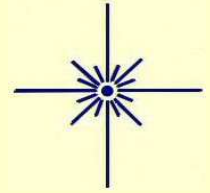




The Guide Star

Newsletter of the Amateur Astronomers Association of Pittsburgh Inc
Founded June 9, 1929 by Chester B. Roe and Leo J. Scanlon
Website: 3ap.org



July 2012

Volume 46, No. 7

AAAP Star Party Dates for July

July 6 & 7 Mingo

Mars and Saturn will be in the west and the waning gibbous Moon will rise around 23:00.

July 20 & 21 Mingo

NASA Moon Rocks on display with special programming on the Moon. A challenging crescent Moon might be glimpsed low in the west just after sunset on both days.

July 27 & 28 Wagman

A waxing gibbous Moon will be available for viewing in the south on both days.

Coming at Mingo

Mingo Observatory Shop and Swap.

Tentative plans are being laid to have an astronomy equipment shop and swap at the Mingo Creek Park observatory on September 22, 2012.

Any member interested in selling or buying any used equipment will be able to bring their equipment to the observatory on that date. We are also going to have a silent auction of some of the telescopes that have accumulated at the observatories and are sitting unused and needing good homes.

Further details will be posted in the August Guide Star. We hope to have a list of equipment that members may be bringing posted in the September Guide Star and on online.

The following equipment is a preliminary list of items that will be in the silent auction:

- Meade 6" Newtonian
- Meade 6" Schmidt Newtonian
- Meade 8" Star Finder Newtonian
- Meade 60mm DSR
- Meade 4" Newtonian OTA
- Meade ETX70
- Galileo 114mm Newtonian + accessories and case
- 17.5" Dobsonian
- Criterion 6" Dynascope Newtonian + mount and pier (a classic)
- "And other stuff"

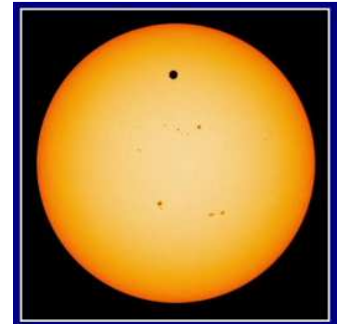
If you have any questions about this event, contact Michael Meteney, Assoc. Director, Mingo Observatory

Sic Transit Gloria ...Transit of Venus

The second and last Venus transit of this century showed that while we were supremely fortunate to be alive at this time, you can never overlook the importance of location, location, location.

Those of us who set up at Wagman, anticipating the clearing that looked to be coming from the north, stared at a cloud cover which refused to budge.

But to the south, at Mingo, observers caught portions of the event through breaks in the clouds and through thin overcast. Members located outside our area fared a bit better.



Unaffected by atmospheric conditions, NASA's SDO (Solar Dynamic Observatory) returned pristine images of the transit.



Now located in the Thousand Islands area of the St. Lawrence River on the U.S. - Canadian border, AAAP member Wallace Watson, caught this image just after second contact.

Wallace used a point-and-shoot camera (Canon PowerShot A75) through the eyepiece of an 8" Dob equipped with a solar filter.

An intriguing set of images was caught by AAAP member Phil Hughes, who took these shots from a moving ship about 100 miles off the South Carolina coast.



Phil used a Canon 50D with a 70-200 f/4 L series lens and a Baader filter

It was disappointing to read online reports from visual observers across the country who were surprised by the distortion - ring or arc of light, call it what you will - that is clear evidence of the planet's atmosphere. The atmosphere contains roughly one hundred times more gas than Earth's and it has impacted the entire history of Venus transit observations.

Very little effort would have turned up numerous references to it and at least one paper demonstrating that the Russian scientist Mikhail Lomonosov's can claim precedence in discovering the atmosphere during the transit of 1761.

There was no reason to be surprised or to be in doubt about what the ring meant.



One apocryphal bit of info emerged however. Visual observers seemed to indicate that "white light filters", like Mylar, Herschel wedges and viewing the Sun in hydrogen alpha were conducive to seeing the ring but those that eliminated blue light tended to suppress the visibility of the ring.

Venus in transit as imaged in Ha light. The distortion around the disk caused by the planet's atmosphere is visible.

It's really unfortunate that Venus transits are so rare. There doesn't appear to be a definitive explanation for the variety of things that observers have seen when a planetary atmosphere is seen in front of the Sun.

The next planetary transit visible from Pittsburgh will be that of atmosphere-free Mercury on May 9th, 2016. We'll see the whole transit from our location. It will last over seven hours.

