

DVESScapades

escapades: interesting, stimulating, exciting activities and adventures



Delaware Valley Earth Science Society Newsletter



July 8, 2009

Program: Chet Lemanski on collecting FOSSILS/MINERALS/GEMS in Arizona

President's Message - by AnnLynne Benson, DVESS President and EFMLS Director

There are **so** many things about our club that I enjoy, it's difficult to put them all into words. One thing I very much enjoy is the camaraderie among our members. Everyone is so friendly!! Everyone shares knowledge and information, talents and skills, and everyone benefits.

IT'S J _ST
NO F _N

Another is our flexibility. A couple of years ago, we lost our long-time home at the Evergreen Ave. school in Woodbury. Thankfully, we were able to relocate to Rowan University, but the downside of that was the University's decision to switch us to a new room with each new semester. When the rooms got smaller and smaller, we were eventually squeezed out like toothpaste! And again, we found a new home, this time at the Education Building behind Centenary United Methodist Church in Berlin where, hopefully, we will accomplish several goals, including growing roots. Hopefully once again seeing our meetings host 40 or more people; keeping our momentum going by holding meetings during the Summer, and attracting new members. The church's new pastor has promised to try to attend the July meeting - with her family so we're already off to a good start on potentially meeting this goal.

We're starting off our first Summer Season with a wonderful program on minerals. Later in the month we'll have our annual picnic. Don't miss out on any of the Summer fun and remember - if you have an idea, share it with someone in the club. As you "Rock Club" family, we promise to appreciate you even more than your other family does!! I say that because we are a "family" by choice (but it could be because we have rocks in our head - you tell me).

Selenitely yours, Ann Benson

OK Folks, Grab your 3-D glasses and go to the following website. Be ready for a new way to enjoy -<http://3dparks.wr.usgs.gov/index.html> found by Grant (our Sec) it is really a wonder it almost feels like being there!!!!

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More current info on volcanos - as if we need something else to worry about!!!

Sent on 10 June 2009 by David Shiga

The US volcano may be connected to a semi-molten magma chamber that could fuel a giant eruption (Image: MAI / Rex Features)

IS A SUPERVOLCANO BREWING BENEATH MOUNT ST HELENS? Peering under the volcano has revealed what may be an extraordinarily large zone of semi-molten rock, which would be capable of feeding a giant eruption.

Magma can be detected with a technique called magnetotellurics, which builds up a picture of what lies underground by measuring fluctuations in electric and magnetic fields at the surface. The fields fluctuate in response to electric currents travelling below the surface, induced by lightning storms and other phenomena. The currents are stronger when magma is present, since it is a better conductor than solid rock.

Graham Hill of GNS Science, an earth and nuclear science institute in Wellington, New Zealand, led a team that set up magnetotelluric sensors around Mount St Helens in Washington state, which erupted with force in 1980. The measurements revealed a column of conductive material that extends downward from the volcano. About 15 kilometers below the surface, the relatively narrow column appears to connect to a much bigger zone of conductive material.

The column below Mount St Helens appears to connect to a huge zone of conductive material. This larger zone was first identified in the 1980s by another magnetotelluric survey, and was found to extend all the way to beneath Mount Rainier 70 kilometres to the north-east, and Mount Adams 50 kilometres to the east. It was thought to be a zone of wet sediment, water being a good electrical conductor.

The meaning of the cryptic box on the front page of our news letter...
It's just no fun without you!!!! We need to see you at our meetings.

However, since the new measurements show an apparent conduit connecting this conductive zone to Mount St Helens - which was undergoing a minor eruption of semi-molten material at the time the measurements were made - Hill and his colleagues now think the conductive material is more likely to be a semi-molten mixture. Its conductivity is not high enough for it to be pure magma, Hill says, so it is more likely to be a mixture of solid and molten rock.

Gary Egbert of Oregon State University in Corvallis, who is a magnetotellurics specialist but not a member of Hill's team, is cautious about the idea of a nascent super-volcano where Mount St Helens sits. "It seems likely that there's some partial melt down there," given that it is a volcanic area, he says. "But part of the conductivity is probably just water."

If the structure beneath the three volcanoes is indeed a vast bubble of partially molten rock, it would be comparable in size to the biggest magma chambers ever discovered, such as the one below [Yellowstone National Park](#)

Every few hundred thousand years, such chambers can erupt as so-called super-volcanoes - the Yellowstone one did so about 640,000 years ago. These enormous eruptions can spew enough sunlight-blocking ash [into the atmosphere to cool the climate by several degrees Celsius](#).

