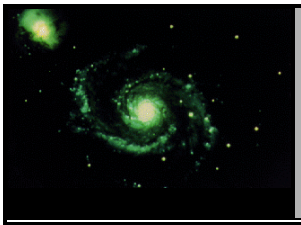

The Prairie Astronomer

The Official Newsletter Of The Prairie Astronomy Club, Inc.

February 2006 **Volume 47 Issue #2**

Internet Addresses

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

Club Events

Club Star Party
Friday, February 24, 2006

PAC Club Meeting
"Observational Astronomy"
Tuesday, February 28, 2006 7:30pm
Hyde Observatory

PAC Club Meeting
Tuesday, March 28, 2006 7:30pm
Hyde Observatory

Club Star Party
Friday, March 31, 2006

Mahoney Star Parties
May 19, June 16, July 14, August 18, September 15.

Nebraska Star Party
July 23-28, 2006

Program

February Meeting: "Observational Astronomy" UNL student Taylor Chronis has been doing fine astrophotography for several years in the Kansas City area. Taylor will present some of his work and techniques to the Prairie Astronomy Club on February, 28,2006 at approximately 8 p.m. There is no admission fee for Taylor's talk.

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**

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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 $30/yr, Family $35/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 Ron Veys called the meeting to order. There were approximately 15 visitors. Ron discussed upcoming club events:

The next club star party will be held February 24 at Jim Kvasnicka's family farm.

- The next club meeting will be Tuesday, February 28. The program will be "Observational Astronomy" by Taylor Chronis.
- The Mahoney Star Parties are scheduled for May 19, June 16, July 14, August 18, and September 15.
- The Beginning Astronomy class will take place in April 2006. The dates are Wednesday, April 5, 12, 19, and 26.
- Astronomy Day will be May 6 this year. This is also National Astronomy Day and UNL graduation day.
- The City of Lincoln will rededicate Holms Park on June 10 to commemorate the completion of the park renovation. This event will take place from 5 PM to 8 PM, followed by an observing session at Hyde.

The IMAX theater at the Henry Doorly Zoo is showing "Magnificent Desolation, Walking On The Moon" by Tom Hanks and the SAC Museum has the Liberty Bell 7 space capsule on display. PAC and OAS have decided to sponsor a group outing to take in both events on Sunday, February 12. Names of those interested in the event were taken at the meeting and an announcement will be sent to the PAC list.

Treasurer's report: Lee Thomas reported that there is $575 in the main PAC checking account. He reported that our savings accounts and CD's earned $560 in interest last year. Lee mentioned that it is time for the annual PAC audit and that a member-at-large from the club is required on the audit team according to club bylaws. Steve Lloyd volunteered to participate in the audit.

Hyde Observatory is open Saturdays from 7:00 to 10:00 pm. If you'd like to help at Hyde, contact volunteer coordinator Dave Churilla.

Ron reviewed upcoming observing highlights for the month of February.

The meeting was adjourned to the program. Brian Sivill presented the program "Learn To Use Your Telescope" after which club members helped several visitors with their scopes.

Submitted by,
Bob Leavitt

Club Telescopes – Checkout Policy

To check out one of the club telescopes, contact Mark Dahmke (475-3150) or mdahmke@4w.com. If you keep a scope for more than a week, please check in with Mark once a week, to verify the location of the telescope and how long you plan to use it. The checkout time limit will be two weeks, but can be extended if no one else has requested use of a club scope.

