THE PRAIRIE ASTRONOMER

THE OFFICIAL NEWSLETTER OF THE PRAIRIE ASTRONOMY CLUB, INC.

DECEMBER 2000 VOLUME 41 ISSUE #12

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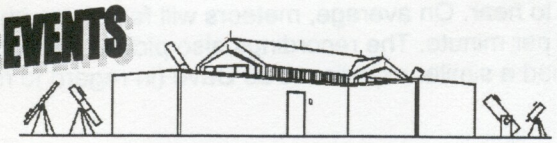
NSP E-Mail:	nsp@4w.com
OAS Web Page:	www.OmahaAstro.com
Astronomy in NE:	www.blackstarpress.com/arin/
Hyde Observatory:	www.blackstarpress.com/arin/hyde/

CLUB EVENTS



PAC MEETING
TUESDAY, DECEMBER 26, 2000, 7:30 PM
at Hyde Memorial Observatory

CLUB STAR PARTY
FRIDAY, DECEMBER 22, 2000
Wagon Train Lake
(see map on back page)

NSP PLANNING COMMITTEE
THURSDAY, JANUARY 11, 2000, 7:00 PM
Mahoney State Park

CLUB STAR PARTY
FRIDAY, JANUARY 24, 2000
Wagon Train Lake
(see map on back page)

PAC MEETING
TUESDAY, JANUARY 30, 2001 7:30 PM
at Hyde Memorial Observatory

DECEMBER'S PROGRAM:

Be sure to check the PAC website for the latest on the December Program

NEW EVIDENCE FOR MAGNETARS: Astronomers from the Netherlands and the United States have announced their discovery of a visual object positioned in the same spot as a mysterious source of repeated x-ray bursts. The team's observations add to the idea that the object and a handful of relatives may belong to a theoretical class of neutron stars called magnetars.

A MASSIVE SPIRAL GALAXY: A team of European astronomers has calculated that the mass of a galaxy about six billion light-years away is more than a trillion times heavier than our sun and about four times greater than the Milky Way. This mass makes the galaxy, called ISOHDFS 27, twice as massive as UGC 12591, the heaviest spiral galaxy known until now.

PAC-LIST: Mark Dahmke maintains an e-mail list server for PAC. 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.

2001 MAHONEY STAR PARTY DATES: The 2001 Mahoney Star Party dates are:

May 25
June 15
August 17
September 21

URSID METEOR SHOWER: Keep an eye on the sky around 7:29 UT as this shower may last 3-4 hours.

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: **Jeff King, 4018 South 83rd Street, Lincoln, NE 68506-5973 or jeffrey892@aol.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.

12-00

SECRETARY'S REPORT

By: Pamela L. Fiedler

Secretary's Report for the Prairie Astronomy Club
November 28th, 2000

President Dave Knisely called the meeting to order.

Discussion was held in regard to solar sites and various places to review them on the world wide web.

Dave brought two cassette tapes of meteor scatters for the club to hear. On average, meteors will fall approximately 1-5 times per hour. However, during a shower--meteors average 23 per minute. The recordings also picked up various radio stations throughout the shower. Rick Johnson reported that he had a similar experience as Dave (in regard to meteor showers) at approximately 2:00 a.m.

The next meteor shower will occur on Thursday, December 14th, 2000.

NSP Planning Meeting will be held at Mahoney State Park @ 7:00 p.m. on Thursday, December 14th, 2000.

The schedule for Mahoney Star Parties is as follows: (7:00 p.m./ Fridays)

May 25
June 15
August 17
September 21

Dave Churilla reported that more volunteers are needed on the telescopes during public viewing hours. Please contact him if you would like to volunteer. He is also in the process of putting together a handbook that should aid Supervisors and volunteers with the telescopes and the processes involved.

A short discussion was held in regard to Meade telescopes and their vendors.

The Hyde Observatory will not be open on Christmas Day.

The next PAC Meeting is scheduled for Tuesday, December 26th @ 7:30.

