PRELIMINARY PROGRAM
The First International Conference on Mars Polar Science and Exploration
October 18–22, 1998

Click on a title to view the abstract for that presentation.

Sunday evening, October 18, 1998

REGISTRATION (5:00–7:30 p.m.)

KEYNOTE SESSION
7:30 p.m.

Chair: S. Clifford

Carr M.*
Water on Mars

Björnsson H.*
Glaciology of Iceland: Ice, Fire and Water, Processes, and Landforms

Monday morning, October 19, 1998

REGISTRATION and BREAKFAST (7:30–8:30 a.m.)

SUMMARY OF OUR CURRENT UNDERSTANDING OF THE MARTIAN POLAR REGIONS
8:30 a.m.

Chair: J. Rice

Clifford S.*
Welcome, Introductions, and Review of Conference Agenda

Herkenhoff K. E.*
Geology, Composition, Age, and Stratigraphy of the Polar Layered Deposits on Mars

Haberle R.*
Seasonal and Climatic Evolution

Fisher D. A.*
Past Glaciological and Hydrological Studies

BREAK (10:15–10:30 a.m.)

Malin M.*
Early MGS Results: MOC

Smith D. E.* Zuber M. T.
An Overview of Observations of Mars’ North Polar Region from the MGS Laser Altimeter

TBA*
Early MGS Results: TES

GENERAL DISCUSSION (30 minutes)

LUNCH BREAK (12:30–1:30 p.m.)

* Denotes speaker
Monday afternoon, October 19, 1998

OVERVIEW OF PLANNED INVESTIGATIONS
1:30 p.m.

Chair: J. Rice

Mc Cleese D.*
Surveyor '98 (Orbiter)


Mars Volatiles and Climate Surveyor (MVACS) Integrated Payload for the Mars Polar Lander Mission

Smrekar S. E.* Gavit S. A.
Deep Space 2: The Mars Microprobe Project and Beyond

Plaut J. J.*
The Mars Express Subsurface Sounding Radar: Water and Ice Detection in the Polar Regions

BREAK (3:30–3:45 p.m.)

MODERATED DISCUSSION ON GEOLOGY, COMPOSITION, AGE, AND STRATIGRAPHY
3:45 p.m.

Moderator: P. Thomas

Clifford S.*
Introduction to Key Issues and Needed Observations

Thomas P.*
Introductory Remarks

PANEL DISCUSSION (45 minutes)

Panelists:
Cutts J.
Herkenhoff K.
Howard A.
Rice J.
Tanaka K.

GENERAL DISCUSSION (45 minutes)

DINNER BREAK (6:00–7:00 p.m.)

Monday evening, October 19, 1998

RECEPTION AND POSTER PRESENTATIONS
7:30–9:30 p.m.

Anguita F. Babin R. Benito G. Collado A. Gomez D. Rice J. W.
Chasma Australe, Mars: Structural Framework for a Catastrophic Outflow Origin

Bass D. S. Paige D. A.
Separating the Role of Regolith Adsorption Versus Polar Cap Development and Retreat in the North Polar Region of Mars
Bills B. G.

Climate-Rotation Feedback on Mars

Boynton W. V.  Lorenz R. D.  Bailey S. H.  Williams M. S.  Hamara D. K.
The Thermal and Evolved Gas Analyzer (TEGA) on the 1998 Mars Polar Lander

Cantor B. A.  James P. B.

Development of an Audio Microphone for the Mars Surveyor 98 Lander

Doran P. T.  Fritsen C. H.
Deeply Frozen Lakes in a Terrestrial Periglacial Environment

Ford A. L. J.  Khatwa A.
Martian Glacial Lineations: Sedimentology, Remote Sensing, and Geographical Information Systems
Unravel the Past

Forget F.
Formation of the CO$_2$ Ice Seasonal Polar Caps

Foster J.  Chang A.  Hall D.  Tait A.  Klein A.
35-GHz Measurements of CO$_2$ Crystals

Garvin J. B.  Sakimoto S. E. H.  Frawley J. J.  Matias A.
Martian Polar Region Impact Craters: Geometric Properties from Mars Orbiter Laser Altimeter (MOLA) Observations

Greve R.
Dynamic/Thermodynamic Simulations of the North Polar Ice Cap of Mars

Hansen G. B.
Radiative Properties of the Seasonal CO$_2$ Polar Caps on Mars

Hansen G. B.  Kirkland L. E.  Calvin W. M.  Kieffer H. H.  Herr K. C.  Forney P. B.
Examination of the Most Diagnostic Spectral Regions from Visible Through Infrared for Polar Studies of Mars

