The Prairie Astronomer

The Official Newsletter Of The Prairie Astronomy Club, Inc.

March 2003 **Volume 44 Issue #3**

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Hyde Observatory	www.hydeobservatory.info
NEB-STAR	www.neb-star.org

CLUB EVENTS

PAC Meeting 7:30pm
Tuesday, March 25, 2003

Club Star Party
Friday, March 28, 2003

UNL Student Observatory Public Night
Sunday, April 06, 2003 8:45 to 11pm

Astronomy Day
Sunday, April 06, 2003 Mueller Planetarium

Club Star Party
Friday, April 25, 2003

PAC Meeting 7:30pm
Tuesday, April 29, 2003

NSP Planning Meeting 7:30
Thursday, May 08, 2003 Mahoney Lodge

Mahoney Star Party dates for 2003:
May 9, June 20, July 18, August 22, September 19.

Nebraska Star Party:
July 27 to August 1, Merritt Reservoir, Valentine, Nebraska.

MARCH PROGRAM

March program: **To be announced**

PAC-LIST: If you have an e-mail address and are not on the PAC List, you may subscribe by submitting an e-mail to list@4w.com. Write "Subscribe PAC-List" in the body of the e-mail.

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.

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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 — Lee Taylor

Prairie Astronomy Club minutes for Tuesday February 25, 2003

President Dave Knisely called the meeting to order and we had one new guest.

The last club star party was best described as iffy, with clouds coming and going. The next club star party will be Friday Feb. 28 at Olive Creek.

The next NSP planning meeting will be Thursday March 13 at the main lodge of Mahoney state park. Tonight, Doug Bell brought flyers for NSP 10.

The next UNL student observatory open house will be Friday Feb. 28.

Information on Astronomical League observing programs can be found by contacting club observing chair Jeff King. The Messier certificate is one such award, and several club members are trying to work on that this year. Let Jeff know if you plan to start an observing program.

Incidentally, at the MARCH star party at Olive Creek, Jeff seems to be implying that there is some sort of surprise waiting for us. :0! Also, late March is the time for the fabled Messier marathon, when, if you can stand the insomnia and eyestrain, most if not all Messier objects can be viewed in a single night. Good Luck!

The next PAC meeting will be Tuesday March 25 at Hyde.

Astronomy day this year will be Sunday April 6 at Mueller Planetarium on the UNL campus. If you'd like to participate, a sign-up sheet will be passed around at the next meeting. This year's speakers will hopefully include Rob Landis of JPL on the new Mars Exploration Rovers and, if he is asked about it, he'll have some things to say about Columbia and his time as a controller in Houston. Also, Saturday evening April 4, there will be a public star party at Hyde. Club members are encouraged to bring out their 'scopes and help the public understand astronomy, telescopes and how to observe and appreciate the sky above them.

Club 2nd Vice President and program chair Brian Sivill needs ideas for programs as usual. If you've done something you'd like to talk about, let Brian know and he'll help you any way he can.

Hyde News- Volunteer coordinator Dave Churilla is always looking for new volunteers - see Dave to get information on becoming a volunteer. On May 15, the observatory will be open for the lunar eclipse that evening. The moon will be rising in partial phase and most of the eclipse will be visible over the course of the evening. Also, The Solar panel equipment for Hyde has arrived!!!!! We are now awaiting installation of the computer, etc.

As always, if you'd like to save the club some money on stamps, etc., the online version of the newsletter is available through the PAC website. Contact an officer for info on joining the users of the online newsletter. There has been a question of who is using/not using the online version. Discussion centered on placing a membership list in the newsletter twice a year. This would only appear online for a short time and would only include members names, no addresses or other personal information.

Liz says that the club audit should be completed by March 15.

Brian Sivill moved to adjourn and Dell Motycka seconded.

Adjourn to Jacks program on new software for Hyde and a good argument for a plan for a return to the moon.

