



NEWSLETTER

Summer Solstice 2013

RITTENHOUSE ASTRONOMICAL SOCIETY

Founded 1888 WWW.RITTENHOUSEASTRONOMICALSOCIETY.ORG



The
Rittenhouse
Astronomical
Society
125th Anniversary
Gala

22 May, 2013

Historic
Rittenhouse Town
Philadelphia, Pennsylvania

Program by David Walker

Our 125th Celebration!

~Fern Culhane

May 22, 2013 was the day we chose to celebrate our society's 125th anniversary at RittenhouseTown in Northwest Philadelphia. Now a part of Fairmount Park, and a national historic landmark, RittenhouseTown began in 1690 as a mill and industrial community of workers who used the then fast-flowing stream to power a water wheel that in turn provided the energy for a paper mill. In 1707, William and his son Nicholas Rittenhouse built the original Homestead (easily visible from Lincoln Drive) and then expanded it twice, and added the Bake House in 1725. Nicholas' grandson, David Rittenhouse, was born in the Homestead in 1734. We were able to reserve the grounds

OPEN TO THE PUBLIC

7:15 PM

The Franklin Institute

20th Street and Benjamin Franklin Parkway

Up coming Meetings

Business Meeting, July 10, All members welcome

Regular meeting, September 11, 2013

and Homestead as the site of our celebration through arrangements with Historic RittenhouseTown, Inc., the non-profit organization dedicated to the preservation of the site through research, restoration and high-quality educational programming. A special thank you is owed to Chris Owens, the director, who facilitated the arrangements for us. Many members worked hard to make this celebration happen. It would take a much longer article to name everyone's contributions, so please know that all efforts were important! Carol Ludolph was our site sleuth who worked out the details with Chris. Dan McCormick's dad helped us with the food for our celebratory picnic courtesy of his company, C. W. Dutten, Inc. Their delicious spread was supplemented by offerings from numerous attendees as well, such as Dave Walker's beans. Denise Vacca brought us a varied mix of music that provided a great background for the festivities. Carol decorated a luscious cake for our 125th birthday complete with a representation of the Transit of Venus in honor of our namesake, David Rittenhouse. Our President and Secretary, Dr. Milton. Friedman and Ted Williams respectively, assembled a fascinating collection



RittenhouseTown Bake House at the Homestead



RAS Members gathering at the Homestead

of images and stories from our past. We used an upstairs room in the homestead for this electronic stroll through the history of our organization.

One of the most interesting portions was to hear about the recipients of the Rittenhouse Astronomical Society Medal and details of these award ceremonies, complete with snafu's and now humorous challenges. Below is a partial list of recipients whose names you might recognize:

Clyde Tombaugh
 Carolyn and Eugene Shoemaker
 Carl Sagan
 Helen Sawyer Hogg
 Peter Van De Kamp
 Dr. Fred Hoyle
 Cecelia Payne Gaposchkin
 Dr. Lyman Spitzer, Jr.
 Dr. Gerard P. Kuiper



Clyde Tombaugh - Discover the Dwarf Planet Pluto in 1930

The link at the end of this article will take you to the section of our own web site where more information and many photographs are posted. Fifteen medals have been awarded since its inception in 1952 with the first awarded to Dr. Gerard P. Kuiper and the last presented in 1990 to

Clyde Tombaugh. Our President, Dr. Milton Friedman, challenged us to begin the process of choosing the next recipient of this medal now. The nominee must be someone who has made important achievements or contributions to astronomical science and someone who is recognizable in the larger non-astronomical Delaware Valley community. This event traditionally is coordinated with the City of Philadelphia and The Franklin Institute.



*Carolyn and Eugene Shoemaker
 Credited with Codiscovery along with Dr. David Levy of the
 Shoemaker-Levy Comet in 1993.*

We closed our celebration with cake, a group photo, and some gazing at the stars and moon rising through the trees. It was a wonderful evening and we decided we don't want to wait another 125 years before doing it again!

<http://www.rittenhouseastronomicalsociety.org/Pages/rasmedalrecipients.htm>



President's Message

Dr. Milton Friedman

We seem to have a basic fear. Those aliens out in the universe have decided that Earth is their target and taking over our solar system is number one on their agenda. Of the some 22 billion planets to chose from, none could have more to offer than Earth. Our only hope for survival is wars and space weapons.

