

President's Report

by Dave Scherping

OBSERVING...

The first Mahoney Star Party of 1995, on Friday March 31st, was rather touch & go. The day started out clear but then clouded up, but just before sunset it began to clear. Doug Bell, Tom Miller, Lou Dorland, Tony Fleming, Dave Hamilton & I ventured out to Mahoney and met up with several members of the Omaha Club. Through the variable clouds, we got in a few views here & there, but overall the night was not great for observing.

The next night, Saturday April 1st, was exactly the opposite. Several PAC members met at Beaver Crossing for a fantastic night of observing under clear dark skies. Tom Miller treated everyone to incredible views through his 30" Obsession, I had my new 20", Kelly Erlandson and her friend Mary had the 13" club scope, and Randy Volk & Larry Hancock brought Larry's 12" Orion dobsonian. Although nobody attempted the Messier Marathon, we did nail some great deep-sky objects and it was great to see the summer constellations returning in the late hours.

Coming up in May, get up early on the 21st to see the first of the upcoming disappearances of Saturn's rings. Earth passes through Saturn's ring-plane on May 21st, August 10th, & Feb 11 (1996). Also, the sun crosses the ring-plane on November 19th. The next triple ring-plane crossing won't occur until the year 2038, although there will be single crossings in 2009 & 2025.

OTHER ACTIVITIES & ISSUES...

- Please join us at Morrill Hall on Saturday May 13th for Astronomy Day. We'll be setting up and displaying our scopes, photographs, astronomy software, etc. Contact Bev Hetzel at 483-2119 for more info.
- Thanks to those who signed up to assist with Nebraska Star Party. We'll still need more volunteers to handle the registration table and traffic control. Volunteers should contact Tom Miller or me or sign up at the next meeting. Also, thanks to those who volunteered their time to represent PAC & Hyde Observatory at Earth Day on April 22nd.

- Bryan Schaaf has taken over the responsibilities of PAC Librarian. We have over 50 great books, plus 10 years of S&T. See Bryan if you want to borrow one.
- If you have Internet access, check out the PAC index at <http://www.infoanalytic.com/pac/index.html> (lower case, no spaces). In March, over 200 people worldwide accessed information on PAC, including our newsletter, Hyde Observatory info, & Nebraska Star Party info! Thanks to Mark Dahmke for setting this up. It's quite impressive.
- Included in this newsletter are maps to the Atlas site and to the Beaver Crossing site. Hopefully, this will assist people in attending our star parties. Please note, the Beaver Crossing site will be getting new bathrooms sometime in May.

NEBRASKA STAR PARTY...

NSP plans are coming together nicely. Several members of the NSP planning committee will be visiting Merritt on April 27-30 to finalize plans with Merritt Resort, Game & Parks, etc. Tom Miller has discussed lighting with Game & Parks, and they agreed to turn off lights wherever it's not a safety hazard. Plus we are working with them to shield any remaining lights and Tom made a generous donation to help fund this.

One nice change since last year will be the addition of a new building behind the Merritt Resort store. We

(Continued on page 3)

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 **\$420 obo** (paid \$675 new). Call Dave Scherping @ 477-2596 (home) or 421-4545 (work).

18" f/5 reflector housed in a 10x20 ft. building on the OAS observing site. Telescope has a Galaxy primary mirror, a 4" 1/25 wave secondary, a heavy Poncet mount, and a 5" f/5 refractor finder. It won the Mechanical Excellence Award at a recent Texas Star Party. The building has a split roll-off roof, carpeting, paneled walls, astronomy pictures, a couch, and a stereo. Will take best offer over \$3000. Might consider selling items separately, but prefers to sell as a unit. Call Roger Besch at (402)486-1977.

The Prairie Astronomer

inside...

President's Message	Page 1
Double Stars to Follow pt. 3	Page 2
Sky and Telescope News	Page 4
Astro Man	Page 6
PAC Monthly Calendar	Insert
Map to Atlas Site and Beaver Crossing Site	Insert

DOUBLE STARS TO FOLLOW PART III

GAMMA VIRGINIS AND XI URSA MAJORIS

by Martin Gaskell

This is the third of a short series on the best double stars to follow. Part I (70 Ophiuchi) can be found on p. 4 of the July 1994 issue of "The Prairie Astronomer" and part II can be found on p. 3 of the March 1995 issue. Don't forget to look at these stars! Castor is still observable in the spring and 70 Oph is going to be around all summer. This month I'll mention two spring systems, one for small 'scopes (Gamma Virginis) and another (Xi Ursa Majoris) for larger 'scopes (10" aperture or more). I'll be doing a club program on double stars and how to measure them cheaply at the April meeting (April 25).

