

"CLEAR SKIES"



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

MARCH, 2005

"PRESIDENT'S" MESSAGE

Here it is March already. It seems like this year is flying by and there just isn't enough time to get everything done. I haven't been out observing once this year (although I was out once with all my equipment and LOTS of clouds). I expect to spend a lot more time observing once I get past some work deadlines and the weather warms up.

While driving home tonight I saw that we had a full moon out and that got me wondering how many of us actually take the time to observe the moon. Here we have this big, beautiful, and bright NSO (near space object) about ¼ of a million miles away and many of us take it for granted. I know I do but I am going to try and change that. I was wondering if we should have an observing session where we try and map the moon. To try and identify as many features on it as possible through a telescope. No prizes, just the satisfaction of accomplishing something. Is this something you might want to do as a club event?

Jeff Bryant will be hosting our program at the March meeting. Jeff will be sharing a summary of recent solar system mission highlights including *Cassini/Huygens* and the *Mars Exploration Rovers*. The topic will be heavy on images from the various missions. We are looking forward to a very interesting presentation.

The observatory telescope work is progressing very well. Mike Lockwood, Mike Conron, and Guy Hampel (did I miss anyone) are all working together to make our telescope into something outstanding. Earlier this month a few of us went out to the observatory to move the fork to Mike C's car so that he could start refurbishing it. We found that it was very heavy and after putting it in Mike's van he didn't have to worry about traction in icy conditions. After the last meeting a few of us went over to Mike Conron's house to unload the fork from his car. Mike has been working very hard on the fork and if you want to take a look at it, see <http://www.mbm30.org/CUASForkProgress/index.htm>.

At the February meeting we were going to help people with their telescope. I was expecting about the same amount of people that were there last year. Wrong, not one showed up but that was okay. I think we had a good meeting. We had some people that haven't been there for a while and it was fun reintroducing ourselves. I encourage others to come and share in our meetings. All input is welcome. You are the club and the club is you. Without your input the club won't grow.

Again I want to invite everyone to come and help with an observing session on April 2 at Allerton Park in Monticello. CUAS provides a classroom session and then an observing session for the people that attended the classroom session.



CUAS DIRECTORY:

Mike Matthews, President	721-9500
Mike Conron, Vice-prez.	355-5996
Guy Hampel, Secretary	
Phil Wall, Treasurer	352-5442
Jeff Bryant, 5 th Director	840-5251
Mike Rosenberger, Obs. Dir.	598-2254
Chris Pond, Webmaster	352-5426
Dave Leake, Newsletter Ed.	359-6644
Kevin Crump, CPD	398-2372

It is always a lot of fun and the people are very appreciative. Allerton Park has some great dark skies and is a great place to observe.

Clear skies,
Mike

LOOKING UP THIS MONTH

Hey, tell the world . . . it's spring! Well, close anyway. We have until 6:33am on the morning of March 20th, but here's hoping the weather warms before that. Remember how the winter evening sky had Saturn and that was about it? Well it gets crowded this month!

The big news is probably the best evening apparition of Mercury for the year. Mercury climbs out of the evening twilight at the beginning of March, reaches greatest elongation on March 12, and then heads back into the solar glare to pass between the Earth and Sun on March 29. So basically the month nicely frames the viewing window. Look due west for a fairly bright "star." Since there are no other bright stars in the area, you've just found Mercury. On the 12th, Mercury sets after 7:30pm in a dark sky. By about the 25th, though, it's back in the twilight, plunging quickly towards the horizon as each evening passes. The day before elongation, a nice crescent Moon is just to the left of the planet. Telescopically, see if you can spy about Mercury at about a half phase. Several times a year Mercury reaches this maximum elongation, but the angle of its orbit isn't always favorable, sometimes making a shallow angle with our horizon. This March, the angle is nearly vertical. Check it out!

Though you can't see Venus about now, we should at least mention it. It's been hanging out in the morning sky for the past several months, but the hiatus is over! Venus will pass behind the Sun at the end of this month to make an appearance next month, low in the west.

Saturn is still in the news as *Cassini* is still operating flawlessly. The next big event is a 500-kilometer pass of the moon Enceladus on March 9th. At magnitude 0.0, it still outshines both Castor & Pollux in Gemini. Near the end of March, Saturn ceases its retrograde motion and begins the trek towards M44, the Beehive cluster. Look for the bright moon Titan east of



the planet near the start, middle and end of March and west of the planet near the 7th and 23rd.

