

# "CLEAR SKIES"



NEWSLETTER of the CHAMPAIGN-URBANA ASTRONOMICAL SOCIETY, Inc.  
An affiliate of the Champaign Park District

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July, 2008

## CUAS OFFICERS MESSAGE

The month of June was a very wet month with our dome site transformed from a place in the central Illinois corn/bean fields to lake front property. Well all that water contributed to a wet public sky session. The mowing of the property had to be delayed as our mower is not equipped with floatation devices. A week later the site was dry enough to be mowed. My wife and I mowed using our own electric mower (could that be considered as being 'Green' (oops that's another group) and the club's self propelled mower. We visited my wife's parents and her dad who runs a lawn mower business had a trade in mower that was too good to pass up. That machine now resides in the shed and will be self-propelled when the required cable comes in and we get it installed. For now one person will have to push a mower.

At our last public session the sky which did not get dark until well past 9:30 was looking good and the five club members had a wonderful time waiting for the public and talking about all the water and of course the pending night sky by identifying the stars and planets popping out as the sky darkened. The water and no place to set up the scopes really dampened the potentially go night. We all left by 10:00pm.

Mike Lockwood informed me that our dome door has been tampered with, probably tried to enter without a key. I will be contacting the county sheriff's office as to what can be done. If you are out at the dome site please pay attention to general conditions of buildings and grounds.

On to astronomy items one of interest is that radio astronomers have linked large antennas in 4 continents together to make them equal to one antenna 6,800 miles in diameter to look at distant objects. We will have to wait and see what they find, have you heard of what they are looking for? Another topic I read about was that Cherry Springs State Park in Pennsylvania has received notoriety as being the 2<sup>nd</sup> International Dark Sky Park. This place is well worth stopping at if you are heading to New England. It is in North Central Penn. and basically very remote. The actual viewing area, when I visited, is a gated



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community that runs on the honor system that you pay to camp or use the place. The park had gravel roads, some parking spaces, shared electrical, restrooms with red lights and a pavilion. The number of viewing areas I could not count with the whole park located on plateau and is a big clearing in a real forest. What places have you been to that make good places that you would suggest that others go to view the sky? A program that was on PBS recently had an interesting possible location to view from. The place was New Mexico where for just the cost of car you could get a spot that had an remote control dome equipped with a remote controlled Schmidt scope with camera on an equatorial mount all run remotely through the internet. The dome and the scope are maintained by a local resident. Sounds like a good idea maybe the club should sign up for one, oops we have a member in Charleston that is famous and has this in his back yard. What is happening with Phoenix Spacecraft on Mars? Come to the next meeting and contribute to education of the rest of the club members with what is astronomically new with you.

## **INTERNATIONAL YEAR OF ASTRONOMY 2009**

### **Possible Plans for IYA 2009 by Dave Leake**

Those who attended the June meeting got to hear me ramble on about the International Year of Astronomy in 2009. The year has been set aside to celebrate the 400<sup>th</sup> anniversary of the telescope and Galileo's observations. As the name implies, this is an international effort with the following objectives:

- Relate astronomical discoveries to the public
- Empower communities in developing countries
- Support science in the schools and in museums/planetariums
- Connect amateur astronomers, scientists and educators
- Promote careers in science
- Improve gender representation in science
- Facilitate preservation and protection of our dark skies

To accomplish these objectives, there are many projects that are being planned across the globe, including:

- "24 Hours of Astronomy"
  - *Everyone* looks through a telescope
  - "Wave of darkness"
- The "Galileoscope" kit
- Personal Blogs
- Web "Portal to the Universe"
- Dark sky awareness
- Teacher training events



So the question becomes . . . what do **WE** do? Keep in mind, an option is “nothing.” But some ideas include:

- “Park tour” with telescopes?
- Workshops?
- Dark sky promotion
- Fliers to promote next Skywatch
- Half price membership offer?
- “Sell” T-shirts?
- Collaborations?
- Contests? Competitions?
- Prize drawing?



