



## NEWSLETTER

Summer Solstice 2014

# RITTENHOUSE ASTRONOMICAL SOCIETY

Founded 1888

[WWW.RITTENHOUSEASTRONOMICALSOCIETY.ORG](http://WWW.RITTENHOUSEASTRONOMICALSOCIETY.ORG)

OPEN TO THE PUBLIC

7:15 PM

The Franklin Institute

20th Street and Benjamin Franklin Parkway

**Upcoming Meetings Include:**

Date	
July 09	Rittenhouse Summer Business Meeting - Members Welcome to Attend

## Final Meetings

In April, our meeting was visited by Derrick Pitts of The Franklin Institute helping us to get geared up for the later activities of the month including the Science Festival on the Parkway and the Citywide Telescope night. For more information on the Festival and Telescope night, check out some other articles included in this newsletter.

Derrick also explained how his initiative, sponsored through a NASA grant is reaching out to local community centers and is expanding every year to bring astronomy to the citizens of the city of Philadelphia.

Our May meeting was a musical extravaganza that was dedicated to the memory of Dr. Milton Friedman. See another article to review in more detail that meeting, as well as a tribute to Dr. Friedman on the last pages.

Our June meeting is a closure for our year and has become a practice to conduct it in an open house format. Members are welcome to do smaller presentations lasting 10- 20 minutes on a topic they have interest in. Although we encourage astronomical topics, it is a format that is open to any topics of scientific interest.

Members can invite family members or guests. On our website we encourage those interested in joining our society to check us out in June since society members are the feature of the evening. Denise started off our planet update to get members ready for some summer sights. Ted followed with a tour of the Great Globular Triangle of the three brightest globular clusters visible in city skies (M13, M5 and M3.) The three together form an equilateral triangle similar in size and scope as the Winter Triangle asterism.

Dave Walker continued in a series of updates he has developed for us as a feature of sorts called "This is Rocket Science." We hope to include more of Dave's updates and welcome him to his new office as Secretary for our Society.

Dan McCormick shared some interesting observations of what one might expect to see in a telescope as opposed to what one sees published in astronomical magazines. He also took us on a Spaced Out tour of sorts across the planets and through the galaxy. Dan has invented Celestial Soundscapes and provides live syncopated musical tracks to our sky talks. We have taken to giving control over to Maestro Dan and Dave our Celestial Navigator as we travel across space in the Fels planetarium to Dan's music without any narrative.

Denise reported to the society some of the discoveries members had that traveled to Cherry Springs state park for an astronomy retreat weekend this past May 30 through June 1. A spirited discussion ensued as many members who attended discovered that the level of perfection obtained and the rules enforced to maintain that excellent view might just be past our expectations of an excellent sky. Perfection could be sacrificed for most of us since we are quite happy with excellent conditions combined with the camaraderie of fellow members.

Mike Mountjoy closed out our year with some amazing expansions going on at the Franklin Institute. Three new exhibits include Your Brain, 101 Inventions That Changed the World and the very exciting Circus, Science Under the Big Top are all opening in the new Karabots Pavilion. Looks to be an exciting future for many visitors. Walk through the Heart, explore Your Brain, marvel at the inventions the human brain has dreamed up and finally, push your body to it's limits as you engage with Circus.



## Twelve Inches and Naked

~Denise Vacca

I'm sure you're all getting sick of hearing us talk about Cherry Springs but I was so jazzed at all the deep sky objects I got to see I thought I'd share.

Not sure most of you know but I consider myself a 'naked eye observer' and a total novice when it comes to deep sky. I can name all the brightest stars, teach you tricks to find the constellations, rattle off facts about the planets, but have no idea where to find those hidden jewels that lurk below the vision of the human eye.

I browse with binoculars but never really do serious deep sky observing.

Sure, I can find the easy ones, the Andromeda Galaxy and the great Globular Cluster in Hercules but as I've learned through members like Joe, Ted & Renee, there's a lot more out there to see.

With the help of the "Messier List" app, I was able to check off the sights I saw. We found a few things with Dan's goto scope, but getting the alignment correct took a while and actually spoiled my desire with too fussy a set up. This is probably why I'm a naked eye observer. Telescopes always seemed like too much bother for very little pay off, but I was really impressed how easily Renee & Ted were able to point their scopes at deep sky objects with the help of their trusty green lasers....they actually got my appetite wet to start saving for a 12in Dobsonian Telescope.

