

"CLEAR SKIES"



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

February, 2007

CUAS OFFICERS MESSAGE

Beginning this month we will have a different message. The message will be from the club officers. So being the newsletter editor, it fell to me to be the guinea pig. I would like to tell you a little about myself to start. I have been in the club for over a year. I own a Newtonian reflector 8" telescope. It is a "go-to" with an equatorial mount. I am still trying to learn how to use it. I also own binoculars I can mount on a tripod. This winter has been horrible with the cloudy skies and when it is clear it has been really cold. I have been looking at the sky with binoculars most of my life, but it has only been the last couple of years I have been trying to learn the various names and where everything is located. I go out as often as I can, even if it is just outside my house, therefore I look at the moon a lot. At least, most of the time I can recognize that! I have been out on several occasions this winter. With my limited knowledge, I look for objects I can readily recognize. So my favorite object is M45. I can stare at it for hours, and I always see something new. I also look for M1. I think the Crab Nebula is a very interesting object. I have noticed that it looks very different looking at it through my 8" scope than it does through my binoculars. I will not attempt to tell you what is coming up for February, I will leave that to Dave, so I will stop here and hope you were not too bored with what I had to say. Keep looking and hopefully you will see something new.

Bill Marble

LOOKING UP THIS MONTH

Venus continues to brighten the southwestern sky after sunset. The set time for Venus increases by about an hour this month but the set time compared to the end of twilight doesn't change all that much. A special treat for me is when the thin crescent Moon passes Venus. This month that happens on the evening of February 19.

If you want to catch Mercury close to Venus, look early in the month. Mercury's greatest separation from the Sun occurs on February 7 (18 degrees). Mercury will set at 7pm on this night, about exactly 30 minutes before Venus. The two will be about six degrees apart (less than a fist). Less than a week later, though, Mercury will take the plunge towards the Sun and will be very hard to see by February 20th. Mercury will be in conjunction with the Sun on the 22nd.

For those of you with telescopes and a keen eye, see if you can spy the planet Uranus 0.7-degrees to the northwest of Venus on February 7th, the same day Venus and Mercury



CUAS DIRECTORY:

Mike Lockwood, President	398-9778
Guy Hampel, Vice-pres.	352-3690
Mike Conron, Secretary	355-5996
Willard Brineger, Treasurer	356-5929
John Stone, 5 th Director	337-1893
Mike Rosenberger, Obs. Dir.	598-2254
Phil Wall, Webmaster	352-5426
Bill Marble, Newsletter Ed.	359-6407
Cell phone	621-7882
Jameel Jones, CPD	398-2550

are closest. It's best to wait until the sky has darkened, but don't wait too late! The planets will be too low then!

Saturn reaches opposition on February 10th. As you know, this means Saturn appears opposite the Sun, as seen from the Earth, so it rises as the Sun sets. It's the brightest thing coming up in the east, though the star Regulus isn't too far behind in the brightness column. If you turn a telescope towards Saturn, let it rise high enough so that the image is a bit more steady. The full Moon is in this area the week before.

If you get up before sunrise in the morning you can catch Jupiter just to the upper left of Antares in the southeast. Jupiter rises at about 2:30am in mid-February. A waning crescent Moon buzzes below the star and the planets on the mornings of February 11-12.

Wait a bit later and you can catch Mars, rising just after 5am and literally minutes before the start of morning twilight.

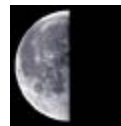
Even though this is technically next month, be sure to put the March 3 total lunar eclipse on your calendar. This is a Saturday and CUAS members are welcome to bring telescopes out to the planetarium at Parkland to do some observing. Given the eclipsed Moon will be rising in the east, we'll need to get away from the planetarium a bit to improve the visible eastern horizon. This eclipse is odd in that the Moon will be completely in the Earth's shadow when the Moon rises. Roughly 15 minutes or so after Moonrise, the Moon will begin to come out of the Earth's shadow. You don't need a dark sky to see this and, in fact, with it being February, it might be good to have a spot close-by where one can warm up!

A PS here . . . have you seen the shots of Comet McNaught on the internet? I found that www.spaceweather.com probably has the nicest gallery. Our own John Stone captured a nice photo as well. Nice work, John! The comet was spectacular as it came around the Sun, but it's position in the sky was such that we could not see it but there was a nice view of it from south of the equator. Still, the comet was bright enough that some photographed the comet's tail as it appeared just above the horizon! Amazing.

