

Harford County Astronomical Society



Monthly Newsletter

Volume 35 Issue 5

May 2009

Public Star Party (Open House):

**Saturday, May 30, at Dusk
At the HCAS Observatory**

**Activity: Modeling the Sun and Earth
Featured Object - The Sun**

General Meeting:

**Thursday, June 4, 2009
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 Meeting

Minutes of April 7, 2009

The meeting was called to order at 7:04pm by President Tom Rusek.

Minutes for the April meeting that were published in the last newsletter were approved as published.

Treasurer's Report:

\$5081.54 in the checking account. Tim has received 17 membership renewals to date.

Outreach:

Earth Day on April 18 saw approximately 350 people stop by our booth. Topics of discussion were Good Neighbor Lighting, club information, Hubble prints, and Solar Eclipse glasses. 8 teachers stopped by and appreciated the efforts of the group.

Open House on May 2nd had 21 visitors, mostly from a Boy Scout group working on their belt loops. Unfortunately it was raining, so there was no observing. Brenda Wyatt was the winner of the Astronomy kit raffle.

Darlington Elementary School sent the group a heartfelt thank you. This was a very successful event.

Tom did a presentation at St. Joan of Arc School for 51 3rd- and 4th-graders on April 22nd. He did a slide show and a verbal presentation that lasted about 1-1/2 hours.

Tom also did a slide show and verbal presentation for the Harford Day School on April 29th. He reported that there were 80 4th- and 5th-graders and 100 6th-, 7th- and 8th-graders.

Due to upcoming renovations to the Observatory Dome, the Faculty and Staff Open House will be rescheduled for the Fall. This will also give us more time to plan this event, which will be a tremendous opportunity for exposure to the Club.

The Campfire Program for Susquehanna State Park is scheduled for July 18th at 8pm. Mark will get the program rolling with a presentation, then we will observe through a variety of equipment. Any and all participation will be appreciated.

The annual *Swanfest* fair in Havre de Grace will be on October 11.

Edgewood Library has applied to be a Harry Potter Program site. Even if they do not get selected, they would like an indoor/outdoor program.

New business:

Observatory Operations: the Board of Directors has approved the purchase of a focal reducer and power adapter needed to run the CCD camera. Mark gave a rundown of the dome renovations. He has been working with Steve Gary, the College Engineer. Mr. Gary has been given approval to write checks up to the amount of \$20,000. This a major renovation project. It will require taking down the telescope and putting it into storage to prevent damage to the instrument. There will need to be precise measurements to the dock and docking plate. Labor hours will be needed to keep the cost down, the labor is intensive and precise, but not difficult. Club members can complete many of the tasks. Tim will get a work crew together when ready to start.

Observation Reports: There is nothing to report. Last trip to Broad Creek was after the Darlington Elementary School Outreach. We are sure that Roy will have many reports from his trip to the West.

The International Year of Astronomy (IYA) *365 Days of Astronomy* Podcast that we are sponsoring will be aired on October 9th. Karen has been working with Dr. Pamela Gay (from Astronomy Cast) to get this scheduled. It will be dedicated to the memory of Leo Heppner, and Grace will contact the family to let them know.

Grace reports that we have received the "Glass and Mirrors" toolkit from the Night Sky Network. Grace and Gary have gone to Goddard and received training to be a Lunar and Meteorite Borrower. They will have samples available at Open House and Outreach events. They will contact the Police Station for securing the samples after events.

Grace reports that the Space Telescope Science Institute will have a free presentation of "Magnificent Universe - Images from Hubble" on May 14th.

Karen will be planning the trip to the Franklin Institute in Philadelphia to see the exclusive Exhibit of the Galileo Telescope. We will need 15 people to get the group rate. She is looking to make this on a Friday in the summer. Perhaps we can carpool up to the Institute. Admission to the exhibit includes the entire Museum, Planetarium and Science Center, so plan on being there awhile! IMAX films are not included but are usually themed to the Featured Exhibit.

Contact Karen (currently at carey.karen@gmail.com) for details or to show interest. More information about the Franklin Institute and the Galileo Exhibit can be seen at <http://www2.fi.edu/exhibits/traveling/galileo/>

The meeting was adjourned at 7:56.

