

MAP A. COMPLETE BOUGUER GRAVITY ANOMALY MAP

- EXPLANATION**
- GRAVITY STATION—Values in milligals
 - 294.5 Δ Department of Defense
 - 300.8 \blacktriangle Helicopter access
 - 295.7 \bullet Ground access
 - GRAVITY CONTOUR—Hachures indicate closed area of low gravity. Contour interval 5 mGal.
 - FEATURE DISCUSSED IN TEXT—Dashed or queried where position is uncertain

As discussed in the text, calculated complete Bouguer gravity anomaly values (the numbers beside the station symbols) have an uncertainty of the order of 2 mGal. The contours are therefore generalized and do not strictly honor all station values.

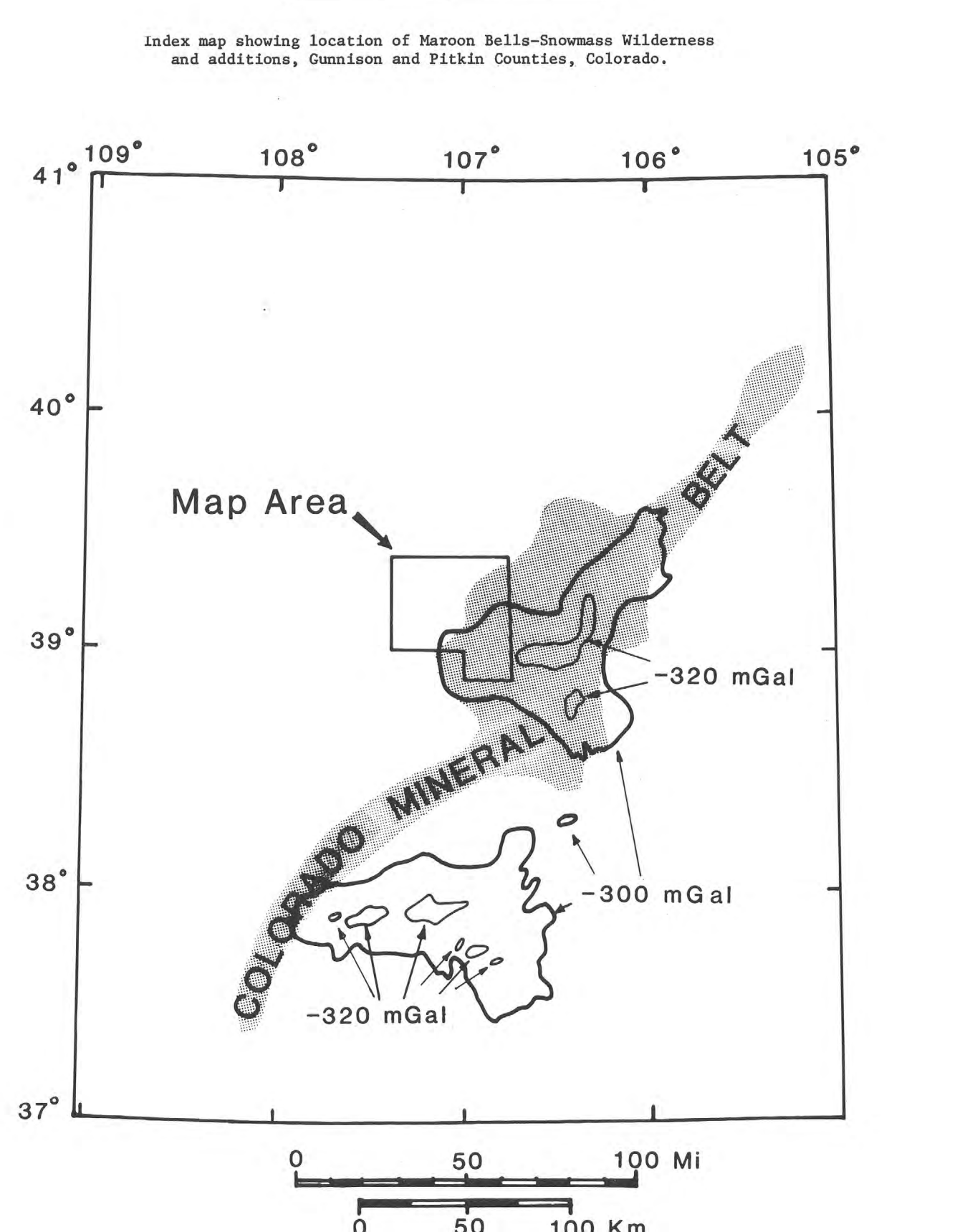
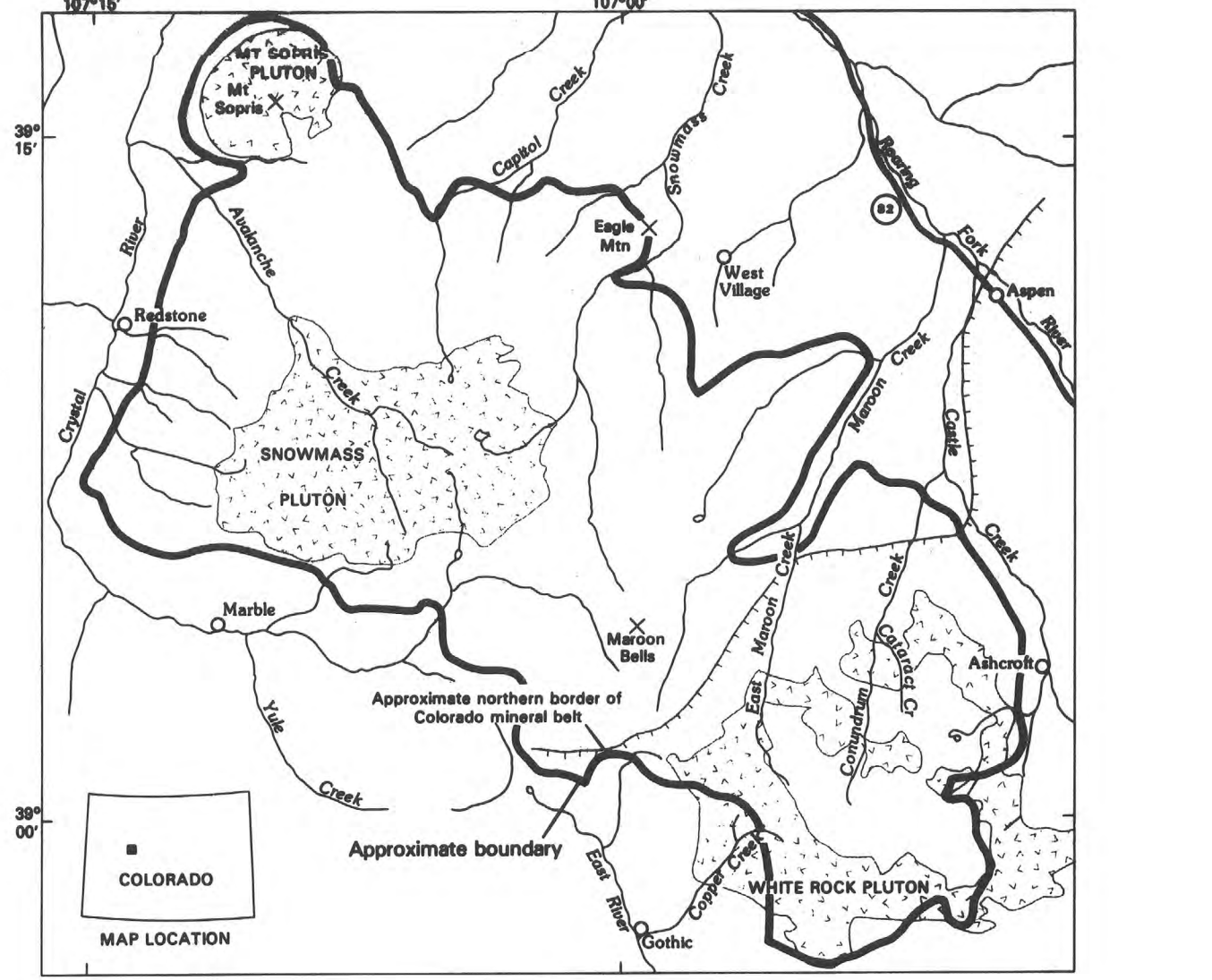