After the meeting, club officers convened to finalize plans for the new club telescope. This will be the Orion SkyView Pro 100mm refractor also purchased will be a padded 'scope case and a 3-element 2x shorty barlow. With luck, it will be here by the March meeting.

Respectfully submitted by

Lee Taylor

Hyde Observatory Volunteer Schedule

Date	Team Leader	Operators		Supervisor	Events
March					
3/22/03	Bill Wells	Lee Taylor	Josh Machacek	Rick J	
3/29/03	Brian Sivill	Dan Delzell	Jared Delzell	Dave H	
April					
4/5/03	Bill Wells	AJ Benker	Lynda Beck	Dave C	Hyde Star Party
4/12/03	Jeff King	Steve Lloyd	AJ Benker		
4/19/03	Dave Churilla	Joey Churilla	Karla Bachman	Brian S	
4/26/03	Dave Hamilton	Jeff Campbell	Justin DeVries	Rick J	
May					
5/3/03	Brian Sivill	AJ Benker	Lynda Beck		
5/10/03	Jeff King	Jeff Campbell	Steve Lloyd	Dave H	
5/15/03	TBA	TBA	TBa	Dave C	Lunar Eclipse
5/17/03	Bill Wells	Joey Churilla	Bob Leavitt	Dave C	
5/24/03	Jeff King	Karla Bachman	Josh Machecek	Rick J	
5/31/03	Dave Hamilton	Dan Delzell	Jared Delzell	Brian S	
Summer Hours: April through September (Sundown to 11:00 PM)					
Winter Hours: October through March (7:00 PM to 10:00 PM)					

Hyde Observatory Has a New Set of Solar Panels on its Roof – Erik Hubl

The new photovoltaic (PV) system was recently installed by Jon Dixon of Dixon Power Systems. The solar panels began generating electricity at 2:02 PM CST on Thursday, March 13th, 2003. It is estimated that the PV system will produce about half of Hyde Observatory's annual electrical needs. Future plans call for developing a web site that can be used to display the performance of the PV system. It will provide an excellent opportunity to compare and contrast how different sun angles and sky conditions affect the amount of electricity generated.

Erik Hubl records power output

The PV system replaces an older, passive solar heating system that had begun to deteriorate after 25 years of service. Unlike the old system, which just generated heat energy, the new PV system will generate electricity to power the observatory and will feed any excess or unused electricity into Lincoln's grid.

Jon Dixon connects PV system to grid

The panels are designed to withstand the impact of a one-inch hailstone and carry a 20-year warranty. Lincoln Electric System funded the system as a demonstration project. Additional project partners include Information Analytics who is installing the computers and web interface, and Alltel who has agreed to provide a DSL service to the observatory.

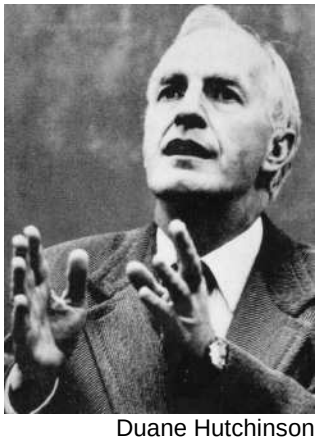
A dedication ceremony is being planned for later this spring.

Duane Hutchinson Donates $50 to PAC– Mark Dahmke

Author and storyteller Duane Hutchinson recently donated $50 to the Prairie Astronomy Club. Duane, an amateur astronomer, helped bring together the group that founded Hyde Observatory. Duane's involvement in the project was mentioned in Jack Dunn's video history of Hyde, presented at Hyde's 25th anniversary in November, 2002. Jack Dunn and Mark Dahmke sent Duane a VHS tape of the Hyde anniversary program, since Duane was not able to attend.

