NORTHERN LIGHTS

Published quarterly in September, December, March and June

NORTH CENTRAL REGION

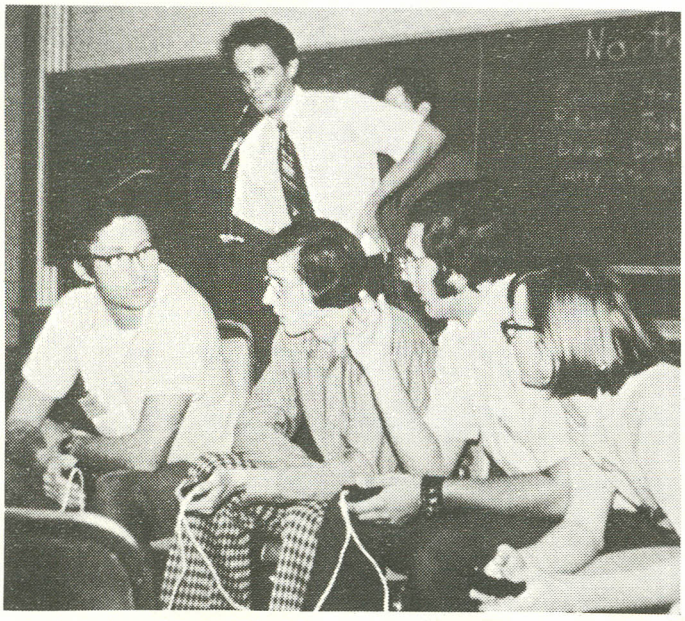
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ROAMING THE REGION

At the Chicago regional convention last May, the Regional Award was given to Mrs. Cathryn DuVall of the Racine Astronomical Society. Cathryn is well known as League historian, past Secretary and as an avid solar eclipse observer.



Ritchie Falk (Racine), Dave Darf (Des Moines), Dick Harthun (Racine) and Larry Stevens (Des Moines) won star atlases for themselves and honor for our region when they defeated a team from the Mid-East Region in the finals of the "Star Bowl" competition at the East Lansing convention. The competition was patterned after the TV College Bowl contest. Each team could score points by correctly answering questions on astronomy.

NATIONAL CONVENTION

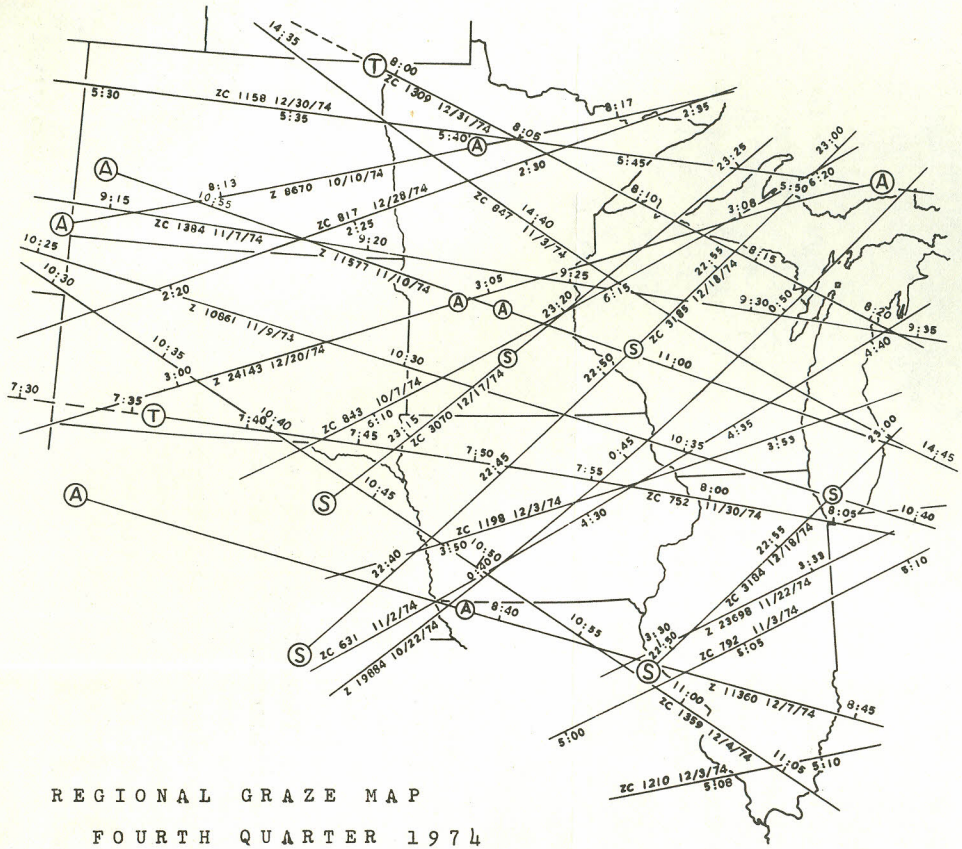
This year's Astronomical League convention at East Lansing truly had something for everyone. Frank McCullough and his convention committee are to be congratulated for a job well done.

