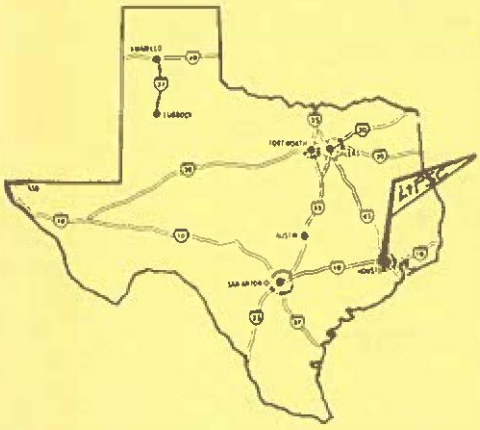
USRA

lunar & planetary information bulletin

NUMBER 21 DECEMBER 1979



THE ELEVENTH L&PSC

The Eleventh Lunar and Planetary Science Conference is being organized under the joint sponsorship of the Johnson Space Center and the Lunar and Planetary Institute. The conference will be held 17-21 March 1980 at the Johnson Space Center, Houston.

In addition to the broad, problem-oriented topics listed below, abstracts will be accepted for inclusion in special topical symposia. Topics suggested to date include Galilean Satellites, Antarctic Meteorites, Venus, and Mars. The broad, problem-oriented topics include:

1. Constraints on structure, composition, and history of planetary interiors. Studies to determine physical, chemical and thermal models for present states and histories of planetary interiors

2. Characteristics and movements of materials on lunar, planetary and asteroidal surfaces. Studies of compositions, chemical reactions, rates of overturn, lateral and vertical mixing, erosion rates, volatile transport at the surface of and within regoliths, and other studies of dynamic surface processes.

3. Characterization and evolution of volcanic landforms. Studies of the origin, fractionation, and emplacement history of volcanic rocks; the characterization and regional distribution of volcanic deposits and studies of volcanic morphologic features; and determinations of ages of volcanic features.

4. Characterization and evolution of planetary crusts. Studies of the nature, origin, fractionation, emplacement mechanisms, and time scales for development of planetary crusts.

5. Nature and effects of impact processes. Studies related to the mechanics of impact cratering, the characteristics of impact crater deposits, the processes of formation and modification of impact craters and basins, and the physical and chemical effects of impact processes on materials.

6. Extraterrestrial materials as solar/interplanetary/interstellar probes. Studies of solar and cosmic ray interactions; interactions of cometary and/or meteoritic particles with planetary surfaces; the search for extra-solar system components.

7. Earliest history of solar system. Studies of the physical state, chemical composition, and homogeneity of the solar nebula; physics, chemistry and chronology and condensation and accretion processes; early history of solid bodies.

There will be no more than four concurrent sessions with six half-days devoted to research papers in topical symposia and in problem-oriented sessions. Some evenings will be set aside for small, informal sessions. These sessions will not be considered part of the formal program but session developers are asked to alert the Program Committee so that the sessions can be announced to attendees.

In addition to the oral presentations, poster sessions will be available. Authors of displays will be asked to make themselves available for discussions of their work during scheduled intervals which will be announced in the formal program.

An abstract volume will be prepared as in previous years. The deadline for submission of abstracts to the conference is 14 January 1980. Copies of abstract forms and other information about L&PSC 11 are available from the Symposia Office, LPI, telephone 713/486-2150.

: :
The lunar and planetary information bulletin is published by the Lunar and Planetary Institute. There are usually four issues per year. It is distributed free on request to lunar and planetary scientists, educators, students, and their institutions.

The next issue will be in February. Copy deadline 1 February 1980. If you have any announcements which you would like to have printed in the bulletin, please send them to the Editor. We reserve the right to select and edit copy.

Editor: Frances B. Waranius, Lunar and Planetary Institute
3303 NASA Road One, Houston, TX 77058
Phone: 713/486-2135

: :

IN MEMORY
THOMAS R. McGETCHIN

Former LPI Director, Thomas R. McGetchin, died on October 22 in a Honolulu hospital after a 6-month battle with cancer. He was 43 years old. Under McGetchin's direction the Institute expanded from the narrow focus of lunar science to the broader fields of planetary and terrestrial sciences. He was an exceptionally competent scientist and an outstanding leader. His loss will be keenly felt by the LPI in particular, and the planetary science community in general.

Contributions toward a memorial fund, probably to benefit some aspect of education in the geosciences, may be made to the McGetchin Memorial Fund and forwarded to the LPI Director's Office.

NASA SPACE SCIENCE BUDGET PLAN

Although many phases of the NASA budget for FY'80 were discussed in Congress, the budget plan for space science remained essentially the same as submitted. Primarily the changes involved the authorization to split the Galileo mission into two separate launches of the Orbiter and Probe and postpone the mission until 1984. Included in the FY 1980 budget is $4.0 M to continue support of the lunar sample program within the newly established Planetary Materials Program. It is expected that high-quality lunar sample and meteorite research will be supported, although the overall funding in this area will be very tight. NSF will consider lunar sample research in competition with other programs in their Earth Science Division. Discussions between NASA/Planetary Programs Office and NSF will continue to insure that the support of lunar sample research by the two agencies is well coordinated.

The space science budget for FY 1978, 1979, and 1980 is shown below.

NATIONAL AERONAUTICS AND SPACE ADMINISTRATION

SPACE SCIENCE

BUDGET PLAN
(thousands of Dollars)

	FY 1978	FY 1979	FY 1980
PHYSICS AND ASTRONOMY	224,200	282,900	337,500
High energy astronomy observatories development	19,811	11,100	4,800
Solar maximum mission development	29,600	16,200	600
Space telescope development	36,000	79,200	112,700
International solar polar mission development		13,000	50,000
Shuttle/Spacelab payload development	27,061	34,900	41,300
Explorer development	24,297	29,800	30,400
Mission operations & data analysis	19,298	25,000	36,500
Research & analysis	42,934	44,400	34,300
Suborbital programs	25,199	29,300	26,900
PLANETARY EXPLORATION	147,200	182,400	220,200
Pioneer Venus	17,900	---	---
Galileo	20,950	78,700	116,100
Mission operations & data analysis	64,359	59,300	59,000
Research & analysis	43,991	44,400	45,100
LIFE SCIENCES	33,300	40,100	43,900
Life sciences flight experiments	9,000	11,900	12,900
Vestibular function research	1,500	3,800	3,700
Research & analysis	22,800	24,400	27,300
TOTAL SPACE SCIENCE	404,700	505,400	601,600

NEW DIRECTOR FOR THE LUNAR AND PLANETARY INSTITUTE

Roger J. Phillips has accepted the position of Director of the LPI effective October 1979. Phillips was most recently Manager of the Planetary Surfaces and Interiors Section of the Jet Propulsion Laboratory. He received his Ph.D. in Appled Geophysics from the University of California, Berkeley in 1968.

Phillips has served as a member of the NASA Lunar Geophysics Subcommittee, the NASA Post Lunar Orbiter Planning Subcommittee of the Lunar Advisory Committee, and the DOE/ERDA Consortium on Geothermal Modeling. Presently he is a member of the Planetary Cartography Working Group, the Lunar and Planetary Review Panel and the Geodynamics Review Panel. Phillips is currently a Principal Investigator in the NASA Planetary Geophysics Program, the Planetary Geology Program, the Mars Data Analysis Program, the Geodynamics Program, and the Pioneer Venus Mission.

Dr. Phillips is presently on the adjunct faculty at the University of Southern California and has taught graduate courses in geology and geophysics at USC and the University of Utah.

His personal research activities are focused on understanding the evolution and present state of planetary interiors from a study of gravity, heat flow, and topographic data. His research includes analysis of newly acquired data from in space investigations in terms of interior processes and states and theoretical investigations such as planetary convection. Phillips is also concerned with understanding the electrical resistivity environment of the Earth's crust and mantle as well as the interiors of the other terrestrial planets, dveloping new techniques in geophyscal data inversion, and understanding the relationship between surface tectonic features and interior processes.

DDC CHANGES ITS NAME

Effective 14 October 1979 the Defense Documentation Center (DDC) was renamed the Defense Technical Information Center (DTIC). The name change represents an upgrading of the role and functions of DTIC. A comprehensive plan has been drawn up to bring new and improved technical information services to the Defense Research and Development community and to increase interaction with and provide additional support for systems planners and information users. DTIC will continue to give special attention to maintaining the quality and timeliness of all its products and services.

FALL CONFERENCE WRAP-UP

ANCIENT SUN CONFERENCE

This four-day LPI Topical Conference held at the National Center for Atmospheric Research, Boulder, CO, October 16-19, 1979, brought together about 100 participants from the solar physics and the planetary geoscience community. The attendees included representatives from Great Britain, Denmark, France, and Canada, and press representatives from seven journals and radio stations.

The attendees used the four-day conclave to consider the challenge of recovering the long term history of solar behavior from natural records. For epochs of solar history from the near-present to approximately 4.6 billion years ago, papers and discussion focused on three broad topical areas: theories of solar variability and their consequences for changes in luminosity, particle emission, and magnetic fields; records of particle emission in lunar and meteoritic materials; and records of past solar behavior recoverable from terrestrial materials.

Proceedings of this conference will be published as a book in a format similar to that of recent proceedings of the annual Lunar and Planetary Science Conferences. Deadline for receipt of manuscripts at the Lunar and Planetary Institute is January 7, 1980. Publication is expected in late 1980. Abstracts of the papers submitted to this conference were compiled by the LPI as LPI Contribution No. 390 and copies are still available from the LPI Administration Office. U.S. requesters should include $2.00 to cover mailing costs. Foreign requesters should specify whether they wish their copy sent air mail printed matter (maximum cost $4.25) or surface mail ($1.05) A bill for the actual postage costs will be sent with the publication to foreign requesters.

CONFERENCE ON THE LUNAR HIGHLANDS CRUST

A three-day conference led to many stimulating discussions among the 100-plus attendees at the Institute November 14-16. The Conference was organized along the following topics: Regional Characteristics of the Lunar Highlands Crust; Petrology of the Lunar Highlands; Chemistry and Chronology of the Highland Crust; Physical Processes of Crustal Evolution; Magma Oceans and Crustal Formation; and a special session "Reflections on the Apollo 16 Mission by the Field Geology Team." The sessions followed an unstructured format with twenty minute presentations by a session keynote speaker followed by participant contributions of approximately five-minute duration. Because evidence of the earliest history of the Earth has been erased, and the ancient cratered terrains of Mercury and Mars have not yet been sampled, the samples of the Lunar Highlands are our best source of data to lead to an understanding of early planetary crustal formation. It was the aim of the Conference to continue to synthesize what is known about the Lunar Highlands by integrating the sample and remote sensing data. This organized data base can then be used in modelling crustal formation processes.

