Kansas Geological Survey
Lawrence, Kansas

Bouguer gravity anomaly map of Kansas

MAP M-31
1992

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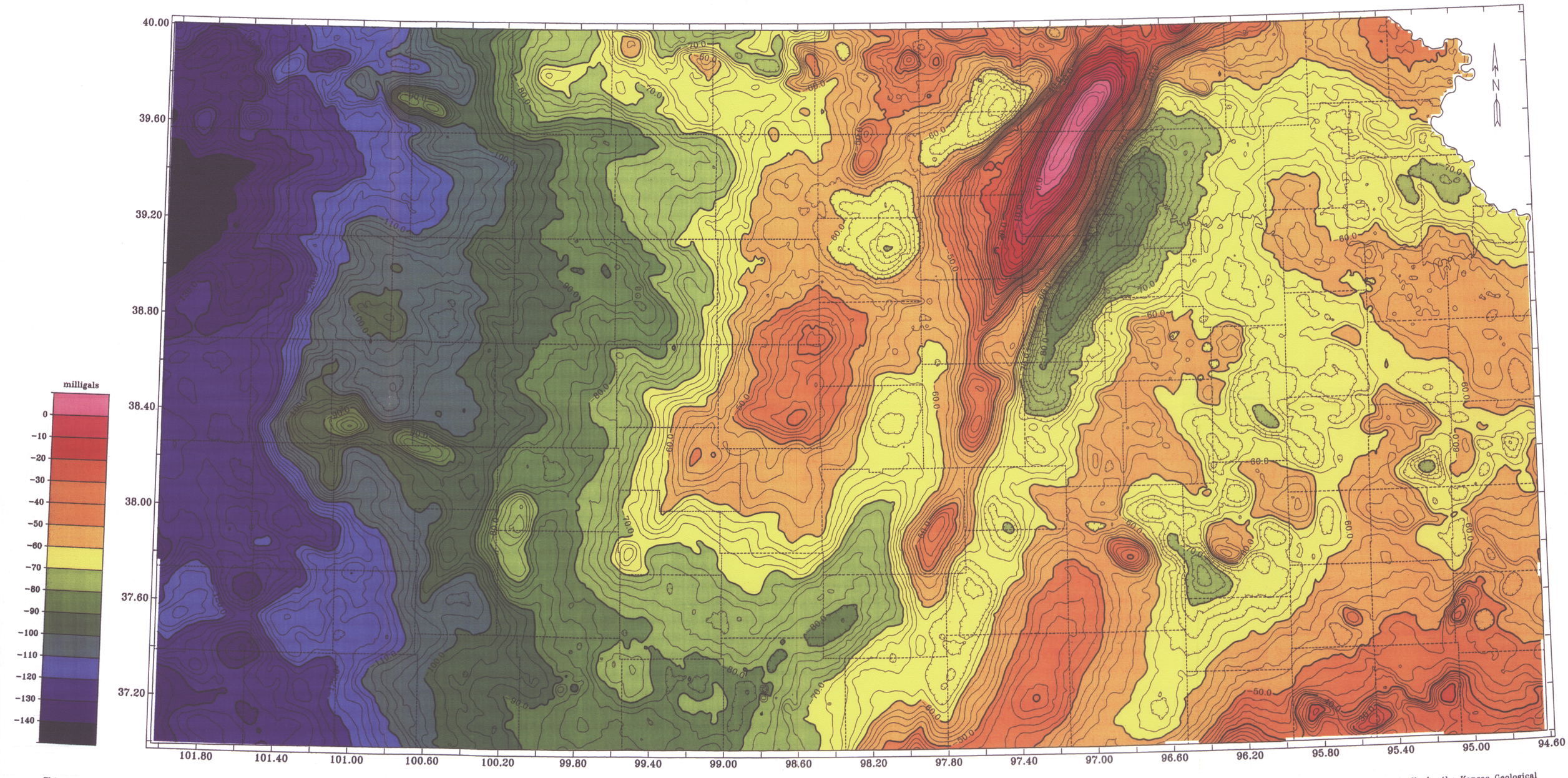

This map is based on gravity data collected during 1976–1992. The measurements were taken every 1 mile along parallel east–west roads spaced 2 miles apart in western Kansas (west of longitude 98.30°) and every 1 mile along parallel east–west roads spaced 1 mile apart in eastern Kansas. The survey was completed using two LaCoste & Romberg D meters primarily. The number of gravity-station measurements in Kansas is 62,606, and measurements extend slightly into the surrounding states. Each day's data were corrected for tidal changes. Base stations located throughout Kansas were tied to Department of Defense absolute-gravity stations. The Bouguer anomaly was calculated by subtracting the gravity reference field (E. Mittermayer, 1969, "Numerical Formulas for the Geodetic Reference System 1967," Bollettino di Geofisica, Teorica ed Applicata, v. 11, p. 96–107) and the Bouguer correction with a density 2.67 g/cc from the absolute gravity-station measurements and by adding the free-air correction to these same absolute measurements. The elevations of the gravity station were taken from USGS 7.5-minute topographic maps. See C. K. Lam's "Interpretation of Statewide Gravity Survey of Kansas" (Ph.D. dissertation, University of Kansas, 1986; KGS Open-file Report 87-1) for more information on the acquisition of the data. The overall precision of the data is 0.1–0.2 milligal and depends on the accuracy of the location and elevation readings in the field. The data were gridded and contoured using SURFACE III software (developed by Robert Sampson at the Kansas Geological Survey, with the assistance of Dana Adkins-Heljeson). Universal kriging was used to grid the data.

Scale 1:1,000,000
1 inch equals approximately 16 miles
0 mi 25
0 km 40

Contour interval is 2 milligals

Lambert Conformal Conic Projection
with standard parallels of 33° and 45°

The gravity survey of Kansas was supported principally by the Kansas Geological Survey and in part by the Department of Energy under grant DE-AS07-79ET27204, the Nuclear Regulatory Commission under contract AT-49-24-2086, and Three-D Gravity, Inc. Dana Adkins-Heljeson, Roubik Avanessians, Mary Austin, Ulf Becker, Randy Brown, Jennifer Fesperman, Clark FitzSimmons, Kevin Hickman, Salah Jarjur, Kurt Limesand, Mary Ann Markezich, Alan Martin, King Ng, Randy Robertson, Chaturong Somanas, Rita Sooby, Robert Taylor, Bob Wentland, and Yan Zhao participated in gravity field work and/or data processing.