

PRINCE GEORGES' COUNTY JUNIORSDECEMBER REPORT

This month at the PGC Jr. meeting and annual Christmas Party we compiled the junior section of the NCA directory and prepared it for final copy. Part of next year's activities including a star party for Tulip Grove Elementary School, were planned and discussed. Last month, the PGC Jrs., at the request of Mr. McGracken, took part in a star party for students of Ridgecrest Elementary School.

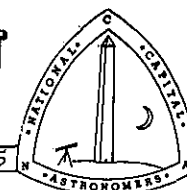
In the interest of statistics, we have taken a poll of our membership and have discovered that we possess an average of 3.6 telescopes per member. We would like to know where we stand in comparison to the other Junior Divisions.

At the request of the President of NCA, we are composing a questionnaire to be distributed to the entire membership. It will concern the number, type and size of telescopes owned by the members and their willingness to use these instruments for various projects that would benefit NCA.

MEETING PLACE FOR JANUARY 8 WILL BE THE INTERIOR DEPARTMENT AUDITORIUM.

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★ STAR DUST



January 1966

Vol. XXIII No. 5

BALLOON ASTRONOMY



Dr. John Strong

Starting off the New Year, Dr. John Strong, Professor of Experimental Physics at the Johns Hopkins University, will speak to the NCA on January 8 at the Interior Department. Many new discoveries have been made since Dr. Strong spoke to NCA several years ago.

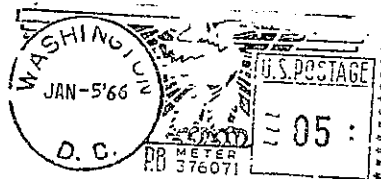
For most of his professional life, Dr. Strong has been engaged mainly in the development of instruments and procedures that have applications in astrophysics and physical meteorology. After an A.B. from the University of Kansas in 1926, he spent one year of graduate study, working in radioactivity with Geiger counters. Thereafter, most of his effort has been devoted to thermal evaporation and infrared spectroscopy. He obtained his Ph.D. at the University of Michigan in 1930. There he made a self-recording infrared spectrometer for his work (the study of the 15 μCO_2 band). He used the first alkali halide prisms (KBr and KI), made from synthetic crystals that he had grown. And he also coated the mirrors of his spectrometer by the thermal evaporation process that he had initiated in Michigan.

Continued on Page 2.

CALENDAR

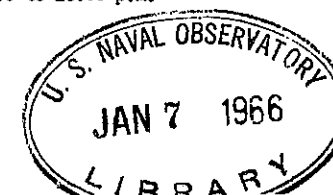
- January 8 BALLOON ASTRONOMY by Dr. John Strong, Professor of Experimental Physics at the Johns Hopkins University. At 8:15 in the INTERIOR DEPARTMENT AUDITORIUM. Business Meeting Follows.
- Anyone interested in having dinner with the Speaker, please phone Mr. Hank Hudson, Vice President, at 534-8378 before noon on Jan. 8.
- JUNIOR DIVISION general meeting at 7:30 P.M. in the Interior Department Auditorium.
- 15 DISCUSSION GROUP MEETING in room 2062 at the Department of Commerce at 8:15 P.M. Topic to be announced.
- 15 MD-DC JUNIORS meeting at the Silver Spring Library. 2:00 p.m.
- 16 PRINCE GEORGES' COUNTY JUNIORS meeting on January 16. 2:00 p.m. at the home of Ted Noble. Phone Lu 2-6721 for details.
- 4, 11, 18, 25 TELESCOPE MAKING CLASS at the Chevy Chase Community Center with Hoy Walls 7:30 -10:00 p.m.
- 7, 14, 21, 28 ADVANCED TELESCOPE MAKING CLASS at the Chevy Chase Community Center with Hoy Walls 7:30 to 10:00 p.m.

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Library,
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John Strong - Continued from Page 1.

After receiving a Ph.D., Dr. Strong moved to California Institute of Technology and was, successively, National Research Fellow, Fellow in Astrophysics, and Assistant Professor of Astrophysics. At Cal Tech, he found and developed methods to coat large telescope mirrors with an aluminum reflecting layer by thermal evaporation. He coated all the large California mirrors, including the Crossley reflector in 1933, the 100" mirror in 1935 and the 200" mirror in 1947. The 1936 aluminum coating that he put on the 36" mirror of the Steward Observatory lasted a quarter of a century. After Cal Tech his infrared research was continued at Harvard (1942-46), directed toward military applications. Since 1946 he has been Professor of Experimental Physics at the Johns Hopkins University.

