

**U.S. DEPARTMENT OF THE INTERIOR
U.S. GEOLOGICAL SURVEY**

**The Preliminary Damage and Intensity Survey for the Landers, California, Earthquake
of June 28, 1992**

Open-File Report 93-191

**by
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This report has not been reviewed for conformity with U.S. Geological Survey editorial standards and stratigraphic nomenclature.

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Introduction

A major earthquake (magnitude 7.6) struck the Landers, California area on June 28, 1992. The epicenter was approximately 150 km east of Los Angeles in San Bernardino County. The Landers earthquake was felt in California, Nevada, western Arizona, and southern Utah. It was felt in high rise buildings as far north as Boise, Idaho, and as far east as Albuquerque, New Mexico, and Denver, Colorado (Preliminary Determination of Epicenters, June 1992, p. 17). The Landers earthquake was felt over a contiguous land area of approximately 103,600 km². Primary ground rupture occurred along four faults in this area (Summerville, 1992). The preliminary hypocenter computed by the California Institute of Technology at Pasadena, California is:

Date:	June 28, 1992
Origin Time:	11 57 34.1 UTC
Latitude:	34.201N.
Longitude:	116.436W.
Depth:	1 km
Magnitude:	6.2 m _b (GS), 7.6 M _S (GS)

A magnitude 6.7 event occurred within 3 hours, near Big Bear Lake, less than 50 km away from Landers. The preliminary estimate of damage is \$92.1 million for the Landers and the Big Bear Lake events. The effects from the two events include: one person killed at Yucca Valley, two people killed by heart attacks, and 397 people injured (press reports). The most extensive damage, from the Landers event, occurred in the Landers, Yucca Valley, and Joshua Tree area—a sprawling conglomerate of desert communities.

The Iseisismal Maps

Intensity questionnaires were mailed to postmasters within 1,600 km of the Landers epicenter to determine the intensities and the geographic extent of the felt area. A U.S. Geological Survey field team (Glen Reagor and the author) was dispatched to conduct a damage survey in the communities that were most affected by the earthquakes. In the course of the survey, damage information was collected through personal observations, interviews with residents, and supplementary press reports. This information was used to compile two isoseismal maps that show areas of equal seismic intensity (figs. 1 and 2, p. 3–4). A listing of the intensities from combined mail and field canvasses is included in Table 1 (p. 5–22).

A maximum preliminary intensity of IX on the Modified Mercalli Intensity Scale (MMI, Wood and Neumann, 1931, p. 277–283) is assigned to the Landers earthquake. A Modified Mercalli Intensity Scale is found in Appendix A (p. 30). The intensity IX is assigned where a well-built, wood-frame house was destroyed by the earthquake; the house was located near ground rupture northwest of Landers (figs. 3–8, p. 24–29).

An MMI of VIII is assigned to the California desert communities of Landers, Yucca Valley, and Joshua Tree. At Landers there was significant damage to the non-elevated water tank adjacent to the Landers post office. In Yucca Valley and Joshua Tree a few one-story, commercial buildings, of poorly-reinforced or unreinforced masonry, sustained partial collapse.

An MMI of VII is assigned to the California desert communities of Lucerne Valley, Pioneertown, and Morongo Valley. At Lucerne Valley a wall, reportedly, was bulged outward at one residence, and a few chimneys were broken. At Pioneertown a few chimneys fell, masonry fences and/or retaining walls had partially fallen, and heavy furniture was displaced. At Morongo Valley a few chimneys were cracked, masonry fences and/or retaining walls had partially fallen, and many small appliances were overturned.

Anomalous MMI VI intensity locations within the MMI V isoseismal include:

California—

The Los Angeles area— Culver City, Los Angeles, Monrovia, Paramount, Placentia, San Clemente, and Sun City.

The San Diego area— La Jolla, and San Diego.

Anomalous MMI V intensity locations within the MMI IV isoseismal include:

California— Escondido, Northridge, San Fernando, and Santa Clarita.

Anomalous MMI V intensity locations within the MMI III isoseismal include:

Arizona— Glendale and Cashion.

California— Grover City and Guadalupe.

Anomalous MMI IV intensity locations within the MMI III isoseismal include:

Arizona—

The Phoenix area— Chandler, Phoenix, Scottsdale, Tempe.

Anomalous felt locations outside the contiguous felt area include:

Arizona— Holbrook (MMI II).

California— Crescent City (MMI III), Modesto (MMI II), and Woodland (MMI II).

Colorado— Alamosa (Felt), Golden (MMI II), Littleton (MMI II), and Steamboat Springs (MMI II).

Nevada— Austin (MMI II), Ely (MMI II), and Hawthorne (Felt).

New Mexico— Albuquerque (Felt), Fort Sumner (Felt), and Lordsburg (MMI III).

Washington— Paradise (MMI III).

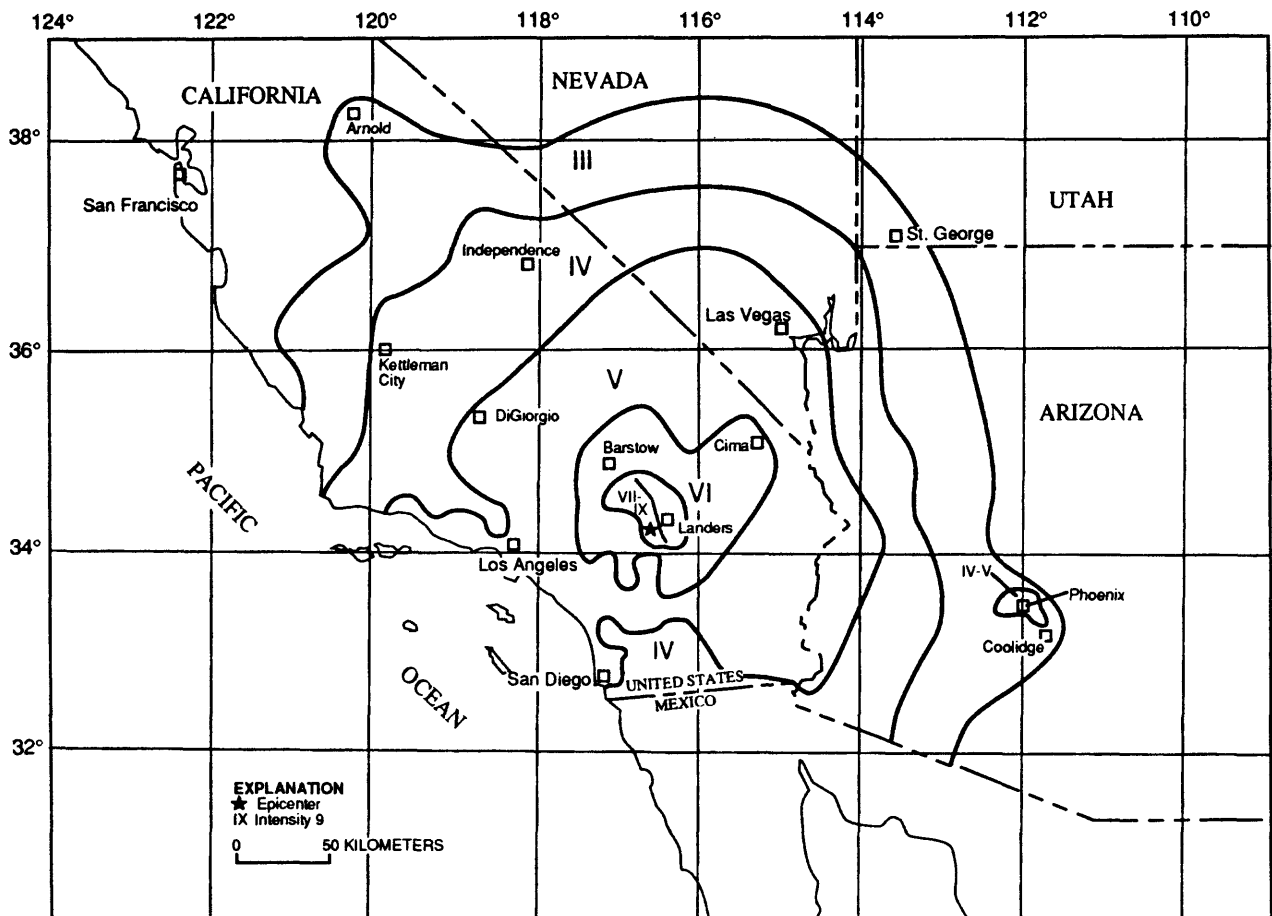


Figure 1. Preliminary isoseismal map for the Lander, California, earthquake of June 28, 1992. Illustration by Ralph Ricotta.

