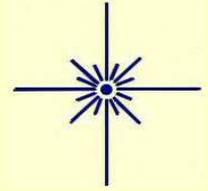




The Guide Star

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



September 2011

Volume 45, No.9

September 9th: AAAP General Meeting

The first general AAAP meeting of the 2011 - 2012 season will be on Friday, September 9th, 2011 at 7:30 pm in the Bayer Science Stage at the Carnegie Science Center. All members, friends and family are welcome.

The speakers for the evening will be Dr. Terry Trees and Daniel Peden, both of the AAAP. Both speakers will presenting material that is targeted to all club members.

Daniel Peden became interested in astronomy at St. Vincent College in the 70's. However, working as a City Medic for 30 years, with required residency, and crazy hours, has limited his telescope skills. So he mostly pursues solar observing from home and enjoys reading about the exploits of others. His chief passion is caving - "you've not known dark unless you've been caving. Unfortunately, no stars." Daniel will be presenting highlights from his trip to Kitt Peak.

Dr. Terry N. Trees received a Bachelors of Science degree in the History of Science from Case Western Reserve University, a Masters of Science degree in Educational Psychology and Guidance from Slippery Rock University and his Doctorate in Educational Administration from the University of Pittsburgh.

Terry spent the first 20 years of his career in public education, as a science teacher in the New Kensington-Arnold School District, a counselor for the Northern Westmoreland Area Vo-Tech School and as an assistant principal for the Union City Area School District. The last 20 years of his career were spent as a computer network engineer for the University of Pittsburgh, Mercy Hospital and the Mine Safety Appliances Company. The latter job allowed him to travel to Argentina, Brazil, Canada, China and Mexico as well as to various MSA facilities here in the United States.

Terry also served as an Adjunct Professor of Astronomy and Physical Sciences for Waynesburg University where he taught courses in astronomy, environmental sciences and information technology, both at the undergraduate and graduate levels.

Terry is a member of the Amateur Astronomers Association of Pittsburgh, the Royal Astronomical Society of Canada, the Kiski Astronomers and the Oil Region Astronomical Society. He has served as an officer in several of these organizations including as president, vice president and corresponding secretary of the AAAP. He is currently a member of the AAAP Executive Committee. Terry and his family have traveled to many star parties in the U.S. and Canada where he has lectured on a number of astronomical topics.

Terry's presentation is titled, "Camp-Over Star Parties and the Observing Clubs of the Astronomical League"

A sneak peek at October's speaker: Dr. Maura McLaughlin, Professor of Astronomy, West Virginia University.

Upcoming AAAP Public Star Party Dates

September 2, 3	Wagman Observatory
September 17	Both Mingo & Wagman Observatories
October 1	Mingo Creek Park Observatory.
October 8	Wagman Observatory.
October 15	Both Mingo & Wagman Observatories
October 29	Mingo Creek Park Observatory.

Observer Classes and Manka Scope Training

I am planning several nights for some sessions for members to come up to Wagman to learn some of my observing methods and informal training on the Manka scope. These dates will depend on the weather and attendance.

I will conduct Starhopping Classes in September and October, also weather permitting. Here are the dates for the Starhopping Classes:

September 19 and 20
October 17 and 18
Mondays and Tuesdays

Email me at my address if you plan to come to any of these programs.

- Tom Reiland

Important: Brunelle Astrophotography Contest Organizers Needed

The AAAP is looking for some folks to organize and lead the Brunelle Astrophotography Contest. The contest is held each November at the regular meeting for the month.

We recommend that those applying have some knowledge of astrophotography and be familiar with electronic means of presenting submitted photos.

Those involved in organizing are still welcome to enter the contest, but we simply ask that you strive to remain unbiased in dealing with and handling other's photos.

Please contact me via the VP email address or via my telephone number (in the member directory) if you're interested.

Also ... I would like to take a moment to thank a few members who have worked on the Brunelle Astrophotography contest in the last few years:

Mark Arelt
Dave Conte
Dave Smith

Let's all thank them for all their hard work in recent years on the Brunelle Astrophotography Contest.

