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

July 2011 ***Volume 45, No.7***

July's AAAP Events

July 8th & 9th Star Party, Mingo Creek Park Obs.
July 8th & 9th Star Party at Wagman Obs.
July 17th Camp Laurelview Children's Star Party
see last page or go to:

https://nightsky.jpl.nasa.gov/event-view.cfm?Event_ID=28277)

Discovering a Supernova

Luck is a word we use when something unexpected occurs, whether it be good or bad. But luck just doesn't happen, we often create our own luck. Some-times it takes days of effort and other times it takes many years. The event on the night of June 1-2, 2011 was made possible by almost 40 years of serious observing and it was not one of the many nights I devoted to searching for supernovae.

"The Manka"

I was looking for Herschel galaxies for more than an hour on the 21" Manka Memorial Reflector at Wagman Observatory when I decided to rest my eyes by switching to deep sky showpieces. Eventually, I made a stop at M51, the Whirlpool Galaxy. Within seconds I realized that something was different from my view of it two nights before. There were three stars in the spiral arms of the galaxy instead of two.

This was at 12:32 AM EDLT (Eastern Daylight Later Time) or 4:32 UT, June 2, 2011 when I recorded my observation. Immediately, I went to my Thompson and Bryan Supernova Chart for M51. No star was plotted in the position of this new object. I went to the members' room to check the Burnham's Handbook photos. Nothing appeared on any of those pictures. I went back to the scope to check this new star at different magnifications from the 115X that I made my original observation. I tried 212X and 282X to confirm that it was a star and not a nebulous knot in a spiral arm. It was definitely stellar, in more ways than one. I began to make my magnitude estimate and plot its position on my chart. I placed it halfway between the 13.7 mag star to the ESE of the nucleus and the 15.1 mag SSE of the nucleus. There is a 13.5 mag WSW of and close to the Nucleus. I estimated the possible nova at 14.0 mag.

I moved onto other objects, but went back to M51 two more times to see if it moved or disappeared or my eyes were playing tricks on me. Jack Landman and Frank Pastin had their scopes set up on the field for their observing projects. I asked them to check for the object with their instruments. Jack thought he caught a hint of it, but Frank could not see it because his eyesight limited what he could view.

I completed my observing session an hour earlier than I originally planned because I couldn't wait any longer to get to my computer to check on what we now know as SN 2011 dh in M51.

I don't remember the drive home, but it was a good thing no animals, little old ladies and small children walked in front of my car. The garage and basement doors were the last obstacles to my confirmation process. It didn't take long to power up the computer and jump on the Internet

I went to the IAU (International Astronomical Union) List of Recent Supernovae and ISN (International Supernovae Network) to look for announcements. To my pleasant, though nervous, surprise there were none.

Sometime last year, for some unknown reason, I printed up the instructions from the IAU webpage concerning all the information necessary when reporting a discovery. I didn't expect to use it. I'm glad that I was wrong.

I followed them as carefully as possible in my excited state. It probably took me at least fifteen minutes to complete it after a little editing. I sent it out at 5:08 AM hoping that I hadn't made a complete fool of myself. I was not going to sleep for awhile, so I read the P-G, did the crossword puzzles, Jumble and ciphers until my eyelids started to droop.

After four or five hours of sleep, I headed for the computer to check the IAU pages. I found the TOCP (Transient Objects Conformation Page) and found my name listed with Riou and Griga as possible discoverers. Another observer/astro-photographer, Bailey, sent his discovery to the ISN. Eventually, it was added to the full list when confirmation was posted on Friday. Even though all three European astro-photographers took their images several hours before my visual find, my name was listed first. I'm still not sure why it turned out that way, but some guess that is was because I viewed the actual light from the star rather than on a computer image.

SN 2011 dh – European and American verification teams using HST and Keck images of the original progenitor star designate it as a TypeII/Ib supernova, the collapse of a massive Population I star resident in spiral arms whose hydrogen envelop had been stripped prior to demise.

