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

Website: 3ap.org

Nicholas E. Wagman Observatory

October 2009 Vol. 43, No.10

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DR. MICHAEL WOOD-VASEY TO SPEAK AT OCTOBER MEETING

By Craig Lang

The speaker at the October 2nd general meeting will be Dr. Michael Wood-Vasey, Assistant Professor of Physics and Astronomy at the University of Pittsburgh. Dr. Wood-Vasey will be talking to us about his latest work and research. Come on down to the Carnegie Science Center that Friday night at 7:30 pm and welcome this new and exciting member of the astronomy community here in Pittsburgh.

Dr. Wood-Vasey is currently working on the detection and classification of transient astronomical events discovered by the new Pan-STARRS survey telescope just coming online in Hawaii. The general technical theme of his research work is moving into the next generation of time-domain astronomy where large data sets will be analyzed using sophisticated databases and the asking of new kinds of questions as the exploration of the Universe continues.

MEMBERSHIP RENEWALS

By Michael Meteney

It is time again to renew your memberships for 2010. Enclosed in this issue of the Guide Star (on pages 3 and 4) is a renewal form that has two parts. The first part is your personal information that we need to make sure our database is up-to-date and accurate. The second part is the billing information. Please fill in both parts of the form completely.

You will notice a change in the dues structure. The basic membership is still $24.00. We now have a student membership ($16.00) instead of a junior membership. This is for any K-12 and full-time college student. We also have a family membership ($40.00) that includes anyone living in the same household. The family membership need only include the basic primary member's contact information and then list the remaining family members' names. All correspondence, Guide Star, and mailings will be sent to the family members through the primary member's contact information. This will reduce printing and mailing costs and redundancy.

A reminder, the AAAP no longer processes *Sky and Telescope* subscriptions. If you want S&T magazine for the first time, use the enclosed form (on page 2) to get your club subscription rate. If you are a current subscriber, use your renewal notice you receive from S&T. It should have the $32.95 club rate on the renewal notice. There have been some *Sky and Telescope* subscription renewal invoices that did not have the club rate on them. This is what happens when companies outsource services. **Send new and renewal subscriptions for S&T magazine directly to SKY PUBLISHING! Do not mail them to us.**

Subscriptions to Astronomy magazine are still handled through the club. Please send these in ASAP so there is no lapse in your subscription. The lead-time on magazines is three months.

Current building key holders need to pay their key fees at this time. To get a building key, you must first be trained by an observatory director.

If you have any questions, you can contact Michael Meteney (treasurer) or Don Hoecker (membership secretary). Thank you.

Astronomy Club Subscription Form

Sky Publishing Corp. P.O. Box 171 Winterset, IA 50273

CLUB NUMBER: *270*

CLUB NAME Amateur Astronomers Association of Pittsburgh

TREASURER'S NAME Mike Meteney - Treasurer Date

MAILING ADDRESS 1070 Sugar Run Rd

CITY Venetia STATE PA ZIP CODE 15367

COUNTRY (IF NOT U.S.A.)

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E-MAIL ADDRESS Treasurer@3ap.org

Sky & Telescope (S&T)	
(1 year/12 issues)	Club Rate
United States	$32.95
Canada	$39.95
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Enclosed is _____in total

AAAP Membership Renewal Form – 2010

Please fill in this single form for anyone in your household who wishes to be a member of the AAAP. We are now offering adult, student, and family memberships. All family members must share the same residence. Student memberships have now replaced junior memberships. To be a student member, you must be a K -12 or fulltime college student. As in the past, you may receive a discounted subscription to *Astronomy Magazine* through the AAAP. The subscription must be included with your membership dues payment. There is a separate form to receive a discount subscription to *Sky and Telescope* Magazine. This is to be sent directly to Sky Publishing. **Do not send any *Sky and Telescope* subscriptions to the AAAP!**

Completely fill in the following information on this form (please print):

Name_____

Address_____

City_____State_____Zip_____-_____

Phone (home)_____ (Work)_____

E-mail_____

How do you want your "Guide Star" Delivered? Online (_____) Snail Mail (_____)

Optional: Do you have a telescope(s) or other special equipment you would like listed under your name in our membership directory? If so, please describe them below.

