
# *Selected tectonic elements of the Socorro region*

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1983, pp. 97. https://doi.org/10.56577/FFC-34.97

*in:*

*Socorro Region II*, Chapin, C. E.; Callender, J. F.; [eds.], New Mexico Geological Society 34th Annual Fall Field Conference Guidebook, 344 p. https://doi.org/10.56577/FFC-34

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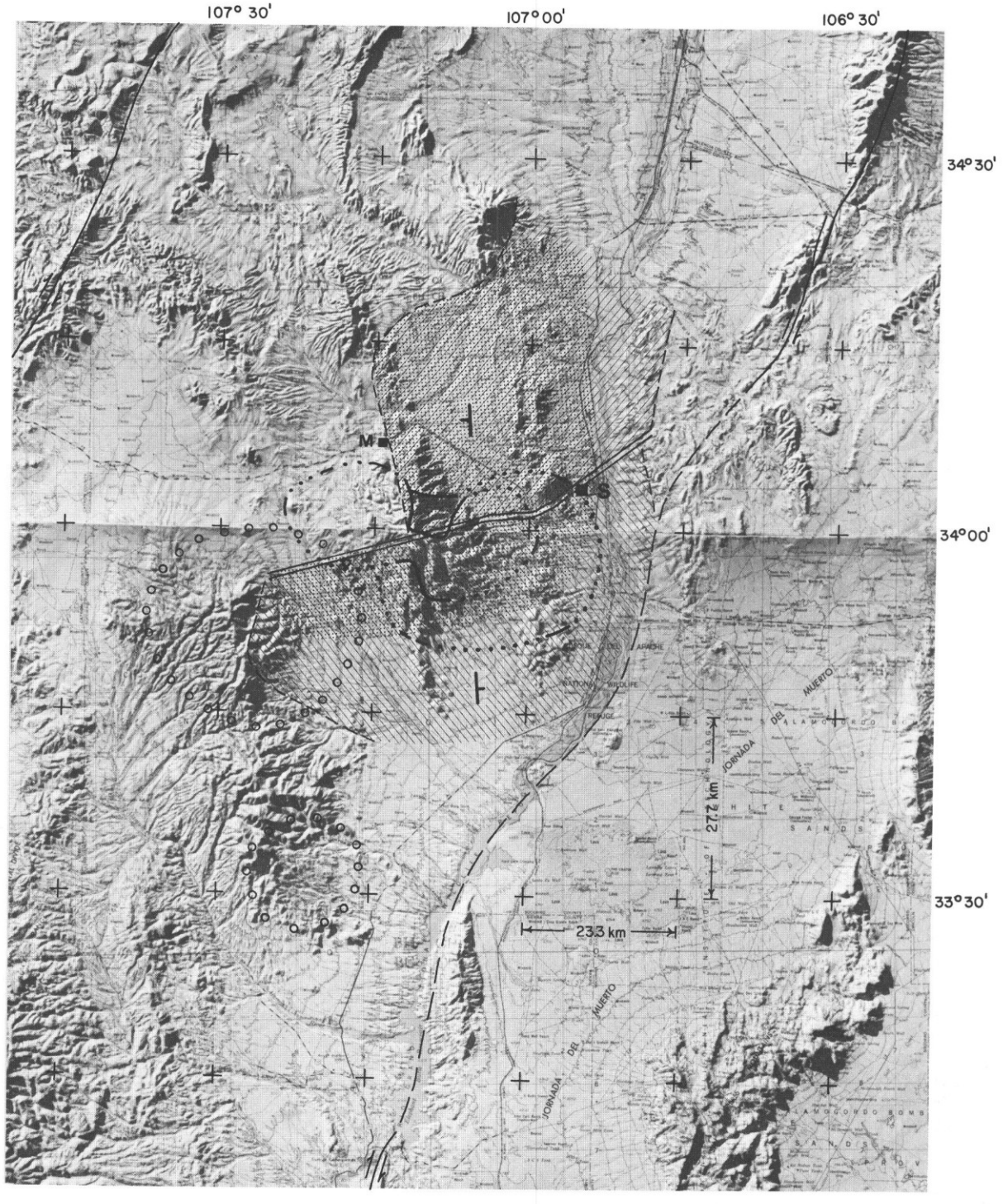
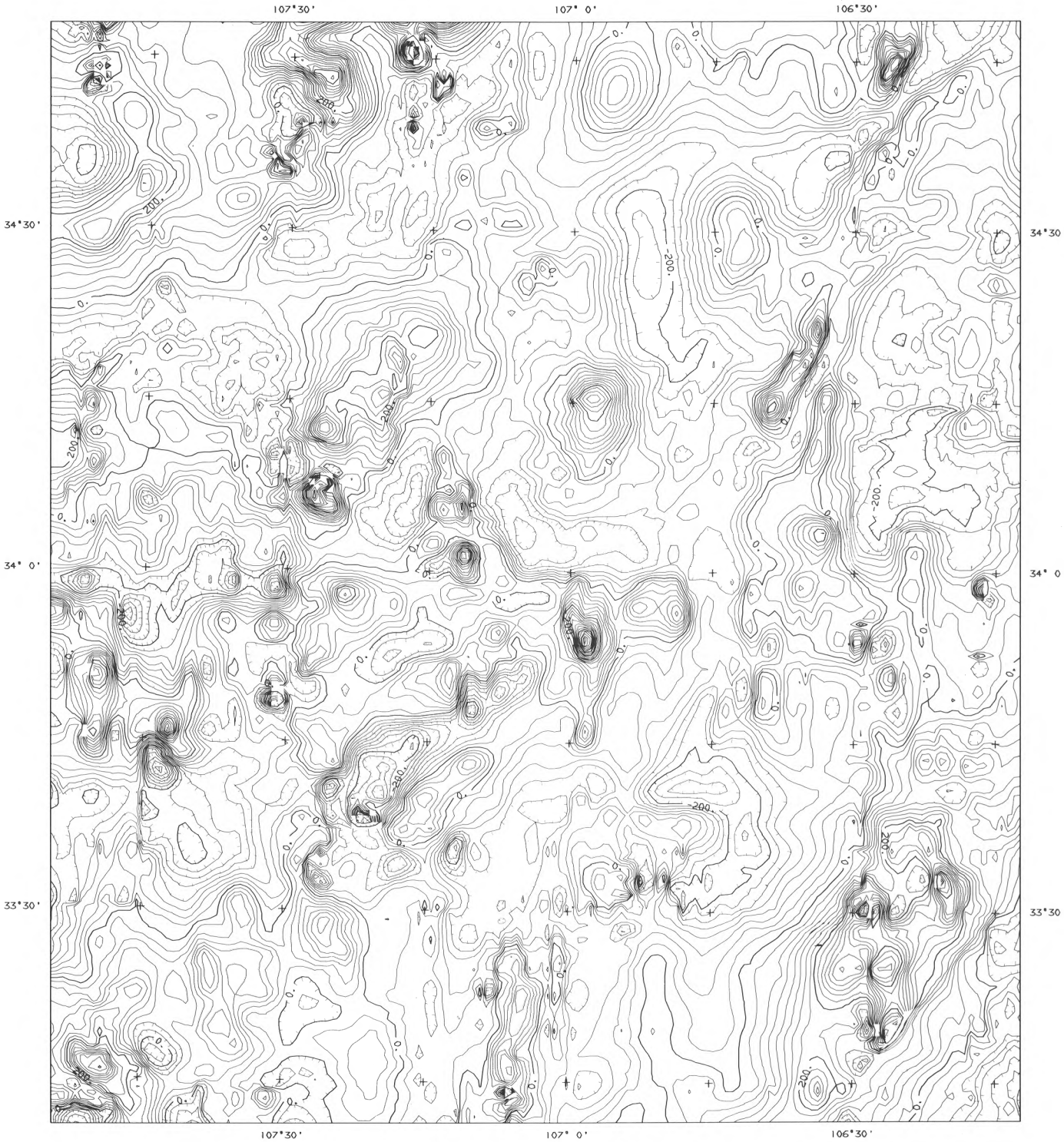
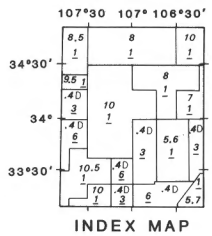



