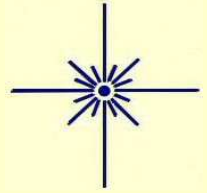




The Guide Star

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 2012

Volume 46, No. 10

AAAP Events for October

General Business Meeting

Friday, October 19, 2012, 19:30

Carnegie Science Center

Topic: "Astronomer's Bucket List"

Speaker: Eric Fischer & John Holtz

Have you seen a Total Solar Eclipse? Have you seen Jupiter with all four Galilean Satellites on one side? Have you been to the Texas Star Party?

These and similar questions will be posed by Eric Fischer and John Holtz in their presentation "The Astronomer's Bucket List", which will be presented at the October 19, 2012 AAAP business meeting (7:30 pm, Carnegie Science Center).

As the title implies, Eric and John will offer a list of astronomical observations and events that club members may want to accomplish at least once in their lifetime. This is similar to standard Bucket List items such as hiking down into the Grand Canyon, making one sky dive, going on an Alaskan cruise, etc.

Members will be provided a checklist to tally the observations and events they can (or cannot) mark as "Done". To keep the Bucket List manageable, simple observations such as seeing the Moon will not be included. Impossibly rare observations such as mutual occultations of planets will also be omitted.

"The Astronomer's Bucket List" is not intended as a competition to see who has piled up the most astronomy-related achievements, but as an incentive to pursue and enjoy as many different observations and events as possible in the years ahead.

Later in the year we will report which unfulfilled observations and events have most often cited by club members.

Star Parties: October 6th & 20th at both Observatories

The last official AAAP star parties for 2012 will be take place on these dates at both of the club's observatories. The next "open air" club event will be Wagman Winterfest on February 16th of next year.

Following are some of the celestial highlights for these dates:

October 6

When the Sun sets at 18:53, Mercury and Saturn, in Virgo, will be low in the West. Mars, a bit higher, will be on the Scorpius-Libra border. Neptune in Aquarius and Uranus in Pisces will dominate the Southern sky.

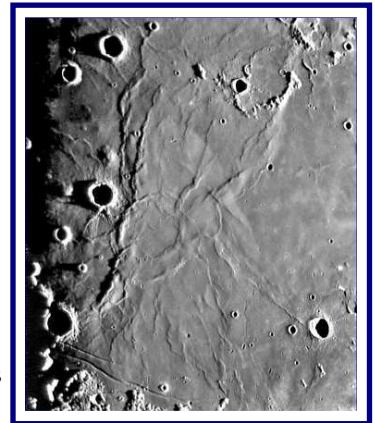
Jupiter will rise at 21:52. No satellite transit/eclipse activity this evening, but all four Galilean satellites will be to the East of the planet. At 23:00, it will appear:



This will be the first night of Draconid activity. See below for details. Finally, at 23:06, the waning gibbous disk of the 21 day old Moon (actually located in Orion!) will rise.

October 20

When the Sun sets at 18:32, the waxing crescent of the 5.5 day old Moon will dominate the sky to the South. Its age is ideal to view the awesome ghost crater Lamont located in the Sea of Tranquility. Lamont shows the outline of an ancient double ringed impact basin later buried by the lava flows that formed Tranquility. The extensive wrinkle ridges show the stresses operative during this period of lunar formation.



Jupiter will rise at 20:56. Again no satellite transit/eclipse activity this evening, but once again, all four Galilean satellites will be to the East of the planet. At 23:00, it will appear:



The Orionid meteor shower maximum is predicted to occur on the 21st of October. It may pay to keep watch during the star party for early members. See details on the Orionids below.

- Guide Star Editor

Annual SSP Meeting in October

The annual meeting should prove equally attractive to both Pittsburgh's astronomy community and history enthusiasts. It will feature a showing of the new film *Undaunted* which tells the story of first three directors of Allegheny Observatory, Samuel Langley, John Brashear and James Keeler, who managed to build an enduring scientific facility while, at the same time, playing central roles in radically changing the focus of late nineteenth and early twentieth century astronomy. Their imprint is still felt today when astrophysics poses fundamental questions about the way the universe is constructed and proceeds to answer them in imaginative and dramatic ways.