HYDE JANUARY VOLUNTEER SCHEDULE

Date	Team Leader	Operators
January 6	Lee Taylor	Pam Fiedler, Bob Leavitt
January 13	Jeff King	Bill Wells, Dave Hamilton
January 20	Brian Sivill	Pam Fiedler, AJ Benker
January 27	Dave Churilla	Joey Churilla, Bob Leavitt

Deep Sky Observations

DS112200 DEEP-SKY OBSERVATIONS
by David Knisely

DATE: November 22nd, 2000, 0430 to 0730 hrs UTC.
LOCATION: Rockford Lake, Nebr. 40.227N, 96.581W, 1400 ft (427m) elevation.
INSTRUMENTS: 10 inch f/5.6 Newtonian: 52x, 59x, 101x, 141x, 220x, 352x
Celestron 80mm f/5 Wide-Field Spotting Scope: 15x, 17x, 29x
CONDITIONS: Clear, Temp. 16 deg. F. Wind W. at 1-5 mph.
UNAIDED EYE LIMITING MAGNITUDE: 6.6
SEEING: 1 to 1.5 arc seconds (Antonaidi II).

OBSERVATIONS: Clear but cold conditions made for about 3 hours of tolerable observation time before I had had enough of the cold. Rather than going after more distant and fainter targets, I once again largely fell back on the simple pleasures of low power observing with my 80mm f/5 rich field refractor and its wide star-filled fields of view. With Cassiopeia high in the sky, I thought I would try John Bortle's challenge of viewing NGC 7789 (also known as "The Magnificent Cluster") with the unaided eye. After an extended period of dark adaptation, I looked at the area between the stars Sigma and Rho Cas. Sure enough, about halfway between them and slightly off the line was a tiny very faint fuzzy spot near the limit of averted vision. With the 80mm f/5 at 17x, this cluster was easy, rich, and very pretty, although its component stars were rather faint. In my ten inch at 101x with the 14mm Meade Ultrawide (a.k.a. "the Glass Hand Grenade"), the field was richly filled with stars, and it became more difficult to see the exact boundaries of the cluster due to the rich background starfield. I also looked at the Double Cluster, and once again, I liked the stunning view in my 80mm f/5 Celestron with the Glass Hand Grenade best (29x, 2.9 degree true field). That power was high enough to separate the brighter inner core stars, while still low enough to show the roughly spherical outer haloes of fainter components which surrounds each of the clusters. Unlike previous viewing sessions, these outer halo stars seemed somewhat brighter than I recall them being when I first trained the 80mm scope on the groups several months ago. With the 14mm Ultrawide still in the 80mm, I paid my usual visit to M31. This night, it was almost startlingly good, with both spiral arms being pretty easy to see, along with hints of the first dark lane going past the nuclear region along the west side. NGC 205 stood out like a sore thumb, showing its clearly oval shape and slightly brighter middle. I put the Glass Hand Grenade back in the ten inch and put it on M31. The detail was simply wonderful. Two dark lanes now flanked the western side of the core region, with the western arm clearly tracable for some distance. Off to the southwest, some patchy diffuse star clouds were faintly seen in the curve of the southwestern arm, but the brightest cloud NGC 206 stood out noticably. The Northeastern arm could be followed all the way around that side of the galaxy, and showed faint brighness irregularities in it.

With this success, a visit to M33 seemed in order. The 80mm showed it easily, and with the Glass Hand Grenade, it looked noticably mottled. In the ten inch, the galaxy showed its broken spiral structure fairly well, although use of the Lumicon Deep-Sky filter did boost the contrast over non-filter views. I looked at the HII region NGC 604 inside M33, and was surprised as to how close to the inner regions it seemed tonight. The faint outer haze which is normally quite dim was now much easier to see, and made the inner portions of the galaxy seem smaller. Indeed, this outer halo seemed rather mottled and less diffuse than I have sometimes seen it before. I put in my Lumicon multi-filter adapter and all my Lumicon filters to look for additional HII regions. NGC 604 seemed best in the OIII filter, with the UHC being a close second best. The nebula was visible in the H-beta filter, but it was slightly fainter than it was in the Deep-sky filter.