Abstracts of the papers submitted to the Conference are available as LPI Contribution No. 394. U.S. requesters can obtain a copy by sending $2.00 to the LPI Administration Office. Foreign requesters should specify whether they wish air mail printed matter service ($5.00) or surface mail ($2.00). A post-conference proceedings publication is also planned.

UNITED NATIONS REVIEWS LUNAR TREATY

The United Nations General Assembly will be considering a treaty that would lay the foundation for regulation of such activities as scientific research and commercial exploitation on and in orbit around the moon and other bodies in the solar system except the earth. Prepared for submission to the General Assembly by the UN's Committee on the Peaceful Uses of Outer Space, the "Draft Agreement Governing the Activities of States on the Moon and Other Celestial Bodies"--known as the lunar treaty--provides that:

- Exploration and use of the moon be for the benefit of all countries.
- The moon be used only for peaceful purposes.
- The moon be exempt from any claims of national sovereignty.
- Freedom of scientific investigation on the moon be guaranteed to all nations.
- Nations have the right to establish manned and unmanned stations on the moon.
- Measures be taken during the exploration and use of the moon to prevent disruption of the environmental balance.

The treaty had received little attention until certain space-concerned groups began raising opposition to the treaty on the grounds that it presented an obstacle to their free-spirited exploration of the heavens. The main backer of this opposition is the L-5 Society, an Arizona based group composed of potential space colonists and other people interested in the use of space as a natural resource. The opposition received little notice on Capitol Hill until the Society hired a Washington lobbyist named Leigh S. Ratiner to lead the crusade against U.S. ratification of this treaty. Articles are appearing in a number of publications such as OMNI, NEW YORK TIMES, WASHINGTON POST, and AVIATION WEEK AND SPACE TECHNOLOGY. For more information about the treaty contact the L-5 Society, 1620 N. Park, Tucson, AZ 85719, telephone 602/622-6351.

BIBLIOGRAPHIC SEARCH SERVICE

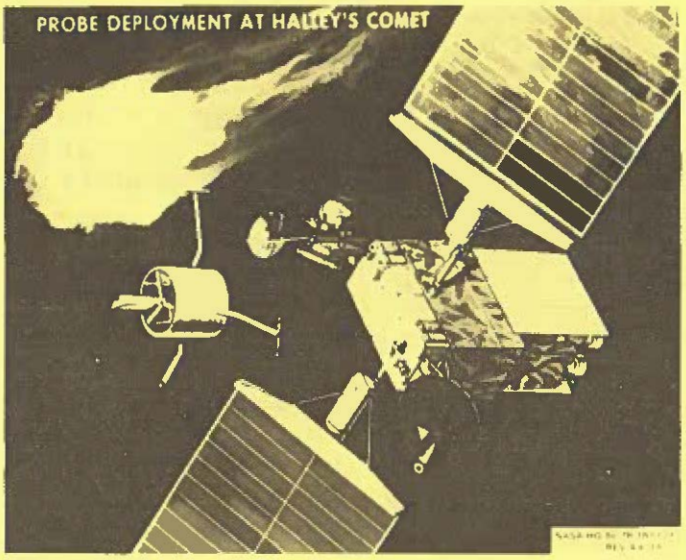
The LPI Library/Information Center (L/IC) provides a number of services to our readers. Many of these are based on the Lunar and Planetary Bibliography. The Bibliography was expanded two years ago from a strictly lunar data base to include the planets, asteroids, meteorites, comets, and space utilization. This service provides:

- The current awareness bibliography published in each issue of the bulletin.
- Citation verification...need a title, ending page, correct citation, abbreviation, or perhaps location of the material
- Literature searches based on a controlled vocabulary; thus not limited to words used by the author in the title.
- Specialized bibliographies such as the ones being developed on the Antarctic Meteorites, Comets. -

To learn more about these services or to make use of them, contact the L/IC: 713-486-2135 or 2134; FTS 525-3436.

If these services are useful to you, or if you have suggestions on how they could be more beneficial to you, PLEASE write to us. We need community support to continue these services.

INTERNATIONAL COMET MISSION - ANNOUNCEMENT OF OPPORTUNITY



The National Aeronautics and Space Administration (NASA) and the European Space Agency (ESA) jointly announce an opportunity for participation in an exploratory comet mission. It is currently contemplated that, if authorized, this mission will be launched in 1985 and will include a rendezvous with a short period comet and a flyby of a second, more active, comet for comparative measurements. Primary candidates under consideration at this time include comet Tempel 2 (rendezvous) and comet Halley (flyby).

Proposals are sought in three categories as follows:

1. Proposed investigations involving scientific instruments, analysis, and interpretation of data from the proffered scientific instrumentation other than rendezvous spacecraft imaging, altimetry, and radio telemetry instruments. This category contemplates the designation of a Principal Investigator (PI) and, if appropriate, Co-Investigators (Co-I's).

2. Proposed investigations from individuals which utilize the NASA-provided rendezvous spacecraft facilities, specifically the imaging, radar altimeter, and radio telemetry subsystems. These individuals will participate as Team Leader (TL) or member of a NASA/ESA-formed team.

3. Proposed interdisciplinary investigations to solve problems in cometary science and or provide meaningful theoretical and analysis support to the mission.

To be selected, proposals for investigations submitted in response to this AO must be within the scope of the following science objectives. The overall objectives, in order of decreasing priority, are:

1. Determine the chemical nature and physical structure of the comet nuclei and characterize the changes that occur as functions of time and orbital position.

2. Characterize the chemical and physical nature of the coma (which is defined as atmosphere and ionosphere) of the comets as well as the processes that occur therein, and characterize the development of the coma as functions of time and orbital position.

3. Determine the nature of the comet tails, and of the processes by which they are formed, and characterize the interaction of comets with the solar wind.

The mission outlined here has not yet been authorized or approved. Therefore, this AO does not constitute an obligation on the part of the NASA or ESA to carry the proposed effort to completion. The AO is being issued at this time to assure timely selection of investigators in order to permit their maximum participation in the detailed design of the mission and to initiate appropriate long lead instrument development.

To obtain a copy of this Announcement request A.O. No. OSS-2-79 from the Office for Space Sciences, National Aeronautics and Space Administration, Code SL-4, Washington, DC 20546 U.S.A.

merrychristmasmerrychristmasmerrychristmasmerrychristmasmerrychristmasmerrychristmas

NASA PLANETARY GEOLOGY INTERN PROGRAM

NASA's Planetary Geology Intern Program (PGI) was developed in an effort to support and encourage work being done in planetary sciences. It's aims are threefold: (1) to provide incentive for the development of future planetary geologists, (2) to broaden the base of participation in planetary geology; and (3) to introduce traditional terrestrial geologists to planetary studies.

The announcement of the 1980 program has been distributed to approximately 500 universities and qualified students are being sought to participate in this program. In addition to soliciting applications from students, it is also essential to the program that scientists and researchers in the field act as hosts for the intern. If you are a student interested in participating in the program, or a researcher interested in sponsoring one or two interns for a research project, contact:

Mrs. Marjorie M. Egan
Project Manager
Planetary Geology Intern Program
SUNY at Buffalo
Dept. of Geological Sciences
4240 Ridge Lea Road
Amherst, NY 14226
(416-894-3676)

Dr. Joesph M. Boyce
Planetary Geology Program Office
NASA Headquarters
400 Maryland Avenue S.W.
Washington, DC 20546

All application material must be received by January 15, 1980.

NEW PUBLICATIONS

NASA PUBLICATIONS A number of publications on planned and recent space programs have been prepared and are generally available from the Superintendent of Documents, Government Printing Office, Washington, DC 20402. This agency requires prepayment. In some instances the various NASA Center Education Offices may have limited supplies of these publications available for distribution. Please DO NOT write the LPI for these publications.

Space Shuttle Two fact sheets have been prepared by NASA relaying general information about the space shuttle. One is an 8-page booklet describing the development of the shuttle, its components, and a typical mission. Realistic drawings illustrate how various shuttle missions will be carried out and an improved space suit and unique rescue system that have been developed for the shuttle are described. The second is a 30" x 42" wall poster showing a cutaway view of the space shuttle that allows you to look through the "skin" of the orbiter. Many smaller drawings show other aspects of the space transportation system and several paragraphs of space shuttle information are provided on the poster. Size, wingspan, weight thrust, and operational altitude data are depicted in the detailed center drawing of the space shuttle orbiter. To obtain copies of these fact sheets order NAS 1.20:NF-79 Space Shuttle ($.60) for the booklet and NAS 1.20:NF-81 Space Shuttle Wallsheet ($1.60) for the poster.

Voyager Mission This NASA factsheet presents the latest information about Jupiter, much of which has come from the Voyager mission. The origin of Jupiter, its magnetosphere, and the Great Red Spot are discussed in detail, and several close-up photographs of the planet's surface are included. To obtain this 8-page booklet order NAS 1.20:NF-89 ($.70)

Landsat Another poster suitable for display explains how Landsat works and depicts a Landsat satellite in orbit. A group of photographs taken by the satellite are presented and many of the uses for the data captured by Landsat are explained. This 32"x48" poster can be obtained by ordering NAS 1.20:NF-80 ($1.50)

Apollo history A new book in the NASA History series relates the story of manned lunar spacecraft. This 500-plus page book, written by Courtney G. Brooks, James M. Grimwood, and Loyd S. Swenson, Jr., is a nostalgic trip for those who worked closely with the U.S. manned space exploration programs. It is also an excellent introduction into the program planning and management which went into this technological masterpiece. The book is richly illustrated and has a well-developed bibliography. This book can be obtained from the Government Printing Office only. Order NASA SP-4205 "Chariots for Apollo" ($9.00)

VOLCANO NEWS

This new, bimonthly newsletter is for the informal exchange of information of interest to volcanologists and others fascinated by volcanoes. VN will publish virtually anything related to volcanism except research articles and reports of recent eruptions. VN does solicit comments, opinions, short reports, observations, requests, and other news related to volcanoes and the people who study them. Photographic reports of little-studied volcanoes are sought to illustrate the diversity of volcanic landforms and to supplement the descriptions in the Catalog of Active Volcanoes. It will publish English abstracts of articles in Japanese and Russian journals of volcanology, book reviews, bibliographies, meeting notices, and other news of interest to volcanologists. The editor of this new publication is Chuck Wood supported by an editorial advisory group. Subscriptions are $6.00 for one year (6 issues) plus $5 extra for airmail postage for foreign addresses. Checks for subscriptions should be mailed to C.A. Wood, PH 1, 1220 Blair Mill Rd., Silver Spring, MD 20910 USA. Contributions and suggestions are solicited from those interested in participating in this international exchange of VOLCANO NEWS

NEW MARS ATLAS

A new set of 1:2,000,000 maps is being prepared by the U.S. Geological Survey from Viking Orbiter images. Of 164 planned sheets, about a dozen have already been published. The maps, actually photomosaics, currently available include:

I-1183 Coprates Southwest (MC-18 SW)
I-1184 Coprates Southeast (MC-18 SE)
I-1185 Memnonia Northeast (MC-16 NE)
I-1186 Memnonia Northwest (MC-16 NW)
I-1187 Memnonia Southeast (MC-16 SE)
I-1188 Memnonia Southwest (MC-16 SW)
I-1189 Phoenicis Lacus Southwest (MC-17 SW)
I-1190 Phoenicis Lacus Southeast (MC-17 SE)
I-1191 Argyre Northwest (MC-26 NW)
I-1192 Argyre North Central (MC-26 N-C)
I-1193 Argyre Northeast (MC-26 NE)

The charts are available for $1.25 each prepaid from Branch of Distribution, U.S. Geological Survey, at either 1200 S. Eads St., Arlington, VA 22202, or at Box 25286 Federal Center, Denver, CO 80225.

