

UNITED STATES DEPARTMENT OF THE INTERIOR  
GEOLOGICAL SURVEY

Slides showing preliminary mosaic magnetic and complete Bouguer  
gravity anomaly maps of the Butte 1° x 2° quadrangle, Montana

By

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This report is preliminary and has not been reviewed for conformity with U.S. Geological Survey editorial standards and stratigraphic nomenclature.

## Discussion

This report consists of two 35-mm slides of geophysical data from the Butte 1° x 2° quadrangle, Montana. Slide 1 shows a preliminary mosaic aeromagnetic anomaly map and slide 2 shows a complete Bouguer gravity anomaly map. The maps are being prepared for publication as part of a package of reports making up the Butte Conterminous United States Mineral Resource Assessment Program (CUSMAP) Folio.

Survey and map specifications for the aeromagnetic anomaly map are listed in the caption of figure 1. The gravity anomaly map at a contour interval of 5 milligals was prepared by merging data from two sources. Solid contour lines represent data from 1,925 gravity stations established by the U.S. Geological Survey; dashed contour lines are from a map by Burfeind (1967, 1969), slightly modified to fit the Geological Survey data.

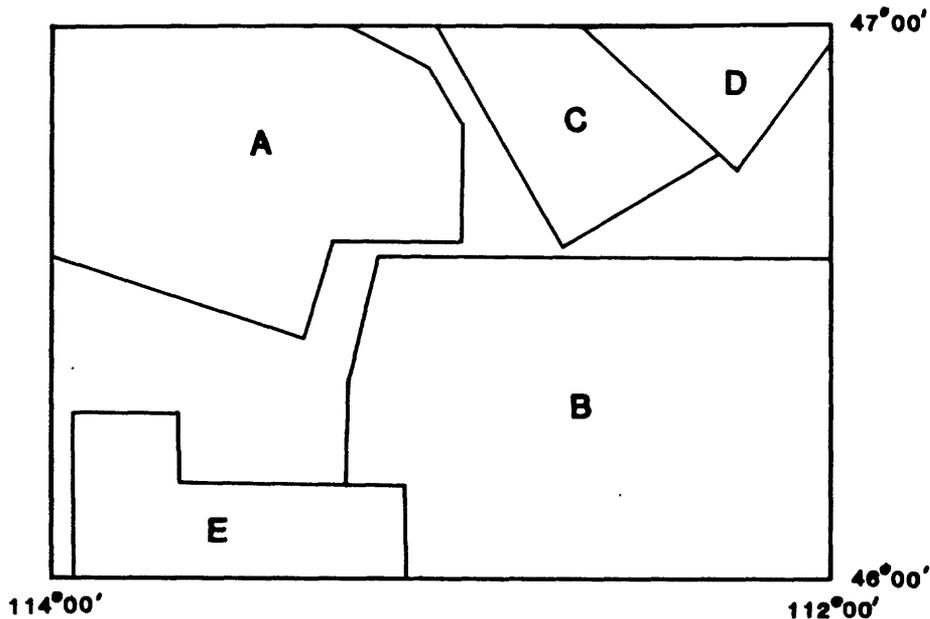


Figure 1. Index map showing sources of total-intensity aeromagnetic surveys of the Butte  $1^{\circ} \times 2^{\circ}$  quadrangle, Montana.

- A. Douglas (1971): Flight elevation, 7,500 ft barometric and draped over higher mountains; flight line spacing, 1 mi; flight direction, north-south; regional field removed; contour intervals, 20 and 100 gammas.
- B. Johnson and others (1965): Flight elevation, 10,500 ft barometric; flight line spacing, 2 mi; flight direction, east-west; no reference field removed; contour intervals, 20 and 100 gammas.
- C. Kleinkopf and Mudge (1972): Flight elevation, 9,000 ft barometric; flight line spacing, 2 mi; flight direction, northeast-southwest; no reference field removed; contour intervals, 20 and 100 gammas.
- D. U.S. Geological Survey (1980): Flight elevation, 7,000 ft barometric; flight line spacing, 1 mi; flight direction, east-west; updated IGRF removed; contour interval, 10 gammas.
- E. U.S. Geological Survey (1981): Flight elevation, 1,000 ft above ground; flight line spacing, 0.5 mi; flight direction, east-west; updated IGRF 75 removed; contour interval, 20 gammas.

## References

- Burfeind, W. J., 1967, A gravity investigation of the Tobacco Root Mountains, Jefferson Basin, Boulder batholith, and adjacent areas of southwestern Montana: Bloomington, Indiana University, Ph. D. thesis, 90 p. (Map is at scale 1:250,000.)
- \_\_\_\_\_ 1969, Gravity investigations of selected batholiths and basins of southwestern Montana: EOS, v. 50, no. 10, p. 536. (Page-size map is included.)
- Douglas, J. K., 1971, Total intensity aeromagnetic map of a portion of the Montana lineament: Missoula, Montana, University of Montana, scale 1:250,000.
- Johnson, R. W., Jr., Henderson, J. R., and Tyson, N. S., 1965, Aeromagnetic map of the Boulder batholith area, southwestern Montana: U.S. Geological Survey Geophysical Investigations Map GP-538, scale 1:250,000.
- Kleinkopf, M. D., and Mudge, M. R., 1972, Aeromagnetic, Bouguer gravity, and generalized geologic studies of the Great Falls-Mission Range area, northwestern Montana: U.S. Geological Survey Professional Paper 726-A (Map is at scale 1:250,000).
- U.S. Geological Survey, 1980, Aeromagnetic map of the Rogers Pass area, Montana: U.S. Geological Survey Open-File Report 80-244, scale 1:62,500.
- U.S. Geological Survey, 1981, Aeromagnetic map of the Sapphire/Anaconda Mountains area, Montana: U.S. Geological Survey Open-File Report 81-1160, scale 1:62,500.