



TRASK TO INTERPRET SURFACE OF MERCURY



DR. TRASK

At the June 1 meeting of the National Capital Astronomers, Dr. Newell Trask of the U. S. Geological Survey will describe the Mariner 10 observations of the planet Mercury and their implications, and offer some interpretations.

Mariner 10 photographs show the surface to resemble that of the Moon. Circular basins, some with double rings of mountains, craters ranging in size from basins to the limit of detectability on the highest-resolution photographs, rayed craters, and bright halo craters all are present. Many lowland areas are flooded with plains-forming materials that seem to be of approximately the same age everywhere on the planet. Wrinkled ridges and scarps similar to lunar features are abundant. The surface appearance and the presence of mare-like material imply that Mercury is differentiated.

Free iron needed to account for the high density of the planet is not evident at the surface and must be concentrated in a core.

Dr. Trask will show much observational evidence that some of the dominant elements in the development of Mercury were common to the Moon and Mars, and probably to the Earth.

Dr. Trask joined the Branch of Astrogeologic studies of the U. S. Geological Survey in 1964. He has been involved with the Ranger, Orbiter, and Apollo missions to the Moon, and is a member of the Mariner-Venus-Mercury '73 TV Science Team. He received his Ph.D. in Geology from Harvard University.

JUNE CALENDAR

- Saturday, June 1, 6:15 PM — Dinner with the speaker at Bassin's Restaurant, 14th Street and Pennsylvania Avenue, NW. No reservations necessary.
- Saturday, June 1, 8:15 PM — NCA monthly meeting at the Department of Commerce Auditorium, 14th and E Streets, NW. Dr. Newell Trask will speak.
- Monday, June 3, 10, 17, 24, 7:30 PM — Telescope-making classes at the Chevy Chase Community Center, Connecticut Avenue and McKinley Street, NW. Information: Jerry Schnall, 362-8872.
- Friday, June 7, 14, 21, 28, 7:30 PM — Telescope-making classes at American University, McKinley Hall basement. Information: Jerry Schnall, 362-8872.
- Saturday, June 29, July 27, August 17, 9:00 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. Planetarium program if cloudy. Information: Bob McCracken. 229-8321.

NCA ELECTION RESULTS

At the annual meeting in May, the following NCA officers were elected for 1974-1975:

President	Dr. Henning Leidecker
Vice president	Wolfgang Schubert
Secretary	Estelle Finkle
Treasurer	Lawrence Torrance
Trustee	Dr. John Eisele
Sergeant at arms	Paul Burnett



TREASURER'S ANNUAL REPORT - 1 MAY 1973 - 30 APRIL 1974

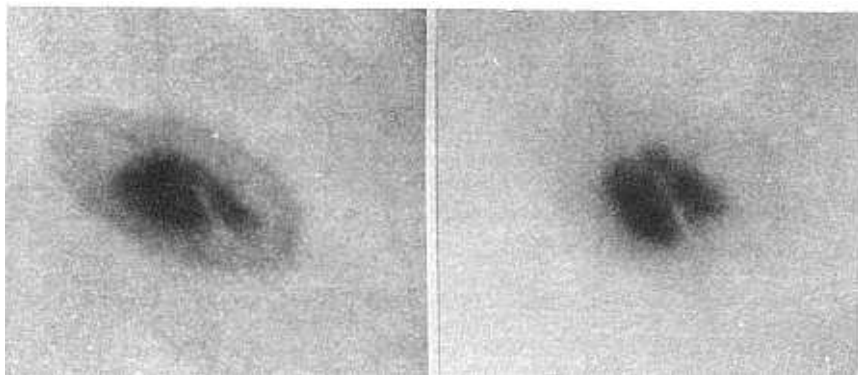
Income		Reconciliation of Checking Account and Current Funds:	
		30 April 74	1 May 73
Dues	\$1797.45		
Publication sales	93.25		
Classes	84.00		
Total	<u>\$1974.70</u>	Chk Acct	\$1698.80
		Pty Cash	56.97
		Total	<u>\$1755.77</u>
			\$1533.54
			<u>19.16</u>
			\$1552.70
Expenses			
Sky & Tel subscriptions	\$941.27	Book	\$1245.60
Star Dust		Increase	203.07
Printing	121.68		
Postage	160.13		
Total Star Dust	<u>281.81</u>		
Observ. Handbooks	90.00	Summary	
Graphic Timetables	22.50	Income	\$1974.70
Speakers' dinners	71.96	Expenses	<u>\$1771.63</u>
Dues		Excess	<u>\$ 203.07</u>
Washington Academy	15.00		
Astron. League (2 yrs)	82.00		
Total dues	<u>97.00</u>		
Insurance on Clark refr.	100.00		
Projectionist, GSA	136.12	(Signed)	
D. C. Rec. of Deeds	1.00	L. C. Torrance, Jr., Treasurer	
Treasurer		National Capital Astronomers	
Supplies & postage	29.97	1224 Adams Road	
Total	<u>\$1771.63</u>	Waldorf, Maryland 20601	