Hyde Observatory Volunteer Schedule

Date	Team Leader	Operators		Supervisor	Events
February					
2/25/2006	Bill Wells	Josh Machacek	Dave Hamilton	Jack Dunn	
March					
3/4/2006	Dave Churilla	Jim Kvasnicka	Joey Churilla		
3/11/2006	Bill Wells	Josh Machacek	Bob Kacvinsky		
3/18/2006	Dan Delzell	Steve Lloyd	Mitch Paine		
3/25/2006	Jeff King	Bob Leavitt	David Hamilton	Steve Lloyd	
April					
4/1/2006	Bill Wells	Joey Churilla	Mitch Paine	Dave Churilla	
4/8/2006	Dan Delzell	Josh Machacek	Dave Brokofsky		
4/15/2006	Jeff King	Steve Lloyd	Jim Kvasnicka		
4/22/2006	Jeff King	Bob Kacvinsky	Dave Hamiton		
4/29/2006	Bill Wells	Josh Machacek	Dave Brokofsky		
Summer Hours: April through September (Sundown to 11:00 PM)					
Winter Hours: October through March (7:00 PM to 10:00 PM)					

Filters and The Winter Sky– David Knisely

DATE: January 25th, 2006, 0200 to 0400 hrs UTC.
LOCATION: Rockford Lake, Nebr. 40.224N, 96.578W, 1400 ft (427m)
elevation. INSTRUMENTS: 100mm f/6 Orion SkyView Pro refractor: 15x, 30x,
43x, Lumicon UHC, OIII, and H-Beta filters.
CONDITIONS: Clear, Temp: 33F, Wind calm. UNAIDED-EYE ZENITH LIMITING
MAGNITUDE: 6.7 SEEING (above 45 deg. altitude): 1 arc second
(Antoniadi II).

OBJECTS OBSERVED: M44, Saturn, M31, M42/43, NGC 2024 (Flame Nebula), NGC 2023, IC 434 (Horsehead), Sh2-276 (Barnard's Loop), Sh2-264 (Lambda Orionis nebular complex), NGC 2237/44 (Rosette Nebula), IC 2177 (Seagull Nebula), NGC 2264 (Christmas Tree Cluster + nebulosity Sh2-273), NGC 2359 ("Duck" or "Thor's Helmet), M46, M47, NGC 2362, NGC 2438, M81, M82, NGC 3077, NGC 2903

OBSERVATIONS: I had felt the need for a little more "filter research" on some fainter objects, so I debated about which scope to take out to my remote site near Rockford Lake. Finally, with the arrival of John Lammers, I decided to skip the NexStar and just take my SkyView Pro 100mm f/6 refractor plus all my filters out to the lake. It turned out to be an excellent night which really showcased the abilities of that small but very capable instrument. On arrival, the Zodiacal Light's massive cone of misty light greeted my eyes from near the western horizon to very near the Zenith even though I was not yet fully dark adapted. A quick look to the east to where Saturn was brought a little momentary hesitation, as it looked like there was a little haze in the area. I soon quickly realized that it wasn't haze: it was the Beehive! Saturn was sitting right next to it, so that would be the first target once the little refractor was set up. The view with my 40mm Mk-70 Konig was stunning, with brilliant Saturn sitting right on the edge of that wonderful cluster of stars. I moved the scope rapidly west

to check out M31, and was once again rewarded with a very nice view of the galaxy and even some of its spiral structure. With averted vision even at 15x, I could see a little of the broad curve of the southwestern spiral arm that contains several irregular star clouds. Well beyond this arm, the galaxy's glow continued for some distance. The northeastern arm was only hinted at, but again, the galaxy looked huge even in the 4.39 degree field of the 40mm Mk-70 Konig. The Pleiades were also nice, with the faint broad fan of the Merope Nebula being visible even without a filter.

