

Foreword and Data Explanation

This report contains an epicenter map (Figure 1) and listings of earthquakes (Tables 1 and 2) detected and located in the Utah region (lat. 36° 45' – 42° 30' N, long. 108° 45' – 114° 15' W). The computer program HYPOINVERSE (F. W. Klein, 1978, U.S. Geological Survey Open-File Report 78-694) was used to process the earthquake data. This report also includes maps and a table of operating seismograph stations in the University of Utah's regional/urban seismic network (Figures 2 and 3, Table 3).

The earthquake listing in Table 2 is estimated to be systematically complete above magnitude 1.5 in north-central Utah, above magnitude 2.0 in central and southwestern Utah, and above magnitude 3.0 in southeastern Utah and the eastern Uinta Basin. *These data are preliminary—both the locations and magnitudes are subject to revision. The catalog may include some artificial seismic events not yet identified.*

The following data are listed for each earthquake in Table 2:

- Date (yymmdd) and origin time in Universal Coordinated Time (UTC). To convert to local time, subtract seven hours for Mountain Standard Time (MST) and six hours for Mountain Daylight Time (MDT). During the report period, local time was MST through 02:00 (2:00 a.m.) on March 9 and MDT thereafter.
- Earthquake location coordinates in degrees and minutes of north latitude and west longitude, and depth in kilometers.
- "*" indicates poor depth resolution: no recording stations within 10 km or twice the depth.
- MAG, the computed Richter local magnitude (M_L) for each earthquake. "W" indicates peak amplitude measurements from Wood-Anderson records were used. Otherwise, the estimate is calculated from signal durations and is more correctly identified as coda magnitude (M_C). The notation "--" indicates that a reliable magnitude estimate could not be made.
- NO, the number of P and S readings used in the solution.
- GAP, the largest azimuthal separation in degrees between recording stations used in the solution.
- DMN, the epicentral distance in kilometers to the closest station.
- RMS, the root-mean-square of the travel-time residuals in seconds:

$$RMS = \left(\frac{\sum_i (W_i R_i)^2}{\sum_i (W_i)^2} \right)^{\frac{1}{2}}$$

where: R_i is the observed minus the computed arrival time for the i -th P or S reading, and W_i is the relative weight given to the i -th P or S arrival time (0.0 for no weight through 1.0 for full weight).