Spectroscopy Society of Pittsburgh October Meeting

Duquesne University – Power Center Ballroom

Monday – October 15, 2012

Social Hour	5:30PM
Dinner in the Power Center Ballroom	6:00PM
Business Meeting	7:15PM
Film Showing	7:30PM

Deadline for Dinner Reservations **10/8/12**

A Special Screening of the Documentary, "UNDAUNTED: The Forgotten Giants of the Allegheny Observatory"
Dr. Dan Handley, Dan Handley Science Media LLC

We will be screening the film *UNDAUNTED: The Forgotten Giants of the Allegheny Observatory* hosted by its writer, producer, and director, Dr. Dan Handley. The film chronicles the contributions Pittsburgh's Allegheny Observatory and the people associated with it have made to scientific discovery, including the birth of astrophysics and innovation in early flight. Dr. Handley will give a behind-the-scenes look at the production of the film, including discussing his experience with interviewing noted astrophysicist, Dr. Neil deGrasse Tyson. Dr. Handley will also discuss communicating science to the public and plans for future projects aimed at inspiring future generations of scientists and engineers.

Biography of Dr. Dan Handley:

Dr. Handley has over twenty years' experience in engineering and biotechnology in both academia and industry. Previously, he has served as a nuclear engineer in the U.S. Navy, senior research management at the UCLA School of Medicine, and as a senior researcher in research and development at the Procter & Gamble Company. He has authored over two dozen research publications. He holds a B.A. in biophysics from Johns Hopkins University, an M.S. in logic and computation from Carnegie Mellon University, and a Ph.D. in human genetics from the University of Pittsburgh. In addition to being owner/producer of his science media production company, Dan Handley Science Media, LLC, Dr. Handley also serves as Chief Science Officer of Pittsburgh-based biotechnology company Brainstage, Inc.



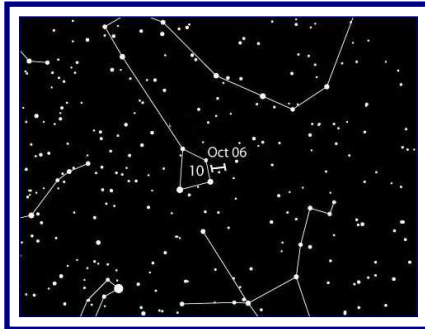
Dinner Reservations: Please register on-line at <http://www.pittcon.org/misc/societies/ssprsvp.php> to make dinner reservations NO LATER THAN MONDAY, October 8, 2012. This month's entrée is TBA. Dinner will cost \$8 and checks can be made out to the SSP. If you have any dietary restrictions, please indicate them when you RSVP.

Parking Instructions: The Duquesne University Parking Garage is located on Forbes Avenue. Upon entering the garage, receive parking ticket and drive to upper floors. Pick up a parking chit at the dinner or meeting. From the parking garage, take the elevator to the 8th floor level. At this level, go to the Right walk through the enclosed Skywalk to the Powers Center Ballroom. Once in the Power Center, you will be on the 5th floor where the Ballroom is located.

Two Meteor Maximums This Month

The Draconids: Evenings of October 7 & 8

Active from October 6th through the 10th, the International Meteor Organization predicts a maximum for this shower on October 8th at 07:15 local time. That's after local sunrise, but the Draconids are unusual in that the radiant, located near the head of the dragon, is high in the Northwest during early evening hours. Best viewing times will probably be the evenings of October 7 and 8 before midnight.



High as evening falls, the Draconid radiant near the head of the dragon, barely drifts over the period of activity.

The ZHR or zenith hourly rate is variable but is listed as from 20 per hour up to storm levels, as occurred in 1933 and 1946.

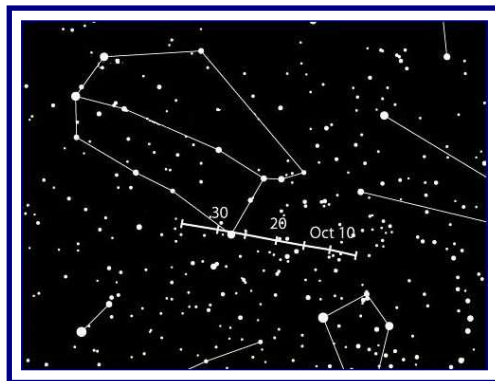
The parent body is comet 21P/Giacobini-Zinner, whose period is 6.6 years and which returned to perihelion in February of this year. While greater rates are detected around times of perihelion passage, no unusual activity is expected this year.

Members of the Draconid shower move slowly. This year the Moon is cooperative, at last quarter, rising after midnight.

The Orionids: Before Dawn, October 21

Active from October 2nd to November 7th, the maximum is predicted to occur in the pre-dawn hours of October 21st.

