



## INTRODUCTION

The earthquake data shown on this map and listed in table 1 are a list of earthquakes that were originally used in preparing the Seismic Risk Studies in the United States (Algermissen, 1969) which have been recompiled and updated through 1977. These data have been reexamined which resulted in some revisions of epicenters and intensities as well as assignment of intensities to earthquakes that previously had none assigned. Intensity values were updated from new and additional data sources that were not available at the time of original compilation. Some epicenters were relocated on the basis of new information. The data shown in table 1 are estimates of the most accurate epicenter, magnitude, and intensity of each earthquake, on the basis of historical and current information. Some of the aftershocks from large earthquakes are listed but are incomplete in many instances, especially for ones that occurred before seismic instruments were in universal use.

The data in table 1 were used to compile the seismicity map. The latitude and longitude were rounded to the nearest tenth of a degree and sorted so that all identical locations were grouped together and counted. A triangle represents the epicenter plotted to a tenth of a degree. The number of earthquakes at each location is shown on the map by the number to the right of the triangle. A Roman numeral to the left of a triangle is the maximum Modified Mercalli intensity (Wood and Neumann, 1931) of all earthquakes located at that geographic position. The absence of an intensity value indicates that no intensities have been assigned to earthquakes at that location. A year shown below a triangle is the latest year for which the maximum intensity was recorded.

## EXPLANATION OF THE TABLES

The data are listed chronologically in table 1 in the following categories: date, origin time, N. latitude, W. longitude, depth, hypocenter quality and referenced data sources, magnitude, and intensity (Modified Mercalli) and intensity source references. Table 1 has some basic limitations in terms of the size (magnitude or intensity) of the earthquakes listed. Prior to 1965 all recorded felt earthquakes are listed, after 1965 only felt earthquakes or those with magnitudes above the 2.5-3.0 range are listed; the lower magnitude levels apply mostly to the eastern United States. If no magnitude was computed and the earthquake was felt it was included in the earthquake list. The low magnitude events located in recent years with dense seismologic networks have not been included.

Listed below is an explanation of the symbols and codes used in the tables:

- Leaders (.) indicate information not available.
- Latitude and longitude are listed to a hundredth of a degree if they have been published with the degree of accuracy, or greater; however, most historical events have been published only to the nearest degree or tenth of a degree and are therefore listed at this accuracy in table 1. An asterisk (\*) to the right of the longitude indicates that the latitude and longitude were not given in the source reference, but were assigned by the compiler of the data file. An (x) to the right of the longitude indicates that the event is an explosion, a suspected explosion, rockburst, or a non-tectonic event; these have not been plotted on the map.
- The letter code in the HYPOCENTER, CNL column is defined below:
  - a. Determination of instrumental hypocenters are estimated to be accurate within the ranges of latitude and longitude listed below; each range is letter coded as indicated:

