NORTHERN LIGHTS

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NORTH CENTRAL REGION

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ROAMING THE REGION

James Labant (Racine A.S.) photographed a peculiar object near RA 4h 30m, Dec +22 , on October 7/8, 1972. This object appeared to be a comet with a photographic magnitude of 8.5. Jim sent all the data he had on this object to the Smithsonian Astrophysical Observatory, but no confirmation has been received. Subsequent observations by Jim and other RAS members were hampered by the unusually bad weather this part of the country has had. Recently, a new comet was discovered well south of Jim's initial position.All involved are now working to determine if these objects are the same or if some other explanation can be found for the object on Jim's photograph.

Jay Thompson, formerly of Fox Valley AS, is now a freshman at the University of Illinois and is active in the U of I Astronomical Society. A 12 inch refractor is available on campus for the 60 members to use. However, the main activity of the group at the moment is a mirror grinding class.

The planning committee of the Milwaukee Astronomical Society has had a busy fall. A foundation has been poured for a comet seeker and its cab is ready for mounting. Other plans include a 25inch mirror blank recently obtained with funds donated by Miss Cora Zemlock.
(cont. p. 5)

REGIONAL CONVENTION - 1973

The 1973 convention of the North Central Region of the Astronomical League will be held in St. Paul, Minnesota, on April 28th. The all day Saturday event will be held at Macalester College,site of the 1957 Regional convention.

One of the highlights of the proceedings will be the use of Macalaster's roll-off roof observatory. This observatory houses a variety of instruments including a 6 inch refractor, an 8 inch Springfield reflector, and a 24 inch Newtonian with a plate glass primary mirror and a new twist on the English yoke mounting. (Those amateurs who are shocked at the thought of a plate glass mirror are reminded that the 100 inch on Mt. Wilson is also made of plate glass.)

A formal call for papers and other announcements concerning the convention will be forthcoming. However, anyone planning a paper on last summer's solar eclipse is asked to convey the intention to Al Zderad as soon as possible. If enough papers are planned, an entire session will be devoted to the eclipse.

Al Zderad
7563 Ideal Avenue South
Cottage Grove, Mn. 55016

VIGNETTES

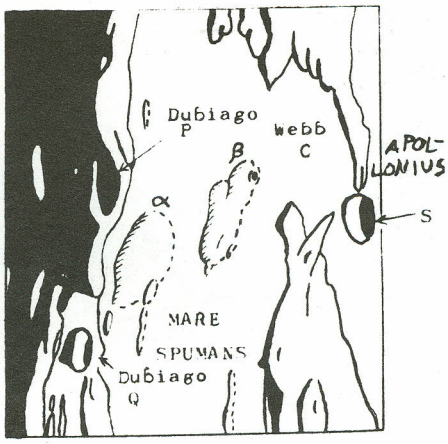
by Hubert Brueckner (3M Club A.S.)

Sir Joseph Norman Lockyer, 1836-1920

Born in Rugby and educated in private schools, Lockyer became a clerk in the British War Office. He devoted his leisure time to astronomy and his intense interest was rewarded in 1890 when he was appointed director of the new Solar Physics Observatory and Professor of Astronomical Physics at the newly founded Royal College of Science.

Lockyer was one of the greatest solar observers of all time, leading eight British Government Eclipse expeditions. In 1866, he mounted a spectroscope on his 6-1/4inch Cooke refractor and began an extensive study of the sun's surface. He discovered that prominences could be observed without an eclipse by setting the slit of the spectroscope on their bright lines. He announced his discovery to the Paris Academy on the same day a communication was received from Janssen who had made the same discovery.

While he is probably best remembered for discovering the element Helium in the surface of the sun before it was known on Earth, Lockyer also cataloged 470 bright stars according to their spectral lines and developed a theory of stellar evolution. In 1869 he founded the journal Nature and continued to edit it until shortly before his death.



By J.E. Westfall (ALPO) from The Strolling Astronomer; 25,11-12

The figure shows two newly discovered domes in Mare Spumans, located on the Moon's east(IAU) limb at its equator. Observation is chiefly possible at sunset lighting soon after Full Moon. Confirmation of these domes by other observers is very much desired.

