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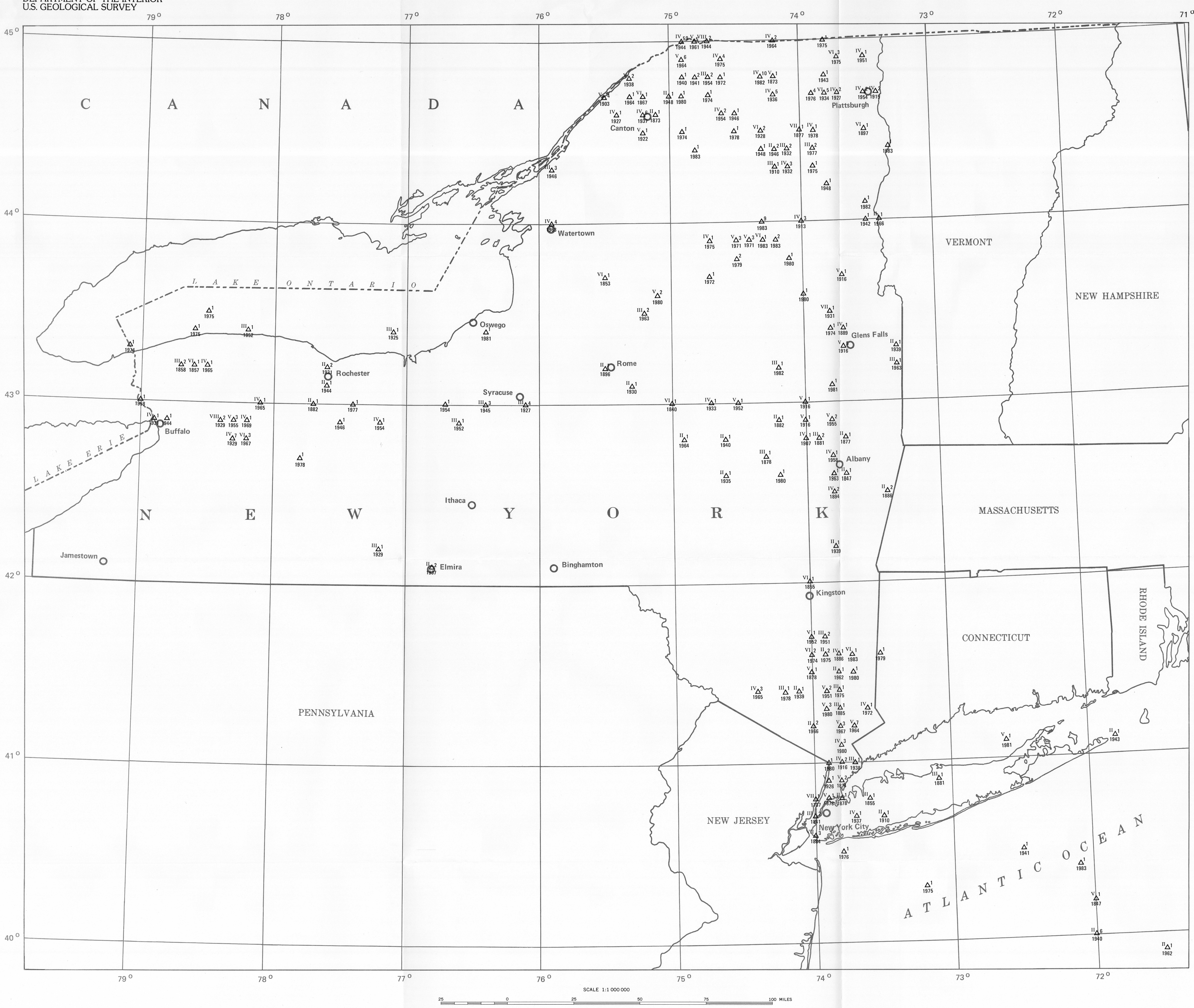

SEISMICITY MAP OF THE STATE OF NEW YORK

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INTRODUCTION

This map is one of a series of seismicity maps produced by the U. S. Geological Survey that show earthquake data of individual states or groups of states at the scale of 1:1,000,000. This map shows only those earthquakes with epicenters located within the boundaries of New York, even though earthquakes in nearby states or countries may have been felt or may have caused damage in New York.

The data in table 1 were used to compile the seismicity map; these data are a corrected, expanded, and updated (through 1983) version of the data used by Algermissen (1969) for a study of seismic risk in the United States. The locations and intensities of some earthquakes were revised and intensities were assigned where none had been before. Many earthquakes were added to the original list from new data sources as well as from some old data sources that had not been previously used. The data in table 1 represent best estimates of the location of the 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 not all, especially for earthquakes that occurred before seismic instruments were universally used.

The latitude and longitude coordinates of each epicenter were rounded to the nearest tenth of a degree and sorted so that all identical locations were grouped and counted. These locations are represented on the map by a triangle. The number of earthquakes at each location is shown on the map by the arabic 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 at that geographic location. The absence of an intensity value indicates that no intensities have been assigned to earthquakes at that location. The year shown below each triangle is the latest year for which the maximum intensity was recorded.

EXPLANATION OF THE TABLES

The data in table 1 are listed chronologically in the following categories: date, origin time in Coordinated Universal Time (UTC), N. latitude, W. longitude, depth, hypocenter quality and reference, magnitude, intensity (Modified Mercalli), and intensity reference. The letter F is recorded in the intensity column if an earthquake was felt but not enough information was available to assign an intensity. Table 1 has some basic limitations in terms of the size (magnitude or intensity) of the earthquakes listed. All felt earthquakes or those with computed magnitudes greater than 2.5 are listed. If no magnitude was computed and the earthquake was felt or an epicenter published, it was included in the earthquake list. The low-magnitude events located in recent years with data from dense seismograph networks have not been included.

Listed below is an explanation of the symbols and codes used in table 1:

1. Leaders (..) indicate information not available.
2. Latitude and longitude are listed to a hundredth of a degree if they have been published with that degree of accuracy or greater; however, most historical events have assigned locations based on felt or damage information and are listed in table 1 only to the nearest degree or tenth of a degree. 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 compilers of the data file. An x to the right of the longitude indicates that the event is an explosion, a suspected explosion, a rockburst, or some other nontectonic event; these have not been plotted on the map. A question mark (?) to the right of the longitude indicates that published descriptions of the event are inconclusive and it may or may not be an earthquake.
3. The letter code in the HYPOCENTER, QUAL column is defined below:
   a. Determinations of instrumental hypocenters are estimated to be accurate within the ranges of latitude and longitude listed below; each range is letter coded as indicated:

      A 0.0°-0.1°
      B 0.1°-0.2°
      C 0.2°-0.5°
      D 0.5°-1.0°
      E 1.0° or larger

   b. Determinations of noninstrumental epicenters from felt data are estimated to be accurate within the ranges of latitude and longitude listed below; each range is letter coded as indicated:

      F 0.0°-0.5°
      G 0.5°-1.0°
      H 1.0°-2.0°
      I 2.0° or larger
4. The reference identification numbers in the HYPOCENTER, REF and INTENSITY, REF columns indicate the sources of the hypocenter and intensity data. They are listed in numerical order in the list of data sources.
5. The magnitudes listed under USGS are mb (modified from Gutenberg and Richter, 1956) or Ms (Bath, 1966) values published in the Preliminary Determination of Epicenters (PDE) by the National Earthquake Information Center, U. S. Geological Survey and predecessor organizations. Associated with the magnitude values listed under OTHER are the source code and type. Type is defined by mb (Gutenberg and Richter, 1956), MD (duration or coda length), Mfa (magnitude based on felt areas or attenuation), ML (Richter, 1958), Mn (Nuttli, 1973), and Ms (Bath, 1966 or Gutenberg, 1945). Magnitudes computed solely from epicentral intensity have not been included. Moment magnitudes (Mw) are listed by value and source. The value was computed using the formula by Hanks and Kanamori (1979). The source codes are listed below:

   BAS - Basham, P. W., Weichert, D. H., and Berry, M. J., 1979, Seismological Society of America Bulletin, v. 69, no. 5, p. 1567-1702.
   DG - Dewey, J. W., and Gordon, D. W., 1984, U. S. Geological Survey, Miscellaneous Field Studies Map MF-1699 Phamphlet, 39 p.
   GS - National Earthquake Information Center (and predecessor organizations), U. S. Geological Survey, Golden, Colo.
   OTT - Earth Physics Branch, Seismological Service of Canada, Ottawa.
   PAL - Lamont-Doherty Geological Observatory, Palisades, N.Y.
   ST - Street, R. L., and Turcotte, F. T., 1977, Seismological Society of America Bulletin, v. 67, no. 3, p.599-614.
   STR - Street, R. L., 1976, Seismological Society of America Bulletin, v. 66, no. 5, p.1525-1537.
   WES - Weston Observatory, Weston, Mass.
   XXX - Published magnitudes of unknown source.
6. An asterisk (*) in the INTENSITY, MM column indicates that the intensity was assigned by the compiler on the basis of the available data at the time the catalog was compiled.

