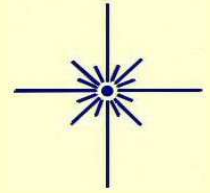




# The Guide Star

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



January 2013

Volume 47, No. 1

## AAAP General Business Meeting

Friday, January 11, 2013, 19:30  
Carnegie Science Center

**Topic: Astronomical Imaging: Seeing the Invisible – Comparison and Discussion of Image processing techniques for Terrestrial and Astronomical Images**  
**Speaker: Nathan Brandt**

Where astrophotography is concerned, there is no absolute truth.

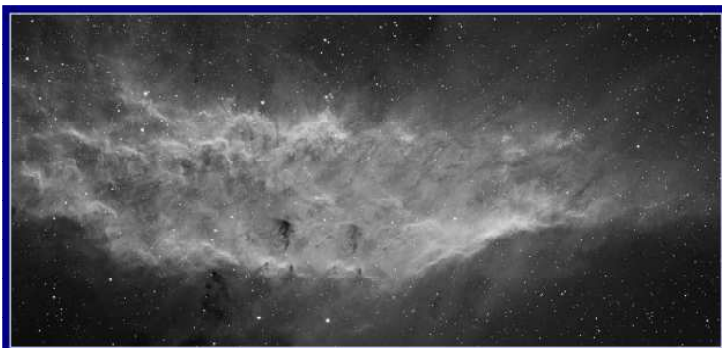
Art and Science conspire to create the beautiful images we're all familiar with, but where do we draw the line between real and fake?

I will provide a short non-technical introduction to astronomical image processing and compare astronomical processing techniques to historical film processing techniques used in terrestrial photography. Comparisons of processing techniques on the same object will be discussed and key differences and benefits to different styles will be noted. I will ask the audience to consider astrophotography in the same way that we consider fine art; what makes a great astrophotograph?

This will not be an astrophotography how-to but rather a thought provoking discussion on aesthetics and how we bridge the gap between the eyepiece and the astrophoto. – **Nathan Brandt**



**SH2-157 by Nathan Brandt.**  
**First Place, Nebula Category 2012**  
**Brunelle Astrophotography Contest**



**California Nebula by Nathan Brandt.**

[ My all-time favorite image of this object. The choice of black & white is perfect for highlighting its intricate structure. - **GS Editor** ]

## AAAP Celebrates at the Annual Holiday Party

Approximately 70 members and guests attended the December 15<sup>th</sup> meeting/annual holiday party at the Buffalo Inn, our main focus being good eats and merriment. The overall consensus was that holding the party on Saturday was a good idea. It was suggested that next year's party should begin with dinner at 6 pm.

Thanks to everyone who brought many delicious food dishes and desserts which complimented the deli trays provided by the club. No one went home hungry! Special thanks go to Bill Yorkshire, Gene Kulakowski, Mike and Deb Meteney, Bill Roemer, Katie Holtz, Lori Seitz, and others for help with set up and clean up.

After our dinner, awards and special recognitions were presented. The winning entries from the Brunelle Astrophoto Contest (see last month's newsletter) were projected, and the winners were presented with a certificate.

A special recognition was bestowed on member Dick Haddad for all of the work he has done for the Mingo Creek Park Observatory. Without his far reaching insight, kind-heartedness, ability to make connections and fund raising abilities, it is unlikely that the observatory would even exist today. We are grateful for his latest involvement, along with others, to upgrade the observatory's planetarium. In gratitude for all of Dick's work, the planetarium is now named the Richard Y Haddad Planetarium. [See article below]

Member Bill Moutz recently summed it up:

"My hat goes off to all involved that helped purchase, install and operate this new system. It is OUTSTANDING. The room was filled to capacity with many children sitting on the floor. All there were spell bound by the program. We have indeed a really great observatory that all should be extremely proud of."