-DCL

Moon Phases

Last Quarter Moon



1 st quarter	February 24	March 25
Full	February 2	March 3
3 rd quarter	February 10	March 11
New	February 17	March 18

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>



CUAS NEWS

We could use your help at the **February meeting**. On February 8th at 7pm (our usual meeting time) we're advertising a telescope user's seminar. This is basically for people who may have received a telescope for the holidays and don't have a clue as to how to use it! Everyone is welcome and it's free! And you're encouraged to bring your telescope to get some one-on-one assistance. Bring collimating tools if you have them and maybe some wrenches, screwdrivers, etc. The Go-to scopes are usually popular here as people are told that "all you have to do is push a button" which is true . . . but the alignment of the scope to the sky can be a pain. And they don't tell you that!

Remember to renew your membership dues! For most of us, annual dues and key fees (if you have an observatory key) are due, ***Don't be dropped at the end of this month.*** Why not renew today? Use the form at the end of this newsletter.

CUAS has a new **webmaster!** Former treasurer Phil Wall has assumed responsibility for our web site. Be sure to check it out at www.cuas.org. We also thank Chris Pond for his many years of service! Thanks, Chris!!

We need your opinion on some **in-town observing**. Last year's survey indicated that you wanted to do some in-town stuff. That's great as long as we have enough people to cover both the Skywatches at the observatory and the in-town sessions. It was thought that we need to have a sign-up list, then someone working an in-town observing session at a park would know that the Skywatch is covered by volunteers. We could schedule the in-town sessions around events (such as favorable views of the planets) and have a rain date.

Dave Leake now has a copy of the Manatee County (Florida) **lighting ordinance** that was passed by their county board. The ordinance was written by an amateur astronomer but there's no mention of astronomy or skywatching in the ordinance. The plan here is to try to adapt this ordinance for our county. Anyone interested in tackling this? Give Dave a yell and he can email it to you.

Did you know that the Staerkel Planetarium had **birthday party packages** now available? Have a party in the lobby, see our special birthday show complete with your child's photo on the dome. See www.parkland.edu/planetarium for details.

We still have a few *Astronomy* magazine **2007 calendars**. They are first come, first served and \$10 for members and \$12 for non-members

Some other **calendar items** recall that CUAS is going to Allerton on May 5. Two days before, on May 3, the planetarium is teaming up with the Orpheum Children's Science Museum and WILL television

for an "Investigate Space!" night for the kids. The free event will be held at Parkland in both the planetarium and theatre lobby. Illinois planetarians will be meeting with colleagues from Wisconsin and Minnesota for a joint meeting at Yerkes Observatory on May 11-12. You need to be a member to attend their fall conference, but this is not the case for the state meetings. Anyone interested in going?

For sale: 6-inch f/8 Criterion reflector with completely redone optics. Equatorial mount and clock drive included. The optics were redone by the Tuesday night ATM group that meets at Mike Lockwood's home. Asking \$350. The mirrors are now back from the coating people and the scope is ready to roll. Contact Mike Lockwood if you're interested.

For sale: 10" F/6.8 and 10" F/5.5 truss-tube Newtonians, both built by me, with primary mirrors made by me. The F/6.8 is plate glass and about 1/15th wave, and the Pyrex F/5.5 is roughly 1/30th wave. They are not inexpensive, but if you're interested in a serious, high-quality telescope that will provide the best of planetary views, please give me a call (398-9778) or talk to me at a meeting. The F/5.5 is the brother to my 10" F/8.8, featured in the March S&T. Both scopes can be seen on my web site (<http://bi-staff.beckman.uiuc.edu/~melockwo/index.html>) under "Telescopes". I am willing to customize the f/6.8 a bit. - Mike Lockwood

The 10-inch mirror from the former "duct tape telescope" has also been completed.