Additional Family Members:

Name_____ Relationship _____

Name_____ Relationship _____

Name_____ Relationship _____

Name_____ Relationship _____

Name_____ Relationship _____

(over)

AAAP Membership Renewal Form – 2010

ITEM	PRICE	ENCLOSED PAYMENT
AAAP Adult Membership (Jan. 1 to Dec. 31 2009)	$24.00	
AAAP Student Membership (Covers all students K -12 and fulltime college students).	$16.00	
Family Membership - This membership covers the adult membership and all family members that live with the adult member. Please list all family members to be included on the attached form.	$40.00	
"Astronomy" Subscription (12 issues per year) Both new and renewals are processed through the AAAP. Do not renew your subscription directly with Astronomy Magazine. You won't get your discount.	US. $34.00 Can $40.25 Int. $50.00	
Key Fee - Only current key holders! Check appropriate observatory: Mingo____ Wagman____	$15.00 each	
Tax Deductible Donation	----	
TOTAL PAYMENT	----	

It is very important that all payments be received by 12/15/2009 so that magazine subscriptions can be processed in a timely manner.

Prices are subject to change without notice. Payments must accompany this application.

Make checks payable to: **AAAP, Inc.**

Send this form with payments to:

Michael Meteney – Treasurer, AAAP
1070 Sugar Run Road
Venetia, PA 15367

Membership questions?
E-mail: MembershipSecretary@3ap.org
Phone: 412-243-8298

Billing questions?
E-mail: Treasurer@3ap.org
Phone: 724-348-9087

VP COLUMN

By Craig Lang

I am writing this month's commentary while sitting in the cafe at a chain bookstore. Now I am wondering where AAAP members obtain their astronomy reading materials. Do you have a favorite local bookstore? A favorite chain store? Do you order your books online and have them shipped to you? Do you use the local libraries? How about e-books? While a major portion of our hobby is hands-on, we need to fill in these cloudy Pittsburgh nights with an astronomical tome. Share your thoughts on the Yahoo group or with fellow members at star parties or even at upcoming meetings.

Meetings. General meetings. That is what we often call them. But they're not really meetings in a strict sense. Those gatherings that we have Friday evenings from September to May at the Science Center should not be thought of as formal business-like events. Maybe we do have a few reports from the officers and a few 'club-keeping' items to cover, but those are not the real reasons we gather there. Of course, we invite speakers to present new and interesting topics to us, but we can do more than just talk business. Here is a sampling of items that can and should be brought to the general meetings…

- ☆ Observation reports
- ☆ Reports on astrophotography techniques you might use
- ☆ Reports on a telescope that you may have constructed, restored, or modified
- ☆ Tips and tricks that you want to share with your fellow observers

Let us make our meetings more about our passion!

I hope that you have been finding my commentaries worth reading and maybe even inspiring in some way; that is truly how I intend them. Always feel free to contact me with thoughts, suggestions, and even complaints regarding what I write. Now get out there and start wondering…

KEVIN BRUNELLE ASTROPHOTOGRAPHY CONTEST

By Mark Arelt

Plan now to enter the Kevin Brunelle Astrophotography Contest!

The 2009 Brunelle Astrophotography Contest is **November 6**!

Astrophotography combines the best of art and science, and the AAAP photo contest always produces a wonderful collection of images of astronomical objects and atmospheric phenomena. This year, the coordinator of the contest is Mark Arelt .

We are looking for prints, digital images, and slides of astronomical objects. Peruse your images from this past year and choose your best to compete for fame, honor and prizes. (See contest rules, below, to decide what qualifies). As always, the contest will be held at the November AAAP meeting, which will be Friday, November 6 at the Carnegie Science Center.

The deadline for entry submission is 10 days before the meeting, Tuesday, October 27. Please submit your entries in one of the following ways:

- ☆ Hand them to Mark Arelt at the Friday, October 2 AAAP meeting, 7:30pm at the Carnegie Science Center
- ☆ Mail them to Mark Arelt at 2005 Pleasant St., Bethel Park, PA 15102
- ☆ E-mail them to Mark Arelt at diapsida@earthlink.net
- ☆ Please include your name, your telephone number, the category for each entry, and the titles of your images with your entries

Digital images in standard formats (JPEG, GIF, TIFF) are easiest for us to work with. If you have questions, call Mark Arelt at 412-835-6806 or email diapsida@earthlink.net

CONTEST RULES:

The contest is open to all active members of the AAAP.
The contest date is the November 6, 2009 meeting of the AAAP. Entries will be viewed and judged by all AAAP members present at this meeting.

All images entered must be originally captured by the contestant. Entries are limited to images concerning areas of interest within the AAAP.

Images may be submitted as 35mm transparencies or negatives, photographic prints, or as digital media (in formats accepted by the AAAP Audio-Visual Committee).

