BUFFALO ASTRONOMICAL ASSOCIATION INC.
BUFFALO MUSEUM OF SCIENCE
HUMBOLDT PARKWAY
BUFFALO NEW YORK 14211

the Spectrum

Editor: Ernst E. Both

MARCH - APRIL 1976

MARCH MEETING: March 12, 1976, 8:00 p.m., Club Room, Buffalo Museum of Science. For the third meeting of the new year we are happy to welcome our own Dr. Fred W. Price, who will present an illustrated lecture entitled: "The Bright Ray Systems of the Moon." Dr. Price is Professor of Biology at the State College at Buffalo and a former President of our association. By avocation a student of the Moon, Dr. Price certainly well-known to our members. His lecture should be very interesting and it is our great pleasure to WELCOME DR. PRICE. Refrshements afterward.

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APRIL MEETING: April 9, 1976, 8:00 p.m., Strasenburgh Planetarium, East Ave., Rochester, N.Y. PLEASE NOTE that we are meeting at the planetarium in Rochester for a regularly scheduled program which begins promptly at 8 p.m. Admission is $ 1.75. No one will be admitted after 8! Transportation is your own responsibility, but should you need transportation, call Darwin Christy at 692-0305. Details at the March meeting.

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SOME SUGGESTIONS CONCERNING THE USE OF OUR NEW OBSERVATORY. By William R. Deazley

The Beaver Meadow Observatory is now complete and the telescope is available for general observing. With the addition of the new guide telescope, a camera attachment and a more controllable drive system, the telescope can now be used as a photographic instrument. This capability in a 12½-inch reflector opens the door to many types of observing programs. However, additional accessories are needed to make these programs possible. This note was written to suggest a number of possible projects which could be undertaken by individuals or small groups within the B.A.A. Some of these projects include the following:

1. We could add to the photographic capability by providing a Blink Comparator for comparison of repeated star photographs. This would be a big help in discovering such objects as atseroids and comets.

2. We could use the telescope for variable star observing. Visual observing is difficult and requires an expert eye to obtain good data. A Photoelectric Photometer system would greatly speed up observations and increase accuracy. It would also permit measurement of an object's brightness through standard filters for multicolor photometry.

3. It would be possible to enhance observing and permit group observing of an object with an Image Intensifier system. This would be a major step in making it possible to observe faint extended objects. The Image intensifier could also be coupled to a camera for making permanent records of the object. A television vidicon and remote TV monitor could also be developed to permit large group viewing of relatively bright objects.

4. The roll-off roof observatory has one significant disadvantage with respect to "seeing" conditions. The telescope tube is much more exposed to the night sky than if it were in a dome, and consequently it gets much cooler than the ambient air temperature. Tube cooling generates thermal irregularities inside the tube which destroy the image. Insulation in the tube helps but often is inadequate. It would be helpful if an interior air-venting system were installed. This would consist of an interior tube, concentric with the existing one. This tube would be porous and would be small enough so that an airspace of about ¼ to ½ inch existed between it and the outer tube.

If both ends were blocked, a low pressure exhaust fan could be used to suck off the inner boundary layer. The fan would be connected to the telescope by a light-weight flexible hose to prevent fan vibration from disturbing the telescope.

5. Anyone who has tried to use setting circles to locate objects knows how difficult it is to do this in a darkened observatory. In addition to this problem, it is necessary to calculate the hour angle from the right ascension and local sidereal time if one wants to find a star by its standard coordinates. An alternate method is to use adjustable hour angle circles which can be set to read right ascension from a known star and then rotate the telescope to the desired right ascension. This latter approach is still difficult because of the need to read the setting circles in poor lighting conditions. If a survey program is started, one cannot waste time hunting for objects, and an L E.D. digital display of right ascension and declination would be a big help for their rapid location.

Two basic methods for generating the angles are: A) Mechanical summing of hour angle (H.A.) and local sidereal time (LST) to obtain the right ascension (R.A.) of the object. This requires accurate, stable angle measuring devices. No atmospheric refraction correction is available without added computations. B) Electronic summing of differential H.A. and LST to obtain R.A. from some pre-set "benchmark" stars. This system uses angle counting from a known reference in the near locality of the desired object. It compensates for refraction and only requires nominal sidereal rate accuracy.