Along with the donation, Duane enclosed a card:

Dear Mark, Thank you for your gift. It was fun to be updated on the Prairie Astronomy Club. You and Jack Dunn made it possible for me to feel included after an absence of so many years. I'll share this tape with Jay Gallagher. He and I had lunch that fateful day when we first dreamed of what could be.
Sincerely, Duane Hutchinson.



Duane Hutchinson
Photo from the cover of his 1989 book "A Storyteller's Ghost Stories"

Recent Observations – Dave Knisely

DATE: March 12, 2003, 0100 to 0430 hrs UTC.
LOCATION: Beatrice, Nebr. USA 40.283N, 96.735W, 1320 ft (402m) elevation.
INSTRUMENTS: 10 inch f/5.6 Newtonian, 101x, 178x, 288x, 357x, 445x, 576x. 80mm f/5 Celestron "Wide View" Refractor: 29x, 51x, 82x, 100x, 127x, 156x, 204x. Orion STARMAX 90mmEQ (87.5mm f/14.3 Maksutov-Cassegrain), 89x, 158x, 195x.
EYEPIECES: 20mm Plossl, 14mm Meade Ultrawide ("the Glass Hand Grenade") 7.9-4.9mm Speers Waler variable focal length ("the Canadian Cannon") TeleVue 2x (2") and 2.5x Powermates, Sirius Optics NPC filter.
CONDITIONS: Mostly Clear, Temp. 45F (7.2C), Wind S. at 3-5 mph.
UNAIDED-EYE ZENITH LIMITING MAGNITUDE: 5.5 (1st quarter moon)
SEEING (above 45 deg. altitude): 0.5 to 1.5 arc seconds (Antoniadi II).
OBJECTS OBSERVED: Moon, Saturn, Jupiter, M42, Rigel, M44.

OBSERVATIONS: With fairly warm afternoon temperatures and not many clouds, the early evening sky ended up to be fairly clear except for a little high patchy haze which occasionally made its appearance. It turned out to be one of the best set of seeing conditions I had seen all winter. A friend of mine, John Lammers, and I set up my telescopes on the driveway to get some shallow-sky" viewing done, and I had a new Sirius NPC filter to try out some more. I usually have fairly good luck with seeing when it has been warm during a winter's day, and it looked like luck was again with me. The moon was the first target, and one glance showed that seeing was going to be pretty good. In the ten inch at only 178x, I could see the central craterlet in Plato, and at 288x, four were easily visible despite the long shadows that partially covered Plato's floor. The Alpine Valley was well shown, as well as a few narrow segments of the central rille, while the narrow Hadley Rille along the edge of the Appenine Mountains also was fairly easily seen. Hyginus Rille showed the many small adjoining pits which make up most of the rille's length. At times, many small cratelets were visible near the terminator quite close to the resolution limit of the ten-inch. Tycho in particular showed the huge number of tiny secondary impact pits which radiate outward from beyond the crater's rim. The Straight Wall was in prime position for viewing, as was the tiny rille, which winds its way north from near Birt. Farther in from the terminator not far north of the ruined crater Descartes, I picked up the tiny almost adjacent white spots of North and South Ray craters where Apollo 16 landed. North Ray showed a hint of shadow next to its white spot, but South Ray was merely a white spot. Giant Clavius was nicely placed with deep shadows along the eastern wall, but I did manage to see one or two of the rinkle or rille-like features off the northern ramparts of Rutherfurd as the shadow began to clear them.

...and now, THE REST OF THE (NPC) STORY!

