

Volume 22.4  
 Winter 2012  
 Fourth Quarter

# PSF NEWS

Planetary Studies Foundation

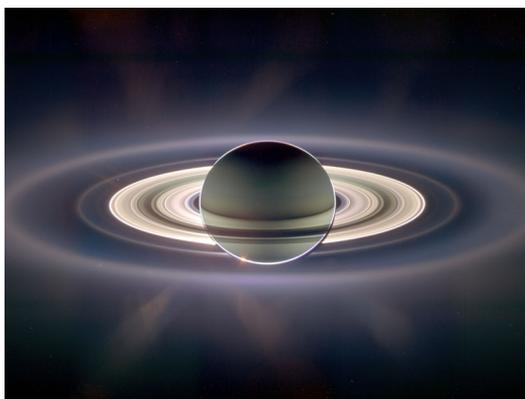
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## LOOKING FOR VOLUNTEERS/VISITORS

The Planetary Studies Foundation is busy preparing for events, lectures and presentations for 2013. Anyone looking to volunteer a talent, skill or expertise is encouraged to contact Diane Sipiera at dsipiera@planets.org. We've also attempted to schedule similar sessions in the Chicagoland area without much luck. If this is something you would be interested in volunteering with, whether with a skill or helping to organize, please let us know.

Also keep in mind when scheduling your trips and vacations this year, consider visiting Galena and Elizabeth. Give us a call ahead of time and we would be happy to help you plan a trip to visit the PSF headquarters and the variety of lectures/presentations held at the 1876 Banwarth House & Museum. We can also help you with recommendations for places to stay, restaurants and other things to do in the area. All upcoming events and presentations can be found on the PSF website:

[www.planets.org](http://www.planets.org)



Courtesy of NASA  
*"In the shadow of Saturn,  
 unexpected wonders appear."*

The robotic Cassini spacecraft now orbiting Saturn recent drifted in the giant planet's shadow for about 12 hours and looked back toward the eclipsed Sun. Cassini saw a view unlike any other. First the night side of Saturn is seen to be partly lit by light reflected from its own majestic ring system. Next, the rings themselves appear dark when silhouetted against Saturn, but quite bright when viewed away from Saturn. Far in the distance, visible on the image left just above the bright main rings, is the almost ignorable pale dot of Earth.

## 2013 JANUARY/FEBRUARY EVENTS

### Winter Constellations

January 19<sup>th</sup>

### Astronaut Remembrance Program

January 26<sup>th</sup>

### History of Women's Clothing - 1850 to 2013

February 2<sup>nd</sup>

### PSF's 24<sup>th</sup> Anniversary/Ernest Shackelton's Birthday

February 9<sup>th</sup>

### WORKSHOP: The Basics of Knitting

February 16<sup>th</sup>

## PRESIDENT'S MESSAGE

2012 has been a very busy year for your Planetary Studies Foundation with all of our historical and cultural events at the *1876 Banwarth House & Museum*, along with our various astronomy outreach programs. I am often amazed at the variety of topics that we cover in our weekly lecture series, and I am told that next year's programs will be even more exciting. In the sky over Elizabeth, Illinois we enjoyed viewing a magnificent Transit of Venus and a beautiful partial solar eclipse. I am also pleased to report that the night-time sky over our part of Illinois remains one of the darkest spots around thanks to the International Dark Sky Association and the efforts of our members **Bonnie and Joe Garriety**. Our night-time astronomy programs and observing sessions at the *Apple River Fort State Historic Site* continue to draw large regional crowds along with many international visitors. In addition, PSF member **Jim Dole** and his associates at the *JETS Observatory* in Freeport, Illinois enjoyed a successful season with growing crowds at their bi-monthly summer programs. Let's not forget our original investment in public astronomy, the *Karl G. Henize Astronomical Observatory* at Harper College in Palatine, Illinois. Named after astronomer/astronaut and PSF member **Karl G. Henize**, this facility has experienced continuous growth and popularity since its opening in 1990. PSF has also made a significant contribution to meteorite research by classifying over 120 new meteorites this year that include several extraordinary specimens. Based on all these educational and scientific accomplishments I am pleased to announce that funding for our "Science in a Changing World" project was renewed for another year through a generous grant from PSF member **COL (IL) J.N. Pritzker, IL ARNG (Ret.)**. On behalf of all the PSF members, staff, and the northwestern Illinois communities that we serve, I want to thank J.N. Pritzker for providing continued confidence in and support of our program.



