



NEWSLETTER

# RITTENHOUSE ASTRONOMICAL SOCIETY

Founded 1888 WWW.RITTENHOUSEASTRONOMICALSOCIETY.ORG

April 2010

OPEN TO PUBLIC AND STUDENTS  
Upcoming Meeting on April 14th at  
7:15 PM  
The Franklin  
20th Street and Benjamin Franklin Parkway

## April's Meeting

We will have multiple shorter presentations for our April meeting. Dr. Karen Vanlandingham will give a presentation on project ASTRO.



Project ASTRO is a national program that creates long-term partnerships between astronomers and teachers or youth groups and community leaders. The philosophy behind Project ASTRO is that students learn best when using hands-on inquiry-based activities in combination with a constructivist approach to teaching.

The astronomer is a resource for the teacher both in and outside the classroom and provides students with the unique opportunity to have long-term interactions with a scientist's.

Our local organization at West Chester University is looking for new astronomers and teachers who are interested in forming partnerships. Their next workshop is tentatively scheduled for August 20-21, 2010

For our opening (7:15-7:30), if we are meeting in the planetarium we will highlight Venus and Mars (music clips we will use are now posted in music section of our RAS Members network site, left column, scroll down.) It might help members to pick out these planets, show how to locate them and then fly to them with the Holst music as our

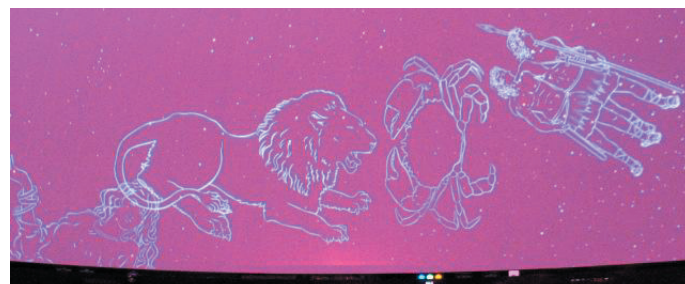
## Meeting Agenda

7:15 - Introduction  
7:30 - Astronomy Lesson  
President's Message  
Sky This Month  
Guest Speakers  
Rooftop Observing - Weather Permitting

inspiration. Mars and Venus (along with Saturn) will come into conjunction this summer. Learn what to watch for.

Ivin and Ted will team present selected astronomical sights that have been highlighted in our RAS newsletter (authored by Ivin Williams) over the past year. You may review a list of those articles at Ivin's website at <http://www.rittenhouseastronomicalsociety.org/I.%20Williams/W.htm>.

If you are interested in a sneak peek at the new Electricity and Changing Earth Exhibits to be included at an upcoming meeting, let us know on our RAS networking site or by e-mail listed on our website. We can arrange that if there is member interest.



## March's Meeting

I need to give a big thanks to the members that stepped up to help our visitors under the dome in the Fels planetarium for our night sky orientation at our recent March 10 meeting.

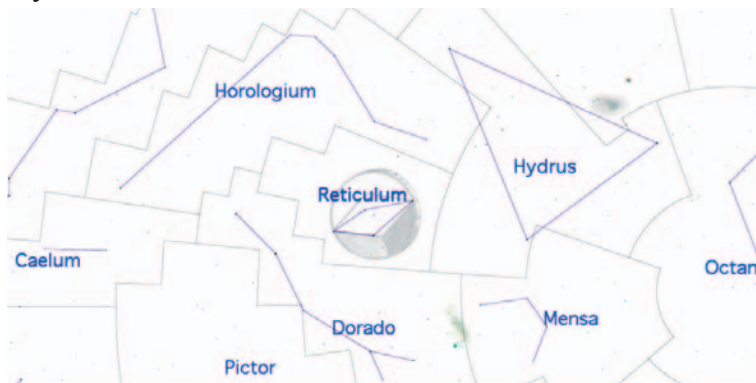
Azaria helped us to see Leo, Alan assisted with the Big Dipper, Ken was our twin star spotter, Fern was on the Zenth with Arcturus, Laura anchored us with Orion, Ivin found those faint Little Dipper stars while Dan kept Cepheus in view. Now does anyone remember who helped with Cassiopeia? (Bet you thought I would not remember everyone! , You win, well.....almost ! )

The Music we played was from an old Don McLean album titled "American Pie" while the track we used was "Vincent." (Thanks for the feed back everyone, it really was a fun night under the Fels dome.) We were playing around with "Under the Milky Way" by the Church at the end of the meeting which was immediately recognized by Ivin. That surprised me. We posted those musical pieces as MP3 files, and a Video file on our RAS Members Network (NING).

