

# "CLEAR SKIES"



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

June, 2007

## CUAS OFFICERS MESSAGE

Summer is here. So far we've been blessed with some good observing nights with relatively few mosquitoes. It can't last long, so enjoy it while it lasts!

At the last meeting I suggested that we devote a meeting program to members' photos, both astrophotos and those taken at observing events and club related activities. That idea got a positive response, so that's what June's meeting program will be. Personally I've got a lot of photos to share from the last few years. Go through your photo albums, hard drives, etc. and pull out the highlights.

If you've got a few images in electronic form, you can email them and a caption to Dave Leake (dleake@parkland.edu). If you have lots of images, you might make your own slideshow or put them all on a CD so we don't completely clog Dave's email. If you have actual printed photos, just bring along the best and we'll all try to have a look.

We have a number of observing events coming up, one at Middle Fork and one at Hessel Park this month, so please keep an eye on the schedule and your calendar and come out to our events if you can.

That's about it for club news. As for me, I will be increasingly busy with mirror work as the summer and fall progresses, but I will be able to make all of the meetings except September (conflict with the Prairie Skies Star Party). Also, I will be giving a talk at the Indiana Family Star Party in August. Both of those star parties are less than a two hour drive away. I'd like to encourage other club members to consider attending a star party this year.

See you and your photos at the next meeting.

Mike Lockwood



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Jameel Jones, CPD	398-2550

## LOOKING UP THIS MONTH

Happy summer, everyone! The summer solstice occurs at 1:06am CDT on June 21 this year. It's also the longest day at 15-hours and one minute. But there's more to June than just the summer solstice!

If you haven't seen Mercury yet, take the next clear night after you read this and look! Early in the month (June 1) Mercury reaches its greatest separation from the Sun and sets at 10:15pm. This is the best evening view of Mercury for 2007 so look early and look often! It is situated to the lower right of Venus. By mid-month Mercury sets at 9:30pm and, by the 24<sup>th</sup>, it's all but invisible, setting with the Sun.

Venus continues its dominance of the west, coming to its greatest separation from the Sun on the 8<sup>th</sup> at 45-degrees. At this time it sets at 11:35pm CDT. Though, from now on, Venus will get a little lower, it will brighten a bit. Early in the month, Venus will form a nearly straight horizontal line with Castor and Pollux in the west, then zip by the Beehive cluster on the 12<sup>th</sup>. The thin crescent Moon is to the lower right of Venus on the 17<sup>th</sup> and between Venus and Saturn on the next night.

Speaking of Saturn, it is roughly 23-degrees (over two fists held at arms length) at the beginning of June. But watch closely each clear night as Venus and Saturn get closer and closer. By June 30, the two are 0.7-degrees apart! Be sure to check that one out!

If we head to the other side of the sky, Jupiter reaches opposition on June 5. This means Jupiter rises at sunset on this date and it up in the sky all night. With Jupiter being relatively close, it also appears huge in the eyepiece at 46-arc seconds. The problem is that Jupiter never gets very high in our sky. When you look through a thicker part of the Earth's atmosphere, the image will appear to bubble. Still, be sure to look! Jupiter will be an easy target for the observatory reflector at the Skywatch events.

Mars still has yet to capture much attention, but it does rise earlier . . . from roughly 3am at the beginning of June to 1:45am at the end of the month. Still, Mars will get its due later on this year.

If you're up for some daytime observing, look for the waxing crescent Moon on the evening of June 19<sup>th</sup>. At very near 8pm (though start looking before this time) the dark side of the Moon will occult, or pass in front of, the star Regulus, the heart of Leo the Lion. The star should appear very close to the northern edge of the Moon and, in fact, Champaign-Urbana isn't too far from the graze line. If you watch the star, the Moon's motion is obvious. Keep in mind the Moon is moving at roughly 2300 mph in its orbit around the Earth.

The magazines report that Vesta is within the limit of the unaided eye and easy in binoculars, but you'll need a finder chart. Check out <http://skytonight.com>. The brightest asteroid was discovered by Heinrich Olbers on March 29, 1807 . . . 200 years ago! It's near M107 on June 1, just north of Jupiter.

-DCL

### *Moon Phases*

### *Waning Gibbous Moon*



1 <sup>st</sup> quarter	June 22	July 22
Full	June 30	July 29
Last quarter	June 8	July 7
New	June 14	July 14

If you would like to see the phases of the moon, past, present, and future log on to <http://aa.usno.navy.mil/data/docs/MoonPhase.html#y2007>

## *Some interesting facts*

Johannes Kepler (1571-1630) correctly theorized that the planets in our solar system did not orbit the sun in a circle, but in an elliptical manner. He took the Copernican theory that the sun was the center of the Solar system, and expanded on that. Thus we have Kepler's three laws of planetary motion.