In the end I was able to see..

M4	Globular Cluster in Serpens-- Ted just talked about this in our June meeting
M8	The Lagoon Nebula in Sagittarius --Wayne has a photo of this he took on the ning site
M13	Great Globular Cluster in Hercules --his was amazing in a 12 inch scope, I had only seen it in Binoculars



The Lagoon Nebula - Credit: Wayne King

M31	The Andromeda Galaxy --we've all seen this but it's still fun
M51	The Whirlpool Galaxy—OMG, this was great, we even saw the little companion
M57	The Ring Nebula --looked like a little iced donut, I've seen it before but only through a small scope
M65 & M66	Spiral Galaxies in Leo
M80	Another great Globular in Scorpious
M81	Bode's Galaxy in Ursa Major...who was Bode and why does he have a galaxy? I'll have to research this and write an update in the fall newsletter
M82	The Cigar Galaxy, an irregular galaxy in Ursa Major-it looked like a cigar too!!
M95 & M96	More lovely galaxies in Leo
M97	The Owl Nebula in Ursa Major--wow, this looked amazing. Usually nebula are unimpressive but not this!!
M105	Another great galaxy in Leo
M108	Yet another galaxy in Ursa Major

These don't even include all the Messier open clusters we could see with our naked eyes & binoculars

Add to these Mercury (which I had never seen before), the whole stretch of the Milky Way, numerous satellites, ISS passes and meteors, and it turned out to be a great weekend

Thanks for letting me bore you with all the details but I'm still learning all about deep sky and this was an exercise for me to start familiarizing myself with them.



M82 - Credit: Internet

## City Wide Telescope Night 2014 Ours was Rain or Shine

~Ted Williams

Our event was really rain or shine, so we were on no matter the weather!.

I was with the ASPIRA group at the old Cardinal Dougherty High School. Our telescope site was within view of about 25 fully lighted carnival rides in full motion, music and all! We were ready to dance when at 7:00 PM rain closed the carnival and put us into the gymnasium.

ASPIRA had a timeshare of sorts for a Geo-Dome. They had it set up in the gymnasium and in it was a digital all sky projector running Uniview software. The operator was thrilled when he figured how to fly everyone to the planets and get lots of screams out of the toddlers present. It served a science fun house of sorts as toddlers screamed at each planet crash, and yelled as we flew through space. Sitting outside listening to the thrilled screams it seemed to me a virtual moon bounce ride at a carnival. Everybody loved it and seemed very happy.

We could never figure out how to set it up to do a night sky talk, (and the operator could never figure out why I wouldn't want to show all the cool projections.) It was clear he wanted to put as many effects up on the dome as he could find (all grids, all meridians, orbit lines, exoplanets, M objects, the works! The Universe glittered as a jewel box inside the portable dome and made the children coo in glee.)

I gave a talk to 35 preschoolers about the size and color of the planets using a flat-screen projection of Solar Walk, ("Show me how big 'really big' is with your hands!") After the talk, we let them knock into our equipment repeatedly as we shared a binocular/tripod and telescope view of two small pictures (lighted slides) of Saturn and Jupiter on the opposite side of the gym. Most of the preschoolers had trouble looking into the Dobsonian at a three degree angle from floor level (hard to believe it was too high for some, but true.)

Most ran about banging on the touch screen computers and I-pads, or pulling at the solar system models. There were few on hand at most of the interactive learning stations set up, they probably did not attend due to the bad weather, but that did not seem to stop the visitors that night.

I felt we might have missed our target with about 50 toddlers attending, young enough that they would fall running around the gymnasium. We did have three teenagers, and eventually one of the teaching staff showed up, but had to leave almost immediately on another school related errand. About 30 moms were on hand who tended

to stay with the strollers and car seats used to bring in the youngest as they careened around the displays.

The place cleared out at 9:30 PM. We felt we had an eventful eye opening evening. Everyone was very appreciative we showed up, for the rained out astronomy night.,



## Musings of a Cherry Springs Virgin

~Ted Williams

I want to start with huge thanks to Denise Vacca and Dan McCormick for planning our first ever overnight adventure in astronomy for our society that I am aware of in the past decade. For twenty-some years I have been promising myself to make that journey to the "Promised Land of astronomy", Cherry Springs State Park in Pennsylvania. A state park dedicated to astronomy located at the darkest location in our state would seem an observers dream. When our society members decided to conduct a trip where we could all rendezvous at the State park and observe together, I knew it was that perfect opportunity, or at least it seemed it would be.

