

Volume 22.1
 Spring 2012
 First Quarter

PSF NEWS

Planetary Studies Foundation

President's Message	2
Member's Corner	3
Spring Lecture Series	4
Member Spotlight: Astronaut Loren Acton	6-8
Transit of Venus: A Rare Alignment	9
The "Polar Pumpkin"	10
A Teacher in Antarctica	10
Spring is for Green	11

PSF Member, Violetta DuPont Turns 100 Years Old

By: Diane M. Sipiera

How many organizations are lucky enough to have a lovely Centenarian as a member? The Planetary Studies Foundation is proud to recognize and honor PSF member, Violetta DuPont as she celebrates her 100th birthday on April 7th. Violetta (or as those close to her call her "Vi") became involved with the PSF through her husband's love and passion for meteorite collecting. The DuPonts have known PSF president, Paul Sipiera, for over 35 years when Paul was just starting out as a young meteorite scientist. While Paul was performing extensive research and Jim was collecting rare meteorites, the two became a dynamic duo. The DuPonts provided Paul with some incredible research opportunities and Jim would soon become the co-author on many early scientific papers Paul would publish. Jim and Violetta were proud to be able to help a young scientist who was eager to make a name for himself in the field.



After Jim had passed in 1991, Violetta donated the James M. DuPont collection, which was the world's largest private meteorite collection at the time, to the Planetary Studies Foundation. This collection would become a staple of the organization, boasting over 965 meteorite specimens. Both Jim and Violetta trusted Paul's good judgment of meteorites and knew he was the right person to serve as the caretaker of the extremely special collection. Violetta has remained involved with the PSF through her attendance at past fundraising dinners and staying active in what the organization is up to. On behalf of all of us, we sincerely wish "Vi" a very happy 100th birthday and the best of wishes!

Transit of Venus: A Rare Alignment

By: Andrea Cosentino

In two months, we will have the opportunity to witness a planetary event that will never happen again in our lifetime. On June 5-6, 2012 the planet Venus will make its transit across the Sun and will not make this transit again until the year 2117. This rare event is not only interesting to observe because you will get to see Venus gliding across the face of the sun, but historically, this rare event would be ground-breaking to how past astronomers measured the size of our solar system.



FULL ARTICLE ON PAGE 9

UPCOMING EVENTS

Workshop: Victorian Hard Bonnet

April 14th

Lecture: Old Fashioned Remedies

April 21st

SKYWATCH & Spring Constellations

April 21st

Preparing Your Garden

April 28th

Earth Day Celebration

May 4th

Yoga Therapy

May 5th

Solar Observing

May 12th

Lecture: Summer Constellations

May 19th

PRESIDENT'S MESSAGE

I am very pleased to report that your Planetary Studies Foundation is off to a great start for 2012. The Saturday lecture series and workshops at the 1876 Banwarth House and Museum have attracted considerable interest in both the local press and in the number of attendees at these events. More diverse and equally interesting programs are set for the second quarter and we will resume our astronomical observing sessions in April at the **Apple River Fort State Historic Site** in Elizabeth, Illinois and in May at the **Jets Observatory** in Freeport, Illinois. There are two major astronomical events happening this spring and I encourage you to make every effort to see them. The first is an eclipse of the Sun that takes place on May 20th. It is an annular eclipse and can best be seen from the southwestern part of the United States. We should be able to see at least a partial eclipse from Illinois. The second event is a rare transit of the Sun by the planet Venus. **EXTREME CARE MUST BE TAKEN** when viewing the Sun in order to protect your eyes. It is highly recommended that you attend these events at a well-supervised observing site. The PSF will have the appropriate telescopes set up at our Apple River Fort observing site on both days. For our Chicago-area members, the **Karl G. Henize Astronomical Observatory** at Harper College in Palatine, Illinois will also be hosting a Venus transit party. The best viewing times will be posted on our website and by an e-mail blast as we get closer to those dates. Safe viewing!

