

Nittany Mineralogical Society Bulletin

Nittany Mineralogical Society, Inc., meeting in State College, Pennsylvania
Contact information on back page

October, 2018

Visit our web site: www.nittanymineral.org

Editor (see back page):

David C. Glick

October 17th meeting:

Serpentinites and Associated Minerals on the Eastern Flank of the Berkshire Massif near Westfield, Massachusetts

by
Dr. Robert Altamura

Our October meeting will be held Wednesday the 17th in room 114 (the large auditorium) Earth & Engineering Sciences Building on the west side of the Penn State campus in State College, PA. Maps are available on our web site.

6:45 to 7:45 p.m.: *Social hour, refreshments in the lobby*

7:45 to 8:00 p.m.: *Annual meeting & elections*
about 8:00 p.m.: *featured program*

*The event has free admission, free parking, and free refreshments, and is open to all; **parents/guardians must provide supervision of minors.** Bring your friends and share an interesting evening!*

A string of serpentinites crops out on the eastern limb of the Berkshire massif. These masses are in the western belt of a double belt of ultramafic (rocks composed of mostly magnesium and iron minerals) pods...

*Please see the complete illustrated article on **page 2**.*



Metamorphic talc-magnesite-serpentine rock along the Little River in Massachusetts. Megacrysts are serpentine after olivine and matrix is the magnesite (tan) and talc (silvery). Note the hammer for scale.

ATTENDING THE OCTOBER MEETING?

Donations of a few high quality, labeled door prize specimens are invited.

Your donated snacks will be welcomed.

Bring a friend!

Annual Meeting and Elections in October

by David Glick, NMS President

The October 17th meeting will be the **Annual Meeting of the Corporation**, and will include election of officers. In accordance with our bylaws (available on the web site), the Board of Directors, acting as the Nominating Committee, has met and has provided its recommended slate of officers. Volunteers and nominations were invited, but none were received, so the slate is the incumbent officers, who have all agreed to stand for election again:

President - David Glick
Vice President - Robert Altamura
Secretary - John Dziak
Treasurer - Stuart Bingham

The Board truly needs **additional volunteers** to get involved with running the Society, providing **new energy and fresh thinking** and some new names on the ballot. In many cases it would be useful to have newcomers spend some time on committees and attending Board meetings before stepping into elected office. **All members: please consider volunteering!**

MEMBERSHIP RENEWAL TIME!

October is the last month of our membership year. Members, if you have not already renewed, a dues form has been mailed with this printed Bulletin or linked (on our web site) with your e-mailed Bulletin announcement. You will need to renew in order to keep on receiving this Bulletin and other benefits of membership. Your renewal will be welcomed! Mail it or bring it to the meeting, or renew online. Thank you!

November, December Date Changes

Our November regular meeting will be on the second Wednesday, Nov. 14. Our usual date would have been the day before Thanksgiving. We are also planning to move our holiday dinner up one week, to Wednesday, December 12.

Minerals Junior Education Day set for Saturday, March 30, 2019

Please keep the date open and plan to help the Society present our annual event for children in grades 1-8 and their parents.

Pennsylvania Geology Magazine

The first two 2018 issues of Pennsylvania Geology magazine from the Bureau of Topographic and Geologic Survey are available via the list of issues at http://docs.dcnr.pa.gov/cs/groups/public/documents/document/dcnr_20033210.pdf

The Spring 2018 issue (vol. 48 no. 1) includes a mineralogy article on pages 22 -23: *So Much for Conventional Wisdom in Mineralogy — Hercynite Spinel? Inclusions in Corundum from Shimersville, Lehigh County, Pennsylvania*, by Robert C. Smith, II, and John H. Barnes, Pennsylvania Geological Survey, retired, and Joe A. Dague, Chambersburg, Pa. It reports that all of the “common millimeter-sized dark inclusions in corundum crystals” from Shimersville which were analyzed were rutile, not spinel. All of those examined optically also had the characteristics of rutile.

The featured article in that issue is *Geology of the Mid-Nineteenth-Century Solferino (Italy) and Gettysburg (Pennsylvania) Battlefields—Similarities, Differences, and Possible Influences*, by Roger J. Cuffey, The Pennsylvania State University.

