

Harford County Astronomical Society

Bel Air, Maryland
www.harfordastro.org



Volume 34 Issue 6

June 2008

**Public Star Party (Open House):
Saturday, June 14, 2008, At Sunset
At the Observatory**

**General Meeting:
Thursday, June 19, 2008
7:00pm - Business Meeting**

**8:00pm – Presentation:
"Observing and Hiking in the Southwest."
Presented by Roy Troxel
At the Observatory**

Club Calendar for 2008:

| <u>Open House/Public Star Party</u> | <u>Meeting Night</u> |
|--|-----------------------------|
| July 12 | July 17 |
| August 9 | August 14 |
| September 13 | September 18 |
| October 11 | October 16 |
| November 8 | November 13 |
| December 6 | December 11 |

Please check the website for possible schedule updates and changes:

<http://www.harfordastro.org>



<http://astroleague.org/>



<http://nightsky.jpl.nasa.gov/>

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HCAS Business Meeting

Minutes of May 17th, 2008

1. Vice President Grace Wyatt opened the meeting at 7:20 PM.
2. The minutes of the April 2008 meeting were published in the last newsletter. The group approved the minutes as published.
3. Treasurer: Tim Kamel reported that the club's bank balance was \$5065.29.
4. Observatory operations: None to report this month.
5. Outreach:
 - a. The Darlington program was cancelled.
 - b. At the Aberdeen Earth Day celebration, approximately 250 people came by the HCAS booth. Club members gave out a lot of flyers and discussed light pollution.
 - c. The May 17th open house had about 20 visitors. The event started at 5 PM at the classroom. Tables were set up with information, Night Sky Network activities, and different types of telescopes. No actual observing was possible due to the clouds.
 - d. The club will support a session at the Susquehanna State Park campground on June 7th. Mark Kregel will give a talk, and additional members are needed to bring their telescopes for the observing session that follows. The talk starts at 7:30 PM at the campground. The park will provide a camping space for any members wishing to camp out for the night.
 - e. SwanFest takes place on October 12th at Swan Harbor Farms.

f. Tom Rusek gave a talk to the kindergarten class at St. Joan of Arc school in Aberdeen on May 6th. There were 21-22 kids present. The teachers and parents asked for the dates of our upcoming open houses, which they shared with the rest of the school.

g. Tom Rusek will give a series of talks to groups of students at a school in Cambridge on June 5th. There will be about 380 students, broken into 3 groups (Kindergarten and first grade; second and third grade; and fourth and 5th grade).

6. Observing Reports:

a. Roy Troxel said that 3 people are planning to go to Broad Creek on Saturday and Sunday nights (24, 25 May). Anyone interested in attending this or other Broad Creek observing sessions can contact Roy for more information.

b. Karen Carey took one of the club telescopes to her daughter's scout event in April. She showed the kids Saturn, and they loved it. She and HCAS were thanked during the awards ceremony.

7. Old business:

a. The results of the election of officers were announced. The winners are:

President- Tom Rusek
Vice President- Grace Wyatt
Treasurer- Tim Kamel
Secretary- Monroe Harden

b. At the last open house, a woman from the Cecil County library in Elkton stopped by. She asked about the possibility of the club conducting an event with telescopes in the fall sometime. Karen Carey and Tim Kamel said they may be interested, depending on the date. Others suggested contacting the Delmarva Stargazers since they are closer to Elkton. Grace Wyatt will pass along the information.

8. New business:

a. Phil Schmitz said that the current annual dues include an amount for a printed monthly newsletter. Since most members received the newsletter via email, he suggested that the club consider reducing the dues for people who do not get the printed copies. Tim Kamel said that only 4 people receive the newsletter in a paper form.

b. Phil Schmitz suggested that we publish the names of members receiving Astronomical League observing awards either on the web site or in the newsletter. Karen Carey agreed to write an article for the newsletter describing the observing award program.

c. Grace Wyatt said that we received a new Night Sky Network kit, titled "Our Galaxy, Our Universe." It shows the relative sizes of things and distances by reducing them to easily understood sizes like CDs and football fields. She said that the Network is encouraging clubs to show the "Seeing in the Dark" video as part of evening activities. She suggested that we consider setting up an outdoor viewing of the show followed by an observing session.

9. The meeting was adjourned at 7:55 PM. Phil Schmitz gave a talk on astrophotography after the meeting concluded.

- Monroe Harden

Observation Reports



HCAS campsite, Thursday afternoon at Cherry Springs.

