U.S. DEPARTMENT OF THE INTERIOR
U.S. GEOLOGICAL SURVEY

MISCELLANEOUS FIELD STUDIES
MAP MF–2143
Explanatory pamphlet accompanies map

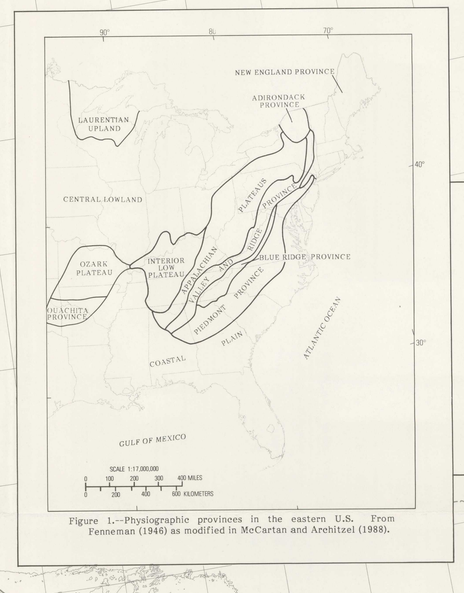

Figure 1.--Physiographic provinces in the eastern U.S. From Fenneman (1946) as modified in McCartan and Arehitzel (1988).

EXPLANATION

- ●² Positive magnetic anomaly larger than 10 km in diameter spatially associated with positive gravity anomaly; numbers are indexed to localities and seismic status of mafic and ultramafic bodies in table 1 of phamphlet
- □ Earthquake epicenter ≥ 6.5 m_b
- △ Earthquake epicenter 5.5-6.4 m_b
- ⬭ Cluster of two or more earthquake epicenters ≥ 5.4 m_b ; adjacent epicenters not more than 10 km apart
- (7) Area in which seismicity may have been induced by human activities; 1–4, seismicity may have been induced by underground injection of fluids (Nicholson and Wesson, 1990); 5-7, seismicity may be due to reservoir filling (Packer and others, 1980)
- -200-- Magnetic anomaly contours; contour interval 200 gammas (nanoteslas)

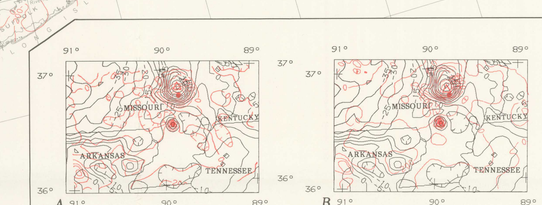

Figure 2.--*A*, Geophysical anomalies near New Madrid, Mo., without reduction to the magnetic pole. Solid red circles mark the tops of the magnetic anomalies and open red triangles mark the tops of the associated gravity anomalies. Magnetic anomaly contours are in red; contour interval is 200 gammas (nanoteslas). Gravity anomaly contours are in black; contour interval is 5 milligals. Tick marks indicate gravity and magnetic lows. Scale is 1:2,500,000. Directions and magnitudes of offsets are given in table 2. *B*, Geophysical anomalies after reduction to the magnetic pole. Transformation was performed by a computer program by Hildenbrand (1983) using a Fourier analysis by Lourenco (1973). Inclination and declination figures for center of area, from Peddie and Zunde (1988a,b), are given in table 2.

