

# "CLEAR SKIES"



NEWSLETTER OF THE CHAMPAIGN-URBANA ASTRONOMICAL SOCIETY, INC.  
AN AFFILIATE OF THE CHAMPAIGN PARK DISTRICT

VOLUME 26

ISSUE 5

NOVEMBER, 2011

## PRESIDENT'S MESSAGE

Howdy,

November already? Time flew in October with our planetarium conference. Things went smoothly (or seemed to) as we welcomed 159 delegates to Champaign-Urbana. And now it's over! Time to get the brain back in gear and move on to other things.

Did you see any northern lights last Monday night? We had a coronal mass ejection hit the Earth's magnetosphere Monday at about 1pm our time. According to [spaceweather.com](http://spaceweather.com), the blast compressed the magnetic field to a point where some of the geosynchronous satellites were actually outside the field and exposed to the solar wind. The event sparked some of the northern lights. Reports came in from north Champaign and even campustown. National reports came from as far south as Arizona, New Mexico and Kentucky. The photo here was shot by Beau Dodson in Massac County down on the Ohio River.



I'm hoping you might stop by, even if it is for a half hour or so. We'll hopefully plug the open house Saturday night.

The November meeting should be very interesting. We'll do officer elections (were you nominated? Details appear inside.) and after we welcome Professor Jon Thaler who has a presentation on supernova. See you there!

Clear Skies!

Dave



### CUAS DIRECTORY:

Dave Leake, President	359-6644
Chris Smith, Vice-Prez	
Phil Wall, Secretary	369-1344
Willard Brineger, Treasurer	356-5929
Mike Conron, 5 <sup>th</sup> Director	
Phil Wall, web master	352-5442
Dave Leake, newsletter editor	359-6644

Thanks to all who participated in the October meeting at the planetarium. We watched a DVD planetarium show that could be developed into a "real" show. It was called "The Missing Universe" and dealt with cosmology. There was a spirited discussion after the show regarding its usefulness. I appreciate that feedback and, in fact, I delivered your feedback to the Great Lakes Planetarium Association executive committee the next week. We'll see what happens.

As this issue goes to press, we have the Farmer's Market coming up this weekend (Saturday morning, 8-noon, at Lincoln Square

## **LOOKING UP THIS MONTH**

There actually quite a bit of action in the sky this month provided you take the time to get out and look. We start in the southwest where Venus is getting to be high enough to see. From early in November to mid-month, Venus is joined by Mercury. The two are only about two degrees apart (two pinky finger widths held at arm's length) until November 15<sup>th</sup>.



On the evenings of the 9<sup>th</sup> and 10<sup>th</sup>, you can see Venus with Mercury just below and then the star Antares. Use binoculars to see all three. The planetary pair sets by 5:45pm or roughly 30 minutes after the end of evening twilight. By the end of November, Mercury is heading back towards the Sun and Venus is gaining altitude. On November 26<sup>th</sup>, a lovely crescent Moon can be seen just to the right of Venus.

Higher in the sky, Jupiter rules the evening. Given opposition was late last month, Jupiter will already be up in the east as the sky darkens. It's a great time to catch it with a telescope. See if one of the equatorial bands is darker than the other. A nearly full Moon is above Jupiter on November 8<sup>th</sup> and just to the left of the planet on the next evening.

Mars rises at about 1am this month amongst the stars of Leo. In fact, Mars comes to within a couple of degrees of the star Regulus on the evening of November 10<sup>th</sup> and 11<sup>th</sup>. Since Mars is currently moving from west to east, use Regulus to monitor the planet's weekly movement against the starry backdrop. Mars is brightening some and appearing larger through the eyepiece as the Earth catches up to the planet in its slightly faster orbit. Opposition for Mars is March 3, 2012 in the constellation of Leo. The Mars Science Lab (better known now as the "Curiosity" rover) is due to launch on November 25<sup>th</sup> at roughly 9:30am.

