

tronomer

President's Report by Dave Scherping



If you have access to Internet, see the Prairie Astronomy Club web page: http://infoanalytic.com/pac/ E-mail us at: pac@infoanalytic.com Omaha Astronomical Society web page: http://www.top.net/cdcheney

Well, it happened again. The Spring equinox has come and gone without a totally clear weekend night. For the fourth consecutive year, I planned for a Messier Marathon to no avail. Perhaps next year will bring better luck. Nevertheless, thanks to the OAS for inviting us to their observing site.

The consolation prize (no, it's not spelled "Constellation") was the wonderful viewing of Comet Hyakutake. It came suddenly and unexpectedly, and was in many ways beyond expectations. I know it's a comet I'll never forget. The comet drew more than a few large crowds at Behlen Observatory and at Hyde Observatory, including the largest turnout for a PAC meeting that I can recall. At one point during our March meeting, I counted fifty two people, and I know several more arrived later. When Hyde opened up for public viewing after the meeting, a huge crowd of visitors were treated to views of the comet through the scopes of PAC members. Now, as Hyakutake fades into the west, we can

Also, the March PAC meeting was Kelly Erlandson's last before her move to California. Accordingly, I appointed Dave Hamilton to the position of Vice President, to fill in for the remainder of Kelly's term. Along with his VP duties, Dave accepted the responsibilities of club scope coordinator. He will be keeping the scope at his office. Those who wish to borrow it should contact Dave. Thanks, Dave for helping out.

only hope that Comet Hale-Bopp will equal it next year.

TEN YEARS AGO ... A LOOK BACK .. reported by Bryan Schaaf

Ten years ago, April 12th, PAC members set up six telescopes at the Princeton rest area to view Halley's Comet. "Between one and two thousand people came to catch a glimpse of the comet", said President Andy Corkill.

-THE PRAIRIE ASTRONOMER, April 1986 issue

A goal to find and acquire a club observing site and observatory was proposed by me in November 1985. Such a ambitious project required a carefully laid out course and the first task was to check whether or not such a project was feasible for the club. The following January a questionaire was designed to elicite the opinions of club members. The "results" of the questionaire, written by Lee Thomas, appear on page 7. I hope you find them as interesting as I did.

APRIL/MAY **MEETING NOTICES:**

ASTRONOMY DAY SATURDAY, APRIL 27th, 10 a.m.- 4 p.m. at Ralph Mueller Planetarium (Setup at 8:30 a.m.)

> **GENERAL MEETING** TUESDAY, APRIL 30th, 7:30 p.m. at Hyde Memorial Observatory

NSP MEETING THURSDAY, MAY 2nd, 7:30 p.m. at Mahoney State Park Lodge

ATLAS SITE WORK BEE SUNDAY, MAY 5th, 12:00 Noon

STAR PARTY FRIDAY, MAY 17th at the Atlas Site SATURDAY, MAY 18th (Rain Date)

MAHONEY PUBLIC STAR PARTY FRIDAY, MAY 24th at Mahoney State Park

BRIEFS:

The discoverer of Comet Hyakutake has a appropriate name for it. "Hyaku" means "hurry up". - Lloyd Gowin

A Prairie Astronomy Club Library listing and map directions to the Atlas Observing Site and Beaver Crossing Observing Site are available for the asking. - Bryan Schaaf

The Beatrice Daily Sun newspaper printed an article about PAC on the front page (4/3/96). It is a really fine article full of (mostly) accurate information. I'll bring a copy of it to Astronomy Day. - David Knisely

The designs for this year's NSP T-Shirt should pertain to the Perseid Meteor Shower and/or any other NSP-type activities and be submitted to me no later than MAY 29th. The winning designer will win a free NSP registration and free NSP T-Shirt. - Dave Scherping