While observations have shown various cycles with differing hourly rates to be operative over the month-long period of activity, the prediction this year calls for a ZHR of about 25 on the 21st, but unexpected instances of rates equaling that of the maxima have occurred over the years.



The Orionid radiant, north of Betelgeuse, drifts into Gemini over the period of activity.

Orionids move quickly and can leave persistent trains and generate some fireballs. A waxing crescent moon setting before midnight on October 20 means a dark sky between midnight and dawn during the best viewing time for shower.

August Star Party Attendance

Mingo Observatory

August 10: 45 Visitors were hosted by the following members:

- | | |
|------------------|-----------------------|
| Bill Roemer | Joyce Osborne-Fischer |
| Mike Meteney | Mary DeVaughn |
| Jon Johnson | Jean Roemer |
| John Diller, | Melody Bishop |
| George Guzik | Don Hoecker |
| Michael Skowvron | Kathy DeSantis |
| Dick Haddad | Gene Kulakowski |
| Eric Fischer | |

August 11: 32 visitors were hosted by the following members:

- | | |
|--------------|-----------------|
| Bill Roemer | Greg Shephard |
| George Guzik | Kathy DeSantis |
| Dick Haddad | Gene Kulakowski |
| Jon Johnson, | |

Wagman Observatory

August 24: Estimated attendance was between 150 and 200, with the following members assisting with this event.

- | | |
|------------------------|-------------------|
| John Diller | Kelly Fletcher |
| Pete Zapadka | Rowen Poole |
| Phil Breidenbach | Ann Campbell |
| Dan Peden | Tom Piper |
| Tim Manka | Becky Valentine |
| Eric and Joyce Fischer | Mary DeVaughn |
| Mike Nizinski | Fred Klein |
| Bill Hayeslip | Don Hoecker |
| Frank Pastin | Terry, Joanne and |
| Matt Maskas | Geoffrey Trees |
| Flacc Stifel | Ed Zullo |
| Tim Colbert | Tom Reiland |
| Ron and Cindy Pollack | |

August 25: The following members assisted with the event:

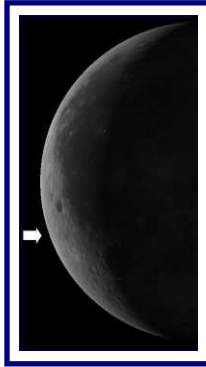
- | | |
|------------------------|------------------------------|
| Mary DeVaughn | Jon Grimme |
| Terry and Joanne Trees | Bill Yorkshire |
| Mike Nizinski | John Holtz |
| Frank Pastin | Flacc Stifel |
| Ken Coles | Viola Christy |
| Bill Hayeslip | Tom Turiak |
| Dan Reed | Don Hoecker |
| Tim Manka | Fred Klein |
| Eric and Joyce Fischer | Tom Reiland |
| Ron Pollack | Mike Frynkewicz (with |
| | grandson, non-member, Tyler |
| | Shofelt helped with parking) |

Some October Lunar Highlights

Because the speed of the Moon in its orbit changes due to the variance of its distance from Earth and that its axis of rotation is not perpendicular to its orbital plane, the Moon appears to wobble as viewed from Earth. The effect is called libration and actually allows observers to see 59% of the lunar surface over time.

On October 4th, the Moon will show the smallest amount of libration in a decade and the 20th least amount in the past millennium. Now, that's a negative distinction – let's go observe something that isn't there.

But, a week later on the morning of October 11th, the 25 day-old Moon does allow us to glimpse something that "usually isn't there" and is surely on a lunar observer's bucket list: Mare Orientale, the "Eastern Sea" (although it's on the Moon's western limb).



Orientele, even under the most favorable libration conditions, is terribly foreshortened and before the space age, earth-bound observers could only guess at its true shape or significance.

That all changed in 1967. NASA's Lunar Orbiter revealed Orientele to be a multiple ring impact basin. It showed little erosion and was young enough that it formed after the lava flooding which disguises the underlying structure of the impact basins – like Imbrium and even gigantic Oceanus Procellarum – that face Earth.



The long-lived debate between volcanism and impactation came to a close.

It's fair to say that if Mare Orientale had been tilted our way, the major role of impacts on lunar and planetary surface formation may have been understood by astronomers much sooner.

At right, a spacecraft's view of Mare Orientale, the multiple ring impact basin that changed our thinking.



On October 26th at 03:28, magnitude 5, κ Piscium will be occulted by the dark limb of the 11 day-old Moon.

