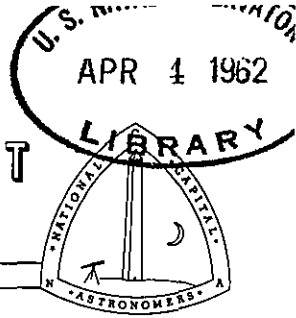


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★ STAR DUST

April 1962 Vol. XIX, No. 8

June LoGuirato, Secretary of the Junior Division was born in the District of Columbia in 1943, and has been a Virginia resident ever since. Now a senior at Fairfax High School, June attended the Fairfax County Science Lecture Program during the summer of 1960. When not fulfilling her duties as secretary, June finds time to do research in chemistry, for which she was awarded an Honors classification in the Science Talent Search. She has also been awarded the Bausch and Lomb Medal. As for the future, June plans to attend VPI and major in Mathematics. She hopes to become an Astrochemist. (Surely a suitable blend of her two main interests.)



ABOUT TIME

The most recent film in the award-winning Bell System Science Series, About Time, will be shown at the April 7th meeting of N.C.A.A.

The film presents the complex subject of time and its measurement through the story of Planet Q, where the concept of time is unknown. When its King decrees that there shall be time and asks where to start, the Scientist tells him about:

CALENDARS -- which are inaccurate by 26 seconds a year because the earth does not take an even number of days to go around the sun.

INTERNAL TIME -- the built-in timing mechanisms of plants and animals that work even when Nature is artificially altered.

CLOCKS -- starting with the shadow of a stick on the ground and developing to the atomic clock, accurate within a second in 3,000 years.

SHORT TIME -- how scientists can divide time into billionths of a second in their study of the processes of Nature.

LONG TIME -- how scientists use rocks to establish the periods in the four and a half billion years of the earth's existence.

RELATIVITY -- Einstein's theory of relativity, illustrating that as a body travels near the speed of light, all time connected with it slows down.

Dr. Frank C Baxer serves as the film's guide through the complexities of time. Three scientists appear as guests: Dr. Anton Lang, plant physiologist and director of Barnhart Laboratory; Dr. Gerald J. Wasserburg, associate professor of geology at the California Institute of Technology; and Dr. Richard Feynman, a professor of physics at Caltech.

Both documentary film and animated diagrams are used to illustrate stages in man's progress in the measurement of time.

***** Betty Lipscomb *****

CALENDAR FOR APRIL

- 7 ABOUT TIME a movie to be shown at 8:15 PM in the Department of Commerce Auditorium, 14th and Constitution Ave. Business meeting follows.
- 14 MD - DC JUNIORS MEETING at the Cedar Lane Unitarian Church, 9601 Cedar Lane, Bethesda at 2:15 P.M. Exhibition of Science Fair Projects. Phone Chris Walker at OL 4-3572 for details.
- 21 DISCUSSION GROUP by Walter F. Rothe, President of the Universal Calendar Society. Time 8:15 PM at Dept. of Commerce Aud.
- 27 JUNIOR DIVISION FIELD TRIP TO GEORGETOWN OBSERVATORY Meet at the Observatory at 8:00 P.M. Call Leith Holloway at 581-7870 for reservations and information on transportation.
- 27 OBSERVING AT THE FIVE INCH at the Naval Observatory 8:15 PM with Larry White.

Richard Falwell, the Data Keeper, is now 17 years old and a junior at Walter Johnson High School. Although presently not a member of the NCJA, Rick hopes to win a membership this year by means of the Montgomery County Science Fair, in which he has consistently done well. After building a 12 1/2" with the help of Hoy Walls, Rick became interested in planetary analysis and especially that of planet Jupiter. He is presently devoting his efforts to explaining the life cycle of spots in the atmosphere of Jupiter and Saturn.



Ed Cragg, Head of the Virginia group, was born in Seattle, Wash. in 1946, Ed is a Junior at St. Stephens School, and hopes to attend Rice Institute to study some form of astronomy, science, or mathematics. Ed joined NCA in 1969 and has been active ever since. He attended the last two regional conventions. His other interests include skin diving and car rallies.



Chris Walker, MD - DC Junior Editor

MIDDLE EAST REGIONAL CONVENTION
HERE MAY 12

★ STAR DUST

Washington, D.C.



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CALENDAR CON'T.

TELESCOPE MAKING with Hoy Walls every Tuesday 7:30 to 10:00 at the Chevy Chase Community Center.
MAKSUTOV CLUB on Friday evenings at the Chevy Chase Community Center.

