



General Meeting of the Omaha Astronomical Society  
Friday, May 5th at 7:30 PM  
Durham Science Center, Room 169, UNO Campus  
Program: See Page 3

## Omaha Astronomical Society Earthday/Astronomy Day Event



### Upcoming Events - Comet's Last Pass

Don't miss what may be Comet 73/P Schwassmann-Wachmann 3's last pass. This comet, which in 2001 showed only 3 of the 4 pieces observed in the 1995 split, is currently in forty fragments (29 April 2006). Fragment C at this time seems to be the only piece that is not fragmenting into smaller pieces. For updated information go to: <http://www.skyhound.com/sh/skyhound.html>, and click on "Comets". Clear Skies

# Events and Stuff Section

## May Meeting Presentation

**Astronomy for Beginner  
Observing Series #5.**

“Finding Treasures in Spring  
Constellations”

## New Members

Stephen Nielsen of Omaha

## Good May Observing Dates to Observe at the Club Site or other good location

Friday 19 May, last quarter moon  
Saturday 20 May, last quarter moon  
Friday 26 May, new moon  
Saturday 27 May, new moon

## May Club Star Party 20 May, 2006

OAS Club Site, Weeping Water

## Looking for Articles or Photographs

I am looking for articles and/or astrophotography to go on the Omaha Astronomy website. If anyone is interested please contact me either by e-mail, mail, or at a meeting.

Mark Weiss  
STELLA Editor

Visit the club web site at:  
**www.OmahaAstro.com**

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

**oas.mkw@cox.net**

## Outreach Events

Any event where you do astronomy outreach can be used for two purposes, if it is at least 2 hours long, not including set up. These events do not have to be club events, they do however need to be astronomy outreach either as individuals or as a group. You need to record these items for each event; *date, time started and ended, location, what you did, and number of people the event was for*. It takes just 5 of these two hour events to qualify for AL's Outreach Certificate. There are two other levels for this program.

The other purpose of these events is to log them in as events for our club with NASA's Night Sky Network (NSN). For NSN we need a bit more information; and to qualify for their quarterly prize drawing we need to use their informational toolkits. If you remember the green laser that we raffled off last year, well that was a prize we won by participating in the Night Sky Network. If you are interested in recording these type of events please contact Mark Weiss or go the NSN website at: <http://nightsky.jpl.nasa.gov/club/>

Mark Weiss OAS Vice President

## Mahoney Public Star Parties

**May 19, 2006**

June 16, 2006

July 14, 2006

August 11, 2006

September 15, 2006

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

## May Sky Calendar

5th First Quarter Moon  
13th Full Moon  
20st Last Quarter Moon  
27th New Moon

# Omaha Astronomical Society April Meeting Minutes

**Meeting** called to order 7:30PM, **April 7<sup>th</sup>**, 2006. Cloudy, no rooftop observing; 3 guests; 52 people total.

**Member** Tom O'Conner shared with us the sad news that his brother Mike O'Conner had just passed away after an illness. His brother Mike had been an OAS member for years and really enjoyed astronomy and being part of OAS.

**The March minutes** were read, motion to accept by Eric Balcom and 2<sup>nd</sup> by Clete Baker. The treasurer's report was read indicating that in March we had expenses of \$157.72, Income of \$355.90 and a balance of \$5264.69.

## Old Business

**Outreach** There are several opportunities for outreach in April. On Thursday, April 27<sup>th</sup>, there is a Science Fair at Benson West in Omaha, 5:30 to 7:30, AND Arlington Middle School is at Gretna 4-H, 7:30 rain or shine. On May 6<sup>th</sup>, Hitchcock Nature Center in Crescent Iowa is hosting a public Star Party with the theme of observing the moon and planets. Astropark had no visitors in March.

Telescopes Loan Program

6 inch Dobsonian	Nina and Clete Baker
6 inch Newtonian	Keith Jones
8 inch SCT	Rita Corell
8 inch Dobsonian	Joe Alvarado
13 inch Dobsonian	Chris Jewell
Binoculars, 11x80	<b>New!</b> Donated anonymously and ready to check out!

