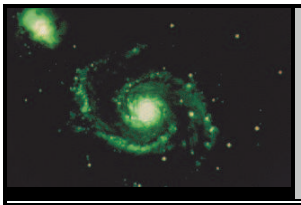


The Prairie Astronomer

The Official Newsletter Of The Prairie Astronomy Club, Inc.

April2004 **Volume 45 Issue #4**

Internet Addresses

PAC Web Page:	www.prairieastronomyclub.org
PAC E-Mail:	info@prairieastronomyclub.org
NSP Web Page:	www.nebraskastarparty.org
NSP E-Mail:	nsp@4w.com
OAS Web Page:	www.OmahaAstro.com
Hyde Observatory	www.hydeobservatory.info
NEB-STAR	www.neb-star.org

CLUB EVENTS

PAC Meeting 7:30pm
Tuesday, April 27, 2004

Club Star Party
Friday, May 14, 2004

Mahoney Star Party
Friday, May 14, 2004

PAC Meeting 7:30pm
Tuesday, May 25, 2004

Mahoney Star Party
Friday, June 11, 2004

Nebraska Star Party
Sunday, July 18, 2004

PROGRAM

April program: To be announced – plus a report on Astronomy Day

Note: changes in email addresses:

The PAC Email address is now info@ prairieastronomyclub.org instead of pac@4w.com.

The PAC-LIST address has also been changed.

PAC-LIST: You may subscribe to the PAC listserv by sending an e-mail message to: **imailsrv@prairieastronomyclub.org**. In the body of the message, write "Subscribe PAC-List your-email-address@your-domain.com"

For example:
Subscribe pac-list stargazer@myISP.com

To post messages to the list, send to the address **pac-list@prairieastronomyclub.org**

READ THIS NEWSLETTER ONLINE

Those who wish to help with publishing and postage costs by receiving only the on-line version of the newsletter should contact Liz Bergstrom at 464-2038. Mark Dahmke or Liz can give you the logon account and password for access. You may receive both the mailed version and the on-line version if you wish. A printable PDF version of this newsletter is also available through the website.

CONTENTS:

The Prairie Astronomer is published monthly by the Prairie Astronomy Club, Inc. Membership expiration date is listed on the mailing label. Membership dues are: **Regular $20/yr, Family $22/yr**. Address all new memberships and renewals to: **The Prairie Astronomy Club, Inc., PO Box 5585, Lincoln, NE 68505-0585**. For other club information, please contact one of the club officers listed on the last page of this newsletter. Newsletter comments and articles should be submitted to: **Mark Dahmke, PO Box 80266, Lincoln, NE 68501 or mdahmke@4w.com,** no less than ten days prior to the club meeting. The Prairie Astronomy Club meets the last Tuesday of each month at Hyde Memorial Observatory in Lincoln, NE.

Secretary's Report

President Dave Knisely called the meeting to order. There were no visitors.

There will not be a NSP planning meeting on April 8th , so the next will be held in May.

The last club star party at Olive Creek was good although a bit windy and hazy. The next club star party will be April 16th.

Mahoney Star Party Dates are as follows:

May 14th, June 11th, July 9th, August 13th, and September 17th.

Hyde News:Dave Churilla is always looking for volunteers at Hyde for more information contact him. On April 17th Hyde will host a star party to kick off Astronomy Day on the following Sunday. Members are encouraged to come and help out; Dave still is looking for more people who will be willing to set up their scopes on the lawn.

Dave Churilla announced that he is starting up a beginner's introductory class for more one-on-one attention on nights other than the PAC meeting. He has also put together packets of information for those new to the hobby.

On Sunday April 18th from 1:30- 4:30 p.m., Mueller planetarium will be hosting the annual Astronomy Day with this year's guest Nagin Cox. Nagin will be speaking at 7:00 p.m. Jack Dunn announced that he has sent flyers out to all the Lincoln public and parochial schools promoting Astronomy Day. Hopefully there will be a good turnout.

He also announced that he still needs people to bring scopes to display at Astronomy Day and to help out. It was decided that if possible there should be booth set ups where people can join PAC if they so desire.

People are also encouraged to contact Jack Dunn if they would be willing to bring extra computers to Astronomy Day for running astronomy software. The computers should be able to run large visual and audio files.

