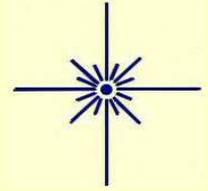




# The Guide Star

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



October 2011

Volume 45, No.10

## October 7<sup>th</sup> 7:30 pm: AAAP General Meeting

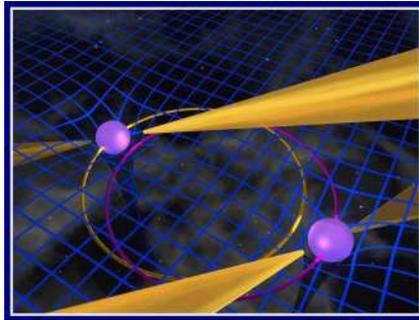
Bayer Science Stage at the Carnegie Science Center

Featured Speaker: **Dr. Maura McLaughlin,**  
West Virginia University

Topic: **Pulsars and Gravitational Waves: Changing the Face of Physics**

Dr. Maura McLaughlin is an assistant astrophysics professor at West Virginia University. Her research involves neutron stars. These are the compact cores of stars left behind after the supernova explosions of massive evolved stars. Most of her time is spent studying neutron stars known as pulsars. These objects are rapidly rotating neutron stars that act like cosmic lighthouses, with a pulse detectable once every rotation of the star. Pulsars are detectable with radio telescopes and with X-ray and gamma-ray satellites.

In 2004, Maura was part of an international team of astronomers who discovered the first known system of two pulsars in orbit around each other. Studies of this system showed that Einstein's theory of general relativity is correct to very high precision. For instance, one can actually see that space-time is curved in the presence of these objects



Much of her current research is aimed towards directly detecting gravitational waves. These fluctuations in the fabric of space-time were predicted by Einstein. However, while there is a great deal of evidence for their existence, they have never been directly detected. She is working with international colleagues to form a global network of pulsars that are being monitored to look for small fluctuations due to the presence of these waves.

Maura is from a suburb of Philadelphia and became interested in astronomy by reading science fiction, the works of Isaac Asimov, and the writings of Carl Sagan and Stephen Hawking. She earned her Bachelor of Science degree in Astronomy and Astrophysics from Penn State in 1994. At Cornell University, she earned her Ph.D. in Astronomy and Space Sciences, working on pulsars, and then moved on to the University of Manchester in England as a National Science Foundation math and physical sciences distinguished research fellow and as a postdoctoral research associate. She joined West Virginia University as an Assistant Professor in 2006. She is now an Associate Professor at the university and supervises a number of postdoctoral research associates, and graduate and undergraduate student researcher.

In addition to her busy research activities, Maura is involved with outreach endeavors to interest more high school students and undergraduate students, including underrepresented rural youths and females, in joining the search for pulsars with the Green Bank Telescope and thus to help increase number students in scientific majors.

## Upcoming AAAP Public Star Party Dates

October 1	Mingo Creek Park Observatory.
October 8	Wagman Observatory.
October 15	Both Mingo & Wagman Observatories
October 29	Mingo Creek Park Observatory.

## 2011 Kevin J. Brunelle Astrophotography Contest

Plan now to enter the Kevin J. Brunelle Astrophotography Contest to be held at the November 11<sup>th</sup> General Meeting.

Astrophotography combines the best of art and science, and the AAAP photo contest always produces a wonderful collection of images of astronomical objects and atmospheric phenomena. Coordination of this year's contest is being handled by various AAAP astro-imagers.

We are looking for prints, digital images, and slides of astronomical objects. Peruse your images from this past year and choose your best to compete for fame, honor and prizes. (See contest rules, below, to decide what qualifies). As always, the contest will be held at the November AAAP meeting, which will be Friday, November 11th at the Carnegie Science Center.

