENDS OF MINERALOGY

November 2015

PNWFM NEWSLETTER

Inside this issue:

PNWFM Contacts

Bruce Kelley
President
bruce.kelley@gmail.com

Gary Hinderman
Vice President, Pro Tem
gkmhind@comcast.net

Karen Hinderman
Secretary
gkmhind@comcast.net

Linda Smith
Treasurer
vanegas3@comcast.net

George Gerhold
Symposium Chairman
ggerholds@comcast.net

Jim Etzwiler
Webmaster
kd7bat@arrl.net

Beth Heesacker
Newsletter Editor
heesacker@coho.net

President's Message

Greetings, mineral lovers! It is symposium wrap-up time, but also time to announce what's coming in the next couple of years.

So Many Volunteers!

I would like to thank all the volunteers who made our "Minerals of the Northeast US and Fluorescent Minerals" symposium such a successful event:

Sean Finneson – General Support
Don Gadway – General Support
Barb and Julian Gray – Projector and General Support
Beth and Paul Heesacker – Publicity, Registration table, New case liners, Case transportation
Karen and Gary Hinderman – Auctions, Storage Coordinator, Case transportation, Solving problems before they occur.
Madison Hinderman – Auction helper
Bruce Kelley – Facebook presence, Packets, Printing, Procure awards, Minor mischief...
Al Liebetrau – Dealer Liaison, FMS liaison
Tom Menzel – Night Security, helping where ever needed
Doug Merson – Publicity
Bob Meyer – Facilities Liaison, Display Coordinator, Contest Designer
Don Newsome – Awesome fluorescence!
Lucie O'Claire – Auction helper
Linda Smith – Pre-Registration, Registration table, All things money related
Don and Pat Snyder – Fluorescent display tables, Fluorescent cases, UV lights
Rob Woodside – Mineral ID Contest
Allan Young – Speaker Recruitment
All of the FM and FMS members who set up displays
And our setup/teardown crew –Jim Etzwiler, Tom Menzel, Don Gadway, and probably half a dozen I'm forgetting…

I said this exactly the same last year, but it is still true: the sheer number of volunteers and the many hours of work you each put in speak proudly of your devotion to FM. It is a pleasure to work with such a committed group. Thank you all!

Awards

We held several contests at this year's symposium. Since there were two co-themes, we decided to have two "Best Displayed Specimen" categories:

Best NE USA Specimen: Douglas Merson: Thompsonite-CA, Datolite, Prehnite from Upper New Street Quarry, Passion Co, NJ

Best Fluorescent Specimen: Al Liebetrau: Halite, Inowrockaw Mine, Poland

The Mineral ID contest, designed by Rob Woodside, had two categories:

Expert: Randy Gage
Master: Robert Meyer

You can see Rob's contest and the answer key later elsewhere in this newsletter.

Finally, we had a Noble Witt Award winner this year. Congratulations to Robert Meyer! You can read my induction speech later in this newsletter.

Symposium 2016-2017

2016: October 14–16: This is your year, copper lovers! Next year's theme is ***"Minerals of Butte and other Copper Localities."***

2017: October 13–15: For 2017, we have selected "***Minerals of Morocco"*** which should be spectacular!

Tucson 2016

Alex Schauss would like to remind us that *"FM will be putting an exhibit together at the TGMS of examples of the kinds of quality specimens that chapter members from around the country have collected on FM field trips. We have one large case, so at some point I might ask chapter presidents to form an ad hoc committee to select the ones to be displayed with the owners' consent and support, of course, in Tucson in February, based on the photos or feedback we get on the candidate specimens."*

Is there anyone who would like to be part of a committee to select specimens for this display? Do you have specimens that you would like to nominate or display? Let me know!

Member Participation: Even more ways to get involved!

Write an article or send in a few photos for the newsletter. Going to a show? Send us a trip report! Find a weird fuzzy green mineral you'd like to share? Send us a photo whether you can positively identify it or not; I think mysteries are as fun as scholarly certainty. Thanks to Wes Gannaway, Beth Heesacker, Karen Hinderman, Al Liebetrau, Bob Meyer, Don Newsome, Lanny Ream, Alexander Schauss, and myself for providing newsletter content so far this year.

Plan to attend our 2015-2017 symposia:

October 14-16, 2016 ***Minerals of Butte and other Copper Localities***
October 13-15, 2017 ***Minerals of Morocco***
"Like" our official Facebook page: facebook.com/PNWFM

Visit the Rice NW Museum of Rocks and Minerals in Hillsboro, OR. PNWFM members get free admission and store discounts.

Send me ideas for how PNWFM can better serve you and the mineral collecting community.

Until next year,

-- Bruce Kelley, President, PNWFM

Noble Witt Award
2015

When Bob Meyer handed over the presidential reins to me two years ago, he gave me only one piece of advice: "My favorite part of the job is honoring members with the Noble Witt award." Last year, that was one of the things that did not happen as the more immediate tasks of getting the symposium running took precedence. Since then, I have pondered the concept. From our web site:

> *The idea for an award to honor an FM member or "friend" of mineralogy originated with a long time member of the PNW chapter, Noble Witt. The prestigious award soon became known as "The Noble Witt Award".*
>
> *Nominations are called for each year from the membership to honor a person of the FM community that stands out as having made great contributions to the organization, to mineral science, and the mineral collecting hobby.*
>
> *Nominations are received by the Chapter's Board of Directors and a recipient is selected from the nominees to receive the award and be honored at the Chapter's annual Symposium.*

Every time I think about it, one person rises very quickly to the top of the list. The board of directors enthusiastically agreed with my nomination of Robert Meyer. So today, Bob, you are on the receiving end of the award. Bob was one of the first people I met at PNWFM, at my first symposium eight years ago. As is his nature, he welcomed me into the organization, included me in conversations - always sharing his knowledge and passion for minerals. When a year later, I expressed curiosity about the micro collectors group that meets in Vancouver, he gave me a ride and another great piece of advice: "You cannot fully appreciate minerals without a microscope." Later, I would see him sharing knowledge and specimens with everyone at Washington Pass.

Bob is well known for his service in Friends of Mineralogy. He was president of this chapter from 2009 through 2013, and has been a board member of the national FM. He is always one of the members who steps up and offers to help at symposium time. Currently, he holds the board position of Past President and has taken on the unenviable job of hotel liaison.

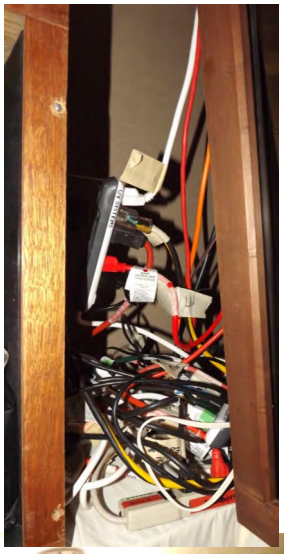
Bob has long collected systematically and according to his mindat page, has over 2000 different species in his large collection. But, his true love seems to be studying the minerals of Tiger, Arizona. When he first told me about this, his voice lit up like a child anticipating Christmas. Do I even need to mention bobmeyerite? How cool is it to have a mineral from your favorite locality named after you? Not to go into every qualification, but the last one I will mention tonight is Bob's fine mineral photomicrography. Looking through mindat, one runs across his "ROM" photos quite frequently. I can almost always recognize his images because of their clarity, color and skillful technique, but most of all, his artistry. He has inspired me to take better photos and once again... shared his secrets with the new guy. Robert Meyer is the ideal example of a deserving Noble Witt recipient, and Bob, I hope it feels as good to receive the award as it did to present it.

PNWFM 2015 Symposium Report
By Beth Heesacker

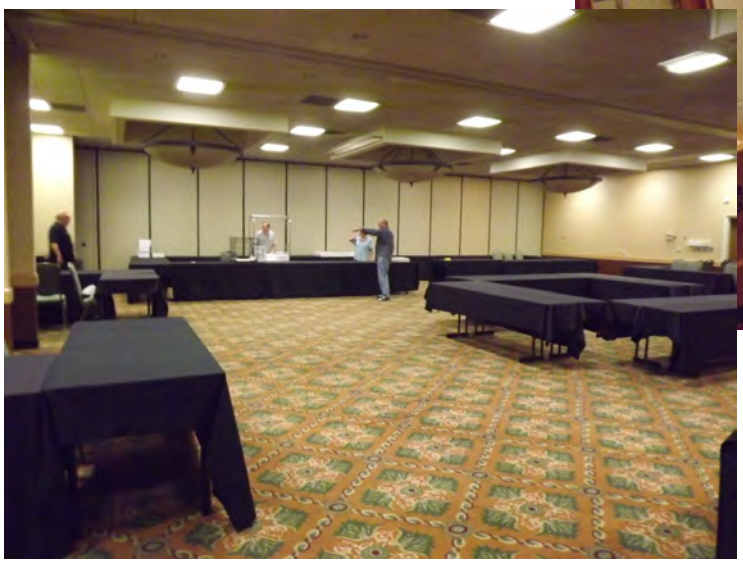
This year's symposium was a combined PNWFM and Fluorescent Mineral Society (FMS) symposium. There are things that worked out well doing this and some problems, especially in the planning stages, but it all smoothed out in the end.

There was a large stumbling block at the beginning but progress was finally made on setup. The FMS was able to get their room on time for setting up their displays but the hotel had double booked the main room and the PNWFM had to wait until almost 5 pm to start set up. Everyone pitched in and it did not take long to have the tables ready for the dealers and to put together the cases for the minerals.

Setting up in the fluorescent display room



Wiring jungle for the fluorescent displays



Setup in the main room

Friday evening was the time selected for the FMS meeting led by President Conrad North and VP Howard Green. They had members attending from not only Oregon and Washington but also from California, Utah, Idaho, Texas, Louisiana, New York and Massachusetts.

Conrad North, President FMS

Howard Green, VP FMS

They announced that they were working with Mindat to add more fluorescent information about minerals and are trying to form more chapters around the country. Some of these chapters could be based on interest, e.g. photography, rather than just geographic locality.

Ways of sharing information such as field trips and hooking up with others while traveling that have the same interests are on the agenda. They are also focusing on helping museums set up and maintain fluorescent displays, how to get and keep members, and reaching out to micro-mounters.

They then had a show and tell session which ended their meeting.

The Talks

The talks began on Saturday morning with a welcome and introductions by the president of the PNWFM, Bruce Kelly and Allen Young, Speaker Chairperson.

Bruce Kelley, President PNWFM

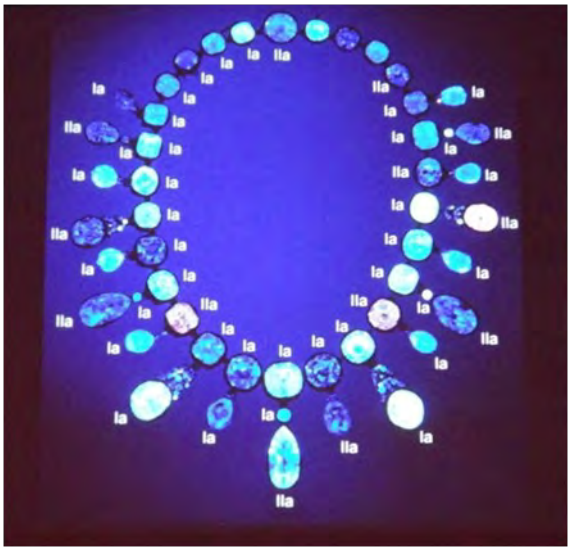
Allen Young, Speaker Chairperson

Fluorescence in Gemstones, by Jeffery Post,

Curator in charge of the National Gem and Mineral Collection, Museum of Natural History, Smithsonian Institute

Dr. Jeffrey Post has published over 80 articles on mineral subjects including articles on their structures and behaviors. He joined the Smithsonian in 1984.

The Smithsonian has a very large and unique collection of gems and minerals held in trust for the American people. He showed slides of many of the articles both in natural light and under fluorescent light. And explained why certain gems fluoresce different colors.