GAMMA VIRGINIS

This series is about the double stars "that are actually doing something" and Gamma Virginis, is certainly a star starting to do something. The two components of Gamma Virginis are rushing towards periastron (closest approach) in only ten years time and this provides a rare opportunity to see rapid orbital motion in even the smallest telescopes.

Gamma Virginis is the third magnitude star about 15 degrees to the "upper right" of Spica in the direction of Leo. For the deep sky folks, if you can find the Virgo cluster of galaxies, its the third magnitude star directly south of the cluster! The system is quite nearby, only 32 light years away. The two stars are almost identical F-type main sequence stars, a little hotter than our sun and each about 3.5 times brighter. The identical magnitudes make resolution of the system easier and this will be a plus when they start to get very close in a few years time. They orbit each other in a very eccentric, comet-like orbit that takes them as far apart as 70 astronomical units (about twice the distance from the earth to Neptune or Pluto) and as close as 3 au (closer than we get to Jupiter).

Gamma Virginis was one of the first stars ever discovered to be double. A missionary in India, named Richaud, discovered the duplicity in 1689. It was rediscovered by Bradley, Pound and Cassini in 1718-1720. The first useful measurement (of the position angle only) was made by Sir William Herschel in the fall of 1781. In the 1820's and early 1830's its motion was so rapid and obvious that in 1833 his son, Sir John Herschel, calculated its orbit. This

was only the second time the orbit of a double star had been calculated. John Herschel predicted periastron in the spring of 1836. At apastron (maximum separation) the stars are 6 arcseconds apart (this last happened in the 1920's) but the orbit is very eccentric so that at closest approach the stars are only half an arcsecond apart. In the 1830's this generated considerable excitement. Here was a star which, in only a decade, went from being a fairly easily resolvable close pair to being unresolvable in every telescope in the world except for the great Dorpat refractor used by the famous Otto Struve! The verification of John Herschel's prediction helped fuel the double star fever of the latter 19th century.

It is now 1995 and you get a chance to relive the excitement of the 1830's! According to the most recent (1990) orbital calculation of Dr. W. D. Heintz, Gamma Virginis has a 168.68 year period and the next periastron will occur less than 10 years away, in late February 2005. Between now and then Gamma Virginis is closing rapidly. The very eccentric orbit makes Gamma Virginis different from most other double stars. For the majority of double stars the main change is in the position angle. For Gamma Virginis, not only will the position angle (PA) be changing rapidly (about 3 degrees per year right now; increasing to 70 degrees per year in 2004/2005) but the separation can be seen to be changing rapidly from year to year. It is closing steadily at a rate of about 0.14 arcseconds per year (easily detectable with a cardboard micrometer) and this rate will increase slightly towards periastron. In the table below I give the predicted separations and position angles for the next few years. The cumulative change in separation between now and 2005 is so large that it will be obvious in a small telescope without making any quantitative measurements. Just note the position angle in your note book relative to the east-west drift in the telescope, estimate the separation relative to the resolution of your telescope and write down your impressions in your observing book so that you can refer back to them in future years. When 2005 comes, unless you have a very big telescope (more than 10" aperture), you won't be able to resolve it at all! Then even a very big telescope will only resolve it in extremely good seeing.



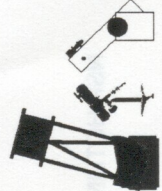
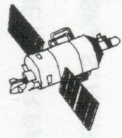
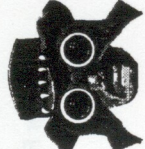


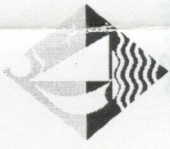

As with the stars I mentioned in the first two articles, there is some uncertainty in the orbit of Gamma Virginis. This is because it is only now completing its first well studied orbit. If you use the older ephemeris given in Norton's 2000.0 (a period of 171 years) you will get positions which are off by quite a lot -- over 2 degrees in PA and over a quarter of an arcsecond in separation. The differences

(Continued on page 4)

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.