Going back to the 80mm f/5, a quick look at the Pleiades showed the faint nebulosity with ease, especially the broad curving fan of the Merope nebula. I looked at Jupiter and Saturn, but seeing was not the best (I am used to seeing conditions which are good enough to try for the Encke gap :-)). Going on to Orion, I had a ball on the sword region. The 80mm and the 14mm Meade Ultrawide seemed perfect for viewing it, as the 2.9 degree field beautifully framed the sword with plenty of room to spare. With the UHC filter in the 80mm f/5, the faint southern loop of nebulosity was faintly seen,

but was only hinted at using the OIII and the Deep-sky filter. The view with the H-beta was fairly good, but did not show the amount of outer nebulosity that the other filters did. With that accomplished, I went over to Zeta Orionis to try for the Horsehead with the 80mm f/5. The only filter which showed IC 434 with any degree of certainty was the H-Beta. The nebula appeared as a very faint surprisingly narrow band running south from Zeta. At times, I could just barely see a small notch about halfway down the nebula, but it was only hinted at. In the ten inch with the H-beta filter, the dark Horsehead shape was unmistakable, but the nebula remained rather faint. NGC 2024 "the Flame Nebula" was also fairly easy to see, but was noticably bothered by the glare from Zeta when viewed in the 80mm f/5 short tube refractor.

I stopped at the Rosette briefly and noted that overall, in the 80mm f/5 refractor, the filter which seemed to give the best view was the OIII. The UHC showed a little larger area of nebulosity, but the OIII really brought out the sinuous dark detail, making it the filter of preference for this object (at least in the 80mm f/5). I also looked at the open cluster M41 in Canis Major, and once again, the 80mm scope did well on this group, showing its many fairly bright stars. I went farther east to try for the faint diffuse emission nebula IC 2177/vdB93, sometimes known as "the Seagull Nebula". Without a filter, all I saw was some very rich Milky Way starfields and scattered open clusters, but with the UHC, I moved the scope and BOOM, there it was! At 17x, it appeared as a large diffuse slightly sinuous ribbon of nebulosity with two fainter and very diffuse glows extending northeastward from the ribbon's eastern side. The "head" of the seagull (vdB93) was just a faint puff around a faint star, but was helped by the H-beta filter. The central core of IC 2177 was also helped by the H-beta, but overall, I liked the UHC more for this object.

On into Puppis, I took a look at the area around M46 and M47. All I can say is those of you with 80mm "Short Tubes" should really take a look at this area, because it is wondeful! M47 is the brighter cluster on the west and easily resolves into a bunch of bright stars. M46 is fainter, but is slightly larger, appearing as a round ball of very faint stars. A third cluster, NGC 2423 appears just to the north of M47 and is also nice, but the background around these clusters is quite rich and well worth a look at 15 to 20x. I got all three in my 2.9 degree field of view with the 14mm Ultrawide and the view was striking. Try it sometime when the moon isn't out and the sky is dark and clear. Clear skies to you.

David Knisely

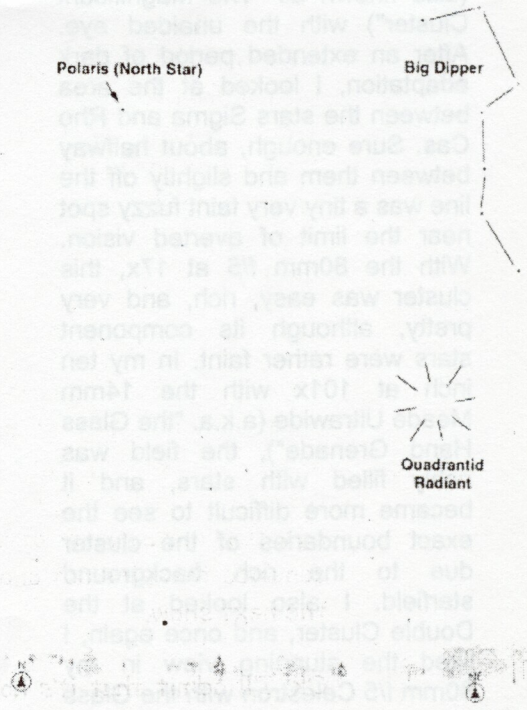
Quadrantids

Best Night: January 3-4, with between 45 and 200 faint meteors per hour

Total Duration of Activity: December 28 to January 7

How to Observe

The Quadrantids emanate from a now defunct constellation called Quadrans Muralis. The radiant never reaches a high altitude for most northern hemisphere observers and southern hemisphere observers will probably see no activity. The location of the radiant in astronomical terms is RA=229 degrees (15 hours 20 minutes), DEC=+49 degrees, but the chart below will also help you find it.



