

"CLEAR SKIES"



NEWSLETTER OF THE CHAMPAIGN-URBANA ASTRONOMICAL SOCIETY, INC.
AN AFFILIATE OF THE CHAMPAIGN PARK DISTRICT

VOLUME 23

ISSUE 2

FEBRUARY 2010

CUAS OFFICERS MESSAGE

BY GUY HAMPEL

I wonder if any of you have experienced this lately, you walk into your garage or other storage area and out of the corner of your eye you see an object that seems out of place? The object or objects are starting to gather a layer of dust. Then you realize that those objects are telescopes and other related equipment. Hey what happened, did the night sky filled with stellar objects disappear from our area. It seems to me that the only nights in the last few months that the sky is black with a few bright stars is on full moon nights. If you are a full moon watcher or like to walk around looking at your shadow at near midnight then this winter the viewing has been good. I have enjoyed both, especially the 4 or more hours I can sit on my couch in the sunroom, oops moon room, and observe the moon with what ever visual aid I want without the aid of moon filter. By the way the floor is heated to near sandy beach temperatures and there is no chilling wind or frost. I must be getting soft or lazy as to not have the desire to fight the cold and go to the dome on those one or two questionable days that we have had this winter. I am glad I have those astronomy calendars and those marvelous Hubble images to remind me that the night sky is full of wonderful objects.

Man has sent two small surveying instruments to the planet Mars that were suppose to last a few short months and they have provided us with information and pictures of the planet now for years. We still have another information gatherer orbiting the peoples' favorite planet Saturn also giving us more data faster than we figure it out. Now we have Kepler observing a small portion of our galaxy looking for planets around suns that are similar to ours. We keep reaching out looking for new or improved information, keep it up observers. The internet adds another way for us to look at the universe.

Last month we had a business meeting in Dave's cleaned out office and we voted to not do anything to the dome scope, but instead buy digital setting circles for the club's 16" dob. The dome is still scheduled to be painted in the spring and the shed will soon receive its extreme makeover. The public viewing sessions start again this month. Another scope that the club has in near completion is the 10" 'duct tape' scope that sits in my garage not quite done.

Come this month and see a reworked Planetarium with new carpet and painted ceiling. Dave is scheduled to do his 'What is up this year talk' and we might have some new telescope owners there with their scopes. Come ready to share your favorite observation or web item.



CUAS DIRECTORY:

Guy Hampel, President	352-3690
John Stone, Vice-Prez	337-1893
Dave Leake, Secretary	
Willard Brineger, Treasurer	356-5929
Mike Lockwood, 5 th Director	684-2170
Phil Wall, web master	352-5442
Bill Marble, newsletter editor	621-7882

Next month we should have Mike Lockwood back from Florida's Winter Star Party to share with us what is new in observing equipment like Televue's new Paracor for short focal length dobs and new focusers with an integrated Paracor again for those both feet on the ground 20" dobs. Mike will also share with us his trips to Hawaii and other star parties.

The Bird Sanctuary dark sky at Middlefork County Park is calling, maybe the next club dark sky session could be out there, what do you think? They have a pole barn with electricity, paved area, parking lot and outhouses.

LOOKING UP THIS MONTH

BY DAVID LEAKE

February offers us a trade-off in the evening sky with Jupiter and Venus passing each other. The actual event happens on the evening of February 16th, but it happens pretty low to the horizon. If you can see low enough, Jupiter will be a half degree to the upper right of Venus in the southwest. The pair will set at 6:15pm, just as the evening twilight is fading. Look the evening before and use the Moon to help you. A thin crescent Moon will appear above the planets. Jupiter will go on to pass behind the Sun and then enter the morning sky in early March. Venus's rise time increases as we approach the summer months but it is a gradual change. By the end of the month, Venus sets at 6:45pm, again as the twilight ends. Can you see it?

As the sky darkens, we turn our attention to Mars, which is just above the eastern horizon as the Sun sets. Mars is best seen when it is highest in the sky, which, this month, occurs just before midnight. Since we're now past opposition, Mars begins to shrink and fade, going from magnitude -1.3 down to -0.6 this month and from 14 down to 12 arc seconds in apparent diameter. Those with telescopes should still see a surface feature or two, but look early in the month. Can you see the north polar cap? Those with binoculars can watch Mars pass the Beehive star cluster in Cancer. Mars is slowly heading westward but will cease its retrograde motion early next month.

And Saturn is up in our evening skies as well, rising at 8:30pm in mid-February in Virgo. Saturn trails Mars by about three hours with the stars of Leo, the Lion, in the middle. Wait a few hours, though, and let Saturn get higher in the sky before you check out the rings.

