

President's Report

by Dave Scherping

OBSERVING...

It was Friday March 3rd. The skies were clear and the moon was only 2 days old. It wasn't even very cold out. The FEW of us who attended the star party at the Beaver Crossing site (Tom Miller, Dave Hamilton, Martin Gaskell with two of his students, and me) were treated to some of the best views of deep sky objects we had ever seen. These were provided by Tom's 30" Obsession. In the past, I often referred to a good image as being "nearly as good as a photograph", but with Tom's 30", the views are always better than the photos! Remember when it took some imagination to see the Horsehead Nebula? When was the last time you saw spiral structure in M81 or the "bridge" between the galaxies of M51? Have you ever seen an 18th magnitude galaxy? Without averted vision? Plus, the views of Mars were by far the best I've ever seen. The club scope was there too, providing a superb view of the Rosette nebula, using Tom's 32mm wide-scan with an O-III filter. Also, Dave's 8" gave some great views of the double cluster, Owl nebula, and several galaxies. Unfortunately, around midnight, clouds started moving in, so we packed up and called it a night. Still, it was a great night of observing. Hopefully we'll have good weather and a huge turnout at the Atlas site on the 24th and at Mahoney on the 31st.

NEBRASKA STAR PARTY...

The NSP program schedule should be finalized shortly. As of March 15th, Dr. Wakefield Dort of Univ of Kansas will give a presentation on the Merna Meteor Crater and give a tour on the way home. Brenda Culbertson & Gary Hug of Harveyville, KS will do programs on Solar Observing & CCD Imaging, respectively. From the PAC, Lou Dorland will give a presentation (topic TBD), Brian Schaaf will give a program on about Aurora Phenomena, and Mike Sibbersen & Kendra Stahl have generously volunteered to do a Magic Show. Plus, we have definite "maybes" from several other people. I'll keep you informed as details unfold.

Registrations keep coming in, many from out-of-state and a few locally. If you're planning on attending, please register as soon as possible. There's only a couple of cabins left, so if you want one, contact Tom Miller pronto. As for door prizes, I've received 24 so far, valued at over \$1000.

Also, NSP information may be obtained from America On-Line, Compuserve, and GENie. Plus, thanks to Mark Dahmke, NSP & PAC info is on the Internet World-Wide Web at: <http://www.infoanalytic.com/pac/index.html> (lower case, no spaces). This includes the newsletter, NSP registration brochure, maps, & more. [See Mark's article elsewhere in this newsletter] Nice job Mark! The next NSP Planning Meetings are scheduled for: March 30th & April 27th -- 7:00 pm @ Miller Grass Seed Co., 1600 Cornhusker Hwy.

VOLUNTEERS NEEDED:

EARTH DAY: We need people to man our booth at Earth Day at Antelope Park on April 22nd. We will be set up from 10:00 am-3:00 pm. You don't need to be there the whole time, but an hour or two would be greatly appreciated. Please contact Eric Hubl @ 488-1698 or call me @ 477-2596. to volunteer.

CLUB LIBRARIAN: Does anybody want to take over the club library? Call me @ 477-2596.

FOR SALE:

CELESTRON C4.5: 4-1/2" f7.9 reflector with equatorial (Polaris) mount, 12VDC motor drive (car or battery pack), new hand controller, 1.25" focuser, 5x25 finder, dust cover, & mylar solar filter \$450 obo (paid \$675 new)
10" f5.6 DOBSONIAN: Primary recently recoated (enhanced). Plus glass solar filter (Type II), 2"/1.25" focuser (University Optics), Novak spider & secondary holder, & finderscope (adjustable power) \$525 obo.
EYEPIECES ETC: 25mm Celestron Ortho (1.25") \$30, 6mm B&L Ortho (1.25") \$20, 40mm Celestron Kelnor (1.25") \$25, Lumicon Camera Adapter (prime focus or eyepiece projection) 6 ft of 12" Sonotube \$20
 Call Dave Scherping @ 477-2596 (home) or 421-4545 (work).