I am also very pleased to report that our 2011 Annual Fund Drive achieved its goal of raising \$6,000 to cover the cost of building our "Stairway to the Heavens". Aside from the dramatic title, this stairway project is designed to connect the parking area at the **Apple River Fort Interpretive Center** to the 1876 Banwarth House and Museum. This will literally bring the two facilities together and make it more convenient for visitors to enjoy both places. The Elizabeth community-at-large will also benefit from the added convenience in reaching Main Street businesses. PSF member **Randy Shaw** of Elizabeth, Illinois is building the staircase and we would also like to thank **Hoskins Building Center** for providing a substantial discount on the building materials. The PSF Board would like to thank the Village of Elizabeth mayor, **Michael Dittmar** and their village board for consenting to this project. I would also like to thank the following members for their generous contributions that made this staircase possible: **Leo & Karen Baran, Kate R. Butler, Cecilia Cooper, Kathie & Jess Farlow (Farmers Guest House), Richard Friedman, Art Frigo, Bill & Claudia Gruber, Phil & Nancy Hablutzel, William & Alice Hack, James Hagen, David M. Lauerman, Richard & Ellie Leary, Captain James A. Lovell, Richard & Alimae Persons, COL (IL) J. N. Pritzker, IL ARNG(Ret), Marilyn Quas, Jennifer Schwartz, Diane & Paul Szipiera, Tawani Enterprises Inc., The Tawani Foundation, Pat & Jim Tierney, Linda Virag, and John & Jane Yoder.**

Given these very difficult economic times I truly appreciate the generosity and dedication of our members. It is my wish that you will all come out for our May dedication event and climb or descend (which ever suits you best) the PSF Stairs.

Paul P. Szipiera

MEMBER'S CORNER

RENEWING MEMBERS

Michael Clifton & Christine Hollis

James Paglin

Bill Schooley

Paul A. Solarz

NEW MEMBERS

Karen & Dave Andersen

Thomas Dunmore

Richard Forester

Janice Myelle

Cena Thorsen

Bonnie Becker

- PSF associate board member, **Trevor Ireland**, will host the 2012 Meteoritical Society Annual Meeting on August 12-17, in Cairns, Queensland, Australia. This will be the Meteoritical Society's 75th Meeting. For more information please go to www.meteoriticalsociety.org.
- Get well to **Herbert Windolf** and **Paula Sipiera** and a speedy recovery.
- The PSF was well represented at the Annual Lunar and Planetary Science Conference held in Houston, Texas this past March. Scientific papers were given by PSF members **Trevor R. Ireland**, **Tony Irving**, and **Mike Zolensky**. PSF is also proud to have provided a travel grant to **Nick Castle**, a University of Washington student, who presented his first scientific paper at this important international conference.
- **Paul Sipiera** was contacted by **Alexander Ovsov** from Romania about the PSF website. The 'Planetary Studies Foundation: All about Meteorites' has been translated to the Romanian language with PSF's permission. **Alexander Ovsov** is involved with 'Geek Science' which includes scientific articles and personal notes.
- PSF would like to extend a special thanks to members **John Yoder** and **Sindy Main** for volunteering their knowledge and time in giving their presentations at the 1876 Banwarth House & Museum.

2012 SPRING LECTURE SERIES

The spring events for the PSF are listed below. If you plan to attend an event, please contact Diane Sipiera at 815.858.2014 or dsipiera@planets.org to RSVP, or if you have any questions. Additional details can be found on the PSF website by visiting www.planets.org.

WORKSHOP: VICTORIAN HARD BONNET

Saturday, April 14th (10am - 2pm)
Banwarth House, Elizabeth, IL
Presented by Diane M. Sipiera & Elizabeth Myelle

This hands-on workshop will guide you into the millinery world of hat making. Basic sewing skills are required. The cost for this workshop is \$25 for members and \$35 for non-members and includes fabric, feathers, ribbon, form and thread. This workshop will be an all-day event, please bring a sack lunch. Please RSVP for this event, no walk-ins will be accepted.

