



The Prairie Astronomer

The Official Newsletter Of The Prairie Astronomy Club, Inc.

September 2002

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 NEB-STAR www.neb-star.org

SEPTEMBER PROGRAM

September program: "How Far Can You See? The Limits of Visual Observing" -- Dr. Bradley Schaefer, University of Texas.

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.

CLUB EVENTS

UNL Student Observatory Open House
Friday, September 20, 2002

PAC Meeting 7:30pm Hyde Observatory
Tuesday, September 24, 2002

Mahoney Star Party
Friday, September 27, 2002

Club Star Party
Friday, October 04, 2002

PAC/OAS Banquet
Friday, October 11, 2002 Mahoney

UNL Student Observatory Open House
Friday, October 25, 2002

PAC Meeting 7:30pm Hyde Observatory
Tuesday, October 29, 2002

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:

Secretary's Report - By Lee Taylor	Page	2
Hyde Schedule	Page	3
Fun With Small Scopes- By Dave Knisely	Page	3
J. Williams Donates Books to PAC Library	Page	5
Star Chart	Page	6
Events Calendar	Page	7
Club Viewing Site Directions and List of Club Officers	Page	8

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 August 27, 2002

President Dave Knisely opened. We have two new members, Bob Kacvinski and his son Karl, welcome to the club.

The ninth annual Nebraska Star Party (NSP9) was from Aug. 4-9 at Merritt Reservoir. We had another great year, as Dave Knisely points out in his review. More than 400 people attended with more than 50 'scopes.

The 10th annual Nebraska Star Party will be held July 27-Aug 1, 2003. Meetings are tentatively scheduled for the 2nd Thursday of each month at Mahoney State Park.

Venus is a great early evening object for the next few months. For the early risers, Saturn is a great morning object.

The sun has been very active recently, still putting on a good show after solar maximum.

The next club star party will be Friday, Sept. 6 at Olive Creek.

On Saturday, Sept. 7, Washiska Audubon Society will be hosting its annual Prairie Festival at Spring Creek Prairie south of Denton. For more info, contact Erik Hubl.

Jeré Williams, in his will, left PAC a significant collection of books and binoculars. The books have been placed in the PAC library for anyone interested in borrowing them. Erik Hubl has placed a list of them on the PAC website. If you wish to borrow any book from the PAC library, contact our librarian, Dave Brokovsky.

Brad Shafer will be here for our next meeting on Tuesday Sept. 24 and will be providing a colloquium at UNL on Wednesday the 25th from 7:30 to 9:00 PM.

The next Mahoney Star Party will be on Friday Sept. 27, 2002 on the driving range of Mahoney State Park.

The PAC fall banquet will be Friday, Oct. 11 at the Riverview Lodge in Mahoney State Park. You should be receiving an invitation from Larry Hancock. The charge is \$8.00 per person.

The next public night at the UNL student Observatory will be Friday Oct. 25.

If you have completed any of the Astronomical League's observing programs recently, contact our observing chair, Jeff King with your observations and notes for proper recognition.

Our Program Chair, Brian Sivill is always looking for new ideas for programs. If you've done something interesting relating to astronomy recently and would like to talk about it, contact Brian. He'll be more than happy to talk to you.

Hyde Memorial Observatory will be celebrating its 25th anniversary this November. If you have any interesting photos, news clippings, etc. about Hyde over the years, contact Jack Dunn, who is putting together a history of Hyde for the celebration in November.

On Saturday Sept 14, Hyde Volunteer Coordinator, Dave Churilla will be hosting a Lunar Star Party. Club members are invited to bring out their 'scopes to show everyone the moon and inform the public what we know about it.

Club Treasurer Liz Bergstrom reports that we are down to 35 mailed newsletters. We're still printing 100 for the bulk discount. The unmailed newsletters make great handouts at Hyde for beginners interested in joining the club or just learning about astronomy.

Joe Vocht, our new club publicist, has been very active the past month, speaking to several organizations about how best to get information about our meetings and events out to the public.

Brian Sivill moved to adjourn to the program, and Liz seconded.

Dave Knisely and John Lammers gave us great demonstrations and speeches about their new equipment. A new Maksutov for Dave and a pair of 12x50mm Binoculars for John. Thanks guys.

