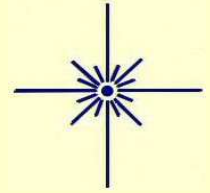




# The Guide Star

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



December 2012

Volume 46, No. 12

## AAAP's Annual Holiday Party

**Saturday, December 15, 2012, 19:30 (7:30 pm)  
Buffalo Inn, South Park**

The highlight of the AAAP social calendar, the annual Holiday Party will be held on Saturday December 15. While the occasion doubles as the club business meeting and service award presentation event, the focus is on relaxation, fun, food and mixing with fellow members.



Having hosted previous AAAP parties, the venue is the Buffalo Inn in South Park, located on Buffalo Drive, off Brownsville Road near the intersection with Corrigan Drive. It's across the street from the Fairgrounds.

The Inn shares a parking lot with the park office and there is additional parking across Corrigan Drive at the Fairgrounds, as well as above Buffalo Inn.

As in prior years, the club will provide cold cuts, cheese, condiments, plates and utensils while attendees are asked to bring along their favorite dishes and beverages. Salads, sides and dessert are especially welcome. **Please coordinate the food you'll bring with John Holtz.**

Also, the club will provide a selection of new door prizes – all attendees will get prize tickets, so everyone has a chance. But members are also invited to contribute new or truly usable astronomical articles to enhance everyone's chances of taking home a gift.

The Holiday Party is the one occasion when the entire club membership is invited to kick back, have a meal, discuss their hobby and basically just enjoy each other's company.

It's an excellent way to close out the AAAP year and capture a bit of warmth to help us on those chilly nights beside the telescope that are just around the corner.

## Brunelle Astrophotography Contest Winners

Historic Allegheny Observatory was the location for this year's event. Expanded to five categories, the Brunelle produced sixteen winning images. These will be displayed at both club observatories. Congratulations to all who entered. Here are the winners:

### Category: Nebulae

**1st place:**

**SH2-157 by  
Nate Brandt**



**2nd Place:**

**Wizard Nebula by  
Frank Wielgus**



**3rd Place:**

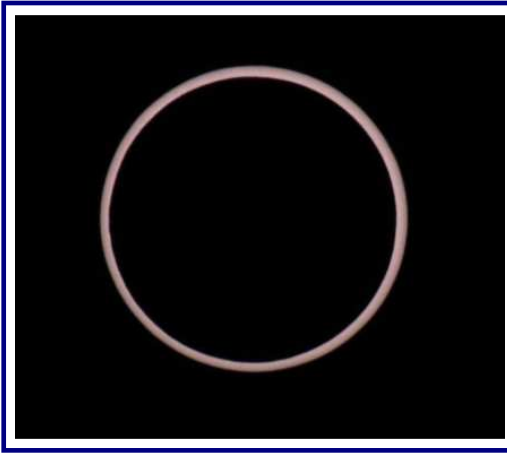
**Pelican Hubble  
Pallet by  
Nate Brandt**



