Website: 3ap.org
Member: Night Sky Network and Astronomical League

The Guide Star

Journal of the Amateur Astronomers Association of Pittsburgh, Inc.
AAAP founded June 9, 1929 by Chester B. Roe and Leo J. Scanlon
May, 2014 Volume 48, No. 4.0


Nicholas E. Wagman Observatory


Mingo Creek Park Observatory

Sunset Start at Wagman and Mingo

Perform A Valuable Community Service: Help Out At May 2 and 3 Star Parties

Bill Moutz (center) speaks with a Wagman star party guest in 2013 (photo by Eric Fischer)

No doubt many AAAP members participate at community service events such as roadside trash collections, fixing up the local kid's playground, working on "Habitat for Humanity" house restorations, etc. If you're not presently involved in such, consider the May 2 and 3 star parties at Mingo and Wagman Observatories as community service events too. When we inspire kids to consider a science-related career, and show adults that astronomy is not a "White Lab Coat" activity requiring a university degree, we render important services to our community.

(*Continued on page 6*)

Wagman 21-Inch Manka Reflector Wearing A New "Coat"

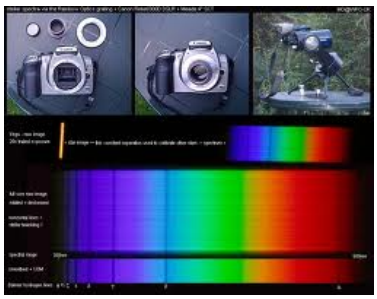
by Tom Reiland (excerpts from AAAP Listserver)

Posted April 1: I'm unwinding after just returning from a 7+ hr stint at Wagman Observatory assisting with the installation of the mirrors with their new coatings. A long but fruitful day. The results are as good or better than expected. Fortunately, we had an experienced optician in Wade Barbin and an excellent engineer in Flacc Stifel to handle the precision aspects of the job. Five of us were there in the afternoon including Bill Yorkshire and Rowen Poole (those four went home by 6 PM.) Wade and Flacc returned after 8:15 PM.

(Continued on page 2, bottom)

Amateur Astro-Spectrometry

May 9 Meeting At CSC: "You Can Almost Touch the Stars"



by Terry Trees, Vice President - AAAP

Even if you wanted to touch a star, they're impossibly distant. Despite these great distances, researchers have learned a great deal about quite a few stars. How? The most common method to study the stars is called spectroscopy, which is the art and science of analyzing the colorful rainbow spectrum produced by a prism-like device. Until recently, spectroscopy was too expensive and too complicated for all but a handful of amateurs.

Today, though, new tools make spectroscopy accessible to almost all of us. You no longer need a PhD, dark skies, long exposures, enormous aperture ... or a big budget! With your current telescope and FITS camera (or a simple web cam or even a DSLR without a telescope) you can now easily study the stars yourself. Wouldn't you like to detect the atmosphere on Neptune or the red shift of a quasar right from your own backyard?!

At the May 9, 2014 AAAP meeting (Carnegie Science Center, 7:30 pm), our guest speaker Tom Field will give a Web-remote talk with lots of interesting examples and show you what it's all about and help you understand how spectroscopy is used in research. In addition, his talk will show you how to get started.

Tom Field (of Field Tested Systems) is a Contributing Editor at Sky & Telescope. His article on spectroscopy appeared in the August, 2011 S&T issue. He's the author of the RSpec software (www.rspec-astro.com) which received their "Hot Product 2012" award last year. Tom is a popular speaker who has spoken at many different venues, including NEAF, the NEAF Imaging Conference, PATS, the Winter Star Party, the Advanced Imaging Conference, SCAE, and others.

His enthusiastic style is lively and engaging. He promises to open the door for you to this fascinating field! For questions, email Tom at tom@fieldtestedsystems.com

Please Mail or Bring In Your Ballot

AAAP 2014-2015 Elections Underway

By now you should have received your specially-numbered AAAP Election Ballot in the U.S. Mail. Per standard practice, the ballot lists the nominees who running for the 2014-2015 term, and provides spaces for alternate write-in votes for each position. As noted, please mail in your ballot to Treasurer Nate Brandt so that he receives it before the May 9 CSC meeting, or bring it to that meeting. (See page 6 for Nate's snail-mail address. This year's slate includes six current officers running for another term, and one new candidate:

- President: John Holtz
- Vice President: Terry Trees
- Recording Secretary: Diane Yorkshire
- Membership Secretary: Don Hoecker (returning) and Chris Mullen (new)
- Guide Star Editor: Eric Fischer

Nate Brandt is in his second year of a 5-year term and is not up for reelection.