The International Dark-Sky Association has a new brochure out about light pollution and good lighting; Jack Dunn will have it available to the public at Astronomy Day

Sign up sheets were passed around for table and location assignments for Astronomy Day along with a sign up sheet for nametags. Volunteers need to be ready to set up at noon on Sunday April 18th.

Outreach Coordinator, Jeff Campbell, announced that the Spring Creek Prairie near Denton, would like PAC to come out on September 11th and August 14th. The BSA event fell through last month, but they are still interested and want to reschedule. He has also contacted the Boy Scouts, 4-H, YMCA and Camp Kindle for possible outreach events.

The Treasurer reported that all accounts were in order.

Both of the club telescopes are available to be checked out by members. To check either of these out, contact Dave Brokofsky.

Brian Sivil moved to adjourn the meeting, Liz Bergstrom seconded, adjourn to program.

The program this evening was presented by Jack Dunn on various Mars software and games that will be used for the upcoming Astronomy Day.

Respectfully submitted by: Lee Taylor, as reported by Erica Block

Hyde Observatory Volunteer Schedule

Date	Team Leader	Operators		Supervisor	Events
April					
4/24/04	Bob Leavitt	Mary Winquest	Erica Block	Rick Johnson	
4/24/04	Dave Churilla	Joey Churilla - Solar Observing		Erik Hubl	Earth Day - Noon - 5 PM
May					
5/1/04	Jeff King	Josh Machecek	AJ Benker	Dave Churilla	
5/8/04	Bill Wells	Mary Winquest	Steve Lloyd	Dave Hamilton	
5/15/04	Bob Leavitt	Karla Bachman	Erica Block	Jack Dunn	
5/22/04	Dave Churilla	Erica Block	Joey Churilla	Rick Johnson	
5/29/04	Brian Sivill	Cece Hedrick	AJ Benker	Jack Dunn	
June					

6/5/04	Bill Wells	Steve Lloyd	AJ Benker		
6/12/04	Dave Hamilton	Jeff Campbell	Erica Block		
6/19/04	Bob Leavitt	AJ Benker	Karla Bachman		
6/26/04	Jeff King	Cece Hedrick	Josh Machecek		
Summer Hours: April through September (Sundown to 11:00 PM)					
Winter Hours: October through March (7:00 PM to 10:00 PM)					

Recent Observations – by David Knisely

DATE: April 14, 2004, 0330 to 0600 hrs UTC.
LOCATION: Rockford Lake, Nebraska 40.227N, 96.580W, elev. 1400 ft (427m)
INSTRUMENTS: NexStar 9.25GPS Schmidt-Cassegrain (altazimuth mode): 78x, 99x, 168x, 235x, 297x, 367x, 479x.
CONDITIONS: Mostly clear, Temp. 45F (7.2C), wind SW at 0-5 mph.
UNAIDED-EYE ZENITH LIMITING MAGNITUDE: 6.6
SEEING (above 45 deg. altitude): 0.6" to 1.2" (Antoniadi II).

OBJECTS OBSERVED: M48, M50, Sh2-274 (Medusa Nebula), NGC 3115 (Spindle Galaxy) NGC 2353, Leo-1, NGC 2903, NGC 3185-87-90-93 (Hickson 44), M65, M66, NGC 3628, M84, M86, NGC 4387, NGC 4388, IC 3303, M100, NGC 4328, NGC 4322, NGC 4312, IC 783, UGC 7425, M64, NGC 4565, NGC 4038-9 (Ring-tail Galaxy), NGC 4361, M104, M83, NGC 5128, NGC 5139, M5, M51, M101, NGC 5474, M97, M108, M81, M82, NGC 2357 (Bear Paw Galaxy), M13.

OBSERVATIONS: Clear skies and not too cool temperatures presented themselves after a few days of clouds, so I decided to put both the NexStar and my little laptop to the acid test by running both "in the field" at my rural dark-sky site above Rockford Lake. I did learn a lot by doing this, as previously, this setup had only been tested on my driveway. As I quickly discovered, Murphy *really* likes it when you go "digital".

