

"CLEAR SKIES"



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

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JULY 2009

CUAS OFFICERS MESSAGE

BY GUY HAMPEL

The weather in Central Illinois just seems to not want to cooperate with our public viewing sessions, clear, hot!!!! in the day time and night comes and it seems a blanket is drawn over the night sky and then rain or light shows from the clouds. Well last night was no different, as night drew near the blanket came to shade us from the summer night sky. So the entertainment for a couple of our early guests was to watch the dueling lawn mowers give the grass a cut, they were well amused and we had a good chat about what was above the clouds after the mowing was done, for their patience and interest they were awarded the coveted astronomy calendar trophy for showing a genuine interest in the night sky. This night with its latest sunset of the year and a sky that just barely signaled the sun's setting with a faint yellowing of the western clouds actually grew many guests. We had over twenty guests ranging in age from just a few months to oh my gosh your how old. They kept coming until Willard and I left at 9:20 after being chased off by those unwanted pests, the Illinois dome class heavy mosquito, and each car or van load of future astronomers was also awarded the calendar trophy for braving the elements to see something not normal for the Saturday night show, a fast approaching large lightning display to the northwest and fireworks to the southeast, both of which were quite impressive. On a positive note the sign has recovered from its attack and the grass seems to be growing into the donut ruts. Hopefully this is the end of rural assault and club members will feel save to attend viewing sessions again.

Our next club meeting on July 9 should be a good one as we have guest speaker Dr. Looney from the U of I astronomy department. Invite guests to come and show up to learn about what is going on at the U of I. We have just one business item this month and that is to fill the vacancy in the office of Secretary as Mike Conron has stepped down from the position due to the need to attend to other matters out side of astronomy, hopefully he will return soon. Please think of a replacement to fill out his term (until the end of the year), hopefully this will be quick.

This month is exciting in that we are going back to the moon, well maybe if we last ten years. This endeavor starts with taking close pictures of the moon's surface and then slamming one of the satellites into the moons surface, gee did anyone watch the recent TV mini series 'Impact', oh yea that was fiction. I guess our local newspaper must be low on stories, recently our club got a picture of one of our IYA events,



CUAS DIRECTORY:

Guy Hampel, President	352-3690
John Stone, Vice-Prez	337-1893
To be Named, Secretary	
Willard Brineger, Treasurer	356-5929
Mike Lockwood, 5 th Director	398-9778
Phil Wall	352-5442
Bill Marble	621-7882

then on June 25th they, The News-Gazette, picked up (4)AP articles dealing with space blobs being “pubescent galaxies”, finding oceans on Saturn’s moon Enceladus, about the recent probes to the moon and fueling test soon for Endeavour shuttle, that rated an entire page. Personally I am glad to see these filler articles on science, even if it is work done by some undocumented, unknown author from somewhere in the universe, maybe the AP has an office on Saturn or is it Mars. With some more research, discussion and genuine asking questions of the right people we might actually get the real facts. I find it amazing as just a few years ago these topics might sound like an episode of the ‘Twilight Zone or one of those different Star Trek series’, maybe we should start a new series ‘Solar System Trek, First Steps’.

Now for genuine news from one of our resident solar observers the sun is getting more active with two named sunspots visible at one time. Some day for those who have not seen our sun boil and eject large quantities of really hot gaseous material in space, how is that for technical terms, you should contact Willard and see when he might go out and spend time at the dome. For your information this type of astronomical observing has a few very good advantages, one might be that you can see who you are talking to and maybe you could also work on your tan at the same time. Please remember never look at the sun without proper equipment, when in doubt if it is the right equipment ask a club member who has already been observing.

One last note our IYA events, web site and club members talking to the public seems to be having an effect. Our public sessions at the dome as well as the cloudy IYA events are bringing new faces to look up at the night sky. Keep up the good work and for those who have not been able to come to these events try to fit one in as the public does enjoy looking at the moon, planets, double stars, clusters and more. The smiles and verbal responses are well worth the short time we spend. We start again Aug. 26 at Anita Purves Pavilion in Urbana, see ya. Next month we might get a report about the solar eclipse from our correspondent in the eastern or is it western Pacific, Bob, that is if he has recovered from jet lag and time warp.

