Atmosphere and Climate of Its Evolution on Mars: Symposium Meca
ATMOSPHERE
AND
CLIMATE
OF ITS
EVOLUTION

MARS:
ON
SYMPOSIUM
MECA

National Air and Space Museum
Smithsonian Institution
Lunar and Planetary Institute
Washington, D.C.

July 17-19, 1986
Information Desk

Instructions concerning papers submitted to ICARS are available at the Desk. Please contact the ICARS organizers for more information.

Symposium Publication

The reception and movie:
7:15 p.m. All Symposium participants and their guests are invited to attend the reception. The movie "Looking at Earth" will be shown at 6:00 p.m. at the National Air and Space Museum.

Reception

The number for messages is 202-357-1424. Messages received during the technical sessions will be posted near the Registration/Information Desk. The registration/Information Desk in the Hyatt Regency Hotel will be staffed from 8:00 a.m. to 5:00 p.m. on Monday through Friday. Saturday hours will be 8:00 a.m. to 1:00 p.m.

Registration/Information Desk

GENERAL INFORMATION
The Program Committee

Committee Members:

Stephen Saunders, Jet Propulsion Laboratory
Robert Pepin, University of Minnesota
Tobias Owen, State University of New York, Stony Brook
Conway Leovy, University of Washington
Robert Haberle, NASA Ames Research Center
Fraser Fanale, University of Hawaii
Stephen Clifford, Lunar and Planetary Institute
Michael Car, NASA Ames Research Center
Victor Baker, University of Arizona

Co-Conveners:

Ted Maxwell, National Air and Space Museum
Ronald Creedy, Arizona State University
The Martian Dust Cycle: A Proposed Model (by Title Only)

B. Dust and Dynamics

Coffee Break

10:25 a.m.

Influence of Polar-Mantle Albedo on Past and Current Martian Climate

Kieffer, H.*

Page, D. A.*

Annual Differences in the Regressions of the Polar Caps of Mars

Ish cedar K.*

Eubank T.*

The Direction of Water Transport on Mars: A Possible Pumping Mechanism

James R. B.*

Varnes, V.*

Optical Thickness of the Olympus Cloud

A. Water and CO2

Conway, L. E.

Chairman: Robert Habib

SESSION I - SEASONAL CYCLES

8:45 a.m.

Committee Opening Remarks: Ronald Green, Chairman, M.E.A. Steering

Museum

8:30 a.m.: Welcome - Walter J. Boyne, Director of National Air & Space

Registration

7:30 a.m.

Thursday, July 17, 1986
COFFEE BREAK

2:50 p.m.

Vertical O$_3$ Distribution as a Diagnostic for Eddy Diffusion Profile

Tylor A. L.

Hunt Q. M.

Mars Global Atmospheric Oscillations Transients and Dust Storm Relations

* Tilman J. E.

Seasonal Wind Variations in the Martian Subpolar Atmosphere

Murphy J. L.

Leovy C. L.

A Martian Polar Warming

Hollingsworth J. L.

Numerical Simulations of Dust Transport into Northern High Latitudes During

Baines J. R.

Dust and Dynamics - Continued

1:30 p.m.

LUNCH BREAK

11:40 a.m.

International Variability of Global Dust Storms on Mars

Habeb M. S.
IMAX MOVIE: "On the Wing"
7:15 p.m.

RECEPTION at National Air & Space Museum
6:30 p.m.

ADJOURN
5:05 p.m.

Mars: A Water-Rich Planet
Carol M. H.

Comets, Volcanism, the Salty Rich Regolith and Cycling of Volatiles on Mars
Clark B. C.

Release of Magmatic Water on Mars: Estimated Timing and Volumes
Creely R.

Water on Mars
Wanke H.

Dredus C.

Could Ig cry Impacts Recognize Venus with Earth and Mars
Owen T.

(by Title Only)

Implications of Isotopic Signatures of Noble Gases for the Origin and Evolution of Terrestrial Atmospheres
Rao A. S.

Pepin R. O.

Robert Pepin

Chairman: Tobias Owen

OUTGASSING HISTORY
SESSION II - VOLATILE SOURCES, INVENTORIES &
Mars Law Albedo Regions: Possible Map of Near-Surface H2O

Hughenin R. L.
* Foragoon Materials
Thermal Properties of Channels in the Aeolis Quadrangle: Topographic Traps
Zimbetham R.
*

Possible Evidence for Permafrost
Possible Existing Mars Surface Materials at High Latitudes
Happy D. A.
* Kiefer H. L.

Phototechnical Weathering and Contemporary Volatile Loss on Mars
Hughenin R. L.
*

Chemical Frost Weathering of Olivine: Experimental Study and Implications
Harms S. L. Hughenin R. L.
10:10 Coffee Break

Mars Climate:
Is Regolith Absorption the Explanation for the Transition from Early to Present
Fanale F. P. Postawoko S. Zenit A. P. Salattiel J.
R.

Absorption on the Martian Regolith: Specific Surface Area and Missing Co2
Fanale F. P. Postawoko S. E.
Zenit A. P.

B. Regolith, Surface Properties, Weathering
Crasnion

Mars Regolith Versus SNC Meteorites: Evidence for Abundant Crustal
Warren P. H.

on Early Mars

Protrihion of Carbon Dioxide Between the Atmosphere and Lithosphere
Pollack J. B. Kasheg J. Richardson S.
R.

Climatic Effects of Enhanced CO2 Levels in Mars Early Atmosphere
Kasheg J. E.

A. Atmosphere
Fraser Fanale

Chaimmen: Victor Baker

Session III: Surface Processes and Climate History

8:30 a.m.

Friday, July 18, 1986
5:15 p.m. Adjourner

The Paleo-Ocean of Mars
Brundage, J. E., Parker, T. J., Schneeberger, D. M., Pelling, D. C., Saunders, R. S., Forman, W. S. F., and Squyres, S. W. Water and Ice on Mars: Evidence from Valles Marineris
Luchini, B. K.

3:40 Coffee Break

Ablation of Martian Glaciers
Moore, H. J., and Davis, P. A., Evidence for Glaciation in Elysium
Anderson, D. M., Branson, C. W., and Schultz, R. H.

Rampart Craters
Reeves, Mars, R. J., and Mountains-Marsh, P. J., Ice on Liquid Water in the Martian Regolith: Morphologic Indicators from Groundwater
McLennan, M. S., and Clifford, S. M.

C. Geomorphology

2:00 p.m.

1:25 Lunch Break

The Mars Observer Spectral
ADJOURN

11:00 a.m.

Discussion MEET: MECA Follow-on Project

10:40 a.m.

Mars Observer Review

Albee A.

Seismic Exploration for Water on Mars (BY TITLE ONLY)

Page 1

Phobos and Deimos: A Base for Sampling the Martian Past

Singer S.

Mars Reconnaissance: A Review

Phillips R.

(ONLY)

Areal and Time Distributions of Volcanic Formations on Mars (BY TITLE)

Kellerfeld G. N., Vlaz V. I.

Mars Volcanism: A Review

Car M. H.

Champion: Michael Car

SESSION I - MARS: THE FUTURE

8:30 a.m.

Saturday, July 19, 1986