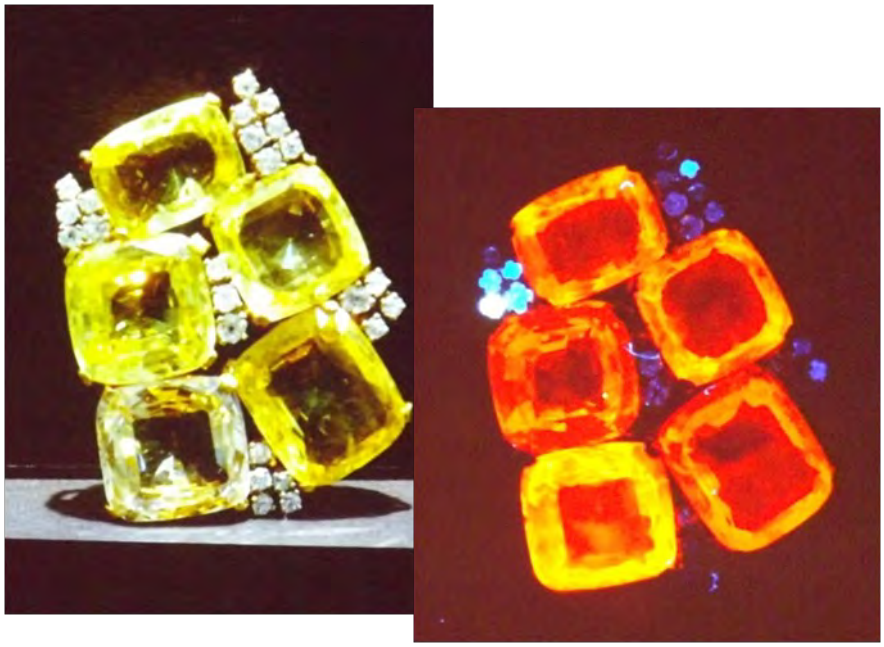


This first example is a diamond necklace given by Napoleon to Maria Louise. The colors of the fluorescence depends upon whether there is nitrogen present in the diamond or not, and the presence of boron or not. These diamonds are from India and Brazil.

This is a diamond brooch whose diamonds have widely differing fluorescence. The color of the fluorescence can be used to determine the origin of the stones.

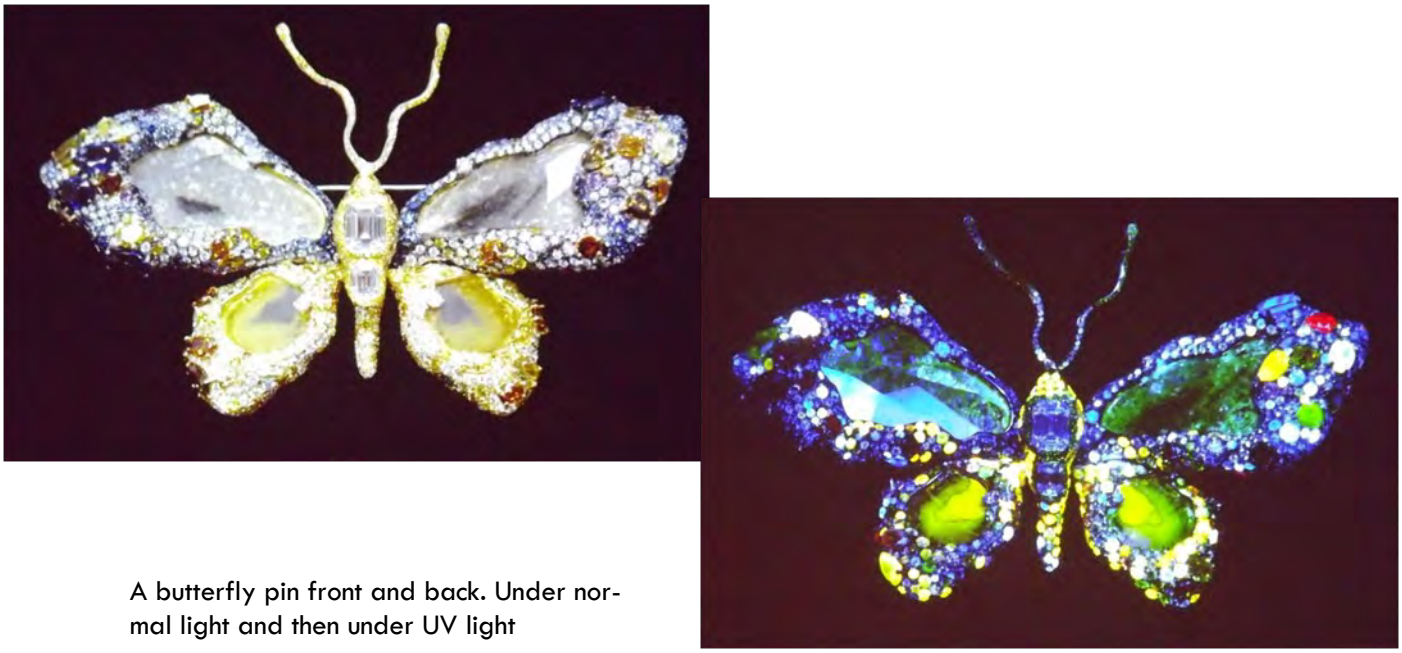
A diamond and pearl owl brooch under natural and UV light

A popular set of ivory camels from the collection under natural and UV light



A sapphire brooch from Sri Lanka under natural and UV light

Trace activators can sometimes help identify whether multiple stones in a piece of jewelry were cut from one crystal. The stones will fluoresce the same color.



A butterfly pin front and back. Under normal light and then under UV light

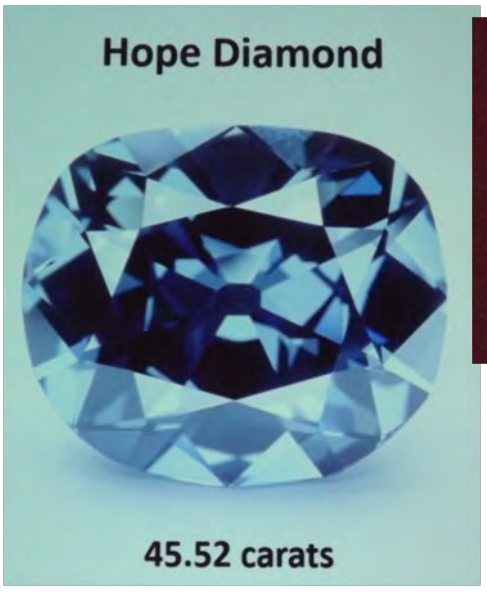
Jeff then proceeded to take us on a whirlwind tour of single stones in the Smithsonian collection.

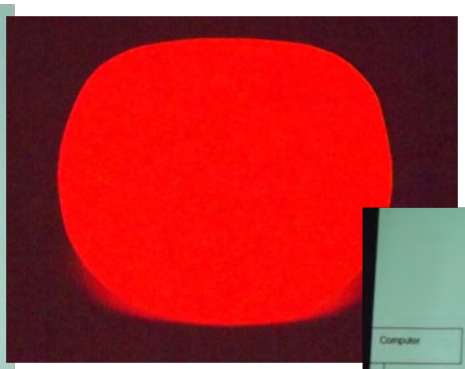
Spodumene

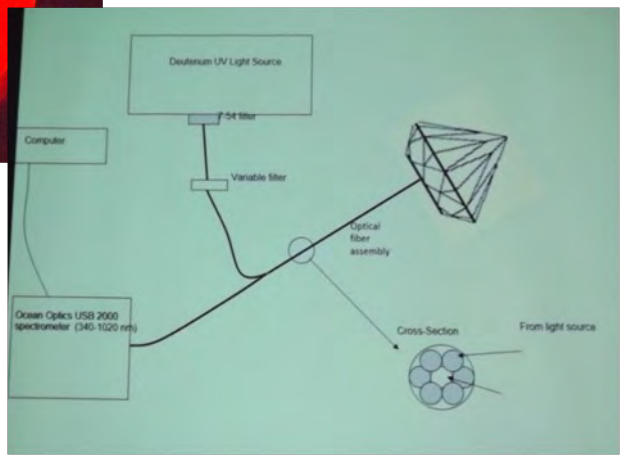
Spinel

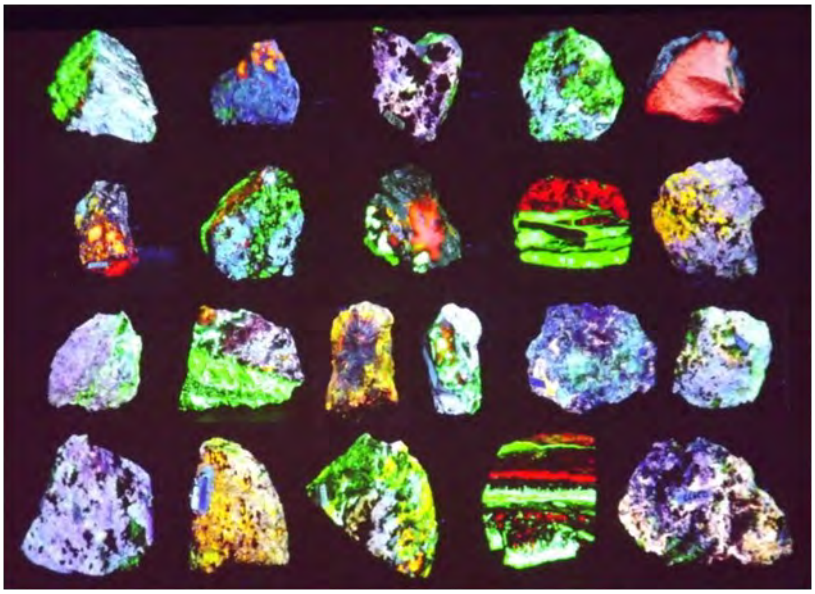
Fluorapatite, short wave and long wave

Jeff also described the Smithsonian's analysis of the Hope Diamond which does not fluoresce but does phosphoresce.



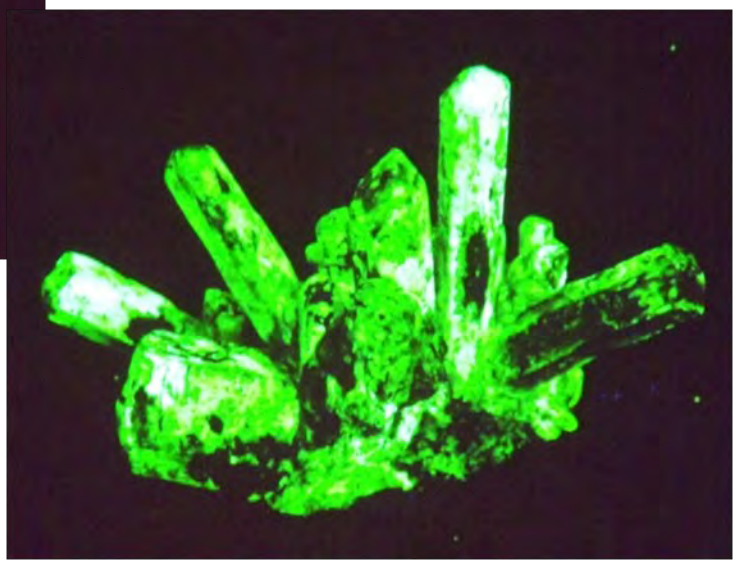






A group of non-gem specimens in the collection under UV light

The Esperite drawer under UV light

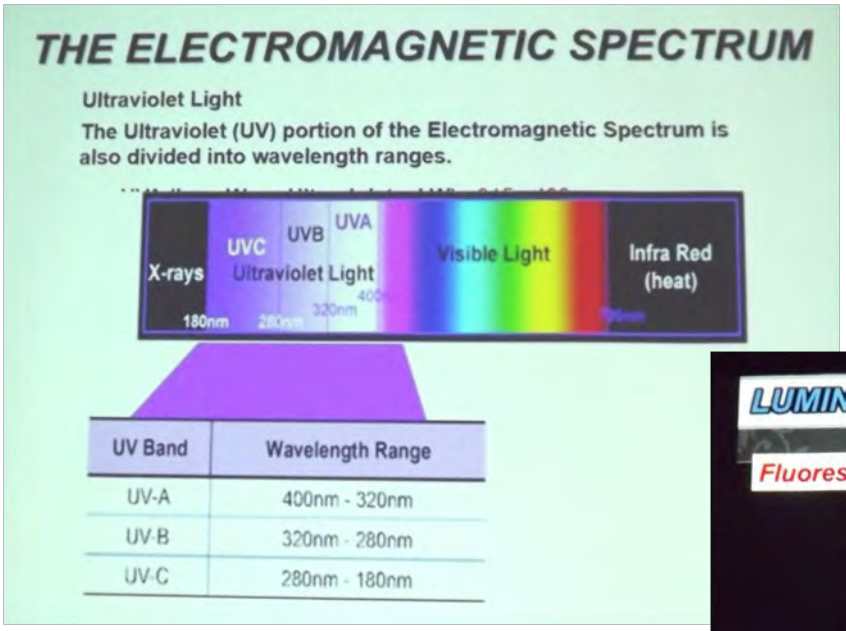


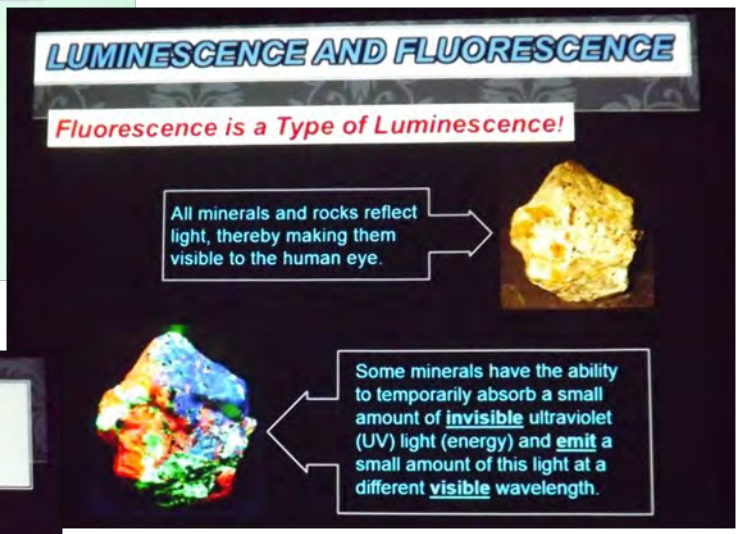
Willemite crystals under UV light

Common Minerals, Exceptional Fluorescence by Al Liebetrau

Al Liebetrau has a PhD in statistics and has held numerous teaching and research positions. He and his wife, Sue, have collected minerals for more than 50 years and have won many awards for their displays.

