



Mingo Creek Park  
Observatory

# The Guide Star

Newsletter of the Amateur Astronomers Association of Pittsburgh, Inc.

Founded June 9, 1929 by Chester B. Roe and Leo J. Scanlon

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Nicholas E. Wagman  
Observatory

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## DARREN WILLIAMS on OCEANS OF WATER ON DISTANT EARTH- LIKE PLANETS (Topic of Next AAAP Meeting)



The AAAP is pleased to present Darren Williams, Associate Professor of Physics and Astronomy at Penn State Erie, The Behrend College, as the speaker at our meeting, Friday, March 9 at 7:30 at the Carnegie Science Center auditorium.

Professor Darren Williams is an astrobiologist and is primarily interested in the evolution of planet/satellite systems, and particularly in the climatic and dynamic factors that affect whether a planet or moon can support life. His work involves theoretical modeling of planetary climates and spin-orbit dynamics using computers.

He will discuss "Oceans of Water on Distant Earth-like Planets," and how, in the future, such planets could be detected and monitored. Dr. Williams spoke at the Black Forest Star Party last year and comes highly recommended. One participant reported to the list that his presentation had the biggest "wow factor" and his love of the subject really showed through.

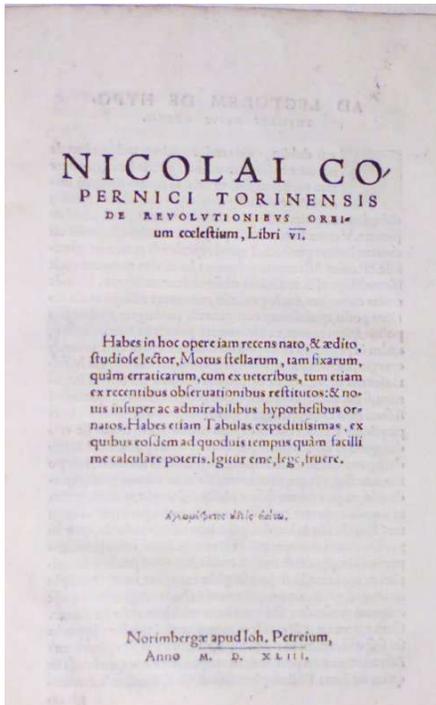


(Photo from Night Sky Network)

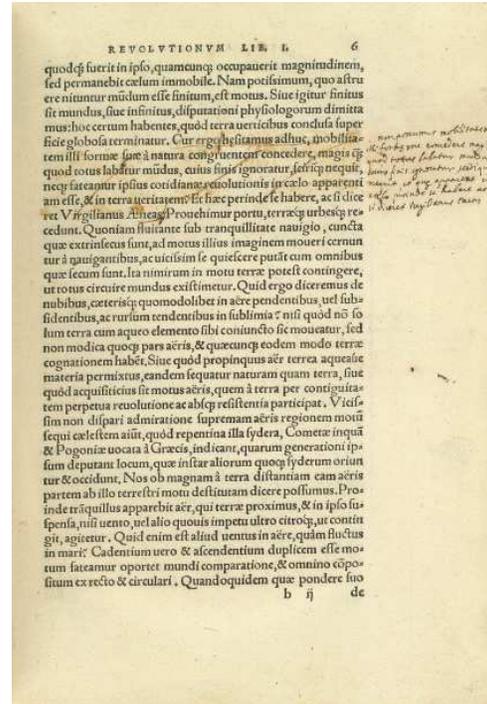
### The Book Nobody Read and an Invitation for YOU.

by Terry N. Trees, Ph. D.

I received a copy of *The Book Nobody Read* as a Christmas gift from my wife. It was written by Dr. Owen Gingerich, a Harvard University History of Science Professor. The book details Gingerich's 30+ years of world-wide study of Nicholas Copernicus' *De Revolutionibus (On the Revolution of Heavenly Spheres)*, the book in which Copernicus published his theory of a sun-centered universe.



