

# Harford County Astronomical Society

Bel Air, Maryland  
www.harfordastro.org



*Volume 32 Issue 12*

*December 2006*

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**General Meeting:**  
**Jan 6, 2007, 7:30pm**  
At the Observatory

**Public Star Party (Open House):**  
**Dec. 30, 2006, at dusk**  
Technical School Parking Lot,  
Next to the Observatory

**Jan. 27, 2007 at dusk**  
Technical School Parking Lot,  
Next to the Observatory

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## **Club Calendar for 2007:**

<u>Meeting Night</u>	<u>Open House/Public Star Party</u>
Jan 6, 2007	Jan 27, 2007
Feb 3, 2007	Feb 24, 2007
Mar 3, 2007	Mar 24, 2007

*Please check the website for possible schedule updates and changes:*

<http://www.harfordastro.org>

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*Happy Holidays to All!*  
*May you have a Happy and Productive New Year!*

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**Recent HCAS Events**  
**Messier Objects for Winter**  
**HCAS By-Laws**

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**HCAS Meeting Minutes, December 2006**

1. The Harford County Astronomical Society held its December business meeting on December 2nd, 2006, at the observatory. President Jim Garrett opened the meeting at 7:33 PM.
2. The minutes from the October meeting were approved.
3. Tim Kamel gave the treasurer's report. He said the club's bank balance was \$5486.42. All bills are paid, including the insurance and the Astronomical League. There have been no new members join since the last meeting. Jim Garrett presented a receipt for reimbursement to re-pay him for the re-purchase of a book he gave out as a door prize at the November Telescope Buyer's Workshop.
4. The telescope seminar took place on November 4th. The turnout was not as large as expected, but the event still went well. The guests received personal recommendations and information, and everyone won a door prize. A lesson learned is that we should consider advertising at our other club functions, such as the open houses and astronomy class events. We should also start advertising earlier.
5. There have not been any observatory operations recently.
6. Tom Rusek reviewed recent and upcoming outreach activities:
  - a. The Girl Scout group attended the October open house. The event went very well. Tom recommends we continue these events that start with a talk at the observatory followed by observing at the open house. The event included a 45 minute talk covering all of the items needed for the scouts' badges. 2 more similar activities are planned for January and February.
  - b. Tom is giving his second presentation at the Bel Air library on January 23rd, 2007. It will be an indoor and outdoor program. The indoor lecture starts at 7 PM, with the outdoor observing session running from about 8 PM until 9 PM. Tom asked the club members to support this by bringing their telescopes to the outdoor phase.
  - c. On January 27th, in conjunction with the monthly open house, Tom is hosting another group of scouts and parents. He will run this the same way he ran the October event. He will do this again on during the open house on February 24th for a group of Forest Hill girl scouts.
  - d. The club was invited to participate in a larger scout camporee event on June 1,2, and 3. We can pick one night to set up scopes for a group of about 100-200 scouts and parents. Tom will coordinate with the event organizers.
  - e. Tom conducted a talk at a senior citizen center in early November. He said that went well, and the guests were interested and excited about the subject.

Tom said that he is often asked how much it costs for his presentations. He has been doing them free of charge, as a community service. He suggested that we keep these events free, but if a

group or individual wants to donate to the club as a measure of thanks, we should accept that donation. The club agreed that this was a good idea. Other groups have offered to send letters of thanks to the college for our support to their events. A guest from the Fallston library event sent the club a thank you letter and a video.

7. Grace Wyatt added information on several other upcoming (or requested) outreach events:

a. Steppingstone Museum is holding a "Book of Dreams" open house on December 8th. This project is a study of the Underground Railroad. Since the escaping slaves often navigated via the stars, they asked the club to participate by bringing some scopes for the guests to use to observe the skies. The event takes place from 7-9 PM, and they expect about 50 people to attend. Tim Kamel, Roy Troxel, and maybe Jim Garrett will participate. The club will be mentioned in the event's flyer.

b. Heidi Richardson of the Whiteford library asked about a club presentation in March. Grace gave the information to Tom Rusek. They also want to do a display during February.

c. Rocks State Park expressed an interest in hosting some club events in the future. They will contact us about their desires later.

d. Mothers and More of Harford County, a day care center, asked if we could do a daytime event for a group of 3 and 4 year old children. The group expressed concerns about safety and keeping the children interested. Grace said she would contact the organization and discuss this with them.