The deadline for entry submission is 10 days before the meeting, Tuesday, November 1st. Please submit your entries in one of the following ways:

- Hand entries to Bill Snyder at the Friday, October 7th AAAP meeting, 7:30pm at the Carnegie Science Center
- Mail entries to Bill Snyder  
2325 Moyer Rd  
Connellsville, PA 15425
- E-mail them to [photosubmission@3ap.org](mailto:photosubmission@3ap.org)

Please include your name, your telephone number, the category for each entry, and the titles of your images with your entries

Digital images in standard formats (JPEG, GIF, TIFF) are easiest for us to work with. If you have questions, contact the following:

Matthew Dieterich  
phone: 412-680-6408  
e-mail: [mfdst6@mail.rmu.edu](mailto:mfdst6@mail.rmu.edu)

Nathan Brandt  
phone: 1-412-304-2185  
e-mail: [nmbrandt@hotmail.com](mailto:nmbrandt@hotmail.com)

### CONTEST RULES:

The contest is open to all active members of the AAAP.

The contest date is the November 11, 2011 meeting of the AAAP. Entries will be viewed and judged by all AAAP members present at this meeting.

All images entered must be originally captured by the contestant. Entries are limited to images concerning areas of interest within the AAAP.

Images may be submitted as 35mm transparencies or negatives, photographic prints, or as digital media (in formats accepted by the AAAP Audio-Visual Committee).

Only images taken since the date of the previous contest deadline (November 12, 2010) are eligible.

### THERE ARE 3 CATEGORIES:

1. Astronomical images taken with optics of focal length no greater than 300mm
2. Astronomical images taken with optics of focal length greater than 300mm
3. Images of atmospheric phenomena - This includes images of rainbows, sun dogs, glories, halos, aurora, solar pillars and arcs and such.

(continued)

No more than 5 entries per contestant per category are allowed for each contest.

Entries must be received by the contest coordinator no later than 10 days before the contest date.

Entries will be judged for 1st, 2nd, and 3rd place in each category, with each voting member assigning points respectively (3, 2, and 1). The entry with the highest total number of points in each category will be declared the winning entry and will be eligible for prizes. Entries that place 2nd and 3rd in total points in each category will be recognized by the AAAP.

Last Year's Brunelle Contest Winners in Each Category



Dual winner 300mm and under Category:

Mark Arelt's Milky Way - Summer to Winter and Dog Day's Planets



Winner over 300mm Category:

Bill Snyder's M51 - Whirlpool Galaxy



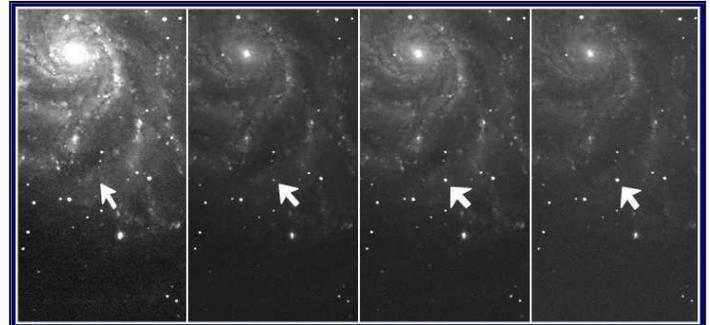
Winner atmospheric phenomena Category:

James Klueber's Jupiter Hurling Lightning Bolts



Supernova 2011fe:  
Brightest supernova in the last 20 years

by Dr. Matthew Templeton  
Science Director of the AAVSO



Sequence shows progress of SN 2011fe from August 23 to 26

On August 24, 2011, astronomers from the Palomar Transient Factory project announced the detection of a supernova in the nearby galaxy M101 (NGC 5457). The transient, initially dubbed "PTF11kly", was initially observed around magnitude 17.2, but has since risen very quickly. Observers from around the world, amateur and professional alike, began observing this field, and it was soon confirmed as a supernova and given the official designation "SN 2011fe". This new Type Ia supernova is now one of the brightest supernovae visible from Earth in the last 20 years, and promises to be a treat to both visual and instrumental observers for the remainder of 2011 and beyond!

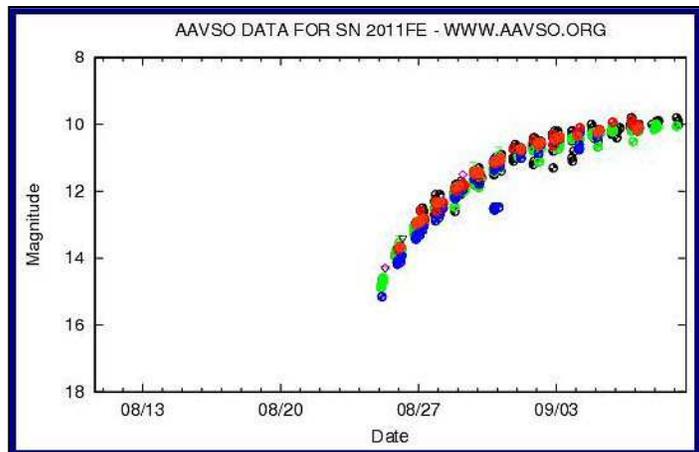
What are supernovae?