LECTURE: OLD FASHIONED REMEDIES

Saturday, April 21st (1 - 2:30pm)
Banwarth House, Elizabeth, IL
Presented by Dr. James Hagen

Board member, Dr. James Hagen, has generously volunteered his talent and time to discuss old fashioned remedies, which are homeopathic solutions and which are plain, old quackery? Dr. Hagen will bring a variety of traditional cures to a new light and will present the history, effects and outcomes. Dr. Hagen is currently a professor in the Graham School of Management with a focus on public health, strategy and emergency management. Admission is free for PSF members and \$3 for non-members.

SKYWATCH & Spring Constellations

Saturday, April 21st (Begins at sunset)
Apple River Fort, Elizabeth, IL
Partnered with Apple River Fort

Welcome to a new year of stargazing and constellation story-telling! Dr. Paul Sipiera and his wife, Diane will also present a program spotlighting spring constellations. Dr. Sipiera is the adjunct curator of meteorites at the Field Museum of National History in Chicago. This event is weather sensitive. If it is overcast or raining, the event will be cancelled. If any guests think they may have a meteorite for Paul to analyze, please bring it with you to this event. This event is free.

LECTURE: PREPARING YOUR GARDEN

Saturday, April 28th
Banwarth House, Elizabeth, IL
Presented by Dr. Rev. Wanona Wellspring Ceisel, DN

Dr. Wanona Wellspring Ceisel, DN will present a lecture on how to prepare your spring garden. She owns and operates Spring Creek Farm and Holistic Center in Lena, Illinois. She will cover topics including soil testing, light determination and plant selection. Admission is free for PSF members and \$3 for non-members.

EARTH DAY CELEBRATION

Friday, May 4th
Banwarth House, Elizabeth, IL
Partnered with Apple River Fort

Paul & Diane Sipiera will partner with the Apple River Fort to present afternoon sessions to 5th & 6th graders on topics including geology and paleontology of the region.

YOGA THERAPY

Saturday, May 5th
Banwarth House, Elizabeth, IL
Presented by Dr. Rev. Wanona Wellspring, Ceisel, DN

Additional details can be found on www.planets.org.

SOLAR OBSERVING

Saturday, May 12th (1 - 3pm)
Banwarth House, Elizabeth, IL
Presented by Chris Zirtzman

Please join PSF member and amateur astronomer, Chris Zirtzman, as he introduces you to the world of solar observing. This session will teach which filters to use on the telescope and what to look for when using the telescope in the daylight. Admission is free for PSF members and \$3 for non-members.

LECTURE: SUMMER CONSTELLATIONS

Saturday, May 19th (1 - 2pm)
Banwarth House, Elizabeth, IL
Presented by Diane M. Sipiera

Join Diane Sipiera as she provides a full tutorial of which constellations can be seen during the summer months and the history behind them.

SKYWATCH

Saturday, May 26th (Begins at sunset)
Apple River Fort, Elizabeth, IL
Partnered with Apple River Fort

Join the PSF and the Apple River fort for a night of stargazing and constellation story-telling! This event is weather sensitive. If it is overcast or raining, the event will be cancelled. This event is free.

SOLAR OBSERVING

Saturday, May 12th (1 - 3pm)
Banwarth House, Elizabeth, IL
Presented by Chris Zirtzman

Please join PSF member and amateur astronomer, Chris Zirtzman, as he introduces you to the world of solar observing. This session will teach which filters to use on the telescope and what to look for when using the telescope in the daylight. Admission is free for PSF members and \$3 for non-members.

BASIC ROCKET BUILDING

Saturday, June 9th (10am - 3pm)
Banwarth House, Elizabeth, IL
Presented by Diane Sipiera

Additional details can be found on www.planets.org

SPRING CELESTIAL EVENTS

April 15

Saturn at Opposition

The ringed planet will be at its closest approach to Earth and its face will be fully illuminated by the Sun. This is the best time to view and photograph Saturn and its moons.

April 21, 22

Lyrids Meteor Shower

The Lyrids are an average shower, usually producing about 20 meteors per hour at their peak. With no moon to get in the way this year, this really should be a good show. Look for meteors radiating from the constellation of Lyra after midnight.