REFERENCES

Algermissen, S. T., 1969, Seismic risk studies in the United States: Fourth World Conference on Earthquake Engineering, Santiago, Chile, January 13-18, 1969, Proceedings, v. 1, p. 14-27.
Bath, Markus, 1966, Earthquake energy and magnitude, in Physics and chemistry of the Earth, v. 7: New York, Pergamon Press, p. 115-165.
Gutenberg, Beno, 1945, Amplitudes of surface waves and magnitudes of shallow earthquakes: Seismological Society of America Bulletin, v. 35, no. 1, p. 3-12.
Gutenberg, Beno, and Richter, C. F., 1956, Magnitude and energy of earthquakes: Annali di Geofisica, v. 9, no. 1, p. 1-15.
Hanks, T. C., and Kanamori, Hiroo, 1979, A moment magnitude scale: Journal of Geophysical Research, v. 84, no. B5, p. 2348-2350.
Nuttli, O. W., 1973, Seismic wave attenuation and magnitude relations for eastern North America: Journal of Geophysical Research, v. 78, no. 5, p. 876-885.
Richter, C. F., 1958, Elementary seismology: San Francisco, W. H. Freeman and Co., 768 p.
Wood, H. O., and Neumann, Frank, 1931, Modified Mercalli intensity scale of 1931: Seismological Society of America Bulletin, v. 21, no. 4, p. 277-283.

MODIFIED MERCALLI INTENSITY SCALE OF 1931

Adapted from Sieberg's Mercalli-Cancani scale, modified and condensed (Wood and Neumann, 1931)

I. Not felt - or, except rarely under especially favorable circumstances. Under certain conditions, at and outside the boundary of the area in which a great shock is felt: sometimes birds, animals, reported uneasy or disturbed; sometimes dizziness or nausea experienced; sometimes trees, structures, liquids, bodies of water, may sway--doors may swing, very slowly.

II. Felt indoors by few, especially on upper floors, or by sensitive or nervous persons. Also, as in grade I, but often more noticeably: sometimes hanging objects may swing, especially when delicately suspended; sometimes trees, structures, liquids, bodies of water, may sway, doors may swing, very slowly; sometimes birds, animals, reported uneasy or disturbed; sometimes dizziness or nausea experienced.

III. Felt indoors by several, motion usually rapid vibration. Sometimes not recognized to be an earthquake at first. Duration estimated in some cases. Vibration like that due to passing of light, or lightly loaded trucks, or heavy trucks some distance away. Hanging objects may swing slightly. Movements may be appreciable on upper levels of tall structures. Rocked standing motor cars slightly.

IV. Felt indoors by many, outdoors by few. Awakened few, especially light sleepers. Frightened no one, unless apprehensive from previous experiences. Vibration like that due to passing of heavy or heavily loaded trucks. Sensation like heavy body striking building or falling of heavy objects inside. Rattling of dishes, windows, doors; glassware and crockery clink and clash. Creaking of walls, frame, especially in the upper range of this grade. Hanging objects swung, in numerous instances. Disturbed liquids in open vessels slightly. Rocked standing motor cars noticeably.

V. Felt indoors by practically all, outdoors by many or most: outdoors direction estimated. Awakened many, or most. Frightened few--slight excitement, a few ran outdoors. Buildings trembled throughout. Broke dishes, glassware to some extent. Cracked windows--in some cases, but not generally. Overturned vases, small or unstable objects, in many instances, with occasional fall. Hanging objects, doors, swing generally or considerably. Knocked pictures against walls, or swung them out of place. Opened, or closed, doors, shutters, abruptly. Pendulum clocks stopped, started, or ran fast or slow. Moved small objects, furnishings, the latter to slight extent. Spilled liquids in small amounts from well-filled open containers. Trees, bushes shaken slightly.

VI. Felt by all, indoors and outdoors. Frightened many, excitement general, some alarm, many ran outdoors. Awakened all. Persons made to move unsteadily. Trees, bushes, shaken slightly to moderately. Liquid set in strong motion. Small bells rang--church, chapel, school, etc. Damage slight in poorly built buildings. Fall of plaster in small amount. Cracked plaster somewhat, especially fine cracks, chimneys is some instances. Broke dishes, glassware, in considerable quantity, also some windows. Fall of knick-knacks, books, pictures. Overturned furniture in many instances. Moved furnishings of moderately heavy kind.

VII. Frightened all--general alarm, all ran outdoors. Some, or many, found it difficult to stand. Noticed by persons driving motor cars. Trees and bushes shaken moderately to strongly. Waves on ponds, lakes, and running water. Water turbid from mud stirred up. Incaving to some extent of sand or gravel stream banks. Rang large church bells, etc. Suspended objects made to quiver. Damage negligible in buildings of good design and construction, slight to moderate in well-built ordinary buildings, considerable in poorly built or badly designed buildings, adobe houses, old walls (especially where laid up without mortar), spires, etc. Cracked chimneys to considerable extent, walls to some extent. Fall of plaster in considerable to large amount, also some stucco. Broke numerous windows, furniture to some extent. Shook down loosened brickwork and tiles. Broke weak chimneys at the roof-line (sometimes damaging roofs). Fall of cornices from towers and high buildings. Dislodged bricks and stones. Overturned heavy furniture, with damage from breaking. Damage considerable to concrete irrigation ditches.

VIII. Fright general--alarm approaches panic. Distrubed persons driving motor cars. Trees shaken strongly--branches, trunks, broken off, especially palm trees. Ejected sand and mud in small amounts. Changes, temporary or permanent: in flow of springs and wells; dry wells renewed flow; in temperature of spring and well waters. Damage slight in structures (brick) built especially to withstand earthquakes. Considerable in ordinary substantial buildings, partial collapse: racked, tumbled down, wooden houses in some cases; threw out panel walls in frame structures, broke off decayed piling. Fall of walls. Cracked, broke, solid stone walls seriously. Wet ground to some extent, also ground on steep slopes. Twisting, fall, of chimneys, columns, monuments, also factory stacks, towers. Moved conspicuously, overturned, very heavy furniture.

IX. Panic general. Cracked ground conspicuously. Damage considerable in (masonry) structures built especially to withstand earthquakes: Threw out of plumb some wood-frame houses built especially to withstand earthquakes; great in substantial (masonry) buildings, some collapse in large part; or wholly shifted frame buildings off foundations, racked frames, serious to reservoirs; underground pipes sometime broken.

X. Cracked ground, especially when loose and wet, up to widths of several inches; fissures up to a yard in width ran parallel to canal and stream banks. Landslides considerable from river banks and steep coasts. Shifted sand and mud horizontally on beaches and flat land. Changed level of water in wells. Threw water on banks of canals, lakes, rivers, etc. Damage serious to dams, dikes, embankments. Severe to well-built wooden structures and bridges, some destroyed. Developed dangerous cracks in excellent brick walls. Destroyed most masonry and frame structures, also their foundations. Bent railroad rails slightly. Tore apart, or crushed endwise, pipe lines buried in earth. Open cracks and broad wavy folds in cement pavements and asphalt road surfaces.

XI. Disturbances in ground many and widespread, varying with ground material. Broad fissures, earth slumps, and land slips in soft, wet ground. Ejected water in large amounts charged with sand and mud. Caused sea-waves ("tidal" waves) of significant magnitude. Damage severe to wood-frame structures, especially near shock centers. Great to dams, dikes, embankments often for long distances. Few, if any (masonry) structures remained standing. Destroyed large well-built bridges by the wrecking of supporting piers, or pillars. Affected yielding wooden bridges less. Bent railroad rails greatly, and thrust them endwise. Put pipe lines buried in earth completely out of service.

XII. Damage total--practically all works of construction damaged greatly or destroyed. Disturbances in ground great and varied, numerous shearing cracks. Landslides, falls of rock of significant character, slumping of river banks, etc., numerous and extensive. Wrenched loose, tore off, large rock masses. Fault slips in firm rock, with notable horizontal and vertical offset displacements. Water channels, surface and underground, disturbed and modified greatly. Dammed lakes, produced waterfalls, deflected rivers, etc. Waves seen on ground surfaces (actually seen, probably, in some cases). Distorted lines of sight and level. Threw objects upward into the air.