Only images taken since the date of the previous contest deadline (November 4, 2008) are eligible.

There are 3 categories:

1. Astronomical images taken with optics of focal length no greater than 150mm
2. Astronomical images taken with optics of focal length greater than 150mm
3. Images of atmospheric phenomena

No more than 5 entries per contestant per category are allowed for each contest. Entries must be received by the contest coordinator no later than 10 days before the contest date.

Entries will be judged for 1st, 2nd, and 3rd place in each category, with each voting member assigning points respectively (3, 2, and 1). The entry with the highest total number of points in each category will be declared the winning entry and will be eligible for prizes. Entries that place 2nd and 3rd in total points in each category will be recognized by the AAAP.

TWITTER ANYONE?

By Craig Lang

Twitter Anyone?

Any Twitter users out there in our membership? If you are not familiar with Twitter, you can, of course, read more about it at www.twitter.com, but it is a web service that users can stay updated by following updates from an interest of theirs.

You may ask, "what does Twitter have to do with my astronomy club"? Imagine that you want to be alerted when a star party is canceled due to bad weather. Wouldn't it be nice to get a text message sent to your cell phone telling you just that? Just about any item such as that can be done with a service like Twitter. We could have a Twitter account for each observatory that the directors could use to alert anyone who 'follows' the account of special observatory events. You could even be reminded of upcoming meetings via text message as well. Even sidewalk astronomy events could be posted to our group's Twitter account.

If you are interested in this idea, helping further its development for use, or just simply would find a service like this valuable, let me know.

RED ASTROFLASHERS

By Jim Moody

I think it was shortly after Mingo opened that I first saw someone using a small flashing red LED to mark the location of tripod feet. I thought it was a great safety idea, and I remember doing a little online searching afterward and found one site that sold these devices, but they were out of stock. In any event, they seemed to me to be a bit on the pricey side. You see, my son, Michael, was still in grade school and we had just completed an electronics project for his entire class: the making of „flashy-lights. Michael and I came up with a way to make LED flashlights out of cardboard shipping tubes, heavy foil cake pans, and LEDs that had built-in flashing circuits. We fabricated a couple dozen kits for the science classes, and we did all of this for less than $1.50 per kit. Well, we had some of the LEDs left over and thought we could make a few economical tripod markers ourselves.

Our remaining supply of flashing LEDs consisted of green, yellow, and super-bright red, neither of which seemed appropriate for use in a dark site. I found a source for a dimmer, less power-hungry version of red. But I had to buy in bulk. Also, to keep it simple we decided to use a 9V battery-style connector to clip the LED directly to a battery. I found a place for exactly what I wanted, but again, I had to buy in quantities of 100.

Buying bulk quantities went against the spirit of an economical device for our own use. However, coming off the heels of our school project kit assembly line, we thought we could make up a bunch of tripod flasher kits for Michael to sell to fellow astronomers. It turned out to be a great father-son project with only one flaw in the plan (as you will see). We settled on making complete ready-to-use kits consisting of the LED module, battery case, batteries, instruction card, and a universal mounting system (ok, just a wooden toggle with an expanding chain of rubber bands to accommodate any leg profile; but it works). Our code name for the project was AstroFlasher. The AstroFlasher LED module went through three revisions. Version 1 was simply the LED unit soldered to the battery clip posts, with the exposed conductors protected by colorful heat shrink tubing.

For Version 2 we thought maybe somehow encapsulating the head would make it easier to remove from the battery, and it might protect against heavy dew (not really an issue). Michael researched casting on the cheap, and it seemed that we could use wax for a casting mold. So we made a few shapes out of polymer clay, and used these masters to make a paraffin mold. The second run of assembled LEDs were then cast in resin. Well, the cured assemblies were pockmarked and pitted so we spent an afternoon grinding and dressing the surfaces with emery cloth. The result was a solid, easy to grip module. Perfectly functional, but very home-made looking. But, hey, we use them in the dark so who cares? The paraffin mold broke down quickly so we stopped using it after our third batch.

Version 3 came about when I was describing the project with a machinist friend. He once made a part for my telescope, and occasionally asked about the hobby. He suggested I make a drawing of what I really wanted the top to look like, and maybe he could make me a new master. I was dabbling with a 3D CAD package at the time so this was a good practice project. I gave him my drawing; he gave me my master a few days later. It was a thing of beauty and, therefore, called for a better grade of casting.