In the constellation Leo, the magazines report the brightening of the asteroid Vesta. The asteroid was discovered in 1807 and it is the second massive object in the main belt and the brightest asteroid, reaching magnitude 6.1. Opposition is February 16th. If you can find a clear, dark night, use binoculars and check it out in the sickle of Leo. Of special note is the evening of February, Vesta appears to pass between the stars Gamma Leonis and 40 Leonis, which are less than a half degree apart. By early April, Vesta appears to go all the way out to Epsilon Leonis (at the end of the sickle) and then heads back. Check it out! A printable finder chart can be found at:

http://media.skyandtelescope.com/documents/WEB_VestaPath_Fndr.pdf

After Saturn, Mercury is found in the early morning sky. Mercury was best at the end of January and now slides back towards the Sun this month. If you get up early, you can still see this planet as it does not rise in the twilight until after the middle of the month. Let the waning crescent Moon help you on the morning of the 11th.

MOON PHASES

Waning Gibbous Moon



1 st quarter	February 22	March 23
Full	February 28	March 30
Last quarter	February 5	March 7
New	February 14	March 15

MOON FACTS **BY BILL MARBLE**

I know that most of you reading this newsletter are too young to remember the 1969 moon landing. But I remember it. I was in Germany at the time, and we were sitting around the TV waiting for word that it had really happened. When we saw Neil Armstrong it was a culmination of lots of effort by lots of folks. That was a success story started by President Kennedy.

Anyway, on July 20, 1969 Neil Armstrong put his foot on the surface of the moon. I think that was when I became fascinated with the moon. Every time I go out to observe, and if the moon is visible, the first thing I do is to look at the moon. There is so much to learn about the moon, and most people don't know anything about it other than it is covered with blue cheese.

So the next time you go out and the moon is visible, take some time to observe the moon. It is a great place to start your nightly viewing.

CUAS NEWS

BY DAVID LEAKE

Remember to **renew your dues** as to not miss any of the action! Use the form at the end of this newsletter and send your check into the club treasurer! All dues are prorated to January 1.

Note on the calendar the addition of two in-town viewing sessions. The **middle schools in Champaign's Unit #4 schools** have an 8th grade astronomy unit. To support that, Dave Leake has agreed to have an observing session at the planetarium (weather permitting) on February 17th (raindate is the 18th) at 6:30pm. The 8th graders and their parents will be invited. Dave will have a few 10-inch Dobsonians available. The planetarium will be open as a warm-up area. Any CUAS members that can assist would be appreciated. Another session is scheduled for April 20. For the latter session, if the weather is warm, we'll move it to Parkland's track, north of the main building. The club can have a table with information to recruit some new members if they so wish.

Would the club like to sponsor **Hubble Space Telescope's "Viewspace"** in the planetarium lobby? Soon the planetarium will have a flat panel television in the lobby to show NASA television and other programming. The self-updating program "Viewspace" (<http://hubblesource.stsci.edu/exhibits/self-update/viewspace/>) can be personalized with local information, thus CUAS events (meetings and observing sessions) can be put on the screen for audiences to see. The planetarium would cover the annual fee for the service, but it would be possible to assist them with the initial set-up fee.

We still have about nine 2010 "**Deep Space Mysteries**" calendars from Astronomy magazine. They will be on sale at the club meetings for \$10 for members and \$12 for non-members. Get 'em while they last!

The Twin City Amateur Astronomers of Bloomington-Normal will be hosting the **North Central Region of the Astronomical League (NCRAL)** on April 16-17, 2010. The theme is “Generations: Past, Present and Future of the Telescope.” TCAA, who will be celebrating 50 years as an astronomy club, are planning observing at the Sugar Grove Nature Center, programs at both the ISU Planetarium and at the Challenger Learning Center, and a tour of historic sites in the B-N area, including movies at the historic Normal Theater. Speakers currently include Dr. Carl Wenning (see below), Dr. Daniel Holland (ISU), Michael Bakich (Astronomy magazine), possibly astronaut Scott Altman (who participated in the last Hubble repair mission) and someone from the James Webb Space Telescope group. There is also a special video tribute to Clyde Tombaugh being planned. For more information, see www.ncral2010.org. We’re told that you need not be a member of the Astronomical League to participate. The cost is \$75 per person (before April 1) that includes a Saturday evening banquet. You can register online at the web site. You are welcome to attend even if you’re not an AL member.

The **Chicago Astronomical Society** has been very active regarding the old Prairie Observatory site adjacent to Walnut Point State Park, south of Urbana. The latest emails have them looking at environmental grants for the site. They’d like to receive endorsement letters from astronomy clubs in the Great Lakes region. They have been invited by the Walnut Point staff to participate in “Conservation Days” on September 9 at the campground.

