NORTHERN LIGHTS

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NORTH CENTRAL REGION

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ROAMING THE REGION

Carol Beaman has retired as editor of the Rockford AA newsletter. Perhaps promoted is a more accurate term. Carol has taken over the editorship of the Reflector for the Astronomical League. If her work on the Rockford newsletter is any indication, the Reflector is in excellent hands. Jim Elliot has assumed the editor's position for the Rockford newsletter.

The Milwaukee AS will sponsor the spring meeting of the AAVSO in Milwaukee on April 30. Dr. Christopher Anderson of UW - Madison will be the guest speaker and will talk about symbiotic variable stars. Convention registrants will also be able to tour Yerkes Observatory on May 1.

Dr. Louis Friedman, Executive Director of The Planetary Society, will be coming to Chicago to talk before the Chicago AS, the Chicago Society for Space Studies and Planetary Society members in the Chicago area. The meetings will be held the weekend of May 20-23. Anyone interested in attending should contact Teinya Prusinski at (312) 482-9086 evenings. Volunteers to help with logistics would also be welcome.

NCRAL CONVENTION

The regional convention of the North Central Region will be held on Saturday, May 22. The site will be Carroll College in Waukesha, Wisconsin. The host is the Milwaukee Astronomical Society who will be celebrating their 50th anniversity at the convention.

Chairman Bill Konig advises that cocmplete registration details will be mailed to member societies soon. Plans so far call for pre-registration fees of $3.00, $4.00 at the door. Lunch will be $4.00 and the banquet $10.00. The banquet speaker will be Dr. Michael Turner of the University of Chicago. The title of his banquet address is "Big Bang Cosmology".

The biggest concern at the moment (as always) is for papers. Anyone wishing to speak for up to 15 minutes on any astronomical subject is invited to present a paper. Contact the paper chairman as soon as possible for a paper entry form: James Greenwald, 2431 N. 64th St., Milwaukee WI 53213.

HALO PHENOMENA

(from the Fox Valley Observer, newsletter of the Fox Valley AS)

Almost everyone, at one time or another, has witnessed a ring or rings around the sun or the moon. These rings are caused by clouds at altitudes between 20,000 and 40,000 feet. These clouds are called "cirroform clouds." When cirroform clouds lie between the observer and the sun or moon, refraction effects can lead to one or more of the numerous halo phenomena.

The most common, the 22^{o} or small halo, occurs when the predominant ice crystal pattern is that of hexagonal prisms of uniform size. These are found at temperatures below approximately $-15^{o}C$. Although this phenomenon occurs predominately in the higher regions of the atmosphere, it can also occur in lower clouds providing the conditions are met.

The halo is caused by hexagonal columns that are tumbling in random fashion, but only those oriented correctly at any given moment contribute to the halo. The 46^{o} or large halo is seen less frequently than its smaller counterpart, though its coloring is the same. The large halo is actually a secondary spectrum produced by the same ice crystals as the small halo.

The halo phenomena can be the forerunner of an approaching storm system if seen in western skies. At altitudes above 20,000 feet, the winds may exceed 200 mph. These winds carry the higher clouds of a storm out in front of the lower clouds. Depending on the winds at lower altitudes, the halos mar be seen up to 15 hours before the onset of the storm's precipitation.

MARS 1982

(From the Chicago AS Observer)

Mars reaches opposition on March 31 (thereby heralding clouds and fog for terrestrial observers and closest approach to Earth on April 5. At closest approach, Mars will be 59,067,000 miles distant and present a disc 14.7" in diameter. Useful observations can be made until late July when the apparent disc diameter drops below 7" of arc.

For those of you who want to make some serious observations of Mars, it is highly recommended that you contact ALPO Mars Recorder, C.F. Capen, 223 W. Silver Spruce, Flagstaff, AZ 86001. Besides being the Mars recorder for ALPO, Mr. Capen is an internationally known planetary astronomer who is currently engaged at the Planetary Research Center at Lowell Observatory. For other observers, the following guidelines are presented to make your observations more useful and meaningful.

You should use at least a basic set of tri-color filters. An example of such a set would be red (W-25A), green (W-58) and blue (W-38A) or violet (W-47). An inexpensive set of gelatin filters can be obtained from most photographic stores and, if used carefully, should last for many years of observing.

A W-47 is useful for clouds in the atmosphere as well as the "blue clearing" effect, which is a temporary atmospheric transparency in violet light. A red filter is fine for details on the surface, while green filters record ground fog or haze and surface frost deposits. Blue filters will reveal mid-level aerosol activity in the atmosphere.

Early in the apparition, there was little cloud and haze activity, but some morning haze was seen at times. Rima tenuis, a thin dark rift, was sighted on several occasions in the north polar cap at 325^{o} W longitude. The north polar cap should have all but disappeared by now, but a small remnant may persist.

Sub-earth and sub-solar points will coincide

at 23^{o} N latitude in mid-April. Around the same time, cloud activity may increase in the southern hemisphere.

ALCON '82

Alcon '82 is the title of the 1982 national convention of the Astronomical League. The Peoria Astronomical Society will host the meeting on July 22-24. They are pulling out all stops to make this a special convention fofr everyone.