Or a combination of several of these things. IF we do a park tour, the intent is to plan well in advance and even come up with dates in the next month. A letter has already been drafted (but not sent) to both park districts to get them on board. We do not want one or two people doing the parks! If we “divide and conquer” then we split the work and no one gets burned out. Also, we would not do all the parks. The following list is based on relatively dark skies (meaning no Dodd’s Park on softball night), availability of parking, and residences nearby where people can walk to the park. Possible parks include (but are not limited to). Also, no rain date. If a session gets clouded out, the plan will be to move on to the next night.:

- Champaign: Garden Hills, Kaufman Lake, Centennial, Robeson, Morrissey, Hessel, Douglas, Eisner, and Clark.
- Urbana: Meadowbrook, Crystal Lake (Anita Purves Nature Center), Lohmann, Blair, Crestview, and Prairie.

So what do we do next? We need to discuss this at the July meeting, so if you have opinions or alterations to this proposal, bring them to the meeting or email an officer. Given the lead time for park district publications, we’ll need to get them on board soon. We also want to get the News-Gazette involved as a partner. From the park districts we’ll ask for:

- permission to do this and be in the designated parks after dark,
- assistance in scheduling the sessions, wishing to avoid any pre-scheduled activities such as concerts, and
- assistance in publicizing the event, by placing the schedule in any park district brochures, schedule cards and fliers. The planetarium could handle any press releases.

So . . . what do you think? Could you volunteer for a night or two? For more info on the international event, see [www.astronomy2009.org](http://www.astronomy2009.org).



## LOOKING UP THIS MONTH

The action begins early this month in the west with Mars and Saturn playing a game of tag. On July 1, Mars is closest to Regulus, passing it by only  $\frac{1}{4}$  of a degree. Saturn begins July five degrees (about a half a fist held at arm's length) above and to the left of Mars. Four days later, a crescent Moon joins the trio to the lower right. On July 9, Mars passes Saturn in its faster orbit. The two come to within  $\frac{3}{4}$  of a degree, which is the closest they'll be seen together until spring of 2022! The only downside of this is that they'll be pretty low in the west. They'll set at 10:30pm in mid-July. Saturn will be the brightest of the three starlike objects and be four times as wide as Mars. They should fit in the same low magnification field of view. By the end of July, Mars is well past Saturn about a fist's length.

Keep your eyes open for Venus, too. It's still very low in the western sky and isn't in any hurry getting higher. It sets at about 9pm the entire month.

Jupiter reaches opposition this month on July 8. It will rise in the southeast as the Sun sets and be visible all night. The only problem with Jupiter will be its low altitude. The view will be better after midnight when it is due south. Anytime you look at something near the horizon, you have to peer through more of the Earth's atmosphere . . . in fact about 40 times more compared to looking at the zenith. This will blur Jupiter's image a bit, but it is still worth a look. A nearly full Moon will rise just before Jupiter on the 17<sup>th</sup>.

If we speed to the morning hours, Mercury reaches its greatest separation from the Sun on July 1. It will rise at 7:15am in the east-northeast. Mercury will pass behind the Sun on the 29<sup>th</sup> so you need to catch it in the first half of the month if you want to see it.

From July 24 to the end of the month, you have a decent chance to see some Delta Aquarid meteors in the morning sky. There's no firm maximum due to the fact that the meteor stream is spread out. The last quarter Moon occurs on the 25<sup>th</sup> to brighten the sky some, though the Delta Aquarids are typically bright. It's best to face south but be sure you can see the sky overhead. The darker the sky, the better. It's also best to look during the dark hours just before the onset of morning twilight.

And the Earth reaches aphelion on the 4<sup>th</sup> of July. That means the Earth/Sun distance is at a maximum at 94,513,144 miles.