Once this was out of the way, it was time to get back to a little research. On the amastro mailing list, there were a few reports about the use of the OIII filter on some objects which, in my earlier object survey, I had concluded were not helped by that filter. I decided to use the narrowband and line filters with my unaided eye to observe a number of objects like Barnard's Loop, the Lambda Orionis Complex, and the Rosette. I set myself in the darkened interior of my minivan with the side door open and the weak ambient light of the sky and terrain shielded by my gloves. I first used the UHC filter and looked up through it at Orion. I could see M42 somewhat better, but my real target had been Barnard's Loop, and true to form, it did appear, at least partially. It was quite faint and the main section that runs above and a little to the left of Orion's belt was the only part that was seen with little doubt. I could not see any firm signs of faint nebulosity around Lambda Orionis, although with the number of stars in that part of the sky, it was difficult to tell if there was anything there. However, the "fuzzy cotton ball" of the Rosette was quite easy to make out east of Orion. With the OIII filter, M42 was still enhanced, but no sign of either Barnard's Loop or the Lambda Orionis complex was seen. The Rosette was still visible, although it looked somewhat fainter than it had in the UHC. Last of all, I held up the H-Beta, and this filter made a real difference. Barnard's Loop promptly reappeared, and while still quite faint, it definitely showed up better than in the UHC, with indications of the full curve visible with averted vision and some study. Also, Lambda Orionis now had a large very faint irregular glow around it (Sh2-264 et al). I had first stumbled into this nebula for the first time several years ago while playing around one night with a hand-held H-Beta, but with the mailing list's comments about the OIII, I had still wanted to confirm my earlier conclusion that the nebula was still best seen in the H-Beta. I had some difficulty seeing the Rosette with the H-Beta, so the UHC once again was the "filter of choice" for that object, at least for the otherwise "unaided" eye.

It was time to go back to the scope and give John a little "eye candy" for his trouble in keeping me company in the cold. I put in his 20mm Nagler and the UHC filter and blew John away with M42. This has to be one of the best combinations for this object, as the 2.6 degree field at 30x framed the central sword of Orion beautifully. The wide wings of light on the eastern and western sides and the huge southern loop were seen quite well, along with some nice detail in the core area. I swept up to Zeta and the Flame Nebula (NGC 2024) was almost shockingly easy, although I usually don't use anything but the Deep-Sky filter for this one. The nebula appeared fairly irregular as if made of two adjacent sections touching near the middle. Nearby, I could just glimpse a faint glow running south from Zeta (IC 434) with the little "fuzz ball" of NGC 2023 sitting next to it. I could not see the Horsehead itself using the UHC, but with some more fumbling, I got the H-Beta in the scope. Now, IC 434 was much more definite, and at 30x, I got glimses of the dark gap of the Horsehead with averted vision. The detail was near the limit of vision, but at times, the gap was unmistakable even to John's eyes. Not too bad for only a 4 inch refractor!

With this under my belt, I thought I would try to look at some of the sections of Barnard's Loop in the refractor and do a little more "filter switching". I dropped the power back to 15x and with the 40mm's 4.39 degree field, I thought I would see something long, faint, and narrow with the H-Beta. Boy was I wrong. That thing is FAT and rather nicely detailed! The segment I happened to have the scope first pointed at filled a good portion of that 4+ degree field with faint but quite definite nebulosity, perhaps nearly two degrees in width in places. By panning around, I could follow much of the Megastar plotted length of the loop from its narrow beginning on to its somewhat irregular and diffuse southern end. The section near 51 Orionis starts out like a narrow

twisted horn-like filament with some interesting structure, but soon broadens and begins an irregular turn toward the south. A number of bay-like dark intrusions were seen along its length, and the section due east of Zeta has a weak concentration of faint stars running across it, as if there is a large diffuse star cloud there. I could follow the loop on south to near -4 degrees declination where it seemed to fade away. Further south, there were a few large very faint diffuse glows in a broad area continuing the loop on to the south, but they were fairly marginal when compared to the northern sections of the loop. Overall, Barnard's Loop is a somewhat easier and more interesting a target than the California Nebula, and I will have to remember to visit it more often with my little refractor. I also tried both the UHC and OIII filters on the loop, and while portions of it were just detectable in the UHC, the OIII filter largely made it vanish.

The Rosette was our next target, and as luck would have it, John said he had had little trouble seeing it in the refractor with his 20mm Nagler even before I had put in the UHC filter. With the UHC, it gained considerable contrast and detail, showing its usual irregular wreath-like form with some interesting dark lanes woven through the glow. I put in the OIII and the contrast improved, but John still said he liked the view through the UHC somewhat better. I cut the power and tried the two filters on John, but he still liked the UHC, so after viewing things myself, I changed my entry on the Rosette in my survey to put the UHC as the recommended filter with the OIII as a very close second. From areas with more skyglow, the OIII would probably be the filter of choice, but from dark skies, the UHC showed a larger area of nebulosity at a slightly higher brightness level.