- Guide Star Editor

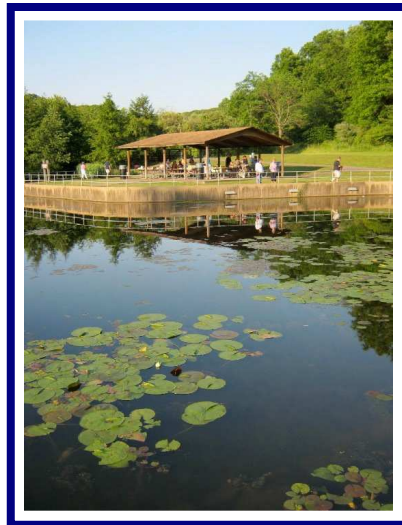
Wagman Picnic & 25th Anniversary

There were at least 45 members and family at the picnic. Lots of good food was consumed and old friendships renewed and new ones formed. It was good to see some members that I had not talked to in a while and everyone thoroughly enjoyed themselves.

All the hot dogs were gone by the end of the day. Most of the pop was consumed as well.

We started to pack up at 7:45 PM to head up to the Observatory to complete the celebration and the

short presentation. There were some members waiting for us who could not make the picnic and others arrived to join the event a short time later.



Veterans1 Grove was the site of this year's picnic

Eight to ten more members and family participated in the program and the eating of the delicious cake that the Yorkshires bought at the Oakmont Bakery.



I gave a brief introduction after Eric Fischer handed me a check from the Wagman Family of \$1,000 for repairs at the repairs at the observatory named for their father. I passed the donation to our new Treasurer, Nate Brandt.

Eric gave a condensed history of some of the most important, unusual and funniest events at Wagman during the past 25 years.



We opened up both roofs for observing and several members set up their scopes on the field.

We observed two passes of the ISS, one, maybe two Iridium satellites, plus at least another half dozen satellites during the night.

I operated the 21" and Bill Yorkshire manned the 11". We entertained at least 10 members of the public who came to see what was going on and gave them schedules and various handouts.

Those who joined me at the 21" observed Saturn and 4 moons, M51 with NGC 5195, M13, M11, M27, M57, M5, M63, U Cygni (red variable with a blue companion), Antares and 61 Cygni. We watched the Moonrise as I started to close the Manka Scope for the night.

For me, it was a wonderful day and night spent with many friends, both old and new, and it matched or exceeded my expectations.

We were sorry more of you could not make it because of other commitments and travel distance.

Here's hoping for another 25 years. Clear skies to all.

from a posting to the AAAPgh group by

Tom Reiland, Wagman Director

Images courtesy of Pete Zapadka

John Close

We mourn the passing, in May, of John Close, a member and our friend.



John was known to many in the club because of his work at star parties and general meetings. But his humor and his personality endeared him to those that met him. His was truly a welcome presence at any AAAP event.

John was an Associate Professor at the University of Pittsburgh and a Vietnam veteran. Most recently, he was a member of the nominating committee that supervised the officer elections at the meeting in May.

John was a quick wit and enjoyed a story in both the hearing and the telling. He was generous with his smile and speaking with him was always interesting, regardless of topic. He will be missed by those who knew him and our club is less because of his absence.

John's family sent the following message:

To the AAAP Family

In a time of such sadness, our family appreciated your effort to come to John's viewing and service.

The girls and I are still excited about how well the celebration of his life went. We enjoyed meeting all the members. I hope you enjoyed seeing pictures of a younger John and hearing the girls' remarks at the service.

We are grateful that God took John quickly and he did not have to suffer and my children did not have to watch his deterioration.

We are honoring his memory by continuing to remember him in stories and laughter. We ask that you do the same. Pour a drink and salute the man who loved you all. He enjoyed your meetings, directing traffic at the star parties and learning about the galaxy.

Thanks for your past friendship and thanks for your flowers.

Love,

Donna, Heather, Ashley and Christa

May's AAAP Star Parties

Although the weather in late May wasn't totally cooperative, the star parties held on May 25th and 26th at Mingo and Wagman observatories were successful examples of the popularity of the club's public outreach efforts.

Each observatory played host to about 200 visitors over the two nights while the club itself was represented by a sizeable number of member volunteers. Following are the names of the AAAPers who helped at these events.

A reminder to members. Please sign in when you assist at a club star party. Your effort is appreciated and remember, a youngster's first look through a telescope can stay with them for a lifetime

Thanks to all who gave their time and shared their enthusiasm at AAAP star party events in May:

Mingo Creek Park Observatory

May 25

Bill Roemer
Gene Kulakowski
Mike Meteney
Jon Johnson
Ken Kobus
Nick Martch
Colleen Martch
Michael Skowvron
Gene Leis

Dan Peden
Flo Rusch
Kathy DeSantis

May 26

Bill Roemer
Gene Kulakowski
Mike Meteney
George Guzik
Jon Johnson

Fred Klein
John Diller
Ken Kobus
Nick Martch
Colleen Martch
Chris Mullin
Kathy DeSantis
Kathleen Kleinmann
Daniel Kleinmann
Ed Moss
Tim Kelly

Wagman Observatory

May 25

Bill Yorkshire
Diane Yorkshire
Tim Manka
Pete Zapadka
Mary DeVaughn
Tom Reiland
Flac Stifel
Fred Klein
Eric Fischer
Joyce Fischer
Don Hoecker