May 5, 6

Eta Aquarids Meteor Shower and Full Moon

The Eta Aquarids are a light shower, usually producing about 10 meteors per hour at their peak. Viewing may be difficult because the Full Moon will wash out all but the brightest meteors. The radiant point for this shower will be in the constellation Aquarius.

May 20

Annular Solar Eclipse

The path of annularity will begin in southern China and move east through Japan, the northern Pacific Ocean and into the western United States.

June 4

Partial Lunar Eclipse and Full Moon

The eclipse will be visible throughout most of Asia, Australia, the Pacific Ocean and the Americas.

June 5-6

Transit of Venus Across the Sun

This extremely rare event will be visible across the globe. A partial transit can be seen in progress at sunset throughout most of North America, Central America and western South America, and at sunrise throughout Europe, western Asia and eastern Africa.

July 3

Full Moon

MEMBER SPOTLIGHT: Loren Acton

Loren Acton, astronaut, physicist, research professor and family man has been a member of the Planetary Studies Foundation (PSF) since 1990. As one of the first astronauts to join the PSF, Mr. Acton has been involved with organization through the 1998 Aruba solar eclipse expedition and served as the guest speaker with his extensive knowledge and research of solar astronomy. He is most recognized as one of the four Payload Specialists selected to fly on the STS-51-F/Spacelab 2 which launched on July 29, 1985. Mr. Acton has traveled over 2.8 million miles in 126 Earth orbits, and logged over 190 hours in space.

Can you provide us with a brief background of growing up and your family life?

My father was a cattle rancher in the foothills of the Snowy Mountains in central Montana. I was the youngest of six children and attended a small country school a bit over a mile from the ranch through the 6th grade. Often I would walk or ride my pony to school. It was a good education. My mother died when I was 11 years old, my dad sold the ranch and we moved to Billings, MT, where I attended Jr. High and High School.

You received a Bachelor of science degree from Montana State University (MSU) in 1959, what inspired you into the area of science?

On my way to matriculate in Mechanical Engineering at Montana State College in 1955 I stopped to visit my oldest brother. After hearing my plans he commented, “Why don’t you study Physics? It’s harder and may open more opportunities for you than engineering.” I took his advice and thus, became a scientist.

You received your Doctorate of philosophy from the University of Colorado in 1965, what inspired you to pursue an advanced degree in philosophy?

Most of my undergraduate classmates were planning to attend graduate school – it just seemed the thing to do. I was fortunate to win a good scholarship and chose to attend the University of Colorado just at the time that access to space for science was beginning. My work with early satellite measurements of solar x-ray emission earned me a Ph.D. in Astro-Geophysics.

Did you always know you wanted to be an astronaut? Or how did your role as research scientist transition into training to become one?

By the time the space shuttle was coming along I learned that the plan was for scientists to fly on the shuttle with their experiments. This was very appealing to me. I like adventures. I worked hard to help our research group at the Lockheed Palo Alto Research Lab to win the opportunity to fly a small solar telescope on an early shuttle mission (Spacelab 2) and to earn the chance to fly with it as a Payload Specialist. After seven years of program delays we launched our 8-day mission on July 29, 1985.



July 29, 1985: Launch of Spacelab 2



Loren aboard Spacelab 2



The crew of Spacelab 2

What was your most memorable experience from traveling (or preparing to travel) to space?

Perhaps the most memorable moments were the difficulties we experienced getting off the launch pad and into orbit. Our first launch attempt on July 12, 1985, was aborted at T-3 seconds (after the liquid-fueled main engines had started) because of a valve malfunction in one of the engines. Our second launch attempt on July 29 had a variety of problems, including weather, and finally launched after a 4 hour delay. About 5 minutes out, one of the shuttle main engines shut down because of a faulty temperature sensor reading. We limped into orbit on the remaining 2 engines, 50 miles low and having dumped 1000 pounds of maneuvering fuel.

You currently work at MSU as a Research Professor of Physics where you oversee the solar physics group, can you explain for us what you do in your current role and what do you enjoy most about your line of work?

