

# STELLA

April 2006 Newsletter of the Omaha Astronomical Society Issue 220

The Kansas Cosmosphere and Space Center has unveiled a stained glass tribute to the 17 astronauts whose lives were lost in the Apollo 1 fire and space shuttle Columbia and Challenger accidents. Credit: Kansas Cosmosphere.



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

## Events

### **April Club Star Party**

**22 April, 2006**

**OAS Club Site, Weeping Water**

### **Mahoney Public Star Parties**

Will Start in May 2006

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:

**[mweiss4@cox.net](mailto:mweiss4@cox.net)**

STELLA is a publication of The Omaha Astronomical Society. Please send related correspondence to: STELLA, c/o Omaha Astronomical Society, P O Box 540424, Omaha, NE 68154



# **BULLETINS**

## **April Meeting Presentation**

### **Astronomy for Beginner's Observing Series #4.**

“Binoculars & Observing”

### **Good April Dates to Observe at the OAS Club Site or at any other good location**

Friday 17 Feb, last quarter moon  
Saturday 18 Feb , last quarter moon  
Friday 24 Feb , new moon  
Saturday 25 Feb, new moon

### **Upcoming Events**

“Lost Spacecraft” Speaker Series at  
Strategic Air & Space Museum  
See Page 5

April 8—Astronaut Clayton Anderson  
(From Nebraska, scheduled for ISS, 2006)

April 22—Captain Scott Grissom  
(Pilot and Gus Grissom’s son)

## Stella Quiz April, 2006

1. **Who** discovered that our galaxy is not the only one?
2. **True or false:** In November of this year Venus will transit the sun as seen from Earth.
3. **Who** said, "The stars awaken a certain reverence, because, though always present, they are inaccessible."
4. In a lunar eclipse, what is the difference between a **partial** eclipse and a **penumbral** eclipse?
5. What is due to be launched **April 11<sup>th</sup>, 2006**, and what will it do?
6. **Whose** astronomy **book** was published in 1543 containing a preface, which stated that the idea of heliocentricity (sun at the center of the solar system) was "a convenient fiction to simplify the calculations of planetary movements?"
7. What is a **bolide**?
8. In what constellation can you find "the **Bubble Nebula**" and what is its official designation?
9. **Mercury** was easy to view in late February 2006; what other months is it going to be good for viewing this year?
10. Who coined the term **satellite**? a) Carl Sagen, b) Galileo Galilei, c) Johannes Kepler or d) Gian Domenico Cassini.
11. What **constellation** contains M71 and inside what **asterism** is that constellation?

### Upcoming Club Outreach Events

Omaha Earth Day Event 22 April 12-6, Elmwood Park, OAS will participate. If you wish to volunteer, contact Jeff at [hustonfamily@hotmail.com](mailto:hustonfamily@hotmail.com) .

Arlington Middle School Science Camp at Gretna 4-H Center Astronomy presentation on April 27th, 7:30 PM. This is a "rain or shine" event.

Hitchcock Nature Center, Crescent Iowa, "Observing the Moon and Planets." May 6th.

## April Sky Calendar

5th First Quarter Moon  
13th Full Moon  
23rd Last Quarter Moon  
27th New Moon

### Recent Observing Awards

None

### New Members

Osa Hendricks of Omaha

### Old Telescope Sale

The club has an old Meade 8020 SCT telescope for sale/bid, this scope has a damaged corrector plate that has resisted all efforts to clean. There is also a tripod and a wedge. The drive for this scope is an old 110 volt style. A member of the university staff has offered us a small fee for the scope, as is. If you wish to buy this old scope from the club contact me at either "mweiss4@cox.net" or 291-5322, before the meeting, or contact me before the meeting on the 7th.

