

# Harford County Astronomical Society

Bel Air, Maryland  
[www.harfordastro.org](http://www.harfordastro.org)



*Volume 35 Issue 3*

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**Public Star Party (Open House):**  
Saturday, March 28, at Dusk  
At the Observatory

**Activity: Light Pollution and Shielding**  
**Featured Object--Saturn**

**General Meeting:**  
Thursday, April 2, at 7:00pm  
In the Observatory Classroom

Please check the website for possible schedule updates and changes:

<http://www.harfordastro.org>

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<http://astroleague.org/>



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

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## HCAS Business Meeting

### Minutes of March 5th, 2009

1. President Tom Rusek called the meeting to order at 7:05 PM.
2. The minutes of the February 2009 meeting were published in the last newsletter. The group approved the minutes as published.
3. Treasurer: The club's bank balance was \$4011.13. There are currently 50 members on the HCAS rolls.
4. Outreach:
  - a. 30 people attended the latest open house. The weather was poor, so the members present conducted indoor discussions with the guests. Boy Scout Den 999 attended the open house so that they could earn their astronomy belt loops and badges. Another Boy Scout group plans to attend the March 28th open house.
  - b. The club will support an outdoor event at Carroll Manor Elementary School in Baldwin on March 27th. The event runs from 7 PM until 9 PM. They expect over 100 people to attend. The portable planetarium will be part of the program, along with Phil Schmitz' meteorites.
  - c. The Aberdeen Earth Day event takes place on April 18th from 10 AM until 4 PM.
  - d. The astronomy community is hosting "100 hours of Astronomy" April 2-5. A PBS television show will highlight the history of astronomy. April 4th was designated as Sidewalk Astronomy Day. The group agreed to hold an impromptu observing session in the Harford Tech parking lot after the meeting on April 2nd.

e. Grace Wyatt reported that the annual Globe at Night dark skies star count takes place March 16-28. Interested people can count the number of visible stars in a designated part of the sky (Orion) and report their results to a national database.

f. Tom Rusek spoke with Sal Rodano at the February meeting about the possibility of holding a special open house for the Harford Community College staff and faculty. They agreed that we need to do this soon, instead of waiting for the dome upgrade to be completed. The group voted to make this a dedicated event, not part of a general public open house. The target date is April 25th, with May 23rd as a rain/cloud date. Grace Wyatt and Tom Rusek will prepare flyers to advertise the event. Tom Rusek noted that the new camera needs to be there along with as many club members and telescopes as possible so that we can show off what we do for the public and our plans for the future.

#### 5. Observatory Operations:

a. A group of members came to the observatory on February 27th to observe and photograph Comet Lulin. They had good views and took several photos using the new CCD camera. Larry Hubble sent the photos to the local ABC station, which aired them during a news segment and posted them on their web site. He also sent copies to other places, such as the Orion Company.

b. Larry Hubble said that the corrector plate on the observatory telescope needs to be cleaned. He has a group of volunteers to take the scope down after the meeting and they will clean the corrector on Saturday, March 7th. For the long term, he recommended that we get a new, breathable cover for the telescope and mount so that dirt and condensation cannot accumulate on the equipment. Karen Carey said that she can sew denim, so she will work with Larry and Mark Kregel to fabricate a new cover.

6. Observing Reports: Roy Troxel reported that he and several others have been to Broad Creek 3-4 times in the last month. Their sessions were short due to poor weather. Cathy Tingler said that the lock for the Broad Creek gate was still broken. She will work with the staff there to get it repaired or replaced.

7. Old business: None

8. New business:

a. Tim Kamel reported that the observatory laptop computer has been loaded with Windows XP and the Microsoft Office suite. They will also include the software for the new CCD camera along with the Meade DSI and LPI cameras. The group needs to decide where to store the computer. Possibilities include locking it in the room behind the classroom, or in the store room off to the side. Mark Kregel suggested coordinating with the security guards for a sign off sheet to be signed by the member and the guard to control access to the computer.

b. Karen Carey reported that she is preparing submissions for the Astronomical League stellar outreach awards. She needs short write-ups from the members who attended each event for these submissions.

c. Karen Carey also noted that the International Year of Astronomy podcast team is looking for sponsors. They are asking for \$25 donations. She suggested that HCAS make a donation and ask them to dedicate an episode to Leo Heppner. A motion to do so was approved.

d. Grace Wyatt said that the next Night Sky Network teleconference will take place soon. The topic will be a continuation of the International Year of Astronomy theme.

e. Grace Wyatt reminded the group of the raffle. The drawing will take place at the May 2nd open house.

f. Lucy Albert will not be able to teach the HCC Astronomy class in the future. This could be a good opportunity for another member to take over.

g. The group took nominations for the upcoming Board of Directors and Officer elections. Jimi Hajak, Roy Troxel, Larry Hubble, and Tony Mullen were nominated to be on the Board. Tom Rusek was nominated for re-election as president. Grace Wyatt was nominated for re-election as Vice President. Tim Kamel was nominated for re-election as Treasurer. Karen Carey was nominated to be secretary. Tim Kamel will prepare and distribute an email ballot. Members can return their ballot via mail or in person at the April meeting. The new Board and Officers take office at the May meeting.