**Metro Science Fair Volunteer** OAS judges went to the fair looking for astronomy related projects but found none. Concluded that the participants don't have guidance/ideas and that we should gather these ideas for Science Fair organizers (as well as advertise our prizes), so that the kids can have the heads up many months in advance. Mentors? If you have an idea for middle or high school students or know of a resource, please share it with any officer or bring it to any OAS meeting. Binoculars were donated as a prize this year but without a winner it was decided to use them in the telescope loan program. Howard Boehm suggested a booklet he had seen from NASA.

**Observing Committee** Look for an interesting

comet in the sky (3<sup>rd</sup> or 4<sup>th</sup> magnitude) May 11<sup>th</sup>, 12<sup>th</sup> and 13<sup>th</sup>. This comet is breaking up. More info in Stella. Also George and JoDee Allen hosted a Messier marathon at their home on the 31<sup>st</sup> of March. They played host to Rita Corell, Kim Moss-Allen, Sandy Viequist and Karl Niehaus. Jodee observed, too. In spite of clouds early in the evening, Karl came up with 28 Messier objects! We have a **Star Party** planned for Astropark on April 22<sup>nd</sup>

**Awards** Deb Cheney let us know that the Outreach Award is available, the first level is a minimum of 5--2 hour events & there are 2 more levels See Deb if you want more the guidelines.

**Old SCT Scope** offered tonight. Primary and secondary mirrors appear OK but corrector plate is bad. Bids to Mark Weiss. Also Mark mentioned that he mailed Stella without envelopes; and we will save \$ on envelopes and postage.

## New Business

**Earth Day** We have a table at Earth Day in Elmwood Park, 12-6 PM. Jeff Houston is coordinating. We will have solar/daytime viewing, NSP info, dark sky info, kids handouts.

**Banquet** Tony Scism is our POC (point of contact) for the Banquet in October, working with Mark Dahmke of PAC. Discussed Gretna 4 -H, Ashland Country Club, pizza place. Tony found out that we can use the atrium at SAC for free, if Sunday through Thursday. Gary Grimes motioned to try another night. 2<sup>nd</sup> by Howard Boehm and passed. By discussion we preferred Sunday night. Will cater food (?) and look into what is necessary to clean up.

**2007 Mid States Regional Convention** Need to be planning now. Think about what you would like to see at the Convention!

**Next meeting** will be Friday, May 5<sup>th</sup>, 2007. Motion to adjourn Howard Boehm, 2<sup>nd</sup> by Sharon Weiss and approved.

**April Program Astronomy for Beginners  
Observing Series, #4  
Binoculars and Observing—John Johnson**

Respectfully submitted,  
Kim Moss-Allen,  
OAS Secretary

## April STELLA Quiz

1. Each day the **moon** appears to move eastward in the sky by about a) 8 degrees, b) 10.5 degrees, c) 13 degrees or d) 15 degrees.
2. Who was the last **amateur astronomer** to build and operate the "world's largest telescope?"
3. Where can you find **Markarian's Chain** and what is it?
4. Who wrote, *"Heaven's utmost deep Gives up her stars, and like a flock of sheep They pass before his eye, are number'd, and roll on."*
5. What is special about **March 3<sup>rd</sup> and August 28<sup>th</sup>, 2007**?
6. "**Twilight** is useful for observing some objects like Mercury and the "young" moon. Match the following levels of twilight:
  - a) nautical twilight
  - b) b) civil twilight
  - c) c) astronomical twilight
  - 1) sun is at horizon to 6 degrees below
  - 2) 2) sun is 12 to 18 degrees below horizon
  - 3) 3) sun is 6 to 12 degrees below horizon
7. What is the reason behind this **sequence**? Ganymede (Jupiter), Titan (Saturn), Moon (Earth), Oberon (Uranus) and Charon (Pluto).
8. What **constellation** is "on meridian" May 15<sup>th</sup> and has a size of 386 degrees?
9. Why are there so many **galaxies** visible in the direction of Leo and Virgo but not Auriga or Vulpecula?
10. What **constellation** extends over 50 degrees across the sky, has about 1,231 square degrees and it's alpha star is Menkar, (meaning the "nose" or "nostrils")?
11. In **Corvus**, the Crow is an 11<sup>th</sup> magnitude object that appears to be 2 galaxies colliding and spewing material. What is its designation and name?