Mark Weiss

#### Looking for Help for 2nd Outreach Event

We have been asked to do a outreach activity for the Benson-West Elementary "Science Day" similar to what we have done in the past. Unfortunately it is the same day/evening as the Arlington School event out at Gretna 4-H camp. i.e. 27th of April. We have listed both to see if we have enough support to do both. It is planned from 5:30 to 7:30 PM, so it will be strictly a daylight, solar observing event.

# Omaha Astronomical Society

## March Meeting Minutes

**Meeting called to order** tonight at 7:37 PM. No rooftop observing, 1 guests, 45 people total.

**Reports:** Kim Moss-Allen read the February minutes. Motion made to accept by Howard Bohm, seconded by Bill Bond.

**Treasurer's Report:** with income in February of \$265.90, expenses of \$154.81 and an overall balance of \$5066.51.

### **Old Business**

#### **OAS Telescope Loan Program**

6 inch Dobsonian	Nena and Clete Baker
6 inch Newtonian	Keith Jones
8 inch SCT	Rita Corell
8 inch Newtonian	Joe Alvarado
13 inch Dobsonian	Chris Jewell

**Observing Committee:** Coordinator Clark Cheney not here tonight but John Johnson filled in some info: New comet is visible! Comet Pojmanski is in the constellation Capricornus, visible in the early AM, about 7 degrees to the left and slightly below Venus. Also, Jupiter has a new red spot (B-A)—go on line to find info – it's not visible to small telescopes. Two people used *Astropark* in February.

**Outreach:** We have a Public Star Party set up with Hitchcock Nature Center near Crescent, Iowa on Saturday, May 6<sup>th</sup>. Also we are doing Astronomy Day in conjunction with Earth Day here in Omaha on April 22<sup>nd</sup>. More details about Earth Day will come in April.

**Budget** 2006 estimated income is \$2550 and estimated expense is \$2985. A motion to accept the minutes was made by John Johnson, seconded by Eric Balcom. Some ideas from Al Dorn on saving money were: 1) more *Stellas* go out electronically, 2) merchandise sales, 3) logo (OAS) merchandising, 4) ads on website, 5) sponsorship of events (like our table/activities at Earth Day), 6) "pay as you go" for some items (like paper *Stella*), 7) donation drive and 8) OAS dues increase.

**Metro Science and Engineering Fair** Please meet at 0800 at Peter Kiewit Center on the Aksarben complex on Saturday March 11<sup>th</sup> if you've volunteered to help judge.

**New Business**

**8"Scope** The club owns a donated 8 inch Schmitt Cassegrain telescope. Its corrector plate is badly etched, and not repairable, other than replacing both the mirror and corrector plate. After some discussion a motion was made to sell it in parts or whole. (Motion by Gary Grimes, seconded by Chris Jewell.) Another motion was made (by Stan Biggs, seconded by Chris Jewell) to offer it first to OAS members in *Stella*. Both motions passed. Contact **Mark Weiss** to bid on all or part of it.

**Website** Mark Weiss has recently updated the OAS website, [omahaastro.com](http://omahaastro.com). Visit it and see what's new!

**Next General Meeting:** Friday, 7 April, 2006, 7:30 PM

**Motion to Adjourn** business meeting made by Howard Bohm, seconded by John Russo, and passed by membership.

**February Program:** Astronomy for Beginners Observing Series,  
**#3 The Celestial Sphere and Constellations.**  
*Presented by Eric Balcom*

Respectfully submitted,  
Kim Moss-Allen  
OAS Secretary

NASA's Spirit Mars rover is limping along at Gusev crater, in reverse, as it heads toward "McCool Hill".

The robot is not only solar-energy deprived due to dust on its solar wings, but is also dealing with a cranky right front wheel.

The robot is dragging the lame wheel, carving into the Martian landscape in the process.

Earth controllers plan to have the rover spend the Mars winter on the hill's north-facing slopes. Doing so, the robot will be tilted toward the Sun, helping to maximize daily output by the solar panels.