On October 28th at 19:0:28, magnitude 5.8, π Piscium will be occulted by the dark limb of the 13.5 day-old Moon. The Moon being near full, the star may be difficult to see.

For Sale: Telescope and Accessories

**Meade LX200 12 inch
Schmidt-Cassegrain Telescope
With Heavy Duty field tripod
Original User Manual Included**

Please contact:





Doug Campbell
104 Woodland Drive
Sarver, PA 16055
724-295-9067

All items for sale for reasonable offer. Accessories will not be sold separately before telescope is sold.

Accessories Include:

- Adjustable height viewing chair
- Meade Equatorial Super-Wedge
- Custom Packing Case w/ aluminum frame, foam padding
- Telrad Starfinder w/ tube installed mount
- Eyepiece - Meade Ultra Wide angle -- 6.7mm/1.25"
- Eyepiece Adaptor – Celestron MicroGuide 12.5mm
- Eyepiece Adaptor – Celestron Radial Guider
- Eyepiece Adaptor - Meade Variable Barlow 2x-3x
- Eyepiece - Meade Super Plossl -- 26mm/1.25
- Eyepiece - Tuthill Plossl -- 10mm/1.25"
- Eyepiece - Televue Panoptic -- 27mm/2"
- Eyepiece - Nagler Type 2 -- 12mm/2"
- Adaptor - Meade variable projection tele-extender
- Adaptor - Canon SLR camera mount
- Deep Sky Filter
- Jim Kendrick Kwik Focus
- Solar Skreen Filter
- Miscellaneous books
- Accessory cases, and more

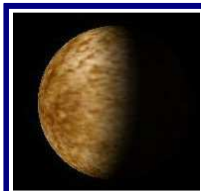


Sun	Mon	Tue	Wed	Thu	Fri	Sat
<p>Times are local. SR = Sunrise, SS = Sunset, MR = Moonrise, MS = Moonset, PI = Approx. Percentage Visible Lunar Surface Illuminated Local Midnight</p>	<p>1</p> <p>SR:07:17 SS:19:01 MR:19:37 MS:08:46 PI:99%</p>	<p>2</p> <p>Orionid Activity Begins</p> <p>SR:07:18 SS:18:59 MR:20:10 MS:09:44 PI:97%</p>	<p>3</p> <p>SR:07:19 SS:18:58 MR:20:48 MS:10:42 PI:92%</p>	<p>4</p> <p>Sputnik 55th Anniversary</p> <p>Minimum Lunar Libration</p> <p>SR:07:20 SS:18:56 MR:21:29 MS:11:36 PI:87%</p>	<p>5</p> <p>Mercury / Saturn Conjunction Separation 3.2°</p> <p>SR:07:21 SS:18:55 MR:22:16 MS:12:28 PI:80%</p>	<p>6</p> <p>Star Parties at both Observatories</p> <p>Draconid Activity Begins</p> <p>SR:07:22 SS:18:53 MR:23:06 MS:13:16 PI:72%</p>
	<p>7</p> <p>SR:07:23 SS:18:51 MR:***** MS:14:00 PI:63%</p>	<p>8</p> <p> 03:33</p> <p>Draconid Maximum</p> <p>SR:07:24 SS:18:50 MR:00:01 MS:14:39 PI:53%</p>	<p>9</p> <p>SR:07:25 SS:18:48 MR:00:59 MS:15:15 PI:43%</p>	<p>10</p> <p>Draconid Activity Ends</p> <p>SR:07:26 SS:18:47 MR:02:00 MS:15:49 PI:34%</p>	<p>11</p> <p>Lunar Libration Event Mare Orientale Visible</p> <p>SR:07:27 SS:18:45 MR:03:04 MS:16:21 PI:24%</p>	<p>12</p> <p>SR:07:28 SS:18:44 MR:04:09 MS:16:52 PI:16%</p>
<p>14</p> <p>SR:07:30 SS:18:41 MR:06:28 MS:17:59 PI:3%</p>	<p>15</p> <p> 08:02</p> <p>SR:07:31 SS:18:39 MR:07:41 MS:18:37 PI:0%</p>	<p>16</p> <p>SR:07:32 SS:18:38 MR:08:54 MS:19:21 PI:0%</p>	<p>17</p> <p>SR:07:33 SS:18:36 MR:10:07 MS:20:11 PI:3%</p>	<p>18</p> <p>SR:07:34 SS:18:35 MR:11:16 MS:21:07 PI:9%</p>	<p>19</p> <p>SR:07:35 SS:18:33 MR:12:18 MS:22:10 PI:17%</p>	<p>20</p> <p>Star Parties at both Observatories</p> <p>SR:07:37 SS:18:32 MR:13:12 MS:23:16 PI:27%</p>
<p>21</p> <p> 23:32</p> <p>Orionid Maximum</p> <p>SR:07:38 SS:18:30 MR:13:58 MS:***** PI:37%</p>	<p>22</p> <p>SR:07:39 SS:18:29 MR:14:37 MS:00:23 PI:48%</p>	<p>23</p> <p>SR:07:40 SS:18:28 MR:15:11 MS:01:29 PI:59%</p>	<p>24</p> <p>SR:07:41 SS:18:26 MR:15:42 MS:02:33 PI:70%</p>	<p>25</p> <p>SR:07:42 SS:18:25 MR:16:10 MS:03:36 PI:79%</p>	<p>26</p> <p>SR:07:43 SS:18:23 MR:16:39 MS:04:37 PI:86%</p>	<p>27</p> <p>SR:07:44 SS:18:22 MR:17:07 MS:05:37 PI:92%</p>
<p>28</p> <p>SR:07:46 SS:18:21 MR:17:38 MS:06:37 PI:97%</p>	<p>29</p> <p> 15:49</p> <p>SR:07:47 SS:18:20 MR:18:10 MS:07:36 PI:99%</p>	<p>30</p> <p>SR:07:48 SS:18:18 MR:18:47 MS:08:33 PI:100%</p>	<p>31</p> <p>Orionid Activity Continues Until November 7</p> <p>SR:07:49 SS:18:17 MR:19:27 MS:09:29 PI:99%</p>	<p><i>Astronomy is one of the sublimest fields of human investigation.</i></p> <p><i>The mind that grasps its facts and principles receives something of the enlargement and grandeur belonging to the science itself.</i></p> <p><i>It is a quickener of devotion.</i></p> <p style="text-align: right;">— Horace Mann</p>		

