

Harford County Astronomical Society



Monthly Newsletter

Volume 37 Issue 1 January 2011

Public Star Party

Saturday, January 15, 2011
Saturday, February 12, 2011
at 7 pm
At the HCAS Observatory

General Meeting

Thursday, January 20, 2010
at 7:00pm
In the HCAS Classroom

Please check our website for possible schedule updates and changes:
<http://www.harfordastro.org>



<http://astroleague.org/>



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

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President's Message

Members,

As the current President of the HCAS, I want to thank all of the members who have participated in the Outreach, Astrophotography and Observing Programs during this past year.

After a very long year without the dome scope, it was once again put in place and operating. Refurbishing continued and now the observatory, in general, looks great. Thanks to all who helped in any way to bring our observatory to where it is today.

The Astrophotography Program is progressing nicely and more and more members are enjoying the thrills of this program. The photos of the heavens are strikingly beautiful and are posted for everyone to enjoy. Outreach is reaching new heights.

The moon rock program as well as all of the other outreach programs have reached over 6 to 7 thousand people in our surrounding area this past year.

Our faithful Observers have kept their vigil during those long evenings to enrich our minds with the wonders of the universe as they share those experiences with us at our meetings and in the newsletter. The HCAS Website is a wonder to behold and hopefully will win an award next year along with the fabulous Newsletter and its first class editor.

So very much has been accomplished during this past year. Our membership has now increased to over 50 members. The Faculty/Staff open house was a success, as was Astronomy Day at HCC. We are now closer to the HCC staff and are truly grateful for their help and cooperation during this past year. We look forward to working closely with them in 2011.

Yes, we may have had some hard times both physically and emotionally in 2010, but have we not grown stronger because of these trials? As we close the book on 2010, we need to read between the lines, forgive, forget and move on to greater achievements in the next year. Frustration is always part of success and nothing worthwhile comes easy. Just sit back and think of all the people we have touched during this past year. What if just one young person was inspired by our efforts and became a successful astronomer who solved an age-old problem? We are on this Earth to accomplish all that we can, and 2011 will be a great year now that the road to success is getting smoother.

I, as President, promise to do what I can to enhance the HCAS in 2011. We need to work as a team, a strong team. I am proud to be surrounded by such fine, upstanding and intelligent

astronomers as yourselves. I can do nothing but learn from you all. Thanks for all of your support in 2010 and I look forward to working with each and everyone of you in 2011.

Your President,

Tom Rusek

Treasurer's Report December 12, 2010

Current balance in checking account is: \$2862.82

Membership remains at 55 individuals and families.

- Tim Kamel

New Members January 13, 2011

Please welcome a new member to our Society:

Todd Peterson

Welcome aboard!

Observation Reports

"A light-polluted sky is still better than what's on TV."

Lunar Eclipse Tuesday, 12/21/2010

Well, it was finally here. After waiting better than 2.5 years, we had a full lunar eclipse that we could see here in Maryland in its entirety.

We had a public event scheduled at the observatory. Start time for our event was advertised for 1:15 AM, allowing for some prep time for when the moon entered the Umbra between 1:32 and 1:33 in the morning. We omitted the portion of the eclipse where the moon entered the Penumbra since that phase was difficult to detect.

Given the early morning time for the eclipse and that it was a weeknight, plus being only 4 days before Christmas, we did not expect much in the way of participation. We were pleasantly surprised. We had nine club members. Besides me, there were Larry, Grace, Bill, Jeremy, Cathy, Roy, and Beverly & Sara. George Jones, a previous member, also attended.

Larry and I set up to do astrophotography. We used Larry's Canon DSLR on my 100 mm ED refractor with LXD-75 mount to track and shoot the moon through the different parts of the eclipse. I also set up a camera tripod and my Canon DSLR camera to shoot photos of the moon through a 55-250mm zoom lens. The latter was a little difficult since the moon was so high in the sky and the tripod would not point that high, so I had to tilt it. This was the first time I was using this lens and the first time shooting the moon. My lack of experience showed. Most of my shots were out of focus and/or over exposed. The ones Larry took are pretty spectacular.

