August 2007 Newsletter of the Omaha Astronomical Society Issue 235

STELLA

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

MISSION STATEMENT FOR THE OMAHA ASTRONOMICAL SOCIETY

The purpose of this society is to educate and enlighten society members and the public in the science of astronomy.

SOCIETY'S OBJECTIVES

1. To hold monthly meetings containing an educational content related to astronomy.
2. To encourage and train society members, utilizing observing programs and lectures.
3. To continue to maintain/offer a secure observing site for the use of OAS members to further their enjoyment and knowledge of astronomy.
4. To provide outreach programs and events to private and public schools, to inform and educate in the science of astronomy.
5. To provide outreach programs and events to the general public and civic groups, to inform and educate in the science of astronomy.
6. To generate public goodwill to preserve the science of astronomy.
7. To hold events to recognize achievements, preserve the morale, and encourage social bonding for the society's members.

GOALS OF THE OMAHA ASTRONOMICAL SOCIETY

Goals are to be reviewed at least twice a year by the Executive Committee to see if they have been met or need due dates extensions, and then presented to the general membership.

1. Take necessary steps to bring our Nebraska charter up to date. Completed.
2. Investigate the advantages & disadvantages of being chartered in the state of Iowa; obtain Iowa tax-exempt status if needed/desired. Due date: September 2007.
3. Investigate the advantages & disadvantages of obtaining federal tax-exempt status, as in United States Internal Revenue Code [26 U.S.C. § 501 (c)(3)]; obtain federal tax-exempt status if needed/desired. Due date: October 2007.
4. Inventory club's observing equipment, and determine which telescopes, eyepieces, and other equipment need to repaired, upgraded, or replaced. Due date: September 2007.
5. Call for a vote to either (a) keep & continue maintaining through CY2008 the Society's observing site known as Astro Park, or (b) dispose of the property. Due date: November 2007.
6. Plan for expanding the Society's outreach activities in Sarpy & Washington Counties in Nebraska, and the Council Bluffs and Mills County areas in Iowa. Due date: August 2008.

May Club Star Party,
August 11th, 2007
OAS Club Site, Weeping Water

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

Events and Stuff Section

August Meeting Presentation

"Unknown"

New Members

None

Good AugustObserving Dates to Observe at the Club Site or other good dark sky location

Friday 3 August 07, last quarter moon
Saturday 4 August 07, last quarter moon
Friday 10 August 07, new moon
Saturday 11 August 07, new moon

Mahoney Public Star Parties

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

Friday August 10, 2007
Friday September 14, 2007

Recent Observing Awards

None

August Sky Calendar

5th	Last Quarter Moon
12th	New Moon
20th	First Quarter Moon
28th	Full Moon

Outreach, Outreach, Outreach

First of all - Mahoney Star Party on Friday 8/10/07, Sundown at "golf driving range".

Second - Hitchcock Nature Center on Saturday 8/11/07, for "Persied meteor shower"

Third - Whispering Hills Vineyards Star Party on Saturday 8/18/07, Sundown, but come early if you want to take in the "wine tasting". The wine tasting will be an extra cost if you care to participate. More info will be provided at the OAS meeting on the 3rd.

Fourth, Fifth, etc. - Papillion/La Vista Schools Science Nights at Gretna 4-H Center start on Wednesday, August 22nd. Usually Monday and Wednesday nights through first week of October. More info will be provided at the OAS meeting on the 3rd, and also "sign-up" sheets will be passed around.

OAS Meeting Minutes June 1st, 2007

The **meeting** came to order at 7:32. Cloudy-no rooftop observing tonight, but members were reminded that the Kountz Planetarium held programs on the first Friday and Saturday of the month at 2 PM. The Secretary read the **May minutes**. John Macy motioned to accept, Howard Bohm seconded and the minutes were accepted. Also, she paid the fee and turned in the paperwork so that the OAS is again in good standing with the state of Nebraska and recognized as a Non-Profit Corporation. We had 2 guests and 37 people total in attendance.

John Macy gave the **Treasurer's report**, with income in April of $50.00 (donation from an outreach program), expenses of $652.04, and balance of $4773.97. The expenses include the $344 paid to the state of NE for current Non-Profit Corporation fee and back fees owed from 1973 to the present.

Old Business

Outreach-- *Sat., June 15th, Public Star Party, Mahoney State Park, dusk

*Sat., June 21st, (tentative) Scout group, Lord of Love Lutheran Church, 105th and Fort, 8 PM.

