Harford County Astronomical Society

Bel Air, Maryland
www.harfordastro.org

Volume 34 Issue 11 *November 2008*

Public Star Party (Open House):
Saturday, December 6, At Sunset
At the Observatory

General Meeting:
Thursday, December 11, 2008
7:00pm - Business Meeting
At the Observatory

Please check the website for possible schedule updates and changes:

http://www.harfordastro.org

http://astroleague.org/ http://nightsky.jpl.nasa.gov/

In This Issue:

HCAS Business Meeting

Minutes of October 16, 2008

1. The general business meeting was preceded by a meeting of the Board of Directors. The board discussed the proposed purchase of an Orion StarShoot Pro CCD camera. Alternatives such as using 35mm film were brought up. After the discussion, the board voted 6 to 1 in favor of making the purchase.

Rules for the use of the camera were also addressed. A "librarian" will be designated to monitor who has the camera and when it was checked out to ensure all members have fair access to it. The board also agreed that the camera should not be used on the observatory telescope during public open houses. A separate telescope will be set up for the camera so that guests can use the observatory scope visually and see the same objects on the screen by using a different telescope with the camera and computer equipment.

The observatory's laptop computer is being cleaned by the Harford Community College IT staff. They told us that any software installations need to be done by them, via the help desk.

2. President Tom Rusek called the general business meeting to order at 7:17 PM. 12 members were present, with 1 arriving shortly after it started.

3. The minutes of the September 2008 meeting were published in the last newsletter. The group approved the minutes as published.

4. Treasurer: Tim Kamel reported that the club's bank balance was $5589.87.

5. Observatory operations:

a. Mark Kregel prepared a detailed outline of the costs required for the college to upgrade the observatory dome. The total cost will be between $5000 and $5500. He is continuing to meet with them to coordinate the work. Tim Kamel noted that we will have to provide some

volunteer labor to help keep the costs down. Mark will do some computer programming to link the hardware in the dome to the projection system in the classroom. He expects this to take about 140 hours of effort.

b. Gary George asked if the school would paint the inside of the dome. The group agreed that we could do it ourselves to save money.

c. Tim Kamel noted that the plug for the windscreen motor is loose. One person needs to hold it in while the other hits the button in order to open or close it.

d. Grace Wyatt suggested that we use a cover on the observatory telescope to keep condensation away. Tim Kamel said that we already had one that should work.

6. Outreach:

a. Approximately 400 people visited the HCAS booth at SwanFest in Havre de Grace. The members passed out Hubble Space Telescope prints and eclipse glasses. Grace Wyatt, Tom Rusek and his family (Barbara and Angela), Gary and Doreen George, and Jimmy Hadjak participated.

b. Tom Rusek will coordinate another lunchtime presentation at the Edgewood retirement home.

c. The group discussed the use of club facilities and equipment during open houses. The club's resources are to be dedicated to use by guests during these events. Any imaging or dedicated research using club equipment should take place at other times. Everyone agreed. A motion to this effect was made, seconded, and approved unanimously.

d. The group also agreed that the public open houses should be scheduled as close to the first quarter moon as possible. If it takes place too close to the full moon, many interesting deep sky objects are washed out by the moon's brightness. Tom Rusek said that we will consider this when scheduling the 2009 events. This will be a topic of discussion at the November meeting. Phil Schmitz suggested we schedule an occasional (perhaps quarterly) open house on or near the third quarter moon to better allow viewing of deep sky objects. This would be in addition to the regular monthly open houses.

e. Grace Wyatt will put items in the Havre de Grace library display case on November 1st. Anyone interested in helping should contact her.

f. We received a new tool kit from the Night Sky Network. This one covers black holes.

7. Observing Reports:

a. Roy Troxel suggested that members conduct an observing session at Broad Creek on October 23rd or the weekend of October 24/25. He will send emails out with contact information and the times he plans to be there.

b. The Delmarva Star Party takes place at Tuckahoo State Park that same weekend.

8. Old business: The Board of Directors approved the purchase of the Orion camera. Anyone with comments or suggestions on how to manage its use, or on the actual operation of a CCD camera, should share their ideas with the club via email. Tim Kamel will coordinate the purchase with Gary Lang at Chesapeake Optics.

9. New business: The group agreed to purchase a new, smaller, more easily charged battery for the open house scrolling sign. The ideal solution will be smaller than a car battery and will allow

a long term trickle charge so that we can plug it in between events and have it ready to go for the next event when we need it.

10. The meeting was adjourned at 7:51 PM. Afterwards, the group watched the DVD that came with the Night Sky Network black hole kit. Tom Rusek will give a presentation on plate tectonics and impacts after the November meeting.

Night Sky Network Teleconference

Make Your Own Radio Telescope

The next NSN Teleconference is an instructional program on how to make a "sidewalk ready" radio telescope. You download a PowerPoint presention through one of the links below prior to the teleconference. You call at the designated time to listen to the speaker and follow along with the PowerPoint on your computer.

You can join the teleconference from your home on Tuesday, November 18th at 9 pm as Sue Ann Heatherly of the National Radio Astronomy Observatory, home of the Green Bank Telescope or (GBT) teaches us how to make The "Itty Bitty (Radio) Telescope" or (IBT).

Ms. Heatherly is the education officer for the National Radio Astronomy Observatory (NRAO) in Green Bank, West Virginia. Sue Ann will share the mystery and magic of space exploration through radio waves, by showing us how to make our very own IBT.