Participation by the public was also high, with 23 visitors including a 10-year old who stayed for about an hour. One family stayed for the entire event. They were in Maryland visiting from Texas.

Visitors did visual and binocular observing, including looking through my 15x70 binoculars that I also set up for the event. They also watched the photo taking session that we had going.

We had a bit of disappointment early in the eclipse when some clouds moved in and they became heavy enough to cover most of the sky. The moon was visible through the clouds and occasional hole in the clouds most of this time. These clouds eventually moved away a 20 minutes before the moon became fully eclipsed, and we were cloud free for the rest of the event.

It was a great session. Pretty neat seeing stars around the moon when it was fully eclipsed. The moon turned a red color during full immersion but it was in different layers, with the part of the moon near the edge of the Umbra being almost white and the part of the moon near the center being almost black.

My final comment is that it was cold. I was at the observatory for 4.5 hours, with temperatures dropping to a low of 22 degrees. Luckily, we were shielded from the breeze that would have given us a wind chill of 13 degrees. I was also able to get into the observatory twice to warm up. Otherwise, I was able to keep my torso and head warm, but my feet and hands were cold. My hands had a tough time when I had to take my gloves off to adjust my camera. They took a beating when I had to take down my equipment and touch all that cold metal. Basically, the cold took away from my enjoyment and I have taken steps to deal with that. Look for an upcoming report.

The next two lunar eclipses, in June and December of 2011, are not visible from our part of the world. The next one we can see won't be till 2014.

Observation Report Tuesday, 12/28/2010

I was on vacation the week before Christmas and the week after. With all that time off, I was hoping to get out and do some observing. I did get to see the lunar eclipse on 12/21 but nothing else that week because the moon was just past being full and the weather was terrible, cold and very windy.

The Tuesday after Christmas looked promising and was the only night forecast to be clear in a week. Unfortunately, that was also the day I was visiting with my in-laws for the holidays, and I would not be back in time to do any good.

Ever hear the expression "it is an ill wind that blows no good"? The snow "storm" of Sunday-Monday the 26th-27th was forecast to hit us with 8 to 12 inches of snow and I thought that even if it was clear on Tuesday, we would not be able to use Broad Creek because of all the snow.

The storm missed us, leaving only a dusting for us. But it hit central NJ with 20 inches. My family get together was postponed and I was free to go star gazing Tuesday night.

I met Roy and Ray Wittstadt at Broad Creek at a little after 5 PM. It was still early enough for me to set up with some daylight. I had brought along my 4.5" Meade reflector and my LXD-75 Meade GOTO mount. I set up and actually got a good polar alignment this time, enabling me to get good GOTOs from one side of the sky to the other.

The weather was cold, around 30 degrees. Some thin clouds rolled in around 5:30, thin enough to see through but spoiling the seeing. It got thicker at times but good chunks of the sky were open and allowed for observing. By 6 or 6:15 they were gone and the sky was perfectly clear.

I spent most of my time observing Jupiter through different eyepieces. The sky was turbulent and seeing was poor and I was limited to no more than 80-100 power on this scope, which was not enough to see the Planet decently. I kept trying though. I did spend some time looking at the Double Cluster and the Pleiades using wide field 38 and 32 mm eyepieces. After that, the Orion

Nebula was high enough to be observed decently and I spent some time looking at it and the Trapezium.

There were two highlights for the night. Roy brought in the Blue Snowball planetary nebula. What a beauty in the 12" obsession. I could even see some color to it.

The second highlight was a bolide. In looking through Roy's scope, I had bumped it too hard and knocked the object (I do not remember which one) out of the field of view. Roy was trying to bring it back and I was looking down at his hand controller when all of a sudden the sky lit up with light. It was a flickering kind of light, like what one would see in a lightning storm. I looked up and there was this bright meteor traveling in what looked like slow motion. I picked it up near Cassiopeia to the north east and it traveled west past Polaris and towards the cross of Cygnus in the north west before disintegrating into fragments and extinguishing itself. I saw it travel for maybe 2 seconds, where it covered some 60 degrees of the sky and it was about 40-50 degrees high. It was a greenish yellow and brighter than Jupiter. The next day, Roy forwarded me a website that was showing information on it. Apparently it was seen from Montreal all the way south to Houston.