Club Telescopes—If you would like to check out a telescope see John Johnson or any OAS officer for more information.

6" Dobsonian, Ann Donovan,
6" Newtonian, Bob Van Metoran
8" SCT, Larry Wilkes
13 " Dobsonian, Chris Jewell
Binoculars, 11x80, Bill Bond

John also shared his impressions of the PAC (Lincoln Prairie Astronomy Club) meeting he attended. The

speaker was a grad student discussing research he was doing at Behlen Observatory (about ½ way between Lincoln and Omaha) on type 2 Cepheid (short period) variable stars. More information on PAC's meetings and speakers is available at prairieastronomyclub.com.

Observing and Awards—Two awards are in the works. Astropark use=**11**. Jupiter is optimal for observing at this time, very bright and high in the south. Virgo galaxies quickly moving "out of sight" for the season, if you are looking for these spring and early summer objects.

Vice President –- Ruts in the road need to be graded at Astropark. He believes the person who does the mowing can do that and will ask.
MidStates Regional Conference—Cancelled. Not enough pre-registration, needed to cancel in order not to lose money. If you have receipts for Conference expenses, bring (or send) them to Al Dorn. Business meeting for the regional officers will be sometime later this year.

Nebraska Star Party—15-20 July**—**Early bird cost of $35 ends today and from here forward cost is $45. (**www.nebraskastarparty.org**)

New Business
Mission Statement and OAS Objectives and Goals—The President read the proposed mission statement and Club objectives and goals and we had open discussion on them. Also members Clete and Nina Baker agreed to look into goals 2 and 3 about investigating pros and cons for OAS as far as 501c Federal Non Profit Tax Status and becoming incorporated in Iowa. And member Bob Dunn will work with John Johnson to become the coordinator for and inventory the Club's telescopes (goal #4). The proposed mission statement, objectives and goals will all be published in the newsletter, the Stella.
Motion to adjourn the meeting made by Bob Dunn, seconded by Howard Bohm. **Next meeting** will be same location, **July 6th**, 2007, 7:30.

Tonight's program:

The Gas Giants: Jupiter and Staurn

Minutes by OAS Secretary
Kim Moss-Allen

July Stella Quiz

1. Where is the Earth-Moon barycenter?

2. Visibly, the darkest spot on the near side of the moon is what?

3. What's an exoplanet?

4. Around which star was the first exoplanet located?

5. Launched in 2004, MESSENGER will be in the vicinity of the planet it was sent to observe in January, 2008. What planet is it and when was it last visited?

6. *Reflector,* June 2007 has 3 OAS members listed as earning awards. Who and what did they earn?

7. On July 12th, Venus reaches it greatest brilliance. What magnitude will it be?

8. The Coathanger cluster (aka Collinder 399, Al Sufi's Cluster, or Brocchi's Cluster) is really a) an asterism, b) a globular cluster or c) an open cluster.

9. Who wrote this and what is it describing?

And art thou, then, a world like ours,
Flung from the orb that whirled our own

A molten pebble from it's zone?
How must the burning sands absorb
The fire-waves of the blazing orb,
Thy chain so short, they path so near
Thy flame-defying creatures hear
The maelstroms of the photosphere!

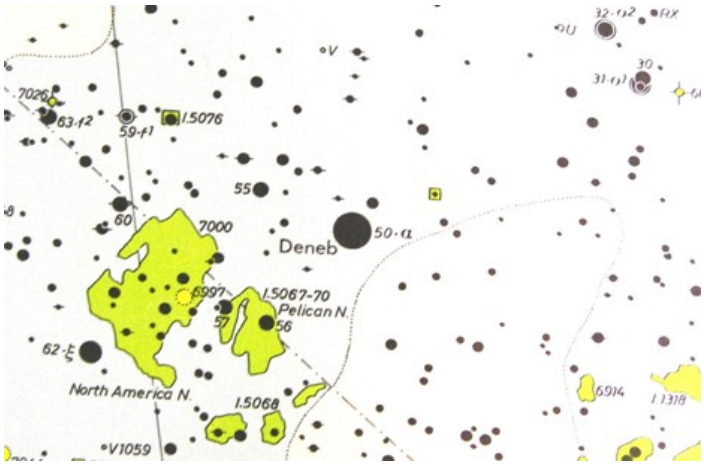
10. This deep sky object is about 5200 light years from Earth, is near the Galactic center, and is in a constellation that is on meridian August 20th. What is it?

