The Prairie Astronomer

May 1995 Volume 36 Issue 5

President's Report

by Dave Scherping

OBSERVING...

May was not a great month for observing, unless you enjoy looking at clouds. As usual, the Mahoney Park star party was clouded out, as was May 19th. Since this article was written mid-month, I can't comment on the star party scheduled for the 26th. Let's hope the summer months bring clearer skies. Be sure to mark you calendar for June 2nd, the night of next Mahoney star party.

AT THE APRIL PAC MEETING...

Martin Gaskell gave a superb presentation on observing and measuring double stars. He amazed us again with one of his ingenious, economical inventions. This time, he demonstrated how to make a diffraction micrometer from a (name brand) cereal box and use if to make double star measurements comparable in accuracy to professionally taken measurements. If you missed the meeting, you may borrow the video tape from Tom Miller.

NEBRASKA STAR PARTY...

Have you registered yet??? It's not too late but DON'T DELAY. This is an event you won't want to miss. Call the NSP Hotline (466-4170) for information.

☐ **DEADLINES: There is a June 1st deadline for T-shirt orders, canoe/tubing trip reservations, and motel reservations. As for T-shirts, we'll let you go over by a week or so, but don't wait too long. Once the T-shirt order is placed, it's too late to get one. Delay at your own risk.** Concerning motel rooms, after June 1st you may be still able to get a room but the motels will not be holding them specifically for NSP attendees. For the canoe trip, we need to let the outfitter know how many to reserve. If you don't have a reservation in by June 1st, we cannot guarantee there will still be canoes available. You may register for NSP up until the star party, however please contact the NSP Hotline if you foresee missing any of these deadlines and we'll do what we can to help out.

☐ **VOLUNTEERS:** We still need volunteers for NSP, primarily to help out with the following:

- ☑Manning the registration table
- ☑Helping out with security at the observing area (mostly during the day on Thursday & Friday while observers are on the canoe trip & at the programs)
- ☑Traffic control (mostly on Tuesday & Wednesday).

Contact Tom Miller at 466-4170 or me at 477-2596 to volunteer.

☐ **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
Brenda Culbertson	
-Harveyville, KS	"Solar Observing"
Gary Hug (maybe)	
-Harveyville, KS	"CCD Imaging"

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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 **$400 obo** (paid $675 new)

2" Helical Focuser w/ Losmandy 1.25" adapter (new) $60 obo.

Call Dave Scherping @ 477-2596 (home) or 421-4545 (work).

inside...

Observing Chairman's Report

by Douglas Bell

Next star party: June 2
New Moon: May 29, June 28
Lunar object: Messier's last comet
Planet: Jupiter
Messier monthly: M65 M 66
Top 40: The Coma Cluster
Deep sky: NGC 4038/4039
Challenge: Mare Marginus

Errata of hte month: Oops! Pico is a real mountain in the Imbrium basin. Look for the virtual plateau near the crater Proclus.

Observing tip: Move away from your scope before spaying insect repellent.

Quote: *I would never have seen it if I didn't believe it.* - Anonymous.

Lunar feature: *Messier's last comet.*
Fittingly, Messier the comet hunter has a lunar crater which looks amazingly like a stereotype comet. Messier A and B craters were caused by a very low angle impact and retain a distinct oval shape. The highly asymmetric rays form a nice tail.

Planet of the month: *Jupiter*
Jupiter reaches opposition on June 1st appearing nearly 45 seconds wide. This should also be a good naked eye apparition as Jupiter slides through Scorpio and Orphiucus.

Top 40: *The Coma Cluster*
The open cluster, not the galaxies (although they're nice too). Variously seen as the tail on the lion or as the Queen's hair, this broad cluster is spectacular in binoculars. Longer, narrower, and having more stars than the Pleiades.

Messier Monthly: *M65 and M66*
M65, 66 and NGC 3628 form a great triple in a modest telescope. Located about where Leo's hind foot should be (assuming a lion laying at rest).

Deep Sky: *NGC 4038, NGC 4039*
This must be the month for multiple galaxies. NGC 4038/4039 are the famous antennae interacting galaxies. The similarities between the real thing and the computer simulations of two galaxies running into each other are startling. A tough catch for small (10" or less). I don't know how much aperture you need to actually see some of the tails.

