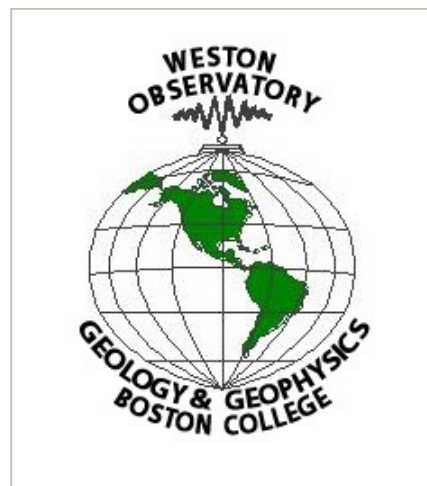


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A STUDY OF NEW ENGLAND SEISMICITY

Quarterly Earthquake Report

October - December, 2007



Weston Observatory
New England Seismic Network
381 Concord Road
Weston, MA 02493

NEW ENGLAND SEISMIC NETWORK

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January, 2008

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Notice

Network operation supported by the U.S. Geological Survey (USGS), Department of the Interior, under USGS award number 04HQAG0020. The views and conclusions contained in this document are those of the authors and should not be interpreted as necessarily representing the official policies, either expressed or implied, of the U.S. Government.

Quarterly Earthquake Report
October - December, 2007

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Introduction

The New England Seismic Network (NESN) is operated by the Weston Observatory (WES) of Boston College. The mission of the NESN is to operate and maintain a regional seismic network with digital recording of seismic ground motions for the following purposes: 1) to determine the location and magnitude of earthquakes in and adjacent to New England and report felt events to public safety agencies, 2) to define the crust and upper mantle structure of the northeastern United States, 3) to derive the source parameters of New England earthquakes, and 4) to estimate the seismic hazard in the area.

This report summarizes the work of the NESN for the period October - December, 2007. It includes a brief summary of the network's equipment and operation, and a short discussion of data management procedures. A list of participating personnel is given in Table 1. There were 23 earthquakes that occurred within or near the network during this reporting period. Phase information for these earthquakes is included in this report.

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Current Network Operation and Status

The New England Seismic Network of Weston Observatory of Boston College currently consists of 12 broadband three-component and 8 analog strong-motion stations. The coordinates of the stations are given in Table 2, and maps of the weak- and strong-motion networks are shown in Figures 1 and 2, respectively. The 12 stations consist of Guralp CMG-40T three-component sensors. Ground motions recorded by these sensors are digitized at 100 sps with 16-bit resolution. Additional gain-ranging provides 126 dB dynamic range. These stations are operated in dialup mode with waveform segments of suspected events transmitted in digital mode to Weston Observatory for analysis and archiving. Weston Observatory also maintains 8 SMA-1 strong-motion instruments in New England.

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Seismicity

There were 23 earthquakes that occurred in or adjacent to the NESN during this reporting period. A summary of the location data is given in Table 3. Figure 3 shows the locations of these events. Figure 4 shows the locations of all events since the beginning of network operation in October, 1975.

Table 4 gives the station phase data and detailed hypocenter data for each event listed in Table 3. In addition to NESN data, arrival time and magnitude data sometimes are contributed for seismic stations operated by the [Geological Survey of Canada \(GSC\)](#), the [Lamont-Doherty Cooperative Seismographic Network](#), and the [US National Seismic Network](#). Final locations for this section were computed using the program HYP078. For regional events (those too far from the NESN to obtain accurate locations and magnitudes) phase data are given for NESN stations, but the entry in Table 3 lists the hypocenter and geographic location information adopted from the authoritative network. Accordingly, the epicenter is plotted on the maps using the entry from Table 3.

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Data Management

Recent event locations are available at http://aki.bc.edu/cgi-bin/NESN/recent_events.pl. Waveform data are saved in Nanometrics, ASCII, and SEED formats and are available by contacting, Anastasia Macherides Moulis, via email. Earthquake lists can be found at www.bc.edu/research/westonobservatory/northeast/eqcatalogs/. Currently available on the Weston Observatory web page is the full catalog of northeastern U.S. earthquake activity to the present time. This will be updated as new Northeastern U.S. Seismic Network Quarterly Earthquake Reports are produced.

For more information on matters discussed in this report or general earthquake information (reports, maps, catalogs, etc.) consult our web site www.bc.edu/westonobservatory or contact:

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Explanation of Tables

Table 1: List of personnel operating the NESN

Table 2: List of Seismic and Strong Motion Stations

1. Code = station name
2. Lat = station latitude, degrees north
3. Long = station longitude, degrees west
4. Elev = station elevation in meters
5. Location = geographic location
6. Operator = network operator

Table 3: Earthquake Hypocenter List

1. Date = date event occurred, Yr (year)/Mo (month)/Dy (day)
2. Time = origin time of event, Hr (hour):Mn (minute):Sec (second)
in UCT (Universal Coordinated Time, same as Greenwich Mean Time)
3. Lat = event location, latitude north in degrees
4. Long = event location, longitude west in degrees
5. Depth = event depth in kilometers
6. Mn = Nuttli Magnitude
7. Mc = Coda Magnitude
8. Int = event epicentral intensity
9. Location = event geographic location

