

Harford County Astronomical Society



Monthly Newsletter

Volume 35 Issue 8

August 2009

Public Star Party (Open House):

Saturday, August 22, 2009

at Dusk

At the HCAS Observatory

“Rocks and Ice in the Solar System”

Activity: Cook up a Comet

Featured Object: Perseid Meteor Shower

HCAS will have a special comet and meteorite presentation. A comet will be made in the classroom and there will be a meteorite presentation including some meteorite samples for the public to see. Presentation will begin at 7:30 PM.

General Meeting:

Thursday, August 27, 2009

7:00pm

In the Observatory Classroom

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 Meetings

Board of Directors Meeting, July 30, 2009

The Board of Directors Meeting was called to order at 6:25pm with the following Board Members in attendance: Gary, Mark, Larry, Roy, Tony and Jimi.

Also in attendance were Officers Tom, Grace, Tim and Karen.

The Meeting was requested by Larry, he is asking for funds and permission to revamp the HCAS Website. Larry stated that Charles was a bit upset to find out about updating the website through the newsletter posted to the website. Larry has been friends Chuck for many years and talked with him about the changes he proposes, and asks for Chuck's help in building the new site and making the transition smooth. In Larry's conversations with Chuck, he appears to be ready to relinquish control, and will help Larry with building the website. Chuck has been paying for the website out of his pocket for the URL (\$7.85/month) for several years. We own the domain name until July 2011, renewal is \$35/year. This includes plenty of web data storage, server redundancy, database, etc. Larry is requesting an expenditure of approximately \$100 for a template that will update the website. Larry assures the template will keep the website user friendly. Larry gave a brief demonstration of the capabilities of the site.

The expenditure was approved. It was agreed that Charlie would be involved in the setup and transfer of the website. Meeting was adjourned at 6:55pm.

- Karen Carey

HCAS General Meeting, July 30, 2009

The meeting was called to order by President Tom Rusek at 7:03pm.

Minutes from the last meeting were approved as published in the July Newsletter.

Newsletter issues are beautiful as always. The new logo has been incorporated into the newsletter.

Treasurer's Report: Tim reports that we have \$5089.39 in the checking account. He needs to pay the insurance. Membership is up to 33 members. Tim has sent the last reminder to those who did not renew.

Outreach: Susquehanna State Park on July 18 - We had approximately 63 people attend Mark's campfire presentation and stick around to look through the telescopes. Grace handled the Outreach Table while Larry, Tony and Karen pointed their telescopes at wonderful targets such as the Hercules Cluster, the Ring Nebula, Alberio and Mizar & Alcor. Our last Open House on July 25 was disappointing weather-wise (the sky was filled with Nature's Fireworks), but we still had approximately 16 visitors take part in an impromptu presentation by Mark and Karen. Of special interest was the new impact scar on Jupiter and the recently acquired Hubble Space Telescope image of the Jovian Feature. Tom mentioned that we really need to get a sign out on Thomas Run Road to attract more people to our Open House events. Even with the thunderstorms, we had a good turnout.

Upcoming events: Open House on August 22 will feature a comet presentation by Jimi and a meteorite presentation by Phil. These will start at 7:30pm.

The Edgewood Library event is October 22, 6:30 to 8pm. Both of these events will feature Apollo Moon samples. Swanfest in Havre de Grace is on Sunday October 11.

Astronomy Day at HCC will be on October 24 We will require many participants to make this a success! The Staff and Faculty Open House will be in the Fall, depending on when the Dome upgrades are completed.

Observatory Operations: Upgrade project - Mark has scheduled a meeting with the welder to schedule the swap out of the rollers. He says that he must create a jig. The new rollers will be polyurethane which is quiet and low friction. The coupler for the drive mechanism for the windscreen is coming.