Table 1.--Chronological listing of earthquakes for the State of New York

Year	Month	Day	Origin time (UTC) H M S	Lat.	Long.	Depth (km)	Hypocenter Qual	Hypocenter Ref	USGS (mb)	USGS (Ms)	Other	Moment (Mw)	Intensity MM	Intensity Ref
1737	DEC	19	03 45 ..	40.8 N.	74.0 W.	..	H	76	..	..	.. ..	.. ...	VII	76
Near New York City, New York. Felt at New York City and over southern New England. In New York City, several chimneys were knocked down and bells tolled.														
1804	MAY	18	.. .. ..	40.7 N.	74.0 W.	..	H	141	..	..	.. ..	.. ...	III	76
1840	JAN	16	20 00 ..	43.0 N.	75.0 W.	..	H	126	..	..	.. ..	.. ...	VI	126
Near Herkimer, New York. No information.														
1841	JAN	25	.. .. ..	40.7 N.	74.0 W.	..	H	141	..	..	.. ..	.. ...	III	76
1847	JAN	12	04 30 ..	42.6 N.	73.7 W.	..	I	126	..	..	.. ..	.. ...	II	126
1847	JUL	09	.. .. ..	43.3 N.	73.7 W.	..	I	141	..	..	.. ..	.. ...	III	76
1847	SEP	02	.. .. ..	40.2 N.	72.0 W.	..	H	76	..	..	.. ..	.. ...	V	76
1847	SEP	29	.. .. ..	40.5 N.	70.4 W.	..	H	76	..	..	.. ..	.. ...	V	76
1852	DEC	15	21 00 ..	43.4 N.	78.2 W.	..	H	126	..	..	.. ..	.. ...	III	76
1853	MAR	12	07 30 ..	43.7 N.	75.5 W.	..	H	76	..	..	.. ..	.. ...	VI	76
Near Lowville, New York. Machinery was knocked down. Felt in Canada.														
1855	JAN	17	.. .. ..	40.8 N.	73.6 W.	..	H	76	..	..	.. ..	.. ...	II	76
1855	FEB	07	04 30 ..	42.0 N.	74.0 W. ?	..	H	76	..	..	.. ..	.. ...	VI	76
Hudson River Valley. Felt as far as Springfield, Massachusetts. According to Lacroix (see Earthquake Notes, vol. 51, no. 1, Jan-Mar 1980), this is a non-tectonic earthquake caused by freezing of ice, ice-soil, and ice-rock conditions.														
1855	DEC	17	19 00 ..	43.3 N.	73.7 W.	..	G	126	..	..	.. ..	.. ...	IV	76
1857	OCT	23	20 15 ..	43.2 N.	78.6 W.	..	I	76	..	..	.. ..	.. ...	VI	76
Centered near Buffalo, New York. At Buffalo, a man seated on a chair was thrown to the ground; walls vibrated and surged; bells rang; and crocks fell from shelves. This shock was felt over 18,000 sq mi from Pennsylvania to the Montreal, Canada region.														
1858	JAN	01	22 00 ..	43.2 N.	78.7 W.	..	I	84	..	..	.. ..	.. ...	III	84
1867	DEC	18	08 00 ..	44.7 N.	75.2 W.	..	H	126	..	..	.. ..	.. ...	VI	126
Northern New York. Felt in New York and adjacent Canada, from Whitehall, New York, near the Vermont boundary, to Belleville, Ontario, and Sackville, New Brunswick. People were awakened at Hamilton, Ontario, Ogdensburg and Syracuse, New York, and Burlington, Vermont.														
1872	JUL	11	10 25 ..	40.9 N.	73.8 W.	..	H	76	..	..	.. ..	.. ...	V	38
1873	MAR	18	.. .. ..	44.6 N.	75.1 W.	..	H	141	..	..	.. ..	.. ...	II	76
1873	APR	25	19 00 ..	44.8 N.	74.2 W.	..	H	76	..	..	.. ..	.. ...	V	76
1874	JAN	05	21 00 ..	44.7 N.	75.5 W.	..	G	141	..	..	.. ..	.. ...	II	76
1874	DEC	11	03 25 ..	40.9 N.	73.8 W.	..	G	38	..	..	.. ..	.. ...	V	76
1874	DEC	13	04	41.4 N.	73.9 W. *	..	H	58	..	..	.. ..	.. ...	II*	58
1876	JAN	08	21 30 ..	43.2 N.	78.7 W.	..	G	126	..	..	.. ..	.. ...	II	76
1877	MAY	11	.. .. ..	42.8 N.	73.7 W. *	..	H	58	..	..	.. ..	.. ...	II*	58
1877	MAY	14	.. .. ..	42.8 N.	73.9 W.	..	G	76	..	..	.. ..	.. ...	II	76
1877	NOV	04	06 56 ..	44.5 N.	74.0 W.	..	G	38	..	..	.. ..	.. ...	VII	38
Northern New York. Shock was felt in the area bounded by a line from Pembroke, Ontario to Three Rivers, Quebec, on the north, to a line from Boston, Providence, and Hartford to Auburn, New York, on the south. It was most severe along the northern side of the St. Lawrence River Valley and Lake Champlain. At Monteal, crockery was overturned, ceilings cracked, and chimneys were thrown down. The shock was felt slightly in Rhode Island. Felt area was estimated at 90,000 sq mi.														
1877	NOV	14	14 40 ..	45.0 N.	74.8 W.	..	H	126	..	..	.. ..	.. ...	III	126
1878	FEB	05	16 20 ..	40.8 N.	73.9 W.	..	G	141	..	..	.. ..	.. ...	V	76
1878	OCT	04	07 30 ..	41.5 N.	74.0 W.	..	G	76	..	..	.. ..	.. ...	V	76
1878	DEC	25	02	40.8 N.	73.8 W.	..	G	141	..	..	.. ..	.. ...	II	76
1878	DEC	29	02 32 ..	42.7 N.	74.3 W.	..	G	141	..	..	.. ..	.. ...	III	76
1879	APR	14	16 15 ..	45.0 N.	74.8 W. *	..	H	58	..	..	.. ..	.. ...	II*	58
1880	SEP	06	07 00 ..	45.0 N.	74.8 W.	..	H	126	..	..	.. ..	.. ...	III	76
1881	MAR	19	02 30 ..	42.8 N.	73.9 W.	..	G	141	..	..	.. ..	.. ...	III	76
1881	APR	21	16 30 ..	40.9 N.	73.1 W.	..	H	141	..	..	.. ..	.. ...	III	76
1881	SEP	25	.. .. ..	42.1 N.	76.8 W.	..	G	141	..	..	.. ..	.. ...	II	76
1882	APR	02	.. .. ..	42.9 N.	74.2 W.	..	H	76	..	..	.. ..	.. ...	II	76
1882	SEP	13	.. .. ..	43.0 N.	77.7 W. *	..	H	58	..	..	.. ..	.. ...	II*	58
1884	AUG	10	19 07 ..	40.6 N.	74.0 W.	..	G	76	..	..	.. ..	.. ...	VII	76
Near New York City, New York. Strong shock in New England and middle states, light in Canada. Felt over 70,000 sq mi. Damage was greatest at Jamaica and Amityville, New York where walls were cracked. Thirty towns from Hartford, Connecticut to West Chester, Pennsylvania, reported fallen bricks and cracked plaster.														
1884	AUG	11	.. .. ..	40.6 N.	74.0 W.	..	H	126	..	..	.. ..	.. ...	V	126
1885	JAN	04	11 06 ..	41.3 N.	73.9 W.	..	G	141	..	..	.. ..	.. ...	III	76
1885	JAN	31	10 05 ..	41.3 N.	73.8 W.	..	G	141	..	..	.. ..	.. ...	III	76
1886	JAN	25	00 04 ..	41.6 N.	73.8 W.	..	G	126	..	..	.. ..	.. ...	IV	126
1886	SEP	03	.. .. ..	42.5 N.	73.4 W.	..	G	126	..	..	.. ..	.. ...	II	126
1886	SEP	09	.. .. ..	42.5 N.	73.4 W.	..	H	126	..	..	.. ..	.. ...	II	126
1889	AUG	10	.. .. ..	43.4 N.	73.7 W.	..	H	126	..	..	.. ..	.. ...	IV	126
1893	MAR	09	05 30 ..	40.6 N.	74.0 W.	..	H	76	..	..	.. ..	.. ...	V	76
1894	DEC	17	.. .. ..	42.5 N.	73.8 W.	..	H	126	..	..	.. ..	.. ...	IV	126
1896	MAY	20	.. .. ..	43.2 N.	75.5 W.	..	H	126	..	..	.. ..	.. ...	II	126
1897	MAY	28	03 16 ..	44.5 N.	73.5 W.	..	H	126	..	..	.. ..	.. ...	VI	76
Northeastern New York. Felt in New York, New Hampshire, Vermont, Massachusetts, and in Montreal and Quebec, Canada. Severe shock, but little damage. Estimated felt area was 150,000 sq mi.														
1903	DEC	25	12 30 ..	44.7 N.	75.5 W.	..	G	76	..	..	.. ..	.. ...	V	76
