

# "CLEAR SKIES"



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

VOLUME 22  
ISSUE 9

SEPTEMBER 2009

## CUAS OFFICERS MESSAGE

BY GUY HAMPEL

IYA events in August were well attended as well as public viewing sessions. The weather cooperated at least sometime. Anita Purves had happy guests and club members while Lohman Park was cloudy after dark so only a few guests and club members were there to enjoy the summer lightning storm. Not bad, one out of two. The Middle Fork session went well thanks to Bob R's talk and leading the parade of guests, we have one more at the bird sanctuary in October, put the 10<sup>th</sup> on your calendar. The new Moon session for the month with its planned debut of a new 20" Lockwood design was clouded out. The public sky watch on the 29<sup>th</sup> was a success with many guests and a good group of club members including our very own story teller Wayne James. His stories were a hit by those

who stopped to listen. I think the first few public sessions I came to his voice and stories as well as others became easily recognizable and something to look forward to the next time I came out. The month of September is going to be busy with a different kind of club meeting, come see and arrive prior to 7pm. Also this month is the prime month for star parties and we have a good representation of the club attending the Okie-Tex one starting the 12<sup>th</sup>, our very own Mike Lockwood will be speaking on fast mirrors and telescope making one day and Al Nagler will be speaking on optics and will probably debut a new eyepiece. Two other star parties, Astrofest and Prairie Skies are up north in Illinois. Then next month we have Illinois Dark Skies by Springfield which is usually well attended by club members.

Maybe at our October meeting we can get a report of the happenings there in far western Oklahoma from each of the attendees. We will also recap (briefly) the IYA events. At our August meeting it was decided that we would schedule (3) observing sessions at Middlefork and we will need people to volunteer to give a short presentation prior to sunset at the pavilion near the camp ground. The cub scout pack wants us to show the cub scouts (about 25) the night sky maybe Friday the 9<sup>th</sup>, are we up for it?

August had a meteor shower, did you see many? Have you been looking up from your favorite dark site or even just from your well lit backyards? Come and tell us. Have you been to campus yet to see the new triplet domes behind the Astronomy building near the Library? The U of I club has an open house on the first Friday of the month, attend one as they are fun and have large numbers of students that like to ask questions.



### 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 <sup>th</sup> Director	398-9778
Phil Wall	352-5442
Bill Marble	621-7882

The viewing sessions this month seemed to focus on the moon, Jupiter and its moons, and a few star clusters, double stars like (the Illini double) and the Andromeda galaxy. Even with not great seeing these objects amazed.

For those who missed the last club meeting you should have been there. Bob R. gave a wonderful talk about his eclipse trip to China. The pictures that he showed were marvelous eclipse pictures along with how dark it got on the ship he was on. Bob, thank you for the presentation.

## **LOOKING UP THIS MONTH**

**BY DAVID LEAKE**

Wow, where has the summer gone? It's hard to believe school is back in session already!

The evening sky is ruled by Jupiter, which is already above the horizon in the southeast as the Sun sets. You can't miss it as Jupiter will be the brightest thing up there aside from our Moon. Early in the month (the evening of September 2) you'll see Jupiter near a nearly Full Moon . . . but look closer with a telescope. The magazines report that the four Galilean moons will be either behind or in front of the planet this night and hence Jupiter will appear moon-less! Even though opposition was last month, Jupiter's visible disk is still huge! Jupiter transits the meridian at about 10:30pm CDT at midmonth and doesn't set until nearly 4am.

Saturn and Mercury are technically in the evening sky, but they set in the twilight. Of course the once-every-15-year Saturn ring plane crossing occurs early this month, but Saturn is too low to see it. Late in the month, Mercury passed between the Earth and the Sun and literally jumps into the morning sky. In fact, one can argue that this will be the best morning view of Mercury all year. The best views occur in early October, but the planet rises at 5:45am on September 28<sup>th</sup>.