Could Mount St Helens erupt like this? "A really big, big eruption is possible if it is one of those big systems like Yellowstone," Hill says. "I don't think it will be tomorrow, but I couldn't try to predict when it would happen."

Further measurements probing the structure of the crust beneath the other volcanoes in the area could help determine if the zone connects to them all, Hill says. He presented his [team's results](#) on 27 May at the [Joint Assembly geophysics meeting](#) in Toronto, Canada.

IT'S J_ST NO F_N

PROGRAMS: DVESS General Meeting Future Dates 2009,

DVESS Newsletter July 2009

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NOTE NEW DATES NOW INCLUDED.FOR JULY AND AUGUST

July 8th "Collecting in Arizona today" by, soon to be inhabitant of AZ, Chet Lemanski (Lemanskiite) of Browns Mills. This well known species collector from NJ will tell us all about the local scene in one of the hottest collecting areas with his powerpoint presentation. (rescheduled from May.)

August 12th, Meetings in the summer are new to our club so we will be doing something old this time. I will bring in a load of antique club newsletters and members will take a stack and peruse them for valuable information, some of which may be shared that night with all. It promises to be an interesting and unique evening.

Sept 9th ., Our annual show and tell will take place this evening. All members who have traveled this summer (or anytime) are encouraged to bring in their finds and photos, etc. and tell us about your adventures. Bring friends!

Oct 14th , Eugene.F.Hartstein-1@USA.dupont.com Subject: Fossil Fakes and Forgeries is on for Oct 14 Please put in your newsletter that I am inviting folks to bring in any fake fossils they may have for that meeting. In past presentations of this topic I have had a number of folks bring in fakes for display and we have had a great time. One fellow brought in a spectacular looking Moroccan trilobite that was sawed in half to reveal it was epoxy stuck to a rock. :) I also have a few slides on faked minerals so if you have a few of those, bring them along. From my perspective this is a great opportunity to educate the collectors on quality material. Given by "Gene" Eugene Hartstein, DuPont CoTech Development Manager (Note our banquet is on Oct 18th)

FIELD TRIPS: Sterling Hill tour for DVESS will take place in September 2009.

EVENTS: The potluck dinner is cancelled for this year because of date scheduling conflicts.

The banquet at Vitarelli's on October 18, 2009. Gary had previously suggested a DVD presentation on Rhodochrosite (A perfect use of the new Dell machine).

Look at the online version which has pages beyond our printed version, limited to 12 pages for mailing. For more info

Group, **A cautionary tale** - forwarded by Grant, who found this on the internet at MSNBC.com

Dinosaur hunter sentenced for stealing fossils; Paleontologist gets 4 months in halfway house, three years of probation according to The Associated Press
updated 8:38 p.m. ET, Wed., June 24, 2009

GREAT FALLS, Mont. - Renowned dinosaur hunter Nathan Murphy was sentenced Wednesday to four months in a halfway house and three years probation after pleading guilty to stealing fossils.

Murphy was accused of stealing 13 dinosaur bones from central Montana's Hell Creek badlands in 2006. He pleaded guilty in April to theft of government property.

U.S. District Judge Sam Haddon also sentenced him to 300 hours of community service and ordered him to pay \$17,325 in restitution.

The case provided a rare glimpse into the black-market fossil trade while sinking the reputation of the 51-year-old, self-taught paleontologist who rose to fame on his discovery of the world's best-preserved fossil, a mummified duckbill dinosaur dubbed Leonardo, in 2000.

More info on page



Introducing Emily R.

This is Emily R. She is 9 years old and likes to do lapidary work. However, she is a mineral collector at heart. She loves to go to the tourmaline mines in the Pala District near San Diego. Emily has a whole collection of tourmaline. She has several colors including watermelon that she collected herself. Her dad's friends bring her minerals also, because they like to help her build her collection. She keeps them all together in neat groups in her room. Last year was her first year entering

the Ventura County Fair and she "cleaned up" in her class. Emily won 8 ribbons in the fossil and mineral divisions with her collections. She especially likes the collecting part because her dad is a rockhound and this is their special thing to do together. Her mom takes her to the junior lapidary classes. Emily hasn't decided if she wants to have a career in the mineral field, but she will definitely be a rockhound when she grows up!

Introducing Heather E.