Gingerich examined more than 600 first and second editions of the book paying special attention to any hand-written notes that might be found in their margins. He attempted to determine (1) if many of Copernicus's contemporaries actually read Copernicus's book and whether or not it had an immediate influence on astronomy (2) who actually owned copies of the book and (3) what those owners might have thought of it.



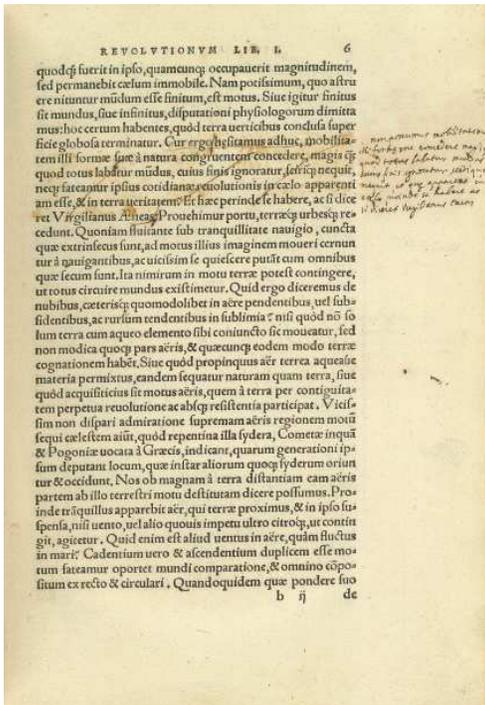
The first and second editions of *On the Revolution of Heavenly Spheres* totals a maximum printing of 1,100 copies (probably less). The first edition was published in 1543 just after Copernicus's death and the second was printed in 1566. It amazes me that more than 600 copies of a book published in the mid-1500s still exist.

These editions included a preface stating Copernicus wasn't actually saying that the earth moved about the sun but rather that assuming a sun-centered universe was done to simplify calculations and increase the accuracy of planetary position predictions. It was only recently determined that Copernicus, a Polish Catholic priest, did not actually write that, although it seemed logical that he did. It was, in fact, added by one of his contemporaries, Andreas Ossiander. Copernicus's preface had simply dedicated his book to the Pope. However, the fraudulent preface kept the book off the Catholic Church's banned book list and out of trouble...for a while.

In the early 1600s, Johannes Kepler not only published what later became known as his 3 laws of planetary motion, but he also denounced the preface in Copernicus's book. He said the

(Continued from page 2)

planets really do orbit the sun, the earth is a planet in motion like the others and that was really what Copernicus's book was about. (Is it important to mention that Kepler was a Lutheran, not a Catholic?) This caused the Catholic censorship machine to reevaluate *On the Revolution of Heavenly Spheres* and since it would have been difficult to ban the book because of its widespread distribution, the censors listed a number of sections that needed to be struck and replaced with new phrasings. Below is an example of such a change. A clever change that met the requirements of the Church but that also allowed the book's owner to go back and read the original text at any time!



The images used in this article (with permission) are from the Posner Memorial Collection of 622 rare books, many of which are landmark titles in the history of science. The collection includes first and second editions not only of Copernicus, but of Tycho, Kepler, Galileo and Newton as well. You can access these works and other titles on-line at: <http://posner.library.cmu.edu/Posner/>. (Note the capital "P" in the second "Posner".) And more importantly, the **YOU** have been invited to visit the

Posner Center and view these books in person. Surprisingly, the Posner collection is conveniently located on the campus of Pittsburgh's Carnegie Mellon University.

I have yet to negotiate a date for our visit but I will attempt to schedule it on a Saturday or Sunday afternoon in April or May. If you are interested, please write to me at [TNTrees@BellAtlantic.net](mailto:TNTrees@BellAtlantic.net) and I will keep you informed.

