

## Great Expectations and great disappointments...

by Dave Knisely

**T**hose of you who are a little new to amateur astronomy may be on a collision course with reality when it comes to your first attempts at viewing the heavens, either with your own new telescope, or with one at the next star party. Everyone has their own preconceptions about what things will look like. Often, people expect Voyager-like views of the outer planets, or star-studded spiral arms in nearly every galaxy they see. You really can't blame them, since all they have had to go on are the stunning color pictures found in books or magazines. Even our magazines or newsletters sometimes use the terms "bright", or "easy", in describing some Deep-Sky objects. It is when the newcomer gets his first look that we frequently hear comments like "I can't see the blasted object!", or "That dim fuzzy thing? My scope stinks and I want my money back!". Unfortunately, many people frequently lose interest at this point and drop out of the hobby all together, never having seen the real wonders of the heavens.

Before you drop out, or even before you try and view, please consider the following facts. First, you are viewing through an Earth-based astronomical telescope. It is usually fairly small in size and cannot hope to compete with the observatory giants which were used to take all those pretty pictures. Second, the human eye can't store up light to build up a bright image like photographic film or CCD cameras can. Those pretty photographs were long exposures, and many of the better color ones were assembled from three specially processed images for each of the primary colors. The eye is horribly insensitive to color at the low light levels present in most astronomical views, so you can't expect to see much color in Deep-Sky objects. In addition, the center of your visual field is rather insensitive to light in general, and has poor detail resolution in dim situations (try reading a newspaper by moonlight sometime). There is no way your little telescope can show your eye

clearly the spiral arms in M74 or color in the California Nebula. Nor can it reveal the craters on Mars or the fine divisions in Saturn's rings. We had to send telescope-equipped TV cameras on spacecraft out of our blurring atmosphere and all the way to the planets to resolve those details. Things in space are VERY far away.

Because things are so far away also means they are usually quite dim. Consider the brightest spiral galaxy in the northern sky, the Great Andromeda Galaxy M31. It is just visi-

*(Continued on page 2)*

### While You Were Gone... Secretary's Report by Jason Stahl

**A**t December's meeting, several dates were established for the Mahoney State Park's public observing programs. The dates that have been chosen are as follows: April 22 at 6:30p.m., May 20 at 8:00p.m., June 24 at 8:30p.m., August 26 at 8:00p.m., and September 23 at 7:30p.m. If you are interested in attending any of these public star parties, just be at Mahoney State Park on that day and time. Mahoney is located at exit 426 on interstate I-80. Exit 426 is approximately thirty miles east of Lincoln, or about thirty miles west of Omaha. If you would like to bring any equipment, please do so. The only cost to you is the fee to enter the Park, which is only \$2.00 for a day pass. The observing grounds is the park's soccer field, located on the main road that leads on the WEST side of the park, just before the Horse Barn.

The trip to the Kansas Cosmo-  
sphere will take place on April 9-10. All persons wanting to attend this years trip must contact Jack Dunn, (475-3013), for more details. The Prairie Astronomy Club will host this year's Astronomy Day at the Ralph Mueller Planetarium on May 7th. People who

*(Continued on page 2)*

# The Prairie Astronomer

inside...

Observing Chairman's Report  
New PAC Bylaws  
Picture Gallery  
Cosmosphere Trip Information  
PAC Member List Insert

page 3  
page 4  
page 7  
page 8



(Continued from page 1)

wish to help out with this event should contact Ron Debus, John Bruce, and/or Jack Dunn. Also on **May 10th, Hyde Observatory will be open to the public for the Solar Eclipse.** Volunteers will be needed to help with the programs, telescopes, and crowd control. If you have equipment that can SAFELY view the eclipse are encouraged to bring it to Hyde for public use.