Even though we have only one contested position, please take this opportunity to participate in a very important business function for the club. Thank you.

April's Total Lunar Eclipse Was Eclipsed Here by Guess What?

With excerpts from AAAP Listserver

Oh well, we can be thankful that Total Lunar Eclipses are much more common than Total Solar Eclipses because the April 15 apparition was mostly masked by clouds. Below are a few reports from AAAP members who decided to stay up/wake up in the wee hours for the eclipse. Note that one member had a grand-stand view; read further to figure out how she did it.

- Bill Moutz: "*At 12:30 am this morning I noticed the bright Moon with nary a cloud near it. I decided to watch some TV until 2:30 am and then check the sky conditions. Alas, at that time the clouds were wall to wall here in Penn Hills, so off to bed I went.*"
- Jim Garasich: "*3:52 AM: Saw very brief glimpses between breaks in the clouds. Very definite, very dark almost black eclipsed portion, very bright, very thin illuminated portion. Not likely to capture any images this time but would have been great. No openings allowing imaging. At least I captured one decent shot thru the telephoto around 1:00 a.m. 3:30 AM: Completely socked in. Not even a hint of the Moon. 3:50 AM: Washed out. So close! At least it's warm out there.*"
- Phil Hughes: "*I just caught a few seconds of the eclipse. I took my wife out onto the deck and we actually saw the entire Moon for a few seconds complete with a partial eclipse."*
- Mary Hall: "*Getting to see entire eclipse here in The Villages, Florida. Right now extremely dark reddish black . Although they predicted rain, we are at the edge of the bad weather and continue to see eclipse unimpeded.*"
- Mary DeVaughn: "*Completely blacked-out, probably clouds as I can't see Spica anymore either....Spica peeked through twice- no moon visible at all!...Still socked in at 3:40 AM, think I'll try to get some sleep now!...And now the rain comes...Good night!"*

North Allegheny Star Party Attracts 400 Guests

by Fred Klein (excerpt from AAAP Listserver)

Dennis Morton, who is not on the AAAP List Server, held his annual star party at the North Allegheny Elementary School on April 11. He was accompanied by Bill Hayeslip and myself. This year it was held the night of their science fair and we got all the people walking in and out. I estimated 400! We had continuous lines from 7 PM onward.

It started cloudy at 6:30 PM, so we focused on earthly objects. But within an hour it cleared and we had a good night. Our only objects were the moon and Jupiter, both because the conditions were not good early and the continuous flow of new observers were happy with these bright objects. Dennis did close with Mars just after 9:00 PM when the people left. It was cool and dewy later, but all had a good time.

Good Attendance, But "Underwhelming" Skies for Ken Kobus' Mingo Lecture Series

As of Guide Star press time, three of Ken Kobus' four-part lectures on "The Birth, Life and Death of Stars" were well attended. But the skies were generally uncooperative for post-lecture observing with the 24-inch reflector. Here are a few of Ken's comments as posted to the AAAP Listserver:

- April 8: "*We had 19 members and guests for the first class. Afterwards we opened the 24" and viewed the moon, Jupiter, Mars, M-42 and M-82 (including the SN) in underwhelming skies."*
- April 15: "*We had 15 members and guests tonight at Mingo for the second class. Some was interesting discussion and questions during the talk. We could not observe afterwards due to poor skies."*
- April 22: "*Class number three was held...there were 14 members and guests (including myself). Afterwards we opened the 24" for observing in poor skies with occasional clear spots to see Jupiter, Mars, the Sombrero galaxy and M-3 before it clouded over. One meteor was seen as was a good ISS pass that was brighter than Jupiter."*

New Primary and Secondary Coatings On Wagman's 21-Inch Reflector

by Tom Reiland (continued from front page)

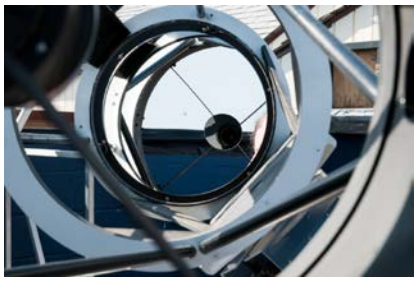
I stopped in Russellton for some pizza and went back up to Wagman to ready the scope for First Light with the upgraded mirrors. The views of the "Wafer Theen" Crescent Moon, Jupiter and four of its moons, Sirius and Betelgeuse very good considering the windy conditions and scattered cirrus clouds. It passed the tests performed by Wade and Flacc. What a satisfying feeling when everything works out.