Why do those beings from other worlds want to visit us? Earth has only been around for 4.6 billion years and only in the last 100 years have we started to get space knowledge. Those space people probably have everything we're just trying to develop and are all more advanced than we are. Our space crafts must look like covered wagons did to the cowboys of the West of the 1800s.

Perhaps the space visitors just want to study the history of the universe and where better than to watch it live than on their space videos or whatever they have on those vehicles up above us. One thing is certain: For any space aliens to get here, they must be more advanced than us.



Our only contact with the space future is with movies such as Star Trek: Into Darkness. I just watched that movie and enjoyed it. I must confess that I was surrounded by Trekkies who were in awe as they saw Captain James T.Kirk, and Commander Spock deal with the hardships of space.

I watched and wondered why we on Earth assume that anyone coming to Earth from the other locations in the universe comes here to fight. We never met them but always assume they want to hurt us, take over our planet and win wars. Wouldn't we be surprised and the movie makers upset if those space travelers came here to study us? Maybe those aliens are like William Penn who came in friendship as he met the Indians and have no desire to take over our planet. Maybe those aliens know everything we're trying to accomplish and came here with just curiosity and to look back to a new civilization that emerged on Earth.

Star Trek, Star Wars, and all the other films that have "end of the world" disasters may be great at special effects, but don't present a true history of our planet. We hope those space aliens don't get confused when they watch our movies and wonder why we're sending rockets and missiles to hurt our fellow space people who just want to make a friendly visit to Earth.



City-Wide Science Festival

This spring we had an opportunity to partner with Girls Incorporated for our participation in the City Wide Science Festival. This being our third year, we had past experience to guide us. At previous carnivals we set up a booth with four to five astronomy interactive demonstrations, iPad views of the sky, scale models of the solar system, celestial sphere demonstrations and telescope views of sunspots and solar prominences are all part of the carnival booth. The day is active and we had a continuous flow of visitors the entire day, each year growing in numbers. We realized from past experience that we needed more folks on hand to assist with our demonstrations, and if possible, we needed younger ones to relate to so many of the primary grade visitors that populate the carnival.

Luckily we were approached by Girls Inc. so, Ted Williams (Rittenhouse Educator & Secretary) visited them at two of their meetings to introduce the girls to the basics of astronomy. The visits involved demonstrations and participation on their part in the lessons that we conduct at the carnival. Showing them how a Celestial Sphere works, how iPads find things in the sky, and how to interact with visitors at our telescopes were part of the knowledge that was shared. The deal we made with the girls is that they could visit the carnival for the day and have a free lunch sponsored by P.E.C.O. if they would assist us in one hour shifts with our demonstrations throughout the day.

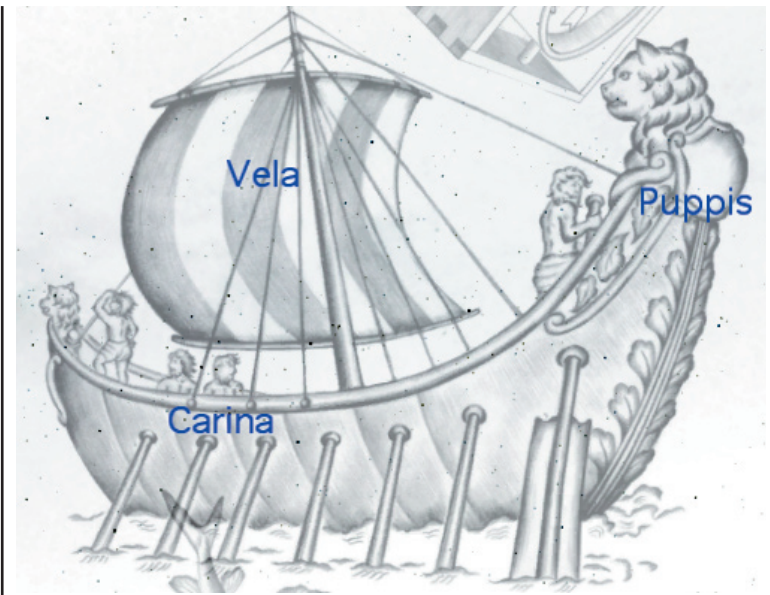
The day of the carnival was beautiful. Weather brought out a record number of visitors and we were busier than ever for the duration of the event. The girls worked out very successfully assisting visitors to see tonight's sky with a celestial sphere, find planets in the day sky with our iPads, and creating take home dipper clocks as a make and take project for our young visitors.