- Karen Carey, Secretary

**Minutes of Board of Directors Meeting
April 7, 2009**

The Meeting for the Board of Directors was called to order at 6:20pm with the following Board Members in attendance: Mark Kregel, Phil Schmitz, Gary George, Larry Hubble and Jimi Hajek. This constituted a quorum of BoD members. Also in attendance were Club Officers Tom Rusek, Grace Wyatt, Tim Kamel and Karen Carey.

Proposal was made by Larry Hubble for the HCAS to purchase items needed to run the CCD camera. Larry has purchased these items for his personal use and feels the club should have the necessary items to be kept with the camera. Items needed are a focal reducer and an AC adapter, costing about \$100. The board voted and passed the proposal.

Proposal was made by Larry Hubble for the College to purchase a telescope, dovetail, ring set. These items can be attached to the 14" telescope in the Observatory so that the CCD can be put on the new telescope and observers can still look through the Observatory telescope. Approximate cost is \$577. Also needed is an Auto Guider, approximate cost \$280. It was agreed

that these items can be asked for from the College, however the Observatory updates should be completed first and see what budget the College has left.

Grace Wyatt proposed that HCAS purchase a Galileoscope for \$15. During discussion, it was proposed the group purchase 5 for display and outreach purposes. Ammended proposal was passed

Larry Hubble proposed that the HCAS update the logo to a more modern look, in which Larry produced examples. The logo has a striking color scheme and prominently displays the constellation Leo in a black sky and the Observatory on a green ground. The proposal was passed.

Tom Rusek ended the meeting by saying that the BoD needs to prioritize their wish list of items to ask for from the college. We should concentrate on the dome upgrades and then see what is left for optical equipment.

The meeting was adjourned at 7:00pm.

- Karen Carey, Secretary

Observation Reports

Observing in New Mexico April 18 through April 26



Looking southwest at Villanueva State Park, New Mexico

Most of my observing time was spent at Villanueva State Park and Datil Well Park (maintained by the U.S. Bureau of Land Management). For the most part, the weather cooperated, and I was treated to some great southwest "Bortle 1" skies. The Clear Sky Clock describes the Bortle 1 rating this way:

"Gegenschein visible. Zodiacal light annoyingly bright. Rising Milky Way confuses some into thinking it's dawn. Limiting magnitude 7.6 to 8.0 for people with exceptional vision. Users of large dobsonian telescopes are very happy." (In the case of Datil Well, the Zodiacal Light was "annoying" because it clouded over most of Gemini, so that M35 appeared washed out.)

Observational Highlights:

M101 and 51: Near the zenith, these galaxies displayed their spiral arms and star clouds clearer than I had ever seen them before.

M3: Really dazzling. Could detect "strings" of stars, like M13's (which was also remarkable).

M20 (Trifid Nebula): Using the UltraBlock filter, I obtained the best view ever of this object. It filled the field of view of the 13mm eyepiece with many bright details. Somebody told me that a very clear night in New Mexico will almost "double" the aperture of your telescope. Looking at M20 on this particular night, that seemed to be the case. (Phew!)

Scorpius: The "Jewel Box" area near Zeta Scorpii was filled with numerous clusters and asterisms, including NGC6231. Too bad all of these aren't visible at higher latitudes.

Omega Globular Cluster in Centaurus (NGC5139): It was sitting just above the horizon and appeared dim, but it's always a pleasure to view. At a distance of 15,600 light years, this is one of the closest globulars to earth.

The Veil Nebula (NGC6960, 6992): Some very clear views of the filamentary structure of these remnants of an exploded star in Cygnus.

I spent a lot of time surveying the areas of Sagittarius, Cygnus and Virgo, using the club's 35mm Panoptic eyepiece and an old pair of 6x30 binoculars.

For the most part, the skies were clear, except for occasional clouds, which appeared as just black holes in front of the constellations, because there was no ambient light. There were times when the night was so dark, I couldn't walk ten feet from my scope without getting lost. (It happened; I'm serious!) The scent of pines, the bubbling of the nearby brook and occasional bird calls all made for some remarkable nights.