8. Grace Wyatt said she was approached by an author who wants the club to endorse and publicize his light pollution book. Jim Garrett said we should have a chance to read and review the book first. Grace said she would ask for a review copy or two from the author.

9. Jim Garrett said he saw an item called "The Earth as a Peppercorn", which shows how to set up a scale model of the solar system. This is a teaching guide for how to set this model up. He suggested we consider this as a future event, possibly for astronomy day.

10. A group of members observed at the Broad Creek site last Friday and Saturday. The conditions were good, and the ground was not muddy.

11. Grace Wyatt agreed at an earlier meeting to transcribe the bylaws into an electronic document. She is still working on it. This is an opportunity to update the bylaws too. This will require the membership's comment and approval, so Grace will give the transcribed document to Roy for inclusion in the newsletter so that the membership can comment on it.

12. Jim Garrett is working with Sol Rodano and others to try to set up a computer control of the observatory from the classroom.

13. Tom Rusek agreed to represent the club for discussions with the college regarding their concept of support for our club as well as our abilities to support college activities. He will also discuss upgrading the grounds around the observatory building. He will set this meeting up for some date after the first of the year.

14. New Business:

a. The club will research the possibility of getting a lighted sign to set up on Thomas Run road to point visitors to the right place during the open houses.

b. Anyone interested in getting a group order together for the annual Astronomical Calendar should contact Grace Wyatt.

c. The club will consider holding a public event for the March lunar eclipse. We will discuss this at the January meeting.

15. The next open house is on December 30th. The next meeting will be on January 6th.

16. The meeting was adjourned at 8:41 PM.

### **Treasurer's Report December 2, 2006**

As of 10/20/06, balance in the checking account is \$5486.42

There have been no changes in the number of members. There are no other financial issues to report.

### **Recent HCAS Events**

#### **Open House**

**November 25, 2006**

Sub Title – Two events in one

On 11/25/2006, we had an open house function. It was a beautiful night, clear and with mild temperature. Seeing was fair but improved after the moon set early. Transparency was good with no clouds.

We tried something different this time. Basically, when we got to the technical high school, we found that the grassy area where we usually set up to be soaked. So, we set up in the parking lot itself. This worked out so much better. Using seats and ladders was much better with no sinking into the ground, and one could easily find something that was dropped. It looks like we are going to do this at each session but because we are now not as easily visible from the street; we are looking into getting a sign.

Public participation was quite good; with a couple of school and scout troops and several interested parties. I would put the number of guests at about 40-45.

Participation by club members was also quite good. Irv, Grace and Mark were there, as were Steve Krall, Conrad Beulow, Mike Talbard and young Clarence Wilson with his 4½" dob.

Main target for the night were the moon, which set early this session. Other targets were the Andromeda Galaxy, the Pleiades, the Double Cluster and Alberio.

For some reason, this session ended early. By 9:15, there were no more guests and by 9:45, I packed it in.

However, I did not go home. Because it was such a beautiful night, I went to Broad Creek, where Jeremy, Kathy and Roy were already doing observing. I got there at about 10:10. Roy and Kathy had already packed up. Jeremy and I stayed till about midnight, where some clouds started to come in.

I spent most of the time looking at the Great Orion Nebula through my 8" F/4 reflector. I had recently been able to get a hold of 4 Celestron Ultima eyepieces, used, and this was my first chance to try them out. The long focal length ones are fairly impressive. The 7.5 mm one was not as good. I still want to do more comparisons since I normally have a tough time looking through short focal length eyepieces.

Anyways, a pretty nice evening with two events and about 6 hours of stargazing.

Tim

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## **HCCC Astronomy Class Support**

**December 11, 2006**

On December 11th, we held the last support session for the Astronomy Class for the Fall Semester.