He gave us a very good introduction to "…escence". He explained the placement of the UV band in the electromagnetic spectrum and defined the different types of " . . . escence". This gave all of us beginners a good foundation for understanding the fluorescent displays a bit better.



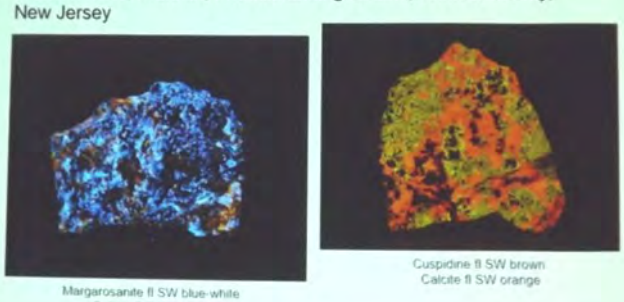


Uncommon Minerals that Fluoresce

Uncommon Combinations

Margarosanite, Calcite
Cuspidene, Calcite

Franklin Mine, Franklin, Franklin Mining District, Sussex County, New Jersey



Margarosanite fl SW blue-white
Calcite fl SW orange

Cuspidine fl SW brown
Calcite fl SW orange

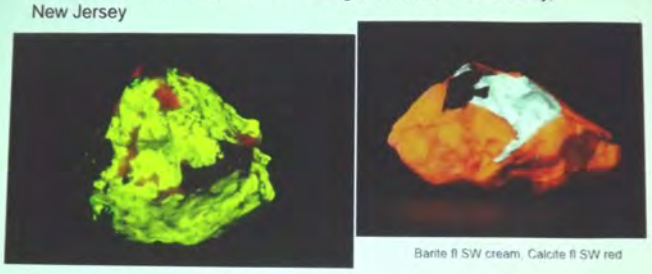
Specimens & Photos: Jim Horste

Uncommon Minerals that Fluoresce

Uncommon Combinations

Esperite & Calcite
Barite & Calcite

Franklin Mine, Franklin, Franklin Mining District, Sussex County, New Jersey



Esperite fl SW yellow, Calcite fl SW red

Barite fl SW cream, Calcite fl SW red

Specimens & Photos: Jim Horste

Minerals with Uncommon Fluorescence

Intrinsic Fluorescence

Scheelite

- (a) Ophir Hill Mine, Tooele County, Utah
- (b) Gharmung area, Baltistan, Pakistan
- (c) Pingwu mine, Sichuan Province, China

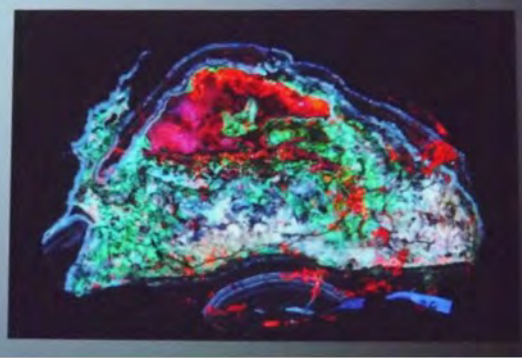
Specimens: (a) Allred, (b) Allred, (c) Biavati Photos: Joe Budd

Minerals with Uncommon Fluorescence

Unusual Color

Willemite & Calcite

Pulliapa Zinc Mine, Beltana Station, near Flinders Ranges, South Australia, Australia



Shortwave

Specimen & Photo:
Al Liebetrau

Minerals with Uncommon Fluorescence

Color Variations – with varying Absorption Spectrum

Aragonite

Giumentara Mine, Monte Capodarso, Agrigento Province, Sicily, Italy

Visible Light

Longwave

Midwave

Afterglow

Shortwave

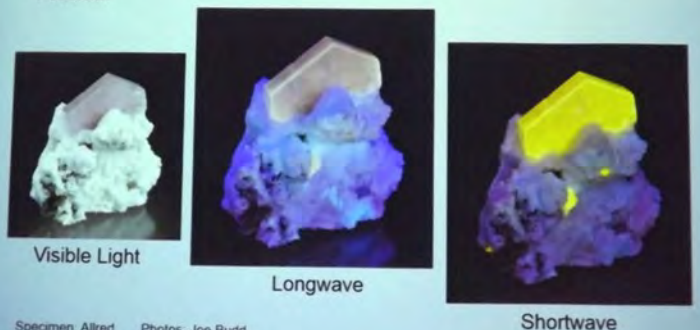
Specimen: Mazzoleni Photos: Roberto Appiani

Minerals with Uncommon Fluorescence

Color Variations – with varying Absorption Spectrum

Apatite

Bulochi, Astor Valley, Astor District, Gilgit-Baltistan (Northern Areas), Pakistan



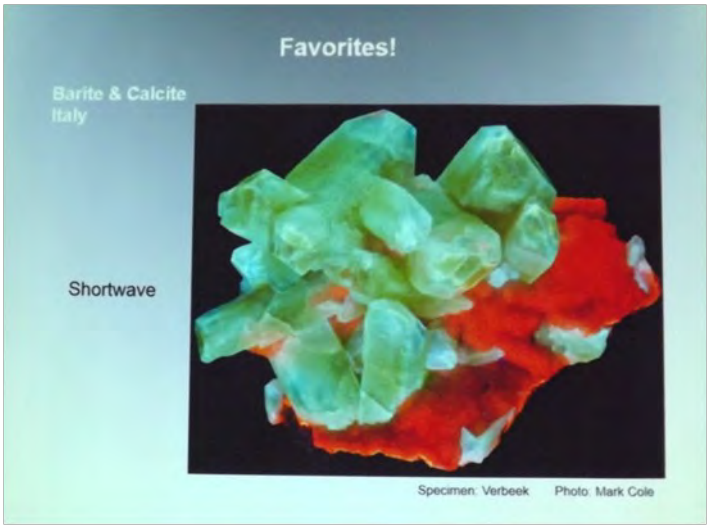
Visible Light

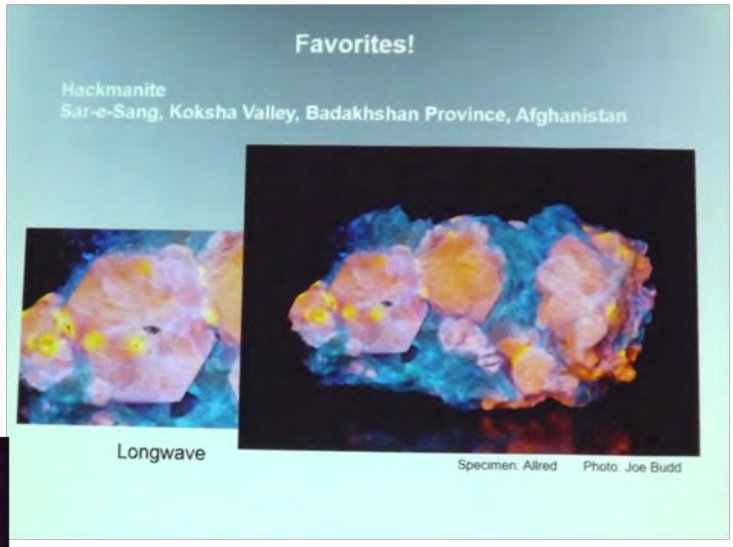
Longwave

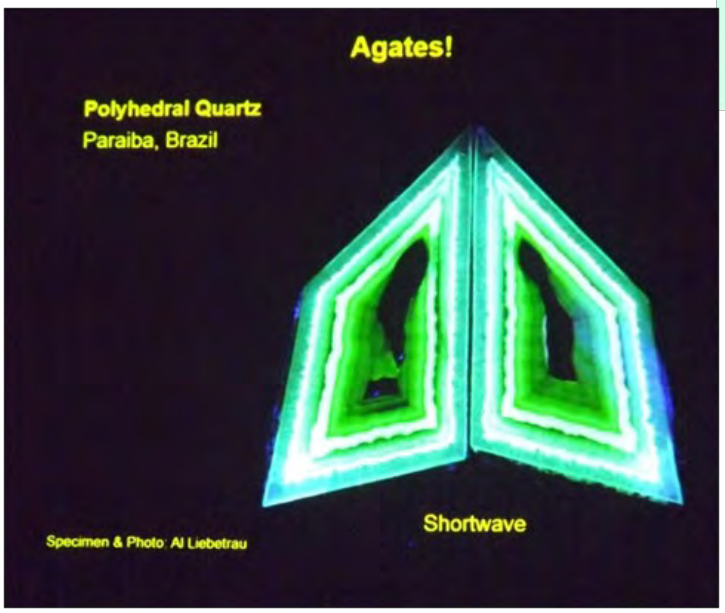
Shortwave

Specimen: Allred Photos: Joe Budd

And some of his favorites.







Highlights and Stories from the Smithsonian Gem and Mineral Collection by Dr. Jeffrey Post, Curator in charge of the National Gem and Mineral Collection, Museum of Natural History, Smithsonian Institute

The Natural History Museum, of which the Gem and Mineral Museum is a part, is one of 19 museums comprising the Smithsonian. Jeff first took us on a short guided tour of the museum of Natural History, taking us deeper and deeper into the bowels of the exhibit starting with the Western Gallery, the National Gem Collection Gallery and then they Mineral and Gem Gallery. The galleries are laid out in the hopes of not only getting people in the door but to educate and get everyone, especially the young, interested in geology.

The exhibits cover crystal shapes and coloring. These attract people close enough that you can then tell them the story behind the beauty. The museum gives them a 3 dimensional look at gems and minerals that a flat screen on a TV or computer cannot do.

Pyrite, 1 foot tall from Spain

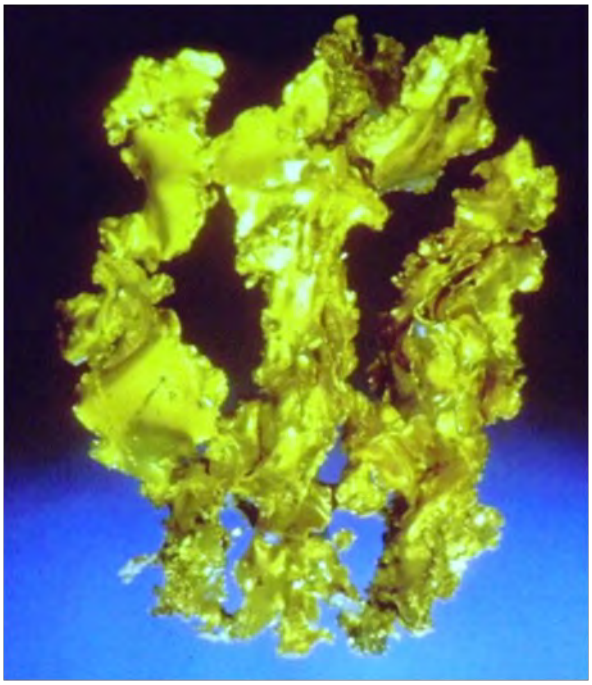
Quartz of many colors

Quartz, 18 inches across exhibiting an interesting growth habit

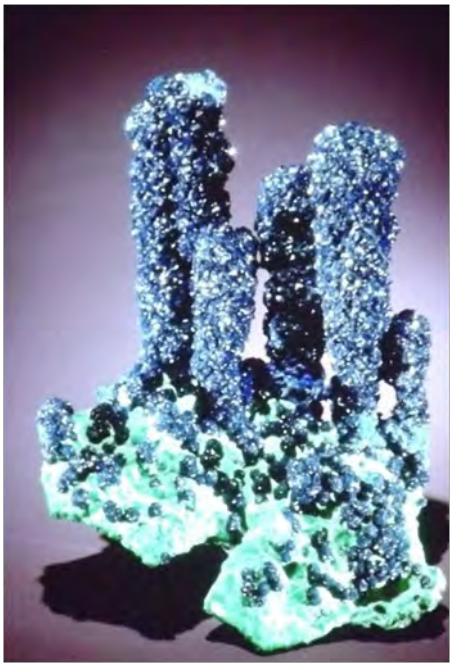
Elbaite, change of growth exhibiting sensitivity to environment

Another exhibit hall is focused on mining.