TREASURERS REPORT

CUAS Treasurers Report for January 2007
Willard Brinegar, Treasurer 2007

As of 1/31/06

Assets*

\$ 111.00	petty cash envelope
\$ 2208.20	checking account
\$ 15.00	Check not deposited
\$ 2334.20	Total Assets

Income*

\$ 60.00	six calendars to member @ \$10
\$ 225.00	fifteen membership renewals @ \$15
\$ 15.00	new member @15
\$ 50.00	key fees @ \$10
\$ 20.00	Donation
\$ 370.00	Total Income

Expenses*

\$ 0.00	no expenses paid
---------	------------------

*Note: Magazine subscription funds are not reflected in Income and Expenses since they are simply sent on to the respective publishers. As of 1/31/07, all received subscription payments have been sent on, so they are not reflected in the Assets category either.

OBSERVATORY NEWS

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

Remember to be aware of the road conditions when visiting the observatory in the winter. 700E is not the first road plowed in the area! Also, even if there is no snow on the ground at the dome site, the ground may be very soft! Park in the rock drive until you can be sure you won't get stuck in the grassy area.



Spring projects 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.



LOOKING AHEAD

February 2 "World of Science" talk 7pm Staerkel Planetarium
Dr. Angus Rockett will be in the dome talking about "Alternative Fuels and Alternative Energy."
Admission is \$1 at the door.

February 2 UIAS Observatory open house 7-9pm (?) UI Observatory
The UIAS will have the observatory at the south end of the Quad open for public viewing. Park near the Krannert Center and walk over . . . if clear.

February 8 CUAS Club meeting 7-8:30pm Staerkel Planetarium
For this meeting, we'll invite telescopes users to the lobby (with their telescopes) for a telescope user's seminar. In the past we have had more than a dozen people show to get some one-on-one assistance with their telescopes. We need members to help with this one! A short business meeting will follow.

February 17 New Moon Observing 7-?pm Observatory

Dress warm and see the faint fuzzies. Members only, but you can bring a guest if you wish.

February 24 CUAS Family Skywatch 7-9pm Observatory
Our public event for the month. Yes, it's chilly, but the Orion Nebula and Crab Nebula are in perfect view. Dress warm as the dome isn't heated. Take I-57 south of Champaign to the Monticello exit. Take this exit west 1.4 miles and turn left (south) on County Road 700E. The observatory is on your left about 0.8 miles south of the Monticello Road. Remember the county may not plow 700E promptly so be cautious if going out on a snowy night. Weather permitting.

March 2 "World of Science" talk 7-8pm Staerkel Planetarium
Tonight's topic is the science of landscaping with Heather Miller. This one is for all the "green thumbs" out there. Admission is \$1 a the door.

March 3 Total Lunar Eclipse sunset Staerkel Planetarium
If it's clear, do we want to do observing at the planetarium for the eclipse? Might be a nice way to get a little publicity given the evening news occurs at this time.

March 8 CUAS Club Meeting 7-8:30pm Staerkel Planetarium
We hope to welcome Dr. You-Hua Chu, current chair of the University of Illinois Astronomy Department, as our evening's speaker.

March 17 New Moon Observing 7-? Pm Observatory

March 24 CUAS Family Skywatch 7-9pm Observatory

March 30 "Spring Prairie Skies" opens 7pm Staerkel Planetarium
Our spring sky shows opens at 7pm, followed by another opening . . . of "Skywatchers of Africa" at 8pm. See www.parkland.edu/planetarium for a full schedule.

April 6 "World of Science" talk 7pm Staerkel Planetarium
"Bird Flu and Other Pandemics" is the topic, featuring Parkland microbiologists Vikki Crneckovic. Admission is \$1 at the door.

CHECK OUT ALL CLUB EVENTS ON THE CUAS HOME PAGE:

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

A LOOK AT 2007

Editors note: this is the article that Dave wrote last month, but since it is still relevant, I thought I would keep it in again this month.

It's always fun to take a peek at what the year has in store for the backyard skywatcher. So let's look at the planets, meteor showers and some special events.

Unfortunately it once again isn't a great year for eclipses. We will have an odd total lunar eclipse on the evening of Saturday, March 3. What makes it odd is that the eclipse will be in progress when the Moon rises . . . meaning we probably won't see the Full Moon when it rises but it will appear to emerge from the Earth's shadow after the Sun sets. Might be a good time to have an observing session, ya think? The eclipse ends at 5:58pm when we'll have a Full Moon in the sky once again.