We had an excellent night for viewing with average transparency and fairly good seeing. Present with me this session were Mark and Mike.

Prime targets this session were M 42 and M 45, fairly high and offering great steady views. We also saw the clusters in Auriga and Mike was able to bring in M 77, a Seiffert Galaxy.

As the class adjourned, Saturn came up over the tree line and we hung around till after 11:00, looking at it and waiting for it to climb above the murk along the horizon.

Two of the students stayed with us till the end, clearly enthusiastic and looking at all objects that we had in view.

Tim

**November 18, 2006**

On November 18<sup>th</sup>, we held the support for the morning observing session for the Astronomy Class. This session started at 4:00 AM on that Saturday and was like a trip down a time tunnel. We were looking at skies that we would see in the evening 5 months from now. Saturn was in plain sight and glorious to see, as were The Orion Nebula, The Bee Hive and M 67.

The weather was mild and the class was enthusiastic. Several of the students brought along young siblings and off spring.

Club members included Irv, Roy and Grace.

As a bonus, this was one night before the peak of the Leonids and we got to see 10-15 shooting stars in the space on one hour.

Tim

**Steppingstone**  
**Dec 8, 2006**

The Steppingstone Museum was the location for the kickoff of a new book about the underground railroad. The book's author, Gandhi Hurwitz, said the stars played a key role in helping slaves escape to freedom. Maps were not possible, but the stars and constellations were always available for travel. Here is the link to the website: <http://www.bookofdreamsproject.org/>

Several HCAS members were there to show visitors the stars, after hearing Mr. Hurwitz's presentation. It was very cold, but a good session nonetheless, with periodic breaks when we went into the house for refreshments - wine, coffee, cookies, etc. Jim Garrett, Mike Talbard and myself entertained about 25 people at the scopes, with the usual subjects - Ring Nebula, Pleiades, etc. It was fun and some of the kids were really knowledgeable! We showed the visitors the North Star and the Little Dipper, but the Big Dipper was too low in the horizon to be seen.

Roy

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**Outreach Report**

Folks,

It's the end of another year and as chairman of the public outreach program for the HCAS, I would like to express my thanks and appreciation to all of our participating members. The outreach programs, which include both the indoor lectures and the monthly outdoor open houses presented in 2006, were superb. We have achieved much in our efforts to help bring astronomy to the community.

This year's enterprises included a summer visit and presentation by the famous side-walk astronomer John Dobson. October brought us a beautiful day for the annual Swanfest in Havre de Grace. A telescope buying workshop was presented at the HCC in November. These, along with all of the other programs are vital both to the club and to our community.

The effortless hard working members who bring their telescopes to our monthly open houses contribute so very much of their time and expertise and they are to be congratulated. The numbers of visitors to these nightly sessions are increasing and the enthusiasm of the attendees is to be appreciated. The indoor lecture series is also growing and expanding in the community. This year we reached 324 people in 13 sessions and since 1999 we have reached 2183 people in 42 lectures. Our arsenal of slides for the slide shows now exceeds 800.

The Harford County Library Lecture Series has been very successful. We have given indoor presentations at the Bel Air, Fallston (2), and Abingdon Libraries this past year. Special topics discussed included "The first billion years of the universe" and "What's happened to Pluto". And for the coming year, we will be at the Bel Air (Jan.) and Whiteford (March) Libraries. These events are publicized in advance and are well attended by people of all ages.

This past November a presentation was given at a facility in Street for the elderly. It was attended by folks from 60 to 90 years of age. On the flip side, five presentations were given in February at the St. Joan of Arc School in Aberdeen which encompassed grades K through 8, over 150 students.

We are very excited about presentations given at the observatory on open house nights for special groups. This past October a group of girl scouts attended our initial program for their belt-

loops. It was a huge success. We already have presentations planned for the January and February open house nights in 2007 for more scouts at the observatory.

Next year will also (hopefully) bring a meeting between the HCAS and the HCC. We are planning a joint meeting with the school officials to discuss present and future plans of the observatory and immediate property. There is a committee working on the interior of the observatory to bring views from the telescope in the dome down to a computer monitor on the first floor for those who may not be able to climb the steps to the top floor of the observatory. Dome refurbishing will also continue.

