

# "CLEAR SKIES"



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

October, 2005

## PRESIDENT'S MESSAGE

Hello fellow star lovers!

Again this month we will be helping out at Allerton Park. We will present "Seeing Stars" at the Allerton Park Visitor Center Auditorium on the north side of the park on Oct 22 at 7:00 P.M. After the presentation we will have a viewing session and all club members are invited to bring their scopes out for a nice dark viewing session. I know that the public really enjoys these sessions.

We have been accepted as a member of the NASA Night Sky Network (<http://nightsky.jpl.nasa.gov/>). In an email that Dave Leake and I received, they told us that, "The Night Sky Network is designed to provide unique materials and activities that allow your club members to engage your visitors in easy and exciting learning experiences in a variety of settings, including at the telescope. We hope you find the resources as useful and fun as so many other clubs have!" I am hoping that we will have access to the new materials for the upcoming Allerton Park presentation. Having something new to use in presentations is always a lot of fun.

This month Mars is up early enough that we should be able to get some good observing sessions under our belts. Remember that on November 6 that we will have a Mars observing session at Parkland.

I read a number of astronomy and science e-mags and I want to give you a pointer to a couple of them. One is called "Universe Today". This e-mag is about our Universe. I have been reading it for a while and within the past couple of months it combined with The Bad Astronomy Bulletin Board to become the "Bad Astronomy and Universe Today Bulletin Board." They have a great newsletter and a number of forums that you can join. The url is <http://www.universetoday.com>. I have send pointers to a number of articles to the cuas list.

Another e-mag I read everyday is the science news mailing list. This list provides me with a number of news articles on science news. To try this one out try sending a blank e-mail to:  
mailto:on-index\_science\_d@e.moreover.com

They are both a great "read" and I highly recommend them.

I hope to see many of you out at the observatory this coming month and at the upcoming meetings.

Clear skies,  
Mike

[Editor's Note . . .note the change in meeting date for October to Wednesday, Oct. 12!!!!]



### CUAS DIRECTORY:

Mike Matthews, President	586-5084
Mike Conron, Vice-prez.	355-5996
Guy Hampel, Secretary	352-3690
Phil Wall, Treasurer	352-5442
Jeff Bryant, 5 <sup>th</sup> 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

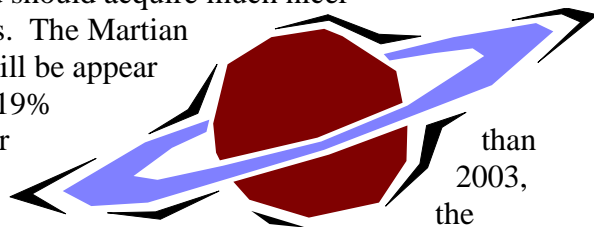
## LOOKING UP THIS MONTH

Wasn't it Paul McCartney that sang "Venus and Mars and all right tonight?" That certainly applies this month. Venus and Mars steal the show! If you can't see Venus, you need to change locations so you have a better horizon! At magnitude -4.2, it's very bright. Look in the southwest and it should be obvious. On October 6<sup>th</sup>, a lovely crescent Moon is near Venus – a great photo op! Ten days later the star Antares (the heart of Scorpius) is only a degree and a half to the lower left of Venus. Telescopically, Venus should look like a little half moon, but it's best to see that while the skies are still bluish. After full dark, there's a lot of glare looking at Venus' brilliance. Venus doesn't set until 8:30pm CDT.

Below Venus and way to the right is Jupiter. Technically you can still see Jupiter early in October, but it's very low. Jupiter passes behind the Sun on October 22. Mercury is below Jupiter and even closer to the horizon. After the second week of October, Mercury overtakes Jupiter and sets just as twilight is ending, just before 7pm CDT.

At the beginning of October, we find that Mars rises as Venus sets. The Mars rise time changes rapidly, though, from 8:30pm CDT early in the month to 6:30pm CDT near the end of the month. Whatever you do, see Mars now! It'll be over a dozen years before you will see it this bright again! On the 1<sup>st</sup>, it's 9° from the Pleiades star cluster, but it begins its retrograde motion, which will continue all

month. Mars is closest to our Earth on October 29<sup>th</sup> at just over 43,000,000 miles. This is about 8 million miles closer than in 2003, but Mars will be higher in the sky and in a much higher in the sky (66° compared to 34° max in 2003). Thus we're looking through less of the Earth's air and should acquire much nicer images. The Martian disk will be appear about 19% smaller in but than in 2003, the view should be stupendous! If you don't have a telescope, be sure to attend the October and November Skywatches at the Observatory or come to the special Mars viewing at the planetarium on November 6 (see the calendar section).



Lastly, Saturn is sort of all by its lonesome in the morning sky, near the Beehive Star Cluster, rising at about 1am near mid-October.