(Continued from page 1)

ble to the unaided eye as a fuzzy spot, and although a telescope will make it appear larger, all common amateur instruments usually show to the eye is the bright fuzzy nuclear region and some faint patchy outer haze off the ends. The major rule in amateur astronomy is **THERE AIN'T NO SUBSTITUTE FOR APERTURE.** However, even telescopes in the 10 to 20 inch range which often do show subtle dust lanes or diffuse star clouds in M31 will not make those features appear very bright visually, although they will definitely be easier to see. It takes telescopic photography to clearly reveal all the features of this incredibly distant object. All the other spiral galaxies in space are farther away (and often smaller) than the giant spiral of Andromeda, so expecting loads of photographic detail in galaxies is a little unrealistic. In short: **DON'T EXPECT TOO MUCH!**

Now lets get on to things you **CAN** expect to see. If your scope is under six inches of aperture, remember this simple rule: **KEEP THE POWER LOW!** This will help immensely in locating objects and making faint ones visible. Also, use averted vision and dark adaptation to squeeze out that last bit of performance from your instrument. Small scope users should initially concentrate on open star clusters. Many of them are spectacular when viewed from a dark site. Staying with the Messier objects is also good, since even a good three inch should show most of them. Much of the challenge (and fun) of amateur astronomy is just learning how to find things in the night sky. Take pleasure in the chase, as well as the finding. Make notes on what you see, or even drawings for your records. Think about just how nice a Messier Award from the Astronomical League would look on your wall! Read up on the objects you will be observing, so you will understand the true nature of the things you will be trying to see. Many Deep-Sky objects will not show much visual detail, so you must learn to view with the mind's eye, as well as your normal one. As you view the hazy details of the Orion Nebula, think about the new stars being formed in its darker reaches. Think about the light that you see from that fuzzy spot of a galaxy, of how it came from hundreds of billions of suns, and how its multi-million year voyage through the dark cold void of intergalactic space has just ended as it enters your eye. Learn to appreciate the fact that you are seeing things few people on this planet have ever seen or even imagined. You have a telescope, your eye, and your mind, all ready to act as your key. Use them, and turn that key. **THE UNIVERSE IS NOW OPEN!**

**In the month of July, the 1st Nebraska Star Party at Merritt Resort will be held on the 7-10.** So far there appears to be a large turnout from several different clubs from around the country. Merritt Resort is located 25 miles south west of Valentine, NE. The amount of time needed to make the trip, by car, from Lincoln is about 6-6 1/2 hours. Once at Merritt Resort you will find several cabins and many camper hookups available. As of this month, four cabins are left, and going quickly. Here is the breakdown of the remaining cabins:

Quantity	#Beds	Cost/night
2	2Double	\$68
2	4Double	\$88

Each cabin has a small kitchen, a bathroom and small living area. A basic Maid service is also available each day. All linens are also supplied at no extra cost.

The cost for an additional person older than the age of six is six dollars/night. Rollaways are available at six dollars/night. Camper hookups are twelve dollars/night. This includes full electric, water and sewage removal.

If you are interested in going to the Nebraska Star Party, please contact any one of these people: Tom Miller 466-4145, David Scherping 477-2596, and/or Jason Stahl 423-4912. Persons wanting a cabin need to let one of these people know by February 15th so you can reserve your cabin. If you want and know of someone who would like to share a cabin, please contact one of the above persons so a number count can be established for record keeping purposes.

Things to do during the day at Merritt Resort are, swimming, fishing, hiking, and just plain relaxing. A call for program papers will begin as of February one. If you are interested in giving a twenty to thirty minute paper during the day, please contact David Scherping, Tom Miller, John Bruce, or Jason Stahl to set a day and time for your paper to be given.

**The final version of the Bylaws are posted this month.** Please read over them and note the changes. This copy of the Bylaws are **DIFFERENT** from last months copy. Final approval of the Bylaws will be done at the January meeting.

If you have missed a meeting as of November 1993, you can still watch that months meeting via video tape anytime one week after that months meeting. Each tape covers the entire business meeting as well as the programs. To obtain the tape call Tom Miller at 466-4145 during the evenings.

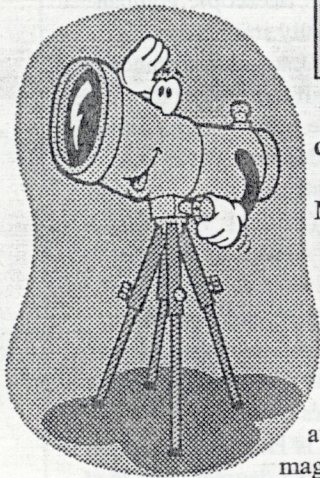
I hope you will attend the January meeting.