IMPORTANT NOTICE

Thursday May 2 NSP meeting has a new location. It will be held at 4421 Superior St (LI-COR environmental) Same time. Questions call John Bruce PRESIDENT'S REPORT, MEETING NOTICES, BRIEFS & 10 YEARS AGO PAGE 1 OBSERVING CHAIRMAN'S REPORT, Q & A, SPACE STATION VIDEO SECRETARY'S REPORT, ATLAS SITE UPDATE, ADVERTISEMENT PRAIRIE ASTRONOMY CLUB CALENDAR

PAC MEMBERSHIP LIST, WELCOME NEW MEMBERS, T-SHIRT AD PRACTICAL MAGNIFICATION LIMITS, SURVEY RESULTS (1986) ASTROMAN

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Observing Chairman's Report

by Douglas Bell



April 30th, for May Observing:

New Moon:

April 17

Top 40: 35 Coma Berenices

Lunar object: Planet:

Vallis Alpes Vesta

Deep sky: NGC 3628

Messier monthly: M 64, the

Challenge: A naked eye asteroid.

black-eye galaxy Tip of the month:

Set up on the front sidewalk for a night.

Quote of the Month:

"I could see it a lot better if that light

wasn't there." Overheard a thousand times during Hyakutake's apparition.

Lunar feature:

Vallis Alpes

A broad, distinct valley on the northern rim of Mare Ibrium. Look for the central cleft and enjoy the view. This area has lots of rimea, mountains, and sharp craters.

Planet of the month:

Vesta

Let's face it. The nine planets are not well placed this month (I figure everyone needs a change from Venus). However, Vesta makes the brightest asteroid apparition this year on May 11th. It reaches magnitude 5.6; as bright as Uranus, and within visual magnitude.

Messier Monthly:

M64, the Black eye galaxy

No, it didn't offend a bigger galaxy. The black eye is a dust lane. You'll need a decent aperture to see the lane. Otherwise, you can still find it and spend some time cruising through the realm.

Top 40:

35 Coma Berenices

How about a good double star for a change. At the turn of the century (the last turn of the century) double stars were a very popular astronomical target, in part, because the faint fuzzies we know and love weren't much to see in a 3 inch scope. However, they're as good as they ever were and are making a bit of a comeback in these light polluted times. Look for the separation, the angle, and the color contrast between the stars. Maybe we'll have to start a whole new category.

NGC 3628

A large bright edge-on galaxy in the same field as M65 & M66. Appar ently Messier didn't think it looked like a comet because it's nearly as bright as the two better known galaxies. All in all, a very good field.

Challenge:

A naked eve asteroid.

Can it be? I can't say that I've done it, but it should be possible. Magnitude 5.6 is viewable at the Atlas site (it would be easy at Merritt Reservoir). This is as bright at they get!

(Continued on page 8, column 1)

Thank you for the question!



Conducted by AstroMan

Q: You mentioned that the RA is the zero point from which the celestial longtitude is measured. This point is located in the first point of Aries. How and why did the first point of Aries become the name for the location of the zero point?

A: RA (Right ascension) is the equivalent of longtitude on the Earth but is measured in hours, minutes and seconds of time eastwards from the zero point. The "zero point" has coordinates of 0 RA and 0 Dec (declination) and is where the ecliptic (the Sun's and planets' paths across the sky, the plane of the solar system) and the celestial equator (the great circle on the celestial sphere that marks the boundary between the northern and southern sky hemispheres) intersect. Confused? Refer to the evening sky map of the January issue of Sky and Telescope magazine or some other star map and locate the intersection yourself. It may help.

The "first point of Aries" was the name given to the zero point because it happened to be in the constellation Aries several thousand years ago. Now, however, the first point of Aries is in the constellation Pisces, but the name has not been changed. Another name for it is the vernal equinox. (The "second point", by the way, is also called the autumnal equinox, located in the constellation Virgo.)

Why, you might wonder, did the first point of Aries change location from Aries to Pisces? That's another story. But simply put, the Earth wobbles as it rotates; similar to the wobble of a spinning top. The rotation axis sweeps around in a huge circle on the sky over a period of 25,800 years. The wobble, which is called precession, has caused the first point of Aries to slip from Aries to Pisces.

Today our north celestial pole star is Polaris, but 13,000 years from now, Vega will be the nearest bright star to the north celestial pole, due to... precession.