From there, it was on to the "Seagull Nebula" (IC 2177). This one continued to be a bit of a puzzle as far as nebula filters are concerned. The improvement in visibility with filters was not quite as much as is seen with an object like the Rosette, but filters do help this one. At my lowest power (15x), the UHC, OIII, and H-Beta all helped to some degree, but it was rather hard to say which one helped the most. Without a filter, the nebula was barely visible as a dim north-south arc-like streamer in a rich starfield. With filters, it increased in length and width, showing stronger curves on the ends and the "head" of Sh2-292 showing up as a discreet feature. With John's 20mm Nagler, the H-Beta filter seemed to have the edge in contrast over the OIII, but the UHC still showed a bit more nebulosity over a wider area than either of the other two filters. The "head" section (Sh2-292) seemed a bit better in the H-Beta but was still easily seen in the other two filters.

I moved the scope up to "The Christmas Tree" Cluster, NGC 2264, and with the UHC filter, I did note a faint glow over much of the cluster which was brightest just south of the cluster's brightest star S Monocerotis. I then showed John the two Messier Clusters M46 and M47, and while he thought they looked nice, its kind of hard not to have wished that I had taken the NexStar out with me. I could see the small planetary nebula NGC 2438 on the northern edge of M46, but I put in the UHC filter and John saw it with no difficulty (he had a little trouble making it out from the stars without the filter). M46 was surprisingly rich even at 30x in the 100mm f/6 refractor, while M47 was more sparse but had brighter stars. Ranging around the areas brought in a number of clusters most of which I didn't bother to identify, so this is kind of the "happy hunting ground" for winter groups.

About halfway between M47 and the Seagull Nebula is another nebula I have heard called "Thor's Helmet", "The Duck Nebula", and maybe the "I can't find it" nebula (NGC 2359). For me, this one was sort of masquerading as an open cluster at 15x as it did look a bit like the dozens of small clusters in the area, but with the use of the UHC filter, its identity became obvious. With the filter at 30x, it appeared as a somewhat oval or rectangular fuzzy patch with a bit of a narrow protrusion on the southern end (the "Duck's" head and beak). The central ring or bubble-like form in the main part of the nebula that I am used to seeing in larger apertures with filters was not well shown unfortunately. However, around and running away from it were several *very* faint diffuse plume-like patches which I have seen in images of the area, so with these, the "Duck" may have some wings! These were somewhat startling to see, as I have only glimpsed them before in

my 10 inch, so maybe all I needed was lower power. I moved the scope down to Tau Canis Majoris (NGC 2362), but while it looked interesting, the lack of aperture and lower power only showed a handful of the stars I am used to seeing in my NexStar.

Since John had to be up early for work the next morning, I decided to finish things off with a few early spring galaxies. I hit M81, M82, and NGC 3077. All three fit nicely in the 2.6 degree field of John's 20mm Nagler, with M81 showing faint hints of the arm structure, especially the sections of the arm north of the nuclear region I like to call, "the box". M82 barely showed the largest of its central dark patches, while NGC 3077 was merely a small faint glowing oval with a couple of 8th magnitude stars next to it. I moved the scope over to Leo for NGC 2903, and surprisingly, the central bar-like feature was visible even at 30x with the 4 inch.

I started putting things away, which made me thankful that I didn't take out the NexStar in the cold, as teardown didn't take very long. One thing this night has really proven is that under a halfway decent sky, a small scope can take you a lot farther than some people might claim.