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Prairie Astronomer
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Observing Chairman's Report

by Douglas Bell

Next star party: March 31 (Mahoney)
 New Moon: March 31
 Lunar object: The Straight Wall
 Planet: Mars
 Messier monthly: M35
 Top 40: M51, The Whirlpool
 Deep sky: NGC 4565
 Challenge: 3C273
 Errata of the month: Those boo boos really sting! The beehive is M44.

Observing tip: *Never trust the Observing Chairman's lunar dates!*

Quote of the month: *"Binoculars are a gateway drug."*
 Anonymous astronomy widow, 1994

Lunar feature:

The Straight Wall (Rima Rectes)

To every complex problem there's a simple solution, and it's wrong. The Wall looks like a sheer cliff when it's actually a gentle, seven degree slope. This kind of observation lead to the sharply chiseled images in the 1953 paintings of the moon. Beautiful and intuitively obvious, but incorrect. Where you disappointed when Apollo 15 landed in gently rolling hills? Invisible except when illuminated on the slant, you'll have to catch it a sunrise or sunset. About one day after 1st and 3rd quarter.

Planet of the month:

Mars

The Mars season winds up with the planet rapidly falling behind our Earth. My favorite activity is just watching Mars move from night to night. However, you can still glimpse the polar cap and (perhaps) a few other features.

Top 40:

The Whirlpool Galaxy, M51

This is what galaxies are supposed to look like. A beautiful pinwheel that... Huh, what do you mean you can't see the spiral arms? Use your averted imagination. That's what it's there for. Either that or talk your friend with the monster scope into giving you a peek. My 8" SCT hints at the spiral but it's not like the photos. Now a 20".....

Messier Monthly:

M35

Might as well get it right! M35 is a small cluster in Gemini. Rated at !! by our friends in the RASC handbook. Give it a try.

Deep Sky:

NGC 4565

Can't ignore the galaxies now. This is an edge-on spiral showing as a thin streak with a dust lane. The trick here isn't finding galaxies, it's knowing which one your looking at. Enjoy the trip. The Realm of the Galaxies is not visually spectacular, but it's mind boggling to consider what you're actually seeing.

Challenge:

3C273

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The Prairie Astronomer is published monthly by the Prairie Astronomy Club, Inc., and is free to all club members. Membership status and expiration date are listed on the mailing label. Membership dues are: Regular Members...\$10/yr; Family Memberships...\$12/yr; Address all new memberships, renewals, or questions to THE PRAIRIE ASTRONOMY CLUB, INC., P.O. BOX 80553, LINCOLN, NE 68501. For other club information contact one of the following: John Bruce (Lincoln) 483-0389, Lee Thomas (Lincoln) 483-5639, John Lortz (Omaha) 496-1122. All newsletter comments and articles should be sent to Newsletter Editor JOHN LORTZ, 11684 MEREDITH AVE., OMAHA, NE 68164 no later than 10 days before monthly club meetings. Club meetings are held the last Tuesday of each month at Hyde Observatory in Lincoln, NE.

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This small home appliance is the 273rd entry in the 3rd Cambridge radio survey. It was the first quasar discovered, and, as the name suggests, it has a totally stellar appearance. At magnitude 12-13 (it's variable) this is a faint catch in most scopes. It's probably the most distant object view able by us amateurs. The actual distance depends on your interpretation of its gigantic redshift, and which Hubble constant you use.

Last month's trivia answer:

Platinum was the favorite in the days of metal mirrors. Unfortunately, the French revolutionaries couldn't allow that the Monarchists had a good idea. Instead they used the precious metal as the standards for their new, egalitarian measuring system. For over 150 years all meters and kilograms were defined by a pair of scratches on a bar, and the mass of a cylinder made from the platinum that the French King would have used in the worlds largest telescope.

PAC on the World Wide Web

by Mark Dahmke

The Prairie Astronomy Club is now on the World Wide Web. The Web is a relatively new Internet service that allows "hypertext" browsing of documents that are stored on computers around the world. The Web has become a very popular means of publishing information because it supports both formatted text and embedded graphics.