The winners of the annual service awards are as follows:

- **The George Lindbloom Award** – presented to the male member who made significant contributions during the year – went to *Art Glaser, George Guzik, Bill Roemer, and Bill Yorkshire*. These four gentlemen helped the club through a difficult turmoil by serving on the Special Investigation Committee.
- **The Lois Harrison Award** – presented to the female member who made significant contributions during the year – went to *Kelly Fletcher*. Kelly's calm, straight-forward manner is a great asset on the Executive Committee and as the club's Corresponding Secretary.
- **The Brashear Award** – presented periodically to the member who has made sustained contributions over the years – was presented posthumously to *John Close*. Among many contributions, John helped with the less-than-glamorous job of parking patrol at Wagman Observatory star parties, even providing his own "famous" flashlight. John collected and

handed out old magazines at the Carnegie Science Center Astronomy weekends and he offered his wisdom on the list serve. Just prior to his passing in May 2012, John served on the Nominating Committee, helping to find candidates to run for office. His jovial presence will be missed.

The evening ended with the door prize drawing. Vice President Terry Trees contacted many astronomical vendors who provided prizes totaling more than \$1000. Thanks go to Terry for all the legwork that went into obtaining these prizes. Together with the prizes brought by individual members, there were enough prizes to go through the door prize tickets one and a half times. Our luckiest winner was our youngest attendee who went home with two framed Bill Snyder astrophotos and holiday balloons.

Here's to a healthy and prosperous New Year for each of you and the AAAP.

*- John Holtz, President AAAP*

### **For Your Consideration, Friends of the AAAP**

The AAAP's Christmas Party was held Saturday, December 15, at the Buffalo Inn in South Park Township. There was plenty of food and it was great fun talking to everyone in such a relaxed setting. A short business meeting was held, including honoring a number of people for their contributions to the club and we concluded the night with the annual door prize drawing.

I had written to a number of vendors requesting door prize donations and the ones listed below responded. These vendors donated more than \$1,000 in door prizes!

By the way, if you plan to purchase some astronomical equipment, please consider purchasing from one or some of the following if at all possible. After all, they are supporting us, so let's try to support them.

Astrocards  
<http://www201.pair.com/resource/astro.html/AstroCards/>

Astrogizmos  
<http://www.astrogizmos.com/>

Astronomy Magazine/Kalmbach Publishing  
<http://www.astronomy.com>

AstroSystems, Inc.  
<http://www.astrosystems.biz>

Cambridge University Press  
<http://www.cambridge.org>

Celestron, Inc.  
<http://www.celestron.com>

JMI Telescopes  
<http://www.telescopes.com>

Knightware, LLC  
<http://www.knightware.biz>

Max's Allegheny Tavern  
537 Suismon Street Pgh

National Geographic Society  
<http://shop.nationalgeographic.com>

Orion Telescopes and Binoculars  
<http://www.telescope.com>

Vixen Optics/Mr. Star Guy  
<http://www.mrstarguy.com/>

Thanks very much for your consideration.

*- Terry Trees, Vice President AAAP*

### **Proposed Change to Club By-laws**

Changes to our club by-laws are made by a two-thirds (2/3) vote of the regular members in attendance at regularly scheduled or special meeting.

Required notice must be given in writing not less than one (1) month in advance.

Included for your review is the wording of a proposed change to the club by-laws concerning membership review by the Executive Committee:

#### **Proposed Change:**

Section 1, Membership: Any person with an interest in astronomy or a related science may become a member of the AAAP upon approval by a majority of the Executive Committee, upon approval by a majority of the membership present at a regular meeting, and upon payment of the prescribed dues to the Treasurer.

Section 2, Membership Categories: The Executive Committee shall determine the membership categories available to new applicants and renewing members. The categories shall be described where appropriate.

For reference, **the original text** is as follows:

Section 1, Regular Member: Any person with an interest in astronomy or a related science may become a member of the AAAP upon acceptance of the By-Laws, upon approval by the membership, and upon payment of the prescribed dues to the Treasurer.