- Craig Lang

**Comet Garradd
& Asterisms**

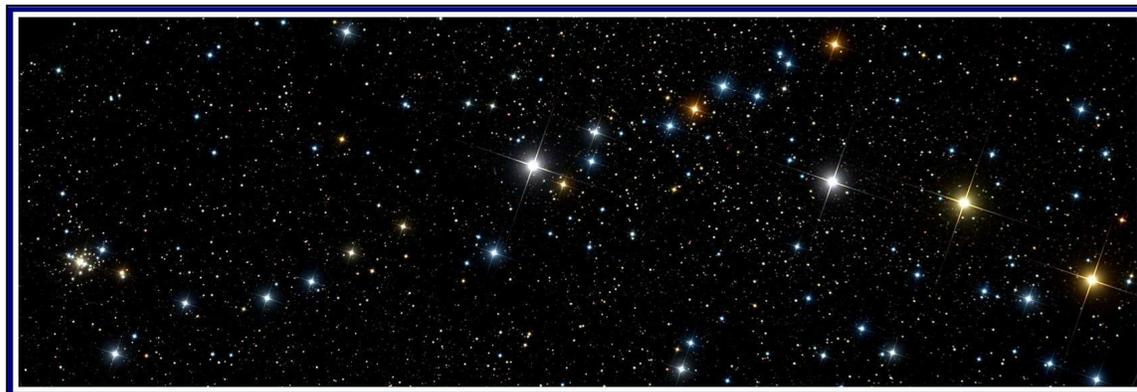
Comet Garradd's path through the "Coathanger" early this month provides a perfect segue into a discussion of asterisms. Usually viewable thru any scope or even binoculars, asterisms, or a chance association of stars in a distinctive pattern, are a great target for casual viewing.

But first, the "Coathanger" in Vulpecula. Once thought to be a true cluster whose member stars were gravitationally bound, recent studies have demoted it to an asterism.



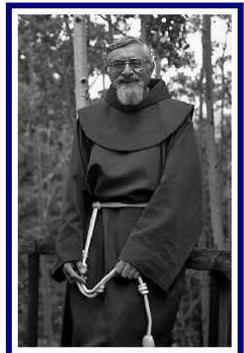
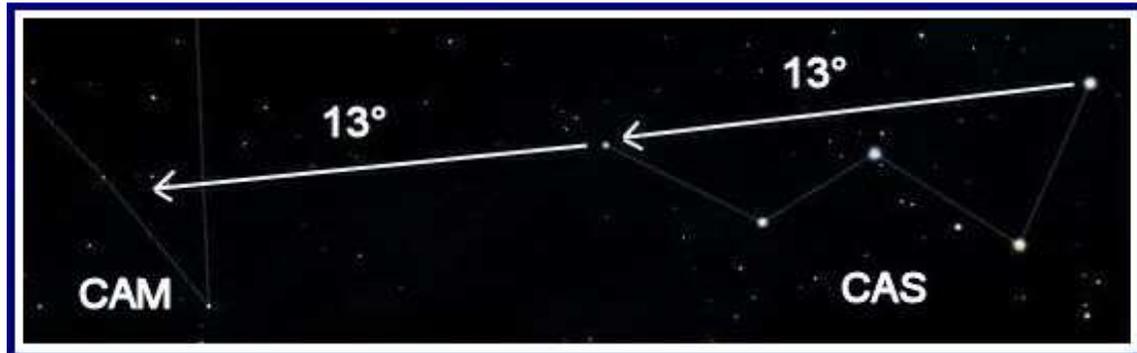
Comet C/2009 P1 Garradd skirts the "Coathanger" or CR399 on September 1st, 2nd and 3rd.

Actually, its more formal title is CR399 because of its inclusion in the catalog of open cluster compiled by Swedish astronomer Per Collinder. The group was originally known as Al Sufi's Cluster after the Persian astronomer who first mentioned it in the 10th century.