9. The meeting was adjourned at 8:27 PM.

- *Monroe Harden*

## Outreach Programs



### Open House February 28, 2009

It was another inclement weather day for our open house, although it had been beautiful the whole week before, Overcast for Saturday and Sunday, and then beautifully clear and warm the week after!

We were expecting quite a turnout, after our comet photo made to the Channel 2 news the Wednesday before. We had received many calls about people wanting to come and see the comet. The clouds kept many away. None-the-less, we still had a good turnout by the public, including a scout troop and their family, for about 23 visitors. We did an indoor program, demonstrated how to focus binoculars, showed different types of scopes and did a tour of the observatory.

Participating for the club were Grace Wyatt, Karen Carey and Jimi Hajek, who did the in-door program. Larry Hubble and I did the tour of the observatory. Also present were Roy Troxel, Gary George and Tom Rusek. - *Tim Kamel*

**Night Sky Network Teleconference**  
**Thursday, March 26th,**  
**Begins between 8:45 - 9:00pm**

Join us for a teleconference to discuss the upcoming PBS documentary, *400 Years of the Telescope* and Night Sky Network's *100 Hours of Astronomy*.

The speakers are Mike Simmons and Kris Koenig.

Mike Simmons is Co-chair of *100 Hours of Astronomy*. He'll tell us what to expect and how to get involved. Mike has been an amateur astronomer for more than 35 years. This will be the highest-profile and largest event of the whole year during IYA 2009. Every participant will be making history!

*100 Hours of Astronomy* begins Thursday, April 2nd ending Sunday, April 5th.

Kris Koenig is the Executive Producer and Director of *400 Years of the Telescope*. Kris is also an Emmy award winning video producer and writer working at Interstellar Studios in Chico, California. His work includes a ten-hour PBS telecourse *Astronomy: Observations and Theories*, for which he won two Emmy Awards in 2005. His footage has been used in National Geographic productions, and his astrophotography graces the covers of nationally acclaimed astronomical textbooks and appears in various publications and videos.

Saturday, April 10th is the nationwide debut of *400 Years of the Telescope*, which is sponsoring the newly released Night Sky Network's Glass and Mirrors ToolKit.

To log into the Telecon on Thursday, March 26th, between 8:45 - 9:00pm.

Use the IYA toll-free conference call line: 1-888-455-9236. This number will be used for the whole year.

An operator will answer and:

- \* You will be asked for the passcode: NIGHT SKY NETWORK
- \* You will be asked to give your NAME and the CLUB you belong to, and number of people listening with you.

**100 Hours of Astronomy**

<http://www.100hoursofastronomy.org/>

April 2 to April 5 has been designated as *100 Hours of Astronomy* as part of the International Year of Astronomy. The goal during that time period is to have someone somewhere looking through a telescope at the sky during the entire time period. Harford County Astronomical Society will join in this global event with a public viewing session on April 2 at 8 PM in the parking lot of Harford Technical School. We will be setting up in the high school parking lot to commemorate International Sidewalk Astronomers Day.

Please contact Grace Wyatt at [dgracew@comcast.net](mailto:dgracew@comcast.net) if you have any questions.

**Observatory Operations**

OK, it is official. We have now adopted the hawk that has taken residence in the dome. It has been given a name that we voted on February 22. Angela Rusek suggested the name. *Please welcome Crackle, the astronomy bird!*

## Observation Reports

**Broad Creek  
February 16, 2009**

It was a last-minute decision, but both AccuWeather and Weather Underground predicted a few hours of very clear skies on this Monday evening, so I packed up my reflector and headed toward Broad Creek, arriving there a few minutes before sunset.

By 6:18 p.m., the scope was set up, collimated and ready to go.

Venus was at about 40° altitude, displaying a distinct crescent when viewed with a green #58 filter and a 13mm (121x) Nagler eyepiece.

I instinctively turned to Orion's M42, which was then high in the sky. For the first time in a year, I was able to see all six stars of the Trapezium very clearly, without them blinking. The air must have been very steady and transparent at sunset. The six stars remained visible for several minutes and then I turned to other objects.

M47, and open cluster in Puppis, was very bright. Between 6:45 p.m. and 6:50 p.m., two satellites crossed the field of view! M46, another Puppis OC, also appeared brightly, with its accompanying planetary nebula, NGC243b

Looking for clusters along the Orion arm of the Milky Way, I found the open cluster M50 in Monoceros and the distant globular M79 in Lepus.

Moving eastward, other objects visible at that time were M35 in Gemini, with its "accompanying" cluster NGC2158. This second cluster is actually thousands of light years further away, on the edge of the galaxy.

By this time, there was a lot of light along BC's horizons, in all directions. However, from about 20° above the horizon and upwards, the sky was very dark.

I next turned the scope toward IC1396, an open cluster with a nebula, in Cepheus, which was then low in the northwest. I saw the open cluster easily but not the nebula, even using the UltraBlock filter. This cluster is near the deep red "Garnet star", Mu Cephei. In the same vicinity. There is also a bright triple star,  $\Sigma$ 2816, that forms a small triangle.