Respectfully submitted by,

Lee Taylor

Hyde Observatory Volunteer Schedule

Date	Team Leader	Operators		Supervisor	Events
Winter Hours (7:00 PM to 10:00 PM)					
October					
10/5	Bill Wells	Justin DeVries	Lynda Beck	Dave C	Hyde Star Party
10/12	Dave Churilla	Steve Lloyd	Joey Churilla	Brian S	
10/19	Jeff King	Jeff Campbell	AJ Benker	Dave S	
10/26	Dave Hamilton	Dan Delzell	Jared Delzell	Rick J	
November (Tentative)					
11/2	Brian Sivill	Karla Bachman	Justin Devries		
11/9	Jeff King	Lynda Beck	Steve Lloyd		
11/10 *	Bill Wells	Josh Machace	AJ Benker	Dave C	25th Anniversary
11/16	Dave Hamilton	Dan Delzell	Jared Delzell	Brian S	
11/23	Dave Churilla	Bob Leavitt	Joey Churilla	Rick J	
11/30	Bill Wells	Jeff Campbell	Steve Lloyd	Dave H	
* Open 7 to 11 PM (Guests including dignitaries)					

Fun with Small Scopes — David Knisely

DATE: September 3rd, 2002, 0430 to 0800hrs UTC.
LOCATION: Rockford Lake S.R.A. 40.227N, 96.580W, 1400 ft (427m) elevation.
INSTRUMENTS: 10 inch f/5.6 Newtonian, 59x, 100x, 178x, 288x.
80mm f/5 Celestron Refractor, 17x, 67x, 100x, 127x, 156x.
Orion StarMax 90mm EQ Maksutov-Cassegrain, 42x, 50x, 52x, 83x, 125x, 195x.
CONDITIONS: Clear, Temp. 68F (20C), Wind W.N.W. at 2 to 5 mph.
UNAIDED EYE LIMITING MAGNITUDE (zenith): 6.6
MEAN SEEING: 1" arc (Antoniadi II).

OBSERVATIONS: I have been playing around with Orion's little "StarMax 90 EQ" 87.5mm aperture Mak-Cass which I had purchased for solar H-alpha viewing, so with clear skies, I decided to see what it could do at a dark sky site. I had been writing a review of it for Cloudynights, so I thought I would finish things off with an evaluation of its deep-sky potential. It turns out that it has *plenty* of deep-sky potential, as it surprised me several times. My first target was M11, and both the StarMax and my 80mm f/5 refractor did a wonderful job of resolving the cluster even at only 50x. The view at 125x was beautiful, with between 100 and 200 faint stars being visible. The little Mak-Cass can only produce a 1 degree field of view, but it still seemed to be having little trouble with the things I tried with it. Next stop was M13, and would you believe it, the darn thing started to show stars on the edges at only 50x! 125x did a better job at showing a large number of faint stars in the cluster, although the core was mostly unresolved. In fact the little scope showed more stars with better star images than the 80mm f/5 did, which was kind of what I had expected. I had engaged the little scope's add-on "clock drive" (a little regulated DC motor powered by a 9 volt battery) so it was a lot easier to observe the cluster with the Mak than it was with my undriven 80mm f/5, although the refractor will go on the Mak's EQ-1 mount if I want to use it that way.

Next, the Ring Nebula's "smoke-ring" form was shown well in both telescopes, with the StarMax 90 revealing the faint 13th magnitude star which sits just east of the Ring. M27 fell to the Mak-Cass next, and showed the "apple-core" form quite well. I put in the UHC filter and noticed that hints of the outer "wings" which are often seen with filters and larger apertures began to show up, once again proving that filters are not just for large scopes.

After these fairly easy trials, I decided to try something just a tad more difficult, namely, the Veil. I hate the little finder that comes with the StarMax 90 (a tiny 6x20 "image-correct" finder), but I still managed to find 52 Cygni and locate the west half. It appeared as a very faint almost linear wisp through the star, but with the UHC or OIII filters, became larger and longer. Moving northeastward, I ran into the main arc, and it looked like the way the band of the Milky Way does to the eye (even without a filter). With a filter, a few hints of the filamentary structure could be seen, and the object appeared much sharper, although it was still quite dim.