Challenge: *Mare Marginus*
Myth: The Moon always shows the same face towards Earth. Fact: Nearly 59% of the Lunar surface is visible because of an effect called libration. Mare Marginus is in that "hidden" 9%. East of Mare Crisium. You'll need a favorable libration (they're listed in S&T) to see much anything of the Mare. If you see any detail you're a better observer than I am.

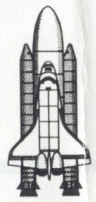
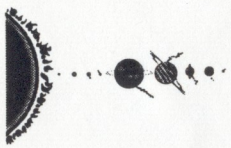
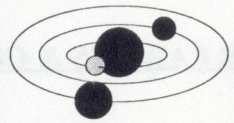
Monthly trivia:

An easy one. *What topic won Albert Einstein's only Nobel prize?*

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

JUNE 1995

SUNDAY	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY	SATURDAY
	May 29 MEMORIAL DAY *NEW MOON* Relativity theory tested by solar eclipse (1919)	*May 30* **PAC MEETING** **7:30 pm** **Hyde Observatory** **!!!**	*May 31* 	*1* **NSP PLANNING MEETING** 7:00 pm Miller Grass Seed 1600 Cornhusker Hy	*2* **MAHONEY PUBLIC STAR PARTY** Mahoney State Park Soccer Field	*3* 200" Hale Telecope dedicated 1948 1st USA spacewalk (E. White - 1965)
4 	*5* Moon 6° South of Mars	*6* *FIRST QUARTER MOON*	*7* 	*8* Giovanni Cassini born 1625 1st X-15 flight 1957	*9* Spica occulted by Moon disappears ≈1:50am reappears ≈ 2:35am	*10* 
11 Moon 2° North of Jupiter	*12* *FULL MOON*	*13* Pioneer 10 left Solar System 1983	*14* Jupiter 5° North of Antares	*15* Mercury 1.2° North of Aldebaran	*16* **1st & only solo woman in space (V. Tereshkova) (USSR - 1963)**	*17* 
18 **FATHER'S DAY** 1st American woman in space (S. Ride - 1983)	*19* *3RD QUARTER MOON*	*20* 1st flight of liquid fuel rocket plane (Germany - 1939)	*21* Summer Solstice 3:34 pm CST	*22* Charon (Pluto's moon) discovered by J. Christy (1978)	*23* **PAC STAR PARTY** Beaver Crossing Site	*24* Look for thin crescent Moon above Venus & Mercury in the East at dawn
25 Moon 0.6° North of Mercury ...rth	*26* Moon 3° South of Venus Charles Messier born 1730	*27* **PAC MEETING** **7:30 pm** **Hyde Observatory** *** *NEW MOON*	*28* 	*29* **NSP PLANNING MEETING** 7:00 pm Miller Grass Seed 1600 Cornhusker Hy	*30* **PAC STAR PARTY** Atlas Site *** Tunguska impact 1908	

EXTENDED CALENDAR OF EVENTS

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

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

NSP HOTLINE: (402) 466-4170

STAR PARTIES & CONVENTIONS:

June 23-25	AL Mid-States Regional Convention	Conway, Arkansas	MSRAL Representative: Tom Martinex (816) 658-3959 MSRAL Chairman: Caroll Iorg (816) 444-4878 Registrar: Chris Lasley, Box 1615, Conway, AR 72033
July 20-22	ALCON (Astronomical League National Convention)	San Antonio, TX	Registrar: Valerie Kinnamon (210) 690-9551 or Bob Gent (210) 497-5180 PO Box 701261, San Antonio, TX 78270-1261
July 25-31	NEBRASKA STAR PARTY	Merritt Reservoir	NSP HOTLINE: (402) 466-4170
August 25-27	Eastern Iowa Star Party	near Dixon. IA	William Myers (319) 359-4286 Quad Cities Astronomical Society Box 3706, Davenport, IA 52808

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Ron Dyvig
-Rapid City, SD "Fabricating a 26" mirror"
M. Sibbersen & K. Stahl
-PAC "Magic Show"

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)

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

OTHER PAC ACTIVITIES...