From Cepheus, I went to Camelopardalis to get a look at NGC1502, an open cluster, and NGC1501, a planetary nebula. Using the UltraBlock filter, I could see a definite ring shape of the nebula. In that same vicinity, I got a view of part of "Kemble's Cascade", but this asterism is best viewed with binoculars.

Using the 35mm Panoptic eyepiece (45X), I moved back to Canis Major to observe NGC2362. This is a beautiful, tight open cluster with a bright blue star (Tau Canis Major) in its center. In the vicinity is also open cluster M93, an open cluster with an odd-shape, resembling the constellation Capricornus.

Moving into the "winter triangle", I began to observe the area of the Rosette nebula. I was able to see only the lower half of the donut shape, although the star cluster that is in the "donut hole" (NGC2244) was very bright.

Still looking in Monoceros, I moved to NGC2506, another dense open cluster. It is a little dim on first sight, but when using averted vision, many stars are visible.

It was now about 8:30 p.m., and becoming very cold, about 25°F. The sickle in Leo was now almost 20° above the eastern horizon, and I decided to pay a visit to the NGC2903 galaxy. It was a little dim, possibly due to the increasing haze in the sky in that region. On the other hand, it

was good feeling to see it again, after eight months. Saturn was just peeking over the horizon in that area, but it was too low into the light dome for observation at that time.

With the cold air bearing down, I moved the scope northward toward the small constellation of Lynx. There I observed NGC2683, a bright elongated galaxy, seen edge on. In the same area was NGC2403, a galaxy that seems to "sparkle" because of some bright stars in the foreground. The very dark northeast sky gave excellent views of these objects. However, it was now 8:45pm and getting still colder, so I began to disassemble the Obsession, and prepare to leave. It had been a short, but pleasant session.

**Broad Creek**  
**February 17, 2009**  
6:00pm to 9:00pm

When I arrived at BC around 5:00 pm, the sky was a deep blue, appearing very clear, so I knew that once the sun had set, it should be a good night for observing. Although clouds were expected to form around 9 pm, I would still have a good three hours of observing time.

After assembling the scope, I went to align the Argo Navis push-to system. While aligning on Polaris, I attained a very clear view of the Polaris double star system. The small companion could be seen very distinctly, as it was not completely dark yet, and the larger companion's light had not obscured the smaller companion. This was a good sign that the sky would be very clear, at least until the clouds rolled in.

After spending a few minutes with Venus, I could discern no gray shadings on its cloud cover, so I pointed the scope toward Orion. When I had M42 in the field of view of the 13mm eyepiece (121x), I could distinctly see all six stars of the Trapezium. They appeared even steadier and more distinct than they had the previous night. This was a very rare occurrence at Broad Creek.

When the sky had finally darkened, I searched for the nebula IC2177 in Canis Major. This is a long wide strip of nebulosity, too wide to be fully observed inside the 13mm eyepiece's field of view, so I had to be satisfied with sweeping back and forth across this shape. (10x50 binoculars would probably work best for this object.)

From Canis Major, I moved the scope northeast to Lynx, to observe NGC2419. This is a remote globular star cluster, positioned at the immense distance of nearly 300,000 light-years from earth. If you consider that the distance to the Milky Way's satellite galaxy, the Large Magellanic Cloud, is only about 160,000 light-years, then NGC2419 must be suspended by itself, outside our galaxy. It's possible this cluster did not originate in the Milky Way, but was somehow captured by its gravitational pull.

By 8:00pm, the sky's transparency and seeing were beginning to fade. Thin clouds were beginning to collect as well.

I inserted a 35mm eyepiece (45x), and began to see if I could detect any more of the nebulosity in that region of Monoceros, specifically in the areas of the Christmas tree cluster and the Rosette nebula. (I had to hold the UltraBlock filter in front of the eyepiece because the filter is made for a one quarter-inch eyepiece and the 35mm is a 2" Panoptic.) I began scanning for nebulosity just to see what was visible, but the sky was not as clear as it had been the previous night, and it was losing its transparency. Nonetheless, while sweeping through this area, I came upon numerous small asterisms and clusters, including NGC2383, with its unique parallelogram shape.

Gemini was now high in the sky and I aimed the scope toward NGC2392, the Eskimo Nebula, so-called because some viewers see it as a furry hood around a face. In any case, using the UltraBlock, it appeared more like a bright white disk, with a fine halo around it (at 121x). While still in Gemini, I looked at the open - but tight - cluster M35. I spent more time on the apparently smaller cluster near it, NGC2158. This is another cluster that is actually on the outer limits of the Milky Way, which is why it appears as small when compared to the closer M35. It is 12,000 light years away and is an estimated 2 billion years in age. Possibly it is a loose globular cluster

instead of a tight open cluster. (NGC752 in Andromeda and NGC 7789 in Cassiopeia are similar clusters.)

I turned off the Argo-Navis, and was preparing to leave, when I noticed that Saturn was now about 10° to 15° above the horizon. I decided to aim the telescope toward the planet, and I'm glad that I did: it was an interesting view. The rings were (are) almost edge-on, appearing like a thin gold line across the planet and I could see more of its major satellites - three on one side and Titan high on the left side.

