A Preliminary, Full Spectrum, Magnetic Anomaly Grid of the United States with Improved Long Wavelengths for Studying Continental Dynamics

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Under an initiative started by Thomas G. Hildenbrand of the U.S. Geological Survey, we have improved the long-wavelength (50–2,500 km) content of the regional magnetic anomaly compilation for the conterminous United States by utilizing a nearly homogeneous set of National Uranium Resource Evaluation (NURE) magnetic surveys flown from 1975 to 1981. The surveys were flown in quadrangles of 2° of longitude by 1° of latitude with east-west flight lines spaced 4.8 to 9.6 km apart, north-south tie lines variably spaced, and a nominal terrain clearance of 122 m. The NURE surveys were processed using the Comprehensive Magnetic Field Model (Sabaka et al. 2004) to remove the core field for the epochs of the surveys. Many of the surveys used base-station magnetometers to remove external field variations. This NURE magnetic anomaly field is merged with the short-wavelengths from the North American Magnetic Anomaly Map (ca. 2002) to create a full spectrum database called NURE_NAMAM2008.

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