By now, the ten inch had been sitting by itself for quite a while looking a bit lonely, so I thought I would re-observe an object I had looked at during my research on the effects of filters on nebulae, IC 1396. It is a very large nebulous cluster a little south of the orangish star Mu Cephei, and in the 80mm f/5 at 17x, it nearly filled the 3.5 degree field with a faint patchy glow using the UHC filter. It has a vague dark inclusion from the north and another one from the west, with some brightness variations. In the ten inch, I could see more light and dark detail using the UHC filter but the 1 degree field of my 27mm Kellner in my Lumicon Multifilter selector meant I had to pan around to get the whole view. There was some almost sinuous dark detail in the object which had to be studied for a while to be appreciated. The OIII filter killed off much of the outermost nebulosity and dimmed the rest, but seemed to provide more contrast, making the dark masses within the nebula stand out a bit more. It would appear that the UHC filter is best for this dim object, although the OIII helps to some degree. The cluster itself is shaped a little like an old "Y" shaped divining rod and is large and somewhat scattered. The center star of the group is a nice 5th magnitude triple star (HD 206267) with 8th magnitude companions to the north and southeast. However, the rich Milky Way background seemed more interesting in much of the area.

Next on my list was the "Crescent Nebula", NGC 6888 in Cygnus. It is quite faint, but is really helped by filters, especially the Lumicon UHC and OIII. Without filters, it appears as a dim diffuse arc going through the 7th magnitude star HD 192182 with hints of other nebulosity to the south, but with filters, it became a large ear-shaped oval. The OIII provided the greatest contrast, showing much interior dark detail and filling out the oval form, although much of this nebular detail was also visible in the UHC filter. I glanced over at the Orion StarMax 90mm EQ with its little clock drive humming away, and thought, "I wonder if this is visible in that scope?" Not to be one to write-off a scope due to aperture limitations, I went over and found the field of the Crescent. Sure enough, at 50x, the faintest wisp of the arc through the 7th magnitude star was visible in the little Mak-Cass! It was a little better with the UHC filter, but it was visible without one (not bad for a scope purchased mainly for solar work!).

As the night progressed, I became more and more impressed with that little Mak-Cass. I turned it to M31, and wonder of wonders, at 42x it actually looked pretty nice! By moving the scope around, I could see the entire 3 degree span of the galaxy, along with M32 and M110 sitting nearby. In fact, the dark drop-off of the darkest of the dark lanes was visible along the southwestern side along with the faintest puff of the star cloud NGC 206 in the southwestern arm. The general curve of the southwestern arm was visible along its outermost edge, although the arm itself was not showing up well as a distinct feature. The northeastern end of M31 also appeared rounded, but was considerably more diffuse than the southwestern end. The bright nearly stellar core of M31 was also easily visible.

With that under my belt, I decided to try M33. It too was visible as a large very dim diffuse hazy area with a brighter middle, and it nearly filled the field at 42x. At times, I could get hints of mottling, but otherwise, little other detail was visible.

I moved over to Gamma Andromeda, and the little scope showed this lovely double star quite well, with its yellowish primary and bluish companion. I had Megastar running on the laptop, and the faint edge-on spiral galaxy NGC 891 had been on the screen, so I thought, "I wonder if... NAAA, it CAN'T reach THAT faint!". Well, 3.5 degrees to the east of Gamma was where I went with the little Maksutov-Cassegrain, and low and behold, near the limit of vision was a small very faint streak! BINGO! The ten-inch was getting ignored again, as the small scope was really strutting its stuff.

More challenges awaited the little Maksutov. I went after NGC 6543, the "Cat's Eye", and found it easily, appearing as a tiny bluish oval. At times at 195x, I thought I caught a glimpse of its 11th magnitude central star. With planetary nebulae on my mind, I went back down south to try for the Helix NGC 7293 in Aquarius. Yup, found that one too (and without a filter too, although the filters did bring up the contrast just a tad). The large galaxy NGC 253 in Sculptor fell next to the Mak-Cass, showing up as an elongated cigar-shaped patch with a brighter middle. These were *supposed* to be challenge objects, but the StarMax 90 was having them for lunch! It didn't show much detail in them, but at least the little scope *was* showing them! I noticed that the Double Cluster was high in the sky, so again, I put the little Mak to the test, expecting a fair view of the clusters at 42x. What I got was a razor-sharp eyeful of both rich clusters and their outer halos of faint stars, which I had previously only noted in my 80mm f/5. The view was simply stunning, with hundreds of pin-point stars glittering in a nice black field. With this kind of performance, its pretty clear that, under a dark sky and with a careful observer, the StarMax 90 should put the Messier objects within easy reach (and maybe a lot of the Herschel 400's too). Saturn had risen above the trees to the east, and M1 was not far away, so once again, the StarMax 90 went to work. The Crab appeared as its usual dim diffuse irregular patch, showing little detail, but at least showing up! Saturn was next, and at 125x despite poor seeing, Cassini's Division, the diffuse equatorial belt, and 3 moons were visible. I tracked down the "close" double Epsilon Arietis (separation 1.4 arc seconds), and it resolved nicely at 195x, although the Airy disks were overlapping to some degree. This scope is no Questar (has just a bit of astigmatism), but overall, it does all right.