Almost incredibly, a striking asterism became famous as recently as 1980. Writer Walter Scott Houston named a wonderful asterism in Camelopardalis after its discoverer, the late Lucian Kemble, a Canadian amateur who was also a Franciscan friar.

A two and a half degree "celestial waterfall" of 5th to 10th magnitude stars, that ends near the open cluster NGC 1502, Kemble's Cascade or Kemble 1 is easily found by simply doubling the line from beta Cas to epsilon Cas.



While speaking of Father Kemble and Cassiopeia, the asterisk designated Kemble 2 is a miniature version of the constellation.

It's located in Draco and being less than two degrees to the east of the mag 3.5 star chi Draconis, it's easily located.

Granted, the directions east and west are a bit dicey when near the pole, so simply start at chi Draconis and move slowly in the direction of epsilon Draconis.

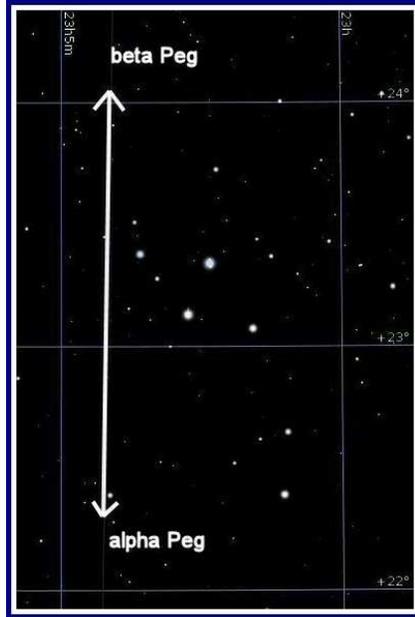
The asterism consists of 8th and 9th magnitude stars and is only 18 minutes of arc in length, about the width of the gibbous Moon.



Another asterism which is a smaller version of a nearby constellation is the miniature Delphinus which can be found by dropping an imaginary line from beta Pegasi, the upper right star in the great square straight down to alpha Pegasi which marks the lower right corner.

Scan a bit less than half way down the imaginary line and a group of 7th and 8th magnitude stars only 1 degree 9 minutes from snout to tail can be found looking for all the world like the actual constellation of Delphinus located about 30 degrees to the west.

Of course, the "point" of most asterisms is simply their beauty or their resemblance to other well known shapes. But there is a famous asterism that has a somewhat practical use.



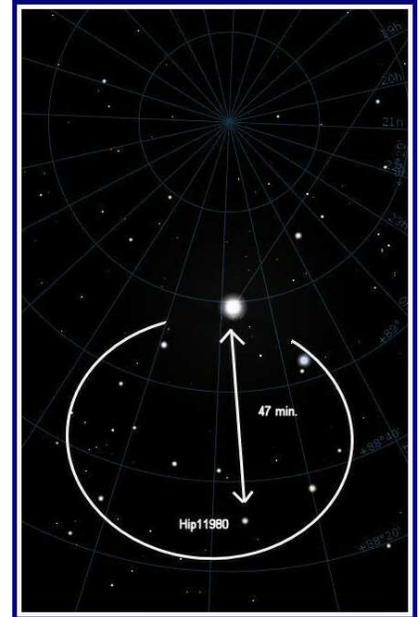
The "engagement ring" is a jagged and roughly semicircular arrangement of 7th to 9th magnitude stars with Polaris in the place of an imaginary gem stone.

There are a number of ways to complete the "ring" in the mind's eye. Take your pick.

But if one draws a line from mag 8.1 HIP11980 through Polaris which is about 47 arc minutes away and continues for about another 40 arc minutes, you are quite close to the north celestial pole.

Just remember that the celestial pole lies opposite the band in the "engagement ring".

- Guide Star Editor



Eric Fischer's Star Party Chatter: "Invisible Particles and Forces" (Last Article in a Series)

Last month we reviewed the many amusement park-like motions that we go through as the Earth rotates and otherwise moves through space. Of course, you cannot directly feel or sense these motions, except for the slow trek of celestial objects across the sky. Similarly, there's another set of cosmic physical effects you can describe to your star party guests: The flood of invisible particles and forces that permeate everybody and everything, most of which go unnoticed.