As a heads up, there's a total eclipse of the Sun on August 1, though the eclipse track runs through northern Greenland, eastern Russia, and into Mongolia and China. The Exploratorium in San Francisco will be conducting a live webcast, though the Moon's shadow reaches China at about 6am our time. Check out [www.exploratorium.edu/eclipse/](http://www.exploratorium.edu/eclipse/) for more details.

-DCL

## *Moon Phases*

1 <sup>st</sup> quarter	July 10	August 8
Full	July 18	August 16
Last quarter	July 25	August 23
New	July 2	August 1

## *Waning Gibbous Moon*



## *Members Corner*

### **CUAS NEWS**

Thanks to Jeff Bryant, Bob Rubendunst and Dave Leake for being at the Krannert Center for the Performing Arts to assist Wayne James during the Winter Solstice Celebration. Over a dozen Starlab shows were performed in the portable planetarium and Jeff had a telescope outside to check out Saturn and then Jupiter from the deck. It was also noticed that many people took an interest in the light pollution display boards.

The **June open house** was certainly one of the most interesting we've had in a while! Due to the heavy spring rains, the lot across the road, west of the dome, was basically a lake! On our lot, the gullies were filled to the brim and there was roughly 2-inches of water north of the drive. You could technically get to the dome without wading but it was very risky parking. Though, as you read this, the waters should have subsided, please be careful when you park at the dome site! There are also some new ruts in lot.

Roughly 20 people attended the **Middle Fork Forest Preserve**. Bob Rubendunst, Guy Hampel, and Dave Leake brought telescopes and Mike Lockwood treated campers to his binoculars. Dave and Bob stuck around until lightning from a thunderstorm to the north threatened the dark skies. There is another session coming up at the end of August.

Calendar note . . . the club decided to hold a session at **Allerton Park** on Saturday, October 25, weather permitting.

We opened the closet at the June meeting and got out both the **club library** and our assortment of **T-shirts** for purchase. Any club member in good standing can check out books from the library for a month. The T-shirts are \$10 each.

Club congratulations go out to **John Stone** who, we are told, tied the proverbial knot with his girlfriend this past month. On a sadder note, club sympathies go out to **Mike and Ginny Conron** on the loss of Mike's mother.

**Membership** at the meetings has been dwindling as of late. Granted, the summers are prime vacation time, though the high gas prices are reducing that. Bring a friend to the next meeting or invite a coworker.

**Lighting Update** . . . Dave Leake has altered the proposed lighting ordinance that is on the web page. The changes are in bold. Dave chatted in person with Charlie Smyth, husband of Audrey Ishii and Urbana city councilman, who says that most new ordinances are now referring to "environmental

zones.” The emphasis in each zone is not only on cut-off fixtures, but on the extent and intensity of the lighting. Dave has also been in touch with Chris Monrad, head of Monrad Engineering in Arizona and the new president of the board of directors for the International Dark Sky Association. He proposed some changes to our own proposed ordinance. Again, the draft appears on our web site. Dave will arrange a meeting with Mr. Smyth and Champaign City councilperson Deb Frank Feinen.

We will need volunteers for the **summer observatory open houses** (“Skywatch”). Even if you can’t run the observatory, you can help by staffing some of the telescopes outside or even helping with parking. The weather has been horrible for our spring events – maybe the summer will be different. See the calendar section, put the Skywatch dates on your calendar, and join us!

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.

TREASURERS REPORT

CUAS Treasurer’s Report for June 2008  
Willard Brinegar, Treasurer 2008

As of 6/27/08

Assets\*

\$111.00	petty cash envelope
\$4105.10	checking account

\$4216.1 Total Assets

Income\*

\$105.00	donations
\$ 15.00	one new member @ 15
\$ 15.00	membership renewal @ 15
\$ 10.00	one key fee @ \$10
\$ 10.00	T-shirt
\$155.00	Total Income

Expenses\*

\$ 0.00

Assets\*

\*Note: Magazine subscription funds are not reflected in Income and Expenses since they are simply sent on to the respective publishers. As of 6/27/08, all received subscription payments have been sent on, so they are not reflected in the Assets category either.