**Life as We Do Not Know It: A Book Review, with Spoilers!**  
By Ann Norman

I just finished "*Life As We Do Not Know It: The NASA Search for (and Synthesis of) Alien Life,*" by astrobiologist Peter Ward. I know a book review isn't supposed to "give away the good parts" but when the question is "Are there Aliens?" I'm sorely tempted to do so!

Peter Ward is often called on to play the role of pessimist in debates about the possibilities of alien life due to "Rare Earth" (Peter D. Ward and Don Brownlee), in which he details the special astronomical, geological, and historical conditions responsible for the evolution of intelligent life on earth. Bottom line: life may be widespread in the universe, but complex life will be rare.

But listen again, "Life may be widespread in the universe!" The glass is half full!

Ward is in fact an enthusiast in the search for alien life—but don't hope to find "Wookies", he tells us dismissively. He's thrilled about microbes, viruses, RNA life, and simple self-replicating physical structures in wet clay (one a possible precursor to life).

He reports facts of which I was completely unaware:

- The synthesis of life in a test tube WILL succeed; the major hurdles have been jumped.
- Europa does not seem to have enough energy reaching its oceans to support life. (Bummer!).
- The evolution of Earth life might have required conditions found only on Mars.

(Continued from page 3)

As for ongoing Martian life . . . (BIG SPOILER . . .)

"No one [of the NASA astrobiologists] is yet shouting 'life,' but in the corridors, over the water cooler, when it is Miller time at the end of the day, the astrobiologists gathering this data [on Mars] are quietly smiling, believing they have detected life." (pg. 90).

Ward is so curious about life on Titan, he seriously proposes a one-way human mission to this moon of Saturn; and he is confident that some astrobiologist like himself would volunteer!

Ward's enthusiasm is contagious; the bottom line, quite surprising.

I would recommend this book to everyone—except that. . . well . . . the details are a little boring. Chemistry just isn't fun. You waded through it to get to the good stuff.

I decided that wading through the carbon, hydrogen, nucleic acids, DNA, proteins, boron, and silicon is a small price to pay to be on the cutting edge. But if you want a shortcut . . . talk to me at the next meeting/star party. I'll be glad to spill all the secrets . . .

### **CORRECTION**

The picture of the comet and M13 shown in the February 2007 Guide Star on page 9 was taken by Tom Bakowski, a friend of James Schultheis from New York.

### **MASON-DIXON STAR PARTY**

By Pete Zapadka

During an era in which Native Americans and European settlers often fought bloody battles on a new frontier, two British astronomers and surveyors braved the wilderness and established what some have called "the second most-famous line on Earth after the equator."

Charles Mason and Jeremiah Dixon surveyed their famous Mason-Dixon Line from 1763 to 1767. Though part of the line is Delaware's western border with Maryland, the best-known part, often

called "the West Line," effectively is the southern border of Pennsylvania.

Mason and Dixon were determined to reach what today is Pennsylvania's southwest corner because William Penn's family had been deeded land by King Charles II of England that was to extend to that remote site—5 degrees in longitude from the Delaware River.

Indians accompanying the team, however, halted the survey some 22 miles short of the goal, about three miles southwest of present-day Mount Morris, Greene County.

Today, Mason-Dixon Historical Park site straddles the line where the survey was stopped and it is at this site in October where a festival, in its planning stages, is expected to be held to commemorate the 240th anniversary of Mason and Dixon's famous line.

Because Mason and Dixon used astronomical observations to determine quite accurately their line, I am hoping we can, some 240 years later, also do astronomical observations at the site for the public to enjoy.

Planning is in its early stages, but I am looking for a few volunteers from the AAAP and our other local astronomy clubs to set up telescopes [Saturday, October 13, 2007](#), at the foot of Brown's Hill on the West Virginia side of the line. The hill marks the farthest point westward that Mason and Dixon reached.

That Saturday is two nights after new moon and falls on a date in which Mason and Dixon were at the location in the fall of 1767. I do not believe there are any AAAP events that night.

I am hoping to secure a location in the park where the telescopes will not be affected adversely by local lighting. It has the potential to be a fairly dark sky, though Morgantown, West Virginia is about 10 miles to the southeast.