I tried for the M95 galaxy, just underneath Leo, and although I found it, it was very dim and almost indistinguishable from the bright haze around it. The sky was filling with clouds and seeing conditions were deteriorating, so I began disassembling the scope. I left Broad Creek shortly after 9 pm; it had been a pleasant three hours.

- Roy Troxel

**Broad Creek  
February 21, 2009**

Roy and I met at BC at about 00:15 in the morning. As we pulled into the clearing, we noticed that the clouds had also arrived. They appeared to be a thin fast moving layer, so we decided to wait. We looked in the area of where the comet should be. It was pretty clear. So out came the hand-held 10x50 and 12x50's. We found the comet without difficulty and were pretty excited. I decided to get out my 30x80 Megaview bino's with tripod. By the time I got that set up, the clouds were about gone. The comet was very defined with a nucleus.

We knew we needed to stay for at least a short while. So out came Roy's Obsession telescope. Next thing we knew, we were watching the comet through the 35MM and 13MM eyepieces. We got a wonderful view of Saturn with edge-on rings. We viewed both M81 and M82 with my Megaviews. Roy was able to find M51. We were able to see both the galaxy and its companion.

Roy also located a variety of galaxies in Virgo. I believe we ended up with about 10 galaxies, Saturn and a comet by the time we were done at about 02:30. We had a grand time, but I was frozen solid. So it was time to take everything apart and put it away. We left a few minutes before 03:00.

I was home at about 03:30. I turned on the computer and went to the WZJ website. It said 25 degrees. I assume that BC was about 15-20degrees. Yes, it was cold.

So call us crazy or dedicated. I don't care, we had a great time.

- Cathy Tingler

**February 24, 2009  
6:40 PM - 10:00 PM.**

All my observations were with 100mm binoculars. Transparency was a four and seeing was a four. The temperature was 36 degrees when I arrived. There was very little wind throughout the entire observation.

A nice crescent Venus was seen. In the constellation of Orion, M42 and M43, were both viewed in the binoculars as well as the small nebula north of the belt M78. Delta Orionis, (Mintaka), whose double is at 52 seconds of arc distant was easily seen using the 25 power eyepiece (This may be an optical double). Sigma Orionis did show one of its four companion stars as well. M41, a large bright open star cluster in Canis Major was a show piece.

Moving into Puppis, M47, a rather bright and loose open star cluster of a couple dozen stars was seen. I then looked for the much fainter M46 open star cluster, which is, I thought, to the west of M47. It is actually to the east. So I panned over to the west and came across a very faint cluster that I mistook for M46, it was actually NGC2401, a much fainter open star cluster than M46. I

checked my star chart when I got home and realized my mistake. This was the first time I had searched out M47 and M46 with these binos. Somewhat south of M47 and M46 is M93 a very bright open star cluster with at least twice the number of stars as M47. M93 looked like a comet with a tail (Again another object never see in these binos before). M93 was still close to the horizon, which could have added to the appearance.

Looked at Saturn, could only see the rings using the 40 power eyepiece on the binos, the 25 power eyepiece did not show any hint of the rings. Could not find Comet LuLin at first. However, at 7:43 turned the binos back over to Saturn and managed to find Comet Lulin, a bright large fuzz ball. It was not visible to the naked eye. It was an easy object in the binos, several fainter stars were in the immediate field. A couple of stars were actually seen behind the halo of the comet. The comet appeared whitish-gray in the binos and showed no tail. It resembled a large unresolved globular star cluster.

The double star Mizar was seen. The double cluster in Perseus was seen. A short time after this I put away the binos and just looked through Roy's Obsession telescope.

When we left, it was around 10:30 PM and the temperature was 28 degrees!

- *Phil Schmitz*

**Broad Creek  
Feb. 24, 2009**

I began observing about 6:30pm. The temperature was already in the low 30s and my scope's 12.5" mirror hadn't cooled down yet. Consequently, when I went to observe Venus, the planet's image was wobbling considerably. Phil Schmitz arrived about this time, bringing his 100mm binoculars, as well as a 2" Nagler 12mm eyepiece. I inserted the 12mm in my scope (thanks, Phil), and began observing the area around Orion. The seeing wasn't as good as it had been the week before, so I was only able to see four of the Trapezium stars.

The 35mm Panoptic eyepiece (45x) provided an excellent view of "Kemble's Cascade" in Camelopardalis. This is a line of twenty stars that ends with the bright open cluster NGC1502.

Comet LuLin was still near Saturn,. It appeared large, bright, and with a hint of green. Over the next three hours, we watched the comet move westward about one degree in relation to the background stars in Leo.

Also in Leo were galaxies M95 and M96, as well as M105 with its two companions, NGC3384 and 3389. Five galaxies within a few degrees of each other! Also saw M65 and 66, using the 12mm. The third galaxy in this "triplet", NGC3628, appeared very elongated.

The large Virgo-Coma Cluster was now about 15 degrees above the horizon, but lost in the hazy light dome.

Concluded the session with Sigma Orionis, a triple star system and Struve 761, a double, also in Orion. Observed M1 in Taurus, almost overhead, but the seeing had deteriorated, so it appeared as a dim oval.