Jupiter reaches its opposition point on April 2 this year, meaning that now it rises after sunset – roughly 8:30pm. It will be the brightest thing in the southeast. A full Moon can be seen just above Jupiter on the 25th. The magazines report a clustering of Jovian satellites west of the planet on the 31st.

Mars rises between 3-4am all month in the southeast. The Moon is just below Mars on the 6th. Mars will get its moment in the Sun later on this year. Isn't it great that the rovers are still on the move? Hello? New media? Have you seen the latest shots from the *Mars Express*? They're looking at an ice reservoirs that are their now, covered by volcanic ash! Neat stuff!

The Moon occults the bright star Antares during the early morning hours of March 3 (meaning set your alarm the night of March 2 if you want to see it). Antares will appear to pass into the middle of a 3rd quarter Moon with disappearance around 4:41am and reappearance



Northern lights on Saturn

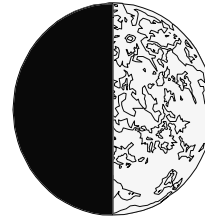
from behind the dark side at 6:02am. Have fun!

Planet	Date	Constellation	Magnitude	Distance*	Apparent Diameter
Mercury	3/15	Pisces	- 0.5	77.7	7.0"
Venus	3/15	Pisces	-3.8	159.5	9.7
Mars	3/15	Capricornus	+1.0	159.8	5.5
Jupiter	3/15	Virgo	- 2.5	422.9	43.3
Saturn	3/15	Gemini	0.0	801.2	19.2
Uranus	3/15	Aquarius	+5.9	1953.6	3.3
Neptune	3/15	Capricornus	+8.0	2867.3	2.2
Pluto	3/15	Ophiuchus	13.9	2872.8	0.1

* in millions of miles

Moon Phases:

3 rd Quarter	March 3	April 3
New	March 10	April 8
1 st Quarter	March 17	April 16
Full	March 25	April 24



CUAS NEWS

We currently have 14 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.

Thanks to Mike Rosenberger, Audrey Ishii, Dick & Ellen Robrock, Stuart Levy, and especially Mike Matthews, Jeff Bryant, and Dave Leake (who spent considerable time there both days) for staffing the club/planetarium display at the "Museums at the Mall" exhibit this past weekend. We talked to a lot of people about the observatory and can still feel the thump, thump, thump from the Abercrombie & Fitch sound system.

The changes to the club **by-laws** were approved at the February meeting as they were written in last month's newsletter. The by-laws can be read on the CUAS web page under "about the club" link.

Treasurer's Report: Checkbook balance as of Feb. 22nd, 2005: \$2321.02

* Expenditures Feb. 2005:

- \$834.99 reimbursement to Mike Lockwood for mirror recoating and shipping, and misc. parts and supplies for dome Cassegrain scope
- \$35.28 to Kinko's for 200 club brochures, copied and folded

* Income Feb. 2005:

- \$30 for 5 calendars @ \$6 each [Note . . .all the calendars were sold . . thank you!]
- \$4 donation
- \$15 new membership
- \$45 for 3 membership renewals
- \$20 dome key fees

At press time, nearly 20 members have not renewed. Submitted by Philip J. Wall

April 16 is **National Astronomy Day** where traditionally amateur clubs bring astronomy to the people. Anyone have any ideas of something we could do? It's also a Skywatch night . . . maybe invite people out to the observatory before sunset for some solar observing or even earlier (4pm?) for a cookout or something? IF we do anything, it will have to be decided at the March meeting.

If you have scouts in your family or know of any, encourage them to attend one of the Boy Scout Astronomy merit badge or Girl Scout "Sky Search" **badge seminars** held at the Staerkel Planetarium. The girl scout sessions are April 7 & 13 from 7-8:30pm, with the cost being \$4 per scout. The boy scouts would meet either May 4, 10 or 19 from 7-9:30pm and the cost is \$5 per scout. Leaders are free. Bring a red flashlight, pencil and come ready to work! Know that advance registration is required. You can either register through the Parkland "Live & Learn" brochure or the planetarium has a simplified form they can send you. Call Dave or Mary at 351-2568 for more information.

