7 PRINCE GEORGES JUNIORS meeting at 7:30 P.M. at the District Heights Elementary School, 801 County Line Road, District Heights, Md.

8 MD - DC JUNIORS meeting at 2:00 P.M. at the Cleveland Park Branch Library, Connecticut Avenue at Macomb St., NW. Telescopes by Hoy Walls.

14 VIRGINIA JUNIORS meeting at the Westover Baptist Church, 1125 N. Patrick Henry Drive, Arlington, Va. 7:30 P.M.

15 DISCUSSION GROUP at 8:15 P.M., Dept. of Commerce, Room 1851. A discussion on Radio Astronomy led by Dr. James Krebs.

21 PRINCE GEORGES JUNIORS meeting at 7:30 P.M. at the District Heights Elementary School, 801 County Line Rd., Dist. Hts.

22 MD - DC JUNIORS business meeting at 2:00 P.M. at the Chevy Chase Community Building, 5601 Connecticut Ave., NW.

28 VIRGINIA JUNIORS meeting at the Westover Baptist Church, 1125 N. Patrick Henry Dr., Arlington, Va., at 7:30 P.M.

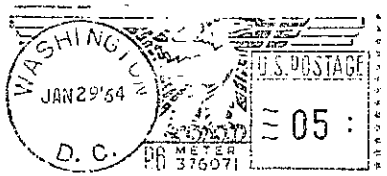
4, 11, 18 REVIEW COURSE IN ASTRONOMY 8:15 P.M. in Building 59, U. S. Naval Observatory, 34th St. and Mass. Ave., NW.

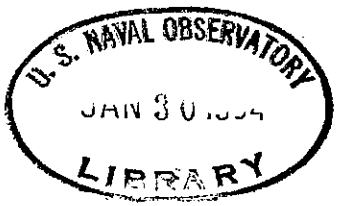
25 REVIEW COURSE IN ASTRONOMY 8:15 P.M. at the D.C. Planetarium Room 301, Cardoza High School, 13th and Clifton Streets, NW.

5, 12, 19, 26 TELESCOPE MAKING CLASS in Bladensburg with William Isherwood, from 7:00 to 9:30 P.M.

6, 20 TELESCOPE MAKING CLASS at McLean High School in McLean, Va., with Grady Whitney from 8:00 to 10:00 P.M.

7, 14, 21, 28 MAKSUTOV CLUB AND TELESCOPE MAKING CLASS at the Chevy Chase Community Center with Hoy Walls, 7:00 to 10:00 PM.





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FEBRUARY 1964 Vol. XXI No. 6

SOME RECENT DEVELOPMENTS IN ASTRONOMY

Radio Astronomy has recently received a lot of public attention due to the many new discoveries being made and so it is with great pleasure that NCA presents Dr. Gart Westerhout, Professor and Director of Astronomy at the University of Maryland, as our February speaker.

The development of radio astronomy is largely due to the availability of highly directive antennas and sensitive receivers, which are developed both for government and for astronomical use. Some of the new developments which Dr. Westerhout will discuss are as follows. First, the center of our Galaxy turns out to be a highly complicated region where the neutral hydrogen gas is in violent motion and there seems to be some form of explosion occurring. Second, recent measurements of the polarization of radio emission from the Galaxy have proven that our Galaxy has a magnetic field tied in some way to the interstellar material. Third, some of the very bright radio sources are now identified with very distant galaxies. Moreover, many appear to be double sources, and enormously bigger than their optical counterparts. Apparently, some very violent phenomena occur in these sources, and suggestions are made that we are dealing with vast explosions of super stars, with masses of several million times the mass of the sun.

Dr. Westerhout was born 15 June 1927 in The Hague, Netherlands. He attended the University of Leiden in the Netherlands and received the degree of Doctor of Astronomy and Physics in 1958. In 1952 he was an Assistant at Leiden University Observatory, from 1956 to 1962 he was Chief Scientific Officer at the Leiden University Observatory, and in 1959 he had a NATO Fellowship to visit radio astronomy installations in the USA. Dr. Westerhout is presently Professor and Director of Astronomy at the University of Maryland. He holds membership in the Dutch Astronomical Society, the International Astronomical Union, the American Astronomical Society, the Astronomical Society of the Pacific, the International Scientific Radio Union, and Sigma Xi.

CALENDAR FOR FEBRUARY

1 SOME RECENT DEVELOPMENTS IN RADIO ASTRONOMY by Dr. Gart Westerhout. Dept. of Commerce Auditorium, 8:15 P.M.
Business meeting follows.
DINNER WITH THE SPEAKER at 6:30 P.M. at the Occidental Restaurant. All members invited. For reservations call Mrs. Noble at Lu 2-6721.

continued on page 4

JANUARY LECTURE -- THE ORIGIN OF COMETS

"We do not know where comets come from even today," stated our January speaker, Mr. Gerald E Pease of the U. S. Naval Observatory. Modern man no longer considers comets as demons portending evil, but much remains to be learned about these strange tailed objects in our solar system.