Lori Seitz
Tom Piper
Rowen Poole
Kelly Fletcher
Bill Hayeslip
Ann Campbell
Viola Christy
Dan Turiak

May 26

Bill Yorkshire
Diane Yorkshire

Julie Yorkshire
Devon Yorkshire
John Diller
Ken Kobus
Nick Martch
Colleen Martch
Chris Mullin
Kathy DeSantis
Kathleen Kleinmann
Daniel Kleinmann
Ed Moss
Tim Kelly

Dave Smith Hospitality Room at Wagman

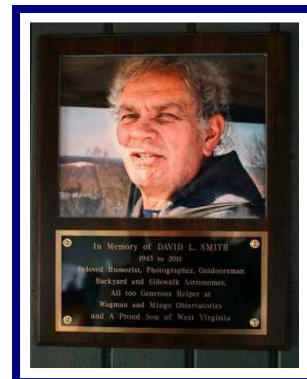
On the evening of June 23rd, the large reception room at Wagman Observatory was renamed the Dave Smith Hospitality Room. The occasion was marked by the unveiling of a memorial plaque.

It's hard to think of a more fitting tribute to a person who lent his time so selflessly to the AAAP and who contributed as much to making visitors to our observatories and events, members and non-members alike, feel welcomed. The plaque reads:

In memory of David L. Smith

1945 - 2011

*Beloved Humorist, Photographer,
Outdoorsman
Backyard and Sidewalk Astronomer
All too Generous Helper at
Wagman and Mingo Observatories
and A Proud Son of West Virginia*



[This Year's Kevin J. Brunelle Contest](#)

Attention all AAAP Astrophotographers:

Following are details on category and rules changes for the 2012 Kevin J. Brunelle Photography Contest, including some of the survey results which motivated the changes. You will find additional clarifications on the categories as well as partial reasoning for making the changes.

KJB Contest

Rule changes and Updates

Following several months of polling the general membership, the KJB committee has analyzed and discussed the results of the surveys both internally and externally.

In order to provide club members sufficient time to adjust to the new rules, we feel it imperative to implement the following changes quickly. Discussion is encouraged but I would remind everyone that suggestions for change will only be considered for the 2013 KJB contest due to timing.

Historical Categories:

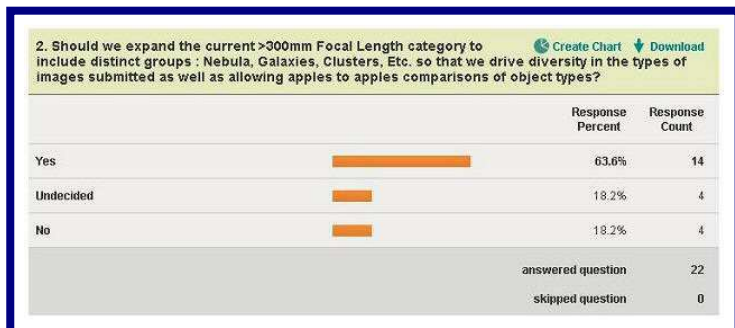
- Atmospheric
- <300mm Focal Length
- >300mm Focal Length

Categories for 2012 KJB Contest:

- Atmospheric
- Galaxy
- Nebula
- Stellar (Clusters, Constellations, Doubles, Star Trails, Etc.)
- Lunar / Planetary / Solar

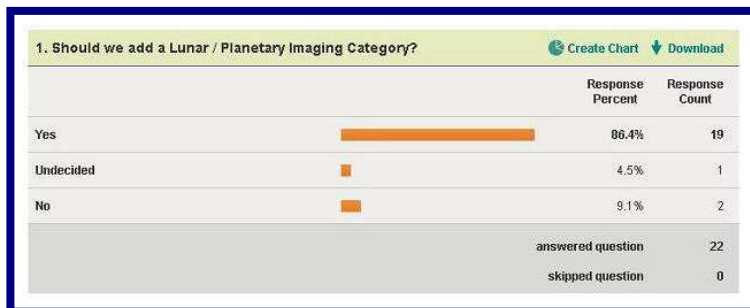
Atmospheric will stay as is.

Galaxies, Nebula, and Stellar: Instead of dividing the categories into focal lengths we have decided to break it out into object categories. This allows a fair playing field where galaxies are being compared to galaxies and narrowband emission nebula are compared to other emission line images.



Lunar / Planetary / Solar (Any Solar System objects including Comets: This category encourages image types we rarely see anymore in the contest. Webcam imaging is one of the cheapest and most accessible (but not easy to master!) imaging types available

that works well with the majority of equipment already owned by non-astrophotographers. High resolution solar system imaging requires different equipment and skill sets and should not be compared against deep sky images. In addition to the lower cost and readily available equipment that solar system imaging offers, it can also be done in ones back yard without serious regard to light pollution.