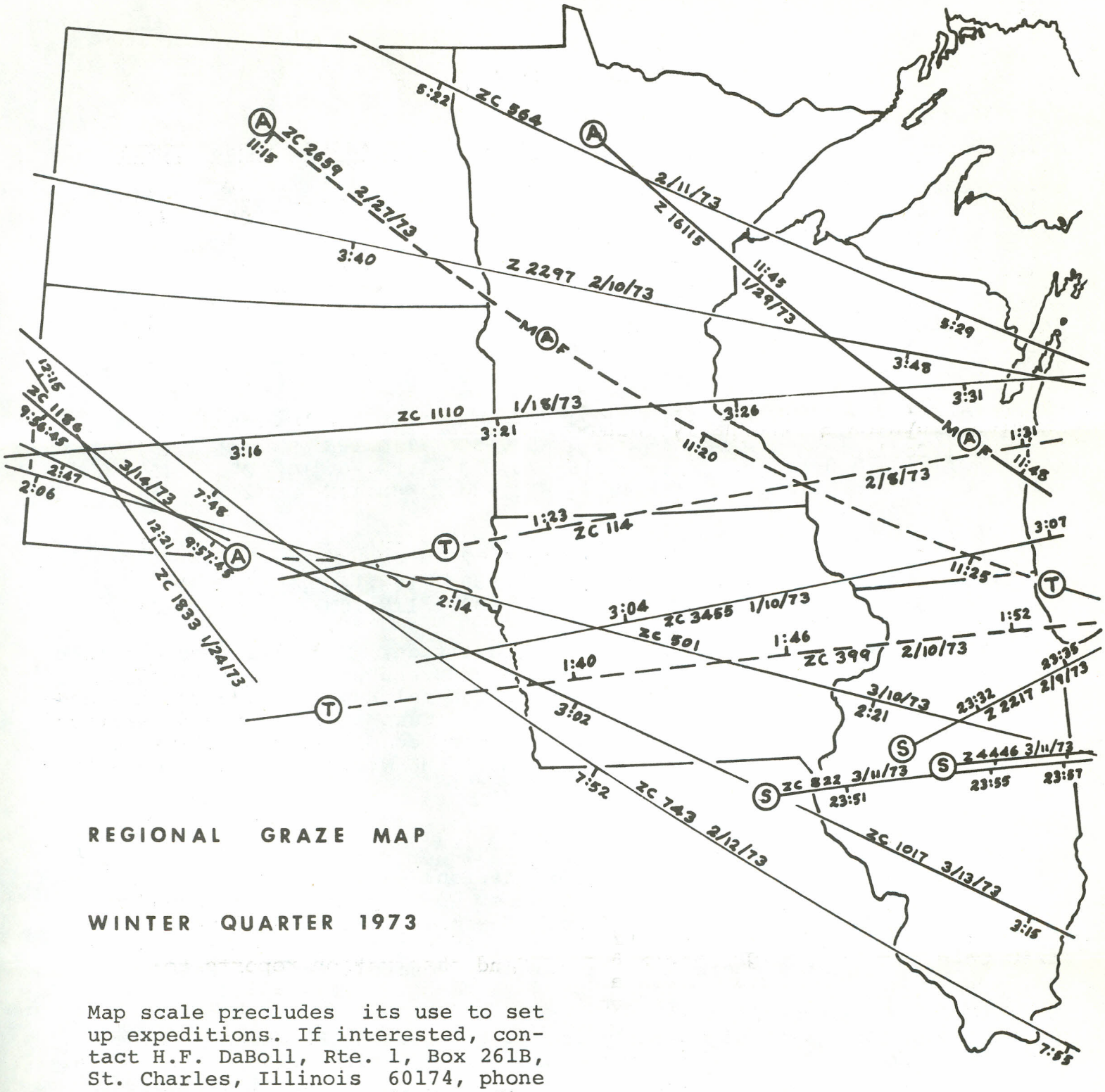
Lunar Recorder Westfall reported Mare Spumans Alpha to be low and circular with a flat summit and ridges on its north side. Mare Spumans Beta was described as low and irregular with a flat summit. It was steep on its northeast side and exhibited a craterlet on the southwest. The major axis of Alpha was determined to be 27 kms.; that of Beta was determined to be 34.5 kms.

Send observation reports to:
John E. Westfall
Dept. of Geography
San Francisco State College
1600 Holloway Avenue
San Francisco, Cal. 94132

COMET KOJIMA

The following ephemeris for Comet Kojima (1972j) is taken from I.A.U. Circular 2462. The last column is the predicted magnitude of the head of the comet. At press time, no tail had been reported, but the object should be bright enough to be found in most amateur instruments.