Section 2, Junior Member: Those who have not yet attained the age of 18 shall be granted a membership at a reduced rate of dues. The dues for this membership shall be discounted by an amount determined by the Executive Committee.

*- John Holtz, President AAAP*

From the Club Observatories

Star Party Schedule for 2013

Mingo	Wagman	Closest Phase
	Feb 16 (WWF)	First Qtr Feb 17
Apr 19-20	Apr 19-20	First Qtr Apr 18
May 17-18	May 17-18	First Qtr May 18
Jun 14-15	Jun 14-15	First Qtr Jun 16
Jul 12-13	Jul 12-13	First Qtr Jul 15
Aug 9-10	Aug 9-10	First Qtr Aug 14
Sep 7 (DS)		New Sep 5
	Sep 14	First Qtr Sep 12
	Sep 21 (MR)	Full Sep 19
Sep 28 (DS)		Last Qtr Sep 27
Oct 12	Oct 12	First Qtr Oct 11
Oct 26 (DS)	Oct 26 (DS)	Last Qtr Oct 26
Nov TBD (BUSF)		

WWF - Wagman Winterfest      DS - Dark Sky  
 BUSF - Bundle-up Starfest      MR - Moon Rise



Mingo Creek Park Observatory

Mingo Security

All gate and door combinations for Mingo Creek Park Observatory will be reset after January 1.

To obtain new combinations, contact Bill Roemer by telephone. They will not be given out by email. To obtain combinations your dues and key fees (if applicable) must be current.

- Bill Roemer

Dick Haddad Honored

Dick Haddad was honored at the AAAP Christmas Party on December 15. Moving on the recommendation of the Mingo Committee, the Executive Committee approved the naming of the MCPO planetarium as "Richard Y. Haddad Planetarium Theater."

This was done in recognition of Dick's outstanding and continuing contributions to the observatory. He was instrumental in conceiving the observatory, selecting its location, working with Washington County Commissioners and the Parks and Recreation Department to obtain approval of the observatory project, and raising funds to have the observatory constructed and equipped.

Dick's heart has been particularly focused on the planetarium. The installation of new projection and sound equipment in the planetarium presented an opportunity for the AAAP to bestow this honor.

- Bill Roemer

*It's the afternoon of the Bundle-up Starfest at Mingo Observatory and Mike Meteney is using the club's high-tech glare shield to set up the 10-inch refractor for solar observing.*



Mingo Star Party Volunteers

At MCPO we enjoyed another successful Star Party season. A total of 18 public and private star parties were attended by 1436 visitors. 48 members volunteered a total of 227 times.

Here are the top 18 volunteers in order of the most SPs:

DeSantis, Kathy	18	Kobus, Ken	11
Kulakowski, Gene	18	Klein, Fred	8
Roemer, Bill	18	Martch, Colleen	8
Guzik, George	14	Bishop, Melody	6
Johnson, Jon	13	Leis, Gene	6
Meteney, Mike	13	Moss, Ed	6
Haddad, Dick	12	Rusch, Florence	6
Martch, Nick	12	Skowvron, Mike	6
Diller, John	11	Peden, Dan	4

These eighteen members accounted for 84% of total volunteer numbers. We thank all the members who gave their valuable time to make this star party season so successful.



**Nicholas E. Wagman Observatory**

**Wagman Security**

Gate and door combinations were changed as of December 12.

Contact me, Nate Brandt, Bill Yorkshire or Rowen Poole with proof of membership for 2013 in order to get the gate combination at Wagman Observatory.

When you pay the key fee for the building, contact me or Nate.

- Tom Reiland

**Wagman Star Party Volunteers**

We enjoyed another successful Star Party season at Wagman Observatory. A total of 17 public and private star parties were attended by 1,150 visitors and 58 members volunteered a total of 260 times.

