October 2007 Newsletter of the Omaha Astronomical Society Issue 237

STELLA

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

My Experience at the 14th Annual NEBRASKA STAR PARTY

This year's Nebraska Star Party once again was a wonderful week of fun and relaxation high in the Nebraska Sandhills (elev. 3100 ft) above Merritt Reservoir. Unlike previous years when I stayed in a cabin at the resort on the lake, this time I was staying in nearby Valentine and commuting to the observing fields (a pleasant 33 mile drive). I left bright and early on the morning of Friday, July 13th, but it turned out that despite the date, nothing really bad happened (other than the gas prices being somewhat high). I arrived at my motel around 3 p.m. and after a short fight with my laptop (the motel's wireless Internet wasn't up), a nap, and some dinner, I headed out to the lake. There had been a line of severe thunderstorms developing to the south of Merritt, but they were rapidly moving away, so the sky was mostly clear by the time I pulled into the observing fields. Curiously, were very few people were there, so after a short discussion, we "early birds" moved most of our scopes into unoccupied Dob Row to begin our observing. The winds were brisk at times, but they helped keep the mosquitoes away as night fell. Even as the sun just began to go behind the 200 foot high dunes to the north of the lake, I was searching the sky to find Venus. I used the "quick align" feature of my NexStar 9.25 inch SCT and quickly had the scope on the planet to see its crescent phase. Once a tweak of the alignment was done to refine it using Venus, I slewed to Jupiter in the blue sky of early twilight. Although the seeing was somewhat unstable to the south, the big planet still shows its belts and moons. We spend a lot of the "twilight time" just sitting in our chairs and pleasantly talking about various things or looking at our setups and discussing what we would do later on.

As the sky got darker, I had the scope's alignment fine-tuned enough to begin looking at a few double stars in Lyra that I had wanted to pick up. I hit a number of fine doubles including a second "double-double" (Otto Struve 2470-74). The surprise came with the double Otto Struve 525, as it showed a beautiful color contrast of a yellowish primary and a bluish companion star. It is less than a degree north of M57, the Ring Nebula, so it makes a good starting point for an evening of observation. The Ring was looking nice as well, but with the Milky Way starting to come out in the south, most of us pointed our scopes that direction initially. We tried for the companion to Antares, but the seeing just wouldn't permit anything other than a faint flicker of blue on one edge to be seen. M7 was nice in binoculars, and M6 showed its "butterfly" form very nicely in my NexStar. Someone asked about M5, so I slewed to it and pointed it out using a laser pointer stuck in my finderscope's eyepiece. It was visible with averted vision to the unaided eye as a faint fuzzy spot right next to the fifth magnitude star 5 Serpentis. M5 itself was simply glorious, as I kicked the power well past 230x and gazed into the heart of that mass of ancient suns.

While taking a break, I looked up at the head of Draco to do my usual star count for limiting magnitude estimates and quickly saw that I was definitely going past 7th magnitude! With the night still young, I hit some galaxies. I sent the NexStar to the edge-on spiral NGC 5907 and saw its thin sliver of light look somewhat mottled down its length. M102 (NGC 5866) was also quite nice, with its brighter core and somewhat pointed ends. I sometimes like to play "wheel of fortune" with the NexStar by typing in some random NGC number on the keypad and seeing if I can actually view what the scope points to. Up at Merritt, this was fairly easy, although some of the targets I ran into were rather small and faint. One galaxy I hit was the "big stinker", NGC 4236 in Draco. This one is a rather large tilted barred spiral with an extremely low surface brightness (15 magn. per sq. arc min.), so it has always been tough even from my dark sky site at home. However, tonight, it was surprisingly easy, showing the long bar and some interesting faint mottled detail towards the ends. Of course, with the scope in the area, I had to go after M101. Again, the dark skies of the Sandhills helped make the patchy spiral form start to come out at only about 59x in my 9.25 inch SCT. When one guy from Omaha wanted help to try his 10 inch Dob on M101, I used his Telrad, but ended up

October Club Star Party,
October 13th, 2007
OAS Club Site, Weeping Water

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

Events and Stuff Section

October Meeting Presentation

TBD

New Members

None

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

Friday 5 September 07, last quarter moon
Saturday 6 September 07, last quarter moon
Friday 11 September 07, new moon
Saturday 12 September 07, new moon

Mahoney Public Star Parties

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

Done for 2007

Recent Observing Awards

None

OctoberSky Calendar

3rd	Last Quarter Moon
11th	New Moon
19th	First Quarter Moon
26th	Full Moon

Outreach, Outreach, Outreach Again

I am asking for help for "one more night" out at Gretna? Please let me know if you can help on the 4th or the 8th.