(Image: Bill Snyder)

It's been a hectic week since this discovery, my sleep has suffered and I lost a couple pounds. I call it my Supernova Diet. The first image listed the SN at 13.5 mag and it was 14.0 when I found it. It dropped to 14.9 by Friday night, but started to climb again and might be as bright as 13.0 mag at this time.

I want to thank all for their congratulations and support, but I must say that I hope things settle down soon.

I dedicate this discovery to my wife, Jean. I might not have achieved my dreams had I married someone else. I have known many members whose observing was limited by their spouses.

I also dedicate it to the AAAP and all those who mentored me during my early years in the club, especially those who taught me how to star hop. Without the ability to recognize patterns in the sky and field stars near galaxies and other deep sky objects, I would not have been able to make this discovery. Thank you all. ***- Tom Reiland***

From the VP's Desk

Carl Sagan once said "*Somewhere, something incredible is waiting to be known*." Aside from this being my favorite quote, it is one that I believe applies to what I would like to talk about this month: meeting topics and speakers.

Over the last few years we have had fourteen presentations by thirteen different speakers at our general meetings. Of the fourteen, five of the speakers/topics were requests by members, six were presented by AAAP members, and two were presented at our annual holiday parties. I do hope that members have been enjoying them and that they have been varied enough to satisfy all tastes.

As I plan for this next season I would like a bit more formal feedback on what I have selected so far to help steer my choices. Please take a few moments and visit www.3ap.org/speakersurvey to provide me your valuable input.

I would like to bring that *something incredible waiting to be known* to you at an AAAP meeting in the next year. ***– Craig Lang***

Terry Trees: Texas Star Party 2011

We left for the Texas Star Party at 6 AM, Thursday, May 26. Stopping overnight in Missouri, we drove thru Joplin the next morning and we could see only damaged trees from I-44 due to tornado damage. Leaving Missouri it was 51 degrees. Arriving in Abilene, Texas at supper time, it was 107!

Stopping another night, we arrived at Fort Davis and the Texas Star Party a bit after 3 PM on Saturday. We had made arrangements to come a day early and I am really glad we did. Saturday was the best night of the week. We met Glen Sanner, Bob Kepple, Ed Moss, Bob Novack, Jeff Kearns and two of Glen's friends from Virginia, Dino and Charlie, both psychology professors, which was pretty handy for our group!!

Saturday: This might have been the best night I have seen anywhere. The sky was extremely transparent and seeing was very good as well. For example, M-101 showed obvious, well-detailed spiral arms. The so-called M-102 looked like a fainter, identical version of M-101. M-51 was very crisp as well. (I thought I saw a supernova in it...no, just kidding, Tom!) The Leo Trio showed highly contrasted features. And of course Omega Centauri was a WOW! as usual. M-83 looked like its photo in our Mallas Messier book, a squashed figure 8. It's funny how much better Centaurus A looks in a 25" compared to our 17.5" while Omega doesn't seem to gain that much between the two scope sizes.

Sunday: The sky was OK for west Texas, great for Pittsburgh. JoAnne worked on one of her observing lists, I spent time in the Virgo Cluster looking at galaxies I don't often visit at home. What a difference between here and Wagman. When viewing a Virgo M-object at home, I see the M-object. When viewing it here in Texas, I see it and about a gazillion NGC cousins. JoAnne used our 10" Dob, I was on our rebuilt 17.5". Both scopes were collimated with our barlowed laser collimator and they were giving great images.

Monday: We participated in the TSP's afternoon tour of McDonald Observatory. Lasting about 3 hours, it included visits to the 107" and the Hobby-Eberly control rooms. Well worth the time and $8 fee. The sky that night was full of fairly thick cirrus. About midnight JoAnne and I covered the scopes and went to bed. Around 12:30 AM, it cleared and everyone had great observing. Next day, they thanked us for leaving and allowing the sky to clear.