Category: Lunar, Planetary, Solar



1st Place: Lunar Mosaic by Nate Brandt

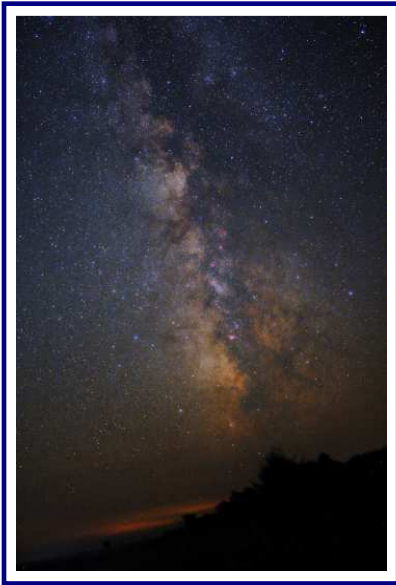


2nd Place: Annular Eclipse by Fred Klein



3rd Place: Clavius by Nate Brandt

Category: Clusters



1st: Milkyway by Matthew Dieterich

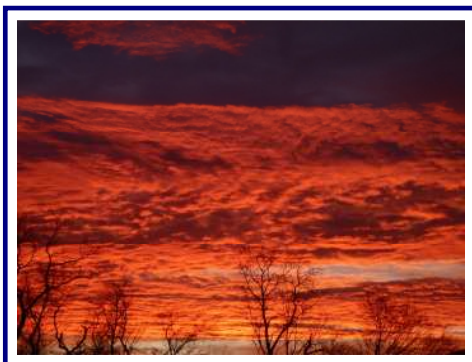


2nd Place: M13 by Nate Brandt



3rd Place: Owl Cluster by Frank Wielgus

Category: Atmospheric



1st Place: Sunrise Storm by Dan Peden



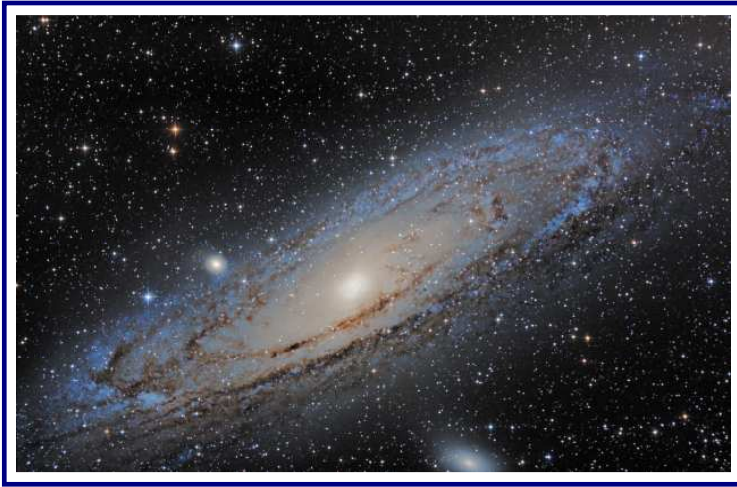
2nd Place: Lightning by Matthew Dieterich



3rd: Starry Morning by Matthew Dieterich



Category: Galaxies



1st place: M31 by Matthew Dieterich



2nd place: M51 by Frank Wielgus



3rd place  
Tie:  
M101  
by  
Frank  
Wielgus



3rd place Tie:  
M31 Widefield  
by  
Nate Brandt

For Observers:

On Christmas Evening

Readers of last December's Guide Star might recall that Rutgers astronomer Michael Molnar, using both astronomical and astrological beliefs current around the time of Christ, suggests that Jupiter may be the "star" of Bethlehem which figures so prominently in the rich traditions of the season.

If his thesis is correct, the night sky on December 25th is an exceptionally fitting one.

Jupiter will be less than a degree away from the waxing 12 day old Moon. They will be north of the Hyades and just east of the Pleiades, one of the richest stellar neighborhoods in the entire sky.



**For Observers: December's Geminid Meteor Shower**

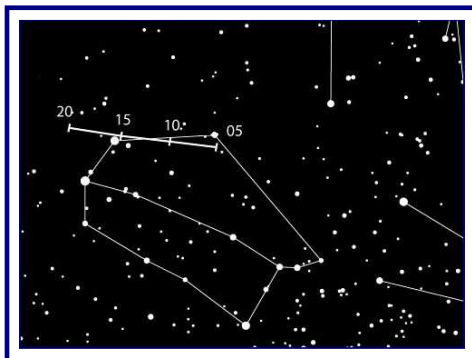
"...the finest of all the annual showers..."

"...one of the finest, and probably the most reliable, of the major annual showers presently observable...."

The Geminid radiant, on the day of peak activity, December 17, is located near Castor. It rises about an hour after sunset and climb in our skies over the course of the evening all the while to our advantage. We are doubly fortunate this year in that the new Moon falls on the day of peak activity.

*The Geminid radiant drifts from west to east over the period of the shower's activity.*

*On the day of peak activity, the radiant will lie just to the south of magnitude 1.5 Castor.*



Here are the essentials on this year's shower:

Activity will begin on December 4 and continue through December 17. Predicted maximum will be at 18:30 local time on the 13th. Near-peak rates can persist for almost a day.

The zenith hourly rate for recent Geminids has routinely surpassed 60 or 70 per hour at maximum while possible rates are estimated at 120.

Shower intensity is said to build slowly through early December until maximum followed by a sharp drop in meteor count. This behavior has changed over the years, probably because Earth passes through different portions of the meteoroid stream over time.

The Geminids are also noteworthy because of their source. Most well-known showers are known to originate from the debris of comets: The Leonids are tied to Comet 55P/Tempel-Tuttle, the Perseids to Comet 109P/Swift-Tuttle, Halley's Comet is the source of both the Eta Aquarids and the Orionids. But the source of the Geminids was a mystery until 1983 when 3200 Phaethon, an Apollo type asteroid – a type of Earth crossing body – was discovered. Its orbit indicated that it was the parent body for the Geminids.

- Guide Star Editor

**For Observers: A December Occultation**

The dark limb of the 6.5 day-old (first quarter) Moon will occult the 5.6 magnitude star 16 Piscium at approximately 18:52 on December 19. The star will emerge from behind the bright limb at approximately 19:41.

16 Piscium is interesting in that its status as a spectroscopic binary was confirmed in 2006 when the star was occulted by asteroid 17 Iris.

- Guide Star Editor

**October Star Party Volunteers**

Local weather conditions were less than ideal for the last of the regularly scheduled star parties. But a corps of AAAP members still turned out to welcome visitors to the club observatories.

Thanks to the following folks who finished out the year and a final note of appreciation to everyone who gave their time in the club's effort to popularize the astronomy hobby in our area.