	RA(1950)	Dec	m
Dec. 19	5h41m	-23 15'	10.8
29	4 47	-20 09	10.8
Jan. 8	4 00	-15 41	10.8
18	3 24	-10 53	11.0
28	2 59	- 6 27	11.2
Feb. 7	2 42	- 2 35	11.4



REGIONAL GRAZE MAP

WINTER QUARTER 1973

Map scale precludes its use to set up expeditions. If interested, contact H.F. DaBoll, Rte. 1, Box 261B, St. Charles, Illinois 60174, phone (312)-584-1162 for detailed predictions or information on an expedition already in your area. Include star name or number, date and approximate longitude of proposed observation. Also mention whether you have had previous experience planning graze expeditions.

"IMBSW" means "it might be seen with" and applies to that part of the limit where conditions are best.

Time ticks on the south side of a limit line indicate northern limit grazes, and vice versa. A dashed limit indicates central graze at the bright limb. An encircled A or S at the end of a limit indicates where the graze becomes unfavorable due to moon or sun altitude, respectively, while those symbols within a limit indicate transitions from favorable to marginal conditions.

GRAZE SUMMARY

1972 DATE	STAR NUMBER	STAR NAME	MAG	MOON	MOON ALT.	SUN ALT	CUSP ANGLE	IMBSW	NOTES
1/10	ZC3455	9 Pisc	6.4	27%+	17,10	-42,-49	3S,2S	2"	(1)
1/18	ZC1110	Gemi	3.5	99%+	45,59	-36,-51	5N,9N	2"	(2)
1/24	ZC1833		6.9	67%-	32,33	-23,-20	7S,7S	5"	
1/29	Z16115		7.6	21%-	6,13	-21,-15	6S,6S	4"	
2/8	ZC 114		8.4	23%+	38,28	-16,-26	+0.3S,-2.1S	6"	(3)
2/9	Z 2217		7.1	43%+	69,67	-1, -4	4S,3S		(4)
2/10	ZC 399	Arie	5.7	44%+	58,49	-21,-30	-0.9S,-3.3S	3"	(5)
2/10	Z 2297		8.0	44%+	43,29	-35,-48	5N,8N	5"	
2/11	ZC 564		6.1	57%+	33,24	-51,-58	9N,10N	3"	(6)
2/12	ZC 743	Taur	5.6	69%+	24, 9	-58,-57	11N,12N	3"	(7)
2/27	ZC2659	70 Sgtr	6.4	28%-	5,16	-23,-13	-1.8N,-0.1N	2"	(5)
3/10	ZC 501	66 Arie	6.1	29%+	49,34	-13,-30	8N,11N	2"	(8)
3/11	Z 4446		6.6	51%+	75,75	+0.5,-2	5N,5N		(9)
3/11	ZC 822	118 Taur	5.9	51%+	74,75	+2.6,-2	4N,5N		(9)
3/13	ZC1017		6.8	64%+	68,59	-19,-38	10N,14N	5"	
3/14	ZC1186	209 Gemi	6.1	77%+	7, 4	-34,-32	11N,10N		(10)

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, if it 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. IMBSW: It Might Be Seen With. Under MOON, + means waxing, - means waning.

NOTES:

(1) Probable Milwaukee expedition.

(2) Probable Minneapolis - St. Paul expedition.

(3) Double star. Separation 2 arc seconds. Disappearance of secondary should be observable with an 8-inch, before graze of primary.

(4) Becomes "favorable" about 115 miles east of Ill-Ind line (just north of Ind-Mich line) where IMBSW a 3-inch. Possible AAC-CAS-FVAS expedition.

(5) AAC-CAS-FVAS expedition.

(6) The best NCR graze of probably the last favorable Pleiades passage until about 1985. If you cannot observe the graze, plan to time total occultations. Note convenient pre-midnight Sat - Sun time of all events.

(7) Possible Omaha, Moberly, and St. Louis expeditions.

(8) Possible Rapid City, Sioux City, and Peoria expeditions.

(9) Z4446 time ticks are for 23:55 and 23:57. At a given longitude, central graze times of this unusual pair differ by less than 8 seconds, and the Limits are separated by about 5.5 miles. Profile predictions will be identical. Both become "favorable" east of the Ind-Ohio line, where they might be seen with apertures of 3 inches and 2 inches, respectively. Probable Dayton expedition for ZC822.

(10) Becomes "favorable" about 45 miles west of the Mont-SD line, where IMBSW a 5-inch.

POLE STARS

by George Triff (Peoria A.S.)

The next time you go out to look at the stars, take a good, long look at the North Star -- then reflect for a few moments and turn your attention to two others that once were our polar stars. One is Thuban, the third star from the tip of Draco's tail, between the two dippers; the other is Kochab, the brighter of the two stars in the cup of the Little Dipper that usually are referred to as the "guardians" of the pole.