We were all quite glad we had the girls there to assist us since the number of visitors increased yet again over previous years. The feedback from the girls after the event was "over the top". They were really blown away with the size of the event, the number of speakers, and multiple demonstrations that seem to cover the streets in all directions around The Franklin Institute. Science was made fun that day, for all to participate and share in the learning. The girls developed a sense of pride mastering some basic astronomy concepts, and then teaching them to our visitors. RAS members also walked away with a great sense of pride, not only spreading the word about all things astronomical, but in training young women, some who will be our future leaders.

We want to thank Al and Barb Ryan for their gracious donation to help fund our endeavor with Girls Incorporated and hope to do this again next year at the Philadelphia Science Carnival. We thank P.E.C.O. for their funding of this event and the amazing partnership we were able to build with the leaders and young women of Girls Incorporated.



*Mystic Mountain Nebula
Part of the Carina Nebula found in Carina*



Members Night at RAS

~Ruth List

As is an annual tradition with the Rittenhouse Astronomical Society, we try to devote at least one meeting a year for member's to present topics of interest to them to all of us. We have a lot of knowledge and talent amongst our members and everyone one of these special meeting nights is a delight.

Before our meeting even started, however, there was a scramble as some members had personal conflicts at the last moment preventing them from attending the meeting, but to our awe and amazement, members stepped up to fill the open voids and a wondrous night was had by all.

Denise Vacca started the night with an exciting tour of her business "Stars on the Move". She showed us the wonderful world of portable planetariums and how she excites young future astronomers to want to explore the universe.

Then Denise took us on a wonderful journey through the southern star field, which most of us have never experienced live. She brought to life the story of Jason and the Argonauts, on the ship Argos for which this constellation was originally called "Argos Navis". The ship has now been broken into three constellations: Vela, Carina, and Puppis. The second brightest star in Earth's night sky is in the constellation of Carina, called Canopus, named after the pilot of the Argo's ship.

Denise then showed us images of the Great Nebula known as Carina Nebula in which there are four other objects. She focused on two of this objects, the Keyhole Nebula and Mystic Mountain. In conclusion she focused on the Magellanic Clouds visible from the Southern Hemisphere. What a treat!

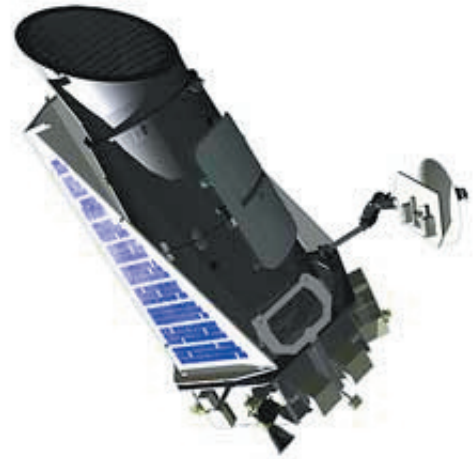
The next member to present was Shawn Rush. The first part of his presentation walked us through a brief history of Education; from “sage on the stage” to the newer digital experience of learning. He showed some of the “on-line” types of tutorials, such as those from Khan Academy that are available to students today. It is with this thought of digital availability to educational content that RAS now has our own YouTube channel to share with others information about our society and astronomical points of interest. As the manager of our RAS YouTube channel, Shaun shared with us the newest of RAS YouTube videos which showed our 125th celebration Gala along with some historical background on RittenhouseTown.

Our own President, Dr. Milton Friedman, next took ownership of the microphone to present his information. First Milt explained the history of the Rittenhouse Medal which is presented to a person who has made significant contributions to the world of science, especially in the field of astronomy. He challenged all members to think of a candidate for the next RAS Medal. Lastly, he requested members of RAS to step up to help us create a continuation of the RAS history book, to continue the legacy of our group and record our contributions to the world of astronomy. He is looking for content ideas and volunteers to help with completing the project.

As Milt complete his talk we found ourselves transported on a celestial journey by Dan McCormick as he gave us a brief lesson on how he creates the musical delights that we experience during each meeting. After the brief lesson in music creation, Dan took us a tour of the heavens, with help from Dave Walker at the console, while he simply mesmerized us with his heavenly playing.