1. The orbits of the planets are ellipses, with the Sun at one focus of the ellipse.
2. The line joining the planet to the Sun sweeps out equal areas in equal times as the planet travels around the ellipse.
3. The ratio of the squares of the revolutionary periods for two planets is equal to the ratio of the cubes of their semi-major axes

To read more on this go to <http://csep10.phys.utk.edu/astr161/lect/history/kepler.html>

## **CUAS NEWS**

**Light Pollution News!** Dave Leake met in person with Deborah Frank Feinen, member of the Champaign City Council. Ms. Feinen is very interested in lighting from an environmental point of view. She says that the council is interested in "experimenting" with the new I-57 interchange and the businesses that will go in there. Lighting might be a part of that. Light pollution has already been discussed as an issue for the interchange by the residents who border the area. Dave Leake, Bob Lozar and Audrey Ishii have been working on adapting a lighting ordinance from Manatee County, Florida to existing Champaign code. A current draft of the ordinance is linked off the CUAS web site at [www.cuas.org](http://www.cuas.org). Please take a look at it and provide feedback to Dave at [dleake@parkland.edu](mailto:dleake@parkland.edu). Remember this is a draft! Input is most welcome. There's a paragraph after the tables that needs either editing or outright deletion. Dave has also emailed officials with the International Dark Sky Association and the leaders of three Illinois IDA sections to get their feedback.

Many thanks to Mr. & Mrs Hampel and Mike Conron for their work at the "**Investigations in Space**" event at the planetarium. It is estimated that more than 500 kids came through in the two hours. There were three standing-room-only planetarium shows and a fourth one was added. Mike and Guy had a telescope outside while Shar staffed the table, complete with hydrogen and neon tubes and spectrum glasses. "Curious George" even launched a rocket from right outside the planetarium!

Thank you also to WILL Meteorologist **Ed Kieser** who did a wonderful impromptu talk at our May meeting. Ed talked about the Greensburg, Kansas tornado and then used the internet to show us some data to determine the stability of the atmosphere. Thank you, Ed!

For the program at the **June meeting**, lets show some of the astrophotos that you've taken. It can be anything . . . simple camera on a tripod or through the telescope. If you wish, you can email your photos ahead of time to Dave ([dleake@parkland.edu](mailto:dleake@parkland.edu)) so he can assemble them into a powerpoint presentation. That will save us from loading multiple shots into the laptop computer. Hopefully a few of you will share techniques with the rest of us, too!

CUAS has been asked to provide a telescope or two at an "afterglow" event at the **Krannert Center for the Performing Arts** on Thursday, June 21 (the summer solstice) from 6:30-11pm. Granted it will be

too light at 6:30 but that is when the event begins. Inside Krannert, Wayne James will have the ROE's portable Starlab Planetarium set up in the lobby for interested passers-by. This is quite the evening! And we're getting some pretty good publicity, too! And it's free! For more info see:  
<http://www.krannertcenter.com/performances/details.asp?elementID=21881>

There is another opportunity for in-town observing IF the club wants to pursue. This summer's state **library reading program** theme is "To the Library and Beyond!" I'm sure the libraries would welcome a few telescopes . . . . IF we had volunteers. Interested?

Bob Rubendunst has arranged two more nights of observing at the waterfowl area (which is north of the main campground) at the Middle Fork Forest Preserve at Penfield, northeast of Rantoul. The dates are June 16 and August 11. Note the second coincides with the Perseid Meteor Shower. Times will be printed in the calendar section. It would be nice to have someone maybe do a short talk before the August session. Of course, all observing is weather permitting.

The Staerkel Planetarium had a new web site, based on a new template for the entire college. As with most new sites, it is a work in progress, but it's coming along. Check it out at [www.parkland.edu/planetarium](http://www.parkland.edu/planetarium). Feedback is welcome! For June and July the planetarium will reduce its public schedule, temporarily suspending Saturday night programming and adding Thursday matinees at 10am and 11am. A full schedule appears on the web site.

The Staerkel Planetarium is now a part of the **Adler Planetarium Travel Coalition**. There are currently two trips in the works. "Celestial Navigation: Sailing the Greek Islands" on August 28-September 7, 2007 and then "Iceland: Northern Lights & Lava Fields" on October 3-9, 2007. For more information on these voyages, contact Elizabeth Lucas at [elucas@adlerplanetarium.org](mailto:elucas@adlerplanetarium.org). The planetarium gets a "credit" for everyone we send to them. We do have a color flier we could email to you if you want more info. The 2008 trips are being planned at this time.

