

"CLEAR SKIES"



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

APRIL, 2005

"PRESIDENT'S" MESSAGE

I hope everyone either has completed his or her taxes or is close - not much more time left. If you are like me and owe taxes, you'll wait until the 15th. This has been a rough month for many of us because of colds and the flu. I have been sick going on a month. I hope all of you are well.

On April 2 we are going to help out with an observing session at Allerton Park. This event starts at 7:30 so please make sure that you are there early enough to get set-up. [Editor's note . . . any way to move the Illinois game up an hour?] CUAS provides a classroom session and then an observing session for the people that attended the classroom session. It is always a lot of fun and the people are very appreciative. Allerton Park has some great dark skies and a great place to observe from. Watch the list server for more information.

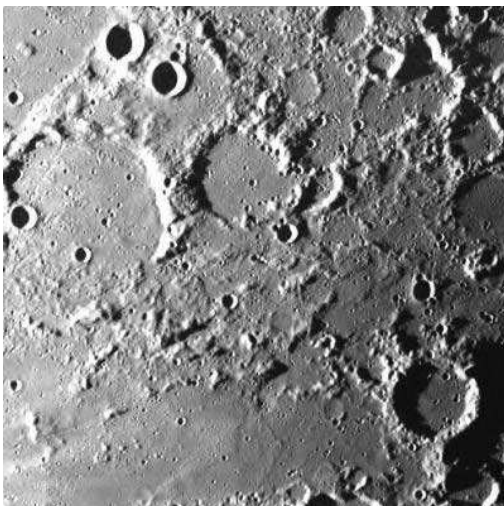
The renovation of the telescope continues to go well. We are going to be putting the fans on the tube soon to help in cooling down the optics. Hopefully within the next month or so we will have it back in the dome for use. We are thinking of having an open house for club members and then another for the public. If you haven't been out to see or use the scope this would be a great time.

I hope everyone enjoyed Jeff's presentation at the last meeting. At this month's meeting Phil Wall will be talking about astronomy software that is available for the Linux operating system.

A number of the planets are viewable this month. Make sure that you get out and take a look.

Clear Skies

Mike



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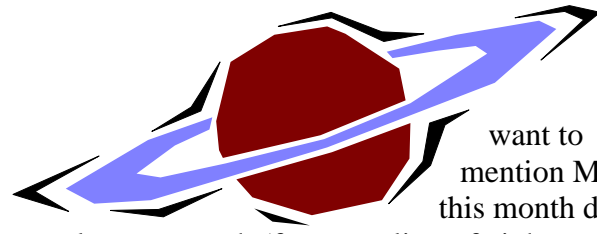
LOOKING UP THIS MONTH

We can never be sure what April will bring (April showers?) but it can't be much worse than the end of March. Did anyone bother counting how many cloudy days we had in a row? "Welcome to the Midwest." IF we can score some clear skies, we have a few planets in the sky this month.

Lets begin with the one that may be one of the toughest to see, at least initially. Venus passed behind the Sun at the end of March and now technically is in the evening sky, but it takes its sweet time. On April 10, Venus sets in the twilight at 7:45pm CDT. This time increases to 8:30pm by the end of the month, so it's not "jumping up" from the horizon by any means. Look when the clouds permit in the west-northwest and see when you can see Venus first. It should get easier as we get later in the month.

Saturn is still up there in Gemini, not setting until after 2am. You have a chance to see the "3D-ness" of the solar system on tax day, April 15. Five days before, Saturn comes to a point in its orbit called "quadrature." Here you can draw a line from the Earth to the Sun and then from the Earth to Saturn and you get a 90° angle. Now is the time to look for the shadow of the planet on the rings. On the 15th the Moon is a day before first quarter and near Saturn. Though it usually isn't referred to this way, a first quarter Moon is also really at quadrature. That makes sense since Saturn & the Moon are near each other.

Jupiter finally comes to opposition on the night of April 2nd. Have you noticed that bright beacon in the sky in the east-southeast roughly an hour after nightfall? Well, it'll be there right after sunset now. In fact, Jupiter in the southeast and Sirius in the southwest make nice bookends. The magazines report that Jupiter is also farthest from the Sun at this point in it's twelve year orbit, so this opposition isn't as good as others. Still, it's only about 13% smaller in a telescope . . . you may not even notice! The full Moon appears just below Jupiter on April 22nd.