Be sure to see the planetarium's newest original show, "**Stellar Extremes**," opening on March 4 and showing every Friday & Saturday night at 8pm through at least May. Written by CUAS member Waylena McCully, the show is funded by a Hubble Space Telescope grant that was acquired by Dr. You-Hua Chu at the UI. E/PO funds from the grant will underwrite production costs, plus duplication costs for other planetarium. The show is inspired by Jim Kaler's recent book "Extreme Stars." It's sort of Guinness Book of World Records program that talks about the largest, smallest, hottest, coolest, and most bizarre stars (and we don't mean Gwen Stefani either). The show will go through stellar evolution. Pam Friese and Waylena created the original artwork. Dr. Chu herself (who appears as a cartoon) stars in the show along with the voice talents of Ed Kelly (WDWS), Jody Littleton, Aaron Steinke and Dave Leake as "Uncle Cosmo." No snickering, OK? Dr. Chu is also giving the "World of Science" talk on opening night . . . come and take in both!

Dues renewals most members have pro-rated dues to January 1, meaning dues are up for renewal by the first of the year. You can use the handy-dandy form on the last page. A reminder to keyholders to include your \$10 keyholder fee with your dues. *Why not renew today!!*

Junior Stargazers news Dave Leake is working on a JS packet in the hope of having something to present at the March CUAS meeting. So far there is a list of about 32 activities. There is already interest in the program from Bottenfield School on South Prospect Avenue in Champaign.

Star party! We're still looking at August 6 for a weekend romp under the stars. Guy Hampel is checking with some friends who have a field south of Walnut Point State Park. Dave Leake has also spoken with Curt Sinclair at the Allerton 4H Camp about doing night there. The first dark sky (near first quarter Moon) weekend he has available is October 7-8. Meals can be brought in at Allerton but they frown on camping. They make their money by renting cabins on a per person cost. Wherever we go, we'll have to consider meals, maybe a shelter (tent), and restrooms.

If you want to get your club news fast, please subscribe to the **Cuas-l 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-l web page at <https://mail.prairienet.org/mailman/listinfo/cuas-l> and follow the subscription directions. Email cuas-l@lists.prairienet.org to post.

Note the planetarium now has a monthly **E-news** that is distributed via a one-way listserv (meaning you don't receive all the responses to the E-news). Check the planetarium web page (www.parkland.edu/conec/pla) for directions on how to sign-up.

OBSERVATORY NEWS!



that the fork is
Then the monster
declination

Mike Conron is in the process of painting the mount. He reports done and they're working on the saddle assembly at press time. fork will be taken to Mike Lockwood's home to add the bearings. You can see the mount here and at <http://www.mbm30.org/CUASForkProgress/index.htm>.



Mike Lockwood is working on the mirror cell and focuser. Progress can be see at:



http://bi-staff.beckman.uiuc.edu/~melockwo/telescopes/16in_CUAS_cass/mirror_cell/mirror_cell.html

Bob Rubendunst is looking into monitoring humidity and temperature at the dome. Hobo makes a 4 channel datalogger that can take 2 smart sensor temp/RH probes. The data logger is \$199, and smart combo temp/RH sensors are \$135 to \$155 each depending on cable length. So, doubling the sensors would mean spending \$423 plus \$20 for software. It's possible we may be able to get external temps and humidity from nearby Willard Airport.

Lastly, be careful when out at the dome. The ground was very soft in late February (ask Dave). Don't take a chance getting your vehicle stuck out there! If in doubt, call the hotline (351-2567) before a Skywatch, even if it's clear.



LOOKING AHEAD

March 4 "Stellar Extremes" opens 8pm Staerkel Planetarium
The Staerkel Planetarium's newest original show is written by CUAS member Waylena McCully and stars Dr. You-Hua Chu from the University of Illinois. Hear about the largest, smallest, hottest, coolest, and most bizarre stars. Earlier in the evening (7pm), Dr. Chu herself gives the "World of Science" talk for the month on the Large Magellanic Cloud.

March 9 Officers meeting 7pm Village Inn Pizza Parlor

March 10 CUAS Club Meeting 7-8:30pm Staerkel Planetarium

Jeff Bryant will update us on the *Cassini/Huygens* mission at Saturn and the Mars Rovers. Dave Leake has some photos of the 4H camp at Allerton if anyone wants to see them.