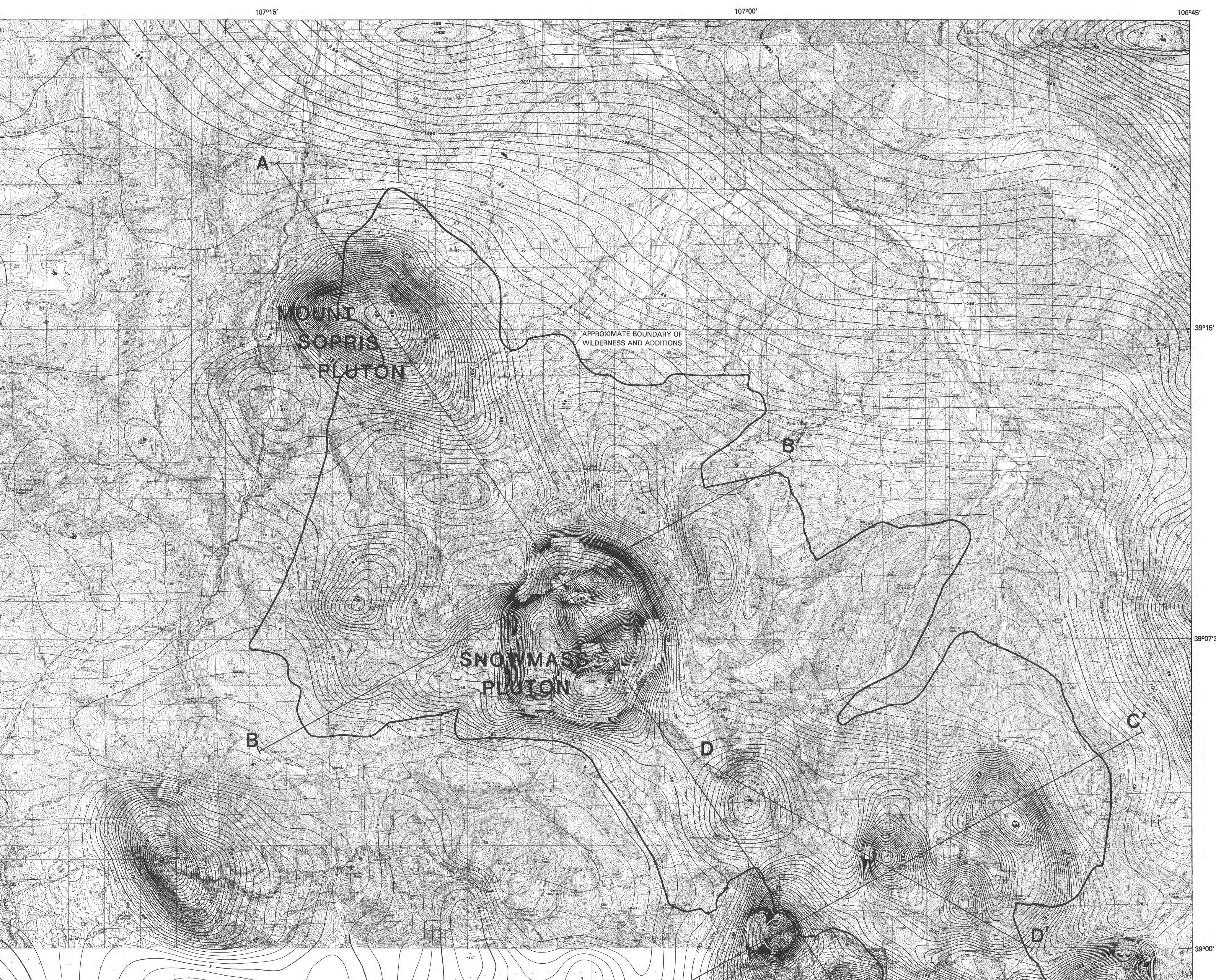
Figure 1. Map of western Colorado showing correlation between complete Bouguer gravity anomaly map (indicated by -300 and -320 mGal contours) from this study and 1975 map and Colorado mineral belt (adapted from Foster and Stone, 1983).

