UNIVERSITIES SPACE RESEARCH ASSOCIATION

LUNAR AND PLANETARY INSTITUTE
3303 NASA ROAD 1
HOUSTON, TEXAS 77058
TEL: (713) 488-5200
CABLE ADDRESS: LUNSI

2 May 1978

LPI TOPICAL CONFERENCE **FIRST ANNOUNCEMENT**

PLATEAU UPLIFT: MODE & MECHANISM

AUGUST 14-16, 1978

Dear Colleague:

One of the keys to understanding the dynamics of plate interiors is the puzzle of plateau uplifts, especially those isolated from active mountain belts. These are of particular interest because they apparently involve deeply-rooted processes and are independent of active subduction. Some of these areas are capped by young alkaline volcanics, while some are free of volcanics. Putorana in Siberia, the Adirondacks and Black Hills of North America and the Serro do Mar in Brazil are typical cases - irregular areas 100 to 200 km in diameter, 1 km above their surroundings. Volcanic-capped uplifts are common in Africa (Ahaggar, Tibesti, Jos Plateau, Nguandere and the Cameroon Zone), as are examples of volcanic-free uplifts (Fouta Djallon, Angola, Adamawa, and high Veldt). The Colorado Plateau may be similar to volcanic-capped African uplifts.

Working Group 7 of the International Committee on Geodynamics is interested in assembling knowledge on the above types of plateau areas as a means of constraining internal geodynamic processes (marginal faults and folds and their relations), including the results of petrologic studies (volcanics and xenoliths), geodetic studies, gravity studies, seismic reflection and refraction, magnetic and electromagnetic studies and heat flow, and modeling studies which attempt to explain the observations in specific regions.

To this end, a Topical Conference will be held August 14-16, 1978, in Flagstaff, Arizona. This Conference will be co-sponsored by Working Group 7 and by the Lunar and Planetary Institute, and will be hosted by the U.S. Geological Survey. A two-day field trip will tour the Lake Mead region and the southwestern edge of the Colorado Plateau prior to the meeting. Details of the field trip are enclosed.

CALL FOR ABSTRACTS: Three page extended abstracts are solicited on

the following specific topics:

- geomorphology and rates of uplift
- direct measurements of uplift (including geodynamic measurements from space)
- structural geology and tectonics of plateau uplifts
- deep crustal and upper mantle structure from geophysics
- petrological and geochemical constraints on upper mantle processes
- models for plateau uplift

Instructions and forms for preparation of abstracts are enclosed. Please complete and return the information form and the copyright release form when submitting your abstract. DEADLINE IS JUNE 30, 1978.

LOGISTICS: The Conference will be held at the U.S.G.S. facility in Flagstaff, Arizona. The locations of the conference room and of some of the nearby hotels are shown on the enclosed map of the Flagstaff area, together with the hotel rates current for April, 1978. A cocktail party is planned for Tuesday evening, August 15, at the Museum of Northern Arizona. A modest registration fee ($20 to $30) will be charged in order to provide travel support for student participants and to cover daily operating costs of the meeting. The precise amount of this fee will be announced in a later mailing.

Direct Flights in and out of Flagstaff are somewhat limited. For those who plan to fly directly to Flagstaff, Cochise Air Lines and Frontier Air Lines are the two scheduled carriers providing service. It is recommended that round-trip reservations be made early to assure having a seat. Persons planning to rent cars in Phoenix and drive to Flagstaff should also make reservations well in advance. The approximately 150 mile drive on I-17 from Phoenix to Flagstaff is quite scenic, and requires about 2½ hours driving time.

Local areas of interest include the Grand Canyon, the San Francisco Peaks, Sunset and Meteor Craters, Oak Creek Canyon and Sedona, the Lowell Observatory, the Museum of Northern Arizona, the Pioneer Museum, and various Indian ruins. Information about these attractions will be available at registration.

For further information on logistical details of the Conference, please contact Pam Jones, Lunar and Planetary Institute, 713-488-5202, ext. 50 (direct FTS, 525-3436).

Your careful attention to the enclosed information regarding field trips and abstracts, as well as the completion and return of applicable forms will greatly assist our preparation and planning for this conference. Return of the form indicating interest in the conference will assure that you remain on the mailing list to receive further information as plans develop.