It is a slow process but with the diligent efforts of the HCAS members anything can be accomplished. I am hopeful that the future of our organization and its outreach programs will flourish and our observatory will INDEED be the talk of the state.

Thank you all and have a safe, healthy, happy and cloud-free holiday season.

Tommy, Barbara and Angela Rusek



*Tom Rusek inspects the 14" Celestron at the HCAS Observatory*

## Upcoming Outreach Programs (so far):

1. Bel Air Library on January 23, 2007 @ 7pm.  
Outdoor program to follow @ 8pm.
2. Observatory on January 27, 2007 @ 7pm  
Scouts (belt loops) and parents (10-11 year olds), 20 to 30 people.
3. Observatory on February 24, 2007 @ 7pm.  
Forrest Hill Girl Scouts (10 year olds), 20 to 30 people.
4. Whiteford Library on March 13, 2007 @ 7pm.  
Outdoor program pending.
5. Scouting Camporee on June 2, 2007 at 7pm.  
Location: North of Bel Air on Route 165 (more info. later).  
Belt loops and 100 to 200 people expected.

### Earth Globes Available

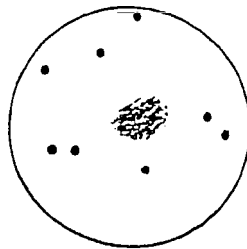
*HCAS has received a donation of a number of older globes. If anyone would like one, please pick it up at or before the next meeting or let Grace ([dgracew@comcast.net](mailto:dgracew@comcast.net) or 410-836-7285) know you are interested in getting one. The globes will be donated after the next business meeting. The globes are stored in observatory storage.*

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## Messier Objects for Winter

*By Steve Krall*

### M1:



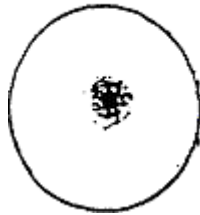
A clear winter's night is the best time to observe this famous nebula, the cast-off debris of a cataclysmic explosion of a troubling star in its final death throes. Renowned as the "Crab Nebula", you can find M 1 just a tad north of Zeta Tauri appearing as a fairly large, soft-glowing, smoke-gray sphere. It is extremely faint, devilishly elusive at times, with pitifully little contrast against the urban sky. Initially I used low power, sweeping methodically for its furtive, feeble patch of light, pausing occasionally only to adjust my focus when M1's shadowy image suddenly seemed to emerge from out of

nowhere. A not uncommon experience when searching out these Messier objects. Using a little more power with a filter, this relic of a supernova appeared as an eerie, haunting, like figure,

somewhat larger, brighter and its football shape was clearly apparent. To view this truly, historic evidence of an exploded star and its astronomical significance was especially appealing to me.

*Note: Messier described M1 as a "nebulousity above the southern horn of Taurus. It contains no star, it is of whitish light, elongated like the flame of a taper. Discovered while observing a comet."*

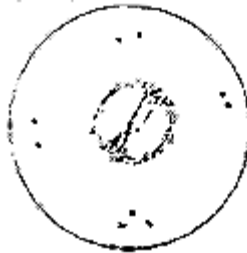
## M2:



This globular cluster appears as a fairly large, chalky-white ball containing a bright, glowing center wrapped in the slightest nebulosity. Residing in Aquarius, a rather mediocre constellation, in a desolate part of the sky devoid of bright guide stars, might impress you as being a difficult object to track down. A neat way to find it is to first locate M15, just off Enif in Pegasus, whose right ascension closely coincides with M2 and then simply slide down on that circle to an area just above third-magnitude Beta Aquarii. Use moderate power on this ancient, cosmic member of the galactic halo orbiting our Galaxy 50 thousand light years away.