Mark reports that the college has been great with the progress made. Due to insurance considerations, Mark asks that a contractor complete the welding that is needed. Mark's goal is to have all 8 wheels welded in one night. Mark and Gary asks that those who have volunteered to help out that have not been called, please do not be offended. Most of what is holding the project up at this point is procurement with the College. As far as the windscreen, we will be able to get nearly overhead shots without the windscreen binding in place. Mark thanks everyone for their hard work. Mike asks for an Astro-Physics manual for the setup of the telescope, Tim reports that there is one already printed up in the cabinet/computer table in storage.

Mark reported that Towson University has acquired the holdout property between the addition to the college and the Observatory. How this will affect the Observatory is unclear at this point in time; however, Mark suggests that we form a 3-4 person committee to be the voice of the Observatory to the College. This includes talking about green lighting, perhaps keeping the tree line for a light block, using the new parking area for the Observatory, etc. Mark will ask for Sal Rodano's opinion about forming this committee. Mark, Gary and Tom volunteered, with Jimi being an alternate. As if the expansion of the college isn't enough, there has been talk that there will be a baseball park expanding to the Observatory's south, complete with night lighting.

Observing Reports: Roy and Cathy recently went to Broad Creek, and the weather was just bad. They did get to observe Jupiter and Neptune in conjunction and some clusters. Roy reports that the Cherry Springs gas fires are currently out. While drilling for gas in the area, the first level of gas needs to be burned off. This causes dense smoke and visible flames in surrounding areas. Cherry Springs is a designated Astronomical Dark Sky Site, and it needs to be preserved.

Old Business: Joe has been working on the 13" Odyssey Dobsonian in the Storeroom, there is some work he needs to do offsite, and he will have it back before the next Open House.

Night Sky Network: Grace held up our newest acquisition, a ball of the WMAP of the Cosmic Microwave Background. Mark gave everyone in the meeting a short physics lesson of what the CMB represents.

Grace gave more information about Astronomy Day on October 24 from 11 to 4pm. She showed off her draft for the flyer that she's sending to schools, libraries, etc. We are looking at having several stations in the South Dining Room of Chesapeake Hall. The stations proposed are: Solar viewing, Apollo Lunar Samples, find your Birth Star, Telescope Use, Astrophotography, Meteorites, Comets, Astronomical League information and Night Sky Network displays.

We will then break for dinner and have our regular Open house from 7 to 10pm.

Patches are available from Grace for \$2.00 to club members. Karen offers to sew these on garments for free.

- *Karen Carey*

New Members August 13, 2009

I have neglected to publish this list for a while; I believe going back to February. I apologize for that and will update this information back to that time.

Please welcome:

New members Ken and Dana Cross, who joined at our last open house. They have been interested in astronomy since taking a sixth grade Earth Science program.

New member Tom Burger. Tom became interested in Astronomy when he took a one week course at Penn State.

Returning member Mike Talbard.

New member David Jayroe. Dave owns a Mak and has already participated in several of our functions.

Welcome aboard!

- *Tim Kamel*

New HCAS Web Site Launches in September

Larry Hubble has notified us that the new HCAS website should be up and running and launched in September. The site will be very high-end, graphic intense, with Flash and JavaScript content.

Larry advises upgrading to Internet Explorer 8 or Firefox 3.5. Both of these browsers are more Flash- and Java-friendly, faster, and more secure as well. A high-speed Internet connection would be beneficial as well.

If you have questions about the site, you can contact Larry by email at: lhubble@comcast.net

You can download Firefox 3.5 for free from this site:

<http://www.mozilla.com/en-US/>

Observation Reports

Broad Creek
Night of July 18/19, 2009
9:00pm to 1:00am

Globular Clusters and Clouds

This was not the clearest night I've seen at BC. However, I had my scope set up by 9:00pm, after a last-minute decision. I would rate the transparency as 2 out of a possible 5 points, and the seeing about the same. Also, there were a number of large clouds that passed over the sky while we were there. The good news is that there were occasional breaks in the sky in which both seeing and transparency increased, so it was largely a matter of waiting for those moments.

On this night, I decided to follow an observing theme: Messier globular clusters. This led me to Ophiuchus, Scorpius, Sagittarius and Aquarius - a nice sweep of the ecliptic that included M107, M10, M12, M14, M22, M21, M55, M4, M80, M2, M69 and M70.