Supernovae are caused by the sudden death and destruction of a star. There are several different kinds of supernovae, each of which comes from a different type of star. The two main progenitors of supernovae are the explosion of a stellar remnant called a white dwarf, and the collapse and explosion of a massive star many times the mass of our own Sun. White dwarfs can form supernovae when, as members of binary star systems, they accrete enough mass from the other star in the system that they reach a critical mass of about 1.4 times the mass of the Sun. When a white dwarf reaches this mass limit -- called the Chandrasekhar Limit -- it can no longer support itself against gravity and it collapses. The result of this collapse is the sudden thermonuclear burning of the interior of the white dwarf, which then explodes. This explosion is what we see as the supernova. The explosion releases as much energy over the course of a few months as all the other stars in a galaxy combined. This is what makes supernovae so bright and easy to see across large distances (from the AAVSO SN 2011 fe Web Page)

Type Ia supernovae are formed from the collapse of a white dwarf star in pairs of closely orbiting stars known as cataclysmic variables. When a white dwarf collects enough matter from its companion to reach a critical mass of 1.4 times the mass of the Sun -- the Chandrasekhar Limit -- it will collapse in on itself and then explode with tremendous power, becoming visible across the entire universe. Supernovae of this type are cosmologically important because they can be used to calibrate the distances to galaxies where they occur. All Type Ia supernovae are believed to reach similar peak brightnesses, and the measurement of this peak is an important way to calibrate distances to galaxies measured by other means (such as redshift). By finding and measuring Type Ia supernovae, we can measure the size and structure of the Universe that we live in.

Bright supernovae occur infrequently, and it's rare for a supernova to become as bright as this one. The last comparably bright supernova of any type was SN 1993J, a Type II supernova which reached magnitude 10.0, while the last comparably bright Type Ia was SN 1972E which reached magnitude 8.5 nearly forty years ago! The supernova is bright because it's relatively close to us. Its host galaxy, the beautiful spiral M101 (also known as the Pinwheel Galaxy), is "only" about 20 million light years from us -- right in our cosmic backyard compared to the distances of most other galaxies in the universe

SN 2011fe will provide the amateur astronomical community a great opportunity to participate in important science, and we encourage everyone to observe SN 2011fe over the coming days, weeks, and months!



Observations of SN 2011fe made by AAVSO observers since August 24, 2011. This graph, known as a light curve, shows the change in brightness of the supernova over time. Different colors of points indicate observations made with cameras using different colored filters. Observations in black are visual estimates made by eye. Over 1000 observations of the supernova have been submitted to the AAVSO so far.

SN 2011fe is located in the bright spiral galaxy M101. It is well separated from the brightest parts of the galaxy, and both visual estimates and instrumental photometry should be straightforward. This region of the sky will be challenging to observe within the next few months if you're observing in the evening, but you can still obtain observations in the early morning, pre-dawn hours. SN 2011fe is located at the following J2000 coordinates:

**RA: 14 03 05.81 , Dec: +54 16 25.4**

#### Observing the supernova

The supernova is located near the end of the handle of the Big Dipper (the tail of Ursa Major). M101 is directly above the midpoint between the last two stars of the handle, Mizar and Alkaid, forming triangle with those two stars. It is currently shining at 10th magnitude, which will be visible in very large binoculars or a telescope with an aperture of 6 inches (15 centimeters) or more.

These finder charts will help you locate M101 and the supernova within it, and will also provide you with "comparison stars" -- stars of known brightness -- that will help you estimate how bright the supernova currently is. The galaxy itself will be faint except for its bright central regions, but the supernova and comparison stars should be visible in suitable equipment.

