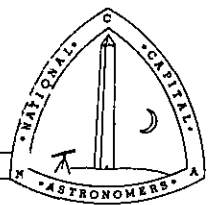


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# ★ STAR DUST



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## MD-DC JUNIORS REPORT

On December 10, the MD-DC Juniors heard Dr. Hobbs speak on Radio-Astronomy. He explained how Radio-Astronomy started, its advantages, and what it had accomplished. With a fine selection of slides, he showed some radio sources and the various Radio-Telescopes used to observe them. Dr. Hobbs wound up the lecture with some of the results of Radio-Astronomical work and some of the goals, mentioning what can be done by interested amateurs. The lecture, or most of it, was taped.

Members are reminded about the Messier Club. It may be the closest we ever come to an inter-region contest.

Next month, January 14, we are looking forward to a talk by Mr. Wright. It will be, as usual, in the Chevy Chase Library at, we hope, 2:00. All members and interested civilians are urged to attend.

---Mark S. Goldberg  
MD-DC Junior Editor

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January 1967

Vol. XXIV, No. 5

## PHOTOGRAPHING THE HEAVENS IN COLOR

NCA is pleased to present Dr. V. M. Blanco of the U. S. Naval Observatory as its January speaker. Dr. Blanco's principal contributions have been in the fields of galactic structure and stellar statistics. Many of the membership will know him as co-author with S. W. McAuskey of a text entitled "BASIC PHYSICS OF THE SOLAR SYSTEM."

Currently work of Dr. Blanco has engaged him in application of color photographic techniques in the recording of planets and NGC objects. It is this work which will be the subject matter of his talk.

Prior to Dr. Blanco's association with the Naval Observatory he was at Warner Swasey Observatory (Case Inst.) from 1951. He was Assistant and Associate Professor of Physics at Puerto Rico, 1949-1951. He holds a B.S. Chicago, 1943; M.A., California (1947) and Ph.D., California (1949). He was also a Guggenheim Fellow 1948-1949.

Dr. Blanco's professional associations include the Commission on Stellar Statistics, International Astronomical Union and the Astronomical Society of the Pacific.

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## CALENDAR

JANUARY 7 DINNER WITH THE SPEAKER at 6:15 P.M. For further information please call Mr. Anderson CL 6-6324.

LECTURE-MEETING at 8:15 P.M. -- Dr. V. M. Blanco will speak on COLOR PHOTOGRAPHY OF ASTRONOMICAL OBJECTS in the Department of Interior Auditorium (D. St. between 18th & 19th sts.) Business meeting after the lecture.

GENERAL MEETING OF JUNIOR DIVISION at 7 P.M. in the Dept. of Interior Auditorium. All Juniors are urged to attend.

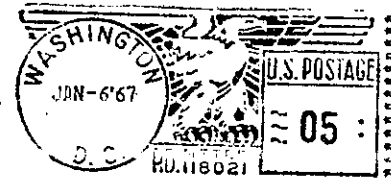
13 OBSERVING AT THE 5-INCH with Larry White--8:30 to 10:00 P.M.

14 MD-DC JUNIORS meet at 2:00 P.M. in the Chevy Chase Library, 8005 Conn. Ave., Chevy Chase. Bob Wright speaks on Messier Observing.

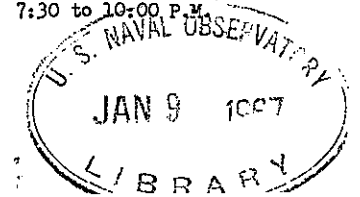
6,13,20,27 TELESCOPE MAKING with Hoy Walls at the Chevy Chase Community Center from 7:30 to 10:00 P.M.

6,20 TELESCOPE MAKING with Grady Whitney at McLean High School, McLean, Virginia. 8:30 P.M.

4,11,18,25 TELESCOPE MAKING with Mr. Isherwood at Bladensburg, High School, Bladensburg, Maryland. 7:30 to 10:00 P.M.



Library,  
Naval Observatory  
Washington 25, D.C.