Cherry Springs Star Party 5/29/2008 – 6/1/2008

Five of us attended the 2008 Cherry Springs Star Party. Gary George, Roy Troxel and I caravanned there together, arriving around 1 PM. Jeremy Kirkendall and his Mom got there earlier to take care of hotel arrangements and Jim Hajek and his girlfriend Emily arrived later in the day after taking a tour of the surrounding area.

This was Jeremy's fourth trip, my third and Roy's second Cherry Springs star party. Gary and Jim were up there for the first time. Roy brought his 12.5" Obsession. Gary an 8" Orion, I believe a Skyview Pro. Jeremy brought his 8" SCT and a refractor. Jim brought a 4" Mak and an 8" Dob from the club and I brought my 10" Orion Polaris OTA on an LXD mount and my new Orion 12 XTi Dob.

As we had done before, we started checking the weather for Coudersport, PA about a week early. Not sure why we subject ourselves to this torture every year but the forecast again initially was beautiful with nice weather for the three nights with storm clouds coming in after the event. Then the storm picked up speed and Sunday was lost to clouds, followed by Saturday and then Friday. I was starting to worry that we would lose Thursday night too but that did not happen. Temperature predictions were for the low 50's and high 40's, which was better than last year when we had to deal with frost.

We met at our usual spot on the southwest part of the park as previously arranged. This spot is furthest away from all services such as food wagon, the presentation pavilion, vendor tent, etc. We continue to choose it because it is the least crowded, allowing us space to spread out. It has the best view to the south and we wanted that for views of Scorpius and Sagittarius. It also allowed space for members of another group that Jeremy belongs to, called Our Dark Skies, to join us. The park continues to make improvements to the site. The old rest room building was replaced with a modern and much nicer building. New electric was added.

We all camped at the site this year and, lucky for us, the park had added another set of electrical outlets near our position and we were able to use them. After registering and setting up the tents and equipment, we drove into town for dinner. We then settled down to wait for nightfall.

The park was fairly packed with many amateurs arriving the night before. The previous night, Wednesday, was reported to have been beautiful and we were hoping for a repeat event. All types of scopes were represented, with Dobs being the most dominant and the largest. Near us was a 32". There were several in the 20"-25" range, including a 25" Obsession brought by a member of ODS.

The weather for Thursday night held and we had a beautiful night of viewing. It did not get really dark till after 10 PM and the stars were then glorious. It is worth the trip just to see that.

The best part that I like about observing from the dark skies of Cherry Springs is what I can see in the southern constellations, mostly Sagittarius and Scorpius. I had a great time looking at the Lagoon, the Trifid and the Swan Nebulas and also the open clusters and globulars in these two constellations. I even spent some time looking at these objects using my 10x50s and cruising the Milky Way. While waiting for these constellations to rise, I spent time looking at various objects in the skies. I did not use an observing list this night and just spent time looking at objects that I felt like looking at. I used both scopes, starting off mostly using the 12" Dob but using the LXD mount more as I began having a problem seeing the display of the hand box (not realizing that the battery was dying, duh).

At about 2:30 or so, I pulled out my Messier list. I only have 5 left to finish the list and was able to pick up 4 of them. The fifth had set ½ hour before I started working the list.

The moon rose a little after 3 AM and I shifted my observing to the western side of the sky for a bit, but then the sky brightened even more as the sun was getting ready to rise. It was a good time to pack it in. It had been getting chilly as the night wore on and I kept adding layers for warmth. I was fairly comfortable except for my feet.

The following day, after getting breakfast and checking out the vendor tents, we started listening to the weather forecast for the remainder of the event. It was not good and was getting progressively worse. Predictions were for storms for the next two nights with high winds, lightning and hail. Not wanting to be on a mountaintop under these conditions, we (except for Jeremy) decided to leave. About a third of the field apparently had the same sentiment and left also, even though new attendees were arriving. We packed up and left by 4 PM.

We later heard that Friday and Saturday day were overcast. Saturday night cleared for another great night of observing. Lucky Jeremy.

- Tim Kamel

Cherry Springs Star Party, 2008

May 29 – 30th

Observing Galaxies

I wanted to devote the first night at Cherry Springs to galaxies, and also to test the limits of my 12.5" reflector.