You can download the 13 MB PowerPoint here:
http://nightsky.jpl.nasa.gov/docs/IBTcom1.ppt

and the associated two WAV files for the PowerPoint here:
http://nightsky.jpl.nasa.gov/docs/cheapsigmeter2.wav (923 KB)

http://nightsky.jpl.nasa.gov/docs/channel.wav (3.95 MB)

To join the Teleconference on Tuesday, November 18th at 9:00 pm - "How to Make an Itty Bitty Radio Telescope" - call the toll-free conference call line: 1-800-779-8164.

Call anytime after 8:45 pm PT the evening of the telecon.

An operator will answer and:
- You will be asked for the passcode: NIGHT SKY NETWORK
- You might be asked for the call leader: MICHAEL GREENE
- You will be asked to give your NAME and the CLUB you belong to, and number of people listening with you.

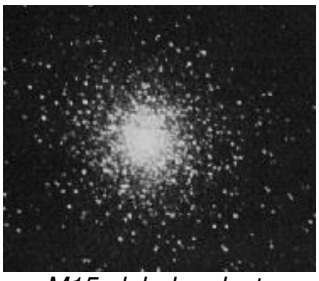
- Grace Wyatt

Observation Reports

Broad Creek
October 20, 2008
7:30pm to 10:40pm

The sky was very clear, except for a haze in the southwest that created the light dome over Bel Air. However, most of what I had planned to observe was in the northeastern sky. The temperature was in the 50s but dropped to the 40s by 11pm. Faint animal noises could be heard, but this was an otherwise silent evening with no wind.

Here are some of the highlights of the evening:


M15 globular cluster

M15 in Pegasus –This globular cluster easily dissolved into stars using the 13mm and 9mm Nagler EPs. It has the densest core of any known globular in our galaxy, suggesting a possible black hole at the center. It is also 12 billion years old.

NGC752 – Wide open cluster in Andromeda. Fills the field of view of the 13mm eyepiece.

M103 in Cassiopeia. Its triangular asterism, with dimmer stars inside, is elegant. This is an object that looks more interesting through the telescope than any photo of it.

NGC457 in Cassiopeia – "E.T." cluster. (Looks like the little alien character, complete with big eyes.)

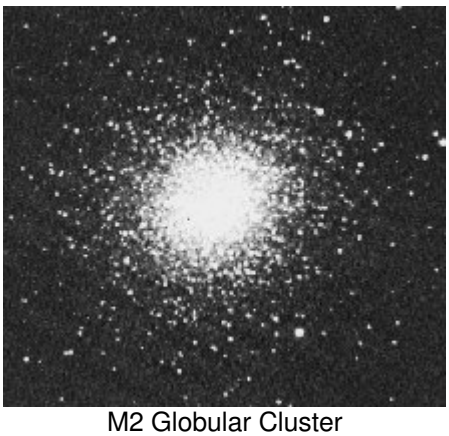
M57 (The Ring)– Near the zenith and very clear. Can see hints of reddish coloring.

M27 (Dumbbell) also near the zenith. Very clear, using the UltraBlock filter

NGC6543 (Cat's Eye) in Draco. Tight, blue planetary nebula.

NGC7662 – The Blue Snowball planetary nebula in Andromeda. Resembles the Cat's Eye and the Saturn planetary nebulae in Draco and Aquarius.

NGC7293 Helix Nebula in Aquarius – very dim and seen only with the UltraBlock filter.


M2 Globular Cluster

M2 – beautiful globular cluster in Aquarius. Never get tired of this one. Very round and smooth when viewed with low magnification.

As with the planets, it is helpful to observe deep space objects over a period of time, and each time look for new features or peculiarities in the objects; i.e., look for what distinguished one cluster from another. You will soon begin to notice differences in star colors, shapes and shades of nebulae, etc. For example, M2 is distinguished from M13 by its smoother, rounder appearances, while M13 has numerous "streamers" of stars coming from its center.

Globular clusters are billions of years old. It has taken

that long for gravity to collect their stars together in such tight groups. The larger globulars might even be "failed" galaxies with not enough gravitation to form a collection of millions of stars.

M30 - This globular in Capricornus has two strings of stars extending outward from it, appearing as "legs". It is about 30,000 miles away from us and contains about 100,000 stars.

M75 – distant globular in Sagittarius. About 68,000 light years away, this is one of the most remote clusters in the Messier catalog and resides on the opposite side of our galactic nucleus.

NGC654 and 663 in Cassiopeia. They could both be seen in the same field of the 22mm Lanthanum eyepiece (about 75x). When I moved the scope slightly, NGC659 came into view.

M34 – Loose, open cluster in Perseus

M76 – Little Dumbbell, a planetary nebula, also in Perseus

Double Cluster using the 35mm TeleVue Panoptic is spectacular, as I had expected.

Scanned the area around Mirfak, "The Alpha Persei Association", using the 35mm. Very bright and beautiful.

M33 galaxy in Triangulum – Dim, but large. I use the appearance of M33 to judge the relative "seeing" of a particular night. This was an above-average night for Broad Creek.

Stopped observing at 10:40pm, with moonlight just becoming visible over the trees along the eastern horizon.

- Roy Troxel

Broad Creek
October 23, 2008
7:00pm to 10:00pm

Temperature was in the pleasantly cool 50s, with no wind or dew, with a slight haze in the south. Otherwise a very clear sky at 7pm.

Features on Jupiter became clearer as the sky darkened, but the haze was still a little thicker than usual in that part of the sky, so I didn't remain with the planet much longer. Venus was already below the trees along the western horizon. Using a variety of eyepieces, I decided to do a general survey of the Cassiopeia-Cepheus-Perseus region. These objects were readily visible:

M103. One of my favorite clusters. For some reason, photographs don't capture the symmetry of this cluster. It displays an interesting pattern - a large triangle with dimmer stars within it.