**For sale:** 6-inch f/8 Criterion reflector with completely redone optics. Equatorial mount and clock drive included. The optics were redone by the Tuesday night ATM group that meets at Mike Lockwood's home. Asking \$350. Contact Mike Lockwood if you're interested. *The telescope is currently in the planetarium lobby if you'd like to take a look at it.*

**For sale:** 10" F/6.8 and 10" F/5.5 truss-tube Newtonians, both built by me, with primary mirrors made by me. The F/6.8 is plate glass and about 1/15th wave, and the Pyrex F/5.5 is roughly 1/30th wave. They are not inexpensive, but if you're interested in a serious, high-quality telescope that will provide the best of planetary views, please give me a call (398-9778) or talk to me at a meeting. The F/5.5 is the brother to my 10" F/8.8, featured in the March S&T. Both scopes can be seen on my web site (<http://bi-staff.beckman.uiuc.edu/~melockwo/index.html>) under "Telescopes". I am willing to customize the f/6.8 a bit.

Mike Lockwood

## TREASURERS REPORT

CUAS Treasurers Report for May 2007  
Willard Brinegar, Treasurer 2007

As of 5/30/07

### Assets\*

\$ 111.00 petty cash envelope  
\$ 2684.46 checking account  
\$ 2795.46 Total Assets

### Income\*

\$ 45.00 three new members @ \$15  
\$ 45.00 Total Income

### Outgo\*

\$ 0.00 no expenses paid

### Assets\*

\*Note: Magazine subscription funds are not reflected in Income and Expenses since they are simply sent on to the respective publishers. As of 5/30/07, all received subscription payments have been sent on, so they are not reflected in the Assets category either.

## **OBSERVATORY NEWS**

The May Skywatch was very successful. We had roughly 40 people come through and look at Saturn, Venus, the Moon (which was right next to Venus – a stunning view!), M65 and M66, plus M13. Bob Rubendunst, Guy Hampel, Dick & Ellen Robrock, and Audrey Ishii & Charles Smyth all had scopes set-up outside the dome. Thanks to all who volunteered!

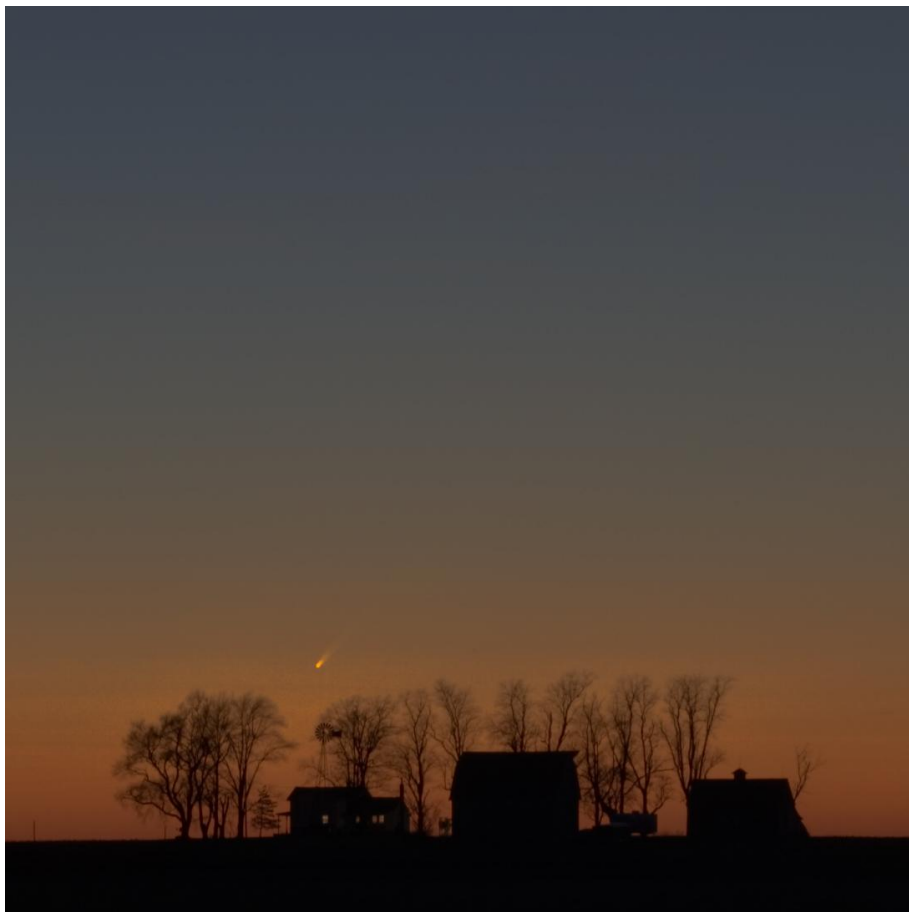
It was noticed that someone had vandalized our Meade mount on the pier outside the dome. One of the set screws is missing and one piece was found across the lawn. We may have to put the head of the wedge in the shed.