- ☐ I want to thank all of those who made Astronomy Day a huge success. The PAC had 6 telescopes and several computers and display tables set up at Morrill Hall on May 13th. Also, Harman Camera had a couple of scopes there. Tom Miller managed to get his 30" into the building, which was no simple task. We need to thank Jack Dunn for spear-heading the publicity and Bev Hetzel for coordinating Astronomy Day. The crowd was larger than ever. Disappointingly however, the Morrill Hall cave man did not join in the festivities this year!

- ☐ My article about building the PAC 13" Dobsonian has been accepted by Sky & Telescope. I recently submitted several additional photographs, but still need to get a complete group shot of all of those who worked on the scope. Let's try to meet at Hyde Observatory at 6:45pm before this month's meeting for a group photo. If you worked on the scope and cannot make it, please call me so we can cancel it.

- ☐ If you have Internet access, check out the PAC index at **http:/www.infoanalytic.com/pac/index.html** (lower case, no spaces).

- ☐ Do you have any activities you would like to see PAC become involved in? Are there any changes you would like to see happen? Do you want to get more involved? Then contact one of the club officers:

Dave Scherping	President	477-2596
Tom Miller	Vice President	466-4140
Dave Knisley	Program Chair	223-3968
Bryan Schaaf	Secretary	438-4285
John Bruce	Treasurer	483-0389

Cosmic Neighbors
COSMIC DEBRIS BY BRYAN SCHAAF

Amatuer astronomers know what the terms "solar system", "galaxy", and "universe" mean, of course. But how often do we astronomers hear these terms inappropriately used? For example, "Wasn't Pioneer 10 the first probe to leave our galaxy?" or "Is the Andromeda galaxy in our solar system?". For me, to tackle these type questions requires an explaination of definitions that risks loosing the attention of the listener amid a trail of astronomical jargon.

In the past I used to cringe at the prospect of answering such questions, because I couldn't present the concepts in a concise comprehendable manner. Encyclopedically rambling off information, as I did, would bore the listener. Equally, using hand gestures to illustrate the relative sizes or distances involved is both awkward and inadequate at public star parties. Pondering this problem one late night hour, about two years ago, I thought of a simple way to explain the terms and have used the following analogy a few times at public star parties. It entertains the listener from a referance that is already familiar and teaches the meanings of the terms "solar system", "galaxy" and "universe" in a way that is easy to remember. This approach can be abbreviated or modified too, dependant on the individual's appetite for it.

Imagine you are standing or sitting in your living room. You see every minuscule detail of your living room from the furniture to the specks of dust on books, shelves and the carpet or floor. Imagine that all these particles of your furniture and living room objects represent stars of various sizes and distances. One speck represents our solar system comprised of the sun, nine planets, moons, comets, etc. Some of the objects or particles are clumped together and represent star clusters. Consider that the other rooms of your house similarly represent stars and clusters of stars. (The walls toward the center of your house can be the dark matter that prevent you from seeing the stars of other rooms). All the rooms combined makeup the entire house. Your house represents our galaxy that we call the Milky Way.

Now imagine that you are looking out the picture window of your livingroom -past the stars of the Milky Way- to the house across the street. You know it is similarly shaped and about the same size as your house, but it appears smaller, because of the immense distance across the street. With rooms and contents inside it, it represents a galaxy all it's own. Other houses down the block also represent galaxies of various shapes and sizes. Some are exotic looking. Some are plain looking.

Perhaps a nearby house is larger than all the others in the

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neighborhood. It represents the Andromeda Galaxy, the largest spiral galaxy and one of the nearest to us. The local neighborhood comprised of all the houses including yours represents the local galaxies which we call the "local group"; a galaxy cluster.

If you look beyond your neighborhood, perhaps to a distant hilltop, you see another neighborhood composed of more houses. That neighborhood represents a group of galaxies that we call the Virgo Galaxy Cluster. Still countless more distant neighborhoods, that you know exists beyond the hill and in other directions represent more clusters of galaxies.

Scattered in the open country, maybe outside of city limits, are the oldest, most distant objects of all. They are the peculiar objects like quasars and protogalaxies that to this day remain a mystery.

Everything that exists, known and unknown, may be represented by the county or whatever you want to call it, but it is the "everything" refered to as the universe.

