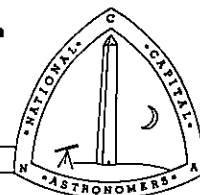


APRIL CALENDAR (Continued)

- 11 OBSERVING AT THE FIVE-INCH on the grounds of the U. S. Naval Observatory with Larry White. 7:30 to 10:00 P. M.
- Md. D. C. JUNIORS meeting at 2:00 P. M. at the Cleveland Park Branch Library, Connecticut Avenue at Macomb Street, N. W. Speaker, G. R. Wright. Subject: "Astronomical?"
- 17 PRINCE GEORGES JUNIORS meeting at 7:30 P. M. at the District Heights Elementary School, 801 County Line Road, District Heights, Maryland.
- 18 DISCUSSION GROUP led by Leith Holloway: "Variable Stars". Let's formulate our own observing program. Room 2062, Department of Commerce Building, 8:15 P. M.
- 24 VIRGINIA JUNIORS meeting at 7:30 P. M. at the Westover Baptist Church, 1125 North Patrick Henry Drive, Arlington, Virginia.
- 3, 10, 17, 24—MAKSUTOV CLUB AND TELESCOPE-MAKING CLASS at the Chevy Chase Community Center with Hoy Walls from 7:30 to 10:00 P. M.
- 1, 8, 15, 22, 29—TELESCOPE MAKING CLASS in Bladensburg with William Isherwood from 7:00 to 9:30 P. M. at the School Materiel Center.
- 2, 16—TELESCOPE MAKING CLASS at McLean High School, McLean, Virginia, with Gradv Whitney from 8:00 to 10:00 P. M.

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☆ STAR DUST



APRIL 1964

VOL. XXI No. 8

A WORLD OF VARIABLE STARS



Dr. Kyong Chol Chou

It is with great pleasure that the NCA presents Dr. Kyong Chol Chou, Astronomer at the United States Naval Observatory, as its guest lecturer for April. Dr. Chou comes to us with a very impressive background, having received degrees from the Chosen Christian University, Seoul, Korea; Tusculum College, Greenville, Tennessee; University of Michigan, Ann Arbor; and the University of Pennsylvania at Philadelphia. Dr. Chou has also worked as Instructor and Assistant Head of the Physics Department at the Korean Military Academy; Research Assistant at the University of Michigan and the University of Pennsylvania; and Testing and Research Engineer at the Ambric Testing Laboratory, Philadelphia. He has authored many articles, some of which have appeared in the Astronomical Journal and Sky and Telescope.

Dr. Chou plans to discuss two distinct types of variable stars, namely intrinsic and eclipsing variables. Many interesting theories about the physical nature of the intrinsic variables have been introduced, and he will explain these. The eclipsing variables' world is another fascinating field he will explore as he introduces the classification of the variables and describes their physical characteristics. Particular emphasis will be placed on observing techniques which are suitable for amateur astronomers so that they may contribute their work to that of the professional astronomers.

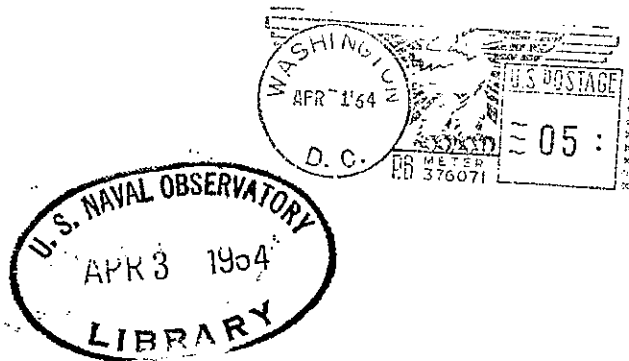
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CALENDAR for APRIL

- 3 PRINCE GEORGES JUNIORS meeting at 7:30 P. M. at the District Heights Elementary School, 801 County Line Road, District Heights, Maryland.
- 4 "A WORLD OF VARIABLE STARS" by Dr. Kyong Chol Chou, Department of Commerce Auditorium, 8:15 P. M.
- BUSINESS MEETING FOLLOWS THE LECTURE.
- DINNER WITH THE SPEAKER at 6:30 P. M. at the Occidental Restaurant. All members are invited. For reservations, call Mrs. Noble, LU 2-6721.
- 10 VIRGINIA JUNIORS meeting at the Westover Baptist Church, 1125 North Patrick Henry Drive, Arlington, Virginia, at 7:30 P. M.

CONTINUED on page 4.

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Library,  
Naval Observatory  
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★ S T A R D U S T ★  
 WASHINGTON, D. C.