NGC654, 659 and 663. With the 35mm eyepiece I can get these clusters almost in the same field of view, and any two of them do appear in the same field. This is a sparkling part of the Milky Way, with many clusters and asterisms.

NGC281 – Open cluster with faint nebulosity

M52 – Round, dense "salt and pepper" cluster. Very attractive, with bright orange star

NGC185 – Faint, elongated galaxy.

NGC7243 – Open cluster in Lacerta.

M74 – Very dim galaxy in Pisces. This a 9th magnitude object, but its light is spread over a wide area, making it appear dim.

NGC185 – Companion galaxy to M31.

NGC891 – Viewed edge-on. See photo to right.

M31 - Saw the core, but seeing not good enough to make out NGC206 star cloud, which is inside M31.

NGC6939 – Open cluster in Cepheus.

NGC7235 - Open cluster in Cepheus, containing a bright "ruby" star.

NGC891 in Andromeda

Perseus Deep-Sky Objects:

M34 - Bright Open Cluster.

NGC1023 – Galaxy

NGC1245 – Open cluster.

NGC1342 – Odd-shaped open cluster.

NGC1444 – Triangular open cluster. About 30 stars, with bright double star in front of it.

NGC1513 – Cluster of about 40 stars

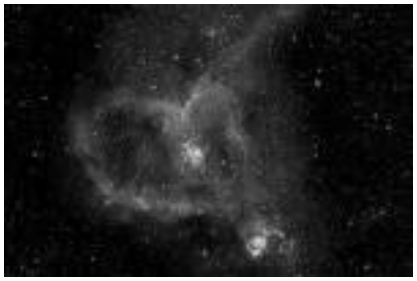
NGC1528 – Large bright open cluster.

NGC1545 – Bright open cluster with a triangle of stars in the center.

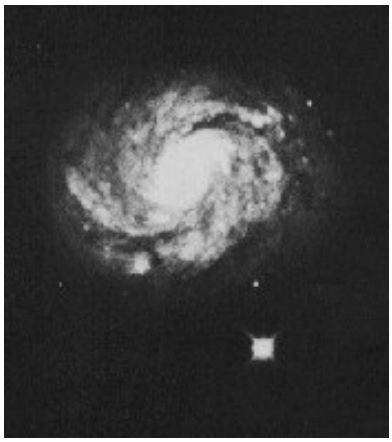
NGC1582 –Bright, open cluster, appearing as two strings of stars.

M45 in Taurus– Looked for nebulae around the stars of the Pleiades, using the UltraBlock filter, but couldn't see any.

NGC6826 – Blue planetary nebula in Cygnus. It is supposed to disappear when you look directly at it, and then re-appear when you avert your vision. I looked directly at it and then away from it, but it didn't change – it didn't "blink". There has been recent discussion about this on various web forums.



NGC281 – The Heart Nebula in Cassiopeia



M77 in Cetus

M77- “Seyfert” galaxy in Cetus. Bright dense core, with dim arms.

About 10:00pm a cloud layer developed over two-thirds of the Broad Creek sky, so I decided it was time to pack up for the night and return home. It had been a nice evening’s tour of star clusters.

- Roy Troxel

Broad Creek
October 26, 2008
by Phil Schmitz

The night started out good, seeing at a 3 and transparency at a 4. By the end of the session, seeing was a 2 and transparency a 2. The temperature was 55 degrees when I arrived at 6:05 PM. Unless otherwise noted, the 12mm 2inch eyepiece was used.

At 7:30, Jupiter was seen with all four Galilean satellites, one on one side and the other three on the other side. The double double in Lyra barely split into its four components and M57 was also seen. M11, the excellent open cluster in Scutum may have been the best I have seen it, many faint background stars were easily seen in the cluster. M 15, a globular cluster in Pegasus was seen.

NGC 404, an elliptical galaxy in Andromeda never looked better, this even surface brightness galaxy was easily seen, even though it is next to the bright star Mirach, Beta Andromedae. Almach's gold primary was more white then gold, but the secondary was very blue. M31, M32 and Ml 10, galaxies in Andromeda were all seen.

Hubble photo of G1 globular cluster. It won’t look like this in your scope, but you can probably see it.

G1, a globular cluster in Andromeda took about 25 - 30 minutes to find. This 13.7 globular is well south of the core of M31. This cluster is in a triangle with two other brighter stars. This is only the second time I have seen this globular, the first time was on September 15, 2001 in West Virginia. NGC 206, a star cloud region of M31, also well south of the M31I's core was also seen.

In Perseus, M76, the Little Dumbbell was brighter than usual and both lobes were easily visible. The double cluster, NGC 869 and 884, also in Perseus, were also seen. The Pleiades, M45, the Hyades, both open clusters and Theta Tauri were seen in the 9x60 finder. M39, an open star cluster in Cygnus was seen. The dew was bad this evening and the Milky Way was fading fast. We decided to close up about

10:30 and by 11:00 we were leaving. The temperature was 53 degrees.

Observation Report
October 26, 2008

On 10/26/2008, Roy, Phil and I went to Broad Creek to do some viewing. I had checked the Clear Sky Clock and the prediction for the night was clear skies and average transparency. Seeing, however, was poor, 2 out of 5. However, this is usually what we get. Wind was low and temperature was mild, in the low 50's to high 40's.

It was short notice but I made several phone calls. Roy and Phil agreed to go and I was the last one to arrive. I got there about 6:50, and had just enough light left to see what I was doing as I set up. I brought along my 6" Criterion Dynascope/LXD-75 GEM. I also brought along my Celestron 7x35 UpClose and my 7x50 Orion Scenix binoculars, intending to do comparisons. Roy brought his 12.5" Obsession and Phil his 16" home built. They both plan to write up their own observations so I will not comment on what they looked at.