Saturn is in the morning sky near the star Spica in Virgo. It rises around 6am so you'll have to set an early alarm. If you do that, you might wait until the morning of the 26<sup>th</sup> when a waning crescent Moon is just to the right of the planet.

As far as smaller solar system bodies go, there are a couple of objects currently in the sky of note. First Comet Garradd is in the northwest near the stars of Hercules, west of the bright star Vega. Garradd was discovered in August of 2009 by Gordon Garradd from Australia. The comet is thought to be large BUT it won't come any closer than the Sun than the planet Mars. And comets are notoriously brighter as they get closer to the Sun. Being farther away from Earth (nearly twice the Earth/Sun distance.) it also doesn't move very much in our sky. You can find it just east of a sign connecting the stars Alpha and Delta Herculis. Just the opposite is the asteroid 2005YU55. The 1300-foot diameter chunk of rock will take about 11 hours to complete a trip from Altair through the Great Square of Pegasus. That comes out to about 7 arc seconds per seconds of movement. The good news is that there's no chance this object will hit the Earth (despite what you might see at the supermarket check-out stand!) but it will only reach magnitude 11.2, meaning you won't be seeing this in binoculars. Still, check it out!

The Leonid Meteor Shower peaks during the early morning hours of November 18. The shower is very potent every 33 years and this year is not "the year." You still might see a few bright meteors in the pre-dawn sky, though keep in mind that a 3<sup>rd</sup> quarter Moon will brighten the sky some. Good luck!

-DCL

## **MOON PHASES**

1 <sup>st</sup> quarter	November 2	December 2
Full	November 10	December 10
Last quarter	November 18	December 17
New	November 25	December 24





## CUAS NEWS

November means officer elections! We'll take nominations all the way up to the November meeting and you don't have to be present to be nominated! Elections will take place at the November meeting by paper ballot. New officers take over on January 1<sup>st</sup> with terms running the calendar year. Those officers are:

- President = Dave Leake
- Vice-president = Mike Conron Chris Smith
- Secretary = Bob Nonnemann
- Treasurer = Dave Dickey, Doyle Slifer
- Fifth Director = Jeff Bryant, Avi Laird

Thanks to treasurer Willard Brinegar, we have many **2012 astronomical calendars**. They are for sale at the meetings for \$10 (members) and \$12 (non-members). Make checks payable to "C.U.A.S."

**For Sale:** This scope is in excellent condition and includes the Televue Case, Starbright red dot sight, rings, Vixen style adapter plate and Televue Diagonal. It is a 660mm f 5.2 4 element Petzval-Nagler design and provides outstanding images. I will email pictures to anyone that is interested. Price? \$4,500 or, make me a reasonable offer! Anyone locally with serious interest would be welcome to try it out. Reason for selling: I have acquired a TEC-140 APO. Contact Jim Licquia

Be sure to see the nice article on **Bob Holmes** written by Mike Lockwood in the December issue of Sky & Telescope magazine.

The **UI Department of Physics** sponsors a **public lecture** on certain Saturday mornings at the Loomis Laboratory of Physics at Goodwin and Green. All the talks are at 10:15am in 141 Loomis Lab. Parking is available in lot B21 on the east side of the building. For this fall the remaining talks are:

- November 12 - Professor Laura Greene – "Transforming Science, Policy and the Power Grid with High Temperature Superconductivity"
- December 3 - Professor P. Scott Carney – "Inside Out: How Physics has Revolutionized Medical Imaging"

For more information, see Web: <http://physics.illinois.edu/outreach/saturdayphysics/>

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. Bill Marble reports that roughly 15 newsletters are now mailed with the rest using electronic delivery. *Thank you!*

Also remember that the club offers magazine discounts for both *Astronomy* and *Sky & Telescope*. If you are interested, contact treasurer Willard Brinegar. Willard reports that you can renew your Sky & Telescope magazine subscription online. In the past, Sky Publishing expected payment from the club treasurer. We can now do this on our own by going to <http://skyandtelescope.com/clubrenew>.