It was pretty neat.

We stayed at Broad Creek till about 9 PM or so and then packed up and left.

- *Tim Kamel*

**December 28, 2010
Broad Creek
5:30pm to 8:30pm**

The sky was intermittently cloudy, with seeing about 1 out of 5 in most regions of the sky. Tim Kamel, Ray Wittstadt and I arrived at the BC gate around 4:00pm.

My first target for the evening was Jupiter. I was able to see the Great Red Spot in the southwest corner of the planet, using a magnification of 262x. All four satellites could be seen, along with the star 20 Pisces, which appeared like a fifth satellite. (I checked this later, using the Stellarium application.)

Uranus appeared as a pale green disk, about a degree from Jupiter.

Other objects observed were:

Globular cluster M2 - low in the southwest sky, in Aquarius.

M103 - an open cluster, in Cassiopeia.

A bright green bolide meteor flashed unexpectedly across the northern sky, NE to NW, at about 60 degrees altitude. It flew across 80 degrees of sky and then broke into little pieces.

NGC6543 - Planetary nebula in Draco, viewed at 262X. Sometimes called the Cat's Eye.

M1(Crab Nebula) in Taurus - very dim in the east, due to the poor seeing that night.

M33 galaxy at 131x, covered the field of view. Could see the bright core and with averted vision could dimly see the galaxy's star clouds and a suggestion of its spirals. Not very bright at all, despite the galaxy being near the zenith. It seemed brighter when using my 35mm Panoptic eyepiece at 45x, with its wide FOV. (I use M33 to judge the seeing and transparency of the night sky, and on this night, neither were very good.)

NGC772, a barred spiral galaxy in Aries.

M77 - Galaxy in Cetus. This galaxy is located in a very "vacant" part of the southern sky. However, it appeared as a reasonably bright object.

- Roy Troxel

**December 29, 2010:
Broad Creek
5:30pm to 8:00p**

Seeing was about 2/5 on this night, but deteriorated to about 1/5 within a few hours. The stars were brighter than the previous night and the Milky Way could clearly be seen at the zenith, running through Cassiopeia, Lacerta and Cygnus, but only dimly.

Began with Jupiter, and saw the Red Spot in the southeastern region of the planet, looking more brownish than red.

M34 - bright open cluster of about 80 stars, in Perseus, seen through the 35mm Panoptic eyepiece.

NGC659 - Open cluster in Cassiopeia, filled with several dozen stars of equal magnitude.

M76 - This is a planetary nebula, viewed from the side. Some astronomers have theorized that if we were looking down on it, we could see the central star and the nebula would appear as a series of rings, like M57 in Lyra. It is sometimes called the "Little Dumbbell", after M27.

**Jan. 3, 2011
Broad Creek
5:30pm to 8:00pm**

It was a cold evening again, with the temperature around 34 degrees. The seeing was about 3 on a scale of 5. Occasional clouds appeared in the southwest. Cathy Tingler and I arrived at the BC gate at 4:00pm. Because of the cold, we took our time setting up the equipment.

Shortly after twilight, I observed both Uranus and Jupiter in the same field of view of my 35mm Panoptic eyepiece (45x). The two planets were only about a degree apart. Using the 2X Powermate with the 12mm Nagler EP to obtain a magnification of 220x, Uranus showed a distinct yellow-green disk.

Other objects observed were:

M35, an open cluster in Gemini. The 35mm Panoptic revealed its dim companion cluster, NGC2158. Increasing the magnification to 220x, the smaller cluster could be resolved into stars.

M37, an open cluster in Auriga.

By 7:30pm, Orion was high enough to begin observing it. Turning to M42, I could see 6 stars in the Trapezium, using the Nagler/Powermate combo again. The nebulosity around Alnitak (left star in the Belt) was not visible, even with filters. The seeing in the southeast was probably about 2 out of 5.

The nebulosity around Alnitak includes the Flame Nebula (NGC2024) and IC434, which includes the Horsehead. If the seeing is good, and you use the UltraBlock filter, they should all stand out, but that wasn't the case on Monday night.