*Note: Messier described M2 as "a nebula without a star."*

## M27:



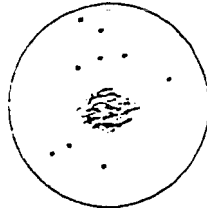
When I first sighted this unusual looking object, it seemed to suddenly spring right out at me. It is ashgray in color, rounded, very large for a planetary type nebula and appears to have a darker, peripheral ring of gray with contrasting shades of lighter gray toward the center. M27 is universally known as the "Dumbbell Nebula" and I think that is appropriate since I can visualize a likeness of a dumbbell in the center. It is also recognized as the "Hour Glass Nebula" since one can readily fancy an imaginary hour glass therein as well. Lying in the constellation Vulpecula, an area devoid of bright stars to guide you, it might seem hopeless to find, but you can overcome this discouragement simply by using your telrad finder and getting a fix on an imagined line drawn from Sulafat in Lyra and terminating about seven degrees on that line extended thru Albireo in Cygnus. Once located this haunting like image is clearly discernible and can be observed with the greatest pleasure.

With a small telescope on a good moonless night, it can be found without too much effort using your low power, wide angle eyepiece. However, a larger

telescope with moderate power is the way to go to contemplate this enigmatic --otienizen of the heavens.

*Note: Messier described M27 as a "nebula without a star, appears oval."*

### **M33:**



On a good night some say you can spot M33 with the naked eye as a dim, hazy patch of light - a highly unlikely possibility from my light tainted backyard. But telescopically you can find this extraordinary galaxy lying in Triangulum between Andromeda and Aries. Look for it about halfway on a straight line between two familiar, bright, pilot stars namely, beta Andromedae and alpha Arietis appearing as a faint, extra large, extremely faint, egg shaped gaseous cloud seemingly waning at times to the point of extinction. To properly view this fiendishly evasive object, use averted vision on a clear, moonless night. Searching for M33 can be a daunting task, but stay the course and not deny yourself the satisfaction of bringing this renowned galaxy to light.

*Note: Messier described M33 as "a nebula, of whitish light of even brightness, contains no star, seen with difficulty in a one foot telescope."*

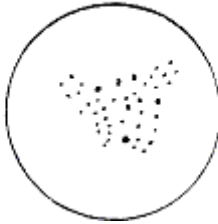
### **M45:**



On a clear, dark night you can see this beautiful, cluster, known as the Pleiades, with the naked eye. Located in Taurus, look for it about halfway between Aldebaran(Taurus) and Hamal(Aries) where you can find it as a close group of six bright, prominent stars enveloped in a thin nebulosity. In a small telescope I managed to embrace the entire cluster of large and small stars in my field of view but I was especially drawn to the six dazzling blue-white stars surrounded by a slight haze. A small telescope or even binoculars is best to observe the overall brightness, the diversity of stars and the wide expanse of this famous cluster commonly known as the Seven Sisters.

*Note: Messier described M45 as "a cluster of stars, known by the name of the Pleiades."*

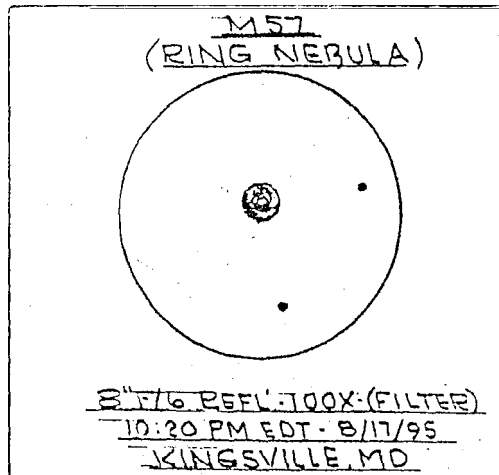
### M52:



The autumn evening skies offer the Messier buff some great looking open clusters. Probably, one of the finest is in Cassiopeia, namely M52. It is a large, bright, V-shaped splash of stars, an easy target lying on a line from Schedir thru Chaph extended several degrees in the direction of Cepheus. Low power can be disappointing on this one but higher magnification easily revealed a mix of stars across the spectrum it is numerically rich a little compressed and dominated by a group of dazzling blue-white stars. M52 is also circumpolar from this latitude ( never rising or setting ) so you can observe it all year around but wait for this treasure when it is high above the pole where it can stand out in contrast to the black sky. I especially liked M52 for its unique form, diversity of stars and its pleasing soft glow.