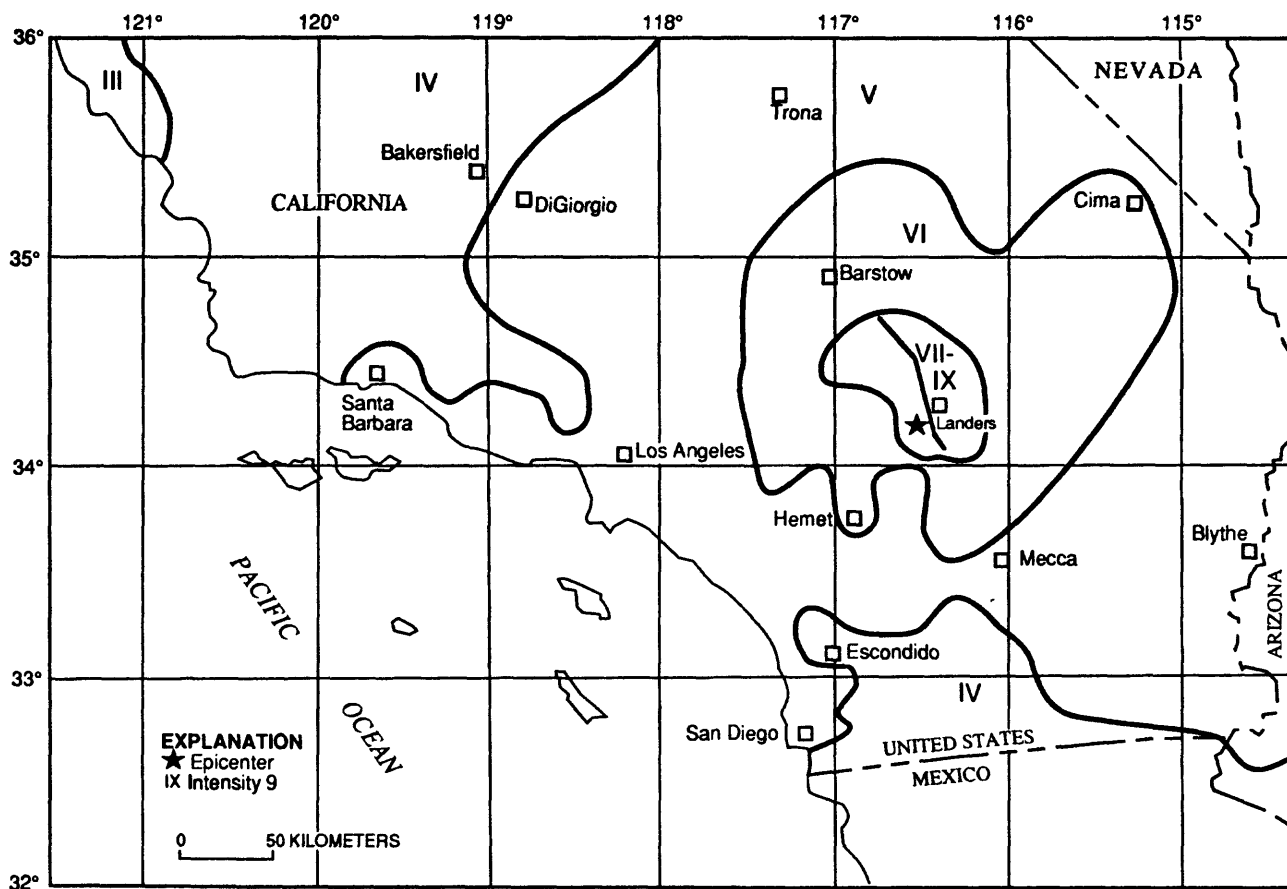


Figure 2. Preliminary isoseismal map of the Landers and southern California area for the Landers, California, earthquake of June 28, 1992. Illustration by Ralph Ricotta.

Intensities from the postmaster questionnaire canvass and field survey

**Table 1. The Preliminary Modified Mercalli Intensities for the June 28, 1992,
11 57 34.1 UTC, Landers, California Earthquake.**

Intensity	Latitude	Longitude	Town Name	State
IX	34.295 N.	116.423 W.	NW of Landers	CA
VIII	34.135 N.	116.312 W.	Joshua Tree	CA
VIII	34.266 N.	116.392 W.	Landers	CA
VIII	34.119 N.	116.445 W.	Yucca Valley	CA
VII	34.443 N.	116.966 W.	Lucerne Valley	CA
VII	34.046 N.	116.580 W.	Morongo Valley	CA
VII	34.156 N.	116.495 W.	Pioneertown	CA
VI	34.582 N.	117.408 W.	Adelanto	CA
VI	34.557 N.	115.743 W.	Amboy	CA
VI	34.146 N.	116.983 W.	Angelus Oaks	CA
VI	34.500 N.	117.185 W.	Apple Valley	CA
VI	33.925 N.	116.875 W.	Banning	CA
VI	34.898 N.	117.021 W.	Barstow	CA
VI	33.929 N.	116.976 W.	Beaumont	CA
VI	34.261 N.	116.844 W.	Big Bear City	CA
VI	34.048 N.	117.230 W.	Bryn Mawr	CA
VI	34.003 N.	117.061 W.	Calimesa	CA
VI	33.779 N.	116.464 W.	Cathedral City	CA
VI	34.253 N.	117.163 W.	Cedar Glen	CA
VI	35.237 N.	115.498 W.	Cima	CA
VI	33.680 N.	116.173 W.	Coachella	CA
VI	34.073 N.	117.312 W.	Colton	CA
VI	34.233 N.	117.195 W.	Crest Park	CA
VI	34.241 N.	117.284 W.	Crestline	CA
VI	34.021 N.	118.395 W.	Culver City	CA
VI	34.863 N.	116.887 W.	Daggett	CA
VI	33.961 N.	116.500 W.	Desert Hot Springs	CA
VI	34.109 N.	117.169 W.	East Highlands	CA
VI	34.733 N.	115.244 W.	Essex	CA
VI	34.126 N.	117.522 W.	Etiwanda	CA
VI	34.085 N.	116.909 W.	Forest Falls	CA
VI	33.870 N.	117.920 W.	Fullerton	CA
VI	34.580 N.	117.366 W.	George Air Force Base	CA
VI	34.240 N.	117.076 W.	Green Valley Lake	CA
VI	33.747 N.	116.971 W.	Hemet	CA
VI	34.426 N.	117.300 W.	Hesperia	CA
VI	34.128 N.	117.207 W.	Highland	CA
VI	33.720 N.	116.214 W.	Indio	CA

**Table 1. The Preliminary Modified Mercalli Intensities for the June 28, 1992,
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Intensity	Latitude	Longitude	Town Name	State
VI	32.847 N.	117.270 W.	La Jolla	CA
VI	33.663 N.	116.309 W.	La Quinta	CA
VI	34.248 N.	117.188 W.	Lake Arrowhead	CA
VI	34.048 N.	117.260 W.	Loma Linda	CA
VI	34.054 N.	118.238 W.	Los Angeles (Downtown)	CA
VI	34.721 N.	116.159 W.	Ludlow	CA
VI	34.259 N.	117.499 W.	Lytle Creek	CA
VI	34.148 N.	117.998 W.	Monrovia	CA
VI	34.826 N.	116.686 W.	Newberry Springs	CA
VI	33.889 N.	118.158 W.	Paramount	CA
VI	33.872 N.	117.869 W.	Placentia	CA
VI	33.739 N.	116.411 W.	Rancho Mirage	CA
VI	33.953 N.	117.395 W.	Riverside	CA
VI	34.864 N.	118.162 W.	Rosamond	CA
VI	34.207 N.	117.108 W.	Running Springs	CA
VI	34.121 N.	117.302 W.	San Bernardino	CA
VI	33.426 N.	117.611 W.	San Clemente	CA
VI	32.713 N.	117.155 W.	San Diego	CA
VI	33.783 N.	116.957 W.	San Jacinto	CA
VI	34.243 N.	116.828 W.	Sugarloaf	CA
VI	33.709 N.	117.196 W.	Sun City	CA
VI	33.820 N.	116.389 W.	Thousand Palms	CA
VI	34.135 N.	116.053 W.	Twentynine Palms	CA
VI	34.238 N.	117.232 W.	Twin Peaks	CA
VI	34.536 N.	117.290 W.	Victorville	CA
VI	34.905 N.	116.819 W.	Yermo	CA
VI	34.033 N.	117.042 W.	Yucaipa	CA
V	33.932 N.	114.005 W.	Bouse	AZ
V	35.147 N.	114.567 W.	Bullhead City	AZ
V	33.435 N.	112.297 W.	Cashion	AZ
V	33.604 N.	114.524 W.	Ehrenberg	AZ
V	33.538 N.	112.185 W.	Glendale	AZ
V	34.483 N.	114.321 W.	Lake Havasu City	AZ
V	33.663 N.	114.229 W.	Quartzsite	AZ
V	32.596 N.	114.708 W.	Somerton	AZ
V	32.725 N.	114.623 W.	Yuma	AZ
V	34.470 N.	118.195 W.	Acton	CA
V	34.143 N.	118.736 W.	Agoura	CA
V	33.835 N.	117.913 W.	Anaheim	CA
V	33.555 N.	116.672 W.	Anza	CA
V	33.865 N.	118.082 W.	Artesia	CA