There are a few more improvements to be made on the scope: (1) a shroud to enclose the tube, (2) a fan to keep the primary mirror dry and dust free, (3) a cover for the front of the scope to keep dirt and moisture off of it when it's not in use, (4) digital settings circles for locating objects in the daytime or early twilight, and (5) upgrade the drive and add slewing controls for moving the scope north and overhead.

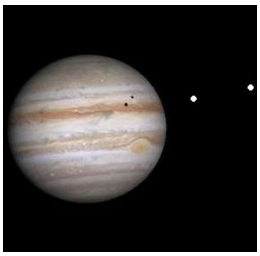
It's the first time the Manka scope was used since Nov. 20, 2013 according to the sign in sheet. I'm glad this over. It's been long wait, but it's was worth it.

Upper left: Tom Reiland inspects the newly-recoated 21-inch primary prior to install-ation.

Lower left: Wade Barbin checks out the installation of the secondary mirror assembly.



April Star Parties: One Forgettable, One Memorable



The April 4 star parties at Mingo and Wagman were wiped every which way you can imagine (except snow), while the April 5 parties benefitted from a clean sweep-through of the cold front that wrecked Friday's events. Here are AAAP Listserver reports from Directors Tom Reiland and Mike Meteney:

April 5, Wagman (by Tom Reiland): We avoided any stuck in the mud situations last night and the wind died down. Transparency was very good and seeing was average to fair. We estimated 40 visitors attended our event, including several young adults from the Ukraine (another first for us). We showed our guests the Moon, Jupiter and two Galilean moons, Mars, The Orion Nebula, M3, M13, M51 with NGC 5195, NGC 3242 (Jupiter's Ghost Planetary), M104 (Sombrero Galaxy), M81, M82 and the Supernova SN 2014 J in the newly refurbished 21" Manka Scope. I'm not certain what was observed in the 11" Brashear, but the Moon, Jupiter and many objects were probably presented to the viewing public. The ISS made a fair pass in the south and we pointed out 5 or 6 other satellites as well. Here is the list of Wagman helpers (let me know if I missed any names):

Rowen Poole	Bill Moutz	Eric Fischer
Kelly Fletcher	Bill Hayeslip	Kevin Spencer
Bill Yorkshire	Matt Jones	Michele Spencer
Diane Yorkshire	Mary DeVaughn	Don Hoecker
Terry Trees	Becky Valentine	Tom Reiland
JoAnne Trees	Tim Manka	

April 4 and 5, Mingo (by Mike Meteney): Friday night was pretty much a washout. We had four visitors with 15 members show up to see rain, high wind, and many clouds. But there was a brief break in the weather to reveal a spectacular double rainbow that was very close to the observatory. See the attached pictures if they go though the Yahoo server. Saturday was a beautiful night, but cold and soggy. We had 210 enthusiastic visitors, about 140 girl scouts and parents, and 20 members. Most of the evening went well, we did have a few cars that needed a push to get out of the mud, and one persons car had a little mishap on the road to the observatory, not quite sure how that happened. The sky was cooperative most of the night and allowed us to view the sun through the 10" and PST starting at 5:30 and we wrapped up the night close to midnight. Everyone was getting pretty cold by then. We also ran several sky shows in the planetarium and Fred Klein gave his presentation on "*What You Can See in the Sky Tonight*".

Thanks to all of the members who came to either set up their scopes or help out running the scopes and the planetarium. Helpers for the April 4 stary party included:

Mike Meteney	Kathy DeSantis	Michael Skowvron
Ken Kobus	Nick Martch	Mike Christeson
Gene Leis	Mary DeVaughn	Michael Christeson
Jon Johnson	Ed Moss	Gene Kulakowski
Bill Roemer		

Helpers for the April 5 star party included:

George Guzik	Fred Klein	Michael Christeson
Bill Roemer	Nick Martch	Jill Zomp
John Diller	Colleen Martch	Beth Martin
Mike Meteney	Kathy DeSantis	Michael Lincoln
Jon Johnson	Frank Pastin	Melody Bishop
Ken Kobus	Dan Peden	Ed Moss
Dan Spano	Mike Christeson	Gene Kulakowski