**Mingo Creek Park Observatory****October 6**

Nick Martch	Melody Bishop	Ed Moss
Bill Roemer	Glenn Smith	Rich Ferraro
John Diller	Jon Johnson	Barb Ferraro
Mike Meteney	Robert Angelone	George Guzik
Fred Klein	Jim Fazio	Kathy DeSantis
Dick Haddad	Tom Korpiel	Gene Kulakowski

**October 20**

Bill Roemer	George Guzik	Mike Christeson
John Diller	Jon Johnson	Kathy DeSantis
Mike Meteney	Mike Skowvron	Mary DeVaughn
Nick Martch	Ken Kobus	Ed Moss
Colleen Martch	Melody Bishop	Gene Kulakowski
	Flo Rusch	

**Wagman Observatory****October 6**

Bill Hayeslip	Ken Coles	Mathew Maskas
Mike Nizinski	Mary DeVaughn	Don Hoecker
Bill Yorkshire	Flacc Stifel	Eric Fischer
Rowen Poole	Tom Reiland	Joyce Osborne-Fischer

**October 20**

Bill Yorkshire	Rowen Poole	Bill Hayeslip
Diane Yorkshire	Kelly Fletcher	Tom Reiland

Sun

Mon





Tue

Wed

Thu

Fri

Sat

<p><i>Looking up at the stars, I know quite well That, for all they care, I can go to hell, But on earth indifference is the least We have to dread from man or beast.</i></p> <p><i>How should we like it were stars to burn With a passion for us we could not return? If equal affection cannot be, Let the more loving one be me.</i></p>		<p><i>Admirer as I think I am Of stars that do not give a damn, I cannot, now I see them, say I missed one terribly all day.</i></p> <p><i>Were all stars to disappear or die, I should learn to look at an empty sky And feel its total darkness sublime, Though this might take me a little time.</i></p> <p style="text-align: right;">W.H. Auden</p>		<p>Times are local. SR = Sunrise, SS = Sunset, MR = Moonrise, MS = Moonset, PI = Approx. Percentage Visible Lunar Surface Illuminated Local Midnight</p>		<p><b>1</b></p> <p>SR:07:24 SS:16:54 MR:19:43 MS:09:36 PI:95%</p>
<p><b>2</b></p> <p>Jupiter at Opposition</p> <p>SR:07:25 SS:16:54 MR:20:40 MS:10:14 PI:90%</p>	<p><b>3</b></p> <p>SR:07:26 SS:16:53 MR:21:39 MS:10:48 PI:84%</p>	<p><b>4</b></p> <p>Mercury at greatest Western (Morning) Elongation</p> <p>SR:07:27 SS:16:53 MR:22:40 MS:11:20 PI:76%</p>	<p><b>5</b></p> <p>SR:07:28 SS:16:53 MR:23:42 MS:11:50 PI:67%</p>	<p><b>6</b></p> <p> 10:31</p>	<p><b>7</b></p> <p>40th Anniversary Apollo 17 Last Manned Lunar Mission</p> <p>SR:07:30 SS:16:53 MR:00:46 MS:12:50 PI:46%</p>	<p><b>8</b></p> <p>SR:07:31 SS:16:53 MR:01:52 MS:13:22 PI:36%</p>
<p>Geminid Meteor Shower Activity December 4 to December 17</p>						
<p><b>9</b></p> <p>SR:07:31 SS:16:53 MR:03:01 MS:13:59 PI:25%</p>	<p><b>10</b></p> <p>SR:07:32 SS:16:53 MR:04:13 MS:14:41 PI:16%</p>	<p><b>11</b></p> <p>SR:07:33 SS:16:53 MR:05:26 MS:15:31 PI:8%</p>	<p><b>12</b></p> <p>SR:07:34 SS:16:53 MR:05:36 MS:16:29 PI:3%</p>	<p><b>13</b></p> <p> 03:42</p> <p>Geminid Maximum</p>	<p><b>14</b></p> <p>SR:07:35 SS:16:54 MR:08:39 MS:18:46 PI:1%</p>	<p><b>15</b></p> <p>AAAP Annual Holiday Party 19:30 Buffalo Inn South Park</p> <p>SR:07:36 SS:16:54 MR:09:27 MS:19:58 PI:4%</p>
<p>Geminid Meteor Shower Activity December 4 to December 17</p>						
<p><b>16</b></p> <p>Geminid Meteor Shower Activity</p> <p>SR:07:37 SS:16:55 MR:10:08 MS:21:08 PI:10%</p>	<p><b>17</b></p> <p>SR:07:37 SS:16:55 MR:10:44 MS:22:16 PI:18%</p>	<p><b>18</b></p> <p>SR:07:38 SS:16:55 MR:11:16 MS:23:20 PI:28%</p>	<p><b>19</b></p> <p>Moon occults 16 Piscium</p> <p>SR:07:39 SS:16:56 MR:11:45 MS:**** PI:38%</p>	<p><b>20</b></p> <p> 00:19</p> <p>SR:07:39 SS:16:56 MR:12:14 MS:00:23 PI:48%</p>	<p><b>21</b></p> <p>Winter Solstice 06:12</p> <p>SR:07:40 SS:16:57 MR:12:43 MS:01:23 PI:58%</p>	<p><b>22</b></p> <p>SR:07:40 SS:16:57 MR:13:14 MS:02:22 PI:67%</p>
<p><b>23</b></p> <p>SR:07:41 SS:16:58 MR:13:48 MS:03:20 PI:76%</p>	<p><b>24</b></p> <p>SR:07:41 SS:16:58 MR:14:25 MS:04:17 PI:84%</p>	<p><b>25</b></p> <p>Jupiter and the Moon near the Hyades</p> <p>SR:07:41 SS:16:59 MR:15:06 MS:05:12 PI:90%</p>	<p><b>26</b></p> <p>SR:07:42 SS:17:00 MR:15:52 MS:06:03 PI:95%</p>	<p><b>27</b></p> <p>SR:07:42 SS:17:00 MR:16:42 MS:06:52 PI:98%</p>	<p><b>28</b></p> <p> 05:21</p> <p>SR:07:42 SS:17:01 MR:17:37 MS:07:35 PI:100%</p>	<p><b>29</b></p> <p>SR:07:42 SS:17:02 MR:18:34 MS:08:15 PI:100%</p>
<p><b>30</b></p> <p>SR:07:43 SS:17:03 MR:19:33 MS:08:51 PI:98%</p>	<p><b>31</b></p> <p>SR:07:43 SS:17:03 MR:20:33 MS:09:23 PI:94%</p>	<p>SR:07:41 SS:16:59 MR:15:06 MS:05:12 PI:90%</p>	<p>SR:07:42 SS:17:00 MR:15:52 MS:06:03 PI:95%</p>	<p>SR:07:42 SS:17:00 MR:16:42 MS:06:52 PI:98%</p>	<p>SR:07:42 SS:17:01 MR:17:37 MS:07:35 PI:100%</p>	<p>SR:07:42 SS:17:02 MR:18:34 MS:08:15 PI:100%</p>