LOOKING UP THIS MONTH

BY DAVID LEAKE

Let us begin by clearing up something I was hoping would just go away. Unfortunately, it has not! Have you received the email yet again about the planet Mars being close to the Earth in August and appearing the size of a full Moon? Well, folks, that email is making the rounds yet again! Some of the email is true . . . for the 2003 parahelic opposition of Mars. They also left out an important bit of information . . . that Mars (in 2003) would appear the size of a full Moon *if viewed in a 75x telescope*. That’s a big difference! If Mars appeared as a full Moon with just the eyes . . . cash in your 401K and don’t worry about the economy anymore! It’s not happening. The next opposition of Mars will be in late January of 2010 and we won’t be breaking any records!

Now, with that out of the way, we can continue! Saturn is still a flicker on the western horizon, though it gets lower and lower each day. By the end of July, it is setting at 10pm CDT, or about 40 minutes after the end of twilight. So look early and look nearly due west. Of course, the lower Saturn is, the more air you have to peer through to see it with a telescope and the image usually isn’t very good. In July the tilt of the ring system goes from three to two degrees. On Friday, July 24, look for a neat waxing crescent Moon under Saturn right after sunset.

About an hour before Saturn sets, Jupiter rises in the east-southwest. Jupiter is now east of the constellation of Capricornus (which I think looks like a bikini bottom), which is east of the Teapot of Sagittarius. Opposition for Jupiter occurs in mid-August, but you can get a good look at it now. Especially check the area inhabited by Jupiter as it is near Neptune all month. On the 9th Neptune is 37 arc minutes (a bit more than half a degree) north of our Jovian friend.

Before we leave the evening sky, technically you can catch a glimpse of Mercury this month but its tough. Mercury comes out from behind the Sun on July 12 but rises fairly slowly, setting in the evening twilight (just after 9pm) at the end of the month. Mercury won't get too much higher than this until the end of August.

Venus and Mars are still in the morning sky, though they are starting to separate a bit in the pre-dawn sky. They begin four degrees apart, but this separation quadruples by month's end. In mid-July, Venus rises at about 2:50am with Mars following at 2:15am. Both also come to within about five degrees of the Pleiades star cluster this month, Venus on the 5th and Mars one week later. Mercury is to the lower left of Venus in the west-northwest until it passes behind the Sun on the 12th to visit the evening sky.

The solar eclipse is mentioned in "Club News." The longest duration solar eclipse seen in a long time will happen on July 22 in mainland China and the South Pacific. Best wishes to Bob Rubendunst as he treks there on a cruise ship in hope of

Earth will reach its aphelion point (farthest from the Sun) on July 3 at 94,505,048 miles. Lastly, please allow me to recognize the 40th anniversary of Apollo 11 on the 40th of July. Can you believe it has been 40 years since Armstrong took those steps? And if you think he faked it, you need to come see the planetarium's showing of "Bad Astronomy" on Friday nights! I owe my current job to those Apollo flights. Not only did the launch of Sputnik affect the teaching of math and science and the proliferation of planetariums, but my personal thanks to the grade school teachers who brought TVs into the classroom so that classes could follow the Apollo missions. No one knows the true effect those mission had on kids, but I know of one 8-year-old from Decatur, Illinois who got hooked. He still is!

MOON PHASES

1 st quarter	July 28	August 27
Full	July 7	August 5
Last quarter	July 15	August 13
New	July 21	August 20

Waning Gibbous Moon



MOON FACTS

When Alan Sheppard was on the moon, he hit a golf ball 2,400 feet.

In a survey conducted in 1988, 13% of people surveyed thought the moon was made of cheese.

The multi layered space suits worn by the Astronauts weighed 180 pounds on earth, but 30 pounds on the moon.

CUAS NEWS
BY DAVID LEAKE



Guy revealed at the June meeting that the school district has donated some Edmund **Astroscan telescopes**. The Astroscan is a neat little portable telescope with a 4.5 inch primary mirror and 3-degree field of view. The telescopes were originally used in a program at Bottenfield School in the early 90's. Currently Guy has three of the instruments and Dave has seven. Dave is planning a meeting with some of the 8th grade teachers in Unit #4 schools (one of which is his next door neighbor!) to talk about maybe either CUAS or the planetarium offering a program using the telescopes. If such a program is not developed, we could either use the telescopes at the open houses at the dome or even auction them off to the highest bidder!