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



# Observing Chairman's Report

by Jason Stahl



**D**on't miss a rare view of Mercury at the beginning of this month, and don't forget about Comet Encke as it moves in Pegasus. You will need to observe Comet Encke in the first part of February since Pegasus is becoming lower in our winter sky.

The next scheduled star parties will be held on February 4th and the 11th at the Atlas Site. The cloud/rain dates are the 5th of Feb., and the 12th of Feb.

**Moon Phases:**

Last Quarter is on the 3rd  
 First Quarter is on the 18th

New Moon is on the 10th  
 Full Moon is on the 25th

This is the month the planet Mercury will reach its greatest elongation on February 4. You can find Mercury low in the west-southwest above the horizon approximately 30 minutes after sunset. By the end of January, on the 25th, Mercury lies six degrees above the west-southwestern horizon, and shines at a magnitude -0.5. On February 1, Mercury will pass 1.3 degrees north of Saturn, which is at a magnitude of 0.9. The 4th of February will be the best time to view this forgotten planet, when it is 18 degrees east of the Sun, the maximum for Mercury this year. On this day, Mercury will be placed 11 degrees above the horizon 30 minutes after sunset. Those who have telescopes, you won't want to pass off Mercury as just a dot in the sky. For Mercury's phase will rapidly change as the planet approaches and passes greatest elongation. On the 4th, Mercury appears at 53 percent lit, and on the 11th, Mercury appears only 20 percent lit. Giving telescope observers a great chance to watch the phases change dramatically in one week's time.

Once again, you can observe four more of Charles Messier's objects. You can start with an object that just had an explosive visitor, M81(NGC 3031). M81 is located in Ursa Major at 9h 55.6m, 69.04 degrees, and a magnitude of 7.9. In a small telescope, six inches, you can easily view M81's bright dense core and two spiral arms "swinging" tightly to the core. The third arm extends from the core a considerable distance compared to the other arms. As with M82, M81 has several bright stars that can be seen around this giant Spiral Galaxy. M82 (NGC 3034), is also located in Ursa Major at 9h 55.8m, 69.41 degrees, and at a magnitude of 9.3. M82 is another great object for any size telescope or binoculars. This Peculiar (Eruptive) Galaxy offers us a splendid detailed view of its shape. With an eight-inch scope you can see the "chunks" of matter bitten out of certain areas of the galaxy. Color photographs show this structure very well, but you won't be disappointed in the view you receive. As the month progresses, and the nights grow darker, find a couple of face on spiral galaxies in Leo. M65 and M66. M65 (NGC 3623) can be found at 11h 18.9m, 13.05 degrees, and shining at 10.2 magnitude. This Spiral Galaxy, with a few very compact arms protruding from a very compressed core, will appear brighter than what is really is because the galaxy has such a tight body. On the other hand, M66 (NGC 3627) is a very "loose" fitting Spiral Galaxy. M66, like M65 has a large bright core, the difference between the two is that M66's arms are spread out more than M65's arms, and are not as bright as M65's. Located at 11h 20.2m, and 12.59 degrees, M66 has a broader disk than M65, but M66 has a shorter length than M65, making this short fat galaxy interesting to look at. After you have conquered these objects and others you look at, try and see, The "Eskimo Nebulae", also known as NGC 2392, or PK 197+17.1. It will be found at 7h 29.2m, 20.55 degrees in the constellation Gemini, glowing at a faint magnitude of 9.9. Depending on the seeing conditions of the night you try to find the Eskimo Nebulae, you may have some trouble finding this face staring back at you. If the sky conditions are fair to poor, don't waste your body heat searching for this. If the sky conditions are good to excellent, you will have no problems finding it. If you have access to a nebulae filter, I recommend you use it, for your chances of seeing the "eyes", and "mouth" increase dramatically. If the sky conditions are good and the moon is not causing a problem in terms of sky darkness, you can see the "fur" surrounding the face. The reason why this is more difficult to see is because of its size. At 40"x50" this is a large diffuse nebulae. Also in Gemini, NGC 2158 is an Open Cluster located at 6h 07.5m, 24.06 degrees with a magnitude of 8.6. What is special about this Open Cluster is that it is in the heart of the Milky Way and has a lot of background stars making this cluster of 30 stars appear to have hundreds of more stars within, when it does not. With all of these background stars NGC 2158 looks more like a Globular Cluster. The main stars that make up this cluster are, compared to the average open cluster, are much closer than that of a normal open cluster, making NGC 2158 even more of a pleasure of observe.