Harri A. M.  Polkko J.  Siili T.  Crisp D.
In Situ Atmospheric Pressure Measurements in the Martian Southern Polar Region: Mars Volatiles and Climate Surveyor Meteorology Package on the Mars Polar Lander

Howard A. D.
The Role of Eolian Processes in Forming Martian Polar Topography

Kapitsa A. P.  Loukashov A. A.  Marchenko A. G.
A Comparison of the Permanent Polar Caps of Earth and Mars

Kapitsa A. P.  Loukashov A. A.  Marchenko A. G.
Origins and Morphology of Similar Landforms in Terrestrial and Martian Polar Regions

Kargel J. S.
Possible Composition of Martian Polar Caps and Controls on Ice-Cap Behavior

Kieffer H. H.  Titus T. N.  Mullins K. F.
Thermal Emission Spectrometer Observations of the South and North Polar Regions During the First Phase of Aerobraking Orbits
Lepper K.  McKeever S. W. S.  
*Luminescence Dating: A Tool for Martian Eolian Geochronology*

Markiewicz W. J.  Kossacki K. J.  Keller H. U.  
*Small-Scale Trench in the Martian Soil: Conditions for Condensation of Atmospheric Volatiles at the Mars Polar Lander Site*

Muhleman D. O.  Ivanov A. B.  
*Evolution of the Mars Northern Ice Cap and the Results from the Mars Orbiter Laser Altimeter (MOLA)*

Neumann K.  Lyons W. B.  Des Marais D. J.  
*Carbon-Isotopic Dynamics of Streams, Taylor Valley, Antarctica: Biological Effects*

Nolin A. W.  
*Mapping the Martian Polar Ice Caps: Applications of Terrestrial Optical Remote Sensing Methods*

Pankine A. A.  Ingersoll A. P.  
*Martian Dusty Atmosphere as a Lorenz System*

Pathare A. V.  Paige D. A.  
*Recent Liquid Water in the Polar Regions of Mars*

Schenk P.  Moore J.  Stoker C.  
*Topography of the South Polar Cap and Layered Deposits of Mars: Viking Stereogrammetry at Regional and Local Scales*

Schneebeli M.  Johnson J. B.  
*Measuring Snow Structure and Resistance with a High-Resolution Penetrometer*

Siili T.  
*Downslope Windstorms in the Martian Polar Regions: A Sensitivity Study*

Skidmore M. L.  Foght J. M.  Sharp M. J.  
*Microbial Experiments on Basal Ice from John Evans Glacier, Eastern Ellesmere Island, Northwest Territories, Canada*

Tanaka K. L.  Leonard G. J.  
*Martian Paleopolar Deposits: Evidence for a Stable Pole and Periods of Climate Change*

*Terrestrial Ice Sheets: Studies of Climate History, Internal Structure, Surface, and Bedrock*

Waddington E. D.  Clow G. D.  Winebrenner D. P.  
*Densification of Surface Deposits on Terrestrial and Martian Ice Sheets*

Wilson A. T.  
*Mass Balance of Martian Ice Caps: Is There Another Type of Polar Glacier?*

Wilson A. T.  
*Where Do We Look for Life in the Polar Regions of Mars?*

Wohlleben T. M. H.  
*The Initiation and Maintenance of an Ice Sheet at the Martian South Pole*

Zuber M. T.  Lim L.  Zwally H. J.  
*The Role of Viscous Deformation in the Morphology of the Martian North Polar Cap*
Tuesday morning, October 20, 1998

BREAKFAST (7:30–8:30 a.m.)

MODERATED DISCUSSION ON PAST AND PRESENT CLIMATE
8:30 a.m.

Moderator: J. Barnes

Fisher D.*
Review of Day’s Agenda

Barnes J.*
Introductory Remarks

PANEL DISCUSSION (45 minutes)

Panelists:
Bills B.
Haberle R.
James P.
Waddington E.
Zent A.

GENERAL DISCUSSION (40 minutes)

BREAK (10:15–10:30 a.m.)

MODERATED DISCUSSION ON GLACIOLOGY AND HYDROLOGY
10:30 a.m.