PROCEEDINGS CUMULATIVE INDEX - 1970-1978

The cumulative index to the Proceedings of the Lunar and Planetary Science Conferences, 1970-1978 has now been published. This index puts together the author, subject, sample number, and mission indices for the first through the ninth proceedings. In addition to the indices, the table of contents of each of the proceedings has been reproduced within this volume so that a quick reference from the index to the authors and title of a particular paper may be spot checked without actually going to the proceedings volumes themselves. This attractive book, compiled by Amanda R. Masterson, is now available from Pergamon Press, Maxwell House, Fairview Park, Elmsford, NY 10523 for $30.00. Denver, CO 80225.

METEOR--A CLASSROOM STUDY GUIDE

A classroom study guide designed to introduce the student to the basic facts about meteors, asteroids, and comets in the most interesting and effective way, has been prepared by American International Films as an adjunct classroom project to the new movie METEOR. The Guide includes a PRETEST, a three-part information GUIDE, suggested ACTIVITIES AND PROJECTS, a POST-TEST, and a factual WALLSHEET suitable for bulletion board display. Permission is given by the producer to freely reproduce any of the material in the Guide. American International was assisted in the preparation of this guide by several individuals, scientists, educators, and establishments. To obtain a copy of this study guide send $5.00 to American International, 9033 Wilshire Blvd., Beverly Hills, CA 90211. To obtain a copy of this Solar System Phenomena wall chart only send $1.00 to the same address.

+ +

REMEMBER! The publications listed here are NOT available from the LPI. Please contact the source given with each item to obtain a copy. If you know of any new materials which could be useful to our readers, please send information about them to the Editor, this bulletin. Review of the items here does not constitute any endorsement of them by the Lunar and Planetary Institute.

+ +

CURRENT LUNAR AND PLANETARY BIBLIOGRAPHY (Continued from page 21)

METEORITES (continued)

SHIMA,M. + MURAYAMA,S. + OKADA,A. (NATIONAL SCIENCE MUSEUM, UENO-PARK, TAITO-KU, TOKYO, 110, JAPAN): CHEMICAL COMPOSITION, PETROLOGY AND MINERALOGY OF THE SHIBAYAMA CHONDRITE FOUND IN SHIBAYAMA-MACHI, SANBU-GUN, CHIBA-KEN, JAPAN
METEORITICS VOL. 14, 317-330 (1979)

TAYLOR,S.R. + MCLENNAN,S.M. (RESEARCH SCHOOL OF EARTH SCIENCES, AUSTRALIAN NATIONAL UNIV. CANBERRA, AUSTRALIA): CHEMICAL RELATIONSHIPS AMONG IRGHIZITES, ZHAMANSHINITES, AUSTRALASIAN TEKTITES AND HENBURY IMPACT GLASSES
GEOCHIMICA ET COSMOCHIMICA ACTA VOL. 43, 1551-1565 (1979)

THIELEMANN,F.-K. + ARNOULD,M. + HILLEBRANDT,W. (INSTITUT FUR KERNPHYSIK, TECHNISCHE HOCHSCHULE DARMSTADT AND MAX-PLANCK-INSTITUT FUR PHYSIK UND ASTROPHYSIK, FUHRINGER RING 6, D-8000 MUNCHEN 40, FEDERAL REPUBLIC OF GERMANY): METEORITIC ANOMALIES EXPLOSIVE NEUTRON PROCESSING OF HELIUM-BURNING SHELLS
ASTRONOMY AND ASTROPHYSICS VOL. 74, 175-185 (1979)

WOOD,J.A. + MOTYLEWSKI,K. (HARVARD-SMITHSONIAN CENTER FOR ASTROPHYSICS, CAMBRIDGE,MA 02138): METEORITE RESEARCH
REVIEWS OF GEOPHYSICS AND SPACE PHYSICS VOL. 17, 912-925 (1979)

ZAIKOWSKI,A. + SCHAEFFER,O.A. (DEPT. OF EARTH AND SPACE SCIENCES, SUNY AT STONY BROOK, STONY BROOK, NY 11794): SOLUBILITY OF NOBLE GASES IN SERPENTINE: IMPLICATIONS FOR METEORITIC NOBLE GAS ABUNDANCES. EARTH AND PLANETARY SCIENCE LETTERS VOL. 45, 141-154

C A L E N D A R

December 2-15	International Union of Geodesy and Geophysics XVII General Assembly, Canberra, Australia U.S. participants may Contact: A.F. Spilhaus, Jr. American Geophysical Union 2000 Florida Avenue NW Washington, DC 20009 Others to respective national committees OR Executive Director Organizing Committee, IUGG 1979 Australian Academy of Science P.O. Box 783 Canberra City ACT 2601 Australia
December 3-7	American Geophysical Union, Fall Meeting San Francisco, CA Contact: Meets AGU 2000 Florida Avenue NW Washington, DC 20009
January 14	DEADLINE - Abstracts due for XI Lunar and Planetary Science Conference. For forms and information contact: Publications Office Lunar and Planetary Institute
January 14-16	Planetary Geology Principal Investigators' Meeting, Arizona State University. Contact: Dr. Joseph Boyce NASA Headquarters Code: SL-4 Washington, DC 20546
February 8	Isotope Anomalies and Super Heavy Elements in the Early Solar System, Royal Astronomical Society, London. Contact: Prof. S. K. Runcorn Dept. of Physics The University Newcastle-upon-Tyne

February 27-29	3rd Annual Conference on the Physics of the Jovian Magnetosphere, Rice University, Houston, TX. Contact: T.W. Hill Dept. of Space Physics & Astronomy Rice University Houston, TX 77001
March 17-21	XI LUNAR & PLANETARY SCIENCE CONFERENCE Houston, TX Contact: Symposia Office Lunar and Planetary Institute
April 21	DEADLINE for Submission of Papers to the 11th PROCEEDINGS
April 22-25	1980 Satellite Power Systems, Program Review and Symposium Lincoln, Nebraska Contact: David L. Christensen Johnson Environmental & Energy Center University of Alabama P. O. Box 1247 Huntsville, AL 35807 Phone: (205) 895-6257

==========

peace peace peace peace peace peace peace peace peace peace peace peace peace peace peace

==========

HAPPY HOLIDAY

The entire staff of the Lunar and Planetary Institute extends a wish for a happy holiday season and a peaceful and prosperous New Year to all our community ....the scientists, the educators, the students, and the friends of space. May this new decade usher in another land-mark period for our ventures into space.

the editor

LUNAR AND PLANETARY BIBLIOGRAPHY.

CURRENT ARTICLES RECEIVED IN THE LPI LIBRARY SEPTEMRER-NOVEMBER 1979. ADDRESS OF FIRST AUTHOR IS GIVEN. CONTACT THE AUTHOR OR YOUR LOCAL LIBRARY FOR COPY OR REPRINT.

MOON. MOTION, DYNAMICS, GRAVITY FIELDS

HENRARD,J. (DEPT. OF MATHEMATICS, FACULTES UNIVERSITAIRES DE NAMUR, B-5000 NAMUR, BELGIQUE): A NEW SOLUTION TO THE MAIN PROBLEM OF LUNAR THEORY
CELESTIAL MECHANICS VOL. 19, 337-355 (1979)

MIGNARD,F. (C.E.R.G.A. GRASSE, FRANCE): THE EVOLUTION OF THE LUNAR ORBIT REVISITED. I
THE MOON AND THE PLANETS VOL. 20, 301-315 (1979)

WILLIAMS,B.G. (UNIVERSITY OF TEXAS, AUSTIN, TEXAS U.S.A.): A NOTE ON THE LIMITS OF STABILITY FOR THE RESTRICTED PROBLEM OF THREE BODIES AS APPLIED TO THE SUN-EARTH-MOON SYSTEM
CELESTIAL MECHANICS VOL. 19, 357-358 (1979)

MOON. PHYSICAL STRUCTURE; THERMAL STRESS HISTORY

CASSEN,P. + REYNOLDS,R.T. + GRAZIANI,F. + SUMMERS,A. + MCNELLIS,J. + BLALOCK,L. (THEORETICAL PLANETARY STUDIES BRANCH, AMES RESEARCH CENTER, NASA, MUFFETT FIELD, CA 94035, U.S.A.): CONVECTION AND LUNAR THERMAL HISTORY
PHYSICS OF THE EARTH AND PLANETARY INTERIORS VOL. 19, 183-196 (1979)

GANGI,A.F. + YEN,T.E. (DEPT. OF GEOPHYSICS, TEXAS A M UNIV., COLLEGE STATION, TX U.S.A.): VELOCITY STRUCTURE OF THE SHALLOW LUNAR CRUST
THE MOON AND THE PLANETS VOL. 20, 439-468 (1979)

HOREDT,G.P. (PHYSICS DEPARTMENT, UNIVERSITATEA CLUJ, ROMANIA): EARLY COLLISIONAL HEATING OF THE MOON
THE MOON AND THE PLANETS VOL. 20, 241-249 (1979)