Comets were thought to be phenomena in the earth's atmosphere until Tycho Brahe observed no parallax in the comet of 1577 and concluded that comets were at least as far away as the moon.

Most comets travel in nearly parabolic orbits and visit the vicinity of the sun only once in history. Notable exceptions are Halley's Comet which returns every 75 years and Encke's Comet having the shortest known period of only 3.3 years. Fifteen per cent of the near-parabolic comet orbits are hyperbolic, but all of these resulted from planetary perturbations. No one has ever discovered a comet having an intrinsic hyperbolic orbit which would indicate a true visitor from outer space.

The most favored theory of cometary origin states that comets are continuously formed out of a halo of matter surrounding the solar system left over from its formation. Another theory proposes that comets condense from material ejected from solar prominences. Comets lose mass each time they pass through the inner solar system and thus probably survive only about one thousand revolutions. Debris from comet disintegrations create meteor showers such as the Leonids, Lyrids, and Perseids.

When Halley's Comet transited the sun in 1910 no trace of it was seen on the solar disk. Therefore, no particle in its head could be larger than 50 miles in diameter. On the other hand, the great comet of 1882 must have contained particles larger than a foot across or else the head would have evaporated during its very close perihelion passage.

The great comets of the nineteenth century dwarf those of this century including Halley's. There has been a dearth of large comets in our century. Most comets are discovered in the warm summer evenings. Mr. Pease advises amateur astronomers to search for comets on cold winter mornings to increase their chances of getting one named after them.

Leith Holloway

NEW MEMBERS

Regular

Paul S. David, 4000 Tunlaw Road, Washington, 7, D.C.
Theodore V. Ryan, 2400 Berkley Street, Hillcrest Heights, Md.

Junior

Bruce K. Shelton, 3026 South Buchanan Street, Arlington, 6, Va.

CORRECTION TO DIRECTORY

Merritt B. Booth phone 362-1761

Are you interested in a trip to New York? Plans are being made. Details later.

MD-DC JUNIORS

Mr. Robert J. Hackman of the U.S. Geological Survey gave an informative lecture to the Md-DC Juniors at the Cleveland Park Library on January 11. His talk, "A Geologist looks at the Moon," dealt with the nature and cause of lunar features.

Project World Day continues selling in and out of the NCA, with the aid of announcements in Sky and Telescope, Review of Popular Astronomy, and Reflector. Project World Night on the December 30 eclipse is accumulating reports, photos, and other data from juniors across the country. It should be ready by March or April.

Over six hundred observations were contributed by eight Md-DC Juniors to NOVA on January 4. All done during December, they represent not only deep sky but also lunar and planetary observations.

Our Chevy Chase meetings on the fourth Saturday of each month are very successful and accomplish much business. Our agenda is always full and members should make a point of coming.

Norman Sperling
Md-DC Junior Editor

NOVA JUNIORS

The Northern Virginia Juniors were very pleased to have Mr. Hendrik R. Hudson as a guest for their January 10 meeting. Mr. Hudson is employed at the Goddard Space Flight Center in Greenbelt, Maryland. Before coming to Arlington, he had worked with several junior groups, and was delighted to be present for the NOVA Juniors.

The highlight of the meeting was a film shown by Mr. Hudson. Entitled "Freedom 7", it beautifully portrayed Cdr. Alan Shepard's sub-orbital flight of May 5, 1961. The color movie contained many shots of the astronaut's training, and motion motion pictures of Shepard during his historic flight.

The Northern Virginia Juniors wish to thank Mr. Hudson for all of his time and care, and especially for the wonderful movie.

Ellie Matter
NOVA Junior Editor

JUNIORS' GENERAL MEETING

The January general meeting of the NCA Juniors was held on January 4 in room 1851 of the Commerce Dept. One of the most important items was a temporary amendment to the Junior By Laws. Originally, an officer of the Junior Division must have been a member for one year and have attained the age of fourteen. However John Stott, Coordinator of the new Prince Georges group is under age. The quorum felt he was qualified and the motion to amend the By Laws in this aspect was passed unanimously, allowing John to keep his position.

Among the other business at the January meeting, Doug Lind talked about Virginia's correspondence with the Pittsburgh Astrophysical Society. This group publishes an extremely interesting journal, with articles on certain aspects of astrophysics. Doug asked all interested Juniors to send articles to this fine organization.

Ellie Matter
Junior Secretary