Join the **club listserv** and get viewing information in advance! This is a yahoo group that you have to join. See the web site [www.cuas.org](http://www.cuas.org) and look for "email listserver" link on the navigation bar on the left.

## **TREASURERS REPORT**

BY WILLARD BRINEGAR, TREASURER

September 2011

As of 9/28/2011

### Assets\*

\$ 3792.69 checking account  
\$ 3792.19 Total Assets

### Income\*

\$ 10.00 One Calendar sold  
\$ 10.00 One Key renewal  
\$ 15.00 One Membership renewal  
\$ 55.00 New Membership dues  
\$ 90.00 Total Income

### Outgo\*

\$ 129.50 Klambach Publishing for 20 Calendars  
\$ 129.50 Total Outgo



\*Note that these numbers do not include any magazine subscriptions

## **OBSERVATORY NEWS**

Mike used a smart strip chemical on the interior dome paint, brushing it on, then letting it sit for 6-7 hours, then returning to peel it off. He tested an area that is just to the right of the rotation device. It took the paint off down to the block. The club authorized the purchase of a 5 gallon bucket which is at the dome.



Mike is, of course, in the midst of harvest. If anyone wants to take over this project, please call Mike in the evenings for instructions.

The dome is becoming tougher to rotate. We may need to look at the wheels and possibly re-grease them.

We also authorized Mike to put a brass kick plate on the door to help the door last longer. If something breaks at the dome, make *sure* Mike Rosenberger knows about it, even if you try to fix it yourself. Then we can centralize the work out there some. Mike can be reached at 598-2254.

The now infamous “**Mow List**” returns! Remember to call or email the next person on the list as soon as you mow! This will give the next person a week or two to plan when they can go out and mow. IF you can't mow during your time in the line-up, switch with the next person. Thank you for your work! IF you would like to be on the mow list, please let Dave know. The entire lot takes 2-3 hours.

- |                     |                     |                 |
|---------------------|---------------------|-----------------|
| 1) Mike Rosenberger | 4) Audrey Ishii     | 7) Dick Robrock |
| 2) John Stone       | 5) Willard Brinegar | 8) Wayne James  |
| 3) Dave Leake       | 6) Guy Hampel       | 9) Jim Licquia  |



## **LOOKING AHEAD**

October 29 “Science at the Market” 8-noon Lincoln Square Mall  
Volunteers are needed, even if only for an hour or two. We'll have two solar telescopes (white light and hydrogen alpha) available. Lets hope for a sunny sky!

October 29            CUAS Family Skywatch    8-10pm            CUAS Observatory  
*Volunteers will be needed.* Call 351-2567 for cancellation notices. The observatory is located south of the Monticello Road on 700E. See [cuas.org](http://cuas.org) for a map & more detailed directions. Allow time to unwrap the telescope.

November 2            CUAS Officer's meeting    7-8pm            Village Inn Pizza Parlor

November 4            World of Science talk    7pm            Staerkel Planetarium  
Greg Pluta, manager of the earthquake center on the UI campus, will be in the dome to discuss "Earthquakes Around the Globe and at Home." Admission is \$1 at the door.

November 5            "Santa's Secret Star" opens    7pm            Staerkel Planetarium

November 6            Daylight Saving Time ends (set your clocks back an hour before you go to bed)

November 10            CUAS Club meeting            7-8:30pm            Staerkel Planetarium  
We will have a guest speaker! Dr. Jon Thaler, professor of physics at UIUC, will be our guest this evening to give us a presentation on supernova research. Dr. Thaler has been involved in dark energy surveys in the past as well as the Large Synoptic Survey Telescope. Invite a friend and hear Dr. Thaler's talk. We'll also do officer elections after the talk.



