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

September 2012 ***Volume 46, No. 9***

AAAP Events this Month

General Business Meeting

Friday, September 14, 2012, 19:30
Carnegie Science Center
Topic: "First Day Back to the Fall Semester - Summer Show and Tell"
Speaker: John Holtz

Join your fellow club members at the Carnegie Science Center on Friday, September 14, for the first monthly meeting of the 2012-2013 meeting year. The meeting begins at 7:30 pm on the Bayer Science Stage.

It has been 126 days since our last meeting, and many interesting events have occurred since then: the May annular eclipse, the June transit of Venus, the 25th anniversary of Wagman Observatory, our own star parties, and the Perseids. What did they all have in common? Our famous Pittsburgh C-L-O-U-D-S!

Did you learn something new from your summer star gazing? Did you get new equipment that you like? Or visit an astronomically historic place?

Please share your photos and come prepared to tell us about your astronomical adventures. Photos should be emailed to John Holtz (John.Holtz@autodesk.com) prior to the meeting. Please include any subtitles, credits, or text to accompany the photos.

Title: Storytelling –Share what you love about the AAAP.

At the last meeting held in May, as President-Elect, I challenged our members to recall stories of the "good old days" of the AAAP. But, this question is really a question about what you love about the AAAP.

Whether you are young or old, or a new or long time member, you have your own special memories and stories of your first experiences in the AAAP. What story can you share that represents the true spirit of the club?

Organizations change and grow over time; an 83 year history guarantees that. And, we will continue to grow as we move forward, but let's pause and take a moment to share something about our past, no matter how long ago it was, and our love of the AAAP.

Any stories that you have will make it an entertaining evening. For example, you will learn how early cell phone technology was used (and not used) at the meetings.

- John Holtz
President, AAAP

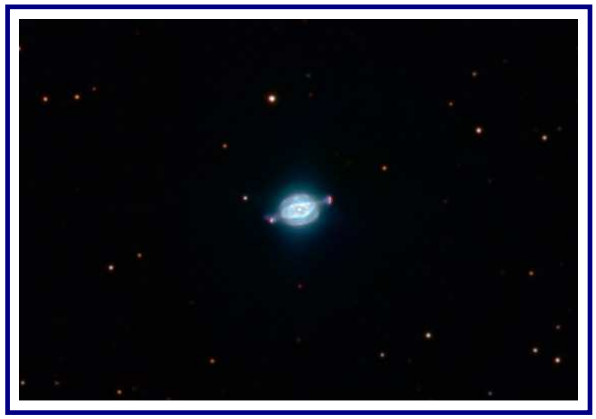
September Star Parties at Both Mingo & Wagman

Star parties will be held at both observatories on September 8 and September 22. Arrive before sunset to allow time for equipment setup and don't forget to sign the attendee sheet.

Saturday, September 8

As the Sun sets at 19:39, Mars and Saturn will be low in the Southwest. Neptune and Uranus will dominate the sky to the South, while Jupiter will rise at 23:39, located just East of the Hyades in Taurus. It will be followed by the last quarter Moon, rising at 00:22 Sunday morning, whose terminator will be beginning a sweep through the crater Plato with its dark floor, offering an excellent chance use high magnification to look for the craterlets sprinkled across its surface .

Beside old stand-by objects, like M31, M57, Albireo and the "Coathanger" (CR 399), there's the often overlooked, but beautiful, globular M15 in Pegasus and, as a bit of a challenge, there's the almost ideally placed NGC 7009, the planetary nebula in Aquarius, nicknamed "Saturn" due to symmetrically placed emission regions visible in larger scopes that resemble Saturn and its ansae. In smaller scopes (a 130mm or 5" refractor) the nebula shows a distinct axis.



NGC 7009. The "Saturn" Nebula. The planetary nebula is located in western Aquarius. Coincidentally, this class of objects was given the description "planetary" by William Herschel, who thought they resembled Uranus, the planet he discovered in 1781. The object is about 29 arc seconds in diameter and is 8th magnitude.

Saturday, September 22

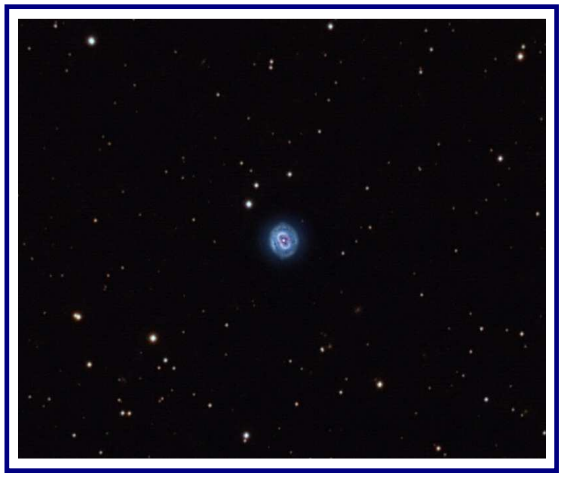
The Sun will set at 19:16. The planetary locations for the West and South remain substantially unchanged since the last star party on the 8th, but there are a number of highlights this evening.