The first "fact" of electronic telescope operation is, "You will forget at least one important cable or cord". I managed to only get two blocks from home before I realized this and returned for the main power cord of the NexStar. After about an 18 minute drive over some rural roads, I arrived at my favorite spot above the lake and began to set up. The second fact of electronic telescope operation was, "All cords or cables will be too short". The DC power outlets I had installed in my minivan were intended to power my amateur radio equipment, which is usually mounted at the base of the dashboard. Thus, I had to add some wire "in the field" to the NexStar's power cable to get it to go all the way through the length of the van and out a few more feet to where I had set up the NexStar (thank goodness I had taken some electrical tape along).

The next occurrence of this came in the heat of DSO hunting when I decided to fire up the laptop to let it take control the NexStar's pointing. I had already had enough cord length to power the computer, but the RS-232 cable connecting it to the NexStar is a little on the short side, so the computer ended up sitting at ground level on a few old magazines at the base of the scope. Obviously, I will need to cobble something together to support the computer if I want to ever do this again (good thing there wasn't any snow on the ground). I suppose I could have connected everything through the side door, but, unlike the minivan's rear hatch, the interior light can't be easily shut off when that door is open. In any case, the van nicely blocked the glare of Venus, which was so bright that it allowed shadows to be cast.

Finally, I got down to actually using the scope. Surprisingly, the NexStar got a better initial star alignment in my rural setting than it usually does on the driveway, placing the alignment stars well within the field of view of the finder. A little tweaking and all was now ready to go. I did a slight touch-up in collimation using Polaris, and enjoyed the fact that the star is a rather pleasing double with the brilliant off-white primary accompanied by a much fainter 9th magnitude companion about 18.4 arc seconds away. After this, it was off to the races. I did keep a close eye on where the NexStar was going while it was slewing, as I had heard that even small power interruptions can cause things to go out to lunch (and my "field" wiring was a little suspect). Fortunately, from my years of starhopping, I could tell that the NexStar definitely knew where it was going as it went from object to object at my command. Initially, I just ran the scope off of its own database using the hand controller, and for most of the time, this was all I needed.

My first target was just a "guess" from memory about M50. It is a rather nice cluster in the constellation of Monoceros which seemed a little bigger than I remembered, probably because I was viewing it at 78x instead of the 59x I use in my 10 inch Newtonian. Its fairly rich with maybe 70 or 80 stars visible over an area of less than 20' arc in width, so it fit nicely in the 1 degree field of my 30mm WideScan III. M48 was a few button pushes away (as long as I remembered to push a preceeding "zero" on the keypad (ie: the comand should be M048: ENTER). It nearly filled the field and has a lot of stars, but they seemed fainter and somewhat more scattered than those of M50.

I had wanted to revisit "the Medusa Nebula" from my driveway a few weeks ago, but had been thwarted by a number of things, so it was time to try it again. Unfortunately, this large faint planetary nebula in the middle of nowhere is not in the NexStar's database, so I had to finally fire up the computer and connect it to the NexStar, which, of course, led to the earlier conclusions about cord length! Its numerical designator is non-NGC (Sh2-274 or PK205+14.1), so its a rather

obscure object which isn't often shown on some charts (although it is on both Uranometria and Sky Atlas 2000). I knew roughly where it was in the sky (in Gemini, roughly 5 degrees north and 40' east of Gomeisa (Beta Canis Minoris)), and could have just slewed the scope to it manually or entered the coordinates into the NexStar's hand controller. However, with the computer ready to do its thing, I just fired up Megastar and clicked on the object. The NexStar quietly slewed to the area and then suddenly stopped. I looked in the eyepiece and initially saw nothing but stars, so I thought "Uh-oh, NexStar's finally gone out to lunch". However, as I looked, I noticed a large *very* faint C-shaped glow near the bottom of the field. Bingo! I had picked this one up with my 10 inch, but it had been years ago, and I had forgotten just how faint this sucker really is (especially at the higher power I was now forced to use due to the NexStar's longer focal length). The OIII filter tended to bring it out somewhat better with hints of faint detail, but this challenge object wasn't all that spectacular.