I took particular care this time to do a good alignment and had some really good GOTOs all night. I started off with Jupiter and spent some time looking at the planet, suspecting that this might be my last look this apparition. All four moons were visible and I could easily see the equatorial belts and had some nice views using long focal length eyepieces down to a 16.3mm. When I tried the 12.7 and 9, all I got was junk. I have seen better with those eyepieces and blame the poor seeing and Jupiter's low position for this.

From 8 PM till about 10 PM, I spent the time hitting some easy objects that were fairly high up in the sky, using both the scope and the binoculars. I started off with M 11, The Wild Duck, while it was still high enough. In the 6", it was fairly faint with one or two brighter stars. The V formation was indistinct. I then tried for M8 but no luck. It sat in the light dome over Bel Air. I moved on to M13, spectacular in the 16.3mm eyepiece. Next was the Perseus Association around Mirfak, followed by M34, which I saw first in the binoculars. A nice open cluster that showed nicely in a 30mm eyepiece. Next was the Double Cluster, a wonderful subject in a 40mm GSO Plossl. Continuing to the east, I picked up the Hyades and the Pleiades in my binoculars. Nice views but too big for the scope even with a 40mm Plossl.

I then moved to the Andromeda Galaxy. It was naked eye visible and was a fine view in the binoculars. The 40mm Plossl showed both M31 and M32. I could not see M110 in the 6" scope. I then spent a whole bunch of time trying to pickup M33, the Galaxy in Triangulum. It was not visible naked eye and I could see nothing in the 7x35's. The 7x50's did show something very, very faint that sometimes was there and other times not. I could not see it in the scope.

I then moved to Auriga and looked at M36, 37 and 38. Amazing how each of these open clusters can be so different in density and brightness.

By now, it was past 10:00 PM and I was having a problem with dew. This started around 9 PM and first, my binocular eye lenses kept fogging up. For some strange reason, only the left one fogged up, but on both binoculars. If I set them down inside my car, they would clear up and I could use them a few minutes later. Then my finder fogged up. Not too much of a problem since I really did not need it. My GOTOs were pretty much dead on all night. But when the eyepieces began to fog up, it was time to go. The scope itself was soaked and dripping. Phil was having a tough time with his finder fogging up, and since he does star hopping, he could not do without it. He kept using a dryer to dry it up but it would only stay clear for a few minutes and then fog up again. We pretty much called it quits by 10:30 and began packing up.

I did get a chance to compare the two binoculars. In short, it was not much of a contest. The Scenix was much better in terms of brightness and sharpness than the UpClose. The Scenix is

also better made and I noticed that the focusing knob on the UpClose getting tougher to move as the binoculars got cold. I did have a problem with blackouts with the Scenix and needed to keep my eyes dead centered on the eye lenses in order to use it. The UpClose scored points for being much lighter than the Scenix and was easier to hold steady for longer periods of time.

A little disappointing that we had to end the session early like this. I was hoping to stay out long enough to catch a view of the Orion Nebula. I guess I will have to wait till next time.

- Tim Kamel

Broad Creek
10/31/2008 to 11/1/2008
6:30pm to 3:30am

This was an unusually clear night. Our band of observers included Cathy Tingler, Phil Schmitz, Jim Hajek, and myself.

At 7:00pm, Venus was low in the southwest but responded well to the green filter, displaying a large gibbous disk that wobbled slightly due to atmospheric thickness along the horizon.

Jupiter: Using 120x and 175x eyepieces, I watched satellite orbiting behind the planet, over a period of a half-hour. The Red Spot was close the planet's western edge and appeared white on this evening. Detail was visible on equatorial bands – spots and cloud rifts.

I went on to deep-sky objects for the rest of the night. These included:

NGC185 - Companion galaxy of M31, in Cassiopeia. Appeared round and dim.

NGC7325 – Cluster in Cepheus.

NGC6939 – An open cluster in Cassiopeia.

NGC6946 – Galaxy in Cepheus. Not bright, but big. It filled the view of my 13mm Nagler EP (120x).

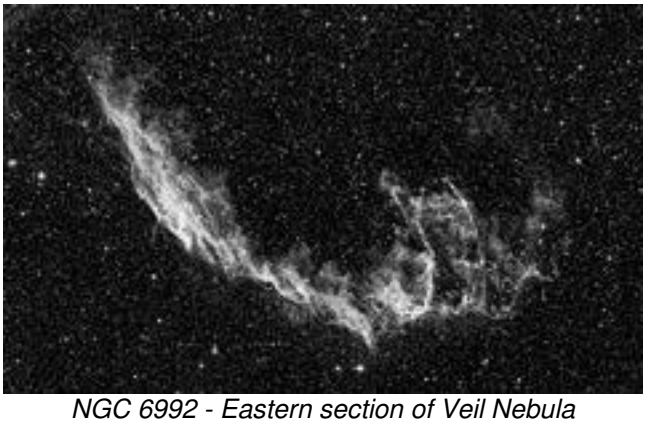
NGC 7762 – Odd-shaped open cluster in Cepheus.

NGC40 – Planetary nebula in Cepheus.

NGC6992 (Veil Nebula in Cygnus) Best view I've had at Broad Creek! Very distinct. Used UHC UltraBlock filter.

NGC7635 - Bubble Nebula - Using averted vision, with UltraBlock on 22mm eyepiece First time I've seen it.

NGC188 – 10-billion-yr-old open cluster in Cepheus and near Polaris. It is studied by astronomers interested in stellar evolution.