The PRAIRIE ASTRONOMY CLUB

MAY 1995

SUNDAY	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY	SATURDAY
<p>7</p>  <p>FIRST QUARTER MOON</p>	<p>1</p> <p>Mercury 4° N of Moon, near Pleiades</p> <p>Gerard Kuiper discovers Neptune's moon Nereid in 1949</p>	<p>2</p> <p>Moon at Apogee</p>	<p>3</p> 	<p>4</p> <p>Eta Aquarid Meteors</p>	<p>5</p> <p>MAHONEY PUBLIC STAR PARTY Mahoney State Park Soccer Field</p>	<p>6</p> <p>Eta Aquarid Meteors</p>
<p>14</p> <p>MOTHERS DAY</p> <p>FULL MOON</p>	<p>8</p> <p>Mars 7° N of Moon</p> <p>1st transatlantic color TV picture transmitted in 1963 (Teistar 2 satellite)</p>	<p>9</p> 	<p>10</p>	<p>11</p> <p>Mercury at greatest elongation (22°)</p>	<p>12</p> 	<p>13</p> <p>Astronomy Day @ Morrill Hall UNL</p>
<p>21</p> <p>3RD QUARTER MOON</p> <p>Earth Passes through ring plane of Saturn</p>	<p>15</p> <p>Moon at Perigee</p> <p>Jupiter 2° S of Moon</p> <p>Nicolas Lacaille born 1713</p>	<p>16</p> <p>☆ ☆ ☆ ☆ ☆ ☆</p>	<p>17</p> <p>Joseph Lockyer born 1836</p>	<p>18</p> 	<p>19</p> <p>PAC STAR PARTY Atlas Site</p>	<p>20</p> <p>STAR PARTY RAIN DATE Pluto at opposition</p>
<p>23</p> 	<p>22</p> 	<p>23</p> <p>Saturn 6° South of Moon</p>	<p>24</p> <p>Mars 1.1° North of Regulus</p> <p>Mercury stationary</p>	<p>25</p> <p>President Kennedy declared man on moon a national objective (1961)</p>	<p>26</p> <p>PAC STAR PARTY Beaver Crossing Site</p>	<p>27</p> <p>STAR PARTY RAIN DATE Venus 0.8° S of moon</p>
<p>29</p> <p>MEMORIAL DAY</p> <p>NEW MOON</p> <p>Relativity theory tested by solar eclipse (1919)</p>	<p>30</p> <p>PAC MEETING 7:30 pm Hyde Observatory</p>	<p>31</p> 	<p>June 1</p> <p>NSP PLANNING MTG 7:00 pm Miller Grass Seed 1600 Cornhusker Hy</p>	<p>June 2</p> <p>MAHONEY PUBLIC STAR PARTY Mahoney State Park Soccer Field</p>		

EXTENDED CALENDAR OF EVENTS

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

May 5	MAHONEY STAR PARTY	Soccer Field, Mahoney State Park
May 13	ASTRONOMY DAY	Morrill Hall
June 2	MAHONEY STAR PARTY	Soccer Field, Mahoney State Park
July 25-31	NEBRASKA STAR PARTY	Merritt Reservoir
August 4	MAHONEY STAR PARTY	Soccer Field, Mahoney State Park
August 19	PAC PICNIC	Atlas Site
September 1	MAHONEY STAR PARTY	Soccer Field, Mahoney State Park

Contact: Bev Hetzel @ 483-2119

NSP HOTLINE: (402) 466-4170

STAR PARTIES & CONVENTIONS:

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	Chris Lasley (501) 327-5518 day (501) 329-7629 eve PO Box 1615, Conway, AR 72033 John Reed (501) 833-0191 day (501) 843-8796 eve
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
Sept 15-17	Astrofest	Camp Shaw-Waw-Nas-See (Illinois)	Astrofest, PO Box 596, Tinley Park, IL 60477-0596

(Continued from page 1)

should be able to use this for registration, literature, etc. Plus, next year they plan to build more cabins and/or motel rooms across the road from the current cabins!

