

# The Prairie Astronomer

The Official Newsletter Of The Prairie Astronomy Club, Inc.

September 2000

Volume 41 Issue

#9

## Internet Addresses:

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 Hyde Observatory: [www.blackstarpress.com/arin/hyde/](http://www.blackstarpress.com/arin/hyde/)

## SEPTEMBER'S PROGRAM:

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

## CLUB EVENTS



### PAC MEETING

TUESDAY, SEPTEMBER 26, 2000, 7:30 PM  
at Hyde Memorial Observatory

### PAC YOUTH GROUP/HYDE VOLUNTEER MEETING

FRIDAY, OCTOBER 6, 2000, BEGINNING @ SUNSET  
At Hyde Memorial Observatory

### MAHONEY STAR PARTY

FRIDAY, OCTOBER 6, 2000  
Mahoney State Park

### BEHLEN OBSERVATORY OPEN HOUSE

FRIDAY, OCTOBER 6, 2000, BEGINNING @ SUNSET  
Behlen Observatory

### PAC/OAS FALL BANQUET

FRIDAY, OCTOBER 20, 2000 @ 7:00 PM  
MAKE RESERVATIONS BEFORE OCTOBER 10  
at Hyde Memorial Observatory

### PAC MEETING

TUESDAY, OCTOBER 24, 2000, 7:30 PM  
at Hyde Memorial Observatory

### CLUB STAR PARTY

FRIDAY, OCTOBER 27, 2000  
Wagon Train Lake  
(see map on back page)

**PAC-LIST:** Mark Dahmke maintains an e-mail list server for PAC. For instructions on how to use it, please see the article Mark has written inside this issue.

### THE ROMANTIC ASTRONOMER STRIKES TWICE!:

The Romantic Astronomer gets double billing this month. Be sure to read both articles by Dave Churilla. The editor appreciates his writing ability and his willingness to submit them for publication.

### OCTOBER PAC MEETING:

Be sure to take note of the change in the October PAC meeting date. Due to Halloween falling on the last Tuesday of October, our meeting will be held on the 24th. Same time of night, same great place.-

### STAR WARS PODRACER REPLICA AT SAC:

The Strategic Air Command Museum near Ashland, has a Star Wars Episode I pod racer replica on display. The racer is on display from now until November 28 courtesy of Nintendo, Inc. Included in the display is a history of space exploration beginning with an early 1900 rendition of an orbiting space station to the apollo flights to science fiction. A Saturn V rocket, Star Ship Enterprise, and a model of Werner VonBraun's space station is also on display.

### HUBBLE SPACE TELESCOPE EXHIBIT:

Coming to the SAC Museum February 4 - April 29, 2001. **Hubble Space Telescope: New Views of the Universe.** Mark your calendars.

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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: 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.

# Secretary's Report

*By: Willa Penney*

Prairie Astronomy Club  
August 29, 2000

President Dave Knisely opened the meeting; there were no guests. There was an aurora on the night of August 12, which was visible as far south as Texas. Comet Linear has broken up after its passage of the sun. Jupiter and Saturn continue to be "nice viewing".

The next NSP Planning meeting will be the 2<sup>nd</sup> Thursday in September at Mahoney State Park. The Mahoney Star Party will be September 8.

The October club meeting date has been changed to October 24. The last Tuesday in the month is Halloween, and Holmes Park will be closed.

The PAC/OAS fall banquet will be Friday, October 20, at Mahoney State Park. Reservations must be in by October 10. Jack Dunn will present the program. Larry Hancock handed out a flyer/reservation form.

Homestead National Monument in Beatrice has asked for our help in holding another Star Walk on Saturday, September 30 at the Freeman School. Dave asked for volunteers to bring binoculars and scopes; if it is cloudy, Dave will give an indoor talk and volunteers do not need to come.

At our next meeting, we will be taking nominations for Board members.

