



General Meeting of the Omaha Astronomical Society  
Friday, December 1st at 7:30 PM  
Durham Science Center, Room 169, UNO Campus  
Program: See Page 3

### Items of Importance for the December Meeting

#### By-Laws Changes for OAS

Changes to the OAS By-Laws need to be considered. Notice is hereby given that several items for changes in the OAS By-Laws will be introduced at the December Meeting, and voted on during the January Meeting.

Discussion on the club buying a new Laser Collimator for club members to use, along with either a sight tube or Cheshire eyepiece. These items if bought, would be signed out just like a scope is now.

#### Reminder to Everyone

Please bring the food items for the December Meeting, if you did not get a chance to sign up to bring an item please contact Eric Balcom for an idea of what he might need:

Eric Balcom—491-3502 / ecbalcom@msn.com

Also please remember that any and all donations of items, especially astronomy related items for door prizes will be greatly appreciated.

So come for the December meeting, come enjoy some food, the company of fellow astronomers, and the chance to win one of the door prizes that will be given out during the meeting.

## A Happy Halloween for Hubble

by Richard Tresch Fienberg Condensed by M. Weiss

On the eve of the Day of the Dead, NASA administrator Michael Griffin gave the Hubble Space Telescope a new lease on life by announcing that Space Shuttle astronauts will visit the observatory in 2008 to replace worn-out parts and install powerful new scientific instruments. The servicing mission will enable Hubble to continue producing landmark astronomical discoveries until 2013 and perhaps longer. Without servicing, Hubble is doomed to die a slow electronic death in the next two to three years as its aging batteries lose their ability to hold a charge.

Griffin traveled from his Washington, DC, office to the Goddard Space Flight Center in nearby Greenbelt, Maryland, where he spoke to a rapt audience of Hubble scientists and engineers, many of whom have been working on the project for decades. "We are going to add a mission to service the Hubble Space Telescope to the shuttle's manifest before it retires," said Griffin, and the crowd rose to give him a standing ovation. Only three years ago, many of these same folks were in mourning when Sean O'Keefe, Griffin's predecessor, canceled plans to repair and upgrade (Continued on Page 5)

**December Club Star Party,  
December 16, 2006  
OAS Club Site, Weeping Water**

**Omaha Astronomical Society is a member of the NASA Night Sky Network**

# Events and Stuff Section

## December Meeting Presentation

Annual Non-Denominational

After Business Meeting

Get-Together

## New Members

John Baker of Omaha  
Dan Weidner of Omaha  
Emily Cleary of Omaha  
Bob Vanmeeteren of Omaha  
Larry Wilkes of Louisville  
David Austenberry of Omaha

## Good December Observing Dates to Observe at the Club Site or other good dark sky location

Friday 15 December, last quarter moon  
Saturday 16 December, last quarter moon  
Friday 22 December, new moon  
Saturday 23 December, new moon

## Mahoney Public Star Parties

Done Until May 2007

All Friday evenings from Twilight On the Golf Driving Range of the Mahoney State Park Ashland, NE

## Discussion Forums

Need to ask an astronomy question, want to sell a telescope or an astronomy related item, or maybe just discuss an upcoming astronomy event or maybe organize a star party?

Well try the OAS Discussion Forum on our Website "omahaastro.com".

Own a Cave Telescope then try the Cave Forum also on the OAS website.

<http://www.omahaastro.com/cave/forum/>

## December Sky Calendar

4th Full Moon  
12th Last Quarter Moon  
14th Geminid Meteor Shower Peaks  
20th New Moon  
21st Solstice  
27th First Quarter Moon

## Recent Awards

Al Dorn—Certificate of Appreciation  
Bill Bond—Certificate of Appreciation  
Eric Balcom—Honorary Messier Award  
Mark Weiss—Outreach Award  
Sharon Weiss—Outreach Award

## December Outreach

December 8th—Cub Scout Pack Group at Cub Maters home west of Bennington at 13101 N. 190th Circle. Outdoor Event 7:00 pm.

December 14th—Cub Scout Pack 378 at St. Margaret Mary Church, at 6116 Dodge St. across from UNO. Indoor event 30 minutes only. 6:30 pm

December 18th—Cub Scout Pack 412 at Zion Lutheran Church 144th and IDA, 2 miles north of Maple. This is an indoor event for only about 30 minutes, time 6:30 pm.