## COMETS AS PROBES OF SPACE AND TIME

Comets are sending us a great deal of information, but we have only begun to decipher their codes. So stated our March speaker, Dr. Bertram Donn, of NASA. Because of their usually highly eccentric and inclined orbits, comets pass through regions presently inaccessible to man-made space probes more or less limited to the plane of the ecliptic and the vicinity of the earth by currently attainable rocket booster power. Conditions in space through which comets pass can be inferred from phenomena observed in these comets. The appearance of a comet at times changes rapidly for unexplained reasons. For example, the tail of Comet Moorehouse (1908) developed wiggles lasting less than a day, and the so-called flair Comet Schwassmann-Wachmann suddenly brightens many magnitudes several times a year. On the other hand, since non-periodic comets spend most of their lifetimes remote from the sun in what Dr. Donn calls the "deep freeze" of space, their constituents have probably changed little from the time of the solar system's formation. Thus, studies of comets may throw light on the character of the primordial material of the solar system.

A comet may have two tails: a straight one composed of molecular ions and a curved, diffuse tail of dust. The gases in the tail of a comet are more rarefied than those in a high vacuum in the laboratory. The nucleus inside the head of a comet probably consists of ices of water, ammonia, methane, etc., mixed with dust particles. The nature of this "dirty snowball" perhaps no more than ten kilometers in diameter is inferred from observations of the coma and tail of a comet.

During the July, 1963 total eclipse of the sun in Maine, NASA scientists attempted to discover comets near the sun photographically. One cometary object may have been found in one of their pictures. This technique may become useful in increasing the number of known comets. Finally, Dr. Donn proposed that we eventually send a space probe to the vicinity of a comet to learn more about these strange visitors from the outer fringes of our solar system.

— Leith Holloway

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FOR SALE — 2.5-inch Goto equatorial refractor. Tripod, 4 eyepieces for up to 250X, erecting and diagonal prisms, sun filter, 6X finder, wooden case, data and instructions. Cost \$125.00, will sell for \$75.00. Mrs. Kenneth E. Pletcher, 2933 Cathedral Avenue, N. W.

TRIP TO NEW YORK — Cancelled.

## NCA GROWS

The NCA welcomes the following to membership in the Junior Division: Charles Kahn, 4619 Glasgow Drive, Rockville, Maryland, WH 6-3752, and Douglass R. Knight, 5005 McCall Street, Rockville, Maryland WH 2-0691.

## RHYSBERGER HONORED

At the March meeting, on a motion by G. R. Wright, the NCA conferred Honorary Life Membership on Robert W. Rhysberger, Astronomer of the U. S. Naval Observatory and long-time member of the NCA. Now, Bob, you'll never get out of it alive!

## the JUNIOR DIVISION

Tracing the history of radio astronomy from first research in statics to the present high-definition instruments, Dr. Armand N. Spitz gave a highly informative lecture to the Md.-D.C. Juniors at the Cleveland Park Library on March 14. He emphasized the importance to astronomy of things invisible, the ultraviolet work on nebulae and the sun, and slow progress in cosmic-ray research. He discussed the possible projection of radiotelescope images on a phosphor screen that could be photographed, thus providing for the first time a visual radio photo. He described 3C-273 in Vega, a thirteenth magnitude object billions of light years distant, and M-82 in Ursa Major as objects in the category of unimaginably strong visual and radio emitters.

Our next speaker will be the NCA's own observing chairman, trustee, and former president, G. R. Wright. His topic for the April 11th lecture at the Cleveland Park Library will be, "Astronomical?" All Juniors should make a special effort to attend the lecture and business meeting which follows.

Project World Night is considering offset printing for the photo page of its second issue. Many junior records have been received and are currently being edited. The result of this work on the most unusual lunar eclipse in years will be a highly informative booklet.

Though not authored by the juniors, the physical constants guide of the National Bureau of Standards, announced in the March issue of Sky and Telescope, is being sold by the Md.-D.C. Juniors for five cents.

The formal proposal of the Md.-D.C. region to the trustees and to Eastman for distributing 103a film to area amateurs is not available at press time.

Norman Sperling,  
Md.-D.C. Junior Editor

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## JUNIOR BIOGRAPHY

Norman Sperling, Md.-D.C. Coordinator, is a Junior at Montgomery Blair High School. He writes their Project World Day booklets and monthly reports for STAR DUST, obtains speakers for his region's lecture series, assisted in writing the NCJA Bylaws and Properties Rules, and originated the pamphlet library, monthly dues, lecture tapes, and Chevy Chase meetings. His other activities include writing, debating, coins, and stamps.

(This is the first in a series of Junior biographies.)