Knowing our organization has all different levels of astronomical interest, we planned a two tiered weekend. Although the park is supposed to be the best location for serious observers, astro-photographers and the like, we questioned ourselves if that would really be the best spot for some of our members that are just beginners, or enthusiasts who want to see the view but have no real equipment of their own. A back up location, located on a private residence just north of Wellsboro was rented by one of the organizers of our trip, Dan McCormick. The idea was to provide an alternate site in case Cherry Springs just did not meet all our needs.

The initial hotel selected for those not wishing to overnight at the park was the Millstream Inn. I can highly recommend the place for clean rooms, breakfast, a grand lobby of sorts (open 24 hours providing coffee, drinks, internet access and snacks all complimentary), private cabins or motel accommodations, and a large field behind the complex away from lights that could be used for observing. When we checked in we were informed the field was waterlogged from recent winter and spring thaw, but that the clearing in front of the cabins could still be utilized. Wanting to finally see Cherry Springs, I opted to join the gang at the observing field.



### Night 1

One of the many rules in effect at Cherry Springs were that the gate locks at sunset, and no cars are permitted to enter or exit due to the light they throw. Having recently broken my foot in 5 places, recently repaired with the insertion of 3 metal rods, I was leery of camping in the cold so soon and opted to park outside the gate so I could return to the hotel. I was unable to carry my gear in, so I set up my scope in the public parking area across from the park where people were free to come and go the entire night, and I hiked back into fellow RAS members set up on the Astronomy field.

Members set their gear up around Al Ryan's tent (a portable observatory of sorts with computer gear inside, scopes outside that can be controlled remotely.) Al can keep warm in the tent while photographing the night sky. We had perfectly clear skies, although seeing was still an issue as the night rolled on. A ground haze had risen by 1:00 AM and although the sky remained clear, seeing degraded through the night.

The mood this night at the park was somewhat like a library, all astronomers quietly and diligently observing in the dark. There was virtually no noise other than scope motors and dew fans, no laser use, no white lights, and just blissful peace under the stars. I totally get the idea behind what they have created.

Personally this was a challenge since this 'modern' observer needs an iPad loaded with astronomy software and a laser guide on my scope. I personally felt blinded and lost. When Al turned on his computer in his tent, although it was dimmed and covered with a red mask and inside a tent, it elicited complaints from our neighboring sites. Our computer screens and iPads were just too bright and 'ruined' their experience.

After a few hours with fellow members, I crossed back over the road and returned to my scope and gear where I would be free (or so I thought according to the rules) to use my iPad and laser sight. Only minutes after I turned on one of my lasers did I hear someone shouting from the astronomy field about the prohibition of laser sighting. So much for my efforts to locate any private location far enough away from all the others to observe from so as not to bother anyone. Dare I say I felt as if we were all in each other's face and the comments about the laser and the laptops earlier were not polite reminders, but more the words of enraged fanatics eager to enforce the light bans. I totally get it, I respect what they are trying to do, but I felt more unwelcome than ever and packed up my gear and got out by 2:00 AM. Upon returning to the hotel, I found equally dark skies to observe and employed my array of

binoculars to complete the nights observing. Dawn marked the end of the observing.

### Night 2

So how do we enjoy a second night of crisp clear skies? We all decided at the end of Night 1 that if members wished, they could meet us at the alternate site North of Wellsboro.

When we arrived we found the sight to be equally as dark as Cherry Springs, and although a clear view to the horizon was not available, a good portion of the sky was easily accessible. With the darkness, there would still be plenty of deep space wonders to observe. Members set up scopes, a bonfire was lighted (no one complained it ruined their night vision,) and just short of singing songs around the campfire, the camaraderie was in full effect. Denise cooked up some stuffed peppers, hot dogs and marshmallows were toasted, and yells went out when someone located a sight to see.

The best of experiences that night for me personally was when Renee found and shared the view of M108 with the Owl Nebula nearby. The bluish glow of the Owl was almost electric (we were well dark adapted.) I was able to share with her the view of the Whirlpool Galaxy which was the first I had ever seen details in the spiral tendrils with a 12" Dobsonian. We were both elated and could not contain ourselves as we shouted out for all to come over and observe (the view truly was that good!)