## ASTRONOMY OUTREACH

Well so far this year we have had two outreach events, one at Omaha's Earthday event where we were able to reach around 500 people, and a second at the Gretna 4-H complex for the Arlington school district. We may have sparked some interest at Earthday as I have heard from our website host Jeff Huston that traffic on the site for the last week has been up three fold. On the 27<sup>th</sup> of April it did not look like we would be able to any sort of outdoor program; however after 8 o'clock the skies cleared enough for those of us present to show the folks from Arlington the planets Saturn and Jupiter, the Orion Nebula, and some of the northern constellations. As always there were those who were eager to observe, those that were quietly interested (so their friends would not know), and those who were not really interested.

As of right now we have two outreach events scheduled for May. The first is at the Hitchcock Nature Center in Crescent, Iowa. We have tried; weather permitting, to do 2 or 3 events every each year for the last three. Hitchcock Nature Center will give you reasonable views with Omaha's skyline to the southwest. While we may get smaller groups than we get at Mahoney, they are usually a very interested group.

Remember in the fall we usually have anywhere from ten to fifteen school outreach events to do for Papillion-LaVista, Nebraska and Glenwood, IA schools. Along the way there are usually a few other opportunities to engage in an outreach event. I would encourage any and all of you that have not participated in an outreach event before to try to do so this year. Do not think that you don't know enough, because it is one of the best places to learn. There will probably be another club member around that can answer a question that you may not know. In finding the answer for someone both you and the guest learn the answer. It is really amazing to see how a child reacts when he or she discovers that the wispy area of the sky that they thought was a cloud is actually stars in the Milkyway. Many of these children have never seen, or do not know what the Milkyway is.

So remember to please check the OAS website events page, or the STELLA often to see when the next outreach event is scheduled for. One may be close to your home.

Come one, come all.  
Mark Weiss

## Observing Highlights for May

Well let's start with the planets, early in the month look to the upper left of Castor & Pollux and you will find Saturn., hanging around in Cancer. During the evening of the 31st of May look for Saturn just to the lower left of a waxing crescent moon, while to the lower right about 10 degree's to the west you will find Mars. Early in May, Mars can be found near Mebsuta in Gemini. Jupiter starts the month low in the east in Libra, while on the fifteenth Jupiter can be found near an almost full moon. Venus can be found all month low in the eastern sky just before dawn.

Remember that because Jupiter reaches opposition in May, it and its moons are visible all night long. Watch Io, Europa, and Ganymede as they cross in front of the planet; wide ranging Callisto will not be seen against the planet disk again until 2008. Look at Jupiter on May 23 and you will all of the moons on one side. You can also look for Jupiter's great red spot, transit times can be found in Sky & Telescope magazine. Remember that while looking at Saturn there are moons to be seen there as well. While any scope should show you the moons of Jupiter, the moons of Saturn are a different story. How many you see will depend on the size of your scope. The easiest to see will be Titan, Rhea, Dione, and Tethys. Harder to see will be Iapetus. Remember Iapetus is six times brighter when it is on the west side of the planet than when it is on the east.

Look for Mercury the last few days of May low in the north-west just after sunset. However for Uranus and Neptune look to the ESE in the hours just before dawn. Look for Uranus in the constellation Aquarius, just over halfway between Phi Aquarii to Lambda Aquarii. Neptune can be found in the same area of the morning sky, however it is in the constellation Capricornus about 4 degree's NW of the star Nishira. The hardest to find planet is Pluto as it is in an area of dim stars near M23. You will find it about 4 degrees from M23 toward Serpens Cauda, you will need a large scope as Pluto will remain about magnitude 13.9 for the month.