For astronomers, thet following "stellar attractions" are scheduled:

Clyde W. Tombaugh, speaking on "The Discovery of Pluto".

Dr. J. Allen Hynek, speaking on "The Dawn and Tomorrow of Corrolitos Observatory".

Dr. Elaine M. Hendry, speaking on "Speckle Interferometry in the Search for New Planetary Systems".

Dr. Michael M. Davis, speaking on "Large Scale Structure in the Universe".

Observatory tours at society observatories at Northmoor and Jubilee and special edition planetarium shows.

Astrophotography contest, telescope fair and comercial exhibits.

For science fiction enthusiasts, Philip Jose Farmer, the internationally known science fiction writer from Peoria, will be in attendance. For the "non-stellar spouses" there will be numerous tours during the morning and afternoon paper sessions. For everyone there will be a Chuckwagon Dinner and tour of Wildlife Prairie Park, just west of Peoria (a fantastic place to glimpse examples of Illinois prairie wildlife in a natural setting - ed.), and the catered banquet at the Continental Regency Hotel.

Mark your calendars now and plan to attend this unique gathering. If you've been to a national convention before, no more need be said. If you haven't, you've only yourself to blame and this is the year to correct past oversights! Additional information and registration details will be forthcoming.

SIDEREAL TIME

(Note: the following was compiled from a combination of SCAN, the Des Moines AS newsletter, Starlite, the Peoria AS newsletter and Mathematical Astronomy with a Pocket Calculator by Aubry Jones.)

Knowing the approximate sidereal time for a given observing session in advance is a real aid to planning what objects will be targeted for study during an evening. This enables one to select the proper star charts and locate and plan the objects to be observed. The technique is simple. First, count the number of months after March 21st and multiply that number by two. Next, count the number of hours between noon and the planned observing time and add that number to the result of step one. If the total is less than 24 hours, you are done. If the total is greater than 24 hours, subtract 24 hours and you have the approximate sidereal time.

If you need a more accurate determination, the following equations may be employed. First, compute the Greenwich Mean Sidereal Time at 0 hours UT on January 0 for any year after 1900. T is the number of Julian centuries of 36525 days since January 0, 1900.

$$GMST = 6h38m45.836s + 8640184.54s\ T + 0.0929s\ T^2$$

After determining GMST, the Local Sidereal Time can be found from the next equation. d is the number of days since January 0 of the present year. UT is the Universal Time for which the sidereal time is wanted. L is the longitude in degrees west of Greenwich.

$$LST = 0.0027379093\ (24d + UT) + UT + GMST + L/15$$

This latter method is sufficiently accurate to allow setting sidereal clocks. Using one of these two methods should satisfy the requirements of nearly all amateurs.

6" TELESCOPE GIVEN TO PARK DISTRICT

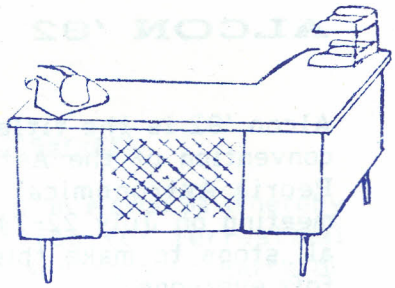
A little over a year ago, Rockford AA, Inc., began discussing with the Rockford Park District the possibility of a public observatory. Two sites were proposed: one at Atwood Outdoor Education Center and one at Quarry Hill Park. The Quarry Hill site was eventually selected. However, the observatory committee promised the Park District that it would make a telescope available to the Atwood program.

That promise was fulfilled October 13th with the presentation of a 6" Newtonian telescope. The telescope mirror and mounting were handcrafted locally. The wooden mounting is a modification of a Zeiss or inverted fork design. This design has proven to be easy for beginners to use.

The mount allows the tube to rotate so that the eyepiece height may be adjusted to compensate somewhat for the varying sizes of its intended users. The 6" is already at Atwood and staff members are being trainied to use the instrument. It will be used with visiting classes whenever weather permits.

May 29 is the Deadline for the June issue

EDITOR'S CORNER



Whither the astronomical articles?

You have no doubt noticed the vast expanses of white space in the pages of this issue. Now that the League has made an official campaign out of "light pollution" I feel that I must speak out against "white pollution"!

Over the past years that I have published Northern Lights, I have used two major sources for materials. First has always been thet newsletters published by the member societies in our Region. The second has traditionally been the occasional short article written by some amateur on a topic with which he was familiar. The last issue or two have abounded with the former materials, but there has been a noticable lack of the latter.

It is not that I am receiving no individual articles at all, but, rather, I am receiving none that are suitable for publication. I have turned away three articles written by three amateurs simply because the articles had nothing to do with astronomy. Since this is an amateur astronomy publication, I feel that the materials published must have at least some relevance to that topic.

And that is why you see all the blank space throughout this issue. Come on, you readers, I know many of you can write a few words of interest on some aspect of amateur astronomy. I know this because you have done so in the past. Sit down at your typewriter and peck out a few paragraphs and send them in to be shared with your fellow amateurs. Don't let "white pollution" get the upper hand!