11. What is an appulse?

12. The planets orbits are not circles, but elipses. Which planet had the most circular orbit? And the next most circular?

What's It Called?!

Many inexperienced astronomers find our current system of star labeling highly confusing: While some guide books refer to brighter stars by proper names, star charts usually show reference numbers and symbols. You may have asked yourself, "Why is this so confusing?" Or, "Why isn't everything labeled the same way"? (Frankly, the rest of us sometimes do too.)



It may help to have a bit of background information, to properly understand and use our modern designations. Ancient astronomers gave proper names to bright stars. For example, the brightest star in the celestial figure we know as *Cygnus, the Swan* was often referred to in ancient times as a "tail" star; it is now known as *Deneb*, derived from an Arabic word which meant "end" or "tail". But Deneb once had other common names, including *Uropygium*, which has been translated to mean "The Pope's Nose on our Thanksgiving Dinner Table". (Think about it.) Even though star names varied by region and language, this simple convention worked fairly well for "naked eye" astronomy.

With the invention of astronomical telescopes, scientists soon discovered that there are far too many stars to continue giving each a unique proper name. So, several new systems soon came into use. German astronomer Johan Bayer is known to have referred to both the Swan Constellation itself and its brightest star by the name *Gallina* (a small jungle bird, the ancestor of our common chicken). But, Bayer is most famous for having developed a scheme in the early 17th Century using Greek letters and Latin names. Deneb, Cygnus' brightest star could now be referred to as "Alpha Cygni"; Cygnus' second brightest was "Beta Cygni, and so on. Bayer's scheme was soon adopted by many stellar cartographers, but there are only 24 letters in the Modern Greek alphabet so only the 24 brightest stars in each constellation could be so identified. Despite this obvious limitation Bayer designations are still widely used today.

Another 17th Century scheme was invented by an English scientist, John Flamsteed. Flamsteed's list, properly known as *Flamsteed's Catalog*, contained about 3000 bright stars. Flamsteed replaced letters with (Arabic) numbers, and he re-identified Deneb as "50 Cygni" because it was the fiftieth bright star in Cygnus, by Right Ascension. Modern star charts often show both Bayer & Flamsteed identifiers – look for the lower-case Greek letter "alpha" next to the number "50" *(SkyAtlas 2000.0).*

Modern science recognizes more than forty different catalogs listing the star known as Deneb. The more common designations include "FK5 777" (star #777 in the *Funfte Fundamentalkatalog*, which listed about 1500 fundamental or primary stars), and "GSC 03574-03347" (from Space Telescope Science Institute's *Guide Star Catalog*, a list of over two billion stars and galaxies to Visual magnitude 18). Astronomers also have to watch for the designators of non-stellar objects, such as the adjacent *North America Nebula*, NGC (New General Catalog) 7000 with its included star cluster, NGC 6997. The *Pelican Nebula* is shown as nebular clouds labeled Index Catalog (IC) 5067 through 5070, and bright stars 56 Cygni and 57 Cygni.

In addition to published scientific works, modern astronomers must sometimes contend with privately-created star catalogs. Non-standard designations are surfacing more and more often because several entrepreneurs sell the opportunity to "name a star"; their companies issue souvenir "registry" certificates and publish designation lists in one form or another. Commercial star lists are neither readily available to, nor recognized by the scientific community yet they exist and are adding to the confusion.

The Bottom Line: Scores of catalogs for stars and non-stellar objects have been developed in the past 400 years. We cannot simply discard existing catalogs each time a newer, more accurate survey is published. Most contain valuable historical data on celestial positions, appearance and/or characteristics of its stars/non-stellar objects, measured at different times

and with varying degrees of precision. Astronomers, especially observational astronomers, will have to contend with this complex system until a better method is created and universally adopted. Learning to recognize the most common star designations should make reading your favorite guidebooks & star maps easier and hopefully make observing more enjoyable.

-Al Dorn-

(SIDE NOTE: People occasionally ask for my help in locating "their stars". Unlike many other astronomers I've met, I believe that ridicule and criticism serve no good purpose so I always try to help as best as I can. I politely discuss the difference between the star names scientists use and a commercially-purchased name. I talk them through finding the appropriate constellations, explain a few scientific facts about stars, and sometimes throw in a bit of mythology. When asked my opinion about "buying a star" I always suggest a more practical gift: an inexpensive pair of binoculars and a basic guidebook. When my guests depart I'm usually rewarded with big smiles and warm Thank You's.)