The winter sky is amazingly free of globular clusters, with only three readily visible in the northern hemisphere: M79 in Lepus, NGC 2419 in Lynx, and NGC 1851 in Columbia. NGC 1851 is an unsung hero of the winter sky, because of its low altitude above our southern horizon. Located at 5h 14.1m, -40.03 degrees, and a magnitude of 7.3. Even with a good view to

(Continued on page 4)



(Continued from page 3)

the south, NGC 1851 is a real challenge to find in binoculars and telescopes. Once you find NGC 4851, it stands out as a small, fuzzy patch of light through binoculars and small telescopes. A ten-inch or larger scope will begin to resolve thousands of stars. The next faintest Globular glows at a magnitude of 8.0. M79 (NGC 1904), in Lepus, will be found at 5h 24.5m, -24.33 degrees. M79 is not one of the more brilliant globulars, but in an 8-inch or 10-inch telescope, you can begin to resolve the outer edges of the cluster into stars, while in larger telescopes, M79 becomes a truly impressive object. Finally, the faintest of the three clusters is, NGC 2419. Despite glowing at a magnitude of 10.4, and a distance of 210,000 light years from the center of the Galaxy, the cluster can be seen in small telescopes as a small fuzzy spot located at 7h 38.1m, and 38.53 degrees. Once again we travel back to the southern horizon to observe some open clusters along with planetary nebulas. M46 (NGC 2437), is found in the constellation Puppis at 7h 41.8m, -14.49 degrees. M46 is an open cluster of about one hundred stars with a collective magnitude of 6.1. While you move your instrument around M46 you may find a small Planetary nebula in the northern part of M46. You have just found NGC 2438 (PK 231 +4.2). Located at the coordinates of 7h 41.8m, -14.44 degrees, and a magnitude of 9.7, this planetary looks similar to the Ring Nebula. Although smaller in size, NGC 2438 displays the same characteristics. A moderately bright central star can be seen if you observe the nebula long enough it may "pop" into view. The use of an OIII filter will greatly enhance the structure of the "mini Ring." NGC 2438, unlike M57 has more stars visible in telescopes, because it shares in the stars of M46. Further south is NGC 2467, an Emissions Nebula located at 7h 52.5m, -26.24 degrees, and has a source star with a magnitude of 9.3. Like NGC 2438, NGC 2467 shares an area with Open Clusters. These two clusters have a classification that may be new to some, the name of the cluster that is to the upper left of NGC 2467, is Haf 18, the cluster just above Haf 18, is Haf 19. Haf is an abbreviation for Haffner. Haf 19 is located at 7h 52.7m, -26.15 degrees, and is at a magnitude of 9.4. Haf 19 has roughly 30 stars in its realm. Together with Haf 18, the view of NGC 2467 is a rememberable one. NGC 2467 has a large broken structure that makes some areas of the nebula difficult to see, but the bulk of the nebula still offers some beautiful "dark" areas to observe for hours of enjoyment.

PRAIRIE ASTRONOMY CLUB BYLAWS  
Revised as of January 1994

NAME

The name of the Club is, Prairie Astronomy Club of Lincoln, Nebraska.

PURPOSE

The purpose of the Club is to encourage, and to participate in the study of astronomy and related subjects for the benefit of its members and of the general public, including but not limited to owning an observatory, telescopes, or other instruments or property useful in such studies. No part of its income or net earnings are to inure to the benefit of or be distributable to its members, directors, or officers or any private individual.