The second night was just fantastic. It was a great experience being in total darkness with friends, the music choices were great and our lasers jumped about the night sky unfettered by others. Using the lasers and image stabilizing binoculars was a treat, as we could point out easily the sights we were sharing with each other. Joe was missed, but Renee and myself are picking up his skill of finding multiple objects within seconds.

The better night (personal opinion here, backed by most of those who attended) was the second night when members were free to do as they wished. The bonfire and picnic table (with red shielded light) served as our center focus and allowed us to gather and talk, laugh hysterically out loud, share star stories, use our pointers, and generally have a great time.



M108 - Credit: Internet

### What did We Learn?

1. We cannot please everyone's wishes all the time.
2. We should have designated only one hotel and encouraged all to stay at that location.
3. If a member decides to show up unannounced, with no prior contact to anyone in the society, they cannot be disappointed that they do not know about plan changes or back up locations. All phone numbers were exchanged in advance and Denise made every effort to keep all informed by phone about what was happening. If there is no phone number shared, no information can be updated.
4. Conducting an astronomy club with all levels of expertise from novice to expert is difficult. Everyone must start their astronomical journey somewhere, and since that is a focus of our society, we feel we can accomplish this when our more experienced members are willing to help out our beginners.
5. If we do Cherry Springs again, 2 sights again will be needed, one for those perfectionists, and one nearby at the hotel for those merely seeking excellence.

Our society might be better served with trips to more nearby dark sky locations, and dare I say, our monthly excursions to Wharton State Forest are still the best bet.

For a majority of those attending, we do not need the absolute darkest location. Don't get me wrong. Dark skies are great and we should seek them out, but the diminishing return on the view does not warrant it. We don't really need to have an excellent+++ over the top view. Excellent will suffice.

So if you could not make the trip and feel you missed out, join us at Wharton State Forrest. Willingboro members are not as fussy, they use lasers and computer gear on the field, and they are always very accommodating and make us feel we are welcomed guests. In fact we benefit from their expert assistance since they have been conducting public star watches for years.

All told, I was glad I did it. I'm a Cherry Springs Virgin no more, and although the experience was a bit uncomfortable, I came away the wiser for it. I'd probably do it again if I was traveling alone, but as far as a group activity, I'll continue to meet with members at Wharton State Forest. We will carry on the practice of offering some soup, hot chocolate, extra seats, binoculars, and scopes. You are welcome with no gear, and as we always say, just bring your interest, we can provide the astronomical experience. See you all soon in New Jersey



*Helix Nebula: October 2013 from LSR Observatory in Glenside, PA  
Credit: Al Ryan*

## Astronomical Swap Meet July 18

I'm writing this to let you all know that on Friday July 18, at 7PM Willingboro Astronomical Society will be hosting a swap meet during our regular meeting. If RAS members want to set up a table or just come to spend money they are welcome. There is no fee for setting up a small table, we will host this indoors but space is limited so super large tables may cause a problem. Please have anyone who wants to set up a table to contact me so I can plan out the space. By phone I'm at 215-707-4863 (during the business day) Info on Willingboro can be found on our website.

Thanks,  
Drew Maser  
President of Willingboro Astronomical Society







## Philadelphia Science Festival on the Parkway Citywide Telescope Night

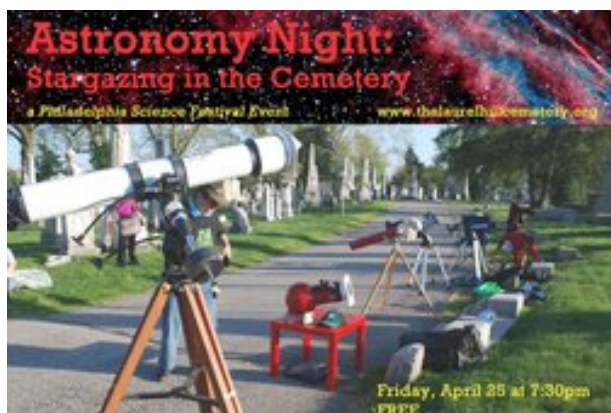
Our 4th year participating in the Carnival on the Parkway along with City Wide Telescope Night was again quite successful. A lot of work goes into the Carnival preparation, and there is planning sessions and orientations to conduct to get all up to speed for City Wide Telescope Night. First, we need to thank all the members that participate in these events as we take astronomy to the streets (literally!)