The Summer 2018 issue (vol. 48 no. 2) includes the featured article *Reflections on Petalodus, a Common Late Paleozoic “Shark” Tooth Found in Western Pennsylvania’s Rocks*, by John A. Harper, Pennsylvania Geological Survey (retired) and Carnegie Museum of Natural History.



Pyromorphite, Wheatley Mines, Phoenixville Mining District, Schuylkill Township, Chester County, Pennsylvania, USA. 3.9 x 2.9 x 2.4 cm. Ex. Dr. Gary Hansen Collection. Photo by Rob Lavinsky, iRocks.com CC-BY-SA-3.0 <https://creativecommons.org/licenses/by-sa/3.0>

Serpentinites and Associated Minerals on the Eastern Flank of the Berkshire Massif near Westfield, Massachusetts

by
Dr. Robert Altamura

A string of serpentinites crops out on the eastern limb of the Berkshire massif. These masses are in the western belt of a double belt of ultramafic (rocks composed of mostly magnesium and iron minerals) pods that follow the Appalachian axial zone. In the Westfield area the serpentinites occur in amphibolites and mica schists with minor dolomitic marble. Serpentine minerals (polymorphs, having the same chemistry but different crystal structure) include antigorite, lizardite and chrysotile.



Figure 1. The foothills of the Berkshires rising dramatically from the Connecticut River valley near Westfield, Massachusetts. View faces the west. The lone building on the horizon is atop Russell Mountain at the location of a former serpentinite building stone quarry.

The serpentinites have relatively high contents of chromium and nickel, indicating an origin as ultramafic masses of mantle origin or as igneous melts. Whole rock chemical compositions of the serpentinites suggest that the original ultramafic rocks were of two types: harzburgite (an orthopyroxene-rich ultramafic rock) and dunite (an olivine-rich ultramafic rock)..

Foot-long pseudomorphs of serpentine (lizardite and antigorite) after olivine suggest the dunite was metamorphosed to produce these spectacular metamorphic crystals (porphyroblasts) that were subsequently converted to serpentine during a later retrograde (lower pressure/temperature) metamorphic event. The process of serpentinization of the magnesium minerals in the ultramafic rocks involved hydration and recrystallization at lower



Figure 2. Streambed of the Little River. Serpentinities can be found as loose boulders in the river bed and in the bedrock outcrops on the river banks. The largest of the well-rounded boulders is approximately the size of a Volkswagen Beetle. This valley was likely a channel for glacial meltwater during the Pleistocene.

pressure/temperature under solid-state conditions. Prograde metamorphic temperature that caused the olivine megacrysts to grow reached up to 650°C while pressure may have reached 7 kilobars. The retrograde alteration of olivine and orthopyroxene to serpentine minerals likely occurred at approximately 500°C..

Associated minerals in the host country rocks and at the contact with the serpentinites with the country rocks include actinolite-tremolite, beryl, biotite, brucite, chlorite, diopside, dolomite, kyanite, magnesite, magnetite, plagioclase, orthoclase, quartz, sillimanite, and talc. Biotite and chlorite occur as a band approximately 6 inches in thickness at the contact with the country rocks. A band of diopside with crystals up to 10 inches in length also was found, along with a relatively thick (4 feet) band of talc (talc schist). These individual bands composed of different minerals suggest considerable elemental mobility during the history of the serpentinite.

Illustrations by the author.



Figure 3. Metamorphic talc-magnesite-serpentine rock along the Little River. Megacrysts are serpentine after olivine and matrix is the magnesite (tan) and talc (silvery). Note the hammer for scale.

Please attend the presentation on October 17!