Look for the Eta Aquarid meteor shower to peak on the days of May 4/5 during a first quarter moon. The radiant will be from the constellation Aquarius. The other big item for May as mentioned on page one is the close encounter with comet 73/P Schwassmann-Wachmann 3, that is breaking up as you read this. Maybe next month I will write about summer deep sky objects.

Mark Weiss

## Lessons from an Odd Kuiper Belt Object By David Tytell

**April 20, 2006** | To date astronomers have found more than 1,000 Kuiper Belt objects (KBOs) beyond Neptune, and the strangest one of all might just be the key to understanding how the largest of these distant ice-rock bodies acquire their moons. Last July, 2003 EL61 entered the KBO lexicon just days before the "[10th planet](#)," 2003 UB313. But follow-up observations of 2003 EL61 left astronomers scratching their heads. Its spin period is just 3.9 hours, making 2003 EL61 the fastest rotating known body in our solar system larger than 100 kilometers (60 miles) across.

As for its shape, picture a squashed American football. Models suggest that 2003 EL61's long dimension could exceed both Pluto's and 2003 UB313's diameters. The body also has two small satellites: an inner moon with a 34.7-day non-circular orbit and a brighter, outer companion with a 49.1-day circular orbit.

Observations of the primary body made by Chadwick Trujillo (Gemini Observatory) and his colleagues reveal the strong spectral signature of crystalline water ice. This is odd because crystalline ice forms at temperatures above 110 kelvins (-163°C) whereas the ambient temperature of space around 2003 EL61 is less than 50 K. Moreover, crystalline water ice typically lasts only 10 million years before it's destroyed, which points to possible resurfacing, perhaps by micrometeorite impacts converting existing surface ices to crystalline form by flash-heating.

Spectra of the outer satellite obtained by Kristina Barkume, Michael Brown, and Emily Schaller (Caltech) reveal the signature of almost pure water ice. While the observations were too low in resolution to distinguish the type of water ice, it seems that nearly all of the moon is coated in frost.

Putting the pieces together, 2003 EL61 strongly suggests that the moons of the largest KBOs differ in origin from those of ordinary KBOs. The satellite systems of the larger objects formed from the remains of violent impacts instead of by delicate gravitational capture. According to Brown, "[2003 EL61] itself is rapidly rotating and thus elongated — a predicted consequence of a giant impact which forms a small satellite." Moreover, he adds, other astronomers have predicted that "small satellites, which form from disks, will be made almost entirely of water ice, which is precisely what we see." Impact is already a favored formation mechanism for another large KBO system — Pluto [and its three moons](#).

## Astronomy Quiz Answers

1. **c)** 13 degrees
2. Wealthy Irishman **William Parsons**, also known as **Lord Rosse**, built and operated a 72 inch reflector. He made a number of important finds, including the spiral nature of galaxies.
3. It's a group of **galaxies**, roughly in a line, in the constellation **Virgo**. It includes M84 and M86 and is part of the Virgo cluster of galaxies.
4. **Shelley**, in "Prometheus Unbound."
5. These are dates for total **lunar eclipses** in 2007 and both are visible in the Americas. 2006 has just one partial eclipse and it is not visible from here.
6. **A-3, B-1, C-2**. Each of these lasts about 30 minutes at our latitude.
7. These are the 5 **largest moons** in our solar system, decreasing in size.
8. **Coma Berenices**, "Berenices Hair."
9. Auriga and Vulpecula lie along the band of our own **Milky Way** so dust and gas within our own galaxy blocks our view of other galaxies in that direction.
10. **Cetus**, the Sea Monster  
This is **NGC 4038, the "Ring Tailed Galaxy."** A time exposure photo is necessary to see the "filament" extending from the object.

### References:

*The Backyard Astronomer's Guide*, Terrance Dickson and Alan Dyer, 1991

*Book of World Records*, 2006

*Star Names, Their Lore and Meaning*, Richard Hinkley Allen, 1963

*The Cambridge Illustrated History of Astronomy*, Michael Hoskin, 1997

*National Audubon Society's Field Guide to the Night Sky*, 1991

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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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