INTRODUCTION

The Maroon Bells-Snowmass Wilderness and additions near Aspen, Colorado, have a rich mineral history. In 1981, the U.S. Geological Survey, in cooperation with the Colorado State Department of Geology and Mineral Resources, conducted a Bouguer gravity and aeromagnetic survey of the area. This report presents the results of this survey. The area was established as a wilderness in 1973 by Public Law 93-20, October 21, 1973.

Geologic Setting

The area is situated in the western part of the Colorado Plateau province. It is bounded to the north and east by the Front Range thrust fault zone. The geology consists of Tertiary granodiorite, Cretaceous sedimentary rocks, and Paleozoic metamorphic and sedimentary rocks. The Snowmass and Maroon Belles plutons are the primary features of the area.



MAP B. AEROMAGNETIC MAP

- EXPLANATION**
- MAGNETIC CONTOURS—Total intensity residual magnetic field values of the Earth in gauss oersted (G) relative to a base value of 84920 nT in the southwest corner of the map. A regional trend of 0.03 nT/mile north and 0.40 nT/mile east has also been removed. The 1 and 2 indicate areas of lower intensity, H, higher intensity. Interval of 20 nT.
 - FLIGHT PATH—Flights—path spacing 1 mi, flight altitude 14,000 ft.

RESULTS

The Bouguer gravity and aeromagnetic maps show significant anomalies associated with the Snowmass and Maroon Belles plutons. The Snowmass pluton exhibits a characteristic magnetic signature, and the Maroon Belles pluton shows a distinct aeromagnetic pattern. The aeromagnetic map highlights the structural features and the distribution of magnetic minerals in the area.

CONCLUSIONS

The aeromagnetic map provides valuable information on the geologic structure and composition of the Maroon Bells-Snowmass area. The magnetic anomalies are consistent with the geologic interpretation of the area, indicating the presence of magnetite-bearing rocks in the Snowmass and Maroon Belles plutons.

REFERENCES

- Blair, F. D., 1966, *Geologic map of the Maroon Bells-Snowmass Wilderness and additions*, U.S. Geological Survey Map MF-1647-B.
- Brown, R. W., 1968, *Geologic map of the Maroon Bells-Snowmass Wilderness and additions*, U.S. Geological Survey Map MF-1647-B.
- Condit, R. J., 1973, *Geologic map of the Maroon Bells-Snowmass Wilderness and additions*, U.S. Geological Survey Map MF-1647-B.