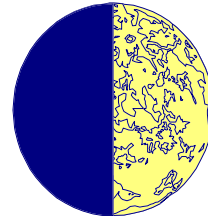
You might hear about two eclipses this month. There's an annular solar eclipse on the 3<sup>rd</sup> and a penumbral lunar eclipse on the 17<sup>th</sup> . . . neither of which we'll be able to see! Oh well. Lets stick to Mars! -DCL

Planet	Date	Constellation	Magnitude	Distance*	Apparent Diameter
Mercury	10/15	Libra	- 0.5	119.8	5.2"
Venus	10/15	Scorpius	- 4.2	75.3	20.8
Mars	10/15	Aries	- 2.0	44.6	19.6
Jupiter	10/15	Virgo	- 1.7	596.7	30.7
Saturn	10/15	Cancer	+0.4	867.9	17.7
Uranus	10/15	Aquarius	+5.8	1800.5	3.6
Neptune	10/15	Capricornus	+7.9	2759.3	2.3
Pluto	10/15	Serpens	14.0	2930.0	0.1

\* in millions of miles from Earth

Moon Phases:

New	October 3	November 1
1 <sup>st</sup> Quarter	October 10	November 8
Full	October 17	November 15
3 <sup>rd</sup> Quarter	October 24	November 23



## CUAS NEWS

**Star Party News** . . . . if there's any observing done at the site south of Walnut Point State Park, it will be discussed at the October meeting. The observing would occur at the end of the month.

**Mars Observing** . . . .CUAS will hold observing Sunday night, November 6<sup>th</sup>, outside the Staerkel Planetarium. We can use the planetarium lobby as a warm room, have restroom facilities, and can even sell Mars shirts and hot chocolate (if you want). This does not mean this has to be the only Mars observing, but this is one we're going to freely publicize.

There is a nice, homemade wooden tripod and a short-focus 4-inch homemade scope on a pipe mount currently at the planetarium. If anyone wants it, speak up quickly, or it will get pitched.

**Officer nominations** are coming up! Might you serve the club next year? We have five elected officials that serve a calendar year:

President = runs the meetings and acts as the club spokesperson

Vice-president = stands in for the president when appropriate and handles club publicity (press releases)

Secretary = handles the meeting minutes and club correspondence

Treasurer = handles club finances, including dues, calendars, T-shirts, and magazine subscriptions.

Fifth Director = the proverbial "other duties as assigned."

Each year this executive committee appoints a newsletter editor, observatory director, and webmaster. Consider serving your club in 2006! And you could get nominated if you're not at the October meeting (which is a day early this month)!

A note to *Astronomy* subscribers . . . . the group **subscription rate** has increased from \$29 to \$34 annually.

CUAS volunteers are needed for a program at **Allerton Park** on October 22 at 7 pm (weather permitting). There will be a 20-minute talk on the current sky in the Visitor's Center, followed by observing through club telescopes in the meadow. The club gets \$125 for participating in this! There's a \$5 fee for non-club members. For more information, contact Kim Petzing at [kpetzung@uiuc.edu](mailto:kpetzung@uiuc.edu) or call 244-1035.

Have you seen the **Zula Patrol**? If you don't have young kids, you may not have had the pleasure. The Zula Patrol is an animated cartoon about the adventures of a group of cute aliens who take care of our solar system. The show has wonderful computer graphics and some neat characters. We can watch a short episode at the October meeting if you'd like to. The show airs on PBS Channel 12 out of the UI, Sunday mornings at 9am. WILL will be working with the planetarium to do some outreach for teachers and parents.

Look for interesting programming in October on WILL Channel 12 on the anniversary of Einstein's 1905 papers. The planetarium is hosting a talk on this topic in November.

**What?** Tear down Yerkes Observatory (home of the largest refracting telescope on the Earth) and put up condos? You're kidding, right? Actually, no. They're debating the future of Yerkes as you read this. Want to help? Interested parties are encouraged to write the president of the University of Chicago. See <http://www.oldfordstuff.com/yerkes/> for details.

An email to the list reports someone in St. Charles, Missouri is willing to donate a **6-inch f/8 Newtonian** on a German Equatorial mount. Any takers? We're not sure if you have to go pick it up or not. Call David at 1-636-724-4619.

**2006 Calendars** . . . . . We now have 20 or so Astronomy magazine 2006 calendars for sale, first come, first served. They'll retail for \$12 to non-members and \$10 to club members.

Congratulations to member Bob Holmes on the installation of the mount for his **32-inch telescope**. The cranes were at his home. Bob has been very active in searching for supernovae in other galaxies and in Near-Earth Object surveys. See [http://ari.home.mchsi.com/observatory\\_phase2.htm](http://ari.home.mchsi.com/observatory_phase2.htm) for more photos.



