

"CLEAR SKIES"



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

August, 2007

CUAS OFFICERS MESSAGE

Hello Everybody,

I'm Phil, the CUAS website implementer, designer, and maintainer. Not actually an officer, but an appointed position.

Chris Pond did a magnificent job when he first set up our website years ago (sometime in the '90s, I think). But now he's got a growing family to take care of and doesn't have time to mess with websites, so I stepped in last year. I simplified some things, redesigned the look a bit, added some pages, made the pages more uniform, and did some cleanup. Stuff Chris would have done if he'd had time, mostly. Response has been, for the most part, positive. Right now, though, I'm just doing maintenance on it, namely, adding the monthly newsletter to the newsletter archive, adding the monthly meeting notes, and updating the front page and the events calendar page. So now it's time to consider what, if anything, should be changed or added.

My vision for our website has been to make it not only an information page for potential new members and the surrounding community, but also a resource for our membership, that is, you. I would very much like to know what you want and expect in a club web page and how I can make it better. Also, it would really help me to know what you don't like about it.

For example,

- ❖ Would you like to see interactive tools such as a Moon Phase calculator or Sidereal Time Clock?
- ❖ Would you like more informational pages in the Articles section?
- ❖ Is the website easy to find your way around in?
- ❖ Are the pages too cluttered or hard on your eyes? Which ones are they, or is it all of them?
- ❖ Is there anything about the website that annoys you?
- ❖ What other features would you find useful, fun, or informative?
- ❖ Are there other websites that you could point to that you think ours should be more like?

Although I'm not planning a major redesign anytime soon, adding and/or removing pages is pretty easy to do. One thing on my to-do list is to add an article about observing meteor showers (should have done that last week). And if you do have a suggestion or complaint about the overall design, I can keep it in my notes file and then consider it if and when it's time to do the redesign or pass the notes on to my successor. (Although I'd like to move to the Chicago area, where I'm originally from, I plan to continue my membership in CUAS indefinitely and take care of the website as long as I'm able to. After all, I still plan



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Mike Conron, Secretary	355-5996
Willard Brineger, Treasurer	356-5929
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Mike Rosenberger, Obs. Dir.	598-2254
Phil Wall, Webmaster	352-5442
Bill Marble, Newsletter Ed.	359-6407
Jameel Jones, CPD	398-2550

to come back for visits, and the website can be maintained from anywhere on Earth, or even from orbit if I should be so lucky.)

And, of course, if you have an article or digitized photographs, or even scanned drawings that you'd like considered for inclusion in the Articles section, please send them along. If you have something that could potentially merit its own button in the navigation bar, I'd even consider that.

Since I'm basically an optimist (or trying to be), if you don't email me about our website, www.cuas.org, I'll assume that you're happy with it exactly as it is now. Of course, feel free to talk to me about it at meetings too, if you happen to be there. I'll try and remember to bring a notepad. My email address is phil.wall@pobox.com.

Clear Skies to you,
Phil

LOOKING UP THIS MONTH

There are two "big events" this month, but neither is really in, what we would call, "prime time." The first is the Perseid Meteor Shower which peaks on the evening of August 12 and the morning of the 13th. In past newsletters, we have printed the max as being August 11-12, but astronomers figure that we'll hit the main part of the stream at about midnight on the 13th. The Perseids are result of the Earth spinning through the dust trail of Comet Swift-Tuttle, which comes around every 130 years. The dust particles, each about the size of a pencil eraser, come into the atmosphere with an average speed of 100,000 miles per hour, ionizing the air. It is really the shocked air that is glowing, which is what you see. Given the Earth's rotation and revolution, the observer is actually pointed into the meteor stream after midnight, thus you should see more meteors. You can still see a few meteors in the sky before midnight, but these dust particles have to be traveling fast enough to catch up with the Earth. And we're cruising around the Earth at about 66,000 miles per hour!

To observe the Perseids, don't take a telescope with you. You need a comfy chair, warm clothes (it gets cold in the middle of an August night), mosquito spray, a dark sky, and some patience. The club will be venturing to the water fowl area of the Middle Fork Forest Preserve near Penfield (northeast of Rantoul) on Saturday night, August 11, with observing beginning at 9pm. Weather permitting, of course!