First up are the neutrinos pumped out by the Sun and other stars. As you may know, neutrinos are virtually massless particles that can easily pass through a light year of solid lead. At the risk of sounding geeky, tell your guests that about 65 billion neutrinos are passing through every cubic inch of their body (about the volume of a finger tip) every second, mostly from the Sun, regardless of whether the Sun is above or below the horizon. A few others arrive here from the stars. If your guests then ask how we know that neutrinos exist in the first place, perhaps it's best if you politely say "Google it".

Much more potent but much less frequent are cosmic rays, primarily made up of free-wheeling protons expelled from nuclear processes all over the Universe. Some scientists have speculated that cosmic rays may account for some human gene mutations, but assure your guests that most are deflected or transformed by the Earth's magnetosphere and atmosphere. If you're struck by a cosmic ray, the changes are remote that one would precisely hit a vital biochemical atom in your body.



Cosmic rays or radio signals from a supernova may indeed pass right through your head.

Interestingly, the unprotected Apollo astronauts reported many retinal flashes on their way to and from the Moon, likely the result of cosmic rays striking their visual cortexes. Also, some researchers have speculated that monks, living in massive pre-Renaissance European cathedrals, enjoyed exceptionally long lives because they spent most of their life protected from cosmic rays by massive stone ceilings and walls.

When it comes to electromagnetic energies, thankfully we are transparent to the most pervasive form: radio waves. Your star party guests may chuckle when you advise them that millions of man-made radio signals, including those broadcast from the red-blinking radio and cell phone towers around the horizon, are streaming through their heads at that moment. Still more are pouring down from the sky from the belt of geostationary satellites. But every so often, we personally "receive" a radio signal from deep space, perhaps from Jupiter or from the backwash of a supernova. Note: The urban legend of someone hearing a radio station in a metallic tooth filling is a busted myth

Ironically, the advent of LCD and other digital television monitors is slowly eliminating an interesting type of radio wave detector, the old style cathode-ray tube TV set. Tell your guests to keep one of these sets, turn it on from time to time and select an inactive channel. A few percent of the resulting "snow" on the TV tube is actually radio residue emitted from the Bing Bang.

Of course, the one physical force you can "demonstrate" to your guests is Earth's gravity. Remind them that gravity is, by far, the weakest of the basic physical forces. It takes 6.6 sextillion tons and 260 billion cubic miles of rock to keep a paperclip on the ground. A 2-inch bar magnet can easily overcome that force.

In fact, you can use force of gravity to put astrology (of all things) in perspective. You are indeed influenced by Mars, Jupiter etc. when you're born. The typical planet exerts a billionth of a billionth of a billionth of an gram when you arrive in the delivery room. Relatively speaking, the obstetrician exerts much greater gravitational pull.



Seemingly innocent radio transmitters are constantly flooding you with radio signals

