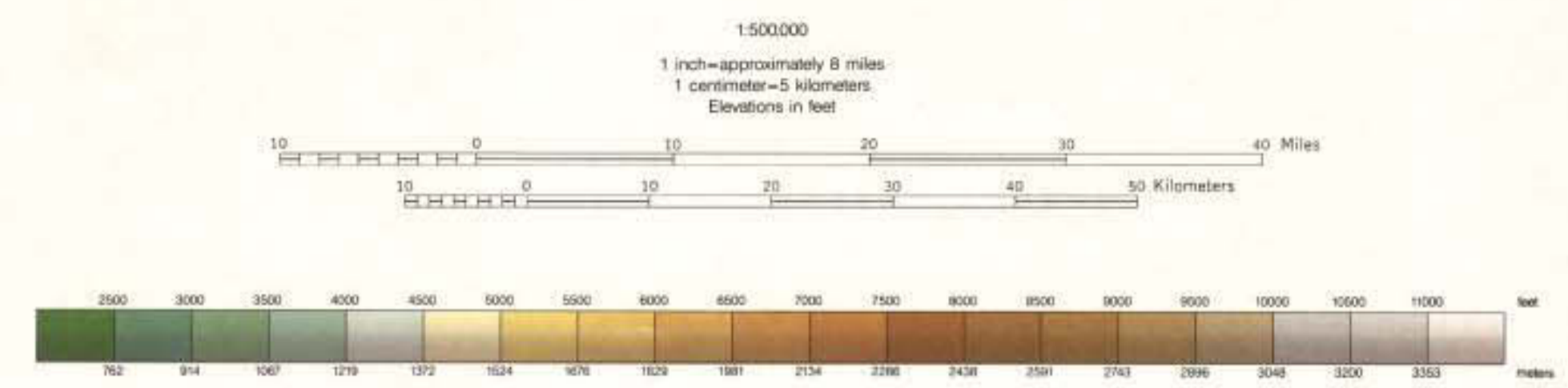


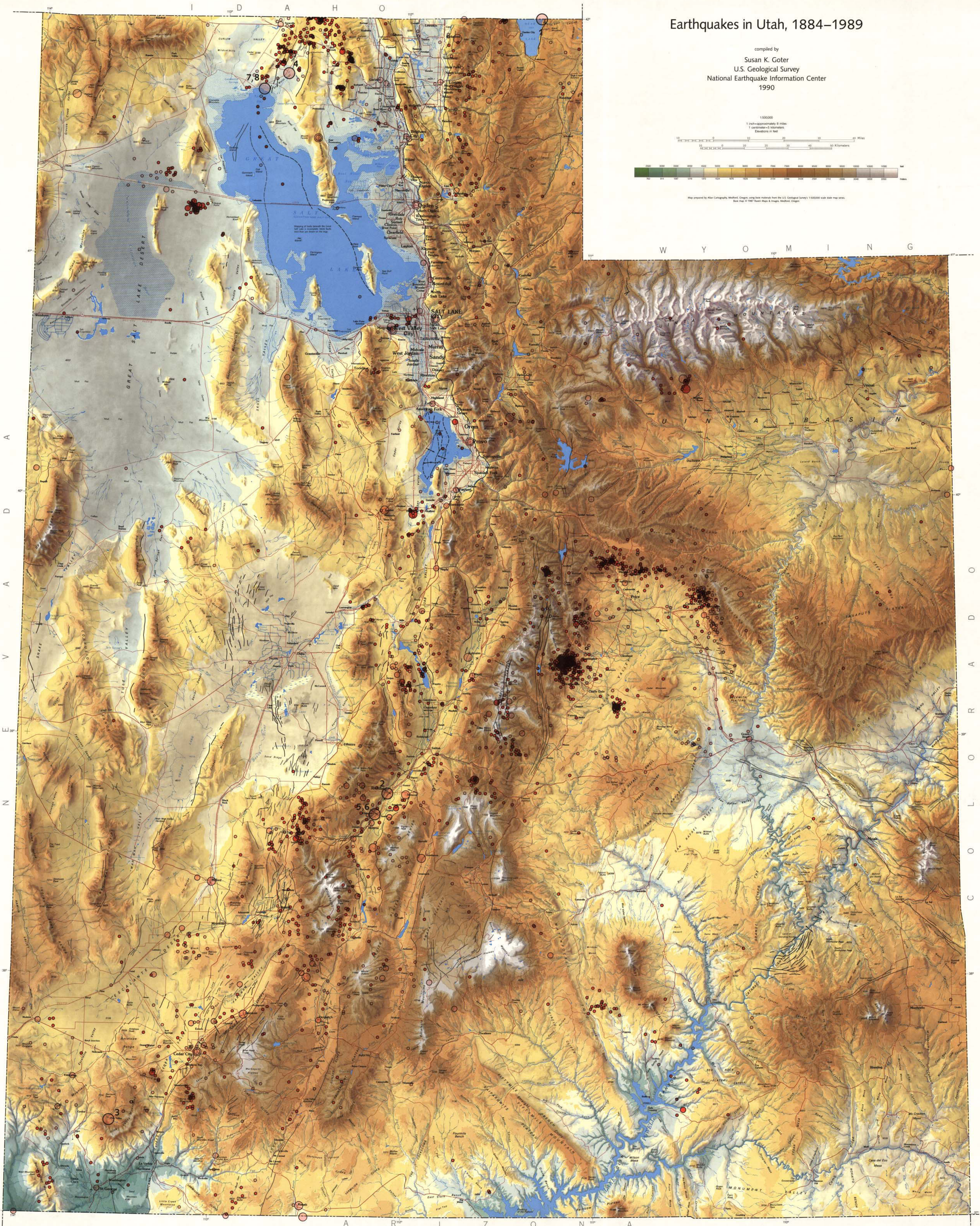
Earthquakes in Utah, 1884-1989

compiled by
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1990



Map prepared by Alan Cartwright Modified. Original map based on data from the U.S. Geological Survey's 1:50,000 scale state map series. Base Map © 1987 Earth Map & Image, Portland, Oregon.

W Y O M I N G



EPICENTERS

Magnitude				Date
2.0-3.9	4.0-4.9	5.0-5.9	≥6.0*	
○	○	○	○	1884-1974
○	○	○	○	1975-1989

* Earthquakes of magnitude 6.0 or greater are designated by a number and described in Table 2.

QUATERNARY FAULTS AND FOLDS (generalized from Hecker, 1990)

- Younger—Known or probable Holocene and latest Pleistocene (0-30,000 years old)
- Older—Probable Pleistocene and suspected Quaternary (10,000-1.6 million years old)

— Faults—Dashed where approximately located

— Anticline—Showing axial trace and direction of plunge

— Syncline—Showing axial trace

— Monocline—Showing axial trace

EXPLANATION

This map displays epicenters of selected earthquakes that occurred from November 1884 through December 1989. Only those data that exceed the magnitude threshold for each time period given in Table 1 are plotted. All of the earthquakes presented have magnitudes of 2.0 or greater. Nearly all originated at a depth shallower than 25 km (15 miles). Symbols are plotted at epicentral locations. Pre-instrumental locations are determined from intensity data. Symbol sizes are scaled into four magnitude ranges. Earthquakes of magnitude 6.0 or greater are labeled with the reference number from Table 2. In addition to these earthquakes, the magnitude 6.1 Pocatello Valley, Idaho, earthquake of March 28, 1975, produced strong shaking in Utah. The epicenter of this shock was several kilometers north of Utah's border within Idaho, at latitude 42°44'N, longitude 112°31'W.