Tuesday: About 3:30 PM, JoAnne was sitting on the front porch and I was lying down in our room. I heard a strong gust of wind. JoAnne opened the door and yelled that there were scopes everywhere. A small dust devil had formed behind our motel, hit the building, jerked her around in her chair, and gone down into the field blowing over both our scopes and that of another fellow. It also blew some of our equipment about 60' or 70' away. The contents of Bob Novack's tent was also scrambled. Like a mini tornado, it affected a path 10' or 15' feet wide and 100 ' long. Outside that path, it was like it never happened. Untangling our scopes we suffered loosened Telrads, a bent bolt and a small scratch on the 17.5"primary mirror which doesn't look like it penetrated the coating. All in all, we were very lucky. We reassembled the scopes, checked them out and all was fine. Later that night a bad storm hit. No rain, just lightning, high winds and lots of grit. Around midnight we saw a bright glow in the north. A lightning strike had started a wild fire. Just what they needed. About 500 square miles had burned in late April and early May. We later learned that six new fires had been started. All but one were quickly extinguished.

McDonald Observatory

Main Telescopes, l to r:

Hobby Eberly
- 11 meter (433")
Struve
- 2.1 meter (82")
Harlan Smith
- 2.7 meter (107")

Wednesday: During the afternoon we drove the bumpy dirt road to the radio telescope that is part of the VLBA. However, it was locked-up. When John Holtz and I visited some years ago, the on-site guys gave us an extended personal tour of the entire facility. The hot weather continued and the evening sky filled with of cirrus. The wind was gusty so we didn't set-up the 17.5". While JoAnne knocked off a couple more items on her list, I observed with binoculars. It soon gunked-up.

Thursday: The high heat continued; 99 degrees at supper time. We spent the afternoon at the Chihuahuan Desert Institute and had an interesting walking tour of regional flora. While the day had been mostly clear, sunset brought bad news. Clouds began to slowly move in and a brush fire had restarted about 5 miles from the ranch. We could smell smoke and after dark, an orange glow appeared in the northwest. No one observed as the clouds completely took control of the sky by 10:30 PM.

Friday: We drove to Marfa to the site where people try to observe the Marfa Lights. It's on Rt 90, between Marfa and Alpine. The fight against the fire continues as does our fight against the clouds. The fire is still winning and the clouds have won. At the swap meet, I met the RASC contingent from west-central Ontario. Someone from New Mexico was selling a calcium PST for $350. That sounded pretty good, except I didn't have $350 for it and I probably wouldn't have been able to see anything through it anyway. Apparently those older than their 20s have little luck viewing through them. Photos must be taken. Lots of good food and sleep on this trip. Lots of new friends, but little observing. At night we sat in our observing field and watched flames march down a mountain about 5 miles away.

Saturday: We visited the famous Ft. Davis fort, a National Monument. It's a small site that surprisingly averages about 50,000 visitors annually. The National Weather Service promised a perfectly clear night. FINALLY!!! So, of course, the Prude Ranch got its first rain since September. I won a year's subscription to Astronomy Magazine, a nice ending to a mostly crummy observing week.

Sunday: We dropped off our extra bottled water at the Ft. Davis Fire Department. There must have been 200 firefighters in town again. We began our trip home and are now in Abilene, TX where it's only 95...

Eric Fischer on Star Party Chatter: "Star Words: Part 2"

Last month we toured the Solar System for planetary word associations you can make while talking with your star party guests. This month we move further out into space for more such associations. The first objects we encounter are stars, the Greek root of which is "aster". An Aster is a star-like flower, while an asterisk (*) is a star-like punctuation mark.

Disasters Were Blamed on "Bad Stars"

Perhaps the most interesting derivative is "Disaster", which literally means "Bad Star".Ancient astronomers must have blamed earthquakes, volcanoes, floods and other natural calamities on the influence of an unfriendly star. Like "lunatic", something in the sky is faulted for causing a problem here on Earth.

The Latin form of star is "Stella". Thus, if your quest's name is Stella or Estelle, she can rightfully claim to have heavenly qualities. You can make a similar claim if your quest's name is Celeste, which is taken from the Latin "caelestis", a reference to the star-filled sky as a whole.