Table 4: Earthquake detailed hypocenter and phase data list

1. Geographic location
2. DATE = date event occurred, yr/mo/dy (year/month/day)
3. ORIGIN = event origin time (UCT) in hours, minutes, and seconds
4. LAT N = latitude north in degrees and minutes
5. LONG W = longitude west in degrees and minutes
6. DEPTH = event depth in kilometers
7. MN = Nuttli Lg phase magnitude with amplitude divided by period
8. MC = signal duration (coda) magnitude
 - WES: $2.23 \text{ Log(FMP)} + 0.12 \text{ Log(Dist)} - 2.36$ (Rosario, 1979)
 - MIT: $2.21 \text{ Log(FMP)} - 1.7$ (Chaplin *et al.*, 1980)
9. ML = local magnitude
 - WES: calculated from Wood-Anderson seismograms (Ebel, 1982)
 - GSC (Geological Survey of Canada): Richter Lg magnitude
10. GAP = largest azimuthal separation, in degrees, between stations
11. RMS = root mean square error of travel time residual in seconds
12. ERH = standard error of epicenter in kilometers
13. ERZ = standard error of event depth in kilometers
14. Q = solution quality of hypocenter
 - A = excellent
 - B = good
 - C = fair
 - D = poor

Table Body: earthquake phase data

1. STN = station name
2. DIST = epicentral distance in kilometers
3. AZM = azimuthal angle in degrees measured clockwise between true north and vector pointing from epicenter to station
4. Description of onset of phase arrival
 - I = impulsive
 - E = emergent
5. R = phase
 - P = first P arrival
 - S = first S arrival
6. M = first motion direction of phase arrival
 - U = up or compression
 - D = down or dilatation
7. K = weight of arrival
 - 0 = full weight (1.0)
 - 1 = 0.75 weight
 - 2 = 0.50 weight
 - 3 = 0.25 weight
 - 4 = no weight (0.0)
8. HRMN = hour and minute of phase arriva l
9. SEC = second of phase arrival
10. TCAL = calculated travel time of phase in seconds
11. RES = travel time residual (error) of phase arrival
12. WT = weight of phase used in hypocentral solution
13. AMX = peak-to-peak ground motion, in millimicrons, of the maximum envelope amplitude of vertical-component signal, corrected for system response
14. PRX = period in seconds of the signal from which amplitude was measured
15. XMAG = Nuttli magnitude recorded at station
16. FMP = signal duration (coda), in seconds, measured from first P arrival
17. FMAG = coda magnitude recorded at station

Table 5: Microearthquakes and other non-locatable events

1. Date = date event occurred, Yr (year)/Mo (month)/Dy (day)
2. Sta = nearest station recording event
3. Arrival Time = phase arrival time, Hr (hour):Mn (minute):Sec (second)

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TABLE 1

WESTON OBSERVATORY PERSONNEL

Name	Position	voice phone	email address
John E. Ebel	Observatory Director, Seismologist, Principal Investigator	617-552-8319	ebel@bc.edu
Alan Kafka	Research Seismologist	617-552-8300	kafka@bc.edu
Anastasia Macherides Moulis	Seismologist, Analyst	617-552-8325	macherid@bc.edu
Dina Smith	Associate Director of Operations, Seismologist	617-552-8335	dina.smith.1@bc.edu
Michael Hagerty	New England Seismic Network Manager, Seismologist	617-552-8337	hagertmb@bc.edu
Weston Observatory		617-552-8300 617-552-8388 (FAX)	

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TABLE 2

SEISMIC STATIONS OF THE NEW ENGLAND SEISMIC NETWORK

Code	Lat	Long	Elev (m)	Location	Operator
BCX *	42.3350	-71.1705	61.0	Chestnut Hill, MA	WES
BRYW	41.9199	-71.5342	107	Smithfield, RI	WES
FFD	43.4700	-71.6539	131	Franklin Falls Dam, NH	WES
HNH	43.7051	-72.2865	180	Hanover, NH	WES
QUA2	42.2790	-72.3521	168	Belchertown, MA	WES
TRY	42.7305	-73.6658	131	Troy, NY	WES
EMMW	44.7101	-67.4580	34	Machias, ME	WES
VT1	44.3317	-72.7536	125	Waterbury, VT	WES
WES	42.3848	-71.3218	60	Weston, MA	WES
WVL	44.5648	-69.6575	85	Waterville, ME	WES
YLE	41.3165	-72.9209	10	New Haven, CT	WES
PQI	46.6701	-68.0133	175	Presque Isle, ME	WES