**CUAS Treasurer's Report**

Income last 30 days plus income not previously recorded\*: \$45.00 (newmemberships)

\$ 101.00 - petty cash envelope

\$ 95.00 - cash and checks awaiting deposit

Outgo last 30 days: \$0.00

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\$2529.76 - total

Money assets:

\$2333.76 - checking account balance

**Light Pollution Report** . . . . . The Champaign lighting code has been distributed to interested parties in an effort to look at and amend the code and take those amendments to the Zoning Board of Appeals. The goals of the code are excellent, but the actual ordinance stops short of where it needs to go. If you're interested in being part of this (and the more, the merrier!), contact Dave at [dleake@parkland.edu](mailto:dleake@parkland.edu) or 359-6644.

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](mailto:cuas-l@lists.prairienet.org) to post.

**OBSERVATORY NEWS!**

Several items regarding the observatory were mentioned at the August meeting:

- Given the number of telescopes at the dome site, the thought was entertained of getting rid of some of them through either a silent auction or even some sort of "garage sale" with proceeds going to the club. IF this happens, club members would get first choice. There's a nice



Criterion 6-inch reflector out there that doesn't get used much.

- We have a new desk at the dome which is much sturdier than the older wooden one, though it takes up a little more room.
- Mike Rosenberger reports that our one self-propelled mower is no longer self-propelled.

*The Mow List may be done for the year – who knows!* If you want to be on (or removed) from the list, email Dave Leake. When you mow, contact the next person immediately so they can plan when to go out and check the lawn. Thank you!

- |                     |                 |                     |
|---------------------|-----------------|---------------------|
| 1) Mike Rosenberger | 4) Mark Prather | 7) Bob Rubendunst   |
| 2) Dave Leake       | 5) Guy Hampel   | 8) Audrey Ishii     |
| 3) Mike Matthews    | 6) Wayne James  | 9) Willard Brinegar |



## LOOKING AHEAD

October 1                      New Moon Observing                      7-?pm                      Observatory

October 7                      “World of Science” talk                      7pm                      Staerkel Planetarium  
Geologists Stephen Hurst, though video and stills, takes us in a submersible craft to a deep ocean trench just off the coast of Peru, the Pito Deep. Admission is only \$1 at the door.

October 8                      CUAS Family Skywatch                      7-10pm                      Observatory  
This is our public event of the month so we could use a few volunteers to staff the observatory and some telescopes outside. The dome can be found by taking I-57 south of Champaign to the Monticello exit. Take this exit and go 1.4 miles to the west to County Road 700E. Turn left (south) here and the dome is on your left about 0.8 miles down this road. All observing sessions are weather permitting. Call 351-2567 for cancellation notices.

October 12                      CUAS Club Meeting                      7-8:30pm                      Staerkel Planetarium  
**NOTE THE CHANGE IN DATE!!** Phil Wall will be doing this month's program. We should talk about any October observing, too, plus officer nominations!

October 13                      Harrison Schmitt at the UI                      8pm                      Lincoln Hall Theater  
This is the reason for moving the meeting up a day. Mr. Schmitt was the geologist aboard Apollo 17, the last mission to the Moon. He'll give a free talk in the large Lincoln Hall Theater, located on the west side of the Quad, entitled “A Trip to the Moon & Beyond.”

October 22                      Allerton Observing                      7-11pm                      Allerton Park  
We'll need someone to do a talk for 20 minutes, then observing from the meadow. All observing sessions are weather permitting.

October 27-29                      CUAS Observing (?)                      TBA                      South of Walnut Point SP

October 28                      “Across the Sky”                      7pm                      Staerkel Planetarium  
The planetarium welcomes storytellers Kim Petzing (Allerton Park) and Kim Sheahan (Spurlock Museum) for a wonderful hour of stories, culture, and a little science. Tickets are \$4 for adults and \$3 for seniors kids.

November 4	“World of Science” talk	7pm	Staerkel Planetarium
Physicist Dr. Paul Kwait will go through “Einstein’s Miracle Year” and how his famous papers of 1905 have changed our lives.			
November 5	CUAS Family Skywatch	7-9pm	Observatory
November 6	Mars Observing	7-9pm	Staerkel Planetarium
Bring a telescope and set it up west of the planetarium, weather permitting, and we’ll show the public what Mars looks like through a telescope. We can sell T-shirts inside the lobby at the counter if desired.			
November 10	CUAS Club Meeting	7-8:30pm	Staerkel Planetarium
November 10-12	SEDS at the University of Illinois	?	
December 2	World of Science” talk	7pm	Staerkel Planetarium
Meteorologists Ed Kieser will discuss this year’s hurricane events in the Atlantic and the Gulf. Why all the destruction lately?			
December 3	New Moon Observing	7-?pm	
December 8	CUAS Club Meeting	7-8:30pm	Staerkel Planetarium
December 9	“Dusk to Dawn”	7pm	Staerkel Planetarium
Another storytelling gem by Kim Petzing (Allerton Park) and Kim Sheahan (Spurlock Museum). Don’t miss it! This hour-long program is very appropriate for families with kids.			
December 10	CUAS Family Skywatch		