First, at 21:29, the dark limb of the first quarter Moon will occult the magnitude 3.8 star Polis or μ Sagittarii (mu).

Second, as the Moon sinks toward the Western horizon before setting after midnight, the lunar terminator will approach the (lunar) eastern wall of the walled plain / crater Ptolemaeus. If conditions are right, the 60 miles-long shadows creeping across the floor of the floor of the crater will provide one of the truly fascinating lunar spectacles.

After, midnight, the naked eye event involving Uranus which is described below takes place.

Yet another nicknamed planetary, NGC 7662, is ideally placed. It's the "Blue Snowball", located in Andromeda. While dimmer and smaller than the "Saturn" nebula mentioned above, it's capable of being seen from the confines of the city with an 80mm (3.1") refractor.



NGC 7662. The "Blue Snowball" Nebula. Located in Andromeda, at 12 arc seconds in diameter and only magnitude 9.2, it's still visible in small apertures from the city.

- Guide Star Editor

Come Shop & Swap at Mingo

This is a reminder that there will be a Shop and Swap at the Mingo creek Park observatory on September 22 from 11:00am to 5:00pm.

We will have some equipment and supplies for sale at listed prices and other equipment for sale through a silent auction. The following is a tentative list of equipment that we currently have. This list may become larger as we near September 22nd.

Everyone is encouraged to come out and browse the items and then hang around for the star party that evening.

Items in the silent auction

- 6" Meade Newtonian on a GE mount
- 6" Meade Schmidt Newtonian on a fork mount with RA drive
- 8" Meade Newtonian on a GE mount with RA drive
- 60 mm Meade DSR
- 4" Meade Newtonian OTA
- ETX 70 with tripod and GOTO
- 114 mm Galileo Newtonian set in case
- 12" Mathis gear set
- 17.5" Dobsonian (old, needs some work, but optics are perfect)
- 6" Criterion Dynascope Newtonian, complete with pier and mount. (A classic)
- And some additional items.

Items for sale by members.

- Meade 70mm refractor OTA
- Meade 90mm refractor OTA
- W.O. dual speed SCT focuser
- 6" f/5 OTA reflector
- Apogee equatorial mount and drives
- Meade 10" SCT Fork, wedge, and tripod
- 2" trend focuser, Newtonian
- 2" R&P focuser, Newtonian
- 15mm Eyepiece
- ST-4 autoguider
- Meade ETX RA + hard case
- Orion 8" Dobsonian
- Astronomy books
- And miscellaneous items

- Mike Meteny
Assoc. Director, Mingo Observatory

General Meeting Dates, Times & Locations

2012

Friday, Sept 14, 2012, 7:30 PM, Carnegie Science Center
Friday, October 19, 7:30 PM, Carnegie Science Center
Friday, November 9, 7:30 PM, Allegheny Observatory
Saturday, December 15, 7:30 PM, Buffalo Inn, South Park *

2013

Friday, January 11, 7:30 PM, Carnegie Science Center
Friday, February 8, 7:30 PM, Carnegie Science Center
Friday, March 8, 7:30 PM, Allegheny Observatory
Friday, April 12, 8:00 PM, Carnegie Science Center
Friday, May 10, 8:00 PM, Carnegie Science Center

Special thanks to Lou Coban for arranging 2 meetings at the Allegheny Observatory and to Jean Philpott for arranging the multitude of Carnegie Science Center dates. Special thanks also to Mike Meteney for rearranging our Buffalo Inn reservations. Thanks to everyone for your patience.

- Terry Trees
Vice President, AAAP

* Please note that this year's Holiday Party has been moved to a Saturday. This should avoid the inconvenience of a work day evening.

A Unique Naked Eye Observation?

