

"CLEAR SKIES"



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

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February 2009

CUAS OFFICERS MESSAGE

January has come and gone with too much cold and snow for anything but casual viewing. The night sky seems clearer in January but somehow I just can not get motivated to spend long hours outside fighting the snow and the cold. Those clear nights tease us with the familiar winter Constellations, clusters, a planet or two and of course the seemingly always present on clear nights--the moon. Take quick peeks and return to the warmth of the fireplace or the telescope projects that we put off the rest of the year.

Last month's meeting showed us the up and coming events for the year on the Planetarium's dome. The night sky in the dome always seems darker and there are so many more stars in the night sky than our own night sky at the club's dome sight. Just come to the planetarium, see one of the shows and the people there will show you the sky that as dark as those 400 years ago at the time the telescope was invented. The size of the universe enlarged that year as the planets took on shape and neighbors (moons). Think about it; if you lived over 400 years ago what did your friends think of the night sky? If you told them what we know now about galaxies, dark matter, black holes ... well do your remember the events of history in our own country in a little town in Mass. (Salem) I think that wrongly burned, hung and banished you for having ideas that are different than the norm, oops that is history not astronomy.

This month's meeting is designed to help those with new toys learn how to get the most out of them. Our club has a number of members that have used or own just about every type of telescope, enjoy helping others and most importantly enjoy learning more. I remember when I started back into astronomy after a many year gap for other things the club members had lots of information, guidance and examples of good equipment and which equipment works best on the scope of your choice. I could spend page after page describing the experience that individual members of the club have had, however the easiest way to find out what you need to know is not Google or spending time exhausting the web; you know it takes time to



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Mike Conron, Secretary	355-5996
Willard Brineger, Treasurer	356-5929
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read 100,000,000 articles and did you actually ask the right question. Come and enjoy the one-on-one experience, see you at our next meeting on Lincoln's birthday, February 12th.

As an added bonus John Stone will share with us the basic requirements of astrophotography both in equipment and the most important element, time required. I have talked about his photos before and have seen him in action. He is just one of our club members that has something to share.

In March we start our Observing in the Park Series. Come to our parks in the CU area and look up at the night sky and celebrate IYA and 400 years of looking through telescopes.

Guy

LOOKING UP THIS MONTH

Venus continues to rule the evening sky as we enter the second month of the year. But have you noticed that, though Venus has been setting at roughly the same time each night, it's been moving from being in the southwest to more to the west. Venus is about as high and bright as it will get this month, too, clocking in at a magnitude -4.8. Through a telescope, Venus' crescent is thinning. Check it out before it gets dark as the blue background provides for better contrast given the planet's brilliance. Towards the end of the month, get your cameras ready! On the 26th, a thin crescent Moon is below Venus. The next night, the Moon is nice and snug, just below and to the left of Venus. Venus currently sets just after 9pm. It will begin to head back towards the Sun in March.

As Venus is setting, Saturn is rising nearly due east. Its rise time decreases from 8:15pm early in the month to 6:30pm in late February. Don't confuse Saturn with Regulus, the heart of the Lion. The rings open up just a bit this month.

After Saturn, you have to wait quite a while for the next naked-eye planet to appear. Jupiter and Mars rise in the morning twilight. They are both in the east-southeast. The later you look in the month, the higher Jupiter will be at dawn. At the end of the month, it rises at about 5:30am. Jupiter rises up to meet Mars this month, which has been rising in the twilight since the beginning of the year. They are only 0.9° apart on February 16. On the morning of the 22nd, a crescent Moon sits to the right of Jupiter and Mars, plus Mercury joins the group. Greatest separation from the Sun is on the 13th. On the next morning (the 23rd), Jupiter and Mercury are only a degree apart, though the trio is very low on the horizon!

In other news, Comet Lulin will be prominent in the sky this month. The comet was actually discovered back in the summer of 2007 by a 19-year-old Chinese student using a 16-inch telescope. It is now brightening to near naked-eye brightness. The best time will be later in the month when it passes Earth and it's apparent speed in the sky increases. Here are some highlights:

- Feb. 5/6 – within a degree of Alpha Librae, moving westward along the ecliptic
- Feb. 11 – ¼ degree from Lambda Virginis
- Feb. 16 – 3 degrees north of Spica, now moving at 3 degrees per day
- Feb. 23 – 2 degrees south-southwest of Saturn
- Feb. 24 – closest approach to the Earth at 38 million miles, now moving at 5 degrees per day . . . you can see it moving in one telescope session! Maybe magnitude 5? Look for it in binoculars.
- Feb. 27 – one degree from Regulus and fading

- Mar. 5 – near the Beehive Cluster (M44)
- Mar. 16 – one degree from Delta Geminorum and probably magnitude 7 or 8.