The Romantic Astronomer

By Dave Churilla

As I pulled into the parking lot at Hyde Memorial Observatory, Joey looked at me and sighed. "Guess it's not going to be so good tonight, huh Dad?" I hesitated to say anything until I checked the out the sky. If they were cloudy, any wavering on my part would elicit a plea to head home invoking the formula of child physics (Clouds = Play Station). Besides, he'd brought a friend with him tonight. But shining like a friendly beacon calling us to join him was Jupiter and his seemingly constant companion, Saturn. We smiled, and headed for the door to the Observatory.

Meeting Brian Sivill moments later, we had the roof pulled back and the scopes set up in no time. Within minutes, the C-14 was on Jupiter and the 8" was on Saturn. The sky was still cloudy, but we swung the 12.5" onto Vega anyway. I pulled out a cheap Orion colored filter (#8, Light Yellow 83% Transmission) and slapped it on the eyepiece peering at Jupiter. It more than doubled the number of atmospheric lines that could be seen, some hairline thin. It may be cloudy, but observing conditions were very still. All set up and still 10 minutes until we opened .. oops ... there was already a line waiting to view the heavens - and it's cloudy. It never ceases to amaze me how people come out no matter what the conditions. One night last year while waiting for the Supervisor to come and open up, I had a couple ask me if we would be putting the scopes on things. I looked up at the driving snowstorm, brushed snow from my head, and said, "I really doubt it".

As usual, the evening at Hyde is very enjoyable. Many of the public seem to be absorbed with talking to the volunteers about the objects in the telescopes, and astronomy in general. The lines are 3 or 4 deep at each scope, but no one seems to mind that everyone else is taking very long looks at the objects. Rick Johnson comes out under the pretense of very soon announcing the next show (actually, he's trying to cool off as Holly is trying to combine Astronomy with Biology by pumping the heat up and making the presentation room a tropical jungle).

As the night progresses, we move Saturn to the C-14 for a closer look, and Jupiter to the 8". My son Joey, manning the 8" is talking to a young couple about the moons of Jupiter, repeatedly having to rename them as they can't remember which is which and really want to know. AJ Benker, on the C-14, is desperately trying to help an older couple see Cassini's Division (of course, it would help if **HE** could see it!). Brian's on the 12.5" showing people the Pleiades, occasionally offering them my binoculars for an even better look and trying to convince them it's not another galaxy. Meanwhile Rick has finally cooled off and announces the next show.

Ok, I'll admit that it's not all fun and games. Trying to set up on a clear night while 25 people are milling around the Deck chomping at the bit to look through the scopes can be nerve racking not to mention down right embarrassing ("oh, sure, I can put the Andromeda Galaxy in"...and 10 minutes later I yell for Joey to get over here and help me!). In the

summer it seems as though all of Lincoln is there at 9 PM to have a peek at the skies, and asking you every 5 minutes when we'll put something in the scopes (with, of course, clear blue skies covering our heads and the sun still trying to find the western horizon). "Not until it's dark, which will be another hour yet!" (have you volunteers noticed that when it will be 30 minutes until it's dark enough to put stuff in the scope and you tell the 5,000 people that are already there "maybe after the film", that's when the Supervisors play a 2-minute show?). And try keeping track of kids (I'll bet you're proud of me for using the more generic term for these sub-humans) to be sure they don't drop stuff down the telescope tubes and then try to view that stuff in the eye piece. My favorite pet peeve has to be the adult who, after showing them where to look in the focuser, takes their finger and says "you mean here?" as they touch the eyepiece lens with it, displaying the most distinct fingerprint ever created (I wonder if the Board would approve handcuffs ... or possibly the RACK!).

But then there are the 5 and 6 year-old sisters who couldn't restrain their excitement as they viewed M13, Uranus, and M31. They said they had goose bumps. The couple that came out in February, March, then April ... then in September stopped out to let me know they'd bought their own telescope. The elderly couple who laughed at me, then touched my arm apologetically saying that they'd heard me give the speech about the M-13 6 times....they'd been there for 1½ hours and didn't have the heart to tell me they'd heard it before. The gentleman that had Lee and AJ look at his new refractor because he couldn't figure out how to put it together (this could have been a matter of the blind leading the blind, but somehow they managed). Not to mention all those people that take away a little something about our hobby and the science of Astronomy. From what I understand, as many as 8,000 people go through Hyde in a year...that's a lot of education.