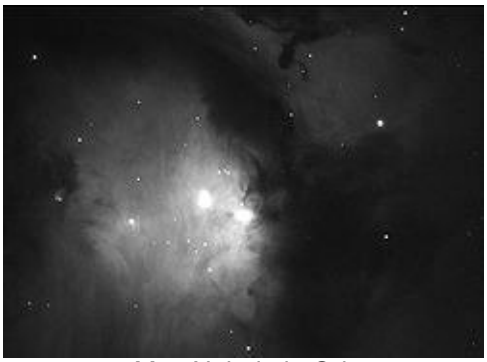
NGC 6992 - Eastern section of Veil Nebula

NGC7510 in Cepheus –Unusual open cluster, looking like several lines of stars.

M35 in Gemini. Dense, beautiful open cluster.

NGC2158 – SW corner of M35 – small open cluster, possibly behind M35 in our line of sight.

[At this point, a bright (-2 magnitude?) green meteor flew past Lyra in the northwest.]



M78 Nebula in Orion

NGC7635 – "Bubble" Nebula

M78 in Orion - About 1,600 light years distant from Earth, M78 is easily found in small telescopes as a hazy patch and surrounds two stars of 10th magnitude. The two stars look like a set of eyes staring back at you. It's kind of funny.

M79 – Globular cluster in Lepus. Currently positioned at a distance of 60,000 light years from the galactic core. It is possible that M79 is not native to our galaxy at all, but instead to the Canis Major Dwarf Galaxy which is currently experiencing a very close encounter with the Milky Way.

NGC1502 – Open cluster in Camelopardalis.

Beta Monoceros – A triple star. All 3 stars lined up very close together

NGC2264 - "Christmas Tree" cluster in Monoceros. This contains the Cone Nebula, an extraordinary pictorial sight, but largely invisible, except when using large telescopes or photography.

NGC2244 – Rosette Nebula, also in Monoceros. Appeared very dim, even with UHC filter.

M46 – with planetary nebula NGC2438 in the foreground. Used filter.

M47 – Bright open cluster in Puppis.

M48 – Open cluster in Hydra.

M41 – Open cluster in Canis Major.

M67 – Open cluster in Cancer. Sometimes overlooked because of the brighter Beehive (M44).

Broad Creek
10/31/2008 to 11/1/2008
6:30pm to 3:30am

All observations were with a 12mm 2-inch eyepiece unless otherwise noted. Temperature was 53 degrees.Transparency was a five throughout the observation. Seeing started at a three and after midnight it went to a four. There was no dew throughout the observing session. Those in attendance were Roy, Cathy, Jimmy, and myself.

The crescent Moon was seen naked eye. Venus was seen, the disk appeared to be near full. Jupiter was seen with three satellites. Roy saw all four, but one had disappeared in front of or behind Jupiter by the time I saw Jupiter.

M57, the Ring Nebula in Lyra was seen along with the double double, Epsilon Lyrae. All four components could be seen, but just barely. Looked at M56, a nice 8.3 magnitude, medium size globular cluster that showed stars around the periphery of the core.

M11, the very bright open cluster in Scutum was incredible as always.

Moving on to Hercules, M 13 and the small galaxy NGC 6207, which is just north of M13 were seen. NGC 6207 was somewhat disappointing since it was just barely visible. M92, another globular cluster was also seen.

Mesarthim, Gamma Arietis, the best highbeam headlight double was nice. Both components are white.

In Perseus, the large and bright open cluster M34 was seen. M76, the Little Dumbbell Nebula, which easily showed both lobes, was seen. The double cluster, NGC 869 and NGC 884 were extremely bright and impressive.

Almach, the bright gold and blue multiple star split easily in the 16 inch, however, the gold primary was more yellow-white tonight. NGC 404, a medium sized elliptical galaxy near Mirach (Beta Andromedae) was easy tonight. M3 1, the large spiral galaxy, and two of its companions, M32 and M 110 both elliptical galaxies were seen. A glimpse of NGC 206, a star cloud inside M31 was barely visible.

M74, a 9.4 magnitude galaxy in Pisces, is actually one of the faintest of the Messier objects. Its 11-arc minute by 11-arc minute size spreads it 9.4 magnitude light over a large area making it hard to see. However, thanks to its proximity to Eta Piscis, it is rather easy to find and it was.

Moving back into Andromeda, I tracked down NGC 891, a 9.9 magnitude spiral galaxy seen edge on. This galaxy is 13.5 x 2.8 arc minutes making it rather faint and difficult to see. The reason I wanted to see NGC 891, is because it leads to a grouping of seven galaxies.

I saw five of the seven galaxies. While searching for NGC 910, I had some confusion. I came across a double star that seemed to be a single star on my Megastar chart. I then noticed the thin line across the star on the chart indicating it is a double. The star, GSC 2839.1326, with magnitudes of 9.6 and 10.0 had a separation of 12.4. Confusion solved. NGC 910, a 12.1 magnitude elliptical galaxy, was extremely faint, and rather small, with a slight brightening in the middle. NGC 911, a fainter 12.7 magnitude elliptical galaxy was extremely faint, very small with even surface brightness and best seen using averted vision. NGC 906, a 12.9 magnitude spiral galaxy, was a bit easier to see since it was a bit brighter (than NGC 909), but very small, with even surface brightness across the disk. Neighboring NGC 909, a 14.3 magnitude elliptical galaxy, was quite fainter than NGC 906 (which is in the same field of view) and was the smallest and faintest galaxy I saw tonight. It was barely there. NGC 914, a 13`" magnitude spiral galaxy was extremely faint, it appeared larger than NGC 906. Once I had located the field, it took 40 minutes to locate all five of these galaxies (10:00 - 10:40 PM). There were two other galaxies in the immediate area, NGC 912 and NGC 913, but they were not seen.