Looking ahead to 2013 and beyond, I would like to point out that on February 8, 2014 your Planetary Studies Foundation will be celebrating its 25th Anniversary! I can still recall back to 1988 in Tucson, Arizona where a few visionary people (**Dave Lauerman**, **Carol Dehnostel**, and myself) talked about the possibility of building a planetarium that would feature traditional astronomy programs and a meteorite museum. This group later expanded to include Founding Members **Mary Becker**, **Ray Moehrlin**, and **Meyer Rudolf**. Sitting around a kitchen table in Schaumburg, Illinois, the business plan for the Planetary Studies Foundation was put to paper and our formal not-for-profit status was approved on February 8, 1989 and the rest is history. I also take great pride in remembering that it was Apollo 17 astronaut **Jack Schmitt** who agreed to be our first celebrity member and he is still involved with us today. Our current anniversary plans are being organized and we are looking for member's ideas and suggestions. Unfortunately, a single Gala event as we did for our 20th Anniversary in 2009 does not seem monetarily possible, but it has not been ruled-out as of yet. I would like to ask our membership, what would you like to see happen for this historic event? One year ahead may seem like a long time, but our past annual dinner events always took 18 - 24 months of planning to put those programs together. So start thinking and send your thoughts to Andrea Cosentino [andrea2986@aol.com](mailto:andrea2986@aol.com) and she will forward them to the Anniversary Committee. Twenty-five years is a tremendous accomplishment for any charity or business organization and we should take great pride in all our accomplishments.

I want to close by thanking all our PSF staff for their dedication and fine work throughout the year and to our loyal donors and members for their continued financial and volunteer support. Without all of you there would be no Planetary Studies Foundation. Best wishes for a very happy holiday season from the entire Sipiera family and a very prosperous New Year.

*Paul P. Sipiera*

## DONORS' SPOTLIGHT

**\$50,000**

Col. J.N. Pritzker

For his continued support of PSF's  
"Science in Our Changing World" Project

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### **Annual Fund**

**1876 Banwarth House & Museum**

**Restoration Project**

(as of December 15, 2012)

**\$1,000**

James R. Lancaster Family Foundation

**\$100 - \$500**

David M. Lauerman

Robert Renguso/Marlin Environmental

Jennifer Schwartz/Yahoo! Matching Gifts Program

Paul & Diane Sipiera

John & Jane Yoder

**\$1-\$99**

Leo & Karen Baran

Cecelia Cooper

Michael Dittmar

Kathie & Jess Farlow

Bonnie & Joe Garriety

Eugenia Krzyzanski

Jim & Lou Paglin

Joan & Larry Reylek

Pat & Jim Tierny

## MEMBERS CORNER

### RENEWING MEMBERSHIPS

#### Supporting Membership

Alicia Anzaldo

#### Regular Membership

Jan Buedel

Jerome Clair

Cecilia Cooper

Helen Kilgore

Sindy Main

Karen Sabatini

Wanona Wellspring-Ceisel

Jane & John Yoder

### NEW MEMBERSHIPS

#### Family Membership

Carl "Skip" & Carol Schwerdtfeger

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### AROUND THE WORLD

- Off to see this past November's Total Solar Eclipse over Australia and the South Pacific were **Jim Lancaster** and **Cathy Rudolph**. For Cathy, we believe this is her 8th eclipse and for Jim his first. They each saw the eclipse from two separate locations and we are anxious to hear about their experiences and compare notes about this exciting astronomical event.
- Another world traveler is PSF Associate Board member **Doug Hicks** who left his New Zealand home to return to his family's roots in Scotland for a family get-together via a short stop in France.

### CONGRATULATIONS

- Congratulations to astronaut and PSF Associate Member **Jack Schmitt** on the 40th Anniversary of his Apollo 17 mission to the Moon. It was also nice to see Jack in November at Chicago's Adler Planetarium where he gave an entertaining program that reminded us of the excitement of space exploration.
- Congratulations to **Mike and Jonna Dittmar** on the birth of their fourth child Anna Elizabeth. Now it's 4am feedings rather than city matters that are keeping Mayor Mike awake at nights.
- More congratulations to PSF Webmaster **Dan Dod and his wife Heather** in celebration of the birth of their daughter Hadleigh.

