NEWSLETTER
Spring Equinox 2014

RITTENHOUSE ASTRONOMICAL SOCIETY

Founded 1888 *WWW.RITTENHOUSEASTRONOMICALSOCIETY.ORG*

OPEN TO THE PUBLIC
7:15 PM
The Franklin Institute
20th Street and Benjamin Franklin Parkway
Upcoming Meetings Include:

Date	Speaker	Topic
April 9	• Dr. Derrick Pitts Chief Astronomer Franklin Institute • Dave Walker • Ted Williams	Philadelphia Science Festival This is Rocket Science Observing Jupiter
May 14	• Martin Knoblauch A Musical Experience	"The Seasons"
June 12	• Members Night	Members Night

Recent Meetings

February and March with RAS

Facing the threat of snow and ice, we forged ahead with February's meeting. With so much snow this past winter, we were up for the challenge. Forecast called for snow moving in at midnight, so our meeting was on.

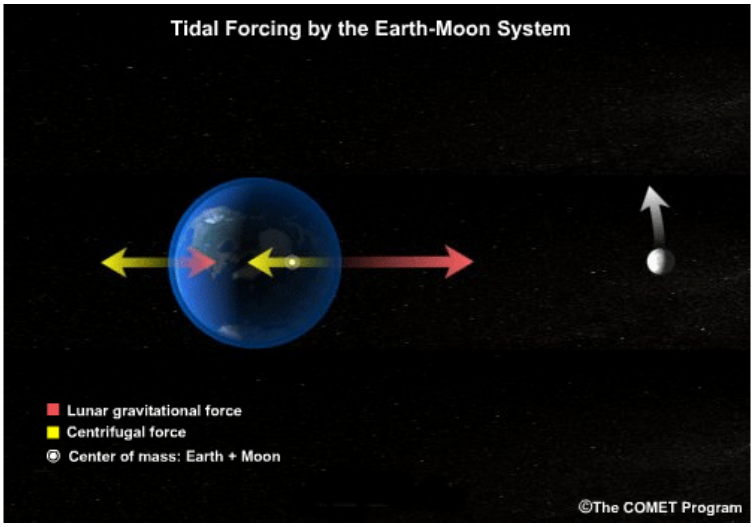
Denise Vacca celebrated the moon with us by sharing some of its past, its mystery, and some moon basics to get us all in the mood for Valentine's Day. Ted shared a bit of the Eros and Psyche myth by finding Sagitta, the arrow that is at times associated with cupid.

Dr. David Bradstreet from Eastern University took command of the presentation "Astronomy Education in The Digital Planetarium Age". Along for technical support were from Scott Huggins and Brad Rush from Spitz who provided their own high resolution projectors so that we could enjoy the digital curriculum that was demonstrated by Dr. Bradstreet.

Spitz Inc. has been riding a surge of planetarium upgrades and new installs that are digital light projection planetaria or SciDome. The capabilities of a planetarium are greatly enhanced since once digital, the audience is not tethered to Earth while viewing the night sky. The universe can be viewed from alternate locations and magnifications. Space travel can be simulated and additionally an entire library of all dome digital presentations is now available to present the attending audience almost any topic one can conceive.

The digital planetaria utilized in public education now have a leader in the field with Dr. Bradstreet. His digital astronomy curriculum is programmed into the Spitz SciDome Systems. Dr. Bradstreet demonstrated some of the "What if?" simulations that can be created by modeling varied scenarios and then observing them. What if the moon doesn't rotate yields the creation of a moon that revolves around the observer that does not rotate. The student can view the result of the scenario and compare that with what they actually see in the night sky.

Tides were demonstrated with vectors which demonstrated forces acting on Earth's oceans. Analema were also demonstrated to a degree that none had possibly understood before utilizing the digital domain of Starry



Night. Dr. Bradstreet was demonstrating and leading us in discussion as to why they appear different on different planets. Stimulating and thought provoking topics lead by one who knows how to work with his audience Dr. Bradstreet was a joy to have as a guest presenter

I suggest we follow up with a possible field trip to Eastern University to see Dr. Bradstreet in his element of the digital universe. By the way, as we left the planetarium a light snow fell over Philadelphia.

