

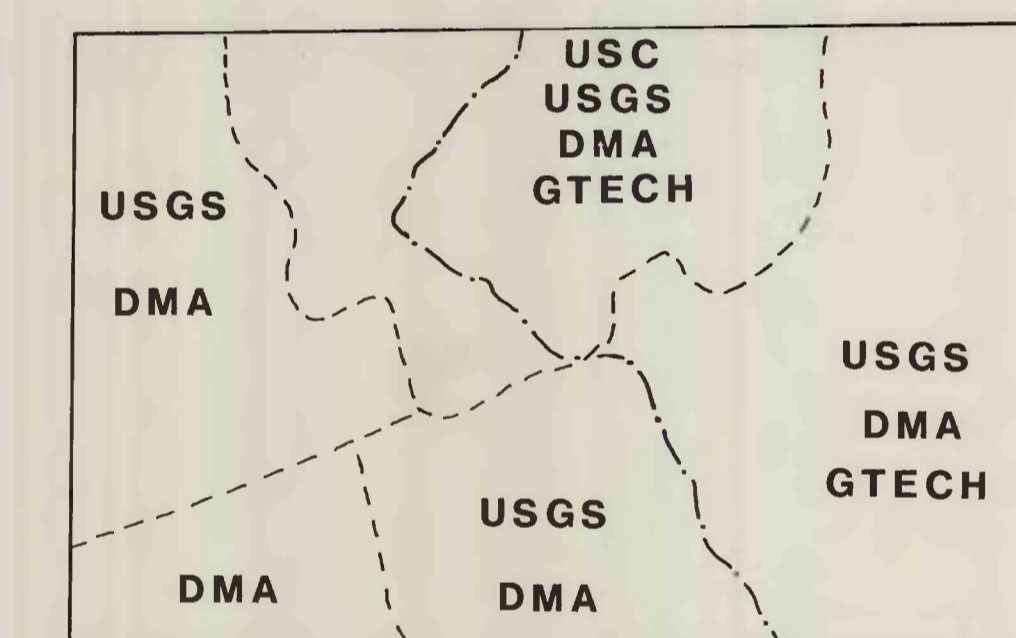
EXPLANATION

This complete Bouguer gravity map represents part of the work undertaken by the U. S. Geological Survey to evaluate the mineral-resource potential of the Greenville two-degree quadrangle as part of the Conterminous United States Mineral Resource Appraisal Program (CUSMAP). The gravity data included in this map have been acquired from the U. S. Defense Mapping Agency (DMA), the University of South Carolina ADCOH project (USC), the Georgia Institute of Technology Geophysics Department (GTECH), and U. S. Geological Survey field work carried out from 1984 through 1987 (USGS) (all unpublished data). The sources of data are shown in the figure below, with the order of institutional abbreviations indicating the larger number of stations for the area indicated. A total of 541 station pairs located within 0.0005 degrees of each other were evaluated on a station-by-station basis, with one being retained based on field repeat measurements of selected station pairs. Most station pairs agreed within 0.5 milligals. The University of South Carolina data set required that 13.70 milligals (the old versus the new Potsdam values for the base station at the Pickens County Courthouse base station) be subtracted from observed gravity values to bring it into agreement with the IGS Net 1971 datum used for the USGS, Georgia Tech, and DMA data sets.

All stations were acquired using base stations described in the DMA Gravity Reference Network (DMAAC, 1974); of five DMAAC base stations within the two-degree sheet, only Elberton Courthouse and Pickens County Courthouse bases were reoccupiable. From these bases, a base-station network was constructed (Wynn, 1986) to which all USGS stations are referenced. USC stations were tied to DMAAC bases in Atlanta and Athens Georgia.

After combining, level-shifting, and duplicate-station resolution processes were completed, all stations were then reduced to complete Bouguer anomaly values. This was done using a density of 2.67 gm/cc, followed by computer terrain-corrections for all 7286 remaining stations using a computer program originally designed by Donald Plouff (1977) and further modified by Dick Godson (unpublished program, 1977), both of the U. S. Geological Survey. The terrain correction program used a 30-second terrain data-set and corrections were carried out from the station location to 167 kilometers. The results are contoured here at 2.0 milligals. The data were gridded to conform to a Universal Transverse Mercator projection with an equal spacing of 400 meters in orthogonal directions.

INDEX OF SOURCES



REFERENCES CITED

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Wynn, J. C., 1986, Gravity base station network and descriptions for the Greenville two-degree CUSMAP sheet, Georgia and South Carolina: U. S. Geological Survey Open-File Report 86-287, 18 p.

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COMPLETE BOUGUER ANOMALY MAP OF THE GREENVILLE
QUADRANGLE, GEORGIA AND SOUTH CAROLINA

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SCALE 1:250,000