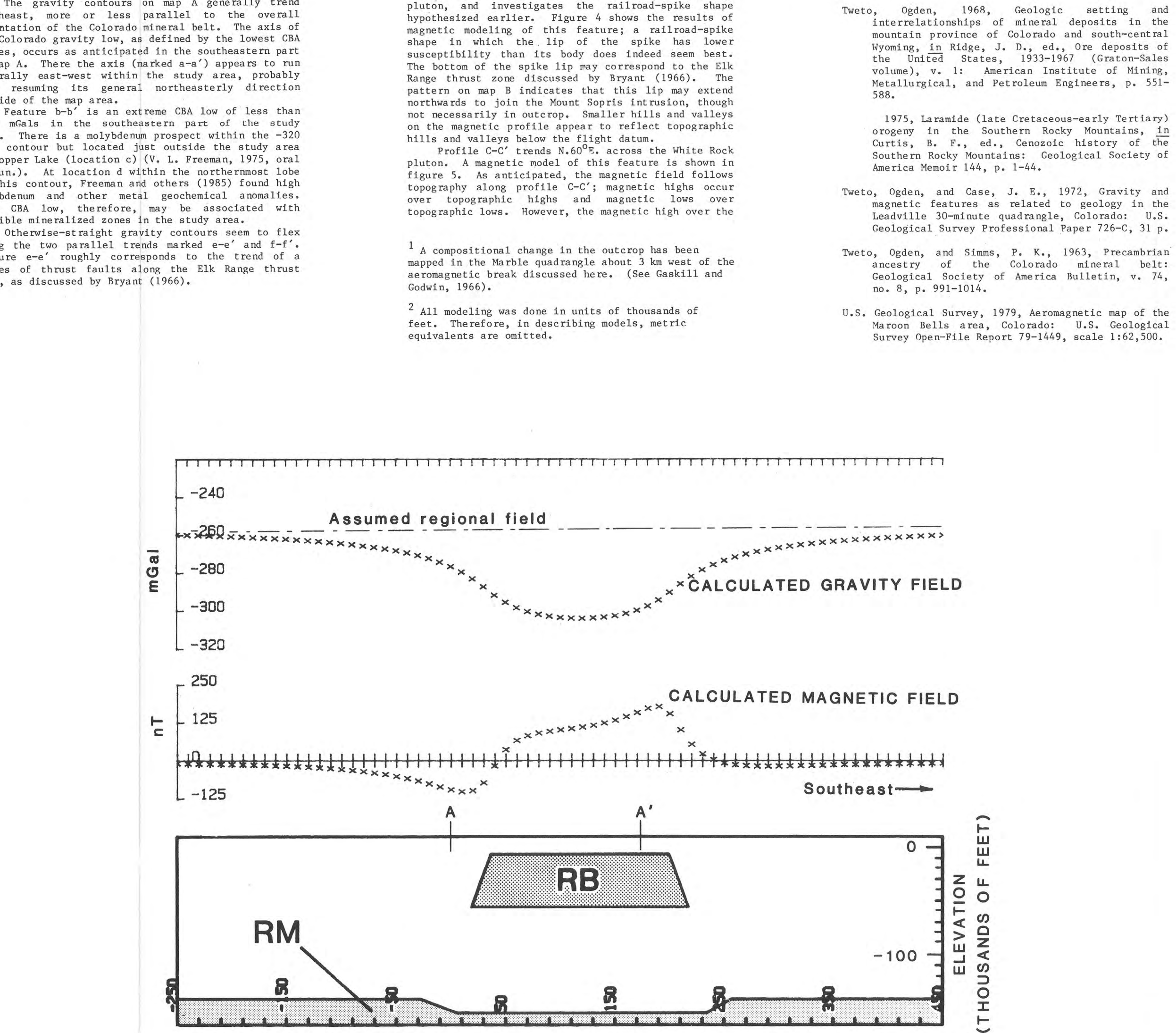


Figure 2. Transverse sections (1976) normal contour interval, assumed in the modeling to hold for depths in excess of 5 km below an arbitrary datum (10,000 ft) (G) as shown in text. The model has a regional field of 84,920 G. The profiles were calculated from the assumed densities and susceptibilities of the units shown. Bodies 1, 2, and 3 are assumed present beneath all modeled profiles (Figs. 3-5).

GRAVITY AND AEROMAGNETIC MAPS OF THE MAROON BELLS-SNOWMASS WILDERNESS AND ADDITIONS, PITKIN AND GUNNISON COUNTIES, COLORADO