And key to all this education are a few people who give up their occasional Saturday nights to work at Hyde. There's no doubt the Supervisor's are to be commended for their dedication and selflessness. But praise also needs to go to the volunteers who help run the Deck. They spend time one on one with the public answering questions and educating them about the objects they are viewing in the telescopes (not to mention freezing their you know what's off during the winter). There are only 10 regulars on a rotating schedule plus 3 that show up as time permits (which is nearly every week anyway). Needing 3 per Saturday night, they work quite often. I'd like to take this opportunity to thank them not only for volunteering their time away from their families and personal lives, but for their dedication and expertise. For those that don't know them, they are as follows:

Volunteer Coordinator:	Yours truly	Regular
Assistant and Operator:	Lee Taylor	Regular
Operators:	Joey Churilla	Regular
	Jeff King	Regular
	Bill Wells	Regular
	Brian Sivill	Regular
	Pam Fiedler	Regular
	Dave Hamilton	Regular
	Bob Leavitt	Regular
	AJ Benker	Regular
	Doc Manthey	
	Jerry Williams	
	Travis Miller	

Although many others have worked during the course of the year, these people are currently volunteering and on the schedule each week and should be recognized for there volunteer work. Thanks to all of you. Following this article is a list of the volunteers for the year 2000 and their hours worked. They deserve a thanks from all of us especially the ones currently working the Deck. In the past 8 weeks we've had a minimum of 3 operators and things have run very smoothly, and that's made my job very, very easy and enjoyable. That's to all of your credit. Several Supervisors have commented on your how well the Deck is running and I've had numerous compliments from the public about the helpfulness and pleasant nature of all the operators on the Deck (and one question about the midget, but I told Joey not to worry, he'll grow....but Joey swore that they were talking about Brian).

And of course special compliment to Mark Fairchild, who's shoes I'm trying to fill as Volunteer Coordinator. He is to be commended for his dedication and time spent at Hyde over the years.

Well, you're right. I couldn't sign off without putting in another plea for volunteer help. You don't have to be an astronomer to volunteer - there will always be someone there to help with either sighting in the telescopes or giving you information about the object in the scope you're manning. We've even developed a volunteer/deck book with useful information, sky charts and maps, and data about many of the objects we put into the scope. The Team Leaders contact their operators by Thursday of the week they are working to remind them, and there's a call list to find a replacement if you can't make it. About all we're missing are a recliner and a fridge (Hmm, not a bad idea) - oh, and a TV for the college football season! With about 5 or 6 more volunteers everyone would only average having to work about once every 5 or 6 weeks. Believe me, I haven't done justice to the rewards of working with the public. It's simply amazing not only how much they aren't aware of, but how much they really want to know. What better way to inform people and interest them in space, space exploration, and appreciating the night skies. Think about it.

Hyde Volunteers and Their Hours Worked
January 1, 2000 thru December 16, 2000

Name	Days	Hours	Ave/Day
Babcock, Joe	2	4	2.00
Benker, AJ	5	12.5	2.50
Brokofsky,	2	6	3.00
Churilla, Dave	24	67	2.79
Churilla, Joey	15	42	2.80
Deogun, Harve	2	3	1.50
Fairchild, Margaret	9	23	2.56
Fairchild, Mark	34	85	2.50
Fairchild, Michael	15	38	2.53
Fiedler, Pam	2	3.5	1.75
Floyd, Cassie	5	15	3.00
Gasparetti, Don	5	10	2.00
Hamilton, Dave	2	3.5	2.70
King, Jeff	5	13.5	2.70
Knisely, Dave	1	4	4.00
Lammers, John	1	4	4.00
Leavitt, Bob	3	8	2.67
Manthey,Robert (Doc)	31	59	1.90
Miller, Travis	27	66	2.44
Reiling, Matt	1	3	3.00
Sivill, Brian	3	8	2.67
Taylor, Lee	29	71	2.45
Wells, Bill	5	11	2.25
Williams, Jerry	16	32	2.00
Woodward, Nick	4	6	1.50
Totals	249	600.5	2.41

