



Los Alamos Seismic Network



Introduction - From the first data recorded in the fall of 1973 to now, the Los Alamos Seismograph Network (LASN) has operated for almost 30 years. During that time LASN data have been used to locate more than 2,500 earthquakes in north-central New Mexico.

Los Alamos Seismic Network's (LASN's) Seismic Stations - The plot (image below - [click to view larger image](#)) shows topography of north-central New Mexico. The Jemez Mountains are in the middle, and within them, the Valles Caldera is the circular feature. The Sangre de Cristo Mountains are at the right. Other features are: LASN stations (blue triangles), faults (black lines), rivers (blue lines), major roads (green lines), and selected towns (green).

New Mexico Seismology

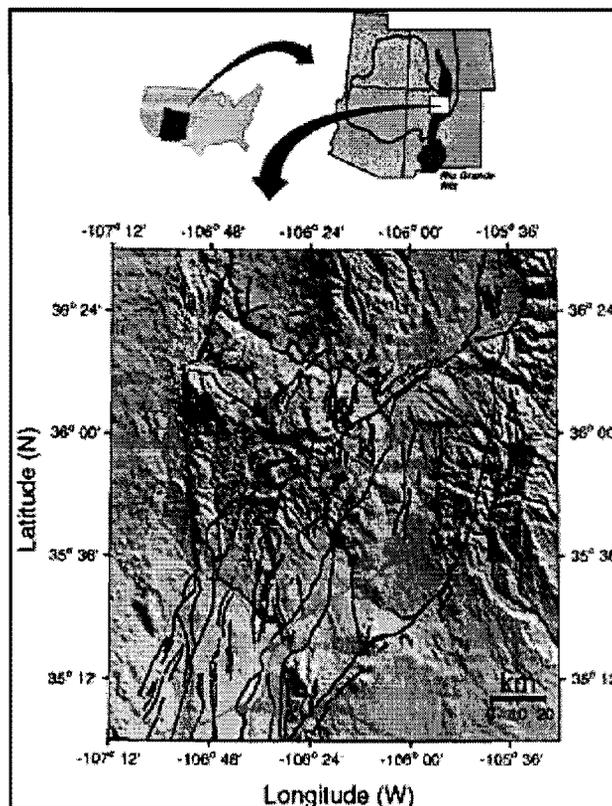
The Albuquerque Seismological Laboratory is the U.S. Geological Survey's instrument test and development center, and currently is operating a broad-band shallow borehole triaxial seismometer package as station ANMO.

The Department of Earth and Environmental Sciences at the New Mexico Institute of Mining and Technology ("New Mexico Tech") in Socorro operates networks of short-period seismographs in the Socorro area and in south-east New Mexico, near the DOE-WIPP site.

Los Alamos National Laboratory researchers are collaborating with the New Mexico/Princeton Earth Physics Program (NMPEPP) to install additional seismographs in secondary schools and community colleges in New Mexico.

LASN History

LASN Recent Seismicity



See our [Links Page](#) for more sites related to seismology

33172



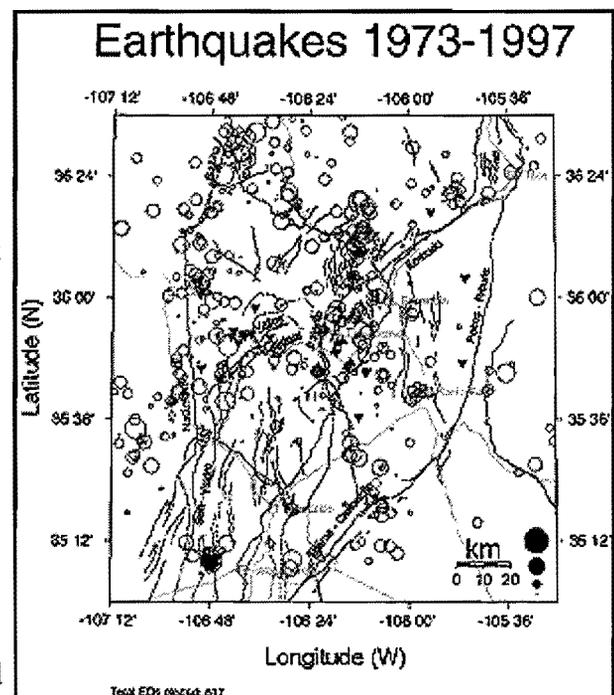
Seismicity in North-Central New Mexico



The plot shows about 600 of the best-located earthquakes (red circles) in north-central New Mexico during the 25 years from 1973 through 1997. The size of each circle is proportional to the magnitude of the earthquakes (filled circles at bottom right show magnitudes from 0 to 3). Faults are drawn in black, rivers in blue, major roads in green. Stations are shown as triangles, with those that operated from 1973 through 1984 as purple inverted triangles, those currently operating as blue upright triangles. (click on the plot to see a larger view of it).

The network was installed to aid in seismic verification research as well as to monitor quakes for Los Alamos National Laboratory. LASN station data is the only instrumental seismic data available for earthquakes that occur in northern New Mexico. Although it once included as many as 22 stations spread over a geographic area of 150 km (N-S) by 350 km (E-W), funding constraints have limited both the number and geographic extent of the network stations. Currently, 7 stations are operated, all within or near Los Alamos National Laboratory. All stations are short-period, radio-telemetered stations, with 1Hz geophones. Three stations are 3-component, with north-south and east-west sensors, as well as vertical component sensors.

More than 2,000 earthquakes were detected and located throughout northern New Mexico during the first 11 years of the network's operation (1973 to 1984). With the subsequent "down-sizing" of the network (done before down-sizing was a buzz-word!), about 1-2 nearby earthquakes a month are detected and located. We consider earthquakes to be nearby if the time between their P and S wave arrivals is about 20 seconds or less. That corresponds roughly to about 150-160 km distance from the network.



Seismicity in North-Central New Mexico



Summary - In the 12 months, October, 1997 through September, 1998, a total of 27 earthquakes were located. Many of these were part of the Willard, NM swarm, which started in late December, 1997 and continued into January, 1998. The Willard swarm earthquakes are located about 30 km south of the southern edge of the north-central New Mexico seismicity plot. Plot features are similar to those described for the plot above. Plot of earthquakes in north-central New Mexico.

Enlarged Plot of Earthquakes in the Los Alamos Area