Letter	Latitude Range	Longitude Range
A	0.0°-0.1°	0.0°-0.1°
B	0.1°-0.2°	0.1°-0.2°
C	0.2°-0.3°	0.2°-0.3°
D	0.3°-0.4°	0.3°-0.4°
E	0.4°-0.5°	0.4°-0.5°
F	0.5°-0.6°	0.5°-0.6°
G	0.6°-0.7°	0.6°-0.7°
H	0.7°-0.8°	0.7°-0.8°
I	0.8°-0.9°	0.8°-0.9°
J	0.9°-1.0°	0.9°-1.0°
K	1.0°-1.1°	1.0°-1.1°
L	1.1°-1.2°	1.1°-1.2°
M	1.2°-1.3°	1.2°-1.3°
N	1.3°-1.4°	1.3°-1.4°
O	1.4°-1.5°	1.4°-1.5°
P	1.5°-1.6°	1.5°-1.6°
Q	1.6°-1.7°	1.6°-1.7°
R	1.7°-1.8°	1.7°-1.8°
S	1.8°-1.9°	1.8°-1.9°
T	1.9°-2.0°	1.9°-2.0°
U	2.0°-2.1°	2.0°-2.1°
V	2.1°-2.2°	2.1°-2.2°
W	2.2°-2.3°	2.2°-2.3°
X	2.3°-2.4°	2.3°-2.4°
Y	2.4°-2.5°	2.4°-2.5°
Z	2.5°-2.6°	2.5°-2.6°
AA	2.6°-2.7°	2.6°-2.7°
AB	2.7°-2.8°	2.7°-2.8°
AC	2.8°-2.9°	2.8°-2.9°
AD	2.9°-3.0°	2.9°-3.0°
AE	3.0°-3.1°	3.0°-3.1°
AF	3.1°-3.2°	3.1°-3.2°
AG	3.2°-3.3°	3.2°-3.3°
AH	3.3°-3.4°	3.3°-3.4°
AI	3.4°-3.5°	3.4°-3.5°
AJ	3.5°-3.6°	3.5°-3.6°
AK	3.6°-3.7°	3.6°-3.7°
AL	3.7°-3.8°	3.7°-3.8°
AM	3.8°-3.9°	3.8°-3.9°
AN	3.9°-4.0°	3.9°-4.0°
AO	4.0°-4.1°	4.0°-4.1°
AP	4.1°-4.2°	4.1°-4.2°
AQ	4.2°-4.3°	4.2°-4.3°
AR	4.3°-4.4°	4.3°-4.4°
AS	4.4°-4.5°	4.4°-4.5°
AT	4.5°-4.6°	4.5°-4.6°
AU	4.6°-4.7°	4.6°-4.7°
AV	4.7°-4.8°	4.7°-4.8°
AW	4.8°-4.9°	4.8°-4.9°
AX	4.9°-5.0°	4.9°-5.0°
AY	5.0°-5.1°	5.0°-5.1°
AZ	5.1°-5.2°	5.1°-5.2°
BA	5.2°-5.3°	5.2°-5.3°
BB	5.3°-5.4°	5.3°-5.4°
BC	5.4°-5.5°	5.4°-5.5°
BD	5.5°-5.6°	5.5°-5.6°
BE	5.6°-5.7°	5.6°-5.7°
BF	5.7°-5.8°	5.7°-5.8°
BG	5.8°-5.9°	5.8°-5.9°
BH	5.9°-6.0°	5.9°-6.0°
BI	6.0°-6.1°	6.0°-6.1°
BJ	6.1°-6.2°	6.1°-6.2°
BK	6.2°-6.3°	6.2°-6.3°
BL	6.3°-6.4°	6.3°-6.4°
BM	6.4°-6.5°	6.4°-6.5°
BN	6.5°-6.6°	6.5°-6.6°
BO	6.6°-6.7°	6.6°-6.7°
BP	6.7°-6.8°	6.7°-6.8°
BQ	6.8°-6.9°	6.8°-6.9°
BR	6.9°-7.0°	6.9°-7.0°
BS	7.0°-7.1°	7.0°-7.1°
BT	7.1°-7.2°	7.1°-7.2°
BU	7.2°-7.3°	7.2°-7.3°
BV	7.3°-7.4°	7.3°-7.4°
BW	7.4°-7.5°	7.4°-7.5°
BX	7.5°-7.6°	7.5°-7.6°
BY	7.6°-7.7°	7.6°-7.7°
BZ	7.7°-7.8°	7.7°-7.8°
CA	7.8°-7.9°	7.8°-7.9°
CB	7.9°-8.0°	7.9°-8.0°
CC	8.0°-8.1°	8.0°-8.1°
CD	8.1°-8.2°	8.1°-8.2°
CE	8.2°-8.3°	8.2°-8.3°
CF	8.3°-8.4°	8.3°-8.4°
CG	8.4°-8.5°	8.4°-8.5°
CH	8.5°-8.6°	8.5°-8.6°
CI	8.6°-8.7°	8.6°-8.7°
CJ	8.7°-8.8°	8.7°-8.8°
CK	8.8°-8.9°	8.8°-8.9°
CL	8.9°-9.0°	8.9°-9.0°
CM	9.0°-9.1°	9.0°-9.1°
CN	9.1°-9.2°	9.1°-9.2°
CO	9.2°-9.3°	9.2°-9.3°
CP	9.3°-9.4°	9.3°-9.4°
CQ	9.4°-9.5°	9.4°-9.5°
CR	9.5°-9.6°	9.5°-9.6°
CS	9.6°-9.7°	9.6°-9.7°
CT	9.7°-9.8°	9.7°-9.8°
CU	9.8°-9.9°	9.8°-9.9°
CV	9.9°-10.0°	9.9°-10.0°
CU	10.0°-10.1°	10.0°-10.1°
