

# Harford County Astronomical Society

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



*Volume 35 Issue 2*

*February 2009*

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## **Public Star Party (Open House):**

**February 28, 2009, at dusk**  
**Featured Object--The Moon**  
**Activity: Spotting Craters**

## **General Meeting:**

**March 5, 2009, 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

The meeting was called to order by President Tom Rusek at 7:08pm. Because of ice on the road to the Observatory, the meeting was held in Edgewood Hall on the Main Campus of the College. Gary George is out of the hospital (and at tonight's meeting); it is good to see him getting around again.

Approval of the Minutes from the January meeting as published in the newsletter was motioned by Tom Rusek, moved by Tim Kamel and seconded by Gary George. The motion carried unanimously.

*Treasurer's Report:* Tim Kamel reports we have \$4209.48 in the checking account. He has deposited the memberships of two members who joined in January, plus three more in February. This brings our Membership to 47 paid members.

*Newsletter Issues:* Tom says that we have just about everyone receiving the newsletter electronically. Tom also gives his thanks to Roy Troxel for always providing a wonderful newsletter for our club. The newsletter publishing closely follow the meetings.

*Outreach:* Open House on January 31 - it was very cold, and the driveway to the Observatory was iced over, but that did not stop 13 members and 20 visitors from gathering on the parking lot of the Technical High School. Skies were mostly cloudy, but the stars did break through for about an hour providing good views of the Moon, Venus, Orion's objects, the Pleiades.

Karen and Maggie Carey announced that their Outreach for the Brownie Troop at their camp in Conowingo was a success. Night Sky Network materials were used to help the 6 to 9 year-olds understand sizes and scales in the solar system.

Two Scout Troops are looking at coming to the February Open house on the 28th.

Grace Wyatt announced that there is a possibility of an outreach event at Carrol Manor Elementary School in Glen Arm sometime between March 16th and 27th (Friday the 27th being the preferred date). Tom will contact them and make make more solid plans. Discussion ensued about what we can offer: observing, a slide presentation, and Phil Schmitz may be interested in a meteorite presentation.

Grace also announced that she sent in the information for Earth Day, and will announce the date; it is sometime in April.

*Observatory Operations:* The hawk is still in residence in the observatory dome. This month, there was a large cleaning session of the dome, as well as a re-organization of the library. Special thanks to Grace, Roy, Mark Matysek, Tom and Angela Rusek, who helped out in this session.

The project to fix the dome seems to be on hold at this point. Mark Kregel announced at the last meeting that he was going to speak with Sal Rodano to see what the status is. Mark also has said he has located a drive shaft controller.

It has been discussed that perhaps the members of HCAS should invite faculty members to a private open house to demonstrate observatory operations. There was also discussion about HCAS members holding classes for a non-credit course at the College.

Grace brought up that the window display of the Abingdon Library is on hold until she can access materials at the observatory.

*Observing Reports:* Roy Troxel stated a small group went to Astronomy Hill (Broad Creek) on January 22nd. It was brutally cold, but observations were great.

Jimi Hajak reported on viewing comet 144p/Kushida in the constellation of Taurus. He reported a magnitude of 8.4 with a 9.3 coma.

*New Business:* Grace reports we have received kit number 7 from the Night Sky Network. This one is titled "The Telescope, Eyes on the Universe". We have also received a special Toolkit for IYA 2009. People are requested to listen in on the teleconference on February 19th about this Toolkit. More about these toolkits were talked about after the meeting adjourned.

We have received emails from our friend, Mohamed Mughal, the author who attended our January 3rd Open House. He thanks us for the inside look at the observatory, and has related his experiences into a character for his book. He mentioned the detail about being able to whisper inside the dome and hearing it across the room.

Grace also mentioned that the LCROSS Mission to the Moon will have an impactor, which will create an explosion that will be visible to most telescopes. She suggested a "members only" event at the observatory to view this once in a lifetime event.