The club shirts/hats/jackets are in; you may purchase them from Larry Hancock or Liz Bergstrom.

Mark Fairchild reported that the next Hyde Volunteers meeting will be Friday, September 1, from sundown to 11:00 p.m. The Youth Group will meet at that time also.

Bill Wells, observing chairman, invited everyone out to Wagon Train this Friday. He recommended the website [www.astronomy.com](http://www.astronomy.com) for deep sky images.

Meeting was adjourned to our program; Mark Dahmke showed slides from NSP 7 and a video of Dave Knisely's talk at NSP on filters.



DS083000  
by David Knisely

DATE: August 30th, 2000, 0400 to 0630 hrs UTC.

LOCATION: Rockford Lake, Nebr. 40.227N, 96.581W, 1400 ft (427m) elevation.

INSTRUMENT: Celestron 80mm f/5 Wide Angle Spotting Scope, 13x, 17x, 22x, 29x, 33x, 40x, 63x, 156x.

CONDITIONS: Mostly clear (patchy high cirrus), Temp. 78F, Wind S at 15 mph.

UNAIDED EYE LIMITING MAGNITUDE: 6.4

SEEING: 1.5 arc sec. (variable)

OBSERVATIONS: After attending the recap of the 7th annual Nebraska Star Party at our astronomy club meeting, a friend of mine and I got something to eat at Village Inn and then noticed that the sky was actually fairly clear for once (forest fire haze did not completely gunk things over). I didn't feel like loading up the ten inch as the sky didn't look outstanding, so once we got home, I just grabbed my 80mm f/5 Celestron Wide Field and my eyepiece case for a quick trip to Rockford Lake and a little wide-field work. It was still pretty humid (the 14mm Ultrawide fogged over a bit after I opened the case), so the transparency wasn't all that hot. Still, after the last few weeks of really gunky skies, I wasn't going to let that stop me. That little 80mm f/5 scope is rapidly becoming a favorite of mine, as its wide field and pin-point star images make it a fine performer. I still haven't gotten a decent mount built for it, so I had to suffer with the little rickety camera tripod I use for shooting stuff off of my computer screen. I also had to do a little neck straining near the zenith, as I am still using the Amici prism erect diagonal instead of a regular star diagonal. Our first target was M24 (one of the few objects in the southwest which was out of some local gunk). With the 30mm Ultrascope, it just glittered with stars, nicely framed in the 3.7 degree field of view. Indeed, going up and down the Milky Way at only 13x was a wonderful experience, even with the slight haze. In particular, the Scutum star cloud showed wonderful patchy dark detail, mainly in the form of a dark curving lane in the eastern half (B.114-7 and B.118), and the dramatic dark dropoff west of the cloud (B.102). I also noted M11 sitting like a glittering diamond near the northeast end of the star cloud and M26 off the southwest side. We stopped for a quick look at the Coathanger, and it appeared much more striking that it had from my driveway a few weeks earlier just after I had gotten the scope, showing many fainter stars in the field. I decided to play "name that object" with my friend, so I put in the UHC filter and centered M27 in the scope. He had no idea what he was looking at, since at only 13x and with the filter, the outer "wings" off the sides of the dumbbell make the object look like an oval ball rather than a dumbbell. It