*Note: Messier described M52 as "a cluster of very small stars mingled with nebulosity, which can be seen only with an achromatic telescope."*

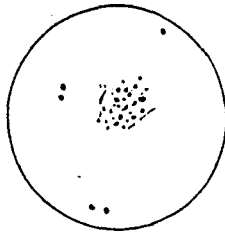
### M57:



At my first glance, this extraordinary looking object, known as the Ring Nebula, resembled a doughnut ! Sweep for its star like image in Lyra on a straight line about halfway between two notable stars namely, Gamma and Beta Lyrae where it appears as a tiny, faint, silver-gray disk, easily overlooked blending in with the Milky Way's rich, starry background. I preferred a large scope with moderately high power, with a sky filter, to observe this celestial spectacle.

*Note: Messier described M57 as "a patch of light between Gamma and Beta Lyrae, suspected to contain many small stars but not distinguished with the best telescope."*

### M71:

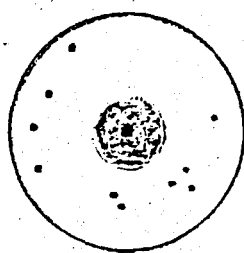


Sorting out this unique cluster merged in the Milky Way's starry band can be a touch and go proposition. One way to search out this phantom like object is to drop down a tad to the south of the Dumbbell Nebula, a large, easy to find planetary nebula where you can find M71 appearing as a fairly large, very dim patch of light, almost imperceptible in a smaller telescope. But in a larger scope its wedge shaped pattern of stars becomes apparent and shimmering star light can be seen thru its misty halo. While you are here, you can take the opportunity to take in the magnificence of the Milky Way.

*Note: Messier described M71 as "a very faint nebula containing no star, the least light extinguishes it."*

\*Since M71 exhibits both globular and open type cluster characteristics, its true classification remains uncertain.

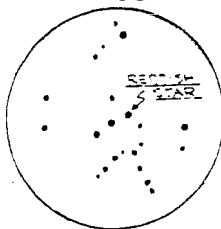
### M74:



Uncovering this faint, elusive, galaxy residing in Pisces, a scanty part of the sky, can be a frustrating endeavor. Look for this starlike figure just a little east of Eta Piscium on a line drawn to Beta Arietis where it appears at first glance only as a star enveloped in a bluish halo. However, higher magnification revealed a small but discernible nucleus suggesting a resemblance to a globular cluster. A major step up in aperture is needed here if you expect to resolve this galaxy, after all, M74 lies an astonishing 20,000,000 light years away.

*Note: Messier describes M74 "as a nebula without a star."*

**M103:**



Look for this open cluster in Cassiopeia, about one degree off Ruchbah on a line from Epsilon Cassiopeia, merged in the foreground stars of the Milky Way. It is a fairly large, numerically poor, loosely held, unorganized, unimpressive looking clump of large and small stars. Nonetheless, I was drawn to a group of radiant stars, one of which was a red star, on the south edge of the cluster arranged in a V shaped figure. I did like the cluster's overall brightness, the glowing red star and the prominent V shaped pattern of stars. You can readily view this uncommon cluster for all it has to offer in the field of a small telescope with only moderate power.

*Note: Messier described M103 as "a cluster of small between Epsilon and Delta on the leg of Cassiopeia, gets lost in the surroundings."*

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**Bylaws  
of the  
Harford County  
Astronomical Society**

Following are the Bylaws of the Society as of May 1990.

**Article I  
Membership**

**Section 1. Classes of Members.**

**Member**-A Member shall be an individual 18 years of age or older, interested in the science of astronomy and in the aims of the Society.

**Junior Member**-A Junior Member shall be an individual under the age of 18, interested in the science of astronomy and in the aims of the Society.

**Student Member**—A Student member shall be an individual who is in attendance at a recognized college, university, vocational school or high school, and who has opted for this class of membership. Student members shall not have the right to vote or hold office.