PRAIRIE ASTRONOMY CLUB LIBRARY
JUNE 1995

BOOKS

Ascent to Orbit: The Technical Writings of Arthur C. Clarke □ Arthur C. Clarke □ 1984
Astronomy and Telescopes □ Robert J. Traister, Susan E. Harris □ 1983
Astronomy: A Guide to the Stars and Planets □ Iain Nicolson □ 1983
Astronomy for Everybody □ Simon Newcomb, Robert H. Baker Ph.D. □ 1942
Astronomy Made Simple □ Meir H. Degani □ 1963
Astronomy Maps and Weather □ C. C. Wylie □ 1942
Beyond the Moon □ Paolo Maffei □ 1978
Black Holes and Warped Spacetime □ William J. Kaufmann, III □ 1979
Burnham's Celestial Handbook, Volume One □ Robert Burnham, Jr. □ 1978
Burnham's Celestial Handbook, Volume Two □ Robert Burnham, Jr. □ 1978
Burnham's Celestial Handbook, Volume Three □ Robert Burnham, Jr. □ 1978
Cambridge Atlas of Astronomy, The □ J. Audouze, G. Israel □ 1985
Celestial Mechanics: A Computational Guide for the Practitioner □ Laurence G. Taff □ 1985
Coming of the Age of the Milky Way □ Timothy Ferris □ 1988
Cosmological Distance Ladder, The □ Michael Rowan-Robinson □ 1985
Design of the Universe: The Heavens and the Earth □ Fritz Kahn □ 1957
Dictionary of Astronomy, The Facts on File □ Valerie Illingworth □ 1979
Dictionary of Physics, The Facts on File □ Dr. John Daintith □ 1981
Discover the Stars: A beginners Guide to Astronomy □ Gaylord Johnson, Irving Adler □ 1954
Entering Space: An Astronauts Odyssey □ Joseph P. Allen, Russell Martin □ 1985
Exploration of the Universe □ George Abell □ 1969
Field Guide to the Stars and Planets, A □ Donald H. Menzel, Jay M. Pasachoff □ 1983
First Light: The Search for the Edge of the Universe □ Richard Preston □ 1987
Fractal Geometry of Nature, The □ Benoit B. Mandelbrot □ 1977
From Falling Bodies to Radio Waves □ Classical Physicists and their Discoveries □ Emilio Segre □ 1984
From X-Rays to Quarks: Modern Physicists and their Discoveries □ Emilio Segre □ 1976
Frozen Star □ George Greenstein □ 1983
Galaxies and Quasars □ William J. Kaufmann, III □ 1979
Grand Tour, The: Traveler's Guide to the Solar System □ Ron Miller, William K.Hartman □ 1981