### GET WELL WISHES & CONDOLENCES

- Get well wishes and a speedy recovery to **Audrey Ratner** and **Joan Reylek**, two of our most loyal members. Can't keep these two ladies down for long.
- Our sympathy goes out to **Claudia and Bill Gruber** on the recent loss of Claudia's brother Craig to cancer. Our thoughts are with you at this difficult time.
- Our sympathy also goes out to **Richard Hoover** on the passing of his wife, Miriam. She will be missed.

## THANK YOU FROM STUDENTS

Dear Dr. Szipiera,

I want to thank you and the members of the Planetary Studies Foundation for providing me with a travel award to attend this year's Meteoritical Society meeting in Cairns, Australia. Your support made it possible for me to attend my first Meteoritical Society meeting and to present my doctoral research to a keen group of scientists from a variety of backgrounds and disciplines. The trip was special in many ways because: 1) it was my first Meteoritical Society meeting; 2) it was my first visit to Australia; 3) I was able to visit the Great Barrier Reef and the edge of the rainforest north of Cairns; and 4) I spent five days touring geological sites and hypervelocity impact craters in the central outback of Australia. My graduate research at the University of New Brunswick these past 5 years has been focused on the Manicouagan impact structure in Quebec. Australia is home to numerous impact structures, some of which have been vital in gaining a better understanding of a complex process. I visited Gosses Bluff (see photos) where much was learned during the early 1970's about how central uplifts form in complex craters. Gosses Bluff is approximately 22 km in diameter and formed ~142 Myr ago in sedimentary target rocks. The central peak at Gosses Bluff is thought to have been uplifted 10 - 11 km based on drill core, stratigraphy, and seismic studies. This is pertinent to my study of the central uplift at Manicouagan: a structure 90 km in diameter that formed 214 Myr ago in crystalline target rocks. My poster presentation at the 75th Meteoritical Society Meeting in Cairns documented the first time a low-temperature thermochronometer (the U-Th/He isotope system in this case) has been used to date the uplift-induced cooling of rocks that form the central uplift of a large terrestrial impact structure. According to our U-Pb results, the uplifted anorthosite at Manicouagan is ~1 Gyr old and according to our U-Th/He results the rocks were allowed to cool to below 200° C shortly after impact at ~210 - 214 Ma. Thanks again for your support...



Kind regards from Canada,  
Marc Biren

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Dear Dr. Szipiera,

I wanted to send you a word of thanks for the generous travel grant provided by the Planetary Studies Foundation. This grant made it possible for me to attend the Meteoritical Society meeting in Cairns, which was a very productive meeting for me where I was able to meet a number of researchers I had not previously met and to coordinate future research with some researchers I knew previously. The presentation of my research also went well, as I was awarded a Wiley-Blackwell outstanding presentation award for my efforts. None of this would have been possible without your travel grant. I am incredibly grateful to you!

Cheers,  
Matthew

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Dear Diane and Elizabeth,

On behalf of all the staff and students here at Galena Middle School, I wanted to send you a huge THANK YOU!! The Starlab was incredible! The students have been talking about it non-stop and I think it definitely spurred some interest in mythology and the constellations. Your presentation was extremely engaging and very informative. I hope that the students here at GMS showed you the utmost respect as you deserve nothing less. Unfortunately, I had to call in sick yesterday with a sudden onset of the flu so I was not able to thank you personally. I wanted to make sure you are aware of how truly thankful we were and I'm hoping we can make connections again in the future!

Thanks again!  
Anna Winter

## A LOOK BACK AT 2012

### Sky Viewing & Astronomy Events



(Left) Chris Zirtzman and Corey Foat show PSF members how to view the Sun through a telescope.



(Right) A crowd of PSF members assemble at the Apple River Fort with Paul Sipiera to view the Partial Solar Eclipse.



(Left) A crowd of PSF members assemble at the Apple River Fort with Paul Sipiera to view the Transit of Venus.



(Right) Paul Sipiera explains the Perseids meteor shower to a crowd of PSF members.

### 1876 Banwarth House & Museum - Historical Interpretations & Events



(Left) Elizabeth Myelle comforts "Theo" the calf. (Middle) Jolene Foat reads a book from 1876 to student volunteer Sierra Griffin. (Right) Elizabeth Myelle, Jim & Lu Pagin and student volunteer Anthony Martinez stand next to "Rocky" the horse.