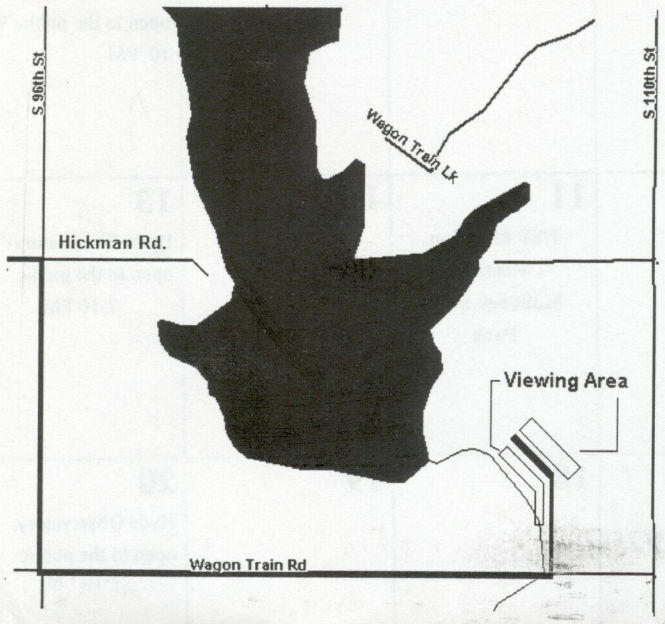
Name	Days	Hours	Ave/Day
Deogun, Harve	2	3	1.50
Reiling, Matt	1	3	3.00
Hamilton, Dave	2	3.5	2.70
Fiedler, Pam	2	3.5	1.75
Knisely, Dave	1	4	4.00
Lammers, John	1	4	4.00
Babcock, Joe	2	4	2.00
Brokofsky,	2	6	3.00
Woodward, Nick	4	6	1.50
Sivill, Brian	3	8	2.67
Leavitt, Bob	3	8	2.67
Gasparetti, Don	5	10	2.00
Wells, Bill	5	11	2.25
King, Jeff	5	13.5	2.70
Benker, AJ	5	12.5	2.50
Floyd, Cassie	5	15	3.00
Fairchild, Michael	15	38	2.53
Williams, Jerry	16	32	2.00
Fairchild, Michael	15	38	2.53
Churilla, Joey	15	42	2.80
Manthey,Robert (Doc)	31	59	1.90
Miller, Travis	27	66	2.44
Churilla, Dave	24	67	2.79
Taylor, Lee	29	71	2.45
Fairchild, Mark	34	85	2.50
Totals	249	600.5	2.41

THE PRAIRIE ASTRONOMY CLUB CALENDAR
For January 2001

Sun	*Mon*	*Tue*	*Wed*	*Thu*	*Fri*	*Sat*
	1	2 1ST QUARTER 	3	4	5	**6** Hyde Observatory open to the public 7-10 PM
7	**8**	**9** **FULL MOON** 	**10**	**11** **NSP Planning Meeting Mahoney State Park**	**12**	**13** Hyde Observatory open to the public 7-10 PM
14	**15**	**16** 3RD QUARTER 	**17**	**18**	**19**	**20** Hyde Observatory open to the public 7-10 PM
21	**22**	**23**	**24** **NEW MOON** 	**25**	**26** **Club Star Party**	**27** Hyde Observatory open to the public 7-10 PM
28	29	**30** **PAC Meeting 7:30 PM Hyde Observatory**	**31**			

Directions to Wagon Train Lake Observing Site

From Hickman, NE, turn East on Hickman Road. Go until you reach 96th Street, then turn RIGHT. Drive until you reach Wagon Train Road, then turn LEFT. Area 6 is about 3/4 of a mile East. Turn LEFT into Area 6.



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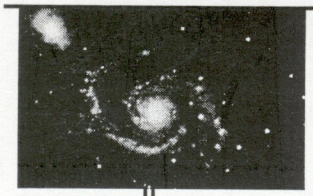

The Prairie Astronomer
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First Class Mail

Next PAC Meeting
December 26, 2000
7:30 PM
Hyde Observatory

EARL MOSER 9/2001
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68372-0162