**Lifetime Member**-A Lifetime Member shall be an individual who in the opinion of the Executive Committee has made extraordinary contributions to the Society. Before election, an individual must also have been a Member of the Society for at least five years and a member of the Executive Committee for at least three years. A Lifetime Member shall have all the rights of a Member.

**Honorary Member**-An Honorary Member shall be an individual who in the opinion of the Executive Committee supports academically or scientifically the aims of the Society. Honorary Members shall have no vote and may not hold office.

**Supporting member**—A Supporting Member shall be an individual or a company that Financially or materially contributes support to the Society. A Supporting Member shall have no vote and may not hold office.

## **Section 2. Election of Members.**

**Lifetime Members** - Nomination for Lifetime membership shall be submitted by any member to the Executive Committee. Election shall be by unanimous vote of the members present at a regular meeting of the Executive Committee.

**Honorary Members**-Nomination for Honorary membership shall be submitted by any member to the Executive Committee. Election shall be by unanimous vote of the members present at a regular meeting of the Executive Committee.

**Supporting Members**-Nomination for Supporting membership shall be submitted by a member of the Board of Directors to the Executive Committee. Election shall be by a majority vote of the members present at a regular meeting of the Executive Committee.

**Other Members**-Application for membership of Member, Junior Member and Student Member shall be made in writing on prescribed forms and submitted to the Secretary of the Society.

## **Article II Dues**

### **Section 1. Amount of Dues.**

The Annual Dues for Members, Junior Members and Student Members shall be fixed by the Executive Committee. Lifetime Members, Honorary Members and Supporting Members are exempt from any payment of dues.

### **Section 2. To Whom Payable.**

All dues shall be payable to the Harford County Astronomical Society.

### **Section 3. Membership Period.**

All memberships shall be for the fiscal year of the Society (June 1 to May 31). All dues shall be prorated for new applicants.

## **Article III Organization**

### **Section 1. Executive Committee.**

The Executive Committee of the Harford County Astronomical Society shall be composed of the Officers of the Society, the Board of Directors, and Technical Advisors.

### **Section 2. Officers.**

The Officers of the Society shall be a President, a Vice President, a Treasurer and a Secretary.

### **Section 3. Board of Directors.**

The Board of Directors shall be composed of seven members over 21 years of age.

### **Section 4. Technical Advisors.**

If qualified Members of the Society can be found, the Society shall have a Technical Advisor in Physics, a Technical Advisor in Optics and a Technical Advisor in Computing.

## **Article IV Duties of Officers, Directors and Technical Advisors**

### **Section 1. President.**

The President shall have general supervision of the affairs of the Society. He or she shall serve as chairperson of the Executive Committee and as a member (ex-officio) of Special Committees. He or she shall preside at meetings of the Society and perform other duties as assigned by the Executive Committee. He or she shall submit an annual report on the activities of the Society to the Executive Committee at the Committee's last regular meeting of the year, and to the membership of the Society at the Annual Meeting.

### **Section 2. Vice President.**

The Vice President shall, in the absence of the President, preside at the meetings of the Executive Committee and discharge the duties of the President. He or she shall serve as chairperson of the Program Committee. He or she shall perform other duties which may, from time to time, be assigned by the President with the approval of the Executive Committee.

### **Section 3. Treasurer.**

The Treasurer shall receive all monies and deposit them to the credit of the Society in Depositories as designated by the Executive Committee. He or she shall disburse the funds of the Society as may be ordered by the Executive Committee, obtaining proper vouchers and/or receipts. He or she shall furnish a statement of monthly balances at all regular meetings of the Executive Committee. He or she shall furnish an annual report of the financial status of the Society at the last meeting of the Executive Committee in each fiscal year. This annual financial report shall be audited and certified by two members of the Board of Directors prior to presentation to the membership at the Annual Meeting of the Society.