This time Michael and I made a proper urethane casting mold from which we made a dozen beautiful epoxy copies of the original master. The epoxy masters were used to create a second urethane mold allowing us to embed several LEDs at a time. Of course, nothing is as easy as it should be, and the unexpected 10% shrinking of the red-tinted polyester resin required a second casting step. Sometimes the resin would wick into the battery clip so that the battery would not make good contact, so we had a few rejects. All in all, Version 3 looked pretty nice when we finally finished.

Well, there we were. The kits were made, tested, bagged and ready to go. I cleared it with the AAAP officers at the time that it was okay for Michael to sell these. But then the flaw in the plan emerged. Neither of us were really that keen on the selling aspect. I think Michael brought the box to one meeting, and one member contacted us through email. But we never really pushed it. So the AstroFlashers sat boxed up in the basement until this past spring when I contacted our new VP. Craig and I got together, I gave him a brief rundown on what they were, handed over the box, and asked that the AAAP use the AstroFlashers as they

see fit. It appears that the committee has since deemed them worthy for a fundraiser, and you should see them available soon.

The flashers run off of 3 to 14 volts, DC. The kits come with a battery holder for 2 AA cells (included), but the flasher can be wired into a 12-volt system or be snapped right onto a 9V battery. We all, of course, replace our smoke-detector batteries every six months, right? Well, what do you do with all of those partially-used batteries? It turns out they still contain plenty of juice to run the AstroFlashers, which consume very little power. (In one test we connected a flasher to an almost-new 9V battery and ran it continuously for over 5 weeks). It was a great project. Michael and I both discovered that there was great fun in working out all aspects of the concept, tackling the challenges when materials did not behave just right and in the process learned that neither of us were born salesmen.

BRASHEAR CENTER RECOLLECTION

By Al Paslow

It's hard for me to believe that 42 years ago today (September 18) that I—having barely turned 12 years old walked down the steps to the basement of "Brashear Center" located at the corner of Sarah and 20th Streets in the South Side carrying a box containing an 8-inch Edmund Scientific Co. mirror grinding kit under my arm. I plopped it down on a counter by a gentleman dressed in a white dress shirt and a long apron. He had greasy dark hair slicked back, gold wire glasses and a dirty apron stained with red rouge and machinist lubricant. I told him..."Sir, I'd like to make this into a telescope".

He looked at me and said "Who's funny looking kid are you"? Then he said ...a telescope you say, what you got in the box? I then proceeded to empty that box which contained an 8-inch Pyrex mirror blank, a plate glass tool, a series of grinding compounds, a magnifying glass, some pitch and, of course, a can of red jewelers' rouge.

He grabbed my right arm and asked me to make a muscle, pinched my bicep and told me I'll really have some muscles before I finish my mirror because grinding is a lot of "grunting & groaning."

That man was Glenn Winterhalter of the Amateur Telescope Makers of Pittsburgh. It was a group of individuals dedicated to making and building telescopes the old fashioned way. The group met on Mondays and Wednesdays from 7:00 to 10 pm in the basement of Brashear Center just down hill from where John Brashear once lived many years before.

From that humble beginning on September 18, 1967; eventually that piece of raw Pyrex was fabricated with the help of Glenn into a precision parabola, very smooth without zones, by October of the following year. Its accuracy was 1/11 wave of sodium light as obtained by readings of the homemade dial indicator Foucault tester used to test all the mirrors made at the "Center".

Before the primary was finished, a diagonal mirror was ordered and also a light blue fiberglass tube from W.R. Parks (now Parks Optical) in California.

The telescope was still being planned and built when Apollo 8 orbited the Moon in December '68, just about the time the tube came in from Parks.

Other parts were ordered as a 12-year-old could get money; that included a Telescopics Micro focuser, and at some point the tube assembly was finished in 1969. It took me another year to learn how to cut and fit metal and afford the rest of the mount.

The metal was obtained mostly as scrap from Williams & Co . on the North Side. They had a room at Williams where brand new metal cuts were sent and sold as scrap or surplus. Glenn or I would travel there to look to find proper sizes that we could use from time to time for telescope making. Brashear obtained a nice discount for any "scrap" purchased as they were a nonprofit organization.

The telescope was completed in early 1970. The first object viewed was Saturn and the impression was spellbinding! Details were excellent and the effect was unforgettable. In April of that year Comet Bennett was a beautiful object for observers in the northern latitudes and I turned my scope upon my first view of an object that over time moved to the far reaches of the solar system and I'd never see again. The ghostly "greenish" cast of the "hairy one" is still burned in my mind.