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Intensity	Latitude	Longitude	Town Name	State
V	33.865 N.	117.830 W.	Atwood	CA
V	34.133 N.	117.906 W.	Azusa	CA
V	35.265 N.	116.073 W.	Baker	CA
V	34.085 N.	117.960 W.	Baldwin Park	CA
V	34.073 N.	118.399 W.	Beverly Hills	CA
V	34.246 N.	117.208 W.	Blue Jay	CA
V	33.610 N.	114.595 W.	Blythe	CA
V	35.588 N.	118.491 W.	Bodfish	CA
V	33.916 N.	117.899 W.	Brea	CA
V	33.867 N.	117.997 W.	Buena Park	CA
V	34.187 N.	118.347 W.	Burbank	CA
V	33.917 N.	116.786 W.	Cabazon	CA
V	34.520 N.	115.511 W.	Cadiz	CA
V	35.125 N.	117.985 W.	California City	CA
V	33.125 N.	115.513 W.	Calipatria	CA
V	35.308 N.	117.967 W.	Cantil	CA
V	33.021 N.	117.280 W.	Cardiff-by-the-Sea	CA
V	34.398 N.	119.517 W.	Carpinteria	CA
V	34.012 N.	117.688 W.	Chino	CA
V	33.660 N.	115.720 W.	Chiriaco Summit	CA
V	33.641 N.	117.917 W.	Costa Mesa	CA
V	34.087 N.	117.889 W.	Covina	CA
V	34.973 N.	118.387 W.	Culver City (Fox Hills)	CA
V	33.816 N.	118.036 W.	Cypress	CA
V	33.466 N.	117.697 W.	Dana Point	CA
V	32.959 N.	117.264 W.	Del Mar	CA
V	33.712 N.	115.401 W.	Desert Center	CA
V	35.252 N.	118.850 W.	Di Giorgio	CA
V	33.939 N.	118.131 W.	Downey	CA
V	34.164 N.	114.300 W.	Earp	CA
V	33.675 N.	117.758 W.	East Irvine	CA
V	34.068 N.	118.026 W.	El Monte	CA
V	33.625 N.	117.692 W.	El Toro	CA
V	33.119 N.	117.085 W.	Escondido	CA
V	33.376 N.	117.250 W.	Fallbrook	CA
V	34.092 N.	117.434 W.	Fontana	CA
V	33.709 N.	117.952 W.	Fountain Valley	CA
V	34.822 N.	118.943 W.	Frazier Park	CA
V	33.891 N.	118.301 W.	Gardena	CA
V	34.136 N.	117.864 W.	Glendora	CA
V	35.121 N.	120.620 W.	Grover City	CA
V	34.971 N.	120.570 W.	Guadalupe	CA
V	33.993 N.	117.967 W.	Hacienda Heights	CA

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Intensity	Latitude	Longitude	Town Name	State
V	34.482 N.	114.413 W.	Havasu Lake	CA
V	33.862 N.	118.398 W.	Hermosa Beach	CA
V	32.811 N.	115.379 W.	Holtville	CA
V	33.743 N.	117.108 W.	Homeland	CA
V	33.658 N.	117.992 W.	Huntington Beach	CA
V	33.740 N.	116.718 W.	Idyllwild	CA
V	33.961 N.	118.352 W.	Inglewood	CA
V	35.646 N.	117.811 W.	Inyokern	CA
V	33.669 N.	117.822 W.	Irvine	CA
V	36.008 N.	119.960 W.	Kettleman City	CA
V	33.917 N.	118.011 W.	La Mirada	CA
V	34.100 N.	117.766 W.	La Verne	CA
V	33.522 N.	117.706 W.	Laguna Niguel	CA
V	33.668 N.	117.326 W.	Lake Elsinore	CA
V	34.676 N.	118.444 W.	Lake Hughes	CA
V	35.609 N.	118.482 W.	Lake Isabella	CA
V	33.853 N.	118.133 W.	Lakewood	CA
V	34.698 N.	118.135 W.	Lancaster	CA
V	32.742 N.	117.030 W.	Lemon Grove	CA
V	33.792 N.	118.314 W.	Lomita	CA
V	33.930 N.	118.210 W.	Lynwood	CA
V	33.571 N.	116.076 W.	Mecca	CA
V	33.744 N.	117.988 W.	Midway City	CA
V	33.599 N.	117.671 W.	Mission Viejo	CA
V	34.009 N.	118.104 W.	Montebello	CA
V	33.917 N.	117.156 W.	Moreno Valley	CA
V	34.233 N.	117.636 W.	Mount Baldy	CA
V	33.553 N.	117.213 W.	Murrieta	CA
V	34.848 N.	114.613 W.	Needles	CA
V	33.621 N.	117.923 W.	Newport Beach	CA
V	33.240 N.	115.518 W.	Niland	CA
V	33.936 N.	117.558 W.	Norco	CA
V	33.922 N.	116.542 W.	North Palm Springs	CA
V	34.228 N.	118.535 W.	Northridge	CA
V	33.902 N.	118.080 W.	Norwalk	CA
V	33.801 N.	117.145 W.	Nuevo	CA
V	33.195 N.	117.378 W.	Oceanside	CA
V	35.690 N.	118.219 W.	Onyx	CA
V	33.787 N.	117.858 W.	Orange	CA
V	34.197 N.	119.176 W.	Oxnard	CA
V	33.721 N.	116.387 W.	Palm Desert	CA
V	33.830 N.	116.544 W.	Palm Springs	CA

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Intensity	Latitude	Longitude	Town Name	State
V	33.303 N.	116.980 W.	Pauma Valley	CA
V	34.506 N.	117.908 W.	Pearblossom	CA
V	34.147 N.	119.194 W.	Port Hueneme	CA
V	32.962 N.	117.035 W.	Poway	CA
V	35.368 N.	117.657 W.	Randsburg	CA
V	34.061 N.	117.181 W.	Redlands	CA
V	33.849 N.	118.387 W.	Redondo Beach	CA
V	36.596 N.	119.449 W.	Reedley	CA
V	34.229 N.	117.224 W.	Rimforest	CA
V	36.431 N.	119.858 W.	Riverdale	CA
V	33.280 N.	115.950 W.	Salton City	CA
V	34.116 N.	117.805 W.	San Dimas	CA
V	34.281 N.	118.438 W.	San Fernando	CA
V	33.501 N.	117.661 W.	San Juan Capistrano	CA
V	33.231 N.	117.322 W.	San Luis Rey	CA
V	33.735 N.	118.291 W.	San Pedro	CA
V	33.750 N.	117.865 W.	Santa Ana	CA
V	34.423 N.	119.703 W.	Santa Barbara	CA
V	34.378 N.	118.613 W.	Santa Clarita	CA
V	34.002 N.	118.482 W.	Santa Monica (Ocean Park)	CA
V	34.354 N.	119.058 W.	Santa Paula	CA
V	33.742 N.	118.101 W.	Seal Beach	CA
V	32.793 N.	115.690 W.	Seeley	CA
V	35.973 N.	116.270 W.	Shoshone	CA
V	34.161 N.	118.051 W.	Sierra Madre	CA
V	33.746 N.	117.636 W.	Silverado	CA
V	34.269 N.	118.780 W.	Simi Valley	CA
V	34.235 N.	117.178 W.	Skyforest	CA
V	33.954 N.	118.211 W.	South Gate	CA
V	34.114 N.	118.152 W.	South Pasadena	CA
V	32.744 N.	116.998 W.	Spring Valley	CA
V	33.802 N.	117.992 W.	Stanton	CA
V	34.217 N.	118.369 W.	Sun Valley	CA
V	33.727 N.	118.081 W.	Surfside	CA
V	35.848 N.	116.225 W.	Tecopa	CA
V	33.493 N.	117.147 W.	Temecula	CA
V	34.093 N.	118.600 W.	Topanga	CA
V	35.762 N.	117.371 W.	Trona	CA
V	34.252 N.	118.287 W.	Tujunga	CA
V	33.745 N.	117.825 W.	Tustin	CA
V	34.097 N.	117.647 W.	Upland	CA
V	34.446 N.	117.851 W.	Valyermo	CA