March meeting kept up the interest and the enthusiasm of February. Dr. Andrew Johnston took us on a tour de force journey navigating us across the Earth, then across the heavens rounding the planets with gravitational assists in an ever complicated trajectories. From dead reckoning to sighting navigational stars we still use some of the same mathematical perspectives to travel across the sea of water or space.

Dr. Johnston not only took the helm of our presentation, he also commandeered the Fels Planetarium to exemplify parts of his presentation with accuracy and confidence. It is evident that Andy has flown a few planetaria in his day.

It would be unfair to compare Dr. Johnston with another favorite guest speaker Dr. Robert Hicks, but it is inevitable since it occurred to me during the presentation. Both gentlemen derive delight in celestial navigation. Dr. Johnston seems to take the topic to it's furthest extreme across space while Dr. Hicks helps us reach the furthest we can traveling back through time. Both gentleman are quite confident navigators and are always welcome to return in the future to steer our group to new heights of understanding.

A Second Quasar - is it possible?

Last year we informed our members of a quasar that was discovered in the nearby constellation of Warminster. A quasar is thought to be the birth of a galaxy and creates a huge outpouring of energy through it's plumes of radiation. We used that analogy to celebrate the outpouring of knowledge and education that a planetarium can provide it's community. The Centennial school district planetarium was our focus. Our organization assisted in it's opening. We have conducted a star watch at the planetarium after one of their evening presentations and wish to continue this in our support.

It is unbelievable that another quasar has erupted in Lower Providence Township (just north of Valley Forge State Park

at the Oaks exit of 422.) Methacton school district has just upgraded their optical mechanical star projector (Mallon Planetarium) to a fully digital facility. Spitz SciDome Touch HD was installed and recently opened to the public for a 'soft opening' to test out their new equipment. The view is spectacular. Not only is the HD system well matched for their facility, it provides Methacton the ability to move through the Universe to observe rather than be tethered to Earth looking into space. With the new ability to project full dome digital show packages, they are now unlimited in the topics that can be selected for education in their facility.

It is critically important at this time for our country to take it's science and math education seriously. We have fallen behind many other nations when comparing student comprehension, competence and knowledge in these fields. Aging facilities, unqualified teachers, and a lack of focus on lab based exploratory science may be contributing to this general decline, but fault can also be laid upon our students. The need to make everything entertaining and fun seems to result in the lack of diligence, mental rigor, a perseverance needed to develop higher level skills required for success in these fields.

Teaching Math and Science in isolation of each other does a disservice to our students who cannot see the basic connection between them (math providing the language for describing and proving Scientific concepts.) Methacton is taking up the charge in bringing not only Science classes, but Math, English, Music, and History classes in their planetarium so that students can see how each discipline combines together to result in higher levels of understanding.

Rittenhouse Astronomical Society endorses these efforts happening in our suburban schools as vital to the advancement in Science that they spur on in our students.

These planetaria were both installed almost 4 decades ago as outstanding examples of what can excite students to learn more. Centennial originally had multiple staff members from different disciplines and referred to their facility as an "Experience Room" since they saw the value of using the facility for all curricular areas. Methacton has referred to their new Planetarium as an Exploration Center since it too is involving all curricular areas and demonstrating how each contributes to a greater awareness and understanding of the universe and it's evolution to it's current state of existence.

Powered with the Full Dome Digital Curriculum being developed by Dr. Bradstreet and Spitz Inc., Methacton school district has the proper tools to ensure them success in their endeavors to educate students in their new digital dome. One can't help think if history is not repeating itself. It was originally Armand Spitz (decades ago) who was showing our audience the power of a planetarium that could be produced affordably for school districts and how it could be used to enhance science and math. Now that those facilities are reaching the end of their usable lifespan, the baton is passed to Dr. Bradstreet who is now the pied piper leading the digital revolution and a renewed understanding of these valuable facilities.

Meet the RIttenhouse Officers

Once again it was time to elect officers to the Rittenhouse Organization, at the Rittenhouse business meeting held in February of 2014. The nominated candidates were announced. Since the nominees for each office were unopposed, they were thosely appointed.

President

Dr. Milton Friedman is once again going to serve as President of the Rittenhouse Astronomical Society. Milt has a long history with the organization and a wealth of knowledge regarding astronomy.