Beginning Astronomy Class – Bob Leavitt

Did you ever want to learn how to use a telescope? To know more about objects in the night sky? Prairie Astronomy Club members will cover topics including stars, planets, constellations, galaxies, telescopes, navigating the night sky, and more. This course is geared for novices. In the classroom there will be interesting multimedia presentations to help you understand and appreciated the wonders of the night sky. Out under the stars you will learn how to use sky charts, binoculars, and telescopes through fun and interactive group activities.

Observing sessions will use telescopes provided by the Prairie Astronomy Club. Any students who own their own telescopes or binoculars are encouraged to bring them to class. You will receive friendly, knowledgeable help from members of the club, who understand the challenges faced by beginners.

Thinking about purchasing a telescope? We can provide lots of tips on what to look for when shopping for one.

The class takes place on four Wednesday evenings in April at Hyde Memorial Observatory on the south side of Holmes Lake in Lincoln, Nebraska. Class will be held from 7:00 - 8:30 pm, with an observing session from 8:30 - 9:30 pm.
(If more than one observing session is clouded out, it will be rescheduled.)

- Dates: Wednesdays, April 5, 12, 19, and 26 Time: 7:00-9:30 pm.
- Registration: $20 / person / 4 sessions.
- Preregistration required and class size is limited.
- Registrations must be received by April 3.
- Make checks payable to the Prairie Astronomy Club, and mail to:

Pioneers Park Nature Center
2740 ‘A’ St.
Lincoln, NE 68502

For further information contact Bob Leavitt at 488-5335 or Dave Churilla at 467-1514, or send a message to info@prairieastronomyclub.org.

Events Calendar

March 2006

Sun	Mon	Tue	Wed	Thu	Fri	Sat
			1 Sun: 07:00 - 18:16	2 Sun: 06:59 - 18:17	3 Sun: 06:57 - 18:18	4 Sun: 06:55 - 18:20 Hyde Observatory Open to the Public
5 Sun: 06:54 - 18:21 Jupiter app. dia. 40 sec.	6 Sun: 06:52 - 18:22 Moon close to Mars	7 Sun: 06:51 - 18:23	8 Sun: 06:49 - 18:24 Mars close to Aldebaran	9 Sun: 06:48 - 18:25	10 Sun: 06:46 - 18:26	11 Sun: 06:44 - 18:27 Hyde Observatory Open to the Public
12 Sun: 06:43 - 18:28	13 Sun: 06:41 - 18:30	14 Sun: 06:39 - 18:31	15 Sun: 06:38 - 18:32 Mercury closest approach	16 Sun: 06:36 - 18:33	17 Sun: 06:34 - 18:34 Moon close to Spica	18 Sun: 18:34 - 06:35 Hyde Observatory Open to the Public
19 Sun: 18:32 - 06:37 Moon close to Jupiter	20 Sun: 18:30 - 06:38 Spring Equinox	21 Sun: 18:29 - 06:39 Moon close to Antares	22 Sun: 18:27 - 06:40	23 Sun: 18:25 - 06:41	24 Sun: 18:24 - 06:42	25 Sun: 18:22 - 06:43 Venus half phase; Hyde Observatory Open to the Public
26 Sun: 18:20 - 06:44	27 Sun: 18:19 - 06:45 Mercury close to Uranus	28 Sun: 18:17 - 06:46 PAC Club Meeting	29 Sun: 18:15 - 06:47	30 Sun: 18:14 - 06:48	31 Sun: 18:12 - 06:49 Club Star Party	

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
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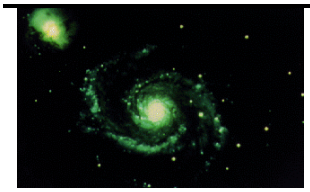

The Prairie Astronomer
c/o The Prairie Astronomy Club, Inc.
P.O. Box 5585
Lincoln, NE 68505-0585

First Class Mail

Next PAC Meeting
February 28, 2006
7:30 PM
Hyde Observatory

«TITLE» «FIRSTNAME» «MIDDLENAME» «LASTNAME» «RENEWALDATE»
«CAREOF»
«ADDRESS1»
«ADDRESS2»
«CITY», «STATE» «ZIP»