The second event is a total lunar eclipse that occurs on the morning of August 28. This is the cousin of the last eclipse which, if you will recall, began before the Moon rose for those of us in Central Illinois. This is the other bookend. The Moon will actually set before the eclipse is over. The umbral phase (the easiest to see) begins at 3:51am CDT and the Moon will be completely in the Earth's shadow at 4:52am. Mid-eclipse is at 5:37am. The total phase ends (and we'll start to see the Moon again) at 6:23am, but by this time it is light and the Moon will have set. Recall Full Moons set as the Sun rises. As this issue goes to press, there is no official CUAS observing for this event, but it's still worth setting the alarm. The next lunar eclipse will occur on February 21, 2008 and, after that, we'll have to wait until just before Christmas in 2010!

If we turn our attention to the planets, the inner worlds will be tough to see in August. Mercury passes behind the Sun on the 15th and into the evening sky, but it never gets very high above the horizon. By the end of August, it sets at 8:15pm in the twilight. Venus passes between the Sun and the Earth on the 18th and ventures into the morning sky. By the 27th it rises at 5:30am, about the time twilight begins.

Saturn also goes behind the Sun on the 21st to reemerge in the morning sky. It rises in the morning twilight near the star Regulus.

Jupiter still rules the evening sky, situated in the south at dusk. It's about half a fist above Antares, the red heart of the Scorpion. On the 21st, a gibbous Moon is just below this pair. The magazines report that Jupiter is finishing up its retrograde motion and will again head back towards the east against the background stars. Since we're past opposition, Jupiter's apparent size will shrink, but it still looks great at the eyepiece.

As we head towards the fall months, you'll begin to hear more about Mars. Currently, Mars is still in the morning sky, rising at around 12:30am in mid-August. Mars will make some nice sky patterns with the Pleiades and the Hyades. On the 7th, Mars is five degrees to the lower right of the Pleiades. On the 22nd, Mars is just north of Aldebaran, the red eye of Taurus the Bull. Now . . .which looks redder?

For the asteroid hunters out there, we have two pretty good opportunities to see two of the larger asteroids this month. Ceres, the largest of all the asteroids (about the size of Texas) is 0.4 degrees south of the star Xi Tauri on August 24. At magnitude 8.7 you might catch this one in binoculars, though a telescope is probably the better choice. Vesta is a bit brighter at magnitude 7.2. It is only 0.4 degrees north of Jupiter on the 29th of August. The word "asteroid" means "starlike" and that's how they'll look. It's best to draw the area and then check back in a few weeks and compare. The asteroid will have moved a bit. Have fun!

-DCL



Moon Phases

Waning Gibbous Moon

1 st quarter	August 20	September 19
Full	August 28	September 26
Last quarter	August 5	September 3
New	August 12	September 11

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

The atmosphere 'escapes'

Due to thermal energy, some of the molecules at the outer edge of the earth's atmosphere have their velocity increased to the point that they can escape the pull of gravity. This results in a slow but steady leakage of the atmosphere into space. Because unfixed hydrogen has a low molecular weight, it can achieve escape velocity easier and leaks into outer space easier. Whoa! Does this mean that we are running out of air?

For more interesting facts and to read the rest of the story, go to <http://fagonazos.blogspot.com/2007/06/ten-amazing-facts-about-earth.html>

Members Corner

This is from Bob Rubendunst.

VIEW THE NIGHT SKY SATURDAY, AUGUST 11TH AT MIDDLE FORK RIVER FOREST PRESERVE'S "PENFIELD STARWATCH"

The Champaign County Forest Preserve District and the Champaign-Urbana Astronomical Society will host a mini-star party on the night of Saturday, August 11th at the Middle Fork River Forest Preserve in Penfield. The "Penfield Starwatch" will last from 9 PM to midnight at Middle Fork's Waterfowl Management Area, weather-permitting.

If Saturday August 11th is rainy or cloudy, the rain/cloud date is Sunday, August 12th.

Setup of telescopes will be shortly before sunset at 8 PM. From 8:00PM to 9:00 PM, the group will be able to look at Jupiter and bright stars. At 9:00 PM, which is the start of better viewing, a CUAS member will give a brief tour of the night sky, telling participants what they might expect to see.

If the night is clear, participants should be able to see galaxies and nebulae that might not be visible closer to city lights. For those who want to try to see a few Leonid meteors, please bring a lawn chair and warm clothes, and arrive between 11pm and midnight.

Telescopes will be provided by CUAS members.