- **Big Dipper & M101 finder chart**

[http://www.aavso.org/sites/default/files/images/SN2011fe\\_chart\\_1.png](http://www.aavso.org/sites/default/files/images/SN2011fe_chart_1.png)

- **Star hops from Mizar & Alkaid:**

hop 1)

[http://www.aavso.org/sites/default/files/images/SN2011fe\\_chart\\_2.png](http://www.aavso.org/sites/default/files/images/SN2011fe_chart_2.png)

hop 2)

[http://www.aavso.org/sites/default/files/images/SN2011fe\\_chart\\_3.png](http://www.aavso.org/sites/default/files/images/SN2011fe_chart_3.png)

hop 3)

[http://www.aavso.org/sites/default/files/images/SN2011fe\\_chart\\_4.png](http://www.aavso.org/sites/default/files/images/SN2011fe_chart_4.png)

- **Photo of SN 2011fe and comparison stars in FOV**

[http://www.aavso.org/sites/default/files/images/SN2011fe\\_photo.png](http://www.aavso.org/sites/default/files/images/SN2011fe_photo.png)

#### How to make and report observations

How do you estimate the brightness of a variable star with your eyes? It's easy! Visit our Observers page <http://www.aavso.org/observers> to learn more about how to make a visual estimate of SN 2011fe and thousands of other variable stars in the sky! We have tutorials, charts and observing manuals, and instructions on how to become an official AAVSO observer and submit observations!

If you have a CCD camera for your telescope, you can make observations too! Check out our resources for CCD observers to learn more about how to extract photometric data from your images

For deep sky photographers: did you image M101 any time between August 23 and August 25, 2011? If so, you may have caught the supernova early on without knowing it! Please check your images against our star charts to see if the supernova is visible. If so, please measure its brightness and submit your observations! Every observation counts!

More information is available at the AAVSO's SN 2000 fe dedicated Web Page: <http://www.aavso.org/sn-2011fe>

The AAVSO has a comparison star sequence suitable for both visual observers and CCD and DSLR imagers. You can create your own customized charts of the field using the AAVSO's chart plotting tool, VSP <http://www.aavso.org/sn-2011fe>

You can also submit observations to the AAVSO using the WebObs tool, <http://www.aavso.org/webobs> just as you would any other variable star. Please use the name "SN 2011fe" to submit data or prepare your own charts.

If you have data to report but you're new to the AAVSO and haven't yet submitted data to us, please go to our "For Observers" page <http://www.aavso.org/observers> and follow the link to "Request AAVSO Observer Code" <http://www.aavso.org/myrequestinitials>. From there, you'll have your own unique identifier code that will allow you to submit observations. If you're a novice observer, please browse the For Observers page and learn more about how you can observe variable stars and contribute observations of this supernova and other variable stars.==

You can also participate in a new online forum about this supernova, asking questions and sharing experiences and expertise with other observers. Go to our Forum: Supernovae Photometry <http://www.aavso.org/forums/supernovae-photometry> for more information and to participate. It's open to everyone -- amateur and professional, novice or experienced observers alike -- so please join in!

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The above content appears courtesy of Dr. Matthew Templeton and the American Association of Variable Star Observers, a century-old non-profit worldwide scientific and educational organization of amateur and professional astronomers interested in stars that change in brightness—  
- GS Editor