We began packing up around 10pm.

- *Roy Troxel*

## Astrophotography



**Orion Nebulae (M42 and M43)**

I would at this time like to share my previous Orion image [*see above*] that I completely redid from scratch. It was overall too red, so I re-stacked the images and, using the Histogram Specification and auto color conversion, the photo ended up being much better than I thought. I have attached the redone photo along with a second photo that I worked a little Photoshop magic on to increase the field of view and added a few fake stars around the edges just to get a better aesthetic image. This camera is far better than I could have imagined for the money. Other cameras are 3 times as much. I can't wait until the weather breaks and the club can take it to Astronomy Hill to do some imaging. My next goal will be a galaxy or two.

Thanks again for your support!

- *Larry Hubble*

**February 22, 2009**

On Sunday, February 22<sup>nd</sup>, it was scheduled to be a clear night and the weather was cold, but not overly so, enough to tempt many of us to trek to the observatory to see if we could use the new camera on the club's 14" Celestron. Our first attempt back in January had failed due to a defective power cord.

Our primary purpose was to see if we could get some shots of Comet Lulin, which was making its closest approach on Monday. The group included Larry, Gary, Roy, Phil, Grace, Tom and myself. Jimi had also planned to attend but his truck would not start.

Most of us arrived early. Grace and Gary cleaned the dome and we then got the dome open and the scope aligned in preparation for the photo session. While waiting for Larry to show up with the camera, we looked at Venus, which by now was a crescent and Saturn, which is almost edge-on and showing a minimal ring.

Larry showed up around 8:30pm and we began the process. After setting up the camera and scope, we located a dim star to use to focus the camera and made sure it was dead center in the field of view. This is a time intensive process that took almost 25 minutes to complete. Centering the image requires that you bump the hand controller, wait for the picture to download to the laptop to see where you are, and then do it again till you are centered. It takes about 15 seconds for each shot to download to the laptop. The same thing happens with focusing. You adjust the focus, take a shot, wait for it to download to the laptop screen, and then adjust the focus knob, then take another shot, etc., till you get close. You then switch to focus mode, which consists of the camera shooting a continuous stream of short duration photos while we watch some numbers and adjust the focus.

After we were done with this, we found that it was still too early to shoot the comet, which was still too low. So we decided to shoot a galaxy and picked M96 in Leo. After getting it into the field of view, we first had to take dark frames, which meant you set the controls on the software, cover the scope, and take several dark shots which the software uses to identify noise on the pictures and subtract it out from the photos that follow.

We then set the camera to shoot the galaxy. I do not recall the exact settings but it was around 30 shots, each about 40 seconds or so long. We then retreated to the classroom to warm up. After about 1/2 hour, we returned to the dome and prepared to shoot the comet. Though it was supposed to be naked-eye visible, it was at magnitude 5.8, impossible to see with all the light from the college. Though we had a chart showing its position, it was not where it was supposed to be. A brief search using binoculars turned it up about 5 degrees below Saturn. We decided to look at it visually first before taking the shots. Off came the camera and on went the diagonal and eyepiece. We all looked at a fairly faint fuzball. Then we re-attached the camera, except that now we have to focus all over again - another 20 minutes. We then started shooting. Again, I do not remember the settings but it was about the same as the galaxy. We again went downstairs and had some more coffee, cleaned up, went back up, packed up and left. It was after 12:30 in the morning.

It took Larry two days to get to the photos, stack them and clean them up. The photos for the galaxy were hopelessly poor, having many small black splotches through out the field and one large one right where the middle of the galaxy would be. The cause for this is explained in Larry's article below.

The photo of the comet was similarly affected, but to a lesser degree. It took three hours to clean up, but in the end, it produced two magnificent photos. Gary George sent the photos off to two TV stations and the Aegis. Channel 2 used the photos on the late news and gave us credit.

– *Tim Kamel*

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## Photographing Comet LuLin February 22, 2009



*Photos taken with Celestron C14 at f6.3 20/40 second exposures and Deep Space Pro Color CCD Imager.*

*Photos by: The Harford County Astronomical Society, Copyright: 2009 (Please do not distribute.)*

*First picture: Comet LuLin. Using ten 40-second shots, and stacked in planet mode. Notice the star trails are ten different images, as if we tracked the comet.*

*Second picture: LuLin in Motion: (my fav) Using all twenty Images but stacked using the stars, giving pinpoint stars but showing the comets motion over a total of about twenty minutes. Notice that the comet seems to be brighter in some shots and that you can see the nucleus as it moves through the sky. This my friends is real astronomy!*

## March, 2009



Just when we thought it could not get any better, I captured this stunning image of the moon.

OK, I know some of you are wondering how I got the whole Moon in the frame of this imager. Here goes: I took a few images of the top half "tweaking focus as I went along" then a few more of the bottom half. Then with the magic of Photo-Shop, here are the steps: You enlarge the canvas size (background) using black as a background color, then selected the bottom half image and 'select all' then cut and paste or drag and drop the image into the now larger image of the top half. This will create a Layer 1.