Also, "The Great NSP Deep Sky Challenge" is being designed by Bryan Schaaf, Jason Stahl, Tom Miller, & me. Tune up your observing skills... this one's going to be great! In addition, Jason's putting together "Name-That-Object".

PROGRAMS: The program schedule is nearly finalized and is tentatively as follows:

Barbara Wilson (95% sure)	Houston, TX	topic TBD
Dr. Wakefield Dort	Univ. of Kansas	"Merna Meteor Crater"
Kendra Stahl	Lincoln (UNL & PAC)	topic TBD (Technical)
Lou Dorland	Omaha (&PAC)	topic TBD
Brian Schaaf	Lincoln, NE (PAC)	"Aurora Phenomena"
Brenda Culbertson	Harveyville, KS	"Solar Observing"
Gary Hug (maybe)	Harveyville, KS	"CCD Imaging"

Also: There will be a **Magic Show** donated by **Mike Sibbersen & Kendra Stahl !!**

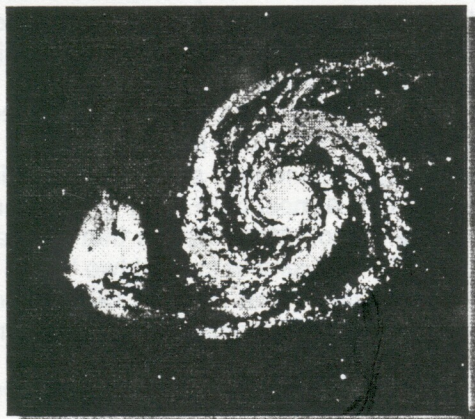
Plus: Obsession Telescope's **Dave Kriege** will wash, center dot, and collimate both your primary & secondary mirrors on your reflector while you watch. Learn a few tricks to keep your scope in peak performance. So bring your dirty optics & go home clean & aligned. (this will probably be held Wednesday 7/26)

DOOR PRIZES: The following is a list of door prizes donated thus far:

(2) Tee Shirts & (2) Clear Skies subscriptions	donated by Sky Bear Publishing
Sky Glow Filter	donated by Orion Telescopes
6" Solar Screen	donated by Tuthill
ST4 for MAC, ST4 for PC, ST8 demo,	donated by Santa Barbara Instruments
CCDOPS for MAC, CCDOPS for PC (software)	"
PIXFIX, SUPERFIX (image processing software)	donated by Bruce Johnston Computing
The SKY for DOS	donated by Software Bisque
5 Videos: (3) "Astronomy 101", (2) "I Dig Fossils"	donated by Mazon Productions
12mm RKE eyepiece	donated by Edmund Scientific
"City Astronomy" book	donated by EMF Corporation
Disk of misc. programs	donated by Aluminum Coatings
"Messier Marathon" Book	donated by JMI
(3) \$50 Gift Certificates	donated by Parks Optical
\$20 Gift Certificate	donated by Lumicon
\$25 Gift Certificate	donated by Spectra Astro-Systems

Please remember the generosity of these manufacturers, publishers, and distributors when you make future astronomy related purchases.

Call the NSP HOTLINE: (402) 466-2596 for information or to register for The Nebraska Star Party.



(Continued from page 2)

between the old and the new Heintz ephemeris have been easily detectable with my cardboard micrometer. How good is the Heintz ephemeris itself? I gave Gamma Virginis particularly intensive study last spring (1994) with our 6" Newtonian ("Tel'Poke") and came up a PA in agreement with the 1990 ephemeris but a separation about 0.05" too large. This is about the same as my calibration uncertainties, but 5 years of observations by more experienced amateur observers with larger telescopes gave a mean separation 0.08" larger than the ephemeris and speckle observations with the 26" at the US Naval Observatory in 1994 gave a separation 0.04" wider than the ephemeris so it looks like the Heintz ephemeris is underpredicting the separation slightly. Any discrepancies will be larger as periastron approaches so I'm going to be keeping a close eye on Gamma Vir with my cardboard micrometer. From these numbers you can see, that at least for a bright pair like Gamma Vir, the \$0.25 cardboard micrometer on Tel'Poke compares quite favorably with a \$100,000 piece of equipment on a 26" refractor at the US Naval Observatory! Come the spring of 2000 however and I going to need to have built a slightly larger telescope!