## Note to All

While I do not mind being the editor of the STELLA newsletter, I would appreciate some help in the article department. If I could get just one short article per year from every member of the club, that would help a lot. So if you have a short story about an observing experience, a book review (astronomy related), or a review of a new astronomy related item, please feel free to contribute to your newsletter. Thanks MKW

# OAS Meeting Minutes

November 3<sup>rd</sup> 2006

**Meeting** was called to order at 7:30 by President Mark Weiss. We welcomed ten guests and had a total of 55 people at the meeting.

**Minutes** of October OAS Meeting read by Secretary Kim Moss-Allen. A motion was made to accept the minutes by John Macy, seconded by Gary Grimes.

**Treasurer's Report** given by Treasurer Bill Bond. October income: \$544.80, expenses: \$725.26, and balance of \$5045.43.

**Outreach** None lined up in November .

**Events:** Nov. 8<sup>th</sup>, Mercury transit. Live video will be fed from one of the telescopes on the Durham Science Building into the Planetarium.

Nov. 13<sup>th</sup>, Nebraska Star Party Planning Meeting, Eric Balcom is point of contact

Nov. 18<sup>th</sup>, Club Star Party, Astropark, Weeping Water, NE

Nov. 18<sup>th</sup>/19<sup>th</sup> Leonid Meteor Shower

July 15<sup>th</sup>-20<sup>th</sup>, 2007 Nebraska Star Party, Valentine, NE

Astropark users for October=0

**OAS Telescope Loan Program** If you are interested in checking out one of the club telescopes please contact John Johnson.

- 6 inch Dobsonian, Osa Hendricks
- 6 inch Newtonian, Keith Jones
- 8 inch SCT, Rita Corell
- 8 inch Dobsonian, Joe Alvarado
- 13 inch Dobsonian, Chris Jewell
- Binoculars, 11x80, Bill Bond

**Old Business** Yerkes Observatory Trip being planned by George Allen. Chicago area, about 400 miles from here, plan to drive on a Friday, tour the Observatory Saturday, drive back Sunday (within next 2 months.) Don't miss this chance to check out

this historic refractor – the world's largest. Contact Karl at [astrocamman@yahoo.com](mailto:astrocamman@yahoo.com)

## New Business

1. December Holiday Social is December 1<sup>st</sup>. Bring some of your favorite holiday treats to share and we are seeking donations of an astronomical nature for door prizes. The more the merrier! Point of contact Eric Balcom.
2. Awards Coordinator Deb Cheney presented outgoing President Al Dorn and outgoing Treasurer Bill Bond with Certificates of Appreciation and special pens in gratitude for their many years of service to the OAS. Also, the gavel (that says "HELP!") was retired with Al Dorn and Mark Weiss was presented with a brand new gavel. Eric Balcom earned the Honorary Messier Award, observing all 110 deep sky objects on the Messier list. Mark and Sharon Weiss both earned the first level on the new Outreach Award. Way to go!
3. Vicki Neidergeses brought materials to make a homemade dew shield and offered to show folks at the meeting how to make the shield.

**Next Meeting** will be December 1st, 2006, UNO Physics Building, room 169. Motion made to close meeting by Chris Jewell, seconded by Karl Neihaus.

*Program:*      **Lunar Observing**      By Al Dorn

Minutes by  
OAS Secretary, Kim Moss-Allen

## **Telescope for Sale**

Meade LX200R 10-inch Ritchey-Cretien, f/10; only assembled & used once. Has field tripod, standard Meade accessories kit (one e/p, diagonal, focuser) Has UHT (Ultra-High Transmission) Coated Optics. GPS receiver built into fork arm like LX200GPS. Weight is approximately 120 lbs ASKING \$2500

Contact Cheryll McAtee in Fairbury, NE (South of Lincoln)

Home 402-729-5633

Cell 402-300-0800

e-mail is "[cheryllmac@diodecom.net](mailto:cheryllmac@diodecom.net)"

## December Astronomy Quiz

1. What is this object?



2. The **Sun** rotates, spinning on its axis every \_\_\_\_\_ days.
3. What is an **NEA**?
4. This **constellation**'s brightest star is Kaus Australis and it covers 867 square degrees and it is part of the Zodiac. Which is it?
5. Who started the **cataloging** of stars according to their brightness or importance? When?
6. Match these **lunar** objects. **Latin:** Mare Nubium, Sinus Iridium, Mare Imbrium, Sinus Medii. **English:** Central Bay, Sea of Showers, Sea of Clouds, Rainbow Bay.
7. A **comet's orbit** could best be described as round, elliptical, parabolic or hyperbolic?
8. **Who** said, "If you shed tears when you miss the sun, you will also miss the stars."
9. **Where** will you find Gold, Bok and Lod?
10. Which **constellation** was once known as the Women's Tent by the Arabs, the Tortoise by the Chinese and is near the modern constellation Ara, the Alter?
11. Which move faster, **sunspots** closer to the solar equator, or those at higher latitudes?
12. This **NEA** swings closer to the sun than any other asteroid, within 13 million miles. It was discovered in 1983. What is its name?