The majority of the brighter stars' proper names have Arabic roots, thus few connections to the English language. However, several first magnitude stars have familiar origins. For example, the name for brilliant "Sirius" comes from the Greek for "searing" (as in "searingly" bright or hot). The ear of a grain such as wheat or barley is referred to as a "spike", which is associated with the star Spica. When the ancients observed Spica rising in the east, it marked the arrival of the first spikes of wheat and the like rising out of the ground.

When a star goes "nova" it literally means it's new to the sky, not an explosion. Similarly, a novel is a new story, while your dentist's Novocain is actually "new cocaine". Tom Reiland's recently discovered M51 supernova literally means "super-new", which is something of a non-sequitur.

The constellations provide many word associations you can offer to your guests. Familiar examples include the dogs Canis Major and Minor ("canines"), Lyra (as in "lyrics" of music) and Aquarius (water-related, as in something "aquatic"). Coronas Borealis and Australis are associated with "Crown". The important feature of a crown was that encircled your head, rather than sitting upon it. The Corona constellations, as well as solar and lunar coronas, likewise form all or part of a circle. But be careful when asking if any of your guests are named Ursala. Ursala and Ursa Major/Minor share a common origin: Bear.

Among the natural star formations, "cluster" is akin to "clutter", while the "lax" in galaxy is connected to the "lac" in lactose, the principal sugar in milk. Thus, be sure to note that the term "Milky Way Galaxy" is somewhat redundant in this regard.

Unfortunately, the astronomical lexicon has several misnomers which may confuse your guests. The term "asteroid" was given because these tiny objects had a star-like appearance when first discovered. Similarly, the "planet" in Planetary Nebula owes its origin to the non-star-like, roundish appearance of many such objects. Speaking of nebula, if one of your guests has a nebulizer in the house, it produces a mist that may resemble an astronomical nebula.

Another fascinating astronomical term is Cosmos, the Greek word referring to the order and harmony of the universe, not its size or splendor. When someone applies cosmetics, she or he is attempting to make her/himself more orderly, not beautiful.

Thus, when Lady Gaga pours on layer after layer of mascara to look even crazier, she is actually making herself more orderly.

Finally, remind your guests that an "amateur" astronomer is not a non-professional, but someone who loves or is "amorous" with the subject.

Next month's Guide Star: Standing still?: Explaining Earth's amusement park motions through the Universe

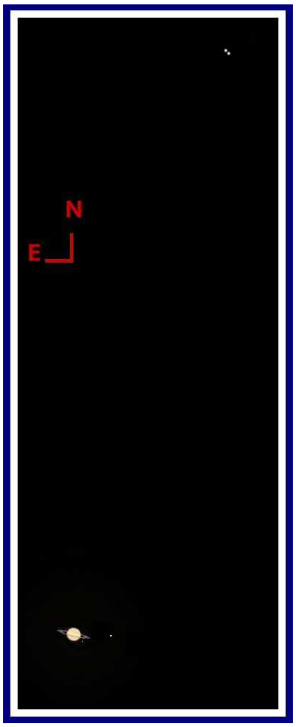
Making Yourself "Orderly" Each Morning

The Lord of the Rings…

July begins with what imaginative observers have been calling a bright transient naked eye double. Saturn at magnitude 0.9 will be only 30 arc minutes away from magnitude 3.4 Porrima or gamma Virginis. An attractive, easy naked eye pairing.

If you have good optics and good seeing, you may see something like the simulated telescope view (admittedly not to scale). It shows Saturn, a couple moons and at upper right the double Porrima, described as "twin headlamps of a cosmic auto" in the same field. Gamma Virginis, after being well near inseparable for years, now shows its components separated by 1.7 arc seconds, just within the capabilities of a good 3 inch scope.

By month's end, however, Saturn will be over 2 degrees away from Porrima and sorry, show's over.