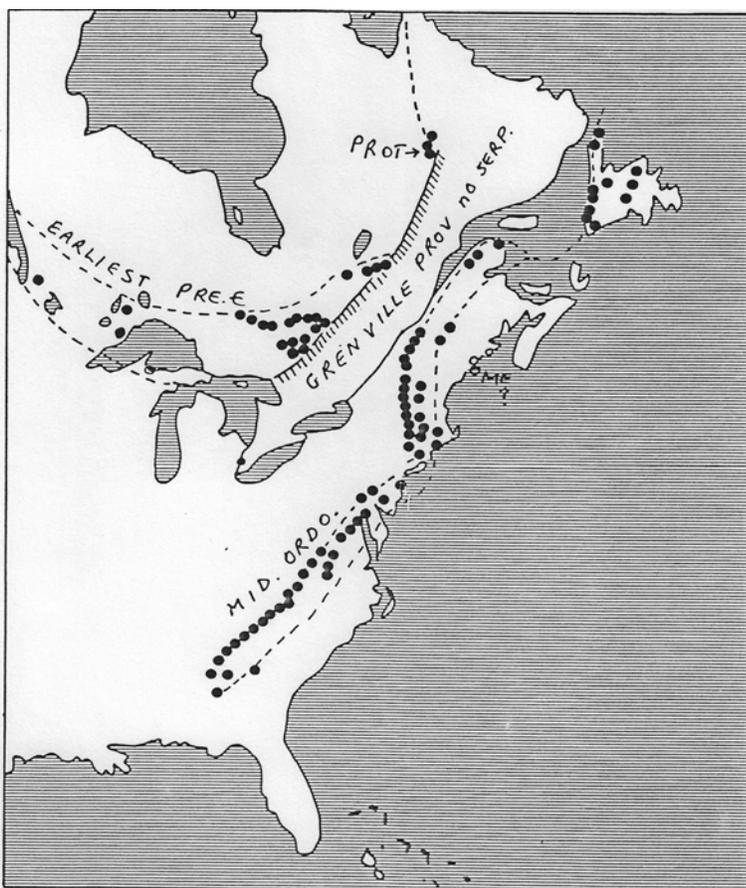


Figure 4. Ultramafic (serpentinites) rocks of eastern North America. Note the double-belt character along the Appalachian trend.

Stories professors told me:

a series by
Charles E. Miller, Jr.
State College, PA

6. The discovery

The South Mountain Physiographic Province is the easternmost part of the Appalachian Ridge and Valley. In Pennsylvania, this province is located in parts of Franklin, Cumberland, Adams, and York Counties. One natural resource in South Mountain is iron ore, consisting mostly of hydrous iron oxides called goethite and limonite. Especially in the early to mid-1800s, iron ore was smelted at iron furnaces such as at Pine Grove and Caledonia. A waste product of iron ore smelting is slag, a vitreous (glassy) material. Impurities impart a variety of colors, including red, blue, green, brown, and white. These colors are attributed to a mixture of metal oxides and silicon dioxide. The latter is also the composition of quartz. Commonly, vesicles or small cavities can be seen in slag samples, formed when volatile gases escape from a melt during smelting. Slag is analogous to obsidian, a natural glass associated with some volcanic flows.

Although attractive as it sometimes is, slag is basically worthless to collectors. It is common at old charcoal iron furnaces that were scattered across Pennsylvania. Some mineral enthusiasts use slag in tumblers, for which it is suitable because of its hardness.

Several decades ago, a former earth science professor at Shippensburg University told the following story to this writer. A colleague of his – from a different department – showed what he thought was a valuable mineral found over the weekend in nearby South Mountain. The mineral was red and vitreous. In his mind, it was a rare discovery. Upon inspection, the earth science professor gently informed the colleague

it was slag, not a rare mineral, and it was common in a variety of colors, a waste product from iron ore smelting, and essentially worthless. The colleague was so sure of his discovery that he pointedly told the earth science professor – trained in geology – he did not know what he was talking about. Decades have passed since this conversation occurred. It is possible, today, that this worthless, common piece of slag is still considered a prize in that colleague's collection. The moral of the story is that some people do not want to know the truth.

Editor's note:

“What's this rock I found that looks like blue-green obsidian?” (or similar wording) may be the most common question we receive from the public here in the Ridge and Valley of central Pennsylvania. For more information on the plethora of iron furnaces which would have created this slag, see:

http://www.oldindustry.org/PA_HTML/Palron.html

<https://www.mindat.org/article.php/1931/>

(That Mindat article is 22.+Iron+and+The+Old+Stone+Furnaces+of+Western+Pennsylvania)

See the May and October, 2017, issues of the Nittany Mineralogical Society Bulletin for earlier installments in this series.