**Table 1. The Preliminary Modified Mercalli Intensities for the June 28, 1992,
11 57 34.1 UTC, Landers, California Earthquake.**

Intensity	Latitude	Longitude	Town Name	State
V	33.282 N.	116.632 W.	Warner Springs	CA
V	35.415 N.	118.300 W.	Weldon	CA
V	33.037 N.	115.620 W.	Westmorland	CA
V	33.780 N.	118.261 W.	Wilmington	CA
V	34.360 N.	117.632 W.	Wrightwood	CA
V	36.643 N.	116.399 W.	Armagosa Valley	NV
V	36.046 N.	115.403 W.	Blue Diamond	NV
V	35.349 N.	114.895 W.	Cal Nev Ari	NV
V	35.490 N.	114.710 W.	Cottonwood Cove	NV
V	36.569 N.	115.669 W.	Indian Springs	NV
V	36.198 N.	115.116 W.	North Las Vegas	NV
IV	33.306 N.	111.840 W.	Chandler	AZ
IV	35.414 N.	114.198 W.	Chloride	AZ
IV	35.189 N.	114.052 W.	Kingman	AZ
IV	34.150 N.	114.288 W.	Parker	AZ
IV	33.448 N.	112.073 W.	Phoenix	AZ
IV	32.751 N.	113.988 W.	Roll	AZ
IV	33.781 N.	113.613 W.	Salome	AZ
IV	32.495 N.	114.781 W.	San Luis	AZ
IV	33.509 N.	111.898 W.	Scottsdale	AZ
IV	32.697 N.	113.956 W.	Tacna	AZ
IV	33.414 N.	111.908 W.	Tempe	AZ
IV	32.672 N.	114.146 W.	Wellton	AZ
IV	33.822 N.	113.540 W.	Wenden	AZ
IV	34.703 N.	113.610 W.	Wikieup	AZ
IV	32.835 N.	116.765 W.	Alpine	CA
IV	35.373 N.	119.017 W.	Bakersfield	CA
IV	32.789 N.	114.555 W.	Bard	CA
IV	33.288 N.	117.224 W.	Bonsall	CA
IV	33.255 N.	116.374 W.	Borrego Springs	CA
IV	35.880 N.	118.672 W.	California Hot Springs	CA
IV	34.216 N.	119.036 W.	Camarillo	CA
IV	32.606 N.	116.468 W.	Campo	CA
IV	34.201 N.	118.602 W.	Canoga Park	CA
IV	33.158 N.	117.349 W.	Carlsbad	CA
IV	34.257 N.	118.600 W.	Chatsworth	CA
IV	34.096 N.	117.718 W.	Claremont	CA
IV	36.098 N.	119.559 W.	Corcoran	CA
IV	33.960 N.	118.184 W.	Cudahy	CA
IV	36.543 N.	119.386 W.	Dinuba	CA
IV	36.297 N.	119.205 W.	Farmersville	CA

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Intensity	Latitude	Longitude	Town Name	State
IV	35.178 N.	119.540 W.	Fellows	CA
IV	34.064 N.	117.585 W.	Guasti	CA
IV	36.327 N.	119.644 W.	Hanford	CA
IV	33.831 N.	118.071 W.	Hawaiian Gardens	CA
IV	33.979 N.	118.220 W.	Huntington Park	CA
IV	32.617 N.	116.188 W.	Jacumba	CA
IV	35.372 N.	117.633 W.	Johannesburg	CA
IV	33.078 N.	116.601 W.	Julian	CA
IV	35.754 N.	118.424 W.	Kemville	CA
IV	36.513 N.	119.553 W.	Kingsburg	CA
IV	34.204 N.	118.200 W.	La Canada	CA
IV	33.126 N.	117.207 W.	Lake San Marcos	CA
IV	33.887 N.	118.351 W.	Lawndale	CA
IV	34.566 N.	117.821 W.	Llano	CA
IV	34.639 N.	120.456 W.	Lompoc	CA
IV	37.648 N.	118.971 W.	Mammoth Lakes	CA
IV	35.058 N.	119.400 W.	Maricopa	CA
IV	35.678 N.	119.228 W.	McFarland	CA
IV	35.305 N.	119.621 W.	McKittrick	CA
IV	32.872 N.	116.417 W.	Mount Laguna	CA
IV	34.226 N.	118.065 W.	Mount Wilson	CA
IV	34.384 N.	118.530 W.	Newhall	CA
IV	34.400 N.	119.299 W.	Oak View	CA
IV	34.448 N.	119.241 W.	Ojai	CA
IV	36.544 N.	119.286 W.	Orosi	CA
IV	34.262 N.	118.426 W.	Pacoima	CA
IV	32.821 N.	116.528 W.	Pine Valley	CA
IV	34.415 N.	118.793 W.	Piru	CA
IV	33.041 N.	116.867 W.	Ramona	CA
IV	34.201 N.	118.535 W.	Reseda	CA
IV	34.080 N.	118.071 W.	Rosemead	CA
IV	34.096 N.	118.105 W.	San Gabriel	CA
IV	33.109 N.	116.672 W.	Santa Ysabel	CA
IV	35.500 N.	119.270 W.	Shafter	CA
IV	34.257 N.	118.995 W.	Somis	CA
IV	36.145 N.	119.059 W.	Strathmore	CA
IV	34.173 N.	118.553 W.	Tarzana	CA
IV	35.132 N.	118.448 W.	Tehachapi	CA
IV	33.836 N.	118.328 W.	Torrance	CA
IV	36.330 N.	119.291 W.	Visalia	CA
IV	33.200 N.	117.241 W.	Vista	CA
IV	35.706 N.	118.455 W.	Wofford Heights	CA

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Intensity	Latitude	Longitude	Town Name	State
IV	35.978 N.	114.831 W.	Boulder City	NV
IV	36.175 N.	115.136 W.	Las Vegas	NV
IV	36.543 N.	114.446 W.	Overton	NV
IV	35.465 N.	114.918 W.	Searchlight	NV
III	32.371 N.	112.860 W.	Ajo	AZ
III	34.581 N.	113.203 W.	Bagdad	AZ
III	33.370 N.	112.583 W.	Buckeye	AZ
III	34.757 N.	112.453 W.	Chino Valley	AZ
III	32.977 N.	111.516 W.	Coolidge	AZ
III	32.947 N.	112.716 W.	Gila Bend	AZ
III	33.493 N.	112.357 W.	Litchfield Park	AZ
III	35.529 N.	113.424 W.	Peach Springs	AZ
III	35.325 N.	112.876 W.	Seligman	AZ
III	33.968 N.	112.728 W.	Wickenburg	AZ
III	33.593 N.	112.302 W.	Youngtown	AZ
III	38.255 N.	120.350 W.	Arnold	CA
III	35.209 N.	118.827 W.	Arvin	CA
III	34.613 N.	120.191 W.	Buellton	CA
III	36.139 N.	120.359 W.	Coalinga	CA
III	41.756 N.	124.200 W.	Crescent City	CA
III	36.523 N.	119.285 W.	Cutler	CA
III	36.659 N.	119.592 W.	Del Rey	CA
III	35.728 N.	118.702 W.	Glennville	CA
III	36.351 N.	119.419 W.	Goshen	CA
III	32.730 N.	115.528 W.	Heber	CA
III	36.202 N.	120.101 W.	Huron	CA
III	36.802 N.	118.199 W.	Independence	CA
III	36.212 N.	121.125 W.	King City	CA
III	36.203 N.	119.087 W.	Lindsay	CA
III	36.961 N.	120.059 W.	Madera	CA
III	36.692 N.	119.051 W.	Miramonte	CA
III	35.098 N.	120.611 W.	Oceano	CA
III	36.624 N.	119.312 W.	Orange Cove	CA
III	36.611 N.	119.526 W.	Parlier	CA
III	38.188 N.	119.989 W.	Pincrest	CA
III	35.796 N.	119.106 W.	Richgrove	CA
III	35.282 N.	120.658 W.	San Luis Obispo	CA
III	36.708 N.	119.555 W.	Sanger	CA
III	35.390 N.	120.608 W.	Santa Margarita	CA
III	34.595 N.	120.136 W.	Solvang	CA
III	37.984 N.	120.381 W.	Sonora	CA
III	35.962 N.	119.043 W.	Terra Bella	CA