CV	10.1°-10.2°	10.1°-10.2°
CW	10.2°-10.3°	10.2°-10.3°
CX	10.3°-10.4°	10.3°-10.4°
CY	10.4°-10.5°	10.4°-10.5°
CZ	10.5°-10.6°	10.5°-10.6°
DA	10.6°-10.7°	10.6°-10.7°
DB	10.7°-10.8°	10.7°-10.8°
DC	10.8°-10.9°	10.8°-10.9°
DD	10.9°-11.0°	10.9°-11.0°
DE	11.0°-11.1°	11.0°-11.1°
DF	11.1°-11.2°	11.1°-11.2°
DG	11.2°-11.3°	11.2°-11.3°
DH	11.3°-11.4°	11.3°-11.4°
DI	11.4°-11.5°	11.4°-11.5°
DJ	11.5°-11.6°	11.5°-11.6°
DK	11.6°-11.7°	11.6°-11.7°
DL	11.7°-11.8°	11.7°-11.8°
DM	11.8°-11.9°	11.8°-11.9°
DN	11.9°-12.0°	11.9°-12.0°
DO	12.0°-12.1°	12.0°-12.1°
DP	12.1°-12.2°	12.1°-12.2°
DQ	12.2°-12.3°	12.2°-12.3°
DR	12.3°-12.4°	12.3°-12.4°
DS	12.4°-12.5°	12.4°-12.5°
DT	12.5°-12.6°	12.5°-12.6°
DU	12.6°-12.7°	12.6°-12.7°
DV	12.7°-12.8°	12.7°-12.8°
DW	12.8°-12.9°	12.8°-12.9°
DX	12.9°-13.0°	12.9°-13.0°
DY	13.0°-13.1°	13.0°-13.1°
DZ	13.1°-13.2°	13.1°-13.2°
EA	13.2°-13.3°	13.2°-13.3°
EB	13.3°-13.4°	13.3°-13.4°
EC	13.4°-13.5°	13.4°-13.5°
ED	13.5°-13.6°	13.5°-13.6°
EE	13.6°-13.7°	13.6°-13.7°
EF	13.7°-13.8°	13.7°-13.8°
EG	13.8°-13.9°	13.8°-13.9°
EH	13.9°-14.0°	13.9°-14.0°
EI	14.0°-14.1°	14.0°-14.1°
EJ	14.1°-14.2°	14.1°-14.2°
EK	14.2°-14.3°	14.2°-14.3°
EL	14.3°-14.4°	14.3°-14.4°
EM	14.4°-14.5°	14.4°-14.5°
EN	14.5°-14.6°	14.5°-14.6°
EO	14.6°-14.7°	14.6°-14.7°
EP	14.7°-14.8°	14.7°-14.8°
EQ	14.8°-14.9°	14.8°-14.9°
ER	14.9°-15.0°	14.9°-15.0°
ES	15.0°-15.1°	15.0°-15.1°
ET	15.1°-15.2°	15.1°-15.2°
EU	15.2°-15.3°	15.2°-15.3°
EV	15.3°-15.4°	15.3°-15.4°
EW	15.4°-15.5°	15.4°-15.5°
EX	15.5°-15.6°	15.5°-15.6°
EY	15.6°-15.7°	15.6°-15.7°
EZ	15.7°-15.8°	15.7°-15.8°
FA	15.8°-15.9°	15.8°-15.9°
FB	15.9°-16.0°	15.9°-16.0°
FC	16.0°-16.1°	16.0°-16.1°
FD	16.1°-16.2°	16.1°-16.2°
FE	16.2°-16.3°	16.2°-16.3°
FF	16.3°-16.4°	16.3°-16.4°
FG	16.4°-16.5°	16.4°-16.5°
FH	16.5°-16.6°	16.5°-16.6°
FI	16.6°-16.7°	16.6°-16.7°
FJ	16.7°-16.8°	16.7°-16.8°
FK	16.8°-16.9°	16.8°-16.9°
FL	16.9°-17.0°	16.9°-17.0°
FM	17.0°-17.1°	17.0°-17.1°
FN	17.1°-17.2°	17.1°-17.2°
FO	17.2°-17.3°	17.2°-17.3°
FP	17.3°-17.4°	17.3°-17.4°
FQ	17.4°-17.5°	17.4°-17.5°
FR	17.5°-17.6°	17.5°-17.6°
FS	17.6°-17.7°	17.6°-17.7°
FT	17.7°-17.8°	17.7°-17.8°
FU	17.8°-17.9°	17.8°-17.9°
FV	17.9°-18.0°	17.9°-18.0°
FW	18.0°-18.1°	18.0°-18.1°
FX	18.1°-18.2°	18.1°-18.2°
FY	18.2°-18.3°	18.2°-18.3°
FZ	18.3°-18.4°	18.3°-18.4°
GA	18.4°-18.5°	18.4°-18.5°
GB	18.5°-18.6°	18.5°-18.6°
GC	18.6°-18.7°	18.6°-18.7°
GD	18.7°-18.8°	18.7°-18.8°
GE	18.8°-18.9°	18.8°-18.9°