* = not in operation during this quarter

STRONG MOTION STATIONS OF THE NEW ENGLAND SEISMIC NETWORK

Code	Lat	Long	Location	Operator
SM1	44.90	-67.25	Dennysville, ME	WES
SM2	44.49	-73.10	Essex Junction, VT	WES
SM3	41.45	-71.33	Newport, RI	WES
SM4	42.38	-71.32	Weston, MA	WES
SM5	42.66	-71.30	Lowell, MA	WES
SM6	42.30	-71.34	Natick, MA	WES
SM7	42.39	-71.54	Hudson, MA	WES
SM8	44.48	-69.61	North Vassalboro, ME	WES

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TABLE 3

HYPOCENTERS FOR EARTHQUAKES IN NEW ENGLAND AND ADJACENT REGIONS
October - December, 2007

Date M/D/Y	Time (UTC) Hr:Mn:Sec	Lat	Long	Depth (km)	Mn	Mc	Int	Location
10/01/2007	16:42:10.31	47.03	-76.84	19.14	3.6	3.5		PQ, 82.3KM NW OF MANIWAKI
10/02/2007	05:06:49.59	45.01	-70.04	09.70		2.3		ME, 10 KM E OF CARRABASSETT
10/02/2007	16:52:10.30	43.95	-70.02	17.18		2.4		ME, 4.8KM NW OF BRUNSWICK
10/07/2007	06:47:28.42	49.94	-67.44	05.22	2.8	3.3		PQ. 80 KM SW OF SEPT ILES
10/08/2007	11:15:16.75	42.81	-71.02	00.70	1.3	1.8		MA, MERRIMAC
10/09/2007	14:05:29.84	44.62	-70.77	10.33	2.0	2.7		ME, 14.7KM WNW OF RUMFORD
10/13/2007	05:53:32.04	46.52	-75.12	02.35	2.6	3.2		PQ, NEAR LAC-SAGUAY
10/15/2007	01:06:27.30	44.49	-68.14	05.00	0.5	1.6		ME, 10KM NE OF BAR HARBOR
10/15/2007	18:21:27.88	45.96	-73.42	00.04		2.4		PQ, SOUTH OF JOLIETTE
10/16/2007	23:57:35.74	43.60	-70.87	01.28	1.9	2.4		ME, 15.5KM NNW OF SANFORD
10/19/2007	05:23:52.96	42.54	-71.50	00.48	2.5	3.0		MA, 1.94KM SW OF LITTLETON COMMON
10/19/2007	10:04:47.04	42.55	-71.48	00.02	0.9	1.1		MA, 0.7KM W OF LITTLETON COMMON
10/21/2007	23:46:24.58	43.02	-71.86	06.43	1.7	2.3		NH, 5.2KM ENE OF BENNINGTON
10/24/2007	21:49:16.94	45.80	-72.01	00.03		2.5		PQ, 5KM W OF ASBESTOS
10/28/2007	09:47:18.66	46.52	-77.14	03.41		3.5		ON, 53KM NNE OF PETAWAWA
11/06/2007	22:47:58.66	43.74	-74.98	04.53		2.6		NY, 57KM NNE OF UTICA
11/07/2007	06:21:47.20	43.17	-71.88	08.04	1.8	2.3		NH, 25KM WSW OF CONCORD
11/20/2007	16:41:50.02	42.97	-71.02	00.79	2.4	2.4		NH, 5.25KM WSW OF EXETER
11/22/2007	00:15:19.83	41.96	-71.56	19.04	1.4	2.3		RI, 12.9KM W OF WARWICK
12/11/2007	10:02:10.28	43.97	-70.02	01.95	2.2	2.6		ME, 6.2KM NW OF BRUNSWICK
12/23/2007	23:48:36.94	46.08	-77.09	07.44		3.6		PQ, 12.8KM N OF CHICHESTER
12/28/2007	00:05:46.08	44.68	-72.07	03.44	1.0	2.4		VT, 21KM NNW OF ST. JOHNSBURY
12/30/2007	12:01:56.62	45.06	-66.83	00.02	1.5	2.3		NB, PASSAMAQUODDY BAY

* indicates magnitude as calculated by Lamont Doherty Earth Observatory
 ^ indicates magnitude as calculated by Earthquakes Canada (Natural Resources Canada)

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TABLE 4
 EARTHQUAKE PHASE DATA LIST
 NEW ENGLAND AND ADJACENT REGIONS
 October - December, 2007

Run Hyp2000: Phase File: [09.X] Vel Mod: [6] ==> XX-File: 09.XX
 HYPOINVERSE 2000 (10/2006 VERSION) RUN ON Mon Oct 1 15:10:44 2007 RUN LABEL=
 CRUST MODEL 1: 6. NORTHERN NY AND ADIRONDACKS

DATE ORIGIN LAT N LONG W DEPTH MN MC ML GAP RMS ERH ERZ Q
 200710011642 10.31 47- 1.52 76-50.67 19.14 3.6 3.5 205 0.30 0.9 0.6
 CANADA, PQ, 82.3KM NW OF MANIWAKI
 FELT