Here are the top 20 volunteers in order of the most SPs on down:

Tom Reiland	17	Kelly Fletcher	7
Bill Yorkshire	16	Frank Pastin	7
Bill Hayeslip	15	Matt Maskas	7
Rowen Poole	14	Flac Stifel	7
Eric Fischer	11	Don Hoecker	7
Joyce Osborne-Fischer	11	John Holtz	6
Diane Yorkshire	11	Mike Nizinski	6
Mary DeV Vaughn	9	Phil Breidenbach	5
Pete Zapadka	8	Fred Klein	5
Tim Manka	8	Matt Jones	5

These twenty members accounted for 70% of total volunteer numbers though they were slightly more than one third of all of the helpers.

Our thanks go out to all the members who gave their valuable time to make the 25th Anniversary of Wagman Observatory a memorable one.

- Tom Reiland, Director

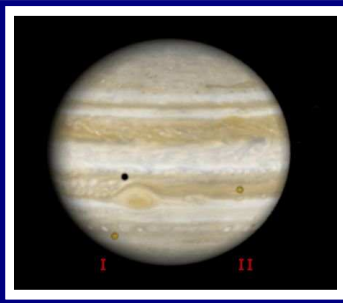
**For Observers**

Astronomers are well acquainted with frustration. After last month's impressive Geminid impressive display, aided by a moonless sky and an almost perfectly timed peak, the conditions accompanying this year's first major meteor shower, the Quadrantids, can only come as a disappointment.

Because the Earth's orbit intersects the plane of the Quadrantid meteor stream at a near perpendicular angle, the peak period of the shower has always been brief, perhaps lasting no more than an hour. So the ideal viewing window is always narrow.

Compounding the problem, 2013's Quadrantid peak is forecast for 08:00 local time on January 3rd, after sunrise, and a waning gibbous Moon, about 70% illuminated, will be above the horizon all the prior night, hindering observers who might want try their luck in the pre-dawn hours.

For hearty (or fool-hardy) souls, practical maximum ZHR is 80, reached in 1932 and the radiant is in northern Boötes.



**Jupiter on Jan 17, at approx. 1800**

***Ganymede is to the east (I) while Io is to the west (II). Io's shadow is above the GRS.***

In the early evening on January 17, a Jovian multiple satellite transit (Ganymede and Io) along with a shadow transit will take place.

Also, the Great Red Spot will be transiting the disk, eventually crossing the Central Meridian at 18:33.

The almost hour long period when all four event will be visible will begin at 17:35 local time.

On January 21, around 2100, the lunar lighting effect known as the Golden Handle will be visible in our skies.

While the terminator of the almost 11 day-old waxing gibbous Moon begins to creep across the floor of Sinus Iridum, the Bay of Rainbows the morning Sun illuminates the semi-circular Jura Mountain Range.



Also, Jupiter will be within a degree of the Moon.

Just after midnight, at 0044 on January 24, the dark limb of the 12 day-old Moon will occult the 4.6 magnitude star  $\chi_2$  Orionis (chi) or 62 Orionis. The star will emerge at 0128 from the bright limb.