The best time to see an outer planet is when it's at "opposition," seen directly opposite the Sun. It is here when the planet is generally closest and thus it's bright and looks large in a telescope. We lead off the year with Saturn's opposition on February 10, followed by Jupiter on June 5, Neptune on August 13, Uranus on September 9 and Mars on Christmas eve. Mars has an opposition every 26 months and this year is our year.

The inner planets are different in that you have to wait until they are on one side of the Sun or the other in order to see them in a dark sky. Venus is in our evening sky now and will be until early August. Greatest separation from the Sun occurs in early June (45°) and it is brightest on July 11th. After August, Venus goes into the morning sky where it rises very quickly to reach its greatest separation (46°) on October 28th.

Mercury has three evening appearances and three morning appearances in 2007, but not all of these are favorable for observation. For evening viewers, the best times to look for Mercury are from the end of January to mid-February and then again from mid-May to mid-June. The late spring view should be grand, especially with Venus in the sky, too. If you like to get up early in the morning, then Mercury will be nicely placed during the entire month of July, plus early to mid-November.

As the planets wander they'll often catch and pass each other and there are several events of note this year. In the evening, the Moon occults the star Regulus near sunset on June 30th and then Saturn and Venus are 0.7° apart on June 30. Venus comes close to Regulus (1.7°) on July 12th. In the morning hours Mars appears to come close to Neptune (March 25th, 1°) and then Uranus (April 29th, 0.7°). Later in the year, Saturn and Venus come to within about 3° on the morning of October 14th.

We might want to think about a Perseid meteor party this year. The most-observed of the major meteor showers peaks on the evening of August 11-12. For starters, the 11th is a Saturday night and then Sunday is the New Moon, so the skies will be dark! The Moon is near full for the Delta Aquarids (July 28) and is a waning gibbous for the October (22nd) Orionids. The Leonids are a little better with the first quarter Moon setting at midnight (and it's a Saturday night, too, November 17th). This is also a Skywatch night. The Geminids reach their peak also just before first quarter Moon on the 13-14th of December.

As far as club events go, remember that all the meetings are on the second Thursday of the month at the Staerkel Planetarium at 7pm (unless otherwise noted) and we'll have observatory open houses on the Saturday closest to first quarter Moon. For 2007 that means Skywatches on January 27, February 24, March 24, April 21 (also National Astronomy Day), May 19, June 23,

July 21, August 18, September 15, October 20, November 17, and December 15. Fall of this year is also the 20th birthday of the Staerkel Planetarium with hopefully several special events and guest speakers.

For those of you who like to travel to observe, the “Prairie Skies” star party will be held on Sept. 13-16 at Camp Shaw-Waw-Nas-See near Kankakee. The Illinois Dark Skies party and Astrofest don’t have 2007 dates on their web sites yet.

Get out your calendars and get these dates on there! We’d love to have **YOUR** participation at many of these events! It should be a great year! -DCL

PLEIADES

I’m sure that most everyone knows about the Pleiades. But, since I mentioned M45 in my column, I would find out more about it. So I went to <http://www.crystalinks.com/pleiades.html> where they have a very nice article on M45.

The Pleiades, or the seven sisters, is an open cluster within the constellation Taurus. M45 is located high up in the southern sky. It is also one of the closest of our heavenly bodies. It is about 440 light years, or 135 parsecs. The cluster is dominated by hot blue stars, which formed within the last 100 million years.



The Pleiades have long been known to be a physically related group of stars rather than any chance alignment. The Reverend John Michell calculated in 1767 that the probability of a chance alignment of so many bright stars was only 1 in 500,000, and so correctly surmised that the Pleiades and many other clusters of stars must be physically related. When studies were first made of the stars' proper motions, it was found that they are all moving in the same direction across the sky, at the same rate, further demonstrating that they were related.

The cluster is about 12 light years in diameter and contains about 500 stars. I could go on and on about M45, but you can read all about the Pleiades at the web site I mentioned above. It really is a fascinating cluster of stars.

“**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>

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 Staerke Planetarium/Parkland College
2400 West Bradley Avenue
Champaign, IL 61821

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>



**Champaign-Urbana Astronomical Society
C/O William M. Staerke Planetarium
Parkland College
2400 West Bradley Avenue
Champaign, IL 61821**