I had recently received a couple of new filters from Al Misiuk of Sirius Optics. One was their nebula filter, but the other was a much more startling filter known as the NPC. Its a new one using the MV1 design coatings on a Neodymium glass substrate, designed mainly to reduce the violet halo around bright objects produced by simple moderate f/ratio achromats while preserving a more neutral color balance to the view. However, after using it for a while, I think the NPC should stand for NICE PLANETARY CONTRAST! Folks, this one's a real winner! It not only decreases the effect of that residual chromatic aberration, but it enhances the color contrast for planets like Jupiter and Saturn even with reflectors! I

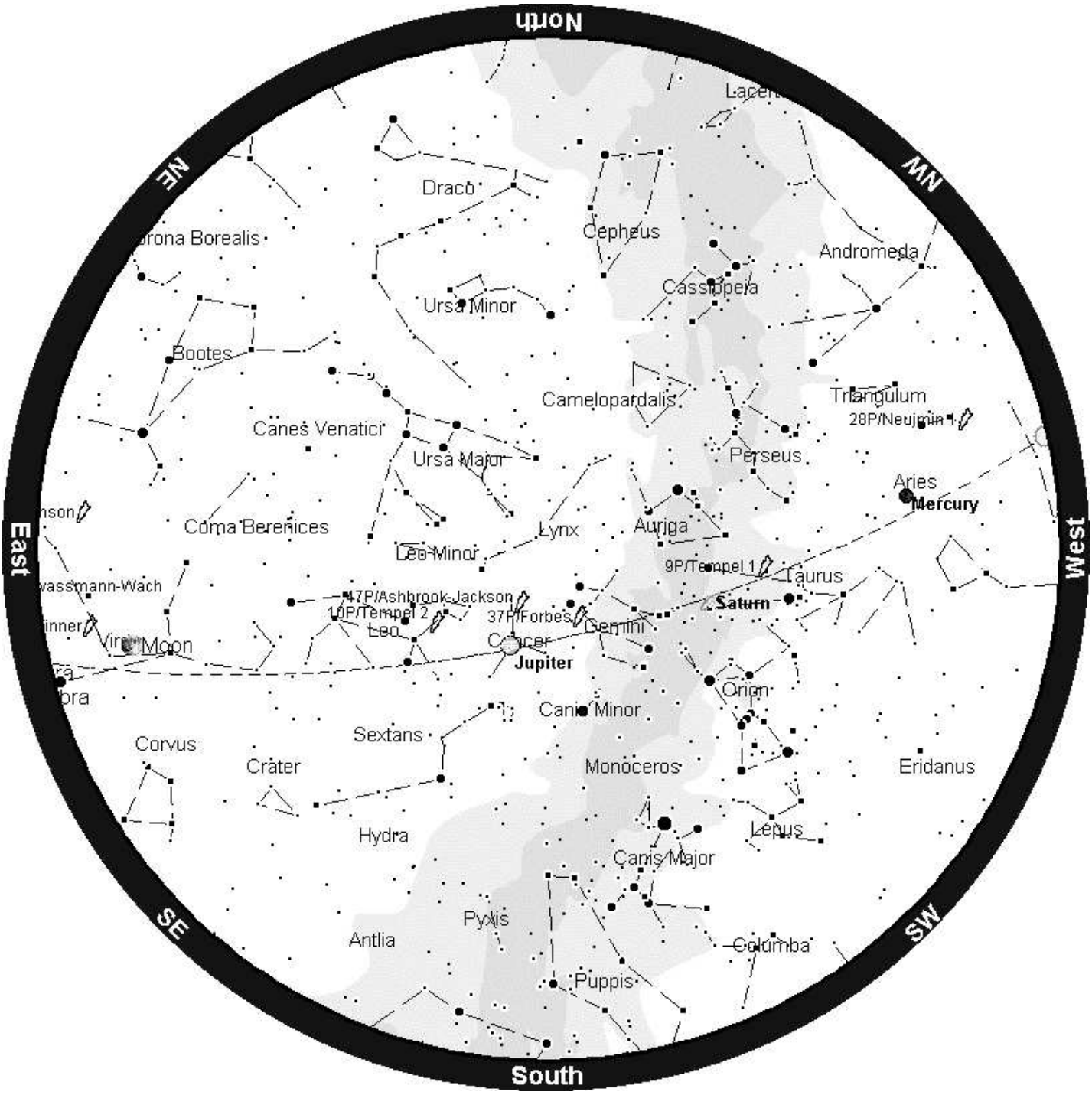
put it to its first test on Jupiter in my little 80mm f/5 refractor, which shows that violet halo at powers over 40x. With the filter in, the halo shrank in size by at least half, and the remaining halo was *much* fainter. It didn't eliminate the secondary color, but it sure helped a lot. More importantly, the color contrast of the belts improved noticably! The effect was similar to that when someone turns up the color saturation a little on a TV or computer monitor. On the moon, I usually don't use much power with my little 80mm f/5, as at higher powers, the violet becomes a faint overlying haze that leaks into dark shadows or onto some of the fine detail around the terminator, reducing the contrast of the image. With the NPC in place, that haze all but vanished, leaving a sharp fairly high contrast view. I could still see just a little edge color, but the view was noticably better than without the filter. What was most surprising is that the overall color balance remained almost the same as it had been without a filter. There might have been just a faint hint of a pale bluish coloration, but if you weren't looking for it, you probably wouldn't even notice it. The belts on Jupiter seemed to be a deeper more saturated orangish color, and the other fainter markings also seemed to have more color to them. At this point, we started doing some silly things with the 80mm f/5 to see just how far we could push the power and still get a reasonable view. Without filters, the little refractor starts to show a decline in overall performance beyond about 70x, and I rarely use it at even 100x. However, with the NPC filter in place, the image looked quite good at 100x and beyond. I put in the 2.5x TeleVue Powermate and my 4.9-7.9mm Speers Waler eyepiece with the NPC filter, making the whole telescope setup look rather comical! The combination of the star diagonal, Powermate, and the "Canadian Cannon" was nearly as long as the entire tube assembly of the scope itself! The darn thing looked a little like a big black letter "L" hanging ungainly off of my little EQ-1 equatorial mount. However, surprisingly, it worked better than I had anticipated. On Jupiter, I ran the scope from 127x with the Speers slide all the way in, to the mid-range point (156x), to as high as 204x with the slide out! The 204x image, while dim, held up fairly well, although realistically, I didn't see any more detail at 204x than I had at 156x. I could see the two equatorial belts and some of their irregularity with ease, two other belts, and the notable polar darkenings, along with the shadow of Io, which was transiting the planet. Again, I could see a little color excess of residual chromatic aberration especially towards the highest powers, but it was less than without the use of the NPC filter.