NSTA NPHS DMIN N.XMG N.FMG
 31 62 88.40 3 7

STN	DIST	AZM	RMK	HRMN	SEC	TOBS	TCAL	RES	WT	AMX	PRX	XMAG	FMP	FMAG	ANG
GRQ	88.4	121	EPC0	1642	24.02	13.71	13.85	-0.19	1.80						100
			S 0	1642	35.09	24.78	24.65	0.04	1.80						
CRLO	117.2	201	EPC0	1642	28.28	17.97	18.17	-0.23	1.71						97
			S 0	1642	42.93	32.62	32.34	0.22	1.71						
VLDQ	129.3	340	EPC0	1642	32.07	21.76	19.98	1.76	0.00						97
			S 0	1642	48.02	37.71	35.56	2.11	0.00						
ALGO	150.8	219	EPC0	1642	33.09	22.78	23.16	-0.42	1.59						54
			S 0	1642	51.92	41.61	41.22	0.31	1.59						
PEMO	153.0	192	EPC0	1642	33.45	23.14	23.43	-0.32	1.58						54
			S 0	1642	52.05	41.74	41.71	-0.02	1.58						
GAC	180.7	143	EPC0	1642	37.72	27.41	26.85	0.55	1.46						54
			S 0	1642	58.25	47.94	47.79	0.13	1.46						
TRQ	196.8	116	EPC0	1642	39.40	29.09	28.83	0.26	1.38						54
			S 0	1643	1.24	50.93	51.32	-0.39	1.38						
OTT	201.1	153	EPC0	1642	39.77	29.46	29.37	0.08	1.36						54
			S 0	1643	2.71	52.40	52.28	0.10	1.36						
PLVO	221.4	185	EPC0	1642	42.30	31.99	31.88	0.11	1.25						54
			S 0	1643	6.70	56.39	56.75	-0.36	1.25						
BANO	238.2	202	EPC0	1642	45.66	35.35	33.95	1.34	0.00						54
			S 0	1643	10.60	60.29	60.43	-0.25	1.16						
MRHQ	238.5	121	EPC0	1642	44.12	33.81	33.99	-0.25	1.16						54
			S 0	1643	11.04	60.73	60.50	0.10	1.16						
RSPO	247.4	246	EPC0	1642	46.20	35.89	35.09	0.76	1.06						54
			S 0	1643	11.08	60.77	62.46	-1.76	0.00						
WBO	255.8	151	EPC0	1642	46.67	36.36	36.12	0.23	1.07						54
			S 0	1643	14.78	64.47	64.29	0.16	1.07						
BUKO	264.2	230	EPC0	1642	47.89	37.58	37.16	0.37	1.02						54
			S 0	1643	15.89	65.58	66.14	-0.65	1.02						
MNT	300.6	123	EPC0	1642	51.95	41.64	41.65	-0.03	0.82				202	3.3	54
			S 0	1643	24.48	74.17	74.14	0.00	0.82						
LONY	320.0	145	EPC0	1642	54.63	44.32	44.05	0.20	0.72				349	3.7	54
			S 0	1643	31.26	80.95	78.41	2.42	0.00						
NCB	396.3	147	EPC0	1643	3.95	53.64	53.47	0.07	0.35				324	3.7	54
			S 0	1643	45.23	94.92	95.18	-0.43	0.35						
MOQ	402.5	116	EPC0	1643	2.76	52.45	54.24	-1.93	0.00				210	3.3	54
			S 0	1643	46.33	96.02	96.55	-0.78	0.30						
QCQ	425.4	91	EPC0	1643	7.20	56.89	57.06	-0.19	0.23						54
			S 0	1643	50.84	100.53	101.57	-1.07	0.08						
DAQ	435.1	74	EPC0	1643	6.97	56.66	58.25	-1.75	0.00						54
			S 0	1643	51.24	100.93	103.68	-3.04	0.00						
MDV	441.7	138	EPC0	1643	9.25	58.94	59.08	-0.16	0.18				250	3.5	54
			S 1	1643	58.39	108.08	105.16	2.88	0.00						
EFO	478.4	205	EPC0	1643	13.47	63.16	63.61	-0.48	0.08						54
			S 0	1644	2.63	112.32	113.23	-0.96	0.05						
A54	489.7	82	EPC0	1643	13.87	63.56	65.00	-1.50	0.00						54
			S 0	1644	2.83	112.52	115.70	-3.29	0.00						
LBNH	493.0	127	EPC0	1643	15.60	65.29	65.41	-0.18	0.05				284	3.6	54
			S 0	1644	8.45	118.14	116.43	1.60	0.00						
LMQ	496.8	80	EPC0	1643	14.40	64.09	65.88	-1.86	0.00						54
			S 0	1644	4.55	114.24	117.27	-3.15	0.00						
HNH	513.6	134	EPC4	1643	19.93	69.62	67.95	1.64	0.00	0.3	.13	3.3			54
			S 3	1644	16.69	126.38	120.95	5.38	0.00						
BINY	541.3	172	EPC1	1643	21.95	71.64	71.37	0.19	0.00						54
			S 0	1644	21.52	131.21	127.04	4.03	0.00						
FPD	567.8	132	EPC1	1643	25.78	75.47	74.64	0.81	0.00						54
			S 2	1644	39.40	149.09	132.86	16.20	0.00						
PKME	616.1	105	EPC0	1643	29.49	79.18	80.60	-1.44	0.00				251	3.6	54
			S 0	1644	31.04	140.73	143.47	-2.77	0.00						
WES	676.6	137	EPC4	1644	3.51	113.20	88.07	25.12	0.00	0.1	.20	3.2			54
			S 2	1645	1.83	171.52	156.76	14.74	0.00						
EMMW	774.1	106	EPC2	1644	52.45	162.14	100.11	62.02	0.00	0.3	.10	4.3			54
			S 2	1645	33.20	202.89	178.20	24.68	0.00						