**Table 1. The Preliminary Modified Mercalli Intensities for the June 28, 1992,
11 57 34.1 UTC, Landers, California Earthquake.**

Intensity	Latitude	Longitude	Town Name	State
III	34.170 N.	118.836 W.	Thousand Oaks	CA
III	36.438 N.	118.903 W.	Three Rivers	CA
III	32.350 N.	108.708 W.	Lordsburg	NM
III	46.786 N.	121.734 W.	Paradise	WA
II	34.902 N.	110.157 W.	Holbrook	AZ
II	36.825 N.	119.701 W.	Clovis	CA
II	37.639 N.	120.995 W.	Modesto	CA
II	38.678 N.	121.772 W.	Woodland	CA
II	39.755 N.	105.220 W.	Golden	CO
II	39.613 N.	105.016 W.	Littleton	CO
II	40.485 N.	106.831 W.	Steamboat Springs	CO
II	39.493 N.	117.068 W.	Austin	NV
II	39.247 N.	114.887 W.	Ely	NV
Felt	32.583 N.	117.083 W.	Palm City	CA
Felt	37.469 N.	105.869 W.	Alamosa	CO
Felt	35.084 N.	106.650 W.	Albuquerque	NM
Felt	34.471 N.	104.245 W.	Fort Sumner	NM
Felt	38.524 N.	118.623 W.	Hawthorne	NV
Not Felt	33.415 N.	111.548 W.	Apache Junction	AZ
Not Felt	33.138 N.	110.124 W.	Bylas	AZ
Not Felt	33.050 N.	109.295 W.	Clifton	AZ
Not Felt	34.739 N.	112.009 W.	Cottonwood	AZ
Not Felt	34.111 N.	109.290 W.	Eagar	AZ
Not Felt	33.613 N.	112.323 W.	El Mirage	AZ
Not Felt	33.031 N.	111.386 W.	Florence	AZ
Not Felt	33.394 N.	110.785 W.	Globe	AZ
Not Felt	34.397 N.	112.235 W.	Mayer	AZ
Not Felt	34.505 N.	109.360 W.	Saint Johns	AZ
Not Felt	32.599 N.	110.630 W.	San Manuel	AZ
Not Felt	34.869 N.	111.760 W.	Sedona	AZ
Not Felt	34.254 N.	110.029 W.	Show Low	AZ
Not Felt	32.221 N.	110.925 W.	Tucson	AZ
Not Felt	41.487 N.	120.541 W.	Alturas	CA
Not Felt	34.139 N.	118.034 W.	Arcadia	CA
Not Felt	35.118 N.	120.589 W.	Arroyo Grande	CA
Not Felt	38.896 N.	121.075 W.	Auburn	CA
Not Felt	40.741 N.	123.254 W.	Big Bar	CA
Not Felt	36.270 N.	121.806 W.	Big Sur	CA

**Table 1. The Preliminary Modified Mercalli Intensities for the June 28, 1992,
11 57 34.1 UTC, Landers, California Earthquake.**

Intensity	Latitude	Longitude	Town Name	State
Not Felt	34.070 N.	117.395 W.	Bloomington	CA
Not Felt	32.665 N.	116.265 W.	Boulevard	CA
Not Felt	38.255 N.	119.230 W.	Bridgeport	CA
Not Felt	40.469 N.	123.798 W.	Bridgeville	CA
Not Felt	40.882 N.	121.659 W.	Burney	CA
Not Felt	41.309 N.	122.800 W.	Callahan	CA
Not Felt	41.138 N.	122.316 W.	Castella	CA
Not Felt	34.250 N.	117.325 W.	Cedarpines Park	CA
Not Felt	41.529 N.	120.172 W.	Cedarville	CA
Not Felt	37.123 N.	120.259 W.	Chowchilla	CA
Not Felt	38.956 N.	122.646 W.	Clearlake Highlands	CA
Not Felt	39.214 N.	122.008 W.	Colusa	CA
Not Felt	39.793 N.	123.246 W.	Covelo	CA
Not Felt	40.096 N.	120.909 W.	Crescent Mills	CA
Not Felt	39.559 N.	120.825 W.	Downieville	CA
Not Felt	41.458 N.	122.430 W.	Edgewood	CA
Not Felt	38.249 N.	122.038 W.	Fairfield	CA
Not Felt	36.630 N.	119.677 W.	Fowler	CA
Not Felt	40.100 N.	123.793 W.	Garberville	CA
Not Felt	37.257 N.	120.997 W.	Gustine	CA
Not Felt	40.143 N.	120.133 W.	Herlong	CA
Not Felt	41.050 N.	123.673 W.	Hoopa	CA
Not Felt	38.161 N.	121.610 W.	Isleton	CA
Not Felt	38.348 N.	120.773 W.	Jackson	CA
Not Felt	35.223 N.	118.561 W.	Keene	CA
Not Felt	33.931 N.	117.945 W.	La Habra	CA
Not Felt	40.905 N.	122.378 W.	Lakehead	CA
Not Felt	36.433 N.	119.685 W.	Laton	CA
Not Felt	41.230 N.	120.503 W.	Likely	CA
Not Felt	33.968 N.	118.069 W.	Los Nietos	CA
Not Felt	41.826 N.	122.004 W.	Macdoel	CA
Not Felt	34.033 N.	118.691 W.	Malibu	CA
Not Felt	38.695 N.	119.779 W.	Markleeville	CA
Not Felt	37.302 N.	120.481 W.	Merced	CA
Not Felt	38.752 N.	122.613 W.	Middletown	CA
Not Felt	40.347 N.	121.593 W.	Mineral	CA
Not Felt	33.917 N.	117.156 W.	Moreno	CA
Not Felt	38.297 N.	122.284 W.	Napa	CA
Not Felt	37.804 N.	122.269 W.	Oakland	CA
Not Felt	41.286 N.	124.058 W.	Orick	CA
Not Felt	41.301 N.	123.540 W.	Orleans	CA
Not Felt	39.513 N.	121.555 W.	Oroville	CA

**Table 1. The Preliminary Modified Mercalli Intensities for the June 28, 1992,
11 57 34.1 UTC, Landers, California Earthquake.**

Intensity	Latitude	Longitude	Town Name	State
Not Felt	39.884 N.	122.544 W.	Paskenta	CA
Not Felt	35.626 N.	120.690 W.	Paso Robles	CA
Not Felt	39.810 N.	120.468 W.	Portola	CA
Not Felt	35.804 N.	118.681 W.	Posey	CA
Not Felt	40.798 N.	120.364 W.	Ravendale	CA
Not Felt	40.178 N.	122.234 W.	Red Bluff	CA
Not Felt	40.586 N.	122.390 W.	Redding	CA
Not Felt	40.499 N.	124.105 W.	Rio Dell	CA
Not Felt	40.890 N.	123.583 W.	Salyer	CA
Not Felt	38.196 N.	120.679 W.	San Andreas	CA
Not Felt	37.338 N.	121.891 W.	San Jose	CA
Not Felt	34.953 N.	120.434 W.	Santa Maria	CA
Not Felt	41.840 N.	123.191 W.	Seiad Valley	CA
Not Felt	36.570 N.	119.611 W.	Selma	CA
Not Felt	39.589 N.	120.366 W.	Sierraville	CA
Not Felt	39.907 N.	121.526 W.	Stirling City	CA
Not Felt	39.375 N.	122.543 W.	Stonyford	CA
Not Felt	34.421 N.	119.595 W.	Summerland	CA
Not Felt	40.416 N.	120.651 W.	Susanville	CA
Not Felt	35.142 N.	119.455 W.	Taft	CA
Not Felt	39.172 N.	120.137 W.	Tahoe City	CA
Not Felt	41.956 N.	121.476 W.	Tulelake	CA
Not Felt	39.150 N.	123.206 W.	Ukiah	CA
Not Felt	33.990 N.	118.459 W.	Venice	CA
Not Felt	39.933 N.	122.052 W.	Vina	CA
Not Felt	40.731 N.	122.940 W.	Weaverville	CA
Not Felt	39.524 N.	122.192 W.	Willows	CA
Not Felt	32.739 N.	114.633 W.	Winterhaven	CA
Not Felt	41.735 N.	122.633 W.	Yreka	CA
Not Felt	40.205 N.	123.490 W.	Zenia	CA
Not Felt	40.160 N.	103.213 W.	Akron	CO
Not Felt	39.191 N.	106.816 W.	Aspen	CO
Not Felt	39.481 N.	106.037 W.	Breckenridge	CO
Not Felt	39.985 N.	104.820 W.	Brighton	CO
Not Felt	39.306 N.	102.268 W.	Burlington	CO
Not Felt	39.801 N.	105.513 W.	Central City	CO
Not Felt	38.821 N.	102.352 W.	Cheyenne Wells	CO
Not Felt	38.833 N.	104.820 W.	Colorado Springs	CO
Not Felt	37.088 N.	106.019 W.	Conejos	CO
Not Felt	37.348 N.	108.585 W.	Cortez	CO
Not Felt	38.746 N.	105.177 W.	Cripple Creek	CO
Not Felt	37.678 N.	106.352 W.	Del Norte	CO