Questions about astronomy or PAC can be confidentially sent to AstroMan in care of Bryan Schaaf (see address and phone number bottom of page).

THE INTERNATIONAL SPACE STATION EXHIBIT VIDEO by Jack Dunn

I managed to track down the latest NASA video on the International Space Station project. I found it in Houston, borrowed it and edited it. This will now run on Cablevision channel 21 (Educable) on the following schedule. This way teachers can just copy it at home or school right off of the cable. Running time is about 14 minutes.

Tuesday, April 23rd	6 p.m.
Thursday, April 25th	2 p.m.
Saturday, April 27th	4 p.m.
Monday, April 29th	12:30 p.m.
Wednesday, May 1st	6 p.m.
Sunday, May 5th	4 p.m.

The Prairie Astronomer is published monthly by the Prairie Astronomy Club, Inc. The membership expiration date is listed on the mailing label. Membership dues are: Regular Members...\$15/yr, Family Memberships...\$17/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: President Dave Scherping (Lincoln) 477-2596, Treasurer John Bruce (Lincoln) 483-0389, Secretary Bryan Schaaf (Lincoln) 438-4285. Address changes, newsletter comments, and newsletter articles should be sent to: Bryan Schaaf, 1309 W. PLUM, LINCOLN, NE 68522 or E-mail to schaafb@aol.com by the 15th of each month. Club meetings are held the last Tuesday of each month at Hyde Memorial Observatory in Lincoln, Nebraska.

MEETING ADJOURNED ...

Secretary's Report by Bryan Schaaf



The March 26th PAC meeting began at 7:35 p.m. with the sound of President Dave Scherping's gavel. Most PAC meetings begin with the "Introduction of Visitors", but this meeting began differently with the introduction of "Rules of the Meeting":

- 1. Raise your hand to talk
- 2. No critisizing others
- 3. Be understanding of beginners and visitors

These three simple rules are for everyone and are intended to help maintain order at all future meetings. With these rules intact, anyone that wants to speak at a meeting can be heard by all others without interruption and ideas and views can be freely expressed.

Second on the agenda was the "Introduction of Visitors" and there were *many* present including three new members! Welcome visitors and new members!

In the "What's Up" section of the meeting, Dave described observations and positions of the planets, followed by Comet Hyakutake, of course, and the Lyrid Meteor Shower and the "rising" total lunar eclipse. Dave Scherping and Dave Knisely reported seeing a 60 degree long tail of Comet Hyakutake on Monday night (March 25th).

Treasurer John Bruce announced that astronomical calendars need to be picked up and paid for by those that ordered them. He will (by the time you read this) call the individuals that haven't yet paid.

John also reported the following:

- * A \$2500 certificate of deposit was invested recently at a annual rate of 6.5 % to help defray the cost of publishing the newsletters and postage.
- * CCD Astronomy magazine (by Sky Publishing Corp.) is now available at a club discount rate. The regular subscription price is \$22 and the discount price is \$20.
- * The realty company that last month expressed an interest in a "option to buy" the Atlas Site has agreed to pay the lawyer fees charged to PAC in addition to the (if and when) "option to buy" agreement(s).
- *A NEWSWEEK magazine issue features a article about the observations of Comet Hyakutake, including a sentence about PAC observing of the comet.

Lastly, John brought up the issue that more volunteers are needed to be present at Hyde Memorial Observatory on Saturday nights for observing for the public. Telescope operators are particularly needed on public nights, because one or two volunteers simply are not enough. Some nights hundreds of visitors show up to observe. Less than half of the twenty-seven listed volunteers show up when scheduled. Two or three individuals are present almost every weekend whether they are scheduled or not. Several other members strongly reiterated the need for volunteers to make the commitment to be present when scheduled.

Jack Dunn announced a new policy that was inacted at the board meeting just before the beginning of the PAC meeting: Perspective volunteers will be called and asked when (what date) one can volunteer with the understanding that such a stated time is a commitment to be present.