TAYLOR,S.R. (RESEARCH SCHOOL OF EARTH SCIENCES, AUSTRALIAN NATIONAL UNIV., CANBERRA, AUSTRALIA): STRUCTURE AND EVOLUTION OF THE MOON
NATURE VOL. 281, 105-110 (1979)

MOON. MORPHOLOGY, STRATIGRAPHY, MAPPING

ASAAD,A.S. + MIKHAIL,J.S. (HELWAN INST. OF ASTRONOMY GEOPHYSICS, ACAD. OF SCIENTIFIC RESEARCH TECHNOLOGY, EGYPT): LUNAR WORK CARRIED OUT AT KOTTAMIA OBSERVATORY
THE MOON AND THE PLANETS VOL. 20, 153-155 (1979)

GIFFORD,A.W. + MAXWELL,T.A. + EL-BAZ,F. (NATIONAL AIR SPACE MUSEUM, SMITHSONIAN INSTITUTION, WASHINGTON, D.C., U.S.A.): GEOLOGY OF THE FARSIDE CRATER NECHO
THE MOON AND THE PLANETS VOL. 21, 25-42 (1979)

KOVALEVSKY,J. (CENTRE D'ETUDES ET DE RECHERCHES GEODYNAMIQUES ET ASTRONOMIQUES, GRASSE, FRANCE): CURRENT SELENODESIC WORK IN FRANCE.
THE MOON AND THE PLANETS VOL. 20, 173-177 (1979)

MAMAKOV,A.S. (ENGELHARDT ASTRONOMICAL OBSERVATORY, KAZAN, U.S.S.R.): SYSTEM OF SELENODETIC COORDINATES BASED ON HELIOMETRIC OBSERVATIONS OF THE MOON AT KAZAN
THE MOON AND THE PLANETS VOL. 21, 19-23 (1979)

MEYER,P. (CENTRE D'ETUDES ET DE RECHERCHES GEODYNAMIQUES ET ASTRONOMIQUES, GRASSE, FRANCE): (FR) DETERMINATION DU BORD LUNAIRE A L'AIDE DU MICRODENSITOMETRE DE L'OBSERVATOIRE DE NICE
THE MOON AND THE PLANETS VOL. 20, 169-172 (1979)

ST.CLAIR,J.H. + CARDER,R.W. + SCHIMERMAN,L.A. (U.S. DEFENSE MAPPING AGENCY, AEROSPACE CENTER, ST. LOUIS, MO, U.S.A.): UNITED STATES LUNAR MAPPING-A BASIS FOR AND RESULT OF PROJECT APOLLO
THE MOON AND THE PLANETS VOL. 20, 127-148 (1979)

SETTLE,M. + CINTALA,M.J. + HEAD,J.W. (DEPT. OF GEOLOGICAL SCIENCES, BROWN UNIV., PROVIDENCE, R.I., U.S.A.): EMPLACEMENT OF FAHRENHEIT CRATER EJECTA AT THE LUNA-24 SITE
THE MOON AND THE PLANETS VOL. 20, 281-300 (1979)

THOMPSON,T.W. (PLANETARY SCIENCE INST., PASADENA, CA U.S.A.): A REVIEW OF EARTH-BASED RADAR MAPPING OF THE MOON
THE MOON AND THE PLANETS VOL. 20, 179-198 (1979)

WEIMER,TH. (OBSERVATOIRE DE PARIS, FRANCE): (FR) CARTOGRAPHIE DES REGIONS MARGINALES DE LA LUNE
THE MOON AND THE PLANETS VOL. 20, 157-162 (1979)

WEIMER,TH. (OBSERVATOIRE DE PARIS, FRANCE): (FR) CARTE DE LA LUNE DE J. D. CASSINI
THE MOON AND THE PLANETS VOL. 20, 163-167 (1979)

MOON. CHEMICAL COMPOSITION, PETROLOGY

ANDERS,E. (ENRICO FERMI INST. DEPT. OF CHEMISTRY, UNIV. OF CHICAGO, CHICAGO, IL U.S.A.): PROCRUSTEAN SCIENCE: INDIGENOUS SIDEROPHILES IN THE LUNAR HIGHLANDS, ACCORDING TO DELAND AND RINGWOOD
THE MOON AND THE PLANETS VOL. 20, 219-239 (1979)

MOON. CHEMICAL COMPOSITION, PETROLOGY CONT.

GOSWAMI,J.N. + LAL,D. + RAO,M.N. + VENKATESAN,T.R. (PHYSICAL RESEARCH LAB., AHMEDABAD 380 009, INDIA): DEPOSITIONAL HISTORY OF LUNA 24 DRILL CORE SOIL SAMPLES
EARTH PLANETARY SCIENCE LETTERS VOL. 44, 325-334 (1979)

LABOTKA,T.C. + VANIMAN,D.T. + PAPIKE,J.J. (DEPT. OF EARTH SPACE SCIENCES, STATE UNIV. OF NEW YORK, STONY BROOK, NEW YORK 11794): THE APOLLO 17 DRILL CORE: COMPARATIVE MODAL PETROLOGY AND PHASE CHEMISTRY OF THE >20 MILLIMICRON AND 20 MILLIMICRON SOIL FRACTIONS
GEOPHYSICAL RESEARCH LETTERS VOL. 6, 503-506 (1979)

MARVIN,U.B. + WASSON,J.T. (HARVARD-SMITHSONIAN CENTER FOR ASTROPHYSICS, CAMBRIDGE,MA 02138): EXTRATERRESTRIAL SAMPLES: PROGRESS AND PROSPECTS
GEOTIMES VOL. 24(10) 22-28 (1979)

PADIA,J.T. + RAO,M.N. + VENKATESAN,K. (PHYSICAL RESEARCH LABORATORY, AHMEDABAD, INDIA): COSMOGENIC AND TRAPPED RARE GASES IN LUNA-24 DRILL CORE SAMPLES
THE MOON AND THE PLANETS VOL. 20, 423-438 (1979)

SURKOV,YU.A. + FEDOSEEV,G.A. REGOLITHIC RADIOACTIVITY IN THE MARE CRISIUM
COSMIC RESEARCH VOL. 17, 88-94 (1979)

WARNER,R.D. + TAYLOR,G.J. + WENTWORTH,S.J. + MOSS,G.R. + MANSKER,W.L. + PLANNER,H.N. + SAYEED,U.A. + KEIL,K. (UNIV. OF NEW MEXICO INST. OF METEORITICS, ALBUQUERQUE, NM 87131): ELECTRON MICROPROBE ANALYSES OF GLASSES FROM APOLLO 17 RAKE SAMPLE BRECCIAS AND APOLLO 17 DRILL CORE
UNIVERSITY OF NEW MEXICO INST. OF METEORITICS. SPECIAL PUB. NO. 20. PP. 20 (1979)

MOON. ELECTROMAGNETIC PROPERTIES

BAILEY,M.E. + CLUBE,J.A. (DEPT. OF ASTRONOMY, UNIV., OF EDINBURGH, BLACKFORD HILL, EDINBURGH, EH9 3HJ.): CARBON IN THE LUNAR REGOLITH AS A POSSIBLE CLUE TO THE NATURE OF INTERSTELLAR GRAINS?
OBSERVATORY VOL. 99(1028) 10-11 (1979)

DAILY,W.D. + DYAL,P. (EYRING RESEARCH INST., PROVO, UTAH 84601): MAGNETOMETER DATA ERRORS AND LUNAR INDUCTION STUDIES
JOURNAL OF GEOPHYSICAL RESEARCH VOL. 84, 3313-3326 (1979)

MOON. RADIATION; OPTICAL, THERMAL PROPERTIES

AKIMOV,L.A. (KHAR'KOV STATE UNIV. USSR): ON THE BRIGHTNESS DISTRIBUTIONS OVER THE LUNAR AND PLANETARY DISKS
SOVIET ASTRONOMY VOL. 23, 231-235 (1979)

MIKHAIL,J.S. (HELWAN INST. OF ASTRONOMY GEOPHYSICS, CAIRO, EGYPT): TELESCOPIC INVESTIGATION OF RELATIVE SPECTRAL REFLECTIVITY OF MARE GROUNDS OF LUNAR SURFACE
THE MOON AND THE PLANETS VOL. 20, 199-210 (1979)

MOON. GENERAL REVIEWS

MARVIN,U.B. (HARVARD-SMITHSONIAN CENTER FOR ASTROPHYSICS, CAMBRIDGE, MA): LOOKING BACK ON THE APOLLO PROGRAM
SMITHSONIAN INST. RESEARCH REPORTS NO. 26, 6-7 (1979)

NAUGLE,J.E. (NATIONAL AERONAUTICS SPACE ADMIN., WASHINGTON,D.C., U.S.A.): THE NASA SPACE PROGRAM
THE MOON AND THE PLANETS VOL. 20, 105-126 (1979)

PAGE,T. (NASA JOHNSON SPACE CENTER, HOUSTON, TX 77058): APOLLO REMEMBERED: CONFERENCE NOTES FROM HOUSTON
SKY TELESCOPE VOL. 58, 28-29 (1979)

PLANETS. (REFERENCES TO MORE THAN ONE PLANET)

ARKANI-HAMED,J. (DEPT. OF EARTH PLANETARY SCIENCES, MASSACHUSETTS INST. OF TECH., CAMBRIDGE, MA U.S.A.): ON THE EFFECTS OF HIGHER CONVECTION MODES ON THE THERMAL EVOLUTION OF SMALL PLANETARY BODIES
THE MOON AND THE PLANETS VOL. 20, 397-413 (1979)

CLOUTIER,P.A. + DANIELL,R.E.,JR. (DEPT. OF SPACE PHYSICS ASTRONOMY, RICE UNIV., HOUSTON, TX. 77001, U.S.A.): AN ELECTRODYNAMIC MODEL OF THE SOLAR WIND INTERACTION WITH THE IONOSPHERES OF MARS AND VENUS
PLANETARY SPACE SCIENCE VOL. 27, 1111-1121 (1979)

COFFEEN,D.L. (GODDARD INST. FOR SPACE STUDIES, 2880 BROADWAY, NEW YORK, NY 10025): POLARIZATION SCATTERING CHARACTERISTICS IN THE ATMOSPHERES OF EARTH, VENUS, AND JUPITER
JOURNAL OF THE OPTICAL SOCIETY OF AMERICA VOL. 69, 1051-1064 (1979)

FARINELLA,P. + PAOLICCHI,P. + FERRINI,F. + NOBILI,A.M. (OSSERVATORIO ASTRONOMICO DI BRERA, MERATE (COMO), ITALY): AN EXPLANATION FOR THE LIGHT CURVE OF JUPITER'S AND SATURN'S SATELLITES
THE MOON AND THE PLANETS VOL. 20, 385-395 (1979)

KERR,R.A. RINGS AROUND THE SOLAR SYSTEM
SCIENCE VOL. 206, 38-40 (1979)

NO AUTHOR CITED. FOUR-PLANET METEOROLOGY
SPACEFLIGHT VOL. 21, 255-259 (1979)

PRENTICE,A.J.R. + TER HAAR,D. (DEPT. OF MATHEMATICS, MONASH UNIV., CLAYTON, VICTORIA, AUSTRALIA): FORMATION OF THE REGULAR SATELLITE SYSTEMS AND RINGS OF THE MAJOR PLANETS
THE MOON AND THE PLANETS VOL. 21, 43-61 (1979)

SHIMIZU,M. (INST. OF SPACE AERONAUTICAL SCIENCE, UNIV. OF TOKYO, KOMABA, MEGURO-KU, TOKYO, 153 (JAPAN)): AN EVOLUTIONAL MODEL OF THE TERRESTRIAL ATMOSPHERE FROM A COMPARATIVE PLANETOLOGICAL VIEW
PRECAMBRIAN RESEARCH VOL. 9, 311-324 (1979)

PLANETS (CONT.)