Heather is 8 years old. At the age of five, Heather loved anything that sparkled, especially glitter and gemstones. When her mom and grandma explained where these beautiful faceted stones came from, she instantly asked to go dig up the back yard. She and her mom joined a local rock, mineral and fossil club in August 2008. Ten weeks later a club member introduced her to a cabbing machine and she cut her first two cabochons (a dinosaur bone and goldstone) that afternoon. Her bedroom and bathroom contain numerous display cabinets labeled with rough, polished and cut gemstones, as well as hundreds of fossils. Now that she's collected so many pieces, she shares extras with her friends. Heather's attended many field trips with her club collecting moonstone, garnets, rutile, amazonite and fossils just to name a few. Last weekend she

joined other club members who were cleaning out and reorganizing the group's storage shed. On a quiet afternoon, this little eight year old can be found with her loupe in one hand and a cut gemstone in the other. By far, diamonds are her favorite. For the last two years she's wanted to become a gemologist. Many girls her age love Hannah Montana and video games, but not Heather. She loves digging in the dirt, the Diamond Dan website and her subscription to "Mini Miners Monthly"!



“Women, Girls & Mineral Collecting

When I (Diamond Dan) was a little Mini Miner, my mother taught me that women and girls can be anything they want to be. They can be teachers and scientists and musicians and carpenters. They can collect dolls if they want to. **And** they can collect minerals if they want to.

There was a time when mineral collecting was a hobby for the men and boys, and the ladies came along with them. Today, however, women are very involved, and very important, in mineral collecting. So, this issue of Mini Miners Monthly is dedicated to the women and girls who collect minerals.

This is a different Mini Miners Monthly than we (Diamond Dan Publications) have ever done before. It is devoted to the women and girls in the world of mineral collecting. In this issue you will meet one of the best-known mineral collector today, Mrs. Gail Spann. She is pictured here to the left with her husband, Jim. Together they have a very fine mineral collection.

You will also meet Dr. Sally Zeller, a professional Geologist and University Professor pictured with her penguin friends on Seal Island, Antarctic Peninsula, lower right.

Mineral Artist and Businesswoman, Brandy Naugle, shares her talents with us. We will also tell you about a very important organization for women called Women in Mining (WIM, for short).

There are also many minerals named after women. You will find a fun project here to challenge you to discover who some of these women are for yourself.

Of course, you will also meet some young lady mineral collectors. I also received a special nomination for a mineral club leader who has worked with and inspired many, many generations of young mineral collectors. Her name is Mitty Scarpato. It is our hope that the young lady Mini Miners out there will be inspired to dream of becoming geologists, mineralogists, mineral dealers, mining engineers, mineral dealers, gemologists, jewelers or any occupation that is related to minerals and mineralogy.”



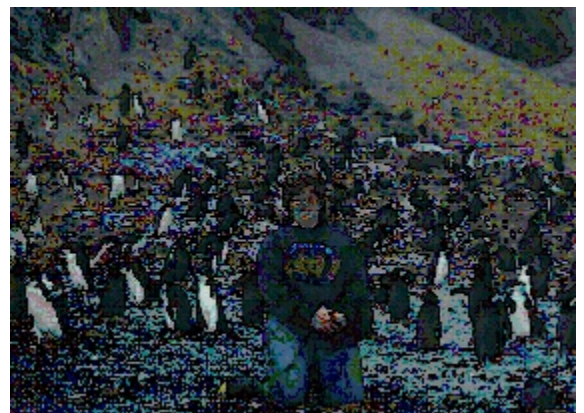
Left: Gail Spann and her husband, Jim.

