



EXPLANATION

QUATERNARY
 Alluvial and marine deposits
 Shown only at west side of map

TERTIARY
 Volcanic and sedimentary rocks
 Includes lava, tuff, and old alluvial and marine deposits, separated from underlying units by angular unconformity

JURASSIC OR CRETACEOUS
 Intrusive rocks
 Chiefly granodiorite, quartz monzonite, and gabbro

JURASSIC
 Ultramafic rocks
 Chiefly converted to serpentinite

JURASSIC
 Gneissites
 Includes metamorphic rocks and, locally, hypabyssal intrusive rocks

PALEOZOIC AND MESOZOIC
 Metasedimentary rocks
 Includes slate, phyllite, and mica schist with local masses and lenses of limestone and sandstone-siltstone schist

CONTACT, APPROXIMATELY LOCATED
 Dotted where concealed by Tertiary or Quaternary deposits

FAULT, APPROXIMATELY LOCATED
 Dotted where concealed by Tertiary or Quaternary deposits

Mine Group of mines or prospects
Mined principally for gold unless otherwise indicated: Au, silver; Cr, chromium; Cu, copper; Fe, iron; Mn, manganese

Basalt
 -1255'
 Well penetrating basement rocks
 Showing lithology and elevation of top of basement (After Smith and others, 1959)

Magnetic contours
 Showing total intensity magnetic field of the earth in gauss relative to arbitrary datum. Reduced to uniform field lines of equal magnetic intensity, dashed where data are incomplete. Contour interval is 50, 250 and 500 gamma.

Location of measured maximum or minimum intensity within closed high or closed low

Zones of high (1, 2, and 3) and low (A, B, and C) magnetic intensity

Flight path
 Showing location and timing of data

NOTE
 Aeromagnetic data are obtained and compiled along a continuous line, whereas ground magnetic surveys are made of separate points. Errors within the normal limits of any magnetic measurement may cause slight discrepancies between flight lines in an aeromagnetic map, which would be more obvious than similar discrepancies between points in a ground magnetic map. For this reason as much care should be exercised in evaluating magnetic features that appear as elongations along a single aeromagnetic traverse as in interpreting an anomaly indicated by a single ground station.

INDEX MAP SHOWING LOCATION OF REPORT AREA

INDEX MAP SHOWING THE SOURCE MATERIAL FROM WHICH THE GEOLOGY WAS GENERALIZED. THE MOTHER LODE FAULT ZONE AND BEAR MOUNTAIN FAULT ZONE ARE FROM CLARK (1960).

Base from U.S. Geological Survey topographic quadrangles: Valley Springs 1941, San Andreas 1945, Murphy 1948, Columbia 1948, Stanislaus 1948, Columbia SE 1948, Long Barn 1956, Farmington 1919-53, Bachelor Valley 1913-53, Copperopolis 1914-54, Sonora 1948, Standard 1948, Tuolumne 1948, and Doswell Mountain 1948

AEROMAGNETIC MAP OF PARTS OF THE MOTHER LODE GOLD AND SIERRA FOOTHILLS COPPER MINING DISTRICTS, CALIFORNIA, AND ITS GEOLOGIC INTERPRETATION

By John R. Henderson, Jr., Arvid A. Stromquist, and Anna Jespersen



Aeromagnetic survey by J. R. Henderson, Jr., 1951. Compiled by J. C. Bass and others. Flight elevation 10000 feet above ground