SMOLUCHOWSKI,R. (DEPT. OF ASTRONOMY PHYSICS, UNIV. OF TEXAS, AUSTIN, TEXAS 78712): THE RING SYSTEMS OF JUPITER, SATURN AND URANUS
NATURE VOL. 280, 377-378 (1979)

SOLOMON,S.C. (DEPT. OF EARTH PLANETARY SCIENCES, MASSACHUSETTS INST. OF TECH., CAMBRIDGE, MA 02139 (U.S.A.)): FORMATION, HISTORY ENERGETICS OF CORES IN THE TERRESTRIAL PLANETS
PHYSICS OF THE EARTH AND PLANETARY INTERIORS VOL. 19, 168-182 (1979)

JUPITER

BAKER,D.N. + HIGBIE,P.R. + BELIAN,R.D. + HONES,E.W.JR. (UNIV. OF CALIFORNIA, LOS ALAMOS SCIENTIFIC LAB. LOS ALAMOS, NM 87545): DO JOVIAN ELECTRONS INFLUENCE THE TERRESTRIAL OUTER RADIATION ZONE?
GEOPHYSICAL RESEARCH LETTERS VOL. 6, 531-534 (1979)

CASSEN,P. + REYNOLDS,R.T. + PEALE,S.J. (THEORETICAL PLANETARY STUDIES BRANCH, AMES RESEARCH CENTER, NASA MOFFETT FIELD, CA 94035): IS THERE LIQUID WATER ON EUROPA?
GEOPHYSICAL RESEARCH LETTERS VOL. 6, 731-734 (1979)

EBERHART,J. JUPITER'S SULFUR RING
SCIENCE NEWS VOL. 116, 155-156 (1979)

ERAKER,J.H. + SIMPSON,J.A. (ENRICO FERMI INST. DEPT. OF PHYSICS, UNIV. OF CHICAGO): JOVIAN ELECTRON PROPAGATION CLOSE TO THE SUN (APPROXIMATELY0.5 AU)
THE ASTROPHYSICAL JOURNAL VOL. 232, L131-L134 (1979)

ERDI,B. (DEPT. OF ASTRONOMY, EOTVOS UNIV., BUDAPEST, HUNGARY): THE MOTION OF THE PERIHELION OF TROJAN ASTEROIDS
CELESTIAL MECHANICS VOL. 20, 59-67 (1979)

FLAGG,R.S. + DESCH,M.D. (DEPT. OF PHYSICS AND ASTRONOMY, UNIV. OF FLORIDA, GAINESVILLE, FL 32611): SIMULTANEOUS MULTIFREQUENCY OBSERVATIONS OF JOVIAN S BURSTS
JOURNAL OF GEOPHYSICAL RESEARCH VOL. 84, 4233-4244 (1979)

GOERTZ,C.K. + THOMSEN,M.F. (DEPT. OF PHYSICS ASTRONOMY, UNIV. OF IOWA, IOWA CITY, 52242): THE DYNAMICS OF THE JOVIAN MAGNETOSPHERE
REVIEWS OF GEOPHYSICS SPACE PHYSICS VOL. 17, 731-743 (1979)

GOERTZ,C.K. + SCHARDT,A.W. + VAN ALLEN,J.A. + PARISH,J.L. (DEPT. OF PHYSICS ASTRONOMY, UNIV. OF IOWA, IOWA CITY, IOWA 52242): PLASMA IN THE JOVIAN CURRENT SHEET
GEOPHYSICAL RESEARCH LETTERS VOL. 6, 495-498 (1979)

GURNETT,D.A. + SHAW,R.R. + ANDERSON,R.R. + KURTH,W.S. (DEPT. OF PHYSICS ASTRONOMY, UNIV. OF IOWA, IOWA CITY,IOWA 52242): WHISTLERS OBSERVED BY VOYAGER 1: DETECTION OF LIGHTNING ON JUPITER
GEOPHYSICAL RESEARCH LETTERS VOL. 6, 511-514 (1979)

JUPITER (CONT.)

HUNT,E.H. + MULLER,P. (LAB. FOR PLANETARY ATMOSPHERES, DEPT. OF PHYSICS ASTRONOMY, UNIV. COLLEGE LONDON, GOWER ST., LONDON WC1E6BT, U.K.): COMMENTS ON LIGHT DARK SPOTS IN THE EQUATORIAL REGIONS OF JUPITER
PLANETARY SPACE SCIENCE VOL. 27, 1127-1129 (1979)

IP,W.H. (MAX-PLANCK INSTITUT FUR AERONOMIE, D-3411 KATLENBURG-LINDAU 3, FRG): ON THE PIONEER 11 OBSERVATION OF THE RING OF JUPITER
NATURE VOL. 280, 478-479 (1979)

IVANOV,N.M. + MARTYNOV,A.I. + SOKOLOV,N.L. BALLISTIC AND NAVIGATION ASPECTS OF THE BRAKING PROBLEM FOR A SPACECRAFT IN JUPITER'S ATMOSPHERE
COSMIC RESEARCH VOL. 17, 25-35 (1979)

KAISER,M.L. + DESCH,M.D. + KIDDLE,A.C. + LECACHEUX,A. + PEARCE,J.B. + ALEXANDER,J.K. + WARWICK,J.W. + THIEMAN,J.R. (GODDARD SPACE FLIGHT CENTER, GREENBELT, MD): VOYAGER SPACECRAFT RADIO OBSERVATIONS OF JUPITER: INITIAL CRUISE RESULTS
GEOPHYSICAL RESEARCH LETTERS VOL. 6, 507-510 (1979)

KIVELSON,M.G. + SLAVIN,J.A. + SOUTHWOOD,D.J. (INST. OF GEOPHYSICS PLANETARY PHYSICS DEPT. OF EARTH SPACE SCIENCES, UNIV. OF CALIFORNIA, LOS ANGELES 90024): MAGNETOSPHERES OF THE GALILEAN SATELLITES
SCIENCE VOL. 205, 491-493 (1979)

KURTH,W.S. + BARBOSA,D.D. + SCARF,F.L. + GURNETT,D.A. + POYNTER,R.L. (DEPT. OF PHYSICS ASTRONOMY, UNIV. OF IOWA, IOWA CITY, IA 52242): LOW FREQUENCY RADIO EMISSIONS FROM JUPITER KILOMETRIC RADIATION
GEOPHYSICAL RESEARCH LETTERS VOL. 6, 747-750 (1979)

LEWIS,J.S. + FEGLEY,B.JR. (DEPT. OF EARTH PLANETARY SCIENCES, MASSACHUSETTS INST. OF TECH.): HOT-ATOM SYNTHESIS OF ORGANIC COMPOUNDS ON JUPITER
THE ASTROPHYSICAL JOURNAL VOL. 232, L135-L137 (1979)

NO AUTHOR CITED. JUPITER PICTORIAL
ASTRONOMY VOL. 7(8) 54-57 (1979)

NO AUTHOR CITED. RETURN TO JUPITER
ASTRONOMY VOL. 7(9) 6-10,14-18,23 (1979)

NO AUTHOR CITED, THE GREAT RED SPOT
ASTRONOMY VOL. 7(9) 12-13 (1979)

NO AUTHOR CITED, THE JOVIAN CLOUDS
ASTRONOMY VOL. 7(9) 20-21 (1979)

NO AUTHOR CITED. A VOYAGER ALBUM
ASTRONOMY VOL. 7(10) 16-23 (1979)

NO AUTHOR CITED, VOYAGER 2 HEADS FOR 1981 SATURN FLYBY
AVIATION WEEK SPACE TECHNOLOGY VOL. 111(4) 18-20 (1979)

OYA,H. + MORIOKA,A. (INST. FOR GEOPHYSICS, TOHOKU UNIVERSITY, SENDAI, JAPAN): DEVELOPMENT OF OBSERVING STATION FOR JOVIAN DECAMETER WAVE RECEPTION AT MT. ZAO OBSERVATORY OF TOHOKU UNIVERSITY
JOURNAL OF GEOMAGNETISM GEOELECTRICITY VOL. 31, 47-66 (1979)

JUPITER (CONT.)