The Candelabra Tourmaline, Tourmaline Queen Mine, Pala, San Diego County, California



Gold from California



Azurite, 6 inches tall, from
Bisbee, Warren District, Mule Mts,
Cochise Co., Arizona, USA

The Smithsonian also has a Department of Mineral Sciences which collects and stores specimens for research and reference purposes along with a research lab. There are 3 collections: rock and ore, meteorites, and gems and minerals.

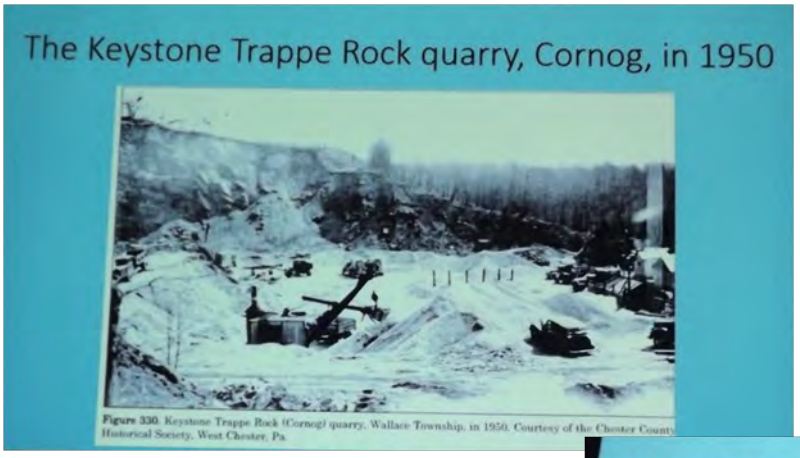
Most items in the many collections were gifts to the Smithsonian. These include the Hope Diamond (which Jeff outlined the convoluted history of), a necklace of diamonds and emeralds from the Maharaja of India, an emerald (75.5 c) from Columbia, an aquamarine (1,000 c), etc., etc., etc.

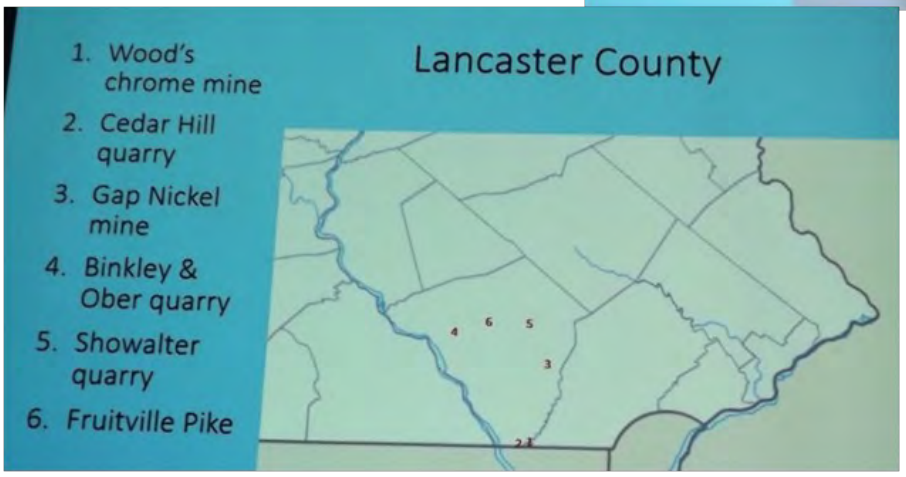
And a lovely cathedral from Brazil. Note the 2 different colors of the fluorescing calcite.

Classic Mineral Localities of SE Pennsylvania

by Tom Moore

Tom gave us a county by county tour of the minerals of SE Pennsylvania, including the geology of the area and the history of many of the mines. This was great for those of us who have not had the privilege of traveling to the east coast. [My apologies for the crookedness of the pictures. I came in late and had lost my prime photo location. My apologies to Tom.]



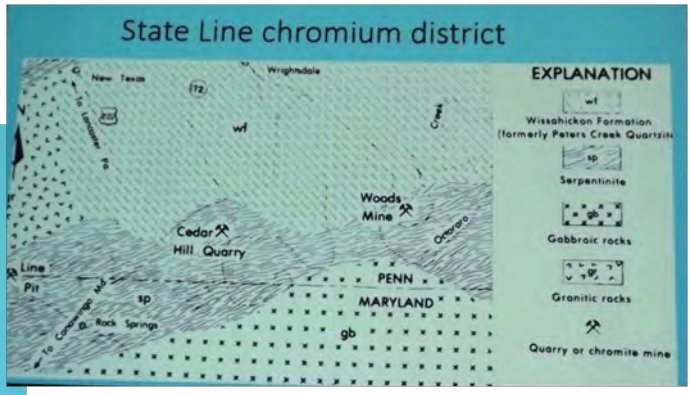


Antigorite

9.8 cm

State Line chromium district

Carnegie specimen;
Debra Wilson photo



Copper

4 cm

Cornwall mine

John Betts Minerals
specimen and photo

Sphalerite

2.75 cm

Lincoln quarry,
Thomasville

Tom Moore
specimen;
Christi Cramer
photo

Ruizite

1 cm

Cornwall mine

Collected on dumps
by Skip Colflesh

John White photo

Zaratite

8.8 cm

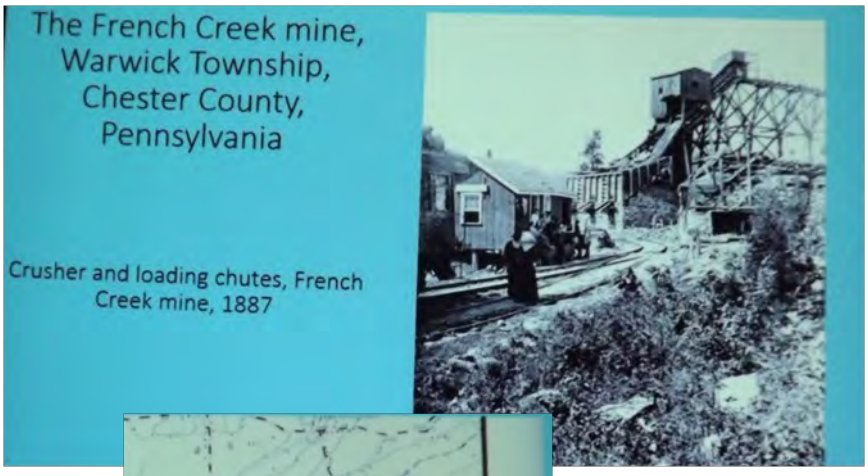
Wood's chrome mine

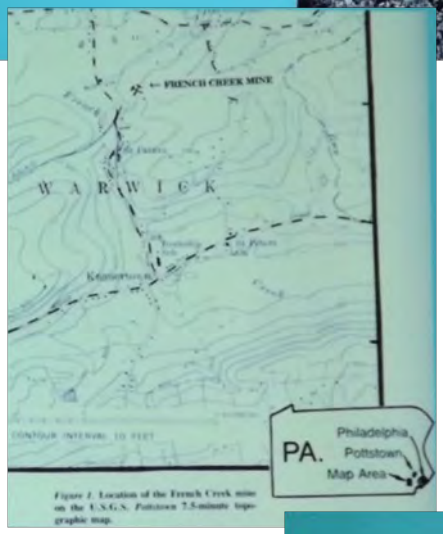
Ex Jefferis collection
Carnegie specimen;
Debra Wilson photo

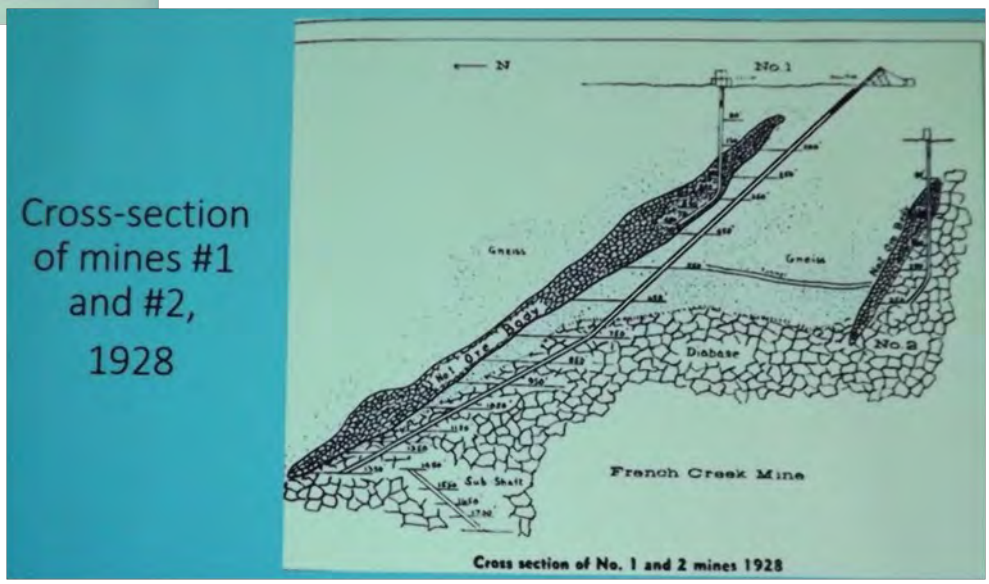
The Phoenixville and French Creek Localities, Chester County, Pennsylvania

by Tom Moore

Tom continued to take us on a tour of Pennsylvania. This time it was to the far southeast corner of the state. He gave us the history and a taste of the minerals found there.





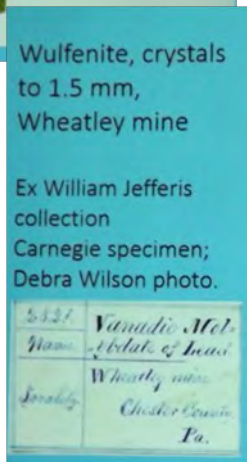


Pyromorphite, 2 cm, Wheatley mine

Tom Moore specimen; Christi Cramer photo.

Wulfenite, crystals to 1.5 mm, Wheatley mine

Ex William Jefferis collection
Carnegie specimen; Debra Wilson photo.



Anglesite, 5-cm crystal in galena, Wheatley mine

Ex Charles Wheatley collection

Carnegie specimen; Debra Wilson photo.

Cerussite, crystals to 1.2 cm with malachite, Phoenixville district

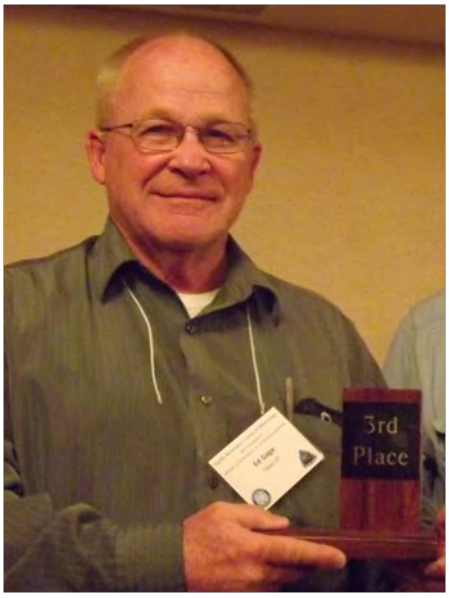
Carnegie specimen; Debra Wilson photo.