Discussion turned to observing site news, including recent progress in the clean-up efforts of the Atlas Observing Site. A suggestion was expressed that there ought to be an observing site manager to oversee the maintenance of the site. Would anyone like to take on that responsibility? There is an incentive. Erik Hubl suggested that the site manager be provided a site key free of charge (normally a \$17 annual charge) and paid for by the club treasury. A motion was made, voted and carried to provide a key to whomever volunteers to be the site manager.

Kelly Erlandson is moving (has moved as of April 5th) to Antioch, California. As Vice President and active member, she contributed a lot to the club. We'll miss you, Kelly.

Dave Scherping has appointed Dave Hamilton as the new Vice President. As V.P. Dave Hamilton as accepted the appointed responsibility to coordinate the checking out of the club telescope to members. If you want to schedule the telescope for free check out, notify Dave Hamilton at his office at Soap Notes Inc., 3140 O street, 434-2900 during daytime hours. "I'm usually there twelve hours a day", he said.

Astronomy day is just days away as you read this. Some ideas for astro-displays and news about the simultaneous, NASA sponsored, International Space Station display were mentioned by Jack Dunn. Dave Knisely, the Astronomy Day coordinator, announced that we will begin setting up displays at about 8:30 a.m. on April 27th and be "up and running" by 10:00 a.m.

The meeting adjourned at about 8:40 p.m. The program afterwards took place over ten million miles away (Way to go, program chairman!). The Hyde Memorial Observatory was opened for public viewing of Comet Hyakutake.

ATLAS SITE UPDATE - by Bryan Schaaf

The warmup shed needed some work, so I began framing a new wall and door frame on Saturday, March 16th. Sunday, March 31st was the scheduled work bee. Jerry Williams, Erik Hubl, Del Motycha and I continued the wall work and tended to various other tasks. The shed has a solid front wall and lockable door now. Also, I painted the door side of the shed on April 6th. It looks really good!

Some cleanup remains to be done, but most of all, a truck is needed to haul the junk away. Most of the junk is already gathered in one place.

The outhouse needs to be positioned and bolted down. With a little effort by six or more people and minimal materials, the outhouse could be finished. It already has a newly installed door.

Six or more people could have the Atlas Site grounds looking sharp in three or four hours of 100% effort. Then, work bees wouldn't have to be scheduled so often. The next work bee will be on Sunday, May 5th at noon. If you are late, please come out anyway.

FOR SALE:

A nearly new Mead (Model 395) 90mm equatorial refracting telescope is for sale. Originally it was \$600; asking \$450. A star diagonal and 6 x 30 finder scope are included. Also for sale are four super plossel eyepieces (26mm, 15mm, 12.4mm, 9.7mm); \$65 each or all four for \$225 or the telescope and eyepieces all together for \$625.

If interested, please contact Bruce Marquis at 472-4700 (day) or 423-4643 (eve).