I had been trying to remember the NGC number of Thor's Helmet (NGC 2359), but failing that, I noticed a star cluster on Megastar, which showed a bright star in its middle (NGC 2353). On a whim, I sent the Nexstar over to it and found it to be a rather pretty object with not a lot of stars which reminded me a little of the "Christmas Tree" cluster north of the Cone Nebula. The next stop was "the Spindle Galaxy", NGC 3115 in Sextans, and this bright little galaxy was very pleasing in the NexStar. It looks quite a bit more elongated and less fat in the middle than is commonly shown in pictures. At 168x, it showed a bright almost stellar core with a pronounced linear spine of light running down almost the entire length of the galaxy. From there, it was on to one of my very favorite planetary nebulae, NGC 3242, "the Ghost of Jupiter". Of course, it looked nothing like Jupiter, but it was quite pretty all the same. 78x showed an almost brilliant bluish-green disk with a brighter inner ring-like core imbedded in the fainter more oval outer haze. It looked a bit more like an "eye" staring back at you than a planet. The inner core was a bright but distorted ring with a somewhat varying brightness and the faint central star was visible when seeing settled down.

I was curious if the NexStar 9.25 would show something like the nearby dwarf galaxy Leo-1 (UGC 5470), located just a little north of Regulus. Leo-1 isn't in the NexStar's database either, but Regulus is. Slewing to Regulus put that bright star in the lower half of the field, but I was surprised when the large dim diffuse oval glow of the galaxy was visible even with brilliant Regulus still in the field of view! In my 10 inch Newtonian, I generally have to put Regulus just outside of the field, so I guess its time get the 10's optics recoated! This showed the high contrast of the StarBright XLT coatings as well as the good overall optical quality of the NexStar which, a couple of months ago, had changed me from a product reviewer to an owner.

While in the area, I went up into the "mane" of Leo to the bright galaxy NGC 2903. This one has been one of my favorites for many years and tonight, it didn't disappoint me. Even at 78x, it showed some detail, with its small brighter core and very patchy outer haze. 168x revealed the spiral structure to some extent, and it has always looked a bit like a barred spiral even at low power, with a sort of linear set of brightenings on both sides of the core region. Earlier classifications of the galaxy tended to call it Sc, but I noted Megastar has it as SAB(rs)bc, so perhaps it is indeed barred.

From here, it was off to a small quartet of galaxies in the back of Leo's mane: NGC's 3185, 3187, 3191, and 3193, which together are known as Hickson 44. Again, I was a little surprised when all four showed up at only 78x, although little NGC 3187 was rather marginal. NGC 3193 was probably the brightest of the group appearing as a small round fuzzy spot with a very bright core. NGC 3190 was the next brightest in line with both 3193 and 3185, appearing as a rather elongated patch with a small brighter center and possibly a hint of a dark lane at 168x. NGC 3185 was fainter still, appearing as a faint oval with a slightly brighter middle and possibly a slightly brighter outer edge. Little NGC 3187 was merely a short faint cigar-shaped streak smaller and noticably fainter than any of the other galaxies in the group.

I stopped briefly at Leo's Trio (M65, M66, and NGC 3628) and was rewarded with a fine view of all three galaxies. M66 showed segments of its two spiral arms, with the one on the west side being the more prominent (almost flaring fan-like towards the south) along with a little mottling, while M65 revealed its brighter core and more elongated form. NGC 3628 was noticably fainter but was equally interesting, as its long irregular dark lane was easy to see. To me, the ends of this edge-on spiral look almost broadened or "bushy".

I usually use my Telrad on the ten inch to get to the start of the Markarian Chain of galaxies in Virgo, but I decided to just use the NexStar's Go-To and see how close it would come. I selected M84 as the target destination and off the NexStar slewed to its "prey". I had inadvertently left in the 14mm Ultrawide (29' arc field), but the scope still found M84, along with M86, NGC 4388, NGC 4387, and IC 3303 all nicely framed in the field. The two giant ellipticals were quite easy, with NGC 4388 being the other "dominant" object in the field, with its long cigar-shaped form. It was nice to see the NexStar get these guys all in the field even at 168x!

I went up to M100 and was fairly satisfied at the view. 78x showed extensive dim mottling around its somewhat brighter core, while 168x showed segments of the spiral arms, although this object has never shown an overall "grand design" kind of spiral structure to me. Clustered around M100 were a number of faint companion galaxies: NGC's 4312, 4322 and 4328, and the fainter IC 783 and UGC 7425. UGC 7425 and IC 783 were marginal at best and I only noted them after seeing the two plotted on Megastar. NGC 4312 is the one I am most used to seeing in the ten inch due to its brightness and elongated form. The two others right (4322 and 4328) adjacent to M100 were also merely *very* faint

spots of light, but I don't recall ever seeing them in the ten inch. I guess 78x and 168x are pretty good powers for this scope.