Engineers at a testbed facility at the Jet Propulsion Laboratory (JPL) in Pasadena, California are trying to determine what caused Spirit's right front actuator to stop working. Meanwhile, rover controllers have successfully commanded the robot to drive using only 5 wheels of its engineer-given six wheels

JPL Engineers plan to have Spirit continue driving backward with five healthy wheels while dragging the right front wheel.

-- Leonard David

Credit: NASA/JPL/Cornell

### **A Note on Astronomy Day**

The 'official' Astronomy Day as recognized by the Astronomical League falls on May 6th this year. However, as we've done for the past several years, OAS is teaming up with Earth Day Omaha, which is held at Elmwood Park on Saturday, April 22nd. Earth Day Omaha is always well publicized and subsequently brings the OAS booth considerable foot traffic. The event gets underway at noontime and continues through 6pm. You can find out more about Earth Day Omaha at [www.earthdayomaha.com](http://www.earthdayomaha.com).

We are also looking for volunteers to help out with the event! There are two primary needs here... 1) folks to sit at the booth and pass out brochures/answer questions/etc... and 2) folks who have scopes equipped for safe solar viewing with which to share with the curious public. This is always a great experience... the enthusiastic and appreciative responses from those seeing telescopes and sunspots for the first time, your reward. If you'd like to help out or have questions, please send an email to Jeff at [houstonfamily@hotmail.com](mailto:houstonfamily@hotmail.com) or call 333-1794. Be sure to indicate approximately when you might be able to attend (ex: noon to 2pm). Jeff will also be at the April club meeting to discuss this all further.

### **Do they have Triskaidekaphobia?**

#### STATION NEWS

#### **Expedition 13 Crew Heads For ISS**

Houston TX (SPX) Mar 30, 2006

Following their successful launch Thursday morning, local time, the three astronauts comprising Expedition 13 to the International Space Station are on schedule to rendezvous with the orbiting facility late Friday, NASA mission controllers reported. Russian comm'er Pavel Vinogradov, NASA flight engineer Jeffrey Williams, ' Brazilian astronaut Marcos Pontes reached orbit in their Soyuz spacecraft in about 10 minutes after liftoff from the Baikonur Cosmodrome in Kazakhstan.

## Mini-Comets Approaching Earth

**A cometary "string-of-pearls" will fly past Earth in May 2006 giving astronomers a fantastic view of a dying comet.**

**March 24, 2006:** In 1995, Comet 73P/Schwassmann-Wachmann 3 did something unexpected: it fell apart. For no apparent reason, the comet's nucleus split into at least three "mini-comets" flying single file through space. Astronomers watched with interest, but the view was blurry even through large telescopes. "73P" was a hundred and fifty million miles away. We're about to get a much closer look. In May 2006 the fragments are going to fly past Earth closer than any comet has come in more than twenty years.

"This is a rare opportunity to watch a comet in its death throes—from very close range," says Don Yeomans, head of NASA's Near Earth Object Program at JPL.

There's no danger of a collision. "Goodness, no," says Yeomans. "The closest fragment will be about six million miles away--or twenty-five times farther than the Moon." That's close without actually being scary.

The flyby is a big deal. "The Hubble Space Telescope will be watching," says Yeomans. "Also, the giant Arecibo radar in Puerto Rico will 'ping' the fragments to determine their shape and spin." Even backyard astronomers will be able to take pictures as the mini-comets file through the constellations Cygnus and Pegasus on [May 12](#), [13](#) and [14](#).

Ironically these comets, so nearby, will not be very bright. The largest fragments are expected to glow like 3rd or 4th magnitude stars, only dimly visible to the unaided eye.

"Remember," says Yeomans, "these are *mini*-comets."

They're not like the Great Comets Hayutake and Hale-Bopp of 1996 and 1997. Those could be seen with the naked eye from light-polluted cities. The fragments of 73P, on the other hand, are best viewed from the countryside--and don't forget your binoculars.

