LUNAR SCIENCE INFORMATION BULLETIN

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Universities Space Research Association
LUNAR SCIENCE INSTITUTE
3303 NASA Road #1
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CONFERENCE: "COMPARISONS OF MERCURY AND THE MOON"

A two and one-half day meeting will be held at the Lunar Science Institute, November 15-17, 1976 devoted to comparisons of the structure, surface morphology, and history of the Moon and Mercury. Topics to be discussed include crater morphology, processes of basin formation, flux histories, surface chemistry, regolith processes, plains formation tectonics, interior structure and planetary magnetism. A special session will be held to discuss scientific rationales for potential future space flights to the Moon and Mercury. Approximately 80 persons are expected to attend the meeting, and ample time will be available for informal discussion. A volume of one-page abstracts submitted to the meeting is being prepared and will be available to non-attendees by writing to Mrs. Carolyn Watkins at the LSI and enclosing $1.00 (U.S.) and $6.00 (Foreign) to cover mailing costs. For additional information about the meeting contact Dr. Charles H. Simonds, Moon-Mercury Meeting, Lunar Science Institute, 3303 NASA Road #1, Houston, TX 77058.

TUTORIAL ON MATERIALS PROCESSING IN A MICROGRAVITY ENVIRONMENT

The Second Annual Tutorial will be held November 10-12, 1976 at Lehigh University, Bethlehem, PA. It will be sponsored by Lehigh with the cooperation of the Universities Space Research Association. An outline of the program includes: November 10 morning: Research opportunities in four kinds of programs: rocket, Long Duration Environment Facility, space shuttle, and the molecular shield program. November 10 afternoon: Ceramics and glasses. November 10 evening: Long range plans for ceramics and glasses. November 11 morning: Fluid physics phenomena. November 11 afternoon: Concurrent meetings on biological separation and solidification processes. November 12, all day: Short presentation on experiments relating to microgravity. The fee for the tutorial is $215 which includes registration, all meals, coffee breaks, liquid refreshments, and hotel room. For more information concerning the tutorial please contact Dr. Henry Leidheiser, Jr., Lehigh University, Center for Surface and Coatings Research, Bethlehem, PA 18015. (215/691-7000 ext. 2292)

7th LUNAR SCIENCE CONFERENCE PROCEEDINGS

The submission of corrected page proofs to Pergamon Press continues along schedules designed to meet the publication date of mid-December 1976. The proceedings this year consisting of 208 papers, 8 new maps reporting results of Earth-based and orbital observations of the Moon, a lunar sample number index, a subject index, an author index, errata for papers which have appeared in previous Conference Proceedings, and a report on new lunar cartographic products, will be published in three volumes with topical formats. The volumes this year are: Volume 1 - Regolith studies; Volume 2 - Petrogenetic studies of mare and highland rocks; and Volume 3 - The Moon and other planets.

The proceedings will be available from Pergamon Press, Maxwell House, Fairview Park, Elmsford, NY 10523 for $150.

PLANETARY SCIENCE MEETING IN HAWAII

The 8th Annual meeting of the Division for Planetary Sciences of the American Astronomical Society will be held in Honolulu, Hawaii, on January 19-22, 1977. The highlight of the scientific sessions is expected to be presentation of preliminary results from the Viking mission. The AAS/DPS welcomes participation by a broad cross-section of planetary scientists. However, the DPS Committee now requires that to present a paper a scientist must be a full or affiliate member of the DPS, or apply for membership concurrently with submitting an abstract (non-Americans are not so restricted). The Society offers an inexpensive affiliate membership to scientists already members of such planet-oriented societies as the American Geophysical Union. The Program Chairman is Dr. Clark R. Chapman, Planetary Science Institute, 2030 E. Speedway, Suite 201, Tucson, AZ 85719 (telephone 602/881-0335). Deadlines for paper titles in Tucson is Monday, November 1, 1976.

For information concerning local arrangements, contact Dr. Carl Pilcher, Institute for Astronomy, 2680 Woodlawn Drive, Honolulu, Hawaii 96822. Lunar scientists, earth scientists, and meteoriticists are cordially invited to attend the Honolulu meeting.

METEORITICAL SOCIETY MEETING

The 39th annual meeting of the Meteoritical Society will be held October 18-21, 1976 in Bethlehem, Pennsylvania on the campus of Lehigh University. The Sponsors of the meeting this year are the Lehigh University and the Lunar Science Institute.

In addition to general sessions dealing with new results on meteoritic and planetary research, four sessions are being planned around the following topics: 1 - Meaning of isotopic disturbances in extra-terrestrial materials. 2 - Application of lunar science results to meteorite studies (regolith, breccias, brecciated meteorites, bulk composition of parent bodies, etc.). 3 - Time scale of accretion and condensation of the solar system. 4 - Mineralogy and petrology of carbonaceous chondrites.