Moderators: S. Clifford
J. Rice

Durham W. B.*
Factors Affecting the Rheologic Properties of Martian Polar Ice

PANEL DISCUSSION (45 minutes)

Panelists:
Dahl-Jensen D.
Durham W.
Fisher D.
Kargel J.
Nye J.
Reeh N.
Thorsteinsson T.
Waddington E.

GENERAL DISCUSSION (55 minutes)

LUNCH BREAK (12:30–1:30 p.m.)
Tuesday afternoon, October 20, 1998

EXPLORATION TECHNOLOGIES AND PLATFORMS I
1:30 p.m.

Chairs: D. Fisher  
D. Crisp

Cutts J.*  
Balloons/Aerobots

Stoker C.*  
Rovers for Mars Polar Exploration

Blake E. W.*  
Geophysical Sounding

Kuivinen K.*  
Hansen L.  
Melters/Borers

AFTERNOON BREAK (3:30–6:00 p.m.)

DINNER (6:00–7:00 p.m.)

Tuesday evening, October 20, 1998

MODERATED DISCUSSION ON EXOBIOLOGY
7:30 p.m.

Moderators: D. Wynn-Williams  
K. Nealson

Nealson K.*  
Search for Martian Life

Wynn-Williams D. D.*  
Edwards H. G. M.  
Potential Earth Analogs

BREAK (8:30–8:45 p.m.)

PANEL DISCUSSION (45 minutes)

Panelists:  
Edwards H.  
Farmer J.  
Harvey R.

GENERAL DISCUSSION (30 minutes)
Wednesday morning, October 21, 1998

BREAKFAST (7:30–8:30 a.m.)

KEY QUESTIONS AND NEEDED OBSERVATIONS: CRITIQUE AND REALITY CHECK BY PANEL OF DISTINGUISHED AND OPINIONATED GREYBEARDS
8:30 a.m.

Moderators: R. Haberle
             P. Thomas

Clifford S.*
Review of Day’s Agenda

PANEL DISCUSSION (1 hour, 40 minutes)

Terrestrial Panelists:
Björnsson H.
Harrison W.
Nye J.
Thorsteinsson T
Waddington W.

Planetary Panelists:
Carr M.
Fanale F.
Kieffer H.
Ingersoll A.
Malin M.

BREAK (10:15–10:30 a.m.)

GENERAL DISCUSSION (2 hours)

LUNCH BREAK (12:30–1:30 p.m.)

Wednesday afternoon, October 21, 1998

EXPLORATION TECHNOLOGIES AND PLATFORMS II:
PANEL DISCUSSION
1:30 p.m.

Moderators: D. Fisher
            D. Crisp

PANEL DISCUSSION (1 hour)

Panelists:
Blake E.
Blankenship D.
Clow G.
Cutts J.
Grard R.
Harrison W.
Kuivinen K.
Stoker C.
Zwally J.

GENERAL DISCUSSION (1 hour)

BREAK (3:30–3:45 p.m.)
Wednesday afternoon, October 21, 1998

FUTURE EXPLORATION
3:45 p.m.

Chair: S. Clifford

McCleese D.*
Post '98 Surveyor, Micromission, and Discovery Opportunities

Paige D.*
Putting Together the Team and Hardware

TBA*
The Human Exploration of Mars

GENERAL DISCUSSION (15 minutes)

BARBECUE DINNER at the Lakeside Pavilion (6:00–9:00 p.m.)

Thursday morning, October 22, 1998

BREAKFAST (7:30–8:30 a.m.)

SUMMARY PANEL DISCUSSION: A PROPOSED ROAD MAP FOR MARS POLAR SCIENCE AND EXPLORATION
8:30 a.m.

Moderators: H. Kieffer
D. Fisher

Rice J.*
Review of Day’s Agenda

PANEL DISCUSSION (1 hour, 40 minutes)

Terrestrial Panelists:
Dahl-Jensen D.
Gotto-Azuma K.
Nye J.
Reeh N.
Thompson E.
Waddington E.
Wynn-Williams D.

Planetary Panelists:
Briggs G.
Carr M.
Cutts J.
Grard R.
McCleese D.
Nealson K.
Paige D.
Smith D.

SUMMARY GENERAL DISCUSSION (1 hour, 30 minutes)
Clifford S.*

*Announcement of Mars Polar Science and Exploration Research Group*

TBA*

*Introduction of Organizing Committee for 2nd International Conference*

CONFERENCE ADJOURNS (12:30 p.m.)

LUNCH (12:30–1:30 p.m.)

BUSES LOAD FOR AIRPORT (2:00 p.m.)