Professional Photographer Captures Wagman Star Party Images

by Terry Trees

During the April 5 public star party at Wagman Observatory, I was approached by Mr. Dave Prelosky, who is a photographer for the Butler Eagle. He lives in Lower Burrell and his kids are friends with some of the kids I have worked with on Science Olympiad teams over the years in the Burrell School District. He had heard about the star parties and decided to check them out on his own…not on assignment from the newspaper or anything like that. He used an app that controlled time exposures on his cell phone. He was just experimenting and had never done this before. Two of the three came out pretty cool, as shown below. The truss-Dob in the bottom photo is JoAnne and my 10" that I built.

Photos by Dave Prelosky

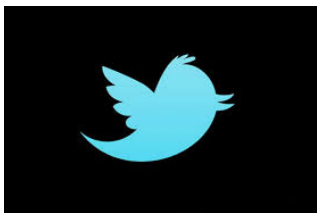
Checking In On Club's Green County Observing Site After the "Vortex" Winter

by Nate Brandt (excerpt from AAAP Listserver)

Two of us spent the evening of April 23 at the Greene County Observing Site. It had been almost six months since we'd been there last due to this year's cold and snowy winter. As always, the light pollution continues to grow everywhere, so I took panoramic shots (see below) of the site in daylight and at night to show the current lights in the Southeast and South primarily. Unfortunately, I didn't take them from the same spot or at the same focal length so they aren't 100% comparable, but they give you an idea.

News In An Minute (of Arc)

- Our gratitude to Terry Trees for stepping in at the April 11 cub meeting to give a fascination lecture on "Observing Solar System Minor Moons". The originally schedule speaker, Dr. James LoPresto, was unable to attend because of medical issues. It turns out that, under ideal conditions, you can observe more than 20 different moons with a typical amateur scope. This includes little Amalthea, which orbits inside Io. If you were unable to attend that meeting, Terry has provided more information on this topic; see his article on page 7.
- Member Sean Obrien reports "*We have a brand new Twitter account for anyone who uses Twitter to follow. We just launched it and it will be tweeting all Astronomy news and tidbits as well as AAAP news. Follow us at @AAAPittsburgh and make sure to tell all your friends too!*"



- On April 17, John Diller showed deep-sky stuff to his neighbors: "*I set up my CPC 925 for the neighbors tonight. Nine of them strolled by and observed Jupiter, Mars, the Eskimo Nebula, M 46, M 105, M 81, M 82, and NGC 2903.*"
- Terry Trees reminds members to plan early for the 2014 Okie-Tex Star Party, one of the best in the entire country, September 20-28. We'll have more about this ideally-located and internationally-famous star party in a near-future issue of the Guide Star.

(Continued at right)

Telrad Charts for Messier and Caldwell Objects

By Terry Trees

The Messier and Caldwell objects are ones that must be found without computer-aided or go-to assistance when you are working on their Astronomical League observing programs. These Telrad finder charts should make that a lot easier.

http://www.solarius.net/Pages/Articles/dbArticle.aspx?artid=caldwell_finders

http://www.solarius.net/Pages/Articles/dbArticle.aspx?artid=messier_finders

Their Astronomical League Observing Programs:

http://www.astroleague.org/al/obsclubs/caldwell/cldwl.html

http://www.astroleague.org/al/obsclubs/messier/mess.html

- April Guide Star Correction: Per the article in the April issue about the Messier Marathon, Tom Reiland notes "Tom Hoffelder and I came up with the idea of the Messier Marathon in 1975 and I was the first to attempt one in 1976. 1980 was the year that Ed Flynn and I observed 109 out of 110. Two observers in California accomplished the same feat that year."
- Terry Trees reminds us reminder to watch for the potential meteor storm on May 24, as described in the May S&T. If you see even a moderate shower that night, make sure to let us know.