Run Hyp2000: Phase File: [12.X] Vel Mod: [11] ==> XX-File: 12.XX
 HYPOINVERSE 2000 (10/2006 VERSION) RUN ON Tue Oct 9 10:35:41 2007 RUN LABEL=
 CRUST MODEL 1: 11. SOUTHEAST MAINE CRUSTAL MO

DATE ORIGIN LAT N LONG W DEPTH MN MC ML GAP RMS ERH ERZ Q
 200710020506 49.59 45- 0.37 70- 2.21 9.70 2.3 181 0.07 13.7 4.2
 ME, 10KM E OF CARRABASSETT

NSTA NPHS DMIN N.XMG N.FMG
 3 5 65.30 0 2

STN	DIST	AZM	RMK	HRMN	SEC	TOBS	TCAL	RES	WT	AMX	PRX	XMAG	FMP	FMAG	ANG
PKME	65.3	63	EPC0	507	0.29	10.70	10.65	0.03	1.45					87	2.3 95
			S 1	507	8.53	18.94	18.96	-0.05	1.09						
LBNH	172.4	242	EPC1	507	16.12	26.53	26.58	-0.11	0.88				66	2.3	51
			S 2	507	37.13	47.54	47.31	0.12	0.58						
EMMW	206.5	98	S 2	507	50.20	60.61	54.79	5.80	0.00						

Run Hyp2000: Phase File: [11.X] Vel Mod: [11] ==> XX-File: 11.XX
 HYPOINVERSE 2000 (10/2006 VERSION) RUN ON Mon Nov 26 12:56:09 2007 RUN LABEL=
 CRUST MODEL 1: 11. SOUTHEAST MAINE CRUSTAL MO

DATE	ORIGIN	LAT N	LONG W	DEPTH	MN	MC	ML	GAP	RMS	ERH	ERZ	Q
200710021652	10.30	43-57.19	70- 0.98	17.18		2.4		222	0.11	1.8	1.8	

ME, 4.8KM NW OF BRUNSWICK

NSTA NPHS DMIN N.XMG N.FMG
 6 11 156.20 0 2

STN	DIST	AZM	RMK	HRMN	SEC	TOBS	TCAL	RES	WT	AMX	PRX	XMAG	FMP	FMAG	ANG
FFD	142.5	249	EPC2	1652	33.48	23.18	22.13	1.03	0.00						51
			S 3	1652	51.58	41.28	39.39	1.85	0.00						
LBNH	156.2	283	EPC1	1652	34.30	24.00	23.83	0.11	1.30				75	2.4	51
			S 2	1652	52.67	42.37	42.42	-0.15	0.86						
PKME	156.7	21	EPC0	1652	34.13	23.83	23.88	-0.07	1.73				84	2.4	51
			S 2	1652	53.02	42.72	42.51	0.18	0.86						
GGN	285.0	61	EPC2	1652	50.08	39.78	39.73	0.04	0.50						51
			S 1	1653	21.00	70.70	70.72	-0.04	0.75						
PQI	340.4	26	EPC4	1653	24.51	74.21	46.56	27.62	0.00						51
LMQ	400.3	357	EPC2	1653	10.25	59.95	53.97	5.91	0.00						51
			S 2	1653	42.58	92.28	96.07	-3.91	0.00						

Run Hyp2000: Phase File: [27.X] Vel Mod: [12] ==> XX-File: 27.XX
 HYPOINVERSE 2000 (10/2006 VERSION) RUN ON Thu Oct 11 14:38:02 2007 RUN LABEL=
 CRUST MODEL 1: 12. NORTHWEST MAINE CRUSTAL ST

DATE	ORIGIN	LAT N	LONG W	DEPTH	MN	MC	ML	GAP	RMS	ERH	ERZ	Q
200710070647	28.45	49-54.42	67-27.12	5.31	2.8	3.3		300	0.14	12.2	11.2	