My company, Information Analytics, operates a commercial Web server using a 56kb/s frame relay circuit and a 486 running Linux (a Unix clone). The address (for those of you with Internet access or Prodigy) is:

<http://www.infoanalytic.com/pac>

The PAC Home Page is listed on a number of Web directories and indexes, including Stanford's Yahoo directory, EINet Galaxy, the Lincoln Telephone Web site, and Clear Skies Home Page. Clear Skies has even put up a special news item about NSP and our Web site. I also posted a Usenet news announcement and have submitted an entry to the GNN What's New page.

The day the Usenet announcement appeared, the PAC pages were accessed about 100 times. Since then, the usage has been steady at an average of 25 per day. In the past month, over 180 unique hosts have accessed our information (since the requests come from a computer or multiuser system, it's impossible to determine the identity of the person viewing the pages). The main menu (or Home Page, as it's called on the Web) has been viewed over 190 times.

The NSP main menu has been accessed 46 times, and the page describing Hyde Observatory is the next most popular, followed by the PAC calendar and Club Notes. The NSP section includes all the material in the brochure, plus an on-line registration form. No one has registered this way yet, but when a request is submitted, it's automatically e-mailed to Tom Miller.

So far, 41 requests came from U.S. educational institutions (including Stanford, Princeton, Emory, Auburn, NYIT, Univ. of Iowa, UNL, UNO, Univ. of Chicago), 40 were from U.S. companies, eight from Canada, seven from Germany and seven from U.S. government hosts (including USGS and Oak Ridge).

In addition, individuals in eleven other countries have visited our site: Finland, Sweden, Argentina, Switzerland, France, Iceland, South Korea, The Netherlands, Poland, Singapore and the United Kingdom.

Tom Miller received an e-mail request from someone at the Johnson Space Center, asking to be put on a mailing list for information about NSP.

John Lortz will be e-mailing the contents of each newsletter, which will be published online. The main menu also lists other Astronomy-related Web sites, planetariums and reference material.

**DOUBLE STARS TO FOLLOW
PART II: CASTOR
(ALPHA GEMINORUM)**

by Martin Gaskell

This is the second of what I hope will be a short series on the best double stars to follow. By this I mean the ones that are "actually doing something." In the first article (page 4 of the July issue of "The Prairie Astronomer") I described how I learned that you don't need a filar micrometer and a big refractor on a massive German equatorial mounting to follow double stars. My mention that you could do it with a piece of cardboard on a 6" Newtonian generated quite a bit of interest among members, and David Knisley has asked me to do a program on it at the April meeting (Tuesday April 25).

I'll give a full description of my methods there with a detailed description of my results, an audience demonstration, and the first annual (!) return visit of "Tel'Poke" - the Gaskell family's ultra-low-cost, home-made, 6" equatorial Newtonian with a high precision clock drive (this year's upgrades to Tel'Poke are almost a program in themselves!).

This month I want to talk about Castor (= Alpha

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(Continued from page 3)

Geminorum), perhaps the best-known double in the Winter/Spring sky, and according to some people the best double in the northern sky. The high declination of Castor makes it measurable all spring (it can still be done in late May.) Next month (if I get time) I want to write about Gamma Virginis, a star undergoing very exciting changes. Since Castor is a star you'll probably look at often and show to friends I'll describe the system and its history a bit.

Castor occupies a famous place in the history of astronomy -- it was the first system beyond the solar system in which gravity was shown to be operating. We might take this for granted today, but in 1803 when Sir William Herschel announced that Castor A and Castor B were orbiting each other, this generated an excitement which was to last for decades.

Castor was probably first resolved way back in 1678 by G. D. Cassini but the duplicity was not rediscovered until 1718 by James Bradley (the Astronomer Royal in England) and James Pound. Bradley and Pound made a fairly good estimates of the position angle (PA = angle of the secondary relative to the secondary measured counter-clockwise from north) but unfortunately did not measure the separation (double star micrometer work didn't really begin in earnest for another 100 years). This is a pity as a good measurement by them (accurate to 0.25", say) would have helped eliminate much of the uncertainty in the orbit. The English minister, Rev. John Michell proposed (on statistical grounds which would seem overwhelming convincing today) that Castor, and close binaries like it, were true gravitationally bound systems, but the theory was not accepted until Sir William Herschel's famous announcement in 1803 that Castor A and Castor B were orbiting each other.