On April 22, at around 8:30pm(Mountain Time), the brightest meteor I have ever seen flashed across the northern sky, from Ursa Major to Gemini. It was a green in color and lit up the sky and ground for at least 20 seconds. I've searched various forums to see if anyone else saw it. If you are interested in posting your own meteor observations, you can do so at the American Meteor Society's site: <http://www.amsmeteors.org/>

Other objects of interest:

Dark Nebulae: As some of you know, these are nebulae that do not reflect starlight or emit radiation. They appear as blank, black spaces in the regions of Cygnus, Ophiuchus and Scorpius and hide our view of the stars behind them. Many of them are cataloged in honor of the American astronomer E. E. Barnard, such as B78, the Pipe Nebula in Ophiuchus. This is a long black cloud, about 7° in length, that obscures a rich region of the Milky Way. There are other nearby splotches of black, including the Snake Nebula, B72. In the nearby Sagittarius, there are B59, 65,66 and 67. The Swan Nebula (M17) gets its unique shape partly because of the black clouds that help form the "neck" of the swan figure. Likewise, the dark rifts in M20 (Trifid Nebula) are caused by similar dark nebulae.

Colliding Galaxies: NGC4038 and 4039 in Corvus were easily resolved into two separate, comma-shaped galaxies, sometimes called "the Ring-Tail".

NGC4490 and 4485 in Canes Venatici are two spirals that have become distorted because of mutual gravitational pull. NGC4490 is sometimes called "The Cocoon."

Finally, there were NGC3395 and 3396 (Leo Minor), an odd-looking pair of two elongated galaxies contacting at their edges.

Galaxies: In general, these distant objects appeared best at Datil Well (Elev. 7,385 ft.), especially when they were near the zenith. Their cores appeared brighter and their outer spiral regions

(halos) were easily seen, making them appear wider than usual. The Leo Triplet of M95, 96 and 105 was especially striking, as you could easily see the two other nearby galaxies, NGC3384 and 3389.

Other very clear views of galaxies included NGC2903 (Leo), and NGC4565 (Coma B), the latter being a large galaxy viewed edge-on (a “spindle”). It was very bright and stretched the entire field of view of the 35mm Panoptic eyepiece. Other spindles that I viewed for the first time included NGC3115 (Sextans), NGC4244 (Canes V) and NGC4631 (Ursa Major).

For some reason, I could detect only three of the five galaxies in the Hickson 44 group, also in Leo. Nonetheless, they were bright and all in a straight line, within the same field of view. NGC3190 appeared the brightest.

“Challenge” Objects: I tried to see the 13th magnitude star near the center of the Ring Nebula in Lyra. I had seen it clearly last year, but this year it flickered in and out of view.

I next tried for some distant globular clusters. These objects are arranged geometrically (and gravitationally) around the Milky Way, with the majority of them collected about the galactic center, where the gravity is strongest. Consequently, most of them are seen in the summer sky, near the vicinity of Sagittarius, Ophiuchus and Scorpius.

This time, I decided to pay special attention to the most distant of these clusters, many of which are on the side of the galaxy opposite to us. Many of these are between 20,000 and 40,000 light years from earth and include M54, M56, M68, M69, M70 and M80. However, M72 in Aquarius is an estimated 53,000 light years from us. Most of these globulars appeared as bright, small cores with tiny halos about them – very difficult to resolve into individual stars. Knowing how far away they were made this an interesting challenge.

At this point, I figured why not try for, hey, the Pillars of Creation? I hasten to say that they were beyond the reach of my 12.5” reflector, but I did see a very clear outline of the Eagle Nebula, with the help of my UltraBlock filter.

To conclude, if you're in New Mexico looking for dark sky sites, I would strongly recommend Villanueva State Park (about 35 minutes north of highway I-40) and Datil Well Park near Socorro and the Very Large Array of radio telescopes. (See below.)

- Roy Troxel



One of the radio telescopes at the VLA (Very Large Array) campus between Socorro and Datil, New Mexico.

Outreach Programs

April 17, 2009

On 4/17/2009, we did our outreach program at Darlington Elementary School. This is a small school with an enrollment of about 130 students, one class per grade.

Weather was beautiful, mild, no clouds. Seeing was predicted to be Fair (3/5) and it was. Not quite perfect conditions as the sky was a little pale and the contrails from jets were quite long. The school had taken care of an outdoor light by covering it up with cardboard and black tape. It worked perfectly.