Other projects which would be useful are listed in outline form below:

6. Star Spectra Measurement. Features: a. PMT detector; b. Spectrum scanner, pulse counter; c. Small microprocessor to accumulate the scanned data or a photographic recorder operating off the amplified PMT output; d. Prime focus mounting of the spectrometer for present system. Coudé system would be better but would require major change in the telescope mounting.

7. Star Pointer. A mechanical or electronically aided angle measuring system which is attached to a simple low power telescope or wand to permit visual location of objects from either star chart data or coordinate data. This device would be useful for classes where the instructor can set the pointer on the object and students can see its location in the sky relative to other stars. It would also be useful for teaching relationships between H.A., R.A. and declination, and how stars move relative to the observer.

8. Photoelectric Guiding System - excellent for long exposure photography.

9. Offset Guiding System (calibrated angles) - a necessity for PMT measurement of objects too faint for direct visual alignment.

10. Rotating Prime Focus Diagonal - to permit directing the starlight to a multiplicity of eyepiece, camera, PMT or other instrument locations on the tube to minimize the adjustments needed for setting up for various observing modes.

There are many other possible projects, useful additions to the Beaver Meadow Observatory, which would also add to the fun of our hobby. Suggestions from others are needed. The projects mentioned above are generally difficult tasks and certainly not many of them could be accomplished in any reasonable time period. However, it may be that one or two could be built by a small group and add to our observing capability. It's worth a try, isn't it??

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A REMINDER: The P.D.Q. Bach concert is on April 2, 1976, at Kleinhans. Profits from this concert have added $ 67.50 to our observatory fund, and we are very grateful to Edith Geiger for a job well-done - as usual!

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FOR SALE, FOR SALE: "Sky and Telescope" January 1952 to December 1970, in very good condition. Also 8-inch reflector, complete, Springfield type mounting. Call Mr. Hilliton, at 833-7140. FOR SALE, FOR SALE, FOR SALE, FOR SALE, FOR SALE, FOR SALE.

THE 1976 NATIONAL CONVENTION OF THE ASTRONOMICAL LEAGUE will ge held in conjunction with the summer meeting of the Association of Lunar and Planetary Observers at Kutztown State College, Kutztown, Pa., August 18-22. The convention site is located midway between Reading and Allentown, Pa., and is about one hour from Philadelphia. The meeting will be co-sponsored by the Lehigh Valley Amateur Astronomical Society, Astronomical Society of Harrisburg and the Rittenhouse Society, Philadelphia.

Giving the meeting a distinctly historic flavor in the Bicentennial Year will be its themes: the Viking Mars exploration and "200 Years of Amateur Astronomy." Included will be talks by featured speakers from NASA with a live telephone discussion with Viking project scientists; talks by professional astronomers and the Smithsonian Institution's astronomy curator, and a display on the history of amateur astronomy in the U.S. Also scheduled are tours of astronomical and historic sites in Philadelphia.

Those wishing to stay at the Kutztown College dormitories for an entire week will be arriving on Monday, August 16. The convention will be preceded on Wednesday August 18 with all-day sessions of the League's National Council. Thursday will be main check-in day with tours of astronomy sites including the Franklin Institute and Frankford Arsenal Optics Laboratory, Philadelphia, as well as tours to the Philadelphia Historic area, center of Bicentennial interest. The evening will end with a social at Kutztown. Friday will see opening ceremonies, papers and evening programs, tours and observing. Saturday will include League, Regional and ALPO business sessions, elections, papers and workshops and will include a dinner with a NASA guest speaker and telelecture on Project Viking. Sunday will complete the meeting with workshops, papers, and a concluding luncheon with awards, announcement of winners of the Astrophotography and Telescope Competitions and invited speakers.

Advance registration is $ 4 per person, $ 5 for families. Room and board for the three principal days of the convention is $ 45 per person, with an additional $ 5 for room for the entire week. Registration information, entry forms and rules for the competitions, forms for scientific papers and information brochures which double as a poster, are available from convention treasurer George H. Maurer, RD 3, Box 140, Coopersburg, Pa. 18036.