## PHOTOS: A LOOK BACK AT 2012

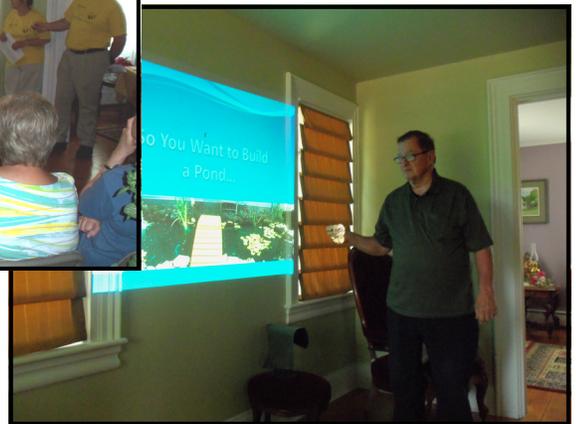
### Workshops & Presentations



Jim Pokornik and his grandson Scott build a rocket at a "How to build a rocket" workshop for adults and children.



Andrea Dubnick and Allen Reed lead a presentation about honeybees and variety of health benefits.



Jim Paglin leads a presentation about how to build a pond

### Other PSF Events



(Left) Diane Sipiera poses next to the "Stairway to the Heavens" made possible through member and community donations.



(Right) Paul Sipiera and Wulf Clifton host a space memorabilia sale at the 1876 Banwarth House & Museum.



(Right) Board members, Jim Paglin, Dave Lauerman and Paul Sipiera visit on the porch of the 1876 Banwarth House & Museum prior to the Annual Members Meeting in August 2012.

## UPCOMING PSF EVENTS

### **WINTER CONSTELLATIONS**

**Saturday, January 19th**  
**Banwarth House, Elizabeth, IL**  
**1:00 - 2:00 p.m.**

The best time for viewing constellations truly is in the winter months. Diane Sipiera will share her knowledge of the universe and solar system, so than any individual can appreciate the beauty of the winter sky. Her straightforward slide presentation will introduce you to Orion “the great hunter”, Taurus “the bull”, Canis Major and Gemini “the twins”. Learn how the Mesopotamian area had a critical influence in astronomy.

### **ASTRONAUT REMEMBRANCE PROGRAM**

**Saturday, January 26th**  
**Banwarth House, Elizabeth, IL**  
**1:00 - 2:00 p.m.**  
**Presented by Paul P. Sipiera**

NASA has been around for approximately 55 years, selected 339 astronauts and 12 of them have walked on the moon. Paul Sipiera will be giving an informative presentation on our fallen astronauts who have given us the ability for space travel. Sipiera will discuss Apollo I, the Challenger and Columbia shuttle disasters. This program is made to honor our fallen U.S. astronauts. PSF will also be selling various space memorabilia.

### **THE HISTORY OF WOMEN’S CLOTHING IN JO DAVIESS COUNTY**

**Saturday, February 2nd**  
**Banwarth House, Elizabeth, IL**  
**1:00 - 2:00 p.m.**  
**Presented by Elizabeth Myelle**

Spend a Saturday afternoon with Elizabeth Myelle as she takes us on a journey of clothing from 1830 until present day. See how fashion influenced women’s apparel from work dresses to formal wear during the Vistorian and Edwardian period. Reminisce from the happy days of the 1950’s to modern fashion trends. Compare the timeline of swimsuits from the 1850’s to 2013.

### **ERNEST SHACKLETON BIRTHDAY CELEBRATION AND THE 24TH ANNIVERSARY OF THE PLANETARY STUDIES FOUNDATION**

**Saturday, February 9th**  
**Banwarth House, Elizabeth, IL**  
**Begins at 1:00 p.m.**  
**Presented by Paul P. Sipiera**

Join Paul Sipiera and the Planetary Studies Foundation in celebrating 24 years of PSF and also the birthday of Ernest Shackleton, Antarctic explorer. Hear about the trials and tribulations of Shakleton’s voyages and his quest for the South Pole.

### **WORKSHOP: THE BASICS OF KNITTING**

**Saturday, February 16th**  
**Banwarth House, Elizabeth, IL**  
**1:00 - 2:30 p.m.**  
**Presented by Elizabeth Myelle**

Knitting has not become a lost art, just yet... if you have wanted to learn how to knit but haven’t found the time, this workshop is the perfect opportunity to start. Elizabeth Myelle will teach the very basics of knitting; how to make a simple stitch, add and take away stitches. No patters to make, just a simple learning experience.