March 12 New Moon Observing 7pm - ? CUAS Observatory
Weather permitting . . .lets do some observing!! Be wary of a soft ground, too!

March 19 CUAS Family Skywatch 7-9pm CUAS Observatory
Yes, it's cold but . . . so what? Lets check out the Orion Nebula! If the dome is still out of commission, we'll use some of the scopes in the shed and the Dobs & the Meade from the dome. And feel free to bring your own, too! Weather permitting. Call 351-2567 for updates . . . and watch out for icy roads!

April 2 Allerton Observing 7:30-11pm Allerton Park meadow
See the "Club News" section for details . . .

April 3 Daylight Savings Time begins

April 9 New Moon Observing 7pm - ? Observatory

April 14 CUAS Club Meeting 7-8:30pm Staerkel Planetarium

April 16 GLPA State Meeting 9-2pm Adler Planetarium
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).

April 16 CUAS Family Skywatch 7-9pm Observatory
This is also National Astronomy Day! Shall we do something special? Maybe still do the observatory open house but start earlier and have some sort of event at the dome or in town?

May 7 New Moon Observing 8pm - ? Observatory

May 14 CUAS Family Skywatch 8-10pm Observatory

CHECK OUT ALL CLUB EVENTS ON THE CUAS HOME PAGE:

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

ODDZ & ENDZ FROM THE COSMOS

Item: Have you seen the blue shots of Saturn's rings? They're gorgeous, and, interestingly enough, similar to our blue skies on Earth. Ring particles are scattering the blue in the Sun's spectrum to yield the bluish tint. Diatomic oxygen has also been found near the rings and in the upper atmosphere. This is cool since we thought O₂ became plentiful on Earth due to photosynthesis from plants. Might there be another way to make it? Lastly, check out the "Dragon Storm" if you haven't already. Freaky!
<http://saturn.jpl.nasa.gov/home/index.cfm>.

Item: The blasts to beat all blasts was detected on December 27th. A X-ray and Gamma ray blast was detected by over a dozen spacecraft, including Cassini at Saturn! Our Moon, normally a poor reflector of these short wavelengths, reflected this blast. Some say it's the brightest event EVER observed out

side of the solar system in the history of astronomy! That's a mouth-full! The culprit is a super neutron star or "magnetar" with a magnetic field over 1000 times stronger than a regular neutron star . . . and those are pretty powerful. The field from this magnetar, 50,000 light years away towards the galactic center in Sagittarius, collapsed or experienced a reconnection event that sent this blast through space.

Item: The latest from Mars is actually from the European Mars Express orbital satellite and not the rovers. We hear weekly about evidence of past water on Mars. Now Mars Express has appeared to find a iced over lake! It's an ice reservoir that's roughly the size of Europe's North Sea (500 miles by 560 miles and estimated to be 150-feet deep! The reservoir appears to be covered by volcanic ash. We'll know more in May when a new type of surface-penetrating radar gets used. The lake is estimated to be five million years old (by crater counts) and, maybe the oddest of all . . . is situated just above the Martian equator. The jury is still out on the detection of methane. Trace amounts have been found which indicate some sort of outgassing or geologic activity OR some sort of life. Naturally the tabloids are all over this, but no one is proclaiming life on Mars just yet. Stay tuned.

Item: As of a couple of weeks ago, the total number of planets detected outside our solar system reached 150 in number. One of the more recent finds concerns an object orbiting a distant pulsar. What's weird about this is the object is about 1/5 the mass of Pluto!! It may not even be a planet, but some sort of asteroid. It's totally amazing that our radial velocity measurements (measuring how much the star wobbles due to the gravity of the planet) are reaching an accuracy of 1 meter per second. Speaking of Pluto . . . it's now 75 years old . . . well, the discovery anyway. Twas February 18, 1930.

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

Item: In a news item that changes weekly, the Hubble Telescope is evidently out of the Bush budget. Though \$160 million has been spent on replacement instruments already, the scope will be due to perish into the Pacific in either 2007 or 2008. A rocket will probably be attached to steer it into the Pacific and away from Washington, DC. Hello? Anyone?

"Clear Skies" is published twelve times per year for it 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. Staerke Planetarium
Parkland College
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