

DOUBLE PRESENTATION—MARCH 20, 1985

GARY L. KINSLAND—Biographical Sketch



Gary Kinsland was born and raised in Oregon. He attended the University of Rochester in New York where he received a B.S. degree in physics in 1969. He then attended the graduate school of geology at Rochester and received his M.S. degree in 1971 for his thesis work entitled "Refractive Index Ratios of KCl, NaCl and AgCl at Pressures Up to 77 Kb". In spring, 1974, he received his Ph.D from the University of

Rochester for his thesis entitled "Yield Strength Under Confining Pressures to 300 Kb in the Diamond Anvil Cell". From 1974 to 1976, he was Research Associate at the University of Rochester in high pressure research.

Dr. Kinsland became interested in geophysics as a Visiting Assistant Professor in Exploration Geophysics at Arizona State University from 1976-1977. He joined the University of Southwestern Louisiana as an Exploration Geophysicist in 1977. He continues in this role today and has had research funded in geopressured-geothermal resource evaluation; 3-D seismic acquisition, processing and interpretation over a geopressured-geothermal reservoir; and gravity and magnetic surveys in west-central Louisiana.

The topic of his presentation-megatectonics-has occupied much of his time during the past few years. He received the Best Paper Award and the A. I. Leverson Award for this presentation at the 1984 G.C.A.G.S. Convention in Shreveport, Louisiana.

BASEMENT STRUCTURE OF THE GULF COAST: INTERPRETATION OF GRAVITY ANOMALIES SUPPORTED WITH STRUCTURAL, MAGNETIC, AND SEISMIC DATA

The filtered gravity map of the forty-eight contiguous states by Hildenbrand et al (1982) illustrates the relationships of anomalies in the Gulf Coast more clearly than previous (unfiltered) presentations. Gravity anomalies are recognized which lead to the following hypotheses: 1) a Late Precambrian — Early Paleozoic rift passive margin underlies the Ouachita fold belt from the Marathons through the end of the exposed Ouachitas in Arkansas; 2) a Late Precambrian — Early Paleozoic transform passive margin underlies the buried Ouachita — Appalachian connection in Arkansas, Mississippi and Alabama; 3) a continuation of the rift passive margin underlies the Appalachians; 4) an early Mesozoic rift passive margin underlies southern Mississippi, south Louisiana and coastal Texas; 5) this Mesozoic margin has at least two transform offsets in southern Louisiana and southern Mississippi; 6) the Sabine Uplift, the Monroe — Sharkey Uplift and other features along the Atlantic Coastal Plain are buried portions of a late Paleozoic island arc complex; 7) the Florida platform is accreted African — South American continental material. These hypotheses are supported by structural, magnetic and seismic data over some of the features.