On a related note, Unit #4 schools do have an **astronomy unit for 8th grade**. Details for the unit can be found at:
<http://www.champaignschools.org/index2.php?header=../science/&file=MSCurriculum/astronomy> . The question becomes . . .does the club want to support these learning goals somehow by way of maybe a viewing session? There are three middle schools so we're talking about six classrooms.

Please note that **Leslie Looney** will be our guest at the **July CUAS meeting**. Dr. Looney is a professor of astronomy at the University of Illinois specializing in young stars. At our meeting, he'll be discussing the University of Illinois Observatory and some of the upgrades planned or that are already in place. It is very interesting that the 12-inch refractor housed in the dome will again be used for student research and teaching. Please plan to attend on July 9.

INTERNATIONAL YEAR OF ASTRONOMY UPDATE if you missed the June meeting you missed an interesting demonstration of our new Night Sky Network toolkit. The kit features a simple optical bench and some lenses to show how a refracting telescope works. We plan to bring the kids to our fall IYA park dates. Recall that we avoided the summer solstice since many take vacations plus it gets dark so late. Our next park session is August 26 at the Anita Purves Nature Center in Urbana. Check the web site for a full schedule. Food for thought . . .since we have only five more sessions scheduled and the clouds nailed us for many of the spring dates . . . do we want to add more?

OBSERVING IN THE PARKS, 2009

<u>Day</u>	<u>Date</u>	<u>Times*</u>	<u>Park</u>
Wed	Aug. 26	8:30-10:30	Anita Purves, U
Thu	Aug. 27	8:30-10:30	Lohmann, U
Tue	Sep. 22	8-10pm	Clark, C
Thu	Sep. 24	8-10pm	Garden Hills, C
Mon	Sep. 28	8-10pm	Centennial, C

* Daylight Savings Time

Remember you can catch **NASA programming** daily from 7-9am, Monday through Friday from 3-5pm and Saturday and Sunday from 8-10pm on the Parkland College channel, PCTV. Club funds helped, in part, to bring NASA TV back!

The Staerkel Planetarium has acquired a **32-inch flat panel television** that will ultimately be mounted in the lobby. The hope is to bring the Hubble Space Telescope program “ViewSpace” to the Staerkel lobby. For more information, see: <http://hubblesource.stsci.edu/exhibits/self-update/viewspace/>

CUAS has been sent a new tool kit from the **Night Sky Network**, this one dealing with glass and mirrors. In fact, the kit includes what amounts to an optical bench! We’ll have it out at the May meeting. It’s a good way to show how telescopes work to the lay public.

A **total solar eclipse** will occur on July 22 through mainland China. The duration of totality will be six minutes, 39 seconds . . . the next eclipse of that duration or longer will be in June of 2132! The eclipse occurs on Tuesday night with the first umbral contact being at 7:51pm CDT. The Chinese IYA people are doing something at: <http://eclipse.astronomy2009.org.cn/english/>

Summer and fall star parties are before us! Note that most do require advance registration (in parentheses below) so if you’re thinking of going, check them out soon!

* Nebraska July 19-24 Merritt Reservoir www.nebraskastarparty.org

* Indiana Family Star Party July 23-26 Camp Collum
<http://home.comcast.net/~jmmahony1/PGO/starparty/>

* Okie-Tex Sept 12-20 Oklahoma panhandle

www.okie-tex.com/

* Prairie Skies Sept 17-19 (8/15) Kankakee

www.prairieskies.org/

* Astrofest Sept. 25-26 () Vana’s Farm, Kankakee

www.chicagoastro.org/

* Illinois Dark Sky Oct. 15-18 near Springfield

www.sas-sky.org/main.html

A note about the **September meeting** . . . though it is a ways off, there is a small change for the September meeting. During the 7pm hour, the Staerkel Planetarium will be offering a preview of the new IYA show called “Two Small Pieces of Glass” for new Friends of WILL. CUAS members can also watch the show at no charge *but you have to RSVP* to make sure we have enough seats. If we get more than 140, the planetarium may do another show at 8pm and CUAS could have their business meeting in the lobby. So if you plan on coming to the September meeting, just drop Dave Leake a quick email by 5pm on September 7. *Thanks!*

Want to put your name on the “Curiosity” **Mars Science Lab** when it is launched in 2011? If so, visit <http://marsprogram.jpl.nasa.gov/msl/participate/> and add your name to the list!

