

## EVENING MEETING—APRIL 3, 1978

### FLOYD F. SABINS, JR.—Biographical Sketch



Dr. Sabins is a native Houstonian who was graduated from the University of Texas at Austin and went on to receive a doctorate from Yale. Since 1975, he has worked for Chevron Oil Field Research Company at La Habra, California, where he is a Senior Research Associate. Dr. Sabins has remained active in the academic field during his time at Chevron; he has taught at California State

at Fullerton, USC, and UCLA, where he currently serves as Regents' Professor of Geology. His professional affiliations include the American Society of Photogrammetry, Geological Society of America (Fellow), the GEOSAT Committee (Chevron's representative), and the AAPG. He has been active in the AAPG Petroleum Exploration Schools since 1975. He is a Distinguished Lecturer for the AAPG in 1977-78.

### EXPLORATION APPLICATIONS OF LANDSAT IMAGERY (Abstract)

The unmanned LANDSAT program has provided high-quality multi-spectral satellite imagery of most of the land areas of the world. Oil and mineral explorationists have acquired numerous images for interpretation, typically using conventional photogeologic techniques. Regional structure, fracture patterns, lineaments, drainage, and tonal anomalies are mapped rapidly and accurately from photographic reproductions of the LANDSAT images.

In addition to photographic reproductions, digital LANDSAT images are available which may be computer processed. Computer processing can enhance images and greatly aid in geologic interpretation. Digital-image processes perform three major functions:

1. Image restoration—to correct for data errors, system noises, and geometric distortions introduced during the scanning, recording, and playback operations.
2. Image enhancement—to alter the visual impact of the image in a manner that improves the information content.
3. Information extraction—to utilize the decision-making capability of the computer to recognize and classify subdivisions of the image on the basis of their digital signatures.

Some examples illustrate the application of these processes for aiding geologic mapping and recognizing potential areas for oil and mineral exploration.