Finder charts can be found on the Sky & Telescope web page at:

<http://www.skyandtelescope.com/observing/highlights/35992534.html>

The largest asteroid . . . no, wait . . . I meant “dwarf planet,” Ceres, comes to opposition on February 25. The magazines report that this is the closest Ceres will be to the Earth until the year 4164!! If you’re into stats, it’s about 147,000,000 miles! At magnitude 6.9 it will be roughly three times brighter than when it was discovered in 1801! Look for it above the hind legs of Leo. A finder chart appears at http://media.skyandtelescope.com/documents/CeresPath2009_BW.pdf

And if you’re just observing with binoculars, check out the Moon on the evening of February 3 when it grazes the northwestern edge of the Pleiades star cluster. The event begins at about 8pm.



Moon Phases

Waning Gibbous Moon

1 st quarter	February 2	March 4
Full	February 9	March 10
Last quarter	February 16	March 18
New	February 24	March 26

CUAS NEWS

REMEMBER TO RENEW YOUR DUES! Time is running out! Use the form at the end of this newsletter and send in your dues today! Be sure to get the scoop on all of the IYA activities!

The Staerkel Planetarium has been named one of five planetariums in Illinois to participate in **Hubble Space Telescope “Great Observatories” project**. The planetarium will be sent two never-before-seen Hubble prints, one being 3x3 feet and the other being 3x6 feet. The latter will be a multi-wavelength view involving Hubble and both the Spitzer and Chandra space observatories. The unveiling event will be Tuesday, February 17 from 4:30 to 6:30pm and you are all invited! Hopefully the media will also attend and refreshments will be served. The planetarium dome will be open but there will be no shows because we’d like for people to come and go as they please. If it’s a clear night, we could do some observing (the planetarium has some 10-inch Dobs we could pull out) and . . . we could even tab this as the kick-off for the IYA. [P.S. – does anyone have a amateur photos of M101?]

Webmaster Phil Wall is working on a replacement for the Prairienet listserv, which is now defunct. Stay tuned for details, but know the **club list** (at press time) is inoperative.

Brian Maple of the **Decatur Astronomy Club** has inquired about doing some joint observing this spring. Any interest in pursuing this?

Since it is now **winter weather season**, keep a few things in mind. First, for the club meetings, if you hear of Parkland closing due to the weather, the meeting is automatically canceled. When the college closes, they stop plowing the perimeter drive and you don't want to be here! At the observatory, be aware that 700E is NOT the first road plowed or salted, plus, if the observing field is sloppy, don't get stuck! Park and evaluate the area before pulling into the lot. It's good to have a cell phone with you, too.

Light Pollution news Did you see the front page of the January 22 News-Gazette? Both Champaign and Urbana are experimenting with LED streetlights. If you want to see what they look like, check out the three lights on North Lincoln Avenue, just north of Michigan Avenue in Urbana. In Champaign, lights were installed at the intersection of Randolph and Colombia. The Urbana lights are here from Relume Technology for a 90 day trial basis. Early returns say that the lights aren't as bright but their use can lower energy costs 30-50%. They use less energy and last seven times longer. Ann Arbor, Michigan and Anchorage, Alaska are using LEDs for street lighting. The article went on to say that Urbana spends \$179,000 annually on 3782 street lights, while Champaign spends \$220,000 for 3500 fixtures (which also includes stoplights). Another \$200,000 is spent on 1300 leased fixtures. LEDs cost more up front (\$1,220 for each fixture, compared to \$240 for the regular vapor discharge models) but the cost savings are in the longer term. The new fixtures are nicely shielded, too. Check them out!

International Year of Astronomy update a second version of the brochure is in the hands of the club officers and duplication will occur soon. The membership at the January meeting voted to spend \$500 for this project, though the initial estimates from Kinko's came in relatively high. The officers also discussed the park observing tour that will begin at the end of March. To avoid burn-out, we'd like for interested persons to sign-up to work at the parks of their choice. That process will be discussed at the February meeting. Click on the IYA logo at www.parkland.edu/planetarium.

The **2009 calendars** are nearly gone! We have five left! See Willard Brinegar if you'd like one. There are also T-shirts available at the meetings. They are all \$10 for members.