THE ULTRAVIOLET SPECTRUM OF THE SUN

Although ordinary air does not absorb ultraviolet light, a layer of ozone in the upper atmosphere shields the earth's surface from sunlight have a wavelength less than about 3000 Angstrom units (one A.U. equals 0.0000001 millimeter). Thus, before the use of high altitude rockets no one knew anything about the ultraviolet spectrum of the sun. Our March speaker, Mr. J. D. Purcell, gave an excellent survey of the Naval Research Laboratory's pioneering work in ultraviolet solar spectroscopy from its early beginnings in 1946 up to the present.

N. R. L. scientists first used captured German V-2 rockets launched from the White Sands Proving ground in New Mexico. Mr. Purcell amused us by telling why the first V-2 flight failed to produce any spectroscopic data. The rocket returned to earth nose first, dug a huge crater in the sand, and disintegrated into small fragments. On the second flight the research team improved their recovery methods and obtained photographs of the solar spectrum from an altitude of about thirty four miles. These photographs extend to 2300 A. U. with a resolution of 3 A. U. and show fifty identifiable features.

N.R.L. rocket men developed the Aerobee rocket to continue these upper atmosphere probes after they fired the last V-2. The modern Aerobee High rocket can lift a 250 pound payload to a height of from 130 to 160 miles. In 1954 N.R.L. perfected the servo-pointer spectrograph capable of tracking the sun with an error of only one minute of arc. By means of this instrument N.R.L. scientists first photographed the Lyman alpha emission line of hydrogen.

The ultraviolet spectrum of the sun consisted of many bright lines superimposed on a dim continuous spectrum. The light of these lines originates above the photosphere of the sun. Mr. Purcell showed a slide containing a fine photograph taken in 1959 of the sun's disc in Lyman alpha light beside simultaneous monochromatic photographs of the sun in H alpha and calcium K light and a picture of the sun in white light. Each photograph portrays a different layer in the sun's atmosphere.

Finally, Mr. Purcell showed a film describing the steps and preparation for launching of an Aerobee rocket which carried aloft a new type (Echelle) high dispersion spectrograph capable of 03 A.U. and will require several years for analysis.

***** Leith Holloway *****

WESTINGHOUSE SCIENCE TALENT SEARCH

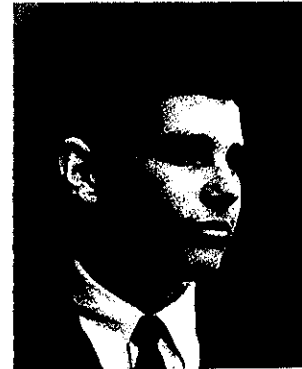
Three of the forty finalists in the Twenty-first Annual Science Talent Search, were in the area of Astronomy. "Observations of the Planets", was the project of Clark R. Chapman of Buffalo, New York;; "Jupiter and Venus in 1961" was the project of Joseph Eyer of Philadelphia, Pa.; and "Atmospheric Currents of Jupiter," was the project of Jack G. Hills of Independence, Kansas. All of them were members of local Astronomy clubs. Mr. Eyer promised that he would be present at our Middle East Regional Convention.

***** Betty Lipscomb *****

J. L. Holloway, Junior Director, was born in 1927 in Hickory, North Carolina, and came to the Washington area at the age of nine. He joined NCA juniors in 1946 and has been in the NCA ever since. Leith attended MIT for five years and got his B.S. and M.S. in meteorology. He became interested in meteorology as a result of the frustrations that inclement weather often presented during his observing. He has been director of the Junior Division ever since Sept. of 1956 with the exception of a year he took off to study at U.C.L.A. Leith professes himself a devoted audiophile (his stereo set now has twenty knobs.) Above all Leith loves mathematics, whether it be in astronomy, meteorology, or satellite predicting.



Chris Walker, the Chairman of the Junior Division, was born in McCook, Nebraska on 27 July 1945 just 11 days after the first atomic explosion was detonated at Alamogordo, N.M. He first became interested in astronomy when only six and at nine bought his first telescope, a three inch refractor from Hoy Walls. He joined NCA just one year later in 1955, and in the fall of 1956 he became a charter member of the MD - DC junior group in which he has been very active ever since. In addition to his duties as Junior Chariman he edits the junior articles in Star Dust. Now a senior at St. Albans High School, he plans to attend Yale next year and major in Astronomy.



Ed Lusby, Co-ordinator of the junior group is presently a senior at James Madison High School. Ed joined the NCA in 1958. Like many other juniors, Ed's interest in astronomy was stimulated by the construction of a telescope at Hoy Walls' class. Ed notes that he "would have been bored with astronomy long ago" if it hadn't been for Jupiter. By taking transit times of many different spots on Jupiter Ed has noticed an inequality of speed for these spots and has been trying to account for the accelerations and decelerations that these features exhibit. Besides science his main interests are golf (which he plays excellently), table tennis, and pool.



***** ***** *****

The members of N C A wish to express their sympathy to Dr. Gant on the recent death of his wife.