The program was scheduled to start at 8 PM. I arrived at about 7:25 or so, and Grace Wyatt, Paul Sokolowski, and Karen Carey were already there. We were soon joined by Greg O'Brien, Gary George, Larry Hubble, Phil Schmitz and Jim Hajek.

We set up assorted equipment, including binoculars, spotting scope, two 10-inch Dobs and an 11" SCT, in addition to the SCT brought by the science teacher who sponsored this session. I brought along a 4.5" Newtonian which I set up on an equatorial mount. It did not get dark enough for alignments till almost 8:30.

The number of visitors for this session was about 24, a number less than expected as the fifth grade was off on a field trip and did not participate.

We were provided with a list of objects to show the visitors, and we each did what we could, based on the ability of our scopes. I was able to show case Saturn, the Orion Nebula/Trapezium, the Pleiades (too large even in a 2", 32mm eyepiece), M81/82 (faint in my small scope), M46 (very faint) and M47. I also had a chance to demonstrate major constellations to two parents, including Orion, Canis Major, Canis Minor, Taurus, Leo, The Big Dipper and Cassiopeia.

The highlight of the night, however, was Larry and Garry doing astrophotography with the club's camera. They were able to get M3 in the camera and were showing the guests the photos as they were being taken. Their set up was attended by the school kids and their families till the session ended around 10:15 PM. We packed up and left by 10:45.

This was a very pleasant experience with well behaved kids and inquisitive parents with lots of questions. It has been over a year since I did an outreach at a school and I had forgotten how much fun it could be.

- *Tim Kamel*

Open House May 2, 2009

Well, another overcast open house, fourth one in a row!

We still had about 21 guests, including Pack 810, Den 10 from Abingdon. Participating from the club were Gary George, Jimi Hajek, Mark Kregel, Grace Wyatt, Phil Schmitz, Tim Kamel and Tom Rusek.

We did an indoor program in the classroom about the scale of the solar system, the galaxy and the know universe. We then ran two groups through a tour of the observatory. The second group was a little luckier in that the moon started peeking through the clouds and they were able to get a few peaks. As usual, the moon even when just glimpsed for a second or two, was exciting and elicited a few Oohs and Ahhs.

With days no getting longer, our sessions are running longer into the night. It did not get dark till well after 8 PM. However, this particular night with the light turnout, we shut the dome down at about 9:30. We had a little gab session that lasted till a little past 10 and then left.

We are hoping for a better night next month.

- *Tim Kamel*

May 30 Open House
“Our Sun”
International Year of Astronomy Activity

This month's activity is called "Our Sun" The activity is modeling the Sun and Earth and the featured viewing object is the Sun. While we will not be able to view the sun, we will be able to do the activity for the month. Our program will center on information about the sun.

The IYA Guide can be downloaded at this Night Sky Network website. Just copy and paste this [complicated] link to your browser's URL pane::

http://nightsky.jpl.nasa.gov/download-redirect.cfm?Doc_ID=304&Doc_Filename=05IYADiscoveryGuide.pdf&InfoLogged=1&Anon=1

When you get to the page, there will be a questionnaire, you can scroll to the bottom and click "skip" to get to the guide.

See you at the May 30 open house!

Night Sky Network Hits 1 Million!

In a message dated May 12, 2009, Ken Frank of the Night Sky Network said, "Hooray for your logging! One Million pairs of eyeballs. We zoomed past the 1,000,000th visitor mark. Our visitors have a greater appreciation in enjoying the day and night sky, thanks to You; the tireless membership of the Night Sky Network. The Night Sky Network (NSN) began five years ago with a core group of amateur and professional astronomers and educators, working with NASA at the Jet Propulsion Laboratory. Since its inception, the NSN has grown to well over 300 amateur astronomy clubs across the United States. Your dedication as amateur astronomers, selflessly sharing your wealth of knowledge, your telescopes and your time are what makes the Night Sky Network what it is today.

We salute you!"

The Harford County Astronomical Society became a member of the Night Sky Network in August 2007. Since that time, we have had 46 Night Sky Network programs that have touched 2,418 people. Keep up the good work! If you haven't participated in any of our programs, you can start now. Attend an open house or other outreach program.