Thuban was our Pole Star in 3000 BC and was worshipped as a sacred star by the ancient Egyptians. They noticed that of all the stars, it was the only one that did not seem to move and, therefore, must be a star of special significance. In fact, when the pyramids were being built, the central air shaft, leading from the center of the pyramid to the outside wall, was set at an angle to permit the light of Thuban to enter the main burial chamber. Of course, no one at that time knew about the Precession of the Equinoxes, so whatever lies in the chamber today, will just have to wait about 24000 years, before the glittering beams of Thuban once again enter the air shaft to light up the interior.

Now, the star Kochab, being just a plain, old second magnitude star, does not have much of a history. Its only claim to fame is that it once was our Pole Star (400 AD), and had the honor of being looked upon by the great Plato himself. It is exciting to a certain degree, however, to look upon Kochab and reflect that we are looking at the same star that held Plato's attention almost 2000 years ago. And, the same goes for Thuban. Just think,you are looking at light that gripped the entire ancient world with a great deal of fascination.

REGION (cont'd.)

During October, members of Racine Astronomical Society worked toward completing a new addition to their observatory complex. The addition, Building #3, will include machine shop, temporary sleeping quarters and storage room. The 24 by 30 foot building will contain various materials now stored under the unused, small dome, thereby allowing a 12 inch f/3.5 reflector to be installed in the small dome next year. The new building and telescope will be the largest addition to the Racine facility since its initial construction in 1963.

Several societies offer basic astronomy courses for their members and other interested persons in the community. Tom Renner (Milwaukee A.S.) just finished giving such a course to M.A.S. members, while Jim Kloeppel (S.C.A.S.O.) will begin a course for astronomy buffs in the Sioux City area. Typically these courses cover the basic elements of astronomy in such a way that a newcomer to the science can understand the principles.
(cont. p. 6)

1973 ECLIPSE LISTING

The solar eclipse of June 30, 1973, is mainly visible only in Africa and the Atlantic Ocean. However, its seven-plus minutes of totality is one of the longest this century and a few amateurs from the Region plan to make the journey to view the eclipse.

Anyone who is planning a trip to observe the eclipse is requested to send the details to NORTHERN LIGHTS. The next issue will contain a list of people and their planned activities so they can contact others about joint programs. Include information on your destination and experiments.

REGION (cont'd.)

Messier Clubs seem to be a wide spread activity around the Region. Al Brouillette heads up a group at Milwaukee, while George Triff and Art Grebner co-chair a group in Peoria. Both of these groups meet regularly to seek out the 105 objects of this famous list. Many other societies have less formal star parties which feature one or more of Messier's nebulae, clusters or galaxies.

ARTICLES NEEDED

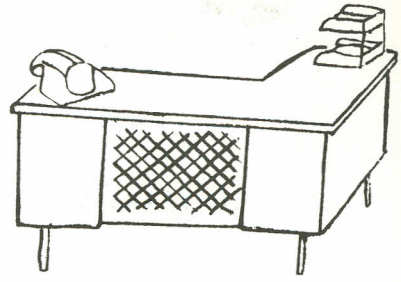
During the year and a half NORTHERN LIGHTS has been published, the only criticism received has concerned the amount of space given to grazes. A prior editorial delt with reasons for continuing graze coverage. Now society support for the publication (in terms of group subscriptions) has grown to the point that an expanded issue is feasible.

Beginning with this issue a 6 page format will be used. This expansion more than doubles the printing space available. Six page issues will continue as long as copy is received to fill them.

If you are interested in a particular facet of astronomy, write a brief article similar to Pole Stars or Vignettes. Articles should be 200-250 words long and may be edited to fit space available. Then, perhaps, blank spots like the one below will not occur.

...fill me...

EDITOR'S CORNER



"They have eyes but see not... ears but hear not." Have you really used your senses lately? All perception of the universe comes to us through our five senses. These senses must be cultivated to be used most efficiently.

Sight is the astronomer's most used sense, but his most important is the common sense used to interpret what he sees. For example, is the following moon near first or last quarter:



Obviously first quarter? Not so, A southern hemisphere observer will claim last quarter. Similarly, a television picture of a cratered plain may have come from either the moon or Mars. These examples are not meant to trick, rather, they point out that all available information must be used to obtain a meaningful interpretation of observations.



Thus, the direction of the sun will determine if the above lunar feature is a low hill (light coming from the left) or a shallow crater (light coming from the right). So, next time you go out to observe, go out to think also!

FEBRUARY 28 IS DEADLINE FOR MARCH ISSUE