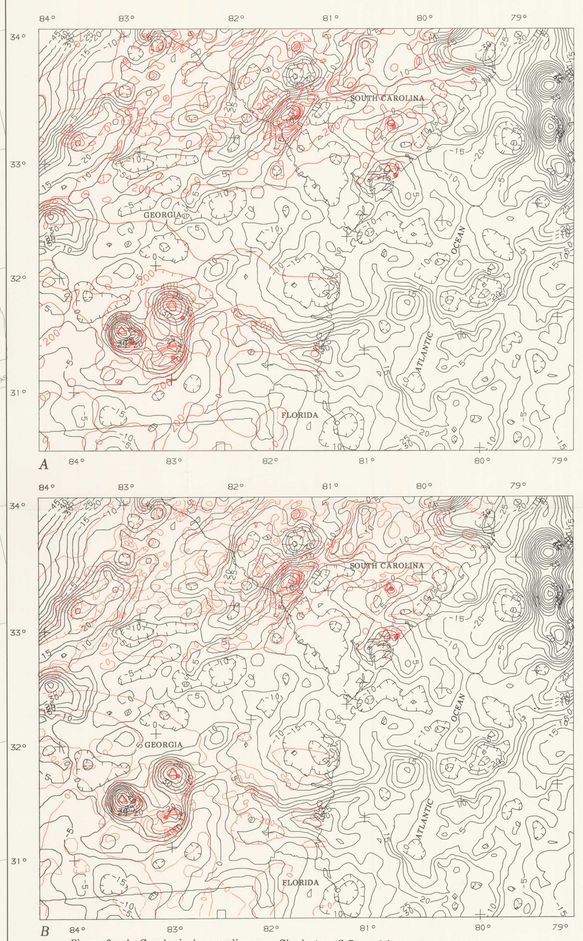

Figure 3.--*A*, Geophysical anomalies near Charleston, S.C., and in south-central Georgia without reduction to the magnetic pole. *B*, After reduction to the magnetic pole. Scale, contour interval, symbols, and transformation as for figures 2*A* and 2*B*; directions and magnitudes of offsets are given in table 2.

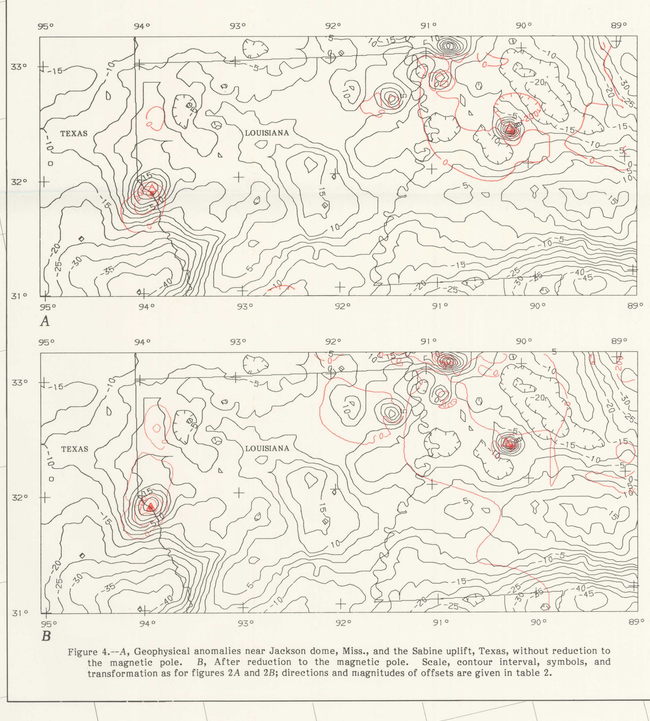

Figure 4.--*A*, Geophysical anomalies near Jackson dome, Miss., and the Sabine uplift, Texas, without reduction to the magnetic pole. *B*, After reduction to the magnetic pole. Scale, contour interval, symbols, and transformation as for figures 2*A* and 2*B*; directions and magnitudes of offsets are given in table 2.

POSITIVE OVERLAPPING MAGNETIC AND GRAVITY ANOMALIES AND SEISMICITY IN THE EASTERN UNITED STATES

SCALE 1:2,500,000
MILES
KILOMETERS

MAP SHOWING THE RELATIONSHIP OF SELECTED MAFIC AND ULTRAMAFIC BODIES IN THE CRUST OF THE EASTERN UNITED STATES TO SEISMICALLY ACTIVE AREAS

By

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1991

Magnetic anomalies from Godson (1986)

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Base from U.S. Geological Survey, 1972

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