



NEWSLETTER

RITTENHOUSE ASTRONOMICAL SOCIETY

Founded 1888 WWW.RITTENHOUSEASTRONOMICALSOCIETY.ORG

January 2008

OPEN TO PUBLIC AND STUDENTS

Upcoming Meeting on January 9th at

7:30 PM

Fels Planetarium

The Franklin Institute

20th Street and Benjamin Franklin Parkway

January's Lesson/Meeting:

A Family Night!

Astronomy and Music-Gustav Holst's The Planets

Ted Williams, Ed McCafferty, & Lori Weidner

This month's student astronomy lesson and main presentation are all part of a very unique lesson marrying astronomy with music. The composer Gustav Holst, a British composer (1874 - 1934), who wrote a musical suite about the planets in the known solar system of the time.

The basis of this lesson is based on a cross-curriculum lesson taught at the Methacton School District. It is a great experience for students to see different curriculum areas interact and demonstrate that learning different subjects should not always be in isolation from other areas of study.

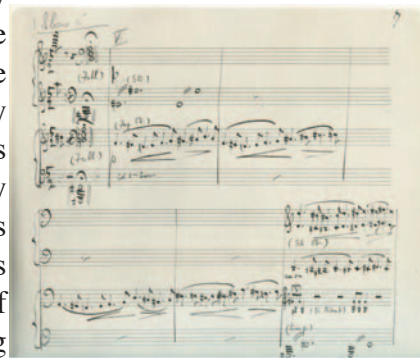
The instruction for this educational program starts in the music classroom with an introduction to the music and the mythology that influenced Gustav Holst while composing "The Planets." This is followed by two visits to the school planetarium.

On day one the students take on the role of exo-biologist,



or planetary scientist to look at the facts we know about our solar system today. The structure of the Solar System, with various space probe pictures of our planets is intermixed with a quick review of the mythological aspects students had been exposed to in the classroom. We look at the major and minor worlds of our planetary system in detail.

On day two, the students travel to each planet for the view while using the ears and imagination of a musician. While listening to segments of each musical piece created by Gustav Holst, we view the planet via space probe fly-bys of each world. The student goal is to identify the musical characteristics that are used to convey the mythological aspects of each planet. Students also guess at the names of the planets viewed using the musical clues heard for each as a guide.



For our society meeting, we will use the student lesson portion to deliver an overview of our solar system as we understand it today, touching some of the mythology associated with each planet. For the guest speaker portion of our meeting, we have invited two music teachers to assist us. Ed McCafferty (Methacton School District) and Lori Weidner (Neshaminy School District) who have both instructed the Gustav Holst program many times to school students in the Methacton School District. They will be our musical guides as we listen and explore the music of Gustav Holst.

Join us as our planets presentation is suitable for all ages to attend. Our Family night presentation is at our upcoming meeting on January 9th.

February's Meeting:

Special Date - February 20!

Lunar Eclipse

We have been asked by the Franklin Institute to host an evening for our society members and members of the Franklin Institute to experience the Lunar Eclipse.

During the hours of 8:30 pm - 12:30 am we will be experiencing an eclipse of the Moon in our area. Although, the Institute may not stay open until the conclusion of the eclipse, much can be viewed in the early hours from the observatory as well as the rooftop location which will be made available to view the eclipse. Members are invited to bring their telescopes to help the public view the eclipse.

Meeting Agenda

Student Check In	7:15 - 7:30 pm
Astronomy Lesson	7:30 - 7:50 pm
Call to Order: Dr. Milton Friedman	
Sky Tonight: Alan Daroff	
Guest Speaker	
Rooftop Observing: Weather Permitting	

December's Meeting:

*Planets, Planets Everywhere
But Only Eight For Us*

Dr. Karen Vanlandingham

In our December meeting, Dr. Karen Vanlandingham did an excellent job of explaining many planetary concepts to us. She dealt not only with issues surrounding what defines a planet within our own Solar System, but how we can locate and define that which is a planet in another Solar System.

It has been an emotional time for many in the astronomy field regarding the reclassification of Pluto from a "Planet" to a "Dwarf Planet". Since its discovery in 1930, many of those alive today have grown up with the knowledge that Pluto was the ninth planet. However, Dr. Vanlandingham did an excellent job of explaining that science is about discovery and with our expanding knowledge through advanced technology we gain more knowledge of objects in our Solar System which has led to us to discover objects in orbit near Pluto. The science community faced a problem again, like they did when the asteroid belt was found to either add LOTS more planets or demote Pluto to a new classification of "Dwarf Planets". It may be hard to let Pluto go, but we must always strive to expand our knowledge and understanding of our own Solar System.