Uranus averages a stately pace of 4.3º per year in its 84.4 year circuit of the Sun. It keeps to a narrow band near the ecliptic only 0.08º wide. Consequently, in our era, Uranus can occult or closely brush only nine stars with visual magnitudes of 6.3 or brighter. They are 44 Piscium, λ Virginis, α_1 Librae, α_2 Librae, 28 Librae, 41 Librae, 11 Sagittarii, SAO 187080 and SAO 187468. (These last, both located in Sagittarius, are in the Smithsonian Astrophysical Obs. catalog)

A "close brush" or an ***appulse*** is defined as the apparent close approach of two celestial bodies, when one moves into the same line of sight as the other. In other words, a visual "near miss".

The following post by Mark Gingrich to the Shallow Sky list server points to the possibility of a unique naked eye observation: an appulse between Uranus and 44 Piscium on Sunday morning September 23rd.

Faraway, plodding Uranus seldom does anything worthy of mention in astronomical calendars. But this year is different.

On Sunday, September 23rd, (around 02:00) Uranus bellies up to 44 Piscium, drawing to within one arc minute -- well below the dark-adapted eye's resolution limit -- for more than 14 hours. Yet their joint proximity is only the first coincidence.

The second finds each differing by mere hundredths from magnitude 5.75. Earnest sky watchers who forgo optical aid thus should see them as a singular spot of magnitude 5.0, which is about a half-magnitude better than the planet's all-time peak. If Uranus' intrinsic faintness (or if light pollution, perhaps) typically keeps it just beyond your visual range, then this uncommon juxtaposition makes for a novel naked-eye sighting opportunity.

As a rule, whenever two starry things fuse in this way, the perceived brightness change is maximal -- doubled, in fact, an enhancement of 0.75 magnitude -- if they are equally luminous. Plus there's added dramatic effect when, coincidentally, each alone lurks at the threshold of visibility: for upon coalescence they seemingly emerge out of the sky background.

It doesn't only happen with Uranus; the asteroid Vesta (6th magnitude near opposition) occasionally meets up with a star of similar gleam. Likewise, the Galilean satellites, which often undergo mutual close appulses that may have betrayed their presence to pre-telescopic observers.

So what do you call such a fluky occurrence? I'm partial to the term "appulsar." It strikes me as a tad more concise that the acronym-defying, phrase "the phenomenon whereby a near occultation between two star-like objects results in an apparent transitory brightening of the unresolved pair."

Stalking distant or smallish planetary bodies bare eyed is not everyone's favorite sport, of course. Should you prefer to ply binoculars or a telescope, the Uranus/44 Piscium twosome will remain resolvable throughout the encounter, with minimum separation (41 arc seconds) at 11:50 UT when they culminate over the western Pacific Ocean.

Following are some things to remember regarding this event:

The resolution limit of the naked eye is stated to be about 1 arc minute (1′). The separation of Uranus and 44 Psc will be:

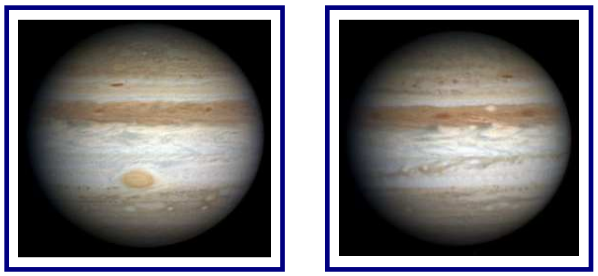
Local Time	Separation	Position Angle of 44 Pcs
00.00	1′ (arc minute)	288º
01.00	56″ (arc seconds)	291º
02:00	52″	296º
03:00	48″	301º
04:00	45″	307º
05:00	42″	314º

- Guide Star Editor

Jupiter Returns to Prime Time

Jupiter, undoubtedly the busiest of the planets for amateur observers, becomes a more convenient target this month, rising well before midnight by month's end.

There is satellite or Great Red spot activity literally every night in September and Jupiter continues to exhibit its two familiar major bands, the NEB and SEB, the northern and southern equatorial belts. Observers may remember the complete disappearance of the SEB in the summer and fall of 2010 and its revival in December 2010.



Jupiter minus the SEB in November, 2010 on the left and the anticipated SEB revival underway in December, 2010. (North is up in all images)

The familiar face of Jupiter, August 15, 2012

Images Courtesy: Christopher Go, Cebu City, Philippines

- Guide Star Editor

July Star Party Attendance

Thanks to the club members who volunteered their time and enthusiasm at July's star parties. These events are attended by schools, scout groups and the public-at-large and contribute to the club's reputation in the region. A reminder to members: please sign in on the member attendance sheets available in the observatory buildings. Following are July's member volunteers:

Mingo Observatory

July 6 (76 public visitors)

Bill Roemer, Ken Kobus, Mike Meteney, Fred Klein, Gene Leis, Nick Martch, Colleen Martch, Kathy De Santis, Melody Bishop, Flo Rusch, Gene Kulakowski