Sun

Mon

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<p><i>"Astronomy is typically a monastic activity: It provides food for meditation and strengthens spirituality"</i></p> <p><i>- Paul Couteau</i></p>	<p>All times given are local.</p> <p>Legend: SR = Sunrise, SS = Sunset, MR = Moonrise, MS = Moonset, PI = Approximate Percentage Visible Lunar Surface Illuminated Local Midnight</p> <p>Details for AAAP Events can be found at:  <a href="https://nightsky.jpl.nasa.gov/event-list.cfm?Club_ID=675&amp;EventEra=Future">https://nightsky.jpl.nasa.gov/event-list.cfm?Club_ID=675&amp;EventEra=Future</a></p> <p>24<sup>th</sup>: William Lassell discovers Uranus' moons Umbriel and Ariel in 1851</p>					<p><b>1</b></p> <div style="border: 1px solid black; padding: 2px;"> <p>Star Party Mingo Obs.</p> <p>Mars 0.5° S of M44 Beehive</p> </div> <p>SR:07:16                  SS:19:02                  MR:12:22                  MS:21:58                  PI:18%</p>
<p><b>2</b></p> <div style="border: 1px solid black; padding: 2px;"> <p>Orionid Meteor Shower Begins</p> </div> <p>SR:07:17                  SS:19:01                  MR:13:23                  MS:22:57                  PI:27%</p>	<p><b>3</b></p> <div style="border: 1px solid black; padding: 2px; text-align: center;">  </div> <p>SR:07:18                  SS:18:59                  MR:14:15                  MS:*****                  PI:38%</p>	<p><b>4</b></p> <p>SR:07:19                  SS:18:57                  MR:14:59                  MS:*****                  PI:49%</p>	<p><b>5</b></p> <p>SR:07:20                  SS:18:56                  MR:15:36                  MS:01:04                  PI:59%</p>	<p><b>6</b></p> <p>SR:07:21                  SS:18:54                  MR:16:07                  MS:02:07                  PI:69%</p>	<p><b>7</b></p> <p>SR:07:22                  SS:18:53                  MR:16:35                  MS:03:08                  PI:78%</p>	<p><b>8</b></p> <div style="border: 1px solid black; padding: 2px;"> <p>Star Party Wagman Obs.</p> </div> <p>SR:07:23                  SS:18:51                  MR:17:01                  MS:04:08                  PI:85%</p>
<p><b>9</b></p> <p>SR:07:24                  SS:18:49                  MR:17:26                  MS:05:07                  PI:91%</p>	<p><b>10</b></p> <div style="border: 1px solid black; padding: 2px;"> <p>William Lassell discovers Neptune's moon Triton in 1846</p> </div> <p>SR:07:25                  SS:18:48                  MR:17:51                  MS:06:05                  PI:96%</p>	<p><b>11</b></p> <div style="border: 1px solid black; padding: 2px; text-align: center;">  </div> <p>SR:07:26                  SS:18:46                  MR:18:17                  MS:07:03                  PI:99%</p>	<p><b>12</b></p> <p>SR:07:27                  SS:18:45                  MR:18:46                  MS:08:01                  PI:100%</p>	<p><b>13</b></p> <p>SR:07:28                  SS:18:43                  MR:19:17                  MS:08:59                  PI:99%</p>	<p><b>14</b></p> <p>SR:07:29                  SS:18:42                  MR:19:53                  MS:09:57                  PI:97%</p>	<p><b>15</b></p> <div style="border: 1px solid black; padding: 2px;"> <p>Star Party Mingo Obs. &amp; Wagman Obs.</p> </div> <p>SR:07:30                  SS:18:40                  MR:20:35                  MS:10:54                  PI:93%</p>
<p><b>16</b></p> <p>SR:07:31                  SS:18:39                  MR:21:22                  MS:11:48                  PI:87%</p>	<p><b>17</b></p> <p>SR:07:32                  SS:18:37                  MR:22:16                  MS:12:38                  PI:80%</p>	<p><b>18</b></p> <p>SR:07:34                  SS:18:36                  MR:23:15                  MS:13:24                  PI:71%</p>	<p><b>19</b></p> <div style="border: 1px solid black; padding: 2px; text-align: center;">  </div> <p>SR:07:35                  SS:18:34                  MR:*****                  MS:14:05                  PI:62%</p>	<p><b>20</b></p> <p>SR:07:36                  SS:18:33                  MR:00:18                  MS:14:42                  PI:52%</p>	<p><b>21</b></p> <div style="border: 1px solid black; padding: 2px;"> <p>Orionid Meteor Shower Maximum Possible ZHR 25</p> </div> <p>SR:07:37                  SS:18:31                  MR:01:24                  MS:15:16                  PI:41%</p>	<p><b>22</b></p> <p>SR:07:38                  SS:18:30                  MR:02:33                  MS:15:48                  PI:31%</p>
<p><b>23</b></p> <p>SR:07:39                  SS:18:29                  MR:03:44                  MS:16:19                  PI:21%</p>	<p><b>24</b></p> <p>SR:07:40                  SS:18:27                  MR:04:57                  MS:16:51                  PI:12%</p>	<p><b>25</b></p> <div style="border: 1px solid black; padding: 2px;"> <p>Giovanni Cassini discovers Saturn's moon Iapetus in 1671</p> </div> <p>SR:07:41                  SS:18:26                  MR:06:13                  MS:17:26                  PI:5%</p>	<p><b>26</b></p> <div style="border: 1px solid black; padding: 2px; text-align: center;">  </div> <p>SR:07:42                  SS:18:24                  MR:07:30                  MS:18:06                  PI:1%</p>	<p><b>27</b></p> <p>SR:07:44                  SS:18:23                  MR:08:47                  MS:18:51                  PI:0%</p>	<p><b>28</b></p> <div style="border: 1px solid black; padding: 2px;"> <p>Jupiter at Opposition                      Venus 1.8° N of the Moon</p> </div> <p>SR:07:45                  SS:18:22                  MR:10:00                  MS:19:44                  PI:2%</p>	<p><b>29</b></p> <div style="border: 1px solid black; padding: 2px;"> <p>Star Party Mingo Obs.</p> </div> <p>SR:07:46                  SS:18:21                  MR:11:08                  MS:20:43                  PI:7%</p>
<p><b>30</b></p> <p>SR:07:47                  SS:18:19                  MR:12:06                  MS:21:47                  PI:14%</p>	<p><b>31</b></p> <p>SR:07:48                  SS:18:18                  MR:12:54                  MS:22:53                  PI:23%</p>	<p>SR:07:41                  SS:18:26                  MR:06:13                  MS:17:26                  PI:5%</p>	<p>SR:07:42                  SS:18:24                  MR:07:30                  MS:18:06                  PI:1%</p>	<p>SR:07:44                  SS:18:23                  MR:08:47                  MS:18:51                  PI:0%</p>	<p>SR:07:45                  SS:18:22                  MR:10:00                  MS:19:44                  PI:2%</p>	<p>SR:07:46                  SS:18:21                  MR:11:08                  MS:20:43                  PI:7%</p>