PROCEDURES

A quorum of one-third of the memberships on the current membership list must be present for a vote to be binding. A family membership shall count as one membership for this purpose. A simple majority vote of the members present is required except where a two-thirds majority vote has been required by these Bylaws. Where a two-thirds majority vote is required, notification of the upcoming vote shall be published in the Club newsletter issued immediately prior to the meeting at which the vote is to be taken.

These Bylaws may be changed by a two-thirds majority vote by a quorum of members at a regularly scheduled meeting. The proposed changes must be presented at a regularly scheduled meeting previous to the meeting at which the vote is taken and must be published in the Club newsletter prior to the meeting at which the vote is taken.

When conducting the business of the Club, procedural disputes shall be decided by consulting Roberts Rules of Order. All amendments to a motion must be voted upon before the vote on the main motion may be called for.

All regular Club meetings shall be open to the general public.

(Continued on page 5)



(Continued from page 4)

**DEBTS AND OBLIGATIONS**

A two-thirds majority vote by a quorum at a regular meeting shall be required to obligate the Club for any debt or to increase any outstanding debt. The property of members, directors, and officers shall not be liable for payment of the debts and obligations of the Club.

**BOARD OF DIRECTORS**

The business of the Club shall be managed by a Board of Directors. The Board shall have the power to spend funds from the treasury for any valid purpose. The Board shall create additional non-elective offices as required and initiate impeachment proceedings against officers who have been negligent in performing their duties.

The Board shall consist of the elected officers of the Club. Each decision of the Board shall require an affirmative vote of three Board members.

**ELECTION OF OFFICERS**

Five officers shall be elected from the membership: President, Vice-President, Secretary, Treasurer, and 2nd Vice President.

Nominations for the elected officers shall be held during the September meeting and elections held during the October meeting. The term of office for elected and appointed officers shall be from November 1 until October 31 or until a successor is elected. In the event of a vacated elective office, a special election will be held to fill that office for the remainder of the term.

Any single individual is precluded from holding more than one elected office at any one time.

Impeachment of any officer shall require a two-thirds majority vote by a quorum of members at a regular meeting. Notice that an impeachment vote is to be held and the name of the officer involved shall be printed in the Prairie Astronomer prior to the meeting.

Non-elected offices shall be held by qualified Club members appointed by the President.

**DUTIES OF THE ELECTED OFFICERS**

**President:**

The President shall organize and direct the regular monthly meetings and all other Club activities, officially represent the Club at meetings of regional and national importance where he/she is in attendance or to delegate this authority.

The President shall have the authority to call meetings of the Board of Directors and to appoint non-elected officers.

**Vice-President:**

The Vice-President shall be responsible for meetings when the President is absent. He/She is to be the mediator in cases of procedural dispute, and is to temporarily assume any duties of any officer at the direction of the President. He/She shall also maintain control of the current inventory of all Club property.

**Secretary:**

The Secretary shall handle all Club correspondence, be responsible for the distribution of information received through official Club correspondence, and shall be in charge of Club publicity.

**Treasurer:**

The Treasurer is responsible for all Club funds and for keeping accurate records of all monetary transactions. He/She shall submit a written report of the Club's monetary status at the request of the President, or give a verbal report at the request of any member during regular meetings.

**2nd Vice-President:**

The 2nd Vice-President shall be responsible for the formation and presentation of monthly Club programs.

**DUTIES OF NON-ELECTED OFFICERS**

**Publications Chairperson:**

The Publications Chairperson is responsible for the editing, publishing, and mailing of the Prairie Astronomer in advance of each monthly meeting.

(Continued on page 6)



**Site Chairperson:**

The Site Chairperson is responsible for establishing a site committee to oversee the maintenance and security of the club site.

**Recording Secretary:**

The Recording Secretary is responsible for keeping the minutes of Club meetings and filing a copy with the Club Secretary.

**Librarian:**

The Librarian shall keep the Club library and promote its circulation among the Club members. Dated records of persons to whom books are circulated are to be kept by the Librarian. He/She shall keep a current bibliographic listing of all Club library materials and file updated copies as necessary with the Club Treasurer.

**Observing Chairperson:**

The Observing Chairman shall present a monthly report at Club meetings and/or in the Prairie Astronomer. He/She shall attempt to keep members informed of upcoming celestial events, sky objects of special interest, and star parties.