took a bit higher power before he finally recognized it. Without the filter the dumbbell form was fairly easy to notice, with the wings being quite faint. We also looked at the Veil with the OIII, and both main arcs were fairly easy to see, although they weren't all that bright. The western arc (NGC 6960) seemed a bit brighter around the star 52 Cyg than the average brightness of the eastern arc (NGC 6992-5), but the eastern one seemed a bit easier to notice initially, with its strongly curved irregular form. Between the two arcs was the much fainter large triangular patch of NGC 6979, which surprised me a bit, as at NSP, I hadn't noticed it in the 80mm. I could just fit all three areas of nebulosity in a 3.5 degree field. From there, I pushed the 80mm up towards the zenith to have a look at the North America Nebula. It showed its full form rather well, but was slightly brighter and better in the UHC than in the OIII filter. Sweeping through central Cygnus was a joy, and in some ways, this star field is better than many of the Sagittarius fields. Aquarius was high in the south, so that meant it was time to look up the Helix NGC 7293. It was just visible in the 80mm's 6x30 finder as a very faint diffuse patch, with the scope itself showing a somewhat easier round diffuse fuzzy patch. The OIII filter immediately brought out hints of its structure at 13x, but it took 17x and the OIII to get its ring form to show up very well. We used up to 40x on it, but due to the shaky tripod, it was better at 29x with the Meade Ultrawide and the OIII. The UHC helped it stand out somewhat as well, but the OIII was the clear winner here. Swinging around to the east, I took a nice long look at M31. Even at only 13x, the galaxy was quite nice, showing the faint curving arcs of the outer arm structure. However, the galaxy seemed to actually look a bit better at 17x in the 24mm Koenig, with hints of one of the dark lanes just west of the central core region. Both M32 and NGC 205 stood out much better with just a bit more magnification, and employing the "Glass Hand Grenade" (Meade 14mm Ultrawide) gave the best view, with M31 filling the field nicely at 29x (2.9 degree field). Going over to M33, I did note it easily, but again, to see much in the way of detail required somewhat more power. The 14mm Ultrawide again gave a nice view, showing the slightly brighter core and

patchy outer haze. Indeed, part of the northern arm was visible at times, with the southern side showing two or three dim patches in a very diffuse haze. From there, I went over to east of Gamma Andromeda, and just for fun, tried to track down the galaxy NGC 891, an edge-on spiral. Surprisingly, the object did just barely show up as a very faint tiny streak running roughly north-south, framed between a couple of faint stars in the 24mm Koenig. I might have to try this one sometime in a pair of 11x80 binoculars!

The double cluster was staring me in the face, so I swung the 80mm over to it. As usual they were spectacular, but surprisingly, both clusters seem to have a faint rich outer halo of very faint stars which extends well beyond their usual apparent limits seen at higher power. It almost seemed that the halo stars got fainter as you looked farther out towards the edges of the haloes. In fact, the outer halos seem to make the two clusters appear to be almost touching each other, with their long diameters being around 0.5 degree or perhaps a bit more. I had never noticed this before when using larger apertures, but again, I had never been able to examine them at fields much larger than a degree. This little 80mm scope is a real winner in my book!

Seeing how well things were working, I decided to go after a faint "challenge" object; the large diffuse nebula and star cluster IC 1396 in Cepheus. It was faint but fairly easy to find, as it extends south from the red star Mu Cephei. With the UHC in the 30mm, the object was simply huge! The brightest portion is immediately south of Mu, but there is an even more noticeable dark lane running in from the north side, where it narrows and curves to the west. Several other dark patches could be seen in the interior of the nebula, with hints of other broad lane-like structures. The south edge is rather diffuse, and the entire object seemed to fill nearly the entire 3.5 degree field. The star fields here are very rich, making for a pleasing view.

With this success, I tried another challenge; the California Nebula NGC 1499 in Perseus. It was visible at 13x with the UHC filter, but was quite faint, appearing as a large elongated diffuse fuzzy area running roughly east-west. The H-beta filter helped somewhat more, bringing out a few hints of detail in the interior, but the object remained faint and not nearly as impressive as IC 1396 had been.