## **OBSERVATORY NEWS**

Spring projects . . . . 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, 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.

The June Skywatch was clouded-out.

Do we want to bring back the **logbook**? If we have one, you'd have to remember to sign-in what you're at the dome, but it will help us determine how much the dome is used and allow us to estimate an annual attendance . . . which would come in very handy should we pursue a grant.



The infamous **mow list** has returned! If you'd like to be added (or deleted), let Dave Leake know. When you mow, let the next person know immediately. If you'll be out of town or can't mow, let the next person know ASAP so we don't lose control of the lawn out there. Thank you!:

- |                     |                     |                   |                  |
|---------------------|---------------------|-------------------|------------------|
| 1) Mike Rosenberger | 4) Audrey Ishii     | 7) Mike Lockwood  | 10) Dick Robrock |
| 2) Dave Leake       | 5) Willard Brinegar | 8) Bob Rubendunst | 11) John Stone   |
| 3) Mark Prather     | 6) Guy Hampel       | 9) Wayne James    | 12) Bill Marble  |



## LOOKING AHEAD

July 5                      Member's Only Observing    8pm-?                      Observatory

July 10                     CUAS Club Meeting            7-8:30pm                Staerkel Planetarium  
We'll discuss the proposal made at the June meeting on the International Year of Astronomy in 2009.  
See the "Club News" section for details.

July 12                     CUAS Family Skywatch       8-10:30pm                Observatory  
This is our public observing event 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.

July 26                     Mars Presentation              3pm                        Pages for All Ages  
Dave Leake gives a presentation on the exploration of Mars, past, present, and future as part of their summer reading program.

August 2                    Member's Only Observing    8pm - ?                    Observatory

August 9                    CUAS Family Skywatch       8-10pm                    Observatory

August 14                   CUAS Club meeting            7-8:30pm                Staerkel Planetarium  
Note . . .there will be a wedding rehearsal from 6-7pm this night.

August 23                   Weekend Wizards: Astronomy 1-3pm                    Orpheum  
If anyone wants to help out, we could use a few hands at the Orpheum Children's Science Museum for Weekend Wizards for the kids.

August 30                   Dark Sky Observing            8pm-?                      Middle Fork, Penfield

September 6                CUAS Family Skywatch       8-10:30pm                Observatory



### *Clues from Ancient Light*

Thanks to the GALEX space telescope we know the age of a sources light by its degree red shift. We have had this in the newsletter before, but I thought it would be interesting to bring it back. Some people are good at telling the age of someone, but scientists can tell the age of our universe, thanks to Galaxy Evolution Explorer (GALEX).

Astronomers know how to tell the age of a stars light. What are the clues? Light changes as it travel through space and time. Light, like humans, begin to tire as they age. But with light it takes billions of years for the changes to take place. Scientists call this being tired as red shifted. Because red light has the least energy of all the colors of light we can see with our eyes. But it still travels at a steady 186,000 miles per second, or 6 trillion miles in one year, thus a light year.

GALEX was launched into space in 2003. It is now looking at all the galaxies in the universe trying to determine just how old everything is.

There are at least 200 billion stars in our own Milky Way Galaxy. So GALEX has its work cut out. By looking at these stars scientists can determine the age of our universe or universes if you like, by looking at young and old pictures of light and making a comparison, and determine the age and see how they live, die, and evolve.

For you young astronomers in the audience, or even young at heart, you can go online and play a little game. There are pictures of new things, old things, and not so old things. Arrange the pictures and see if you can determine the age of the objects. Have fun. Web site

[http://spaceplace.jpl.nasa.gov/en/kids/downloads/galex\\_activity.pdf](http://spaceplace.jpl.nasa.gov/en/kids/downloads/galex_activity.pdf)

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

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

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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>

**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



**Champaign-Urbana Astronomical Society  
C/O William M. Staerke Planetarium  
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