## FUN PAGE

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

### A LOOK BACK AT 2012

BANWARTH HOUSE  
 STAIRWAY TO THE HEAVENS  
 CELEBRATION  
 COMMUNITY  
 PSF NEWSLETTER  
 PRESIDENTS MESSAGE  
 DONORS SPOTLIGHT  
 MEMBERS CORNER  
 MEMBERS SPOTLIGHT  
 MARS EXPLORATION  
 HARTMANN  
 IRVING  
 SCHMITT  
 SIPIERA  
 HOLIDAY SEASON  
 NEW YEAR

# HAPPY NEW YEAR

2013



# FROM THE PSF



## YUCATAN PENINSULA: BEACH VACATION TURNED FIELD TRIP

By Andrea Cosentino

December 21<sup>st</sup> came and went, just as quickly as the media hype surrounding the day. Most people, I hope, viewed this date as the historical misunderstanding it was all along, the end of the Long Count Mayan calendar falsely interpreted as the end of the world. But no matter your stance on 12.21.12 (which happened to be a pretty cool number sequence), there really is a lot to think about and when it comes to the Mayan civilization, their contributions to mathematics and astronomy, and the scientific events that have taken place in this part of the world.

I had the opportunity to visit the Yucatán Peninsula of Mexico this past October 2012 and during my visit, I toured two sets of Mayan ruins that amazed me both in their architectural longevity and historical significance. It's incredible, and almost unbelievable, that a civilization established well over 1,000 years ago could be so advanced in so many ways.

### RUINS AT TULUM

The first ruins I visited were in the town of Tulum in the state of Quintana Roo and situated on tall cliffs overlooking the Caribbean Sea. Because Tulum had access to land and sea, it was an important trade hub for the civilization. Given their natural exposure, the ruins were well intact but the cliffs that helped protect Mayans from invaders made for some of the most picturesque moments of ancient man partnering with mother nature.



Ruins near Tulum, Quintana Roo

### CENOTES

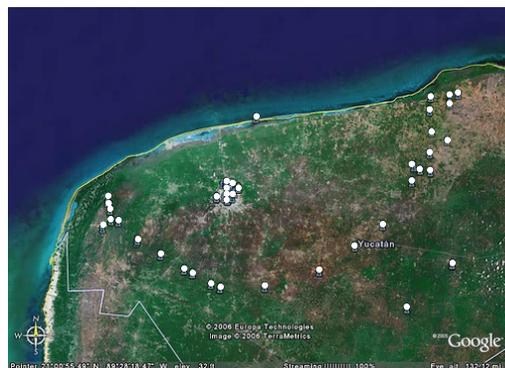
Another interesting feature in the area, which was a life source for Mayans all across the Yucatán, were the cenotes which can be found nowhere else in the world, except Mexico. A cenote is a deep natural pit resulting from the collapse of limestone bedrock that exposes groundwater from underneath. The word *cenote* (*say-no-tay*) is derived from the Mayan word, *Dzonot* which means "sacred well" and often times served as their only water source. In Chichen Itza particularly, Mayans also used these reservoirs sacrificially, in which they believed throwing young children, virgins and prized possessions into the lake would bring them rain during extensive droughts.

These water features were truly awe-inspiring and I was eager to do a snorkeling trip through the Dos Ojos cenote near Tulum. The flooded cavern is a combination of various geological events and climate changes that create an extremely unique ecosystem. Dos Ojos is one of the top ten longest underwater cave systems in the world and is host to only very few species of freshwater fish, shrimp and bats in the upper areas of the cave.

One of my favorite parts of the cenote were the stalactites and stalagmites that cover the floor and ceiling of the cavern. These calcium carbonate formations evolve when rain water drips

down the limestone cave walls and in many places, actually connect from floor to ceiling. Not only was this adventure incredible, but it also came with some scary moments when we had to snorkel through small, pitch-black openings of the route. Sometimes there were only a few inches of air from the surface of the water and the ceiling of the cave!

It's easy to be impressed by an underground cave, filled with water and covered in stalactites and stalagmites, but there is an even more exciting story behind these exotic land features. When you look at a map of the Yucatan Peninsula, you'll notice an interesting pattern of cenotes and their density in one particular area. Look below, can you see the shape?



