

All are invited to attend the monthly meeting of the

Nittany Mineralogical Society

Wednesday, October 19, 2011 - Program at 8:00 p.m.

114 Earth & Engineering Sciences Building

Cave Minerals as Paleoclimate Archives

by William B. White

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Our October meeting will be held Wednesday the 19th in the room 114 auditorium of Earth & Engineering Sciences Building on the west side of the Penn State campus in State College, PA. Maps may be found on our web site.

(Junior Rockhounds: 5:00 p.m. in room 118)

6:30 to 7:30 p.m.: Social hour, refreshments in the lobby

7:30 to 8:00 p.m.: announcements, questions, answers;

Annual Meeting & Elections;

door prize drawings

about 8:00 p.m.: featured program

*The event has free admission, free parking, and free refreshments, and is open to all –
Bring your friends and share an enjoyable evening. -Editor*

Rainwater on limestone terrains percolates through the soil where it picks up an excess of carbon dioxide and various organic molecules and trace elements. The water eventually reaches underlying cave passages where the excess CO₂ is degassed and calcite or aragonite is deposited as the stalactites, stalagmites and flowstone that decorate caves. Other minerals may also be deposited.

Stalagmites, in particular, grow over tens of thousands of years layer upon layer so that a longitudinal slice of a stalagmite is a microstratigraphy of the growth period. Uranium-thorium dating allows for an absolute determination of the age of calcite deposition. Because the water that formed the stalagmite originally came from the surface, each layer contains a trace element and isotope signature which relates to the surface climate at the time of deposition.

Caves have become an important archive of paleoclimate information. This talk will be an overview of what we've learned and how we learned it.

See our web site: www.nittanymineral.org