Gamma Virginis

Date	Year	PA	Sep.	PA (obsd. MG)	Sep. (Obsd. MG)
June 21, 1994	1994.48	278.1	2.29"	277.4 +/-0.6	2.34" +/- 0.03
May 1, 1995	1995.33	276.1	2.17"		
May 1, 1996	1996.33	273.4	2.03"		
	1997.33	270.5	1.89"		
	1998.33	267.0	1.73"		

XI URSA MAJORIS

For those who already have a larger telescope I must briefly mention Xi Ursa Majoris, the most southerly obvious naked eye star of Ursa Major (it's just above the east end of Leo). This system is only 26 light years from the sun. The stars orbit each other with a period of 60 years so they've been seen to go through three complete orbits since they were discovered by William Herschel in 1780. Xi UMa is famous for being the first star to have its orbit determined, by M. Savary in 1828, 5 years before John Herschel calculated the orbit of Gamma Virginis. The stars went through a closest approach in the sky of 0.85" in 1992 and will be at periastron this year (the difference is due to perspective caused by the tilt of the orbit as seen from the earth). Between now and the year 2000 the system will widen from 1.10" to 1.77". At present it can just be resolved by a 6" but an 8" or 10" would be better. It is certainly possible to measure it with a cardboard micrometer on a 10" -- I measured it in 1992 when the separation was 0.89". But if you can't measure it, this is a system to just watch as the stars swing round each other. The change in PA is rapid -- well over a degree per month. Since I measured it in 1992 the PA has changed from 13 degrees to 312 degrees this

spring, a change of 61 degrees! This is the sort of change you can see in sketches in your observing notebook.

Here is a star which you might be able to follow through an entire orbit if you live long enough! Below is a brief ephemeris due to W. D. Heintz. It was calculated 30 years ago, so I would not be surprised if there are deviations from it at a level which could be detected by a cardboard micrometer and a 10" - 12" telescope.

Xi Ursa Majoris

1995.0	1.10"	316.9	1998.0	1.61	285.8
1996.0	1.29"	303.6	1999.0	1.71	278.9
1997.0	1.47"	293.7			

Sky and Telescope News

For April, 1995

(from the CompuServe Information Service)

LOCAL GROUP + 2

Two galaxies have been discovered on the outskirts of our Local Group of galaxies, the fourth and fifth such neighbors found in the last two years. Marshall McCall (York University) and Ronald Buta (University of Alabama) found the faint, amorphous bodies on the border between Cassiopeia and Perseus in 1992, roughly a half degree south of the elliptical galaxy Maffei 1. They revealed themselves at a near-infrared wavelength of 0.8 micron but are invisible in blue light. As reported in this June's issue of the *"Astronomical Journal"*, the larger object is roughly 3.5 arc minutes long and possibly a barred spiral. The smaller object, 1.4 arc minutes across, is most likely a dwarf irregular galaxy. If physically associated with Maffei 1, these objects would lie roughly three times farther away than M31.

ZAGAMI *IS* FROM MARS

On October 3, 1962, inhabitants of the Katsina Province in Nigeria saw a 20-kg meteorite fall to Earth. Later name Zagami, this stone has a composition so unusual that it's believed to have come from Mars. Now five geochemists led by Kurt Marti (Univ. of California, San Diego) have analyzed noble gases trapped within shards of glass from the meteorite. These glasses were shock-melted when the rock was blasted off the Martian surface and into interplanetary space, and they preserve critical information about the Martian atmosphere as it existed hundreds of millions of years ago. Marti reports that the gas samples from Zagami are very similar to what two Viking spacecraft found when they landed on Mars in 1976. Curiously, not all of the 11 recognized Martian meteorites contain these

(Continued on page 5)

(Continued from page 4)

trapped gases. Marti speculates that the Zagami stone must have resided on or near the surface, so that it had intimate contact with the Martian atmosphere before being propelled into space.

IO: STILL GOING...

Astronomers John Spencer and Jim Harrigan report that the new volcanic eruption on Jupiter's moon Io, which burst forth on March 2nd, is still going strong. They reobserved the hot spot on March 30th at the infrared wavelengths of 1.7 and 2.3 microns, using the 72-inch telescope at Lowell Observatory.