With the Pleiades high in the east, I thought it was time to take a look at probably the most impressive object the 80mm Wide Field scope will show. As usual, the cluster was wonderful, but I wanted to see what the 14mm "Glass Hand Grenade" would do to it. I had looked at M45 from my driveway with the 14mm with the moon in the sky, so I expected the usual pinpoint images in a black background. However, one look made me quickly examine the 14mm to see if it had fogged over, as the brightest stars all had faint diffuse haloes around them. The eyepiece was fine, so I looked at all the other components to see where the fogging seemed to be, but everything looked clear. To check on whether it was the sky doing the fogging, I pushed the scope over to the Perseus OB Association, but didn't see any haloes there, or on bright stars nearer to the Pleiades. I went back to the cluster, and then noticed that Merope had a faint diffuse fan of light heading off in exactly the RIGHT DIRECTION! The scope wasn't fogged at all! I was seeing nebulosity around the 4 bright stars in the "bowl" of the Pleiades! Atlas and Pleione showed only a slight glow around them, but the nebulosity around Merope, Alcyone, and Maia was unmistakable with a very faint glowing background through much of the group. Any "fogging" of the group was being caused by something over 400 light years away, so I guess there wasn't too much I could do about it! A few clouds began to drift in, so I finished things off with Jupiter and Saturn. Even at 40x, it was obvious that seeing wasn't all that good, as the limb of the planet was shimmering a bit. Only 3 moons were visible at low power, with Ganymede to the east, and Europa and Callisto hugging the planet's disk (IO was in transit). 63x showed the two equatorial belts, but seeing was rapidly deteriorating. Saturn was a little higher, and showed the rings well, but with the wind and at 156x, the scope was bouncing way too much to get a decent view, so we packed it in. Still, I can't wait until later this fall, when the winter Milky Way gets into prime viewing position for my little 80mm gem. Clear skies to you.

David Knisely

# The Romantic Astronomer

*Or Oh To Be A Kid Again*

By Dave Churilla

Well, I told Jeff that this article was purely filler. It has no astronomical information, no redeeming social value. So, if you're reading it, it means it was probably a slow month for articles for the newsletter. But I wanted to relate one of the best reasons for enjoying astronomy for me, and I hope for many of you. Enjoy....or at least wake up when you're done with the article.

I smiled as I watched the little 11 year old munchkin try to carry the eyepiece case, chart bag and cooler all at the same time. "Scorpius and Sagittarius will be up tonight, won't they dad?" he struggled to call back over his shoulder, nearly dropping the cooler. "Yep Joey, they sure will be. But that'll be later. We still spend some time galaxy hunting in Virgo first." "Will John be there with the 18?" he grunted as he hoisted the bags into the trunk. "He said he would be" I grinned as I set down our 10" Dob's tube and rearranged things. "Hope Jeff and his son are there, they're fun". I cringed, fearing for Jeff's sanity and safety. "What about Don?" he asked. "He said he'd try" now fearing for Joey's sanity. Loading done, we hopped in the car and headed for Wagon Train Park. The first part of the trip was quiet with Joey running the dial on the radio trying to find something he liked (us old fogies don't always play the right things you know). Finally we began talking about what we were going to see that night, and what fun we'd have.

Ever since Joey and I became involved in the hobby of astronomy and even more so being members of PAC, we've enjoyed the night skies, the rich wonders that we never dreamed we could see with our own two eyes, let alone find in a telescope. One of our favorite times with the hobby are the club Star Parties. This particular night Joey spent roaming around visiting others, looking through their telescopes and talking about the objects. But mostly he just bugged Jeff, which is always fun to watch, or was being bugged by Don, which is usually sweet revenge. Finally tiring of being the social butterfly, he came home to our telescope and sat beside me, sipping a pop. It was time to enjoy each other's company as we explored our favorite constellations, Scorpius and Sagittarius.

I've taken great pleasure in the time I've been able to spend with my son in many activities. We bowl together, we fish, and we enjoy games at home. But probably the most fun I have is when we go stargazing, often times incorporating camping along with it. It's a time to talk together, to enjoy the beauty and majesty of our world and the universe. I've smiled watching Jeff and his son working together to find an object in the telescope and the bond that's between them as they enjoy the night together (if only stargazing wasn't so exhausting as Aaron usually falls asleep before things are done).