November 17            Boy Scout visit?            7pm            Observatory  
This is tentative, but we have been contacted by a scout troop out of Barkstall School about doing some real-sky observing at the observatory. Note this is a Thursday evening. Might anyone be interested in working this event? They will confirm a week out- look for a notice on the club list.

November 25            "Season of Light" opens    8pm            Staerkel Planetarium  
The planetarium's holiday program brightens a normally darkened evening. All tickets are sold at the door. [www.parkland.edu/planetarium](http://www.parkland.edu/planetarium).

December 2            "World of Science" talk    7pm            Staerkel Planetarium  
We welcome back astronomer emeritas Jim Kaler for a light-hearted talk on "The Real Zodiac, 2012, and all that!" It should be interesting! Admission is \$1 at the door.

December 3            CUAS Family Skywatch    7-9pm            Observatory  
This will be the last open house for the calendar year. Help is appreciated . . . dress warm!

December 6            Head Start Family Night    5-8pm            Staerkel Planetarium  
We'll do the Sesame Street show for the kids and their parents, then have some activities in the lobby. If any CUAS scopes could show up and show people the Moon and Jupiter, it would be appreciated!

December 8            CUAS Club Meeting            7-8:30pm            Staerkel Planetarium  
The plan is to have a social holiday gathering. Feel free to bring munchies or drinks.

January 12            CUAS Club Meeting            7-8:30pm            Staerkel Planetarium  
Per tradition, we'll use the Digistar 4 digital machine look at the sky for the upcoming year.



# The Gray Cubicle You Want to Work In

By Dr. Tony Phillips

It's another day at the office.

You're sitting in a gray cubicle, tap-tap-taping away on your keyboard, when suddenly your neighbor lets out a whoop of delight. Over the top of the carpeted divider you see a star exploding on the computer screen. An unauthorized video game? No, this explosion is real. A massive star just went supernova in the Whirlpool Galaxy, and the first images from Hubble are popping up on your office-mate's screen.

It's another day at the office ... *at NASA.*

Just down the hall, another office-mate is analyzing global temperature trends. On the floor below, a team of engineers gathers to decode signals from a spaceship that entered "safe mode" when it was hit by a solar flare. And three floors above, a financial analyst snaps her pencil-tip as she tries to figure out how to afford *just one more* sensor for a new robotic spacecraft.

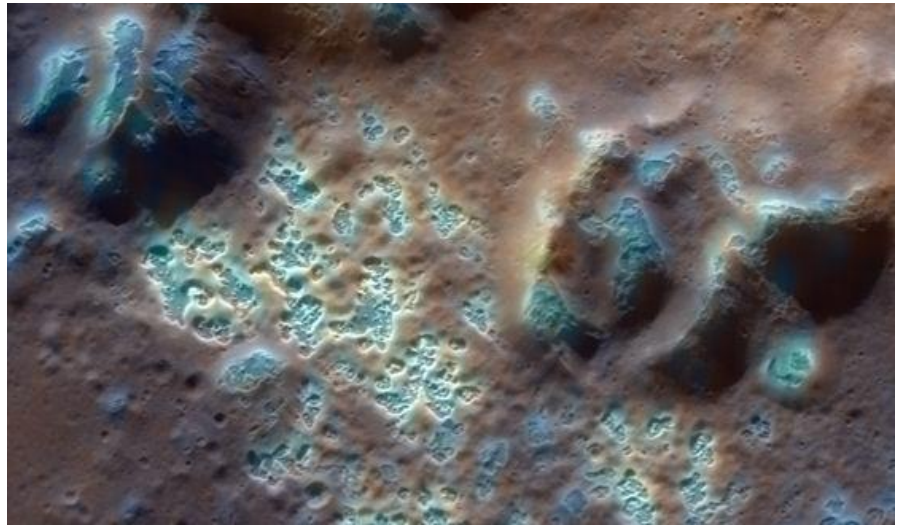
These are just a few of the things going on every day at NASA headquarters in Washington DC and more than a dozen other NASA centers scattered around the country. The variety of NASA research and, moreover, the variety of NASA people required to carry it out often comes as a surprise. Consider the following: NASA's Science Mission Directorate (SMD) supports research in four main areas: Earth Science, Heliophysics, Astrophysics, and Planetary Science. Read that list one more time. It includes everything in the cosmos from the ground beneath our feet to the Sun in the sky to the most distant galaxies at the edge of the Universe. Walking among the cubicles in NASA's science offices, you are likely to meet people working on climate change, extraterrestrial life, Earth-threatening asteroids, black holes or a hundred other things guaranteed to give a curious-minded person goose bumps. Truly, no other government agency has a bigger job description.