A word about elections: Nominations will take place at the March meeting, with the ballots going out soon afterward. Ballots will be due by the April meeting, and new officers and board members will take their offices at the end of the May meeting. If you are interested in a position or wish to nominate someone for a seat, please be prepared for the March meeting. There are four seats available on the Board of Directors, and there are four Officer positions.

The meeting was adjourned at 7:48pm.

- Karen Meddows-Carey

### From the President:

Well another year has come and gone. 2008 was a year of outreach, changes, updates and improvements. It was also a year of sadness. We will truly miss Leo Hepner who passed away early last year. Leo was one of the original members of HCAS. Leo, a friend to all, was very knowledgeable in all of his endeavors including astrophotography along with having a dynamic personality and character. He will truly be missed but certainly not forgotten.

The outreach programs have grown and have touched over 600 Maryland residents, over 400 through private lectures and 200 via our open houses. We welcomed all visitors including a dog that came to see what all the fuss was about. Just this past open house we had a 2 ½ year old taking charge. The "ooohs and aahhs" are still there. The night sky network program has grown as we now have quite a few packages to share with our youngest visitors.

Astronomy Hill (Broad Creek) has been jumping this past year with our "premier" observing team keeping long hours searching for those perfect views of UFO's, sorry, I mean Messier objects. The newly acquired Orion Astroscan Astro Imager is already bringing the best views of the heavenly objects and will be a truly advantageous asset for the club.

I have truly enjoyed being the president of a group of astronomers as knowledgeable as yourselves. Each one of you share a unique talent and I truly believe that the HCAS is the very best in its class. In the coming year, we will grow and be even better than we are.

- Tom Rusek

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Ravens football mascot POE at Swanfest taking a look at the sun.

## **New Members February 3, 2009**

Please welcome five new members this month.

Michael Levin has been interested in astronomy for along time, was active about ten years ago. After a time away, he is now getting back into it. He owns a 10" Meade LX-200 and a Celestron 14" CGE.

Colleen Carrion became interested in astronomy about 2-3 years ago when a friend gave her a copy of Astronomy Magazine. She now owns a 10" Dob.

James Opie has been interested in astronomy for about one year and owns a 120mm refractor.

Jack Mitchell is a retired engineer. He is new to astronomy, got hooked after seeing Montana night skies from a mountaintop. Jack has an Orion Starblast 6.

The O'Brien Family - Greg, Lori and Elley. Greg has been interested in astronomy for about 15 years and owns a 12" Celestron Dob.

Welcome aboard!

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## **Observation Reports**

### **Broad Creek January 22, 2009**

Well, here we are in 2009 and Thursday, January 22, 2009 was our first observing session for the New Year. Again, a lot of poor weather since our last session on 12/29, but it was worth the wait.

It was a beautiful day and was shaping up to be a beautiful night. Weather was in the low forties and prediction was for a reasonably warm night. I had originally wanted to go to the observatory and take some pictures since it had been a while since we took any, and I wanted some hands on experience with the new camera. No luck. Larry Hubble, our expert, was busy with his family that night. I thought about going alone and possibly using my own DSI but decided against it. I had not read the instruction manual in a while and did not have the time to brush up on it. Roy was going to Broad Creek so I decided to join him. When I got there, he was already there, along with Tony Mullen. Jimi joined us after work, at about 7 PM or so.

Sky conditions were pretty good, better than our last session. The Milky Way was pretty obvious. I did not check the Clear Sky Chart so I do not know what the actual conditions were. The sky was actually pretty clear early on and then later in the evening we had some thin clouds pass through that did not really affect the views. At that time there were thicker clouds to the north and east, low on the horizon, that never came near us. Seeing was good enough to see 5 stars in the Trapezium, and Roy saw the sixth one briefly in his Obsession.