Light pollution update We now have an Illinoisian on the International Dark Sky Association board of directors as Debra Norvil (no, not the TV news lady) begins a three year term. Ms. Norvil was instrumental in instituting a lighting ordinance in her hometown of Homer Glen, Illinois a school project in Lancaster, New York has shown that firefly mating habits are affected by excessive night lighting (<http://articles.lancasteronline.com/local/4/245921>) Eureka Spring, Arkansas, is about to approve a new lighting ordinance (<http://www.lovelycitizen.com/story/1601964.html>)and, in Baltimore, light pollution can even affect drive-in movies! (<http://www.baltimoresun.com/news/maryland/bal-md.bengies08jan08.0,2937792.story>)

Planetarium update as this issues goes to press, the planetarium is still a mess but things are coming together. The dome has been repainted and the floors and walls carpeted. Carpeting for the lobby starts the last week of January. The Zeiss has been revived, though Dave still has to fix the Moon! The main thing will be to reposition many of the special effects and get the seats remounted. The planetarium is nearly ready to sign a contract with Evans & Sutherland to bring their Digistar 4 system to Parkland this summer. http://www.es.com/products/digital_theater/digistar4/ The planetarium will reopen the February 5/6 weekend with a “World of Science talk” (see the calendar section), “The Stargazer” (starring Jim Kaler), “Follow the Drinking Gourd,” and the return of Pink Floyd’s “Dark Side of the Moon.”

We have received information from **Rigel Astronomy Vacations** regarding astronomy-related vacations in southern New Mexico for club members. Tours include White Sands Missile Base and the observatories at Apache Point and Sunspot. More information can be found at www.tedcookproductions.com.

Consider taking your **CUAS newsletter** by email only and save the club some money. By your request, we can email you a pdf file monthly instead of spending money on stamps.

Also remember that the club offers magazine discounts for both *Astronomy* and *Sky & Telescope*. If you are interested, contact treasurer Willard Brinegar.

Join the **club listserv** and get viewing information in advance! *NOTE . . . this is not the same list as before!!!!* We had to dump the cuas-l on prairienet since prairienet went belly-up. This is a yahoo group that you have to join. See the web site www.cuas.org and look for “email listserver” link on the navigation bar on the left.

TREASURERS REPORT

BY WILLARD BRINEGAR, TREASURER

CUAS Treasurer's Report for January, 31 2010

Willard Brinegar, Treasurer 2010

As of 1/31/10

Assets*

\$ 4232.35 Checking account

\$ 4232.35 Total Assets

Income*

\$ 15.00 New member

\$ 155.00 Eleven Renewal Dues

\$ 40.00 Key fees

\$ 10.00 One calendar sold

\$ 25.10 Donations

\$ 245.10 Total Income

Expenses*

\$ 0.00 Total expenses

*Note: Magazine subscription funds are not reflected in Income and Outgo since they are simply sent on to the respective publishers.

As of 1/31/10, all received subscription payments have been sent on, so they are not reflected in the Assets category either.

OBSERVATORY NEWS

BY DAVID LEAKE



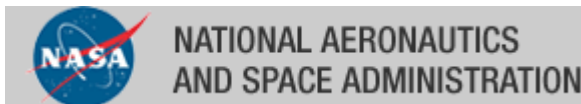
As this issue goes to press, the shed at the observatory is still in need of repair but Scott Hough will fix it when the weather permits. There was discussion at the January meeting on how to prevent further occurrences of vandalism. Options include installing a camera to monitor the area (a 30-50 watt, motion-activated unit) or installing posts or ties to prevent cars from entering, either around the entire lot (100 x 200) or maybe around the buildings (roughly 50 x 50). Dave Leake will check with the park district on costs. Any digging must be approved by the university. Williard Brinegar will check into the insurance. There was also a mention of ringing the area with new trees that could be purchased at a low cost from the government.

This spring, the club should paint the dome, both inside and outside. The telescope should be removed so that mechanical strippers could be used inside, then masonry paint could be used. The current epoxy paint should not have been applied as it does not allow the moisture to flow through. A discussion began at the January meeting as to whether to spend money on the dome or not. How many people use the telescope? It was pointed out that many members have telescopes that are larger than the 16-inch Cassegrain. But people are drawn to the dome. We do need an improved polar axis (which sticks). It could be made into an altitude/azimuth mount but at considerable expense. Is the telescope an antique? It was decided that the shed needed to be completed first, including the purchase of a pre-hung door. The budget for this project was approved at a previous meeting. Williard purchased a new tarp for the dome instrument (thank you, Williard!). There was a motion to table the work on the 16-inch Cassegrain (motion by John, second by Guy, motion carried) and a motion to purchase Sky Commander setting circles (motion by John, second by Phil, motion carried). Guy will supervise the installation of the setting circles to allow the observer to more easily find things through the dome slit.