I think the most fun I've ever had was one lonely night at Olive Creek. It was just Joey and I and we didn't know much about what we were doing. The moon shown brightly in the sky (we weren't too swift at figuring out when it would be out yet...now I'm a lot smarter....I ask Jeff!) and dashed our hopes of a dark sky to view into. Joey was really disappointed, and nearly wanted to go home. I consoled him, shaking my fist at the moon and pretending to do a witch doctor dance to get rid of it...he laughed hysterically, mostly because of my great coordination as I stumbled and fell down. We decided to use the night to try and see some clusters in Auriga, Gemini, Canes Major and Minor. We found one...Joey practiced finding it again. Then we found another...more practice. That night we found 23 Messier objects and had the best time together. We were learning more about the hobby, how to find things, and how to work together. We were proud of ourselves, but I think the best part was being together. I let Joey do most of the searching, partly because he's better at finding most things anyway, but mostly because it was fun watching him. I became the chart navigator, the eyepiece changer, the flashlight holder and the pop getter. In the space of about 3 hours a little boy, well, ok, 2 little boys, were transformed into amateur astronomers, gaining more experience than we had in the past 4 weeks.

I look forward to every time Joey and I go out. I can see that Jeff does too (with Aaron I mean....I'm sure he'd prefer to have Joey bound and gagged!), as well as the other parents I see doing something with their sons or daughters with club activities. I think it's great. I sometimes worry that Joey is making a pest of himself at the Star Parties, but everyone assures me he isn't (but then, I don't know what Joey's bribed them with). I enjoy the other kids that come out and would love to see more. Perhaps a youth Star Party would be in order, to teach, to have fun, and to be together. It's a thought....

Anyway, if you've wondered about taking your kids stargazing, stop wondering and do it. Let them do some of the work and you'll see the excitement in their faces. It's well worth the effort.

# How To Use The PAC-LIST

Pac-list is a discussion list that is available to PAC members. Anyone with an email account can access and contribute to the list.

## To join:

Send a message to [list@4w.com](mailto:list@4w.com) with the following in the body of the message:

Join pac-list [me@mydomain.com](mailto:me@mydomain.com)

where [me@mydomain.com](mailto:me@mydomain.com) is your email address. You will receive a message from the mail server stating that you have been joined to the list.

## To contribute to the list:

Send a message to [pac-list@4w.com](mailto:pac-list@4w.com). Your message will be sent to all other members of the list, and you'll also receive a status message confirming your post. Note that the message you send must come from the same email address you used when you joined the list. If not, the server will reject it because it thinks you're not a member. This will also happen if you use an alias... for example, if your mail comes from [md12345@alltel.net](mailto:md12345@alltel.net) but you used the alias [mdahmke@alltel.net](mailto:mdahmke@alltel.net) when you subscribed, the system will reject your message.

## To leave the list:

Send a message to [list@4w.com](mailto:list@4w.com) with the following in the body of the message:

Unsubscribe pac-list

## To get help:

Send a message to [list@4w.com](mailto:list@4w.com) with **help pac-list** in the body of the message.

## List Archive

Pac-list is also archived to a website. To view it, go to: <http://list.4w.com/archive/pac-list/> Messages can be viewed by subject, author or date.

# September MSP Pictures

Cameron Contradt gets a little help from his dad, John, to view the moon through a 10" SCT.



Dave Churilla aligning the Magellan I on the 10" dob. Joey is setting up the table.



# The Romantic Astronomer

## The Planning

By Dave Churilla

Monday: Emails sent to the Wagon Train Bunch to see if anyone's interested in stargazing on Friday.

Tuesday: Check Email. Two responses. Good, the gathering begins. Best check the Telescopes Collimation.

Wednesday: More email. Looks like a good group going out Friday. Not sure about the Telescope's alignment....recollimate. Later that night started working on a list of objects to view on Friday. Work on computer program and SkyMap Pro to print charts for Neptune and Uranus. Gotta check Sky & Telescope and Astronomy Magazines for suggested viewing objects.