*** Please note – Widefield shots are still greatly encouraged and should be entered into the category best fitting the main subject of the photograph.

Fundamental Rule Changes / Clarifications:
General Contest Categories

- The Kevin Brunelle Photography Contest is open to all active AAAP Members
- All images entered should concern areas of interest to the AAAP
- Remote imaging is allowed provided the equipment is owned and setup by the astrophotographer
- The image must be the sole work of the contestant and may not be a collaborative work
- All images submitted must have been captured after the deadline for the November 11th 2011 KJB Contest and must be submitted before the yet to be announced deadline for the Nov 2012 KJB Contest. (see below)
- No more than 5 entries per category per person

With the new rules in place the KJB Committee and Exec Committee will work together to determine prize details to accommodate the additional categories. Suggestions on unique prizes are welcome.

The official prizes will be announced at a later date.

Regards,

***Nathan Brandt,
Treasurer - AAAP***

The deadline for the 2012 Kevin J. Brunelle Contest will be October 30, 2012

An online copy of the new rules and updates can be found at:

[KJB Contest Categories and Rules Announcement](#)

The Prime Time Meridian

Throughout July, astronomical twilight, ends around 22:30, being defined as the time when the Sun is between 12 and 18 degrees below the horizon. Practically, it's the time when deep sky observers can get serious. But for anyone whose day begins at dawn or with an early wake-up call, it means that the prime observing period begins at an unfortunate hour.

One solution is to grab what the sky gives you in the time you have. Example: at mid-month, at 10:30 pm, maybe carve out a convenient piece of sky centered on the meridian and the celestial equator. This month, that piece of sky would be in Ophiuchus, that large, hard to pronounce, constellation that's not among the dozen zodiacal constellations even though the Sun lingers almost three times as long inside its borders as within the wildly "popular" Scorpius.

Ophiuchus itself is a huge expanse of sky with few conspicuous markers and seemingly little to offer. α Ophiuchi, Rasalhague, is a bit dimmer than 2nd magnitude but consider, Ophiuchus is home to 33 of the 157 globular clusters currently associated with our galaxy, making it second only to Sagittarius which has 35. On our hypothetical July evening, three globulars are strung beneath the celestial equator like charms on a bracelet.

They are Messiers 10, 12 and 14, all discovered in 1764, the annus mirabilis, in which Messier made 20 of his own 44 discoveries that are included in his catalogue. Hobbled by inferior optics even for his time, he described globular clusters as "nebulae without stars".

M10 & M12 are often considered as a pair. Both are mid 6th magnitude and can be seen simultaneously in binoculars. Easily resolved into stars in a 317 mm (12.5 inch) scope, they both sit close to the galaxy's inner halo, may have formed at the same time and may still interact. M10 is at 140 l.y., is almost twice the diameter of M12 at 85, and is about 4000 l.y. more distant at 24,760 l.y. However, M10's density indicates it may be facing a process called core collapse wherein smaller cluster stars migrate to the periphery of the cluster while larger stars condense at the center, possibly getting as close as Pluto is to our Sun. This process has already taken place in M15 in Pegasus.



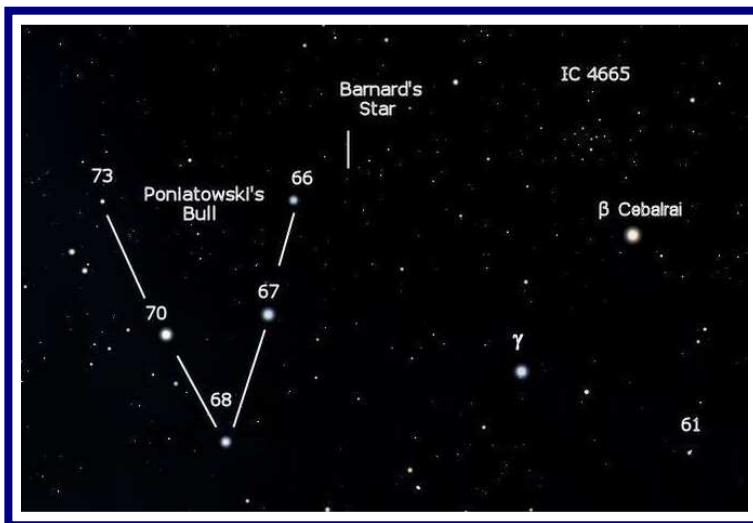
Messiers 10, 12 and 14. A trio of well placed globular clusters, captured by Bill Snyder, using a TMB130 refractor and an Apogee U8300 camera.

Messiers 10 and 12 are easily found. They're about 9° east of 3rd magnitude δ Ophiuchi, within two finder hops or three telrad jumps.

More distant, a 2005 estimate puts it at 55,620 l.y., dimmer at magnitude 7.6, more difficult to find and resolve, Messier 14 is a bit of a challenge. Starting from γ Ophiuchi, careful use of a finder or Telrad or both proceeding SW toward η Ophiuchi will find the cluster and larger aperture will resolve a few stars and suffice to show its extension along an east-west axis.