**CHECK OUT ALL CLUB EVENTS ON THE CUAS HOME PAGE:**

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



**Where No Spacecraft Has Gone Before**

by Dr. Tony Phillips

In 1977, Voyager 1 left our planet. Its mission: to visit Jupiter and Saturn and to study their moons. The flybys were an enormous success. Voyager 1 discovered active volcanoes on Io, found evidence for submerged oceans on Europa, and photographed dark rings around Jupiter itself. Later, the spacecraft buzzed Saturn’s moon Titan—alerting astronomers that it was a very strange place indeed! — and flew behind Saturn’s rings, seeing what was hidden from Earth.

Beyond Saturn, Neptune and Uranus beckoned, but Voyager 1’s planet-tour ended there. Saturn’s gravity seized Voyager 1 and slingshot it into deep space. Voyager 1 was heading for the stars—just as NASA had planned.

Now, in 2005, the spacecraft is nine billion miles (96 astronomical units) from the Sun, and it has entered a strange region of space no ship has ever visited before.

“We call this region ‘the heliosheath.’ It’s where the solar wind piles up against the interstellar medium at the outer edge of our solar system,” says Ed Stone, project scientist for the Voyager mission at the Jet Propulsion Laboratory.

Out in the Milky Way, where Voyager 1 is trying to go, the “empty space” between stars is not really empty. It’s filled with clouds of gas and dust. The wind from the Sun blows a gigantic bubble in

this cloudy “interstellar medium.” All nine planets from Mercury to Pluto fit comfortably inside. The heliosheath is, essentially, the bubble’s skin.

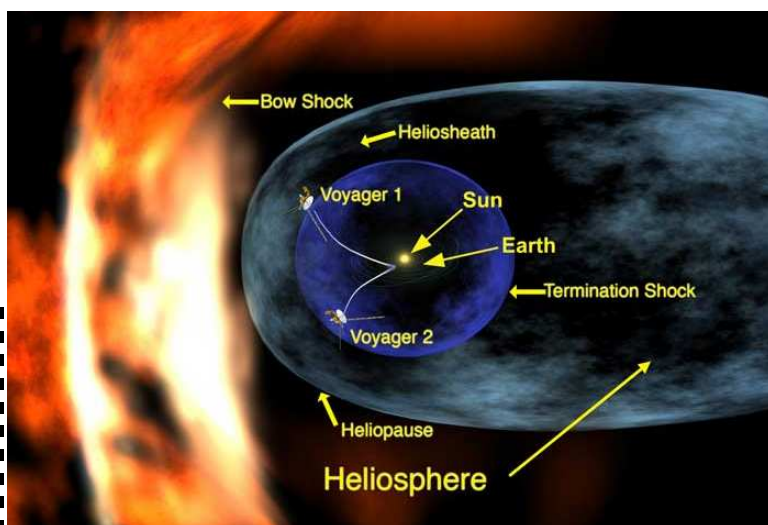
“The heliosheath is different from any other place we’ve been,” says Stone. Near the Sun, the solar wind moves at a million miles per hour. At the heliosheath, the solar wind slows eventually to a dead stop. The slowing wind becomes denser, more turbulent, and its magnetic field—a remnant of the sun’s own magnetism--grows stronger.

So far from Earth, this turbulent magnetic gas is curiously important to human life. “The heliosheath is a shield against galactic cosmic rays,” explains Stone. Subatomic particles blasted in our direction by distant supernovas and black holes are deflected by the heliosheath, protecting the inner solar system from much deadly radiation.

Voyager 1 is exploring this shield for the first time. “We’ll remain inside the heliosheath for 8 to 10 years,” predicts Stone, “then we’ll break through, finally reaching interstellar space.”

What’s out there? Stay tuned...

For more about the twin Voyager spacecraft, visit [voyager.jpl.nasa.gov](http://voyager.jpl.nasa.gov). Kids can learn about Voyager 1 and 2 and their grand tour of the outer planets at [spaceplace.nasa.gov/en/kids/vgr\\_fact3.shtml](http://spaceplace.nasa.gov/en/kids/vgr_fact3.shtml)



## MEMBERSHIP FORM

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Circle all that apply:

- |                                     |          |
|-------------------------------------|----------|
| Basic membership                    | \$15     |
| Observatory key fee                 | \$10     |
| <i>Astronomy</i> magazine renewal*  | \$34     |
| <i>Sky &amp; Telescope</i> 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. 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  
2400 West Bradley Avenue  
Champaign, IL 61821**