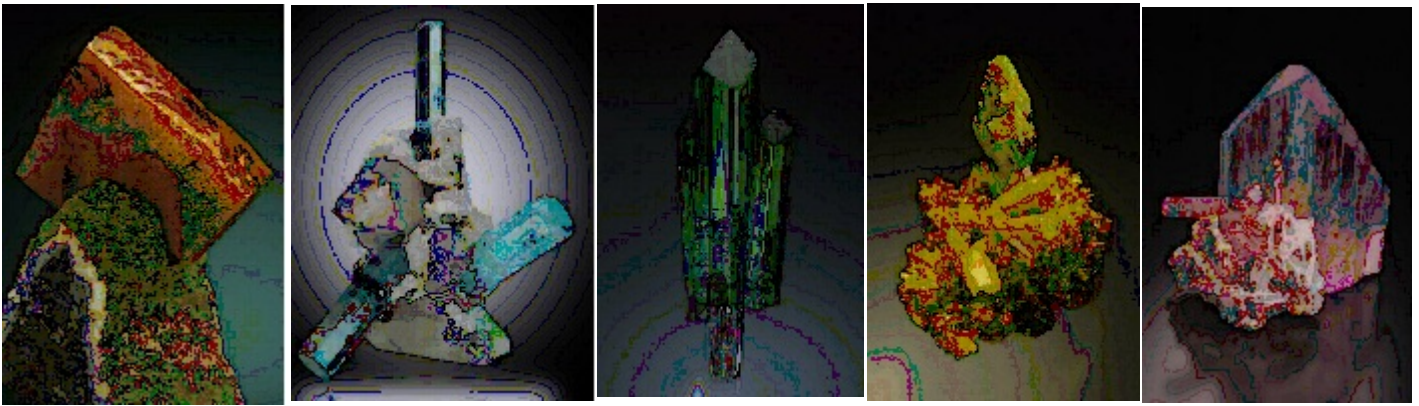
Gail Patricia Spann

Gail Patricia Spann and her husband, Jim, live in Rockwall, Texas. For many years she owned and operated a fine art and framing shop. She is a very, very busy lady. Gail is active in bicycling and is the Texas ambassador for the League of American Bicyclists. She is also a very serious and accomplished mineral collector. Gail travels all over the United States to participate in cycling and mineral events. She often gives talks and is always ready to visit with people and talk about the things she loves in life. Her picture here is a great one of

Gail: she is always smiling. One of her sayings is, “Life, by the way, is really fun.” Gail enjoys every minute of it.

Right: Dr. Sally Zeller with her penguin friends on Seal Island, Antarctic Peninsula.





Above are a number of mineral specimens from the Spann's collection. From left to right wulfenite, aquamarine, tourmaline, Pyromorphite and kunzite.

We asked Gail some questions about mineral collecting. Here are her thoughts.

In what ways to do you see girls and women changing the mineral collecting hobby?

Women are social and entertain in a different way than men do. I know that we often show our collection and I clean house, buy the groceries, cook the meals and decorate the house in preparation. I like to be sure guests are made to feel welcome and then go about looking at our minerals with them. When other women come, I let the other ladies know that they are welcome and we get to know each other before moving on to minerals. The men, in general, are right off to the cabinets where they challenge each other to "guess what this is". Also, women travel in groups and so you seldom see women alone when they shop for minerals. Women shop in groups.

Would you encourage young women to pursue a career in the mineral collecting hobby?

Young women should pursue any field that interests them. If a young lady desires to be a mineral dealer or work in the field of mining, she should follow her dreams.

How are women mineral collectors unique from men collectors?

Women are more into the look, beauty and color of minerals. For example, women are drawn, so often, to those minerals that have colorful crystals and a slight sparkly affect. Women display their minerals better also, incorporating them into the decor of the house and less into keeping them in flats under beds. When it comes to purchasing minerals, women will take longer to shop for a bargain and will wait till the "one that calls their name" is available. We enjoy seeing shapes in our minerals and often communicate that when showing minerals to other women. I have names for the minerals pictured here.

I call the wulfenite a piece of butterscotch. To me, the aquamarine looks like an airplane propeller so I call it "the propeller aquamarine." What does the tourmaline look like? The Space Shuttle, so it is "the Space Shuttle Tourmaline."

What wisdom would you offer young women and girls to help them find success and satisfaction in mineral collecting?

Find other women in local rockhound clubs and learn from those that actually do dig. Buy mineral publications and read them. Go to shows with others to see pricing, availability and comparison. Go to Museums, meet the people who work there, ask questions. They really don't mind! Buy minerals on auctions that have low starting prices, see what you can find that appeals to you and start collecting a few pieces as reference. If you really do like it, collect it. I have found that collecting is a constant evolving thing, you move on to other minerals while

still loving those you first collected.

What is the most rewarding and satisfying aspect of mineral collecting for you personally?

The fact that I have a wonderful husband who also collects and goes to shows alongside me. It makes for a fun relationship when we both enjoy all the same aspects of our hobby. We love to be social so that is a satisfying portion of collecting as well. We have crawled into mines together and love that we are there as a couple. I owned an art gallery for most of my life and now that I am retired from that world, it is a pleasure to shift into the fabulous world of rocks and minerals, even the black and white ones are beautiful to us.

Is there anything special you would like to say from your heart for the young women and girls who are interested in minerals and mineral collecting?

Don't let anyone deter you from collecting. Many women have, and do, collect. Never be ashamed of liking any mineral or for never going in the field to dig. Collectors come in all ways to this wonderful hobby. Some dig and find their own, others purchase at shows and some on the web. There is no right or wrong way to collect. It is a pure joy to learn about the history of minerals and who owned them before us, but it is also a joy to sit and just look at the beauty of each and every one. We all started somewhere and we all learned as we went. It is about enjoying our beloved hobby.

Thank you very much, Gail, for your thoughtful and beautiful answers. You are an inspiration!

More of this topic online -- BUT BONUS - two word searches this month 1 home made 1 from DD.

Continued from page 3 for your edification.

"I have no excuse. I was wrong and I know it," Murphy told Haddon during his sentencing hearing. "I want you to know that this has devastated my life."