Western Nebraska Star Gaze

Western Nebraska Star Gaze will be held at Camp Clarke Raiders Black Powder Range (five miles south of Bridgeport, Nebraska just off State Highway 88) on September 7, 8, & 9. This is just below historic Courthouse and Jailhouse Rocks.
The Western Nebraska Star Gaze is a time to share, to relax and enjoy our heavens. It's a time for amateurs, professionals, families and friends to come together to promote astronomy It's a time to share the night sky, our experiences and stellar sights with others. It is good clean fun for all ages.
Our observing site provides some of Western Nebraska's darkest skies with light pollution at a minimum. The Milky Way is easily visible from this location and the viewing compares nicely to that of the Nebraska Star Party.
In addition to the dark skies, there will be other scheduled events such as an astronomers breakfast, ice cream social, program for beginners and educational activities for the children. As well as, several area attractions located within an hour drive from the site. Including several golf courses, Bridgeport State Lakes, Lake Minatare, Chimney Rock and the Scottsbluff National Monument.
The Western Nebraska Star Gaze is open to anyone interested in astronomy. You do not need to own a telescope in order to attend. Camping is permitted on the observing field. Outhouses and drinking water are available at our site. There are no electricity, flush toilet or showers; so plan accordingly.
The cost for the entire weekend is $10.00 for ages 5 through 100. Young astronomers under the age of 5 or over the age of 100 are free.

For more information contact the Panhandle Astronomy Club
Phone: 308-641-5874 or 308-641-1201
Email: info@panhandleastronomyclub.com
Website: www.panhandleastronomyclub.com
Snailmail: Western Nebraska Star Gaze, PO Box 987, Scottsbluff, NE 69363

Sky And Telescope Subscription changes

If you haven't been to a meeting lately you may not have heard about the changes to the way Sky and Telescope handles renewals of your subscription. Sky Publishing has hired a service to handle renewals rather than doing it in house. OAS members can now renew directly with Sky and Telescope when they receive their notice, just send in the invoice with your check. Your bill should be for $32.95 a year, which is the club rate. This makes the process more efficient by keeping the middleman (your friendly treasurer) out of the loop. HOWEVER, I do need to be the one to send in your initial subscription to get you the club rate. There have been a few glitches in the transition, including envelopes with the old address sent with renewals, which has slowed, but not stopped, renewals from getting processed. Hopefully, most of those problems have been resolved now.

I will need to know if you quit getting Sky and Telescope, they will be asking me annually to provide a list of all the members who should be getting the club rate. How can you tell if I know? Your Stella label will say YES under the section on when your Sky and Telescope expires, rather than having a date there.

Astronomy Magazine renewals still need to go through the treasurer; the current rate is $34 for a year and $60 for two years.

If you have any problems with your subscriptions let me know.

John Macy, Treasurer

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June Quiz Answers

1. Pollux, in the constellation Gemini, now visible in the evenings in the western sky.

2. June 2nd is when Mercury is at greatest elongation (23degrees) and June 8th is when Venus is at greatest elongation (45 degrees).

3. Uranus takes about 84 Earth years to circle the sun once, so each "season" is about 21 years long.

4. Gravitational lensing is how far away objects are brightened, distorted and /or magnified because their light rays are deflected by passing "through a massive gravitational field."

5. Pluto was once again farther from the sun than Neptune in 1999.

6. Aquila the Eagle.

7. It's a pulsar, emitting radio "pulses" because of a misalignment of the neutron star's rotation axis and it's magnetic poles.

8. This is Bootes, the Herdsman.

9. This is M44, in Cancer, also known as the Beehive Cluster or the Praesepe.

10. A nova outburst is what happens when a "burned out" white dwarf gets fresh hydrogen from a companion star and it is ignited in a thermonuclear explosion. It causes the white dwarf to be much brighter for a period of time, then dim again. Also, the during the nova outburst the white dwarf ejects surface material at high speed.

11. Ursa Minor, or the Little Bear or "Little Dipper." The engagement ring is near Polaris, the North Star.

The Planets, 2005, Dana Sobel, Hubble Revisited, 1998, Fisher, Duerbeck, Phlare Cards, 2002, National Audubon Society Field Guide to the Night Sky, 1991, *Jack Horkheimer, Stargazer,* May 2007.

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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.
- Savings on astronomy books and printed materials.

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 of the Stella. Signing up is easy… just send an e-mail to:

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