## SELECTED TECTONIC ELEMENTS OF THE SOCORRO REGION

### C. E Chapin

Base is composite of Socorro and Tularosa 2-degree quadrangles (Army Map Service plastic relief maps). S = Socorro, M = Magdalena. Two domains of west-tilted versus east-tilted, domino-style fault blocks are shown by diagonally ruled patterns with large strike-and-dip symbols that show the directions of tilt. The two domains are separated by a transverse boundary (transverse shear zone) that acts as a null line across which the direction of tilting changes. The dotted pattern indicates a large area of potassium metasomatism of Cenozoic volcanic rocks and basin-fill sediments, interpreted as a fossil geothermal system (see D' Andrea-Dinkelman and others, this guidebook). Solid lines and dots southwest of Socorro outline three overlapping cauldrons of Oligocene age delineated by detailed mapping (see Osburn and Chapin, this guidebook). Open circles outline two cauldrons proposed by Deal and Rhodes (1976) from reconnaissance work; the larger of these cauldrons is probably a composite of at least two cauldrons and needs considerable revision. Two major strike-slip fault zones are shown, the Red Lake fault zone on the west and the Hot Springs—Montosa fault zone on the east. Between these faults is a 100-km-wide zone of distributed strike-slip faulting along which the Colorado Plateau was translated approximately 100 km to the north-northeast, mainly during Eocene time (Chapin and Cather, 1981; Chapin, 1983).




INDEX MAP

## KEY TO INDEX MAP

8.5 Flight elevation of constant-elevation surveys, in kilofeet above sea level.

.4D Terrain clearance of draped surveys, in kilofeet.

1 Flight-line spacing, in miles.

CONTOUR INTERVAL = 25 GAMMAS

10 0 10 20 30

KILOMETERS

Data from digital data set used to compile New Mexico State composite aeromagnetic map. Total magnetic intensity data from each of the 18 individual surveys (see index map) were reduced to a residual anomaly field by removing the Geomagnetic Reference Field (DGRF) appropriate for the time the survey was flown. Discontinuities at project boundaries were smoothed by computer, using bicubic-spline interpolation functions. Project boundaries will still be visible, however, as an inevitable consequence of variable flight elevation and other survey specifications. A more complete description of procedures used is given by Cordell, Lindrith, 1983, Composite aeromagnetic map of New Mexico, in Geothermal Resources of New Mexico: Scientific Map Series: National Oceanic and Atmospheric Administration, in press.

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# COMPOSITE RESIDUAL TOTAL INTENSITY AEROMAGNETIC MAP OF THE SOCORRO REGION, NEW MEXICO