These are the most distant of the Messier globulars that I observed:

M72 in Aquarius - 56,400 light years away. With its slightly oval shape, it looks almost like a galaxy.

M75 in Sagittarius - 59,300 light years away, lying well beyond the Galactic center.

M54 in Sagittarius - 70,000 light years away. This is part of a dwarf galaxy, absorbed by Milky Way, millions of years ago.

M53 in Canes Venatici - 56,000 light years away. It was fairly high in the sky and appeared round and bright.

I concluded my glob survey with the bright M15 in Pegasus, about 30° altitude in the eastern sky.

I also observed some non-globular objects, including M11, the open cluster in Scutum, with the prominent orange star in the foreground. Coma Berenices was now about halfway up from the western horizon, as was M63, the "sunflower" galaxy and M64, the "black eye" galaxy.

This was not a good night for nebulae in the Sagittarius area. In fact, the UltraBlock filter was required to see them in any detail at all. (The UltraBlock is marketed by Orion and blocks mostly the sodium and mercury vapor light used in street lights, like the ones that cause the southwest light dome at BC.)

However, a little higher up in the sky, M16 (the Eagle nebula in Serpens), appeared vaguely, while M17 (the Swan Nebula) was surprisingly bright.

Jupiter and Neptune: Observed this pair of planets several times, as they rose together in Aquarius. They are currently less than a degree apart. However, it was not until midnight that Neptune's pale blue dot could be distinguished from the stars near Jupiter. (Coincidentally, it was a few hours later that an asteroid hit Jupiter.)

I was able to observe a number of bands and spots on Jupiter's surface, which appeared the clearest when using the #58 green filter. I've found this filter also helpful when observing Venus. It cuts out a lot of light and allows features to be seen distinctly, although it does leave a heavy green pallor over the objects.

By midnight, the weather had become unusually chilly for July and dew was beginning to form on our scopes, so we decided to call it a night and began packing up. There are a number of Messier globulars that I didn't have time for, including M3, M5 and seven others. If you add the several dozen NGC globulars now visible, this gives you an idea of the visual feast in store for glob viewers - assuming of course, the clouds are gone.

Some interesting facts about globular clusters:

Many globulars are orbiting the galaxy at high speeds (over 100 miles per second) in elliptical orbits. They enter and leave the galaxy's core like comets enter and leave our solar system. Many of them are billions of years old. Some of them are remnants of galaxies that have been dismantled and absorbed by the Milky Way's gravitational pull.

Dark nebulosity weaves around the globulars in Sagittarius, Scorpius, and Scutum and this accounts for the unexpected dark spaces around these clusters, which absorb some of their light, making them dimmer in appearance. Most of these dark dust clouds were cataloged by astronomer E.E. Barnard during the 19th Century. Under very dark skies (sometimes even at Broad Creek), you can separate these black clouds from the stars in the background, but tonight wasn't providing that opportunity.

Stephen O'Meara, in his book, *The Messier Objects*, presents an interesting idea: "Many astronomers theorize that our galaxy began 15 billion years ago as a sphere of gas that eventually collapsed into its present visible form – a central bulge and a disk – and that the ancient globular clusters, which form a spherical halo around the disk, mark the original size of this primordial cloud."

- Roy Troxel

**Broad Creek
Saturday July 18, 2009
9:30 PM -1:30AM**



This was last minute planning, due to the cloudy forecast. I arrived a little past 9PM. (It is always so much fun to set up in the dark.) Roy was already present and had set up.

I had brought my Orion Apex Maksutov-Cassegrain 127mm spotting scope for this session. Before you say "Yuk, a spotting scope", let me explain. This spotting scope can be used in the dark or daytime. When observing, everything is right side up. Keep in mind that many of these spotting scopes are pretty advanced. I use a Sirius Plossl 1.25", plus a variety of filters. The focal length of my spotting scope is 1540mm, so eye piece of 32MM is 48.12x magnification, 25mm is 61.6x, 20mm is 77x and 17mm is 90.5x.