We want to mention Mars this month due its close approach (from our line-of-sight anyway) to Neptune. Mars is brightening in the east-southeast, rising at 3:45am CDT. A nice crescent Moon appears to the right of Mars on the morning of April 3rd. Try looking on the night of the 13th, though, as Mars is just 1.2° to the south-southeast of Neptune. Neptune is obviously much fainter, but what better time to pick it out of the starfield then with a bright object near it.

Mercury passes between the Sun and the Earth and into the morning sky for all of April and May, though it doesn't get too high from our point of view. Greatest separation is technically April 24th, but Mercury still rises as the twilight is morning beginning.

On paper, we have two eclipses this month and we won't get to see either, unless you're traveling south or west. A hybrid annular eclipse of the Sun occurs on April 8th with the path coming in off the Pacific and crossing Central America. Panama is the place to be. It's interesting, though, that the upper limit of the eclipse track appears to crisscross central Illinois. It might be fun to do some solar projection around 5pm on the 8th just to see what might happen. There won't be much of the moon visible at all, but I wonder if we'll see any? On the 24th we'll have a penumbral lunar eclipse but only those out west can check that one out.

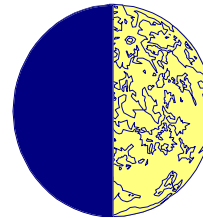
The Lyrids peak near midnight on the night of April 21st, though only a dozen or so an hour are expected. There have been some outbursts of heavier activity in the past, so who knows. And lastly, for asteroid hunters, maps appear in the magazines of Pallas making a trip through the Virgo cluster of galaxies. During April, Pallas will be near the galaxies M84, M99, and then M98. The asteroid is around magnitude 8, so you'll need a scope. Good luck! -DCL

Planet	Date	Constellation	Magnitude	Distance*	Apparent Diameter
Mercury	4/15	Pisces	+0.6	70.7	8.8"
Venus	4/15	Pisces	-3.8	160.0	9.7
Mars	4/15	Capricornus	+0.7	139.2	6.3
Jupiter	4/15	Virgo	- 2.4	418.1	43.7
Saturn	4/15	Gemini	+0.1	845.7	18.2
Uranus	4/15	Aquarius	+5.9	1928.6	3.4
Neptune	4/15	Capricornus	+7.9	2828.3	2.2
Pluto	4/15	Ophiuchus	13.9	2827.5	0.1

* in millions of miles

Moon Phases:

3 rd Quarter	April 3	May 1, 30
New	April 8	May 8
1 st Quarter	April 16	May 16
Full	April 24	May 23



CUAS NEWS

We currently have 17 members who are receiving this newsletter as a **pdf file** via email. If you'd like your newsletter emailed to you (saving the club a little postage), email Dave Leake at dleake@parkland.edu and have your name put in the electronic mail list.

We'll do some observing from the meadow at **Allerton Park**, weather permitting, on April 2. There'll be a short program in the visitor's center at 7:30 and then observing just outside in the meadow. This is a wonderful place to check out the sky! Bring a scope and use the northern approach to Allerton (the bridge is still out and will be for a while). You can get access to the meadow just west of the visitor's center – drive carefully! If the weather is iffy and you're not sure about cancellation, call Dave Leake the afternoon of April 2 at 359-6644.

The **light pollution** group is getting more active now. Give Bob Lozar a call if you'd like to be a part. The group plans on meeting for roughly 15 minutes after the monthly meetings. The group's purpose is to decrease the nuisance of light trespass in and near Champaign County to preserve the resource of night time darkness for the pleasure of the night sky, for the habitat of nocturnal animals, to improve safety & security, and to decrease the wasteful usage of light energy by both public and private groups.

Ahead, the group plans to look at:

- Develop County lighting Ordinance
- Inform Public of Lighting Trespass
- Educate Government (County) Officials of Problem
- Develop a list of lighting solutions specific for Champaign
- Identify and Reward Examples of Good local lighting, educate owners of light trespass solutions
- Establish Dark Sky Preserve

All interested parties are welcome!

April 16 is **National Astronomy Day** where traditionally amateur clubs bring astronomy to the people. It appears that we'll be out at our observatory using our newly refurbished 16-inch Cassegrain, thanks to the tireless work of many individuals, including Mike Lockwood, Mike Conron, Guy Hampel, Mike Rosenberger, Mike Matthews, and John Stone, among others. Great work, guys! Come to the dome early on the 16th (if clear). Should we break a bottle of champagne over it? *Should we have a work day to prep the area and clean up the dome prior to the telescope re-installation?*

Junior Stargazers news . . . The preliminary JS packet is done and the press release information was submitted on March 24. Now we wait and see how many schools/scout groups respond. We'll send them some materials and then put some activities on the web site. There is already interest in the program from Bottenfield School on South Prospect Avenue in Champaign.