## Some Celestial Highlights for October

**Mercury** is low in evening twilight both this month. It sets shortly after sunset all month. It will sit only 2° from Venus at month end.

**Venus** is low in the southwestern evening twilight. the last half of the month, setting less than an hour after sunset the entire month.

**Mars** in the eastern morning sky, moves from Cancer into Leo, rising at 02:07 on the 1<sup>st</sup> and 01:47 on the 21<sup>st</sup>. Its angular diameter will be about 5.6 arc seconds on that date.

**Jupiter** is in Aries all month rising at 20:16 on the 1<sup>st</sup>, 19:34 on the 11<sup>th</sup> and 18:51 on the 21<sup>st</sup>. Jupiter comes to opposition on the 28<sup>th</sup> and at that time will subtend an angle of 49.6 arc seconds, the largest apparent diameter in twelve years.

**Saturn** is in conjunction with the Sun on the 13<sup>th</sup> and reappears in the morning sky at month's end, rising at 06:27 on the 31<sup>st</sup>, an hour and 20 minutes before the Sun.

**Uranus** in Pisces, is visible all night, rising at 18:44 on the 1<sup>st</sup>, 18:04 on the 11<sup>th</sup> and 17:24 on the 21<sup>st</sup>. Uranus dips below the celestial equator on the 16<sup>th</sup>. It will remain there until January of 2012.

**Neptune** in Aquarius, is visible most of the night rising at 17:22 on the 1<sup>st</sup> and 16:42 on the 11<sup>th</sup>.

For those using programs to predict **GRS** transits, **Jupiter's System II longitude** is 171°. **Selenographic Colongitude** is 302.04° at 0h UT at beginning of the month. Add 12.2° each day.