The site is about 65 miles south of Pittsburgh, but only a few miles from Interstate 79 at Mount Morris.

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If anyone is interested in helping, please let me know through my alternative e-mail address: [jeremiah@exploretheline.com](mailto:jeremiah@exploretheline.com).

The Mason-Dixon Line, perhaps to your surprise, was not intended to be the dividing line (free vs. slave, North vs. South) so often thought of today. Instead, it is a property line that established in which colony the settlers resided and to whom they paid taxes. When all sides agreed to the survey, the line was responsible for helping to stop the fighting between residents of Pennsylvania and Maryland, and Pennsylvania and Virginia (West Virginia did not exist until 1863). In short, the Mason-Dixon Line averted a war between the states a century before the War Between the States.

To learn more, visit [www.exploretheline.com](http://www.exploretheline.com). And thanks in advance for your interest in this effort to promote what is important local history.



AAAP member Pete Zapadka kneels in December 2002 on the Mason-Dixon Line atop Brown's Hill, about three miles southwest of Mount Morris, Pennsylvania. The stone marker was placed in a resurvey in 1883. Pete is helping to organize a festival to be held this fall that will commemorate the 240th anniversary of the end of Mason and Dixon's survey atop Brown's Hill in 1767.

### **The National Wildlife Federation's Great American Backyard Campout**

By Kathy DeSantis

Plan to turn off the TV and grab your sleeping bag - on **June 23, 2007**. Folks all across America will be coming together in their backyards for this special night of family fun. You can bring together your neighbors, friends and family to enjoy a night of

star gazing, listening for nocturnal wildlife and exploring a whole other world that's right in your backyard. This is a good opportunity for amateur astronomers to share their craft.

### **ASTRONOMY WEEKEND**

**March 31 and April 1**

By George Guzik

Astronomy Weekend 2007 is almost here! Astronomy Weekend 2007 will take place at the Carnegie Science Center on March 31 and April 1. The theme of this year's event is "Everyday Astronomy". Dan Malerbo of the CSC has been busy making arrangements for exhibits and activities. We'll have Moon rocks and meteorites on display. Dan also has plans for many hands-on activities for families.

The Buhl Planetarium will be a busy place. In addition to a lineup of planetarium shows, speakers from California University will be visiting the Planetarium to address the interesting topic of Space Weather. We're also expecting a speaker from NASA's Discovery and New Frontiers Program. Dan Malerbo will be giving his presentation on the "Pluto Dilemma".

Our friends from the Pittsburgh Space Command are making plans to bring their excellent rocketry exhibit to the lobby of the CSC.

The AAAP will have our large set of displays along with exhibits on astrophotography, telescope making, digital imaging, and NASA Night Sky Network.

As an added bonus, the CSC is again partnering with Meade Instruments and Astronomy Magazine for this year's Astronomy Weekend. Meade is providing an ETX-80AT to the CSC that will be presented to a lucky raffle winner at the conclusion of the event. The Meade/Astronomy partnership extends to many institutions across the U.S. in addition to the CSC. At the national level, Meade is providing a 10-inch LX200R that will be presented to a VERY lucky raffle winner chosen from the entries received at the participating institutions.

We're looking forward to Astronomy Weekend 2007 and we would certainly appreciate YOUR participation as an AAAP volunteer in the

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event. Please contact George Guzik ([GeorgeGuzik@aol.com](mailto:GeorgeGuzik@aol.com) or 724-863-8008) to make arrangements to bring your favorite astronomy topic to the visitors at the CSC.

### **JENNINGS ENVIRONMENTAL EDUCATION CENTER STAR PARTY**

By John Holtz

On February 18, John Holtz, Katie Holtz, and Bob Novack attended a talk at the Jennings Environmental Education Center near Slippery Rock. Naturalist Will Taylor gave a very informative talk on various creation myths about astronomy and some "gee whiz" facts about our universe. John then conducted a brief question and answer session. The talks were well received by the 40 people in attendance.