Next on my list of things to look at was a quick stop at M104. Again, this was a beautiful sight at moderate to high power, with the long dark lane and prominent nuclear region. From there, I thought I might try for the "Ring-Tail" Galaxy, NGC 4038-9, and the NexStar obliged. I was again quite surprised as to how nice this object looked, as I seem to have hit a "sweet spot" in power at 78x to 168x. The object was faint but unusually easy to see, showing the interacting objects fairly well as an oval fuzzy patch with a short fat tail on the southern portion. In fact, I could see some brightness variations in both the northern and southern components at 168x and 297x. The northern galaxy seemed to have a series of small patches near the limit of visibility in a sort of broken ring or oval, while the "tail" of the southern one had one patch near its middle. While in the area, I sent the scope over to the bright planetary nebula NGC 4361. It was quite easy to see with a bluish coloration, but it showed some odd flaring of its outer haze in various directions, which gave it a less than disk-like form. Higher power confirmed this sort of flared effect (mostly on the northern and southern sides of the main oval), making it look rather unusual for a planetary nebula. I went farther south to the large barred spiral M83 and again was a little surprised at the detail I could see, although none of it was exactly bright. Still, I could see the central bar and the numerous diffuse patches that surround the core region.

I noticed that Spica was almost on the meridian, so it was time for my annual "lets try for Omega Centauri from 40.3N" exercise. I quickly found NGC 5128 (Centaurus "A") and noted its dark lane vaguely, but then punched in NGC 5139. The scope promptly slewed onto a low tree about 100 feet to my south! I had to wait about 5 minutes for the rotation of the Earth to carry Omega out from behind the low branch, but eventually, this big globular did appear as a *very* large dim fuzzy ball with a few stars in it. Considering that it was only 2.2 degrees above my south horizon, I suppose I am lucky to have seen anything at all!

I went back northward to something "a little higher" in the form of the "Black-eye" Galaxy M64. As usual, the NexStar put me almost right on top of the object, and it appeared a bit larger and maybe a tad brighter than I am used to seeing it. Indeed, the brightness of the galaxy made seeing the dark arc north of the nucleus a bit more difficult at 78x than I am used to. The area around the core seemed to show some soft brightness variation that hinted at a very smooth almost uniform spiral form in the outer haze, with some flaring off the east and west ends. After this, it was on to the huge edge-on spiral NGC 4565, "Berenice's Hair Clip" (a John Dobson name). This monster was very nice at all the powers I tried, and essentially filled the field of view at 297x. The star-like core, the dark lane across the egg-shaped nuclear bulge, and the long mottled pointed ends were all seen with little trouble, although it took a lot of averted-vision and moving the eye around to catch all the detail.

After a brief look at M5 and M13 (mostly to straighten the cord to the NexStar out), I went to M51. It was simply stunning at both 78x and 168x, showing the dim bridge between the two galaxies as well as the spiral structure. Indeed, the view at 168x is one of the finest I have ever had of that object in a modest-aperture scope. I even pushed things to 297x to see the dark lane-like features, which separate the spiral arm segments. I tried M101, and it showed much patchy detail, but like M100, its spiral structure is somewhat vague at best. After this, it was getting rather late, so I did a quick tour of M97 to see both of its eyes (without a filter for once), M108 to see its patchy structure, M81 and M82 (both shown well), and finally, an object which has puzzled me ever since getting the NexStar: the "Bear Paw" galaxy (NGC 2357). I had seen it in the "named objects" portion of the database, so I selected it and sent the NexStar to work. What I found was a small dim round puff of fairly uniform brightness but with maybe a hint of some dark detail, but nothing more. I may have to revisit this one in a much larger aperture sometime.

All in all, I am satisfied that the NexStar 9.25GPS is a pretty good scope for deep-sky work, so I guess I can part with the mirrors in the ten inch for a while to get them recoated.

Karla Bachman named Hyde Observatory Volunteer of the Year– by Erik Hubl

Volunteer of the Year. Karla exemplifies the true spirit of a volunteer. She is always ready to help at any event, fills in for other volunteers when they need covered and has recorded 64 volunteer hours in 2003.