## Some Solar System Highlights

*Selenographic Colongitude* is 118.77° at 0h UT and 121.7° at 0h local 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.



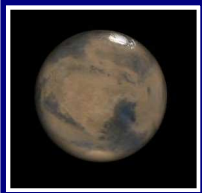
Date	Rise	Set	Mag	Arc
01	05:39:56	15:58:07	-0.2	7.32
10	05:53:14	15:49:15	-0.5	5.98
20	06:26:20	15:53:38	-0.5	5.21
30	07:01:25	16:10:10	-0.6	4.84

**Mercury** puts on its best morning appearance or apparition of 2012 in the first week of the month, being separated from the Sun by 21° on the 4th. From the 4th until the 15th, Venus will be less than 7° away. On the 12th, observers with a good eastern horizon will be able to view an alignment consisting of the crescent Moon, Mercury, Venus and Saturn, in ascending order.



Date	Rise	Set	Mag	Arc
01	05:01:02	15:30:55	-4.0	11.75
10	05:22:25	15:27:28	-4.0	11.41
20	05:45:56	15:27:38	-3.9	11.08
30	06:07:54	15:32:53	-3.9	10.80

**Venus** is in the eastern morning sky all month. It will present a waxing gibbous disk throughout December. On the 11th, it will be about one and a half degrees north of the crescent Moon



Date	Rise	Set	Mag	Arc
01	09:51:15	18:58:40	1.2	4.36
10	09:42:42	18:56:37	1.2	4.31
20	09:31:17	18:55:50	1.2	4.26
30	09:17:51	18:56:09	1.2	4.21

**Mars**, low in the southwestern evening sky, moves from Sagittarius into Capricornus late in the month. It sets in early evening.



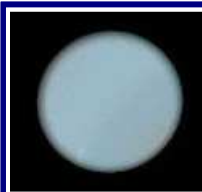
Date	Rise	Set	Mag	Arc
01	16:54:13	07:38:35	-2.8	48.39
10	16:14:17	06:57:24	-2.8	48.25
20	15:30:16	06:12:01	-2.8	47.76
30	14:46:54	05:27:29	-2.7	46.94

**Jupiter**, in Taurus, comes to opposition on the 3rd. Consequently, as can be seen from the Jupiter activity page, there are lots of satellite and shadow transits occurring close in time. Jupiter, close to the Hyades and being occulted for observers in South America and southern Africa, will form an interesting naked eye grouping on Christmas evening. Jupiter's System II longitude is 187°.



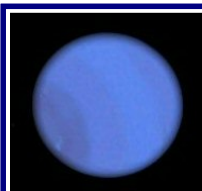
Date	Rise	Set	Mag	Arc
01	04:34:58	15:18:55	0.6	15.61
10	04:04:15	14:46:08	0.6	15.75
20	03:29:42	14:09:31	0.6	15.93
30	02:54:35	13:32:39	0.6	16.14

**Saturn** in the morning sky, moves from Virgo into Libra in early December twilight by the middle of the month. The ring system, which we will continue to view from the north until 2025, is inclined to our line of sight by about 18°.



