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### HUTCHINSON TRIP

March 1st and 2nd several club members and I (about 11 to be exact) took a trip to the Hutchinson Cosmosphere and to the Lake Afton Observatory in Kansas... we had an incredible time!

Most of us left around 9am on Saturday morning, except for the car I was in, which had various delays due to SOMEONE who will remain nameless [It HAD to be Ron Veys. Ed.].

The trip down to Hutchinson took about 5 hours, but when you're with good friends having fun, it only seems to take about an hour, which makes it really weird to get out of the car in what you thought was an hour, but your body knows it was 3 1/2 hours...

Once we arrived in Hutchinson we eventually made it over to the Cosmosphere. There were a lot more displays there this year than I've seen in previous years. They pretty much cover the history of the space program. From the earliest rockets, to satellites, then the early manned space program, Mercury, Gemini, Apollo, and the current Space Shuttle. The museum was really fascinating with very educational displays plus a lot of buttons that you could push and play with to activate displays.

Later that afternoon, we watched the Space Shuttle rumble into space on the giant dome of the Cosmosphere. It was truly breathtaking! They have an intricate speaker system as well as incredible film footage of the shuttle. It was almost like it was in 3-D... the film covers the ENTIRE dome above you.

That evening, after a simple meal at a local restaurant, almost everyone, except for a few, made our way toward Wichita to visit the Lake Afton Public Observatory. This observatory was really neat! They had a 16 inch telescope that gave very good views of deep-sky objects. The observatory also had an adjoining room to the telescope room that had many astronomical displays as well as computers to play with. The displays they had were very interesting.

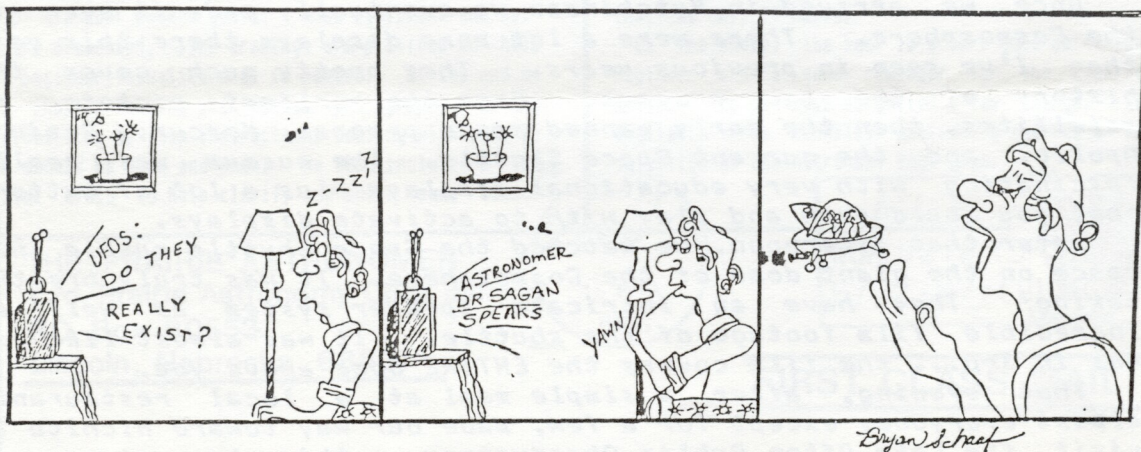
The skies in that part of Kansas are beautiful. The winter Milky Way was easily visible. That's something I don't think I've ever seen down at Earl's in Hickman (but I'm also not down at Earl's very much in the winter). We had fun just doing naked eye observing, there was so much to see.

Another neat attraction at this observatory was a group of

small telescopes and 7x35mm binoculars outside on pedestals for the public to use. You could just walk up to one of the pedestals on the sidewalk, pick up the binoculars, and start viewing through them. The pedestals were padded and were different heights so you could rest your elbows on them and view with ease. They also had a large case positioned about 50 yards away from the small telescopes with a back-lit piece of black plastic which had holes drilled into it in the shape of constellations and clusters. There were also some slides that were back-lit with nebula and planets on them. When you viewed this through the small telescopes you could search around through the stars and find these different objects...which was kind of fun.

Now, after you've heard how much fun and really neat the trip was don't you wish you could have gone? And I've still not told you of many other things that happened. Hell, maybe you unfortunate ones could take a short vacation down that way this summer....its really worth the trip!!!

Andy Corkill



Bryan Schraf

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## 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 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 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:

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

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.] Interestingly, 20 respondents had no objections to any direction. However, a majority of these 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:

20 miles or less.....	9
25 miles.....	10
30 miles.....	7
35 miles.....	6
40 miles or more.....	9
No answer.....	1

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."

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

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Now, for some observations. The survey questionnaire 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 at the time 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 a 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 1/4 of the club members will never use the site, no matter close to Lincoln it is, or in which direction.)

## CHICAGO TRIP

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 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 categories, 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 1/3 of the overall membership. That is comfortably the case here. Cautionary flags were raised concerning security, financing, taxes, etc., from some club members, but it is significant that apparently no members are now flatly opposed to a club observing site.

-- Lee Thomas

The Omaha Club is sponsoring a trip to Chicago to visit the Museum of Science and Industry and the Adler Planetarium. A bus will leave Omaha on Friday, June 13th at 9pm and arrive in Chicago the following morning at 6am. The group will spend 2 days in Chicago and return on Monday June 15th.