PROBLEMS ON PARANAL

Legal wrangling over Cerro Paranal in Chile, the proposed site of the European Southern Observatory's Very Large Telescope, intensified last week. On March 30th a ruling by the Chilean court allowed government officials and militia to occupy the VLT construction zone on Paranal's summit. The Chilean government donated the Paranal site to ESO in 1988, but in 1993 the descendants of Juan Latorre claimed that they -- not the government -- own the mountain. Then on March 28th an injunction was issued against further work by ESO, but construction continued anyway. According to an ESO press release, "This act raises to a new level the quality of the harassment to [ESO] activities in Chile ... in the past year, and will result in substantial financial damage to the VLT project."

KUIPEROIDS: 21 & COUNTING

In the last few years a total of 21 objects have been discovered at or near the distance of Pluto. These represent the inner ranks of a much larger population of perhaps 35,000 such objects, each at least 100 km across, that exist between 30 and 50 astronomical units from the Sun. Known as the Kuiper Belt, this collection is thought to consist of unassembled planetesimals left over from the formation of the solar system. Observers Jane Luu and David Jewitt have discovered the bulk of these far-flung objects. Luu says that some clumping in space seems to exist among the ones found so far, and several appear to have orbital periods in resonance with that of Neptune, as does Pluto. Luu expects to begin a more concerted search soon that could net as many as 100 of these so-called Kuiperoids over a three-year period.

MOUNT WILSON INTERFEROMETER

On April 7th Georgia State University announced that Mount Wilson will be the site for its new optical interferometer, which will consist of five 1-meter telescopes arranged in a Y shape. Each arm of the Y will be 200 meters long, giving the entire instrument a resolution of 0.0002 arcsecond. That's equivalent to the

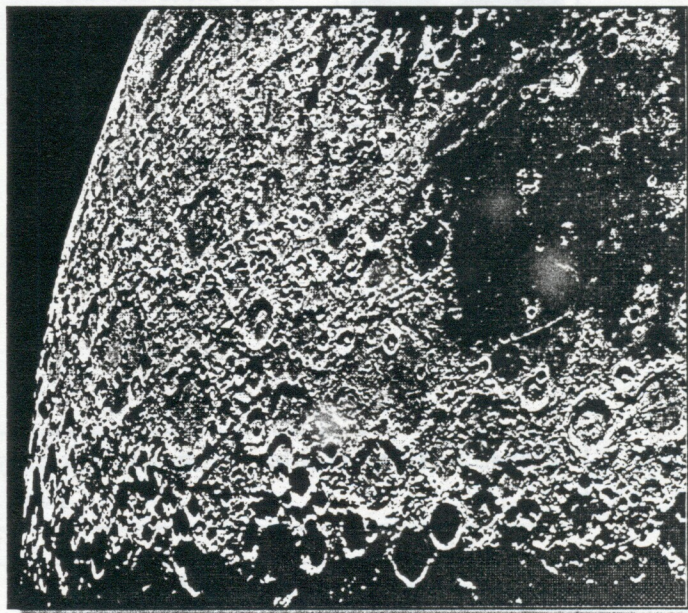
apparent size of Neil Armstrong's footprint on the Moon! Famed for its exceptionally steady skies, Mount Wilson is well known as the home of 60- and 100-inch reflectors built there early this century. These historic instruments may be incorporated into the interferometer array, which will be built by Georgia's Center for High Angular Resolution Astronomy (CHARA).

COMET TAKAMIZAWA-LEVY SPLITS

Jim Scotti reports that Comet Takamizawa-Levy has apparently split, based on his observations with the Spacewatch telescope. On April 5th and 6th, a second nucleus was spotted about 7 arcseconds away from the primary. The secondary was 2 magnitudes fainter than the primary, and it was not seen in images taken January 3rd. The comet passed through perihelion 11 months ago, and it's currently 600 million km from the Earth and Sun and thus out of reach for amateur telescopes. Comet theorist Zdenek Sekanina says the Spacewatch observations are consistent with the split occurring last September, three months after perihelion. Now the question is: will one nucleus be called Takamizawa and the other Levy?