Also seen in Andromeda was NGC 898 a 13^{t}" magnitude spiral galaxy, near NGC 891, which I saw years ago.

M1, the Crab Nebula in Taurus, did appear to be "S" shaped, once it got higher in the sky. The Pleiades and the Hyades were seen naked eye.

In Orion, M42, with four of the trapezium stars, was breath taking. The nebulosity did not need any type of filter. The detail was "out of this world". M43 was also impressive. The double star Iota Orionis, and the quadruple star Sigma Orionis were seen. (There are actually five stars, but I have never gotten the brightest star to split.)

In Gemini, M35, the large bright open star cluster was seen along with the 8.6 magnitude open cluster, NGC 2158. M35 is estimated to be about 2,200 light years away, while NGC 2158 is about six times further away at 13,000 light years. NGC 2158 was a faint haze on the edge of M35, and no stars were seen. NGC 2129, a rather bright (mag 6.7) but small open cluster was also viewed. The multiple star Castor was seen. Another "new" object for me tonight was IC 2157, a sparse, bright, open cluster near M35 that blended with the background stars. By this time it was Nov. 1 around 12:15 AM.

The three Messier open clusters in Auriga were seen, M36, M37 and M38.

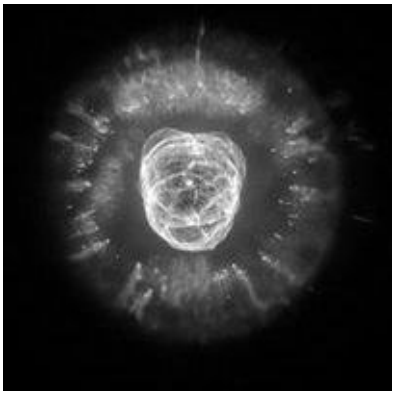
Rigel also split later in the morning when it got higher in the sky. Also later in the morning, M78, an extension of the M42 nebula, located above the belt stars was easily seen. This object reminds me of a comet.

Revisited Gemini to look for NGC 2371-2 a 13th magnitude planetary in Gemini near Castor. It appears as a faint double lobbed object that seems to be much brighter than its listed 13th magnitude. This object looks similar to M76, the little dumbbell in Perseus, but a bit fainter.

M50, a large, somewhat bright, open cluster in Monoceros was seen. Two other cluster NGC 2264 and NGC 2244 in Monoceros. I could only discern nebulosity in NGC 2244, no filter was used.

M47, a magnitude 4.4 bright naked eye cluster in Puppis was seen through the scope. M47 is quite a contrast to its neighboring fainter open cluster M46 that shines at magnitude 6.1. M46 may be the fainter of the two but NGC 2438, a 10`" magnitude planetary nebula is seen within the cluster, although it is a background nebula, and not associated with M46. I had to use my 0-111 filter to confirm the planetary nebula, which looked like a much fainter ring nebula (M57).

M44, the Beehive Nebula, a bright and large open star cluster in Cancer is best viewed at low power or through the finder. The smaller and fainter M67, another open cluster was also seen.



Back in Gemini again, NGC 2392 (*left*), the bright planetary nebula, is easily seen with its central star. This nebula is also known as the Clown or Eskimo Nebula. It is now 2:50 AM.

Took another look at the Orion Nebula (M42), and without any filters, the nebulosity from the central part of the nebula extended out further than I have ever seen them before on both sides of the central region. I did see a fifth star in the trapezium.

The last object I looked at was Polaris, its double was obvious. It was now about 3 PM. We decided to close up. We left at 3:23 and the temperature was 42 degrees. It seemed a bit warmer than that. I have observed eleven times this year at Astronomy Hill and this was the best yet; it will be some time before this observing session is surpassed!

- Phil Schmitz

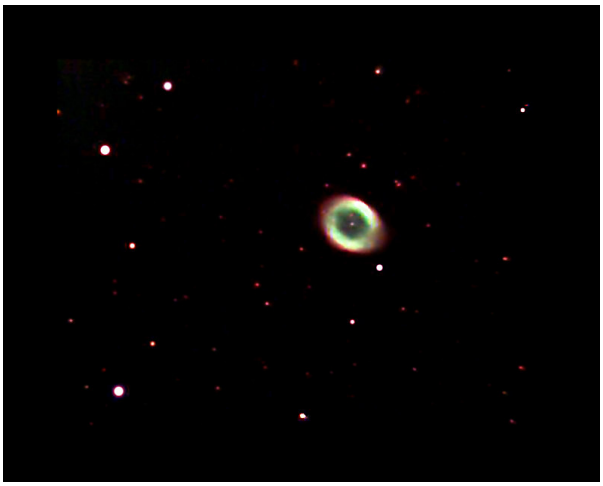
Astrophotography Session
HCAS Observatory
October 19, 2008

On 10/19/2008, Roy, Gary, Larry and I went to the Observatory to try taking some pictures. The original intent was to work with Gary's Orion Starshoot camera to see if we could do something with it. It had not worked properly when used at the Open House the week before but after about an hour of trying to get the software to recognize it, we gave up. Gary is sending it back to Orion to see if they can fix it.

Not wanting to waste the night, we used my Meade Deep Sky Imager. I had it in the trunk of my car, just in case. The Envisage software recognized the camera and we were able to get an image. We plugged in a focal reducer (actually a .5X Barlow made by Rini that I had bought on a lark just to play with) and were able to get a decent focus. This was probably the best thing we did since it gave us two really nice photos.

We started off with the Ring Nebula and tried different settings on the camera before taking 3-4 decent shots.