M78 is a patch of nebulosity surrounding two stars, near the head of Orion. It is mostly a reflection nebula, illuminated by the nearby stars. Observing M78 with an OIII filter, however, reveals that it is also an emission nebula, glowing with its own radiation.

I had hoped to see some of the nebulosity in Monoceros, to the left of Orion. However, the Rosette Nebula wasn't visible, although its companion star cluster, NGC2244, was. I obtained only a dim view of the open cluster M50, which was close to the eastern horizon. Also saw NGC2264, the Christmas Tree cluster, as well as 2031, called "The Great Bird of the Galaxy", but it didn't look as impressive as that name would suggest. Maybe when it gets higher in the sky...

R Leporis, or "Hind's Crimson Star" in Lepus, under Orion. This is a 427-day variable which was glowing with an uncanny metallic orange light. The star appeared to be about 10th magnitude.

It was now almost 8:00pm and the temperature was in the 20s. We decided it was definitely time to leave, although it had been a productive two hours of observing.

- Roy Troxel

The best times to observe at Broad Creek are between the last quarter and first quarter of the lunar cycle. The next period is :

Sunday, Jan. 23, 2011 to Friday, Feb. 4, 2010

Try to keep some of these nights open on your schedule!

Because of the unpredictable weather conditions, we cannot set a specific date and time to observe. Sometimes the decision to go to BC is made within a few hours before sunset. In any case, all club members will be notified by email.

For any questions, contact Roy Troxel at: rtroxel@comcast.net

Astrophotography

To see high-resolution versions of HCAS photographs, please visit our web site at:
<http://www.harfordastro.org>.



Full Moon in Eclipse
December 21, 2010

Photo by Larry Hubble, Tim Kamel. Camera: Canon EOS50D, with 100mm ED refractor.



Moon partially eclipsed, Dec. 21, 2010

*Photo by Jeremy Kirkendall, with Celestron 8.
Blue color is due to light bending through the stratosphere*

The Unintentional Astrophotographer

I am sure you will receive a technical report on the astrophotography session at the observatory tonight with a picture from the evening attached. I wanted to send you a report on the non-technical aspects of a session at the dome and encourage you to attend the next time.

As I have said before, I don't ever plan to do astrophotography because I just don't have the patience. Tonight Tim sent out an email stating he, Larry and Gary would be at the dome taking some pictures. I had not planned to go for the astrophotography session, I just wanted to pick up some things for a project I am working on and thought it would save the guards a trip if I went when the building was open. I would just grab the things I needed while the guys were taking pictures. Why, oh, why did I go up those stairs? I think it was just to ask a question. The problem is once upstairs it is like being sucked into a black hole and impossible to get out. (Yes I know black holes don't suck things into them. So I guess I got too close and fell in).

To begin with, it was cold. No not just cold—it was freezing! I had not dressed for a night in the cold. I had on a thin coat with a short sleeved shirt underneath. Slacks with slack socks (socks made for looks not warmth), regular shoes, no gloves and no hat.

Larry was dressed for the night with coat, gloves, boots, etc and kept wondering why we were out in the cold doing this. Gary was dressed for the cold including three pairs of gloves. And Tim... well Tim came for the duration and wondered why we were cold. He was very comfortable with his electric socks, electric gloves and electric vest. Roy arrived, also dressed appropriately with many layers and hand warmers. It was so cold even the equipment was acting up.

You are probably wondering why I am even writing this. It doesn't sound pleasant and the equipment was acting up. It's because it is fun and even a freezing session where things don't go as planned is educational. The discussion ran from identifying the stars visible in the sky that night, proper attire and interesting clothing options for the cold, the equipment, how the astrophotography process worked, trouble shooting when it wasn't working, meteor showers and bolides to interesting things each person had observed in the sky at various times. I did pack it in early before everyone else and left at 8:30. I just wish I had dressed for the occasion and stayed the entire time.

The next time you see an invitation for a session at the observatory, think twice, get dressed appropriately and GO. Just remember the dome is a black hole--well maybe periwinkle hole--and it may be difficult to leave. Come prepared to stay for the duration, have a memorable evening and learn a few things.

– *Grace Wyatt*



NGC7662 (The Blue Snowball) in Andromeda
Photo by Hubble, George, Kamel and Troxel.