This time I brought my 8" F/4 scope with me and was prepared to enjoy some rich-field views, but my mount did not cooperate. All my GOTO's were off, even though I was careful about doing my alignment. I wasted a lot of time looking through my finder to get centered, time that I should have spent observing. I did not solve the problem till after 10, when I told the scope to slew to Saturn. The hand controller gave an error message that Saturn did not rise till 10:09. Another hint that something was wrong since I could see Saturn right above the tree line. Turned out that I had left Day Light Savings Time on when I should have shut it off. Once I corrected that, I was fine for the few remaining minutes of the session.

Any way, After looking at Venus and seeing that it is now definitely less than 50% illuminated and very bright, I started looking at deep sky objects.

I worked my way from Venus towards the north and then to the east and south and then back again. I hit M33 but it was so faint in the 8" that I am not really sure that I saw it. M31 was next with M32 and M110 in the field of view. All were much better seen with averted vision. Next were M34 and the Double Cluster in Perseus. Then to M103 in Cassiopeia, with a distinctly triangular shape and quite small. By then, M42 was quite high and I looked at that for a while. I readily saw Star E in Roy's scope. In mine, it was very faint but faded in and out. I then looked at the Pleiades, M41 in Ursa Major, M50 in Monoceros, and M46 and M47 in Puppis. Next were M44 and M67 and then to Auriga for M36, M37 and M38.

It was now getting late and Saturn was up. I took a look and saw a very thin ring and one star near the ring. It was probably Titan, but with Saturn hanging so low, the view was pretty poor.

It was now nearing 11 PM and it was cold. The thermometer in my car registered 24 degrees, much colder than what the weatherman had predicted. We all had hand warmers going but the hand-warmer-in-the-shoes trick did not work and my feet were very cold. We all packed up and left at about that time.

Not as productive a session for me as last time, mostly due to my screw up with the Daylight Savings Time. It was still a very good session. Once on target, tracking was very good. The views were pretty nice. It was great being able to see all of M44 and M45 in the field of view of a 35mm eyepiece. Collimation on the scope was good and the eyepieces worked well. We had no problems with dew. I remembered to use my observing chair this time and it was a big help in steadying me at the eyepiece.

I had brought along my 15X70 binoculars and had some nice views of the star clusters as well as the Andromeda Galaxy. No luck with M33, though. These binoculars are fairly heavy and worked best if I was sitting down.

Tim Kamel

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### **Broad Creek**

Jan. 22, 2009

6:00pm to 12:00midnight

A group of HCAS members that included Tim Kamel, Jim Hajak, Tony Mullen and myself met at Broad Creek around sunset and spent the next six hours viewing the current winter sky.

I first turned my scope, the 12.5" reflector, toward the northern and northeastern sky, where the seeing was the clearest. I began with trying to locate a relatively dim object, the nebula IC1396 in Cepheus. The nebula is located near Mu Cephei, which is sometimes called the "Garnet Star", because of its intense redness. In general, this is a very colorful area of the northern sky. Low powers are recommended for this area, partly because IC1396 is so large, about 3 degrees in diameter (6 moon diameters). Like M42, this is also a classic stellar nursery, with a number of the nearby stars having been formed the gas cloud. I spent about ten minutes sweeping the area, using the 35mm Panoptic eyepiece.

Next, it was on to Auriga, which was almost overhead by this time. I decided to keep using the 35mm eyepiece; because of its low magnification and wide field, I was able to obtain good views of the overall structures of that constellation's open clusters: M36, 37, 38. For example, M38 has a long string of stars coming from its center.

I finished with Auriga by observing two lesser-known clusters, NGC2281 and NGC1857.

By 10:00pm, Gemini had cleared the eastern horizon enough to put it above the haze, and the first natural observing target was M35, an unusually dense and structured open cluster. Nearby

are two dim clusters, NGC2158 and IC2157. A final cluster, NGC2129, is an interesting knot of stars around two bright stars.