2 <sup>nd</sup>	20:13	<b>Jupiter</b> Rises
	21:41	<b>Ganymede</b> Shadow Transit Begins
	22:35	<b>Great Red Spot</b> Crosses Central Meridian
	23:41	<b>Ganymede</b> Shadow Transit Ends
3 <sup>rd</sup>	00:46	<b>Ganymede</b> Transit Begins
	01:56	<b>Ganymede</b> Transit Ends
	04:38	<b>Io</b> Shadow Transit Begins
	05:18	<b>Io</b> Transit Begins
	06:48	<b>Io</b> Shadow Transit Ends
9 <sup>th</sup>	19:43	<b>Jupiter</b> Rises
	23:20	<b>Great Red Spot:</b> Crosses Central Meridian
10 <sup>th</sup>	01:42	<b>Ganymede</b> Shadow Transit Begins
	03:42	<b>Ganymede:</b> Shadow Transit Ends
	04:05	<b>Ganymede:</b> Transit Begins
	05:16	<b>Ganymede:</b> Transit Ends
	06:33	<b>Io:</b> Shadow Transit Begins
	07:03	<b>Io:</b> Transit Begins
10 <sup>th</sup>	19:39	<b>Jupiter</b> Rises
	20:15	<b>Europa</b> Transit Begins
	21:43	<b>Europa</b> Shadow Transit Ends
	22:35	<b>Europa</b> Transit Ends
11 <sup>th</sup>	03:53	<b>Io</b> Disappears into Eclipse
	05:07	<b>Great Red Spot</b> Crosses Central Meridian
	06:30	<b>Io</b> Reappears from Occultation
17 <sup>th</sup>	19:09	<b>Jupiter</b> Rises
	19:56	<b>Great Red Spot</b> Crosses Central Meridian
	21:51	<b>Europa</b> Shadow Transit Begins
	22:29	<b>Europa</b> Transit Begins
18 <sup>th</sup>	00:19	<b>Europa</b> Shadow Transit Ends
	00:49	<b>Europa</b> Transit Ends
	05:48	<b>Io</b> Disappears into Eclipse
	05:52	<b>Great Red Spot</b> Crosses Central Meridian

20 <sup>th</sup>	18:57	<b>Jupiter</b> Rises
	19:36	<b>Ganymede</b> Disappears into Eclipse
	21:25	<b>Io</b> Shadow Transit Begins
	21:38	<b>Io</b> Transit Begins
	22:05	<b>Ganymede</b> Reappears from Occultation
	23:35	<b>Io</b> Shadow Transit Ends
	23:47	<b>Io</b> Transit Ends
	03:21	<b>Great Red Spot</b> Crosses Central Meridian
21 <sup>st</sup>		<b>Orionid Meteor Shower</b> Maximum Possible ZHR 25
24 <sup>th</sup>	18:39	<b>Jupiter</b> Rises
	20:41	<b>Great Red Spot</b> Crosses Central Meridian
	00:27	<b>Europa</b> Shadow Transit Begins
	00:42	<b>Europa</b> Transit Begins
	02:54	<b>Europa</b> Shadow Transit Ends
	03:03	<b>Europa</b> Transit Ends
	06:36	<b>Great Red Spot</b> Crosses Central Meridian
27 <sup>th</sup>	18:26	<b>Jupiter</b> Rises
	23:20	<b>Io</b> Shadow Transit Begins
	23:22	<b>Io</b> Transit Begins
	23:38	<b>Ganymede</b> Disappears into Eclipse
28 <sup>th</sup>	01:30	<b>Io</b> Shadow Transit Ends & Transit Ends
	01:35	<b>Ganymede</b> Reappears from Eclipse
	04:06	<b>Great Red Spot</b> Crosses Central Meridian

## A Welcome to Our New Members



**David Burton**  
**Raymond Delissio**  
**Harry Hancq**  
**Michelle Plinta**  
**Edward Zullo**

## October Starhopping Classes

Weather permitting, Tom Reiland, director of Wagman Observatory, will conduct Starhopping Classes on Monday October 17 and Tuesday October 18. Please email Tom if you plan to come to any of these programs.

## November Meeting Reminder

The highlight of next month's General Meeting on November 11<sup>th</sup> at 7:30 pm is the Kevin J. Brunelle Astrophotography Contest. The location is the Bayer Science Stage at Carnegie Science Center.

Discounted parking rate of \$3.00 is available to AAAP members when mentioned to the attendant.

## Membership Renewals

It is time again to renew your memberships for 2012.

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 basic membership is still \$24.00. We also have a student membership for \$16.00. This is for any K-12 and full-time college student. We also have a family membership (\$40.00) 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 members 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.

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 Michael Meteney, treasurer, or Don Hoecker, membership secretary. Thank you.