For sale Meade LXD55 SN 10" scope – like new – been to Astrofest once. All the original accessories are included plus a dew shield, Orion 12-volt dew zapper, 25' 12-volt power cord, and Coleman 12-volt powermate. The optics have never been cleaned and have been covered since purchased, there are no dents or scratches. Everything was in good working order when last used. The only thing wrong with it is that on one of the counter balances the threads are stripped. Asking \$800. Contact Vic Bennett at 217-840-7905.

Got a call from a woman who has a Dobson scope for sale, see below. WM

For sale.... Odyssey compact dobson telescope 10.5 inch f 4.5 paraboloidal mirror by coulter optical. Telrad reflex sight . Stellarscope on pivot stand. \$200.00 obo Phone 217-892-9336 or cell 217-841-1708

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.

The planetarium has an IYA web site now, which can be viewed by pointing our browser to www.parkland.edu/planetarium and clicking in "International Year of Astronomy." Comments are welcome! When the club gets a page up and running, that planetarium will link to the CUAS page.

Remember the dates for the **park tour!** We need your help! If everyone volunteers for two dates, then we can spread around the work.

Mon	Mar. 30	8-10pm	Douglass, C
Thu	Apr. 2	8-10pm	Crestview, U
Mon	Apr. 6	8-10pm	Prairie, U
Tue	Apr. 21	8:30-10:30	Eisner, C
Tue	Apr.28	8:30-10:30	Blair Park, U
Thu	Apr. 30	8:30-10:30	Robeson, C
Mon	May 4	8:30-10:30	Morrissey, C
Sun	May 17	8:30-10:30	Hessel Park, C
Tues	May 26	8:30-10:30	Cherry Hills, C
Thu	May 28	8:30-10:30	Meadowbrook, U
Wed	Aug. 26	8:30-10:30	Anita Purves, U
Thu	Aug. 27	8:30-10:30	Lohmann, U
Tue	Sep. 22	8-10pm	Clark, C
Thu	Sep. 24	8-10pm	Garden Hills, C
Mon	Sep. 28	8-10pm	Centennial, C

* Daylight Savings Time

TREASURERS REPORT

CUAS Treasurer's Report for January 2009
 Willard Brinegar, Treasurer 2009

As of 1/31/09

Assets*

\$ 3870.11 checking account

\$ 3870.11 Total Assets

Income*

\$ 20.00 two calendars to member @ \$10
 \$ 195.00 thirtenn membership renewals @ \$15
 \$ 20.00 two key fees @ \$10
 \$ 88.10 Donations
 \$ 323.10 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 1/31/09, all received subscription payments have been sent on.

OBSERVATORY NEWS



IMPORTANT INFO FOR DOME SITE USERS . . . We have received a phone call from the gentleman who lives in the house south of the dome site. He reports a lot of activity at the dome by people who are not astronomers! According to our neighbor, a heavy traffic time is right around 4pm, after school. A black SUV has also been seen there a lot. In mid-January, the Champaign County Sheriff's Office was notified who pledged to drive by the site more. So, two things . . . 1) if you see suspicious activity at the observatory site, call the sheriff's non-emergency number at 333-8911 immediately, and 2) do not be offended if a squad car stops and questions you. Be cooperative as it should be obvious if you're there observing. *UPDATE:* On January 25, Mike Rosenberger "caught" the black SUV on the grounds and submitted the license number to the sheriff's office. Still – be aware!

Small projects list for warmer weather 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 (no paper or plastic), 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. We also need to strip the paint on the inside but, given the dust that would be created, it might be best to wait until the telescope is removed.

A LOOK AT 2009

Welcome to the International Year of Astronomy (IYA) and the 400th anniversary of the first astronomical observations made with this instrument then called the "Optik Tube" and we now call the telescope. Strap on your seatbelt as there isn't a lack of things to do astronomically this year. Here's a quick look!

First, eclipses. This is an easy one. Basically there aren't any! For us, anyway. We'll have two solar and four lunar in 2009, but the paths of the two solars won't come close to us. The "big one" is a total solar that crosses India, China and the South Pacific on July 22. The Annular eclipse is early (January 26) but the path is in the Indian Ocean. The partial lunar eclipse in December is visible in the eastern hemisphere and three penumbral lunar eclipses aren't worth mentioned as they occur at either Moonrise or Moonset for us! Oh well! The next biggie is July 11, 2010 . . .and we won't see that one either.