Like all conventions, this year's had some fine papers detailing the work being done by amateur astronomers today. (See page 3 for abstracts of some of them.) Two innovations by the Great Lakes region, however, almost stole the show.

The Star Bowl contest pitted teams from the various regions against each other in a quiz game on astronomical topics. As often as not the winning team was the one which had the fewest incorrect answers, not the most correct answers. If this contest is continued at future conventions, potential entrants may want to do a little "cramming" before they leave home.

Thursday evening's social party was a welcome relief from the technical details of early sessions. Wives who attended the convention with their astronomer-husbands were especially glad that something had been included in the program which they could enjoy, also. A variety of music from well known bands was provided via tape recorder.

(cont. p. 3)



REGIONAL GRAZE MAP

FOURTH QUARTER 1974

Map scale precludes its use to set up expeditions. If interested, contact H. F. DaBoll, 6N106 White Oak Lane, St. Charles, Illinois 60174, (phone 312/584-1162) for detailed predictions or information on an expedition already in your area. Include star number, date, and approximate longitude of proposed observation. Also mention whether you have had previous experience in planning graze expeditions.

If an encircled A or S (Moon or Sun altitude, respectively) is shown within a limit, increasingly larger telescopes are needed from there to the same symbol ending the limit, while "IMBSW" (it might be seen with) refers to the better part, on the other side of the intra-limit symbol. Time ticks on the south side of a limit indicate northern limit grazes, and vice versa. A dashed limit indicates central graze at the bright limb; an encircled T means just at the cusp.

1974 DATE	STAR NUMBER	MAG	MOON	MOON ALT	SUN ALT	CUSP ANGLE	IMBSW	NOTES
10/7	ZC 843	7.2	67%-	26,34	-52,-49	3N,2N	6"	1,2
10/10	Z 8670	8.3	32%-	9,19	-46,-38	0.6S,2S	6"	
10/22	Z 19884	8.2	40%+	27,20	-13,-21	13S,13S	6"	
11/2	ZC 631	5.6	95%-	41,49	-56,-58	3N,2N	6"	A,3,4
11/3	ZC 792	5.1	88%-	42,46	-64,-64	4N,3N	4"	B,5,6
11/3	ZC 847	3.0	86%-	23,13	9,20	9S,10S		C,1,7,8
11/7	ZC 1384	7.4	46%-	28,43	-46,-33	3S,6S	4"	1
11/9	Z 10861	8.2	24%-	16,30	-35,-22	6S,9S	6"	6
11/10	Z 11577	8.2	15%-	9,21	-30,-18	7S,10S	6"	1,8
11/22	Z 23698	7.9	51%+	24,20	-54,-57	10S,9S	6"	6,9
11/30	ZC 752	4.7	99%-	68,60	-66,-53	-0.6S,+3.5S	4"	D,6,10,11
12/3	ZC 1198	6.2	84%-	14,21	-54,-59	5N,5N	6"	E,3,4,8
12/3	ZC 1210	5.9	83%-	33,34	-72,-73	3N,3N	5"	F,5
12/4	ZC 1359	5.1	72%-	55,60	-39,-20	7S,10S	60 mm	G,3,5,12,13
12/7	Z 11360	8.2	39%-	15,22	-55,-48	4S,6S	6"	14
12/17	ZC 3070	6.6	16%+	30,24	-4,-11	10S,9S	60 mm	H,1
12/18	ZC 3184	7.1	24%+	40,37	-2,-7	11S,10S	3"	J,6
12/18	ZC 3185	5.3	24%+	39,33	1.5,-8	10S,9S	7X50's	K,1
12/20	Z 24143	8.5	34%+	25,13	-38,-49	6S,3S	6"	
12/28	ZC 817	4.8	99%+	40,50	-30,-42	5N,7N	4"	L,15
12/30	ZC 1158	5.2	98%-	47,56	-60,-65	11N,8N	5"	M
12/31	ZC 1309	5.7	93%-	53,57	-59,-53	-0.1S,+1.9S	6"	N,16