LYRID METEORS, MAYBE

The Lyrid meteor shower is predicted to reach maximum on Saturday morning, April 22nd. But light from the last-quarter Moon will interfere somewhat, and the Lyrids are considered a weak shower anyway. The zenithal hourly rate (that is, the number of meteors seen under ideal conditions with the shower's radiant overhead) is typically only 15 per hour. But surprises happen. In 1982 the ZHR unexpectedly reached 90 for a single hour and 180 to 300 for a few minutes. Some meteor mavens suspect that the Lyrids have a 12-year periodicity, in which case this could be another surprising year.



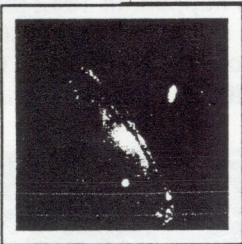
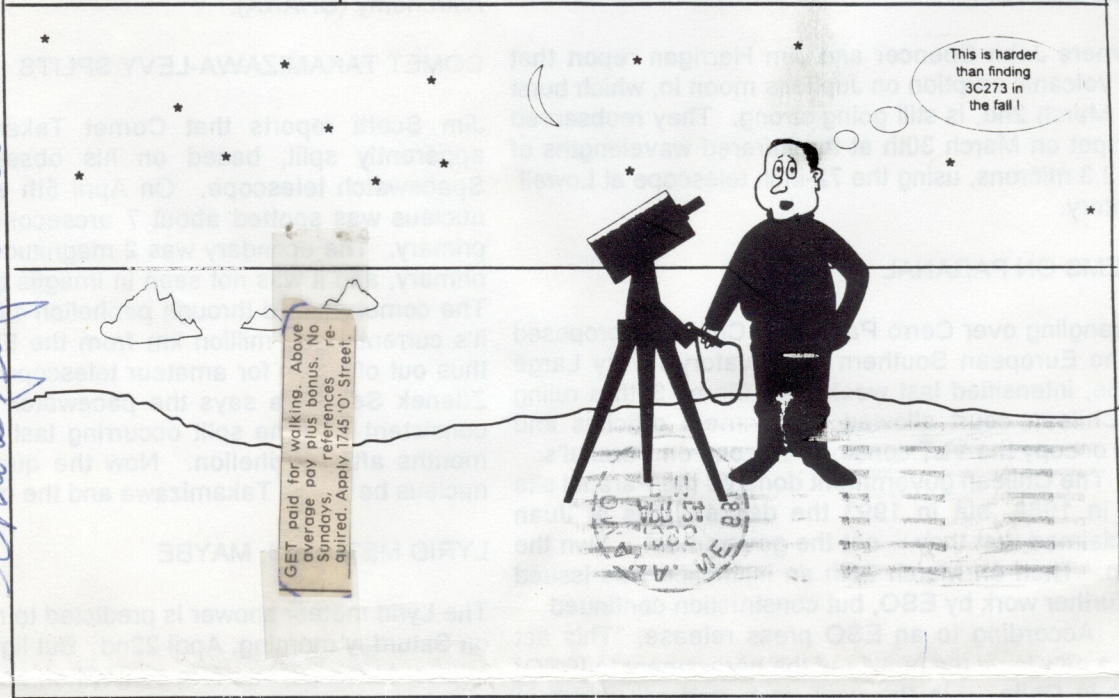
May 6th - 9 AM Sat
Begin June

May 5th Seward Hosp.
Thru paper Bruce

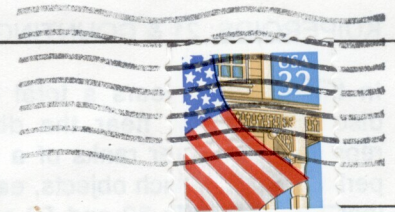
ASTROMAN

By: Dave Scherping

After an hour of trying to find Omega Centauri from Barrow Alaska, Astro-Man finally concludes there are limits to what he can find with his new computer controlled Schmidt-Cassegrain !!



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



first Class Mail

Next Meeting
 April 25, 1995

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

APR.

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

inside...	President's Message	Page 1
	Double Stars to Follow pt. 3	Page 2
	Sky and Telescope News	Page 4
	Astro Man	Page 6
	PAC Monthly Calender	Insert
	Map to Atlas Site and Beaver Crossing Site	Insert