Vice-President
Webmaster

Ted Williams is now the Vice-President of our organization. Ted has brought a lot of experience in teaching astronomy to our group and has helped to grow our society's public recognition through our commitment to assist with functions such as the Philadelphia Science Festival and the public "Astronomy Nights" which is a telescope night for the Festival around the city of Philadelphia. Ted also has transformed the presence of Rittenhouse on the Internet. We not only have a public web page, but a "Members Only" web page where members can share their ideas, thoughts and whatever else they want with other Society Members.

Vice-President Emeritus
Historian
Cheif Solar Observer

Alan Daroff was promoted to our new title of Vice-President Emeritus along with being our Historian and our specialist in Solar Observation. We highly respect Alan's knowledge of the history of Rittenhouse, as he is a longtime standing member. We also enjoy his great depth of knowledge about telescope observation, both day and night skies. He is highly valued member of our organization and we look forward to his continued role among our officers.

Secretary
Planetarium Operator

Dave Walker has stepped up into the role Secretary for our organization. Dave has been an integral part of the organization for many years. He has driven our ride through space at almost every meeting when we are in the Fels Planetarium. Dave has also been a guest presenter for us and will a guest speaker again in our upcoming April meeting.

Treasurer
Newsletter Editor

Ruth List is once again the groups Treasurer. She has helped the group to maintain a working balance of funds when the group incurs unexpected expenses while trying to support the growth of Rittenhouse into exploring and supporting community projects such as the Philadelphia Science Festival.

Rittenhouse Astronomical Society
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Philadelphia Science Festival's Astronomy Night

~Derrick Pitts

Philadelphia Science Festival invites you to join us again for the 4th annual city-wide 'Astronomy Night' on Friday, April 25th. Many of you have participated in this event over the past several years and we are deeply appreciative of your partnership. This year we have twenty observing locations where telescopes will be set up around the city to engage and involve citizens who don't realize what can be seen telescopically in an urban environment.

You all know the sense of amazement a person has when seeing the moon or Jupiter through a telescope for the first time and you also understand the need to debunk the myth that it's impossible to observe the night sky in an urban environment. Challenging yes; but impossible - no. The role that amateurs play in introducing viewers to the night sky is a significant one and PSF invites amateurs to join our team, helping connect people to science through astronomy.

Sunset is at 7:49 that evening and twilight ends at 8:17. Jupiter will be well-placed in the western sky early that evening. Mars and Saturn become available over in the east an hour or so later. The event runs from 7 to 10 p.m. So far, 3 college and university observatories have agreed to open their facilities that evening. It could be quite a regional event if we could all join together in a one-night, region-wide star party.

Like last year, we'll locate 2 experienced people with a telescope or two at SAFE locations in safe neighborhoods at community centers, nature preserves, schools, cemeteries and even a battleship. I understand your concerns about safety. To that end, each location is a SAFE location where we have an established program partner with a facility like a library, school, neighborhood recreation center, church, police station, etc. for participants to choose from. Our team is comprised of Franklin Institute staff and volunteers, college interns, and all who'll help us take astronomy to the public. We'll provide signage for each group at each location and PSF 2014 T-shirts for all participants. Again this year, we're offering valuable astronomy equipment in a raffle for all who participate.

If you're willing to participate again in the 'Astronomy Night' event, please register at http://marcatoapp.com/website_integration/philadelphiascience/volunteers/new where you'll check the box Astronomy Night Astronomer – Friday April 25. We look forward to working with you again this year. If you have any questions about the program or any suggestions about how to help make this effort successful, please let me know.

Here is a list of this years observation sites:	
Philadelphia Center for Arts and Technology	Jefferson University Lubert Plaza
Riverbend Environmental Education Center	Zoar United Methodist Church
John Heinz National Wildlife Refuge	Blair Christian Academy
Folk Arts - Cultural Treasures Charter School	ASPIRA Campus
String Theory High School of the Arts and Sciences	Hagert Street Playground
Smith Memorial Playground	Awbury Arboretum
Historic Fairhill Burial Ground	Laurel Hill Cemetery
Imani Educational Circle Charter School	The Woodlands-W. Phila.
Independence Seaport Museum	John Story Jenks School
Grumblethorp Historic House & Garden	Teens 4 Good Urban Farm
Battleship New Jersey	And more.....