As a semi-retiree I no longer lead the group, although I was the founder. My current role is to work part-time with pictures of the solar x-ray corona obtained from my x-ray telescope which flew on the Japan/US/UK mission Yohkoh from September 1991 to December 2001. What I enjoy the most about my research has been the excitement of discovery and seeing new experimental results. It is also a tremendous privilege to be able to follow up on my own ideas and interests. Being a university research professor is the best job in the world!

Is the solar physics group working on any current projects you would like to share?

A big question in solar astrophysics is

how and why the sun is a star with a strong and varying magnetic field and how and why this results in high energy phenomena such as flares and coronal mass ejections in the sun's outer atmosphere. Our group is researching, both experimentally and theoretically, many aspects of this problem.

You recently traveled with your wife to Cuba, what was the purpose of the trip?

The advertised purpose of the trip was as a humanitarian mission carrying medical and school supplies to Cuba. Mostly, however, we wanted to see and experience Cuba and its people before the barriers to U.S travel there came down.

What was the most interesting thing you learned from your trip to Cuba?

The Cuban people were surprisingly warm and friendly. They seemed proud of their country and what had been accomplished socially, educationally and of their medical system. Their nation has labored under enormous difficulties and everyone is poor – but vanishingly few destitute or homeless people. I came away very, very sorry about what I believe has been exceedingly misguided policies towards Cuba on the part of my country.

What additional hobbies do you have?

I enjoy reading, travel, woodworking and working on my old Farmall tractors.

How did you become involved with the Planetary Studies Foundation?

Many years ago Evelyn and I were at Northwestern University for an astronaut event. After the public evening, we were approached by Paul Sipiera with an invitation to visit Harper College to help promote his dream of founding a planetarium. The Planetary Studies Foundation was in its infancy at the time. I think I may have been the first astronaut involved with PSF.



Loren and his wife, Evelyn



Front row: Evelyn (wife), Loren, Rosa (granddaughter)
Back row: Rebecca (daughter-in-law), Stanley (son), Cheryll (daughter) and Steve (son-in-law)

CONTINUED FROM PREVIOUS PAGE

You went on a total solar eclipse trip with the PSF to Aruba in 1998 as a solar astronomer and guest speaker. What interests you so much about solar astronomy?

It is really neat to live close enough to a star to study it in detail. Nature has a way of accomplishing amazingly powerful and wonderful things. It is up to us to try to understand how she does it!

Since you study UV rays, what are your thoughts about plastic degradation in our oceans caused by UV rays? And do you think it is something humans should be concerned about (i.e. the chemical intake as a cause of cancer)?

Ultraviolet photons carry enough energy to break molecular bonds and drive chemical reactions. This part of the solar spectrum is both a blessing and a curse. Over time, UV degrades and breaks up plastic and other materials – a kind of recycling. On the other hand, too much UV is damaging to living tissue. Thankfully, the atmosphere of the earth (especially the ozone layer) is both a UV shield and filter so that life on earth has been enabled to evolve to the magnificent diversity we see all around us.

What do you think about the current funding issue for NASA programs and what would you like to see happen?

The scientific side of our national space program is conducted in an orderly, sensible and extremely successful manner. Certainly costly mistakes and misjudgments are made (e.g., the Hubble mirror and the cost growth of the James Webb Space Telescope) but this is to be expected when everything that is done is new and original. But, from the very beginning, our NASA science program has been tremendously exciting

and rewarding. Our human spaceflight program has unfortunately, since Apollo, floundered from a lack of vision, commitment and a national agreement on why we send humans into space. Despite this, remarkable work has been accomplished but I grieve over the fits, starts and redirections and changed priorities that continue to hobble our NASA human spaceflight program. It isn't so much a lack of funding as a politicized funding and commitment cycle far too short for the needs of this kind of work.

What advice would you give to our younger readers and science enthusiasts?

Learn enough to enjoy learning and to have dreams. Follow your dreams and the dreams of others so that your intellectual life is rich and exciting. As I tell almost every student group, especially the younger ones, "Do smart stuff rather than dumb stuff."