OYA,H. + MORIOKA,A. + KONDO,T. (GEOPHYSICAL INST., TOHOKU UNIV. SENDAI 980, JAPAN): LOCATIONS OF JOVIAN DECAMETRIC RADIATION SOURCES
PLANETARY SPACE SCIENCE VOL. 27, 963-972 (1979)

PRENTICE,J.R. + TER HAAR,D. (DEPT. OF MATHEMATICS, MONASH UNIV. CLAYTON VICTORIA 3168, AUSTRALIA): ORIGIN OF THE JOVIAN RING AND THE GALILEAN SATELLITES
NATURE VOL. 280, 300-302 (1979)

PRICE,P.B. (DEPT. OF PHYSICS SPACE SCIENCES LAB., UNIV. OF CALIFORNIA, BERKELEY, CA 94720): POSSIBLE DETECTION OF ENERGETIC JOVIAN HEAVY IONS AT SKYLAB ORBIT
GEOPHYSICAL RESEARCH LETTERS VOL. 6, 711-712 (1979)

RIIHIMAA,J.J. (AARNE KARJALAINEN OBSERVATORY, UNIV. OF OULU, OULU, FINLAND): DRIFT RATES OF JUPITER'S S-BURSTS
NATURE VOL. 279, 783-785 (1979)

SCARF,F.L. (SPACE SCIENCES DEPT., TRW DEFENSE AND SPACE SYSTEMS GROUP, REDONDO BEACH, CA 90278): POSSIBLE TRAVERSALS OF JUPITER'S DISTANT MAGNETIC TAIL BY VOYAGER AND BY SATURN
JOURNAL OF GEOPHYSICAL RESEARCH VOL. 84, 4423-4424 (1979)

SCHATTEN,K.H. (ASTRONOMY DEPT. BOSTON UNIV., BOSTON, MASS. 02215): A GREAT RED SPOT DEPENDENCE ON SOLAR ACTIVITY?
GEOPHYSICAL RESEARCH LETTERS VOL. 6, 593-596 (1979)

SATO,M. + HANSEN,J.E. (NASA GODDARD INST. FOR SPACE STUDIES, GODDARD SPACE FLIGHT CENTER, NEW YORK, NY 10025): JUPITER'S ATMOSPHERIC COMPOSITION CLOUD STRUCTURE DEDUCED FROM ABSORPTION BANDS IN REFLECTED SUNLIGHT
JOURNAL OF THE ATMOSPHERIC SCIENCES VOL. 36, 1133-1167 (1979)

SUTTON,C. IO'S VOLCANOES REVEAL INTERNAL STRUCTURE
NEW SCIENTIST VOL. 83, 657 (1979)

TOKUNAGA,A.T. + KNACKE,R.F. + RIDGWAY,S.T. + WALLACE,L. (STEWARD OBSERVATORY, UNIVERSITY OF ARIZONA): HIGH-RESOLUTION SPECTRA OF JUPITER IN THE 744-980 INVERSE CENTIMETER SPECTRAL RANGE
THE ASTROPHYSICAL JORNAL VOL. 323, 603-615 (1979)

VDOVICHENKO,V.D. (ASTROPHYSICS INST., ACADEMY OF SCIENCES OF THE KAZAKH SSR): SPECTROPHOTOMETRY OF JUPITER AT LAMBDA LAMBDA 0.6-1.1 MILLIMICRONS. BRIGHTNESS DISTRIBUTION AND OPTICAL PARAMETERS OF THE ATMOSPHERE IN THE TROPICAL AND TEMPERATE BELTS OF JUPITER
SOVIET ASTRONOMY VOL. 22, 67-71 (1979)

VDOVICHENKO,V.D. (ASTROPHYSICS INST., ACADEMY OF SCIENCES OF THE KAZAKH SSR): SPECTROPHOTOMETRY OF JUPITER AT LAMBDA LAMBDA 0.6-1.1 MICRONS. BRIGHTNESS DISTRIBUTION AND OPTICAL PARAMETERS OF THE ATMOSPHERE IN THE EQUATORIAL BELT OF JUPITER
SOVIET ASTRONOMY VOL. 22, 727-732 (1979)

YODER,C.F. (JET PROPULSION LAB., CALIFORNIA INST. OF TECHNOLOGY, PASADENA, CA 91103): HOW TIDAL HEATING IN IO DRIVES THE GALILEAN ORBITAL RESONANCE LOCKS
NATURE VOL. 279, 767-770 (1979)

MARS

AKSIONOV,S.I. (BIOLOGY DEPT., M. V. LOMONOSOV STATE UNIV., MOSCOW 117234, U.S.S.R.): SOME COMMENTS ON INTERPRETATIONS OF VIKING BIOLOGICAL EXPERIMENTS
ORIGINS OF LIFE VOL. 9, 251-256 (1979)

DEBARBAT,S. + LAM,S.K. + TEXIER,P. + TOMAS,M. + VANHOLLEBEKE,J. (OBSERVATOIRE DE PARIS, FRANCE): (FR) OBSERVATIONS OF MARS WITH THE ASTROLABE AT PARIS OBSERVATORY DURING THE WINTER 1977-1978
ASTRONOMY ASTROPHYSICS. SUPPLEMENT SERIES VOL. 36, 399-400 (1979)

EBERHART,J. MARS: THE NEW LOOK
SCIENCE NEWS VOL. 116, 108-110 (1979)

HOLZER,G. + ORO,J. (DEPT. OF BIOPHYSICAL SCIENCES CHEMISTRY, UNIV. OF HOUSTON, HOUSTON, TX 77004, U.S.A.): PYROLYSIS OF ORGANIC COMPOUNDS IN THE PRESENCE OF AMMONIA. THE VIKING MARS LANDER SIM. ALTERATION EXPERIMENT
ORGANIC GEOCHEMISTRY VOL. 1, 37-52 (1979)

MICHAEL,W.H.JR. (NASA LANGLEY RESEARCH CENTER, HAMPTON, VA., U.S.A.): VIKING LANDER TRACKING CONTRIBUTIONS TO MARS MAPPING
THE MOON AND THE PLANETS VOL. 20, 149-152 (1979)

NAKAMURA,Y. + ANDERSON,D.L. (GEOPHYSICS LAB., MARINE SCIENCE INST., UNIV. OF TEXAS, GALVESTON, TEXAS 77550): MARTIAN WIND ACTIVITY DETECTED BY A SEISMOMETER AT VIKING LANDER 2 SITE
GEOPHYSICAL RESEARCH LETTERS VOL. 6, 499-502 (1979)

PHILIP,J.R. (CSIRO DIVISION OF ENVIRONMENTAL MECHANICS, P.O. BOX 821, CANBERRA CITY, A.C.T. 2601, AUSTRALIA): ANGULAR MOMENTUM OF SEASONALLY CONDENSING ATMOSPHERES, WITH SPECIAL REFERENCE TO MARS
GEOPHYSICAL RESEARCH LETTERS VOL. 6, 727-730 (1979)

PILLINGER,C.T. (UNIV. OF CAMBRIDGE, DEPT. OF MINERALOGY AND PETROLOGY, U.K.): MARS VOLATILES
NATURE VOL. 280, 636-637 (1979)

ROHRBAUGH,R.P. + NISBET,J.S. + BLEULER,E. + HERMAN,J.R. (IONOSPHERE RESEARCH LAB., PENNSYLVANIA STATE UNIV., UNIVERSITY PARK, PA 16802): THE EFFECT OF ENERGETICALLY PRODUCED O2 PLUS ON THE ION TEMPERATURES OF THE MARTIAN THERMOSPHERE
JOURNAL OF GEOPHYSICAL RESEARCH VOL. 84, 3327-3338 (1979)

THOMPSON,D.E. (JET PROPULSION LAB., CALIFORNIA INST. OF TECH., PASADENA, CA 91103): ORIGIN OF LONGITUDINAL GROOVING IN TIU VALLIS, MARS: ISOLATION OF RESPONSIBLE FLUID TYPES
GEOPHYSICAL RESEARCH LETTERS VOL. 6, 735-738 (1979)

MERCURY

CHRISTON,S.P. + DALY,S.F. + KRAKER,J.H. + PERKINS,W.A. + SIMPSON,J.A. + TUZZOLINO,A.J. (ENRICO FERMI INST., UNIV. OF CHICAGO, CHICAGO, IL 60637): ELECTRON CALIBRATION OF INSTRUMENTATION FOR LOW ENERGY, HIGH INTENSITY PARTICLE MEASUREMENTS AT MERCURY
JOURNAL OF GEOPHYSICAL RESEARCH VOL. 84, 4277-4288 (1979)

STROM,R.G. (DEPT. OF PLANETARY SCIENCES, LUNAR PLANETARY LAB., UNIV. OF ARIZONA, TUCSON, AZ 85721 U.S.A.): MERCURY: A POST-MARINER 10 ASSESSMENT
SPACE SCIENCE REVIEWS VOL. 24, 3-70 (1979)

SUESS,S.T. + GOLDSTEIN,B.E. (SPACE ENVIRONMENT LAB., NOAA/ERL, BOULDER, CO 80303): COMPRESSION OF THE HERMAEAN MAGNETOSPHERE BY THE SOLAR WIND
JOURNAL OF GEOPHYSICAL RESEARCH VOL. 84, 3306-3312 (1979)

PLUTO

FARINELLA,P. + MILANI,A. + NOBILI,A.M. + VALSECCHI,G.B. (OSSERVATORIO ASTRONOMICO DI BRERA, MERATE, ITALY): TIDAL EVOLUTION THE PLUTO-CHARON SYSTEM
THE MOON AND THE PLANETS VOL. 20, 415-421 (1979)

JENSEN,K.S. (COPENHAGEN UNIV. OBSERVATORY, DENMARK): ACCURATE ASTRONOMIC POSITIONS OF PLUTO, 1975-1978
ASTRONOMY ASTROPHYSICS. SUPPLEMENT SERIES VOL. 36, 395-398 (1979)

SATURN

CUZZI,J.N. + BURNS,J.A. + DURISEN,R.H. + HAMILL,P.M. (AMES RESEARCH CENTER, NASA, MOFFETT FIELD, CA 94035): THE VERTICAL STRUCTURE AND THICKNESS OF SATURN'S RINGS
NATURE VOL. 281, 202-204 (1979)

EBERHART,J. SIX PLUS YEARS TO SATURN
SCIENCE NEWS VOL. 116, 120-121 (1979)

ELSON,B.M. PIONEER'S BRUSH WITH DISASTER DETAILED
AVIATION WEEK SPACE TECHNOLOGY VOL. 111(12) 20-21 (1979)

ELSON,B.M. PIONEER RETURNS EXTENSIVE SATURN DATA
AVIATION WEEK SPACE TECHNOLOGY VOL. 111(11) 22-24 (1979)

JAFFE,W. + CALDWELL,J. + OWEN,T. (NATIONAL RADIO ASTRONOMY OBSERVATORY, CHARLOTTESVILLE, VA): THE BRIGHTNESS TEMPERATURE OF TITAN AT SIX CENTIMETERS FROM THE VERY LARGE ARRAY
THE ASTROPHYSICAL JOURNAL VOL. 232, L75-L76 (1979)

NO AUTHOR CITED PIONEER 11'S NEW SATURN
SCIENCE NEWS VOL. 116, 180-181 (1979)

NO AUTHOR CITED ( ) SATURN'S MAGNETIC FIELD SMALLER THAN JUPITER'S
AVIATION WEEK AND SPACE TECHNOLOGY VOL. 111(15) 61 (1979)

SATURN (CONT.)