Gretna 4-H Center (7:30-10:00 PM):

Thursday, Oct 4th - Parkview (50 kids)

Monday, Oct 8th - Ralston Elementary (37 kids)

Also, I have another Outreach Event tentatively planned for October 18th, 2007 out at Camp Calvin Crest which is south west of Fremont, NE.
This is the Brownell-Talbot elementary kids. We were out there with them last year. If it is a nice night, this is a pretty decent observing sight, although, I know it is a week night for us "working stiffs"!

OAS Meeting Minutes

7 September 2007

The **meeting** came to order at 7:35 PM. No rooftop observing tonight. The Secretary read the **August minutes**. Gary Grimes motioned to accept and Dan Wagner seconded. We had no guests and 50 people total in attendance.

John Macy gave the **Treasurer's report**, with August income of $219.00, expenses of $143.52, and balance of $5178.74.

Old Business

Outreach and Events

Eric Balcom filled in for John Johnson. Help is still needed for the outreach events in September and October. But overall it's going well.

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

6" Dobsonian, John Macy
6" Newtonian, Bob Vanmeeteren
8" SCT, Larry Wilkes
13 " Dobsonian, Keith Jones
Binoculars, 11x80, Bill Bond

Observing— Astropark use=(at least **7)**.
Awards—OAS member Kim Moss-Allen earned the Honorary Messier certificate
Report from Vice President—Astropark's porta-john has been serviced and is in good condition, the site has been mowed and small trees along the road removed. In good shape overall!
Mission Statement and OAS Objectives and

Goals—Decided to change the date to accomplish the club telescope hand over from John Johnson to Bob Dunn to 1 January 08, since now is peak time for outreach events.
T-Shirts and Polos---are available with the OAS logo. The first batch is here and available to take home. Polos are $15 and T-Shirts are $7. See Deb or Clark Cheney if interested. Also, the company will put the OAS logo on just about anything: hats, pull-overs, sweat, etc.
Solar Telescope---We have the new Solar Telescope! Works great; Clete Baker has offered to modify the mount so it can track the sun.
Banquet---PAC (Lincoln astronomy club) let us know they are not interested in putting together a large banquet in October, but would consider a smaller scale get-together. Bill Bond will see what we can arrange. Traditionally, the Omaha and Lincoln clubs have had a joint meeting in October, with a meal and a speaker. We discussed maybe a nice pizza or buffet dinner in the Ashland area.

New Business

Calendars are available from the Treasurer at $10 each.
Elections will be held in October. Mark Weiss will not seek another term as President. All other officers are willing to run again.
Holiday Gathering in December. Some door prizes are already donated. John Atherton will look make sure it's legally OK with UNO if we can do a swap meet as was discussed. Also we considered having the normal Holiday celebration in December and then the swap meet in January.

Next meeting will be same location, **October 5th**, 2007, 7:30. Motion to adjourn Ed Sikorski, seconded by Gary Grimes and passed.

Tonight's program:

Gas Giants

By Eric Balcom

Minutes by OAS Secretary
Kim Moss-Allen

initially running across a number of the galaxies *around* M101 but not getting the scope on the galaxy itself until a couple of tries later! M51 showed its spiral structure quite well, including hints of the three faint tidal tails extending away from the companion. Ah, the wonder of dark pristine skies! The comet LINEAR C/2006 VZ13 was also easily visible in binoculars, and comparing it to M101, the comet appeared to be nearly half a magnitude brighter and perhaps a bit larger than the galaxy. In my NexStar, the comet was basically a large diffuse fuzzy ball with a small condensed center and a hint of a vague narrow spike extending from the core region to just beyond the outer edge of the coma.