Murphy was sentenced last month to 60 days in jail on a separate state count involving a stolen raptor fossil.

Federal prosecutors wanted him to serve an additional 10 months on the federal charge. Still, U.S. Attorney Bill Mercer said the case would serve as a deterrent to others who would steal fossils from public lands.

"We want to avoid ever having to prosecute a case like this again," he said. "The best way we can deter is to make sure that if people are on federal land excavating for dinosaurs, they're going to be prosecuted for it."

While it's legal to take and sell bones from private property, federal law generally prevents their removal from public lands without a research permit. But the remoteness of many prime fossil grounds in Montana, Wyoming, Utah, Colorado and other western states makes enforcement difficult.

Murphy's theft case was pending when President Barack Obama signed a law in March setting a penalty of up to five years for stealing bones or other fossils from public land. The Paleontological Resource Protection Act came too late to apply to Murphy's case.

The new law — combined with Murphy's conviction — will **force fossil buyers to question where bones came from to avoid becoming accomplices to a crime**, said Scott Foss, a regional paleontologist with the Bureau of Land Management in Utah.

Murphy runs a business in Billings that charges customers \$200 a day to participate in dinosaur digs.

He was paleontology director at the Dinosaur Field Station in Malta, Montana, for 15 years before resigning in July 2007 — about the same time state and federal authorities began investigating his activities.

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Mineral People & Mineral Careers

Hopefully you are not tired of word searches yet. In this word search puzzle you will find the names of people and jobs that are related to minerals and mineral collecting. Would one of these careers be right for you?

Marie Huizing ~ Managing Editor, Rocks & Minerals Magazine

M	I	N	E	R	A	L	O	G	I	S	T	O	P	A
A	I	A	A	R	O	N	J	E	W	E	L	E	R	Q
R	I	N	C	C	H	E	A	T	H	E	R	T	O	L
I	P	X	E	U	H	A	N	N	A	H	I	E	F	I
E	U	B	N	R	T	Y	L	L	A	S	M	E	E	F
H	B	W	G	I	A	V	M	I	T	T	Y	A	S	T
U	L	M	I	E	J	L	W	E	S	L	E	Y	S	S
I	I	I	N	M	O	E	D	I	T	O	R	A	O	I
Z	S	K	E	M	I	L	Y	E	D	F	G	U	R	G
I	H	E	E	V	N	N	E	V	A	E	H	T	B	O
N	E	B	R	A	N	D	Y	H	I	L	I	H	O	L
G	R	C	O	L	L	E	C	T	O	R	E	O	K	O
L	Y	N	N	V	A	R	O	N	W	H	Y	R	W	M
S	C	I	N	E	Z	S	K	E	L	L	I	P	U	E
M	I	N	E	R	V	T	S	I	G	O	L	O	E	G

The following mineral careers and people are in this word search puzzle. They are also found in this issue of Mini Miners Monthly. They can be left to right, right to left, up, down or diagonal.

mineralogist, miner, engineer, gemologist, author, geologist, artist, mineral dealer, jeweler, editor, publisher, WIM, professor, Marie Huizing, Lynn Varon, Sally, Curie, Heaven, Brandy, Emily, Heather, Mitty, Szenics, Kelli, Collector

Lynn Varon ~ Managing Editor, Rock & Gem magazine

KELLI MARCOU ~ JEWELER, GEMOLOGIST, BUSINESS OWNER

UPCOMING EVENTS

NOW thru Sept. 20, 2009 Franklin Institute (now known as The Franklin) in the Mandell Center. Step into the realm of *Star Trek* and be part of the legacy that has captured the imagination of generations! This unprecedented exhibition features the world's most comprehensive collection of authentic *Star Trek* ships, sets, costumes and props from all five series and ten films over the last 40 years and includes over 200 authentic objects, a full-motion flight simulator AND the spaceship bridge from *Star Trek: The Next Generation*!

NOW thru Sept. 7, 2009 Reserve your tickets today for a look at this exclusive exhibit, created specifically for The Franklin about "The Father of Modern Science!". The Franklin is proud to have been selected as the only host of *Galileo, the Medici and the Age of Astronomy*, presented by Officine Panerai. Created through The Franklin's exclusive partnership with the Istituto e Museo di Storia della Scienza in Florence, the exhibit showcases Galileo's accomplishments, his relationship to the ruling Medici family, his discoveries and his overall impact on astronomy, physics and math. This is the first time one of the only two remaining Galileo telescopes has left Italy! Also exhibited are other instruments belonging to Galileo, as well as paintings, prints and manuscripts from the priceless Medici collection. Together, the collections will showcase how the union of science, art and political power gave rise to Galileo's success.