For those who have never visited the museum, it's almost like a small Smithsonian. Two days is hardly enough time to visit even a small part of all there is to see. Some of the main attractions include a full size coal mine (right in the building!), an original German WW2 submarine, a large computer display... the list goes on and on. Dozens of live demonstrations take place every hour.

The trip will run \$84 per person which provides bus fare, 2 nights at a great hotel, and breakfast the morning of arrival. The limit for one bus is 47, but two buses will be taken if enough people sign-up. Reservations are on a first come first serve basis and can be made by contacting:

PEGASUS TRAVEL CENTER  
1034 STH 74TH PLZ  
OMAHA, NE 68114  
(402)390-0122  
attn. Jane

For more information you can talk to Jane at the above number, or call George Allen at 333-1097. (The trip will include members from the OAS, the Des Moines club, and the Kansas City club... so if you plan to go make reservations as soon as possible).

# OBSERVING CHAIRMAN'S REPORT

The April Star Party will be held on Friday, April 4th at Earl Moser's house near Hickman. This month's sky is highlighted by the enormous number of galaxies visible in Virgo. A good starting point is the core of the Realm of the Galaxies, located midway between Regulus and Epsilon Virginis. A six or eight inch telescope will show the main group or string of galaxies starting with M84, a giant elliptical galaxy located four degrees west and three degrees north of Rho Virginis. This string runs east and then north for more than two degrees with most of the galaxies being non-Messier objects. There is a spot in the string that I could see 10 galaxies in a 1.1 degree field with my eight inch Newtonian, so this area is a must for all you galaxy lovers.

In nearby Coma Berenices about six degrees east and 1/2 degrees north of Regulus is the bright nearly edge on spiral galaxy M98. This galaxy can be seen faintly in a good three inch but shows little detail unless an eight inch or larger instrument is used. Another bright spiral in the area is M100, located one degree north and just under two degrees east of the faint star 6 Comae Berenices. This galaxy does show faint hints of spiral structure when viewed with at least an eight inch telescope. Another galaxy that shows some detail is M64, located about one degree east of 35 Comae Berenices. On a good night an eight inch will show the famous

by  
David Knisley



dark spot that gives this galaxy the name "Black Eye Galaxy".

In the south part of Virgo about two degrees south and 1.5 degrees east of 21 Virginis is M104, the Sombrero Galaxy. It appears as a fairly small elongated fuzzy patch when viewed in a 2.4 inch and the dark lane that gives the galaxy its name can be seen with averted vision in telescopes larger than six inches. Down in Corvus look two degrees south and 1.5 degrees west of Delta for the faint planetary nebula NGC 4361. It is as big as the Ring Nebula in Lyra but is rather dim with a brighter circular core and very faint central star so use at least a six inch on this one. As a final challenge for those of you with larger instruments, look about 1.5 degrees south and 3.5 degrees west of Gamma Corvi for NGC 4038, this object is known as the Ring Tail Galaxy and appears as a faint fuzzy oval with a hook like appendage on the south end when viewed with an eight inch reflector.

# ASTROPHOTOGRAPHY. A STEP-BY-STEP APPROACH

by Robert T. Little

reviewed by David Knisely

I have found that there are really very few books out on the subject of astrophotography, and those few that are available are generally out of date or extremely weak on the technical details. Bob Little's latest contribution is a notable exception, being both current and detailed in the basic steps towards good sky shooting. It is intended to help the beginner enter the fascinating world of astrophotography with a minimum of hassle, while at the same time helping the novice produce fine quality photos of everything from star trails to galaxies.

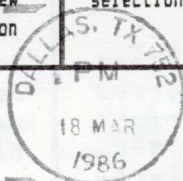
In eight chapters, Little covers equipment, camera and tripod photography, photography with the telescope both piggyback and through the instrument, focusing and guiding, and high-power lunar and planetary photography. Each chapter begins with a brief discussion of each subject covered, along with numerous color pictures to illustrate the results, including a few of his most common goofs! When equipment and set-ups are discussed, line drawings are provided to help the beginner visualize what is needed. At the end of each chapter dealing with actual photography, Little provides step by step instructions dealing with exactly what should be done and when. He also includes a few helpful hints to help clarify and solve some common

problems such as commercial processing and guiding errors.

This book does have a number of problems. The author's line drawings are sometimes insufficient or slightly confusing, the most notable example being his drawing of a drive corrector. A block diagram would have better shown how the drive corrector varies the speed of the main drive motor, rather than his drawing showing only the drive box and a hand controller. He does not think that black and white photography has much use in these days of high speed color emulsions. Anyone who has worked with or seen the results from Kodak 2415 film knows how valuable black and white photography can be in revealing fine details in deep sky objects that would be all but invisible in color slides. He doesn't even mention the valuable narrow-band filters that make spectacular deep-sky photography possible from in or near a large city. The book's \$19.95 price hardbound seems a bit steep for a book that has only 79 pages.

On the whole, the book is a very good guide for the beginner and a good reminder for the experienced amateur who may have forgotten a few things. It is available from MacMillan publishing and was a recent selection of the Astronomy Book Club.

**THE PRAIRIE ASTRONOMER**  
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**MARCH MEETING...  
MARCH 25TH 7:30PM**