The highlight of the night was viewing Jupiter and Neptune. Jupiter is at -2.8 magnitude. Neptune is at 7.8 mag. Roy and I viewed the planets several times throughout a 2-hr period. We viewed with both his and my scope.

We were able to see 3 of Jupiter's moons. A moon was close to each side of the planet. The 3rd moon, which must have been Callisto, according to the S&T Jupiter moon map, was to the far left. Just a little more left of Callisto was Neptune.

We were able to see one moon move so close as to touch Jupiter. We forgot to look again to see if it had vanished or was producing a shadow as it went in front of the planet. This occurred just as we began to pack to leave. Bands were visible. I observed with and without a blue filter.

Several other items I would like to mention are as follows:

M8 - Lagoon Nebula: I was able to observe lots of nebulae and the dark lane while using my ultra block filter.

M32 in Andromeda: Hard to find with the finder scope. Once found, we observed with an eye piece. M32 was not as big and bright as I have observed at other times. I guess due to haze in that area. For some reason, M31, to the lower right, seemed to stand out more than usual.

NGC7789 in Cassiopeia, an open cluster of stars. Observed a variety of bright stars.

The sky was good with a few periods of fast moving clouds. Around 11:30pm, the clouds suddenly broke up and disappeared. We were able to see the Milky Way.

We observed at least 2 fast meteors. Nothing like the meteor that lit up the north part of the county and made a sonic boom a few weeks ago, however.

I did view a variety of other items. The above is what stands out for me with my observing equipment. Next time, I will try to do a better report of my observations. (I tend to have fun observing, but neglect to write and record.)

- Cathy Tingler

Shenandoah Valley, Virginia Week of August 3rd, 2009

I was on vacation the week of 8/3, in the Shenandoah Valley in Virginia. This is a little of a misstatement since we were along the walls of the valley, at an elevation of about 2,100 feet.

I have an ETX-125 Mak which is fairly portable and does not take up too much space in the family van. So I took it along, hoping for some decent weather. In all we had a great week, weather wise, but only three of the nights were clear. Unfortunately, it was only a few days before full moon and the sky was quite bright. Things being what they were with family related stuff, I was only able to get out the first two nights for a few minutes and I just used a set of binoculars. I had also brought along my 10-30 x 50 Celestron zooms and I used them to look at Jupiter and the moon. I am not much of a moon viewer but with little else in the sky, I cranked up the power and looked at the craters, maria and mountains on the surface along the terminator. The view held up pretty well at 30 x though holding the binos steady was a little tough. It was much better at 15 – 20 power. Views of Jupiter showed a definite disk and at least two of the moons. There was no hint of any bands. Again, views were better at a lower power than at higher since holding the binos steady was difficult. The last object I looked at was the Coat Hanger. The moon was 1-2 days short of fully and I just wanted to see if I could find it. I did, on both nights.

On the 5th, I set up my scope and spent about an hour looking at Jupiter at different magnifications. Mostly, I was hoping to see the impact site on the southern hemisphere. Jupiter is such a joy because it offers much to see at low power as well as high. At low power, the four moons were nicely framed and in perfect focus. At higher power, the bands on the planet are easily seen. The scope itself is designed to be a planetary scope, f/15 with a focal length of 1900 mm. I was able to take the power up to about 160 power using a 12 mm eye piece. Higher power, however, was beyond the ability of the scope tonight, possibly due to poor seeing or poor quality of eyepiece. The 9 mm Plossl I used gave about 210 power but the view was very soft. I was not able to see the impact site. I was not surprised, however, having heard that a scope with an aperture of at least 8" was needed. Still, it was the best I could do under the circumstances.

With the moon now full, there was not much to look at, not even the moon itself. I packed it up for the night.

This was the most viewing that I have done in months.

- *Tim Kamel*

Outreach Programs

Susquehanna State Park Campfire Program July 18, 2009

This was a perfect night for our program at Susquehanna State Park Campground. We had 63 visitors and a program that lasted 3.5 hours. I set up the table with distribution materials at 7 PM while Mark and his granddaughter set up for his presentation. People at the playground and people walking by stopped to see what we had available.