**Table 1. The Preliminary Modified Mercalli Intensities for the June 28, 1992,
11 57 34.1 UTC, Landers, California Earthquake.**

Intensity	Latitude	Longitude	Town Name	State
Not Felt	38.742 N.	108.068 W.	Delta	CO
Not Felt	37.766 N.	108.905 W.	Dove Creek	CO
Not Felt	38.480 N.	102.781 W.	Eads	CO
Not Felt	39.655 N.	106.828 W.	Eagle	CO
Not Felt	39.224 N.	106.001 W.	Fairplay	CO
Not Felt	40.250 N.	103.799 W.	Fort Morgan	CO
Not Felt	39.706 N.	105.696 W.	Georgetown	CO
Not Felt	39.550 N.	107.324 W.	Glenwood Springs	CO
Not Felt	39.063 N.	108.550 W.	Grand Junction	CO
Not Felt	38.545 N.	106.924 W.	Gunnison	CO
Not Felt	40.584 N.	102.301 W.	Holyoke	CO
Not Felt	40.073 N.	106.102 W.	Hot Sulphur Springs	CO
Not Felt	39.136 N.	103.469 W.	Hugo	CO
Not Felt	40.988 N.	102.263 W.	Julesburg	CO
Not Felt	39.347 N.	104.463 W.	Kiowa	CO
Not Felt	37.985 N.	103.543 W.	La Junta	CO
Not Felt	38.030 N.	107.314 W.	Lake City	CO
Not Felt	38.087 N.	102.620 W.	Lamar	CO
Not Felt	38.066 N.	103.222 W.	Las Animas	CO
Not Felt	39.250 N.	106.291 W.	Leadville	CO
Not Felt	38.478 N.	107.875 W.	Montrose	CO
Not Felt	38.218 N.	103.755 W.	Ordway	CO
Not Felt	38.022 N.	107.670 W.	Ouray	CO
Not Felt	38.254 N.	104.608 W.	Pueblo	CO
Not Felt	38.534 N.	105.998 W.	Salida	CO
Not Felt	37.200 N.	105.423 W.	San Luis	CO
Not Felt	37.811 N.	107.663 W.	Silverton	CO
Not Felt	37.408 N.	102.613 W.	Springfield	CO
Not Felt	40.625 N.	103.207 W.	Sterling	CO
Not Felt	37.169 N.	104.500 W.	Trinidad	CO
Not Felt	40.731 N.	106.283 W.	Walden	CO
Not Felt	38.134 N.	105.465 W.	Westcliffe	CO
Not Felt	40.075 N.	102.222 W.	Wray	CO
Not Felt	42.786 N.	112.853 W.	American Falls	ID
Not Felt	43.190 N.	112.344 W.	Blackfoot	ID
Not Felt	43.613 N.	116.202 W.	Boise	ID
Not Felt	42.535 N.	113.791 W.	Burley	ID
Not Felt	43.663 N.	116.686 W.	Caldwell	ID
Not Felt	44.516 N.	116.040 W.	Cascade	ID
Not Felt	44.504 N.	114.230 W.	Challis	ID
Not Felt	47.677 N.	116.779 W.	Coeur D' Alene	ID
Not Felt	44.730 N.	116.437 W.	Council	ID

**Table 1. The Preliminary Modified Mercalli Intensities for the June 28, 1992,
11 57 34.1 UTC, Landers, California Earthquake.**

Intensity	Latitude	Longitude	Town Name	State
Not Felt	43.723 N.	111.110 W.	Driggs	ID
Not Felt	44.176 N.	112.230 W.	Dubois	ID
Not Felt	43.873 N.	116.498 W.	Emmett	ID
Not Felt	43.346 N.	114.790 W.	Fairfield	ID
Not Felt	42.938 N.	114.712 W.	Gooding	ID
Not Felt	45.926 N.	116.121 W.	Grangeville	ID
Not Felt	43.519 N.	114.314 W.	Hailey	ID
Not Felt	43.828 N.	115.833 W.	Idaho City	ID
Not Felt	43.466 N.	112.033 W.	Idaho Falls	ID
Not Felt	42.724 N.	114.517 W.	Jerome	ID
Not Felt	46.416 N.	117.016 W.	Lewiston	ID
Not Felt	42.191 N.	112.250 W.	Malad City	ID
Not Felt	46.732 N.	116.999 W.	Moscow	ID
Not Felt	46.235 N.	116.239 W.	Nezperce	ID
Not Felt	42.227 N.	111.400 W.	Paris	ID
Not Felt	44.078 N.	116.932 W.	Payette	ID
Not Felt	42.871 N.	112.444 W.	Pocatello	ID
Not Felt	42.096 N.	111.875 W.	Preston	ID
Not Felt	43.826 N.	111.788 W.	Rexburg	ID
Not Felt	43.672 N.	111.914 W.	Rigby	ID
Not Felt	42.619 N.	113.676 W.	Rupert	ID
Not Felt	43.966 N.	111.681 W.	Saint Anthony	ID
Not Felt	47.314 N.	116.561 W.	Saint Maries	ID
Not Felt	42.563 N.	114.460 W.	Twin Falls	ID
Not Felt	44.251 N.	116.968 W.	Weiser	ID
Not Felt	32.899 N.	105.959 W.	Alamogordo	NM
Not Felt	36.822 N.	107.992 W.	Aztec	NM
Not Felt	35.300 N.	106.550 W.	Bernalillo	NM
Not Felt	33.641 N.	105.876 W.	Carrizozo	NM
Not Felt	36.451 N.	103.183 W.	Clayton	NM
Not Felt	32.268 N.	107.758 W.	Deming	NM
Not Felt	35.883 N.	105.632 W.	Los Alamos	NM
Not Felt	34.806 N.	106.732 W.	Los Lunas	NM
Not Felt	32.943 N.	103.348 W.	Lovington	NM
Not Felt	35.776 N.	103.956 W.	Mosquero	NM
Not Felt	34.186 N.	103.333 W.	Portales	NM
Not Felt	36.903 N.	104.438 W.	Raton	NM
Not Felt	33.713 N.	108.757 W.	Reserve	NM
Not Felt	33.394 N.	104.522 W.	Roswell	NM
Not Felt	35.686 N.	105.937 W.	Santa Fe	NM
Not Felt	34.938 N.	104.681 W.	Santa Rosa	NM
Not Felt	32.770 N.	108.279 W.	Silver City	NM

**Table 1. The Preliminary Modified Mercalli Intensities for the June 28, 1992,
11 57 34.1 UTC, Landers, California Earthquake.**