Some Solar System Highlights

Selenographic Colongitude is 95.97° at 0h UT on the first day of the month. Add 12.2° each day.

The following planetary entries include Local Rise and Set Times (for Pittsburgh) , Magnitudes and Disk diameters in Arc Seconds on the 1st, 11th, 21st and 31st days of the month.



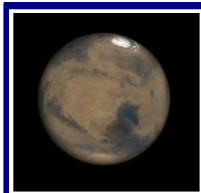
Date	Rise	Set	Mag	Arc
1st	08:36:10	19:34:37	-0.4	5.00
11th	09:14:26	19:27:36	-0.2	5.37
21st	09:45:07	19:21:05	-0.1	6.03
31st	09:57:57	19:11:22	-0.0	7.21

Mercury is low in the evening twilight to the West South West throughout the month, close to the horizon and quite difficult to view. A challenging observation to make would occur on the evening of the 16th, when (gibbous) Mercury is within 2° of the slim crescent of the one and a half day old Moon. An excellent Western horizon would be a must.



Date	Rise	Set	Mag	Arc
1st	03:51:16	17:24:01	-4.1	15.78
11th	04:10:21	17:16:27	-4.1	14.82
21st	04:30:26	17:07:17	-4.0	14.02
31st	04:51:13	16:57:17	-4.0	13.33

Venus is in the eastern morning sky. On the 4th, rising more than 3 hours before the Sun, Venus will be positioned a scant 9 minutes of arc from 1.4 magnitude Regulus. On the 12th, Venus will be only 6° North North East of the 26 day old crescent Moon



Date	Rise	Set	Mag	Arc
1st	11:20:22	21:01:05	1.2	4.82
11th	11:16:55	20:44:42	1.2	4.72
21st	11:13:31	20:30:35	1.2	4.64
31st	11:09:44	20:18:54	1.2	4.56

Mars is low in the western evening sky, moving eastward from Libra into Scorpius. On the evening of the 18th, the planet will be about 30 North of Antares with the 3.5 day old crescent Moon located about 50 away. This may make a pretty naked eye grouping.



Date	Rise	Set	Mag	Arc
1st	22:12:24	13:01:07	-2.5	43.04
11th	21:32:47	12:21:26	-2.6	44.35
21st	20:51:53	11:40:12	-2.7	45.59
31st	20:09:46	10:57:28	-2.7	46.69

Jupiter, in Taurus, rises in the late evening and is well positioned for viewing after midnight and through to the early morning. System 2 longitude is 185°.