August 1 had been designated as IYA Lunar Star Party night. Since we already had three things scheduled for the 2 weeks prior to August 1, I decided to give out materials about the moon at this event and the July 25 open house. We had handouts about the LRO/LCROSS, information about Apollo missions (July was the 40 year anniversary of the first person walking on the moon) as well as Kepler information, star charts, IYA information, skywheels and club schedules.

Karen Carey, Larry Hubble and Tony Mullen brought their telescopes for observing. Mark's program started at 8 PM and went a little more than an hour. The group then came out for viewing. We had the First Time Telescope Awards to give out and gave out quite a few of those. I asked visitors what they had seen to put on the award and got some great answers. Most of the children were quite small--maybe kindergarten to second grade. Some knew the name of the item they had looked at and others gave descriptions. "I saw it with that telescope, up there (pointing the general direction) and it was two stars with different colors"--Alberio. Most of the children either saw Alberio, Mizar and Alcor or M13.

It was close to 10:30 when the last of the 63 visitors left and Larry was able to finally pack up his telescope and leave.

- *Grace Wyatt*

Open House July 25, 2009

Saturday the 25th was our July Open House and, no surprise, it was overcast again. Is it my imagination or are we having one of the worst observing years in recorded history? As I write this on 8/13, we have had 4-5 nights of overcast skies. We have missed the Persiads and Saturn going edge-on.

Nonetheless, we held the open house function and had a good turnout by members and a fairly good turnout by the public, considering.

Members attending included Tom Rusek, Grace Wyatt, Dave Jayroe, Mike Talbard, Jimi Hajek, Paul Sokolowski, Phil Schmitz, Karen Carey, Tim Kamel, Roy Troxel, Gary George, Mark Kregel and Caleb and Mathew Grayson.

By 10:30pm, most of the guests had left and the remaining members talked a little more, cleaned up a bit and left at about 11:30. In all, it was not a bad session with some interesting discussion and sharing of information.

- *Tim Kamel*

Astronomy Day October 24, 2009

Help Needed!

October 24 is the date of our regularly scheduled open house. Because it is Astronomy Day, we will also have an event from 11 AM to 4 PM. We will have a number of stations set up to show the public what HCAS and HCC have to offer the community.

To make this event a true success, we will need maximum club participation. If you have not been involved in the past, now is your chance. Not only can you help out, but you can meet other members and see what we have been doing. You don't have to come for the entire time; you can schedule to be there for support anytime during the day or evening activities.

During the day, we will have the following areas with displays:

- HCAS and HCC (will include Night Sky Network, Astronomical League, International Year of Astronomy and Birthday stars)
- Lunar Samples
- Meteorites and comets
- Astrophotography
- Telescopes and Binoculars
- Weather permitting solar viewing (telescope with filter available)

Each station will need at least one person there at all times. We can use help at all the stations except lunar samples which has already been assigned to those certified to be lunar borrowers by NASA.

We will continue with International Year of Astronomy themes for the night time activities. The program is titled "What is the Fate of the Universe. Activities include telescopes as time machines and birthday stars. The featured viewing object will be the Andromeda Galaxy. For program information check out this website:

http://nightsky.jpl.nasa.gov/download-view.cfm?Doc_ID=309 When you get to the page with a survey, you can scroll to the bottom and click on skip to get the manual.

Think about how you can help out and let Grace (dgracew@comcast.net) know as soon as possible. Again, you don't have to be there all day, but if you have some time (either during the 11 AM to 4 PM session or the evening session), please commit to assist. It may seem early to get a commitment, but this event needs to be advertised heavily and flyers will need to be made soon to post and give out.

Even if you can't help out, stop by to say hi and meet some of the other members.