It was getting late and we debated quitting but then decided for one more. We picked the Dumbbell Nebula and started shooting. This one was easier since we already had our focus and felt comfortable with the settings. Larry then took the photos home and cleaned them up a bit, using Maxim DL stacking software and Photoshop.



Here are the photos of M57 and M27, taken at about the same magnification:

- Tim Kamel

Outreach Programs

Larry Hubble, Jim Hajek and Grace Wyatt met at the Havre de Grace library on November 1 to dress the display case for HCAS.

When we arrived there were approximately six young people around 10 or 11 years old using the computers. They politely moved so we could place our items in the case and even offered assistance. They stayed in the room while we did our work and our work time turned into an outreach session with those kids. They had some questions, we told them some general information and they answered some questions for us. They gave their approval of the case when we were done.

If you are in Havre de Grace during the month of November be sure to stop by and see the display. The library is located at the corner of Pennington and Union Avenue.

- Grace Wyatt

Open House
October 11, 2008

On 10/11/2008, we held the open house for the month of October. The moon was three days short of full and was very bright. Otherwise, it was a beautiful night for an open house. The sky was perfectly clear and seeing was quite good. Temperature was mild and there was no wind.

Participating for the club were Joe Manning, who brought along his 20" home made Dob. Karen Carey came and was using a 10" Dob as well as a 3" Mak spotting scope. New members Joe and Amanda Mays brought along a 12.5" Dob. Tom Rusek had his newly acquired 6" reflector on

a German Equatorial Mount. I brought along my 70 mm ETX but could not set it up because I felt bad for the scope. It would have just wilted away in the shadow of those big scopes and refused to show any images. Operating the C-14 in the dome were Larry Hubble and Gary George. Larry was driving the mount using his laptop instead of the hand controller and it was working well. Also present tonight were Phil Schmitz, Roy Troxel, Grace Wyatt, Mark Kregel and Mike Talbard.

Participation by the public was good, with about 45 visitors showing up. Four visitors indicated they would join the club.

Between the 4 major scopes present, we were able to view several planetary and deep space objects. The moon, Venus, Jupiter, Uranus and Neptune were presented. Deep sky objects included several planetaries, including M 57 and M 29. Star clusters included the ET cluster, M45, M11, M36 and M38. No luck with M 37, however. The Double Cluster was spectacular in the 20" Dob using a 41-mm Nagler. Using the same combination, we also viewed M31 and M32 in the same field of view. Globular clusters included M13 and M22. M16 was overwhelmed by the moon and could not be seen.

We ended up packing up around midnight after a thoroughly enjoyable evening.

- Tim Kamel

Open House
November 8, 2008

Our open house event was totally clouded out on November 8, 2008. That did not stop 8 members of the public and 8 members of HCAS from showing up for a presentation. Phil Schmitz and Grace Wyatt arrived at 5 PM to begin setting up activities. Gary George, Tim Kamel, Caleb Grayson, Matthew Grayson, Roy Troxel and Larry Hubble were not far behind. Visitors started arriving at 5:30. The security guard called her husband and told him to bring their children to the event.

We had an extremely interested group. Most of them stayed until almost 9 PM. Phil discussed Messier objects, meteors, the periodic table and explained the differences between telescopes amongst other activities. We gave out information and/or did demonstrations about the LCROSS mission, the Kepler Mission, size and distance in space and Larry did a slide show of his photos. We had a general discussion about life forms on other planets and a question time for the small group.

- Grace Wyatt

M31 Galaxy, with two companions, M32 (upper left) and M110(lower right). The star cloud NGC206 can be seen at middle left.

M31's Family of Galaxies

The local group of galaxies consists of at least 41 known galaxies; most of them are dwarfs. In this article I will discuss the galaxies associated with M31.

M31, the largest galaxy in the local group is visible to the naked eye at a dark sky site at night. As seen from Earth, it is several times the diameter of the full Moon. M31 lies about 2.5 million light years from us and is 150,000 light years in diameter. The light we see left there when the Megatherium (a 20 foot giant sloth), the Glyptodon (an 11 foot armadillo), and the Mammuthus (a 13 foot tall mammoth) roamed the Earth during the Pleistocene period! And it is a nearby galaxy! Andromeda was recognized as early as 905 when the Persian astronomer Al Sufi mentioned it. It was called the "Little Cloud".

My description: Extremely bright, very large, 100x20, viewed at 69x, 26mm eyepiece, 16 inch telescope

M32 (NGC221), a large elliptical galaxy is 6,000 light years in diameter. This 8`" magnitude galaxy is somewhat south of M3 I's core. It is 11x7.3 arc minutes in size. It consists of only old stars and there doesn't appear to be any dust or gas. The mass of M32 is about 2 billion solar masses.

My description: Very bright, small, oval, 3x2, viewed at 69x, 26mm eyepiece, 16 inch telescope

Mll0 (NGC205), a large elongated elliptical galaxy is 12,000 light years in diameter. It is harder to see than M32 and is farther away from the core of M31. In a dark sky, its elongated shape is obvious. This galaxy contains mostly older population stars, but does contain many young giant stars, probably caused by interaction with M31. At very low power, one can see all three galaxies in the eyepiece field.

My description: Bright, larger than M32 but fainter, viewed at 69x, 26mm eyepiece, 16 inch telescope.

The only other two galaxies that can be seen in moderate size telescopes are NGC 147 and NGC185 in the neighboring constellation of Cassiopeia. These two elliptical galaxies each have a total magnitude of around 9, however they are so diffused that their surface brightness is rather faint. The coordinates for NGC147 are OOh 33.2m + 48° 30° and for NGC185, OOh39m OOs and + 48' 20'. Both of these galaxies are slightly closer to us than M31 is to us. They are outlying members of the M31 group and require a dark sky site to be seen.