Co-chairmen of the meeting are Dr. Charles B. Sclar, Department of Geological Sciences and Dr. Joseph I. Goldstein, Dept. of Metallurgy and Materials Science at Lehigh. For more information contact: Secretary, Meteoritical Society Meeting, Whitaker Laboratory, Bldg. 5, Dept. of Metallurgy and Materials Science, Lehigh University, Bethlehem, PA 18015.

NASA ANNOUNCEMENTS OF OPPORTUNITY

AO-OSS-2-76 is the announcement of opportunity for the Spacelab 2 Mission. The Spacelab 2 Mission which is scheduled for flight during the fourth quarter of calendar 1980, is a performance verification flight primarily intended to evaluate system and subsystem performance. However, sufficient space and resources are available to conduct a meaningful experimental program. The Spacelab 2 Mission implements different payload accommodations and capabilities than the first flight. The pallet area is significantly increased (possibly up to five pallets) and a pressurized module will not be flown; arc-second pointing is available and deployment of instruments beyond the envelope of the orbiter bay is permitted. These capabilities are primarily tailored for Astrophysics investigations, but other technical disciplines can also be supported. Letters of Intent should be submitted to Mr. William R. Witt, Jr., Program Manager, Spacelab 2 Mission, Code ST, AO-OSS-2-76, NASA, Washington, DC 20546 by October 1, 1976. Proposals must be submitted by December 3, 1976. Inquiries about scientific matters should be addressed to Dr. Charles J. Pellerin, Jr., Program Scientist, at the address listed above.

AO-OSS-3-76 is a solicitation of proposals for scientific investigations of Jupiter. The overall scientific objectives of this mission are to conduct comprehensive investigations of the Jovian system by making in situ and remote measurements of the planet, its environment and its satellites. Primary emphasis is on direct-entry measurements and the characterization of the magnetosphere of the planet and its interaction with the satellites. In the proposed mission, a single launch in 1981/1982 would carry a spacecraft to Jupiter which would consist of an atmosphere-entry probe and a long-lived orbiter. Proposals for the probe investigations are due November 1, 1976 and for the orbiter investigations, December 1. For more information contact: M. A. Mitz, Chief, Advance Planning, Lunar & Planetary Programs Office, Code SL, NASA Headquarters, Washington, DC 20546.

ROYAL SOCIETY PUBLISHES RESULTS OF 1975 MEETING

THE MOON: A NEW APPRAISAL FROM SPACE MISSIONS AND LABORATORY ANALYSES is the proceedings of the Royal Society Discussion held in June 1975. The book containing 600 pages and 13 plates, clothbound, is offered by the Royal Society at a special pre-publication price of £32.00 (U.K. address) and £32.80 (overseas addresses). Orders must be received at the Royal Society, 6 Carlton House Terrace, London SW1Y 5AG England, before 12 November 1976. Regular price will be £38.00 (U.K.) and £38.95 (overseas). The publication is expected in early 1977. NOTE: Subscribers to Philosophical Transactions of the Royal Society will be published in a forthcoming volume in Series A.

NASA PUBLISHES THREE NEW SPECIAL PUBLICATIONS

APOLLO EXPEDITIONS OF THE MOON. NASA SP-350. 324 pp.
(Available from Superintendent of Documents, U.S. Government Printing Office, Washington, DC 20402. $8.90)
This profusely illustrated book on the Apollo program was written by 18 key members of the team that successfully planned and carried out the enormous national effort to land men on the Moon. It is edited by Edgar M. Cortright, former Director of the NASA Langley Research Center, who says "the purpose of the book is to record the story of Apollo before the colors fade and memories blur." Its 15 chapters tell the dramatic story of what are perhaps the most exciting and challenging scientific voyages in modern history--voyages that symbolize the triumph of man and technology over seemingly impossible odds. The book also provides a broad insight into the U.S. civilian space program since its inception to the present.

SPINOFF 1976: a bicentennial Report. NASA SP-5121. 103 pp.
(Available from Technology Utilization Office, NASA Scientific and Technical Information Facility, P.O. Box 8756, Baltimore Washington Airport, MD 21240)
This well illustrated book, by Neil P. Ruzic of the National Space Institute, can provide the answer to those people who ask "The space program....what did I get out of it?" In it are described examples of how our national investment in space research and technology pays off, first as social, political, and economic stimuli and then in the exploration of space for its own purposes. The "Research Payoff" continues with current cases of space spinoffs that affect jobs, health, mobility, home, environment, and the future.