The eastern sky began to brighten, and it was only then that I noticed that the crescent moon had come up. I began to put stuff away, but then I stopped and took the StarMax 90 out away from my van to a point where the trees would not interfere. Its clock drive was starting to sag after logging about 31 hours of battery operation, but I just had to get a quick

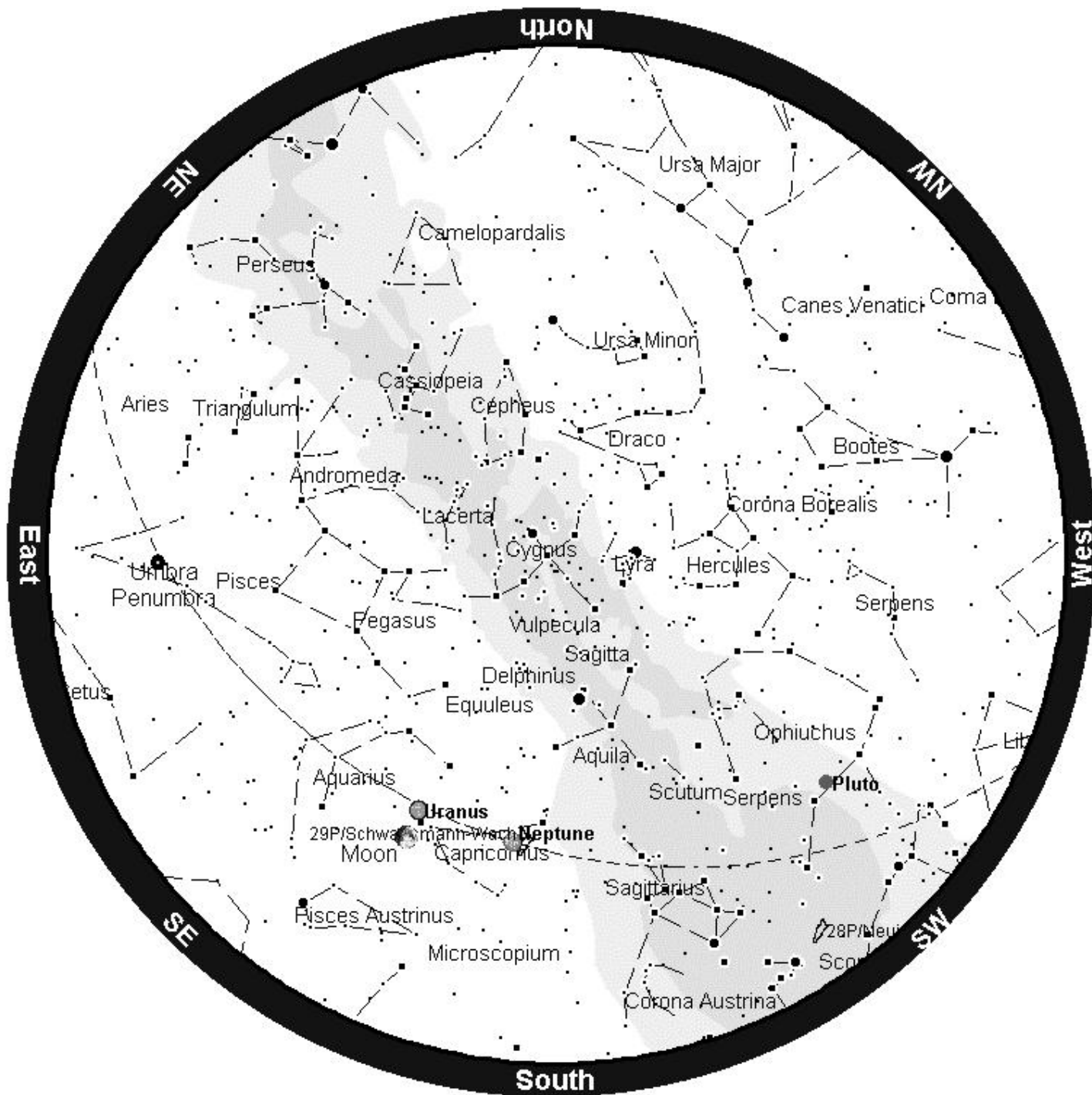
look at the moon. The waning battered crescent with Earthshine was simply wonderful at 50x in the little Mak-Cass, putting a fitting end to a night where aperture was not necessarily "king".