On to planets . . . Mercury is a tough rascal to corral since it's so close to the Sun, so you have to catch it on one side or the other. There are four views of Mercury in the evening sky and three in the morning sky in 2009. We start the year with a decent view of the planet but by mid-January, it's too low to see in the west. The best evening view occurs from about April 5 to May 15. On April 25, Mercury sets at 9:40pm CDT. From mid-July to early September is another decent view and a better one from mid-November to the end of the year. On December 20, you'll have an hour of darkness to spy Mercury in the west. For the morning-minded, there are two favorable times, one being from the end of May to early July and another from the end of September to the end of October. In early October, Mercury rises near 5:30am.

Venus begins the year placed magnificently in our evening sky where it will stay until Marcy 26. Greatest separation from the Sun occurs on January 14 when it sets near 9pm. By the end of February, it makes a rapid trek towards the Sun's glare. Venus passes between the Sun and Earth on March 27 but it's 4° above the ecliptic, so technically you can see it both in the evening and the morning sky! After March 23 it makes a slow ascent in the morning sky. By mid-July, Venus is rising at 3am CDT and brightening the morning skies.

Mars rises as the morning twilight begins from New Year's Day to the end of April! Yes, it rises earlier, but the sunrise time is also earlier! It will eventually make it's way into the evening sky later in the year. By the end of December it will rise at 7:30pm CST. The rovers celebrate five Earth years on Mars in 2009.

Jupiter disappears behind the Sun early in January to reappear in the morning sky by mid-February. It will rise at midnight CDT on June 15. Opposition for Jupiter (when it is usually closest and rises at sunset) occurs on August 14.

Saturn will be a spring object near the stars of Leo. It's opposition is March 8 so we'll have a good view! In late August, Saturn will set in the evening twilight to eventually reappear in the morning sky by early October.

Oppositions for both Uranus and Neptune occur on September 16 and August 17 respectively.

As far as notable planetary gatherings go, Mercury and Saturn are close for several weeks near August 23 in the evening sky. In the morning sky, Mercury is 0.7° below Jupiter on February 24, and Mars is 2° to the upper left of Venus on June 21. Saturn is 0.5° to the left of Venus during the morning of October 13.

The Moon will "occlude" (or pass in front of) some brighter objects this year including Venus on April 22 (around 8am), the star Antares on June 6, and the Pleiades star cluster on August 14 during the morning hours.

Meteor showers are fun to observe if you have a dark, Moonless sky. It's usually best to observe "shooting stars" before dawn, during the early morning hours. This year, the Lyrids (April 21-23) occur just before New Moon, the Eta Aquarids (May 5-7) are drowned out by a waxing gibbous Moon, and the Delta Aquarids will be better as the first quarter Moon will set around midnight. The potent Perseid shower (August 11-13) happen at third quarter Moon, which rises around midnight – that's not good, but you'll still see the brighter meteors. The Orionids (October 22) occur four days before new Moon, the Leonids (November 17) are at new Moon and the Geminids (December 14) occur three days before new Moon, so all three of these are favorable, though it's naturally chillier!

As far as the club goes, our meetings are on the second Thursday of the month at the Staerkel Planetarium at Parkland at 7pm. We also meet at our observatory for "Family Skywatch" open house events on the Saturday closest to the first quarter Moon. In 2009, these dates are Jan. 31, Feb. 28, Apr. 4, May 2, May 30, June 27, July 25, Aug. 29, Sept. 26, Oct. 24 and Nov. 21. Note that, due to how the calendar worked out, there is not a Skywatch in March. Usually the Saturday before these dates, we have our member's only, New Moon sessions at the dome. But we'll meet at the Middlefork Forest Preserve near Penfield for some dark sky viewing on April 18, August 15 and October 10, all at 8pm.

The planetarium will have girl scout workshops in early April followed by boy scout merit badge workshops in early May. See the planetarium web site for more info. They'll also open a show called "Bad Astronomy" sometime in May. Be *sure* to see this one!

The IYA has many events this year with further info available on the web. The Hubble print unveiling will be at the planetarium on February 17 from 4:30 to 6:30 and you're invited to stop by. The dates for our "park tour" of sidewalk observing is on both the club web site and the planetarium web site – *please* plan to come to some of those! The "Globe at Night" project is March 16-28, and "100 Hours of Astronomy" is April 2-5. More information about these events will appear in upcoming newsletters. A two-part "Quest for Infinity" NOVA special will be shown on PBS April 7 and 14. World Space Week is October 4-10 followed by the Great Worldwide Star Count from October 11-23. The 40th anniversary of the first Moon landing will occur on July 20th.