Astro, Atmo and Sketched Images for May (continued on page 6)

Un-named Object – by Nate Brandt: I recently reprocessed some images as I experiment with processing outside of Photoshop. With the ever-increasing pixel count of modern CCD cameras, we have the option to crop our images to showcase them in unique ways and still have enough resolution to satisfy our curiosity for details. I haven't named the object and I have excluded the most popular / notable structure in these crops so as to highlight the more often overlooked details. I'm sure some of you will recognize it right away. ☺

Monkey Head Nebula (NGC-2175) – by Nate Brandt. I took this image a little while back while working through many quirky problems in the cold winter months this year. I fought for a long time with irregular guiding due to a loose set screw on a transfer spur gear in the Dec axis. This was the first series of images taken after fixing the Dec axis gear train to test guiding. Don't look for the monkey head; it's cropped to close to see it. Processed entirely in Pixinsight to force faster learning. ☺

Andromeda Galaxy M-31 – by Bill Snyder: I did this galaxy about six months ago and used the color data from an FSQ 106mm with the luminance data from the 17in Planewave at SRO. Since that time I went back and gathered the color data and Ha with the Planewave 17in scope. This is a 13 panel mosaic due to the fact of the size of the galaxy and the focal length of the scope. I was very pleased with the color and resolution in the final outcome of the image.

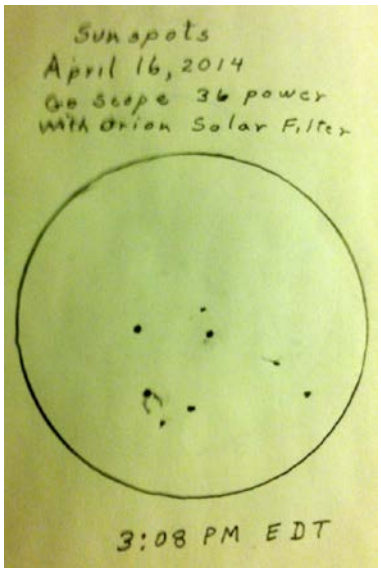
Pre-Eclipse Moon – by Dan Peden. I took a few test pics of the Moon in preparation for the April 15 eclipse. At 01:59 (time of eclipse) the sky was clear east of the Moon, solid cloud blanket west. And, right on cue, the clouds moved in. The image on the above left was taken at 00:52, while the image on the above right was taken at 01:59, just before eclipse (and cloud cover).

- Rainbow from Mingo Observatory Site – by Mike Meteney

(Continued on page 6, top)

Astro, Atmo and Sketched Images for May (continued)

Rainbow Right Down to the Street – by Tom Geyer



Eight Sunspots At One Time – by Rich McLaughlin. In all of the years that I have been observing sunspots I have never seen eight at one time. Below is a drawing that I made at the telescope. One of spots had two lines of dark areas extending from it.

AAAP 2013-2014 Elected Officers

President:	John Holtz, president@3ap.org
Vice-President:	Terry Trees, vicepresident@3ap.org
Treasurer:	Nate Brandt, treasurer@3ap.org
Corresponding Sec:	Joanne Trees, correspondingsecretary@3ap.org,
Recording Sec:	Diane Yorkshire, recordingsecretary@3ap.org
Membership Sec:	Don Hoecker, membershipsecretary@3ap.org
Guide Star Editor:	Eric Fischer, eric.fischer69@yahoo.com

AAAP Executive Committee Appointees

Mike Skowvron, Chris Mullen, Joyce Osborne-Fischer, Bill Roemer

Facility Directors

Mingo Creek Park Observatory

Director:	Mike Meteney
Associate Director:	Gene Kulakowski
Associate Director:	Ken Kobus

Nicholas E. Wagman Observatory

Director:	Tom Reiland
Associate Director:	Rowen Poole
Associate Director:	Bill Yorkshire

Membership Information

AAAP Member Dues:	$ 30.00
Family Membership:	$ 45.00
Student Membership*:	$ 20.00

* K thru 12 and full time college student

Paying Your Dues

1. Make check payable to "AAAP Inc."
2. Send check to:

   Nate Brandt, Treasurer
   2520 Campmeeting Rd.
   Sewickley, PA 15143-9104

On-Line Membership Forms

Membership Renewal Form available at:
http://www.3ap.org/AAAP_Mem_RenForm_dah_2014.pdf

New Member Form available at:
http://www.3ap.org/AAAP_New_MemForm_dah_2014.pdf

May 2-3 Star Parties: Our Public Service

(Continued from front page.)

No matter how little you think you know about the subject, we very much appreciate your help with the visiting public, even if only with simple tasks such as pointing to the Big Dipper or Orion's Belt. For many of our guests, a star party is a first-time experience where everything is inspirational.