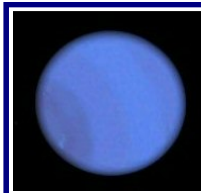
Date	Rise	Set	Mag	Arc
1st	08:58:36	19:59:40	0.7	15.47
11th	08:25:11	19:23:18	0.7	15.40
21st	07:51:54	18:47:04	0.6	15.37
31st	07:18:37	18:10:53	0.6	15.37

Saturn is in conjunction with the Sun on the 25th and is not visible.



Date	Rise	Set	Mag	Arc
1st	18:50:55	07:11:38	5.7	3.67
11th	18:10:40	06:30:20	5.7	3.67
21st	17:30:28	05:49:08	5.7	3.66
31st	16:50:21	05:08:07	5.7	3.64

Uranus, in Pisces, rises in late afternoon and is visible throughout the night.



Date	Rise	Set	Mag	Arc
1st	17:25:44	04:12:19	7.8	2.29
11th	16:45:57	03:32:05	7.9	2.29
21st	16:06:17	02:52:04	7.9	2.28
31st	15:26:45	02:12:18	7.9	2.26

Neptune, in Aquarius, rises in late afternoon and is visible throughout the night.

Jupiter Activity: Satellites & the Great Red Spot



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

They are organized by observing sessions beginning with the first event of interest on a given evening and continuing to Jupiter's setting or the Sun rising. Using September 17 as an example, Jupiter rises at 21:10. At 23:40, the Great Red Spot will transit the meridian. After midnight, on the 18th, at 00:13, Europa's shadow begins to transit (S), at 02:22 Europa itself will begin to transit, so both a satellite transit and a shadow transit will be in progress (ST). At 02:37, Europa's shadow will exit the Jovian disk, leaving only Europa itself in transit (T). At 04:42, Europa will exit the disk. Sunrise ends the session. All times are local.