## Observing Items for December

Well as many of us found out this November the Leonids were for us here in Nebraska pretty much a no-show. We do however still have one more chance in 2006 for a good meteor shower, we have the Geminids Meteor shower which peaks on the morning of December 14th, which is a Thursday. Astronomers expect the peak to be around 5 a.m. CST. For those who are willing to look for some of the lesser know meteors there is the Ursid meteors in December. The date for their peak is the 22nd of December.

As summer night sky items fade, winters Objects begin to make an appearance. Look for items like M36, 37, and 38. Here you might use Binoculars to view the true beauty of this area of space in and around Auriga. Use a telescope to further study the details of each star cluster. While you are in the neighborhood, you might want to look for NGC 1931 a combination emission and reflection nebula.

Late in December Venus returns to the evening sky, look for it in the southwestern sky just after sunset. Because Venus is on the far side of the sun it will appear as a fully illuminated disc. Both Neptune and Uranus are in the southwest after it gets dark. Late evenings in December will find Saturn in the east in Leo. On December 6th Saturn will begin it's retrograde loop. Also look for Saturn's moons while observing the ringed planet. We even have a gathering of planets Jupiter, Mercury, and Mars have a close conjunction on the morning of the 10th of December. The moon also visits Pleiades on the night of December 3rd, spend the night watching the occultation of the stars of Pleiades by the moon. This event will repeat itself on the morning of the 31st of December, but this time there will a slightly less sunlit moon.

As always every month there is the moon to look at as it continues through it cycle. Ever thought of doing one of the Astronomical League's Observing Programs, well you might want to start with the moon. While it could be done in one month if the weather was right the whole month, it can easily be done in two to three months.

If you want to there is also a comet and

asteroid to look for in the month of December. Comet 4P/Faye heads east through Cetus during December. Asteroid Iris can be seen in Aries near the Pleiades star cluster.

As always there will be various items from the Messier, Caldwell, Herschel, and many other lists of stellar objects, to occupy your time at the telescope or binoculars observing. So remember that since December is cold, so make time to prepare properly for observing in cold weather. If proper preparations are taken some of the night skies most breath taking view are yours to behold. Clear skies, and keep looking up.

the observatory amid concerns for astronaut safety in the wake of the *Columbia* disaster. The new NASA chief chuckled that he was glad to come to Goddard to convey a "much more pleasant decision."

O'Keefe's main argument against returning to Hubble was the unavailability of the International Space Station (ISS) to serve as a lifeboat should something happen to the shuttle during its ascent to orbit. Because the telescope flies in a higher and differently inclined orbit than the ISS, a shuttle damaged en route to Hubble would not have enough fuel to divert to the space station. That's still the case, but as Griffin explained, some key things have changed thanks to the three successful shuttle missions flown in 2005 and 2006.

Using the new extendable boom carried aboard the shuttle, astronauts have demonstrated their ability to inspect the spacecraft for damage and to position themselves securely near any areas needing repair. They've also proven that they can repair any holes in the orbiter's heat shield punched by debris shed during launch — the type of accident that led to *Columbia*'s destruction during reentry. The last piece of the puzzle to fall into place was the ability to have a second shuttle ready and waiting on the launch pad in case a rescue mission is needed — without jeopardizing NASA's plan to finish ISS construction and close down the shuttle program by 2010.

Senator Barbara Mikulski (D-Maryland) lauded NASA's change of plans. "It's a great day for science, a great day for discovery, a great

day for inspiration, and a great day for science education," said Mikulski, who led the fight in Congress to keep open the possibility of servicing Hubble again. With little time to lose in preparing for the forthcoming Hubble visit, Griffin announced that the mission will be flown aboard the shuttle *Discovery* and commanded by veteran astronaut Scott Altman, who also led the last servicing flight, in March 2002. Among the space-walking repairmen are Michael Massimino and John Grunsfeld, both of whom joined Altman on the 2002 flight. Grunsfeld, an astronomer and *Sky & Telescope* author, also repaired the telescope in December 1999, so this will be his third trip to Hubble. *Discovery*'s crew will be rounded out by four rookies: pilot Gregory C. Johnson, space-walkers Andrew J. Feustel and Michael T. Good, and robot-arm operator K. Megan McArthur.