City Wide Telescope night attract some 15 Rittenhouse members to participate. Comments were made at the planning session/dinner that each year the event is better organized and this year was no exception. Early on, a few years back, we formulated the sign up data base and posted the Google Map list of locations. As the years progressed, more were employed by PSF/Franklin Institute and this year they conducted the sign up on line, data bases were developed by the Franklin, and a decent sized mailing list of interested astronomers was further developed.

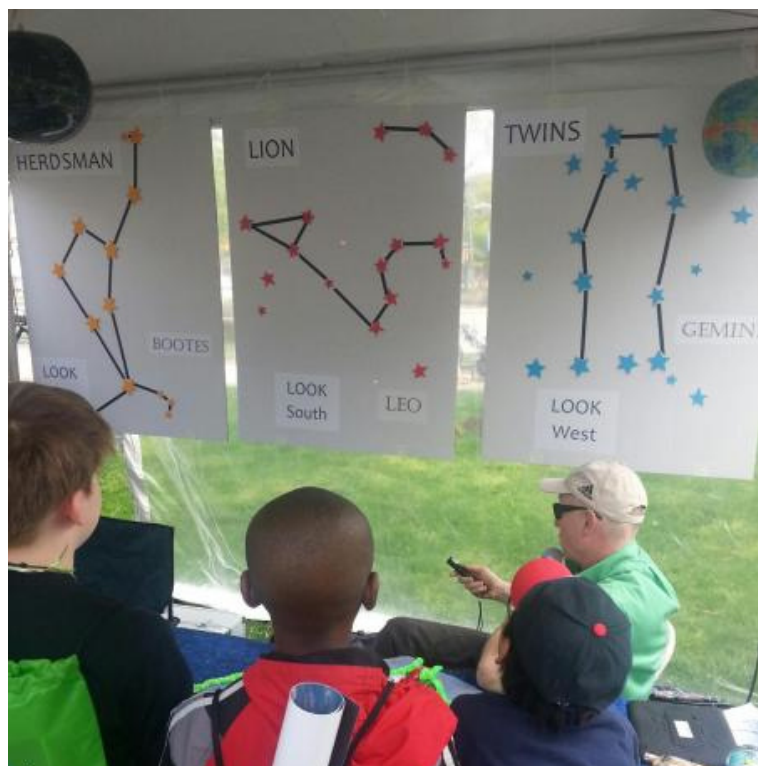
Those who signed up were treated to dinner at the Franklin as Derrick Pitts and Ellen Trappy took care of all the final preparations, matched astronomers with contact folks at the various sites the event would be conducted at. This year 26 locations were all primed for the event.

Rain that set in the evening of the City Wide Telescope night foiled our best attempts. Some sites still hosted an indoor event of sorts but that was limited to 3 locations. Three out of four is not that bad a record as this was the first year rain washed us out.

Science Carnival on the Parkway on the other hand was wildly successful. This year, space science and astronomical science exhibits/booths were constructed together in a semi-circle of sorts behind the gold Auxiliary Sphere just across from the main entrance of the Franklin.







Our carnival booth was a hit as we did a “Laser Shoot” to imagine a constellation. Star patterns of Bootes, Leo and Gemini were constructed on poster-boards. All three constellations are in the night sky currently and we could conduct a star talk of sorts. Participants were given lasers and asked to draw a herdsman, lion or twins over the star patterns. Constellations are imaginary so participants used their imagination to draw their personal interpretations.

At the end of each session, participants put all their lasers on one spot to create a bright star which turned out to be Jupiter’s location (currently located in Gemini.) We were easily able to accommodate 6 participants at the same time, and everyone got a prize! Dipper Clocks were constructed and given as a take home prize for all participants.

Three weeks later I met a fellow visitor to the Carnival and our booth was one of the 3 displays that her younger children remembered. We made quite an impression with our exhibit.

Special thanks to Henry, Denise, Renee, Ivin, Mike, Shawn, Mitch, Sherry, Wayne, Lynn, Ruth and Dave for assisting with the ever popular Sun Gun, telescopes, set up or clean-up, and participating in the carnival booth.







