



SKYLAB SOLAR RESULTS TO BE HEARD



DR. TIMOTHY

Dr. Adrienne Timothy, NASA's Project Scientist for the Skylab Apollo Telescope Mount data analysis and for solar Space Shuttle payloads, will open the NCA 1974-75 lecture series on September 7. She will describe a variety of Skylab contributions to knowledge of the solar coronal structure.

One of the major components of Skylab was the Apollo Telescope Mount (ATM), a cluster of solar instruments for coronal observation: soft-X-ray telescopes, spectroheliographs in UV and extreme UV, UV spectrograph, white-light coronagraph, and H_{α} telescopes. Excellent data were obtained throughout the 8-month mission; a variety of discoveries has already emerged even though a vast quantity of data is still to be reduced.

"At this early time in the ATM analysis," Dr. Timothy says, "we are only seeing the beginning of what promises to be an enormously rewarding and instructive phase in the history of solar physics."

Dr. Adrienne Timothy was born in Caterham, Surrey, England. She was graduated from the University College, London, in 1964 with First Class Honors in physics. As a graduate student, then as a research assistant until 1971, Dr. Timothy worked with her husband, Dr. J. Gethyn Timothy, on sounding rocket and satellite experiments, upon which she based her thesis. She was also involved in solar extreme ultraviolet spectrometry flown on the OSO IV satellite and was responsible for the optical design of a satellite spectroheliograph. She has been associated with the Skylab project since July 1971. Dr. Timothy has authored and coauthored an impressive list of publications and experimental proposals.

SEPTEMBER CALENDAR

Monday, September 2, 9, 16, 23, 30, 7:30 PM — Telescope-making classes at Chevy Chase Community Center, McKinley Street and Connecticut Avenue, NW. Information: Jerry Schnall, 362-8872.

Friday, September 6, 13, 20, 27, 7:30 PM — Telescope-making classes at American University, McKinley Hall basement. Information: Jerry Schnall.

Saturday, September 7, 6:15 PM — Dinner with the speaker at Bassin's Restaurant, 14th Street and Pennsylvania Avenue, NW. No reservations necessary.

Saturday, September 7, 8:15 PM — NCA monthly meeting at the Department of Commerce Auditorium, 14th Street and Constitution Avenue, NW. Dr. Adrienne Timothy will speak on Skylab solar results.

Saturday, September 14, 8:30 PM — Exploring the Sky, presented jointly by NCA and the National Park Service. Glover Road South of Military Road, NW, near Rock Creek Nature Center. Information: Bob McCracken. 229-8321.

NCA LECTURE TAPE LIBRARY AVAILABLE

Wolfgang Schubert has recorded most of the NCA monthly lectures over the last five years. He has furnished the following list of tapes which he is willing to loan. Write or telephone him at 7906 Gosport Lane, Springfield, Virginia 22151, 321-9617.

DATE	SUBJECT	SPEAKER	FORM
February 7, 1970	Preliminary analysis Apollo lunar samples	Dr. E. C. T. Chao	Reel
March 14, 1970	Emission regions in Andromeda Galaxy	Dr. Vera Rubin	R
April 4, 1970	Structure of spiral galaxy	Dr. Gart Westerhout	R
September 12, 1970	Spectral study of interstellar dust	Dr. George R. Carruthers	R
October 10, 1970	Naval Research Lab satellite technology	Dr. John Eisele	R
November 7, 1970	Lunar motion studies from occultation data	Dr. Thomas Van Flandern	R
December 5, 1970	X-rays from Sco X-1	Dr. Elihu Bolt	R
January 9, 1971	Molecular lines in the interstellar medium	Dr. David Buhl	R
February 6, 1971	140-ft radiotelescope Green Bank, WV	Dr. William Howard	R
March 6, 1971	Cosmic-ray sources	Dr. Howard Shapiro	R
April 3, 1971	Supergiant star research	Dr. Anne B. Underhill	R
October 2, 1971	Diffuse X-ray background	Dr. Seth Schulman	R
November 13, 1971	Solar X-ray physics	Dr. Robert Kreplin	Cassette
December 18, 1971	Earth-Moon history	Dr. S. Fred Singer	C
January 8, 1972	Cosmological implications of He/H in the Universe	Dr. David S. Leckrone	C
February 5, 1972	Central planetary stars	Dr. Sally Heap	C
April 1, 1972	Mariner 9 infrared Spectroscopy	Dr. Rudolph Hanel	C
May 4, 1972	Atomic clocks probe Relativity Theory	Dr. Richard Keating	C
September 9, 1972	Antimatter meteors	Dr. Clyde Cowan	C
November 4, 1972	Cosmic-ray detectors	Dr. Carol Jo Crannel	C
February 3, 1973	Solar flares	Dr. Elske van P. Smith	C
September 8, 1973	Astronomical perspectives	Dr. Richard Berendzen	C
November 3, 1973	Cosmic-ray astronomy	Dr. Emanuel Carreira	C
December 8, 1973	Comet Kohoutek	Dr. Robert Chapman	C
January 5, 1974	History and theory of planetary motions	Dr. Henning Leidecker	C
February 2, 1974	The Sun at 1216 Å (hydrogen Lyman α)	Dr. Dianne K. Prinz	R
March 2, 1974	Radiointerferometry of solar chromosphere	Dr. Robert W. Hobbs	C
April 6, 1974	Naval Observatory astro- metry with 26-inch Clark	Dr. Robert S. Harrington	C
June 1, 1974	Mariner 10 observations of planet Mercury	Dr. Newell Trask	C