Iron furnace slag from central Pennsylvania, found by Jim Garthe. Note the gas bubbles in the specimen at top left, swirls of color at top right, and conchoidal fracture at bottom right. *D. Glick photo*

FM - Colorado Chapter Videos and Publications

from Denver Gem and Mineral Guild,
<http://denvergem.org/News.html>
 via Lake George Gem & Mineral Club Newsletter,
 Bob Carnein, Editor

Worth noting: the Program, Abstracts, and Field Trip Guides, for the recent Aug. 4-5, 2018 symposium, "Minerals from the Metallic Ore Deposits of the American Southwest" are available for free download at the Friends of Mineralogy, Colorado Chapter, website, at <http://friendsofmineralogycolorado.org/mmodas/>. Video recordings of the oral presentations will also be available soon at the CSM Library website. Likewise, both the abstracts and field guides and video recordings of most presentations from last year's symposium, "Gold and Silver Deposits in Colorado" (July 20-24, 2017) are available for free viewing and download online via the Colorado School of Mines Library website, at <https://dspace.library.colostate.edu/handle/11124/172170>.



Smoky Quartz with Amazonite, Crystal Peak area, Park and Teller Cos., Colorado, USA. 8.2 x 7 x 6.2 cm. Photo by Rob Lavinsky, iRocks.com CC-BY-SA-3.0 <https://creativecommons.org/licenses/by-sa/3.0>

FEDERATION NEWS

Nittany Mineralogical Society, Inc., is a member of EFMLS, the Eastern Federation of Mineralogical and Lapidary Societies, and therefore an affiliate of AFMS, the American Federation of Mineralogical Societies. **The Federations and our Society strongly encourage all members to read the monthly Federation Newsletters, available on their web sites,** which are linked from our web site, www.nittanymineral.org. We present brief summaries here in order to encourage readers to see the entire newsletters. There's a lot there!

The **EFMLS Newsletter** is now being distributed electronically; a link is available on our web site www.nittanymineral.org. The October issue has news for the May 20-26 2019 Wildacres workshop session; the Speaker-in-Residence will tentatively be gemologist and author Renee Newman. President Barbara Ringhiser has her outgoing message, with request for a new volunteer webmaster. The safety article reminds field collectors to remember to bring basic safety equipment and remember the basics for safe activity in their particular environment. There's an article on 2019 being the International Year of the Periodic Table.

The **AFMS Newsletter** is available by the same methods. In the October issue, outgoing President Sandy Fuller writes about making our clubs stronger, including attracting new members, saying, "Roll out the welcome mat and invite new ideas as well as new members." The Juniors article discusses using A.B. Dickas's Geo-Sites and Fossil Sites books in kids' programs. *-Editor*

Geo-Sudoku

by David Glick

This puzzle contains the letters ADELOPTUS; one row or column spells a tooth fossil from Pennsylvania. Each block of 9 squares, each row, and each column must contain each of the nine letters exactly once. The solution is on page 8.

	S		L	U		T	E	
	T		P		S			A
D			E					U
O	D	A					L	
	E				O	D		
S			D					T
E			O	T		S		L
	P	S		E				D
					L	U		

SOUTH PENN

ROCK AND MINERAL

SATURDAY SWAP & SALE

OCT 27, 2018

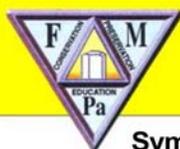
8AM TO 3PM

South Mountain Fairgrounds
 1.5 miles West of Arendtsville, PA on route 234
 (Where the Apple Harvest Festival is held)

FOOD AVAILABLE

General Admission: \$1.00
 Tables for swappers: \$5.00 ea
 Children free



SYMPOSIUM & FIELD TRIP

Friends of Mineralogy - PA Chapter November 3-4, 2018 Lancaster, PA

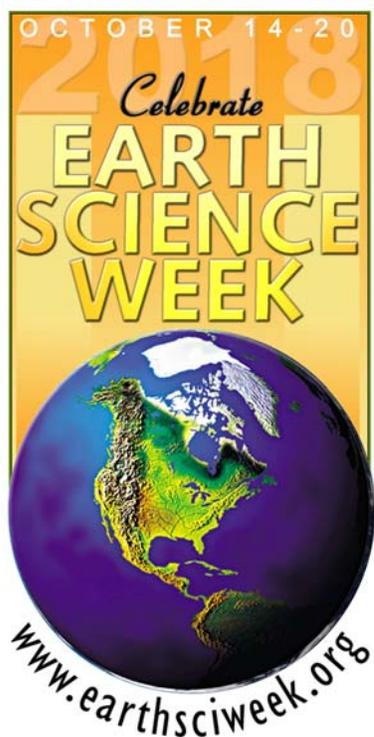
Hackman Physical Sciences Building (parking lot off Harrisburg Pike), Franklin & Marshall College