## Some of Milt's Favorite Jokes

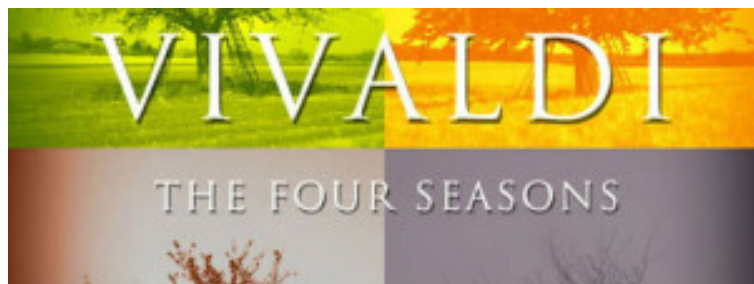
~Fern Culhane and Denise Vacca

A little remembrance of jokes Milt might have told us...

- What kind of songs do the planets like to sing?  
*Nep-tunes*
- What kind of light goes around the Earth?  
*A Satel-lite*
- What do you call a crazy moon?  
*A Luna-Tick*
- Why does a moon rock taste better than an Earth rock?  
*It's a little meteor*
- "How many Astronomers does it take to change a light bulb?"  
*"Two. One to change the bulb, and the other to complain about the light pollution."*
- I'm reading a book about anti-gravity.  
*It's impossible to put down.*
- How does a meteor shower?  
*With Comet. Which solves the problem of rings around Uranus.*
- A neutrino walks into a bar...  
*And keeps right on going ...*
- If athletes get "Athlete's Foot" What do astronauts get?  
*Missile toe*
- Why didn't the Dog Star laugh at the joke?  
*It was too Sirius*
- Sherlock Holmes and Dr. Watson go on a camping trip. After a good dinner and bottle of wine, they retire for the night and go to sleep. Some hours later, Holmes wakes up and nudges his faithful friend. "Watson, look up at the sky and tell me what you see."  
"I see millions and millions of stars, Holmes," replies Watson. "And what do you deduce from that?"  
Watson ponders for a minute.  
"Well, astronomically, it tells me that there are millions of galaxies and potentially billions of

planets. Astrologically, I observe that Saturn is in Leo. Horologically, I deduce that the time is approximately a quarter past three. Meteorologically, I suspect that we will have a beautiful day tomorrow. Theologically, I can see that God is all powerful, and that we are a small and insignificant part of the universe. What does it tell you, Holmes?"

Holmes is silent for a moment. "Watson, you idiot!" He says. "Someone has stolen our tent!"



## May Meeting Memories And Music

We had some very congratulatory feedback by some long-time members, who have known Milt for years. Milt's family was also quite pleased. I was quite proud to be part of the 'speaking' team of members including Dave, Denise, Alan, and Derrick who shared such great varied perspectives on Dr. Friedman.

Also, many non-speaking members teamed together ensuring a successful evening with their assistance including Mike, Shawn, Dan, Ruth and Fern. So for all of you that might not have had any direct feedback from those attending, I'm sharing it now. All positive, all respectful, and all very thankful.

I will write a note to the Orchestra Society Members thanking them not only for their musical tribute, but for their patience and respect for someone they may have never known of, as they waited their time on stage. That respect for us as we spoke on about Milt, should also be commended.

And what can I say Martin! Bravo Maestro, you rescued our night and provided us the sweetest of musical moments for us to reflect back on Milt. I truly appreciate you sharing your personal perspective having Milt as your physician, and your talent not only as a musician, but one who rallies other musicians for the greater good of society.

Rittenhouse Astronomical Society  
P.O. Box 283  
Feasterville, PA 19053-0283



## In Memoriam Dr. Milton Friedman

It is with great regret we share the news of the loss of our long time President Dr. Milton Friedman. He passed on April 18th during his final battle with Cancer. It was Dr. Friedman's dedication to our society along with the help of now Vice President Emeritus Alan Daroff that enabled our society to survive through the turn of the century. Reshaping our group from one focused as a clearinghouse for astronomical studies to an open society dedicated to education of amateurs, professionals, laymen, educators, students and those with a general interest in astronomy that has kept our society solvent.