What advice can you offer to young people who are interested in becoming involved with the space program?

Recognize the vast range of opportunities in the space program (research, engineering, life sciences, human factors, etc.) and keep moving towards your own personal star. If you dream of becoming an astronaut, go for it. At the same time, recognizing that all who want to fly won't make it, plan your livelihood so that it will be a wonderful work life even if you don't make it into orbit. ♦

DID YOU KNOW?

- The pilot or commander of the space shuttle is required to fly 1,000 hours as a jet pilot.
- Astronauts can grow taller while in space, approximately 2 inches if they are there over 30 days. This is due to lack of gravity.
- The first living animal into orbit was a dog from Russia names Laika. She traveled into space on Sputnik 2 in 1957.
- In Earth orbit, temperature conditions can be as cold as – 250°F. In the sunlight, it can be as hot 250°F.
- Astronauts wear orange spacesuits called "launch and entry suits" during launch and landing of the space shuttle.
- Twelve men have walked on the moon, two each on six different Apollo missions.
- Alan Shepard is the only person to hit a golf ball on the moon. During the Apollo 14 mission, he fitted an 8 iron head to the handle of a lunar sample collection device and hit three golf balls. All of which are still there.
- A spacesuit weighs approximately 280lb (127kg) on the ground. In the microgravity environment of space, it weighs nothing.

TRANSIT OF VENUS: A RARE ALIGNMENT

By: Andrea Cosentino

In two months, we will have the opportunity to witness a planetary event that will never happen again in our lifetime. On June 5-6, 2012 the planet Venus will make its transit across the Sun and will not make this transit again until the year 2117. This rare event is not only interesting to observe because you will get to see Venus, as a small black dot, gliding across the face of the sun, but historically, this rare event would be ground-breaking to how past astronomers measured the size of our solar system.

For many centuries, astronomy was not a very accurate science. The solar system model created by Nicolaus Copernicus (1473-1543) and later improved by Johannes Kepler (1571-1630) detailed where the planets should be in the sky at any given time. But the original heliocentric model never determined the actual distances between planets, only their relative distances compared to Earth's distance from the Sun. In these early models, Earth was considered 1.00 Astronomical Unit (AU) from the Sun, Venus was 0.69 AU and Mercury was 0.39 AU. What would puzzle astronomers for decades was the physical distance between any two of these planets at a particular moment.

Astronomical Unit - the mean distance from the Earth to the Sun.

Accuracy of planetary distances would be significantly improved in 1605 by Kepler's determination that planetary orbits were in the shape of an ellipse. This discovery, which would become Kepler's first law of planetary motion, would show that the inner planets, Mercury and Venus, would occasionally pass in front of the Sun in a transit. Before ever seeing a transit with his own eyes, Kepler calculated that transits of Venus would be extremely rare, occurring in pairs more than a century apart. Kepler's results showed that transits of Venus would occur in 1631

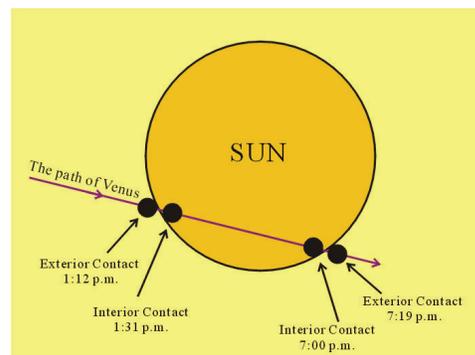
and 1639. However, Kepler would die in 1630 and would never have the opportunity to observe a Venus transit for himself.

Previous work from Copernicus used simple trigonometry to figure out that Venus was at an angle of 46 degrees from the Sun at its maximum elongation and if Venus orbited the Sun, a right triangle could be formed between Venus, the Earth and the Sun. However, one piece of information would be crucial to unlocking the size of the solar system, astronomers needed to know the parallax of the Sun.

Parallax - a displacement or difference in the apparent position of an object viewed along two different lines of sight, and is measured by the angle of inclination between those two lines.