Grace has already given you the lowdown on how cold it was Sunday night at the observatory. Gary, Tim, Roy, Grace, and I were there and everyone participated in the fun.

It was cold! The windscreen did not want to open, the guider/ imager did not want to work due to the cold, and the telescope did not want to track at all. When it warms up, we need to do a work night to fix the tracking issues with the scope.

That said, we did manage to get another image of the Crab Nebula (M1) with the club's CCD imager. I have not done much with it due to the tracking issues, we may need to just shoot it again when things are working better.

However, we did manage to get this absolutely beautiful image of NGC 7662 'The Blue Snowball Planetary Nebula'. This object is very tiny and will need more magnification to see real detail in the nebula. We will re-shoot it again sometime using a 2x Barlow to increase magnification for more detail.

I feel this may be the best image so far from the observatory. I absolutely love it and those who know me know I almost never say that. Everyone got their hands dirty on this image and the group is really moving forward. Please come join us when it's a little more pleasant out, like 32 degrees or so.

NGC 7662 (also known as the Blue Snowball Nebula or Caldwell 22) is a planetary nebula located in the constellation Andromeda, about 1800 light years from earth.

- Larry Hubble

Miscellaneous

Meteorite Of The Month



MILLBILLILLIE

This is an achondrite, a stone meteorite from Western Australia that fell in October 1960 (the exact date was not recorded). This is the most common of achondritic meteorites, a eucrite (AEUC). Some 330 kilograms (1 kilogram equals about 2.2 pounds) have been found. These stones were easily distinguished from common desert rocks due to their black shiny surfaces. There are no chondrules in this type of meteorite. It is similar to terrestrial igneous rocks. Eucrites are mostly pigeonite and feldspar. When sliced, these meteorites show a light gray interior with inclusions. The main mass (largest piece) is a 20 kilogram specimen that is housed in the Western Australia Museum. If you are interested in visiting Australia and want to go to the strewnfield (where the meteorites were found) here is the approximate coordinates = 26 degrees 27 minutes South and 120 degrees and 22 minutes East. Good hunting!

The pictured specimen is a 34.8 gram part slice of the Millbillillie meteorite.

- *Phil Schmitz*

Equipment Report

Thursday, 12/30/2010

I have never done one of these equipment reports before but I thought I would pass on my experience with some new equipment that I acquired over the holidays.

I had participated in our session to look at the eclipse on 12/21 and was at the observatory from about 12:40 AM to about 5:30 AM, almost five hours. Temperatures were about 22 degrees and we were shielded from the wind, which was a mercy. Otherwise, the wind chill would have been 13 degrees.

Well, I was cold, and had to duck into the observatory classroom twice to warm up.

I was able to keep my torso warm by dressing in layers. My head was warm because I used the hoods on my sweater and jacket. My feet were like ice, painful when I moved. I could keep my hands warm if I kept them in my thick gloves. Unfortunately, I had to keep taking them out of the gloves to handle the equipment. Taking down my equipment, metal at 22 degrees, was brutal. It took four hours after I got home to warm my feet up and the palms of my hands had spots that were painful to touch, I am guessing from touching cold metal.

Basically, the cold was spoiling my enjoyment of this hobby. I prefer winter viewing to summer and this was turning into a real problem that I needed to fix.

Tuesday afternoon I was in Dicks. The first thing I was looking for were gloves like the ones Roy has. These are gloves with exposed finger tips to allow for handling things and the fingers could be covered with a mitt like cover that had a pocket where a chemical heater could be placed. I found them and grabbed a pair. Next, I looked for boots. Grace had told me about the boots she had that were good to -20 degrees. She got them at Wal-Mart for a really decent price. I decided to look in Dicks before I left and found a pair in my size that were good to -40 for a price that was not as good as Grace's but still a good price. I grabbed those too. When I got home, I put them under the tree, thinking about my next time out observing and how I was going to beat the cold.

Christmas morning, my wife gifted me with more warming stuff. I got an electric vest and electric gloves. The vest is heated by a rechargeable battery that is good for about 6 hours of heat at low power. The gloves run on AA batteries and are good for 2-5 hours at low power, depending on the types of batteries. However, they are actually liners, intended to be worn inside gloves to trap the heat. This is the same for the vest, which must also be worn inside another jacket to trap the heat.