July 7 (22 public visitors

Bill Roemer, Nick Martch, Fred Klein, Dick Haddad, George Guzik, Kathy DeSantis, Ken Kobus, Gene Kulakowski

July 20 (7 public visitors)

Bill Roemer, Kathy DeSantis, Colleen Martch, Nick Martch, John Diller, Dick Haddad, George Guzik, Gene Kulakowski (Moon rocks display)

July 21 (77 public visitors)

Bill Roemer, Rich Ferraro, Jon Johnson, George Guzik, Fred Klein, Dick Haddad, Nick Martch, Colleen Martch, Ed Moss, Kathy DeSantis, Gene Kulakowski

Wagman Observatory **July 27 and 28**

Both Nights Tom Reiland, Bill Yorkshire, Diane Yorkshire, Eric Fischer, Joyce Osborne-Fischer Bill Hayeslip George Guzik
One Night Fred Klein, Tim Manka, John Holtz, Pete Zapadka, Rowen Poole, Flac Stifel, John Diller, Kelly Fletcher, Mary DeVaughn, Ed Moss, Matt Jones

Treasurer's Report: 2012 Second Quarter Summary:

Our expenses exceeded income by $9,000+ this quarter due to several things: Legal fees, equipment and maintenance at Mingo and Wagman. This includes such repairs as the 24" fork maintenance and end wall repair at Mingo as well as the new TV and accessories at Wagman.

Category	4/1/2012- 6/30/2012
INCOME	
50-50	54.00
Donation	1,571.76
Interest	5.73
Membership	1,046.00
Sales	20.00
TOTAL INCOME	**2,697.49**
EXPENSES	
Award	152.50
Bank Fee	6.00
Wagman Equipment	1,129.81
Food	130.36
Gift	27.00
Guide Star	57.23
Legal Fees	1,000.00
Mailings	142.43
Meeting, Speakers	150.00
Memorial	356.90
Mingo	3,294.06
Officers Expenses	391.42
Planetarium Service	150.00
printing	197.06
Star Party	393.60
Taxes	3,425.22
Utility	792.27
TOTAL EXPENSES	**11,795.86**
OVERALL TOTAL	**-9,098.37**

Account Balances 8/26/2012	
USX Share CD	$101,814.00
USX Money Market	$15,731.00
PNC Savings	$15,116.00
Planetarium Fund	$15,000.00
PNC Checking	$2,428.00
Cash	$50.00
Total Account Balance	**$150,139.00**

Sun	Mon	Tue	Wed	Thu	Fri	Sat
Times are local. SR = Sunrise, SS = Sunset, MR = Moonrise, MS = Moonset, PI = Approx. Percentage Visible Lunar Surface Illuminated Local Midnight	*What matters it, that weary and alone,* *I sit and think of things I might have done?* *What matters it that wife and children shun* *In me a dreamer, a mere rolling stone?* *What matters it that rustic neighbors fear* *In me a madman, all because I know* *The motions of the comets and the flow* *Of time, that travels on from year to year?* *What matters it? There are far better men* *To count the days and aeons, as they run,* *And weigh this planet that we dwell upon,* *But yet, I feel it matters somewhat, when -* *What matters it? - I see, across the wire,* *The transit of the star of my desire.* ***R. Burnside Potter, The Old Amateur***					**1** SR:06:47 SS:19:51 MR:20:06 MS:07:55 PI:100%
2 SR:06:48 SS:19:49 MR:20:35 MS:08:57 PI:98%	**3** SR:06:49 SS:19:48 MR:21:05 MS:09:57 PI:94%	**4** SR:06:50 SS:19:46 MR:21:37 MS:10:57 PI:88%	**5** SR:06:51 SS:19:44 MR:22:12 MS:11:55 PI:81%	**6** SR:06:52 SS:19:43 MR:22:50 MS:12:52 PI:73%	**7** SR:06:53 SS:19:41 MR:23:34 MS:13:45 PI:65%	**8** 09:15 Star Parties Both Observatories SR:06:54 SS:19:39 MR:***** MS:14:36 PI:55%
9 SR:06:55 SS:19:38 MR:00:22 MS:15:23 PI:46%	**10** SR:06:56 SS:19:36 MR:01:15 MS:16:05 PI:36%	**11** SR:06:57 SS:19:34 MR:02:13 MS:16:44 PI:27%	**12** Venus about 4° North of the Moon SR:06:58 SS:19:33 MR:03:14 MS:17:20 PI:19%	**13** Venus about 3° South of M44 or the Beehive in Cancer SR:06:59 SS:19:31 MR:04:17 MS:17:53 PI:12%	**14** AAAP General Business Meeting 19:30 Carnegie Science Center SR:07:00 SS:19:29 MR:05:23 MS:18:25 PI:6%	**15** 22:11 SR:07:01 SS:19:28 MR:06:31 MS:18:57 PI:2%
16 SR:07:02 SS:19:26 MR:07:40 MS:19:29 PI:0%	**17** SR:07:03 SS:19:24 MR:08:51 MS:20:05 PI:1%	**18** SR:07:04 SS:19:23 MR:10:03 MS:20:44 PI:5%	**19** SR:07:05 SS:19:21 MR:11:15 MS:21:28 PI:11%	**20** SR:07:06 SS:19:19 MR:12:24 MS:22:19 PI:20%	**21** SR:07:07 SS:19:18 MR:13:28 MS:23:16 PI:30%	**22** 15:41 Star Parties Both Observatories Autumnal Equinox SR:07:08 SS:19:16 MR:14:26 MS:***** PI:41%
23 SR:07:09 SS:19:14 MR:15:15 MS:00:18 PI:52% **30** SR:07:16 SS:19:03 MR:19:06 MS:07:46 PI:100%	**24** SR:07:10 SS:19:13 MR:15:58 MS:01:23 PI:63%	**25** SR:07:11 SS:19:11 MR:16:35 MS:02:30 PI:73%	**26** SR:07:12 SS:19:09 MR:17:08 MS:03:35 PI:82%	**27** SR:07:13 SS:19:08 MR:17:39 MS:04:40 PI:90%	**28** SR:07:14 SS:19:06 MR:18:08 MS:05:43 PI:95%	**29** 23:19 Uranus at Opposition SR:07:15 SS:19:04 MR:18:36 MS:06:45 PI:99%