**MEMBERSHIP**

There shall be three classes of membership: Individual, Family, and Honorary Membership.

An Individual Membership shall be granted to any individual who has a valid interest in astronomy and the Club's activities, upon payment of the prescribed dues. Family Membership shall be granted to any family, the members of which have a valid interest in astronomy and the Club's activities, upon payment of the prescribed dues. Honorary Membership may be granted to an individual who has shown exemplary support of Astronomy. Any member may submit a nomination for Honorary Membership to the Board of Directors. Upon unanimous approval of the Board, the nomination shall be published in the Prairie Astronomer, and presented to the Club's membership for vote at the next regularly scheduled meeting. Approval requires a two-thirds majority vote, a quorum being required. An Honorary member needs not to pay dues. Except for voting rights and dues, the rights of the three classes of memberships are identical.

**VOTING**

Each Individual member in good standing, and each Honorary member is entitled to one vote. Each Family membership in good standing shall have two votes when two or more family members are present at the time of voting. When only one member of the family is present, he/she may cast one vote. Members of any class must be present in order to cast a vote.

**RIGHTS OF MEMBERS**

Each membership in good standing has the right to:

1. Receive notification of all Club meetings, activities, and other events occurring in the name of the Club.
2. Initiate and second motions. The President does not have this right.
3. Speak out and be heard during Club discussions.
4. Submit for publication articles for the Prairie Astronomer.
5. Submit, without charge, advertisements of relevance for publication in the Prairie Astronomer.
6. Require a reading of the minutes of the last meeting, a Treasurer's Report, or request a secret ballot.
7. Equal opportunity to use all Club-owned equipment and resources.

**DUES**

Dues shall be determined by the Club membership and adjusted as required to meet expected expenditures.

**AUDIT**

The Treasurer's books shall be audited within 45 days of the close of the fiscal year by a committee of three club members.

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(Continued from page 6)

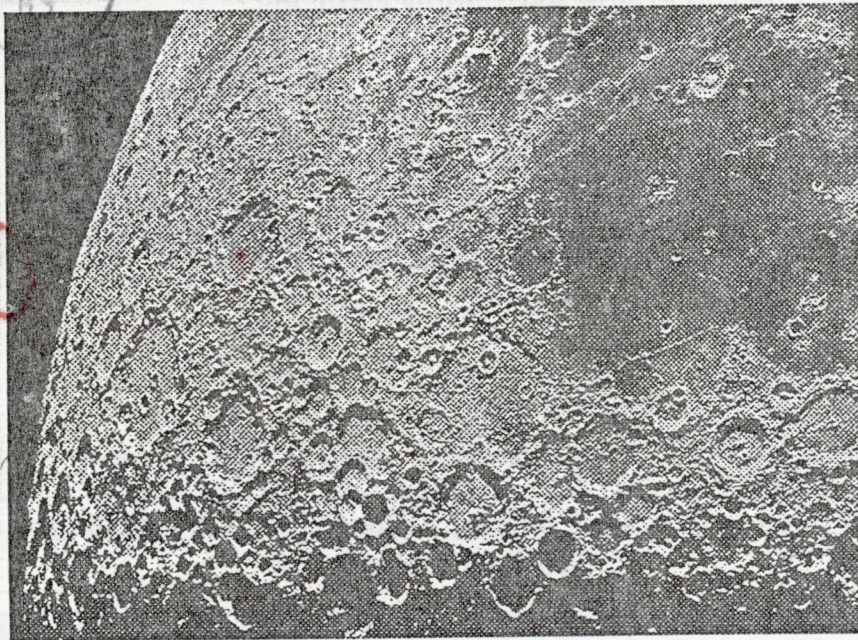
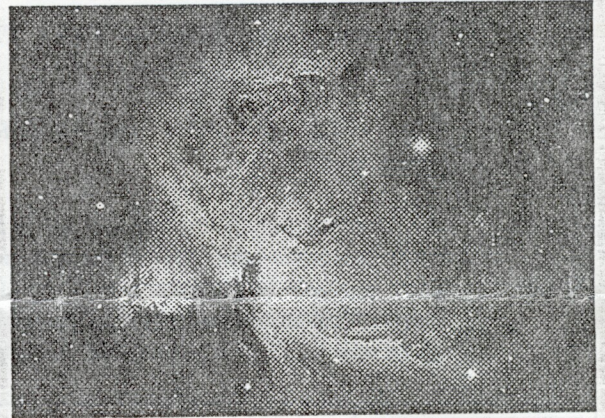
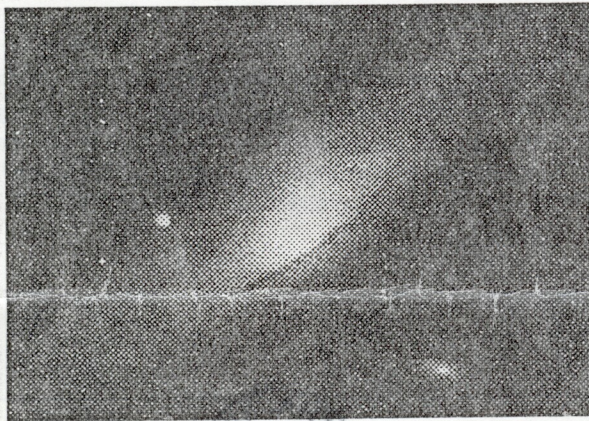
This committee shall be appointed by the newly elected President within ten days of assuming office. The fiscal year is defined as November 1 through October 31 of the following year.