Congratulations to **Mike Lockwood** for his photo on p.70 of the July issue of Sky & Telescope magazine. Also, there was a nice write-up about **Robert Holmes** and his large telescope in the Decatur Herald & Review newspaper.

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

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 June 2009

As of 6/30/09

Assets*

\$ 4240.11 checking account

\$ 4240.11 Total Assets

Income*

\$ 15.00 Dues 1 renewal

\$ 10.00 Key fee

\$ 10.00 Donation

\$ 35.00 Total Income

Expenses*

\$ 0.00

*Note: Magazine subscription funds are not reflected in Income and Outgo since they are simply sent on to the respective publishers.
As of 6/30/09, all received subscription payments have been sent on.

OBSERVATORY NEWS

BY DAVID LEAKE



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! Also, new **tarp** for the 16-inch (no paper or plastic), 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. Evidently no one showed up at our work day . . . do we schedule another one?

If you missed the last **Skywatch** at the observatory, reports at the June meeting told of seeing the galaxy M51, the galaxy pair M81 and M82, globular cluster M13, the double star Albireo, and no less than six moons of Saturn! This was all, of course, after a heavy thunderstorm dampened the viewing field . . . a bit.

The **club sign** at the observatory has been repaired. Recall that someone who apparently was clowning around a bit in their vehicle, supposedly lost control and plowed into our sign . . .and left their license. We're told that the police did make an arrest and the perpetrator offered to fix the damage.

The infamous "**mow list**" returns, but this time with a twist! A million CUAS "thank yous" to new member Ray Cummings who lives near the dome AND owns a mowing service! Ray has mowed the lawn about 4-5 times at press time so we actually have not started the list below. However, as Ray's paying customers start calling, we will resort to the list if and when we have to! If you want on the list or removed from the list, contact Dave Leake. Immediately after you mow the lot, contact the next person so they can plan to check the grass height. There is a mower and gas in the shed. Allow a couple of hours to complete the job.

- | | | |
|---------------------|---------------------|-----------------|
| 1) Mike Rosenberger | 5) Guy Hampel | 9) Dick Robrock |
| 2) Dave Leake | 6) Willard Brinegar | 10) John Stone |
| 3) Mark Prather | 7) Audrey Ishii | 11) Bill Marble |
| 4) Mike Lockwood | 8) Wayne James | |

A Note From the IYA Coordinator:

Thanks to everyone who has participated in the park observing sessions. Depending on how you define if a session actually "went" or not, we've scheduled ten sessions so far and six of them have happened. Now, with this spring's record rains, most of these sessions saw us fighting clouds! In fact, I believe only one boasted truly clear skies! Welcome to Illinois! We have five more to go in August and September . . . unless you'd like to add a few more! We have found that we like Morrissey Park in Champaign and Hessel is darker than you might think given its location. And Millage Park in Cherry Hills even got some of our members' photos in the newspaper! Recall the basic idea of these sessions is that each of us would take a one or two and that hasn't really happened. We've had roughly the same people at each. The club thanks you and I thank you! Now, with our Night Sky Network telescope kit, we may set-up a little early in daylight and try to drum up some interest in the club. Hopefully the late summer and early fall weather will be clearer.

Thanks!