The number of fragments is constantly changing. When the breakup began in 1995 there were only three: A, B and C. Astronomers now count at least eight: big fragments B and C plus smaller fragments G, H, J, L, M and N. "It looks as though some of the fragments are themselves forming their own sub-fragments," says Yeomans, which means the num-

ber could multiply further as 73P approaches. No one knows how long the "string of pearls" will be when it finally arrives.

Bonus: There could be a meteor shower, too.

This is very uncertain, indeed, forecasters consider it unlikely. But an expanding cloud of dust from the 1995 break-up of the comet could brush past Earth in May 2006 producing a display of meteors.

Astronomer Paul Wiegert at the University of Western Ontario has studied the possibility:

"We believe the cloud is expanding too slowly to reach Earth only eleven years after the break-up," he says, "but it all depends on what caused the comet to fly apart—and that we don't know."

"The most likely explanation is thermal stress, with the icy nucleus cracking like an ice cube dropped into hot soup: the comet broke apart as it approached the Sun after a long sojourn in the frigid outer solar system," he explains. "If this is truly what happened, then the debris cloud should be expanding slowly, and there will be no strong meteor shower."

On the other hand, what if "the comet was shattered by a hit from a small interplanetary boulder?" A violent collision would produce faster-moving debris that could reach Earth in 2006. Wiegert expects to see nothing, but he encourages sky watchers to be alert. It wouldn't be the first time a dying comet produced a meteor shower:

"One outstanding example is comet Biela, which was seen to split in 1846, and had completely broken apart by 1872," he says. "At least three very intense meteor showers (3000-15000 meteors per hour) were produced by this dying comet in 1872, 1885 and 1892."

Assuming a thermal breakup for 73P, Wiegert and colleagues have calculated the most likely trajectory of its dust cloud. Their results: dust should reach Earth in 2022, "producing a minor meteor shower--nothing spectacular. However," he adds, "the ongoing splitting of the comet means new meteoroids are being sent in new directions, so a future strong meteor shower from 73P remains a real possibility."

The watch begins on May 12th.

Author: [Dr. Tony Phillips](#) | Editor: [Dr. Tony Phillips](#) | Credit: [Science@NASA](#)

## Astronomy Quiz Answers

1. Edwin **Hubble**, in 1924. He later worked out the distances to 9 different galaxies.
2. **False**. But the statement would be true if you said, “In November of this year *Mercury* will transit the sun as seen from Earth.”
3. Ralph Waldo **Emerson**, NATURE
4. In a **partial** eclipse the moon passes partially into the darkest part of the Earth’s shadow, called the umbra. The moon looks like a disc with a round chunk darkened with Earth’s shadow. In a **penumbral** eclipse the moon passes only through the brighter, outer part of the Earth’s shadow, the penumbra, and the dimming is barely noticeable.
5. NASA’s **Stereo** mission. Two space-bourn observatories will orbit the sun, one just ahead of Earth and one just behind, will be able to take “3-D” images of the sun.
6. That “revolutionary” book was “**On the Revolution of Celestial Bodies**” by Nicolaus Copernicus. Later, after Galileo’s problems with the Catholic Church, Copernicus’ book was forbidden from 1616 to 1835. The preface was added without the author’s knowledge or permission.
7. A **bolide** is a very bright meteor, also called a fireball. They may be bright enough to see in daytime, produce a rumbling sound, or leave a dust trail.
8. The Bubble Nebula is in the constellation of **Cassiopeia** and is designated **NGC 7635**.
9. Early **August** and late **November**.
10. It was c) Johannes **Kepler**, in 1610 describing the moons of Jupiter.
11. It’s **Sagitta** and it is within the “**Summer Triangle**.”

References:

*Discover*, January 2006

Don’t Know Much About Astronomy, Kenneth Davis

National Audubon Society Field Guide to the Night Sky  
Sun, Moon and Stars, Richard Whelan



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**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.
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