NO AUTHOR CITED PIONEER ELEVEN'S SATURN
SCIENCE NEWS VOL. 116, 163-165 (1979)

ROSE,L.E. (ROUTE 2, BOX 33, SMITH, NEVADA 89430): MOTION OF PHOEBE (SATURN IX) 1904-1969 A DETERMINATION OF SATURN'S MASS
THE ASTRONOMICAL JOURNAL VOL. 84, 1067-1071 (1979)

WAITE,J.H.JR. + ATREYA,S.K. + NAGY,A.F. (SPACE PHYSICS RESEARCH LAB., DEPT. OF ATMOSPHERIC OCEANIC SCIENCE, UNIV. OF MICHIGAN, ANN ARBOR, MI 48109): THE IONOSPHERE OF SATURN: PREDICTIONS FOR PIONEER 11
GEOPHYSICAL RESEARCH LETTERS VOL. 6, 723-726 (1979)

URANUS

DERMOTT,S.F. + GOLD,T. + SINCLAIR,A.T. (CENTER FOR RADIOPHYSICS SPACE RESEARCH, SPACE SCIENCES BUILDING, CORNELL UNIV., ITHACA, NEW YORK 14853): THE RINGS OF URANUS: NATURE AND ORIGIN
THE ASTRONOMICAL JOURNAL VOL. 84, 1225-1234 (1979)

VENUS

BEATTY,J.K. PIONEERS' VENUS: MORE THAN FIRE AND BRIMSTONE
SKY TELESCOPE VOL. 58, 13-15,27 (1979)

CIMINO,J.B. + ELACHI,C. (JET PROPULSION LAB., CALIFORNIA INST. OF TECH., PASADENA 91103): PRECIPITATION ON VENUS: PROPERTIES POSSIBILITIES OF DETECTION
JOURNAL OF THE ATMOSPHERIC SCIENCES VOL. 36, 1168-1177 (1979)

CONWAY,R.R. + MCCOY,R.P. + BARTH,C.A. + LANE,A.L. (DEPT. OF ASTRO-GEOPHYSICS LAB. FOR ATMOSPHERIC SPACE PHYSICS, UNIV. OF COLORADO, BOULDER, CO 80309): IUE DETECTION OF SULFUR DIOXIDE IN THE ATMOSPHERE OF VENUS
GEOPHYSICAL RESEARCH LETTERS VOL. 6, 629-631 (1979)

ELSON,L.S. (JET PROPULSION LAB., CALIFORNIA INST. OF TECH., PASADENA, CA 91103): PRELIMINARY RESULTS FROM THE PIONEER VENUS ORBITER INFRARED RADIOMETER: TEMPERATURE AND DYNAMICS IN THE UPPER ATMOSPHERE
GEOPHYSICAL RESEARCH LETTERS VOL. 6, 720-722 (1979)

EROSHENKO,E.G. UNIPOLAR INDUCTION EFFECTS IN THE MAGNETIC TAIL OF VENUS
COSMIC RESEARCH VOL. 17, 77-87 (1979)

ESPOSITO,L.W. + WINICK,J.R. + STEWART,A.I. (LAB. FOR ATMOSPHERIC SPACE PHYSICS, UNIV. OF COLORADO, BOULDER, CO 80309): SULFUR DIOXIDE IN THE VENUS ATMOSPHERE: DISTRIBUTION IMPLICATIONS
GEOPHYSICAL RESEARCH LETTERS VOL. 6, 601-604 (1979)

FLORENSKII,K.P. + VOLKOV,V.P. + NIKOLAYEVA,O.V. (VERNADSKII INST. OF GEOCHEMISTRY AND ANALYTICAL CHEMISTRY, ACAD. SCIENCES OF THE USSR, MOSCOW): GEOCHEMISTRY OF THE DIURNAL VARIATIONS IN CLOUD COVER ON VENUS
GEOCHEMISTRY INTERNATIONAL VOL. 1 (2) 1-4 (1979)

VENUS (CONT.)

JOHNSON,F.S. + HANSON,W.B. (UNIV. OF TEXAS AT DALLAS, RICHARDSON, TEXAS 75080): A NEW CONCEPT FOR THE DAYTIME MAGNETOSPHERE OF VENUS
GEOPHYSICAL RESEARCH LETTERS VOL. 6, 581-584 (1979)

KERZHANOVICH,V.V. + KUZLOV,F.I. + SELIVANOV,A.S. + TUFLIN,YU.S. + KHIZHNICHENKO,V.I. STRUCTURE OF VENUSIAN CLOUD LAYER ACCORDING TO VENERA 9 TELEVISED PICTURES
COSMIC RESEARCH VOL. 17, 57-66 (1979)

KOTEL'NIKOV,V.A. + ALEKSANDROV,YU.N. + GOLOVKOV,V.K. + DUBROVIN,V.M. + ZAITSEV,A.L. + KAEVITSER,V.I. + KRYMOV,A.A. + NAUMKIN,YU.K. + PETROV,G.M. + RZHIGA,O.N. + KHASYANOV,A.F. + SHAKHOVSKOI,A.M. (INST. OF RADIO ENGINEERING AND ELECTRONICS, ACAD. OF SCIENCES, USSR): RESULTS OF ASTRONOMETRIC RADAR MEASUREMENTS OF VENUS IN 1977
SOVIET ASTRONOMY VOL. 23, 227-231 (1979)

KRASNOPOLSKY,V.A. + KRYSKO,A.A. (SPACE RESEARCH INST., ACADEMY OF SCIENCES, U.S.S.R., PROFSOJUSNAJA 88, 117810, MOSCOW, U.S.S.R.): VENERA 9, 10: IS THERE A DUST RING AROUND VENUS?
PLANETARY SPACE SCIENCE VOL. 27, 951-957 (1979)

MAKOV,M.YA. (INST. OF APPLIED MATH., ACAD. SCIENCES USSR): STUDIES OF THE VENUSIAN ATMOSPHERE
SOLAR SYSTEM RESEARCH VOL. 13, 1-17 (1979)

MCGILL,G.E. (DEPT. OF GEOLOGY GEOGRAPHY, UNIV. OF MASSACHUSETTS, AMHERST, MA 01003): VENUS TECTONICS: ANOTHER EARTH OR ANOTHER MARS?
GEOPHYSICAL RESEARCH LETTERS VOL. 6, 739-741 (1979)

SHIMIZU,M. (INST. OF SPACE AERONAUTICAL SCIENCE, UNIV. OF TOKYO, KOMABA, MEGURO-KU, TOKYO, JAPAN): IMPLICATIONS OF 36A EXCESS ON VENUS
THE MOON AND THE PLANETS VOL. 20, 317-319 (1979)

USINOV,E.A. + ZHEGULEV,V.S. + ZASOVA,L.V. + MOROZ,V.I. MODEL OF SPECTRAL AND ALTITUDE DISTRIBUTION OF FLUXES OF SCATTERED SOLAR RADIATION IN THE ATMOSPHERE OF VENUS
COSMIC RESEARCH VOL. 17, 67-76 (1979)

WATSON,A.J. + DONAHUE,T.M. + STEDMAN,D.H. + KNOLLENBERG,R.G. + HAGENT,B. + BLAMONT,J. (DEPT. OF ATMOSPHERIC OCEANIC SCIENCE, UNIV. OF MICHIGAN, ANN ARBOR, MI 48109): OXIDES OF NITROGEN AND THE CLOUDS OF VENUS
GEOPHYSICAL RESEARCH LETTERS VOL. 6, 743-746 (1979)

WEERTMAN,J. (DEPT. OF MATERIALS SCIENCE ENGINEERING, DEPT. OF GEOLOGICAL SCIENCES, MATERIALS RESEARCH CENTER, NORTHWESTERN UNIV., EVANSTON, IL 60201 (U.S.A.)): HEIGHT OF MOUNTAINS ON VENUS AND THE CREEP PROPERTIES OF ROCK
PHYSICS OF THE EARTH AND PLANETARY INTERIORS VOL. 19, 197-207 (1979)

ASTEROIDS

DVORAK,R. + EDELMAN,C. (INSTITUT FUR ASTRONOMIE, UNIVERSITAT GRAZ, UNIVERSITATSPLATZ 5, A-8010 GRAZ, AUSTRIA): (FR) A STATISTICAL METHOD FOR THE DETERMINATION OF ORBITS OF ASTEROIDS AND SATELLITES
ASTRONOMY AND ASTROPHYSICS VOL. 77, 320-326 (1979)

GEHRELS,T. + TEDESCO,E.F. (LUNAR AND PLANETARY LAB., UNIV. OF ARIZONA, TUCSON, AZ 85721): MINOR PLANETS RELATED OBJECTS. XXVIII. ASTEROID MAGNITUDES PHASE RELATIONS
THE ASTRONOMICAL JOURNAL VOL. 84, 1079-1087 (1979)

DEBEHOGNE,H. + MACHADO,L.E.S. + CALDEIRA,J.F.C. + VIEIRA,G.G. + NETTO,E.R. (OBSERVATOIRE ROYAL DE BELGIQUE., BRUXELLES): MINOR PLANETS' POSITIONS OBTAINED IN SEPTEMBER 1977 WITH THE 25 CM (F=1.70 M) ASTROGRAPHIC CAMERA OF THE OBSERVATORIO NACIONAL DO BRASIL
ASTRONOMY ASTROPHYSICS. SUPPLEMENT SERIES VOL. 36, 407-409 (1979)

MAYO,A.P. (NASA, LANGLEY RESEARCH CENTER, HAMPTON, VA 23665, U.S.A.): ANALYTICAL METHOD FOR THE EFFECTS OF THE ASTEROID BELT ON PLANETARY ORBITS
CELESTIAL MECHANICS VOL. 19, 317-333 (1979)

SCHMADEL,L.D. + SCHUBART,J. + SCHUSTER,H.E. + WEST,R.M. (ASTRONOMISCHES RECHEN-INSTITUT, MONCHHOFSTR. 12-14, D-6900 HEIDELBERG 1, FEDERAL REPUBLIC OF GERMANY): A SURVEY FOR HIGH-INCLINATION MINOR PLANETS
ASTRONOMY ASTROPHYSICS VOL. 76, 130-131 (1979)

VRCELJ,Z. (DEPT. OF PHYSICS ASTRONOMY, UNIV. OF PITTSBURGH, PITTSBURGH, PA 15260): AN INVARIANT RELATION IN THE ELLIPTIC RESTRICTED PROBLEM OF THREE BODIES. III. ASTEROIDS
THE ASTRONOMICAL JOURNAL VOL. 84, 1072-1078 (1979)