I concluded my observing in the northeast with two clusters in Cancer, M67 and The Beehive(M44). M67 is often overlooked in favor of the brighter Beehive cluster, but it is a very interesting sight, with its contrasting orange and blue stars, as well as several strings of stars coming from the center of the cluster.

It was now time to aim the scope toward the southern sky, in the direction of The Winter Triangle, the area between Betelgeuse, Procyon and Sirius. Although this area is devoid of bright stars, it is rich in nebulae and star clusters. In fact, much of the sky around Orion, Monoceros and Puppis is filled with nebulosity which can be seen on exceptionally dark nights, or with OIII filters.

Here are some notable Winter Triangle objects:

M93 in Puppis. An odd, but striking, wedge-shaped cluster, easily observed at low powers.

M50 in Monoceros. A bright, open cluster of about 150 stars, also easily seen in low powers.

NGC2301. Open cluster in Monoceros. There is a striking line pattern of stars running through the center of this cluster, with its smaller stars near the center.

NGC2353 – Another of the many open clusters in Monoceros.

*Note: It was about this time that Jim Hajek observed comet 144p/Kushida (Mag 8.4) . He located it by star-hopping. Good work, Jim!*

NGC2264, The Christmas Tree asterism, with its brightest star at the bottom, instead of the top. This distinct formation is easily visible in binoculars and is covered with nebulosity, most of which requires patience to see at Broad Creek.



For some reason, the designation NGC 2264 actually identifies four astronomical objects as a single object: the Christmas Tree Cluster, the Cone Nebula, the Snowflake Cluster, and the Fox Fur Nebula. (The notch at the top of the Christmas tree is the Cone Nebula, a striking photographic sight by itself, and often reproduced in astronomy manuals.)

Finally, there is the Rosette Nebula, a conglomeration of several nebulae that form a circle with a distinct hole in its center. There are a number of star clusters in this vicinity as well. You could probably spend several hours observing this area – under good viewing conditions, of course, as the Rosette formation is quite dim.

Using color photography, the nebula has a distinct reddish hue, due to radiation emission of its hydrogen gas.

Like M42, the nebula is a stellar nursery, with globules of hydrogen still forming.

The complex has the following NGC designations:

NGC 2237 - Part of the nebulous region (Usually used to denote whole nebula)

NGC 2238 - Part of the nebulous region

NGC 2239 - Part of the nebulous region (Discovered by John Herschel)

NGC 2244 - The open cluster within the nebula (Discovered by John Flamsteed in 1690)

NGC 2246 - Part of the nebulous region

This is all part of the vast nebulosity in this region of our galaxy - the Orion Arm of the Milky Way.



**January 29, 2009**



I had picked up on the Yahoo Groups that I belong to that there was going to be a close conjunction of the moon and Venus on the night of January 29<sup>th</sup>.

I walked my dog that night at about 9:00 PM and looked to the west to see that the crescent moon was about 5 degrees below and slightly to the right of Venus. I had waited too long and both were already in the tree branches. None-the-less, it was an impressive sight with Venus at Magnitude  $-4.6$  and the moon a slim crescent. I went back inside

and bought out a digital camera and took some shots. Above is the best one. It is at a slight zoom. Note the thin crescent. - *Tim Kamel*

## **Outreach Programs**

**Open House**

**January 31, 2009**

The day held such promise, and the night was in such contrast.

Weather all day was great, with blue skies and not a cloud to be seen. It was cold but the wind was expected to die down by evening. We learned that our driveway was covered with ice, threatening the open house with cancellation. Grace, Tom and I visited the observatory and



found that the ice coating was extremely treacherous, could not be walked or driven on. Grace suggested that we hold the open house in the parking lot of the Technical School, as we had done for years up to the summer of 2007. We agreed to this and got the word out, thankful that we avoided a last minute cancellation.

The weather, however, did not cooperate. When I got into my car to drive to the site at about 4:40, it was completely overcast, with only a sliver of clear skies to the west. Several members arrived and we watched the skies for clearing trends.