Thursday: Only one person can't make it. The anticipation is killing Joey and me. Haven't been out in over a month thanks to all the cloudy weather (wouldn't be so bad if we got the much needed rain along with the lousy clouds). Finished star charts of objects to look at....emailed Lee about double star list. Bugged Jeff for the umpteenth time about what we're going to hunt for tomorrow night. Better check that collimation one more time...then hit the sack, drifting off to sleep with visions of the Lagoon Nebula, Neptune and Uranus dancing in my head.

Friday: Got home from work. Great, it's clear out. Best to be ready so I open the garage door and begin loading stuff. Chair, table, stool, and cooler. That's a start. Back into the house and get the chart case and binoculars. Recollimate the telescope and take the it out to let it come to temperature. Ok, I'm ready

8:00 PM. ..Sigh... If there were blue skies up there, one sure couldn't tell it by the clouds that had moved in. But I still can't bring myself to unload the car. Maybe it will all burn off as it gets dark. The optimist to the end, but even that's fading.

8:30 PM. Forlorn sigh. It's time to admit defeat, again, and unload the car and put the telescope away. So much for stargazing.

Sound familiar? It seems this past summer it's been tough to get clear skies when you plan to go out. I'll wager I've had more nights cancelled than nights we've been able to go out observing. But that hasn't always been a total waste. There are still projects you can work on when the weather is lousy (an aside: funny how my perspective has changed. 3 years ago a sunny day with puffy clouds or a little haze was a gorgeous day. Now it's a "lousy day").

This is a good time to catch up on all that reading in your periodicals. It's amazing how I seem to skim more than I read them sometimes and cloudy skies give me a chance to turn off the TV and settle into that comfy chair and enjoy them (well, provided there's not a football game on). One night Joey and I even took our sky atlas and spread it out on the rec-room floor, piecing the grid together as best we could to end up with a layout of the sky covering our carpet. We almost completely lost the Orion Nebula from the universe when our dog came charging down the stairs. But it was actually a good exercise as it helped us to better understand our atlas and how it was laid out. Anyway, as I read off an object from Sky & Telescope or Astronomy, he tried to find it on the chart. Then we'd practice star hopping from a familiar or easy to find star to the object.

Lately I've been using the time to become familiar with lesser-known constellations. It's amazing the wealth of objects that can be found there, especially NGC objects. Getting a feel for where the constellation is, what it looks like and what's there makes finding objects a lot faster and easier. Besides, this way when Dave Knisely tells me "Oh, the umptysquat galaxy is in the Timbuktu constellation just a degree North of those two Magnitude 22 stars right there", I can shock his socks off by saying "Oh, ok, I know where that is". I kid Dave lovingly. I've learned a lot from him, even just listening while he's helping others. I just can't get caught up to his expertise and I doubt anyone knows more obscure objects to look at. I'll say this, I've not been disappointed yet.

A quick note has to be said about the Internet. Cancelled star parties are ideal times to surf the web (boy, do I know the lingo or what!) for information or to email friends about astronomy. I've joined several Astronomy Clubs on Yahoo and the feed back about objects can be very helpful. (A quick plug: Jeff King has done a fantastic job with the Wagon Train Web Site. Next time you're on the net take a spin there. He's still fine tuning it, and I've already tricked him into letting me put my 2 cents worth in...but I promise not to ruin it. It's <http://members.aol.com/wtlsp/wtlsp.html> ).

I know this all is probably old hat for all you seasoned stargazers out there. But for Joey and me it's been a constant learning experience. Even though we've always known that 90% of our hobby took place indoors in the form of preparation and learning, as we continue to hone our skills we recognize the importance of this pre-observing preparation to make the few nights of observing productive and more enjoyable. While many objects can be found using the more common books and charts, exploring deeper into our cosmos can be made easier by researching a little more before going into the field. This also helps in learning to read the star charts and atlas.