1907	JAN	24	11 30 ..	42.8 N.	74.0 W.	..	G	76	..	..	.. ..	.. ...	IV	76
1910	MAR	03	11 15 ..	44.3 N.	74.2 W.	..	G	141	..	..	.. ..	.. ...	III	76
1910	MAY	01	20	40.7 N.	73.5 W.	..	G	76	..	..	.. ..	.. ...	II	76
1911	JAN	29	07	44.7 N.	75.5 W.	..	G	141	..	..	.. ..	.. ...	III	76
1913	AUG	10	15 15 ..	44.0 N.	74.0 W.	..	H	76	..	..	.. ..	.. ...	IV	76
1915	FEB	21	23 41 ..	44.7 N.	73.4 W.	..	G	76	..	..	.. ..	.. ...	IV	76
1916	JAN	05	13 56 ..	43.7 N.	73.7 W.	..	G	76	..	..	.. ..	.. ...	V	76
1916	FEB	02	16 26 ..	42.9 N.	74.0 W.	..	G	141	..	..	.. ..	.. ...	V	38
1916	FEB	03	04 20 ..	43.0 N.	74.0 W.	..	H	126	..	..	.. ..	.. ...	V	126
1916	JUN	08	21 15 ..	41.0 N.	73.8 W.	..	G	76	..	..	.. ..	.. ...	IV	76
1916	OCT	30	.. .. ..	43.3 N.	73.7 W.	..	H	226	..	..	.. ..	.. ...	III	226
1916	NOV	02	02 32 ..	43.3 N.	73.7 W.	..	G	76	..	..	.. ..	.. ...	V	76
1917	JAN	26	.. .. ..	44.4 N.	74.1 W.	..	H	126	..	..	.. ..	.. ...	II	126
1917	MAY	17	10 08 ..	44.7 N.	75.5 W. *	..	G	58	..	..	.. ..	.. ...	II*	58
1917	OCT	02	02 14 ..	43.3 N.	73.7 W.	..	G	76	..	..	.. ..	.. ...	III	76
1921	JAN	19	10 00 ..	43.3 N.	73.7 W. x	..	G	76	..	..	.. ..	.. ...	IV	76
1921	JAN	27	.. .. ..	43.3 N.	73.7 W. x	..	G	76	..	..	.. ..	.. ...	IV	76
1922	DEC	08	21 24 ..	44.5 N.	75.2 W.	..	G	58	..	..	.. ..	.. ...	V	58
1925	APR	07	20 18 ..	43.0 N.	76.1 W.	..	G	141	..	..	.. ..	.. ...	III	76
1925	MAY	23	.. .. ..	43.4 N.	77.1 W.	..	G	76	..	..	.. ..	.. ...	III	76
1926	JAN	27	.. .. ..	44.3 N.	74.1 W.	..	G	76	..	..	.. ..	.. ...	IV	76
1926	MAY	12	03 30 ..	40.9 N.	73.9 W.	..	G	38	..	..	.. ..	.. ...	V	38
1926	MAY	22	.. .. ..	41.7 N.	73.9 W.	..	G	141	..	..	.. ..	.. ...	II	76
1927	MAR	12	22 14 ..	44.6 N.	75.2 W.	..	G	76	..	..	.. ..	.. ...	IV	76
1927	MAR	14	14 15 ..	44.6 N.	75.4 W.	..	G	76	..	..	.. ..	.. ...	IV	76
1927	MAR	29	20 30 ..	43.0 N.	76.1 W.	..	G	141	..	..	.. ..	.. ...	III	76
1927	MAR	31	21 00 ..	43.0 N.	76.1 W.	..	G	141	..	..	.. ..	.. ...	III	76
1927	MAR	31	21 30 ..	43.0 N.	76.1 W.	..	G	76	..	..	.. ..	.. ...	III	76
1927	OCT	24	11 00 ..	44.7 N.	73.7 W.	..	G	141	..	..	.. ..	.. ...	IV	76
1928	MAR	18	15 20 ..	44.5 N.	74.3 W.	..	G	38	..	..	4.1ML OTT	.. ...	VI	38
Saranac Lake, New York. Dishes fell from shelves at Saranac Lake and Malone. Many residents fled from homes. Felt throughout northeastern New York and on the Canadian side of the St. Lawrence River. Felt area estimated at 12,000 sq mi.														
1928	MAR	19	03 20 ..	44.5 N.	74.3 W. *	..	G	1	..	..	.. ..	.. ...	III*	1
1929	JUN	05	07 00 ..	44.8 N.	74.3 W.	..	G	2	..	..	.. ..	.. ...	III	77
1929	AUG	12	06	42.2 N.	77.2 W.	..	I	77	..	..	.. ..	.. ...	III	77
1929	AUG	12	08 45 ..	42.9 N.	78.4 W.	..	H	126	..	..	.. ..	.. ...	III	126
1929	AUG	12	11 24 48.7	42.910N.	78.402W.	009	B	349	..	..	5.2Mn ST	.. ...	VIII	77
Attica, New York. The earthquake was widely felt in New England, though only in a restricted area in the Hudson River Valley. Felt area included southern Ontario, northeastern Ohio, northern Pennsylvania, eastern Connecticut, western Maine, southern Vermont, southeastern New Hampshire, and most of New York. The shock was strongest in the eastern part of Attica and the region to the east. Two hundred and fifty chimneys were thrown down. Felt area was estimated at 100,000 sq mi (Ref. 38).														
1929	DEC	02	22 14 ..	42.8 N.	78.3 W.	..	F	77	..	..	.. ..	.. ...	IV	77
1929	DEC	03	12 50 ..	42.8 N.	78.3 W.	..	F	77	..	..	.. ..	.. ...	IV	77
1930	JAN	04	.. .. ..	43.1 N.	75.3 W.	..	G	3	..	..	.. ..	.. ...	II	77
1930	JAN	17	.. .. ..	42.8 N.	78.3 W.	..	G	3	..	..	.. ..	.. ...	II*	3
1930	NOV	02	02 35 ..	44.8 N.	74.3 W.	..	G	3	..	..	.. ..	.. ...	III	77
1931	APR	20	19 54 30.6	43.471N.	73.785W.	005	B	349	..	..	4.7Mn ST	.. ...	VII	4
Lake George, New York. Threw down chimneys and twisted a church spire at Warrensburg. At Lazerne, New York, chimneys were damaged and windows were broken; at Glen Falls, New York, walls were cracked and dishes broken; and at Lake George, store goods were knocked from shelves. Felt area was estimated at 60,000 sq mi. The shock was widely felt, but with less intensity in the Catskills than at equal distances in other directions.														
1931	APR	22	.. .. ..	42.9 N.	78.9 W.	..	G	77	..	..	.. ..	.. ...	IV	77
1931	MAY	04	18 43 ..	44.8 N.	74.3 W.	..	G	77	..	..	.. ..	.. ...	III	77
1931	JUN	07	00 00 ..	43.2 N.	77.6 W.	..	G	77	..	..	.. ..	.. ...	II	77
1931	JUN	07	02 30 ..	43.2 N.	77.6 W.	..	G	4	..	..	.. ..	.. ...	II*	4
1931	NOV	03	15 30 ..	44.6 N.	75.2 W.	..	G	4	..	..	.. ..	.. ...	II	77
1932	DEC	07	03 15 ..	44.3 N.	74.1 W.	..	G	5	..	..	.. ..	.. ...	IV	77
1932	DEC	07	04 05 ..	44.3 N.	74.1 W.	..	G	5	..	..	.. ..	.. ...	IV*	5
1932	DEC	07	16 45 ..	44.4 N.	74.1 W.	..	G	77	..	..	.. ..	.. ...	III	77
1932	DEC	29	04 28 ..	44.0 N.	73.9 W. x	..	C	5	..	..	.. ..	.. ...	V*	5
1933	MAY	20	19 57 ..	44.8 N.	74.7 W.	..	G	77	..	..	.. ..	.. ...	III	77
1933	JUN	26	14 10 ..	41.0 N.	73.8 W.	..	G	141	..	..	.. ..	.. ...	III	77
1933	OCT	29	.. .. ..	43.0 N.	74.7 W.	..	H	38	..	..	.. ..	.. ...	IV	38
1934	APR	15	02 58 13.0	44.7 N.	73.8 W.	..	C	77	..	..	4.5ML OTT	.. ...	VI	126
Adirondack Mountains, New York near Lake Champlain. Felt strongest at Beekmantown, Keeseville, and Plattsburg. Slight plaster cracks, swaying of buildings, and disturbed furniture was observed. Felt area estimated at 8,000 sq mi of northern New York, Vermont, and southern Quebec, Canada.														
1934	APR	15	18 05 ..	44.8 N.	74.3 W.	..	G	77	..	..	.. ..	.. ...	III	77
1934	JUN	05	20 11 ..	44.8 N.	74.3 W.	..	G	77	..	..	.. ..	.. ...	III	77
1935	JAN	28	06 00 ..	44.8 N.	74.3 W.	..	G	77	..	..	.. ..	.. ...	IV	77
1935	JAN	28	09 01 32	44.8 N.	74.3 W.	..	G	77	..	..	3.2ML OTT	.. ...	III	77
1935	NOV	01	06 30 ..	42.6 N.	74.6 W.	..	G	77	..	..	.. ..	.. ...	II	77
1936	JUN	21	03 40 ..	44.7 N.	74.2 W.	..	G	77	..	..	.. ..	.. ...	III	77
1936	JUN	21	03	44.7 N.	74.2 W. *	..	G	9	..	..	.. ..	.. ...	II*	9
1936	JUN	21	04	44.7 N.	74.2 W. *	..	G	9	..	..	.. ..	.. ...	II*	9
1936	JUN	21	04	44.7 N.	74.2 W. *	..	G	9	..	..	.. ..	.. ...	IV*	9