Intensity	Latitude	Longitude	Town Name	State
Not Felt	36.407 N.	105.572 W.	Taos	NM
Not Felt	33.128 N.	107.252 W.	Truth Or Consequences	NM
Not Felt	40.832 N.	115.762 W.	Elko	NV
Not Felt	39.512 N.	115.959 W.	Eureka	NV
Not Felt	39.473 N.	118.776 W.	Fallon	NV
Not Felt	36.660 N.	115.993 W.	Mercury	NV
Not Felt	39.309 N.	119.648 W.	Virginia City	NV
Not Felt	40.973 N.	117.734 W.	Winnemucca	NV
Not Felt	38.985 N.	119.161 W.	Yerington	NV
Not Felt	42.177 N.	119.897 W.	Adel	OR
Not Felt	42.556 N.	124.067 W.	Agness	OR
Not Felt	44.636 N.	123.104 W.	Albany	OR
Not Felt	43.426 N.	124.031 W.	Allegany	OR
Not Felt	42.914 N.	117.524 W.	Arock	OR
Not Felt	46.188 N.	123.830 W.	Astoria	OR
Not Felt	44.778 N.	117.828 W.	Baker	OR
Not Felt	44.058 N.	121.314 W.	Bend	OR
Not Felt	42.397 N.	121.040 W.	Bly	OR
Not Felt	44.246 N.	117.516 W.	Brogan	OR
Not Felt	42.052 N.	124.282 W.	Brookings	OR
Not Felt	43.813 N.	120.602 W.	Brothers	OR
Not Felt	43.586 N.	119.053 W.	Burns	OR
Not Felt	44.470 N.	121.641 W.	Camp Sherman	OR
Not Felt	43.216 N.	121.781 W.	Chemult	OR
Not Felt	42.577 N.	121.865 W.	Chiloquin	OR
Not Felt	45.234 N.	120.183 W.	Condon	OR
Not Felt	43.177 N.	124.186 W.	Coquille	OR
Not Felt	45.296 N.	117.806 W.	Cove	OR
Not Felt	43.703 N.	122.846 W.	Culp Creek	OR
Not Felt	44.468 N.	119.534 W.	Dayville	OR
Not Felt	43.178 N.	122.137 W.	Diamond Lake	OR
Not Felt	43.806 N.	118.376 W.	Drewsey	OR
Not Felt	44.052 N.	123.085 W.	Eugene	OR
Not Felt	43.356 N.	121.052 W.	Fort Rock	OR
Not Felt	42.826 N.	118.914 W.	Frenchglen	OR
Not Felt	42.439 N.	123.327 W.	Grants Pass	OR
Not Felt	43.863 N.	117.608 W.	Harper	OR
Not Felt	45.353 N.	119.556 W.	Heppner	OR
Not Felt	45.705 N.	121.520 W.	Hood River	OR
Not Felt	44.702 N.	122.077 W.	Idanha	OR
Not Felt	43.323 N.	123.022 W.	Idleyld Park	OR
Not Felt	45.559 N.	116.832 W.	Imnaha	OR

**Table 1. The Preliminary Modified Mercalli Intensities for the June 28, 1992,
11 57 34.1 UTC, Landers, California Earthquake.**

Intensity	Latitude	Longitude	Town Name	State
Not Felt	45.895 N.	119.490 W.	Irrigon	OR
Not Felt	42.974 N.	117.053 W.	Jordan Valley	OR
Not Felt	45.324 N.	118.086 W.	La Grande	OR
Not Felt	42.188 N.	120.344 W.	Lakeview	OR
Not Felt	44.107 N.	122.675 W.	Leaburg	OR
Not Felt	44.633 N.	121.128 W.	Madras	OR
Not Felt	45.175 N.	121.080 W.	Maupin	OR
Not Felt	44.175 N.	122.162 W.	McKenzie Bridge	OR
Not Felt	42.326 N.	122.874 W.	Medford	OR
Not Felt	44.754 N.	122.476 W.	Mill City	OR
Not Felt	44.566 N.	120.152 W.	Mitchell	OR
Not Felt	44.819 N.	119.420 W.	Monument	OR
Not Felt	45.484 N.	120.730 W.	Moro	OR
Not Felt	44.636 N.	124.052 W.	Newport	OR
Not Felt	45.357 N.	122.605 W.	Oregon City	OR
Not Felt	45.024 N.	123.945 W.	Otis	OR
Not Felt	42.693 N.	120.545 W.	Paisley	OR
Not Felt	44.133 N.	119.961 W.	Paulina	OR
Not Felt	45.672 N.	118.787 W.	Pendleton	OR
Not Felt	42.745 N.	124.496 W.	Port Orford	OR
Not Felt	45.523 N.	122.675 W.	Portland	OR
Not Felt	43.248 N.	118.590 W.	Princeton	OR
Not Felt	42.751 N.	122.487 W.	Prospect	OR
Not Felt	43.702 N.	124.095 W.	Reedsport	OR
Not Felt	44.769 N.	117.167 W.	Richland	OR
Not Felt	43.541 N.	119.502 W.	Riley	OR
Not Felt	43.216 N.	123.340 W.	Roseburg	OR
Not Felt	44.134 N.	118.970 W.	Seneca	OR
Not Felt	44.397 N.	122.735 W.	Sweet Home	OR
Not Felt	44.058 N.	123.798 W.	Swisshome	OR
Not Felt	45.594 N.	121.177 W.	The Dalles	OR
Not Felt	42.928 N.	122.950 W.	Tiller	OR
Not Felt	45.720 N.	123.293 W.	Timber	OR
Not Felt	44.437 N.	118.191 W.	Unity	OR
Not Felt	43.982 N.	117.237 W.	Vale	OR
Not Felt	45.570 N.	117.527 W.	Wallowa	OR
Not Felt	45.348 N.	121.964 W.	Wemme	OR
Not Felt	45.813 N.	118.423 W.	Weston	OR
Not Felt	38.276 N.	112.640 W.	Beaver	UT
Not Felt	41.510 N.	112.014 W.	Brigham City	UT
Not Felt	39.212 N.	111.018 W.	Castle Dale	UT
Not Felt	40.917 N.	111.398 W.	Coalville	UT

**Table 1. The Preliminary Modified Mercalli Intensities for the June 28, 1992,
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Intensity	Latitude	Longitude	Town Name	State
Not Felt	40.163 N.	110.402 W.	Duchesne	UT
Not Felt	40.980 N.	111.886 W.	Farmington	UT
Not Felt	38.968 N.	112.322 W.	Fillmore	UT
Not Felt	38.237 N.	112.219 W.	Junction	UT
Not Felt	38.402 N.	111.642 W.	Loa	UT
Not Felt	41.735 N.	111.833 W.	Logan	UT
Not Felt	40.988 N.	109.721 W.	Manila	UT
Not Felt	39.268 N.	111.636 W.	Manti	UT
Not Felt	37.871 N.	109.342 W.	Monticello	UT
Not Felt	41.036 N.	111.676 W.	Morgan	UT
Not Felt	39.710 N.	111.835 W.	Nephi	UT
Not Felt	41.223 N.	111.973 W.	Ogden	UT
Not Felt	37.842 N.	112.827 W.	Parowan	UT
Not Felt	40.233 N.	111.657 W.	Provo	UT
Not Felt	41.665 N.	111.181 W.	Randolph	UT
Not Felt	38.772 N.	112.083 W.	Richfield	UT
Not Felt	40.760 N.	111.890 W.	Salt Lake City	UT
Not Felt	40.530 N.	112.297 W.	Tooele	UT
Not Felt	40.455 N.	109.528 W.	Vernal	UT
Not Felt	46.339 N.	117.047 W.	Asotin	WA
Not Felt	45.781 N.	122.532 W.	Battle Ground	WA
Not Felt	45.998 N.	120.299 W.	Bickleton	WA
Not Felt	48.248 N.	120.115 W.	Carlton	WA
Not Felt	46.203 N.	123.381 W.	Cathlamet	WA
Not Felt	46.662 N.	122.962 W.	Chehalis	WA
Not Felt	47.841 N.	120.015 W.	Chelan	WA
Not Felt	47.195 N.	120.938 W.	Cle Elum	WA
Not Felt	46.663 N.	118.860 W.	Connell	WA
Not Felt	47.611 N.	119.291 W.	Coulee City	WA
Not Felt	46.323 N.	117.971 W.	Dayton	WA
Not Felt	47.954 N.	117.475 W.	Deer Park	WA
Not Felt	46.867 N.	122.265 W.	Eatonville	WA
Not Felt	47.932 N.	119.036 W.	Electric City	WA
Not Felt	46.996 N.	120.546 W.	Ellensburg	WA
Not Felt	47.204 N.	121.990 W.	Enumclaw	WA
Not Felt	47.317 N.	119.552 W.	Ephrata	WA
Not Felt	47.079 N.	119.854 W.	George	WA
Not Felt	46.018 N.	121.289 W.	Glenwood	WA
Not Felt	45.820 N.	120.820 W.	Goldendale	WA
Not Felt	46.342 N.	120.186 W.	Granger	WA
Not Felt	47.481 N.	118.253 W.	Harrington	WA
Not Felt	47.406 N.	123.138 W.	Hoodsport	WA

**Table 1. The Preliminary Modified Mercalli Intensities for the June 28, 1992,
11 57 34.1 UTC, Landers, California Earthquake.**