New Jersey State Museum Sunday Science Lecture Series

WHAT YOU NEED TO KNOW Free Admission - Free Parking, Museum Auditorium

Each lecture begins at 4pm. Light refreshments will be served. For more information, or to make reservations, please call (609) 292-8594

DVESS MEETING LOCATION : Centenary United Methodist Church, 151 South White Horse Pike, (route 30) in Berlin, 856-767-3881 or 856-767-7453. Located between Estaugh Ave and W Taunton Ave on your left, the church is on the right hand side.

MEMBERSHIP INFORMATION

Regular members are entitled to participate in all DVESS activities. Sponsoring members are entitled to the same plus a specially chosen mineral specimen. Dues are renewable each year in January. Membership rates for the Society:

Regular Membership:

\$15.00 for the 1st family member + \$5.00 for each additional family member

\$10.00 for the 1st Senior (65+) member + \$5.00 for each additional family member

Sponsoring Memberships (each additional family member - \$5.00):

"Silver" \$50.00 for 1st family member - receive a Geode Specimen

"Gold" \$75.00 for 1st family member - receive a Native Gold Specimen

"Platinum" \$100 for 1st family member - receive a Premium Specimen

SOCIETY INFORMATION

The Delaware Valley Earth Science Society, Inc., (DVESS), a non-profit organization, was founded in 1956 and incorporated in the state of New Jersey in 1957.

The Society:

- * promotes interest , knowledge and the development of skills in the "earth sciences". These interests include mineralogy, paleontology, lapidary arts, archeology and local preservation.
- * supports the conservation of natural resources, advocates the availability of collecting sites and maintains close contact with those in the academic field.
- * is a member club of the Eastern Federation of Mineralogical and Lapidary Societies
(<http://www.AmFed.org/EFMLS>)

MEETINGS

The Society meets the 2nd Wednesday of each month throughout the year at Centenary United Methodist Church, 151 South White Horse Pike, (route 30) in Berlin. Junior Rockhounds meet at 7:30pm with the regular meeting beginning around 8 pm.

Anyone with info for the newsletter please share with me. You can be published!
Stuff you did in school, on a trip etc., see my info below (next page).

Editor's Notes: Editor is not responsible for authenticity of information in any articles submitted for publication. Nor are the opinions expressed in the "DVESScapades" necessarily those of the officers of the Delaware Valley Earth Science Society, Inc., and/or the editor.

To submit an article for publication in the DVESScapades contact the Newsletter Editor. decuzzic@comcast.net, or Delaware Valley Earth Science Society Inc., DVESS, P O Box 372 Maple Shade, New Jersey 08052 or DVESS Website: <http://www.dvess.org> garyskyrock@comcast.net

AFMS CODE OF ETHICS (American Federation of Mineralogical Societies)

- I will respect both private and public property and will do no collecting on privately owned land without the owner's permission.**
- I will keep informed on all laws, regulations of rules governing collecting on public lands and will observe them.**
- I will to the best of my ability, ascertain the boundary lines of property on which I plan to collect.**
- I will use no firearms or blasting material in collecting areas.**
- I will cause no willful damage to property of any kind - fences, signs, buildings.**
- I will leave all gates as found.**
- I will build fires in designated or safe places only and will be certain they are completely extinguished before leaving the area.**
- I will discard no burning material - matches, cigarettes, etc.**
- I will fill all excavation holes which may be dangerous to livestock.**
- I will not contaminate wells, creeks or other water supply.**
- I will cause no willful damage to collecting material and will take home only what I can reasonably use.**
- I will practice conservation and undertake to utilize fully and well the materials I have collected and will recycle my surplus for the pleasure and benefit of others.**
- I will support the rockhound project H.E.L.P. (Help Eliminate Litter Please) and will leave all collecting areas devoid of litter, regardless of how found.**
- I will cooperate with field trip leaders and those in designated authority in all collecting areas.**
- I will report to my club or Federation officers, Bureau of Land management or other authorities, any deposit of petrified wood or other materials on public lands which should be protected for the enjoyment of future generations for public educational and scientific purposes.**
- I will appreciate and protect our heritage of natural resources.**
- I will observe the "Golden Rule", will use "Good Outdoor Manners" and will at all times conduct myself in a manner which will add to the stature and Public "image" of rockhounds everywhere.**