The Prairie Astronomy Club May 1996

2	TAT					
Venus is at it's brightest this month in the western evening after the sun. Mars reappears from the glare of the Sun late northeast sky in the morning twilight. Use binoculars to find inght and passes the meridian by sunrise. It begins retro-grasses as morning twilight begins; in the southeast at surrise. Connet Hale-Bopp is about 14 degrees east of the handle connet. It's coordinates on May 1st are: 19h44m-17o21' at magnitude. Observation of Hale-Bopp emerging from behir the morning of May 8th will be difficult as the sun rises soo	Venus is at it's brightest this month in the western evening sky. It sets about three hours after the sun. Mars reappears from the glare of the Sun late this month, low in the east-northeast sky in the morning twilight. Use binoculars to find it. Jupiter rises at about midnight and passes the meridian by sunrise. It begins retro-grade motion on May 4th. Saturn rises as morning twilight begins, in the southeast at sunrise. Connet Hale-Bopp is about 14 degrees east of the handle of the Teapot (Sagittarius) this month. It's coordinates on May 1st are: 19h44m -17021' and is shining at about 7.7 magnitude. Observation of Hale-Bopp emerging from behind the dark limb of the Moon on the morning of May 8th will be difficult as the sun rises soon afterwards.	y. It sets about three hours his month, low in the east- it. Jupiter rises at about mid- e motion on May 4th. Saturn the Teapot (Sagittarius) this is shining at about 7.7 the dark limb of the Moon on afterwards.	Comet Hyakutake perihelion, closest to Sun (0.23 AU) Comet Hale-Bopp 19h 44.0m - 17021' 7.7m "44.0 m" = 44 minutes "7.7m" = 7.7 magnitude	2 NSP MEETING AT MAHONEY STATE PARK LODGE 7:30 PM	3 FULL MOON 6:48 AM	4 Venus at greatest brilliancy (mag. 4.5) Eta Aquarid meteor shower peaks
Venus at max. north declination in 20th Century Freedom 7 flight with Alan Shepard aboard, 1961	6 Moon at perigee, 227,752 miles 4:45 PM Progress M-32 launch scheduled (Russia)	is solid front well as the well as the shed on Apple of the shed on Apple of the front sway. The curhouse of set	S Jupiter 5 deg. S of Moon 7 PM Lunar occultation of Comet Hale-Bopp Asteroid Vesta at opposition (mag. 5.6)	9 Uranus 6 deg. S of Moon 1 AM	10 Last quarter Moon 12:04 am	Albert Einstein's General Theory of Relativity, 1916
Comet West-Hartley at perthelion (2.13 AU)	Saturn 3 deg. S of Moon 8 AM, look east for them 30 minutes before sunrise	Eclipsing variable star Algol at minimum magnitude at 1:18 AM; eclipse last ~10 hours Mercury at inferior conjunction 8 PM	Mars 1.7 deg. N of Moon 10 PM Mercury Faith 7 launch with Gordon Cooper aboard, 1963	Faith 7 splashdown, 1963 Scheduled launch of ST877, Endeavour Space Shuttle, Spacchab-4 Algol minimum 10:07PM	17 STAR PARTY AT ATLAS SITE (RAIN DATE-SAT. NIGHT) NEW MOON 6:46 AM	Apollo 10 launched, 1969 Asteroid 1991 JR, near Earth flyby (0.108 AU)
Venus 8 deg. N of Moon 8 PM Algol minimum 10:07PM Mars 2 launched, Soviet Mars Orbiter/ Lander, 1971	20	21 Comet Hale-Bopp 19h 36.4m -15043' 7.6m Comet Kopff 18h 56.0m -15046' 7.7m	Moon at apogee, 251,700 miles 11:20 AM Pluto at opposition, closest to Earth	Tycho Brahe acquires Hyeen Island on which Uranborg Observatory is built, 1576	24 MAHONEY STAR PARTY AT STATE PARK SOCCER FIELD Mercury Aurora 7 flight with Scott Carpenter aboard, 1962	25 FIRST QUARTER MOON 9:13 AM JFK's Moon goal speech, 1961
26 Apollo 10 splashdown, 1969	Today and next 4 days: International Geoscience & Remote Sensing Symposium, Lincoln, Nebraska	PAC MEETING 7:30 PM AT HYDE MEMORIAL OBSERVATORY MAIS 3 launch, 1971	29 Asteroid Ceres at opposition (mag. 7.0)	Surveyor 1 launched, made first soft landing on Moon, 1966 Mariner 9 launched, 1st to orbit another planet (Mars), 1971	31 Comet Hale-Bopp 19h 29.5m -14650° 7.4m Comet Kopff 19h 06.4m -15649° 7.4m	Asteroids Ceres and Vesta are both at opposition this month and well placed for observation. Vesta will be at 5.6 magnitude. Ceres, though twice the size of Vesta, is less reflective, so use binoculars to see it.

PRACTICAL MAGNIFICATION LIMITS by David Knisely

The maximum useful magnification which a telescope can provide depends on a number of things, such as the size and type of the instrument, as well as the type of object that is being observed. A certain upper limit comes at the point where the eye can see a star's diffraction disk clearly. Going to any higher power will only make the diffraction disk larger, and will add no further detail, since the wave nature of light will obscure any detail much smaller than this disk. The size of the disk (to the first minimum) is the resolution limit given by the Rayleigh criterion: Theta = (1.22 * Lambda)/D, where THETA is the size (in radians), LAMBDA is the wavelength of the light, and D is the aperture of the instrument.