As always, members are invited to bring their scopes and binoculars, big and small, or just stroll the area around the observatories, helping out as needed with parking, steering the long lines at the big scopes, keeping people on blankets out of harm's way, etc. Make sure to sign the member log books at the observatories so that we can recognize your service to the AAAP community as well.

Welcome!

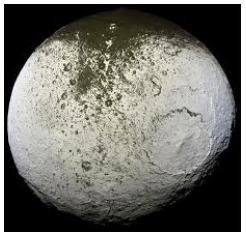
....hath been extended to ye newest members of the AAAP:

Michael Faulkner
Barbara A. Burgert
Jeff Mierzejewski
Philip S. Dragotta
Karissa Narad
Beth Martin
Scott T. Gathers
Mike Miller
Dan Drischler
Jill Zomp
Meredith Dienst

Observing Minor Solar System Moons: General Information

by Terry Trees

(Editor's note: This is a follow-up to Terry's lecture at the April meeting).



Atmospheric Issues
- Observe objects when they are high in the sky

Observe Asteroids
- Learn star hopping with charts of increasing detail
- Prove you saw an asteroid by identifying it & watching it move over several days
- Prove the same with minor moons

Use Planetarium Programs
- Check their predictive accuracy for minor (small) moons via ephemera
- Manually plot ephemeris generated minor moon positions
  - Sky Map Pro ($) - Use "Quick Catalog" feature
  - Cartes du Ciel (free) Setup-Catalog-User Defined Objects
    - Display User Defined Objects – Button w/Blue Dot
  - Stellarium (free) – Manually edit ssystem.ini – looks like a pain
  - Starry Night ($) Right-click on screen, select "FOV Indicator" feature
  - Sky Tools 3 ($) – Generate ephemeris (tab) in program
- Enter orbital elements to "auto-plot" moons
  - Starry Night – Right-click on planet, select "Add Moon Orbiting..."
- Simply use it...accurately show the position of the moon you wish to view
  - Guide 9 from Project Pluto

Create An Ephemeris - http://ssd.jpl.nasa.gov/horizons.cgi
- Easy to do and extremely accurate - if you don't skip any steps
  - [Change]: Target, Location, Time Span, Table Settings (Apparent RA/Dec)
- Plot highly accurate positions on star charts
  - Don't forget Epoch – Julian Date – JNow – Check what's needed w/planetarium program author
- Feed the positions into a computer guided scope

Build an Occulting Eyepiece
- Use to try to defeat planetary glare
- The eyepiece's focal plane must be outside the glass
  - Occulting Bar
    - Tape a thin strip of aluminum foil across the field stop
  - Occulting Filter
    - Glue a semi-circular blue/violet filter on the inside of the field stop
- The advantage of an occulting filter over an occulting bar is that you can see a dim image of the planet, and if you know where the moon is supposed to be, you can more accurately search that position.

Observing Minor Solar System Moons: The Epoch of Your Ephemeris Data

Use a chart (http://amsu.cira.colostate.edu/julian.html) or calendar (count) to determine the Day Number of the night you are going to observe.
- Chart says July 19 = Day Number 200
- But it it's a leap year, click the link at the top of the web page to go to the Leap Year Chart
- Counting calendar dates or using the Leap Year Chart → July 19, 2012 = Day Number 201

We need to begin calculations at midnight of the morning of the date of observation so subtract 1 from the above total. → July 19, 2012 becomes Day 200

Multiply the Day Number by 24 to convert it to hours.
- 200 * 24 = 4800

Your ephemeris is calculated for what observing time (use 24 hour time)?
- In our example, 11 PM or 23:00 hours

Add the 2 numbers together so you have the total number of hours from the beginning of the year to your ephemeris time.
- 4800 + 23 = 4823

There are 8766 hours in a Julian Year of 365.25 days

Divide the total by 8766 to get the % of the year that's passed.
- 4811/8766 = .550194

Epoch value to be plotted = J2012.550194 = JNow

Classifieds

FOR SALE: Observatory dome in Johnstown area. Will be scrapped very soon. 8.5 foot diameter, wood frame with four wheels on the frame, comes with cement track which is laid on your level site. Great for backyard as it blocks out neighbor's lights and puts everything at hands reach and out of the dew! Has over $800 in materials and only needs a new metal roof to last a long time. New observatory will cost $3-4,000.00. Asking $250.00. Call 814-242-6834 for details.