My little battery-operated clock drive on the EQ-1 mount was really straining to keep this configuration tracking properly, so I pulled the eyepiece and Powermate out and put them in my ten inch. I pointed the scope at Saturn and the view was nice and crisp as I let John have a look. Then, I put in the NPC and let him look again :-). His first word was, "WOW". At 178x and 288x, Saturn looked somewhat better and almost more crisp than it had without the filter. The detail was the same, but again, the color saturation and the belts looked just a bit better than without the use of the NPC. Even Saturn's disk looked a bit more orangish than I had ever seen it. We got out his 2 inch 2x Powermate and boosted the power up to 357x. Seeing was getting pretty good, as the equatorial band now seemed to have two parallel components. The darker polar cap and a slight hint of other detail on the disk of the planet were also visible. I boosted things to 440x and 576x with the Speers Waler, but got only occasional hints of the Encke Division. The B-ring showed its band-like inner segments where the brightness abruptly changes with radial distance from the planet. The A-ring showed the brighter inner-edge "ringlet" just outside the outer edge of Cassini's Division, and several moons were peeking out nearby. Without the filter the image looked pretty much the same, but for some reason, I liked the filtered view a bit better. This NPC filter has a fairly high overall transmission, so unlike some color dye filters, it doesn't dim the view all that much or radically shift the color balance. A few nights earlier, I had viewed the crescent moon with my 80mm f/5 refractor and the NPC filter, and even at 63x, I could still clearly see the fine patchy glow of Earthshine.