To complete the story of the Castor system, a third star, Castor C, a 9.1 magnitude star 72.5" away in PA 164, visible in any small telescope, has also been shown to be a distant member of the system. It is probably orbiting A and B with a period of 10,000 years. Each of A, B and C has been shown to be a spectroscopic binary (periods of 9.2, 2.9 and 0.8 days respectively) so there are six stars total in the system. Castor C is interesting because the orbit of the components is edge on causing eclipses of amplitude about 0.5 magnitudes (easily detectable visually). Castor C is given the variable star designation YY Gem.

The most recently available photographic parallax measurements give the distance to the system as 45 light years with an uncertainty of about 5 light years. The separation between the A components is 1/25th of an AU. The B components are about 90 AU away from the A components on average, or three times further away than Pluto is from the sun. The B components have a separation of 1/30th of an AU. The C components are more than 1000 AU away (300 times further apart than the sun and Pluto are

but are only 1/60th of an AU apart. Robert Burnham Jr. in his famous "Celestial Handbook" gives an interesting scale model of the Castor system. If A1 and A2 are 2.3 inches apart then B1 and B2 are 340 feet away and have a separation of 1.7 inches. C1 and C2 are 4500 feet away and have a separation of 0.9 inches. It would be fascinating to be on a planet in such a system! If the 45 light year distance is correct, the A and B stars are less massive than stellar evolution theory would predict. The A stars, for example, each seem to be similar to Sirius in spectral type and luminosity, but their masses come out to be about the same as the mass of the sun (Sirius is about twice as massive as the sun).

When Pound and Bradley discovered the duplicity of Castor, the companion was almost due north of the primary. When the famous Wilhelm Struve began micrometric measurements in 1826 the companion was almost due west of the primary. In my lifetime it has gone from being due south of the primary in 1954/55 to due east in 1982. Thus the system has been seen to rotate three-quarters of the way round.



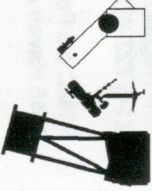


You might think that there is nothing more to be learned about such a famous and well-studied system as Castor, especially not from visual measurements, but this is not true. The orbit of A and B is uncertain by an amount which is detectable using my cardboard micrometer. The main reason is that A and B have not yet been observed to go through a full orbit. As we saw in the previous article on 70 Ophiuchi, even when a system has been observed to go through several orbits there can be still be significant discrepancies when one tries to predict future behavior. We will see this to be the case again with Gamma Virginis. For Castor even the orbital period of A around B is quite uncertain. It has been calculated many times. In 1933 it was calculated to be 340 years, in 1940 to be 380 years, in 1956 to be 511 years, in 1958 to be 420 years and most recently (in 1988) to be 467 years. This is a 50% uncertainty! The semi-major axis of the orbit (the average AB distance) is also uncertain with values ranging from 6.3" to 7.4". This would be much less uncertain if the early 18th century observers had measured the apparent separation. It is agreed that the orbit of A and B is tipped towards us, making an angle of about 65 degrees with the plane of the sky (90 degrees would be seeing the orbit edge-on). A and B appeared to be at their closest in 1969/70, but because of the tilt of the orbit we are not sure when the real closest approach of the stars ("periastron") took place. Orbital calculations place it between 1950 and the late 1960's.