1	00:40 GRS Crosses Central Meridian		
	01:30 Io Reappears from Occultation		
1	22:14 Jupiter Rises		
	22:38 Io Transit Ends		
	00:00 Europa Disappears into Eclipse		
	02:23 Europa Reappears from Eclipse		
	02:29 Europa Disappears into Occultation		
	04:49 Europa Reappears from Occultation		
	06:27 GRS Crosses Central Meridian		
2	22:10 Jupiter Rises		
3	02:18 GRS Crosses Central Meridian		
3	22:06 Jupiter Rises		
	22:09 GRS Crosses Central Meridian		
	23:52 Europa Transit Ends		
4	22:02 Jupiter Rises		
5	03:56 GRS Crosses Central Meridian		
5	21:58 Jupiter Rises		
	23:47 GRS Crosses Central Meridian		
6	00:33 Ganymede Disappears into Eclipse		
	02:31 Ganymede Reappears from Eclipse		
	05:29 Io Disappears into Eclipse		
	05:30 Ganymede Disappears into Occultation		
	07:19 Ganymede Reappears from Occultation		
6	21:54 Jupiter Rises		
7	02:39 Io Shadow Transit Begins	S	
	03:50 Io Transit Begins	ST	
	04:49 Io Shadow Transit Ends	T	
	05:34 GRS Crosses Central Meridian		
	06:00 Io Transit Ends		
7	21:50 Jupiter Rises		
	23:57 Io Disappears into Eclipse		
8	01:25 GRS Crosses Central Meridian		
	03:19 Io Reappears from Occultation		
8	21:46 Jupiter Rises		
	22:17 Io Transit Begins	ST	
	23:17 Io Shadow Transit Ends	T	
9	00:27 Io Transit Ends		
	02:34 Europa Disappears into Eclipse		
	07:12 GRS Crosses Central Meridian		
	07:15 Europa Reappears from Occultation		
9	21:42 Jupiter Rises		
	21:46 Io Reappears from Occultation		
10	03:03 GRS Crosses Central Meridian		
10	21:38 Jupiter Rises		
	22:55 GRS Crosses Central Meridian		
	23:58 Europa Transit Begins		
11	00:01 Europa Shadow Transit Ends	T	
	02:18 Europa Transit Ends		
11	21:34 Jupiter Rises		
12	04:42 GRS Crosses Central Meridian		
12	21:30 Jupiter Rises		
13	00:33 GRS Crosses Central Meridian		
	04:33 Ganymede Disappears into Eclipse		
	06:32 Ganymede Reappears from Eclipse		
	07:23 Io Disappears into Eclipse		
13	21:26 Jupiter Rises		
14	04:32 Io Shadow Transit Begins	S	
	05:38 Io Transit Begins	ST	
	06:20 GRS Crosses Central Meridian		
	06:43 Io Shadow Transit Ends	T	
14	21:22 Jupiter Rises		
15	01:52 Io Disappears into Eclipse		
	02:11 GRS Crosses Central Meridian		
	05:07 Io Reappears from Occultation		
15	21:18 Jupiter Rises		
	22:02 GRS Crosses Central Meridian		
	23:01 Io Shadow Transit Begins	S	
16	00:05 Io Transit Begins	ST	
	01:11 Io Shadow Transit Ends	T	
	02:15 Io Transit Ends		
	05:09 Europa Disappears into Eclipse		
16	21:14 Jupiter Rises		
	23:02 Ganymede Transit Begins	T	
	23:34 Io Reappears from Occultation	T	
17	00:51 Ganymede Transit Ends		
	03:49 GRS Crosses Central Meridian		
17	21:10 Jupiter Rises		
	23:40 GRS Crosses Central Meridian		
18	00:13 Europa Shadow Transit Begins	S	
	02:22 Europa Transit Begins	ST	
	02:37 Europa Shadow Transit Ends	T	
	04:42 Europa Transit Ends		
18	21:06 Jupiter Rises		
19	05:27 GRS Crosses Central Meridian		
19	21:02 Jupiter Rises		
	22:49 Europa Reappear		
20	01:18 GRS Crosses Central Meridian		
20	20:57 Jupiter Rises		
	21:09 GRS Crosses Central Meridian		
21	06:26 Io Shadow Transit Begins	S	
	07:05 GRS Crosses Central Meridian		
	07:25 Io Transit Begins	ST	
21	20:53 Jupiter Rises		
	02:56 GRS Crosses Central Meridian		
	03:46 Io Disappears into Eclipse		
	06:55 Io Reappears from Occultation		
22	20:49 Jupiter Rises		
	22:47 GRS Crosses Central Meridian		
	00:54 Io Shadow Transit Begins	S	
	01:52 Io Transit Begins	ST	
	03:05 Io Shadow Transit Ends	T	
	04:02 Io Transit Ends		
23	20:45 Jupiter Rises		
	22:14 Io Disappears into Eclipse		
	22:39 Ganymede Shadow Transit Begins	S	
24	00:40 Ganymede Shadow Transit Ends		
	01:21 Io Reappears from Occultation		
	02:32 Ganymede Transit Begins	T	
	04:21 Ganymede Transit Ends		
	04:34 GRS Crosses Central Meridian		
24	20:41 Jupiter Rises		
	21:33 Io Shadow Transit Ends	T	
	22:28 Io Transit Ends		
25	00:25 GRS Crosses Central Meridian		
	02:50 Europa Shadow Transit Begins	S	
	04:43 Europa Transit Begins	ST	
	05:14 Europa Shadow Transit Ends	T	
	07:03 Europa Transit Ends		
25	20:37 Jupiter Rises		
26	06:12 GRS Crosses Central Meridian		
26	20:32 Jupiter Rises		
	21:01 Europa Disappears into Eclipse		
27	01:09 Europa Reappears from Occultation		
	02:03 GRS Crosses Central Meridian		
27	20:28 Jupiter Rises		
	21:54 GRS Crosses Central Meridian		
28	20:24 Jupiter Rises		
29	03:41 GRS Crosses Central Meridian		
	05:40 Io Disappears into Eclipse		
29	20:20 Jupiter Rises		
	23:32 GRS Crosses Central Meridian		
30	02:48 Io Shadow Transit Begins	S	
	03:38 Io Transit Begins	ST	
	04:59 Io Shadow Transit Ends	T	
	05:48 Io Transit Ends		
30	20:15 Jupiter Rises		
	00:08 Io Disappears into Eclipse		
31	02:38 Ganymede Shadow Transit Begins	S	
	03:07 Io Reappears from Occultation	S	
	04:40 Ganymede Shadow Transit Ends		
	05:19 GRS Crosses Central Meridian		
	05:59 Ganymede Transit Begins	T	
	07:47 Ganymede Transit Ends		
31	20:11 Jupiter Rises		
	21:17 Io Shadow Transit Begins	S	
	22:04 Io Transit Begins	ST	
	23:27 Io Shadow Transit Ends	T	