Then, someone in the group started asking about filters, which basically pushes my "talk" button (it tends to jam in the "on" position). I did an extended demonstration of the various nebula filters starting from M8 and working northward all the way up to the North America and Pelican nebulae. I had my 100mm f/6 refractor out, so I put in the 2" DGM Optics NPB filter and pointed it at both M8 and M20. Both nebulae were shown beautifully in the same field of view, with hints of the three dark lanes of M20 being seen even at low power. The view in the NexStar 9.25 was better, and the Trifid didn't really need the filter, as the lanes were still pretty obvious at 98x. M16 and M17 were also very easy to see in the refractor. The OIII filter with the NexStar 9.25 really stunned some people, as it made M17 look like a long-exposure photo, showing the fainter outer loop that sometimes gives the object the name, "the Omega Nebula". I demonstrated why the narrowband filters are a bit better on M27 than the OIII line filter is by letting people see the way the outer "wings" are enhanced. I also pulled my little "finder" trick by putting my 2" OIII filter in front of my 9x50 RACI finder and letting people see both sides of the Veil. However, the view was better with that same filter properly in its place in my 100mm f/6 refractor, where the two main arcs plus Pickering's triangle were easy to see. In the NexStar 9.25, the fine filamentary detail in the eastern arc was beautiful in the OIII filter, and Pickering's Triangle showed a narrow faint southerly extension. While we could easily see the North America Nebula's many glowing segments in the NexStar using the OIII filter, the best view came in the 4.4 degree field of my 100mm f/6, where the entire nebula (plus the nearby Pelican Nebula) was shown in all its glory. I even looked at the faint diffuse nebula IC 1396 in Cepheus, and in the NexStar with the NPB filter, it showed some sinuous dark detail intermixed with the faint glow of the nebulosity. We hit the Double Cluster and continued going over many other objects before finishing the night up with the Andromeda Galaxy. In my 100mm f/6, both arms were visible along with the two dust lanes and a faint outer glow beyond the arms that made the overall length of the object appear to be close to four full degrees. By that time, I was getting a bit tired, so I put things back in the van and began the 40 minute return trip to Valentine.

Saturday was again pretty good, with mostly clear skies and warm temperatures. I spent a lot of my time in the motel room going over my presentations for the Beginner's Field School, but again after supper, I headed back out to the lake. This time, there were a *lot* of people setting up, with more arriving every minute. I ran into John Johnson from Omaha and Jim Hopkins

from near Chicago, both of whom were going to be involved with the field school, so we had a nice chat. Jim had set up on "the Hill" in the middle of the observing fields with his 14 inch LX200, and several other people were up there as well. I didn't feel like setting up, so I just took pictures and walked around talking to people and looking at their scopes. A large 20 inch fully-driven Obsession caught my eye, as did a number of other large instruments on Dob Row. The skies had a little patchy haze floating around, but it still wasn't too bad. I ended up with John Johnson and his 10 inch LX200 for much of the night, observing doubles and some globulars and planetary nebulae. We watched a shadow transit on Jupiter and a somewhat mysterious marking in the north temperate zone which appeared to be a rather prominent "barge". Again, I called it a night somewhat early and drove back into town to get some more rest.

Sunday ended up being perhaps the best night of the entire star party. We started the evening with a chicken barbecue on the observing fields, followed by an evening of outstanding conditions that lasted until dawn. It was beautifully clear, and the action on the observing fields was extensive, with over 50 instruments present. I set up my NexStar 9.25 SCT and my 100mm f/6 refractor in my usual spot near the split in the road where it divides to go down to the lower Snake Campground or over to Dob Row. Unlike previous nights, Dob Row finally had a bunch of big Dobs on it (12" to 20" aperture), in addition to a few other scopes. The rise to its south of Dob Row was covered by a sort of "Meade Row", with several 10 inch SCTs there along with a couple of Newtonians. My "Cloudynights" friend from Florida (Rusty) had his motor home on a rise just to my west and was running his Nexstar 11 and a Takahashi 130 refractor, while Lee Thomas had his 1970's vintage Celestron 8 next to me, along with Dan Delzel's 12 inch Meade Lightbridge Dob. There were also a lot of the "black" 10 inch Dobsonians scattered all over the observing fields, as well as a few other scopes down in the campground. On a walk prior to sunset, I recognized an "oldie but a goodie", as someone had a massive 12.5 inch equatorial Newtonian set up near the water pump above the campground. There were a few refractors present as well, with a couple of six inch versions in the low areas of the fields.

