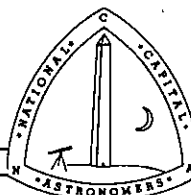


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DECEMBER 1963

Vol. XXI No. 4

ARE WE ALONE?



In December the NCA is pleased to present one of its own members as lecturer. Robert H. McCracken, Trustee and ex-President of NCA, will speak on the topic "Are We Alone?"

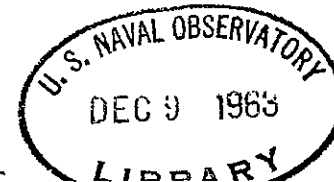
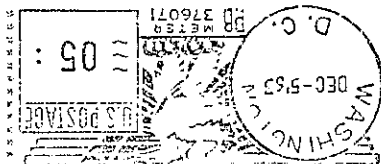
The organization, composition, distribution, and extent of the known, observable universe will be considered. Many of the currently-popular theories, statistics, observations and programs, as well as notions and fallacies regarding extra-tellurian biology will be explored in terms of man's present knowledge and limitations according the most authoritative sources, and tempered by admonitions to opine with scientific caution. (continued page 2)

CALENDAR FOR DECEMBER

- 7 ARE WE ALONE? by Robert H. McCracken. Dept. of Commerce Auditorium, 8:15 P.M. Business meeting follows.
- 13 VIRGINIA JUNIORS meeting at the Westover Baptist Church, 1125 N. Patrick Henry Drive, Arlington, Va. 7:30 P.M.
- 14 OBSERVING AT THE FIVE INCH on the grounds of the U. S. Naval Observatory with Larry White. 8:00 to 10:00 P.M.
- 14 MD-DC JUNIORS meeting at 2:00 P.M. at the Cleveland Park Branch Public Library, Connecticut Ave., at Macomb St., NW. Leith Holloway will speak on Einstein's Theory of Relativity.
- 28 MD-DC JUNIORS business meeting at 2:00 P.M. at the Chevy Chase Community Center, 5601 Connecticut Ave., NW. Call Leith Holloway at 362-1961 for details.
- 3, 10, 17 TELESCOPE MAKING CLASS at the Chevy Chase Community Center with Hoy Walls, from 7:30 to 10:00 P.M.
- 4, 11, 18 TELESCOPE MAKING CLASS in Bladensburg with William Isherwood, from 7:00 to 9:30 P.M.
- 5 TELESCOPE MAKING CLASS at McLean High School in McLean, Va. with Grady Whitney, from 8:00 to 10:00 P.M.
- 6, 13, 20, 27 MAKUTOV CLUB at the Chevy Chase Community Center with Hoy Walls, from 7:30 to 10:00 P.M.

Season's Greetings

Library,
Naval Observatory
Washington 25, D.C.



Mr. McCracken is an avocational astronomer, professionally an electronic engineer engaged in the development of missile electronics at the Harry Diamond Laboratories since 1954. Formerly with the National Bureau of Standards, he was responsible for the electronic development of the first cesium-beam atomic clock. During the war, he developed air-navigation equipment for Lend-Lease, Naval airborne radar, radar counter-measures, and taught electronics at an Army Signal Corps school. Previously, he was Chief Engineer of a broadcast station.

NOVEMBER LECTURE --- CELESTIAL MOTIONS

Before you can predict where a celestial body is going to go, you first must know where it is and has been. This was the theme of the first part of the November NCA lecture on celestial motions by Dr. Harvey Banks of Georgetown University Observatory. Dr. Banks began with a review of various astronomical coordinate systems by which positions of celestial bodies may be specified. The familiar Right Ascension and Declination are coordinates of the geocentric equatorial coordinate system. Dr. Banks pointed out that only in a rigid coordinate system are Newton's Laws strictly valid.

After a celestial body such as a satellite, comet, or asteroid has been observed over a sufficiently long enough path, astronomers can predict the future course of the object through the sky by applying Newton's laws of motion. This involves determining the past and future actual path of the body through space and converting this motion into apparent motion as seen from our moving platform, the earth. The true path through space, or orbit, is specified by numerical information called orbital elements. Three examples of the six elements necessary to define the orbit uniquely are the mean distance of the body from the sun or earth, location of the perihelion or perigee (nearest approach to the sun or earth), and the position of the nodes or two places in the orbit where the body crosses the plane of the ecliptic or earth's equator depending on whether the body is revolving around the sun or earth.

Dr. Banks said that astronomers have learned a great deal about predicting orbits, especially in the neighborhood of the earth, since the days of Kepler and Gauss but that much basic research remains to be done in this field of celestial mechanics.

Leith Holloway

CHRISTMAS SHOPPING

When making out your Christmas shopping list, be sure to include some books on astronomy either for yourself or a friend. Remember astronomy books may be ordered through the Astronomical League at a ten per cent discount. Most books available from Sky Publishing may be ordered through NCA at a ten to forty per cent discount.

Dr. Kyong Chol Chou, of the Astrometry and Astrophysics Division of the Naval Observatory, gave an excellent talk on the popular subject of astrophotography to twenty juniors last month in the Cleveland Park Library. He named the camera, tripod, coupler, and telescope as the basic pieces of equipment. He described six types of cameras, two couplers, ten film types, and six different camera lenses for the do-it-yourselfer. Dr. Chou also recommended many subjects for various combinations cameras and optical systems. The tape of this, and our other lectures, is available through either Mr. Holloway (362-1961).

Our speaker on December 14 will be Mr. Holloway, who will speak on Relativity. We have also arranged for Dr. Armand Spitz to speak at our meeting on March 14, 1964, so mark the date now to be sure you can come.

Ken Ritvo was elected Treasurer and Doug Richstone was elected Secretary at our business meeting. Virginians, Doug Lind and Travis Taylor were accepted as honorary members of the Maryland-DC Juniors.

The eclipse booklet, edited by Doug Richstone, will be on sale at the December meeting. It has seventeen photographs of the July eclipse, three light curves, and several hundred words of write-up. The initial edition will be only fifty, but if sufficient interest is shown through the NCA and our up-coming announcement in Sky and Telescope, more will be printed. No profit is being made on the booklet.

We are beginning our own library of astronomy pamphlets for club reference. They will be handled under the Junior Properties Rule. If you have anything to contribute or if you want to borrow something, please contact Mr. Holloway, Norm Sperling, or Doug Richstone.

It was decided that a second meeting should be held on the fourth Saturday of each month, to take care of committee reports and any business left over from our current marathon sessions (our last took over two and one half hours). They will be held at the Chevy Chase Community Center.

Norm Sperling
Md-DC Junior Editor

NEW MEMBERS

Regular
William H. Gardiner, 4406 14th St., NW, Washington 11, D. C.
Mr. and Mrs. Hendrik R. Hudson, 925 Montana St., Arlington, Va.

Junior
Jerome H. Colegrove, Quarters 169-B, Fort Belvoir, Va.
John Greenlee, 815 Tarpon Lane, Alexandria, Va.
John Cunningham, 933 N. Van Dorn St., Alexandria, Va.