- Guide Star Editor

Sun

Mon



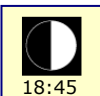

Tue

Wed

Thu

Fri

Sat

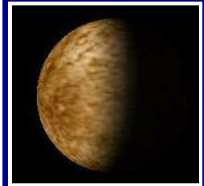
<p><i>The amateur astronomer has access at all times to the original objects of his study; the masterworks of the heavens belong to him as much as the great observatories of the world.</i></p> <p><i>And there is no privilege like being allowed to stand in the presence of the original.</i></p> <p><b>- Robert Burnham Jr.</b></p>		<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>
		<p>Quadrantid Meteor Shower Active</p>		<p>Quadrantid Meteor Shower Peak 08:00</p>	<p>December 31 to January 6</p>	
		<p>SR:07:43 SS:17:04 MR:21:34 MS:09:54 PI:88%</p>	<p>SR:07:43 SS:17:05 MR:22:37 MS:10:23 PI:81%</p>	<p>SR:07:43 SS:17:06 MR:23:41 MS:10:53 PI:72%</p>	 <p>22:57</p> <p>SR:07:43 SS:17:07 MR:**** MS:11:23 PI:63%</p>	<p>SR:07:43 SS:17:08 MR:00:46 MS:11:57 PI:52%</p>
<b>6</b>	<b>7</b>	<b>8</b>	<b>9</b>	<b>10</b>	<b>11</b>	<b>12</b>
<p>Quadrantids</p> <p>SR:07:43 SS:17:09 MR:01:54 MS:12:35 PI:41%</p>	<p>SR:07:43 SS:17:10 MR:03:04 MS:13:19 PI:30%</p>	<p>SR:07:43 SS:17:11 MR:04:13 MS:14:11 PI:20%</p>	<p>SR:07:43 SS:17:12 MR:05:20 MS:15:11 PI:11%</p>	<p>SR:07:42 SS:17:13 MR:06:20 MS:16:18 PI:5%</p>	 <p>14:43</p> <p>SR:07:42 SS:17:14 MR:07:14 MS:17:30 PI:1%</p>	<p>SR:07:42 SS:17:15 MR:07:59 MS:18:42 PI:0%</p>
<b>13</b>	<b>14</b>	<b>15</b>	<b>16</b>	<b>17</b>	<b>18</b>	<b>19</b>
<p>SR:07:42 SS:17:16 MR:08:39 MS:19:53 PI:2%</p>	<p>SR:07:41 SS:17:17 MR:09:13 MS:21:02 PI:7%</p>	<p>SR:07:41 SS:17:18 MR:09:45 MS:22:07 PI:13%</p>	<p>SR:07:40 SS:17:19 MR:10:15 MS:23:10 PI:22%</p>	<p>Jupiter Double Satellite Transit</p> <p>SR:07:40 SS:17:20 MR:10:45 MS:**** PI:31%</p>	 <p>18:45</p> <p>SR:07:39 SS:17:22 MR:11:16 MS:00:12 PI:40%</p>	<p>SR:07:39 SS:17:23 MR:11:48 MS:01:11 PI:50%</p>
<b>20</b>	<b>21</b>	<b>22</b>	<b>23</b>	<b>24</b>	<b>25</b>	<b>26</b>
<p>SR:07:38 SS:17:24 MR:12:24 MS:02:09 PI:60%</p>	<p>Lunar Lighting Effect: Golden Handle</p> <p>Jupiter near Moon</p> <p>SR:07:38 SS:17:25 MR:13:04 MS:03:04 PI:69%</p>	<p>SR:07:37 SS:17:26 MR:13:48 MS:03:57 PI:77%</p>	<p>SR:07:36 SS:17:27 MR:14:36 MS:04:47 PI:84%</p>	<p>Occultation of <math>\chi_2</math> (chi2) Orionis 00:44 by Moon's dark limb</p> <p>SR:07:36 SS:17:29 MR:15:29 MS:05:32 PI:91%</p>	<p>SR:07:35 SS:17:30 MR:16:26 MS:06:14 PI:95%</p>	 <p>23:38</p> <p>SR:07:34 SS:17:31 MR:17:25 MS:06:51 PI:98%</p>
<b>27</b>	<b>28</b>	<b>29</b>	<b>30</b>	<b>31</b>	<p>Times are local.</p> <p>SR = Sunrise, SS = Sunset, MR = Moonrise, MS = Moonset, PI = Approx. Percentage Visible Lunar Surface Illuminated Local Midnight</p>	
<p>SR:07:33 SS:17:32 MR:18:26 MS:07:25 PI:100%</p>	<p>SR:07:32 SS:17:33 MR:19:27 MS:07:57 PI:99%</p>	<p>SR:07:32 SS:17:35 MR:20:30 MS:08:27 PI:97%</p>	<p>SR:07:31 SS:17:36 MR:21:34 MS:08:57 PI:92%</p>	<p>SR:07:30 SS:17:37 MR:22:38 MS:09:28 PI:85%</p>		

**Some Solar System Highlights**

Lunar entries are listed by named phase and include maximum libration dates. Note: Values are lunar east and lunar west. 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.