Thanks to Bob Lozar, the parts of the old iron fork mount are now out of the shed. Thanks, Bob!

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.

This is a picture of comet McNaught. Taken by John Stone January 2007. It's a really nice photo. Unfortunately, you can't see the differences in color. But if you look in the lower part of the picture you can see the tail just above the tree tops.





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) Mike Matthews | 11) Bob Rubendunst |
| 3) Mark Prather     | 6) Guy Hampel       | 9) Wayne James   | 12) John Stone     |
| 13) Bill Marble     |                     |                  |                    |



## ***LOOKING AHEAD***

June 14                      CUAS Club Meeting                      7-8:30pm                      Staerkel Planetarium  
It's astrophoto night! Bring your astrophotographs to share with the group. Even simple photographs are welcome!

June 16                      New Moon Observing                      8:30-?pm                      Observatory  
Our members-only event for the month. You can meet at the dome OR at the Middle Fork Forest Preserve near Penfield (see club news). If you head to Penfield, remember that we're not at the

campground, but at the waterfowl area. If you're coming from the south off of 136, pass up the regular park entrance and take the next left.

June 21                      Krannert's Afterglow event    6:30-11pm    Krannert Center  
See the club news section for details. Can you bring a telescope to see the crescent Moon?

June 22                      Hessel Park Star Party            8:30-10:30pm Hessel Park  
Lets do some in-town observing! If the weather permits, join us at Hessel Park, near the southeast corner of the park

June 23                      CUAS Family Skywatch        8:30-10:30p,    Observatory  
Our public event for the month is also weather permitting. Take I-57 south to the Monticello Exit, go west 1.4 miles to CR 700E, then turn left (south) and go 0.8 miles. The dome will be on your left. Bring the family, invite your friends! We'll have Venus and Saturn in the sky once again!

July 12                      CUAS Club Meeting            7-8:30pm        Staerkel Planetarium  
Program to be announced.

July 14                      New Moon Session            9-?pm            Observatory

July 21                      CUAS Family Skywatch        9-11pm            Observatory

August 9                      CUAS Club Meeting            7-8:30pm        Staerkel Planetarium

August 11                      New Moon Observing            8:30pm-?        Middle Fork Preserve  
Bob Rubendunst has arranged for us to watch the Perseids from the dark skies of the Middle Fork Preserve, northeast of Rantoul. Thanks, Bob! More info will be available as we get closer to the date.

August 17                      Meadowbrook Star Party        8-10pm            Meadowbrook Park  
Join us at Meadowbrook Park, off Windsor Avenue, near the Prairieplay playground (weather permitting) for a look at the sky from in-town.

### **Other News, Viewing for June**

Read about the Spitzer telescope discovery. It looks like the telescope has discovered a binary pair of black holes. The space telescope is the only one that is orbiting around the sun behind the earth, so this gives it a different perspective on our Milky Way galaxy. It can look at an object two different ways, similar to our eyes do, thus depth perception. So using two lenses, one from earth and the Spitzer astronomers were able to determine they were looking at a binary pair of black holes.

For further information, go to the following url.

<http://www.universetoday.com>



*Astronomy Club Resources*

From Chandra X-Ray Observatory

The brightest stellar explosion ever recorded may be a long-sought new type of supernova, according to observations by NASA's Chandra X-ray Observatory and ground-based optical telescopes. This discovery indicates that violent explosions of extremely massive stars were relatively common in the early universe, and that a similar explosion may be ready to go off in our own galaxy.

"This was a truly monstrous explosion, a hundred times more energetic than a typical supernova," said Nathan Smith of the University of California at Berkeley, who led a team of astronomers from California and the University of Texas in Austin. "That means the star that exploded might have been as massive as a star can get, about 150 times that of our sun. We've never seen that before."

Even though this is a relatively new explosion, Astronomers think this happened all the time in the early universe. With this information, they think they can determine how the early stars died. The discovery of the supernova known as SN2006gy, provides evidence that the death of the supernova is different than theoretical predictions.

For more information on this go to <http://myNASA.nasa.gov/portal/site/myNASA/index.jsp>

**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 &amp; Telescope</i> renewal*	\$33
Donation	\$ _____
Total Enclosed	\$ _____

\*enclose mailing label

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

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<http://www.champaignparkdistrict.com>

**William M. Staerke 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  
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