MEETING

GUEST NIGHT—JUNE 13, 1988

WILLIAM R. MUEHLBERGER—
Biographical Sketch

Dr. William R. Muehlberger holds the W. S. Farish Chair in Geology in the Department of Geological Sciences, The University of Texas at Austin, where he teaches and supervises graduate research programs in structural geology and tectonics.

He received his B.S. and M.S. degrees (1949) in Geology and his Ph.D. degree (1954) in Structural Geology from California Institute of Technology.

He is co-compiler (1966) of the *Basement Rock Map of the U.S.* and project director for *Tectonic Map of North America* (in preparation). During the NASA Apollo 16 and 17 preparations and missions (1970-73), he was Principal Investigator for the geological field investigations that led to the successful moon landing and its ensuing achievements. This work with NASA led to his being selected as co-investigator of global tectonics for Visual Observations Experiment, Skylab and Apollo-Soyuz Missions.

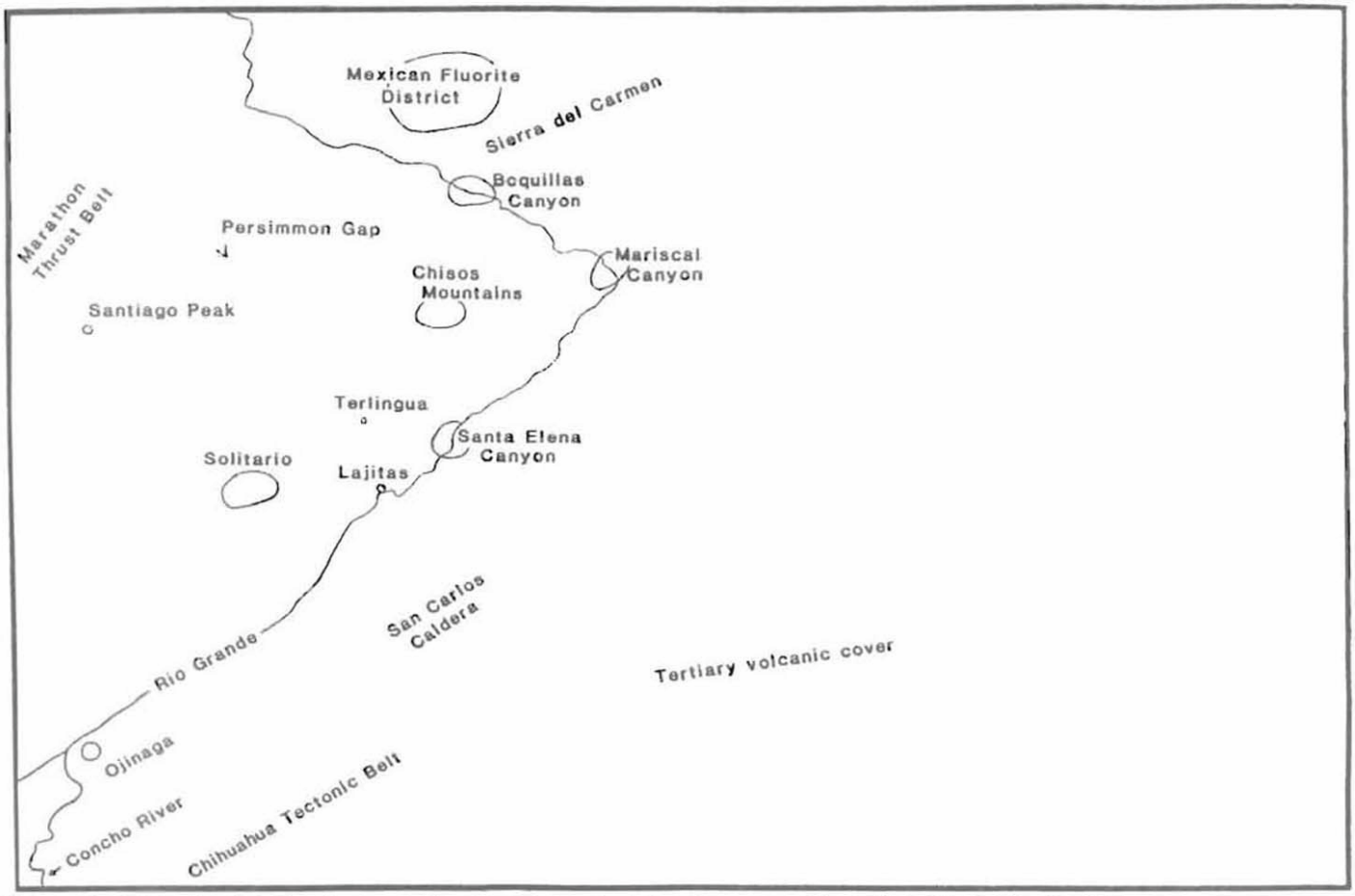
During his career he has conducted structural geological investigations across Guatemala, Honduras, Turkey, and most of the southern part of the U.S., glacial geology in New England, and supervised graduate research in Mexico, Texas, New Mexico, Colorado, Canadian Rockies, and many other interesting places in North America and around the world.

GEOLOGIC UTILITY OF SHUTTLE HANDHELD PHOTOGRAPHY

Each mission of the Space Shuttle returns more than 1,500 frames of handheld photographs of the Earth. The photographs are taken to document geologic, oceanographic, meteorologic, and environmental phenomena. Because of varying launch times and lengths of missions, these photographs can be taken over a wide range of sun angles and look directions. Further, the photos are in true color and, for selected areas, in stereosets.

Because most missions orbit between 28.5°N and S, the bulk of available photographs are of areas between these latitudes. A few missions have orbited between 57°N and S. Soon there will be polar orbital missions. Nadir photographs have a resolution of about 90 m when a 100-mm lens is used, and about 30-m resolution when a 250-mm lens is used.

(Continued on next page)



Key to hand-held shuttle photo on front cover, showing topographic and geologic features.

Hand-held shuttle photo of the Big Bend area, west Texas.
NASA photo 61A-47-011, courtesy of Bill Muehlberger.

High sun angles give the best color renditions; low sun angles produce shadow effects that emphasize structure shown in the topography. Different look directions allow the viewer to emphasize linear trends or changes in trend. These photographs are available from the same sources as other government-acquired earth-looking coverage.

These photographs can be as scientifically useful, or more so, as LANDSAT because of their similar resolution. But Shuttle photographs are in true color and can be taken in stereo sets and in specific look directions to emphasize certain features.

The talk will show selected frames from around the world that highlight the utility of these photographs for science, education, and sheer beauty.

(The above is modified from a 1986 AAPG Abstract)