The planet Mars rises just north of east at 1am early in the month and then near 12:30am near the end of the month as it treks across the constellation of Gemini. Though Mars is still small through a scope, it will continue to get larger and brighten ahead of next year's opposition.

Following Mars is Venus, rising at 4:15am in mid-September, or about 80 minutes before the start of twilight. Venus is near the Cancer/Leo boundary. In fact, on the mornings of the 1<sup>st</sup> and the 2<sup>nd</sup> Venus just misses the Beehive star cluster in Cancer. Use binoculars and see if you can see the cluster. Venus heads towards Leo, sitting just above Regulus on the morning of September 16, with the crescent Moon to the right of Venus. Four mornings later, Venus comes to within a half a degree from Regulus! Look nearly due east. As we look to the rest of the year, Venus stays in the morning sky but it's rise time gets closer and closer to the morning twilight.

And the planet Uranus reaches opposition on September 16<sup>th</sup> near the circlet of Pisces. At magnitude 5.7 you might be able to catch it with binoculars IF you know where to look.

IF you still need a challenge, there are two asteroids that brighten this month. Juno reaches opposition on September 21<sup>st</sup> at magnitude 7.6, not far from Uranus. Vesta, fainter at magnitude 8.4, is near the Beehive cluster (southern part) on the 16<sup>th</sup>.

The autumn equinox occurs at 4:19pm CDT on the afternoon of September 22.

## **MOON PHASES**

1 <sup>st</sup> quarter	September 26	October 25
Full	September 4	October 4
Last quarter	September 11	October 11
New	September 18	October 18

### *Waning Gibbous Moon*



### **MOON FACTS**

- The surface area of the moon is 14,658,000 square miles or 9.4 billion acres
- Only 59% of the moon's surface is visible from earth.
- The moon rotates at 10 miles per hour compared to the earth's rotation of 1000 miles per hour.

## **CUAS NEWS**

*BY DAVID LEAKE*

Thanks to Bob Rubendunst and Jeff Bryant for their presentations at the August meeting. Bob showed us some of the photos he took while on a total solar eclipse cruise this past July. Jeff used the internet to show examples of the new tool called “Wolfram Alpha.” The latter can be found at <http://www.wolframalpha.com/>. Test it out with a question to compute!

If you're a Facebook user, the Staerkel Planetarium has a new **fan site**. Get your astro news quickly including notice of CUAS observing sessions by searching for “William Staerkel Planetarium” from Facebook.

Thanks to Willard Brinegar, we now have 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.

**International Year of Astronomy** update . . . . Dave sold three of his five Galileoscopes at the August meeting. The scopes took longer than usual to assemble and you even have to assemble the eyepiece elements. The scopes made “first light” at the Middle Fork session and performed wonderfully looking at Jupiter on a tripod. They are pretty good telescopes for \$15!! We also have a new Night Sky Network kit on the planets. Included are ready-to-make models showing planet distances to scale and planet sizes to scale.

For your calendars . . . the club has agreed to do another session at the **Middle Fork Forest Preserve** (at the water fowl area, along with a short talk at the campground) on April 10, 2010.

**Light pollution update** . . . . the International Astronomical Union has declared that we each have a “right to starlight!” They claim this is a basic human right. Read more in *Scientific American*: <http://www.scientificamerican.com/article.cfm?id=save-our-dark-skies-say-scientists-2009-08>. A similar article about a fight for unobstructed skies appeared in *Red Orbit*: [http://www.redorbit.com/news/space/1737984/astronomers\\_fight\\_for\\_unobstructed\\_view\\_of\\_the\\_sky/](http://www.redorbit.com/news/space/1737984/astronomers_fight_for_unobstructed_view_of_the_sky/) Commissioners in an Idaho county want an lighting ordinance! How refreshing is that? <http://www.mtexpress.com/index2.php?ID=2005127330> . And lastly from Fort Worth . . . a theory on why there are fewer fireflies: <http://www.star-telegram.com/living/story/1524957.html>