I began with Leo, in the southwest just after sunset. The two Triplets were the first choice. The first Triplet, near the Lion's abdomen is composed of M95, M96 and M105. With the 32mm eyepiece, it was easy to see all three galaxies within the field of view. With some effort, two fainter galaxies could also be seen – NGC3412 and 3384. The second Triplet, in the Lion's hindquarters, is composed of M65, and 66, along with NGC3628. In front of the Sickle formation is NGC2903, which contains a bright star cloud that has been given a separate NGC number, 2905. At first I thought this was a pair of colliding galaxies.

I finished with Leo by observing NGC3190, an elliptical galaxy that strongly resembles our own Milky Way. It is also part of the Hickson 44 galaxy cluster [see article below], but the additional three galaxies only suggested themselves in my scope. The distance to these galaxies is approximately 100 million light years.

I continued my galaxy quest with M64 in Coma Berenices, however, I couldn't see its distinctive "black eye" feature, although the galaxy was almost overhead. (The black eye is caused by dark dust clouds and nebulosity.)

Next was NGC2403 in Camelopardalis which appeared formless, almost like a nebula, with sparkling "jewels" composed of star clusters and other densely populated areas of the galaxy. Tried for two others in the constellation, NGC1501 and 1502, but they were too low on the horizon.

Tried for 3 different pairs of "colliding galaxies". The first was NGC3690 and IC694 in Ursa Major. It is also #299 in the Arp catalogue of Peculiar Galaxies. It is an 11th magnitude object, which I was able to see, but not resolve into two separate galaxies. (Dr. Halton Arp calls these galaxies "peculiar" because of their shapes or because they don't follow the usual evolutionary pattern for galaxies. The list includes 11 Messier objects.)

The next pair was the Antenna galaxies, NGC 4038 and 4039. These were easy to resolve and I could clearly see the comma-shaped pattern they form. The total image is around 11th magnitude.

Finally, I tried for the colliding pair NGC3395 and 3396 in Leo Minor. They were clearly separated at 12.5 magnitude.

Mostly for fun, I swept my scope around Markarian's Chain of galaxies, in the vicinity of M84 and M86 in Virgo. I also viewed M104 "The Sombrero Galaxy", lower in Virgo. This 8th-magnitude object appeared bright and elongated with a long black strip running across the width of its edge.

Nearly overhead were two popular galaxies, M51 and M101, so I rotated my Dob until it was almost perpendicular to the ground to view them. The sky was very clear at the zenith, so I was able to see the spiral structures of each of these objects. The smaller companion to M51 (NGC 5194) did not resolve into spirals, but was a bright cloud nonetheless. M51 is at 8.4 magnitude and M101 is at 7.9.

A number of galaxies were out of my scope's reach. These included two colliding pairs. The first is Ophiuchus' NGC6240 (14th mag.), the remnant of a merger between two smaller galaxies. The second pair is NGC6050 and IC1179 in Hercules, both of them 14th magnitude objects. Arp 220, another colliding pair in Serpens, was also unviewable, at 16th magnitude.

Decided to take another break, and look at some bright (and much closer) objects, like star clusters. M13, M5 and M3 were my first choices, with all of them being high in the sky. I've always appreciated the long "arms" of stars that swirl from the center of M13. I did another sweep of star clusters in Cygnus. There are numerous ones there, mostly open, and it's fun just to move your scope slowly through them – especially when the seeing isn't too good, because unlike nebulae and galaxies, you can easily pick them out.

I stopped for a few minutes by M71, a globular cluster in the minor constellation of Sagitta (The Arrow). This is a beautiful part of the summer sky, with many small asterisms in view. I used two eyepieces here, a 32mm TeleVue and a 22mm Lanthanum.

By midnight, both Scorpius and Sagittarius were in full view above the trees to the south, so I decided to take a break from galaxies and briefly scan that vast vicinity near the center of the Milky Way, skipping from star clusters to nebulae. My plan at the time was to spend the next night

exclusively in this area, but that was not too happen, with the threat of thunderstorms. Nonetheless, both M16 and M17 provided clear bright sights. The M16 star cluster with the accompanying Eagle nebula (IC4703) had distinct outlines, but did not except scrutiny using powers higher than 121x. I was hoping to get at least a glance at the Pillars of Creation or the Spire, but that clearly required more aperture.

Next was the Swan nebula, M17, which was bright and did have the swanlike outlines. The seeing in this southern area near the trees did alter slightly from time to time as thin clouds occasionally came into the view, but I was able to catch nice views of these two objects.

I observed two other nebulae as well – the Ring and the Dumbbell, partly as a test for my reflector. They were both high in the sky, bright and distinct.