Universal times and dates are used. Moon altitude, Sun altitude, and cusp angle, in degrees, are given for the western and eastern intersection of each limit with the boundary of the North Central Region, and for the end of any limit which falls within the Region. Cusp angle is the separation of central graze from the northern or southern cusp, with negative values indicating central graze on the bright limb. Under MOON, + means waxing, - means waning.

NOTES:

A. 51 Tauri
B. 109 Tauri
C. Zeta Tauri
D. Iota Tauri
E. 2 B. Cancri
F. 5 Cancri
G. Kappa Cancri
H. 8 Aquarii
J. 117 G. Capricorni
K. 46 Capricorni
L. Omicron Tauri
M. 74 Geminorum
N. 45 Cancri

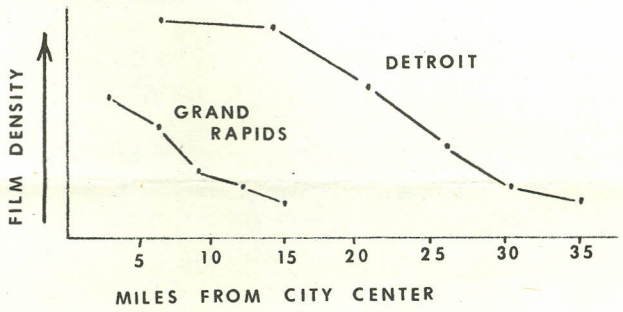
1. Possible Fox (Twin Cities) exped.
2. Double. Secondary mag 7.8 (8" needed). Sep ca 3".8. Secondary probably ¼ second shallower than primary.
3. Possible Harvey (Omaha) expedition.
4. Possible Blattner (Madison, WI) exp
5. Possible Clark (St. Louis) exped.
6. Northeastern Illinois expedition.
7. Observable with small scope, but only with near-perfect conditions.
8. Possible Halbach (Milwaukee) exped.
9. Possible Sandy (Kansas City) exped.
10. Probably a close double; not certain. Magnitudes 5.4 & 5.4. Stepwise events possible with 6" telescope.
11. Possible Olsen (Cedar Rapids) exp.
12. Triple; pri & sec are spectro binary. Mag 6.0 tertiary probably is 0".05 deeper, so look for 23% drop.
13. Possible Rapid City, SD expedition.
14. Entry to NCR taken as SW corner of Iowa (Limit misses Iowa by a mile).
15. Possible Willcox (Fargo) expedition
16. Recently discovered to be double. Mags ca. 6.4 & 6.4. Stepwise events possible with an 8-inch telescope.

PAPERS HIGHLIGHTS

The following are excerpts from a few of the papers given at the national convention. Summaries of other papers will appear in future issues as space permits.

Robert Sigler, Ann Arbor, presented a group of design equations for compound Schmidt telescopes. By varying the parameters he was able to find certain designs with all spherical optics which yield wide, flat fields. Bob further described his own method of figuring corrector plates using vacuum deformation.

Rollin Van Zandt, Peoria, discussed his findings after analyzing seven successful amateur societies. He covered points on starting a society, building membership and maintaining interest in an existing group. Although the sample was small, certain trends appeared that related to the success of the organization. Among the factors were: by-laws structure, public relations, newsletters, observing programs and observing facilities.