FOR SALE: C-11 Scope. 11" (2800 mm) f/10 Schmidt Cassegrain. Tripod w/Equatorial Wedge. 10 x 40 mm Finder. Camera Mount. JMI Motofocus. Electronic Drives – both axes – AC/DC (scope doesn't have GO-TO computer). #21 (Orange) and Polarizer Eyepiece Filters. 1 ¼" and 2" star diagonals. 40 mm Kellner 1.25" Eyepiece. 15 mm Vixen 1.25" Eyepiece. 4 mm Vixen 1.25" Eyepiece. Illuminated Reticle Eyepiece with Off-Axis Guider. Poro Prism. Pentax Camera Adapter. Aluminum Equipment Case. Plastic Equipment Case. DC Cables. Price for everything = $995

Contact Dave at 412-673-6797 or dfpens@comcast.net. Contact Terry Trees (treest@comcast.net) if you'd like me to forward a copy of some images of the scope and equipment.

FOR SALE: Astronomy Books In MINT condition:

- Gerald North, "Observing the Moon". Hardcover. < http://www.amazon.com/Observing-Moon-Modern-Astronomers-Guide/dp/0521874076/ref=sr_1_sc_3?ie=UTF8&qid=1396789957&sr=8-3-spell&keywords=gerald+north+observin+g+moon> Amazon sells it for $35.75 + tax new and anywhere from $9.99 to $29.69 + tax + shipping in used (good) condition. I'll sell this one for $20.00 cash, if I can hand it to you at one of our meetings. (You can inspect it before you buy.)
- Roger Clark, "Visual Astronomy of the Deep Sky". Hardcover. <http://www.amazon.com/Visual-Astronomy-Deep-Roger-Clark/dp/0521361559/ref=sr_1_1?ie=UTF8&qid=1396790246&sr=8-1&keywords=clark+visual+astronomy+deep+sky> Amazon sells it from $272.79 to $1,825.90 + shipping + tax new and from $149.47 to $419.04 + tax + shipping in used (good, up to mint condition). If I can hand it to you at one of our meetings, I'll sell this one for $90 cash. (Again, you can inspect it before you buy.). Once again, both are in mint condition. Contact Terry Trees at 724-337-3231 or treest@comcast.net

FOR SALE: Celestron CPC 1100 Edge HD. I am a member of ORAS. I have currently listed on Astromart my Celestron CPC1100 Edge HD. I am asking $3500, but would be willing to take $3250 from any AAAP member. Pick up only.

Celestron CPC 1100 Edge HD which was delivered in November 2012 - LOADED and blemish free optically and mechanically. With Celestron Finder scope and bracket, all caps. Includes:

- Hand control keypad with bracket
- Feathertouch Fine Focuser – installed

(Continued at right)

- Starizona Weight System - installed with brackets, rails, weights and hardware
- Baader 2" Click Lock for Celestron 2" diagonal Astrozap
- Dewshield/Heater - 11" - New in Box Heavy Duty Celestron Tripod
- Original factory boxes, manuals, factory focuser knob, AC Power supply with cord, DC cord, etc.

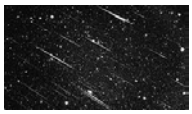
Works great and kept either inside house, or covered in POD. John Karian wetlandsplendors@gmail.com

AAAP Resource Guide

Club policies, issues, Executive Committee, agenda for business meetings Contact President John Holtz at president@3ap.org	Dues, magazine subscriptions, making financial donations, etc. Contact Treasurer Nate Brandt at treasurer@3ap.org	Your membership status, Membership Directory Contact Membership Secretary Don Hoecker at membershipsecretary@3ap.org	IT matters, access to AAAP website and listserver Contact IT Coordinator Mike Skowvron at michaels@3ap.org
Access/training on Wagman observatory site, building, telescopes. Star party scheduling Contact Director Tom Reiland at 412-487-8326	Access/training on Mingo observatory site, building. Star party and planetarium scheduling Contact Director Mike Meteney at 724-348-9087	Need Mingo Observatory telescope help? Contact Help Facilitator Gene Leis at 412-310-2504	Mingo Observatory loaner telescope: 8" Orion Dobsonian Contact Director Mike Meteney at 724-348-9087
Business Meeting Guest Speakers, Presentations Contact Vice President Terry Trees at vicepresident@3ap.org	Submitting Guide Star articles, images, corrections Contact Eric Fischer at: eric.fischer69@yahoo.com	Night Sky Network Contact Kathy DeSantis at desantisk@aol.com	AAAP Merchandise (Calendars, books, etc.) Contact Merchandise Coordinator Mark Arelt at diapsida@verizon.net