In Serpens Caput, I tried to locate Seyfert's Sextet (NGC6027) give (URL), but with no success. However, I learned later that these galaxies were of 14th to 16th magnitude, so it's not surprising. For a beautiful Hubble photo of these galaxies, see:
http://en.wikipedia.org/wiki/Image:Seyfert_Sextet_full.jpg

I decided to try a local challenge object and aimed the scope toward the Veil Nebula. I was able to locate all three "pieces" of what is left of the supernova that caused the nebula: NGC6960, 6992 and 6995.

It was now approaching 2am, and an "autumn" sky was coming into view.

I checked for two other galaxy clusters, but was disappointed. These were Stephan's Quintet (5 galaxies in one massive gravitational field) in Pegasus and the Deerlick Group, which accompanies NGC7331, a 10.3 magnitude galaxy. These are all 12th and 13th magnitude objects and should have been visible, but, with the exception of NGC7331, they just weren't. I'm going to blame passing clouds for this, because I have seen the Quintet at Broad Creek. The Deerlick group ranges from 15th to 17th magnitude, and I thought I saw a fuzzy spot in their vicinity, but it was all too obvious that these objects were currently beyond the power of my scope. (But if I had still been in Arizona...) This part of the sky just wasn't as clear as it could have been, because even the planetary nebula NGC7662 - the Blue Snowball - wasn't as bright as usual.

The Andromeda galaxy was the next obvious target and, sure enough, its core shone brightly in the 22mm Lanthanum eyepiece. I was able to move the scope smoothly through the span of four degrees that is the length of the galaxy, and obtain clear views of M32 and M110 as well. I looked for the G1 globular cluster that should be visible in the Andromeda galaxy, but couldn't see it. (I had a chart of the galaxy in my car, but it was too dark to find. Oh, well, maybe next time.)

I was able to come to some conclusions by this time. My scope was seeing down to the 12th magnitude before galaxies appeared as simply fuzzy dots. I had observed some of these same objects a few months ago in the Southwest, and they had certainly appeared brighter, so the rumor that "observing in Arizona adds 5 inches to your scope's aperture" has some truth to it. I would add that sky conditions, especially transparency and seeing, have a lot to do with what you will be able to see. Some people don't see the point in galaxy observing at all, except for the brighter ones, like M51 or Andromeda. Nonetheless, I like the challenge of determining the shape and having the patience to wait until atmospheric conditions allow you to see more of the spiral details. Galaxy-observing also provides skills for recognizing details on much closer objects such as the bands of Jupiter or Saturn, or surface details of Mars.

The Astronomical League has two certification programs for observing galaxies. For more information, see: *Galaxy Groups and Clusters Club*: <http://www.rca-omsi.org/ggc/> and *Arp Peculiar Galaxies Club*: <http://www.astroleague.org/al/obsclubs/arppec/arppec.html>

Although my goal that night was to observe the galaxies, I couldn't avoid the two major planets then in view - Jupiter and Saturn. Saturn appeared brightly in Leo, in the evening in the southwest, and I was able to clearly discern a dark equatorial band, plus one or two lighter bands, as well as the dark yellow south polar region. Three rings were clearly visible, as were four satellites – Titan, Tethys, Dione and Rhea.

Jupiter was exceedingly bright in Sagittarius, even when seen through a blue #80A filter. However, I was able to see a number of bands and, using my Barlow and 13mm Nagler which brought the magnification to 242x, observed a number of spots and swirls on the bands. I was planning to observe the planets in more detail Friday night, but those plans were curtailed by the oncoming thunderstorm.

- Roy Troxel

Broad Creek

June 2, 2008,
9:10 PM- 11:45 PM

The telescope used was a 16" dobsonian. All observations were made with a 12mm 2 inch TeleVue eyepiece at 153 power. The temperature grew colder after sunset but was still pleasant throughout the observing session. Seeing and transparency started out good, but about an hour after sunset, the hazy clouds were moving in, and eventually ended this observing session.

Anyway, some nice objects were still seen. Saturn, Titan and one other moon were visible. Mars was a small red disk. Later in the evening, Jupiter was seen through some hazy clouds with all four of the Galilean satellites visible.