For those of us who like inches, seconds of arc, and a common visible wavelength (5500 Angstroms), the formula becomes: Theta = 5.44/D where Theta is in seconds of arc, and D is in inches.

A more common formula is the so-called "Dawes Limit", and is based on observations of double stars: DAWES LIMIT: Theta = 4.56/D

It gives a somewhat higher resolution and may reflect observational reality a bit more than the Rayleigh formula. If we use it as the basis for our power "limit", all we have to ask is how much power do we need to employ to get this "Theta" up to a point where the human eye can clearly see it. If "S" is the eye's unaided effective resolution, then all we have to do is boost, or "multiply" S to the point where it equals our telescope's Theta, hence, that power becomes:

M(limit) = (D * S)/4.56

Now comes the question: exactly what is S? As for my own eyes, I can see the wide components of Epsilon Lyrae, 3.5 minutes of arc apart, and testing in my basement shows I can just barely resolve a separation of 2 minutes, so I could set S=3 minutes of arc (180 seconds of arc in our formula) and probably be fairly accurate. If I am using a one inch (50 mm) telescope, the maximum power I could effectively use would be approximately: M(limit) = (1 * 180)/4.56 = 39.5 power for a one inch aperture.

A ten inch aperture would give about 395 power, thus for my example, the maximum effective power would be about 40x per inch of aperture. This would just barely make the diffraction pattern visible. To make the diffraction disk itself easier to see would probably mean that we would need to boost S up to around 4 minutes (240 sec.) of arc. This is somewhat more reasonable, especially considering many people's eyes may not be that good. Setting S=4 makes M(limit) = 52.6x PER INCH. This is where the "maximum" power limit of *50x PER INCH* comes from. It is NOT a hard and fast rule, but it is a very good guide. For viewing objects like planets or the moon, going too close to the 50x per inch mark can make the image a bit fainter, with lower contrast.

A good tradeoff between planetary image contrast, brightness, and image scale seems to be around 30x to 35x per inch of aperture, but again, it depends on a person's eyes and the type of instrument which is being used. Deep-sky objects usually must be viewed at low powers just to be visible, thus using much more than 30x per inch on them may not work at all. Those with poorer eyesight may need to kick the power up slightly higher than these "limits".

However, contrary to what some department store telescope distributors say, THERE IS A PRACTICAL UPPER LIMIT TO POWER, and it is about 50X PER INCH (2x per mm).

TEN YEARS AGO...A LOOK BACK... SURVEY RESULTS:

Here are the results of the recent telephone survey of club members regarding the possibility of the PAC acquiring its own observing site. We'll lead off with the raw counts on each question, and follow with some conclusions based on correlations within the data.

Please note that the figures are reported as counts out of total possible respondents, rather than percentages because percents are meaningless in a sample base of less than 100. A total of 42 out of 48 club members responded to the questions. (The remaining six could not be contacted within the committee's interviewing time frame.)

Of 42 respondents, 31 said they would use an observatory site if we acquired one, 5 said they would not, and 6 did not know.

To the question concerning a willingness to contribute over and above yearly dues (\$22.00 regular and \$25.00 family dues at that time) for such a project, 37 said they would, and 5 said they would not. Of the "yes's" to that question, the likely yearly amounts were:

Of the latter group, 8 said they would contribute \$50, and 2 said they would contribute amounts over \$50.

We asked which directions members would not want to travel. The least desirable directions were: North (18), Northwest (9), Northeast (8), and West (8). (Remember that multiple answers were allowed, so the total of all answers would exceed 42.)

Less than \$10 4 \$10-\$20 4 \$20-\$30 10 \$30-\$40 ... 7 \$40+... 12

Interestingly, 20 respondents were "not very interested" or "fairly interested" in the project overall (see below).