1936	JUN	21	04 40 ..	44.7 N.	74.2 W. *	..	G	9	..	..	.. ..	.. ...	IV*	9
1937	FEB	21	12	42.1 N.	76.8 W.	..	G	77	..	..	.. ..	.. ...	II	77
1937	MAR	10	05 30 ..	44.6 N.	75.2 W.	..	G	77	..	..	.. ..	.. ...	IV	77
1937	JUL	19	03 51 ..	40.7 N.	73.7 W.	..	D	10	..	..	.. ..	.. ...	IV	10
1937	OCT	12	03	41.2 N.	73.8 W.	..	H	77	..	..	.. ..	.. ...	II	77
1937	OCT	12	06	41.2 N.	73.8 W.	..	H	77	..	..	.. ..	.. ...	II	77
1938	MAY	05	00 35 ..	44.8 N.	74.3 W. *	..	G	11	..	..	3.0ML OTT	.. ...	IV*	11
1938	JUL	29	07 44 07	41.0 N.	73.7 W.	..	G	77	..	..	.. ..	.. ...	III	77
1938	AUG	23	05 18 23	41.2 N.	73.7 W.	..	G	77	..	..	.. ..	.. ...	III	77
1938	AUG	23	07 11 46	41.2 N.	73.7 W.	..	G	77	..	..	.. ..	.. ...	III	77
1938	OCT	21	07 18 55	41.2 N.	73.7 W.	..	C	77	..	..	.. ..	.. ...	II	77
1938	NOV	18	22 19 06	44.8 N.	75.3 W.	..	F	11	..	..	.. ..	.. ...	V	126
1939	FEB	21	.. .. ..	44.8 N.	74.3 W.	..	G	77	..	..	.. ..	.. ...	II	77
1939	FEB	24	00 20 ..	42.9 N.	78.3 W.	..	F	77	..	..	.. ..	.. ...	III	77
1939	JUN	01	03 36 ..	44.6 N.	75.2 W.	..	F	77	..	..	.. ..	.. ...	III	77
1939	SEP	21	20 30 01	41.4 N.	74.1 W.	..	G	77	..	..	.. ..	.. ...	II	77
1939	OCT	21	08 59 33	43.3 N.	73.3 W.	..	C	77	..	..	.. ..	.. ...	II	77
1939	OCT	25	14 46 39	42.2 N.	73.8 W.	..	C	77	..	..	.. ..	.. ...	II	77
1940	APR	12	01 58 10	42.8 N.	74.6 W.	..	C	77	..	..	.. ..	.. ...	II	77
1940	APR	13	08 23 27	44.8 N.	74.9 W.	..	C	77	..	..	2.6ML OTT	.. ...	...	..
1940	APR	27	22 31 ..	40.0 N.	72.0 W.	..	H	126	..	..	.. ..	.. ...	II	126
1940	APR	27	22 37 ..	40.0 N.	72.0 W.	..	H	126	..	..	.. ..	.. ...	II	126
1940	APR	27	22 44 ..	40.0 N.	72.0 W.	..	H	126	..	..	.. ..	.. ...	II	126
1940	MAY	10	19 23 ..	40.0 N.	72.0 W.	..	H	126	..	..	.. ..	.. ...	II	126
1940	MAY	20	01 26 ..	44.6 N.	75.2 W.	..	G	77	..	..	.. ..	.. ...	II	77
1940	JUN	04	18 13 ..	40.0 N.	72.0 W.	..	H	126	..	..	.. ..	.. ...	II	126
1940	JUN	04	18 14 ..	40.0 N.	72.0 W.	..	H	126	..	..	.. ..	.. ...	II	126
1940	SEP	26	23 30 15	44.7 N.	73.4 W.	..	C	77	..	..	2.9ML OTT	.. ...	III	126
1941	FEB	01	18 28 ..	44.6 N.	75.2 W.	..	F	77	..	..	.. ..	.. ...	II	77
1941	APR	03	19 52 58	44.7 N.	73.9 W.	..	D	77	..	..	2.5ML OTT	.. ...	...	..
1941	APR	10	08 10 44	44.7 N.	73.9 W.	..	C	77	..	..	3.3ML OTT	.. ...	...	..
1941	APR	29	14 05 35	40.5 N.	72.5 W.	..	C	77	..	..	2.5ML OTT	.. ...	...	..
1941	JUL	29	00 24 ..	41.1 N.	73.8 W.	..	G	126	..	..	.. ..	.. ...	III	126
1941	OCT	09	22 07 ..	44.0 N.	75.9 W.	..	G	77	..	..	.. ..	.. ...	II	77
1941	OCT	20	21 29 ..	44.0 N.	75.9 W.	..	G	77	..	..	.. ..	.. ...	II	77
1941	OCT	21	05 23 45	44.8 N.	74.8 W.	..	D	77	..	..	2.2ML OTT	.. ...	...	..
1941	OCT	21	06 10 41	44.8 N.	74.8 W.	..	C	77	..	..	3.3ML OTT	.. ...	...	..
1941	DEC	12	23 28 57	44.9 N.	73.7 W.	..	C	77	..	..	2.7ML OTT	.. ...	II	126
1942	JAN	31	04 11 57	44.7 N.	73.9 W.	..	C	77	..	..	2.7ML OTT	.. ...	...	..
1942	MAY	24	07 15 14	44.7 N.	73.8 W.	..	C	77	..	..	2.9ML OTT	.. ...	...	..
1942	MAY	24	11 33 57	44.7 N.	73.8 W.	..	C	77	..	..	3.9ML OTT	.. ...	...	..
1942	OCT	01	20 58 22	44.0 N.	73.5 W.	..	D	77	..	..	2.5ML OTT	.. ...	...	..
1942	OCT	02	22 29 51	42.5 N.	73.8 W.	..	C	77	..	..	3.0ML OTT	.. ...	...	..
1943	MAY	09	11 03 19	44.8 N.	73.8 W.	..	C	77	..	..	3.2ML OTT	.. ...	...	..
1943	JUN	11	22 51 ..	41.1 N.	71.8 W.	..	G	126	..	..	.. ..	.. ...	II	126
1943	OCT	15	23 00 02	44.4 N.	74.2 W.	..	D	77	..	..	2.5ML OTT	.. ...	...	..
1944	JAN	16	10 00 ..	43.1 N.	77.6 W.	..	G	77	..	..	.. ..	.. ...	II	77
1944	FEB	26	21 58 20.0	42.9 N.	78.8 W.	..	G	141	..	..	.. ..	.. ...	F	141
1944	MAY	29	23 03 ..	44.7 N.	73.8 W.	..	G	126	..	..	.. ..	.. ...	II	126
1944	SEP	05	04 38 45.7	44.958N.	74.723W.	012	B	349	..	..	5.8Mn ST	.. ...	VIII	17
Between Massena, New York and Cornwall, Ontario, Canada. The true epicenter is thought to lie 3 mi north of Massena near the International Boundary. The area over which the earthquake was perceptible extends from James Bay in Canada south to Virginia and from New Brunswick, Canada to Lake Michigan. However, the area in which the shock was felt with intensity as great as V or VI is relatively very small. The area of greatest intensity extends farther lengthwise along the St. Lawrence River than perpendicular to it (Ref. 77). In the United States, the felt area was estimated at 175,000 sq mi. The maximum intensity of VIII occurred in the vicinity of Cornwall and Massena. The total damage in the two towns was estimated at 2,000,000 dollars. In the epicentral area, a large number of chimneys required rebuilding and many structures were rendered unsafe for occupancy until repaired. A number of wells in St. Lawrence County, New York went dry. At Massena, 90% of the chimneys were damaged or destroyed; as were masonry, plumbing, and house foundations. Windows were also broken. At Hogansburg, New York, brick masonry and concrete structures were damaged. Numerous aftershocks followed the main shock- 14 were noted by November 1.														
1944	SEP	05	08 30 49	45.0 N.	74.9 W.	..	B	77	..	..	3.4ML OTT	.. ...	...	..
1944	SEP	05	08 51 06.0	44.999N.	74.652W.	001	B	349	..	..	4.5Mn BAS	.. ...	...	..
1944	SEP	05	10 56 51	45.0 N.	74.9 W.	..	B	77	..	..	3.3ML OTT	.. ...	...	..
1944	SEP	05	11 10 54	45.0 N.	74.9 W.	..	F	77	..	..	2.8ML OTT	.. ...	F	77
1944	SEP	06	13 30 ..	45.0 N.	74.9 W. *	..	G	194	..	..	.. ..	.. ...	III*	194
1944	SEP	07	.. .. ..	45.0 N.	74.9 W. *	..	G	194	..	..	.. ..	.. ...	III*	194
1944	SEP	07	01 30 ..	45.0 N.	74.9 W. *	..	G	194	..	..	.. ..	.. ...	III*	194
1944	SEP	07	02 47 ..	45.0 N.	74.9 W. *	..	G	194	..	..	.. ..	.. ...	III*	194
1944	SEP	07	13 55 14	45.0 N.	74.9 W.	..	F	77	..	..	2.5ML OTT	.. ...	F	77
1944	SEP	08	09 50 ..	45.0 N.	74.9 W. *	..	G	194	..	..	.. ..	.. ...	III*	194
1944	SEP	08	10 11 14	45.0 N.	74.9 W.	..	F	77	..	..	2.5ML OTT	.. ...	F	77
1944	SEP	08	19 35 21	45.0 N.	74.9 W.	..	F	77	..	..	2.8ML OTT	.. ...	F	77
1944	SEP	08	19 50 ..	45.0 N.	74.9 W. *	..	G	194	..	..	.. ..	.. ...	III*	194
1944	SEP	09	23 24 50.3	45.105N.	74.688W.	001	B	349	..	..	4.0Mn BAS	.. ...	F	17