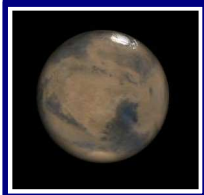
Date/Time	Phase	Arc	The Moon's Selenographic Colongitude is 135.70° at 0h UT and 138.3° at 0h local on the first day of the month. Add 12.2° each day. Max Libration dates:	
04 22:57	Last	1901		
11 14:43	New	1976		
18 18:45	First	1796	East limb on 16th (+7.2°)	West limb on 3rd (-6.6°) & 30th (-5.3°)
26 23:38	Full	1808	South limb on 14th (-6.6°)	North limb on 1st (+6.7°) & 28th (+6.6°)



Date	Rise	Set	Mag	Arc	Mercury is not visible for most of the month. It reaches superior conjunction on the 18th and will reappear in the evening sky at month's end.
01	07:07:59	16:14:58	-0.6	4.80	
10	07:34:09	16:42:47	-0.9	4.69	
20	07:55:01	17:24:54	-1.3	4.76	
30	08:06:02	18:15:47	-1.2	5.07	



Date	Rise	Set	Mag	Arc	Venus is in the eastern morning sky progressively descending into the dawn twilight. Venus will continue to get lower in the eastern sky, vanishing in late February. Invisible during March and much of April, it will next appear in the evening sky late in April.
01	06:11:59	15:34:36	-3.9	10.75	
10	06:28:25	15:45:07	-3.9	10.54	
20	06:42:08	16:01:43	-3.9	10.33	
30	06:50:17	16:22:23	-3.9	10.16	



Date	Rise	Set	Mag	Arc	Mars, low in the south west as the month begins, sinks even lower into the evening twilight as the month progresses. Even while doing this however it is moving eastward, moving from Capricornus into Aquarius on the 29th. The crescent Moon will near the planet on the evenings of the 12th and 13th. Mars is at perihelion on the 24th.
01	09:14:56	18:56:18	1.2	4.21	
10	09:00:55	18:57:13	1.2	4.17	
20	08:43:47	18:58:29	1.2	4.13	
30	08:25:14	18:59:40	1.2	4.09	



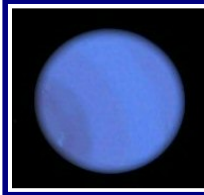
Date	Rise	Set	Mag	Arc	Jupiter, System II longitude is 189° this month. Located just north of the Hyades, and completing a retrograde loop at month's end, it is perfectly placed for observation. On the 17th, a double satellite transit, involving Ganymede and Io, will take place.
01	14:38:20	05:18:42	-2.7	46.74	
10	14:00:16	04:39:54	-2.7	45.75	
20	13:19:01	03:58:13	-2.6	44.48	
30	12:38:57	03:18:10	-2.5	43.13	



Date	Rise	Set	Mag	Arc	Saturn is positioned for early morning viewing in western Libra. The ring system, which we will continue to view from the north until 2025, will be inclined to our line of sight by about 18° until October when it will begin to open to an eventual 22° by year's end.
01	02:47:30	13:25:15	0.6	16.18	
10	02:15:14	12:51:44	0.6	16.40	
20	01:38:42	12:14:09	0.6	16.67	
30	01:01:23	11:36:09	0.6	16.95	