Although the day included snow showers and scattered clouds and the temperatures were in the single digits by the time star gazing came around, the skies were very clear and the visitors eagerly went into the dark parking lot where the AAAP members had setup some scopes. After a brief sky tour with a laser pointer, the visitors were treated to such wonders as Saturn, the Orion and Crab Nebulas, and various open clusters. Some of the attendees were young scouts (boys and girls) who were working on their badges. A few hearty observers braved the cold for more than 45 minutes!

Thanks go out to our "cold trio" for this successful star party and to the Education Center who donated \$100 for our participation.

### **NORTH ALLEGHENY STAR PARTY** By Dennis Morton

Hello AAAP Members! I hope that everyone is having a great year and surviving the cold weather. While the snow has been falling outside, I have been in the process of putting together a few spring star parties at my school. Last year the North Allegheny Star Party was a huge success with over 170 parents/students eager to look at the wonders of the night sky. I believe that we had four members help out and

once Saturn was visible, each telescope was swamped with lines of 15 or more curious students to get a peak. Please check my web site for pictures from last year and more information about this year's event. [http://teachers.northallegheny.org/dmorton/exploring\\_with\\_a\\_telescope.htm](http://teachers.northallegheny.org/dmorton/exploring_with_a_telescope.htm)

I want to invite any AAAP member who may be interested in helping out to these events. This could be a wonderful opportunity to share your knowledge with the community and to pass out flyers about the 2007 AAAP star parties. If you are available on any of the evenings below, please e-mail me at [dmorton@northallegheny.org](mailto:dmorton@northallegheny.org)

The dates for the N.A. Star Parties are:

- Tuesday, April 17, 2007 at 8:00 p.m.-??? (Rain date- I've suggested going to Wagman on the weekend)
- Thursday, May 17, 2007 at 8:00 p.m.-??? (Rain date-Wednesday, May 23 from 8:00 p.m. -???)

The location for the N.A. Star Parties is in a field behind McKnight Elementary School at 500 Cumberland Road, Pittsburgh, 15237. This event will be like sidewalk astronomy because of the school lights, but we are working on getting the lights behind the building shut off. In order to get to the field behind the school, you have to drive through a playground area. If you are not there early to set up, you would have to navigate your vehicle through a large crowd and the playground area to get to the field.

Finally, last year we had over a dozen families bring their own telescopes to the N.A. Star Party. Some were aware of how to use them while others needed help on how to adjust them or fix the viewfinder. Even if you wanted to float around and give a helping hand that would be a great help. I know that I was trying to operate two telescopes and help students/parents with questions last year.

FYI:

- Parent organizations are willing to talk about

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these events during their monthly meetings and add information in their monthly bulletins to promote these events.

- Science teachers will be passing out small flyers with directions and times to these events. There will also be help from other faculty who have an interest in astronomy.
- Secretaries will be adding information to the weekly school bulletin to inform students/parents of these evening events and posters will be at the entrance of each elementary school.
- Information will be posted on the North Allegheny website. Ideas, suggestions and/or comments are also welcome!

Thanks for your time and I hope to hear from you!

### **HILLCREST INTERMEDIATE STAR PARTY**

By Bob Goetschkes

Last year, George Guzik and several other members of the club were kind enough host a Star Party for Hillcrest Intermediate School. This year the Hillcrest Intermediate star party will be on May 12th at Oak Hollow Park on Timothy Road in North Irwin. Anyone interested in helping out can contact me (Bob Goetschkes at 724-861-3015 or [rgoetschkes@norwinsd.org](mailto:rgoetschkes@norwinsd.org)).