**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!

- \* Okie-Tex Sept 12-20 Oklahoma panhandle [www.okie-tex.com/](http://www.okie-tex.com/)
- \* Prairie Skies Sept 17-19 (8/15) Kankakee [www.prairieskies.org/](http://www.prairieskies.org/)
- \* Astrofest Sept. 25-26 ( ) Vana’s Farm, Kankakee [www.chicagoastro.org/](http://www.chicagoastro.org/)
- \* Illinois Dark Sky Oct. 15-18 near Springfield [www.sas-sky.org/main.html](http://www.sas-sky.org/main.html)

A note about 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. If we get more than 140, the planetarium may do another show at 8pm and CUAS could have their business meeting in the lobby, but that doesn’t seem likely. We could give a short presentation at the end of the show as a plug for the club if we wish. But the show will precede the meeting! So if you’re late, you may find a darkened dome!

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.

We also have a **club library** that is stored at the planetarium. Any club member in good standing can check out materials. Thanks to Jim Licquia for his donation of the book, “The Next Step: Finding and Viewing Messier’s Objects” by Ken Graun (2005). Remind Dave at the meeting to get out the books and any member would be welcome to check them out. Thank you, Jim!

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](http://www.cuas.org) and look for “email listserver” link on the navigation bar on the left.

**INTERNATIONAL YEAR OF ASTRONOMY UPDATE . . . . .**

Our observing sessions begin again this month in late August. We'll be at the Anita Purves Nature Center in north Urbana on August 26 and at Lohman Park (near Thomas Paine Elementary School) the next night. Both sessions begin at 8:30pm but we'll bring our two new Night Sky Network kits to set-up on a second table. Plus, the Galileoscopes have arrived! So we'll have one of those on a tripod. Do we want to repeat any of the earlier sessions that got clouded out? These two events are being publicized by the Urbana Park District.

**OBSERVING IN THE PARKS, 2009**

<u>Day</u>	<u>Date</u>	<u>Times*</u>	<u>Park</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! It's a good way to show how telescopes work to the lay public.

**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!

- \* Okie-Tex Sept 12-20 Oklahoma panhandle [www.okie-tex.com/](http://www.okie-tex.com/)
- \* Prairie Skies Sept 17-19 (8/15) Kankakee [www.prairieskies.org/](http://www.prairieskies.org/)
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- \* Illinois Dark Sky Oct. 15-18 near Springfield [www.sas-sky.org/main.html](http://www.sas-sky.org/main.html)

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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!

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](http://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 August 31, 2009

Willard Brinegar, Treasurer 2009

As of 8/31/09

Assets\*

\$4173.23 checking account

\$4173.23 Total Assets

Income\*

\$30.00 Dues

\$40.00 4 calendars sold

\$70.00 Total Income

Expenses

\$161.88 25 calendars

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

As of 8/31/09, all received subscription payments have been sent on, so they are not reflected in the Assets category either.

# **OBSERVATORY NEWS**

*BY DAVID LEAKE*



Once again, pay attention to security at the observatory site. You may find some UI students using the land given that fact their field site (just northeast from our site) has been graced with a mercury vapor pole light! They are working with the Electrical Engineering department to hopefully remedy that situation. You can see the light from our dome. A lot of trash has been reported at our site. Feel free to call the county sheriff if you find damage has been done.

Did you see that planetarium shows plus stargazing at our dome was listed in the News-Gazette E3 section as a place to go for a “cheap date?”

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?

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!