*Black Brant XII Trail - Launched from Wallops Island
Picture take in NJ by Joe Stieber*



After running the Planetarium console to compliment Dan’s music with beautiful images on the dome, Dave Walker stepped in front of the group to give us a history lesson and update on telescopes that are not Earth bound. These orbiting telescopes explore our universe using many different parts of the light spectrum showing us many different views of the same objects or areas of space (Optical, Infrared, X-Ray and Ultraviolet). He also updated us on the growing concern about the Kepler telescope and what the possible future may hold.

The evening concluded with Dr. Ken Kremer giving us a quick update on the Mars rovers and a look at the Wallops Flight Facility in Virginia. This facility is only a few hours from Philadelphia where we can watch live launches of rockets, some of which are carrying supplies to the ISS. He highlighted photographs taken by RAS members of some of the launches as well as the triple conjunction that occurred this past May



*Venus, Jupiter and Mercury at Chatsworth Lake, NJ
Taken by Joe Stieber*

Star Parties - SO THRILLING!!

~Ted Williams

When Ruth suggested I write an article on all the recent star watches RAS has been involved with, Dan McCormick had just posted his review of the French Creek Night. What more could I say, his article (in this newsletter) is full of enthusiasm to the point of sounding 'thrilled' to have attended. I watched over the years as Dan has progressed with a few scopes of increasing aperture. I was at the French Creek Star Watch, and although Dan's scope was far enough away in the dark that I could not really see him, I could hear his thrilled exclamation when he called out he had just found one of the globular clusters we featured at our last meeting. Thrilled you say? Impossible, just a view of some fuzzy lights. I can attest to the fact that Dan was thrilled, and I realized how fortunate I was to be practicing astronomy for as long as Dan has been alive, fortunate that I still get thrilled after all these years.

Thrilled that a fellow member had success, thrilled that I might have spurred on some of that interest, and also thrilled with the same view, albeit even a larger aperture, as I too revisit many familiar sights with a new set of glasses, so to speak.

Could you as a visitor to a star watch also be thrilled. I'll bet you can. Talking with Renee after a recent meeting, she was sharing her experiences with our City Wide Telescope Night. She remarked that although the scope she used was not the largest aperture, she felt the thrill of the evening was helping people couple the knowledge of what they are looking at with the view itself. A fuzzy ball of stars is so-so to look at in a small scope, but knowing you are viewing photons that have been traveling some 30,000 years from a huge spherical collection of half a million first generation stars, dating back to the earliest years of our galaxies formation, is thrilling. Renee said she was convinced that the thrill for her visitor's that evening was the understanding of what you are seeing, and not necessarily the sight itself.

On a recent star watch at Batsto, I asked Joe if he would point out M101 so I could follow the beam and find it with my binoculars. He is always very willing to assist. He remarked once that in a way, we were cheating since I was just following his beam up to the galaxy with my binoculars. He said that many enjoy the 'thrill of the hunt' and that just finding the objects brings great satisfaction and that I was missing that part when he helped me out. What I've never told Joe, is that almost immediately after his assistance, I go back to my telescope sight and practice multiple times finding the object again. I even try back at home again under light polluted skies and get surprised at times as I am



*Fairhill Burial Ground, City-Wide Telescope Night
by Denise Vacca*

rewarded with the thrill of finding it there too! Don't worry Joe, I'm cashing in on that experience. In a way, Joe gives me a jump start, but I still get that 'thrill of the hunt.'

So how about it, are you up to being thrilled? Thrilled at the view itself, thrilled at the knowledge of what you are seeing, thrilled to have assistance to find objects you never thought possible, or just thrilled to get out to some remote location, under pitch black skies, with some friends who are also all looking up? Everyone experiences the universe in their own personal way. I'm willing to bet that just the thrill of a new perspective on our Universe is reason enough to give it a try.

RAS is an astronomy club for everyone. This summer we again couple with Willingboro members to gather at some of the darkest skies within reasonable distance of Philadelphia. We are posting these ventures on our Members website. Please refer there for more information. Whether you have a huge scope or no scope, binoculars or naked eyes, know it all or know nothing, please know you are welcome. Know there are friends at the darkest of locations far from city lights that are thrilled to have you visit, and thrilled to share the knowledge and the view. Come experience the thrill!



*Venus, Jupiter and Mercury from a rooftop in S. Philadelphia
Taken by Michael Wintering*

French Creek Star Party

~Dan McCormick

This past weekend (Saturday, June 15th) members of Rittenhouse Astronomical Society teamed up with The Franklin Institute to showcase the wonders of the universe at French Creek State Park. Members arrived with telescopes in hand around 7:00 p.m. to begin setting up for the night. There were all kinds of telescopes to look through, ranging from automatic Schmidt-Cassegrain GoTo computerized telescopes to big 12" manual telescopes all of which amazed the star gazers. So many people came up to us who have never even looked through a telescope before. It's always a great reaction when someone sees Saturn for the first time and they think that we are holding an image of it from a text book up against the telescope even though they are looking at the real thing!