Symposium for mineral enthusiasts on **Saturday Nov. 3** Doors open 8:30 a.m.; Symposium 9:00 - 4:00
 Sales by Select Dealers – Silent Auction – Give-away Table – Meet Fellow Collectors
 Experts will speak on the theme: **Pennsylvania Mining and Mineralogy**

Stan Mertzman, PhD	Ron Sloto, PG	James Van Fleet	Other possibilities being developed include:
Franklin & Marshall College What a Spring for Volcano Lovers: Kilauea in Hawaii and Volcán Fuego in Guatemala: A Study in Contrasts	West Chester University The Perkiomen-Ecton Lead- Copper Mines, Audubon, Montgomery County, Pennsylvania	Bucknell University Fluorescent Minerals of Pennsylvania	- The Vaux Collection at Bryn Mawr College - The Hogg Mine 2018 Machine Dig

Registration (form on web site): Current members \$ 15.00/person Non-members \$ 25.00 Students with student ID free
 Professional Geologists: lecture attendance qualifies for Professional Development Hours toward license renewal

Field Trip Penn/MD Materials Q., Peach Bottom PA **Sunday Nov. 4** Open only to symposium registrants.
 Visit our web site for details, registration form, changes and updates: www.rasloto.com/FM

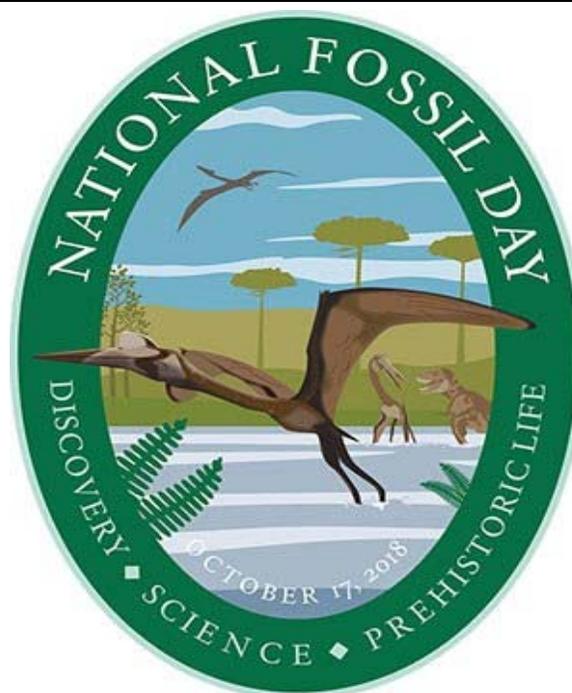


Earth Science Week

October 14 - 20, 2018

from <https://www.earthsciweek.org>

“Earth Science Week isn’t just for students and teachers. If you’re curious about Earth science, you’re invited to participate in events nationwide and plunder a treasure trove of online resources.” This year’s theme is “Earth as Inspiration.”



National Fossil Day™

October 17, 2018

from

<https://www.nps.gov/subjects/fossilday>

“Join paleontologists, educators, and students in fossil-related events and activities across the country in parks, classrooms, and online during National Fossil Day. National Fossil Day is an annual celebration held to highlight the scientific and educational value of paleontology and the importance of preserving fossils for future generations.”

For National Fossil Day events in Pennsylvania, see <https://www.nps.gov/subjects/fossilday/events.htm>

ULTRAVIOLATION 2018

FLUORESCENT MINERALS FROM AROUND THE WORLD

If Your Rock Don't Glow You're at the Wrong Show
SHOW – SWAP – SELL

Sponsored By **The Rock and Mineral Club**
of Lower Bucks County



and the

UV Nomads



WHEN: **Saturday October 27, 2018**
9:00 AM to 4:00 PM

WHERE: **First United Methodist Church**
\$2 donation - Kids 12 & under free
840 Trenton Road
Fairless Hills, PA 19030



Snacks & Beverages available
Raffles & other exciting give-a-ways

ULTRAVIOLATION is the **ULTIMATE** annual show for the fluorescent mineral enthusiast, whether a novice or serious collector. The show features many of the world's premier fluorescent mineral **COLLECTORS AND DEALERS** who strive each year to bring the biggest, brightest and best fluorescent minerals to satisfy the insatiable cravings of the fluorescent collector. ULTRAVIOLATION highlights fluorescent minerals **exclusively** and is the next best thing to night collecting. Free admission and a fluorescent mineral specimen for each junior mineralogist 12 years and younger when accompanied by an adult.