Night Sky Network

I have been encouraging Night Sky Network participation and asking that members use materials in presentations and to please let us know when you do an outreach so we can record it on the Night Sky Network. And WOW you have responded. Members of the NSN are ranked with stars. When a club has done 4 to 9 presentations in a 6 month period of time, they become a white star. When a club has done 10 to 19 presentations in a 6 month period of time, they become a red star. We have been at the red star level for quite a while. We recently moved up to the next level (20 to 29 presentations in a 6 month period of time), and we are now a yellow star club! The next level is 30+ presentations in a 6 month period of time.

While it is risky to list people individually, I want to say thank you to Karen Carey, Jimi Hajek, Larry Hubble, Ricky Hubble, Roy Troxel, Gary George, Tom Rusek, Paul Sokolowski, Garry Lang, Greg O'Brien, Phil Schmitz, Mark Kregel, Tim Kamel, Joe Manning, Tony Mullen, Dave

Jayroe and Mike Talbard who have all participated in at least one of the programs over the last six months that pushed us into the next level! Remember, if you do a program on your own, see me and I can give you materials so your presentation will count as a Night Sky Network presentation. We receive many effective and simple teaching tools from the Network, and we receive many contacts for free materials to hand out from the Network. The only requirement is that we use the materials to educate the public about astronomy. If you haven't already participated, come out, have some fun and log a program. Stop by to see some of the materials and toolkits we have received. To those who have participated, keep up the good work and thanks.

- Grace Wyatt

Astrophotography



M13 globular cluster in Hercules, July 19, 2009

Gary, Tim, and I did a test run with my new Canon 50D camera for astrophotography in my backyard. We picked M13 for its location in the sky, UP!, and its brightness and ease to find. By the time we were ready to shoot, thin clouds had formed throughout most of the sky but M13 was in the clear. Thanks to Jeremy for his suggestions on starting camera settings for the 50D. He has a 40D.

Although I pushed the envelope a good bit to test the camera's capabilities using an ISO of 2500 and 1000. I did not use any dark frames on purpose to see the noise results. Surprising to me, there was very little difference between 2500 and the 1000. The noise could have easily been reduced or maybe even eliminated with a couple of dark frames. The 50D is capable of automatically taking the darks and auto subtracting them as you shoot, but will double your exposure times of course.

The resulting image looks pretty good considering there was a 70% dew factor and thin clouds passing over the shot. Everything was soaked by the time shooting was done. No laptop was used--just the camera and scope. I really loved this simplicity. It reminded me of when all I used was my scope and a film camera. Although I think the laptop could have made things easier. Oh, I forgot to attach my 6.3 focal reducer so it is shot at f/10. (I don't know if this was a good thing or a bad thing) and 11x45sec. Google *images* M13 for other M13 shots to compare.

We learned a lot of what not to do and a couple of things I will try next time.

- Larry Hubble

Note: Newsletter images are low-resolution and not suited for printing, wallpaper, etc. If you are interested in a CD of the full-resolution, uncompressed .tif files of our results so far, just ask or email Larry Hubble and he will bring it to the next club meeting. Larry can be reached at: lhubble@comcast.net

HCAS Astronomy Quiz

This Quiz is on the Andromeda Galaxy

1. In what constellation do NGC 147 and NGC 185, two of M31 satellite galaxies, reside?

Andromeda Perseus Cassiopeia Pegasus

2. M31 is what type of galaxy?

Spiral Elliptical Barred Spiral Irregular

3. There is a bright region within the Andromeda galaxy, what is its designation?

NGC 205 NGC 206 NGC 221 NGC 891

4. Who was the first person believed to see M31 in a telescope?

Galileo Kepler Marius Messier

5. What is the approximate distance of the Andromeda galaxy?

2 1/2 million miles 13 thousand quadrillion miles 48 trillion miles 370 billion miles

Answers to Last Month's Quiz

1. What famous galaxy is located in Andromeda?

M31 M51 M83 M33

M31 is visible from a dark sky site with the naked eye.

2. Which star of Andromeda is also a star of Pegasus?

Mirach Almach Delta **Alpheratz**

Alpheratz is the northeast corner star of the Great Square of Pegasus.