GEORGE FIELD ON THE BIG BANG

The final lecture in this year's Smithsonian series on topics in astrophysics was given on May 1 by the director of the Harvard College and Smithsonian Astrophysical Observatories. He opened with the news that preliminary data indicate neutrinos from a supernova that erupted somewhere in the Milky Way have been recorded in the carbon tetrachloride-filled gold mine in North Dakota.

The term "big bang" was coined by the late physicist George Gamow. The primeval fireball is estimated to have contained 10^{20} stars. Now the greatly expanded cloud has cooled to 2.7°K. Experimental evidence suggests that some of the original helium is still present. (See also Leckrone, David S., "Cosmological Implications of He/H," NCA lecture, *Star Dust*, January and February 1972. - Ed.)

The universe is expected either to continue expanding forever or, some time in the distant future, to contract rapidly to the common center of gravity of all the galaxies



SUNSPOT PHOTOGRAPHY WITH THE NCA 5-INCH CLARK REFRACTOR

During late April and early May the Sun was unusually active for this near-minimum time in the solar activity cycle. These photographs, taken during that period, show apparent changes in a unipolar sunspot during a 24-hour interval. Note that the umbra split in two, and the increased apparent roundness of the spot as solar rotation carried it farther from the limb. The fibroid structure of the penumbra in the earlier view is missing in the poorer seeing of the later picture. Left, 30 April 1648 UT; right, 1 May 1650 UT.

These 1/500-second exposures were made by Bill Winkler on High-Contrast Copy Film at an $f/37$ Barlow focus of the NCA refractor. The light was reduced by an aluminized flat ahead of the focal plane.

1974 MERAL CONVENTION

About 100 people from five states attended the Astronomical League Mid-East Region Convention, sponsored by NCA in Manassas, Virginia. Ten papers from members of seven societies covered a wide range of topics. Among the exhibits were two by NCA members. Eric Boody's told of the Rock Creek Nature Center, and June LoGuirato's traced a new report from manuscript planning to final publication. June's *Some Planetarium Programs of 1972-73* has just been published by the International Society of Planetarium Educators as Special Report Number 5. The price is \$2.00 from Frank Jettner, State University of New York, Albany, NY12222.

The astrophotography contest was judged by Bert Asper, Harrisburg, Pa., and Henning Leidecker and Wolfgang Schubert of NCA. They declared Bob Bolster winner of the print category with his color photo of the Pleiades, and also of the slide category with his guided-camera view of the North American Nebula. Elected as 1974-75 Region officers were Bob Young, Harrisburg, president; Hank Slanker, Baltimore, vice president; Norman Sperling, Princeton, secretary; Larry Torrance, NCA, treasurer; and Bob Wright, NCA, League representative.

An excellent banquet concluded with a detailed talk by Winifred Cameron on the NASA Lunar Transient Phenomena Program's first year. Although results are promising, many more observations are needed before an explanation of LTP can be attempted, Dr. Cameron said. An extensive question period followed.

EXCERPTS FROM THE IAU CIRCULARS

1. April 20 -- Miss Burgat, Astronomical Institute, Berne University, discovered a 13th-magnitude supernova in NGC 4414 in Coma Berenices.

2. April 21 -- Mr. C. B. Ford, Wilton, Connecticut, reported an outburst of AL Coma Berenices, a suspected U Geminorum-type variable.

3. May 13 -- Mullard Radio Astronomy Observatory, University of Cambridge, reported that Cyg X-3 had undergone an outburst at 5GHz, reaching a flux density of 7 Jy.

This listing courtesy Bob Bolster.

NOTE ON CURRENT RESEARCH

Neff, Lane, and Fix, of the Department of Physics and Astronomy, University of Iowa, have disclosed new photometric results claimed to resolve the longstanding ambiguity in the synodic period of Pluto. Measurements obtained at Kitt Peak on four consecutive nights in April 1973 are said to show that the shorter period of 1.819d is spurious, and to confirm the longer period of 6.3867d found by Hardie (1964). The times of light crossing on the rising branch yield an improved period of 6.3874d based on 20 years of observations. 1974 *Pub. A.S.P.* v86, p225.

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