AAAP Events can also be found at: https://nightsky.jpl.nasa.gov/event-list.cfm?Club_ID=675&EventEra=Future

Some Solar System Highlights

Selenographic Colongitude is 89.94° at 0h UT on the first day of the month. Add 12.2° each day.

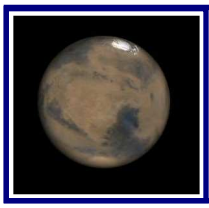
The following planetary entries include Local Rise and Set Times, Magnitudes and Disk diameters in Arc Seconds on the 1st, 10th, 20th and 30th days of the month.

Date	Rise	Set	Mag	Arc
1st	06:01:01	19:37:29	-1.4	5.27
10th	06:54:30	19:43:19	-1.7	4.89
20th	07:47:10	19:41:27	-0.9	4.82
30th	08:32:02	19:35:20	-0.4	4.97

Mercury is not visible this month. It reaches superior conjunction on September 10th.

Date	Rise	Set	Mag	Arc
1st	03:06:58	17:32:27	-4.2	19.91
10th	03:17:15	17:32:18	-4.2	18.42
20th	03:32:06	17:29:47	-4.1	17.04
30th	03:49:26	17:24:39	-4.1	15.88

Venus is in the eastern morning sky and reaches greatest western elongation of 46º on the 15th. The waning crescent Moon lies near Venus on the 12th, which in turn is quite close to the Beehive or M44 on both dates. Venus presents a waxing gibbous disk throughout the month.



Date	Rise	Set	Mag	Arc
1st	11:33:59	22:01:29	1.2	5.19
10th	11:29:09	21:41:49	1.2	5.06
20th	11:24:36	21:21:27	1.2	4.94
30th	11:20:43	21:02:50	1.2	4.83

Mars is low in the western evening sky, moving eastward from Virgo into Libra on the 4th. It sets in mid-evening.

Date	Rise	Set	Mag	Arc
1st	00:07:25	14:51:08	-2.3	39.20
10th	23:31:30	14:19:29	-2.4	40.30
20th	22:54:30	13:42:59	-2.5	41.59
30th	22:16:17	13:05:00	-2.5	42.91

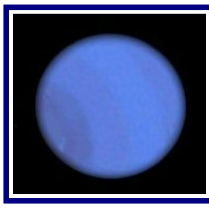
Jupiter, in Taurus, rises near midnight. Jupiter's System II longitude is 183º

Date	Rise	Set	Mag	Arc
1st	10:40:27	21:49:48	0.8	15.88
10th	10:09:34	21:16:33	0.8	15.73
20th	09:35:36	20:39:50	0.7	15.59
30th	09:01:57	20:03:18	0.7	15.48

Saturn, low in the western evening sky, disappears into twilight by month's end.