CANADA, PQ. 80 KM SW OF SEPT ILES

NSTA NPHS DMIN N.XMG N.FMG
 9 12 310.00 1 3

STN	DIST	AZM	RMK	HRMN	SEC	TOBS	TCAL	RES	WT	AMX	PRX	XMAG	FMP	FMAG	ANG
BATG	310.0	160	EPC1	648	13.19	44.74	44.69	-0.01	1.84				214	3.3	47
LMQ	337.0	220	EPC1	648	16.33	47.88	48.02	-0.21	1.50				215	3.3	47
			S 2	648	54.03	85.58	85.48	-0.02	1.00						
All	359.0	216	EPC0	648	19.38	50.93	50.74	0.18	1.65						47
PKME	534.4	196	EPC0	648	41.06	72.61	72.40	0.19	0.01						47
			S 2	649	33.60	125.15	128.87	-3.76	0.00						
GGN	534.7	174	EPC1	648	40.61	72.16	72.43	-0.28	0.01				175	3.3	47
SCHQ	549.7	4	EPC0	648	38.63	70.18	74.28	-4.18	0.00						47
EMMW	577.8	181	EPC1	648	46.06	77.61	77.75	-0.15	0.00	0.1	.15	2.8			47
			S 2	649	45.70	137.25	138.40	-1.16	0.00						
MRHQ	675.1	232	EPC1	648	56.73	88.28	89.76	-1.55	0.00						47
NCB	837.5	221	EPC2	649	17.38	108.93	109.82	-0.99	0.00						47

Run Hyp2000: Phase File: [21.X] Vel Mod: [1] ==> XX-File: 21.XX
 HYPOINVERSE 2000 (10/2006 VERSION) RUN ON Tue Oct 9 10:34:21 2007 RUN LABEL=
 CRUST MODEL 1: 1. SOUTH & COASTAL NEW ENGLAND

DATE	ORIGIN	LAT N	LONG W	DEPTH	MN	MC	ML	GAP	RMS	ERH	ERZ	Q
200710081115	16.75	42-48.80	71- 0.93	0.70	1.3	1.8		228	0.10	2.8	3.7	

MA, MERRIMAC

NSTA NPHS DMIN N.XMG N.FMG
 7 12 53.80 3 4

STN	DIST	AZM	RMK	HRMN	SEC	TOBS	TCAL	RES	WT	AMX	PRX	XMAG	FMP	FMAG	ANG
WES	53.8	208	EPC0	1115	25.72	8.97	8.96	0.00	1.75	0.1	.15	0.9	45	1.7	61
			S 1	1115	32.58	15.83	15.95	-0.14	1.31						
HRV	56.1	233	EPC2	1115	22.85	6.10	9.33	-3.26	0.00				47	1.7	61
			S 3	1115	34.96	18.21	16.61	1.55	0.00						
FFD	89.5	325	S 3	1115	41.22	24.47	26.43	-2.00	0.00						61
BRYW	108.1	204	EPC2	1115	34.81	18.06	17.91	0.09	0.81	0.1	.24	1.4	34	1.7	61
			S 1	1115	48.75	32.00	31.88	0.01	1.22						
QUA2	124.8	243	EPC1	1115	37.40	20.65	20.62	0.00	1.18	0.1	.16	1.5	39	1.9	53
			S 3	1115	53.79	37.04	36.70	0.28	0.39						
LBNH	174.8	336	EPC3	1115	44.40	27.65	28.08	-0.49	0.34						40
			S 3	1116	4.35	47.60	49.98	-2.49	0.00						
PKME	305.4	26	EPC4	1116	1.09	44.34	44.20	0.12	0.00						40

Run Hyp2000: Phase File: [28.X] Vel Mod: [11] ==> XX-File: 28.XX
 HYPOINVERSE 2000 (10/2006 VERSION) RUN ON Tue Oct 9 12:14:00 2007 RUN LABEL=
 CRUST MODEL 1: 11. SOUTHEAST MAINE CRUSTAL MO

DATE	ORIGIN	LAT N	LONG W	DEPTH	MN	MC	ML	GAP	RMS	ERH	ERZ	Q
200710091405	29.84	44-36.96	70-46.36	10.33	2.0	2.7		132	0.35	1.2	1.7	

ME, 14.7KM WNW OF RUMFORD

NSTA NPHS DMIN N.XMG N.FMG
 9 18 100.90 1 1

STN	DIST	AZM	RMK	HRMN	SEC	TOBS	TCAL	RES	WT	AMX	PRX	XMAG	FMP	FMAG	ANG
LBNH	100.9	246	EPC0	1405	46.57	16.73	16.30	0.37	1.33				134	2.7	93
			S 0	1405	58.61	28.77	29.01	-0.35	1.33						
PKME	137.3	57	EPC0	1405	51.99	22.15	22.07	0.06	1.24						92
			S 0	1406	6.78	36.94	39.28	-2.38	0.00						
MOQ	140.2	305	EPC2	1405	53.55	23.71	22.52	1.05	0.09						92
			S 0	1406	10.33	40.49	40.09	0.16	1.23						
FFD	145.6	210	EPC0	1405	53.11	23.27	23.20	0.05	1.21						51
			S 0	1406	11.66	41.82	41.30	0.49	1.21						
HNH	157.8	231	EPC0	1405	53.88	24.04	24.71	-0.70	1.10	0.3	.09	2.0			51
			S 0	1406	13.80	43.96	43.98	-0.08	1.18						
MDV	204.1	252	EPC4	1406	4.35	34.51	30.42	4.07	0.00						51
			S 4	1406	26.41	56.57	54.15	2.39	0.00						
LONY	302.5	272	EPC4	1406	15.25	45.41	42.57	2.77	0.00						51
			S 4	1406	52.85	83.01	75.77	7.11	0.00						
GGN	317.2	78	EPC0	1406	14.20	44.36	44.39	-0.04	0.55						51
			S 0	1406	48.17	78.33	79.01	-0.70	0.52						
LMQ	327.8	5	EPC4	1406	22.55	52.71	45.69	6.95	0.00						51
			S 4	1406	57.03	87.19	81.33	5.74	0.00						