Three directions elicited no negative responses: South, Southwest, and Southeast.

When we asked the distance beyond which respondents felt regular use of the observatory site would be inconvenient, the count went this way:

Five respondents indicated plans to purchase a parcel of the site for their own use for pads or observatory buildings. Of the remaining respondents, 24 said they would not, and 6 each said such a purchase would depend on the price, or did not know. There was one "no answer."

20 miles or less9
25 miles10
30 miles7
35 miles6
40 miles or more9
No answer1

Only two respondents definitely preferred an arrangement with the Omaha Astronomical Society, whereby we would share their present site, while 12 members strongly opposed

to such an arrangement. Of the remaining respondents, 20 said they needed more information and 7 didn't care. (One "No Answer".)

Finally, 15 members were "very enthusiastic" about the idea of an club observing site, 20 were "fairly interested", 7 "not very interested", and none was completely opposed.

Now, for some observations. The survey questionaire was developed using question devices and wording that are commonly employed in consumer surveying to substantiate predictive conclusions. In other words, in the case of most of the tallies, we have reasonable statistical certainty that the club members meant what they said when they said it. (That also means they could change their minds later, if their personal circumstances or their perceptions of the site plans are altered.)

The survey leaves little doubt that over half the PAC members would probably make use of the club observing site, but only if the site is located no more than 25 miles from the city limits, South, Southeast, or Southwest of Lincoln. (Conversely, we can expect about % of the club members will never use the site, no matter how close to Lincoln it is, or in which direction.)

It would be a mistake to tally up all the dollar amounts that respondents said they would contribute and "run" with that figure. This was an opinion survey, not a pledge sheet. On average, the club can probably expect a contribution of about \$20 per member. (But, remember what "average" means: Of 5 members, one might contribute \$50, one \$25, two each \$10, and the last \$5. The average is still \$20.)

One very significant concern is that there is a relatively small "core" of highly interested individuals, no more than 15 people. Of these, over half strongly oppose

(Continued on page 8)

(Continued from page 2)
Astro trivia:

Which galaxy came first? Hint: It happened less than one hundred years ago.

Last month's answer: Carina, the Keel; Pixis, the compass; Vela, the sail; and Puppis, the Poop deck (I did not make this up); are all part of the now defunct constellation Argo Navis. Argo, the argonaut's ship, proved to be too big a constellation and was dismembered when the constellations were standardized.

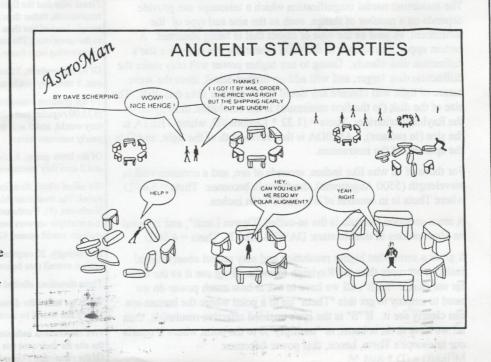
(Continued from page 7)

any participation with the Omaha Club, and only one strongly favors it. The obvious conclusion is that any effort to unite with Omaha in a site would likely result in a significant dilution of the impetus for the project.

It is also worth noting that among the "enthusiastics" were 9 of the 15 people who would be willing to travel 35 miles or more to reach an observatory, and 7 of the 12 people who would contribute over \$40 to the project yearly. The remainder of the respondents in these catagories, as might be expected, were "fairly interested" overall.

It is not unusual to find a "core group" that is particularly interested in a project, but the rule of thumb is that this enthusiastic core group should represent at least one-third of the overall membership. That is comfortably the case here. Cautionary flags were raised concerning security, financing, taxes, etc., from some members, but it is significant that apparently no members are now flatly opposed to a club observing site.

- THE PRAIRIE ASTRONOMER, MARCH 1986 ISSUE





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First Class Mail

Next Meeting APRIL 30th, 1996

APRIL

Mr. Earl Moser 9/96 P. O. Box 162 Hickman NE 68372