Date	Rise	Set	Mag	Arc
1st	20:51:32	09:15:20	5.7	3.65
10th	20:15:24	08:38:21	5.7	3.66
20th	19:35:11	07:57:06	5.7	3.67
30th	18:54:57	07:15:46	5.7	3.67

Uranus, visible all night, comes to opposition in Pisces on the 29th. See the article above for a possible naked eye event involving the planet on the 23rd.



Date	Rise	Set	Mag	Arc
1st	19:25:31	06:13:58	7.8	2.31
10th	18:49:32	05:37:23	7.8	2.31
20th	18:09:36	04:56:48	7.8	2.30
30th	17:29:43	04:16:21	7.8	2.30

Neptune is visible most of the night and is retrograding in Aquarius.

Jupiter Activity: Satellites & the Great Red Spot

Following are times for Jovian satellite transits and occultations and Great Red Spot meridian crossings for the current month that are visible in our area.

They are organized by observing sessions beginning with the first event of interest on a given evening and continuing to Jupiter's setting or the Sun rising. Using September 13 &14 as an example, at 23:22, Jupiter rises. Two hours later on the 14th, the Great Red Spot crosses the Central Meridian. At 02:30 Io's shadow will begin to transit the Jovian disk (**S**). At 03:50, Io itself will transit, so both a satellite transit and its shadow will be on the disk (ST). At 04:40, Io's shadow leaves the disk, leaving only Io itself in transit (T). At 05:35, Europa will be eclipse with Io still on the disk (T). At 06:00, Io leaves the disk and the observing activity terminates. All times are local.

1 00:09 Jupiter Rises
05:50 GRS: Crosses Central Meridian
2 00:05 Jupiter Rises
00:25 Europa: Transit Ends
01:41 GRS: Crosses Central Meridian

3 23:58 Jupiter Rises
4 00:15 Ganymede: Transit Begins **T**
02:08 Ganymede: Transit Ends
03:20 GRS: Crosses Central Meridian

4 23:55 Jupiter Rises
5 06:08 Io : Shadow Transit Begins **S**

5 23:51 Jupiter Rises
6 03:24 Io : Disappears into Eclipse
04:58 GRS: Crosses Central Meridian

6 23:47 Jupiter Rises
7 00:36 Io : Shadow Transit Begins **S**
00:50 GRS: Crosses Central Meridian
01:58 Io : Transit Begins **ST**
02:46 Io : Shadow Transit Ends **T**
03:01 Europa: Disappears into Eclipse **T**
04:07 Io : Transit Ends
05:23 Europa: Reappears from Eclipse
05:43 Europa: Disappears into Occultation

7 23:44 Jupiter Rises
8 01:26 Io : Reappears from Occultation
06:37 GRS: Crosses Central Meridian

8 23:40 Jupiter Rises
9 00:15 Europa: Shadow Transit Ends
00:40 Europa: Transit Begins **T**
02:28 GRS: Crosses Central Meridian
03:01 Europa: Transit Ends

10 23:33 Jupiter Rises
11 00:38 Ganymede: Shadow Transit Ends
04:06 GRS: Crosses Central Meridian
04:14 Ganymede: Transit Begins **T**
06:06 Ganymede: Transit Ends

11 23:29 Jupiter Rises
23:58 GRS: Crosses Central Meridian

12 23:26 Jupiter Rises
13 05:18 Io : Disappears into Eclipse
05:45 GRS: Crosses Central Meridian

13 23:22 Jupiter Rises
14 01:36 GRS: Crosses Central Meridian
02:30 Io : Shadow Transit Begins **S**
03:50 Io : Transit Begins **ST**
04:40 Io : Shadow Transit Ends **T**
05:35 Europa: Disappears into Eclipse **T**
06:00 Io : Transit Ends

14 23:18 Jupiter Rises
23:47 Io : Disappears into Eclipse
03:19 Io : Reappears from Occultation

15 23:15 Jupiter Rises
16 00:28 Io : Transit Ends
00:29 Europa: Shadow Transit Begins **S**
02:52 Europa: Shadow Transit Ends
03:15 GRS: Crosses Central Meridian
03:15 Europa: Transit Begins **T**
05:36 Europa: Transit Ends

17 23:07 Jupiter Rises
23:52 Europa: Reappears from Occultation
18 02:42 Ganymede: Shadow Transit Begins **S**
04:39 Ganymede: Shadow Transit Ends
04:53 GRS: Crosses Central Meridian