The acid test came on Tuesday, December 28th, when I went observing at Broad Creek. I field tested all this equipment. The vest worked like a charm. I charged the battery in three hours and set it going at low power and was comfortable. The thing is, I did not really need the vest, but using it allowed me to give up two layers of clothing, making me more comfortable and I could move around easier.

One of the gloves gave me a hard time, would not power up. Turned out that one of the batteries was dead and this prevented glove from working properly. When I got home and replaced it, the battery pack and glove worked as they should. The gloves, however, are really only liners, are thin and do not work well unless used inside other gloves. I used the glove/mitts I got from Dicks and the liners fit in well and the finger tips going through the finger openings with no problem. Dexterity was good enough to swap eyepieces, tighten the screws that hold the eyepieces and focus the scope. Some activities, however, such as feeling in the eyepiece case in the dark required that the gloves and liners be removed. This again resulted in cold hands. So I tried the chemical warmers in the glove/mitt and that solved the problem.

The boots were a little disappointing. I did not put them on till I got to Broad Creek, so maybe they were not as warm as they should be before I hit the cold. They are very comfortable and were initially warm enough. As the night went on, my toes started getting cold. Not as bad as on

the 21st but then, it wasn't as cold either. I did not have any issues with cold feet when I got home. Anyway, I have ordered the electric socks!!!!

Some conclusions:

Electric Vest

Pros – Light weight, three heat settings, controller located in an easy to access spot, battery is rechargeable and is good for 500 charges.

Cons – Must remember to charge it before using

Electric Gloves

Pros – Light weight, better dexterity than gloves, two heat settings,

Cons – Needs replacement batteries, must be worn inside other gloves

Non-electric Gloves/Mitt

Pros – Dexterity excellent, can cover exposed finger tips, has pocket for chemical heater.

Cons – Needs chemical warmers for best effect

Insulated boots

Pro – Insulated, padded, comfortable.

Con – A little heavy and bulky, tough driving with them

- *Tim Kamel*

Addendum

The electric socks arrived and I had the chance to try them out on Sunday, 1/9 at the observatory. Pretty much like the gloves, they each need 3 AA batteries but when I wore them with my boots, I was perfectly fine.

Equipment Report: TeleVue Powermate Barlow

**Abingdon, MD.
12/19/2010
5:30pm to 6:45pm**

The seeing conditions weren't great tonight, especially when you consider the light pollution from the nearby parking lot, but I was excited about testing my new Powermate barlow, so I set up my 12.5" reflector in the field behind my condominium.

TeleVue's Powermates have an extra lens which increases the exit pupil range and therefore avoids the vignetting effect that some barlows have. (For most observers, this means you don't have to push your eyeball against the eyepiece lens to see the full field of view.) I tested the Powermate on just two objects, the moon and Jupiter, and I'm happy to report that it performed "as advertised". Observing these objects with the Powermate, I thought the views appeared flat and sharp, up to the edge of the field of view.

I began by locating Jupiter with my 12mm Nagler eyepiece (131x) and noticed that the southern equatorial band, which had disappeared early last year, was now becoming darker. I slipped the

eyepiece into the Powermate, boosting the magnification to 262x, and was pleased to see that the planet's image remained clear and more details could be observed. Jupiter's satellite Europa was resting on the southeast limb of the planet and its shadow could be seen on the western edge of the planet. Near the center of the southern equatorial belt was the Great Red Spot, looking pink on this particular evening.

I decided to push the magnification to the limit, and slid my 9mm Nagler(175x) into the Powermate, giving me a magnification of 350x. Although the image was larger, no more detail could be easily seen, due to the air's fluctuations. There were some additional spots on the belts that popped into view for a few seconds, but that was all.

After the moon had risen above the trees in the east (about 96% illuminated), I used magnifications of 262x and 350x. Along its terminator were craters and mountains, still half-lit in the shadows of lunar dawn. Even at 350x, these details showed little wobbling, although the overall seeing could have been better.

- Roy Troxel

This newsletter is the official publication of
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