

DIVISION FOR PLANETARY SCIENCES ABSTRACT FORM

HERMES GLOBAL ORBITER: Mission to Mercury

L. Horin, R. Nelson, J. Weiss, W. Smythe, M. Evans, E. Gatz, S. Kras, A. Lane, S. Linick, R. Lopez-Cavaller, K. Marrett, W. Martin, R. Morris, A. Ocampo, G. Spradlin, B. Wallis, C. Yen (JPL/Caltech); G. Danielson (Caltech); J. Garry (GSEC); J. Guest (U. College, London); B. Hanks (U. of Pittsburgh); W. McClintock, K. Simmons (U. of Colorado, LASP); C. Russell (UCLA); M. Cruz, J. Freitas, L. Mitchell (TRW)

The planet Mercury, at the innermost limit of our Sun's planetary system, provides a technically challenging target for spacecraft exploration. Mariner 10, the only spacecraft to fly by Mercury, mapped about 40% of the planet's surface two decades ago. Over half of Mercury remains to be explored. Today, NASA is funding a study called the Hermes Global Orbiter (HGO) to place a spacecraft in polar orbit around Mercury.

The Hermes Global Orbiter is a proposed Discovery-class mission. Hermes will be launched aboard a Delta II rocket in 1999 and will be placed in an elliptical polar orbit about Mercury. The spacecraft is a TRW Eagle Class C Bus which will be modified for Mercury's environment. Remote sensing measurements of the planet's surface, atmosphere, and magnetosphere will be performed. The preliminary Hermes payload consists of an imaging system, a laser altimeter/photopolarimeter system, an ultraviolet spectrometer and a magnetometer. Key mission goals include mapping the entire surface at 1 km resolution, characterizing the surface composition, texture and topography, searching for water ice at the poles, characterizing the atmosphere, and constraining the interior structure.

The Hermes mission will address important scientific questions regarding Mercury. These problems include possible volcanic origin for smooth plains, search for iron in the crust, identification and mapping of hypothesized icy polar caps, role of impact cratering in surface evolution, distribution of atmospheric constituents and their production and loss rates, nature of magnetic and gravitational fields, and their relation to the interior.

This work was supported by the NASA Discovery Program.

Abstract Submitted for the Division for Planetary Sciences Meeting, Boulder, CO, USA

Date Submitted

Form Version 2.98

Pub. No. _____ Sess. No. _____
FOR EDITORIAL USE ONLY

ORAL PAPER

POSTER PAPER

PAPER PRESENTED BY Mark L. Horin

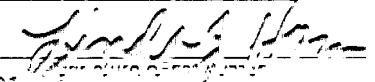
Associate / Member / Non-member

SPECIFYING INSTRUCTIONS:

Joint Registration/Delegation No. 10001

Address of Delegated Dr. Y.S. 100-501

Residence: 661-01109



Astrogeosciences Department
University of Texas at Austin
Austin, TX 78712-0299

Phone (512) 232-1647

MEMBERSHIP STATUS

Membership Status (Presenter):

DPS-AAS Member

Non-member

Student

Is your abstract newsworthy, and if so would you be willing to assist our publicity staff with additional material or interviews for reporters?

Yes

No

Maybe

DPS Category No. 2 (From list on separate page)

Abstracts must conform to the AAS style as described on the back of this form. Abstracts must be typed or glued directly onto this form. The charge for publication of this abstract in the *Bulletin of the American Astronomical Society* will be included in the registration fee for this meeting.

Deadline for receipt of abstract: July 10, 1993

SUBMIT ORIGINAL AND FIVE COPIES TO:

DPS Abstracts
Jupiter and Planetary Institute
Publications Services Department
3800 Bay Area Boulevard
Houston, TX 77058-1113

FOR EDITORIAL USE ONLY

EAMS VOL. NO. 19