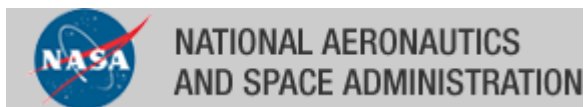
***LOOKING AHEAD***  
*BY DAVID LEAKE*

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. <i>IMPORTANT:</i> 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
October 2	"World of Science" talk	7pm	Staerkel Planetarium
Jesse Miller from the UI Department of Chemistry (REACT) and regular on WCIA in the mornings, will be in the dome to discuss the "Chemistry of Alternative Energy Sources." Admission is \$1 at the door.			
October 3	Decatur Jamboree	7-10pm	Friends Creek Park
Join the Decatur Area Astronomy Club for their regular event at Friends Creek Regional Park near Cisco. The park is closer to Champaign than you might think and the skies aren't bad! The speaker will be our own Dave Leake talking about "The Legacy of Galileo."			
October 8	CUAS Club meeting	7-8:30pm	Staerkel Planetarium
October 10	Middle Fork Observing	8pm - ?	
October 17	New Moon Observing	8pm - ?	Observatory
October 24	CUAS Family Skywatch	7-10pm	Observatory
November 3	"World of Science" talk	7pm	Staerkel Planetarium
Our buddy Ed Kieser, WILL meteorologist, will be at the planetarium with some awesome tornado video!			

November 7	“Santa’s Secret Star” opens	7pm	Staerkel Planetarium
November 12	CUAS Club Meeting	7-8:30pm	Staerkel Planetarium
November 14	New Moon Observing	7pm - ?	Observatory
November 21	CUAS Family Skywatch	7-9pm	Observatory

Note: This will be our last official open house of the calendar year.

November 27            “Rites of the Season” opens    8pm            Staerkel Planetarium  
 Given the new digital system that will (hopefully) be in place next year, dare we say this is “last rites?”



*Astronomy Club Resources*

***BY BILL MARBLE EDITOR***  
***Black Holes are fuel efficient***

One billion miles per gallon. That’s how far a car could travel if it were fueled by a black hole. Scientists have discovered that like automobiles, we need to know the fuel efficiency of black holes. Without this information, astronomers cannot figure out what’s going on with black holes. Using the Chandra telescope astronomers have shown that as matter falls toward a black hole it releases energy. The surprise was that the energy releases jets of particles that erupt from it a nearly light speed. The jets were discovered when Chandra showed something was blowing giant bubbles into gas clouds surrounding black holes. They were able to determine the strength of the jets by determining the size and force needed to form cavities. So it seems that the job of the jets job is to keep a vast number of stars from forming. The jets keep the clouds from cooling enough to form stars, thus we have a balance. Sounds crazy to me, but what do I know. Read more on NASA’s web site.

***EXCERPTS FROM THE PLANETARY SOCIETY.***

***BY BILL MARBLE, EDITOR***

**Stardust Retrieves Life Building-Block from Comet**

**By Amir Alexander**

August 25, 2009

Amir Alexander claims that life’s building blocks arrived on earth via a comet. The spacecraft, Stardust. The samples were captured by *Stardust* on January 2, 2004, as the spacecraft passed by comet Wild-2, coming within 240 kilometers of its nucleus. For several hours as it flew through Wild-2's coma, *Stardust* was subjected to a [barrage of rocks and grains](#) from the comet, which battered but did not damage the spacecraft. Along the way, particles from the bombardment became embedded in the spacecraft's collector, made of aerogel tiles framed in aluminum foil. Once the ordeal was over, the collector was [tucked into Stardust's sample return capsule](#) and sealed inside.

It took the spacecraft two years to come back close enough to earth to release the payload into the atmosphere over the Utah desert.

Scientists have been studying the comets samples since it landed and has been recovered. One remarkable discovery in the Stardust samples took place when Daniel Glavin and Jason Dworkin of NASA's Goddard Space Flight center found traces of glycine embedded in the collector's aluminum foil. Glycine is one of the amino acids that combine to form proteins – the building blocks of living organisms. The discovery of an amino acid in a comet would have profound implications as to the origins and prevalence of life, but scientists were cautious: it was possible, some argued, that the glycine came not from the comet but from contamination of the aluminum on Earth. Amino acids, after all are very common on our own planet.

## 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
  - Astronomy* magazine renewal\* \$34
  - Sky & Telescope* 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

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

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

"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. Staerkel Planetarium  
Parkland College  
2400 West Bradley Avenue  
Champaign, IL 61821**