# AAAP Membership Renewal Form – 2012

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 \_\_\_\_\_

How do you want your "Guide Star" Delivered? Online (\_\_\_\_) Snail Mail (\_\_\_\_)

**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 \_\_\_\_\_

(over)

## AAAP Membership Renewal Form – 2012

<i>Item</i>	<i>Price</i>	<i>Enclosed Payment</i>
AAAP Adult Membership (January 1 to December 31, 2012)	\$24.00	
AAAP Student Membership (covers all students K-12 and <u>fulltime</u> college students)	\$16.00	
Family 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 attached form)	\$40.00	
“Astronomy” Magazine Subscription (12 issues per year) Both new and renewals are processed through the AAAP. Do not 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><i>Total Payment</i></b>	- - - -	

It is very important that all payments be received by 12/15/2011 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:

**Michael Meteney – Treasurer, AAAP**  
**1070 Sugar Run Road**  
**Venetia, PA 15367-1514**

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: 724-348-9087

# AAAP *New Membership Form – 2012*

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 \_\_\_\_\_

How do you want your "Guide Star" Delivered? Online (\_\_\_\_) Snail Mail (\_\_\_\_)

**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 \_\_\_\_\_

**(over)**

## AAAP New Membership Form – 2012

<i>Item</i>	<i>Price</i>	<i>Enclosed Payment</i>
AAAP Adult Membership (January 1 to December 31, 2012)	\$24.00	
AAAP Student Membership (covers all students K-12 and <u>fulltime</u> college students)	\$16.00	
Family 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 attached form)	\$40.00	
“Astronomy” Magazine Subscription (12 issues per year) Both new and renewals are processed through the AAAP. Do not 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>	- - - -	

I hereby make application for membership in the Amateur Astronomers Association of Pittsburgh, Inc. I am in accord with the principles of this society and am interested in the science of astronomy as a hobby.

\_\_\_\_\_  
Applicant's Signature

\_\_\_\_\_  
Date

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

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

Send this form with payments to:

**Michael Meteney – Treasurer, AAAP**  
**1070 Sugar Run Road**  
**Venetia, PA 15367-1514**

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: 724-348-9087

# 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>Mike Meteney - Treasurer</b> Date _____	(1 year/12 issues) Club Rate
MAILING ADDRESS <b>1070 Sugar Run Rd</b>	United States \$32.95
CITY <b>Venetia</b> STATE <b>PA</b> ZIP CODE <b>15367</b>	Canada \$39.95
COUNTRY (IF NOT U.S.A.) _____	International \$50.00
DAYTIME PHONE <b>724-348-9087</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  
 VISA  Master Card

Total No. of Sky & Telescope Subs. \_\_\_\_  
Total No. of Night Sky Subs. \_\_\_\_

\_\_\_\_\_-\_\_\_\_\_-\_\_\_\_\_-\_\_\_\_\_- Expiration Date \_\_\_\_/\_\_\_\_

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

AMATEUR ASTRONOMERS ASSOCIATION  
OF PITTSBURGH, INC  
1070 SUGAR RUN ROAD  
VENETIA, PA 15367-1515

ADDRESS SERVICE REQUESTED

NON-PROFIT ORG  
U.S. POSTAGE  
PAID  
PITTSBURGH, PA  
PERMIT NO. 394

## ATTENTION: 2012 Membership Forms Enclosed

Amateur Astronomers Association of Pittsburgh, Inc.

### 2011-2012 Executive Officers

President: Anthony Orzechowski  
[president@3ap.org](mailto:president@3ap.org)  
Vice President: Craig Lang  
[vicepresident@3ap.org](mailto:vicepresident@3ap.org)  
Treasurer: Michael Meteney  
[treasurer@3ap.org](mailto:treasurer@3ap.org)  
Corresponding Sec: John Mozer  
[correspondingsecretary@3ap.org](mailto:correspondingsecretary@3ap.org)  
Recording Sec: Dennis Derda  
[recordingsecretary@3ap.org](mailto:recordingsecretary@3ap.org)  
Membership Sec: Don Hoecker  
[membershipsecretary@3ap.org](mailto:membershipsecretary@3ap.org)  
Guide Star Editor: John Cheng  
[gseeditor@3ap.org](mailto:gseeditor@3ap.org)

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:

Michael Meteney, Treasurer  
1070 Sugar Run Road  
Venetia, PA 15367-1514

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. Only submissions received before the 15th of the prior month are assured inclusion in the coming issue. The Guide Star is posted online and sent to print on the 20th of the prior month. Send submissions or questions to: [gseeditor@3ap.org](mailto:gseeditor@3ap.org)