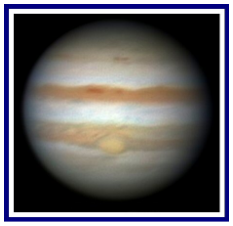


…and the Return of the King

This month, Jupiter begins to rise at a time more suitable to normal life (See the highlight section following with times for satellite events of interest) and the planet now sports both its familiar bands, the SEB and NEB, northern and southern equatorial band. Recall that the SEB began to fade in November of 2009, essentially disappeared for a year, reviving in November of 2010. The following images courtesy of Christopher Go in the Philippines document the change.

Left: 11 Nov. 2010 prior to revival

Right: 8 June 2011 revival complete

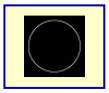
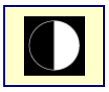
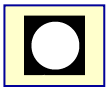
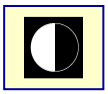
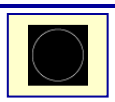


- Guide Star Editor

All times given are local.

Legend: SR = Sunrise, SS = Sunset, MR = Moonrise, MS = Moonset,
PI = Approximate Percentage Visible Lunar Surface Illuminated Local Midnight

Details for AAAP Events can be found at:
https://nightsky.jpl.nasa.gov/event-list.cfm?Club_ID=675&EventEra=Future

Sun	Mon	Tue	Wed	Thu	Fri	Sat
					1  SR:05:53 SS:20:54 MR:06:08 MS:21:10 PI:0%	**2** SR:05:54 SS:20:54 MR:07:15 MS:21:49 PI:1%
3 SR:05:54 SS:20:54 MR:08:24 MS:22:24 PI:3%	**4** SR:05:55 SS:20:53 MR:09:35 MS:22:56 PI:8%	**5** SR:05:55 SS:20:53 MR:10:45 MS:23:25 PI:16%	**6** SR:05:56 SS:20:53 MR:11:56 MS:23:55 PI:25%	**7** SR:05:56 SS:20:53 MR:13:07 MS:***** PI:36%	**8**  SR:05:57 SS:20:52 MR:14:18 MS:00:26 PI:47%	**9** SR:05:58 SS:20:52 MR:15:30 MS:01:00 PI:58%
10 SR:05:58 SS:20:51 MR:16:40 MS:01:39 PI:69%	**11** SR:05:59 SS:20:51 MR:17:47 MS:02:24 PI:79%	**12** SR:06:00 SS:20:51 MR:18:47 MS:03:17 PI:88%	**13** SR:06:01 SS:20:50 MR:19:39 MS:04:15 PI:94%	**14** SR:06:01 SS:20:50 MR:20:23 MS:05:19 PI:98%	**15**  SR:06:02 SS:20:49 MR:21:00 MS:06:24 PI:100%	**16** SR:06:03 SS:20:48 MR:21:32 MS:07:30 PI:99%
17 SR:06:04 SS:20:48 MR:22:00 MS:08:33 PI:97%	**18** SR:06:04 SS:20:47 MR:22:25 MS:09:34 PI:92%	**19** SR:06:05 SS:20:46 MR:22:50 MS:10:34 PI:86%	**20** SR:06:06 SS:20:46 MR:23:14 MS:11:33 PI:79%	**21** SR:06:07 SS:20:45 MR:23:40 MS:12:31 PI:70%	**22** SR:06:08 SS:20:44 MR:***** MS:13:29 PI:62%	**23**  SR:06:09 SS:20:43 MR:00:08 MS:14:28 PI:52%
24 SR:06:10 SS:20:42 MR:00:40 MS:15:28 PI:43%	**25** SR:06:10 SS:20:42 MR:01:18 MS:16:26 PI:33%	**26** SR:06:11 SS:20:41 MR:02:01 MS:17:23 PI:24%	**27** SR:06:12 SS:20:40 MR:02:53 MS:18:16 PI:16%	**28** SR:06:13 SS:20:39 MR:03:51 MS:19:03 PI:9%	**29** SR:06:14 SS:20:38 MR:04:57 MS:19:45 PI:4%	**30**  SR:06:15 SS:20:37 MR:06:06 MS:20:23 PI:1%
31 SR:06:16 SS:20:36 MR:07:18 MS:20:56 PI:0% Editor's Birthday						

Some Celestial Highlights for July

Mercury is low in the western evening sky and achieves greatest eastern elongation of 27° on the 20th. Unfortunately the angle of the ecliptic is shallow and the planet achieves no appreciable altitude off the horizon.