The optics on that scope are quite good. I can remember splitting Antares on nights of good seeing with an 8mm Brandon eyepiece at somewhere around 200x .

I made a number of other mirrors at Brashear before they closed up in the seventies. Glenn retired to Colorado to his daughter's place and eventually passed on.

The 9-inch South Bend lathe, drill press, band saw, tables, vice, Foucault tester, tools, equipment and inventory all just apparently vanished after closing. I don't know for sure where any of it is today. Last time I checked the basement area at Brashear outside the ATM shop, it was being used as a children's clinic for vaccinations, etc. Doors to our shop were locked & closed.

Oh well, it was a great and very interesting time. It was also lots of fun. I obtained the mirror grinding kit as a gift from my mother when I graduated from Hale Elementary School in Pasadena, California. We moved back home to Pittsburgh only a few months before. Come to think about it, I made that telescope before I had a drivers' license!

Good times & showin' my age!

WELCOME NEW MEMBERS

RON KIRKWOOD
MICHAEL MARKIW III
JOHN M. YADLOSKY

HARVEST MOON CAMPFIRE STAR PARTY

By Kathy DeSantis

The Second Annual Harvest Moon Campfire Star Party will be held Monday, October 5, 2009, 7PM, Shelter 2, Mingo Creek County Park. (Park Map http://www.co.washington.pa.us/downloads/mingo%20creek.pdf) This Washington County public event is by reservation (724-228-6867). AAAP members will join the park staff around the campfire for a fun, relaxing evening of songs and stories while sitting under the Harvest Moon. Moonrise is 6:49 PM. Interesting facts about the Harvest Moon and astronomy will also be shared. The event begins before dark with children's games and sharing astronomy displays, and with darkness and moonrise, telescope viewing and a sky tour follow. Marshmallows will be provided, but you may want to bring along a chair or blanket and a drink. There is a large field allowing telescope viewing opposite the campfire. If you are interested in volunteering, please contact Kathy DeSantis kappa@3ap.org , Dan Thomas or Mike Meteney treasurer@3ap.org .

REQUEST FOR ASTRONOMY TALK/ POWERPOINT PRESENTATION

By Bill Moutz

AAAP member, Les Johnson, who is currently residing at the Veterans' Hospital in Aspinwall has requested an astronomy talk at the hospital. If anyone can accommodate him, his phone number is 412-822-2855. This would not entail observing as the hospital security does not have personnel available to keep tabs on the residents outside the building after dark.

STARHOPPING CLASS

By Tom Reiland

A starhopping class is set for October 5. It will start at 7:30 PM, weather permitting. You can bring binoculars and/or telescopes if you so desire. There will be a brief instruction while we wait for the sky to darken. If interested, contact Tom Reiland at Wagman Observatory 724-224-2510.

PRIVATE STAR PARTY REQUEST AT WAGMAN

By Tom Reiland

I reserved another scout group at Wagman Observatory for Monday, October 19 starting between 7 and 7:30 PM. There will be 20 to 25 scouts, siblings and parents in attendance. Let me know if you can help out. Don't forget the 200+ on Friday October 9.

OBSERVATION

By Tom Reiland

Taken from Yahoo Groups September 14, 2009. The conditions didn't look promising at sunset, but apparently that didn't stop nine or ten of us from making the trip to Wagman Observatory last night. Matt Maskas and his grandson were there with Mike Nizinski and Jack Landman when I arrived. Wallace Watson, Chris Genovese, Jeff Kearns and Jim Johnston showed up later. There were a few thin clouds near the western horizon early on, but nothing to hinder observing. The transparency was fair when we started and improved as the night went on. Seeing was fair, not good and not horrible. There was a nice breeze that helped the conditions. The humidity was increasing throughout the night and the dew would have been worse if not for the wind. I checked out Comet Christensen in Aquila and it was visible, barely, in my 10 X 50s at 8.5 mag. Juno is nearing opposition and it's 7.9 mag, also a binocular object. I was viewing it in the 21-inch when I picked up three faint galaxies, one is a Herschel object, plus a 13 mag supernova in the galaxy NGC 1015 in Cetus. It's as bright or brighter than the galaxy. Its designation is SN2009ig. It's less that two degrees SSW of M77.

FOR SALE

Quantum Mechanics: The Physics of the Microscopic World, Course No. 1240 (24 lectures, 30 minutes/lecture) taught by Benjamin Schumacher Ph.D., Kenyon College, The University of Texas at Austin. Available exclusively on DVD: 24 lectures - 30 minutes each. Four DVDs in 2 boxes. 127-page course book also included.