Massena, New York - Cornwall, Ontario, Canada. According to United States Earthquakes (Ref. 17), this was the strongest of the aftershocks which occurred through November 1. This shock nearly equaled the intensity of the main shock.														
1944	SEP	13	02 45 13	45.0 N.	74.9 W. *	..	G	194	..	..	.. ..	.. ...	III*	194
1944	SEP	13	17 40 ..	45.0 N.	74.9 W. *	..	G	194	..	..	.. ..	.. ...	III*	194
1944	SEP	13	22 00 28	45.0 N.	74.9 W.	..	B	77	..	..	2.7ML OTT	.. ...	IV*	177
1944	SEP	16	04 05 ..	45.0 N.	74.9 W. *	..	G	194	..	..	.. ..	.. ...	III*	194
1944	SEP	16	23 40 ..	45.0 N.	74.9 W. *	..	G	194	..	..	.. ..	.. ...	III	194
1944	SEP	18	04 55 ..	45.0 N.	74.9 W. *	..	G	194	..	..	.. ..	.. ...	III	194
1944	SEP	19	01 00 ..	45.0 N.	74.9 W. *	..	G	194	..	..	.. ..	.. ...	III	194
1944	SEP	24	19 30 26	45.0 N.	74.9 W.	..	G	77	..	..	2.0ML OTT	.. ...	III*	194
1944	SEP	30	19 50 ..	45.0 N.	74.9 W. *	..	G	194	..	..	.. ..	.. ...	III*	194
1944	OCT	03	.. .. ..	45.0 N.	74.9 W. *	..	G	194	..	..	.. ..	.. ...	III*	194
1944	OCT	04	00 36 26	45.0 N.	74.9 W.	..	G	77	..	..	2.3ML OTT	.. ...	III*	194
1944	OCT	04	13 35 ..	45.0 N.	74.9 W. *	..	G	194	..	..	.. ..	.. ...	III*	194
1944	OCT	05	11 30 ..	45.0 N.	74.9 W. *	..	G	194	..	..	.. ..	.. ...	III*	194
1944	OCT	05	21 00 ..	45.0 N.	74.9 W. *	..	G	194	..	..	.. ..	.. ...	III*	194
1944	OCT	06	13 00 ..	45.0 N.	74.9 W. *	..	G	194	..	..	.. ..	.. ...	III*	194
1944	OCT	08	13 50 ..	45.0 N.	74.9 W. *	..	G	194	..	..	.. ..	.. ...	III*	194
1944	OCT	09	01 00 ..	45.0 N.	74.9 W. *	..	G	194	..	..	.. ..	.. ...	III*	194
1944	OCT	09	01 45 56	45.0 N.	74.9 W.	..	F	77	..	..	2.3ML OTT	.. ...	F	77
1944	OCT	09	07 00 ..	45.0 N.	74.9 W. *	..	G	194	..	..	.. ..	.. ...	III*	194
1944	OCT	10	00 00 ..	45.0 N.	74.9 W. *	..	G	194	..	..	.. ..	.. ...	III*	194
1944	OCT	13	02 33 58	45.0 N.	74.9 W.	..	B	77	..	..	2.7ML OTT	.. ...	...	..
1944	OCT	13	10 00 ..	45.0 N.	74.9 W. *	..	G	194	..	..	.. ..	.. ...	III*	194
1944	OCT	17	13 00 ..	45.0 N.	74.9 W. *	..	G	194	..	..	.. ..	.. ...	III*	194
1944	OCT	20	23 39 ..	45.0 N.	74.9 W. *	..	G	194	..	..	.. ..	.. ...	III*	194
1944	OCT	26	00 57 ..	45.0 N.	74.9 W. *	..	G	194	..	..	.. ..	.. ...	III*	194
1944	OCT	31	08 42 25	45.0 N.	74.9 W.	..	B	77	..	..	4.0ML OTT	.. ...	IV*	194
1944	NOV	08	23 00 ..	45.0 N.	74.9 W. *	..	G	194	..	..	.. ..	.. ...	III*	194
1944	NOV	09	03 15 ..	45.0 N.	74.9 W. *	..	G	194	..	..	.. ..	.. ...	IV*	194
1944	NOV	11	03 30 ..	45.0 N.	74.9 W. *	..	G	194	..	..	.. ..	.. ...	IV*	194
1944	NOV	17	10 15 ..	45.0 N.	74.9 W. *	..	G	194	..	..	.. ..	.. ...	III*	194
1944	NOV	20	01 15 ..	45.0 N.	74.9 W. *	..	G	194	..	..	.. ..	.. ...	III*	194
1944	NOV	23	07 00 ..	45.0 N.	74.9 W. *	..	G	194	..	..	.. ..	.. ...	III*	194
1944	NOV	25	13 00 ..	45.0 N.	74.9 W. *	..	G	194	..	..	.. ..	.. ...	III*	194
1944	DEC	05	12 00 ..	45.0 N.	74.9 W. *	..	G	194	..	..	.. ..	.. ...	III*	194
1944	DEC	27	10 07 ..	45.0 N.	74.9 W. *	..	G	194	..	..	.. ..	.. ...	III*	194
1944	DEC	31	05 30 ..	45.0 N.	74.9 W. *	..	G	194	..	..	.. ..	.. ...	III*	194
1945	JAN	01	05 45 ..	45.0 N.	74.9 W. *	..	G	194	..	..	.. ..	.. ...	III*	194
1945	JAN	01	10 00 ..	45.0 N.	74.9 W. *	..	G	194	..	..	.. ..	.. ...	III*	194
1945	JAN	02	23 00 ..	45.0 N.	74.9 W. *	..	G	194	..	..	.. ..	.. ...	III*	194
1945	APR	15	13 15 ..	43.0 N.	76.4 W.	..	H	77	..	..	.. ..	.. ...	III	77
1945	APR	15	14 20 ..	43.0 N.	76.4 W.	..	H	77	..	..	.. ..	.. ...	III	77
1945	APR	15	15 30 ..	43.0 N.	76.4 W.	..	H	77	..	..	.. ..	.. ...	III	77
1945	JUL	24	01 56 18	45.0 N.	74.9 W.	..	G	77	..	..	2.7ML OTT	.. ...	F	77
1945	DEC	02	15 22 32	45.0 N.	74.9 W.	..	G	77	..	..	3.0ML OTT	.. ...	F	77
1946	FEB	13	15 10 ..	45.0 N.	74.9 W.	..	G	77	..	..	.. ..	.. ...	II	77
1946	MAR	16	04 20 ..	45.0 N.	74.9 W.	..	G	77	..	..	.. ..	.. ...	II	77
1946	MAR	20	02 01 ..	44.3 N.	75.9 W.	..	G	77	..	..	.. ..	.. ...	III	77
1946	MAR	20	02 29 ..	44.3 N.	75.9 W.	..	G	77	..	..	.. ..	.. ...	III	77
1946	MAR	20	03 02 ..	44.3 N.	75.9 W.	..	G	77	..	..	.. ..	.. ...	III	77
1946	JUN	20	23 09 ..	44.4 N.	74.2 W.	..	G	77	..	..	.. ..	.. ...	II	77
1946	JUN	27	21 06 22	44.6 N.	74.5 W.	..	B	77	..	..	3.0ML OTT	.. ...	...	..
1946	SEP	04	19 29 ..	45.0 N.	74.9 W.	..	G	126	..	..	2.3ML XXX	.. ...	III	126
1946	NOV	10	11 41 23	42.9 N.	77.5 W.	..	C	77	..	..	3.1ML OTT	.. ...	...	..
1946	NOV	11	10 20 47	45.0 N.	74.9 W.	..	G	77	..	..	3.0ML OTT	.. ...	F	77
1946	NOV	28	22 00 ..	43.9 N.	73.8 W. x	..	G	77	..	..	.. ..	.. ...	III	77
1946	DEC	25	06 48 03	45.0 N.	74.9 W.	..	G	77	..	..	3.0ML OTT	.. ...	F	77
1947	OCT	29	15 45 ..	45.0 N.	74.9 W.	..	F	126	..	..	.. ..	.. ...	II	126
1948	APR	04	02 44 34	44.2 N.	73.8 W.	..	C	77	..	..	2.5ML OTT	.. ...	...	..
1948	JUL	07	07 15 ..	44.7 N.	75.0 W.	..	F	126	..	..	.. ..	.. ...	II	126
1948	AUG	07	.. .. ..	44.0 N.	74.0 W.	..	F	126	..	..	.. ..	.. ...	II	126
1948	NOV	22	23 32 50	44.4 N.	74.3 W.	..	D	77	..	..	2.9ML OTT	.. ...	...	..
1949	FEB	07	06 17 ..	44.9 N.	74.6 W.	..	G	77	..	..	.. ..	.. ...	III	77
1951	SEP	03	21 26 24.8	41.355N.	73.859W.	018	D	349	..	..	3.8Mn ST	.. ...	V	24
1951	NOV	06	17 54 45.9	44.916N.	74.548W.	031	B	349	..	..	4.1Mfa DG	.. ...	IV	24
1951	DEC	08	04 37 ..	41.7 N.	73.9 W.	..	G	77	..	..	.. ..	.. ...	III	24
1952	AUG	25	00 07 ..	43.0 N.	74.5 W.	..	F	77	..	..	.. ..	.. ...	V	77
1952	OCT	08	21 40 ..	41.7 N.	74.0 W.	..	F	77	..	..	.. ..	.. ...	V	77
1952	NOV	20	.. .. ..	42.9 N.	76.6 W.	..	G	77	..	..	.. ..	.. ...	III	77
1952	DEC	21	12 00 ..	44.9 N.	74.9 W.	..	G	77	..	..	.. ..	.. ...	III	25
1953	APR	26	01 17 02	44.7 N.	73.5 W.	..	G	77	..	..	2.6ML OTT	.. ...	IV	77
1954	JAN	31	12 30 ..	42.9 N.	77.2 W. *	..	G	27	..	..	.. ..	.. ...	IV	27
1954	FEB	01	00 37 50	43.0 N.	76.7 W.	..	B	77	..	..	3.3ML OTT	.. ...	...	..
1954	APR	21	15 45 ..	44.7 N.	73.5 W.	..	G	77	..	..	.. ..	.. ...	IV	27
1954	MAY	20	22 01 18	45.0 N.	74.2 W.	020	B	77	..	..	2.7ML OTT	.. ...	IV	27
1954	SEP	29	03 50 ..	44.0 N.	75.9 W.	..	G	77	..	..	.. ..	.. ...	II	27
1954	DEC	13	03 53 52	44.6 N.	74.6 W.	012	C	77	..	..	3.6ML OTT	.. ...	IV	27
1954	DEC	15	17 35 ..	44.8 N.	74.7 W.	..	G	77	..	..	.. ..	.. ...	III	27
1955	JAN	21	08 40 ..	42.9 N.	73.8 W.	..	G	77	..	..	.. ..	.. ...	V	77