DISSOLUTION

The Club shall not be dissolved so long as five members vote against dissolution. If the Club is dissolved, its assets at the time of dissolution, after payment of liabilities, shall be distributed to Hyde Memorial Observatory, so long as this observatory is used for purposes of dissemination of astronomical knowledge to the general public.

# Picture Gallery

Photo's Provided by Dave Knisely





## Cosmosphere Trip Information

by Jack Dunn

Here is the info for the potential Kansas Cosmosphere trip:

By April 9, the Cosmosphere will be showing "Tropical Rainforest" as their main feature. The second film running will be "Sharks." It would depend on how many of us there are if we could get a private showing of something else like "Dream Is Alive."

Combo price: \$6 for Omnimax and a planetarium show in the new Planetarium.

Individual prices: Omnimax \$4.50, Planetarium \$2.50

These are all adult prices Drop \$1 off for kids or senior citizens.

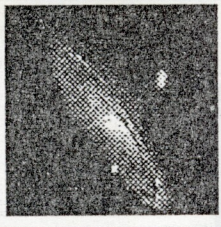
As far as the motel, the Comfort Inn is \$49.95 for a single king-size bed. \$59.95 for two queen size add up to 4 people in the room at no extra charge. The comfort has an outdoor pool but indoor sauna and game room. Th also have a free continental

breakfast. It looks to me like their prces havegone up since our last visit, so I will check on an alternative. However the Holidome is still higher. We need to get reservations made now, as there is some sort of bowling tournament coming into town that weekend, so best bet is for us to reserve the rooms.

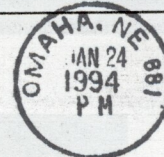
I may not be at the club meeting this time. If so I will have Holly Johnson take a list of names of people interested.

The Kansas Cosmosphere is probably second only to the Smithsonian in its collections of space artifacts (too bad they don't have a certain Apollo capsule now sitting in a UNL shed) One of their most recent acquisitions is an SR-71 Blackbird spy plane. They always have really neat stuff to show us and I will try to arrange for us to go to Spaceworks and maybe have a workshop by their staff.

It was voted at the last (Dec.) meeting that the dates for our trip should be April 9-10th. We would go own on Sat. and come back Sun. There is also the possibility (weather permitting) for a visit to the Lake Afton Observatory near Wichita in the evening.



The Prairie Astronomer  
c/o The Prairie Astronomy Club, Inc.  
P.O. Box 80553  
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Next Meeting  
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1-94

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

inside...

Observing Chairman's Report  
New PAC Bylaws  
Picture Gallery  
Cosmosphere Trip Information  
PAC Member List Insert

page 3  
page 4  
page 7  
page 8