FOUNDATIONS OF SPACE BIOLOGY AND MEDICINE. NASA SP-374 in 4 books (3 volumes).
(Available from Superintendent of Documents, U.S. Government Printing Office, Washington, DC 20402. $40.95)
This publication is the result of several years' work by the U.S.-U.S.S.R. Joint Editorial Board on Space Biology and Medicine, formed in October 1965 by NASA and the Soviet Academy of Sciences. The work summarizes the biological and medical results of the first 15 years of space flight. Volume I is entitled, "Space as a Habitat," Volume II, "Ecological and Physiological Foundations of Space Biology and Medicine" deals with the responses of man, plants, and animals to space flight. Volume III "Space Medicine and Biotechnology" is concerned with the technology and procedures necessary to sustain life and permit living creatures to function in space.

SYMPOSIUM ON PLANETARY CRATERING MECHANICS

The Symposium on Planetary Cratering Mechanics, held at the U.S. Geological Survey, Branch of Astrogeological Studies in Flagstaff, September 13-17 was attended by 112 registered participants. The topics discussed included: theoretical and numerical computer simulations, equations of state, material failure, comminution, ejecta, scaling and energy partitioning; high-energy explosion and nuclear cratering experiments, laboratory explosion and impact experiments; terrestrial impact craters; applications of cratering mechanics data to lunar and planetary impact processes; terrestrial economic implications. Proceedings of this symposium are to be published in THE MOON (D. Reidel Publishing Co., Dordrecht, Holland).

PHOTOGEOLOGIST JOINS LSI STAFF

Dr. Peter H. Schultz, formerly at University of Santa Clara/NASA-Ames Research Center, has joined the scientific staff at the Lunar Science Institute. Dr. Schultz' fields of interest include problems in planetary geomorphology; volcanic modification of impact craters; lunar mare emplacement history; and lunar degradational processes. Other members of the scientific staff are: Dr. David R. Criswell - Theoretical modeling of Moon/solar wind interaction; electrostatic transport of lunar dust; surface seismology; ion implantation theory; space industrialization. Dr. Russell B. Merrill - Experimental study of phase equilibria which constrain the origins of lunar highland and mare rocks. Dr. Charles H. Simonds - Studies of impact igneous and metamorphic processes; petrographic, microprobe and thermal modeling of lunar highland lithologies; field and petrologic studies of terrestrial impact structures. Dr. Leonard Srnka - Origins of lunar and planetary magnetic fields; plasma physics of solar wind and planetary magnetospheres.

VIKING 1 RESULTS PUBLISHED BY NASA

An 80-page book titled "Viking 1 Early Results," has been published by NASA's Scientific and Technical Information Office. This report provides a concise description of the Viking mission and describes the Viking 1 lander's first 25 days of operation on the surface of Mars. It contains 50 photographs of Mars taken from the surface and from orbit.

Copies of "Viking 1 Early Results (NASA SP-408) can be obtained from the National Technical Information Service, Springfield, VA 22151, $2 per copy prepaid.

CALENDAR

18-21 October	METEORITES AND LUNAR SAMPLES. ANNUAL MEETING METEORITICAL SOCIETY. See page 2 this Bulletin
8-10 November	GEOLOGICAL SOCIETY OF AMERICA AND AFFILIATED SOCIETIES ANNUAL MEETING. Denver, CO. Contact: Fred S. Handy, Annual Meeting Manager, GSA, 3303 Penrose Place, Boulder, CO 80301
10-12 November	TUTORIAL ON MATERIALS PROCESSING IN A MICRO-GRAVITY ENVIRONMENT. Lehigh University, Bethlehem, PA. See page 1 this Bulletin
15-17 November	CONFERENCE ON COMPARISONS OF MERCURY AND THE MOON Lunar Science Institute, Houston, TX Contact: Dr. Charles H. Simonds, Symposia Office, LSI, 3303 NASA Road #1, Houston, TX 77058
28 November - 3 December	PENROSE CONFERENCE: THE APPLICATION OF CRYSTAL GROWTH THEORY AND EXPERIMENTS TO ROCK FORMING PROCESSES. California Contact: Dr. G. Lofgren, NASA Johnson Space Center, Houston, TX 77058 (Deadline for application September 1, 1976)
6-10 December	AMERICAN GEOPHYSICAL UNION FALL ANNUAL MEETING Jack Tar Hotel, San Francisco, CA Contact: AGU, 1909 K Street, N. W. Washington, DC 20006
19-22 January	DIVISION FOR PLANETARY SCIENCE, AMERICAN ASTRONOMICAL SOCIETY, 8th ANNUAL MEETING See page 2 this Bulletin
14-18 March	LUNAR SCIENCE CONFERENCE Johnson Space Center, Houston, TX Contact: Program Committee, Eighth Lunar Science Conference, LSI, 3303 NASA Road #1, Houston, TX 77058

CURRENT LUNAR ARTICLES received in LSI Library, February - May 1976

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