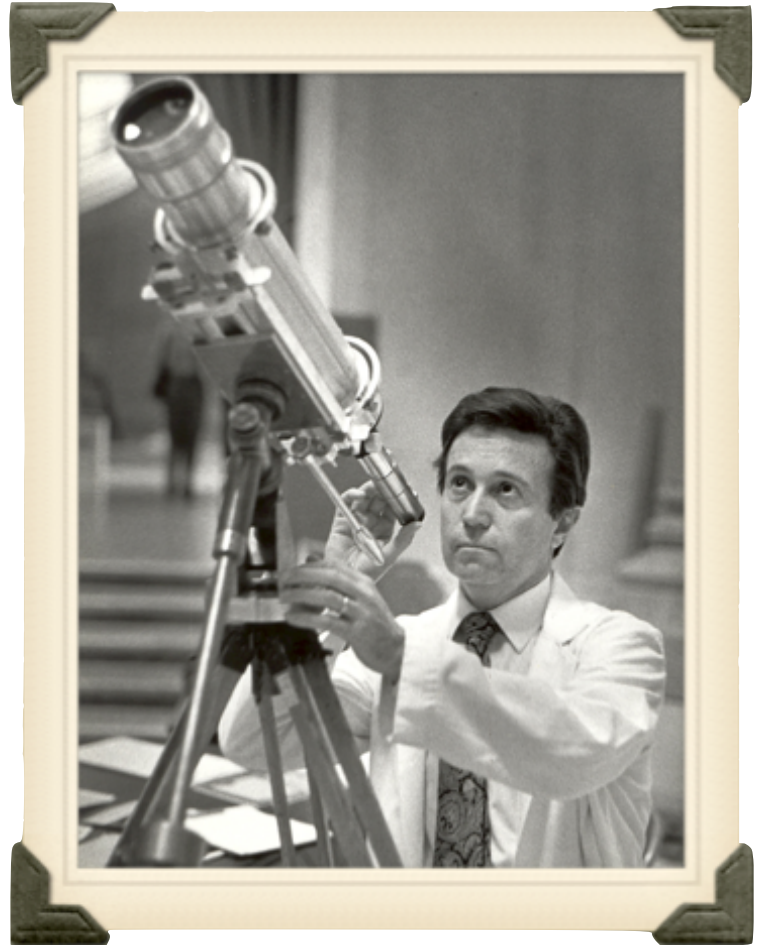
Before development of the internet, it was common in the 1950's and 1960's for colleges and universities to send their astronomy professors and research assistants to Rittenhouse meetings sharing with the scientific community of the Franklin Institute the recent results of their research. As the internet grew, it became the primary method of conducting research linking colleges directly to the grandest of telescopes. It also became the most expedient way to disseminate that information to a world wide community. Colleges closed their local observatories, or reduced their research in these centers for better tools and telescopes made available through the World Wide Web. Personnel were cut or retired and our attendance waned. Our purpose or focus became slightly blurry.

Eleanor Valdala (previous president to Dr. Friedman) suggested a new focus for our society, one centered on educating those interested about recent findings in astronomy. In essence, she challenged us to bring astronomy to the public in a way that is understandable, possibly enjoyable to any who are interested (Note the influence of Franklin Institute and it's approach to science.)

Dr. Friedman reveled in that challenge and dedicated his presidency to reshaping the organization. I remember Milt many times saying "Early on, there were too many lectures about a thousand dots on charts most cannot see or read." His concern was for everyone, no matter what level of experience or background in astronomy, to leave our meetings with a better understanding of the topic at hand or feeling they had a part in contributing to the further understanding of others.

It is with great respect and sorrow that we promote Dr. Friedman to Honorable Past President / Deceased. His guiding light may now be extinguished, but many fellow members have shared that we know his influence still travels on like starlight continuing it's journey through the Universe.

We all miss you very much Milt, as you will be in our hearts and minds for years to come. (I'll miss your follow up call after you would have proof read this submission.)



Respectfully Submitted 4/24/14:

Ted Williams, Secretary to President Friedman  
Vice President RAS

## Rittenhouse Medals Winners and Other Special Events



*Clyde Tombaugh receives the Rittenhouse Medal from Milton Friedman, president of the Rittenhouse Astronomical Society, in Philadelphia, Pennsylvania. Photograph by Robert Summerfield, Sky and Telescope Magazine April 1991*



*Carolyn and Eugene Shoemaker receives the Rittenhouse Medal from Milton Friedman, president of the Rittenhouse Astronomical Society, in Philadelphia, Pennsylvania, 1988*



*Dr. Milt Friedman, Harrison Schmitt (Apollo 17, One of the last Astronauts to step foot on the Moon)*



*Sally Ride - First American female astronaut in space 1985*