Sun

Mon

Tue

Wed

Thu

Fri

Sat

<p><i>"You have to really study the image you see in the eyepiece to get all the information coming to you..."</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: https://nightsky.jpl.nasa.gov/event-list.cfm?Club_ID=675&EventEra=Future</p>			<p>1</p> <p>Comet C/2009 P1 Garradd enters the Coathanger</p> <p>SR:06:47 SS:19:52 MR:11:06 MS:21:40 PI:12%</p>	<p>2</p> <p>Star Party Wagman Obs.</p> <p>SR:06:48 SS:19:50 MR:12:20 MS:22:22 PI:21%</p>	<p>3</p> <p>Star Party Wagman Obs.</p> <p>Mercury Greatest Western Elongation 18°</p> <p>SR:06:49 SS:19:49 MR:13:30 MS:23:11 PI:31%</p>
	<p>4</p>  <p>SR:06:50 SS:19:47 MR:14:34 MS:***** PI:42%</p>	<p>5</p> <p>SR:06:51 SS:19:46 MR:15:31 MS:00:05 PI:53%</p>	<p>6</p> <p>SR:06:52 SS:19:44 MR:16:19 MS:01:04 PI:64%</p>	<p>7</p> <p>SR:06:53 SS:19:42 MR:16:59 MS:02:06 PI:74%</p>	<p>8</p> <p>Mercury 45 arc minutes NE of Regulus</p> <p>SR:06:53 SS:19:41 MR:17:34 MS:03:10 PI:82%</p>	<p>9</p> <p>SR:06:54 SS:19:39 MR:18:04 MS:04:13 PI:89%</p>
<p>11</p> <p>SR:06:56 SS:19:36 MR:18:57 MS:06:14 PI:98%</p>	<p>12</p>  <p>SR:06:57 SS:19:34 MR:19:22 MS:07:13 PI:100%</p>	<p>13</p> <p>SR:06:58 SS:19:32 MR:19:47 MS:08:12 PI:99%</p>	<p>14</p> <p>SR:06:59 SS:19:31 MR:20:14 MS:09:10 PI:97%</p>	<p>15</p> <p>SR:07:00 SS:19:29 MR:20:43 MS:10:08 PI:94%</p>	<p>16</p> <p>SR:07:01 SS:19:27 MR:21:15 MS:11:06 PI:89%</p>	<p>17</p> <p>Star Party Mingo Obs. & Wagman Obs.</p> <p>SR:07:02 SS:19:26 MR:21:53 MS:12:04 PI:82%</p>
<p>18</p> <p>SR:07:03 SS:19:24 MR:22:36 MS:13:00 PI:74%</p>	<p>19</p> <p>SR:07:04 SS:19:22 MR:23:27 MS:13:54 PI:65%</p>	<p>20</p>  <p>SR:07:05 SS:19:21 MR:***** MS:14:44 PI:56%</p>	<p>21</p> <p>SR:07:06 SS:19:19 MR:00:23 MS:15:29 PI:46%</p>	<p>22</p> <p>SR:07:07 SS:19:17 MR:01:26 MS:16:09 PI:36%</p>	<p>23</p> <p>Autumnal Equinox 05:05</p> <p>Neptune discovered 1846</p> <p>SR:07:08 SS:19:16 MR:02:33 MS:16:46 PI:26%</p>	<p>24</p> <p>SR:07:09 SS:19:14 MR:03:43 MS:17:20 PI:17%</p>
<p>25</p> <p>SR:07:10 SS:19:12 MR:04:55 MS:17:52 PI:9%</p>	<p>26</p> <p>Uranus at Opposition</p> <p>SR:07:11 SS:19:11 MR:06:10 MS:18:24 PI:3%</p>	<p>27</p>  <p>SR:07:12 SS:19:09 MR:07:25 MS:18:58 PI:1%</p>	<p>28</p> <p>Mercury Superior Conjunction</p> <p>SR:07:13 SS:19:07 MR:08:42 MS:19:35 PI:1%</p>	<p>29</p> <p>Venus and Saturn 1.3° Apart</p> <p>SR:07:14 SS:19:06 MR:09:59 MS:20:17 PI:4%</p>	<p>30</p> <p>SR:07:15 SS:19:04 MR:11:13 MS:21:04 PI:10%</p>	<p><i>...Taking a peek and looking for the next object is like reading just a few words in a great novel."</i></p> <p><i>George Atamian (former astronomy professor)</i></p>

Some Celestial Highlights for September

Mercury is in dawn twilight the first half of August, rising at 05:18 on the 1st and 05:39 on the 11th. Greatest western elongation 18° on the 3rd.

Venus reappears low in the western evening sky the last half of the month, setting at 19:46 on the 21st, less than 30 minutes after sunset.

Mars moves Gemini into Cancer in the morning sky, rising at 02:34 on the 1st and 02:15 on the 21st. Its angular diameter will be a scant 4.9 arc seconds on that date.

Jupiter is in Aries, rising at 22:18 on the 1st, 21:39 on the 11th and 20:58 on the 21st, presenting a favorable angular diameter of more than 47 seconds. See Galilean satellite activity below.