As the sky got dark, the faint whine of the Meade LX200's began to be heard, and people got down to more serious observing. I could see that, as good as Friday night had been, this one was going to be *better*, so I did a little casual observing before getting down to business. I started working on a review of the DGM Optics Oxygen III filter by going on survey of various emission and planetary nebulae, while others just did a lot of sight-seeing around the sky. I got a chance to go up to Rusty's setup and use the big refractor on the North America Nebula, and again, it was stunning. We looked up the comet once again, and then marveled at the naked-eye dome of the Milky Way's central bulge which could be seen extending well into Ophiuchus. I got to try the 40mm TMB Paragon and determined that, while it was a very good eyepiece, in my f/10 SCT, my 40mm Mk-70 Konig was roughly its equal, so there was no need to go eyepiece shopping when the vendors arrived. Much later, I left my scope for a while and started wandering a little over to Dan Delzel, where he was busy with the Lightbridge. After a couple of minutes, I got the scope on an object he had been trying to find earlier, and as I used the 12 inch, I found that I really liked the way it performed. It had almost buttery-smooth motions and a nice eyepiece position which made using it quite easy. The 12 inch Lightbridge made short work of the faint open cluster NGC 6791 in Lyra, showing a mass of very faint stars at moderate power with fairly high contrast. Dan just had the red-dot finder on the Lightbridge, but I was still able to find about anything I wanted to look at. We spend some time perusing the Veil Nebula and the Crescent Nebula (NGC 6888) using a wide-field Burgess eyepiece and the OIII filter, and, after a short visit to the Saturn Nebula and the Helix, ended up the night with a wonderful view of M31. Later in the week, Jim Hopkins told me that he had worked that sky all night and hit over 400 targets with his 14 inch scope up on "the Hill". He said that it had been the finest night he had ever experienced at NSP.

Monday was fairly clear but rather hazy and hot. I didn't have to start teaching the first session of the Beginner's Field School until the reasonable hour of 3 p.m., so I was able to get enough sleep after the late night of observing. The Field School was based in Valentine at the 4-H building on the fairgrounds. John Johnson and I had about 40 students ranging from grade school age to senior citizens. Registration was held there as well, and the first of the vendors (Astrosystems) made their appearance. Unlike previous years, the swap meet was held all three days, so people had a chance to work their wares a bit each afternoon. After 5 p.m., we shut things down and headed back out to the observing fields for the Barbecue sandwich dinner. During the dinner, another "Cloudynights" person (Jim, A.K.A. "Snaproll") from Wisconsin drove in with a titanic "ExploraDome" observatory on its side in a trailer behind his vehicle. He said he got a lot of strange looks as he was driving, and he thought he might put a sign on it saying, "KEEP BACK: Nuclear Weapon", on it! Jim deployed the dome near the road off the northwest observing field and said it worked pretty well. Lori May from South Dakota did her usual star-talk for the field school attendees as darkness fell, using a few helpful laser pointers to show the most common constellations and asterisms. After that, I ranged around again between scopes, settling for a while with a "different" John Johnson, who was running a 20 inch f/5 Obsession equipped with ServoCAT and Argo Navis DSC telescope control. We did a little sight seeing, but eventually settled down to trying some more obscure targets like Campbell's Hydrogen Star. The Cat's Eye Nebula was particularly striking in the 20 inch, as it showed the delicate interior arcs as well as the faint outer shell and pin-point central star. We later tried for Pease-1, a planetary nebula inside of M15, but we failed to locate it. With the skies getting a bit more hazy, I was headed back towards my van to drive back into town when I stopped by at fellow club member Brian Sivill's setup (Meade 6" SNT and a home-brew six inch f/8 Newtonian). He was having a bit of a problem finding the planetary NGC 7662, otherwise known as, "the Blue Snowball from H*ll". He tweaked his finder's alignment, and I then put his six inch on the nebula. It was a small bluish-green oval with just a hint of structure at high power, so we were all pleased that at least that object made it

through the haze.

Tuesday started a decline in weather, with thick high haze and eventual thunderstorm development. The temperature went past 100F for a short time, but thunderstorms quickly cooled things down a bit. The Field School and swap meet went on at the 4H Building in Valentine with the 2nd session on Telescopes and Equipment. Once done, we had to spend a lot of time tearing down, as we would be holding everything at the High School on Wednesday. I got a little wet getting stocked up for the evening, but eventually, I got back out to the observing fields for the Hamburger dinner. The skies were mostly cloudy by this time, so we did more talking than observing. The Grand door prize was given out (a Meade 12 inch "Lightbridge"), along with many others.

Wednesday was similar in weather to Tuesday but not as hot. Activities shifted to the Valentine High School, where the Field School, Vendors, Swap Meet, and the speakers programs were held. The Field School was lead by Jim Hopkins, who introduced the students to the ins and outs of Deep-sky observing. The vendors were going strong in the main lobby, with Astrosystems, Camera Concepts, AstroGizmos, and Infini-Tees were all set up. AstroGizmos set up a large fabric dome in the lobby which got a lot of attention. At noon, the pizza noon luncheon was held, followed by the Children's activities and three main speakers programs in the auditorium. Jim Hopkins gave an update on the Mars Rovers, while Eric Balcom presented a talk on Summertime Celestial Wonders. John Spack gave a wonderful account of the construction (and the subsequent publicity) of his suburban observatory in Chicago. This was followed by the awards for the observing challenges and the astrophotography contest (as well as by more door prizes). The skies were a bit threatening, so a friend of mine and I went to the Peppermill restaurant for dinner and then to a movie, as did a number of other attendees.