3. What is the name of the gold and blue double star with the Greek designation of Gamma?

Mirach **Almach** Megrez Alpheratz

Almach is a beautiful gold and blue multiple star, and each component is a spectroscopic binary.

4. What bright star is the elliptical galaxy NGC 404 near?

Mirach Almach Delta Alpheratz

The brightness of Mirach (Beta Andromedae) sometimes makes it difficult to distinguish the galaxy NGC 404 in the same field of view.

5. The Andromeda houses a bright blue-green planetary nebula, what is its name?

The Blue Nebula **The Blue Snowball** The Blue Planet The Blue Sea

The Blue Snowball, NGC 7662, is an obvious blue planetary in larger apertures. It is magnitude 8 and can be seen in small telescopes even though it is small.

- *Phil Schmitz*

Miscellaneous



Cathy Peddie, Deputy Project Director speaks to visitors about LRO mission.

Lunar Reconnaissance Orbiter (LRO)

NASA Event
August 1, 2009
7:45pm

I attended the NASA LRO event at Goddard Space Flight Center the night of 8/1/2009 that started at 7:00 pm. However due to a massive traffic jam on 295 south I arrived at 7:40 pm

instead of the planned 6:30 pm. I missed the bus tour which filled up by 7:30 . However I did see most of the presentation by the LRO team who explained the mission in detail and answered questions afterward. After the presentation there was a small party with cake being served, actually there were several cakes, I managed to get a shot of one before it was cut (photo below). Starting at 8:00pm there were about 8 telescopes set up outside by the Goddard Astronomical Group and the Greenbelt Astronomical Society for moon viewing that ranged in size from 9 X 50 binoculars to a 12-inch Meade . Sorry, I don't have any photos of the telescope setup as I did not get out there till after dark and did not want to use the flash and mess up everyone's night vision. The seeing was only fair to poor due to clouds and haze, however by about 9:30 the summer triangle, both dippers and a few other stars were becoming visible overhead through the holes in the clouds. Seems that we are not alone with our public viewing events being clouded out. I would like to point out that the team expects the crash of the LRO at end of mission to be visible with a 10" or larger amateur scope.

The event was well attended and the parking lot was full when I finally arrived. Those of us getting there late were directed to park on the grass past the end of the lot away from the visitor center.

All in all, everyone seemed to have a good time there. I hope to get back soon to see what I missed on the bus tour and any other changes that occurred since I was last there about 15 years ago. I would like to add that the NASA web site has a ton of info on the mission which is why I did not go into detail here.

http://www.nasa.gov/mission_pages/LRO/

- Dave Jayroe



Last minute arrivals hurry in, including me.



HCAS Official Embroidered Patch

HCAS now has an embroidered patch (*see left*). The design is by Larry Hubble. The patches are 4" and are available to club members for \$2. They are available to the general public for \$4 each. Contact Grace if you would like to purchase any patches. dgracew@comcast.net



ASTRONOMY DAY - OCTOBER 24, 2009

11 AM to 4 PM Chesapeake Hall--Dining Room South

7 to 10 PM HCC Observatory - viewing session

HARFORD COUNTY ASTRONOMICAL SOCIETY

with HARFORD COMMUNITY COLLEGE presents ASTRONOMY DAY

LUNAR SAMPLES

(Samples brought back from the moon by Apollo astronauts)

TELESCOPES & BINOCULARS

(What should I buy? If you have a telescope and don't know how to use it, bring it with you for assistance.)

ASTROPHOTOGRAPHY

(See club members' photos. Ask questions and receive information)

METEORITES AND COMETS

(Meteorite display)

SOLAR VIEWING

(Weather permitting--learn how to safely view the sun)

BIRTHDAY STARS

(Find your birthday star and learn what it means)



www.nightsky.jpl.nasa.gov

HARFORD COMMUNITY COLLEGE

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www.astroleague.org

Contact: Call 410-836-7285 or Email: harfordastro@yahoo.com
www.harfordastro.org

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Please send all contributions (electronic format is strongly encouraged) to:

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