What do these uncertainties mean for the amateur observer in the mid- to late-1990's? In the table below I have calculated the predicted positions from three ephemerides due to P. Muller in 1956, W. Rabe in 1958 and W. D. Heintz in 1988 (the later is the one used in Norton's 2000.0). It will be easy to distinguish between the predictions using a

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The PRAIRIE ASTRONOMY CLUB

APRIL 1995

SUNDAY	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY	SATURDAY
2 Daylight Savings Time Begins ◆ 1st photo of the Sun 1845 	3 Luna 10 1st spacecraft to orbit Moon 1966	4  PAC MEETING 7:30 pm Hyde Observatory !!!	5 Moon at Apogee (251,639 miles from Earth)	6  NSP PLANNING MEETING 7:00 pm Miller Grass Seed 1600 Cornhusker Hy	7 Gamma Ray Observatory deployed 1991	8 FIRST QUARTER MOON
9 ◆ 1st manned docking with space station (USSR) 1971 ◆ Lyrid meteors	10 Moon 8° south of Mars	11  Moon 3° north of Jupiter	12 Yuri Gagarin 1st to orbit Earth (Vostok 1) 1961	13 Saturn 0.5° south of Venus @ dawn	14 Good Friday Passover begins ◆ Christiaan Huygens born 1629	15 FULL MOON ◆ Moon occults Spica 5-6am
16  EASTER	17 Moon at Perigee	18 Moon 3° north of Jupiter	19 ☆ ☆ ☆ ☆ ☆	20 1st rocket belt flight (US) 1961	21 PAC STAR PARTY Atlas Site ◆◆◆ Lyrid meteors	22 LAST QTR EARTH DAY Antelope Park ◆◆◆ Star Party rain date Lyrids Peak
23 1st manned docking with space station (USSR) 1971 ◆ Lyrid meteors	24 Juno stationary ◆ V. Komarov became 1st to die in space (Soyuz 1) 1967	25 PAC MEETING 7:30 pm Hyde Observatory ◆◆◆ HST deployed 1991	26 1st international satellite launched (US/UK) 1962	27 Moon 4°N of Venus NSP PLANNING MTG 7:00 pm Miller Grass Seed 1600 Cornhusker Hy	28 PAC STAR PARTY Beaver Crossing Site (See Feb newsletter for directions)	29 NEW MOON ◆ Star Party rain date
30					Mar 31 MAHONEY PUBLIC STAR PARTY Mahoney State Park Soccer Field	1 Jupiter Stationary

EXTENDED CYCLE OF EARTH

EXTENDED CALENDAR OF EVENTS

PAC ACTIVITIES (see monthly calendar for regular club star parties)

March 31	MAHONEY STAR PARTY	Soccer Field, Mahoney State Park	
April 22	EARTH DAY	Antelope Park 10:00 am - 3:00 pm	Contact: Eric Hubl @ 488-1698
May 5	MAHONEY STAR PARTY	Soccer Field, Mahoney State Park	
May 13	ASTRONOMY DAY	Morrill Hall	Contact: Bev Hetzel @ 483-2119
June 2	MAHONEY STAR PARTY	Soccer Field, Mahoney State Park	
July 25-31	NEBRASKA STAR PARTY	Merritt Reservoir	NSP HOTLINE: (402) 466-4170
August 4	MAHONEY STAR PARTY	Soccer Field, Mahoney State Park	
August 26	PAC PICNIC	Atlas Site	
September 1	MAHONEY STAR PARTY	Soccer Field, Mahoney State Park	

STAR PARTIES & CONVENTIONS:

March 31-April 2	Astronomy Workshop	Eskridge, Kansas	Brenda Culbertson (913) 589-2405 681 Frog Hollow, Harveyville, KS 66431
May 21-28	Texas Star Party	Prude Ranch Fort Davis, Texas	TSP Registrar, 1326 Misty Wood Lane, Allen, Texas 75002 214) 727-8733 or (915) 426-3202 (Prude)
May 26-29	Riverside Telescope Makers Conference	Camp Oakes Big Bear Lake, CA	RTMC c/o Fox & Stephens (909) 948-2205 9045 Haven Ave, Suite 109, Rancho Cucamonga, CA 91730
June 23-25	AL Mid-States Regional Convention	Conway, Arkansas	MSRAL Representative: Tom Martinex (816) 658-3959 MSRAL Chairman: Caroll Iorg (816) 444-4878
July 20-22	ALCON (Astronomical League National Convention)	San Antonio, TX	Registrar: Valerie Kinnamon (210) 690-9551 PO Box 701261, San Antonio, TX 78270-1261
July 25-31	NEBRASKA STAR PARTY	Merritt Reservoir	NSP HOTLINE: (402) 466-4170