The nation-wide contest for amateur astrophotographers is open to any amateur, including non-league members, and can be conducted locally by astronomical societies. National judging will be conducted August 16-22, 1976 at the League convention in Kutztown. The photography contest includes black and white and color photographs, with both groups sub-divided into "Deep Sky Objects" (requiring relatively long exposures and special equipment) and "General" categories. Each of the four categories will receive awards and will be judged for astronomical interest and artistic merit. Deadline for submission of photos to the chairman, Marion Robson, P.O. Box 105, Parker Ford, Pa., is July 30, 1976. All entries must be mounted for hanging and may be from 5x7" to 4x8'. Return cover,postage must be provided. All entries will be mounted and displayed at a special show open to the public August 4-22 at the Kutztown State College Gallery. (zip code for Parker Ford, Pa.=19457)

The telescope competition, open for amateur equipment only, is chaired by Ellsworth Machin III, Bethlehem, Pa. Amateur instruments using commercial parts may be displayed, but only home-built components will be judged. Entrants for the national telescope competition must be registered at the convention where all entries will be publicly displayed. Entry forms and information may be obtained from George Maurer, RD 3, Box 140, Coopersburg, Pa. 18036, or from Ellsworth Machin III, 2855 N. Main St., Bethlehem, Pa.

COMET West, 1957n: Discovered on Nov. 5th, 1975 by Richard West of the European Southern Observatory at La Silla, Chile, Comet West should be in interesting object in the morning sky, before sunrise. During the second week of March it will be slightly south of due east, the altitude above the horizon fairly rapidly increasing as the comet speeds away from the Sun. Find a dark sky with a good eastern horizon. Elong.-angular distance from Sun. *

	Right Asc.	Dec.	Elong.	Mag.
Mar. 1	22h 19.6m	+1°52'	12°	0.8
5	21 51.2	5 51	21	2.3
9	21 32.3	8 08	29	3.6
13	21 19.5	9 37	35	4.6
17	21 10.4	10 42	41	5.4
21	21 03.4	11 36	45	6.0
25	20 57.8	12 22	50	6.6
29	20 52.8	13 03	54	7.1
Apr.2	20 48.2	13 42	59	7.5
6	20 43.6	14 20	63	7.9

NEARBY ASTRONOMY GROUPS (MEMBERS OF NFCAAA): LOCKPORT, Third Tuesday of month, 8 p.m., (Sept.-June) Lockport Senior High School, Lincoln Ave., Lockport (Darwin Christy, 692 0305); ROCHESTER, First Friday of month, 8 p.m., (Oct.-June), Strasenburgh Planet., East Ave., Rochester (Ralph Dakin, 716 586 4519); HAMILTON, Ont., First Thrusday of month, 8 p.m. (Oct.-May), Main Auditorium, Physical Sciences Bldg., McMaster Univ., Hamilton, Ont. (Ken Chilton, 416 388 0586); ELMIRA-CORNING, First Friday, 8 p.m., Big Flats Branch Library, Canal St., Big Flats, N.Y. (Judith Schusler, 607 734 5833); FINGER LAKES, Second Friday of month, 8 p.m. (Sept.-May) Eaton Hall, Hobart College, St. Clair St., Geneva, N.Y. (William Ottemiller, 315 568 8271); SYRACUSE, Third Thursday, 8 p.m. (Sept.-June), Syracuse University Campus, Physics Bldg., Room 202, Syracuse, N.Y. (Sept.-June)(Joseph Italiano, 315 478 2661).

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WANTED: WANTED: 6 or 8-inch reflector, Don French, 649-8795.

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c/o/Buffalo Museum of Science
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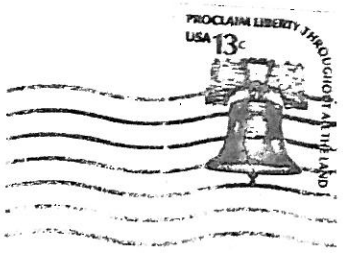
Buffalo, N.Y. 14211



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FIRST CLASS
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