There is no admission fee. The Waterfowl Management Area is located on County Road 3500 N, about ½ mile west of County Road 2700 E. For more information on the forest preserve, contact Wendy Israel at (217) 896-2455. Program updates are available at (217) 351-2567.

Editors note: see the map insert for directions.

CUAS NEWS

Light Pollution News: The draft of the light pollution ordinance is still online on the club web site. The International Dark Sky Association has been notified that it's there as well as some other officials. Feedback is encouraged! We want the best ordinance we can get to take to the city planning commission. The latest advice is to eliminate the minimum 1 foot-candle illumination since this is way too bright. The 1 foot-candle limit was put in in Florida only to placate law enforcement officials. Email dleake@parkland.edu with comments.

As mentioned in the "Looking Up" section, interested CUAS members and the general public are invited to the water fowl area of the Middle Fork Forest Preserve near Penfield to observe the **Perseid Meteor Shower**. We'll start Saturday night (August 11) at 9pm and see how long we can last! This is weather permitting, of course. Remember that the water fowl area is north of the main campground. Bypass the main entrance to the campground and head north on the road, taking the next left. [Editor's note: Dave Leake is working at the planetarium this night and will be leaving Parkland to drive up to Penfield at about 10:30pm. If anyone wants to caravan, be at the planetarium circle drive at 10:20pm. The **20th anniversary** plans for the Staerkel Planetarium have been announced in the college's fall "Live & Learn" guide. Of special note are lectures by astronaut and Danville native Joe Tanner, a talk by Smithsonian astrophysicist (and former U of I Astro Club president) Lynn Carter, and a talk by Education Professor Barbara Hug on the anniversary of Sputnik. You're also all invited to a fundraiser for the planetarium's full-dome project. The gala is October 4 and we hope to have many astronomical items for a raffle. Tickets can be purchased through the Parkland Foundation. More info will appear in the newsletter as we get closer to the event date.

For sale: 6-inch f/8 Criterion reflector with completely redone optics. Equatorial mount and clock drive included. The optics were refurbished 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.*

Star Party Information for the fall are as follows. Be sure to check the web sites soon as some require early registration. Did we miss any?

Astrofest, hosted by the Chicago Astronomical Society at Vana's Farm, is September 6-9. As this issue goes to press, registration info isn't available. <http://chicagoastro.org/af/index.html>

Illinois Dark Skies, hosted by the Sangamon Astronomical Society at the Jim Edgar Panther Creek State Wildlife Area, will be September 13-16. Meals are available for purchase. Registration is \$45 per person although there are family rates. <http://www.sas-sky.org/main.html>

The *Prairie Skies* party at Camp Shaw-Waw-Nas-See (the old Astrofest site) will be September 13-16. <http://www.prairieskies.org/>

The *Indiana Family Star Party* will be August 9-12 at Camp Cullom, 50 miles northwest of Indianapolis. This is also the Great Lakes meeting of the Astronomical League.

<http://jmmahony.home.insightbb.com/pgo/starparty/>

Also, though not a star party, the *Astronomical Society of the Pacific* will meet in Chicago from September 5-7. The emphasis is on education and public outreach.

<http://www.astrosociety.org/events/meeting.html>

TREASURERS REPORT

CUAS Treasurer's Report for July 2007
Willard Brinegar, Treasurer 2007
As of 7/31/07

Assets*
\$ 111.00 petty cash envelope
\$ 2517.76 checking account
\$ 2628.76 Total Assets

Income*
\$ 0.00 Total Income

Outgo*
\$ 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 7/31/07, all received subscription payments have been sent on, so they are not reflected in the Assets category either.

OBSERVATORY NEWS



Summer 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.

Do we want to bring back the **logbook**? If we have one, you'd have to remember to sign-in when 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) Mike Matthews 11) Bob Rubendunst
- 3) Mark Prather 6) Guy Hampel 9) Wayne James 12) John Stone
- 13) Bill Marble



LOOKING AHEAD

August 9 CUAS Club Meeting 7-8:30pm Staerkel Planetarium
Mike has done a great job of providing programs for our meetings, but we're still looking for one for this particular meeting. Any ideas? [Note to those attending the meeting . . . believe it or not there is a wedding rehearsal that will run from 5:20 to 6:30pm this night. If it by chance runs a bit late, please be patient!]

August 11 New Moon Observing 9pm-? 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! See "Club News" for more info.