After this apprenticeship with telescopes and infrared spectroscopy he is now making infrared astronomical observations. He is currently less pessimistic than many astronomers that concern themselves with the possibilities of life on other planets; and his findings, using the large California telescopes and balloon-borne telescopes, have not dampened, but have rather enhanced, his enthusiasm to study planetary environments.

HOBBY SHOW FOR NCA IN APRIL 1966

You are probably one of the NCA members who has been working quietly but steadily inventing gadgets and interesting astronomical aids. If not, start now to put your ideas in three dimensions and join in the exclusive hobby show in April. These gadgets and "things" invented by NCA members are always interesting. It has been several years since the last hobby show and it would be nice to plan for a browsing time as well as a discussion of the objects. So an afternoon-evening event is being planned for April, when a few hours before and after dinner can be spent at the NCA Hobby Show. There will be more details about the show later but begin now to make your plans to enter some interesting gadget, book, chart, telescope, clock, sundial or just anything you want to enter.

1966 GRAPHIC TIME TABLE

All members of NCA are eligible to receive free of charge a copy of the 1966 Graphic Time Table of the Heavens, the world famous condensed celestial almanac, which is published by the Maryland Academy of Sciences and prepared by Paul S. Watson, curator of Astronomy. The time-table is a valuable astronomical chart giving the rising and setting time of the sun, moon and naked-eye planets. Data on eclipses, astronomical twilight and other astronomical information is included. Be sure to get your gift from your society, NCA. Extra copies for your friends are available for 35¢ each.

MEETING PLACE FOR JANUARY 8 WILL BE THE INTERIOR DEPARTMENT AUDITORIUM.

DECEMBER LECTURE - SOLAR RESEARCH FROM ROCKETS AND SATELLITES

A great deal has been learned about the ultraviolet spectrum of the sun in the 19 years since a V2 rocket first pierced the 2900-angstrom-unit barrier imposed by the earth's atmosphere and photographed 500 new A.U. of solar spectrum from a height of 55 kilometers. Our December speaker, Dr. Richard Tousey of the U. S. Naval Research Laboratory, brought us up to date on the highlights of this new knowledge.

In 1954, liquid fuel Aerobee rockets replaced the V2 rockets in this N.R.L. research. The Orbiting Solar Observatory launched in 1963 recorded and transmitted solar spectra to ground by radio. Since repairs cannot be made on unmanned satellites, Dr. Tousey feels that spectrographs obtained by astronauts are the ultimate solution. A rocket flight costs \$100,000, but it may require two or three times this amount to get an astronaut to carry a spectrographic instrument into orbit with him.

The most important line observed in the sun's spectrum is the Lyman alpha emission line at 1215 A.U. The magnitude of the dip in the center of this line indicates that there are 10^{12} hydrogen atoms in a column one square centimeter in cross-section between the earth and the sun.

Solar pictures taken in the light of Lyman alpha reveal more contrast between bright and dark areas than those taken in H alpha and calcium K. Rockets cannot be used to take such pictures routinely for studies of changes in features with time, but satellites will be able to do this job. The second O.S.O. observed the solar corona for several months and accumulated piles of data still waiting to be analyzed. The broadening of lines in the spectrum of the solar corona and the presence of certain X-ray lines indicates a temperature of about two million degrees Kelvin in the corona.

Leith Holloway —

JUNIOR BIOGRAPHY



Sheila Duck is a member of the Prince Georges' County Juniors. She is a Junior at High Point Senior High School where she is the president of the Astronomy Club and an active member of the Math Club. Sheila joined the NCA in November 1964 and has been an active member ever since. She contributes regularly to the discussion groups and PGC Jr. Group activities. She also attended the Middle East Region Astronomical League Convention last June in Baltimore.

Sheila made her 6 inch reflector in one of the NCA's telescope making classes, under the direction of Mr. Isherwood.

She has won several science fair awards and spent last summer working at Goddard Space Flight Center with Mrs. Jaylee Burley.