The first transit of Venus would be observed in 1639 by the English clergyman and scientific observer, Jeremiah Horrocks (1618-1641). Horrocks was only twenty years old when he recorded the first observation of a Venus transit. He focused the image of the Sun through a simple telescope onto a piece of paper where the image could be safely observed. This type of observation would ultimately provide the information to measure the distance from the Earth to the Sun, but Horrocks would die at the young age of 22 and the mystery of the astronomical unit wouldn't be solved for another several decades.

Edmund Halley (1656-1742), famed astronomer of Halley's Comet and friend of Isaac Newton, suggested a high-precision measurement of the distance between the Earth and the Sun utilizing the Venus transits of 1761 and 1769. This would later be called "Halley's Method". Due to the parallax differences, the body of Venus would enter and exit at different places along the face of the Sun as seen from different places in the world. And since



The four contacts for a transit of Venus, from left to right is Contacts I, II, III and IV
Courtesy of NASA

the Sun's face is curved, the times of the transit would vary by latitude on the Earth. So all that was needed was an observer to measure the times of the contacts when Venus's edge touched the Sun's edge, thereby yielding the total time of transit at a location of known latitude.

Halley died in 1742, nearly 20 years before the transit of 1761, but the transits of 1761 and 1769 were measured by several sets of observers. Many difficulties were encountered by various transit observers, but when the transit pair had passed, enough parallax data was collected to enable astronomers to place the value of the astronomical unit in the range of 92-96 million miles. This was extremely accurate to the modern value of approximately 92,955,807 miles.

More information about this historically fascinating event and how and when to view the transit of Venus will follow in a May email blast to all PSF members. This information will include a global map of the transit, ways to safely view the event and educational resources to understand the transit for both children and adults.

For questions and comments, please contact Andrea Cosentino directly at Andrea2986@aol.com

THE “POLAR PUMPKIN” POLAR FLIGHT 90



Art Mortvedt and the “Polar Pumpkin”



PSF Member and Alaskan Bush Pilot, Art Mortvedt, has once again embarked on a mission to fly from Alaska, through the Canadian Yukon Territory, the Northwest Territory and the province of Nunavut to get to the North Pole and back. This journey will begin in April and will be accomplished in a single engine Cessna 185, known as the “Polar Pumpkin”. The purpose of this mission is to determine and document effects of global warming and climate change and to demonstrate the applicability, practicality and economy of a ski-equipped, single engine aircraft in the name of polar science.

Art has 5,000 hours of flight experience, six seasons of scientific logistics in the North Polar ice pack and has completed over 20 expeditions to Antarctica. Just as he did last year, Art will fly with the NASA-owned “hyperspectral imager” camera, which

photographs the surface below at various wavelengths of the light spectrum, looking for microscopic life above and below the ice surface. He will also have gelatin filters attached to the plane to collect microbial life in the air as he flies along. Last year’s samples were given to PSF member, Birgit Sattler of the University of Innsbruck, Austria, who has cultured the bacteria and is quite happy with the results. Art and his wife Damaris live in Alaska and run the Peace of Selby Wilderness, along with their partner and friend, Bernice Sheldon. This lodging experience offers a personalized adventure in an Arctic paradise.

Make sure to visit the Polar Pumpkin website www.polarflight90.com for full information about the mission and “Like” the Polar Pumpkin Facebook page to be kept up-to-date of the latest news from his trip. The PSF wishes Art the best of luck, GODSPEED!

A TEACHER IN ANTARCTICA: SINDY MAIN

The 1876 Banwarth House was happy to have Sindy Main, teacher and participant in the Tawani 2008 International Antarctic Expedition, as a guest speaker on March 3, 2012. Sindy shared some amazing stories from her journey to Antarctica and spoke in detail about how she has incorporated this experience into her classroom curriculum. She was able to share some incredible photos, stories and spoke highly of her fellow colleagues on the expedition.

The 2008 expedition included teams from the United States, Russia and Austria and focused on the Schirmacher Oasis region of Antarctica and Lake Untersee, a perennially ice-covered hyper-alkaline lake with the highest production of methane of any natural aquatic system on Earth.