Attending for the club were Jimi Hajek, Gary George, Sal Rodano, Grace Wyatt, Larry Hubble, Roy Troxel, Tom Rusek, Karen Carey and Irv Koplowitz. Not a bad turnout, considering the circumstances. Four of us set up scopes (Tom's 6" Newtonian on a GEM; Karen's 10" Coulter Dob; Jimi's 8" Dob; and my ETX-70 GOTO) and binoculars (my 15X70 and Gary's 12X60) and waited for guests to show up. The rest decided to wait and see. It turned out that what we set up was enough.

Around 6:00 O'clock, the sky began to clear and shortly had cleared up completely. We had about 23-guests show up, including a reporter for the Harford Owl who is doing an article on the club. We were able to show the moon and Venus as well as some deep sky objects including the Orion Nebula and the Beehive. There was way too much parking lot lighting for my little scope to pickup some of the other objects that were out at that time. I had no luck picking out M41, M50 or M46/47. Also, the Pleiades, which are bright enough, were almost directly overhead, which is a really bad position for my altaz mount.

We were able to observe for about 1-1.5 hours, after which the clouds returned and we were again completely overcast. I was confident that it would clear up again (it did, after 9 PM), but by then, most of the members had left and I was freezing. The temperature was in the mid 20's and my feet felt frozen. I left at around 8:20 and headed home for a nice cup of hot chocolate.

- *Tim Kamel*

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## **What's New in the H.C.A.S. Library?**

### **"Eyes on the Skies"**

This DVD is approx. 1 hour in viewing time and if you include the bonus material it's about 1 and 10 minutes long, but very interesting. Did you know that the telescope was actually built in the year 1608 by a Dutchman for the local seafarers? Not until the year 1609 did Galileo build his first telescope and turn it to the heavens. The DVD also explains the different types of mirrors and how they are made. You also view the different scopes, from the Hale telescope on Mt. Palomar to Mt Wilson to the Keck telescopes in Hawaii.

This is a must-watch DVD, not only for its basic information on telescopes and their history, but for its pictures as well. From the invention of the radio telescope in 1930 to the present (and different) Very Large Baseline Arrays in New Mexico, to the cosmic microwave background echoes of the Big Bang, to the Hubble, Spritzer, XM Newton, Glas, and Chandra. The James Webb telescope to be launched in the near future will have a 6.5 meter mirror and will not circle the earth like the Hubble, but will be "parked" in an orbit way out there

Did you know that telescope mirrors can be made using liquid mercury? Would you believe that in the future there will be mirrors the size of Olympic swimming pools? ( My wife wanted to know why I kept saying "wow!")

Until later, enjoy the DVD – and check out the other resources in the HCAS library!

- *Gary George*

## HCAS Astronomy Quiz

**This is a quiz on Ursa Major.**

1 Ursa Major is a northern circumpolar constellation.

TRUE FALSE

2 Mizar and Alcor are sometimes referred to as:

Draft horses Bonnie and Clyde Horse and Rider The Twins

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 Europe Egyptians Australians

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

**Answers to last month's quiz:**

1 Orion is known as the **Hunter** Scavenger Prey Cat

The constellation Orion is 594 square degrees.

2 Orion is completely situated in the northern celestial hemisphere

TRUE **FALSE** About 3/4 of the constellation is in the north, the rest is in the south.

3 The brightest star in the constellation Orion as seen from Earth is

**Rigel** Betelgeuse Bellatrix Saiph

Rigel is magnitude 0.1, Betelgeuse is 0.5, Bellatrix is 1.6 magnitude and Saiph is 2.1 magnitude

4 Of the stars listed, which star is closest to our solar system?

Rigel Betelgeuse Bellatrix **Saiph**

*Saiph is the closest at 68 light years; Bellatrix is next at 360 ly; then Betelgeuse at 600 ly, and lastly Rigel at 910 ly away.*

5      *The three belt stars in order from east to west are*

***Alnitak, Alnilam, Mintaka***      *Alnitak, Mintaka, Alnilam*      *Mintaka, Alnilam,*  
*Alnitak Alnilam, Mintaka, Alnitak*

## Learning To Observe

The image of a distant galaxy or star cluster in your telescope will never rival the pro-quality photographs you see in books and magazines. But with a little practice, you'll learn to observe subtle detail and structure in faint objects that even the best cameras will never capture. Here's how to see more through your telescope or binoculars.