Run Hyp2000: Phase File: [32.X] Vel Mod: [6] ==> XX-File: 32.XX
 HYPOINVERSE 2000 (10/2006 VERSION) RUN ON Tue Oct 23 11:02:18 2007 RUN LABEL=
 CRUST MODEL 1: 6. NORTHERN NY AND ADIRONDACKS

DATE	ORIGIN	LAT N	LONG W	DEPTH	MN	MC	ML	GAP	RMS	ERH	ERZ	Q			
200710130553	32.04 46-31.25	75- 7.09	2.35	2.6	3.2			262	0.18	2.0	2.9				
CANADA, PQ, NEAR LAC-SAGUAY															
NSTA	NPHS	DMIN	N.XMG	N.FMG											
12	17	99.20	2	6											
STN	DIST	AZM	RMK	HRMN	SEC	TOBS	TCAL	RES	WT	AMX	PRX	XMAG	FMP	FMAG	ANG
MRHQ	99.2	134	EPC0	553	47.49	15.45	15.38	0.00	2.43				230	3.2	67
			S 2	553	59.36	27.32	27.38	-0.18	1.22						
MNT	161.9	133	EPC1	553	58.00	25.96	24.88	1.06	0.00				158	3.0	67
			S 2	554	16.59	44.55	44.29	0.23	1.06						
LONY	215.4	168	EPC0	554	4.64	32.60	32.64	-0.11	1.76				235	3.3	48
			S 3	554	30.23	58.19	58.10	-0.03	0.44						
MOQ	259.7	120	EPC2	554	10.67	38.63	38.11	0.38	0.72				212	3.3	48
NCB	291.7	165	EPC0	554	14.53	42.49	42.06	0.33	1.20				232	3.4	48
			S 2	554	48.94	76.90	74.87	1.86	0.00						
MDV	318.8	150	EPC1	554	17.15	45.11	45.41	-0.32	0.75						48
LBNH	356.1	134	EPC2	554	23.56	51.52	50.01	1.45	0.00						48
LMQ	381.8	70	EPC1	554	24.86	52.82	53.19	-0.44	0.42						48
TRY	436.7	164	EPC4	554	38.34	66.30	59.96	6.29	0.00	0.1	.25	2.6	87	2.8	48
BINY	485.8	189	EPC2	554	41.52	69.48	66.03	3.37	0.00						48
QUA2	520.3	153	EPC4	554	53.22	81.18	70.29	10.86	0.00	0.1	.20	2.6			48
BATG	696.3	79	EPC1	555	2.63	90.59	92.01	-1.48	0.00						48
			S 2	556	9.93	157.89	163.78	-5.99	0.00						

Run Hyp2000: Phase File: [33.X] Vel Mod: [11] ==> XX-File: 33.XX
 HYPOINVERSE 2000 (10/2006 VERSION) RUN ON Tue Oct 23 11:05:50 2007 RUN LABEL=
 CRUST MODEL 1: 11. SOUTHEAST MAINE CRUSTAL MO

DATE	ORIGIN	LAT N	LONG W	DEPTH	MN	MC	ML	GAP	RMS	ERH	ERZ	Q			
200710150106	27.30 44-29.67	68- 8.11	5.00	0.5	1.6			249	0.30	4.7	28.2				
ME, 10KM NE OF BAR HARBOR															
NSTA	NPHS	DMIN	N.XMG	N.FMG											
3	6	58.90	1	3											
STN	DIST	AZM	RMK	HRMN	SEC	TOBS	TCAL	RES	WT	AMX	PRX	XMAG	FMP	FMAG	ANG
EMMW	58.9	65	EPC2	106	36.58	9.28	9.59	-0.32	1.35	0.1	.10	0.5	21	1.2	90
			S 3	106	47.06	19.76	17.07	2.67	0.00						
GGN	124.8	55	EPC2	106	47.80	20.50	20.06	0.43	1.22				33	1.8	90
			S 3	107	2.87	35.57	35.71	-0.15	0.61						
PKME	125.2	314	EPC2	106	47.50	20.20	20.12	0.06	1.22				49	2.0	90
			S 3	107	2.85	35.55	35.81	-0.30	0.61						