FMS Meeting

This meeting included an experiment by the FMS group on the effects of gamma radiation on fluorescent minerals. In 1974 an experiment at Cal Tech found that exposing minerals to gamma radiation and then freezing them preserved the phosphorescence for quite some time. The minerals then could be warmed up and the afterglow could be seen. The FMS took some minerals to the Pacific NW National Laboratory in Richland, WA where they were exposed to Cobalt 60 and then stored in dry ice at -119 degrees F.

At the meeting the specimens were removed from the dry ice and warmed using heat guns. After blowing a circuit breaker due to trying to use 3 heat guns at the same time they cut back to just using one. There seemed to be some glow seen on some specimens but it was very faint.

Trophies for the fluorescent displays were announced. Placement was decided by votes from the visitors. **Third place** was a tie between Mark Erwin (case #17) and Ed Gage (case #18). A coin was tossed and Ed won the toss.

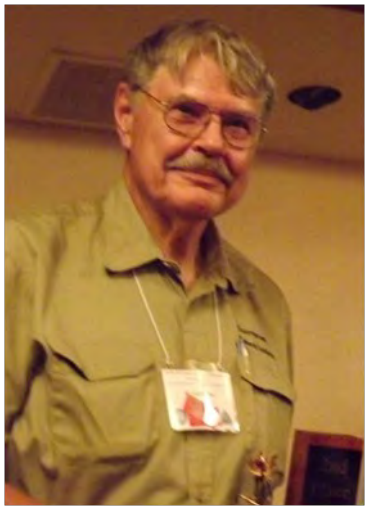


Ed Gage and his case in natural light and UV light

Irwin's case tied for third but lost the coin toss.

Mark Erwin's case in natural light and UV light

Second place was Al Liebetrau (case #8).



Al Liebetrau and his case in natural light and UV light

First place was a runaway vote for Jennifer Moore's train case (case #24) featuring trains of fluorescent minerals moving between short and long wave areas in her case.

Don Newsome presenting the award

Jennifer Moore's case in UV light and natural light

Don Newsome then showed an antique uv lamp that also exhibits thermotriboluminescence. Mercury is trapped in a quartz bulb. After warming up and then turning the lamp off, tilting the bulb shows a bright arc as the mercury flows over the quartz as the mercury is vaporized from the friction. I could not get a picture of the arc.

The lamp

The lamp when lit

A door prize was given out to the person who traveled the farthest (from Boston, Massachusetts), numbers were drawn for the more valuable door prizes and then grab bags were up for "grabs". Most contained labeled fluorescent minerals but a couple had nice gift certificates from well known mineral photographers to be used for photographing your specimens for you. Everyone went home with lots of materials.

PNWFM Meeting

Headed up by our President, Bruce Kelley, Sunday got off to a great start. Many thanks were given to the volunteers, exhibitors, dealers and participants.

The NE specimen contest winner was announced: Douglas Merson for a Thomsonite – CA, Datolite, Phrenite from Upper New Street Quarry, Passion Co., NJ. Best Flourescent Specimen went to Al Liebetrau for a Halite from Inowrack Mine, Poland. The winners of the mineral id contest were: Master, Robert Meyer and Expert, Randy Gage.

The regular approval of minutes and the Treasurer's report followed. In old business it was noted that the new wireless microphone system that the club purchased worked out well throughout the whole symposium.

We need some volunteers to take on the creation of the registration packet including stuffing the envelopes. There was also discussion about how to get more participation in the mineral id contest and in bringing displays for the cases and their brand new liners. Also please note that the cases entered do not have to fit within the theme of the show. Some problems with the setup of the Paypal account did not allow its use this year. We hope to have it ready by next year

Under new business the theme for 2016 will be Butte and other copper minerals. And for 2017 the theme will be Morocco. The actual titles for these shows will be announced later.

Under discussion was the need for a field trip coordinator and concerns for safety while up at Washington Pass. We also need a college outreach coordinator. Free admission to the Rice Museum was mentioned as a benefit of membership in the PNWFM and we are hoping to get a discount somewhere for mineral analysis which would also be of benefit to the members.

Symposium restructuring to assist our room dealers, separating the banquet as an add-on, breaking the bond between the oral auction and the banquet and a more structured social time did not get full time for discussion. They will be on the agenda at the Seattle Mineral Market meeting.

Election results were announced. Bruce Kelley is again our President, Secretary is Karen Hinderman, Treasurer is Jim Etzwiler. Thank you to them for volunteering for these positions.

Minerals and Mines of Franklin and Sterling Hill, NJ
by Richard Bostwick

Richard gave a rousing talk on these very important mines and kept us laughing with his anecdotes. He worked as a miner at Sterling hill so had a special insight into its workings. He helped found the Thomas S. Warren Museum of Fluo-resence at Sterling Hill and Bostwickite is named after him.

Mining has been done in this area for at least 400 years. Collecting of the minerals as specimens dates from the 1930's-40's. It is considered one of the most important mineral deposits in the world. There have been found 367 different species and, for 73, this is the type locality. The 3 main minerals are Franklinite, Willemite and Zincite.

Buckwheat Open Pit,
Franklin Mine, 1860s

The crusher at the Buck-wheat pit, 1890-1900, and the beginnings of the dump

The pit today

Planner's drawing of the NJ Zinc Co. mill

The mill in the plan in 1950. It was shut down in 1954.

The Sterling Mine, 1920's

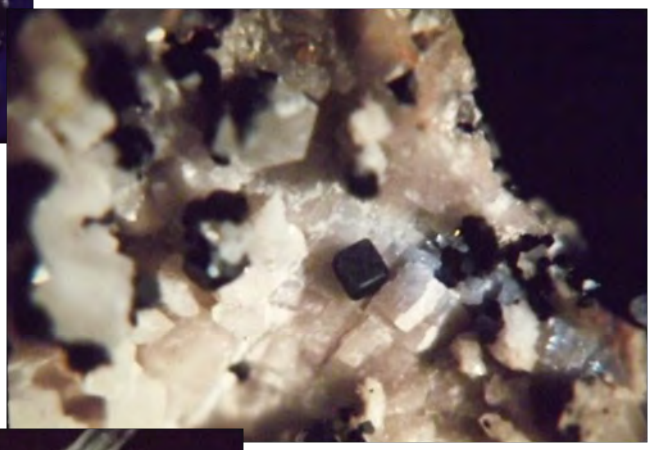
Sterling Mine, 1960's. Its demise was in 1986.

Sterling Mine today

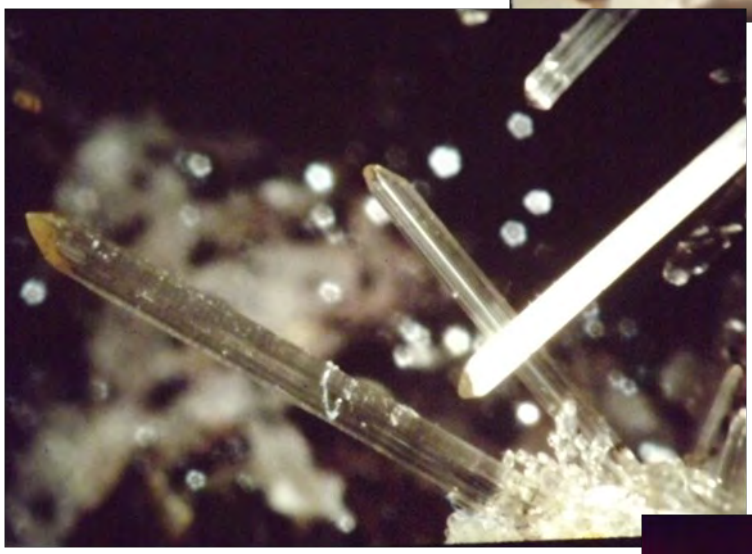
Sterling Mine pits today

The Sterling mine has been re-opened as a museum. But be careful if you purchase rock souvenirs. The pile has been contaminated by rocks from all over the world.

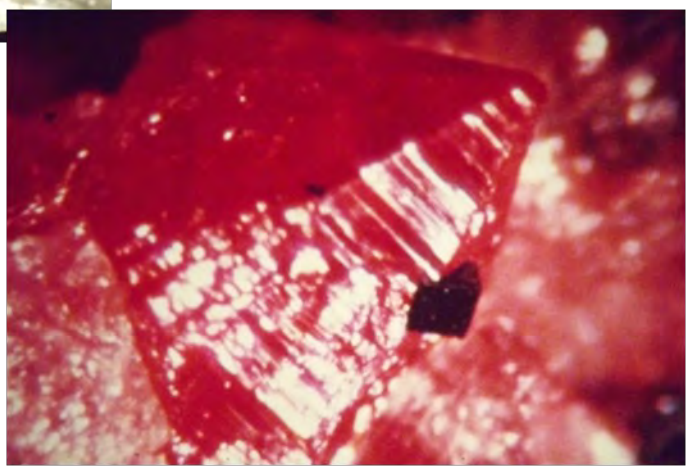
Spinel in Franklin marble



Cubic Franklinite, micro-mount



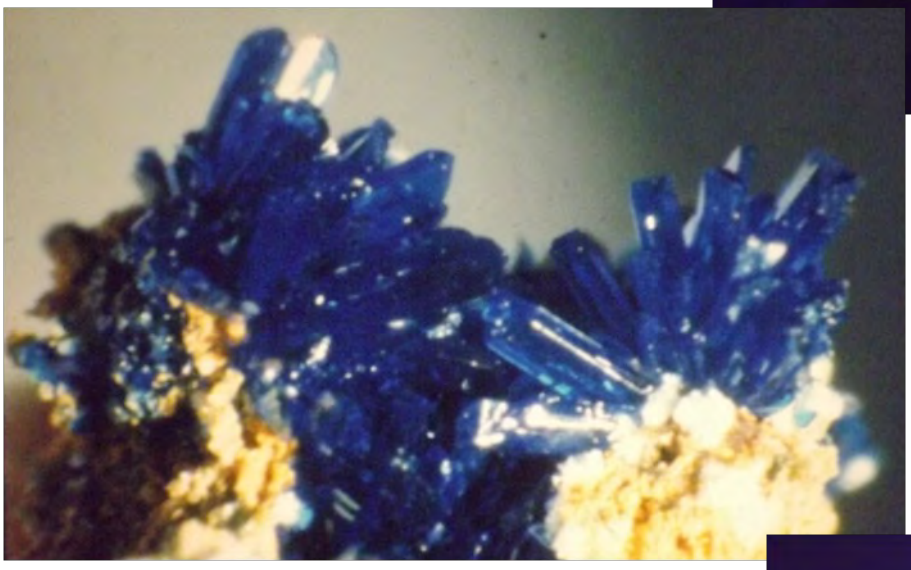
Willemite, micro needles



Zincite, micro-mount

Bladed Rhodenite

Bustamite, type locality



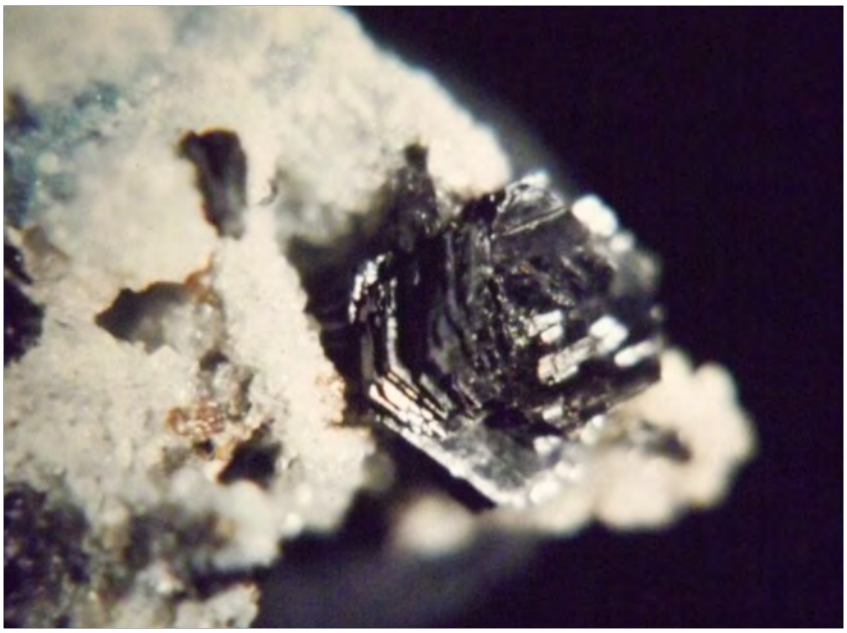
Azurite

Ramsburgite

Grenibite barrels

Grenibite needles

Anatase



Ilmenite rose, etched out of albite

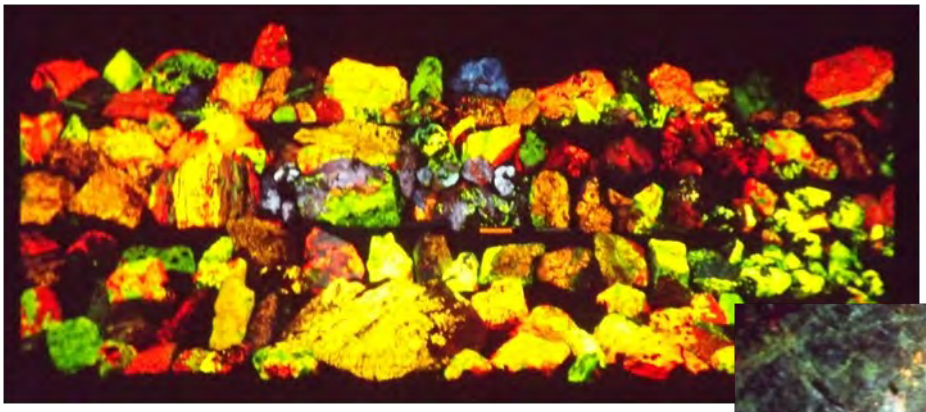
Bostwickite, named after our speaker, Richard Bostwick.