### The Basics

- The first step is to find what you're looking for. Whether you star hop or use a go-to mount, find the object with a low-power eyepiece to get a wide field of view. Congratulate yourself, step back, take a sip of coffee or water and a few deep breaths. Oxygenate your brain... this will help you see better.
- Step back up to the eyepiece. Inspect the object and the stars around it. Is the field of view around the object rich with stars, or is it relatively sparse? What are the colors of the brightest stars in the field of view?
- Now look at the object itself. What is its shape? If it's a galaxy, is it round, or elongated? Does the shape change when you use averted vision? Do you see any structure, dark patches or dust lanes? As you look through the eyepiece, tap gently on the side of your telescope to stimulate your eye's innate ability to detect motion.
- If you're looking at a globular cluster, can you resolve individual stars around the edge, or all the way to the core? Again, averted vision will help enormously. Move your eyes right and left, up and down to see which view is best. Does the density of stars dwindle suddenly at the edge, or more gradually? Any color?

### A Deeper Look

- Take your time as you look for structure, shape, color, and patterns. Wait for fleeting moments when the atmosphere steadies. Sometimes you get a few seconds of clear seeing when the object seems to jump out at you in 3D. Now step back from the eyepiece and try to hold in your mind the image of what you have seen. How would you describe what you see to someone else?
- Put in a higher-power eyepiece and repeat the above process. For dim, large-area objects like nebula and face-on galaxies, medium power is good enough. But for tight globular clusters, planets, planetary nebulae, and double stars, work your way up to the highest-power eyepiece you have.
- To develop the keenest attention to detail, try sketching what you see. All you need are a few pencils and a piece of paper. Don't worry if you can't draw. Your goal isn't to produce a work of art. It's to develop awareness of fine detail. Take a look, sketch a little, take another look, and sketch some more. Perfect this skill, and you will be astonished at what you will see, even with a small telescope.

## A Bit of History

Steven James O'Meara is one of the keenest observers alive. In the mid-1970's, he saw what looked like radial spokes in the rings of Saturn. No one else could see them, and so no one believed him. But he was vindicated when Voyager 1 arrived at Saturn in 1979 and took close-up photos of the spokes which arise from interactions between the rings and Saturn's magnetic field.

## Personal View

When you're pressed for time, go for quality over quantity. I rarely look at more than 3-4 objects per hour. But with a little patience, I see new detail nearly every time, even in objects I've seen many times before.

- From "One Minute Astronomer" at <http://www.oneminuteastronomer.com/>



*HCAS display case, currently at the Abingdon Branch of Harford County Library*

## Miscellaneous

### 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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### 2009 Astroimaging Contest

For all the astrophotographers in our group:

***Astronomy Magazine*** has announced its 2009 Astroimaging 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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### 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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### 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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## INTERNATIONAL YEAR OF ASTRONOMY - 2009 February Activities

To continue with the IYA2009 programs, our February 28 open house theme will be Our Solar System. The featured activity will be spotting craters and the featured observing object will be the Earth's moon.

Presentations include a demonstration of how craters are formed and showing why a full moon is not the best time for observing. If you plan to participate in the open house, please go to the website below and review the activities planned for the night. You can participate in any way you wish. You can even just come and enjoy the activities. You might want to visit the website just for the information you will obtain from the activities and links to other sites. Hope to see you at the February open house.