I watched on as five members took notes during Terry Underkoffler's Astronomical Web review. Terry assisted us as we developed our RAS networking site, he is a member there, and is willing to help with any questions left unanswered. When I see members taking notes, I interpret that you feel the talk is worth while! Thanks to Terry for your tips and pointers for our members and guests.

Very special thanks to Dave Walker for programming our amazing flight around the celestial sphere. That took some personal time and commitment prior to our meeting which is appreciated. (That programming is not as easy as he makes it look!)

Our meeting ended as with overcast skies, so we put up all those constellations we opened with. Members grouped around Terry with questions at the console, and many clustered in front, under the Fels dome pointing out constellations and asterisms. The night ended with an impromptu tour of some of our southern constellations as members quizzed each other. Reticulum being the one that mystified most!



## President's Message

*Dr. Milton Friedman*

If alien life is discovered, there's no reason to expect the cosmic visitors will want to hurt, conquer or destroy us. No alien has ever contacted us or sent a message that we'd better watch out when they get here. We've learned to worry about that happening because of the many alien horror movies that Hollywood distributes to the movie theaters. We should assume that the aliens will be as curious about us as we are of them. Actually, if they come here they will be more advanced than we are so we've got a lot to learn and should look forward to their visit. Just getting here is evidence that they can do something we're just thinking about doing.

Hopefully, we will be able to decipher any alien message and they ours. We're putting a lot of faith in their understanding our binary code, the meaning of DNA and why we like pizza.



Recently, the lithopanspermia hypothesis has triggered interest in how life may have gotten to other places in the universe. An article published in *Microbiology and Molecular Biology Reviews* explains that it's possible to transfer microorganisms between planets if they're shielded within meteorites. There's even been a theory that life on Earth may have first occurred after a meteorite transfer of microorganisms arrived from Mars over three billion years ago.

Meanwhile, the search for life beyond Earth has been focused on our solar system. Water is a requirement if life is to develop acting as a solvent for metabolism to take place. Water has been found on Mars, water is thought to exist under the ice of Jupiter's moon Europa, and beneath the cracks of Saturn's moon Enceladus. Even Jupiter's moons Callisto and Ganymede may possess water.

Another finding compatible with life is the presence of methane. And methane has been found on Mars. However, on Earth methane is a byproduct of the metabolism of microorganisms. This might be occurring on Mars indicating life has happened there or it may just be a byproduct of chemical reactions between volcanic rock and water.

The thinking of most astronomers is that Earth-like planets do exist throughout our galaxy. If they are found, there might be life on many of them. As exciting as it would be to have astronauts or cosmonauts travel to a far-off planet, because of the distances, it's unlikely that we will visit them via spaceships and it's doubtful they will come here. We rely on orbiting space telescopes such as

Kepler and Spitzer to locate them. The next step will be communicating using radio telescopes and even lasers. Someday, the Rittenhouse Astronomical Society will have a guest speaker from the other side of the galaxy. Stay tuned.

## On top of the Launch Pad with Shuttle Discovery: Reporting Live from the Kennedy Space Center

*Dr. Ken Kremer*

At the Kennedy Space Center, pre-launch operations have been on-going for the STS 131 mission of Space Shuttle Discovery for several months. I had the opportunity to participate in media tours to inspect her primary cargo, the Leonardo resupply module, inside the Space Station Processing Facility and take an extremely rare visit to witness Discovery close up from directly on top of Launch Pad 39A as her payload canister was delivered to the massive pad structure on March 19.