Northeastern Ophiuchus is a busy place. Using β Ophiuchi, as a starting point, IC 4556, is a can't miss object just above it. In binoculars, it's a pretty scatter of about 30 blue white stars that fully earn the nickname, the "summer beehive".

70 Ophiuchi is a colorful double, with a yellow-white primary at 4th and a red secondary at 6th magnitude. Currently widening, it was a clean split in an 85mm refractor at 70 power in 2010. 70 Ophiuchi is part of a "V" shaped asterism, remnant from a defunct constellation, Poniatowski's Bull, created in 1777 to honor a forgotten Polish king.

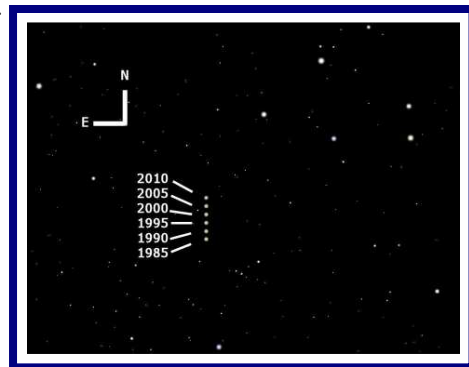


Below Cebalrai, 61 Ophiuchi is an easily split double consisting of almost identical 6th magnitude off-white components.

One of the most interesting objects in the entire sky is Barnard's Star, a 9.5 magnitude red dwarf that is the closest star to our Sun after the α Centauri system. It shows the largest proper motion of any star, moving north 10.5" annually. This equates to shifting the diameter of the Moon every 175 years.

Finding Barnard's Star is hard. Deep charts or software is essential.





A controversy surrounds the star. In the early 60's a Sproul Observatory astronomer explained to a young visitor that his years of work on the star carried out with the 24" Sproul refractor showed



that it was accompanied by a presumed planet about 1.6 times the mass of Jupiter. It was the first evidence for the existence of a planet orbiting another star. The young boy was impressed. The astronomer was Swarthmore College's Peter Van de Kamp.

In 1973, working independently, George Gatewood of Allegheny Observatory and John Hershey at Van de Kamp's own institution were to show that his findings were invalid and due to changes in equipment and photographic emulsion at Sproul.

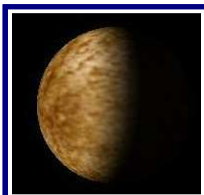
Today, exo-planets are commonplace and in 2009, Swarthmore College named its new Peter van de Kamp Observatory after the diligent, but mistaken pioneer.

Sun	Mon	Tue	Wed	Thu	Fri	Sat	
1	2 Mercury at Greatest Eastern Elongation 26°	3  14:52	4	5	6 Star Parties Mingo Observatory July 6 & July 7	7	
In the eastern sky during the early morning, Venus, Jupiter will be located near Aldebaran and the Hyades cluster in Taurus							
SR:05:53 SS:20:54 MR:18:55 MS:03:39 PI:89%	SR:05:54 SS:20:54 MR:19:55 MS:04:39 PI:95%	SR:05:55 SS:20:53 MR:20:46 MS:05:45 PI:99%	SR:05:55 SS:20:53 MR:21:30 MS:06:56 PI:100%	SR:05:56 SS:20:53 MR:22:07 MS:08:06 PI:98%	SR:05:56 SS:20:53 MR:22:40 MS:09:15 PI:93%	SR:05:57 SS:20:52 MR:23:09 MS:10:21 PI:87%	
8	9	10  21:48	11	12 Venus at it brightest. Magnitude -4.7	13	14	
In the eastern sky during the early morning, Venus, Jupiter will be located near Aldebaran and the Hyades cluster in Taurus							
SR:05:58 SS:20:52 MR:23:37 MS:11:24 PI:79%	SR:05:58 SS:20:52 MR:***** MS:12:25 PI:70%	SR:05:59 SS:20:51 MR:00:05 MS:13:25 PI:61%	SR:06:00 SS:20:51 MR:00:33 MS:14:23 PI:51%	SR:06:00 SS:20:50 MR:01:04 MS:15:21 PI:41%	SR:06:01 SS:20:50 MR:01:38 MS:16:18 PI:32%	SR:06:02 SS:20:49 MR:02:16 MS:17:12 PI:24%	
15 The Moon joins Venus and Jupiter near the Hyades	16	17	18	19  00:24	20 Star Parties Mingo Observatory July 20 & July 21	21	
SR:06:03 SS:20:48 MR:02:58 MS:18:04 PI:16%	SR:06:03 SS:20:48 MR:03:47 MS:18:52 PI:10%	SR:06:04 SS:20:47 MR:04:40 MS:19:36 PI:5%	SR:06:05 SS:20:47 MR:05:38 MS:20:15 PI:2%	SR:06:06 SS:20:46 MR:06:39 MS:20:51 PI:0%	SR:06:07 SS:20:45 MR:07:43 MS:21:24 PI:1%	SR:06:08 SS:20:44 MR:08:47 MS:21:54 PI:4%	
22	23	24	25	26  04:56	27 Star Parties Wagman Observatory July 27 & July 28	28	
SR:06:08 SS:20:43 MR:09:52 MS:22:24 PI:9%	SR:06:09 SS:20:43 MR:10:59 MS:22:55 PI:16%	SR:06:10 SS:20:42 MR:12:06 MS:23:27 PI:25%	SR:06:11 SS:20:41 MR:13:15 MS:***** PI:35%	SR:06:12 SS:20:40 MR:14:25 MS:00:03 PI:46%	SR:06:13 SS:20:39 MR:15:34 MS:00:44 PI:57%	SR:06:14 SS:20:38 MR:16:41 MS:01:31 PI:68%	
29	30	31 Guide Star Editor's Birthday	<p><i>In starry skies, long years ago, I found my Science. Heart aglow I watched each night unfold a maze Of mystic suns and worlds ablaze, That spoke: Know us and wiser grow.</i></p> <p>- Sterling Bunch, Amateur Astronomer 1900-1945</p>			<p>Times are local.</p> <p>SR = Sunrise, SS = Sunset, MR = Moonrise, MS = Moonset, PI = Approx. Percentage Visible Lunar Surface Illuminated Local Midnight</p>	
SR:06:15 SS:20:37 MR:17:42 MS:02:26 PI:79%	SR:06:16 SS:20:36 MR:18:36 MS:03:28 PI:87%	SR:06:17 SS:20:35 MR:19:23 MS:04:36 PI:94%					