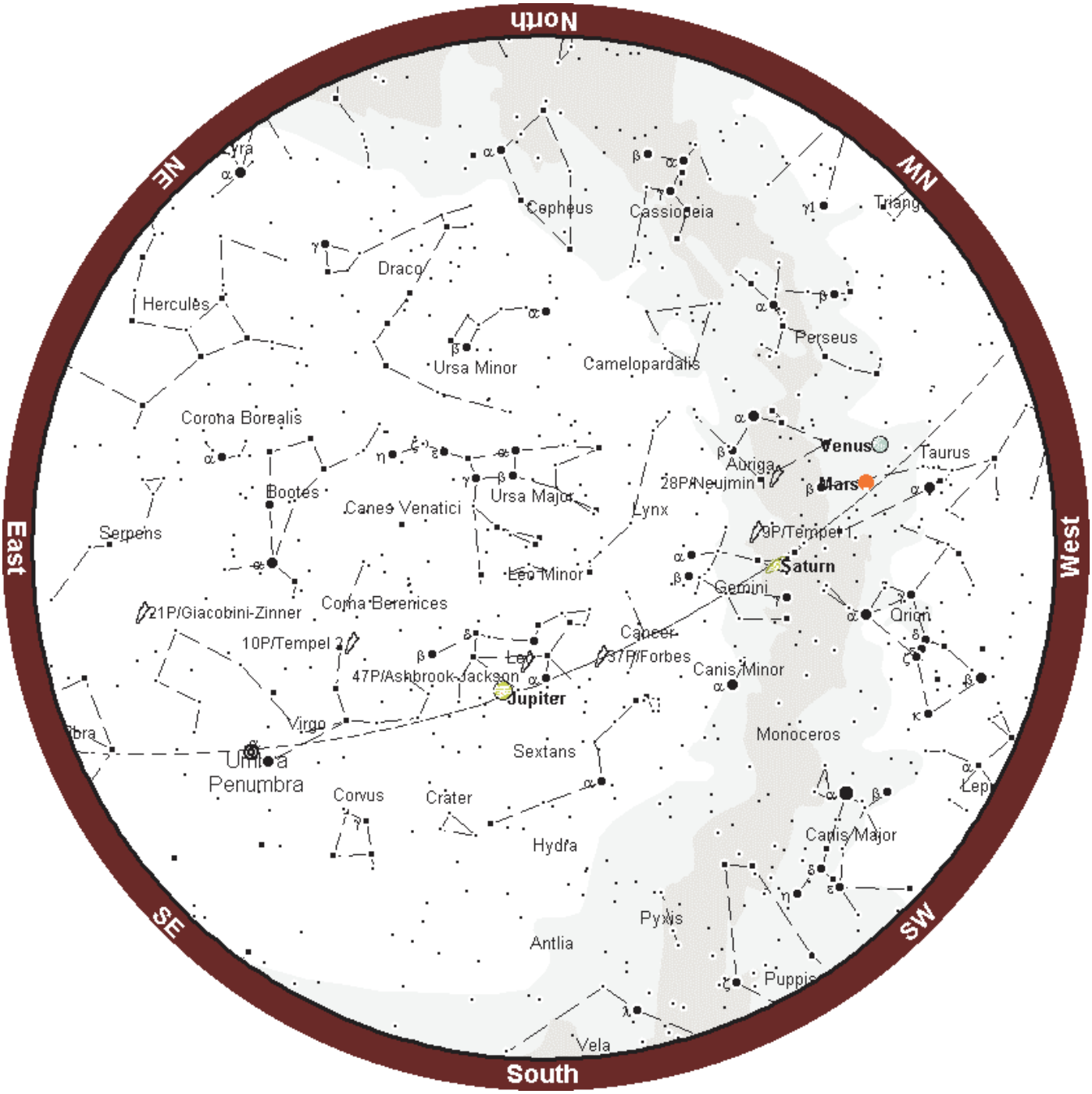
Karla demonstrates the strong desire to share astronomy and space exploration with the public. She takes the time to research topics and comes well prepared to the public openings. Her knowledge is infectious and it stimulates many questions and conversations.