Date	Rise	Set	Mag	Arc
01	13:47:10	02:03:11	5.8	3.57
10	13:11:37	01:27:31	5.8	3.54
20	12:32:19	00:48:17	5.8	3.51
30	11:53:12	00:09:29	5.8	3.48

**Uranus**, is well placed for early evening viewing in Pisces. It located close to magnitude 5.7 44 Piscium and magnitude 6.1 SAO 109119. The planet resumes direct or west to east motion on the 13th.



Date	Rise	Set	Mag	Arc
01	12:25:24	23:07:15	7.9	2.22
10	11:50:19	22:32:31	7.9	2.21
20	11:11:29	21:54:11	7.9	2.20
30	10:32:46	21:16:05	7.9	2.19

**Neptune** is in Aquarius. At sunset, it will be close to the meridian on most dates in December, and viewable in the western sky during early evening. Located just to the south of the magnitude 5.41 38 Aquarii, it sets before midnight throughout the month.



**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 December 9 as an example, at 18:35 with Jupiter already risen, Io will begin to transit the disk (T), followed by its shadow at 18:46 (ST). Fifty-nine minutes later, Io's transit ends, leaving only its shadow on the disk (S) which itself will exit at 20:27. At 21:20 the Great Red Spot will cross the central meridian. After midnight, on December 10, Europa will begin to transit the disk at 06:24 (T), followed by its shadow at 06:46 (ST). No other activity will be seen before sunrise or Jupiter setting. All times are local.

**November**

30 18:57 GRS: Crosses CM  
 22:22 Io : Shadow Trans Start S  
 22:26 Io : Transit Begins ST

**December**

1 00:33 Io : Shadow Trans Ends T  
 00:36 Io : Transit Ends  
 04:53 GRS: Crosses CM  
  
 1 19:43 Io : Eclipse Start  
 21:55 Io : Occultation Ends  
 2 00:44 GRS: Crosses CM  
  
 2 16:52 Io : Transit Begins ST  
 19:02 Io : Sh Ends & Tr Ends  
 20:35 GRS: Crosses CM  
 3 04:10 Eur: Sh Begins & Tr Begins ST  
 06:31 GRS: Crosses CM  
 06:31 Eur: Transit Ends S  
 06:34 Eur: Shadow Trans Ends  
  
 4 02:22 GRS: Crosses CM  
  
 4 22:12 Eur: Occultation Ends  
 22:13 GRS: Crosses CM  
 5 00:42 Eur: Eclipse Ends  
  
 5 18:04 GRS: Crosses CM  
 21:26 Gan: Transit Begins T  
 21:38 Gan: Shadow Trans Start ST  
 23:18 Gan: Transit Ends S  
 23:45 Gan: Shadow Trans Ends  
 6 04:00 GRS: Crosses CM  
 05:43 Io : Transit Begins T  
 05:48 Io : Shadow Trans Start ST  
  
 6 17:17 Eur: Transit Begins T  
 17:28 Eur: Shadow Trans Start ST  
 19:38 Eur: Transit Ends S  
 19:52 Eur: Shadow Trans Ends  
 23:51 GRS: Crosses CM  
 7 03:03 Io : Occultation Ends  
 05:20 Io : Eclipse Ends

7 19:42 GRS: Crosses CM  
 8 00:09 Io : Transit Begins T  
 00:17 Io : Shadow Trans Start ST  
 02:19 Io : Transit Ends S  
 02:28 Io : Shadow Trans Ends  
 05:38 GRS: Crosses CM

8 21:29 Io : Occultation Ends  
 23:49 Io : Eclipse Ends  
 9 01:29 GRS: Crosses CM  
  
 9 18:35 Io : Transit Begins T  
 18:46 Io : Shadow Trans Start ST  
 20:45 Io : Transit Ends S  
 20:57 Io : Shadow Trans Ends  
 21:20 GRS: Crosses CM  
 10 06:24 Eur: Transit Begins T  
 06:46 Eur: Shadow Trans Start ST

10 17:11 GRS: Crosses CM  
 18:18 Io : Eclipse Ends  
 11 03:07 GRS: Crosses CM  
  
 11 22:58 GRS: Crosses CM  
 12 00:26 Eur: Occultation Ends  
 03:19 Eur: Eclipse Ends

12 18:49 GRS: Crosses CM  
 13 00:40 Gan: Transit Begins T  
 01:38 Gan: Shadow Trans Start ST  
 02:34 Gan: Transit Ends S  
 03:46 Gan: Shadow Trans Ends  
 04:45 GRS: Crosses CM

13 19:31 Eur: Transit Begins T  
 20:04 Eur: Shadow Trans Start ST  
 21:52 Eur: Transit Ends S  
 22:29 Eur: Shadow Trans Ends  
 14 00:36 GRS: Crosses CM  
 04:47 Io : Occultation Ends

14 20:27 GRS: Crosses CM  
 15 01:53 Io : Transit Begins T  
 02:12 Io : Shadow Trans Start ST  
 04:03 Io : Transit Ends S  
 04:23 Io : Shadow Trans Ends  
 06:23 GRS: Crosses CM