#### **Section 4. Secretary.**

The Secretary shall keep all minutes of the meetings of the Executive Committee, report them at subsequent meetings and keep a permanent file of them. He or she shall receive all membership applications; maintain the membership roster, keeping it up-to-date; and prepare and mail all notices and other pertinent information to the membership. He or she shall forward all monies received to the Treasurer. He or she shall keep a permanent file of all correspondence originated and received by the Society.

#### **Section 5. Directors.**

The members of the Board of Directors shall serve as members of the Executive Committee of the Society and assist in the technical, scientific and operational management of the Society. They shall have a vote in all aspects of the operation of the Society.

#### **Section 6. Technical Advisors.**

The Technical Advisors to the Society shall serve as members of the Executive Committee and shall have a vote in all aspects of the operation of the Society.

### **Article V Nominations and Election**

#### **Section 1. Eligibility for Office.**

All Members over the age of 21 shall be eligible to be an officer of the Society or a member of the Board of Directors.

#### **Section 2. Length of Term of Office.**

All officers shall be elected for a term of one year. They can be nominated for reelection for consecutive terms.

Members of the Board of Directors shall be elected for a period of two years. To provide continuity in the management of the Society, four members shall be elected every even year and three members every odd year.

#### **Section 3. Nominations.**

Nominations for Officers and Board of Directors shall be made in writing to the Executive Committee prior to its April meeting. All nominations shall be contingent upon written acceptance from the nominees. Additional nominations can be made at the April meeting of the Society and, if seconded, shall be placed on the ballot, subject to acceptance from the nominees.

#### **Section 4. Voting.**

All voting shall be by secret ballot. The secretary shall mail the ballots to all eligible members at least two weeks prior to the Annual Meeting of the Society. Ballots shall be returned to the

Secretary by April 30. The Secretary shall hold all the ballots until the Annual Meeting, at which time they shall be turned over to the tallying committee for counting.

### **Section 5. Elections.**

The President or the chairperson of the Annual Meeting, upon receiving the results of the balloting, shall announce the results of the elections and introduce to the membership the newly elected officers and members of the Board of Directors. New officers and members of the Board of Directors shall take office at the end of the Annual Meeting.

## **Article VI** **Meetings**

### **Section 1. Annual Meeting**

The Society shall hold an Annual Meeting each year, at a place and date during the month of May as the Executive Committee may designate. The meeting shall be for the election of new officers and members of the Board of Directors and for the official business of the Society.

### **Section 2. Executive Committee Meetings.**

The Executive Committee shall hold at least four meetings a year. If necessary for the business of the Society, additional meetings may be called at the discretion of the President. A quorum of six is required to transact business.

### **Section 3. General Meetings.**

Meetings for the membership shall be held at least nine times a year. These meetings shall be for the purpose of presenting programs of interest and education to the membership.

### **Section 4. Special Meetings.**

Additional meetings shall be planned for the interest and participation of the membership. These may be at the observatory or other available areas for the purpose of fostering celestial observations and/or participating in searches for specific planets or deep space objects.

## **Article VII** **Vacancies on Executive Committee**

### **Section 1. Officers.**

If a vacancy occurs in any office, the Executive Committee may appoint another member of the Committee to fill the vacancy for the remainder of the term.

### **Section 2. Board of Directors.**

Any vacancy on the Board of Directors shall be filled by appointing a new member for the remainder of the current term.

**Article VIII**  
**Amendments**

Amendments to these Bylaws may be instigated by filing with the Secretary a petition containing the proposed amendment signed by not fewer than three members of the Society. To take effect, amendments must be approved by not less than two-thirds of the members voting at a General Meeting or Annual Meeting of the Society.

**Article IX**  
**Parliamentary**

Robert's Rules of Order shall be the governing parliamentary law of the Society in all cases not definitely provided for by its Constitution or Bylaws.

**Article X**  
**Dissolution**

Dissolution of the Harford County Astronomical Society can be effected by the approval of not less than two-thirds of members voting at a special meeting for which notice shall have been given at least 30 days prior to the meeting. Upon dissolution, the assets, financial and material, of the Society shall be transferred in their entirety to the Harford Community College, Bel Air, Maryland.

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**P.O. Box 906,**  
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