J. Williams Donates Books to PAC Library— Erik Hubl

These books were donated to the Prairie Astronomy Club, as directed in his will, by J. Williams.

Title	Author(s)	Copyright
Popular Science Library - The Story of the Starry Universe	David Todd	1939
This is Astronomy	Lloyd Motz	1958
Time - Life Science Library	Samuel Goudsmit / Robert Claiborne	1966
The Universe - Time/Life Books	David Bergamini	1966
Beyond the Observatory	Harlow Shapley	1967
Astronomy 2nd Edition - Univ of Oregon	E.G. Ebbighausen	1971
The Collapsing Universe - The Story of Black Holes	Isaac Asimov	1977
Discovering Astronomy	Jacqueline & Simon Mitton	1982
Comet	Carl Sagan / Ann Druyan	1985
Planet Earth	Jonathon Weiner	1986
The Planet Earth - World Book Encyclopedia of Science	Dougal Dixon	1987
The Heavens - World Book Encyclopedia of Science	Robin Kerrod	1987
The Constellations - An Enthusiat's Guide to the Night Sky	Lloyd Mutz / Carol Nathanson	1988
Observing The Constellations - An A-Z Guide for the Amateur Astronomer	John Sanford	1989
The Far Planets - Time/Life Books	George Constable	1990
The Arrow of Time	Peter Coveney and Roger Highfield	1990
Celestial Delights - Best Astronomical events through 2001	Francis Reddy & Greg Walz-Chojnacki	1992
The Light at the Edge of the Universe	Michael D. Lemonick	1993
Telescope Power - Fantastic Activities and Easy Projects for Young Astronomers	Gregory L. Matloff	1993
Sky Watchers Handbook - Expert Reference Source	James Muirden	1993
Astronomy 4th Edition A self teaching guide	Dinah L. Moche	1993
Picture Atlas of our Universe - National Geographic	Roy A. Gallant	1994
Astronomical Calendar	Guy Ottwell	97,98,99,01
RASC Handbook	RASC	1992
4 Astronomy Magazines		
1 Sky & Telescope		

October Star Chart



Events Calendar

October 2002						
Sun	Mon	Tue	Wed	Thu	Fri	Sat
		1 	2 	3 	4 	5 
		Sun: 07:23 - 19:10	Sun: 07:24 - 19:08	Sun: 07:25 - 19:07	Sun: 07:26 - 19:05 Club Star Party	Sun: 07:27 - 19:03 Hyde Observatory open to the public
6 	7 	8 	9 	10 	11 	12 
Sun: 07:28 - 19:02	Sun: 07:29 - 19:00	Sun: 07:30 - 18:57	Sun: 07:31 - 18:55	Sun: 07:32 - 18:54	Sun: 07:33 - 18:52 PAC/OAS Banquet	Sun: 07:34 - 18:50 Hyde Observatory open to the public
13 	14 	15 	16 	17 	18 	19 
Sun: 07:35 - 18:49	Sun: 07:36 - 18:47	Sun: 07:37 - 18:46	Sun: 07:38 - 18:44	Sun: 07:39 - 18:43	Sun: 07:41 - 18:41	Sun: 07:42 - 18:40 Hyde Observatory open to the public
20 	21 	22 	23 	24 	25 	26 
Sun: 07:43 - 18:38	Sun: 07:44 - 18:37	Sun: 07:45 - 18:35	Sun: 07:46 - 18:34	Sun: 07:47 - 18:33	Sun: 07:48 - 18:31 UNL Student Observatory Open House	Sun: 07:50 - 18:30 Hyde Observatory open to the public
27 	28 	29 	30 	31 		
Sun: 06:51 - 17:29	Sun: 06:52 - 17:27	Sun: 06:53 - 17:26 PAC Meeting 7:30pm Hyde Observatory	Sun: 06:54 - 17:25	Sun: 06:55 - 17:24		

**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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First Class Mail

**Next PAC Meeting
September 24, 2002
7:30 PM
Hyde Observatory**