Saturn vanishes into the evening twilight, setting at 20:12 on the 21st, less than a hour behind the Sun.

Uranus is visible all night, rising at 20:45 on the 1st. I comes to opposition on the 26th and presents a disk of only 3.7 arc seconds.

Neptune visible most of the night rising at 19:22 on the 1st and 18:42 on the 11th is retrograding in Aquarius, where it will reside until 2022. It present a disk 2.3 arc seconds.

For those using programs to predict **GRS** transits, **Jupiter's System II longitude** is 168°. **Selenographic Colongitude** is 295.97° at 0h UT at beginning of the month. Add 12.2° each day.

1st **Comet C/2009 P1 Garradd begins a 3 day passage through the Coathanger Cluster (Brocchi's cluster or CR399)**

2 nd	22:16	Jupiter Rises
3 rd	02:33	Io : Shadow Transit Begins
	03:45	Io : Transit Begins
	03:47	GRS : Crosses Central Meridian
	04:43	Io : Shadow Transit Ends
	05:54	Io : Transit Ends
4 th	22:08	Jupiter Rises
	22:13	Io : Transit Begins
	23:12	Io : Shadow Transit Ends
5 th	00:21	Io : Transit Ends
	05:25	GRS : Crosses Central Meridian
	06:13	Europa : Shadow Transit Begins
11 th	21:40	Jupiter Rises
	22:55	Io : Shadow Transit Begins
12 th	00:01	Io : Transit Begins
	01:06	Io : Shadow Transit Ends
	02:09	Io : Transit Ends
	06:11	GRS : Crosses Central Meridian
15 th	21:23	Jupiter Rises
	22:08	Europa : Shadow Transit Begins
	23:31	GRS : Crosses Central Meridian
16 th	00:13	Europa : Transit Begins
	00:37	Europa : Shadow Transit Ends
	02:34	Europa : Transit Ends
18 th	21:11	Jupiter Rises
19 th	00:49	Io : Shadow Transit Begins
	01:48	Io : Transit Begins
	03:00	Io : Shadow Transit Ends
	03:56	Io : Transit Ends
	06:56	GRS : Crosses Central Meridian

22 nd	20:55	Jupiter Rises
23 rd	00:16	GRS : Crosses Central Meridian
	00:44	Europa : Shadow Transit Begins
	02:33	Europa : Transit Begins
	03:13	Europa : Shadow Transit Ends
	04:53	Europa : Transit Ends
	05:05	Autumnal Equinox
25 th	20:42	Jupiter Rises
	21:23	Ganymede : Transit Begins
	21:45	GRS : Crosses Central Meridian
	22:33	Ganymede : Transit Ends
26 th	02:44	Io : Shadow Transit Begins
	03:33	Io : Transit Begins
	04:54	Io : Shadow Transit Ends
	05:42	Io : Transit Ends
29 th	20:26	Jupiter Rises
30 th	01:01	GRS : Crosses Central Meridian
	03:20	Europa : Shadow Transit Begins
	04:51	Europa : Transit Begins
	05:49	Europa : Shadow Transit Ends
	07:11	Europa : Transit Ends

NASA Update: What's up with the NanoSail-D?

It is coming down and that is what it was designed to do. NanoSail-D has lowered its altitude roughly ten percent of its original 400 miles above the Earth. NASA's nanosatellite NanoSail-D, deployed its 100 foot sail on January 20, 2011. It is a demonstration experiment for the design of "de-orbit mechanisms" for future satellites.

More information:

http://www.nasa.gov/mission_pages/smallsats/nanosaild.html

http://www.nasa.gov/centers/marshall/pdf/484314main_NASAfactsNanoSail-D.pdf

Satellite Tracking:

<http://www.spaceweather.com/flybys/>

- Kathy DeSantis

A Welcome to Our New Members

Andy Benedict
Travis Carroll
James Costanza
Kristine Danowski
Timothy M. Kelly
Nick Martch

Daniel Micco
Rachel Miller
Jason Snow
Sala Udin
Andrew Walters
John Wenskovitch



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2. Send check to:

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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