Intensity	Latitude	Longitude	Town Name	State
Not Felt	47.233 N.	123.958 W.	Humptulips	WA
Not Felt	48.116 N.	118.200 W.	Hunters	WA
Not Felt	46.814 N.	117.880 W.	La Crosse	WA
Not Felt	46.352 N.	124.053 W.	Long Beach	WA
Not Felt	47.811 N.	119.635 W.	Mansfield	WA
Not Felt	46.981 N.	123.601 W.	Montesano	WA
Not Felt	46.558 N.	122.273 W.	Morton	WA
Not Felt	47.130 N.	119.276 W.	Moses Lake	WA
Not Felt	48.183 N.	117.041 W.	Newport	WA
Not Felt	48.361 N.	119.582 W.	Okanogan	WA
Not Felt	47.038 N.	122.899 W.	Olympia	WA
Not Felt	46.826 N.	119.174 W.	Othello	WA
Not Felt	46.228 N.	119.099 W.	Pasco	WA
Not Felt	46.570 N.	123.296 W.	Pe Ell	WA
Not Felt	45.934 N.	119.349 W.	Plymouth	WA
Not Felt	46.475 N.	117.601 W.	Pomeroy	WA
Not Felt	47.540 N.	122.635 W.	Port Orchard	WA
Not Felt	46.206 N.	119.767 W.	Prosser	WA
Not Felt	46.731 N.	117.178 W.	Pullman	WA
Not Felt	46.535 N.	121.955 W.	Randle	WA
Not Felt	47.127 N.	118.378 W.	Ritzville	WA
Not Felt	47.892 N.	122.011 W.	Roosevelt	WA
Not Felt	47.091 N.	117.580 W.	Saint John	WA
Not Felt	47.215 N.	123.096 W.	Shelton	WA
Not Felt	47.709 N.	121.358 W.	Skykomish	WA
Not Felt	47.528 N.	121.824 W.	Snoqualmie	WA
Not Felt	46.665 N.	123.789 W.	South Bend	WA
Not Felt	47.658 N.	117.425 W.	Spokane	WA
Not Felt	47.300 N.	117.974 W.	Sprague	WA
Not Felt	45.695 N.	121.889 W.	Stevenson	WA
Not Felt	47.862 N.	121.815 W.	Sultan	WA
Not Felt	47.253 N.	122.443 W.	Tacoma	WA
Not Felt	47.223 N.	117.071 W.	Tekoa	WA
Not Felt	46.702 N.	120.754 W.	Tieton	WA
Not Felt	46.440 N.	122.845 W.	Toledo	WA
Not Felt	46.040 N.	118.671 W.	Touchet	WA
Not Felt	45.638 N.	122.660 W.	Vancouver	WA
Not Felt	46.064 N.	118.341 W.	Walla Walla	WA
Not Felt	46.756 N.	118.309 W.	Washtucna	WA
Not Felt	47.647 N.	120.070 W.	Waterville	WA
Not Felt	47.423 N.	120.309 W.	Wenatchee	WA
Not Felt	45.727 N.	121.485 W.	White Salmon	WA

**Table 1. The Preliminary Modified Mercalli Intensities for the June 28, 1992,
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Intensity	Latitude	Longitude	Town Name	State
Not Felt	46.383 N.	120.730 W.	White Swan	WA
Not Felt	47.758 N.	118.704 W.	Wilbur	WA
Not Felt	46.602 N.	120.504 W.	Yakima	WA
Not Felt	44.348 N.	106.698 W.	Buffalo	WY
Not Felt	42.866 N.	106.312 W.	Casper	WY
Not Felt	41.133 N.	104.816 W.	Cheyenne	WY
Not Felt	44.526 N.	109.055 W.	Cody	WY
Not Felt	42.759 N.	105.381 W.	Douglas	WY
Not Felt	41.268 N.	110.962 W.	Evanston	WY
Not Felt	44.291 N.	105.501 W.	Gillette	WY
Not Felt	41.528 N.	109.465 W.	Green River	WY
Not Felt	42.833 N.	108.730 W.	Lander	WY
Not Felt	41.311 N.	105.590 W.	Laramie	WY
Not Felt	42.866 N.	109.860 W.	Pinedale	WY
Not Felt	41.791 N.	107.238 W.	Rawlins	WY
Not Felt	44.797 N.	106.955 W.	Sheridan	WY
Not Felt	43.646 N.	108.211 W.	Thermopolis	WY
Not Felt	42.065 N.	104.181 W.	Torrington	WY
Not Felt	44.016 N.	107.954 W.	Worland	WY

[Glen Reagor and Carl Stover provided intensity assignments and collaboration on intensity assignments for both the epicentral field canvass and the postmaster mail canvass.]

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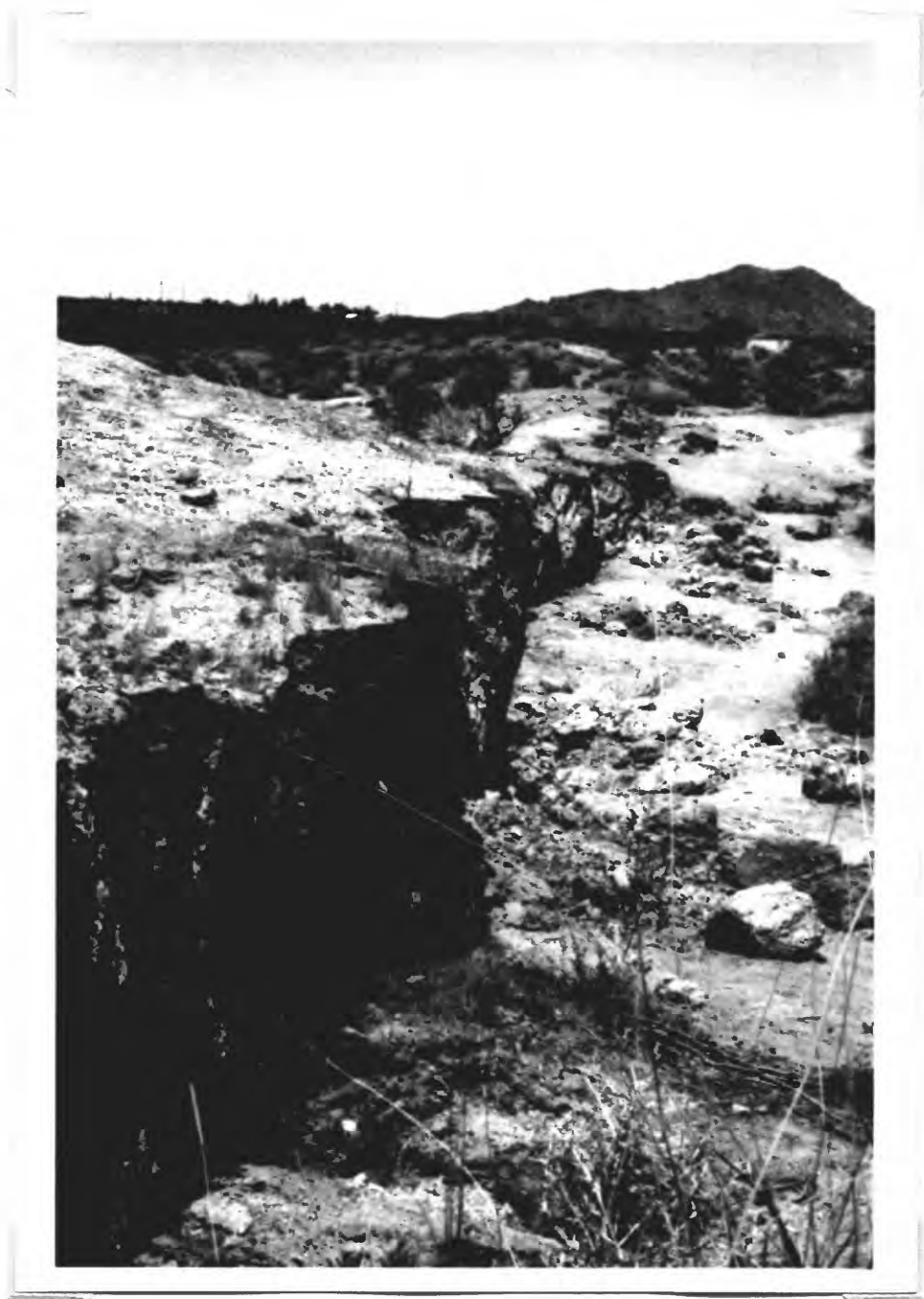


Figure 3. Close-up of fault rupture, northwest of Landers, California, with a vertical displacement of approximately 1–1.2 m.



Figure 4. The wood-frame house northwest of Landers, California with substantial damage. The same fault rupture is in the foreground.



Figure 5. The house northwest of Landers; the front side is partially collapsed.



Figure 6. The same house northwest of Landers. The frame is separated from the foundation—note the bent anchor bolts at the corner of the concrete-pad foundation.



Figure 7. The cracked concrete-pad foundation of the same house near Landers.



Figure 8. Porch damage to the same house near Landers.