15 23:13 Io : Occultation Ends  
 16 01:44 Io : Eclipse Ends  
 02:14 GRS: Crosses CM

16 17:42 Gan: Eclipse Ends  
 20:19 Io : Transit Begins T  
 20:41 Io : Shadow Trans Start ST  
 22:05 GRS: Crosses CM  
 22:29 Io : Transit Ends S  
 22:52 Io : Shadow Trans Ends

17 17:39 Io : Occultation Ends  
 17:56 GRS: Crosses CM  
 20:12 Io : Eclipse Ends  
 18 03:52 GRS: Crosses CM

18 16:55 Io : Transit Ends S  
 17:21 Io : Shadow Trans Ends  
 23:43 GRS: Crosses CM  
 19 02:41 Eur: Occultation Ends  
 05:56 Eur: Eclipse Ends

19 19:34 GRS: Crosses CM  
 20 03:55 Gan: Transit Begins T  
 05:30 GRS: Crosses CM  
 05:38 Gan: Shadow Trans Start ST  
 05:52 Gan: Transit Ends S

20 21:46 Eur: Transit Begins T  
 22:40 Eur: Shadow Trans Start ST  
 21 00:07 Eur: Transit Ends S  
 01:05 Eur: Shadow Trans Ends  
 01:21 GRS: Crosses CM

21 21:13 GRS: Crosses CM  
 22 03:37 Io : Transit Begins T  
 04:07 Io : Shadow Trans Start ST  
 05:48 Io : Transit Ends S

22 17:04 GRS: Crosses CM  
 19:15 Eur: Eclipse Ends  
 23 00:57 Io : Occultation Ends  
 02:59 GRS: Crosses CM  
 03:39 Io : Eclipse Ends

23 17:29 Gan: Occultation Ends  
 19:27 Gan: Occultation Ends  
 19:33 Gan: Eclipse Start  
 21:43 Gan: Eclipse Ends  
 22:04 Io : Transit Begins T  
 22:36 Io : Shadow Trans Start ST  
 22:51 GRS: Crosses CM  
 24 00:14 Io : Transit Ends S  
 00:47 Io : Shadow Trans Ends

24 18:42 GRS: Crosses CM  
 19:23 Io : Occultation Ends  
 22:07 Io : Eclipse Ends  
 25 04:38 GRS: Crosses CM

25 17:04 Io : Shadow Trans Start ST  
 18:40 Io : Transit Ends S  
 19:16 Io : Shadow Trans Ends  
 26 00:29 GRS: Crosses CM  
 04:57 Eur: Occultation Ends

26 20:20 GRS: Crosses CM  
  
 28 00:02 Eur: Transit Begins T  
 01:16 Eur: Shadow Trans Start ST  
 02:07 GRS: Crosses CM  
 02:24 Eur: Transit Ends S  
 03:41 Eur: Shadow Trans Ends

28 21:58 GRS: Crosses CM  
 29 05:23 Io : Transit Begins T

29 17:49 GRS: Crosses CM  
 18:06 Eur: Occultation Ends  
 21:52 Eur: Eclipse Ends

30 02:42 Io : Occultation Ends  
 03:45 GRS: Crosses CM

30 20:49 Gan: Occultation Ends  
 22:49 Gan: Occultation Ends  
 23:33 Gan: Eclipse Start  
 23:36 GRS: Crosses CM  
 23:49 Io : Transit Begins T  
 31 00:31 Io : Shadow Trans Start ST  
 01:44 Gan: Eclipse Ends ST  
 02:00 Io : Transit Ends S  
 02:42 Io : Shadow Trans Ends

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

**January**

1 00:02 Io : Eclipse Ends

### Suggested Deep Sky Objects for December

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
02 <sup>h</sup> 19.0 <sup>m</sup>	+57° 09'	NGC 869	5.3v	29'		Per	Open Cl 200* Double Cluster
02 <sup>h</sup> 22.4 <sup>m</sup>	+57° 07'	NGC 884	6.1v	29'		Per	Open Cl 115* Double Cluster
02 <sup>h</sup> 42.0 <sup>m</sup>	+42° 47'	M34	5.2v	35'		Per	Open Cluster 60*
05 <sup>h</sup> 03.4 <sup>m</sup>	+60° 27'	Beta	4.0, 8.6	80.8"	208°	Cam	Double Star
05 <sup>h</sup> 06.1 <sup>m</sup>	+58° 58'	11&12 Cam	5.4, 6.5	108.5"	8°	Cam	Double Star
05 <sup>h</sup> 44.5 <sup>m</sup>	-22° 27'	Gamma	3.7, 6.3	96.3"	350°	Lep	Double Star