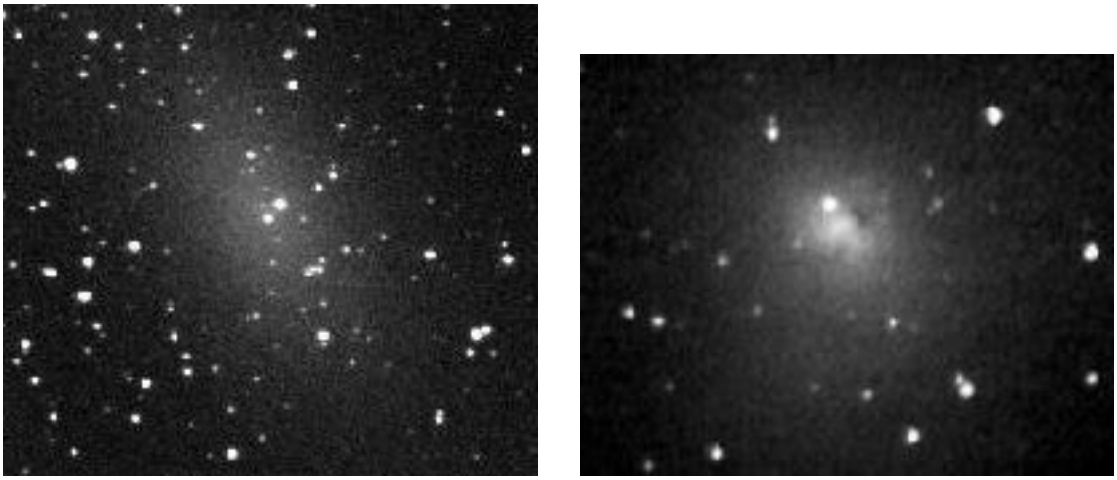
NGC185 was discovered by William Herschel in 1787 as a faint nebula and NGC147 was discovered by John Herschel (son of William) in 1829, also as a faint nebula. Remember, the true nature of galaxies was not discovered until the late 1920's by Edwin Humble. NGC185 is about 2.3 million light years from us and is about 9,700 light years in diameter. NGC147 is about 2.4 million light years from us and 10,500 light years in diameter. Walter Baade recognized NGC 147 and NGC185 as local group members in 1955, while using the 100 inch reflector at Mt. Wilson.

My description: NGC147 - Very faint, oval in shape, deep sky filter, averted vision, viewed at 153x with 12mm 2-inch eyepiece, 16-inch scope.

My description: NGC185 - Bright, elongated, deep sky filter, direct vision, 153x with 12mm 2-inch eyepiece, 16-inch scope.

Some of the remaining galaxies are listed as Andromeda I, II, III, etc., through Andromeda X. All are dwarf galaxies. Andromeda IV has yet to be confirmed as a satellite galaxy. Andromeda VI is the Pegasus dwarf and Andromeda VII is the Cassiopeia dwarf. Andromeda VIII is actually around 9th magnitude, however it is 45 by 10 arc minutes in size and is way to faint to see in moderate telescopes. All were discovered from 1970 to 2005. Of these ten dwarfs, Andromeda II is the closest known to us at 2.1 million light years and Andromeda X is the farthest at 2.9 million light years and glows as an ember at 16.2 magnitude.

- Phil Schmitz



NGC 147 and NGC 185

HCAS Astronomy Quiz

A Monthly Feature
by Phil Schmitz

Question: What planet or satellite am I on?

1 ***I am standing on the largest known volcano, Olympus Mons.***
Earth Venus Mars Mercury

2 ***I am standing on the rim of crater Birt looking at the straight wall.***
Moon Io Titan Triton

3 ***I am in orbit looking at the Great Dark Spot.***
Uranus Jupiter Neptune Saturn

4 ***I am on the edge of the Caloris Basin.***
Venus Mars Pluto Mercury

5 ***I just landed on the feature called the Saddle.***
Vesta Moon Eros Ida

Answers to last month's quiz:

1 ***How many official constellations are there?***

12 110 **88** 45

In 1930 the International Astronomical Union officially recognized 88 constellations.

2 ***How many constellations are on the ecliptic?***

13 12 24 8

Gemini, Cancer, Leo, Virgo, Libra, Scorpius, Ophiuchus, Sagittarius, Capricornus, Aquarius, Pisces, Aries & Taurus

3 ***The constellations of Carina, Puppis, Vela & Pyxis were originally what constellation?***

Nautical Magellan Felix **Argo**

4 ***How many official constellations are multi-named, i.e. Ursa Major is one?***
15 10 **12** 9

Canes Venatici, Canis Major, Canis Minor, Coma Berenices, Corona Australis, Corona Borealis, Leo Minor, Piscis Austrinus, Serpens Caput & Cauda, Triangulum Australe, Ursa Major & Ursa Minor

5 ***The center of the galaxy appears to be in what constellation?***

Scorpius **Sagittarius** Orion Capricornus

From our vantage point on Earth, Sagittarius houses the center of our galaxy.

Miscellaneous

For Sale: **Orion 8mm FL Stratus eyepiece**, with 68-degree field.
Owned for two years, but still clean, with no scratches on lens or body.
Price: $85 or best offer

For Sale: **7x50 Antares Right Angle Finder**
Correct-image, Non-illuminated
Amici prism
Used for 8 months, no wear visible.
Price: $150, or best offer.

If interested, contact Roy at 410-569-2373 or rtroxel@comcast.net

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