If you have problems accessing the site, please contact me at [dgracew@comcast.net](mailto:dgracew@comcast.net)

[http://nightsky.jpl.nasa.gov/download-showform.cfm?  
Doc\\_ID=301&Doc\\_Filename=02IYADiscoveryGuide.pdf](http://nightsky.jpl.nasa.gov/download-showform.cfm?Doc_ID=301&Doc_Filename=02IYADiscoveryGuide.pdf)

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### Comet Lulin now in view

**Comet Lulin (C/2007 N3)**, discovered in 2007 by a Strait-bridging team of astronomers from Taiwan and China, is swinging around the sun and approaching Earth. Right now, Comet Lulin is gliding through the constellation Libra in the southeastern sky before dawn. It glows like an 7th magnitude star, so a mid-sized backyard telescope is required to see it. Visibility will improve in February as the Earth-comet distance shrinks. At closest approach (0.41 AU) on February 24th, the comet should brighten to about 5th magnitude--dimly visible to the unaided eye and an easy target for binoculars. Surprises are possible. The hyperbolic orbit of Comet Lulin suggests this could be the comet's first visit to the inner solar system. How it will react to increasing sunlight is anyone's guess.

To see Comet Lulin with your own eyes, set your alarm for 3 am. The comet rises a few hours before the sun and may be found about 1/3rd of the way up the southern sky before dawn. Here are some dates when it is especially easy to find:

Feb. 16th: Comet Lulin passes Spica in the constellation Virgo. Spica is a star of first magnitude and a guidepost even city astronomers cannot miss. A finderscope pointed at Spica will capture Comet Lulin in the field of view, centering the optics within a nudge of both objects.

Feb. 24th: Closest approach! On this special morning, Lulin will lie just a few degrees from Saturn in the constellation Leo. Saturn is obvious to the unaided eye, and Lulin could be as well. If this doesn't draw you out of bed, nothing will.

- From [spaceweather.com](http://spaceweather.com)

## **GLOBE at Night Toolkit**

We won a toolkit. In order to have a chance to win the toolkit, we had to agree to some conditions. We won a GLOBE at Night toolkit with a Sky Brightness Meter. Please help us fulfill the conditions by participating in at least one of the three activities below. Two of them can be done from the comfort of your own home.

The first condition is that we have an open house event sometime between March 16 and March 28 using materials from the toolkit. Our March 28 open house has already been scheduled and is about light pollution. Activities from the toolkit are included in the open house program. You don't need a telescope or binoculars to help out, just bring yourself and we will find something for you to do.

The second condition is that at least one person participate in the Thursday, February 19th telecon with Dr. Connie Walker titled GLOBE at Night: Light Pollution. At least one person must attend this telecon. I plan to attend and encourage others to listen in also. There are instructions on how to use the Sky Brightness Meter in the kit. You can also do this one from the comfort of your own home. If anyone wants to get together at the observatory to listen as a group, that could be arranged also. To participate in the telecon you simply call 1-888-455-9236 between 8:45 and 9 PM on February 19. An operator will answer and ask you for the passcode: NIGHT SKY NETWORK and you will be asked to give your NAME and the CLUB you belong to and the number of people listening with you. There is a PowerPoint presentation that goes with the telecon. You can access the presentation at:

<http://nightsky.jpl.nasa.gov/docs/GlobeAtNightNSN1.ppt>

The last condition can also be done from your home. This one you can send to anyone who may want to participate. GLOBE at Night has done a study of night skies globally for the last three years. To participate, you simply go outside and observe Orion naked eye sometime between March 16 and March 28. You then go to the website <http://www.globe.gov/GaN/> and follow the instructions. You will be asked for longitude and latitude of your location (there is a tool where you put in your address and it will tell you the coordinates) and there are pictures of Orion on the website. You compare how Orion looks in the sky at your location with the pictures on the site and that gives you the magnitude of your sky. You then enter the information on the site.

Thanks for your assistance.

- *Grace Wyatt*

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