LOOKING AHEAD

BY DAVID LEAKE

- July 9 CUAS Club Meeting 7-8:30pm Staerkel Planetarium
Dr. Leslie Looney from the University of Illinois will be our guest speaker! Plan to attend! See “club news” for details.
- July 16 “Secrets of Suburban Skies” opens 11am Staerkel Planetarium
See the club news section for details.
- July 18 New Moon Observing 9-? Observatory
- July 25 CUAS Family Skywatch 9-11pm Observatory
Our public open house for the month. Take I-57 to the south of Champaign to the Monticello Exit. Take the exit and then turn right (west) on the Monticello Road. Go 1.4 miles and then turn left on County Road 700E. The Observatory will be 0.8 miles south on this road, on your left. All viewing sessions are weather permitting.
- August 11-12 Perseid Meteor Shower
- August 13 CUAS Club Meeting 7-8:30pm Staerkel Planetarium
- August 15 Middle Fork Observing 8pm - ?
Our dark sky night at the water fowl area, just north of the campground at the Middle Fork Forest Preserve, northeast of Rantoul. Weather permitting.
- August 22 New Moon Observing 8pm - ? Observatory
- August 26 IYA Observing 8:30-10:30pm Nature Center
We’ll set-up outside of the Anita Purves Nature Center, weather permitting.
- August 27 IYA Observing 8:30-10:30pm Lohman Park
We’ll set up in the Thomas Paine School Parking lot, weather permitting.
- August 29 CUAS Family Skywatch Observatory
- September 10 CUAS Club Meeting 7-8:30pm Staerkel Planetarium
We’ll preview the new IYA show entitled “Two Small Pieces of Glass” with the club meeting to come after the show. The show opens to the public September 11 at 8pm. **IMPORTANT:** See “Club News” for details!
- September 18 “Fall Prairie Skies” opens 7pm Staerkel Planetarium
- September 22 IYA Observing 8-10pm Clark Park

September 24	IYA Observing	8-10pm	Garden Hills Park
September 26	CUAS Family Skywatch	8-10pm	Observatory
September 28	IYA Observing	8-10pm	Centennial Park



Astronomy Club Resources

HERSCHEL!

The European Space Agency’s Herschel Observatory has successfully removed the cover over the instruments anticipation of going into orbit 1.5 million kilometers around the earth. That location is called the Lagrange point of our Earth-Sun system. The observatory will soon start exploring our universe. Herschel detects infrared light, as does NASA’s Spitzer telescope, but sees longer wavelengths. This means that Herschel will study objects cooler than Spitzer such as early stages of star formation.

The cover was removed from the cryostat, the chamber that chills the instruments. The cover was necessary to keep the chamber warm so that there was no ice buildup during launch which would harm the instruments. Once all the water stuck on the observatory was gone, it was safe to remove the cover and let the telescope cool down. Once this was done, the telescope finally saw the light of day, so to speak. For more information on the Herschel Observatory go to NASA’s website.

EXCERPTS FROM THE PLANETARY SOCIETY.

BY BILL MARBLE, EDITOR

At last, at last, we have a new for true planet other than those in our solar system. Last month an exoplanet was discovered orbiting the red dwarf star VB-10. This is significant for a couple of reasons. For one thing, the planet is a cold Jupiter, for another the planet’s home is among the smallest known stars, making it the smallest know star to posses a planet. But what makes it truly great is the fact that it was discovered by Astrometry. What is Astrometry, you ask? Well, I will tell you.

As the term suggests, "astrometry" is the measurement of stars, or more specifically their precise location in the sky. In a way, "astrometry" is precisely what astronomers have always done, measuring the exact positions of celestial objects. It is therefore not altogether surprising that astrometry was also the first method used in searching for planets around faraway stars. In fact, the earliest claim by an astronomer to have discovered an exoplanet through astrometry was made as early as 1943 – more than half a century before the discovery of the first confirmed exoplanet by Michel Mayor and his colleagues.

Here's how the method works: when a planet orbits a star, it is not only the planet that moves. The star too moves in its own little orbit, circling around the system's center of gravity. In principle the star's wobble can be observed and recorded with precise astrometric measurements from Earth. From this it is then possible to deduce the distant planet's orbit and period. And since the mass of the star itself is known with considerable accuracy from its light spectrum, it is also possible to deduce the companion planet's mass.

So now you know all about Astrometry. Stay tuned for more interesting things about our universe.

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<i>Astronomy</i> magazine renewal*	\$34
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Detach and mail to:
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c/o Staerkel Planetarium/Parkland College
2400 West Bradley Avenue
Champaign, IL 61821

**CHECK OUT ALL CLUB EVENTS ON THE
CUAS HOME PAGE:**

<http://www.prairienet.org/cuas> or
<http://www.cuas.org>

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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
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