Date	Rise	Set	Mag	Arc	Uranus is in the western evening sky in Pisces. During the first half of the month, it will be located near the meridian as the Sun sets.
01	11:45:24	23:57:55	5.8	3.48	
10	11:10:24	23:23:28	5.9	3.45	
20	10:31:42	22:45:33	5.9	3.42	
30	09:53:09	22:08:00	5.9	3.40	



Date	Rise	Set	Mag	Arc	Neptune in Aquarius is low in the western evening sky. It disappears into evening twilight by the end of the month
01	10:25:02	21:08:30	7.9	2.19	
10	09:50:18	20:34:26	8.0	2.18	
20	09:11:47	19:56:45	8.0	2.17	
30	08:33:21	19:19:12	8.0	2.17	

**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.

The codes following the entries indicate what is currently happening, for example, T indicates a satellite transit, S indicates a shadow transit, ST indicates both a satellite and a shadow are transiting, STT indicates one shadow and two satellites are in transit. All times are local.

**December**

- 31 16:59 Eur: Shadow Trans Ends
- 19:28 GRS: Crosses CM
- 21:09 Io : Occultation Ends

**January**

- 1 00:02 Io : Eclipse Ends
- 1 19:00 Io : Shadow Transit Begins ST
- 20:26 Io : Transit Ends S
- 21:11 Io : Shadow Transit Ends
- 2 01:18 GRS: Crosses CM
- 2 18:31 Io : Eclipse Ends
- 21:09 GRS: Crosses CM
- 3 17:01 GRS: Crosses CM
- 4 02:19 Eur: Transit Begins T
- 02:56 GRS: Crosses CM
- 03:52 Eur: Shadow Transit Begins ST
- 04:42 Eur: Transit Ends S
- 4 22:47 GRS: Crosses CM
- 5 18:39 GRS: Crosses CM
- 20:25 Eur: Occultation Begins
- 6 00:30 Eur: Eclipse Ends
- 04:28 Io : Occultation Begins
- 04:34 GRS: Crosses CM
- 7 00:12 Gan: Occultation Begins
- 00:26 GRS: Crosses CM
- 01:36 Io : Transit Begins T
- 02:15 Gan: Occultation Ends T
- 02:26 Io : Shadow Transit Begins ST
- 03:33 Gan: Eclipse Begins ST
- 03:46 Io : Transit Ends S
- 04:38 Io : Shadow Transit Ends
- 7 17:10 Eur: Shadow Transit Begins ST
- 17:52 Eur: Transit Ends S
- 19:35 Eur: Shadow Transit Ends
- 20:17 GRS: Crosses CM
- 22:55 Io : Occultation Begins
- 8 01:57 Io : Eclipse Ends
- 8 20:02 Io : Transit Begins T
- 20:55 Io : Shadow Transit Begins ST
- 22:13 Io : Transit Ends S
- 23:07 Io : Shadow Transit Ends
- 9 02:04 GRS: Crosses CM
- 9 17:22 Io : Occultation Begins
- 9 20:26 Io : Eclipse Ends
- 9 21:55 GRS: Crosses CM