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1985

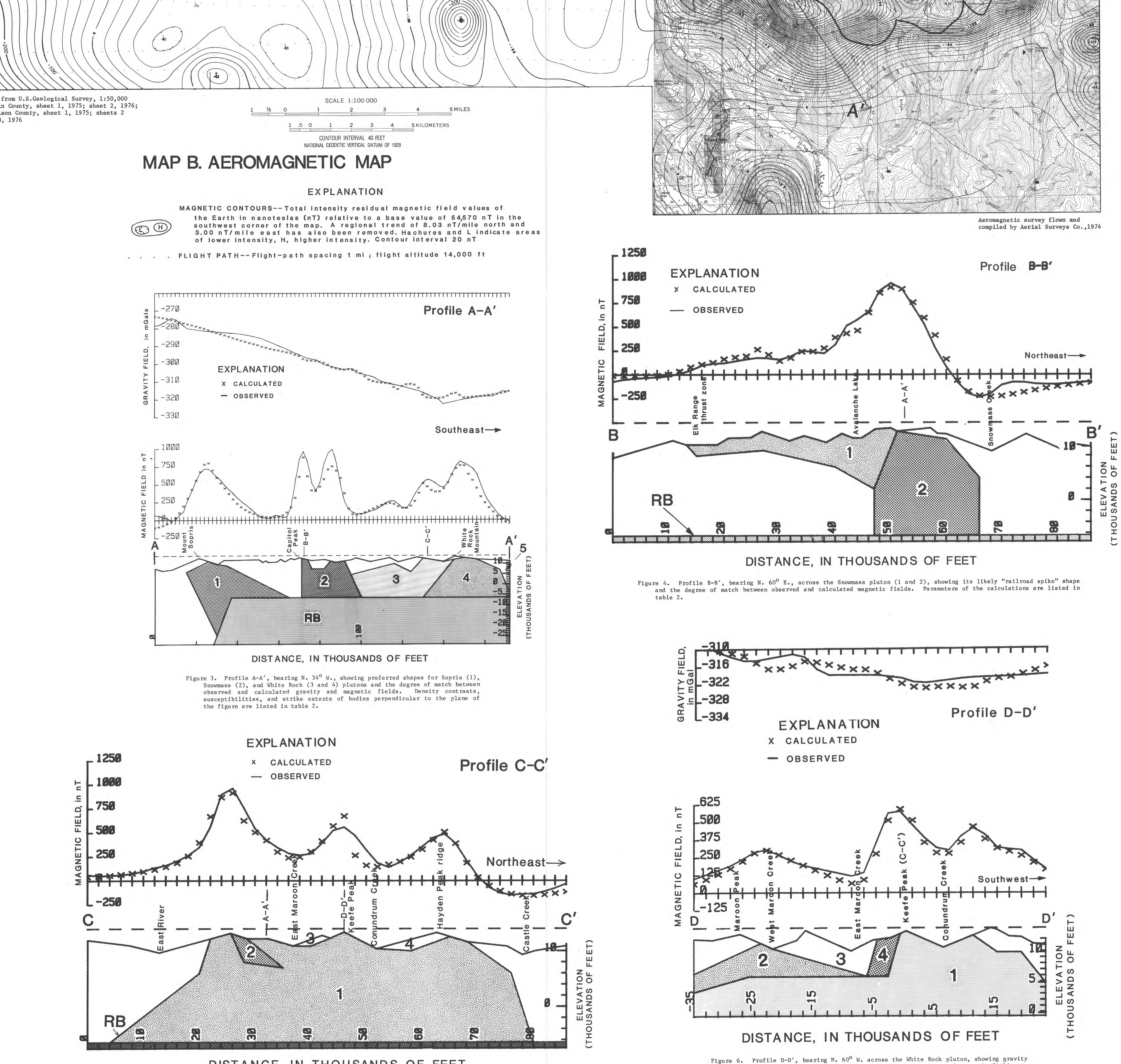


Figure 3. Profile A-A', bearing N. 60° E., across the Maroon Bells pluton, showing the magnetic field in gauss oersted (G) relative to a base value of 84,920 nT in the southwest corner of the map. A regional trend of 0.03 nT/mile north and 0.40 nT/mile east has also been removed. The 1 and 2 indicate areas of lower intensity, H, higher intensity. Interval of 20 nT. The profiles were calculated from the assumed densities and susceptibilities of the units shown. Bodies 1, 2, and 3 are assumed present beneath all modeled profiles (Figs. 3-5).