I then moved the ten inch back over to Jupiter. Io's shadow was still quite prominent near the middle of the disk, and there was a lot of fine detail visible at times, although heat from nearby house vents tended to fuzz up the view from time to time. Again, the NPC filter definitely improved the color contrast to a noticeable degree, making previously weak bands stand out with a more orangish color than I had ever seen them. The South Equatorial Band was highly detailed, with a couple of dark spots and one dark barge easily visible. Watching at 357x, I noted a tiny orangish spot on the equator in the somewhat broken narrow equatorial belt, but after some checking, I discovered that it was not a spot on the planet, but the disk of Io itself. We watched it move slowly for some time until Io finally began to clear the limb of Jupiter, appearing as a bright "dot" as it left Jupiter's disk. Interestingly enough, the 80mm f/5 refractor also was easily able to show Io's "bump" on the limb. In the ten inch, seeing was becoming even better, with so much detail visible that it would have been nearly impossible to draw it. Two fine belts were visible in the north temperate region, which had several condensations or patches in them. The southern temperate belt was somewhat easier to see, and also showed interesting irregular fine structure. Even the polar regions looked a little mottled. In the 80mm f/5 at low power, I could just get Jupiter and the Beehive in the same field of view, which, with the moons, made for a fascinating sight.

We looked at M42 mainly to see the Trapezium. The transparency was starting to decline, so the nebula wasn't all that great, but the Trapezium showed the 4 bright members plus the E and F components at 178x. We took a brief look at Rigel and its companion, and they resolved quite nicely in the ten-inch (about a 9.5 arc second separation). I tried for the companion to Sirius, but seeing was not the best at that altitude and I failed to get even a glimse of the "pup". After a last look at Jupiter, Saturn, and the moon with my StarMax 90 Maksutov, we packed it in and warmed up inside, happy to have gotten at least one night out under halfway decent skies.

April Star Chart



Events Calendar

April 2003

Sun	Mon	Tue	Wed	Thu	Fri	Sat
		1 Sun: 18:11 - 06:50	2 Sun: 18:09 - 06:51	3 Sun: 18:08 - 06:52	4 Sun: 18:06 - 06:53	5 Sun: 18:04 - 06:54 Hyde Observatory open to the public
6 Sun: 19:03 - 07:55 UNL Student Observatory Public Night; Astronomy Day	7 Sun: 19:01 - 07:56	8 Sun: 18:58 - 07:57	9 Sun: 18:56 - 07:58	10 Sun: 18:55 - 07:59	11 Sun: 18:53 - 08:01 The Moon passes 4° north of Jupiter.	12 Sun: 18:52 - 08:02 Hyde Observatory open to the public
13 Sun: 18:50 - 08:03	14 Sun: 18:48 - 08:04	15 Sun: 18:47 - 08:05	16 Sun: 18:45 - 08:06 Mercury Greatest Eastern Elongation	17 Sun: 18:44 - 08:07	18 Sun: 18:42 - 08:08	19 Sun: 18:41 - 08:09 Hyde Observatory open to the public
20 Sun: 18:39 - 08:10	21 Sun: 18:38 - 08:11	22 Sun: 18:37 - 08:12	23 Sun: 18:35 - 08:13 Moon 3° S. of Mars	24 Sun: 18:34 - 08:14	25 Sun: 18:32 - 08:15 Club Star Party	26 Sun: 18:31 - 08:16 Hyde Observatory open to the public
27 Sun: 18:30 - 08:17	28 Sun: 18:28 - 08:18	29 Sun: 18:27 - 08:19 PAC Meeting 7:30pm	30 Sun: 18:26 - 08:20			

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).

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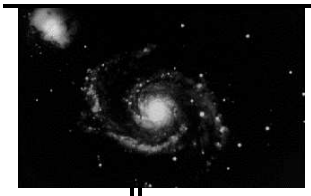

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First Class Mail

Next PAC Meeting
March 25, 2003
7:30 PM
Hyde Observatory