Franklin and Sterling Hill: The Fluorescent Mineral Capital of the World

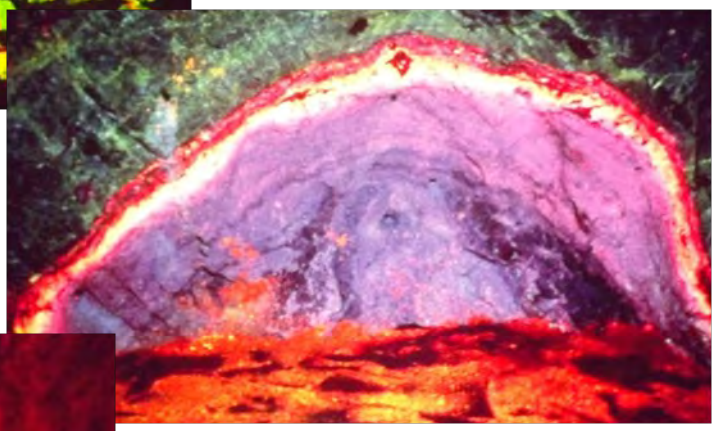
by Richard Bostwick

Richard gave a second talk on Sunday. He made the point that sometimes it is the beauty of the fluorescent minerals that bringa people into the mineral hobby. But sometimes you run into the weirdest things when you go out collecting.