Directions from Route. 30: Turn onto Rte. 30 from the Turnpike heading west. At your first traffic light, Kohl's Department Store, turn right onto an extension of Pennsylvania Ave. At the next light, turn left onto PA. Ave. proper, heading west towards downtown Irwin....Stay on PA. Avenue for a couple of miles, passing Union Cemetery on your right, an elementary school, and old Victorian looking homes. You will head into Irwin and turn right onto Oak St. There is a Sunoco Gas station there. Take Oak St. North into town. It will bend slightly to the right, but stay on Oak St. Turn Left onto 2nd St. You will see a Catholic Church and the Post Office. Turn right onto Main St. and go down the hill, past the railroad tracks, and back up a hill towards North Irwin. Main St. will turn sharply to the right and become Washington Ave. Drive about two blocks to Morris St. and turn left. You are heading north again. Drive up hill, passing Sheridan Terrace Elementary School, continuing

up until you see a sign for Oak Hollow Park on Timothy Drive. Park in the upper lot. Walk to your right past a gate, down a service road. Not far ahead you'll see pavilions and the telescopes set up.

### **MESSIER MARATHON**

By Tom Reiland

This coming month starting the weekend of March 16 & 17 through March 20 will be the best time in 2007 to try the Messier Marathon. If you have the experience of observing all of the Messier Objects, you can observe 109 out of the 110 in one night. Friday, March 16th offers the best chance for that. The difficult M objects in the evening will be: M74, M77, M33, M31, M32, M110 and M79. The tough ones in the morning will be: M55, M72, M73, M15 and M2. M30 is not visible from here. You have to go to southern Florida to see all 100 in one night. The moon offers little or no interference from March 15 through March 20. New Moon is Sunday night, March 18. Good Hunting and Good Luck.

### **ATTENTION ALL MEMBERS**

By Mark Schomer

AAAP Membership Secretary

Some new Membership Cards were printed with a "Current Through" date of 1/2008. This is incorrect. It should indicate "Current Through 12/2007". It is not a problem—just keep in mind that your membership only runs through 12/2007. Sorry for the miscalculation.

### **COOL WEBSITES**

**Larry McHenry:** Here's a few images from a short Lunar tour I did last night at my home observatory using my C8 and StellaCam Ex video camera. (I didn't stay out long; it was a little on the chilly side for me). The seeing was a little unstable when I first opened up my observatory, but after about a half hour of additional cooling, the images settled down. Wide field image with the University Optics 80mm finder: <http://home.comcast.net/~lemastro/vidcap/images/moon-022307-1stQTR-80mm.jpg>

Following along the terminator, (from the top of your Rukl's Lunar Atlas) we come to a pair of nice

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craters just north of Mare Serenitatis, Aristoteles & Eudoxus. (you can make out part of the terraced walls of Aristoteles). To their left is the Caucasus Mountain range. <http://home.comcast.net/~lemastro/vidcap/images/moon-022307-aristoteles.jpg>

Continuing south, we come to the full extent of Mare Serenitatis. Notice the long wrinkle ridges and rilles to the right of the Haemus Mountains. Also, the small, but prominent crater, Bessel, located out in the middle of the Mare. <http://home.comcast.net/~lemastro/vidcap/images/moon-022307-mareserenitatis.jpg>

Moving much further south, is the fully illuminated trio of craters - Theophilus, Cyrillus, and Catharina, lying on the edge of Mare Nectaris. Notice in this image, Theophilus's central peaks, which reach over 4,600 feet high. <http://home.comcast.net/~lemastro/vidcap/images/moon-022307-theophilus.jpg>

Taking a detour to the east is the small crater, Messier, located in Mare Fecunditatis. The interesting thing to note is Messier's 'twin' ray system. <http://home.comcast.net/~lemastro/vidcap/images/moon-022307-messier.jpg>

Finally, moving back south along the terminator, we make our last stop at the heavily cratered region around the walled plain, Maurolycus, where several of its central peaks have recently emerged from shadow. <http://home.comcast.net/~lemastro/vidcap/images/moon-022307-maurolycus.jpg>  
<http://home.comcast.net/~lemastro/vidcap/images/moon-022307-maurolycus-2x.jpg>

**Bill Cooley:** While in NM two weeks ago, I had a chance to tour the Very Large Array near Socorro. Here is the link to that video on YouTube. <http://www.youtube.com/watch?v=k220p2Mg0B8>.