In addition, knowing a little about the object you seek helps in a number of ways. First, it can help you in finding it, especially if you study the star maps. Secondly, knowing a little about the object really makes finding it special. I know with the public, looking at a dim fuzzy means little, if anything, until you tell them it's another galaxy that's 45,000,000 light years away. Even that little bit of information can make the object take on more meaning. I've tried to encourage Joey to read what he can about every object we look at. I think it's given him a much keener appreciation of our

universe. Besides, if he reads it, I can ask him about it instead of having to use my granny bifocals.

So, when clouds ruin your star party, resist the urge to throw the scope in the garbage and turn into Scrooge. Have an "Indoor" Star Party and enjoy learning about the wonders of our universe. But please ... don't let the dog eat the Orion Nebula ... it's my favorite.

# October Celestial Events

- 5** First quarter moon is at 6:59 a.m. EDT
- 6** The moon is at apogee (251,140 miles from Earth), 3:03 a.m. EDT. Mercury is at greatest eastern elongation (26°), 6 a.m. EDT
- 7** The moon passes 1.3° south of Neptune, 2 a.m. EDT
- 8** The moon passes 1.5° south of Uranus, 4 a.m. EDT
- 9** Asteroid Pallas is in conjunction with the sun, 6 p.m. EDT
- 13** Full moon is at 4:53 a.m. EDT
- 16** The moon passes 1.6° south of Saturn, 2 a.m. EDT  
The moon passes 2° south of Jupiter, 8 p.m. EDT
- 19** The moon is at perigee (229,979 miles from Earth), 5:59 p.m. EDT
- 20** Last quarter moon is at 3:59 a.m. EDT
- 21** Jupiter passes 5° north of Aldebaran, 1 a.m. EDT. Orionid meteor shower peaks
- 23** Asteroid Nausikaa is at opposition, 9 a.m. EDT
- 24** The moon passes 3° north of Mars, 1 a.m. EDT
- 26** Venus passes 3° north of Antares, 6 p.m. EDT. Asteroid Urania is at opposition, 9 p.m. EDT
- 27** New moon is at 3:58 a.m. EDT
- 29** Mercury is in inferior conjunction, 9 p.m. EST
- 30** The moon passes 4° north of Venus, 3 a.m. EST





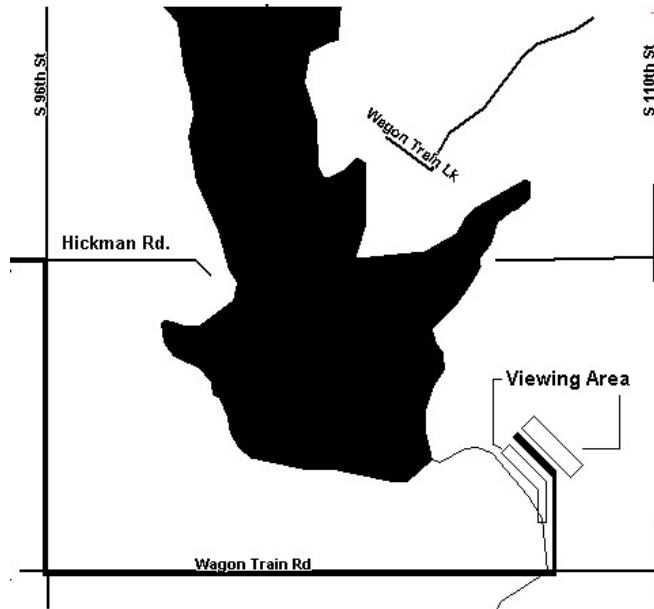
# THE PRAIRIE ASTRONOMY CLUB CALENDAR

## For October 2000

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

**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.



**OFFICERS**  
**OF THE PRAIRIE ASTRONOMY CLUB**

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**The Prairie Astronomer**  
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First Class Mail

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