Then in the layers pallet (F7) you change the Opacity of the layer to 40 or 50%. Again drag the lower imager over the top image until you align or register the two images. Once you are close use the arrow keys to nudge it in place. Then you change the layers opacity back to 100%. After this, I had a hard line across the top of the bottom image so I used the Eraser tool to wipe it out. Then back in the layers pallet top right corner click the drop down menu and Flatten image and save. Voila! One whole image of the Moon. OK, I know what you are thinking, but once you do it you will say it was easy.



**Saturn:** Again it's a composite of two images. One image was taken of Saturn and another taken of the moons with a longer exposure. This is the only way to get the two images simultaneously. In the darkroom we would have dodged the image during processing, but I guess those days are over. Please note that this is not a high power image of Saturn. I just took it at f10 without any Barlow lens or

eyepiece projection so you will not be able to blow up Saturn to see any detail. It's more like a view as you would see at low power through the telescope. I think it's pretty cool though, you can blow it up a little to see the 6 moons captured.

Back to the Moon shot, the club has even a better one we took a very long time ago with the 16" f20 using a 4"x5" format film (if any of you remember the posters we made). I want to believe there is still a place for film photography.

Although the moon is a very impressive image, try taking this with a point and shoot.

I am now turning over the camera to other club members so they can get their feet wet and start turning out images on their own. I will be there for any members who need help with the imager.

- Larry Hubble

## **Camera Test Sessions March 7 and 9, 2009**

The team that was assembled to clean and/or test the telescope and camera optics last Saturday met at about 10 am in the Observatory library. We had previously decided not to disassemble the Celestron's tube assembly for cleaning, because we were fairly sure that this was not causing the artifacts on our initial images from the CCD camera.

After a few tries to focus the telescope and camera in the library room, we determined that could not be done. We rescheduled to run the tests with the telescope back in place on the observatory pedestal on Sunday, but that session was clouded out. Members Mark Kregel, Tom Rusek, Tim Kamel, Gary George and I assembled again on Monday to test the camera.

Beforehand, Tim Kamel had read Yahoo group and *Sky and Telescope* reviews of the Deep Space Pro camera stating that with the right conditions of high humidity and very cold temperatures, frozen water crystals could form on the outside of the camera chip's protective lens, creating blotches and artifacts. This information turned out to be very pertinent. Great research, Tim!

With this information in hand, it made sense that this very well may be the issue of the comet session and the artifact problem. We set the camera up and obtained focus on a star in the Orion area. Our first image was of Orion which came out perfectly. Our second image was of the moon which also came out perfectly. No artifacts, no blotch in the center, perfectly clean images. We have decided that on the night we shot the comet, that we did have an icing and/or fogging problem. As you know, this can happen any time you have high humidity and very cold conditions. Your eye pieces, lenses, optics, and so forth can fog and ice up. This is due to the camera always trying to cool the chip to 45 degrees below ambient temperature. Orion knows of this issue and has fixed it with a gas filled lens instead of just our plain protective lens. This by no means is a cause for alarm. I have shot many images already on nights where hell froze over without any problem. The issue we had is a very rare occurrence, and if it happens again, pull

the camera out and breathe on it. It will warm the chip, and you should be able to continue for the rest of the evening. This issue may never happen again.

Thanks to all who were present for the testing. We have resolved the issue without even pulling out a screwdriver. And we had a lot of fun in the process. Tim Kamel has possession of the camera at this time. Please don't hesitate to call him or me anytime for any help you may need with using the camera. We still plan to have a star party at the observatory for all club members to see this imager in action. Then you all can see what all the excitement is about! OK, I still plan to buy the pizza! - *Larry Hubble*

## Messier's Missed Objects

### Part 1

The following is a list of objects that Messier could have seen but didn't. From my research, it appears that Messier's largest telescope was a crude 8-inch reflector. The criteria I used was that the object had to be brighter than 10<sup>th</sup> magnitude and not too far south. Also, a lot of open clusters did not make the list because they are too sparse. Some planetaries did not make the list since they are too small. I am sure that I missed some objects that could be included on this list. The rest of the list will appear in next month's newsletter (Both list total 70 objects).

For some unknown reason Messier never recorded the double cluster in Perseus, or at least he never assigned numbers to these two objects. These clusters should have been easily visible to him. He recorded the relatively nearby open clusters of M103 and M52 in Cassiopeia and M34 in Perseus, as well as M31, the naked-eye galaxy in Andromeda, but not the double cluster! He did not assign a number to the Alpha Persei Group either, but he did to M45, the Pleiades! This is one mystery that will probably never be resolved. On another note, he did sketch NGC205 on a drawing with M31 and M32 but did not assign a number to NGC205, now recognized as M110.

Of course, his main interest was the discovery of comets, not nebulae and clusters. He simply recorded these non-comets so others could avoid wasting their time on them. He probably just scanned a small portion of the sky at a time, constantly panning his scope across the sky and passed over them rather quickly. My guess would be that many of the objects listed here were simply missed by him. The planetary nebulae, for instance, may have appeared as fuzzy stars (no O-III filters back then).