May, 2014

SP = Star Party
MM = Monthly Meeting
NEWO = Wagman Observatory
CSC = Carnegie Science Center
MCPO = Mingo Observatory
AO = Allegheny Observatory

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
27 	28	29	30	1	2 Public SPs, NEWO and MCPO, start at Sunset. See front page.	3 Public SPs, NEWO and MCPO, start at Sunset. See front page.
4 Eta Aquarid meteors. "Star Wars" Day	5 Eta Aquarid meteors	6	7	8	9 MM at CSC, starts at 7: 30 pm. See front page. Ballots due.	10
11	12	13	14	15	16	17
18	19	20	21	22	23	24 Possible meteor storm (see page 4 and May S&T)
25	26	27	28	29	30	31

June Look-Aheads

June 6: Public star parties at Mingo and Wagman

June 7: Public star parties at Mingo and Wagman

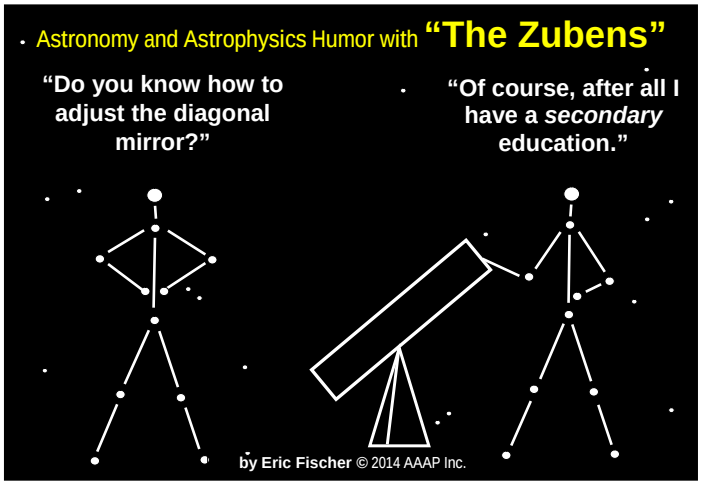
June 21: AAAP Picnic at Deer Lakes Park (NEWO)

June 21: Off-site star party at Keystone State Park

May, 2014 Sunrise/Sunset Times (R = Rise, S = Set)

				R: 6:17 am 1 S: 8:16 pm	R: 6:16 am 2 S: 8:17 pm	R: 6:15 am 3 S: 8:18 pm
R: 6:14 am 4 S: 8:19 pm	R: 6:13 am 5 S: 8:20 pm	R: 6:11 am 6 S: 8:21 pm	R: 6:10 am 7 S: 8:22 pm	R: 6:09 am 8 S: 8:23 pm	R: 6:08 am 9 S: 8:24 pm	R: 6:07 am 10 S: 8:25 pm
R: 6:06 am 11 S: 8:26 pm	R: 6:05 am 12 S: 8:27 pm	R: 6:04 am 13 S: 8:28 pm	R: 6:03 am 14 S: 8:29 pm	R: 6:02 am 15 S: 8:30 pm	R: 6:01 am 16 S: 8:30 pm	R: 6:00 am 17 S: 8:31 pm
R: 6:00 am 18 S: 8:32 pm	R: 5:59 am 19 S: 8:33 pm	R: 5:58 am 20 S: 8:34 pm	R: 5:57 am 21 S: 8:35 pm	R: 5:56 am 22 S: 8:36 pm	R: 5:56 am 23 S: 8:37 pm	R: 5:55 am 24 S: 8:38 pm
R: 5:54 am 25 S: 8:39 pm	R: 5:54 am 26 S: 8:39 pm	R: 5:53 am 27 S: 8:40 pm	R: 5:53 am 28 S: 8:41 pm	R: 5:52 am 29 S: 8:42 pm	R: 5:52 am 30 S: 8:43 pm	R: 5:51 am 31 S: 8:43 pm

Astronomy and Astrophysics Humor with "The Zubens"



Quoting Ptolemy

"*Mortal as I am, I know that I am born for a day. But when I follow at my pleasure the serried multitude of the stars in their circular course, my feet no longer touch the earth.*"