Small projects list for warmer weather we probably need to **scrape paint** again, both inside and outside. The inside looks pretty bad in the daylight! Thank goodness it's used in the dark! Cooling **fans** in the telescope, and a **vent** for the shed. If you're returning the 8-inch red Dobsonian telescopes to the dome, remember to try to store them horizontally to help protect the mirror coatings. We also need to strip the paint on the inside but, given the dust that would be created, it might be best to wait until the telescope is removed. Guy brought a paint expert out to the dome and has a paint solution.

Boy scouts can get help with their Astronomy Merit Badge in one of these two workshops. The cost is \$5 per scout and you must pre-register. See the planetarium web site for details.

May 13	CUAS Club meeting	7-8:30pm	Staerkel Planetarium
May 15	New Moon Observing	7pm - ??	Observatory
May 22	CUAS Family Skywatch	7-8:30pm	Observatory



Astronomy Club Resources

BY BILL MARBLE EDITOR

WHAT IS IBEX?

Have you ever heard of Interstellar Boundary Explorer (IBEX)? I haven't, but looking at the NASA website I came across this Q and A section which speaks to IBEX. So here goes, you can find out more on the web site.

Apparently this is old news, the IBEX was launched via the Orbital Sciences Pegasus XL Rocket on October 19, 2008. But I didn't know about it, so I will now tell you all about it, hopefully. This spacecraft is exploring where the boundaries of our solar system is. IBEX is about the size of a bus tire and does not gather images so much as particles. These particles are called energetic neutral atoms (ENA). The spacecraft collects these particles from the outer limits of the solar system which travel from a month to 11 years. NASA scientists can gather this information and map the boundary of the solar system.

By analyzing the map, the team of scientists can determine what the interaction of the solar wind and interstellar medium is like in all of the areas of the protective bubble around the solar system. For example, scientists are trying to find out if there are some areas where the interstellar medium stops the solar wind from flowing outward more quickly (like slamming on the brakes) than other places (where a slow gradual stop may occur.) Also, scientists are trying to determine the overall shape of the bubble which may be affected by differences in density, and magnetic fields in the interstellar medium.

IBEX will complete one orbit every five to eight days, depending upon conditions at launch. Each orbit, there is a period of time when the spacecraft is inside Earth's magnetosphere. This is an ideal time to communicate with Earth because, being close to the Earth, it does not take a lot of power to send signals back and forth. It uses antennae that are attached to the outside of the spacecraft to send radio signals to receivers on Earth. Due to the rotation of the Earth each day, the IBEX team needs a global network of receivers so that no matter how the satellite and Earth are lined up, there is a receiver available to accept the signal. IBEX has partnered with the Universal Space Network, which is designed to arrange receiving communications from many other missions and satellites. IBEX is never further away from Earth than the Moon, so it takes a second or less for signals to travel between the spacecraft and Earth.

CHECK OUT ALL CLUB EVENTS ON THE CUAS HOME PAGE: <http://www.prairienet.org/cuas>
or <http://www.cuas.org>

MEMBERSHIP FORM

- Enroll me as a new member!
- Membership renewal [attach mailing label]
- Change of address only

Name _____
Address _____
Phone # _____
Email address: _____

Make all checks payable to:
"Champaign-Urbana Astronomical Society"

Circle all that apply:

Basic membership	\$15
Observatory key fee	\$10
<i>Astronomy</i> magazine renewal*	\$34
<i>Sky & Telescope</i> renewal*	\$33
Donation	\$ _____
Total Enclosed	\$ _____

*enclose mailing label

Detach and mail to:
C.U.A.S. Treasurer
c/o Staerkel Planetarium/Parkland College
2400 West Bradley Avenue
Champaign, IL 61821

"Clear Skies" is published twelve times per year for its membership. [Circulation: 78]
The Champaign-Urbana Astronomical Society is an affiliate group of the **Champaign Park District**.

<http://www.champaignparkdistrict.com>

William M. Staerkel Planetarium has public shows on Friday evenings in August. Call 217/351-2446 for more information.

<http://www.parkland.edu/coned/pla>



**Champaign-Urbana Astronomical Society
C/O William M. Staerke Planetarium
Parkland College
2400 West Bradley Avenue
Champaign, IL 61821**