The accuracy of epicentral parameters of earthquakes that occurred since the mid-1970s is greater than that of earlier earthquakes because a major expansion of the University of Utah seismograph network took place at this time. Earthquakes that occurred since 1975 are distinguished on this map from earlier events by the intensity of color of the epicentral symbol, as indicated at left.

Table 1. Magnitude thresholds

Time Period	Magnitude
1884-1900	M ₂ ≥3.5
1901-June 1962	M ₂ ≥4.0
July 1962-1989	M ₂ ≥2.0

Table 2. Utah Earthquakes of Estimated Magnitude 6.0 or Greater
(modified from Anderson and others, 1975)

No.	Epicenter Locality and Date*	MAG.
1	Bear Lake Valley (Idaho-Utah border) earthquake of November 9, 1884	6
2	Southern Utah (Richfield) earthquake of November 13, 1901	6½
3	Pine Valley, Utah, earthquake of November 17, 1902	6
4	Northwestern Utah (Harted Valley) earthquake of October 5, 1909	6
5	Elmore, Utah, earthquake of September 29, 1921	6
6	Elmore, Utah, earthquake of October 1, 1921	6
7	Harted Valley (Kromas), Utah, earthquake of March 12, 1934	6.6
8	Harted Valley (Kromas), Utah, aftershock of March 12, 1934	6.1

* Modified. W. J. Smith, R. E. and others, 1975. Earthquake Studies in Utah, 1850 to 1975. Salt Lake City, Utah, University of Utah. (Reprinted with permission from the author.)

Sources of Earthquake Data

Principal Sources of Data
Decade of North American Geology Catalog (1884-1985)
University of Utah Seismograph Stations Catalog (1986-1989)

Other Significant Sources of Data
State Seismology File, U.S. Geological Survey
University of Nevada Catalog
Professional Determination of Epicenters
United States Network, U.S. Geological Survey
International Seismological Centre Catalog



* Modified. Source: 1989. Quarterly Bulletin of Utah, U.S. Geological Survey Open-File Report 91-128, scale 1:500,000. Modified by the Geological Survey, Bureau of Geology and Mineral Resources, U.S. Geological Survey, Denver, Colorado.