The astronauts have a long lists of tasks to accomplish during their mission, which will include at least four, and probably five, days of space-walking. They'll install new batteries, gyroscopes, and insulating blankets to restore the spacecraft to near-perfect health and protect it against the harsh environment of space. They'll replace one of three fine-guidance sensors to improve the telescope's ability to track faint guide stars and measure stellar positions with great accuracy. They'll attempt to repair the Space Telescope Imaging Spectrograph, which stopped working two years ago when a power supply failed. Finally, and most importantly for astronomers, the astronauts will install the Wide Field Camera 3 and Cosmic Origins Spectrograph, two powerful new instruments that will expand Hubble's scientific capabilities manifold. There's no need to worry about that anytime soon, because NASA's latest forecast shows that friction with the tenuous upper atmosphere won't lower Hubble's orbit enough to threaten an uncontrolled reentry until the year 2020 or later. By then astronauts aboard the Orion crew-exploration vehicle — the one now being developed to ferry crews to the ISS, Moon, and Mars beginning around 2014 — should be able to attach a retrorocket to Hubble. *Discovery*'s astronauts will attach a special grapple fixture to the telescope's aft end to facilitate that future mission.



## OAS Club Officers

<b>President:</b>	Mark Weiss	291-5322	mweiss4@cox.net
<b>Vice President:</b>	Gary Grimes	(712)-527-3495	b52crow@netzero.com
<b>Treasurer:</b>	John Macy	991-5587	ptmacy@doctor.com
<b>Secretary:</b>	Kim Moss-Allen	291-7887	dallen@novia.net
<b>Program Chair:</b>	Eric Balcom	491-3502	ecbalcom@msn.com
<b>Outreach Coordinator:</b>	John Johnson	333-5460	jwjohnson@oppd.com
<b>Stella Editor:</b>	Mark Weiss	291-5322	mweiss4@cox.net

## Astronomy Terms

### **Celestial Poles.**

The projection of the Earth's poles onto the celestial sphere.

### **Celestial Equator**

The projection of the Earth's equator upon the celestial sphere.

### **Ecliptic.**

The apparent path the Sun (and, approximately that of the planets) as seen against the stars. Since the plane of the Earth's equator is inclined at 23.5 degrees to that of its orbit, the ecliptic is inclined to the celestial equator by the same angle. The ecliptic intersects the celestial equator at the two equinoxes.

### **Equinox.**

This is the time when the Sun crosses the celestial equator. There are two equinoxes; Vernal (Spring), around March 21st and Autumnal (Autumn) around September 23rd. On these dates, day and night are equal. Actual dates and times vary due to the Earth's precession.

### **Asterism.**

An asterism is a star pattern that is not one of the 88 constellations. Asterisms may belong to a single constellation or consist of stars belonging to different constellations. The Plough (Big Dipper) is an asterism in Ursa Major, while the Summer Triangle is an asterism which includes stars from several constellations (Cygnus, Lyra and Aquila).

### **Astronomical Unit (AU).**

Approximately equal to the mean earth-sun distance, which is about 150,000,000 km or 93,000,000 miles.

The STELLA is a publication of  
The Omaha Astronomical Society.  
Please send related correspondence to: STELLA, c/o  
Omaha Astronomical Society,  
P O Box 6257, Omaha, NE 68106  
email: stella@omahaastro.com

### **ANNUAL MEMBERSHIP DUES**

Regular/Family  
\$25.00

Junior/Student  
\$10.00

Newsletter Only  
\$10.00

Send your check to:  
The OAS  
c/o John Macy  
P.O. 6257  
Omaha, NE 68106

### **BENEFITS OF MEMBERSHIP**

- ◆ Members receive the STELLA, our monthly newsletter.
- ◆ Each member is automatically a member of the Astronomical League, the only nation-wide organization for amateur astronomers.
- ◆ Use of the observing site at Weeping Water, NE
- ◆ The opportunity to borrow one of several club-owned telescopes.
- ◆ Organized trips to local observatories, planetariums and museums.
- ◆ Significant savings on subscriptions to **Sky & Telescope** and **Astronomy** magazines.
- ◆ Savings on astronomy books and printed materials.

**Visit the club web site at:  
[www.OmahaAstro.com](http://www.OmahaAstro.com)**

Save the club money... and get your newsletter in full color by signing up for the email edition of the Stella. Signing up is easy... just send an e-mail to:

**[oas.mkw@cox.net](mailto:oas.mkw@cox.net)**