#### Objects for Small Telescopes (2-6 inch)

RA	Dec	Number	Mag(s)	Size/Sep.	PA	Const.	Type of Object
04 <sup>h</sup> 07.0 <sup>m</sup>	+60° 55'	NGC 1501	11.5v	51"		Cam	Planetary Nebula
04 <sup>h</sup> 07.7 <sup>m</sup>	+62° 20'	NGC 1502	5.7v	7'		Cam	Open Cluster 45*
06 <sup>h</sup> 18.7 <sup>m</sup>	+78° 21'	NGC 2146	10.6	5.4'x4.5'		Cam	Galaxy
05 <sup>h</sup> 14.5 <sup>m</sup>	-08° 12'	Beta	0.1, 6.8	9.5"	202°	Ori	Double Star Rigel
06 <sup>h</sup> 08.4 <sup>m</sup>	+13° 57'	NGC 2169	5.9v	6'		Ori	Open Cluster 30*
07 <sup>h</sup> 27.1 <sup>m</sup>	+80° 11'	NGC 2336	10.4v	6.4'x3.3'		Cam	Galaxy

#### Objects for Medium Telescopes (8-14 inch)

RA	Dec	Number	Mag(s)	Size/Sep.	PA	Const.	Type of Object
04 <sup>h</sup> 32.8 <sup>m</sup>	+78° 53'	NGC 1560	11.4v	9.2'x1.7'		Cam	Galaxy
05 <sup>h</sup> 24.5 <sup>m</sup>	-24° 33'	M79	7.8v	8.7'		Lep	Globular Cluster
05 <sup>h</sup> 46.7 <sup>m</sup>	+00° 03'	M78		8'x6'		Ori	Emis. & Refl. Nebula
05 <sup>h</sup> 27.5 <sup>m</sup>	-12° 42'	IC 418	9.3v	12"		Lep	Planetary Nebula
05 <sup>h</sup> 33.4 <sup>m</sup>	-21° 57'	NGC 1964	10.7v	5.0'x2.1'		Lep	Galaxy
07 <sup>h</sup> 28.9 <sup>m</sup>	+69° 13'	NGC 2366	10.8v	8.2'x3.3'		Cam	Galaxy

#### Objects for Larger Telescopes (16-inch & larger) Challenge Objects

RA	Dec	Number	Mag(s)	Size/Sep.	PA	Const.	Type of Object
03 <sup>h</sup> 46.8 <sup>m</sup>	+68° 06'	IC 342	8.4v	22.0'x22.0'		Cam	Galaxy
05 <sup>h</sup> 00.0 <sup>m</sup>	-26° 01'	NGC 1744	11.3v	5.1'x2.5'		Lep	Galaxy
05 <sup>h</sup> 06.9 <sup>m</sup>	-03° 21'	NGC 1788		5'x3'		Ori	Reflection Nebula
05 <sup>h</sup> 42.1 <sup>m</sup>	-09° 05'	NGC 2022	11.9v	11.9v		Ori	Planetary Nebula
06 <sup>h</sup> 13.8 <sup>m</sup>	+12° 48'	NGC 2194	8.5v	8'		Ori	Open Cluster 80*
07 <sup>h</sup> 36.9 <sup>m</sup>	+65° 36'	NGC 2403	8.5v	25.5'x13.0'		Cam	Galaxy



## November 's Bundle Up Star Fest is a Success

Two hundred and nine visitors visited Mingo Creek Park Observatory on November 17th. The event was the club's first ever Bundle Up Star Fest. Good weather and the club's new digital planetarium conspired to make it the best night of Mingo's whole star party season.

Initial thoughts are that this could be an annual Mingo event, so stay tuned.

Thanks to the twenty-six member/volunteers who attended and helped make the night successful:

Fred Klein	Mike Meteney	Mike Fisher
Jon Johnson,	Kathy DeSantis	Jeff Marsh
John Diller	Michael Skowvron	Ed Moss
George Guzik	Mary DeVaughn	John Holtz
Bill Snyder	Michael Christeson	Mike Nizinski
Gene Leis	John & Sheila Mozer	Bill Hayeslip
Tim Manka	Bill & Jean Roemer	Ken Kobus
	Maureen & Bill Moutz	
	Gene Kulakowski	

## 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

## *Membership Renewals*

It is time again to renew your memberships for 2013.

Attached is a renewal form that has two parts. The first part is your personal information that we need to make sure our database is up to date and accurate. The second part is the billing information. Please fill in both parts of the form completely.

The membership categories remain unchanged, but there is an increase in the fees (which were last increased five years ago). This increase is to help cover the basic operating expenses of the AAAP. The basic membership is \$30.00. We also have a student membership for \$20.00. This is for any K-12 and full-time college student. We also have a family membership (\$45.00) that includes anyone living in the same household. The family membership need only include the basic primary members contact information and then list the remaining family member names. All correspondence, Guide Star, and mailings will be sent to the family members through the primary member's contact information. This will reduce printing and mailing costs and redundancy.

All members are encouraged to download the electronic version of the Guide Star from the website ([www.3ap.org](http://www.3ap.org)). For those without access to a computer and internet, there is an option to receive the newsletter through the mail. To defray the cost of copying and postage, there is now a charge for the mailed version of the Guide Star.

A reminder, the AAAP no longer processes Sky and Telescope subscriptions. If you want S&T magazine for the first time, use the enclosed form to get your club subscription rate.

