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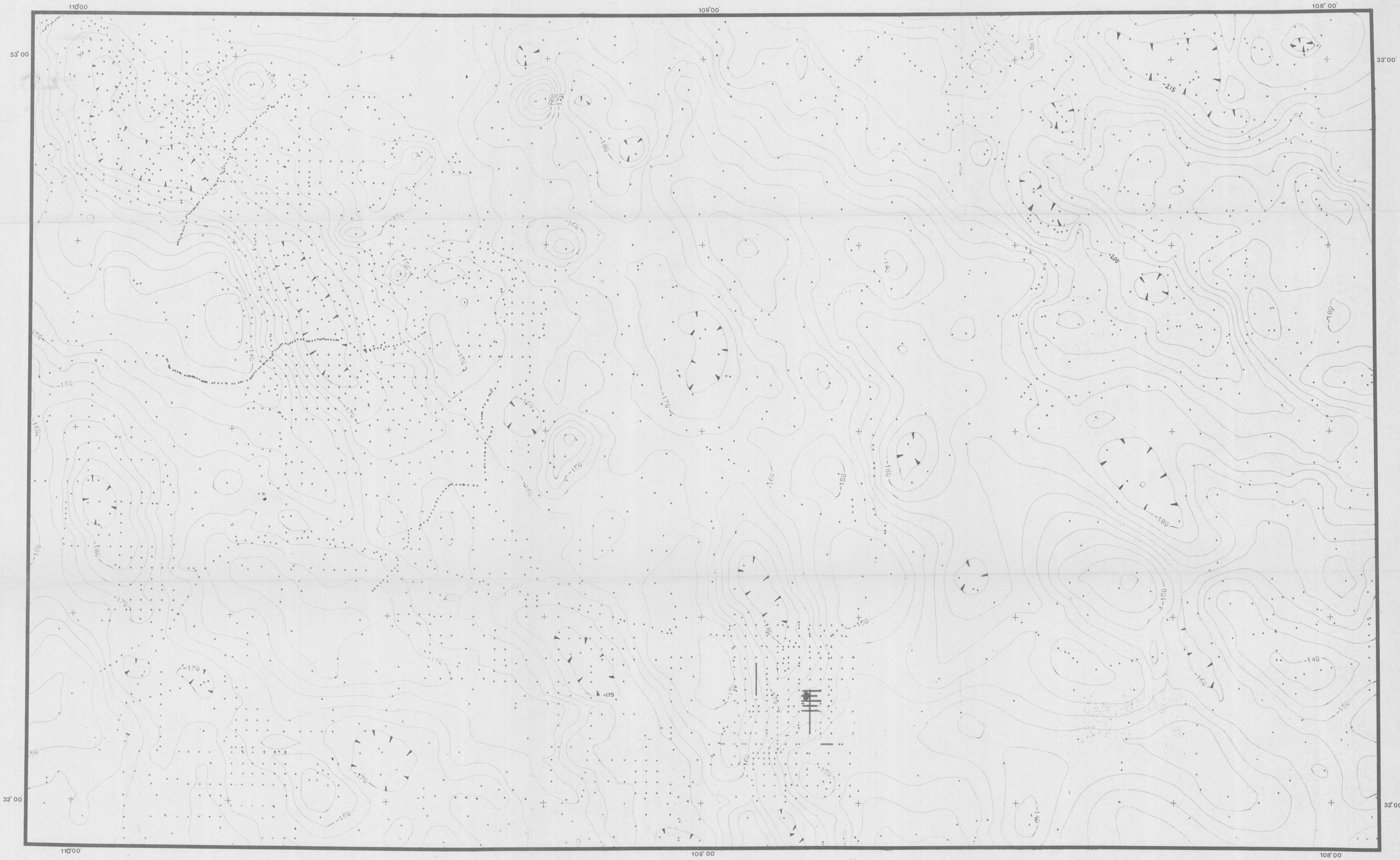
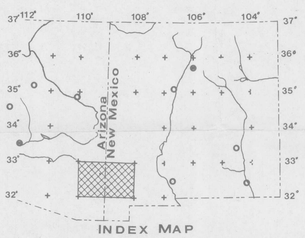
79-708
Wynn & Dansereau

OPEN-FILE REPORT
79-708

DEPARTMENT OF THE INTERIOR
UNITED STATES GEOLOGICAL SURVEY

110°00'
109°00'
108°00'
33°00'
32°00'





INDEX MAP

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GRAVITY CONTOURS

HACHURED CONTOURS INDICATE AREAS OF LOW GRAVITY CLOSURE

5 Milligal Contour Interval

+ GRAVITY STATION

PRELIMINARY COMPLETE BOUGUER GRAVITY ANOMALY MAP OF THE SILVER CITY TWO-DEGREE SHEET, NEW MEXICO AND ARIZONA

BY

J. C. WYNN AND D. A. DANSEREAU

SCALE 1:250,000

5 0 5 10 15 20 Miles

5 0 5 10 20 30 Kilometers

1979

This PRELIMINARY Complete Bouguer Gravity Anomaly Map is derived from several different sources, all unpublished, which include Wynn (U.S. Geological Survey), Eaton (U.S. Geological Survey), Preslar (New Mexico State University, Las Cruces), Webring (U.S. Geological Survey), Smithson (University of Wyoming, Laramie), Keller (University of Texas at El Paso) and the Defense Mapping Agency (DMA) in St. Louis. Inter-source redundancies within 0.2 minutes of latitude and longitude were removed, leaving a total of 3609 stations, each represented by a "+" sign on the map. Observed gravity values have been adjusted to the 1971 base values of the International Gravity Standardization Net (DMA, 1974, World relative gravity reference network; North America, Part 2: DMAAC Ref. Pub. No. 25, with supplement updating gravity values to the International Gravity Standardization Net 1971, 1635 p.). The Geodetic Reference System, 1967 Formula (International Association of Geodesy, 1967, Geodetic Reference System, 1967: International Association of Geodesy Spec. Pub. No. 3, 74 p.) was used to compute the theoretical gravity, and terrain corrections were calculated from ½ to 167 kilometers from each station. Terrain corrections were made by means of DMA digital terrain data and an assumed average rock density of 2.67 gm-cm^{-3}, using a computer program developed by Plouff (Plouff, D., 1977, Preliminary documentation for a Fortran program to compute gravity terrain corrections based on topography digitized on a geographic grid: U.S. Geol. Survey Open-File Report 77-535, 45 p.).