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cardboard micrometer. Castor is one of the best stars in the sky to measure in this way. It is so bright and so far apart that you can do it under seeing conditions which would make

measuring other stars impossible. If you have a Celestron Microguide eyepiece with a degree scale this should also let you distinguish between the PAs. You should be able to see a change between now and 1996 if you are careful. If you don't go in for quantitative measurements you will have to wait longer, but the change in PA will be obvious even from eyeball estimates over a 5 to 10 year period. This should also be true for the separation as well. Have a look at Castor this month, and even if you can't make an accurate measurement, try to estimate the PA as accurately as you can. Write it down in your observing book for your future enjoyment! I note with pleasure that the estimated PA I scribbled down in the margin of my "Norton's" in 1972 is now off by a full 100 degrees!

PREDICTED SEPARATIONS AND POSITION ANGLES OF CASTOR AB

Date	Muller 1956		Rabe 1958		Heintz 1958	
	PA	Sep.	PA	Sep.	PA	Sep.
Mar 1, 1995 = 1995.08	72.1	3.54"	66.6	3.44"	70.5	3.45"
Jun 1, 1995 = 1995.42	71.8	3.57"	66.2	3.46"	70.1	3.48"
Oct 1, 1995 = 1995.75	71.4	3.60"	65.8	3.49"	69.7	3.51"
Mar 1, 1996 = 1996.08	71.1	3.63"	65.4	3.52"	69.4	3.54"

AMATEUR ASTRONOMY

By: Dave Scherping

There's numerous reasons why people become astronomers. Many enjoy the beauty of the night sky, some enjoy technical astronomy, some do it for the camaraderie. Some are "armchair astronomers", doing most of their "observing" in the pages of Sky & Telescope, while others are active visual observers. Some hunt for comets, some for supernovae, and some love variable stars & double stars. Then there's the solar observers, the astro-photographers, and the telescope makers. The common thread between all astronomers is an attraction to the night sky and a desire to understand the universe. Throughout the years our involvement & interest varies, sometimes growing stronger & sometimes fizzling out.

I feel that part of my role as president is to help our members continue to grow and not lose interest in astronomy. As with most hobbies, if there's no variation or challenges, you may lose interest. One way to add variation and excitement is to get involved in one of the activities in which amateur astronomers can make contributions to science.

Astronomy is unique among the sciences in that amateurs can and do play an important role. When was the last time you heard of an amateur chemist, biologist, or geologist making an important discovery? Sure, some amateurs dabble in these sciences but rarely do they contribute significant observations or discoveries. In astronomy, professionals are typically absorbed in teaching and conducting specialized research, and observing time at the major observatories is limited and not easy to come

by. This leaves open numerous areas in which amateurs can contribute. Below are a few examples:

Comet Hunting is the field that usually comes to mind when we think of amateur discoveries. Mankind has had an interest in comets since the ancient days, and devotion to comet discovery can be traced back many centuries. Since the invention of the telescope, many individuals have devoted entire lifetimes to being the first to observe a new comet. It's the one discovery that eternally carries the name of the discoverer. Comet hunting does indeed require dedication. Avid comet hunters are ready to go at dusk nearly every clear night of the year and are up then a couple of hours before dawn, searching the skies again. Some have searched for years with little success, while others have found several. All will tell you, the rewards are worth it.

Supernovae Searching, like comet hunting, requires dedication. Unlike comets, new supernovae do not carry the discoverer's name, but the good ones are highly publicized, rewarding the discoverer just the same. Most supernova searchers work by an organized plan, observing numerous galaxies on a regular basis and comparing what they see to photographs, written descriptions, and vivid memories. Racing to be the first to find one makes this activity, like comet hunting, very competitive and rewarding.

Variable Star Observing attracts a large number of amateurs. Most are members of the American Association of Variable Star Observers (AAVSO), which coordinates observations of astronomers across the country. Amateurs involved in variable star observing, enjoy contributing their measurements of apparent magnitudes and periods, to the ever increasing database of astronomical knowledge. These measurements are then often used by professional astronomers worldwide. Information on AAVSO may be obtained from Janet Mattei, 25 Birch St, Cambridge, MA 02138 (617) 354-0484.