If we do not try and understand our Solar System and its make up, how can we possibly understand other Solar Systems. This is a question that Dr. Vanlandingham answered quite well by explaining to us how scientists go about discovering planets in other Solar Systems. There are several methods used of which two are "Transits" (which are rare) and using "Doppler Shift". She demonstrated how these methods worked along with data showing evidence of planets, their size and distance from their central star. It was a very enjoyable and informative presentation.

Election Results:

2008-2010

Nominations have been submitted, reviewed and results are now posted on our web-site. Look on the menu for the contacts page.

We welcome the new members at large that have stepped forward to assist us in our mission of astronomy education. At our meetings through the spring, we would like to extend the opportunity of each of them to introduce themselves to members gathered at our meetings. We hope they might take a moment to share what focus they have on astronomy, and possibly what lead them to assist with our organization. Keep in mind that not all members-at-large can make all meetings therefore we will introduce them as they attend through our winter and spring meetings. We look forward to their involvement with our organization. The members at large for 2008-2010 are:

Martin KnoBlauch

Dr. Ken Kremer – NASA Liaison

Dr. Carol Ludolph – Observatory Liaison

Daniel McCormick – Student Liaison

Mike Mountjoy – Instructional Technology Advisor

Robert Richards

Dave Walker - Fels Planetarium Liaison

Ivin Williams

We would also like to welcome back to service our officers Dr. Milton Friedman (President), Alan Daroff (Vice President), Ted Williams (Secretary), and Ruth List (Treasurer).



The Local Bubble & Beyond II:

Conference:
April 21-24, 2008
Philadelphia, USA

Visible Planets 01/09/2008

	Rises	Transit	Sets
Mercury	08:19 am	01:04 pm	05:49 pm
Venus	04:38 am	09:29 am	02:19 pm
Mars	02:52 pm	10:35 pm	06:18 am
Jupiter	06:29 am	11:07 am	03:46 pm
Saturn	08:53 pm	03:29 am	10:05 am

4 Earth Years of Robots on Mars

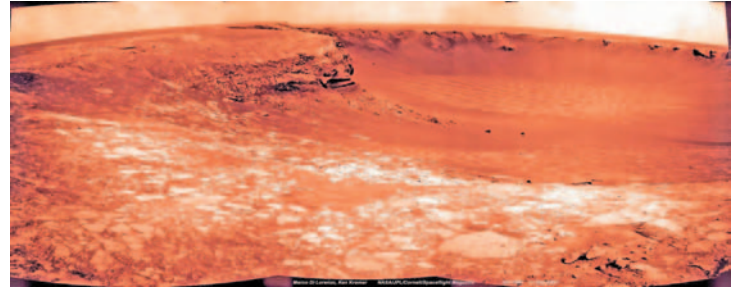
Dr. Ken Kremer

In honor of the 4th anniversary of the robots Spirit and Opportunity roving on Mars, the editors of Spaceflight magazine (British Interplanetary Society) celebrated by selecting a panoramic image created by Marco Di Lorenzo and myself for publication on the cover of the new January 2008 monthly issue (see below). The cover image is a cropped portion of a mosaic we originally published in the 3 September 2007 issue of Aviation Week & Space Technology magazine (p. 6 and 42). Look closely and perhaps you'll recognize this image. The complete panorama was reprinted on the cover of the October 2007 RAS Newsletter and was taken by Opportunity while perched at the rim of Victoria crater. I presented this image during my lecture at the RAS monthly meeting on October 10, 2007. It is also viewable at the meetings link on the RAS website and at the Nasawatch webpage headlined "Stunning Image" here: http://www.nasawatch.com/archives/2007/09/stunning_image.html#more

The cover image is part of a 4th anniversary review article by Spaceflight titled "Four Years of MER on Mars", which includes 2 additional large image mosaics created by us and printed across 2 pages inside. Below is a reprint of one of the new images for your enjoyment, hot off the presses, which was first published in Spaceflight's January 08 issue. The mosaic was taken by Opportunity on 11 September 2007, the first day she drove over the rim and into Victoria crater. Link to Spaceflight Magazine, January 2008 issue: <http://www.bis-spaceflight.com/sitesia.aspx/page/184/id/1649/1/en-us>



Opportunity with robot arm at the rim of Victoria Crater on 28 August 2007. All 4 science instruments are visible on robot arm. Rover later entered the crater at roughly the center of the cover image and just to the right side of the robot arm. Cover reprinted by permission of Spaceflight magazine, January 2008 issue. Photo Credit: Marco Di Lorenzo and Ken Kremer.