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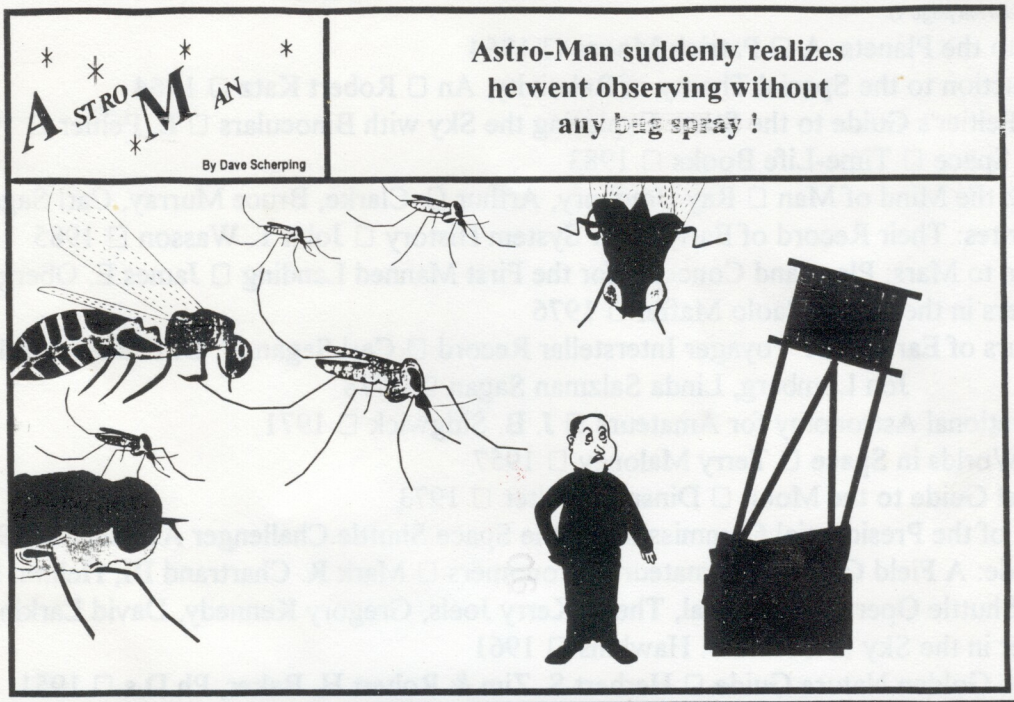
Guide to the Planets, A □ Patrick Moore □ 1954
Introduction to the Special Theory of Relativity, An □ Robert Katz □ 1964
Leslie Peltier's Guide to the Stars: Exploring the Sky with Binoculars □ L. Peltier □ 1986
Life in Space □ Time-Life Books □ 1983
Mars & the Mind of Man □ Ray Bradbury, Arthur C. Clarke, Bruce Murray, Carl Sagan,Walter Sullivan □ 1973
Meteorites: Their Record of Early Solar System History □ John T. Wasson □ 1985
Mission to Mars: Plans and Concepts for the First Manned Landing □ James E. Oberg □ 1982
Monsters in the Sky □ Paolo Maffei □ 1976
Murmurs of Earth: The Voyager Interstellar Record □ Carl Sagan, F. D. Drake, Ann Drunyan, Timothy Ferris, Jon Lomberg, Linda Salzman Sagan □ 1978
Observational Astronomy for Amateurs □ J. B. Sidgwick □ 1971
Other Worlds in Space □ Terry Maloney □ 1957
Pictorial Guide to the Moon □ Dinsmore Alter □ 1973
Report of the Presidential Commission on the Space Shuttle Challenger Accident □ 1986
Skyguide: A Field Guide for Amateur Astronomers □ Mark R. Chartrand III, Helmut K. Wimmer □ 1982
Space Shuttle Operator's Manual, The □ Kerry Joels, Gregory Kennedy, David Larkin □ 1982
Spender in the Sky □ Gerald S. Hawkins □ 1961
Stars: A Golden Nature Guide □ Herbert S. Zim & Robert H. Baker, Ph.D.s □ 1951
Stars and Nebulas □ William J. Kaufmann, III □ 1978
Star Sailing: Solar Sails and Interstellar Travel □ Louis Friedman □ 1988
Starwatch □ Ben Mayer □ 1984
Story of the Starry Universe, The □ David Todd, Donald H. Menzel □ 1941
Time for the Stars □ Robert A. Heinlein □ 1956 □ Sci Fi
To The Ends of the Universe □ Isaac Asimov □ 1967
Webb Society Deep-Sky Observer's Handbook, Volume 1, Double Stars □ Webb Society □ 1986

MAGAZINES

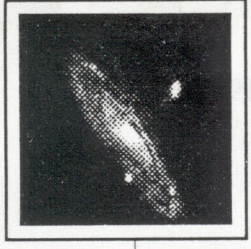
Sky & Telescope magazine issues: August 1982-July 1984, November 1984-October 1987, December 1987-July 1992
Final Frontier magazine bi-monthly issues: April 1988-February 1991

POSTCARDS

Voyagers at Saturn-Astronomy Postcards □ Hansen Planetarium, JPL



A Note From The Editor: Jason Stahl dropped me a line to say that he had received a letter from an astronomer in Cambridge, NE, who would like to coorespond with anyone using CCD cameras. He specifically wants to know how people are using the camera's and any problems or special successes they have had. He is using a ST7 CCD with a Meade LX200 10". Anyone who is interested in contacting this gentleman can do so by writing Bob Linderholm, R2 Box 79, Cambridge, NE 69022. His phone number is (308)697-4793 and fax number is (308)697-3268.



The Prairie Astronomer
c/o The Prairie Astronomy Club, Inc.
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First Class Mail

Next Meeting
May 30, 1995

Mr. Earl Moser 9/95
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MAY

inside...