The DVD features more than 600 visual elements to enhance your learning experience, including 3-D animations, diagrams, graphs, images, and on-screen text.

Teaching Company price, new: $254.95 + $30 shipping and handling = $284.95.

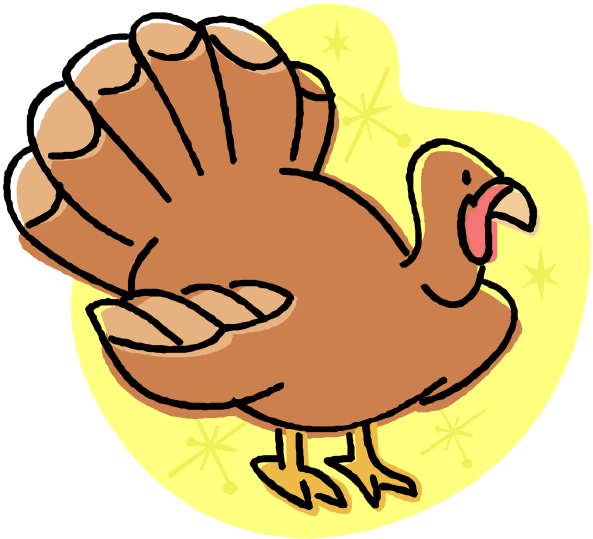
For details and lecture titles: www.teach12.com Search for course title. Condition: Like new.

Asking $80 (plus any mailing costs if you want it mailed). Contact: Dan Peden. Please reply off list to: betelgeuse@pobox.com

IMPORTANT DATES

October 2—AAAP Monthly Meeting 7:30 p.m. at CSC
Uranus 6° south of Moon
October 3—Washington County Employee Picnic and Star Party
October 4—Full Moon 2:10 a.m.
October 5—Mars 6° south of Pollux
Mercury at greatest elongation (18° west)
October 8—Mercury 0.3° south of Saturn
October 9—Boy Scout Wagman Camporee
October 10—Mingo Public Star Party
Wagman Public Star Party
October 11—Last quarter Moon 4:56 a.m.
Mars 1.2° north of Moon
October 13—Moon at perigee
Jupiter appears stationary
Venus 0.6° south of Saturn
October 16—Saturn 7° north of Moon
Venus 7° north of Moon
October 18—New Moon 1:33 a.m.
October 19—Wagman Scout Star Party
October 21—Antares 1° south of Moon
Orionid Meteor Shower
October 22—Orionid Meteor Shower
IYA October Galilean Nights October 22 through 24
October 24—Mingo Public Star Party
Wagman Public Star Party
October 25—First quarter Moon 8:42 p.m.
Moon at apogee
October 27—Jupiter 3° south of Moon
Neptune 3° south of Moon
October 30—Uranus 6° south of Moon
October 31—Juno appears stationary
Ceres in conjunction with Sun

November 1—Venus 4° north of Spica
November 2—Full Moon 2:14 p.m.
November 4—Neptune appears stationary
November 5—Mercury in superior conjunction
Taurid Meteor Shower
November 6—AAAP Monthly Meeting 7:30 p.m. at CSC
Taurid Meteor Shower
November 7—Moon at perigee
November 9—Last quarter Moon 10:56 a.m.
Mars 3° north of Moon
November 12—Saturn 8° north of Moon
November 16—New Moon 2:14 p.m.
November 17—Leonid Meteor Shower
November 18—Leonid Meteor Shower
November 22—Moon at apogee
November 23—Jupiter 4° south of Moon
November 24—First quarter Moon 4:39 p.m.
Neptune 3° south of Moon
November 26—Uranus 6° south of Moon



Amateur Astronomers Association of Pittsburgh, Inc.

Founded June 9, 1929 by

Chester B. Roe and Leo J. Scanlon

2009-2010 Executive Officers:

President:	**Edward Moss** president@3ap.org
Vice President:	**Craig Lang** vicepresident@3ap.org
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Guide Star Editors:	**Bill & Maureen Moutz** gseditor@3ap.org

AAAP Member Dues*:

AAAP Dues:	$24.00
Junior Member (under 18):	$15.00

***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

Please submit any articles for the Guide Star to the Guide Star Editors at gseditor@3ap.org by the 20th of each month.

****Some websites may need to be copied and pasted in your browser to view them****

AMATEUR ASTRONOMERS ASSOCIATION
OF PITTSBURGH, INC.
1070 Sugar Run Road
VENETIA, PA 15367-1514

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