**ALTERNATING
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AND DARKNESS
PROVIDE THE
ULTIMATE
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FOR ENJOYING
FLUORESCENTS**

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8' TABLE \$30 – ½ TABLE \$15
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ULTRAVIOLATION IS THE DIFFERENCE BETWEEN "NIGHT AND DAY"

Some Upcoming Shows and Meetings

Our web site <http://www.nittanymineral.org> has links to more complete lists and details on mineral shows and meetings around the country. See www.mineralevents.com for more.

October 27, 2018: Ultraviolation: Fluorescent Minerals from Around the World, by R&MC of Lower Bucks County PA & the UV Nomads. First United Methodist Church, 840 Trenton Rd., Fairless Hills PA 19030. Sat. only, 9-4. See page 7.

October 27, 2018: 27: South Penn Fall Rock and Mineral SWAP & Sale: South Mountain Fairgrounds, 1.5 miles West of Arendtsville, PA. Sat. only, 8-3. See page 5.

Nov. 3-4, 2018: Friends of Mineralogy - PA Chapter Symposium. Franklin & Marshall College, Lancaster PA. See page 6. <http://www.rasloto.com/FM/>

March 23-24, 2019: AFMS and Midwest Federation Convention, Cedar Rapids, Iowa

June 1-2, 2019: EFMLS Convention, Monroe, New York

Geo-Sudoku Solution

A	S	P	L	U	D	T	E	O
U	T	E	P	O	S	L	D	A
D	O	L	E	A	T	P	S	U
O	D	A	T	S	U	E	L	P
P	E	T	A	L	O	D	U	S
S	L	U	D	P	E	A	O	T
E	U	D	O	T	P	S	A	L
L	P	S	U	E	A	O	T	D
T	A	O	S	D	L	U	P	E

Visit us at www.nittanymineral.org

INVITE A FRIEND TO JOIN THE SOCIETY

The Nittany Mineralogical Society prides itself on having among the finest line-up of speakers of any earth sciences club in the nation. Everyone is welcome at our meetings. If you'd like to be part of our Society, dues are \$20 (regular member), \$7 (student rate), \$15 (seniors), \$30 (family of two or more members, names listed). Those joining in March or later may request pro-rated dues. Your dues are used for programs and speakers, refreshments, educational activities, Bulletins, and mailing expenses. Please fill out a membership form (available at www.nittanymineral.org), make checks payable to "Nittany Mineralogical Society, Inc." and send them in as directed, or bring your dues to the next meeting.

We want to welcome you!

CONTACT INFORMATION

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SOCIETY OFFICERS

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John Dziak (Secretary)
e-mail: jjd264@psu.edu
Stuart Bingham (Treasurer)
E-mail: sebing145@comcast.net

OTHER CONTACTS

Field Trips:
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Membership Chair: David Glick (see above)
Programs: Dr. Duff Gold 865-7261(o), 238-3377(h)
e-mail: gold@ems.psu.edu
Door Prizes: Dr. Bob Altamura (see above)
Facebook & Publicity: John Dziak: jjd264@psu.edu

The **Bulletin Editor** will welcome your submissions of articles, photos, drawings, cartoons, etc., on minerals, fossils, collecting, lapidary, and club activity topics of interest to the members. Please contact:

David Glick E-mail: xidg@verizon.net
209 Spring Lea Dr. phone: (814) 237-1094 (h)
State College, PA 16801-7226

Newsletter submissions are appreciated by the first Wednesday of the month. Photographs or graphics are encouraged, but please do not embed them in word processor files; send them as separate graphics files (TIF, or good to highest quality JPEG files, about 1050 pixels wide, are preferred). Please provide captions and name of photographer or artist.