Another thought is that since his scopes showed a small field of view, some of the open clusters appeared to him as just stars. If he had a wider field of view, some of these clusters may have looked detached from the background stars, and he would have recognized them as such. Think about it, if you had a small refractor, with a 2- to 3-inch lens, and a poor field of view, and you were scanning the sky, how many faint clusters and nebulae would you find?

***Enjoy finding these "missing Messier gems" of the night sky:***

# OBJECT	CONSTELLATION	TYPE	MAG	NAME / INFORMATION
1 NGC7662	ANDROMEDA	PN	8.3	BLUE SNOWBALL
2 NGC0752	ANDROMEDA	OC	5.7	
3 NGC7009	AQUARIUS	PN	8.3	SATURN NEBULA
4 NGC6709	AQUILA		OC	6.7
5 NGC6755	AQUILA		OC	7.5
6 NGC1907	AURIGA	OC	8.2	
7 NGC2403	CAMELOPARDALIS	SG	8.5	M81 GALAXY GROUP
8 NGC1502	CAMELOPARDALIS	OC	5.7	NEAR KEMBLE'S CASCADE
9 NGC4631	CANES VENATICI	SG	9.2	
10 NGC4490	CANES VENATICI	SG	9.8	COCOON NEBULA
11 NGC2362	CANIS MAJOR	OC	4.1	
12 NGC7789	CASSIOPEIA	OC	6.7	2 BILLION YRS OLD

13	NGC0663	CASSIOPEIA	OC	7.1	
14	NGC0654	CASSIOPEIA	OC	6.5	
15	NGC0457	CASSIOPEIA	OC	6.4	"ET" CLUSTER
16	IC1396	CEPHEUS	OC	3.5	
17	NGC7380	CEPHEUS	OC	7.2	
18	NGC4565	COMA BERENICES	SG	9.6	NEAR MEL 111
19	MEL 111	COMA BERENICES	OC	1.8	NAKED EYE CLUSTER
20	NGC4494	COMA BERENICES	EG	9.8	NEAR MEL 111
21	NGC4565	COMA BERENICES	SG	9.6	
22	MEL111	COMA BERENICES	OC	1.8	
23	NGC4725	COMA BERENICES	SG	9.4	
24	NGC6826	CYGNUS	PN	8.8	BLINKING PLANETARY
25	NGC6819	CYGNUS	OC	7.3	
26	NGC6934	DELPHINUS	GC	8.7	
27	NGC6543	DRACO	PN	PN	8.1
28	NGC1535	ERIDANUS	PN	9.6	
29	NGC2392	GEMINI	PN	9.2	ESKIMO NEBULA
30	NGC2129	GEMINI	OC	6.7	
31	NGC2420	GEMINI	OC	8.3	
32	NGC3242	HYDRA	PN	7.8	GHOST OF JUPITER
33	NGC2903	LEO	SG	9	
34	NGC3628	LEO	SG	9.5	NEAR M65 & M66
35	NGC3521	LEO	SG	9	

- Phil Schmitz

*Part II of Messier's Missed Objects will be published in next month's newsletter.*

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## HCAS Astronomy Quiz

*What Messier object matches the name given?*

1. **Omega Nebula:**

M15   M16   M17   M46

2. **Blackeye galaxy:**

M32   M64   M101   M82

3. **Butterfly Nebula:**

M4   M6   M7   M80

4. **Whirlpool Nebula:**

M33   M51   M83   M106

5. **Pinwheel Nebula:**

M31   M33   M51   M63

**Answers to last month's quiz on Ursa Major:**

1. Ursa Major is a northern circumpolar constellation.

**TRUE** FALSE

*True. This means that this constellation is visible from latitudes north of 41 degrees, at some time of the night(provided that the sky is clear).*

2. Mizar and Alcor are sometimes referred to as:

Draft horses   Bonnie and Clyde   **Horse and Rider**   The Twins

*Mizar and Alcor are both a part of the closest open star cluster to us as are many of the other stars of the Big Dipper, as well as other stars in Ursa Major.*

3. Which two stars of the "big dipper" point to the north star Polaris?

Alkaid and Mizar   Dubhe and Alioth   Megrez and Merak   **Dubhe and Merak**

4. While the "big dipper" was known to ancient China as Tseih Sing, what culture considered it a Plough?

**Britain**   Central Europe   Egyptians   Australians

*In Britain, they saw a plough, in Europe, they saw a wagon, the Egyptians saw the thigh of a bull. Australia can't see the Big Dipper.*

5. What is Mizar, the middle star in the handle famous for?

First double star measured      First spectroscopic binary detected      First double star seen  
**All three of these statements**

*All three. It was the first double star to be found by a telescope, by Riccioli in 1662. It was the first star to be photographed, by Bond in 1857 and the first spectroscopic binary discovered, by Pickering in 1889*

- Phil Schmitz

## Miscellaneous

### 2009 Astro-Imaging Contest

For all the astrophotographers in our group:

***Astronomy Magazine*** has announced its 2009 Astro-Imaging Contest.  
Photos will be accepted until April 15.

If you think you might want to enter one of your photos, check out the rules at this website:

<http://astronomy.com/asy/default.aspx?c=a&id=7819>

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### Hubble's Next Discovery --You Decide

As part of the International Year of Astronomy (IYA), the celebration of the 400th anniversary of Galileo's observations, people around the world can vote to select the next object the Hubble Space Telescope will view.