Opportunity takes a 'toe dip' to descend several feet inside Victoria for this first dramatic camera view from the crater interior on 11 September 2007 (Sol 1291) which points towards its first science targets. For context, note that Opportunity was perched at the crater rim visible on the far left side of this image when she took the image which appears on the January 2008 Spaceflight cover. Dust is noticeable on the camera lens and leftover from the near fatal global martian dust storm of summer 2007. Reprinted by permission of Spaceflight magazine, January 2008 issue, p. 22/23. Photo Credit: Marco Di Lorenzo and Ken Kremer

Meanwhile, Spirit has reached her 3rd winter resting place and is safely sitting at a sun-facing 14 degree slope at the feature named Home Plate which is an eroded over volcano. Home Plate is the 1st volcano ever visited by a man-made robot sent beyond earth. Spirit touched down on Mars on 3 January 2004, while Opportunity arrived 3 weeks later on 24 January 2004. Mars Rover website: <http://marsrovers.jpl.nasa.gov>

What's ahead for the new year on Mars? Briefly, the top scientists and engineers in charge of Earth's invasion fleet at Mars told me the following: Opportunity is likely to remain inside Victoria crater for several more months of science operations during the approaching martian southern hemisphere winter season. Spirit will collect hundreds more images as she takes another giant panorama from her winter resting spot. And all is A-OK on board the Phoenix lander currently cruising thru interplanetary space and set to touch down near the martian north pole in May 2008.

DAWN Asteroid Orbiter Update:

The initial check-out phase of all spacecraft systems following launch was successfully completed. On 18 December 2007 the probe was transitioned to the interplanetary cruise phase with nearly continuous ion thrusting. For a beautiful new starfield image which includes the Eta Carina nebula, Check out the Dawn homepage: <http://dawn.jpl.nasa.gov>

Italy Unveils Cosmic Masterpieces:

Italian Contributions to Space Exploration was the topic of my Dec 2 presentation at the Dorothea's House of the Italian Cultural Society in Princeton, NJ. My talk highlighted Italy's key roles in construction of the International Space Station, Cassini/Huygens mission to Saturn, Dawn Asteroid Orbiter, Rosetta Comet lander and the exploration of Mars and was attended by a standing room only crowd braving the snowy weather on Earth.

Program Brochure: <http://www.dorotheashouse.org/DHbrochure07-08.pdf>



NASA's Jet Propulsion Lab (JPL) sent me several new 3-D display posters. Pictured here are Saturn's moons Hyperion, Iapetus and Dione from Cassini and the McMurdo panorama from Spirit enjoyed by lovers of Italy and Italian culture in Princeton on Dec 2. Credit: Ken Kremer

Please contact me for more info or science outreach presentations by email. My upcoming Astronomy talks include:

Lawrence Elementary School: Lawrenceville, NJ. Fri, Jan 25, 7 PM. "Science and Discovery Night"

Rittenhouse Astronomical Society (RAS) at the Franklin Institute: Philadelphia, PA, Wed, Feb 20, 8 PM. "Lunar, Solar and Martian Eclipses". Website: <http://www.rittenhouseastronomicalsociety.org>

Astronomical Society of Long Island (ASLI): Old Westbury, LI, NY, Wed, Mar 26, 8:30 PM. "Exploring Mars and Asteroids (in 3-D)". Website: <http://www.asliclub.org>

Raritan Valley Community College Planetarium: Somerville, NJ, Wed, Apr 2, 7:30 PM. "Launching DAWN (and Phoenix): From Behind the Scenes at Kennedy Space Center". Website: <http://www.raritanval.edu/planetarium>

Washington Crossing Nature Center: Titusville, NJ, April 12, 1 PM. "Mars, Saturn, Asteroids and Beyond"

Dr. Ken Kremer Email: kremerken@yahoo.com
NASA JPL Solar System Ambassador

MARK YOUR CALENDAR NOW FOR THE 2008 SOUTH JERSEY SPRING STAR PARTY

April 4-6, 2008

Belleplaine State Forest, Cape May County, NJ.

Save the date, and make plans now to attend the 2008 SOUTH JERSEY SPRING STAR PARTY! This "no frills" event will take place over the April 4-6, 2008 weekend at beautiful Belleplaine State Forest in northern Cape May County, NJ. Bring your tent, supplies and telescope -- weather permitting, the Star Party features some of the best dark-sky viewing conditions in the region!

There's camping on the five-acre observing field, and nearby you'll find plenty of other camp sites, hot showers and other amenities. The area is famous for its ecology and natural beauty, and there are plenty of attractions to see during the day. Pre-register now and get 50% off the regular registration cost of the Star Party! Visit <http://www.sjac.us> and click on the SOUTH JERSEY STAR PARTY.

Sign up now to reserve your space!

WHAT: The 2008 South Jersey Spring Star Party

WHERE: Belleplaine State Forest in northern Cape May County, NJ

WHEN: April 4-6, 2008 (Friday-Sunday)

MORE INFO: <http://www.sjac.us> or contact Ray Maher, President of SJAC at rp2099@aol.com



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Checks Payable to "Rittenhouse Astronomical Society"