Sindy currently teaches at Carl Sandburg Middle School and was selected by the Planetary Studies Foundation four years ago for the icy opportunity of a lifetime. Sindy has taught in the Illinois public school system for over 25 years, teaching science, physical education and health. She has taught in Dakota, Lena and Freeport, Illinois. She is an Illinois Master Teacher and has her National Board Teaching Certificate in Early Adolescence Science.



Courtesy of www.tawanifoundation.org

For more information about the Tawani 2008 International Antarctica Expedition or to learn more about Sindy Main, please visit the Tawani Foundation website at <http://expedition.tawanifoundation.org/>

SPRING IS FOR GREEN: SAVE MONEY & ENERGY

GREEN IS EASY

Saving money and energy has never been easier. For years we've seen the buzz words "eco-friendly" and "go green" but even with all the resources, many of us have yet to follow the easy ways to help our planet and our pockets. You'll be surprised how quick changes of habit can lead to hundreds of dollars of savings each year. Start with these easy tips for spring and summer:

1. **Close your curtains/blinds when you are not home.** This blocks out the sun and cools the house down tremendously. Keeping them closed during the day will have a dramatic effect in utility costs.

2. **Every day before you leave, do a quick walk-through.** Make sure lights are off and electronic items like the computer, TV and phone chargers are unplugged from the wall socket.

3. **Switch all the light bulbs to LED.** These last for years longer than regular bulbs and they don't get nearly as hot. You would save \$100-\$250 per year just by making the switch.

4. **Ride a bicycle or walk to run a local errand.** Not only will you save money from the rising gas prices, you will save on the production of pollution. And the light exercise is great for your heart and keeping excess weight off. A similar tip, invite the family for a brisk walk after dinner. This will prevent you from turning the TV on and makes for some great quality time. Plus the habit of daily exercise is an excellent routine to pass on to your children.

WHITE IS THE NEW GREEN

Speaking of colors, the Big Apple is going *white*. New York City becomes an urban heat island in the warmer months due to the dark colored man-

made materials used in the construction of the city. When these dark colored materials absorb the sunrays, the energy is then released back out as heat, about 15 degrees hotter than a suburb during the day, and 22 degrees hotter at night. These increased temperatures lead to higher energy bills and pollution from coal, oil and natural gas fired power plants.

The White Roof Project has enlisted the help of New Yorkers to paint 35,000 square feet of rooftops white. White paint reflects up to 90% of the sunlight that strikes the roofs and can make buildings as much as 25% more energy efficient. To learn more about this project, visit www.whiteroofproject.org.



EARTH DAY WORD SEARCH PUZZLE

<p>O L Y S S K G C E G T S L Y R W B K V U I S B B H Z I W J K L O T O N E D N E L E M P S M A I G V A O O J K A N A R E R Z O U A U T H O Y G R E N E B N S L V S M E M R U G K L Y M F L L I P B F X L I E Z K E I C N U I M F A A O W U C L Y K B M G C T V Y R L Y O X I V N Z W N L G R H U G D Q V S P A Q V C C R R Z C J W A S U I T Y S T O E A R T H T E U L I E C O S Y S T E M G S F T I L Y N X F E Z J E V U R E T A W W K A J R R M T O O T A K M Q O J N S A B L M W G W N N A J D E S N I G K Q G F V E E U E C O L O G Y E A O B N L E H B J R H C K Y U C E S S P A G G K G J E A U I A N E I J C K B S E V R E S E R P H J Y S L F R F P O A R E H E D C K D N O V B V U W S X P K K G I P W R R V R F U T I K V U Y H A B Z Y O B E B U T R E Z T J I Z Q I</p>		
<p>AIR ANIMALS BIOLOGY CLIMATE CONSERVE EARTH ECOLOGY ECOSYSTEM ENERGY</p>	<p>ENVIRONMENT FUEL GEOLOGY GREEN HABITAT HUMANS ORGANISMS OXYGEN OZONE</p>	<p>PLANET POLLUTION PRESERVE RECYCLE REUSE SOIL WATER</p>

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