If you are a current subscriber, use your renewal notice you receive from S&T. It should have the \$32.95 club rate on the renewal notice.

***Send new and renewal subscriptions for S&T magazine directly to SKY PUBLISHING! Do not mail them to us.***

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

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

If you have any questions, you can contact Nathan Brandt, treasurer, or Don Hoecker, membership secretary. Thank you.

# ***AAAP Membership Renewal Form – 2013***

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

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

Name \_\_\_\_\_

Address \_\_\_\_\_

City \_\_\_\_\_ State \_\_\_\_\_ **9-digit** zip \_\_\_\_\_ –  
\_\_\_\_\_

Phone (Home) \_\_\_\_\_

(Work) \_\_\_\_\_

E-mail \_\_\_\_\_

**Guide Star:** We currently provide our monthly newsletter, the “Guide Star;” only by down-loading from our website; if you need a mailed hard copy, include the \$24.00 surcharge offered in the table on Page 2 of this form.

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

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Additional Family Members:

Name \_\_\_\_\_ Relationship \_\_\_\_\_

Name \_\_\_\_\_ Relationship \_\_\_\_\_

Name \_\_\_\_\_ Relationship \_\_\_\_\_

Name \_\_\_\_\_ Relationship \_\_\_\_\_

Name \_\_\_\_\_ Relationship \_\_\_\_\_

# ***AAAP Membership Renewal Form – 2013***

ITEM	PRICE	ENCLOSED PAYMENT
AAAP Adult Membership (Jan. 1 to Dec. 31 2013)	\$30.00	
AAAP Student Membership (Covers all students K-12 and <u>fulltime</u> college students).	\$20.00	
Family Membership - This membership covers the adult membership and all family members that live with the adult member. Please list all family members to be included on the Page 1 of this form.	\$45.00	
Printed (“snailmail”) hard copy of the <i>Guide Star</i> .	\$24.00	
“Astronomy” Subscription (12 issues per year) Both new and renewals are processed through the AAAP. Do <b>not</b> renew your subscription directly with Astronomy Magazine; you won’t get your discount.	US. \$34.00 Can \$40.25 Int. \$50.00	
Key Fee - Only current key holders! Check appropriate observatory: Mingo_____ Wagman_____	\$15.00 each	
Tax Deductible Donation	----	
<b>TOTAL PAYMENT</b>	----	

It is very important that all payments be received by 12/15/2012 so that magazine subscriptions can be processed in a timely manner.

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

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

Send this form with payments to:  
**Nathan Brandt – Treasurer, AAAP**  
**2520 Campmeeting Road**  
**Sewickley, PA 15143-9104**

Membership questions?  
E-mail: [MembershipSecretary@3ap.org](mailto:MembershipSecretary@3ap.org)  
Phone: 412-243-8298

Billing questions?  
E-mail: [Treasurer@3ap.org](mailto:Treasurer@3ap.org)  
Phone: 412-741-9529



# Astronomy Club Subscription Form

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

CLUB NUMBER: <b>270</b>		
CLUB NAME <b>Amateur Astronomers Association of Pittsburgh</b>		Sky & Telescope (S&T)
TREASURER'S NAME <b>Nathan Brandt - Treasurer</b>	Date _____	(1 year/12 issues) Club Rate
MAILING ADDRESS <b>2520 Campmeeting Road</b>		United States \$32.95
CITY <b>Sewickley</b> STATE <b>PA</b> ZIP CODE <b>15143</b>		Canada \$39.95
COUNTRY (IF NOT U.S.A.) _____		International \$50.00
PHONE <b>412-741-9529</b> FAX _____		
E-MAIL ADDRESS <b>Treasurer@3ap.org</b>		

## SUBSCRIPTION INFORMATION

MEMBER'S NAME \_\_\_\_\_

MAILING ADDRESS \_\_\_\_\_

CITY \_\_\_\_\_ STATE \_\_\_\_\_ ZIP CODE \_\_\_\_\_

DAYTIME PHONE ( ) \_\_\_\_\_ FAX ( ) \_\_\_\_\_ E-MAIL \_\_\_\_\_

MEMBER'S NAME \_\_\_\_\_

MAILING ADDRESS \_\_\_\_\_

CITY \_\_\_\_\_ STATE \_\_\_\_\_ ZIP CODE \_\_\_\_\_

DAYTIME PHONE ( ) \_\_\_\_\_ FAX ( ) \_\_\_\_\_ E-MAIL \_\_\_\_\_

MEMBER'S NAME \_\_\_\_\_

MAILING ADDRESS \_\_\_\_\_

CITY \_\_\_\_\_ STATE \_\_\_\_\_ ZIP CODE \_\_\_\_\_

DAYTIME PHONE ( ) \_\_\_\_\_ FAX ( ) \_\_\_\_\_ E-MAIL \_\_\_\_\_

page \_\_\_\_ of \_\_\_\_

Check or Money Order payable to Sky Publishing Corp

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Enclosed is \_\_\_\_\_ in total