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D V E S S

W O R D P U Z Z L E

14

b y E d L o v e l a n d

R	O	L	O	C	E	T	I	T	A	M	E	H	A	E	B
E	R	D	C	G	H	V	E	T	I	E	D	A	J	T	E
T	U	E	F	L	A	I	A	J	O	I	T	E	G	I	T
I	F	L	H	A	E	R	S	E	S	K	C	O	R	H	I
N	L	E	A	U	T	I	N	E	L	O	K	G	H	P	S
O	U	P	J	B	I	E	E	E	L	C	T	E	E	A	K
M	S	I	E	E	R	R	N	L	T	S	M	O	U	R	N
I	C	D	T	R	O	A	E	I	E	I	E	L	L	G	A
L	I	O	I	I	E	C	D	R	M	L	D	O	A	E	H
G	S	L	L	T	T	M	C	O	H	N	O	G	N	T	E
N	S	I	O	E	E	E	P	C	R	D	E	I	D	I	T
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W	R	E	A	I	I	R	T	O	C	P	T	T	T	T	Z
T	U	V	L	T	U	N	G	U	S	K	A	E	E	E	N
S	J	A	E	T	I	T	E	N	G	A	M	R	S	O	U
E	U	C	E	T	I	E	P	S	A	G	T	A	B	G	K

July Puzzle 09

AJOITE	GRAPHITE	METEORITE
CAVE	HANKSITE	MINNE
CHISEL	HEMATITE	ORE
CLEAVE	HEMMORPHITE	PICK
COLLECT	HEULANDITE	RICH
COLOR	JADEITE	ROCKS
ESTWING	JURASSIC	SULFUR
GARNET	KUNZITE	TUNGUSKA
GASPETTE	LABRADORITE	
GEODE	LANOLITE	
GEOLOGIST	LEPIDOLITE	
GLAUBERITE	LIMECREST	
GOETHITE	LIMONITE	
GOLD	MAGNETITE	

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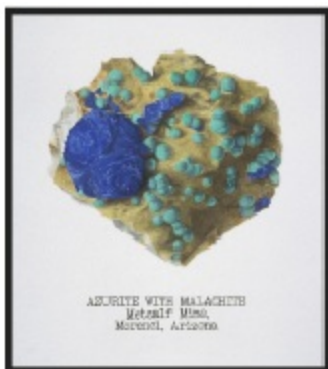
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MINERAL ARTIST BRANDY NAUGLE

Brandy Naugle was born November 2, 1978. She was raised in Waynesboro, Pennsylvania, and grew up with a strong interest in both art and rocks. Starting from the age of 6, Brandy and her father attended the Annual Chambersberg Mineral show. Under the influence of her Grandmother and parents (who are both artists themselves), Brandy developed a natural talent for art and artisan works. Combining art projects at home and at school, she went on to win numerous awards during her public school years.

In 2002, a few years after graduation, Brandy and her husband, Justin Zzyzx, began a mineral sales company and moved from the east coast to Los Angeles, California. While working on some projects, Justin requested a painting of a mineral specimen, in the tradition of old mineral paintings from historic mineral textbooks. After completing the first, an Amazonite from Teller County, Colorado, she took to a Benitoite crystal from San Benito, California and an Elbaite crystal from the Himalaya Mine, California. Once offered to their mineral customers, these works were purchased right away and she received more and more requests for her paintings. Brandy just kept painting, turning out beautiful portraits of Epidote and Prehnite, Aquamarine, Huebnerite, Sulphohalite, Kyanite and many others. In fact, we sold over twenty five paintings before she began having them professionally photographed and cataloged on her website, BrandyNaugle.com. Spending most days doing graphic design and website coding left little time for paintings. However, during that time she has designed advertising for most major mineral dealers for the website The-Vug.com and the companion magazine of which she serves as Art Director. Below and on the back page of this issue are some of Brandy's paintings. She is a very talented, and very busy. If you go to any of the larger mineral shows, you will eventually meet Brandy.



THE-VUG.COM

ALL THINGS MINERALOGICAL ONLINE

Vug (Vuhg) n. - A small cavity in a rock or vein, often with a mineral lining of a different composition from that of the surrounding rock.

We (this website) will be your jumping off point for searching the web for information and sales regarding our fine hobby. Like a crystal-filled void in a host rock, we hope The-Vug will serve as a treasure trove of information!

www.The-Vug.com

Mitty Scarpato, a Mentor to Young Mineral Collectors



A "mentor" is a person who works with and teaches someone to become better at something. Mitty Scarpato is a mentor to many, many children who are interested in minerals. Her friend, Dr. Karla Bouck, wrote to us and nominated Mitty as deserving of special recognition for all she has done for young mineral collectors and students. Dr. Bouck wrote this information about Mitty:

"I would like to nominate Mitty Scarpato for special recognition in the Women, Girls and Mineral Collecting issue. She was the Pebble Pup Leader of the Conejo Gem and Mineral Club for many years and handed a highly suc-