We owe all this activity to Galileo, who celebrates a birthday on February 15. He'll be 445 years old. On August 25 this year, we'll have the 400th anniversary of Galileo using his telescope to show a group of Venetian lawmakers a few things in the skythus completing the "first astronomical outreach activity involving a telescope" ever! *Let us continue the 400 year tradition!*

-Dave Leake



LOOKING AHEAD

February 6 "World of Science" lecture 7pm Staerkel Planetarium
Dr. Tim Lindsey, manager of the Illinois Sustainable Technology Center, will be in the dome to discuss "Recovering Energy from Wastes" – a topic that affects us all! Admission is \$1 at the door.

February 12 CUAS Club Meeting 7pm Staerkel Planetarium
This is our annual night where we help people operate that telescope they may have received for the holidays. Bring your collimating tools if you have them and join us for this "telescope user's seminar. In the past we have sat and waited to see who shows up. This year, the event is again free to telescope owners, but we have asked them to RSVP for a headcount. That information will be put in the club list the day before the meeting.

February 17 Hubble Event 4:30 – 6:30pm Staerkel Planetarium
Come, have a cookie, and see the unveiling of a new and spectacular Hubble photo. The event is free and kids are welcome. See the "Club News" section for the details.

February 21 New Moon Observing 7-?pm Observatory
F/or those who can't feel cold! All observing sessions are weather permitting.

February 28 CUAS Family Skywatch 7-9pm Observatory

February 28 Science Olympiad Regionals (am) Franklin Middle School

March 6 "World of Science" talk 7pm Staerkel Planetarium
State Climatologist Jim Angel will discuss "Climate Extremes" in Illinois.

March 7 Science Fair 8:30-11am Parkland College
Contact Dave if you're interested in being a Science Fair judge! The student projects are fascinating and lunch is provided.

March 12 CUAS Club Meeting 7-8:30pm Staerkel Planetarium
Program to be announced. We'll also go over the park tour for IYA.

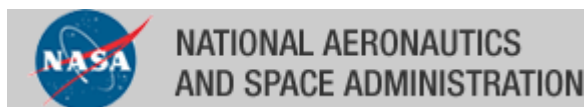
//March 20 "Spring Prairie Skies" opens 7pm Staerkel Planetarium
Our traditional backyard skywatching star show switches from the winter to the spring constellations. Call 351-2446 for a full schedule.

March 30 IYA Park Tour 8-10pm Douglass Park
If you can, join us for the first of about a dozen observing sessions in the park. We'll hand out brochures and maybe do a little recruiting of new members. Bring a telescope if you have one, too. All observing is weather permitting.

April 2 Moonwalk 2009 kick-off 5-7pm Staerkel Planetarium
Again, we'll try to beat Rockford and Peoria by logging our miles walking. Lets see if we can walk to the Moon and back . . . twice! Form a team and participate! More info will be available as we get closer to the event.

April 2 IYA Park Tour 8-10pm Crestview Park
Night #2 takes us to Crestview Park in Urbana. Join us if you can (weather permitting, of course). A full IYA schedule appears on the web site.

April 3 "World of Science" talk 7pm Staerkel Planetarium
Can plants make you healthy? What information is supported by good science? Dr. Donald Briskin will show us some useful "Medicinal Plants." Admission is \$1 at the door.



Astronomy Club Resources

BLACK HOLES ARE FUEL EFFICIENT!

Did you know that if we could harness the power of black holes we could travel for a billion mile on one gallon? That's how far you could go if it were possible. Observations through the Chandra X-ray telescope that black holes are the most fuel efficient "engines" in the universe. Steve Allen a researcher at Stanford University says that without knowing the fuel efficiency of a black hole it is impossible to tell what the black hole is doing.

Observations with the Chandra show that as matter falls toward a supermassive black hole it releases enormous amounts of energy. Most of this energy produces jets of particles that erupt at almost the speed of light.

So I suppose the key to our energy crisis is to harness the power of black holes, and all of our problems would be solved. But of course we would also have to solve the problem of how to corral this massive amount of energy.

It is thought that this energy has the capability of limiting the production of stars. If it weren't for this we would have billions more stars.

To read more on this go to NASA's web site.

-WM-

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- Enroll me as a new member!
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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

**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>



**Champaign-Urbana Astronomical Society
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