Thursday was beautiful, with clear skies and very mild temperatures. Many attendees went on the Canoe/Tubing trip down the scenic Niobrara river. I always look forward to the river trip, and this year was one of the best I have ever been on, giving me time to relax and just float down the river with the occasional water cannon battle thrown in for good measure! The trip's midpoint stops at Smith Falls State Park, where Nebraska's highest waterfall sends cascades of icy cold water down into the Niobrara canyon and onto anyone who dares walk to the base of the stream. After a short nap, it was back out to the observing fields for a Brats dinner and some more observing. The moon was a fat crescent, and some occasional clouds and haze limited observation at times, but there was still a lot of activity on the observing fields.

Friday was partly cloudy and warm, and was the day I finally had to leave an head home after a week of fun. For those who stayed, there was a public viewing event held at the lake which put the ribbons on the 14th annual NEBRASKA STAR PARTY.

David Knisely

October Astronomy Quiz

1. This planet moves slowly in our sky, moving to another constellation in the zodiac every 7 years. What is it?
2. If moons, asteroids, etc. are above this size in diameter, they tend to be spherical; below this size they will normally be odd shaped. What is the diameter in miles?
3. What's a green flash?
4. Where is this from?

   Give all men, for all time to be, the blessing of tranquility,

   1. As galaxies and quasars share the knowledge that our God is there!

   2. May future aeons call to mind, "We came in peace for all mankind."
5. Name some "watery" constellations that might be good to observe on an October evening.
6. What can we look forward to on Dec. 24th, 2007?
7. What 2 planets are currently in Leo?
8. This star is a supergiant, type A9 II, about 80 Light years from earth and has magnitude of -.72. It's named after the Pilot of the fleet of King Menelaus. Which star is it?
9. This constellation contains the Small Magellenic Cloud, and it contains the 2nd largest and brightest globular cluster, and is near the south celestial pole. Which is it?
10. What's the difference between Titon and Triton? Similarities?
11. Orionid meteor shower in October peaks when?
12. What's new about P2007 R5 SOHO?

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Answers to the September Quiz

1. The **Summer Triangle** is made up of Vega (in Lyra), Deneb (in Cygnus) and Altair (in Aquila). Vega is the brightest at about magnitude 0.3, Altair is about 0.8, and Deneb is 1.3.

2. **Altair** is 17 light years from us, **Vega** is 26 light years from us and **Deneb** 1,800 light years from us!

3. **Charon** is Pluto's largest moon; it is about 1200 km in diameter and one side always faces Pluto, like our Moon.

4. **Chiron** is an unusual body in our outer solar system. It has a diameter of 200km, but also a detectable coma, combining some of the characteristics of a comet and some of an asteroid. These objects as a group are called Centaurs.

5. That's **Olympus Mons** on Mars. Its 650 km wide across (that's about the length of the state of Nebraska!) and rises 26 KM above the surrounding plains.

6. A **Parsec** is 3.26 light years. It comes from the words 'par'allax and 'sec'ond.

7. With terra in the name you might think it was on earth (terra means 'earth') but Terra Aphrodite is the name of a large fractured highland region near the equator of **Venus.**

8. **11 years**.

9. Altair is relatively bright because of its **proximity** to us, only 17 light years away. Deneb is much farther at about 1,800 light years away from us but it is a type A2Ia star, the A2 meaning it's a very hot blue-white star and Ia meaning it's a **supergiant**.

10. **Apparent magnitude** is how bright an object appears from a viewer on Earth. It depends on how bright the object is, how far away it is and how much "stuff" is in between (interstellar medium). **Absolute magnitude** is a calculation of how a star would look if we could set it at a reference point of 10 parsecs (32.6 light years) from our sun.

11. The comet is **Biela's Comet** named for Wilhelm von Biela; it demonstrated for the first time that comets aren't permanent but 'finite and transitory objects.'

12. **d)** The Broadband Light Pollution Reduction filter would probably be most helpful in general.

A= 3 (S. Chandrasekhar), B=1 (E. Hubble), C=2 (A. Compton) ferences: NSP Beginner's Field School book, the Facts on File Space and Astronomy Handbook by Joseph A. Angelo, Jr., "Know your Telescopes" postcard is from the University of Chicago.

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