Observing Occultations: The International Occultation Timing Association is an organization of about 350 amateurs who, you guessed it, time occultations. The information they compile is used to determine distances, positions, orbits, etc. Information on IOTA may be obtained from Terri & Craig McManus, 2760 SW Jewell Ave., Topeka, KS 66611 (913) 232-3693.

Double Stars: There are estimates that over 1/2 of the stars in the sky are actually multiple star systems. Amateurs can make contributions to astronomy by obtaining data on positions and orbital periods of these systems. You'll probably want to purchase or make a filar micrometer which is used to measure separation and angle.




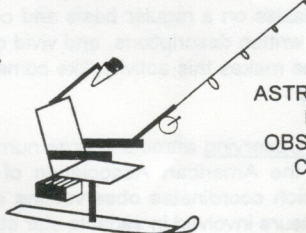
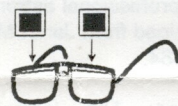
Lunar & Planetary Observations: Many amateurs like to draw, photograph, and/or record their observations of the Moon and planets. During the Jupiter/Shoemaker-Levy comet crash, amateurs played an important role in contributing and compiling visual and photographic observations. You may want to contact the Association of Lunar & Planetary Observers by contacting Harry Jamieson, PO Box 143, Heber Springs, AR 72543 (501) 362-7624.

These are just a few examples of areas to get involved in. There are many more. I must admit, I haven't much experience in many of these areas; I just wanted to throw out a few ideas. For those who are now or have been involved in a project such as those described, it would be great for you to share your wisdom and experiences with the rest of the club. I encourage you to submit them to this newsletter. Also, feel free to submit your data, findings, and observations, even if it's just from casual observing. Even if you haven't made a great discovery, hearing about your experiences motivates us all.

Astro-Man

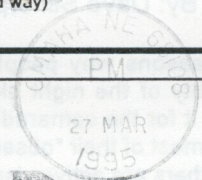
By: Dave Scherping

To assist you in preparing for the Nebraska Star Party, Astro-Man has developed the following checklist of essential supplies:

1.  **CLOUD FILTER GLASSES**
Just in case the "Clear Skies Coordinator" lets you down. Available at most convenience stores.
2.  **ANTI-MILKY WAY GLASSES**
Specially designed to prevent the bright NSP Milky Way from ruining your night vision. Features dark zones to safely shield you from this extremely bright light source. May be purchased at any of the Astronomy Supply Stores in Valentine, Nebraska, or you can make your own using clear glasses & flat black paint.
3.  **HYPER-PROBABILITY DEVICE**
A high quality HPD will nearly guarantee that you win a door prize and will prove to be extremely useful at the Rosebud Casino. Available at all "Crooks R Us" locations.
4.  **ASTRO-MAN'S NSP OBSERVING CHAIR**
Allows you to observe the sky through 11x80 binoculars, while you Bar-B-Q, water ski, and fish for walleye all at the same time !!! Maximize your enjoyment at NSP... time will no longer be an issue. Available in the popular slalom version and in the new "easy-to-use" 2-ski version for beginners. (Spatula, worms, & solar filters are extra). Manufactured, sold, and distributed exclusively by ASTRO-MAN, INC.
5.  **ANTI-AVERTED IMAGINATION GLASSES**
Just insert slides of your favorite deep sky objects into these specially designed glasses, and you'll never again leave the eyepiece wondering if you really saw it. Very handy while working on the "Great NSP Deep Sky Challenge". Warning: AAI glasses should never be used while driving! (Astro-man found out the hard way)



The Prairie Astronomer
c/o The Prairie Astronomy Club, Inc.
P.O. Box 80553
Lincoln, NE 68501



First Class Mail

**Next Meeting
March 28, 1995**

94027 9/95 FS 08
Mr. Earl Moser
P. O. Box #162
Hickman NE 68372

MAR

Please Notice: If there is an asterisk on your mailing label it is time for you to renew your PAC membership!

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