NOTE ON CURRENT RESEARCH

William J. Luyten, University of Minnesota, reports in July 26 *Science* on his survey of stellar proper motions using the Control Data Corporation automated-computerized plate scanner and measuring machine with the Palomar Sky Survey plates. Before 1971 a pair of Palomar plates required 35 hours of blink-microscope work followed by 200 hours of measuring the stellar motions detected and 75 hours of data reduction. This resulted in an average of 400 new proper motions.

With the CDC scanner the same plates can be processed to printout stage in 3 hours 20 minutes. Apparent changes in image position as small as .001 arc second are *detected*, although *measurements* of less than .18 arc second are marginal. By far the major source of error in stellar proper-motion determination is variations in plate physical properties; position changes less than 2.5 μ m on a plate pair cannot be accurately measured.

So far 26,000 new stellar motions greater than .18 arc second per year have been determined. The CDC scanner also has given a complete star-image count of nearly 600 plates of the 936-plate Sky Survey — well over 120 million images.

NASA RELEASES MARS GLOBE

More than 1500 computer-corrected U. S. Mariner 9 television photos were assembled by Jet Propulsion Laboratory to make this global photomosaic of Mars, the first of any Solar-System body, according to NASA.

Portions of the globe shown in these three selected NASA photos include many features that can be found on the Mariner 9 Mars map published in *Star Dust*, December 1972.

Just below center in the top photo is the enormous volcano, Nix Olympica, Mars' tallest feature,



North Martian summer.

Your 1971 *Observer's Handbook* shows an interesting pre-Mariner visual map of Mars on page 67. Many features are named, but it is difficult to correlate the visual features, generally representing albedo differences and atmospheric effects, with the more local photographic details.

Past issues of *Star Dust* have carried other Mariner 9 reports and photos than those cited. In the June 1972 issue is a remarkable pair of photos of a crater in Hesperontus covering different fields.

Others of interest are April and May 1972 and March 1973.

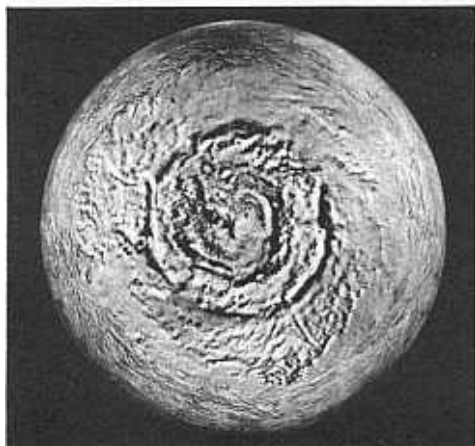


whose caldera-like crater details are shown in *Star Dust*, January 1972. Nix Olympica is prominent above center near the left end of the Mars map at latitude 18° , longitude 134° .

The middle photo is centered in the Elysium area. The crater slightly below center appears on the map at latitude 31° , longitude 210° .

In both of these photos, the residual northern ice cap is shown at the top.

The North Pole of the planet is centered in the bottom photo; it shows the polar ice cap near its minimum extent, i. e., during the



EXCERPTS FROM THE IAU CIRCULARS

1. June 17 -- D. J. Muehner and R. Weiss, M.I.T., detected an intense submillimeter radiation source in Aquila. The intensity at a bandwidth of 10 to 25 cm^{-1} was $1.5 \times 10^{-12} \text{W} \cdot \text{cm}^{-2}$.

2. July 26 -- Dr. Carlos U. Cesco and Mario R. Cesco, Observatorio Austral, El Leoncito, discovered a 14th-magnitude comet in Sagittarius. Comet Cesco (1974e) is moving westward.

3. Mr. G. E. Taylor, Royal Greenwich Observatory, predicts that prior to the August 29 occultation of SAO 79100 by Saturn (*Sky and Telescope*, August 1974, p93), the star will be occulted by Rhea and Enceladus. The first event will be visible from Europe or Africa, the second from the Atlantic Ocean.

This listing courtesy R. N. Bolster.

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EXTRA-GALACTIC RADIO SIGNALS TO PREDICT EARTHQUAKES

Radio signals from outside our galaxy will soon be used to detect almost imperceptible movements in the Earth's crust that may lead to the accurate prediction of earthquakes, NASA has just announced.

The Earth-fault monitoring system, under development at NASA's Jet Propulsion Laboratory in Pasadena, combines experience gained from spacecraft navigation with current radioastronomy and geophysical research. Called ARIES for Astronomical Radio Interferometric Earth Surveying, the project will use signals from quasars to measure changes of less than one inch between stations 125 miles apart, if project goals are met, according to Pete MacDoran, head of the JPL team.