18 23:03 Jupiter Rises
19 00:44 GRS: Crosses Central Meridian

19 23:00 Jupiter Rises
20 06:31 GRS: Crosses Central Meridian

20 22:56 Jupiter Rises
02:22 GRS: Crosses Central Meridian
04:23 Io : Shadow Transit Begins **S**
05:42 Io : Transit Begins **ST**
06:33 Io : Shadow Transit Ends **T**

21 22:52 Jupiter Rises
23:50 Ganymede: Occultation Ends
22 01:41 Io : Disappears into Eclipse
05:11 Io : Reappears from Occultation

22 22:48 Jupiter Rises
22:52 Io : Shadow Transit Begins **S**
23 00:10 Io : Transit Begins **ST**
01:02 Io : Shadow Transit Ends **T**
02:20 Io : Transit Ends
03:05 Europa: Shadow Transit Begins **S**
04:01 GRS: Crosses Central Meridian
05:29 Europa: Shadow Transit Ends
05:47 Europa: Transit Begins **T**

23 22:45 Jupiter Rises
23:39 Io : Reappears from Occultation
23:52 GRS: Crosses Central Meridian

24 22:41 Jupiter Rises
23:48 Europa: Reappears from Eclipse
25 00:02 Europa: Disappears into Occultation
02:22 Europa: Reappears from Occultation
05:39 GRS: Crosses Central Meridian
06:42 Ganymede: Shadow Transit Begins S

25 22:37 Jupiter Rises
26 01:30 GRS: Crosses Central Meridian

27 22:29 Jupiter Rises
28 03:08 GRS: Crosses Central Meridian
06:17 Io : Shadow Transit Begins **S**

28 22:25 Jupiter Rises
22:31 Ganymede: Reappears from Eclipse
23:00 GRS: Crosses Central Meridian
29 01:47 Ganymede: Occultation Begins
03:35 Io : Disappears into Eclipse
03:37 Ganymede: Occultation Ends
07:02 Io : Occultation Ends

29 22:22 Jupiter Rises
30 00:45 Io : Shadow Transit Begins **S**
02:01 Io : Transit Begins **ST**
02:55 Io : Shadow Transit Ends **T**
04:10 Io : Transit Ends
04:47 GRS: Crosses Central Meridian
05:42 Europa: Shadow Transit Begins **S**

Suggested Deep Sky Objects for September

This table is part of a series of monthly Deep Sky targets compiled by Bob Kepple, co-author of *Night Sky Observer's Guide*. The complete set of tables, one per month, may be found at the AAAP web site : http://www.3ap.org/ under the S.I.G. link (Special Interest Group) for Deep Sky Observing.

Bob mentions that, "…objects in the … lists may be observed for about two months before and after the month they are listed… If you have a small telescope see how many objects you can find in the lists for larger scopes and, of course, individuals with larger instruments will have no trouble observing objects listed for smaller instruments…." [PA = Position Angle of second component in relation to primary, with 0^o representing North, 90^o representing East, etc.]