Best regards,

Thomas R. McGetchin
Director
for the Organizing Committee

TRM/RBM/PPJ/pj

Enclosures

ORGANIZING COMMITTEE

K. Burke, *State University of New York, Albany*
G. Eaton, *U.S. Geological Survey, Hawaii*
E. Flinn, *NASA Headquarters, Washington, D.C.*
P. Jones, *Lunar and Planetary Institute, Houston*
I. Lucchitta, *U.S. Geological Survey, Flagstaff*
T. McGetchin, *Lunar and Planetary Institute, Houston*
R. Merrill, *Lunar and Planetary Institute, Houston*
E. Shoemaker, *California Institute of Technology, Pasadena*
L. Silver, *California Institute of Technology, Pasadena*
G. Swann, *U.S. Geological Survey, Flagstaff*
G. Thompson, *Stanford University, Stanford*
R. Young, *State University of New York, Geneseo*

LPI TOPICAL CONFERENCE ON

PLATEAU UPLIFT: MODE & MECHANISM

GEODYNAMICS FIELD TRIP: PLATEAU BOUNDARY

August 12 and 13, 1978

LEADERS: R. Young, SUNY, Geneseo
E. Shoemaker, California Institute of Technology/USGS
I. Lucchitta, USGS

A two-day field trip is planned prior to the Conference. Participants will view Tertiary structure, geomorphology, volcanics, and sequence of events from the Lake Mead area southward to the "transition zone" along the southwestern edge of the Colorado Plateau. Emphasis will be upon contrasting the nature of the pre- and post- Basin and Range events and the evidence for earlier Tertiary deformation. The significance of the newly-obtained and revised radiometric dates (early to middle Tertiary) on intrusive and extrusive rocks will also be examined.

Participants will meet Friday evening in Las Vegas. Saturday will begin with a fifty or sixty mile launch trip across Lake Mead (bathing suits recommended). Tentatively, localities to be seen and discussed include Fortification Hill, Black Mountains, Muddy Mountains, Temple Bar, Gold Butte, Iceberg Canyon (Gregs Basin Section). Having met the buses, we will proceed to a viewpoint overlooking the Plateau - Basin and Range boundary for a discussion, followed by a trip through the Hualapai Valley. The night will be spent in Kingman, Arizona.

On Sunday, we will visit sites in south-central Mojave County. We may view the boundary fault at the site of a geothermal well at the Plateau edge, and climb (moderately easy climb) to a point at which the Peach Springs Tuff crops out and from which the Basin and Range, faults, volcanics, Tertiary channels and the metaconglomerate zone along Hurricane fault are visible (site of filming for feature film "Easy Rider"). Plans call for us to continue south to the route of the new Interstate highway (under construction) to view Oligocene volcanics capping the Plateau near Aquarius and Mohon Mountains. New age data are now being gathered, and hopefully, will be ready by August. We then will proceed east to Seligman with views of Tertiary gravels and a possible stop at the Fort Rock intrusive. A two-hour drive will bring us to a late dinner in Flagstaff.

LOGISTICS: Transportation will be provided by bus and boat, as well as lodging Friday and Saturday nights, meals on Saturday and Sunday, guidebook and refreshments. No personal vehicles can be accommodated. We will not return to Las Vegas, so those who wish to arrive in personal vehicles should arrange for their collection.

FILE COPY

Temperatures could be in the 90-110°F range. Boots and hat are recommended for the climbing portions of the trip.

Space limits the number of participants to fifty. The fee will be $125 per person. To reserve a place, please send the reservation form below and a $25 deposit by June 1 to Dr. Richard Young, SUNY, Geology Department Geneseo, New York 14454. The remainder of the fee is due by July 17. Please make checks payable to Richard Young. Should the trip be oversubscribed, available space will be alloted on a first-come first-serve basis and deposits will be returned to unsuccessful applicants.

RESERVATION FORM

GEODYNAMICS FIELD TRIP: PLATEAU BOUNDARY

August 12 and 13, 1978

Enclosed is my deposit of $25 per person. Please reserve_____space(s).

NAME:_____

ADDRESS:_____

_____

_____

TELEPHONE:_____FTS:_____

I understand that the balance of the fee ($100 per person) is due by July 17, 1978. Reservations will be filled on a first-come first-serve basis from applications received with deposits by June 1, 1978.

(office use only)

Date Received:_____

Amount of Deposit Enclosed:_____