Some Solar System Highlights

Selenographic Colongitude is 52.52° 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, 11th, 21st and 31st days of the month.



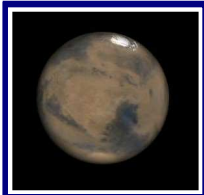
Mercury is low in the western sky in the first half of the month showing a near quarter phase which approaches a crescent dim and gets closer to the Sun. The planet is at inferior conjunction on the 28th.

Rise time / Set time	1st	08:01	22:22	11th	07:59	21:49	21st	07:20	20:55	31st	06:09	19:54
Magnitude / Arc Sec	1st	0.6	8.11	11th	1.3	9.79	21st	3.0	11.27	31st	4.4	11.10



Venus in the eastern morning sky, is a waxing crescent at month's beginning. Up to mid-month, it will be within 7° of Jupiter and located in the Hyades. Early on the 15th, the crescent Moon will join the group. A pretty scene..

Rise time / Set time	1st	04:01	18:10	11th	03:34	17:45	21st	03:16	17:32	31st	03:04	17:28
Magnitude / Arc Sec	1st	-4.4	44.56	11th	-4.5	37.95	21st	-4.5	32.56	31st	-4.4	28.33



Mars is in the western evening sky in western Virgo. Moving east, it approaches Saturn and at month's end an attractive grouping of Mars, Saturn and Spica might be seen low in the west after sunset.

Rise time / Set time	1st	12:30	00:43	11th	12:18	00:15	21st	12:07	23:45	31st	11:57	23:19
Magnitude / Arc Sec	1st	0.8	6.60	11th	0.9	6.28	21st	1.0	6.01	31st	1.1	5.77



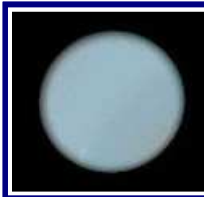
Jupiter is low in the eastern morning sky in Taurus. See Venus above. Jupiter's System II longitude is 181°.

Rise time / Set time	1st	03:34	18:05	11th	03:01	17:36	21st	02:29	17:06	31st	01:56	16:35
Magnitude / Arc Sec	1st	-2.0	33.92	11th	-2.1	34.48	21st	-2.1	35.15	31st	-2.1	35.94



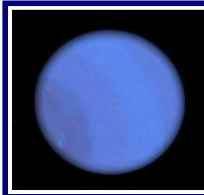
Saturn in Virgo, is located in the west after sunset. It sets near midnight. As mentioned before, the north side of its ring system is inclined toward us.

Rise time / Set time	1st	14:26	01:49	11th	13:47	01:10	21st	13:10	00:32	31st	12:33	23:49
Magnitude / Arc Sec	1st	0.7	17.48	11th	0.7	17.19	21st	0.8	16.90	31st	0.8	16.62



Uranus in Cetus, rises around midnight.

Rise time / Set time	1st	01:01	13:23	11th	00:22	12:44	21st	23:38	12:05	31st	22:59	11:25
Magnitude / Arc Sec	1st	5.8	3.50	11th	5.8	3.53	21st	5.8	3.56	31st	5.8	3.58



Neptune in Aquarius, rises in late evening and is well situated for viewing throughout the night.