In the constellation Leo, M65 and M66 were easy, but the nearby NGC 3628 was not seen. The double star Al Gieba split easily, both stars appear to be yellow in color. Another galaxy seen in Leo was NGC 3593, an 11th magnitude spiral galaxy. This galaxy was just a smudge in the eyepiece, as the sky conditions were beginning to deteriorate. Managed to find NGC 3190 (mag. 11.2) and NGC 3193 (mag. 10.9), near the sickle of Leo, but two other fainter galaxies in the same grouping were not seen. If you have The Night Sky observer's guide, there is a nice photograph of this grouping on page 233. This group is also known as Hickson 44.

M44, the beehive cluster in Cancer was rather weak in the finder (6x90).

Looking into Ursa Major, I was surprised to see M97, through the haze! The double star Mizar and M109, a spiral galaxy, were also seen.

Cor Caroli, a very bright and easy double star and M3, a nice globular cluster in Canes Venatici were seen. Even with the sky conditions degrading to poor, M3 still slightly resolved. Saw M51 and NGC 5195 later, both were barely visible.

Moved into Lyra where the sky looked a little better, and picked up M57, the Ring Nebula, rather easily. Also looked at some doubles in Lyra; Zeta, Beta, and Epsilon Lyrae (the double double).

Roy and I waited until about 12:45 AM, but the sky was only getting worse, and with only a handful of stars visible, we decided to shut down our scopes.

- Phil Schmitz



Hickson 44 Galactic Cluster. (Hubble space telescope photo)

Hickson Galaxy Groups

What is a Hickson Galaxy group? In a sentence, they are very compact groups of at least four galaxies, with all members within a range of three magnitudes of each other, separate from other large groupings of galaxies.

There are at least 100 of these groups currently known. These groups may be the building blocks of larger galaxies throughout the universe. Many of these galaxies range as faint as magnitude 20, way too faint for all but the largest telescopes! However there are few groups that have member galaxies within range of an 8" reflecting telescope in a very dark sky. Here are a few of the more accessible Hickson group galaxy clusters:

The very first compact group discovered was by E. M. Stephan in 1877 in France. It is known as Stephan's quintet (Hickson 92). The brightest member in this group is NGC 7320 at mag. 12.6; the faintest is NGC 7317 at 13.6. This cluster is located near NGC 7331 in Pegasus. I have seen this group several times in my 16" dobsonian, but a very dark sky is required and high power is needed to resolve all five galaxies!

Another nice group is Hickson 44 in Leo. This group consists of four galaxies. The brightest member in this group is NGC 3193, an elliptical galaxy shining at magnitude 10.9, easily visible in 8" scopes. The faintest, NGC 3187 is at 13.4. NGC 3193 and NGC 3190 are usually both visible as one peers into the eyepiece. NGC 3185 and NGC 3187 are more difficult. Averted vision should work well to view the fainter two galaxies, provided the skies are dark enough. This is probably the easiest of all the Hickson galaxy groups to see.

Another group, Hickson 68, located in Canes Venatici consists of five galaxies. NGC 5353 is the brightest at 11.0 magnitude, and NGC 5358 is the faintest at 13.6. I have only seen the three brightest members of this group. This group is located about 8 degrees southeast of the famous Whirlpool galaxy M51. The brighter members of this group are within reach of an 8-inch scope.

Hickson Group 61, located in Coma Berenices contains four faint galaxies. The brightest, NGC 4169 only shines at 12.2, while the faintest NGC 4174 glows at magnitude 13.3. I have only seen NGC 4169 in this group.

The last Hickson group I will mention is Hickson 90 in Pisces Austrinus. According to my records I have not seen any of these four galaxies. This is one of the brightest Hickson groups. The brightest member is NGC 7173 at magnitude 11.3, and the faintest is NGC 7174 at 13.3. This constellation is located around - 30 degrees. I will have to check these out!

There are other Hickson groups that have members brighter than magnitude 13.5 that should be visible in larger scopes.

- Phil Schmitz

Outreach Programs

Open House

May 17, 2008

This was our open house for the month of May and was intended to coincide with Astronomy Day. We had advertised it heavily and had a big program prepared. Participation by club members was good.

Weather, however, did not cooperate and we had a modest turnout of about 20 guests.

The session started early, at about 5 PM and we had tables set up with handouts and promotional materials. We did tours of the dome and demonstrated astronomical concepts using materials we had on hand. However, as it got darker, it became progressively cloudier and participation dropped off.

We stayed till about 10 PM hoping for a break so that we could observe but no such luck.

- Tim

Thank You

The Harford County Astronomical Society would like to thank George Thomson and Mary & Stanley Grybos for the generous donations to the Society in the name of Leo Heppner.

- Tim Kamel

This newsletter is the official publication of:

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