Collecting out on the dump in the daylight

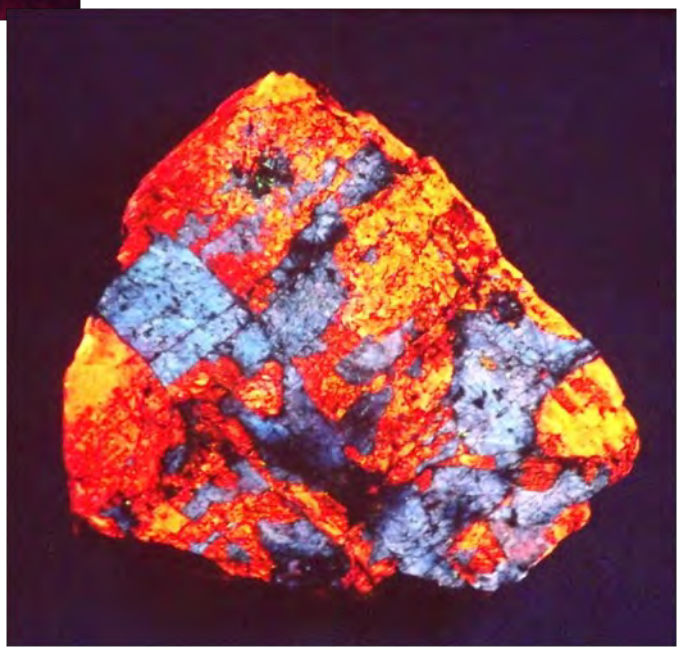


A colorful display at the museum

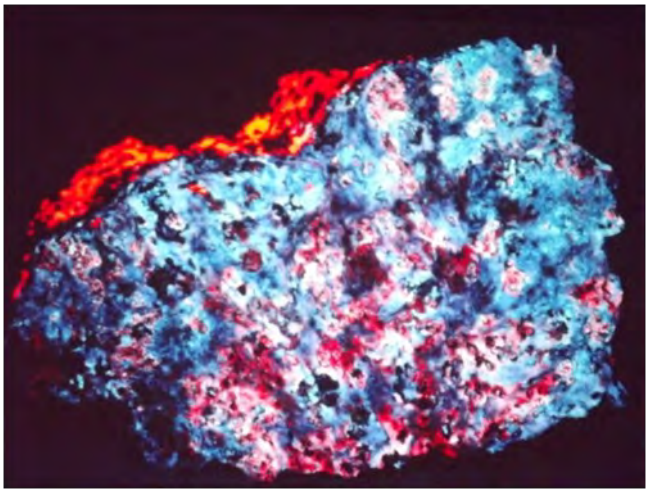


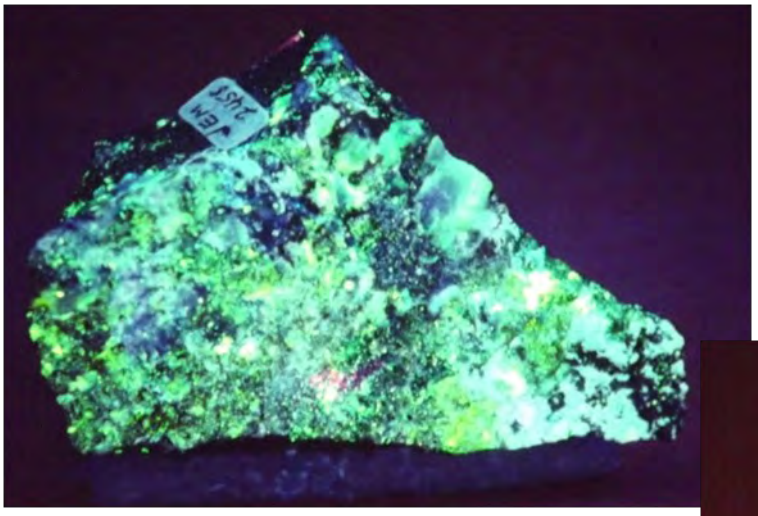
Rainbow Room in the mine

A pile of boulders in the mine

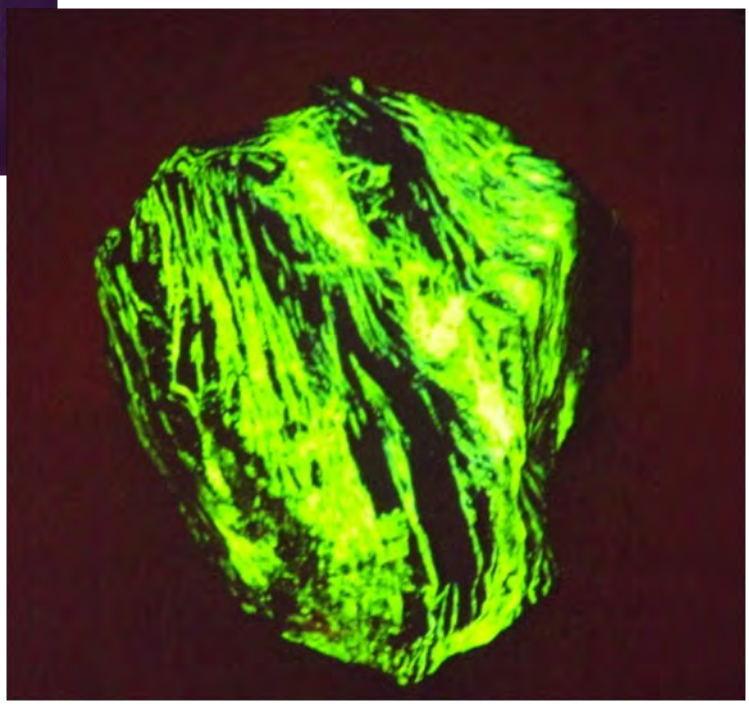


Two specimens
of Hydrozincite

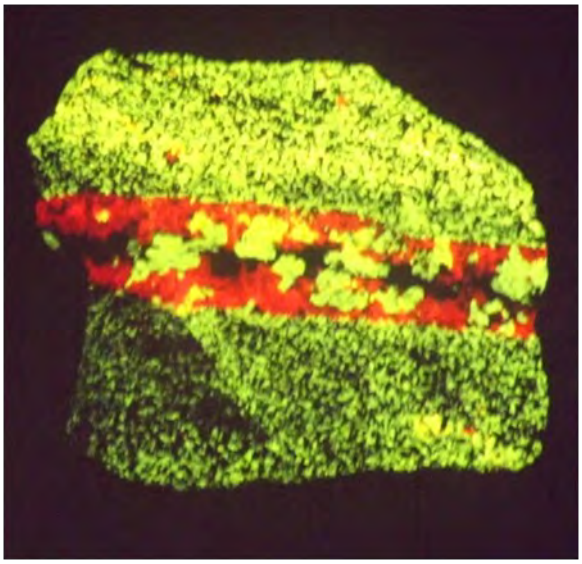


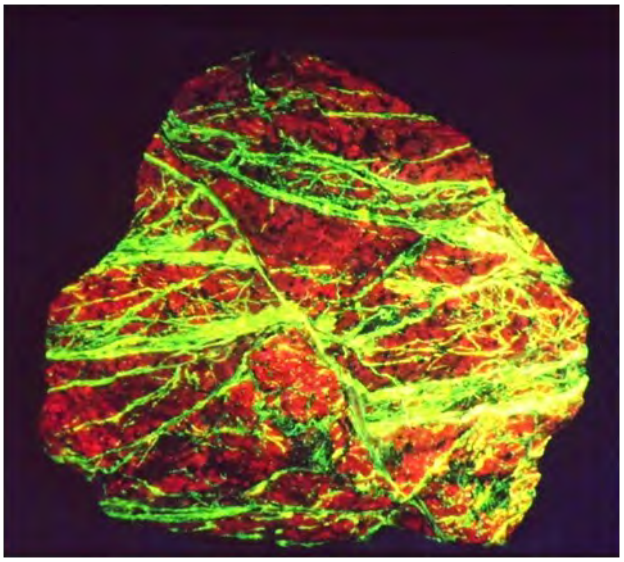


Willemite, pale blue is rare, activator is lead

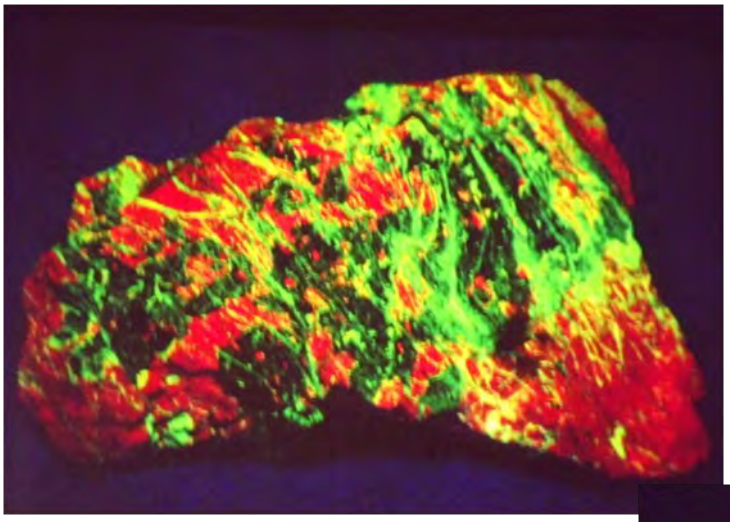


Willemite, stressed and strained

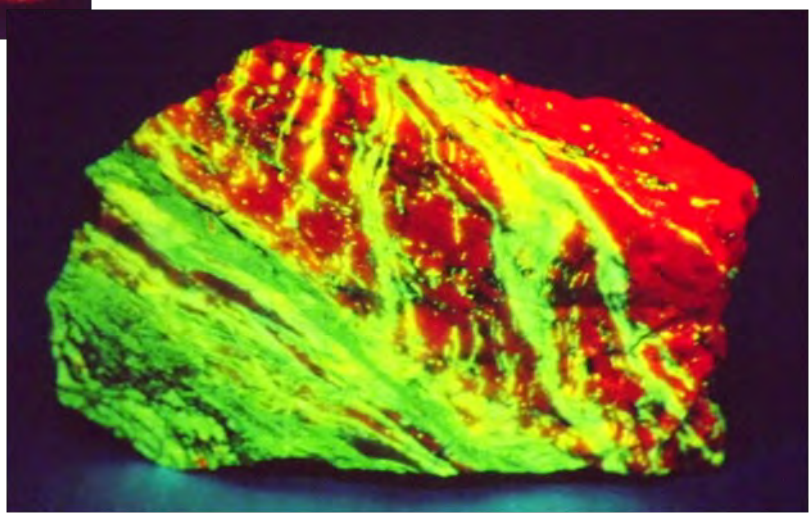


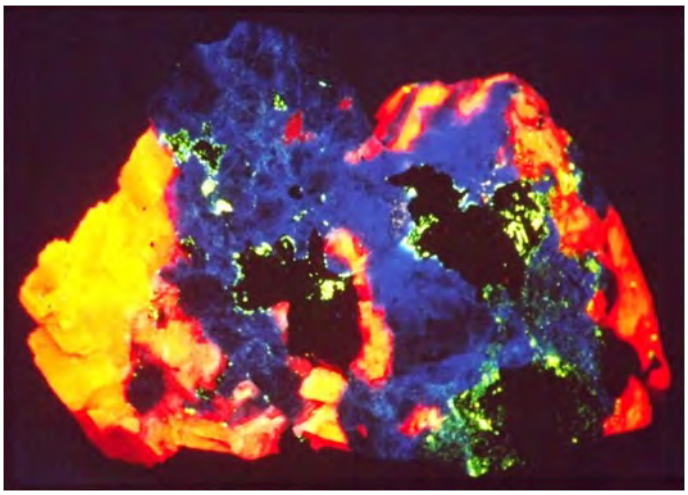


Willemite and calcite, 2 specimens

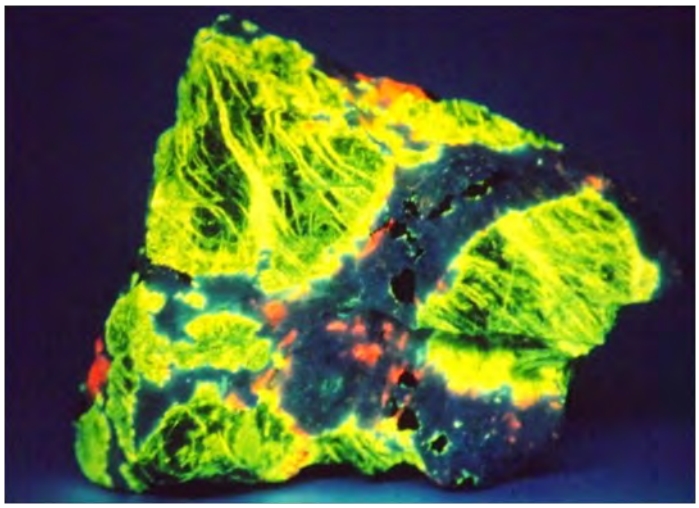


Willemite and calcite, 2 more specimens





Hardestonite, 2 specimens,
blue fluorescence



As to be expected, it was a wonderful symposium. I have only given you a brief look at the many activities and specimens that were shared. The dealers, the silent auction, the dinner, the oral auction, the displays, etc. all came together to provide a wonderful weekend. Many thanks to everyone who helped and to the speakers for allowing me to share their slides with you.

Symposium Mineral ID Contest by Bruce Kelley

Rob Woodside's Mineral ID contest at this year's symposium was a doozy! Here are the 34 specimens:

Left half of the case

Right half of the case

The Rules and the form:

Most entrants should be in Expert class
Past Winners and Pros in Master's class
One entry per person. No teams
Use the entry form and fill in the blanks
No penalties for wrong guesses. So guess away!
The entrants with the highest score in each class will win
The marks are final: No appeal
Please return completed forms to the Registration Desk by 3:30 p.m., Saturday

Hint: All localities end with a country name

GOOD LUCK!!!

1. Perched _____, a variety of _____. A two word phrase describing the crystal: _____ _____. With only this information what would be the HONEST locality? _____.
2. Orange _____ from _____ _____ Mine, _____, _____. What is the crystal system of the orange mineral? _____
3. Red _____ in metallic _____from _____,_____, What kind of cleavage does the metallic mineral have? _____
4. _____ replacing _____ from _____ Mine, _____, _____. Such a replacement is called a _____.
5. Dark _____ needles with grey needles that are most likely either _____ or _____ from _____, _____. How could you identify the grey? _____.
6. Blue _____ and white _____. Name two polymorphs of this blue mineral. _____ and _____.
7. _____ from _____ District, _____. This is an ore of _____ and it crystallizes in the _____ system.
8. Tiny green _____ crystals were long dismissed as _____ or _____. Give the most productive locality for this material. _____ Mine, _____, _____.
9. Yellowish _____ altering to white _____ in pink _____ from _____, _____, _____.
10. Purple _____ from _____ Mine, _____ Province, _____.
11. Orange _____ from _____ _____ Mine, _____, _____.The orange crystals are a combination of positive and negative _____.
12. Dark green _____ from the _____ Pit, _____Mine, _____, _____
13. Red _____ in white _____ from _____, _____. Is the red crystal twinned? _____. If so what kind of twin? _____.
14. Blue _____ in white _____ from _____Province, _____. What is the major crystal form of the blue mineral? _____. What mineral species was this blue mineral formerly called? _____.
15. Black _____ in white _____ from _____, _____, _____ Co., _____,_____.
16. Dark green _____ from _____ Claim, _____, _____Co., _____, _____.
17. Yellow _____ and distinguishing pink _____ from _____ Mine, _____, _____.

18. Orange _____ crystals from _____ Mine, _____, _____.
19. Black _____ and red _____ with white _____ from _____ Field, _____ Province, _____.
20. Gemmy green _____ on purplish _____Anhydrite from _____, _____ Province, _____.
21. Blue _____ and minor green _____ from _____, _____ Parish, _____, _____.
22. Blue _____ is the only mineral listed at this locality at Mindat. The white might be minylite and under the scope there are green blades that could be _____ or _____. This specimen needs work and is from _____ Mine, _____ District, _____ Province, _____.
23. Greenish _____ and tiny clear _____ crystals from _____, _____,_____.
24. Orange _____ with white to clear _____ and _____ from _____ Mine, _____,_____, _____.
25. _____ from _____. _____, _____
26. This metallic _____ has a twin habit called a _____ and is from _____ Mine, _____, _____, _____
27. Yellow _____ in rock called _____from _____, _____,_____, _____.
28. The purplish balls are an intergrowth of _____and _____ but historically have been called just _____. This is from the _____, _____,_____, _____.
29. Bluish _____ containing radiating balls of _____ from the type locality _____,_____, _____.
30. Gemmy _____ from the _____ Mine, _____, _____
31. _____ was originally thought to be its dimorph _____. So far the only recorded locality is the _____ _____ for the species which is _____ Mine, _____ Province, _____ Department, _____.
32. Greeny _____ balls with clear _____and fibrous _____from _____ Quarry, _____, _____ State, _____.
33. Pink _____ from _____ pegmatite (_____ claim), _____,_____, _____.
34. Yellow _____ and black _____Hematite from _____, _____, _____. The crystal system and crystal class of the yellow metallic is _____ and _____.

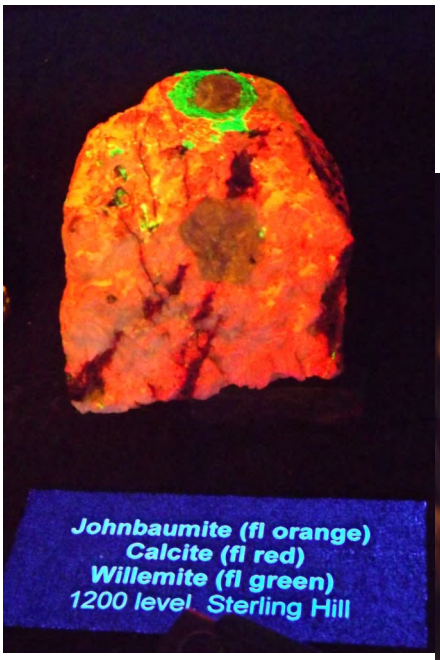
And if you want to try your luck using the pictures, do not look at the next page where you will find the answer key.

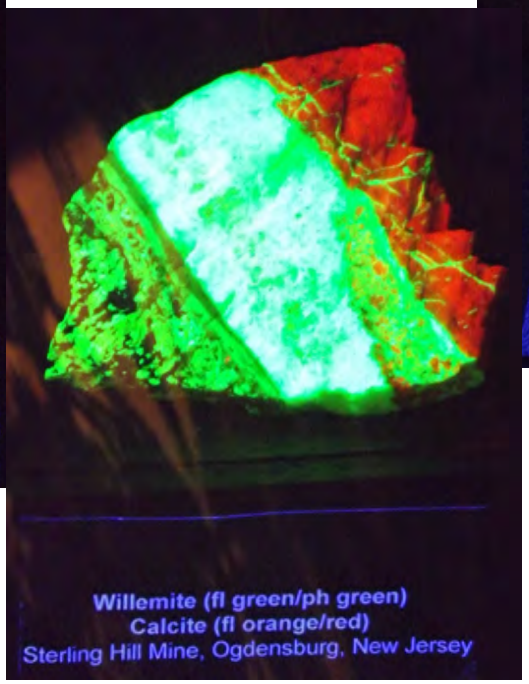
And, the answer key:

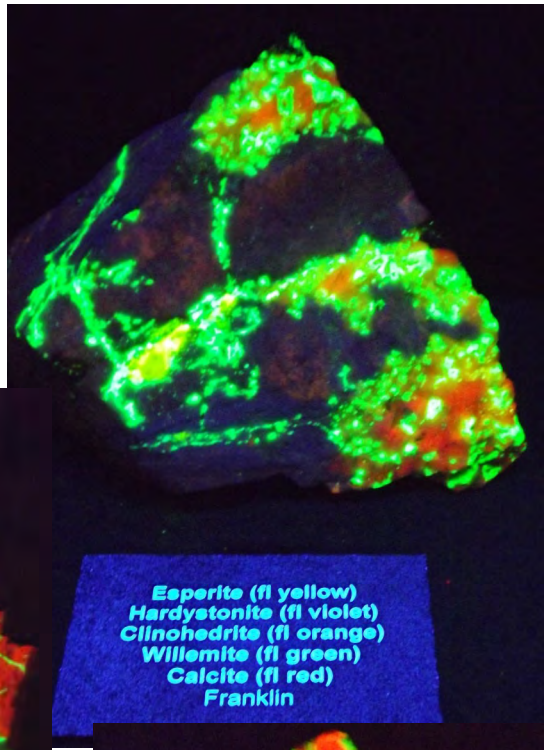
1. Perched Rock Crystal, a variety of Quartz. A two word phrase describing the crystal: Doubly Terminated. With only this information what would be the HONEST locality? Unknown.
2. Orange Spessartine from Wushan Spessartine Mine, Tongbei, China. What is the crystal system of the orange mineral? Cubic
3. Red Rhodonite in metallic Galena from Broken Hill, Australia. What kind of cleavage does the metallic mineral have? Cubic
4. Turquois replacing Apatite from La Caridad Mine, Sonora, Mexico. Such a replacement is called a pseudomorph.
5. Dark Berthierite needles with grey needles that are most likely either Boulangerite or Jamesonite from Herja, Romania. How could you identify the grey? Electron probe or x-ray diffraction
6. Blue Kyanite and white Quartz. Name two polymorphs of this blue mineral. Andalusite and Sillimanite
7. Skutterudite from Bou Azer District, Morocco. This is an ore of cobalt and it crystallizes in the cubic system.
8. Tiny green Sincosite crystals were long dismissed as Autunite or Tornbernite. Give the most productive locality for this. Ross Hannibal Mine, South Dakota, USA.
9. Yellowish Vlasovite altering to white Gittinsite in pink Eudialyte from Kipiwa, Quebec, Canada
10. Purple Sugilite from Wessels Mine, Northern Cape Province, South Africa
11. Orange Helvite from Wushan Spessartine Mine, Tongbei, China. The orange crystals are a combination of positive and negative tetrahedra.
12. Dark green Libethenite from the Mindola Pit, Nkana Mine, Kitwe, Zambia
13. Red Spinel in white Calcite from Mogok, Burma. Is the red crystal twinned? Yes. If so what kind of twin? Spinel
14. Blue Hauyne in white Calcite from Badakhshan Province, Afganistan. What is the major crystal form of the blue mineral? Dodecahedron. What mineral species was this blue mineral formerly called? Lazurite.
15. Black Stilpnomelane in white quartz from Blanchard Hill, Bellingham, Skagit Co., Washington, USA
16. Dark green Luinaite-OH from Bald Hornet Claim, North Bend, King Co., Washington, USA.
17. Yellow Gold and distinguishing pink feldspar from Nugget Pond Mine, Newfoundland, Canada.
18. Orange Hydroxylbastnaesite-(Ce) crystals from Trimouns Talc Mine, Luzenac, France.
19. Black Hausmannite and red Andradite with white Barite from Kalahari Manganese Field, Northern Cape Province, South Africa.
20. Gemmy green Diopside on purplish Anhydrite from Ladjuar Medan, Badakhshan Province, Afghanistan.
21. Blue Liroconite and minor green Olivenite from Wheal Gorland, Gwennap Parish, Cornwall, UK.
22. Blue Sampleite is the only mineral listed at this locality at Mindat. The white might be minylite and under the scope there are green blades that could be atacamite or liebethenite. This specimen needs work and is from Engano Feliz Mine, La Pintadas District, Copiapo Province, Chile.
23. Greenish Augelite and tiny clear Quartz crystals from Tamboras Mine, Mundo Nuevo, Peru
24. Orange Svandbergite with white to clear Dolomite and Quartz from Mount Brussilof Mine, Radium Hot Springs, B.C., Canada
25. Fluorapatite from Ipira Complex. Bahia, Brazil.This metallic Cubanite has a twin habit called a trilling and is from Henderson No. 2 Mine, Chibougamau, Quecec, Canada
26. This metallic Cubanite has a twin habit called a trilling and is from Henderson No. 2 Mine, Chibougamau, Quecec, Canada
27. Yellow Narsarsukite in rock called Hornfels from the Poudrette Quarry, St-Hilaire, Quebec, Canada.
28. The purplish balls are an intergrowth of Leifite and Eirikite but historically have been called just Leifite. This is from the Poudrette Quarry, St-Hilaire, Quebec, Canada.
29. Bluish Chalcedony containing radiating balls of Ferrierite-Mg from the type locality Kamloops Lake, B.C., Canada.
30. Gemmy Grossular from the Jeffery Mine, Quebec, Canada.
31. Anorpiment was originally thought to be its dimorph Orpiment. So far the only recorded locality is the type locality which is Palomo Mine, Castrovirreyna Province, Huancavelica Department, Peru.
32. Greeny Gyrolite balls with clear Hydroxyapophyllite- K and fibrous Okenite From Malad Quarry, Mumbai. Maharastra State, India.
33. Pink Hureaulite from Jocão pegmatite (Cigana claim), Conselheiro Pena, Minas Gerais, Brazil.
34. Yellow Pyrite and black Hematite from Rio Marina, Elba Island, Italy. What is the crystal system and crystal class of the yellow metallic is cubic and pyritohedral

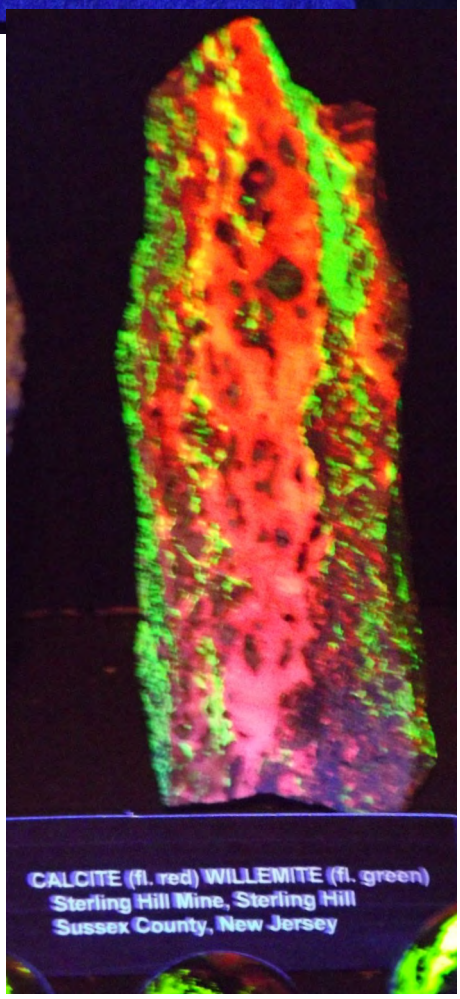
Fluorescent Displays: A Photo Essay

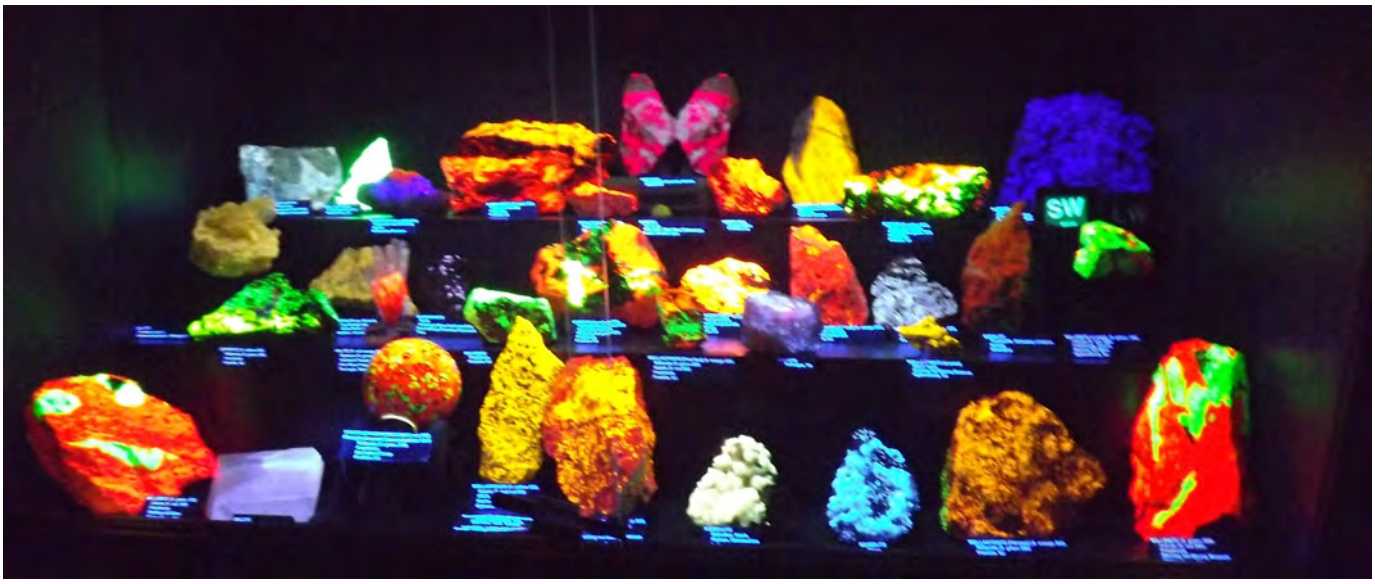
Imagine a whole room glowing like this !







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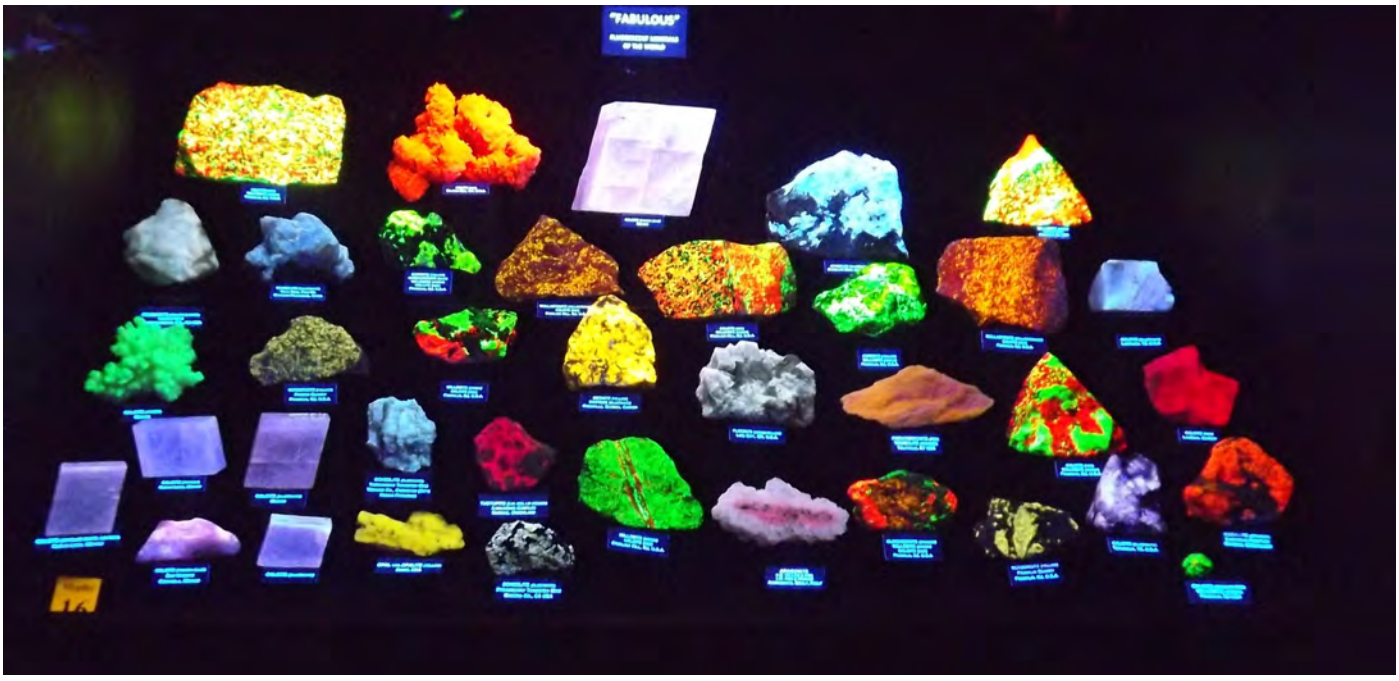
"FABULOUS"


HIGH PRICED SPECIMENS vs.
LOW PRICED SPECIMENS
LOW PRICED SPECIMENS vs.
HIGH PRICED SPECIMENS

Micromounters Hall of Fame Award by Beth Heesacker

Don Howard, a member of the Micro Mineral Study group and editor of the Micro Probe newsletter for that group, traveled to Baltimore this October to be inducted into the Micromounters Hall of Fame at the Baltimore Mineral Society Symposium.

The Hall of Fame was established in 1975 to

> honor those who have supported and promoted this aspect of the mineral hobby to the highest degree. Those selected have often written articles or a column for a notable mineral publication, founded a micromount symposium or club, given lectures, promoted and taught micromounting to others, built sizeable collections, discovered new minerals etc. By their efforts over a period of years, they have earned a worldwide reputation among mineral collectors in general and especially among micromounters.
>
> [from the Baltimore Mineral website—
> http://www.baltimoremineralsociety.org/halloffame/historyandmembership.html]

Congratulations to Don on this honor. I know personally that he richly deserves this honor. In addition to his attendance at our regular meetings, he attends the Northern California Mineralogical Association meeting bringing back many flats of micro minerals to share with the Micro Mineral Study Group and holds monthly mineral identification meetings which a few of us "newbies" attend. He has been very helpful in helping me identify many minerals in my collection.

PACIFIC NORTHWEST CHAPTER FRIENDS OF MINERALOGY

www.PNWFM.org
Editor, Beth Heesacker
4145 NW Heesacker Rd.
Forest Grove, OR 97116
heesacker@coho.net

PNWFM CALENDAR

Micro-Mineral Study Group — November 7, 2015, 9-5
Clark County P. U. D. Building
1200 Fort Vancouver Way
Vancouver, Washington

Seattle Mineral Market - May 21- 22, 2016, 10 -6
Lake City Community Center,
12531 NE 28th Ave NE, Seattle, WA 98125

42st Annual Symposium, October 14-16, 2015
Minerals of Butte and other Copper Localities
Red Lion Inn
Kelso, Washington

2017: 43rd Annual Symposium, October 13–15, 2017
Minerals of Morocco
Red Lion Inn
Kelso, Washington