Rise time / Set time	1st	23:32	10:25	11th	22:53	09:44	21st	22:13	09:04	31st	21:33	08:24
Magnitude / Arc Sec	1st	7.9	2.28	11th	7.8	2.29	21st	7.8	2.30	31st	7.8	2.31

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 July 21st as an example, at 03:32, Europa's shadow will begin to transit the Jovian disk (S). At 05:43, Europa itself will transit, so both a satellite transit and a shadow transit will be in progress (ST). At 05:50, Io's shadow will begin to transit the Jovian disk, giving two shadows and a satellite in transit (SST). At 05:56, Europa's shadow will exit the disk leaving only Io's shadow and Europa itself in transit (ST). At 06:10 the Sun rises. All times are local.

1	03:35	Jupiter Rises	
	04:18	GRS: Crosses Central Meridian	
	05:57	Sun Rises	
5	03:23	Jupiter Rises	
	03:54	Europa Eclipse Begins	
	05:59	Sun Rises	
6	03:19	Jupiter Rises	
	03:34	GRS: Crosses Central Meridian	
	04:44	Io Eclipse Begins	
	05:59	Sun Rises	
7	03:16	Jupiter Rises	
	04:12	Io Shadow Transit Ends	T
	05:05	Io Transit Ends	
	06:00	Sun Rises	
8	03:13	Jupiter Rises	
	05:13	GRS: Crosses Central Meridian	
	06:01	Sun Rises	
12	03:00	Jupiter Rises	
	04:24	Ganymede Occultation Begins	
	06:03	Sun - Rises	
13	02:57	Jupiter Rises	
	04:22	GRS: Crosses Central Meridian	
	06:04	Sun - Rises	
14	02:54	Jupiter Rises	
	02:55	Europa Transit Begins	ST
	03:18	Europa Shadow Transit Ends	T
	03:56	Io Shadow Transit Begins	ST
	04:54	Io Transit Begins	STT
	05:19	Europa Transit Ends	ST
	06:05	Sun Rises	
15	02:50	Jupiter Rises	
	04:18	Io Occultation Ends	
	06:01	GRS: Crosses Central Meridian	
	06:06	Sun Rises	
18	02:41	Jupiter Rises	
	03:32	GRS Crosses Central Meridian	
	06:08	Sun Rises	
19	02:37	Jupiter Rises	
	04:36	Ganymede Eclipse Begins	
	06:09	Sun Rises	
20	02:34	Jupiter Rises	
	05:11	GRS Crosses Central Meridian	
	06:10	Sun Rises	
21	02:31	Jupiter Rises	
	03:32	Europa Shadow Transit Begins	S
	05:43	Europa Transit Begins	ST
	05:50	Io Shadow Transit Begins	SST
	05:56	Europa Shadow Transit Ends	ST
	06:10	Sun Rises	
22	02:28	Jupiter Rises	
	03:02	Io Eclipse Begin	
	06:11	Sun Rises	
23	02:24	Jupiter Rises	
	02:28	Io Shadow Transit Ends	T
	02:41	GRS: Crosses Central Meridian	
	02:50	Europa Occultation Ends	T
	03:33	Io Transit Ends	
	06:12	Sun Rises	
25	02:18	Jupiter Rises	
	04:20	GRS: Crosses Central Meridian	
	06:14	Sun Rises	
27	02:11	Jupiter Rises	
	05:58	GRS: Crosses Central Meridian	
	06:16	Sun Rises	
28	02:08	Jupiter Rises	
	06:10	Europa Shadow Transit Begins	S
	06:16	Sun Rises	
29	02:05	Jupiter Rises	
	04:56	Io Eclipsed Begins	
	06:17	Sun Rises	
30	02:01	Jupiter Rises	
	02:12	Io Shadow Transit Begins	S
	03:21	Io Transit Begins	ST
	03:27	Ganymede Transit Begins	STT
	03:29	GRS: Crosses Central Meridian	
	04:22	Io Shadow Transit Ends	TT
	05:21	Ganymede Transit Ends	T
	05:31	Io Transit Ends	
	05:33	Europa Occultation Ends	
	06:18	Sun Rises	
31	01:58	Jupiter Rises	
	02:46	Io Occultation Ends	
	06:19	Sun Rises	

Suggested Deep Sky Objects for July

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° representing North, 90° representing East, etc.]