*In an extremely rare media photo opportunity with Discovery poised at the top of Pad 39 A, the massive Rotating Service Structure (RSS, at left) had been retracted the day before my visit on March 19. I stood in absolute awe right beneath Discovery and the RSS and the just delivered payload canister. The enormous payload canister (rectangular white box with NASA logo) containing 'Leonardo' resupply module had just been hoisted by crane and attached to the RSS (see red hoses hanging down). The RSS supports vertical installation of 'Leonardo' payload into the shuttle cargo bay. Credit: Ken Kremer*

Discovery is set to blast off to the International Space Station on April 5 with a 7 person crew led by Commander Alan Poindexter. Jim Dutton will serve as the pilot. Mission Specialists are Rick Mastracchio, Clay Anderson, Dorothy Metcalf-Lindenburger, Stephanie Wilson and Naoko Yamazaki of the Japan Aerospace Exploration Agency.



*'Leonardo' Multi-purpose logistics module (MPLM) inside the Space Station Processing Facility at KSC is loaded with 16 science and equipment storage racks and platforms. Credit: Ken Kremer*

Nestled inside Discovery's cargo bay is the 'Leonardo' Multi-purpose logistics module (MPLM) and a 3800 lb Ammonia Tank Assembly (ATA). Leonardo weighs over 27,000 pounds and is jam packed with 16 science and stowage racks including the 3rd MELFI low temperature science freezer, the 4th crew personal quarters and the WORF space science imagery experiment which features Klingon inscriptions in anticipation of future imperial visitors.

During the flight, Leonardo will be removed from the cargo bay and temporarily attached to the ISS. The racks and supplies will be transferred to laboratories on board the ISS. Leonardo will then be placed back into Discovery's cargo bay at the conclusion of the flight for a return to Earth. After renovations and modifications to increase protective shielding, Leonardo will be re-launched on the final shuttle mission and left permanently attached to the ISS.

The planned 13 day flight will feature three spacewalks. Mastracchio and Anderson will conduct three six-and-a-half-hour-long spacewalks on flight days 5, 7 and 9. They will swap out the empty ATA currently on orbit with the new one and return the spent ATA to Earth for relaunch on STS 134. The spacewalkers will also retrieve a Japanese experiment from the station's exterior and switch out a rate gyro assembly on the S0 element of the station's truss. STS-131 will be the 33rd shuttle mission to the station and the 131st shuttle mission overall.



*Among the contents packed into Leonardo are more than ten Russian food lockers constructed of Aluminum and cumulatively weighing in excess of several hundred pounds. Each individual packet is filled with over 18 pounds of delicacies for the ISS crew, including meats and puddings. The canisters were sealed and shipped from Russia and the exact contents were unknown. Each locker measures 16" x 5" x 12". .Credit: Ken Kremer*

### Visible Planets 04/14/2010

	Rises	Transit	Sets
Mercury	06:56 am	02:03 pm	09:10 pm
Venus	07:25 am	02:28 pm	09:31 pm
Mars	12:49 pm	08:07 pm	03:24 am
Jupiter	05:09 am	10:55 am	04:42 pm
Saturn	05:19 pm	11:29 pm	05:40 am

Read my online articles at Universe Today for more details about the Shuttle program, SD), Mars and more:

- <http://www.universetoday.com/author/ken-kremer/> (link to recent articles)
- <http://www.universetoday.com/2010/03/20/obama-made-mistake-cancelling-nasas-constellation-sen-bill-nelson/>
- <http://www.universetoday.com/2010/03/10/nasa-manager-says-shuttle-extension-possible-key-issue-is-money-not-safety/>
- <http://www.universetoday.com/2010/02/28/sts-130-cool-night-landing-video-from-the-shuttle-strip/>

## Astronomy Outreach:

*Dr. Ken Kremer*

Please contact me for more info or science outreach presentations by email. My upcoming Astronomy talks in FL, PA and NJ include:

Gloucester County College Astronomy Club: Sewell, NJ, Apr 14, 7 PM. "LRO & LCROSS: America Returns to the Moon"

Website: [http://www.gccnj.edu/news\\_and\\_alerts/rotating\\_ads/ken\\_kremer.cfm](http://www.gccnj.edu/news_and_alerts/rotating_ads/ken_kremer.cfm)

STAR Astronomy Club: Brookdale Community College, Lincroft, NJ. May 6, 7 PM. "LRO & LCROSS: America Returns to the Moon"

Café Scientifique: Philadelphia, PA, June 1, 6 PM, Belle Cena Restaurant. "6 Years of Mars Rovers and the Search for Life (in 3-D)"

Website: <http://www.sciencecafephiladelphia.org/Home.html>

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