Suggested Deep Sky Objects for October

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
23 ^h 56.7 ^m	+61° 44'	NGC 7788	9.4v	9'		Cas	Open Cl 20* with 7790
23 ^h 57.0 ^m	+57° 44'	NGC 7789	6.7v	15'		Cas	Open Cluster 300*
23 ^h 58.4 ^m	+61° 13'	NGC 7790	8.5v	17'		Cas	Open Cl 40* with 7788
01 ^h 51.5 ^m	-10° 20'	Zeta	3.7, 9.9	187.0"	41°	Cet	Double Star
01 ^h 53.5 ^m	+19° 18'	Gamma	4.8, 9.6	221.3"	84°	Ari	D.S. (AB: 4.8,4.8; 7.8")
02 ^h 32.7 ^m	+61° 27'	Mel 15	6.5v	22'		Cas	Open Cl 40* (w E.neb IC1805)

Objects for Small Telescopes (2-6 inch)

RA	Dec	Number	Mag(s)	Size/Sep.	PA	Const.	Type of Object
01 ^h 15.6 ^m	+58° 49'	NGC 436	8.8v	5'		Cas	Open Cluster 30*
01 ^h 44.1 ^m	+61° 53'	NGC 654	6.5v	5'		Cas	Open Cluster 60*
01 ^h 46.0 ^m	+61° 15'	NGC 663	7.1v	16'		Cas	Open Cluster 80*
02 ^h 03.0 ^m	+33° 17'	Iota	5.3, 6.9	3.9"	71°	Tri	Double Star
02 ^h 42.7 ^m	-00° 01'	M77	8.9v	8.2'x7.3'		Cet	Galaxy
03 ^h 57.9 ^m	+40° 01'	Epsilon	2.9, 8.1	8.8"	10°	Per	Double Star

Objects for Medium Telescopes (8-14 inch)

RA	Dec	Number	Mag(s)	Size/Sep.	PA	Const.	Type of Object
00 ^h 14.1 ^m	-23° 11'	NGC 45	10.8v	6.3'x4.6'		Cet	Galaxy
01 ^h 47.9 ^m	+27° 26'	NGC 672	10.9v	6.6'x2.6'		Tri	Galaxy
01 ^h 59.3 ^m	+19° 01'	NGC 772	10.3v	7.3'x4.6'		Ari	Galaxy
02 ^h 08.4 ^m	+1° 00'	NGC 821	10.7v	3.3'x2.3'		Ari	Galaxy
02 ^h 27.3 ^m	+33° 35'	NGC 925	10.1v	12.0'x7.4'		Tri	Galaxy
02 ^h 30.8 ^m	+37° 08'	NGC 949	11.8	3.3'x2.1'		Tri	Galaxy
02 ^h 34.2 ^m	+29° 19'	NGC 972	11.4v	3.4'x1.6'		Ari	Galaxy

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

RA	Dec	Number	Mag(s)	Size/Sep.	PA	Const.	Type of Object
00 ^h 39.0 ^m	+48° 20'	NGC 185	9.2v	14.5'x12.5'		Cas	Galaxy
01 ^h 09.4 ^m	+35° 43'	NGC 404	10.3v	6.1'x6.1'		And	Galaxy
01 ^h 31.3 ^m	-06° 52'	NGC 584	10.5v	3.2'x1.7'		Cet	Galaxy
01 ^h 33.9 ^m	+30° 39'	M33	5.7v	67.0'x41.5'		Tri	Galaxy
02 ^h 09.4 ^m	-10° 08'	NGC 835	12.1v	1.9'x1.6'		Cet	Galaxy with 833, 838, 839
02 ^h 18.0 ^m	+14° 33'	NGC 877	11.9v	2.1'x1.7'		Ari	Galaxy with 870, 871, 876
02 ^h 39.2 ^m	+10° 51'	NGC 1024	12.1v	4.4'x1.6'		Ari	Galaxy with 1028, 1029

Reminder: November's Brunelle Contest

The deadline for the 2012 Kevin J. Brunelle Contest will be October 30, 2012. An online copy of the new rules and updates can be found at:

<http://www.natebrandt.com/Direct/2012KJBContest.pdf>

This year's contest will be held at Allegheny Observatory on Friday, November 9th in conjunction with the club's general business meeting.

Membership Information

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

Basic Procedure for Paying Dues:

1. Make check payable to "AAAP Inc."
 2. Send check to: Nate Brandt, Treasurer
2520 Campmeeting Rd.
Sewickley, PA 15143-9104
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Membership Renewal Form can be found at:

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

New Membership Form can be found at:

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

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

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

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