Objects for Binoculars							
RA	Dec	Number	Mag(s)	Size/Sep.	PA	Const.	Type of Object
18 ^h 03.8 ^m	-24° 23'	M8	6.8v (oc)	45'x30'		Sgr	"Lagoon Neb." + Cl. 113*
18 ^h 16.5 ^m	-18° 50'	M24	4.6v	95'		Sgr	Sm Sagittarius Star Cloud
18 ^h 36.4 ^m	-23° 54'	M22	5.1v	24'		Sgr	Globular Cluster
19 ^h 59.6 ^m	+22° 43'	M27	7.3v	348"		Vul	Pl. Neb. "Dumbbell Nebula"
18 ^h 51.1 ^m	-06° 16'	M11	5.8v	13'		Sct	"Wild Duck Cluster"
19 ^h 25.4 ^m	+20° 11'	Cr399	3.6v	60'		Vul	Cluster 40*, "Coathanger"
Objects for Small Telescopes (2-6 inch)							
RA	Dec	Number	Mag(s)	Size/Sep.	PA	Const.	Type of Object
18 ^h 02.3 ^m	-23° 02'	M20	-	20'x20'		Sgr	"Trifid Nebula"
18 ^h 20.8 ^m	-16° 11'	M17	Cl. 6.0v	20'x15'		Sgr	"Omega/Swan Neb" + Cl.
18 ^h 24.5 ^m	-24° 52'	M28	6.8v	11.2'		Sgr	Globular Cluster
18 ^h 45.2 ^m	-09° 24'	M26	8.0v	14'		Sct	Open Cluster 30*
18 ^h 53.6 ^m	+33° 02'	M57	8.8v	>71"		Lyr	Pl. Neb. "Ring Nebula"
19 ^h 08.8 ^m	+34° 46'	E2470	6.6, 8.6	13.4"	272°	Lyr	Double Star, w/E2474
19 ^h 09.1 ^m	+34° 36'	E2474	6.7, 8.8	16.2"	262°	Lyr	Double Star, w/E2470
Objects for Medium Telescopes (8-14 inch)							
RA	Dec	Number	Mag(s)	Size/Sep.	PA	Const.	Type of Object
16 ^h 04.4 ^m	-11° 22'	Xi Sco	4.8, 7.3	7.6"	51°	Sco	Double Star, w/E1999
18 ^h 18.4 ^m	-18° 25'	NGC 6603	11.1p	5.0'		Sgr	Open Cl. In M24
18 ^h 44.3 ^m	+39° 40'	Epsilon Lyr	5.1, 5.4	2.6", 2.3"		Lyr	"Double, Double" Star
19 ^h 16.6 ^m	+30° 11'	M56	8.3v	7.1'		Lyr	Globular Cluster
19 ^h 18.4 ^m	+06° 33'	NGC 6781	11.4v	109"		Aql	Planetary Nebula
19 ^h 52.2 ^m	+29° 25'	NGC 6834	7.8v	5'		Vul	Open Cluster 50*
19 ^h 53.8 ^m	+18° 47'	M71	8.0v	7.2'		Sge	Globular Cluster
Objects for Larger Telescopes (16-inch & larger) Challenge Objects							
RA	Dec	Number	Mag(s)	Size/Sep.	PA	Const.	Type of Object
18 ^h 17.6 ^m	+36° 46'	Eta Sgr	3.2, 7.8	3.6"	105°	Sgr	Double Star
18 ^h 31.4 ^m	+32° 21'	M69	7.6v	7.1'		Sgr	Globular Cluster
18 ^h 42.2 ^m	-32° 18'	M70	8.0v	7.8'		Sgr	Globular Cluster
18 ^h 55.1 ^m	-30° 29'	M54	7.6v	9.1'		Sgr	Globular Cluster
19 ^h 14.6 ^m	-02° 42'	NGC 6772	12.7v	>62"		Aql	Planetary Nebula
19 ^h 30.6 ^m	+20° 16'	NGC 6802	8.8v	3.2'		Vul	Open Cluster 50*
19 ^h 31.6 ^m	-09° 13'	NGC 6804	12.0v	31" x 66"		Aql	Planetary Nebula

2012 Star Party Dates**Wagman Obs.**

Jul 27 – 28
 Aug 24 – 25
 Sep 8 * – 22
 Oct 6 * – 20

Mingo Obs.

Jul 6 – 7, 20 - 21
 Aug 10 – 11
 Sep 8 – 22
 Oct 6 – 20

* Moonrise

Executive Committee Appointments

AAAP president John Holtz has appointed four members to serve on the club's Executive Committee.

They are: Eric Fischer, Joyce Osborne-Fischer, Bill Moutz and Chris Mullin.

They join the 2011 - 2012 elected executive officers and the observatory directors and assistant directors in constituting the club leadership for the coming year.

Guide Star Submissions:

All AAAP members are encouraged to submit items to the club newsletter. Articles, images, observations, notices, ads, book, software and equipment reviews, all are welcome.

The Guide Star is posted online at month's end to both the club web site and the file section of the Yahoo Group AAAPgh.

Please submit items as early as possible for inclusion in the coming issue. Forward submissions or questions to: gseditor@3ap.org

AAAP Welcomes a New Member

David Pettersen
 Gary Ganzer

Amateur Astronomers Association of Pittsburgh, Inc.**2011-2012 Executive 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

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_2012.pdf

New Membership Form can be found at:

http://www.3ap.org/AAAP_New_MemForm_2012.pdf