In further testimony to her skill, Karla is a teacher at LPS and has helped bridge a path between Lincoln Public Schools and Hyde. She recognizes the huge potential that Hyde Observatory has in being an excellent educational resource for our area youth.

Karla was honored for her accomplishment on April 6th, 2004 at the Hyde Observatory

volunteer appreciation dinner hosted by Jack Dunn, Director of Mueller Planetarium. She was presented with a certificate signed by Lincoln Mayor Coleen Seng. A brass engraving with her name will be added to the display containing previous winners and a color portrait will be placed in prominent view at Hyde Observatory.

April Star Chart



Events Calendar

May 2004

Sun	Mon	Tue	Wed	Thu	Fri	Sat
						1 Sun: 18:23 - 08:22 Hyde Observatory open to the public
2 Sun: 18:22 - 08:23	3 Sun: 18:21 - 08:24	4 Sun: 18:20 - 08:25	5 Sun: 18:18 - 08:26	6 Sun: 18:17 - 08:27	7 Sun: 18:16 - 08:29	8 Sun: 18:15 - 08:30 Hyde Observatory open to the public
9 Sun: 18:14 - 08:31	10 Sun: 18:13 - 08:32 Neptune 5deg N of Moon	11 Sun: 18:12 - 08:33	12 Sun: 18:11 - 08:34 Vesta 1.1deg N of Moon	13 Sun: 18:10 - 08:35 Jupiter stationary	14 Sun: 18:09 - 08:36 Mahoney Star Party; Mercury greatest elongation; Club Star Party	15 Sun: 18:08 - 08:36 Hyde Observatory open to the public
16 Sun: 18:07 - 08:37 Mercury 3deg S of Moon	17 Sun: 18:06 - 08:38 Dbl shadow transit on Jupiter	18 Sun: 18:05 - 08:39	19 Sun: 18:04 - 08:40	20 Sun: 18:04 - 08:41	21 Sun: 18:03 - 08:42 Venus .3deg S of Moon	22 Sun: 18:02 - 08:43 Hyde Observatory open to the public
23 Sun: 18:01 - 08:44	24 Sun: 18:01 - 08:45 Mars near Saturn; Mars 1.6deg N of Saturn	25 Sun: 18:00 - 08:46 PAC Meeting 7:30pm	26 Sun: 17:59 - 08:47	27 Sun: 17:59 - 08:47	28 Sun: 17:58 - 08:48	29 Sun: 17:58 - 08:49 Hyde Observatory open to the public
30 Sun: 17:57 - 08:50	31 Sun: 17:57 - 08:51					

Moon phase images by: António Cidadão

Directions to Olive Creek Observing Site

Shorter:

Take Hwy 77 South out of Lincoln until you get to the Crete corner (junction Hwy 77 and Hwy 33). Go West on Hwy 33 (toward Crete) until you get to SW 72 St. Turn Left (South) on SW 72 St. and go about 5 miles until you get to SW Panama Rd. Turn right (West) until you get to SW 100 St. (SW 100 St does NOT go through to Hwy 33). Turn Left (South) on SW 100 St and go about 1 to 1 1/2 miles until you see the sign and entrance to Olive Creek (this is the West side of the Park). It's on your left (East) side of the road. More Black Top:

Take Hwy 77 South out of Lincoln until you get to the Crete corner (junction Hwy 77 and Hwy 33). Go West on Hwy 33 (toward Crete) until you get to about SW 114 St. - the first intersection after SW 100 St. (forgot to look at this street sign, sorry - you'll see a sign for Olive Creek though at this road- but don't count on anymore signs after that, I didn't see any). Turn Left (South) on SW 114 St and go about 5 miles or so until you get to SW Panama Rd (you'll see a church and small school on your right). Turn Left (East) and go about a mile to SW 100 St, then turn Right (South) and go 1 to 1 1/2 miles until you see the Olive Creek entrance and sign (on your left hand side of the road).

OFFICERS
OF THE PRAIRIE ASTRONOMY CLUB

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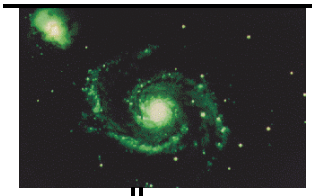

The Prairie Astronomer
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First Class Mail

Next PAC Meeting
April 27, 2004
7:30 PM
Hyde Observatory