- 10 17:35 Io : Shadow Transit Ends
- 17:41 Gan: Shadow Transit Begins S
- 17:47 GRS: Crosses CM
- 19:53 Gan: Shadow Transit Ends
- 11 03:42 GRS: Crosses CM
- 11 23:34 GRS: Crosses CM
- 12 19:25 GRS: Crosses CM
- 22:47 Eur: Occultation Begins
- 03:08 Eur: Eclipse Ends
- 14 01:12 GRS: Crosses CM
- 03:23 Io : Transit Begins T
- 03:40 Gan: Occultation Begins T
- 14 17:50 Eur: Transit Begins T
- 19:46 Eur: Shadow Transit Begins ST
- 20:14 Eur: Transit Ends S
- 21:04 GRS: Crosses CM
- 22:12 Eur: Shadow Transit Ends
- 15 00:43 Io : Occultation Begins
- 03:52 Io : Eclipse Ends
- 15 21:50 Io : Transit Begins T
- 22:50 Io : Shadow Transit Begins ST
- 16 00:01 Io : Transit Ends S
- 01:02 Io : Shadow Transit Ends
- 02:51 GRS: Crosses CM
- 16 19:10 Io : Occultation Begins
- 22:21 Io : Eclipse Ends
- 22:42 GRS: Crosses CM
- 17 17:19 Io : Shadow Transit Begins ST
- 17:35 Gan: Transit Begins STT
- 18:29 Io : Transit Ends ST
- 18:33 GRS: Crosses CM
- 19:31 Io : Shadow Transit Ends T
- 19:41 Gan: Transit Ends
- 21:41 Gan: Shadow Transit Begins S
- 23:55 Gan: Shadow Transit Ends
- 19 00:20 GRS: Crosses CM
- 19 20:12 GRS: Crosses CM
- 01:11 Eur: Occultation Begins
- 21 01:59 GRS: Crosses CM
- 21 20:13 Eur: Transit Begins T
- 21:50 GRS: Crosses CM
- 22:22 Eur: Shadow Transit Begins ST
- 22:37 Eur: Transit Ends S
- 00:48 Eur: Shadow Transit Ends
- 02:31 Io : Occultation Begins

- 22 17:42 GRS: Crosses CM
- 23:40 Io : Transit Begins T
- 00:46 Io : Shadow Transit Begins ST
- 01:51 Io : Transit Ends S
- 02:58 Io : Shadow Transit Ends
- 03:37 GRS: Crosses CM
- 23 19:05 Eur: Eclipse Ends
- 20:59 Io : Occultation Begins
- 23:29 GRS: Crosses CM
- 24 00:16 Io : Eclipse Ends
- 24 18:07 Io : Transit Begins T
- 19:15 Io : Shadow Transit Begins ST
- 19:20 GRS: Crosses CM
- 20:18 Io : Transit Ends S
- 21:10 Gan: Transit Begins ST
- 21:27 Io : Shadow Transit Ends T
- 23:19 Gan: Transit Ends
- 25 01:41 Gan: Shadow Transit Begins S
- 25 18:45 Io : Eclipse Ends
- 26 01:07 GRS: Crosses CM
- 26 20:59 GRS: Crosses CM
- 28 02:46 GRS: Crosses CM
- 28 17:51 Gan: Eclipse Ends
- 22:37 GRS: Crosses CM
- 22:39 Eur: Transit Begins T
- 00:58 Eur: Shadow Transit Begins ST
- 01:03 Eur: Transit Ends S
- 29 18:29 GRS: Crosses CM
- 01:30 Io : Transit Begins T
- 02:42 Io : Shadow Transit Begins ST
- 30 21:44 Eur: Eclipse Ends
- 22:49 Io : Occultation Begins
- 31 00:16 GRS: Crosses CM
- 02:12 Io : Eclipse Ends
- 31 19:58 Io : Transit Begins T
- 20:08 GRS: Crosses CM
- 21:11 Io : Shadow Transit Begins ST
- 22:09 Io : Transit Ends S
- 23:23 Io : Shadow Transit Ends

**February**

- 1 00:51 Gan: Transit Begins T

**The AAAP Welcomes Its New Members**

KOSTA ADELIANAKIS & FAMILY  
 ROBERT ANGELONE  
 JIM FAZIO  
 RYAN S. REED

**Membership Information**

AAAP Member Dues:	\$ 30.00
Student Membership (K-12 & full time college student):	\$ 20.00
Family Membership	\$ 45.00

## 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](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](http://www.3ap.org/AAAP_New_MemForm_2013.pdf)

**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](mailto:gseditor@3ap.org)

**Amateur Astronomers Association Of Pittsburgh, Inc****Executive Committee****2012-2013 Elected Officers**

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

**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