- *Grace Wyatt*



Gary George and Grace Wyatt recently spent the day at Goddard at a Lunar & Meteorite Certification Workshop to become Authorized Borrowers for Lunar Samples. Phil Schmitz has been certified for a number of years. Gary, Grace and Phil can now borrow lunar and meteorite samples from NASA for HCAS programs. Look for moon rocks (well dust) to be a part of an open house in the future. (The astronaut gloves are not necessary for certification, but they are fun).

Observatory Upgrades



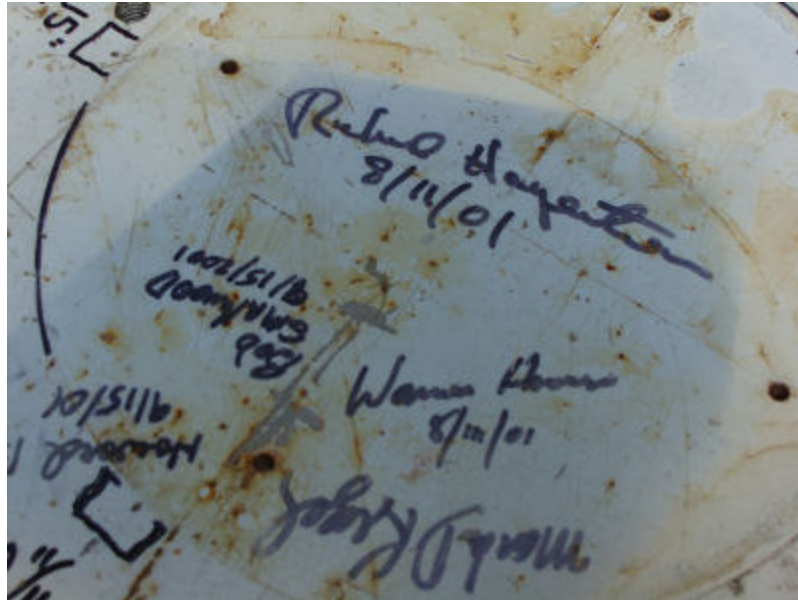
Equatorial mount of HCAS 14" Celestron, just before removal from pedestal, to prepare for observatory upgrades.

On May 9, 2009, the telescope and mount were successfully taken down and put into storage for a period of 2 months. As discussed at the last business meeting that the dismantling of the scope and mount would be a last minute discussion and Mark would contact the volunteers, those involved were Mark, Larry Hubble, Jim Hajek, and myself, Gary George, also Tom Rusek and Tim Kamel but were unable to attend as this was a last minute discussion. But to our surprise when we removed the mount from the base plate, we found several signatures of fellow club members who were involved in putting up the telescope from 2001.

It took about 2 hours to complete this task, and everything is locked up and carefully stowed

away. I took a little over thirty pictures and will send several of those out for you to look at. If anyone has any questions please feel free to contact me and I'll get you an answer. Also as this project continues I'll try my best to get more pictures and keep everyone up to date . Talk to everyone later.

- Gary George, e-mail: gg43920@aol.com



Base plate of HCAS 14" Celestron, showing names of club members who participated in building the observatory in 2001.

Astrophotography



M51 and accompanying galaxy NGC5195 (HCAS Photo.)

On April 17, the camera was very active. Now that the weather has become nicer, we had our first chance to demo the camera at the Darlington outreach event. This event was very successful with a lot of members participating. Gary George and I started setting up at 8:00pm and by 9:00, we were starting to take images of M3 for the attendees. We picked a bright globular cluster so the exposures would be short and they would see something instantly on the screen. This was a good choice. It reminded me of back when we were CCD-ing at the old observatory. People were gathered around the table fascinated that we were imaging this cluster

instantly before their eyes. I was getting requests from people there to email them copies of the images so I will. The skies were excellent and all in all, the event was very successful. We packed up everything at 10:00pm and headed up to Broad Creek (Astronomy Hill). We had a mission: M51, the Whirlpool Galaxy. After setting up, M51 was directly overhead at zenith. The sky in that location was black. After obtaining focus, we had a little trouble finding the object in my Ultima C11. We had to go back to the eyepiece and then back to the camera. This took time, but the results were well worth the extra effort. Members Jimi Hajek, Greg O'Brien, Gary George and I took 40 images at 60 seconds each. Attached is the result of our efforts. Can you imagine what we could do at Cherry Springs?