The circular alignment of cenotes is actually the measured rim of the Chicxulub Crater which is the site of a large meteorite impact associated with the mass extinction of the dinosaurs, or the Cretaceous-Paleogene extinction event!

### CHICHEN ITZA - ASTRONOMY

The next day I took a three hour bus trip to Chichen Itza, which is one of the New Seven Wonders of the World. These ruins were where I really gained a true appreciation and knowledge for the contributions from the Mayans. Even

after viewing the famous Kukulkan Pyramid, The Ball Court and other impressive structures, nothing could compare, for me, to the observatory or *El Caracol*, meaning “the snail”. El Caracol was of one of the most important structures in the sacred city because astronomy was extremely important to the Mayan people.



Andrea Cosentino standing in front of the Mayan observatory (top left) and pretending to climb the Kukulkan Pyramid, as climbing the monument is no longer allowed.

Mayan priests would observe the nighttime sky every night from the observatory and the rooftops of their temples. Due to their advanced observations and profound reflections, they managed to learn such phenomena as the phases of the moon, eclipses and the movements of Venus, Mars and Jupiter within the slightest error of 3 ½ hours for every 500 years. Even more astonishing, is the Mayan Calendar which has become well known because of 12.21.12. The Mayans used the Kin (day), the Uinal (20 days), the Tun (360 days), the Katun (20 years) and the Baktun (400 years) to measure time. For reasons that remain unknown, the Mayans began with the year 3313 BC. It still remains a mystery to historians and scientists what event might have took place that caused them to start with that year.



The Market (bottom left) shows the Mayans fascination of straight lines and geometrical shapes. Cenote Sagrado o de las Sacrificios (bottom right) was the main well used for sacrifices in Chichen Itza.

### **CHICHEN ITZA - MATH**

Not only were Mayans powerful astronomers, they were also highly skilled mathematicians. They devised a numerical system based on 20 which is rather complete and unites all the actual elements of arithmetic. It's incredible that the Mayans rose to heights of such advanced astronomical and mathematical discoveries.

But the biggest and most notable

accomplishment of the Mayans was the invention of zero. There is a lot of historical information where zero may have been used as a placeholder or a punctuation mark in other ancient cultures but undoubtedly, the invention of zero and use of the number by the ancient Mayans, is truly impressive.

Their numerical system was based on dots and bars, where one dot represented one, a bar represented five and zero was represented by a horizontal shell. This bar-dot system is very similar to the one used today by computers, 1 and 0, which is called a binary system. Using their own numerical system, the Mayans were able to make complex calculations.

These complex calculations lead to the utilization of hydraulic engineering, suspension bridges and buildings that could withstand earthquakes.

Even with all these amazing sights, what remains the most interesting thing to me from my trip is the amount of research, time, experimentation and hard work this civilization put towards bettering their lives and to the advancement of their community. Now that the New Year is upon us, I too look to adopt these same ethics for the things I want for myself, those around me and for all members of the PSF organization. Happy 2013!

**Membership Form**

Regular Membership	___ \$	20.00	1 year	or ___ \$	35.00	for 2 years
Family Membership	___ \$	35.00	1 year	or ___ \$	60.00	for 2 years
Sponsoring Membership	___ \$	50.00	1 year	or ___ \$	90.00	for 2 years
Contributing Membership	___ \$	100.00	1 year	or ___ \$	180.00	for 2 years
Student Membership	___ \$	10.00	1 year			
Life Membership	___ \$	500.00				
Please accept this donation	___ \$	_____				

Please fill out the form completely and return it to:

Name: \_\_\_\_\_

Address: \_\_\_\_\_

City: \_\_\_\_\_

State: \_\_\_\_\_ Zip Code: \_\_\_\_\_

Email: \_\_\_\_\_

Phone: \_\_\_\_\_

Please make checks payable to

**Planetary Studies Foundation**

Please mail the membership form along with a check to the address below.

Thank you for your support!

*Our mission is to promote the study of planetary science and astronomy with emphasis on meteorites; and to sponsor, encourage, and assist in the physical, astronomical, earth, environmental and cultural sciences so as to broaden our knowledge of all phases of the universe.*

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*General questions, membership inquiries and comments please send to:*

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**PLANETARY STUDIES FOUNDATION**

**ONLINE**

**Make sure to check out all the news and upcoming events at:**

***www.planets.org***

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***Planetary Studies Foundation - and - 1876 Banwarth House & Museum***