GF	18.9°-19.0°	18.9°-19.0°
GG	19.0°-19.1°	19.0°-19.1°
GH	19.1°-19.2°	19.1°-19.2°
GI	19.2°-19.3°	19.2°-19.3°
GO	19.3°-19.4°	19.3°-19.4°
GP	19.4°-19.5°	19.4°-19.5°
GQ	19.5°-19.6°	19.5°-19.6°
GR	19.6°-19.7°	19.6°-19.7°
GS	19.7°-19.8°	19.7°-19.8°
GT	19.8°-19.9°	19.8°-19.9°
GU	19.9°-20.0°	19.9°-20.0°
GV	20.0°-20.1°	20.0°-20.1°
GW	20.1°-20.2°	20.1°-20.2°
GX	20.2°-20.3°	20.2°-20.3°
GY	20.3°-20.4°	20.3°-20.4°
GZ	20.4°-20.5°	20.4°-20.5°
HA	20.5°-20.6°	20.5°-20.6°
HB	20.6°-20.7°	20.6°-20.7°
HC	20.7°-20.8°	20.7°-20.8°
HD	20.8°-20.9°	20.8°-20.9°
HE	20.9°-21.0°	20.9°-21.0°
HF	21.0°-21.1°	21.0°-21.1°
HG	21.1°-21.2°	21.1°-21.2°
HH	21.2°-21.3°	21.2°-21.3°
HI	21.3°-21.4°	21.3°-21.4°
HJ	21.4°-21.5°	21.4°-21.5°
HK	21.5°-21.6°	21.5°-21.6°
HL	21.6°-21.7°	21.6°-21.7°
HM	21.7°-21.8°	21.7°-21.8°
HN	21.8°-21.9°	21.8°-21.9°
HO	21.9°-22.0°	21.9°-22.0°
HP	22.0°-22.1°	22.0°-22.1°
HQ	22.1°-22.2°	22.1°-22.2°
HR	22.2°-22.3°	22.2°-22.3°
HS	22.3°-22.4°	22.3°-22.4°
HT	22.4°-22.5°	22.4°-22.5°
HU	22.5°-22.6°	22.5°-22.6°
HV	22.6°-22.7°	22.6°-22.7°
HW	22.7°-22.8°	22.7°-22.8°
HX	22.8°-22.9°	22.8°-22.9°
HY	22.9°-23.0°	22.9°-23.0°
HZ	23.0°-23.1°	23.0°-23.1°
IA	23.1°-23.2°	23.1°-23.2°
IB	23.2°-23.3°	23.2°-23.3°
IC	23.3°-23.4°	23.3°-23.4°
ID	23.4°-23.5°	23.4°-23.5°
IE	23.5°-23.6°	23.5°-23.6°
IF	23.6°-23.7°	23.6°-23.7°
IG	23.7°-23.8°	23.7°-23.8°
IH	23.8°-23.9°	23.8°-23.9°
II	23.9°-24.0°	23.9°-24.0°
II	24.0°-24.1°	24.0°-24.1°
II	24.1°-24.2°	24.1°-24.2°
II	24.2°-24.3°	24.2°-24.3°
II	24.3°-24.4°	24.3°-24.4°
II	24.4°-24.5°	24.4°-24.5°
II	24.5°-24.6°	24.5°-24.6°
II	24.6°-24.7°	24.6°-24.7°
II	24.7°-24.8°	24.7°-24.8°
II	24.8°-24.9°	24.8°-24.9°
II	24.9°-25.0°	24.9°-25.0°
II	25.0°-25.1°	25.0°-25.1°
II	25.1°-25.2°	25.1°-25.2°
II	25.2°-25.3°	25.2°-25.3°
II	25.3°-25.4°	25.3°-25.4°
II	25.4°-25.5°	25.4°-25.5°
II	25.5°-25.6°	25.5°-25.6°
II	25.6°-25.7°	25.6°-25.7°
II	25.7°-25.8°	25.7°-25.8°
II	25.8°-25.9°	25.8°-25.9°
II	25.9°-26.0°	25.9°-26.0°
II	26.0°-26.1°	26.0°-26.1°
II	26.1°-26.2°	26.1°-26.2°
II	26.2°-26.3°	26.2°-26.3°
II	26.3°-26.4°	26.3°-26.4°
II	26.4°-26.5°	26.4°-26.5°
II	26.5°-26.6°	26.5°-26.6°
II	26.6°-26.7°	26.6°-26.7°
II	26.7°-26.8°	26.7°-26.8°
II	26.8°-26.9°	26.8°-26.9°
II	26.9°-27.0°	26.9°-27.0°
II	27.0°-27.1°	27.0°-27.1°
II	27.1°-27.2°	27.1°-27.2°
II	27.2°-27.3°	27.2°-27.3°
II	27.3°-27.4°	27.3°-27.4°
II	27.4°-27.5°	27.4°-27.5°
II	27.5°-27.6°	27