COMETS

CHAUBEY,U.S. (UTTAR PRADESH STATE OBSERVATORY, NAINI TAL, INDIA): EMISSIONS FROM THE HEAD OF COMET BRADFIELD (1978C)
ASTROPHYSICS AND SPACE SCIENCE VOL. 64, 53-56 (1979)

DAVIS,J. THE SUN-GRAZERS
ASTRONOMY VOL. 7(8) 18-23 (1979)

HUGHES,D.W. (DEPARTMENT OF PHYSICS, UNIV. OF SHEFFIELD): CHANGING COMETARY ORBITS
NATURE VOL. 280, 274-275 (1979)

KRAMER,E.N. + MUSIL,V.I. + SHESTAKA,I.S. (ASTRONOMICAL OBSERVATORY, ODESSA STATE UNIV., ODESSA): A CERTAIN DINAMIC CHARACTERISTIC OF COMETARY ORBITS
SOLAR SYSTEM RESEARCH VOL. 13, 33-39 (1979)

KUMAR,S. + HOLBERG,J. + BROADFOOT,A.L. + BELTON,M.J.S. (JET PROPULSION LAB., 4800 OAK GROVE, PASADENA, CA 91103): THE LYMAN-ALPHA OBSERVATIONS OF COMET KOHOUTEK FROM MARINER 10
THE ASTROPHYSICAL JOURNAL VOL. 232, 616-623 (1979)

METEORITES

ADIB,D. + LIOU,J.G. (DEPT. OF GEOLOGY, STANFORD UNIV. STANFORD, CA 94305): THE NARAGH METEORITE: A NEW OLIVINE-BRONZITE CHONDRITE FALL
METEORITICS VOL. 14, 257-272 (1979)

BART,G. + LIPSCHUTZ,M.E. (DEPT. OF CHEMISTRY, PURDUE UNIV., W. LAFAYETTE, IN 47907, U.S.A.): ON VOLATILE ELEMENT TRENDS IN GAS-RICH METEORITES
GEOCHIMICA ET COSMOCHIMICA ACTA VOL. 43, 1499-1504 (1979)

BRECHER,A. + FUHRMAN,M. (DEPT. OF EARTH PLANETARY SCIENCES, MASSACHUSETTS INST. OF TECH., CAMBRIDGE, MA U.S.A.): THE MAGNETIC EFFECTS OF BRECCIATION AND SHOCK IN METEORITES: II. THE URELITES AND EVIDENCE FOR STRONG NEBULAR MAGNETIC FIELDS
THE MOON AND THE PLANETS VOL. 20, 251-263 (1979)

BRECHER,A. + FUHRMAN,M. + STEIN,J. (DEPT. OF EARTH PLANETARY SCIENCES, MASSACHUSETTS INST. OF TECH., CAMBRIDGE MA U.S.A.): THE MAGNETIC EFFECTS OF BRECCIATION AND SHOCK IN METEORITES: III. THE ACHONDRITES
THE MOON AND THE PLANETS VOL. 20, 265-279 (1979)

CRONIN,J.R. + PIZZARELLO,S. + MOORE,C.B. (DEPT. OF CHEMISTRY CENTER FOR METEORITE STUDIES, ARIZONA STATE UNIV., TEMPE, AZ 85281): AMINO ACIDS IN AN ANTARCTIC CARBONACEOUS CHONDRITE
SCIENCE VOL. 206, 335-337 (1979)

DODD,R.T. + JAROSEWICH,E. (DEPT. OF EARTH SPACE SCIENCES, STATE UNIV. OF NEW YORK AT STONY BROOK, NY 11794 U.S.A.): INCIPIENT MELTING IN AND SHOCK CLASSIFICATION OF L-GROUP CHONDRITES
EARTH PLANETARY SCIENCE LETTERS VOL. 44, 335-340 (1979)

FUDALI,R.F. + FORD,R.J. (DEPT. OF MINERAL SCIENCES, SMITHSONIAN INST., WASHINGTON, DC 20560): DARWIN GLASS AND DARWIN CRATER: A PROGRESS REPORT
METEORITICS VOL. 14, 283-296 (1979)

GROSSMAN,J.N. + KRACHER,A. + WASSON,J.T. (INST. OF GEOPHYSICS PLANETARY PHYSICS, UNIV. OF CALIFORNIA, LOS ANGELES, CA 90024): VOLATILES IN CHAINPUR CHONDRULES
GEOPHYSICAL RESEARCH LETTERS VOL. 6, 597-600 (1979)

HUNT,E.H. + MULLER,P. (LAB. FOR PLANETARY ATMOSPHERES, DEPT. OF PHYSICS ASTRONOMY, UNIV. COLLEGE LONDON, GOWER ST., LONDON WC1E6BT, U.K.): COMMENTS ON LIGHT DARK SPOTS IN THE EQUATORIAL REGIONS OF JUPITER
PLANETARY SPACE SCIENCE VOL. 27, 1127-1129 (1979)

HUTCHISON,R. + BEVAN,A.W.R. + AGRELL,S.O. + ASHWORTH,J.R. (DEPT. OF MINERALOGY, BRITISH MUSEUM (NATURAL HISTORY), LONDON SW7, UK): ACCRETION TEMPERATURE OF THE TIESCHITZ, H3, CHONDRITIC METEORITE
NATURE VOL. 280, 116-119 (1979)

KRINOV,E.L. (COMMITTEE ON METEORITES, ACAD. SCIENCES USSR): REGMAGLYPTIC RELIEF OF METEORITES
SOLAR SYSTEM RESEARCH VOL. 13, 45-49 (1979)

MACKINNON,I.D.R. + BUSECK,P.R. (DEPT. OF CHEMISTRY GEOLOGY, ARIZONA STATE UNIV., TEMPE, AZ 85281): NEW PHYLLOSILICATE TYPES IN A CARBONACEOUS CHONDRITE MATRIX
NATURE VOL. 280, 219-220 (1979)

MASON,B. DATA OF GEOCHEMISTRY. SIXTH ED. CHAPTER B. COSMOCHEMISTRY. PART 1. METEORITES.
U.S. GEOLOGICAL SURVEY. PROFESSIONAL PAPER 440-B-1. PP. 132. (1979)

MCSWEEN,H.Y.JR. (DEPT. OF GEOLOGICAL SCIENCES, UNIV. OF TENNESSEE, KNOXVILLE, TN 37916): ARE CARBONACEOUS CHONDRITES PRIMITIVE OR PROCESSED? A REVIEW
REVIEWS OF GEOPHYSICS AND SPACE PHYSICS VOL. 17, 1059-1078 (1979)

MELCHER,C.L. (MCDONNELL CENTER FOR THE SPACE SCIENCES, WASHINGTON UNIV., ST. LOUIS, MO 63130): KIRIN METEORITE: TEMPERATURE GRADIENT PRODUCED DURING ATMOSPHERIC PASSAGE
METEORITICS VOL. 14, 309-316 (1979)

NOZETTE,S. (LUNAR PLANETARY LAB. DEPT. OF GEOSCIENCES, UNIV. OF ARIZONA, TUCSON, AZ 85721): COLLESCIPOLI: AN UNUSUAL FUSION CRUST GLASS
METEORITICS VOL. 14, 273-281 (1979)

OLSEN,E. (FIELD MUSEUM OF NATURAL HISTORY, CHICAGO, IL 60605): A NEW MEASURE OF THE NICKEL CONTENT OF METEORITIC COPPER
METEORITICS VOL. 14, 307 (1979)

PECK,E. THE FATE OF A KANSAS METEORITE CRATER
SKY TELESCOPE VOL. 58, 126-128 (1979)

PUTNIS,A. + PRICE,G.D. (MINERAL SCIENCES GROUP, DEPT. OF MINERALOGY PETROLOGY, DOWNING PLACE, CAMBRIDGE, UK): HIGH-PRESSURE (MG,FE)2SIO4 PHASES IN THE TENHAM CHONDRITIC METEORITE
NATURE VOL. 280, 217-218 (1979)

REEDY,R.C. + HERZOG,G.F. + JESSBERGER,E.K. (LOS ALAMOS SCIENTIFIC LAB., LOS ALAMOS, NM 87545): THE REACTION MG(N,ALPHA)NE AT 14.1 AND 14.7 MEV: CROSS SECTIONS AND IMPLICATIONS FOR METEORITES
EARTH AND PLANETARY SCIENCE LETTERS VOL. 44, 341-348 (1979)

SALIMOV,O.N. + KONSTANTINOV,I.E. + MIKHEENKO,S.G. (MOSCOW ENGINEERING PHYSICS INST.): THERMAL FRACTURE OF METEORS
SOLAR SYSTEM RESEARCH VOL. 13, 40-44 (1979)

SCOTT,E.R.D. + CLARKE,R.S.JR. (DEPT. OF TERRESTRIAL MAGNETISM, CARNEGIE INST. OF WASHINGTON, 5241 BROAD BRANCH ROAD, N.W., WASHINGTON, DC 20015): IDENTIFICATION OF CLEAR TAENITE IN METEORITES AS ORDERED FENI
NATURE VOL.281, 360-362 (1979)

SEARS,D. + MCKEEVER,S. (UNIVERSITY OF BIRMINGHAM, U.K.): ROCKS THAT GLOW IN THE DARK
NEW SCIENTIST VOL. 83, 112-114 (1979)

SEARS,D.W. (DEPT. OF METALLURGY, UNIV. OF MANCHESTER, MANCHESTER M139PL, U.K.): THE COMPOSITION OF IRON METEORITES: A STUDY BY FACTOR ANALYSIS
METEORITICS VOL. 14, 297-306 (1979)

BIBLIOGRAPHY CONCLUDED ON PAGE 12

TABLE OF CONTENTS

The Eleventh L&PSC	Page 1
In Memory - Thomas R. McGetchin	Page 3
NASA Space Science Budget Plan	Page 4
New Director for the LPI	Page 5
DDC Changes Its Name	Page 5
Fall Conference Wrap-Up	Page 6
United Nations Reviews Lunar Treaty	Page 7
Bibliographic Search Service	Page 7
International Comet Mission - AO	Page 8
NASA Planetary Geology Intern Program	Page 9
New Publications	Page 10
Calendar	Page 13
Lunar and Planetary Bibliography	Page 15

Universities Space Research Association
LUNAR AND PLANETARY INSTITUTE
3303 NASA Road One
Houston, TX 77058

HOUSTON TEXAS

Nonprofit Org.
U.S. POSTAGE
PAID
Permit No. 662

ADDRESS CORRECTION REQUESTED

LUNAR AND PLANETARY INFORMATION BULLETIN