Venus disappears into the dawn's early light at the beginning of the month.

Mars located in Taurus in the eastern morning sky, begins to improve its visibility rising at 03:43 on the 1st , and at 03:04 on the 31st.

Jupiter in Pisces, rises after midnight and becomes available for early morning viewing. See Galilean satellite activity below.

Saturn is in the western evening. and sits close to the celebrated double gamma Virginis or Porrima through the month. Recall that this double was recently too close to split in even large amateur scopes, but separation is now at an easy 1.7 seconds.

Uranus in Pisces rises around midnight, 00:55 on the 1st and 22:52 on the 31st.

Neptune is in late evening sky rising at 23:29 on the 1st and at 21:30 on the 31st .

For those using programs to predict ***GRS*** transits, ***Jupiter's System II longitude*** is 166°.

Selenographic Colongitude is 258.33° at 0h UT at beginning of the month. Add 12.2° each day.

Dates with notable Jupiter satellite activity:

12th
01:33 Jupiter Rises with Io Shadow in transit
01:40 Io : Transit Begins (Both Io and its shadow are seen)
02:30 Io : Shadow Transit Ends
03:41 Europa: Disappears into Eclipse
03:49 Io : Transit Ends
04:58 GRS: Crosses Central Meridian

19th
01:08 Jupiter Rises
02:13 Io : Shadow Transit Begins
03:36 Io : Transit Begins (Both Io and its shadow are seen)
04:24 Io : Shadow Transit Ends
05:45 GRS: Crosses Central Meridian
05:45 Io : Transit Ends

27th
00:39 Jupiter Rises
01:15 Ganymede: Disappears into Occultation
01:25 Io : Disappears into Eclipse
02:23 GRS: Crosses Central Meridian
02:57 Ganymede: Reappears from Occultation
05:00 Io : Reappears from Occultation

A Welcome to Our New Members

Todd Ciarimboli
Kelly Fletcher
Suzanne Magnes
John Sincek

Guide Star Submissions

All AAAP members are encouraged to submit items to the club newsletter. Articles, images, observations, notices, ads, book, software and equipments 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: gseditor@3ap.org

2011 Upcoming Public Star Party Dates

Date	Location
July 8, 9	Wagman Obs. & Mingo Creek Park Obs.
August 5, 6	Wagman Obs. & Mingo Creek Park Obs.
September 2, 3	Wagman Obs.
September 17	Wagman Obs. & Mingo Creek Park Obs.
October 1	Mingo Creek Park Obs.
October 8	Wagman Obs.
October 15	Wagman Obs. & Mingo Creek Park Obs.
October 29	Mingo Creek Park Obs.

July 17 Camp Laurelview Children's Star Party

Rob Browell directs a church camp each summer for 40-50 children ages 4th through 6th grade.

Camp Laurelview, 384 Middlecreek Rd., Rockwood, PA 15557

This year's curriculum has a section for star gazing. He is asking if any members with telescopes that live around the Somerset area may be interested in coming by the camp for one evening with their telescope to share with the campers.

The activity would last only an hour or so. The week of the camp is Sunday July 17 - Saturday July 23. The activity is best suited for Sunday July 17th. The camp grounds has a wonderful spot to set-up. Coordinates 39°57'36.22"N, 79°13'17.92"W

Interested members can contact Rob Browell:

rob@browell.com or mailto:rob@fluidtechpa.com

AMATEUR ASTRONOMERS ASSOCIATION
OF PITTSBURGH, INC
1070 SUGAR RUN ROAD
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Guide Star Editor:	**John Cheng** *gseditor@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:

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