Getting out to a dark location is key to observe a great sky. French Creek State Park is about 45 minutes to an hour west of Philadelphia. Views from Philadelphia can be very limiting; however, just by driving this short distance, the universe unlocks its glory. We saw many different sights on this night; starting with the moon – which was visible when we were there – to several planets such as Venus, Mercury and Saturn later in the evening. We also saw a lot of the “faint fuzzies” that must be looked through with a telescope like the great Ring Nebula (M57) in Lyra and M13, one of the best globular clusters in the night sky which can currently be found in Hercules. Finally, as we were packing up for the evening we even saw a few shooting stars and even a manmade object - the International Space Station. It was great watching the space station because you can see this with no observational aide except your own eyes. We watched the station disappear right into Earth's Shadow. This was truly an amazing event.

If you have never been to a Star Party, you should highly

consider attending one. I have two rules before arriving – don't be afraid and arrive in day light! It is much easier to find everyone while the sun is still out and you will have much less stress on your shoulders if you do, believe me, I know this one from experience! Star Parties are typically free and last for several hours into the night. Everyone is always amazingly friendly. They will also answer any questions you may have, no matter how dumb they may seem so do not be afraid to ask. Also, as I mentioned above there are all kinds of observational instruments at these events. So, if you are in the market to buy a telescope this is a great place to begin your research. It is very hard to recommend which telescope may be the best for you. They are just like a car where you must first “test drive” it to see if it fits your needs.

I hope to see you out at an upcoming Star Party in our area! If you would like more information on upcoming events or have any questions regarding star parties, feel free to shoot me an email at daniel@celestialsoundscapes.com and I would be happy to answer any question you may have.

Signing off for now, never forget to take a second and look up. You may discover the next big thing that lands in our textbooks of the future! If no one looked up and discovered Mars, we would not have the robots on that amazing planet today. So stop, take a second, and do not forget to look up at the wonders of the universe which have been with us since man has walked on this planet.



Left to right: CJ, Mike Mountjoy and Dan McCormick in the distance.

INRS 2013-06-16 “Skylab”

~Dave Walker

Passing over our heads several times a day is the International Space Station (ISS). ISS is a magnificent structure, as large as a football field and with over 1,000 cubic meters of habitable space inside, assembled with over more than 40 launches of Space Shuttle and Proton rockets. ISS is a giant larger than anything else placed in orbit.

Forty years ago another giant ruled Low Earth Orbit: “Skylab”. As the penultimate mission of the Apollo program Skylab was the first space station launched by the United States, and by far the largest at the time. On 14 May, 1973, Skylab thundered aloft aboard the last flight of the mighty Saturn V rocket. The fourth space station launched, following three previous Soviet ‘Salyut’ stations, it was by far the largest. How large? 300 cubic meters of pressurized space, as much as the three previous Salyuts combined, and one third the size of the current ISS.

Skylab loomed large in the US space program and the public imagination. Three missions between 1973 and 1974 tested the boundaries of living in space, establishing on data on muscle loss, psychological effects of living in an enclosed environment, and radiation exposure.

Attached to Skylab was the Apollo Telescope Mount, named after the Sun god, not the Moon missions, that provided a wealth of new information about Earth’s life giving star from the extreme ultraviolet to the infrared. Originally designed as a free floating observatory, an ancestor to Hubble, attached to an Apollo Lunar Module



Skylab with docked Apollo Command and Service Modules and Apollo Telescope Mount with its four solar arrays.



Skylab launched as the upper stage of a Saturn V

as a miniature space station, it was joined to Skylab. Astronauts had to perform frequent space walks to change the film.

Today we would consider the flights short, 28, 60, and 84 days each, they were pioneering in their day. Skylab was the first US spacecraft that employed the formal principals of industrial design and ergonomics, with the help of Raymond Lowey, to help astronauts cope with long missions in enclosed environments. Compared to the Apollo Moon missions, food was improved, the crew were given private sleeping quarters, and there was an actual commode and shower aboard. Without the lessons learned on Skylab, ISS would have never been possible.

Rittenhouse Astronomical Society

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