Star party! The August 6 date is a definite, thanks to Guy Hampel. Toss this one on the calendar. We could also do the first or last weekends in October, too. In October they have 50-60 people show up for a father/son campout. The club will need to investigate paying for a tent and some porta-potties. The site is two miles south of Walnut Point State Park and Guys says you can directly see just three lights from the observing pasture. Count on setting up in the daylight, though . . . it IS a pasture. . . meaning watch your step! More information will appear here as it becomes available.

If you want to get your club news fast, please subscribe to the **Cuas-I email list**. Sometimes people will email and say they will be observing that night and will ask for people to join them. There is also news of new comets and possible auroral displays. To subscribe, just go to the Cuas-I web page at <https://mail.prairienet.org/mailman/listinfo/cuas-I> and follow the subscription directions. Email cuas-I@lists.prairienet.org to post.

OBSERVATORY NEWS!

At the time of the meeting, the Cassegrain scope and the cradle Lockwood's basement while Guy Hampel had the tube patched, the tube repainted. The declination bearings have been replaced diameter by 1" thick aluminum disks from S&S Machine in were bolted to the cradle which holds the tube. The motion of will be controlled by friction from some casters. The only items on the list left to do are to drill the new mounting holes in the tube for the mirror cell and one fan, paint the new parts and touch up the fork and cradle, install fans, and then reassemble. For an update, see: <http://bi-staff.beckman.uiuc.edu/~melockwo/>. Photos are courtesy of this web page.



was in Mike hole filled and with two 1 3/4" California, which these bearings



(Left) Part of the moving crew: Mike Conron, Mike Rosenberger and Cliff Maduzia. (right) That's not the mirror, that's the dec bearing! Bob Rubendunst brought information to the March meeting about the Hobo datalogger for recording temperature & humidity

at the dome. This is to keep our mirror coatings from failing prematurely again. The unit is \$200 with \$20 for software and sensors at \$125 each. We could get a cheaper unit with the sensors mounted on the unit, but this wouldn't give us results near the telescope.



We'll be talking to the Champaign Park District later this year about our lease with the UI on the land where the dome is situated. We've been leasing the 100 x 200-foot tract since 1991. The lease expires in 2006.

Lastly, Mike Rosenberger talked with State Farm to increase our insurance at the dome \$10,000 (\$5000 for structure and \$5000 for marine). This will raise our premium by \$150 annually. We need to get a detailed list of the equipment at the dome, including some digital photos. Any takers? It was mentioned we need more photos of the equipment and facility on the web site, too.



LOOKING AHEAD

April 1	"World of Science" talk Parkland's own Dave Wilson will talk about how advance in genetics have transformed cancer treatments. Admission is only \$1.	7pm	Staerkel Planetarium
April 2	Allerton Park Observing See the "Club News" section for details . . .	7:30-11pm	Allerton Park meadow
April 3	Daylight Savings Time begins		
April 9	New Moon Observing	7pm - ?	Observatory
April 14	CUAS Club Meeting Phil Wall will show us some Linux-based astronomy programs, projected on the dome.	7-8:30pm	Staerkel Planetarium
April 16	GLPA State Meeting The Great Lakes Planetarium Association has state meetings in the spring with this year's being at the Adler in Chicago. All interested people are welcome to go (even if you're not a GLPA member). Give either Dave or Waylena a holler if you'd like more information. Registration is required (though the only cost is a Dutch treat lunch).	9-2pm	Adler Planetarium
April 16	CUAS Family Skywatch This is also National Astronomy Day! Come to the "rechristening" of the observatory. Take I-57 south to the Monticello exit; go west 1.4 miles County Road 700E. Turn right here and the observatory is a white dome 0.8 miles to the south, on your left. Weather permitting. Call 351-2567 for cancellation notices.	7-9pm	Observatory
May 7	New Moon Observing	8pm - ?	Observatory
May 12	CUAS Club Meeting	7-8:30pm	Staerkel Planetarium
May 14	CUAS Family Skywatch	8-10pm	Observatory
June 4	New Moon Observing	8pm-?	Observatory

June 9	CUAS Club Meeting	7-8:30pm	Staerkel Planetarium
June 11	CUAS Family Skywatch	8-10:30pm	Observatory

CHECK OUT ALL CLUB EVENTS ON THE CUAS HOME PAGE:

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

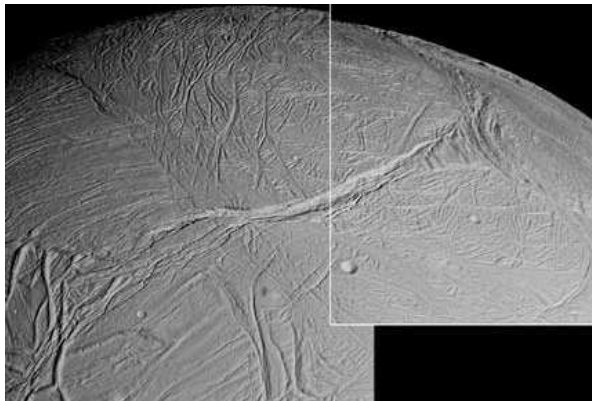
ODDZ & ENDZ FROM THE COSMOS

Item: With the August 6 star party on the calendar, it might be a nice time to mention some of the Midwestern star parties and how to find information. Here is the start of such a list – any others that are missing?

Texas Star Party	Mar/Apr	http://www.texasstarparty.org/
Niagfest, IN	Apr	http://clubs.kconline.com/was/niag.htm
Apollo Rendezvous, OH	June	http://www.mvas.org/
Nebraska Star Party	Jul/Aug	http://www.nebraskastarparty.org/
Iowa Star Party	Aug	http://www.farmresort.com/astronomydates.htm
Illinois Dark Skies	Sept	http://www.sas-sky.org/main.htm
Prairie Skies, IL	Sept	http://www.prairieskies.org
Great Plains, Kansas City	Sept	http://www.omahaastro.com/gpsp.htm
Great Lakes Stargaze, MI	Sept	http://www.boonhill.net/sunset/stargaze.htm
Eagles Park, MO	Sept	http://eaglespark.com/starparty.htm
Astrofest	Sept	http://www.chicagoastro.org/
Okie-Tex	Oct	http://www.okie-tex.com/
Twin Lakes Star Party, KY	Oct	http://www.wkaa.net/

Item: Thanks to members Dick & Ellen Robrock for this link: <http://medicinewheel.vcsu.edu/> Hmmm . . . think we ought to build something like this out at the observatory site?

Item: Ends up the Saturnian moon Enceladas (pictured here) has an atmosphere! *Cassini's* magnetometers made the find during two close passes on Feb. 17 and then Mar. 9. The small (300 miles diameter) moon's gravity has a hard time holding on to an atmosphere so it is surmised that ice volcanoes replenish the atmosphere.



Item: Using a little subtraction, the Spitzer Infrared Space Telescope has detected light from a planet – another first! Until now, extra-solar planets were found indirectly by their passing in front of the parent star or by making the parent star wobble. For HD 209458b, a cast of a transiting planet, the infrared emission was precisely measured both during and after an eclipse. By subtracting, you can determine how much light you're getting from the planet. These Jupiter-sized planets are at roughly 1340°F! Ouch!

Item: Ever seen “Westerlund 1?” Probably not . . . it's an open cluster in the constellation of Ara discovered originally in 1961. Ends up most the cluster is behind dust cloud. With infrared telescopes, you can “see through” the dust to reveal one of the Milky Way's mega-clusters! We've got hypergiants that would go all the way out past Saturn's orbit if placed where our Sun is located! They are about 100,000 solar masses in a space spanning only six light years! That's more dense than my closet at home!

Item: Rover update . . . *Spirit* passed day (“sol”) #427 of a planned 90 day mission – ain’t that amazing? It’s now scaling Husband Hill, getting a power reprieve when a dust devil passed over the rover, cleaning it’s solar panel . . . so power is up, thank you very much! *Spirit* also found what appears to be salt! So now we’ll have something for those Martian fries! Opportunity is speeding (quarter-mile in three days!) towards Victoria crater, 3 miles away, passing over what appears to be some sort of white terrain on the way. We now know that 90% of the Martian dust is magnetic!



Treasurer’s Report: As of March 28, 2005:

Checking account: \$2321.02

Petty cash envelope: \$101.00

No expenditures since March 1st.

Income:

Three renewals and one key renewal, yet to be deposited: \$55.00.

Two T-shirts sold, yet to be deposited: \$20.00.

Philip J. Wall, CUAS Treasurer 2005

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* \$29
- Sky & Telescope* renewal* \$33
- Donation \$ _____
- Total Enclosed \$ _____

*enclose mailing label

Detach and mail to:

C.U.A.S.
 C/o Phil Wall
 607 West Healey #11
 Champaign, IL 61820

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The Champaign-Urbana Astronomical Society is an affiliate group of the **Champaign Park District.**

<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>



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