1955	JAN	21	12 20 ..	42.9 N.	73.8 W.	..	G	77	..	..	.. ..	.. ...	III	28
1955	AUG	16	07 35 ..	43.0 N.	78.3 W.	..	G	77	..	..	.. ..	.. ...	V	28
1956	JUL	27	01 34 44	44.7 N.	73.8 W.	..	B	77	..	..	3.4ML OTT	.. ...	...	..
1957	FEB	20	15 45 ..	44.9 N.	74.9 W.	..	G	77	..	..	.. ..	.. ...	IV	77
1957	NOV	30	06 27 ..	45.0 N.	74.8 W.	..	F	126	..	..	2.5ML OTT	.. ...	IV	126
1958	JAN	11	16 36 ..	44.9 N.	74.9 W.	..	G	77	..	..	.. ..	.. ...	IV	77
1958	FEB	12	13 29 54	44.8 N.	75.3 W.	..	C	77	..	..	2.6ML OTT	.. ...	...	..
1958	MAY	06	19 00 ..	42.7 N.	73.8 W.	..	G	77	..	..	.. ..	.. ...	IV	77
1958	AUG	22	14 25 05	43.0 N.	79.0 W.	..	E	77	..	..	3.6ML OTT	.. ...	...	..
1961	APR	20	13 00 ..	45.0 N.	74.8 W.	..	D	221	..	..	2.0ML OTT	.. ...	V	38
1961	SEP	29	06 30 ..	44.9 N.	74.9 W.	..	G	141	..	..	.. ..	.. ...	IV	34
1962	MAY	06	.. .. ..	39.9 N.	71.5 W.	..	F	126	..	..	.. ..	.. ...	II	126
1962	OCT	02	23 45 52	44.8 N.	74.3 W.	..	G	126	..	..	.. ..	.. ...	IV	35
1962	NOV	27	04 14 50	41.5 N.	73.8 W.	..	G	126	..	..	1.7ML OTT	.. ...	II	126
1963	JAN	30	14 50 ..	44.0 N.	75.9 W.	..	C	141	..	..	3.0ML OTT	.. ...	IV*	141
1963	FEB	16	08 00 17	44.9 N.	73.7 W.	..	C	141	..	..	2.6ML OTT	.. ...	...	..
1963	MAY	19	.. .. ..	43.2 N.	73.3 W.	..	G	126	..	..	.. ..	.. ...	III	126
1963	MAY	19	19 14 18	43.5 N.	75.2 W.	..	C	141	..	..	3.5ML OTT	.. ...	III	126
1963	JUL	01	19 59 12.0	42.6 N.	73.8 W.	..	C	141	..	..	3.3ML OTT	.. ...	...	..
1964	MAR	29	09 16 ..	44.9 N.	74.9 W.	..	G	38	..	..	.. ..	.. ...	V	38
1964	JUN	04	23 40 51	44.7 N.	75.3 W.	..	C	195	..	..	2.8ML OTT	.. ...	...	..
1964	JUN	16	13 00 44	45.0 N.	74.2 W.	..	C	195	..	..	2.7ML OTT	.. ...	IV	126
1964	SEP	29	00 16 27.5	41.2 N.	73.7 W.	..	G	141	..	..	.. ..	.. ...	III*	37
1964	SEP	29	20 26 49.5	41.2 N.	73.7 W.	..	G	141	..	..	.. ..	.. ...	III*	37
1964	NOV	17	17 08 ..	41.2 N.	73.7 W.	..	G	38	..	..	.. ..	.. ...	V	38
1964	NOV	30	00 34 55	42.8 N.	74.9 W.	..	C	141	..	..	2.6ML OTT	.. ...	II	126
1964	NOV	30	10 47 32.9	41.20 N.	73.97 W.	006	A	141	..	..	.. ..	.. ...	...	..
1965	JUL	16	11 06 55	43.2 N.	78.5 W.	..	C	141	..	..	3.5ML OTT	.. ...	IV	75
1965	AUG	28	01 55 ..	43.0 N.	78.1 W.	..	C	126	..	..	3.1ML XXX	.. ...	IV	75
1965	SEP	29	20 57 39.5	41.4 N.	74.4 W.	..	G	141	..	..	.. ..	.. ...	IV	75
1966	JAN	01	10 30 ..	42.8 N.	78.2 W.	..	G	126	..	..	.. ..	.. ...	III*	81
1966	JAN	01	11 29 20	42.8 N.	78.3 W.	..	C	141	..	..	3.0ML WES	.. ...	III*	81
1966	JAN	01	13 23 39.0	42.842N.	78.249W.	000	A	349	4.7	..	4.6Mn STR	4.3 HRN	VI	81
Attica-Varysburg, New York area. Felt in western New York, northwestern Pennsylvania, and southern Ontario, Canada. Slight damage to chimney and walls was sustained at Attica and Varysburg. Plaster fell at the Attica State Prison and the main smokestack was damaged. Felt area was estimated at 32,000 sq mi (Ref. 105).														
1966	MAY	21	07 30 55.0	41.2 N.	74.0 W.	..	G	141	..	..	.. ..	.. ...	II	126
1966	JUN	30	00 29 ..	44.0 N.	73.4 W.	..	G	126	..	..	2.8ML XXX	.. ...	II	126
1967	JUN	13	19 08 55.5	42.837N.	78.234W.	001	A	349	3.9	..	4.4Mn STR	4.1 HRN	VI	40
Attica-Alabama, New York. Plaster and ceiling damage at Attica and Alabama. Felt over a small area of western New York-3,000 sq mi (Ref. 38).														
1967	NOV	22	21 10 ..	41.2 N.	73.8 W.	..	G	141	..	..	.. ..	.. ...	V	38
1969	AUG	13	02 42 ..	42.9 N.	78.2 W.	..	F	141	..	..	2.5Mn OTT	.. ...	IV	42
1971	MAY	23	06 24 27.9	43.899N.	74.475W.	009	A	349	..	..	4.1Mn DG	.. ...	V	44
1971	MAY	23	09 29 59.5	43.933N.	74.468W.	001	A	349	..	..	3.8Mn DG	.. ...	V	44
1971	JUN	21	02 48 31.6	43.897N.	74.484W.	002	A	349	..	..	3.4Mn DG	.. ...	IV	44
1971	JUL	10	08 15 01.5	43.912N.	74.437W.	002	A	349	..	..	3.6Mn DG	.. ...	V	44
1972	FEB	15	23 53 14.6	41.29 N.	73.61 W.	..	B	304	..	..	2.6ML XXX	.. ...	IV*	45
1972	MAR	15	12 10 57.0	43.68 N.	74.73 W.	..	B	304	..	..	2.6ML WES	.. ...	...	..
1972	NOV	02	05 15 08.8	44.76 N.	74.56 W.	..	B	304	..	..	3.0ML WES	.. ...	...	..
1973	FEB	02	23 09 30	44.45 N.	74.69 W. x	..	B	304	..	..	2.8Mn OTT	.. ...	...	..
1973	FEB	09	04 46 ..	42.8 N.	78.3 W.	..	B	126	..	..	2.7ML WES	.. ...	...	..
1973	JUN	11	10 08 31.6	43.95 N.	73.98 W.	001	A	304	..	..	2.8ML OTT	.. ...	...	..
1973	JUL	15	08 20 30.7	43.887N.	74.434W.	001	A	349	..	..	3.5Mn DG	.. ...	...	..
1973	JUL	15	10 32 37.8	43.921N.	74.401W.	003	A	349	3.4	..	3.2Mn DG	.. ...	...	..
1973	JUL	16	08 41 58.2	43.76 N.	74.47 W.	001	B	196	..	..	3.3Mn OTT	.. ...	...	..
1974	MAR	18	16 04 54.4	44.45 N.	74.86 W.	..	C	304	..	..	2.7ML WES	.. ...	...	..
1974	JUN	02	14 42 46.3	44.72 N.	74.65 W.	005	C	304	..	..	2.5ML WES	.. ...	...	..
1974	JUN	07	19 45 35.7	41.595N.	73.951W.	003	A	349	..	..	2.9Mn DG	.. ...	VI	47
Wappinger Falls, New York area. Windows were broken and a bookcase toppled in one home. Over 100 aftershocks were recorded in the next 6 days.														
1974	SEP	18	06 23 09.2	43.4 N.	73.8 W.	005	B	141	..	..	2.5ML PAL	.. ...	...	..
1974	NOV	27	10 28 51.7	43.33 N.	79.11 W.	000	B	141	..	..	3.3ML XXX	.. ...	...	..
1975	JAN	04	20 40 05	44.89 N.	74.55 W.	000	B	197	..	..	2.8Mn PAL	.. ...	...	..
1975	JAN	04	20 44 08	44.89 N.	74.55 W.	000	B	197	..	..	2.7Mn PAL	.. ...	...	..
1975	JAN	15	19 16 31.6	44.90 N.	74.56 W.	000	B	48	..	..	2.6Mn PAL	.. ...	IV	48
1975	JAN	28	00 15 27.8	44.97 N.	73.78 W.	..	C	304	..	..	2.6ML XXX	.. ...	...	..
1975	FEB	20	08 06 ..	40.3 N.	73.2 W.	..	D	126	..	..	2.9Mn XXX	.. ...	...	..
1975	MAY	14	00 08 08.5	43.42 N.	78.61 W.	..	C	304	..	..	2.9ML XXX	.. ...	...	..
1975	JUN	09	18 39 22.7	44.874N.	73.651W.	011	A	349	..	..	3.5Mn ST	.. ...	VI	48
Northern New York. Slight damage occurred at Beekmantown, New York and at Fairfax, Vermont. Felt over 5,000 sq mi of Massachusetts, New Hampshire, New York, Vermont, and southern Quebec, Canada (Ref. 38).														
1975	JUL	11	01 44 54.1	44.29 N.	73.87 W.	002	B	304	..	..	2.8Mn XXX	.. ...	...	..
1975	JUL	19	20 59 32.0	41.43 N.	73.79 W.	005	B	317	..	..	2.3Mn PAL	.. ...	III	48
1975	OCT	08	09 00 02.5	43.48 N.	78.50 W.	005	B	219	..	..	2.6Mn PAL	.. ...	...	..
1975	OCT	24	07 08 46.4	41.62 N.	73.98 W.	005	B	219	..	..	2.0Mn PAL	.. ...	II	126