And it's not just scientists doing the work. NASA needs engineers to design its observatories and build its spacecraft, mathematicians to analyze orbits and decipher signals, and financial wizards to manage the accounts and figure out how to pay for everything NASA dreamers want to do. Even writers and artists have a place in the NASA scheme of things. Someone has to explain it all to the general public. Clearly, some cubicles are more interesting than others. For more information about the Science Mission Directorate, visit [science.nasa.gov](http://science.nasa.gov). And for another way to reach the Space Place, go to <http://science.nasa.gov/kids>.

## ODDZ & ENDZ FROM THE UNIVERSE . . . . .

- On November 8, an asteroid named 2005YU55 will pass within about 201,700 miles of our Earth. The asteroid, about the size of an aircraft carrier, will travel at a rate of about 7 arc seconds per second during closest approach. The Goldstone tracking facility will start tracking the object on November 4 and, a few days later, Arecibo will join in. Closest approach is November 8 at 85% the distance to the Moon. It has been since 1976 since we've had something this large come this close. 2005 YU55 is expected to reach magnitude 11.2 as it passes through from Altair on the 8<sup>th</sup>, south of Delphinus, then through the lower section of the Great Square of Pegasus.
- How many neutrinos does it take to change a light bulb? None. If the neutrinos go really, really fast, the bulb is no longer burned out.
- The National Astronomy Education Review is celebrating ten years of celebrating astronomy education. Check it out online at <http://aer.aas.org>. There are now readers in 98 countries.
- Only 31 people "like" the CUAS Facebook page . . . help spread the word! Thanks to Doyle Slifer, Jr. for taking over some of the postings. Feel free to post your photos and observations on that page. "Like" us!
- A surprise at Mercury! NASA's MESSENGER spacecraft has discovered strange hollows on the surface of Mercury. Images taken from orbit reveal thousands of peculiar depressions at a variety of longitudes and latitudes, ranging in size from 60 feet to over a mile across and 60 to 120 feet deep. No one knows how they

got there. The hollows appear to be younger than the craters in which they are found, and that means Mercury's surface is still evolving in a surprising way. Mars Reconnaissance Orbiter spotted similar depressions in the carbon dioxide ice at Mars' south pole, giving that surface a "swiss cheese" appearance. But on Mercury they're found in rock and often have bright interiors and halos. If you could stand in one of these "sleepy" hollows on Mercury's surface, you'd find yourself, like Ichabod Crane, in a quiet, still, haunting place, with a black sky above your head. As the planet closest to the Sun, Mercury is exposed to fierce heat and extreme space weather. Blewett believes these factors play a role. A key clue is that many of the hollows are associated with central mounds or mountains inside Mercury's impact craters. These so-called "peak rings" are thought to be made of material forced up from the depths by the impact that formed the crater. Excavated material could be unstable when it finds itself suddenly exposed at Mercury's surface.



## 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*	\$34
Sky & Telescope 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.cuas.org>

"Clear Skies" is published twelve times per year for its membership. [Circulation: ~24]

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/planetarium>

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**Champaign-Urbana Astronomical Society  
C/O William M. Staerkel Planetarium  
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