Gary Ross, Grand Rapids, made a photographic study of urban skyglow. A series of exposures were taken at varying distances from the center of a city and the negatives were measured with a densitometer. A comparison of the "light domes" for Detroit and Grand Rapids is shown above.

Orville Brettman and Greg Novacek, Racine, pondered the question of resolving extra-galactic objects with amateur equipment. The two important criteria are the brightness and separation of the stars being resolved. Theory indicates that hot supergiants in M-31 should be recordable photographically in as small as a 12-1/2 inch. Comparing plates taken with a 2 meter Schmidt and with a 16 inch telescope indeed show that stellar objects are resolvable in M-31 in the 16 inch.

CONVENTION (cont.)

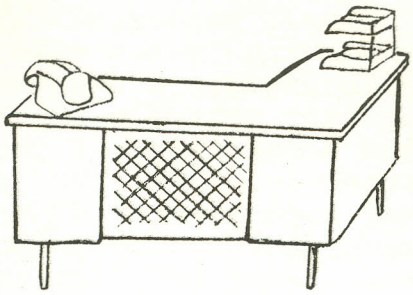
The Astronomical League Award was presented to Walter Scott Houston who, in accepting the plaque, admitted, "I've always wanted it!" Mr. Houston, best known for his "Deep Sky Wonders" column in Sky and Telescope, was also the banquet speaker. However, he chose a topic a little nearer than "deep sky" when he discussed the Sierra Madera meteor crater in Texas.

Other highlights of the convention included an Abrahms Planetarium program, a tour of the Michigan State University Observatory and a field trip to the Portage Lake Observatory and Radio Telescope.

VENUS PARTIAL

Thirty-two observers travelled to Osseo, Wisconsin, the morning of July 17th to observe the partial occultation of Venus. The closest anyone came to observing the event was a brief glimpse through the clouds by Dave Dunham of Austin, Texas, a few minutes after the occultation had ended. A group lead by Homer DaBoll in Michigan and solo observer David Harvey near Omaha were also clouded out.

EDITOR'S CORNER



A TIME FOR CHANGE?

Two million years ago the first hominid, Australopithecus, left the safety of the jungle and ventured forth into the savanna grasslands of Africa. In so doing he had to learn new concepts of hunting and tool making. These concepts were not acquired easily and, in time, Australopithecus disappeared in favor of later hominids who could adapt more readily. The end of this evolutionary chain is man as we now know him.

Twenty-eight years ago a group of astronomical societies gave up the safety of their local isolation to form the Astronomical League. They had to learn new concepts of cooperation and national organization. These concepts have not been easy to learn either. Perhaps the time has come for the next evolutionary step.

That the evolutionary process is at work can be seen in the new format of the Reflector. Anyone comparing the last two issues with former editions will have to admit that our motion is forward. Further evidence of our evolution came in the remarks of President Robert Fried at the banquet of this year's convention. President Fried promised an overhaul of the By-Laws and studies of potential future programs for the League.

Significant changes in the League will require that its members learn more new concepts. When dues were only 25¢ per person, these dues constituted a very small fraction of any society's budget. However, dues have now doubled and indications are that additional increases may be necessary to meet the expected budgets in coming years. All societies will have to adapt to spending a larger portion of their budget for League membership.

Several council members expressed fears that the higher dues would drive out some of our member societies. This should not happen if the societies stop to consider that, at least for now, the new Reflector alone is worth the increase. However, there are so many new astronomical publications on the market now that future dues increases will probably have to be supported by increased services supplied by the League in return for the dues.

Yet another indication of an evolutionary trend appeared at the convention in Michigan. When the financial plight of the League was made known, 15 attendees signed up as new patron members. Perhaps they signify the birth of a new phase of the Astronomical League in which those individuals who believe in the League rally to its support so that the number of patrons begins to approach the number of member societies!

What form will the evolved Astronomical League assume? Only time will tell. We are now at a crossroads, able to catch only glimpses of each path. The next few years are critical in deciding which way to go. As we decide, the guiding principle must be: how best to serve the needs of the amateur astronomer.

NOVEMBER 22ND IS DEADLINE FOR DECEMBER ISSUE