Choose from a list of objects Hubble has never observed before and enter a drawing for one of 100 new Hubble pictures of the winning object.

The winning image will be released between April 2nd and 5th, during the IYA's *100 Hours of Astronomy*, a global astronomy event geared toward encouraging as many people as possible to experience the night sky.

Vote by March 1st to swing Hubble toward your favorite target at:

<http://youdecide.hubblesite.org/>

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### What's New in the HCAS Library

As I am sure you are all aware, HCAS has been a member of the Night Sky Network since August 2007. As a member of the NSN, we receive many teaching materials and toolkits. These materials are used at our outreach events. Did you also know the materials can be used by individuals as learning resources? There is a wealth of information in each of the toolkits. To make the materials more accessible for individual use, notebooks have been put together from each toolkit. The toolkits each contain a manual (about 120 to 150 pages each), a training DVD and a CD with scripts and resources. The manual has been cut down to about 12 to 15 pages for the notebooks. These pages can be used by anyone who is thinking about making a presentation using one of the kits. They describe what you need, where it could be used, the audience level, etc.

However, if you are not interested in teaching but would like to learn about the subject of the toolkit, you should borrow one of the books for personal enrichment. The training DVD demonstrates how to use the materials in the kit. They supply simple demonstrations and explanations of sometimes complex and difficult astronomical ideas and material. Then there is the CD. The CD contains the script for the teaching materials and it also includes links to numerous websites with additional information about the subject matter. The subjects available in the notebooks are: Exploring the Solar System, Shadows & Silhouettes, Our Galaxy-Our Universe, Black Hole Survival, SUPERNOVA!, PlanetQuest, Telescopes: Eyes on the Universe. Whatever your skill level the information in these notebooks will supply you with considerable information about the specific topic. Stop by and borrow one of the notebooks and expand your knowledge about one or all of the topics

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### **IYA2009 Outreach and other events.**

March 28 will be our next open house. The topic will be "Observing at Night and in the Day". Discussion and materials about light pollution and shielding will be given out. The featured viewing object will be Saturn.

Please visit the IYA2009 site at [http://nightsky.jpl.nasa.gov/download-view.cfm?Doc\\_ID=302](http://nightsky.jpl.nasa.gov/download-view.cfm?Doc_ID=302) to download the guide and gather information for the event. Be sure to bring telescopes and binoculars to set up for public viewing.

#### **100 hours of Astronomy**

<http://www.100hoursofastronomy.org/>

April 2 to April 5 has been designated as *100 Hours of Astronomy* as part of the International Year of Astronomy. The goal during that time period is to have someone somewhere looking through a telescope at the sky during the entire time period. Harford County Astronomical Society will join in this global event with a public viewing session on April 2 at 8 PM in the parking lot of Harford Technical School. We will be setting up in the high school parking lot to commemorate International Sidewalk Astronomers Day.

#### **Earth Day**

April 18 from 11 AM to 4 PM

Earth Day takes place at Festival Park in Aberdeen, Maryland. We set up a table and give out information about astronomy in general, our club and light pollution. We need people to set up at least one telescope to let visitors view the sun.

If you would like to help, you don't have to stay the whole time, come for part of the day to help out. Contact Grace Wyatt at [dgracew@comcast.net](mailto:dgracew@comcast.net) if you are interested in helping out. Or stop by to visit sometime during the day.

#### **Globe at Night Participation and "Let There be Night"**

Don't forget to participate in the Globe at Night light pollution study sometime between March 16 and March 28. Visit the website <http://www.globe.gov/GaN/> and follow the simple directions to record your observations of Orion for the study.

Don't forget to "Let there be Night" on March 28 by participating in the global event to turn off all your lights from 8:30 to 9:30 PM on that date.

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## HCAS RAFFLE FUND RAISER

HCAS is running a raffle fund raiser. The raffle prizes were generously donated by Garry Lang of Chesapeake Optics. There will be one winner who will receive the following:

Orion Large Aluminum Clad Accessory Case  
Celestron Green Laser Optical Kit (includes 10x50 binoculars, green laser pointer and red LED flashlight)  
Vortex Optics Fog Free Lens Cleaning System  
Orion RockStable Tripod Anti-Vibration Pads  
Orion 1.25" Color Filter Set  
StarQuest-A Beginner's Guide to Digital Astrophotography by Timothy E. Kent  
Sky & Telescope's Pocket Sky Atlas  
Celestron Sky Maps and Glow-in-the-Dark Star Finder  
The Astronomical Companion

HCAS is including a one-year club membership.

Please help to make this event a success and raise some money for club activities. The tickets are \$2 each or 3 for \$5. If you would like to buy some tickets or would like to take some to sell, please stop by a club event or contact Grace Wyatt at [dgracew@comcast.net](mailto:dgracew@comcast.net) or 410-836-7285. The drawing will take place at the end of our May 2 open house which is also Astronomy Day.

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### 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**

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### 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](http://www.alcon2009.org)

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