**John Cheng:** Variable star observer, Sebastian Otero, has posted URLs for three charts that can be used to observe the "new" Nova...note the redundancy; a chart that will be useful if the new

"guest star" gets brighter: [http://ar.geocities.com/varsao/Carta\\_RR\\_Sco.htm](http://ar.geocities.com/varsao/Carta_RR_Sco.htm).

A chart that goes down to 11th mag is [http://ar.geocities.com/varsao/Carta\\_V1281\\_Sco telesc 1.htm](http://ar.geocities.com/varsao/Carta_V1281_Sco_telesc_1.htm)

A chart suitable for mags fainter than 11th and down to 13th magnitude: [http://ar.geocities.com/varsao/Carta\\_V1281\\_Sco telesc 2.htm](http://ar.geocities.com/varsao/Carta_V1281_Sco_telesc_2.htm)

P.S.: As many members probably know, the term "guest star" was used by Chinese astronomers to describe the supernova which appeared in Taurus in 1054 and whose remnant we see today as Messier 1. An amusing remark was made by Carl Sagan to the effect that when we look at ancient astronomical records, it appears that everybody went to bed early - except the Chinese).



### FOR SALE

I am the happy owner of An Orion AstroView™ 120mm EQ Refractor w/Original Plossl 15mm and 25mm eyepieces, original collimator eyepiece Tri-Mag™ 3x Barlow Lens 35mm Ultrascopic™ 1.25 eyepiece. If interested, please contact Kevin Hyde at [khyde@telerama.com](mailto:khyde@telerama.com)



\$500 for a 10-inch Coulter Dobson Reflector up-graded with a Precision Focuser  
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Orion Color Filter Set, Basic Set of Four Filters  
Tele Vue Radian 4 mm Eyepiece \$200

Contact: Ross Potter at 412-828-2810 or [ross.h.potter@ieee.org](mailto:ross.h.potter@ieee.org)

**WINTERFEST 2007 AT WAGMAN**

By Tom Reiland

We had another successful Winterfest at Wagman Observatory even though the sky conditions were not ideal. Actually, they were rather crappy, but we were able to show our visitors and, for a brief moment, I showed Saturn to a few people through the 5" refractor on the Manka Scope. I estimated about fifty members of the public, but Pete said that there were some early arrivals that I missed. The final total was around 75. Eighteen members assisted with our first event this year. Here are the names of the volunteers:

- Shirley Ann Cassman
- Kathy DeSantis
- Mary DeVaughn
- Eric Fischer
- George Guzik
- Bill Hayeslip
- Brent Hudock
- Fred Klein
- Tim Manka
- Ann Norman
- Tom Reiland
- Bill Roemer
- Larry Sneider
- Bill Snyder
- Flac Stifel
- Bill Yorkshire
- Diane Yorkshire
- Pete Zapadka

Our thanks go out to all the volunteers who came out on a less than favorable night. Hope to see many of yinz next Saturday for the Lunar Eclipse.



Photos by Shirley Ann Caseman and Pete Zapadka

**Amateur Astronomers Association of Pittsburgh, Inc.**

*Founded June 9, 1929 by  
Chester B. Roe and Leo J. Scanlon*

**2006-2007 Executive Officers:**

- President: **Edward Moss**  
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**AAAP Member Dues\*:**

AAAP Dues:	\$18.00
Junior Member (under 18):	\$13.00
<u>Sky &amp; Telescope Magazine:</u>	Add \$33.00
<u>Astronomy Magazine:</u>	Add \$34.00

**\*Basic Procedure for Paying Dues:**

1. Make check payable to "AAAP Inc."
2. Send check to Michael Meteney, Treasurer,  
1070 Sugar Run Road; Venetia, PA 15367-1514

Celebrate March 14 is Pi Day (3.14), which is also Albert Einstein's birthday.

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