1975	OCT	24	07 43 12.3	41.601N.	73.929W.	001	A	349	..	..	2.2Mn PAL	.. ...	II	126
1975	OCT	28	21 45 ..	41.57 N.	73.93 W.	..	C	219	..	..	.. ..	.. ...	II	126
1975	NOV	03	20 54 55.3	43.912N.	74.650W.	005	A	334	4.0	..	4.0Mn ST	.. ...	IV	48
1976	APR	28	21 32 43.9	44.58 N.	74.63 W.	001	A	304	..	..	2.8Mn PAL	.. ...	...	..
1976	MAY	11	13 18 14.4	40.48 N.	73.80 W.	001	B	304	..	..	2.8Mn PAL	.. ...	...	..
1976	AUG	20	22 08 14.3	41.11 N.	73.75 W.	006	A	304	..	..	2.5Mn PAL	.. ...	...	..
1976	OCT	20	23 42 08.4	44.69 N.	73.89 W.	001	B	304	..	..	2.8Mn PAL	.. ...	...	..
1977	SEP	02	05 53 56.5	41.31 N.	73.92 W.	002	A	318	..	..	2.5Mn PAL	.. ...	...	..
1977	SEP	28	17 21 44.7	44.39 N.	73.89 W.	003	B	304	..	..	3.1Mn PAL	.. ...	III	39
1977	DEC	15	08 55 24.5	43.03 N.	77.44 W.	005	B	304	..	..	2.6ML PAL	.. ...	...	..
1978	MAR	05	07 53 25.6	41.35 N.	74.15 W.	005	A	304	..	..	2.1Mn PAL	.. ...	III	240
1978	APR	05	14 45 49.5	43.86 N.	74.24 W.	011	A	304	..	..	2.6Mn PAL	.. ...	...	..
1978	MAY	13	21 55 42.3	42.78 N.	78.26 W.	016	A	304	..	..	2.8Mn PAL	.. ...	...	..
1978	MAY	13	22 08 34.5	42.76 N.	78.30 W.	006	A	304	..	..	2.6Mn PAL	.. ...	...	..
1978	JUL	13	17 38 38.4	44.73 N.	73.67 W.	003	A	304	..	..	2.5Mn PAL	.. ...	...	..
1978	AUG	21	08 47 10.9	44.52 N.	74.51 W.	001	A	304	..	..	3.1Mn PAL	.. ...	...	..
1978	OCT	26	21 53 40.0	42.65 N.	77.82 W.	006	A	304	..	..	2.6Mn PAL	.. ...	...	..
1978	DEC	28	09 24 50.6	44.52 N.	73.89 W.	001	A	304	..	..	2.5Mn PAL	.. ...	IV	245
1979	JUN	07	13 45 53.3	44.43 N.	73.86 W.	000	B	304	..	..	3.1Mn PAL	.. ...	...	..
1979	JUN	20	19 20 17.8	41.35 N.	74.38 W.	000	B	262	..	..	3.0Mn PAL	.. ...	...	..
1979	SEP	04	07 38 56.2	41.58 N.	73.54 W.	002	A	304	..	..	2.8Mn PAL	.. ...	...	..
1979	NOV	29	02 58 44.5	43.79 N.	74.49 W.	000	A	304	..	..	2.5Mn PAL	.. ...	...	..
1979	DEC	30	14 15 12.3	41.16 N.	73.71 W.	004	B	304	..	..	3.0Mn PAL	.. ...	IV	262
1980	JAN	17	10 13 16.1	41.31 N.	73.93 W.	003	A	304	..	..	2.9Mn PAL	.. ...	V	300
1980	FEB	04	09 18 45.6	44.76 N.	75.30 W.	000	A	304	..	..	2.8Mn PAL	.. ...	...	..
1980	FEB	29	05 53 56.1	42.58 N.	74.20 W.	012	A	304	..	..	3.1Mn PAL	.. ...	...	..
1980	MAY	07	04 32 49.3	41.02 N.	73.87 W.	000	B	304	..	..	2.6Mn PAL	.. ...	...	..
1980	MAY	20	21 33 23.0	41.35 N.	74.37 W.	002	B	300	..	..	2.6Mn PAL	.. ...	...	..
1980	MAY	23	08 39 44.0	44.89 N.	74.55 W.	000	B	300	..	..	3.4Mn PAL	.. ...	...	..
1980	JUN	06	13 15 52.9	43.571N.	75.138W.	001	A	349	..	..	3.8Mn PAL	.. ...	V	300
1980	JUN	12	18 19 26.9	43.63 N.	75.09 W.	007	B	300	..	..	2.8Mn PAL	.. ...	...	..
1980	JUN	12	18 49 26.0	44.37 N.	74.10 W.	016	B	300	..	..	2.6Mn PAL	.. ...	...	..
1980	JUL	15	07 21 01.5	44.72 N.	74.90 W.	004	A	300	..	..	2.6Mn PAL	.. ...	...	..
1980	AUG	11	14 54 46.2	43.54 N.	75.16 W.	000	A	300	..	..	3.3Mn PAL	.. ...	...	..
1980	SEP	04	04 30 55.8	41.11 N.	73.78 W.	013	A	300	..	..	3.2Mn PAL	.. ...	IV	300
1980	SEP	21	20 54 45.1	43.63 N.	74.02 W.	001	A	300	..	..	3.2Mn PAL	.. ...	...	..
1980	SEP	27	00 48 30.5	41.34 N.	73.69 W.	006	A	300	..	..	2.5Mn PAL	.. ...	...	..
1980	SEP	28	22 19 05.4	43.77 N.	74.12 W.	001	A	300	..	..	3.0Mn PAL	.. ...	...	..
1981	MAR	31	21 05 14.2	42.86 N.	78.26 W.	006	B	325	..	..	2.8Mn PAL	.. ...	...	..
1981	SEP	16	14 41 33.8	43.43 N.	76.39 W.	009	B	325	..	..	2.6Mn PAL	.. ...	...	..
1981	OCT	21	16 49 07.0	41.13 N.	72.56 W.	006	B	325	..	..	3.8Mn WES	.. ...	V	325
1981	DEC	14	18 31 38.3	43.08 N.	73.83 W.	002	B	325	..	..	2.3MD PAL	.. ...	F	325
1982	AUG	31	10 16 58.2	43.21 N.	74.20 W.	004	B	350	..	..	2.6Mn PAL	.. ...	III	350
1982	OCT	23	05 09 55.1	44.10 N.	73.54 W.	000	B	350	..	..	2.5MD PAL	.. ...	...	..
1983	FEB	21	21 13 30.8	39.787N.	73.205W.	000	B	360	..	..	2.6Mn WES	.. ...	...	..
1983	FEB	26	19 59 35.4	41.552N.	73.663W.	007	A	360	..	..	2.9Mn GS	.. ...	VI	360
Southeastern New York. A church wall was cracked and a few buildings were reported damaged at Pawling, New York. Chimneys and a foundation were cracked at Lagrangeville, New York. Felt in southeastern New York and western Connecticut.														
1983	MAY	09	12 36 22.2	44.434N.	74.842W.	004	A	360	..	..	2.6MD PAL	.. ...	...	..
1983	SEP	08	19 35 10.1	40.433N.	72.123W.	026	C	360	..	..	2.9MD PAL	.. ...	...	..
1983	OCT	07	10 18 46.1	43.938N.	74.258W.	013	A	360	5.1	..	5.1ML PAL	.. ...	VI	360
Blue Mountain Lake Area, New York. Although this earthquake caused damaged that included cracked masonry walls and chimneys, the contiguous felt area was approximately 630,000 sq km of the United States and Canada. 250,000 sq km lies within the United States. The earthquake was felt in all or part of 12 states of the United States and 2 provinces of Canada. Dana Coyle, Lamont-Doherty Geological Observatory assigned a maximum intensity of VII to sites near the epicenter on the basis of cracked masonry walls, broken chimneys, and several landslides. The lower intensity assigned here is considered to be on the "high side" of the VI intensity level. At Blue Mountain Lake, New York, 20 tombstones slid or rotated and 1 old chimney collapsed. One person was injured.														
1983	OCT	07	10 39 38.5	43.952N.	74.258W.	008	A	360	..	..	3.5Mn GS	.. ...	F	360
1983	OCT	07	10 59 03.8	43.952N.	74.258W.	008	A	360	..	..	2.9Mn GS	.. ...	...	..
1983	OCT	08	08 58 37.6	43.962N.	74.261W.	007	A	360	..	..	2.8MD PAL	.. ...	...	..
1983	OCT	11	05 48 29.0	43.955N.	74.257W.	008	A	360	..	..	2.9MD PAL	.. ...	...	..
1983	OCT	12	02 17 06.3	43.956N.	74.238W.	008	A	360	..	..	2.8Mn GS	.. ...	...	..
1983	OCT	30	12 14 10.9	43.931N.	74.238W.	012	A	360	..	..	3.0MD PAL	.. ...	...	..
1983	NOV	12	15 13 00.0	43.957N.	74.271W.	006	A	360	..	..	2.5MD PAL	.. ...	...	..
1983	NOV	15	20 51 06.8	43.960N.	74.264W.	007	A	360	..	..	2.5MD PAL	.. ...	...	..
1983	NOV	23	02 22 03.0	43.952N.	74.260W.	007	A	360	..	..	2.8MD PAL	.. ...	...	..
1983	NOV	23	23 34 17.3	43.952N.	74.261W.	007	A	360	..	..	2.6MD PAL	.. ...	...	..
1983	DEC	10	02 58 55.3	44.392N.	73.342W.	005	A	360	..	..	2.8MD PAL	.. ...	...	..

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