*cessful and organized program to my husband and I to run. She is currently our youth Education Group leader. She teaches about minerals, rocks and geology to our local schools that are woefully lacking in science education due to extreme budget cuts in the State of California. The kids and teachers love her visits to their schools. She did an outstanding job organizing our youth room and show program at our Pageant of Gems show. She is also our club Secretary. She is an avid collector and extremely helpful to all club members during field trips. She also makes very nice displays of her collections to share with others at various fairs and shows. **Mitty Scarpato is an inspiration to all the women in our club, both young and old.***



Space Shuttle Science Shows How 1908 Tunguska Explosion Was Caused By A Comet In 1927

Professor Leonid Kulik took the first photographs of the massive destruction of the taiga forest after the Tunguska catastrophe. (Credit: Professor Leonid Kulik)

ScienceDaily (June 25, 2009) — The mysterious 1908 Tunguska explosion that leveled 830 square miles of Siberian forest was almost certainly caused by a comet entering the Earth's atmosphere, says new Cornell University research. The conclusion is supported by an unlikely source: the exhaust plume from the NASA space shuttle launched a century later.

The research, accepted for publication (June 24, 2009) by the journal *Geophysical Research Letters*, published by the American Geophysical Union, connects the two events by what followed each about a day later: brilliant, night-visible clouds, or noctilucent clouds, that are made up of ice particles and only form at very high altitudes and in extremely cold temperatures.

"It's almost like putting together a 100-year-old murder mystery," said Michael Kelley, the James A. Friend Family Distinguished Professor of Engineering at Cornell who led the research team. "The evidence is pretty strong that the Earth was hit by a comet in 1908. " Previous speculation had ranged from comets to meteors.

The researchers contend that the massive amount of water vapor spewed into the atmosphere by the comet's icy nucleus was caught up in swirling eddies with tremendous energy by a process called two-dimensional turbulence, which explains why the noctilucent clouds formed a day later many thousands of miles away.

Noctilucent clouds are the Earth's highest clouds, forming naturally in the mesosphere at about 55 miles over the polar regions during the summer months when the mesosphere is around minus 180 degrees Fahrenheit (minus 117 degrees Celsius).

The space shuttle exhaust plume, the researchers say, resembled the comet's action.

A single space shuttle flight injects 300 metric tons of water vapor into the Earth's thermosphere, and the water particles have been found to travel to the Arctic and Antarctic regions, where they form the clouds after settling into the mesosphere.

Kelley and collaborators saw the noctilucent cloud phenomenon days after the space shuttle Endeavour (STS-118) launched on Aug. 8, 2007. Similar cloud formations had been observed following launches in 1997 and 2003.

Following the 1908 explosion, known as the Tunguska Event, the night skies shone brightly for several days across Europe, particularly Great Britain -- more than 3,000 miles away.

Kelley said he became intrigued by the historical eyewitness accounts of the aftermath, and concluded that the bright skies must have been the result of noctilucent clouds. The comet would have started to break up at about the same altitude as the release of the exhaust plume from the space shuttle following launch. In both cases, water vapor was injected into the atmosphere.

The scientists have attempted to answer how this water vapor traveled so far without scattering and diffusing, as conventional physics would predict.

"There is a mean transport of this material for tens of thousands of kilometers in a very short time, and there is no model that predicts that," Kelley said. "It's totally new and unexpected

physics."

This "new" physics, the researchers contend, is tied up in counter-rotating eddies with extreme energy. Once the water vapor got caught up in these eddies, the water traveled very quickly -- close to 300 feet per second.

Scientists have long tried to study the wind structure in these upper regions of the atmosphere, which is difficult to do by such traditional means as sounding rockets, balloon launches and satellites, explained Charlie Seyler, Cornell professor of electrical engineering and paper co-author.

"Our observations show that current understanding of the mesosphere-lower thermosphere region is quite poor," Seyler said. The thermosphere is the layer of the atmosphere above the mesosphere.

The paper is also co-authored by physicist Miguel Larsen, Ph.D. '79, of Clemson University, and former student of Kelley. The work performed at Cornell was funded by the Atmospheric Science Section of the National Science Foundation.

On July 1, Kelley will give a lecture, "Two-dimensional Turbulence, Space Shuttle Plume Transport in the Thermosphere, and a Possible Relation to the Great Siberian Impact Event," at a plenary session of the annual meeting of Coupling, Energetics and Dynamics of Atmospheric Regions in Sante Fe, N.M.

Another fabulous find contributed by our intrepid internet miner and Secretary, Grant.

Many, many thanks, Editor.