## DECEMBER LECTURE - STELLAR EVOLUTION AND BINARY STARS

Binary stars are very important in astronomy because they are so numerous. Half of the stars in the Universe are probably double stated our December speaker, Dr. Charles E. Worley of the U. S. Naval Observatory.

In the study of astrophysics and stellar evolution astronomers must determine four properties of stars; namely -- their luminosity, temperature, mass, and composition. The spectrum of a star indicates its composition. Most stars are 73% hydrogen, 25% helium, and 2% of other elements. A star's temperature, or what is equivalent, its spectral type, is indicated by its color index which is its blue magnitude minus visual magnitude. Stellar luminosities are computed from the apparent magnitudes and distances of stars. The distances of nearby stars can be determined directly by measuring their parallaxes which now has been done for about 10,000 stars. The mass of a star can only be accurately estimated if it is part of a binary or multiple system. An equation based on a generalization of Kepler's third law is used for this purpose.

Given the intrinsic brightnesses and temperatures, colors, or spectral types of stars one can construct a spectrum-luminosity graph (the famous H-R diagram). The evolution of stars can be traced on such a chart. Star clusters are particularly useful for this work because their stars are nearly the same age, composition, and distance. Thus the apparent magnitude is proportional to the absolute magnitude, and accurate distance determinations are not necessary. As a star grows old and uses up its hydrogen, it leaves the so-called main sequence on the H-R chart and expands into a bright red giant star which will start to burn helium in its very hot interior.

Since the primary (or brighter) component of a binary star uses its hydrogen fuel faster than the dimmer secondary, it evolves into a red giant first. It will die first and often turn the system into an eclipsing binary in which the then-brighter secondary star is periodically hidden by the large dead giant.

Some binary stars are so close that they become very elongated toward each other and mass leaks across the gap. Eventually as one grows at the expense of the other, the primary component becomes the secondary and vice versa.

---Leith Holloway

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## LEAGUE CONVENTION TAKING SHAPE

Plans for the 1967 convention of the Astronomical League are coming along fine. Dates are Friday evening to Tuesday noon, June 30 to July 4, at Georgetown University. The University is giving us full cooperation through Father Heyden, Director of the Observatory.

- Continued on Page 3

## LEAGUE CONVENTION TAKING SHAPE - Continued from Page 2

Georgetown Observatory will be open to conventioners Friday evening. Registration that night will be in Copley Lounge. Leo Scott, in charge of transportation, will ask NCA's to help shuttle visitors to the Observatory.

Registration Saturday will be at the Science Building. All the sessions will be held in the auditorium there, and a room on the floor above will accommodate exhibits under the direction of Dr. James Krebs who will ask supporting members for their displays. Hoy Walls will see that NCA has some exhibits.

Mrs. Margaret Noble with Mrs. Trudy Dellar and Mrs. Ellen Stolarik need several more hostesses and hosts to keep the exhibit room open. Ellen is planning details of the banquet, also.

Ted Noble has promised that Prince Georges County Juniors will operate all the equipment needed in the auditorium--amplifier, projectors, tape recorder, lights, etc. Fred Cornelius already is receiving registrations, \$2 single; \$3 for a couple or family.

Dormitories on the campus will accommodate all who want to stay there. No reservation is necessary. Just pay at the dorm where a room will be assigned to you.

John Stolarik is helping several chairmen.

Bob Wright, Convention Chairman, has been working tirelessly. He is arranging trips to Goddard Space Flight Center and Naval Observatory. Bob already has sent press releases and notices to periodicals and member societies.

The Association of Lunar and Planetary Observers has agreed to conduct one session, and American Association of Variable Star Observers is conducting another. Both organizations are affiliated with the League.

The host society is required to publish proceedings of the convention, and Mabel Sterns is looking into costs and means of reproducing the report.

--- Mabel Sterns

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ANY PRINTERS IN NCA? If you are connected with a printing establishment or a duplicating service, please get in touch with me--Mabel Sterns at 265-5219. I shall appreciate your suggestions for reproducing the convention proceedings.

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