Objects for Binoculars							
RA	Dec	Number	Mag(s)	Size/Sep.	PA	Const.	Type of Object
$22^h\ 43.0^m$	+30° 13'	44 Peg	2.9, 9.9	90.4"	339°	Peg	Double Star
$23^h\ 24.2^m$	+61° 35'	M52	6.9v	12'		Cas	Open Cl. 100*
$00^h\ 42.7^m$	+41° 16'	M31	3.4v	18.5'x7.5'		And	"Great Andromeda Galaxy"
$02^h\ 19.0^m$	+57° 09'	NGC 869	5.3v	29'		Per	OC 200* "Double Cluster"
$02^h\ 22.4^m$	+57° 07'	NGC 884	7.3v	348"		Vul	OC 115* "Double Cluster"
$02^h\ 42.0^m$	+42° 47'	M34	5.2v	35"		Per	Open Cl. 60*
Objects for Small Telescopes (2-6 inch)							
RA	Dec	Number	Mag(s)	Size/Sep.	PA	Const.	Type of Object
$01^h\ 33.2^m$	+60° 42'	M103	7.4v	6'		Cas	Open Cluster 25*
$01^h\ 36.7^m$	+15° 47'	M74	9.4v	11.0'x11.0'		Psc	Galaxy
$01^h\ 42.4^m$	+51° 34'	M76	10.1v	65"		Per	Pl Neb "Little Dumbbell"
$01^h\ 57.8^m$	+34° 41'	NGC 752	5.7v	50'		And	Open Cluster 60*
$02^h\ 03.9^m$	+42° 19'	Gamma	2.3, 5.5	9.8"	63°	And	Double Star
$02^h\ 22.6^m$	+42° 21'	NGC 891	9.9v	13.0'x2.8'		And	Galaxy
Objects for Medium Telescopes (8-14 inch)							
RA	Dec	Number	Mag(s)	Size/Sep.	PA	Const.	Type of Object
$20^h\ 53.5^m$	-12° 32'	M72	9.3v	5.9'		Aqr	Globular Cluster
$22^h\ 37.1^m$	+34° 25'	NGC7331	9.5v	10.5'x3.7'		Peg	Galaxy
$22^h\ 37.4^m$	+23° 48'	NGC7332	11.1v	3.7'x1.0'		Peg	Galaxy, Pair w/NGC 7339
$23^h\ 04.9^m$	+12° 19'	NGC7479	10.8v	4.0'x3.1'		Peg	Galaxy
$23^h\ 25.9^m$	+42° 33'	NGC7662	8.3v	12"		And	Pl Neb "Blue Snowball"
$00h03.3^{h\ m}$	+16° 09'	NGC7814	10.6	6.0'x2.5'		Peg	Galaxy
Objects for Larger Telescopes (16-inch & larger) Challenge Objects							
RA	Dec	Number	Mag(s)	Size/Sep.	PA	Const.	Type of Object
$21^h\ 36.9^m$	+12° 47'	NGC 7094	13.4v	95"		Peg	Planetary Nebula
$22^h\ 29.6^m$	-20° 48'	NGC 7293	7.3v	769"		Aqr	"Helix Neb" (Use O-III filter)
$22^h\ 36.1^m$	+33° 57'	NGC 7320	12.6v	1.7'x0.9'		Peg	Br Gx in Stephan's Quintet
$23^h\ 54.1^m$	+20° 07'	NGC 7771	12.2v	2.3'x1.1'		Peg	Galaxy w/NGCs7770, 7769
$01^h\ 33.9^m$	+30° 39'	M33	5.7v	67.0'x41.5'		And	"Pinwheel Galaxy"
$03^h\ 10.3^m$	+61° 19'	IC 289	13.3v	34.0'		Cas	Planetary Nebula

Birthday Celebrations at Wagman

Our second birthday party at Wagman Observatory, except for the weather, was a major success.

Bill Yorkshire, Rowen Poole and I entertained and educated 13 girls and boys and 6 parents on our favorite subject, Astronomy.

We received two AAAP family memberships from the group and a donation of $150 towards Wagman Observatory. We plan to do more of these and similar events in the future.

- Tom Reiland
Director, Wagman Observatory

Upcoming 2012 Star Party Dates

Mingo Observatory	Wagman Observatory
October 6 – 20	October 6 * – 20 (* Moonrise)

Membership Information

AAAP Member Dues:	$ 24.00
Student Membership (K-12 & full time college student):	$ 16.00
Family Membership	$ 40.00

Basic Procedure for Paying Dues:

1. Make check payable to "AAAP Inc."
2. Send check to: Nate Brandt, Treasurer
   2520 Campmeeting Rd.
   Sewickley, PA 15143-9104

Membership Renewal Form can be found at:

http://www.3ap.org/AAAP_Mem_RenForm_2013.pdf

New Membership Form can be found at:

http://www.3ap.org/AAAP_New_MemForm_2013.pdf

Two Announcements:

The Mingo Star Party date in September 2013, will be the 28th, a Saturday. (Last month's listing contained an error)

Next month's Guide Star, the October issue, will be posted and sent out for mailing on the 18th of September. Please send announcements and inclusions for October well in advance of this date.

AAAP Welcomes Its New Members

Rich Ferraro
Vamsi Maddula
Brian McBane
Taylor Nicholas
Timothy B. Skraitz
Dan Spano

Amateur Astronomers Association of Pittsburgh, Inc

Executive Committee

2012-2013 Elected Officers

President:	John Holtz president@3ap.org
Vice-President:	Terry Trees vicepresident@3ap.org
Treasurer:	Nate Brandt treasurer@3ap.org
Corresponding Sec:	Kelly Fletcher correspondingsecretary@3ap.org
Recording Sec:	Diane Yorkshire recordingsecretary@3ap.org
Membership Sec:	Don Hoecker membershipsecretary@3ap.org
Guide Star Editor:	John Cheng gseditor@3ap.org

Facility Directors

Mingo Creek Park Observatory

Director: Bill Roemer
Assistant Director: Gene Kulakowski
Assistant Director: Mike Meteney

Wagman Observatory

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

Executive Committee Appointees

Eric Fischer
Bill Moutz
Chris Mullin
Joyce Osborne-Fischer