We hope to demo the camera at the upcoming Open House - weather permitting, of course. I am still reaching out for any and all members to email Grace, Tim, Gary and me at any time if they want to join in. It has been brought to my attention that a club alert needs to be issued when the camera is in use. We would love for anyone to join in at any time. In the future, we are going to need to have more people trained so we have someone to attend our Outreach events and Open Houses to demo the camera.

Thanks again.

- Larry Hubble
lhubble@comcast.net

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 me and I will bring it to the next club meeting. Thanks again for all of your support!

HCAS Astronomy Quiz

This is a quiz on lesser known nebulae.

1. In which constellation is the Crescent nebula?
Monoceros Cygnus Hydra Scorpius
2. Which constellation is the California nebula?
Perseus Pegasus Cygnus Ursa Major
3. Which constellation houses the Pelican nebula?
Sagittarius Delphinus Aquila Cygnus
4. Which constellation houses the Pipe nebula?
Ophiuchus Orion Sagittarius Perseus
5. Which constellation houses Hubble's variable nebula?
Perseus Sagittarius Orion Monoceros

Answers to last month's quiz on Taurus:

1. The brightest star in this constellation is Aldebaran, what is it considered to be?

Tail of the Bull Horn of the Bull **Eye of the Bull** Head of the Bull

The name Aldebaran from the Arabic means "The Follower", apparently since it follows the Pleiades across the sky.

2. M1, the first object in Messier's catalog is what type of object?

Open cluster Diffuse nebula Galaxy **Supernova remnant**

M1 is a supernova remnant whose star exploded in July of 1054. It is the only supernova remnant in Messier's famous list.

3. What type of star is Aldebaran?

Blue-white giant **Red giant** Red dwarf Yellow, sunlike star

Aldebaran is a red giant star with a luminosity of about 125 suns and lies roughly 70 light years away. It has a 13th magnitude companion star that is a red dwarf.

4. Although El Nath is technically in Taurus, what other constellation claims it as well?

Andromeda Pisces **Auriga** Perseus

El Nath is Beta Tauri in Taurus and Gamma Aurigae in Auriga.

5. What bright star is M1 located near?

Aldebaran **Zeta Tauri** El Nath Gamma Tauri

Zeta Tauri is the closest bright star to the location to M1, the Crab Nebula. It is the guide star to use to find M1.

Miscellaneous

Cherry Springs Star Party

June 18 through 21, 2009
(Thursday through Sunday)

<http://www.astrohbg.org/CSSP/Information.html>

Online registration is open until June 2, 2009

ALCON EXPO 2009

Date: Sunday August 2nd through Saturday August 8th, 2009
Place: Hofstra University on Long Island, New York

Sponsored by: Amateur Observers' Society of NY, Inc.

For more details visit:

www.alcon2009.org

What's in the HCAS library?

We received a new toolkit titled "Glass and Mirrors" It demonstrates an inside look at telescopes. There are outreach toolkit notebooks with the information from the toolkit available for members to borrow in the library. The toolkit includes a hands-on presentation of the differences between reflectors and refractors and how the telescopes provide the image for viewing.

As part of the Lunar Certification Training, the club received two new notebooks. Exploring Meteorite Mysteries and Exploring The Moon are full of information and teaching materials all about meteorites and the moon.

Also available is *400 Years of the Telescope :A Journey of Science, Technology and Thought* by Donald Goldsmith. The book is a companion to the recently released PBS special "400 Years of the Telescope". Both the book and the DVD are available for club members to borrow at the HCAS library.

Galileo Exhibit
at the
Franklin Institute
222 North 20th Street
Philadelphia, PA 19103
Phone: 215-448-1200

April 4 through Sept. 7, 2009

For More Information, visit:

<http://www2.fi.edu/exhibits/traveling/galileo/index.html>

Karen Carey will be planning a group trip this summer to the Franklin Institute in Philadelphia to see the exclusive Exhibit of the Galileo Telescope. Please contact Karen at carey.karen@gmail.com for details.

This newsletter is the official publication of:

Harford County Astronomical Society
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Items for the newsletter are due to the editor by the 13th of the month of publication.

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