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. We'll need volunteers for this session and the Skywatch the next night.

August 18 CUAS Family Skywatch 8-11pm 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!

August 28 Total Lunar Eclipse 4am
Given the time, we'll probably have no "formal observing session" but do set the alarm and check it out! See the "Looking Up" section for times.

September 8 New Moon Observing 8-?pm Observatory

September 13 CUAS Club Meeting 7-8:30pm Staerkel Planetarium

September 15 CUAS Family Skywatch 7-10pm Observatory
And it's also the second National Astronomy Day of the year!

September 21 "Fall Prairie Skies" opens 7pm Staerkel Planetarium

October 4 Planetarium Gala Event 5-7:30pm Staerkel Planetarium

October 5 "World of Science" Lecture 7pm Staerkel Planetarium

What's the latest on this "dark energy" craze? Does the evidence still support it? And what does it mean for our universe? Dr. Brian Fields is the speaker. Admission is \$1 at the door.

October 6 Decatur Area Astronomy Jamboree Friends Creek Park
Though this is not an official CUAS event, several members have gone in the past. The location is Friends Creek County Park, northeast of Decatur, near Cisco, just off I-72. A cookout begins the

evening at 7pm, then activities for the kids, then a speaker, then observing. Dave Leake is this year's speaker.

October 7 Astronaut Joe Tanner 7pm Parkland Theatre
Shuttle astronaut and Danville native Joseph Tanner will talk about his latest space shuttle mission. Admission is only \$2 at the door. Note this is in the theatre, adjacent to the planetarium. It has double the planetarium's capacity.

October 13 New Moon Observing 8-?pm Observatory

October 19 "Universary" opens 8pm Staerkel Planetarium
The planetarium's latest original feature details all of the amazing astronomical discoveries that have occurred in the first 20 years of the planetarium's history.

Other News, Viewing for August

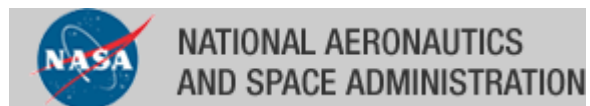
What is this world coming to? It has been announced that Brian May, some of you may not know who this is, but he was the founder of the rock group Queen. They were a big hit in the 1970's with such hits as "We will rock you." Anyway back to what I was going to say, Mr. May will soon be Dr. May. He is about to complete his doctorate in Astrophysics. The title of his thesis? "Radial Velocities in the Zodiacal Dust Cloud." May was a student at Imperial College in 1970 when the group was formed and when they became a big success on the rock scene he dropped out of college. His interest in astronomy never left him and he co-wrote "Bang! The Complete History of the Universe," which was published last year.

He was due to finish carrying out astronomical observations at an observatory on the island of La Palma, in Spain's Canary Islands, on Tuesday, the observatory said.

May told the British Broadcasting Corp. that he had always wanted to complete his degree. "It was unfinished business," he said. "I didn't want an honorary Ph.D. I wanted the real thing that I worked for."

Editors note about star gazing.

I will interject some of my on biases here about stargazing. I am a real novice when it comes to naming stars, constellations, etc. but my two favorite things to see are Jupiter and the moon. When I look at Jupiter, I marvel that I can see so much, and when I look through a 20mm or smaller lens, then I can see the clouds, of blue and gray. Looks so cool. I love to look at the moon also, because I can actually see the craters that some of the web sites talk about. And I can also see the differences in the shadows and the mountains. Anyway that is my two cents worth.



Astronomy Club Resources

Well it looks like the sun spots have ended. Scientists think that maybe the sun has finally ended its solar maximum, or a time when sun spots and solar flares occur frequently. We appear to be in solar minimum. There has been no activity on the sun for days and scientists think that maybe the 11 year cycle of solar maximum is done. But they will continue to watch to determine when the next 11 year cycle will occur. At the cycle's peak, solar maximum, the sun is continually peppered with spots, solar flares erupt, and the sun hurls billion-ton clouds of electrified gas into space. Once spots begin to appear

again, then scientists will know the sun is heading into another 11 year cycle. Solar maximum has often been compared to hurricane season here on earth. Violent solar events, like flares and coronal mass ejections, are the hurricanes of space weather. These solar storms are capable of wreaking havoc with satellites, power grids, and radio communication, including the Global Positioning System. For more information, check out the NASA web site.

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>

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



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