Run Hyp2000: Phase File: [36.X] Vel Mod: [6] ==> XX-File: 36.XX
 HYPOINVERSE 2000 (10/2006 VERSION) RUN ON Tue Oct 23 11:09:03 2007 RUN LABEL=
 CRUST MODEL 1: 6. NORTHERN NY AND ADIRONDACKS

DATE	ORIGIN	LAT N	LONG W	DEPTH	MN	MC	ML	GAP	RMS	ERH	ERZ	Q			
200710151821	27.88 45-57.74	73-25.41	0.04		2.4			200	0.21	1.1	1.9				
CANADA, PQ, SOUTH OF JOLIETTE															
NSTA	NPHS	DMIN	N.XMG	N.FMG											
6	12	116.30	0	5											
STN	DIST	AZM	RMK	HRMN	SEC	TOBS	TCAL	RES	WT	AMX	PRX	XMAG	FMP	FMAG	ANG
MOQ	116.3	127	EPC1	1821	45.85	17.97	18.12	-0.29	2.30				55	2.1	67
			S 3	1822	0.55	32.67	32.25	0.17	0.77						
LONY	174.8	212	EPC1	1821	54.73	26.85	26.97	-0.19	1.98				80	2.4	67
			S 3	1822	16.01	48.13	48.01	0.00	0.66						
MDV	219.0	174	EPC3	1822	2.71	34.83	33.34	1.47	0.00						48
			S 3	1822	27.51	59.63	59.35	0.25	0.56						
LBNH	224.8	147	EPC3	1822	1.77	33.89	34.05	-0.22	0.55				63	2.4	48
			S 3	1822	28.65	60.77	60.61	0.05	0.55						
NCB	229.9	197	EPC1	1822	2.65	34.77	34.68	-0.01	1.61				88	2.6	48
			S 3	1822	30.14	62.26	61.73	0.35	0.53						
LMQ	295.1	52	EPC1	1822	10.70	42.82	42.73	0.02	1.14				95	2.7	48
			S 3	1822	44.45	76.57	76.06	0.39	0.35						

Run Hyp2000: Phase File: [37.X] Vel Mod: [11] ==> XX-File: 37.XX
 HYPOINVERSE 2000 (10/2006 VERSION) RUN ON Tue Oct 23 11:10:20 2007 RUN LABEL=
 CRUST MODEL 1: 11. SOUTHEAST MAINE CRUSTAL MO

DATE	ORIGIN	LAT N	LONG W	DEPTH	MN	MC	ML	GAP	RMS	ERH	ERZ	Q			
200710162357	35.74 43-35.92	70-52.02	1.28	1.9	2.4			163	0.28	0.9	2.9				
ME, 15.5KM NNW OF SANFORD															
NSTA	NPHS	DMIN	N.XMG	N.FMG											
9	17	65.20	3	4											
STN	DIST	AZM	RMK	HRMN	SEC	TOBS	TCAL	RES	WT	AMX	PRX	XMAG	FMP	FMAG	ANG
FFD	65.2	258	EPC0	2357	46.32	10.58	10.76	-0.20	1.88	2.0	.05	2.0	103	2.4	72
			S 2	2357	54.41	18.67	19.15	-0.52	0.94						
LBNH	111.0	311	EPC0	2357	53.80	18.06	18.02	-0.02	1.76						72
			S 1	2358	8.11	32.37	32.08	0.19	1.32						
HNH	115.1	277	EPC0	2357	54.76	19.02	18.69	0.30	1.74				68	2.2	72
			S 2	2358	8.70	32.96	33.27	-0.36	0.87						
HRV	133.8	206	EPC4	2357	56.22	20.48	21.65	-1.20	0.00						72
			S 3	2358	11.45	35.71	38.54	-2.88	0.00						
WES	139.9	196	EPC1	2357	56.99	21.25	22.61	-1.37	0.21	0.2	.20	1.9	95	2.5	72
			S 2	2358	12.95	37.21	40.25	-3.05	0.00						
QUA2	190.2	221	EPC0	2358	5.79	30.05	29.65	0.37	1.43	0.2	.10	1.9	94	2.6	47
			S 2	2358	25.17	49.43	52.78	-3.40	0.00						
MDV	191.5	285	S 3	2358	28.91	53.17	53.06	0.07	0.36						47
PKME	223.6	33	EPC0	2358	9.21	33.47	33.77	-0.32	1.26						47
			S 2	2358	34.31	58.57	60.11	-1.58	0.00						
NCB	273.4	280	EPC3	2358	15.94	40.20	39.92	0.18	0.25						47
			S 2	2358	49.42	73.68	71.06	2.44	0.00						

Run Hyp2000: Phase File: [40.X] Vel Mod: [1] ==> XX-File: 40.XX
HYPOINVERSE 2000 (10/2006 VERSION) RUN ON Tue Oct 23 11:15:29 2007 RUN LABEL=
CRUST MODEL 1: 1. SOUTH & COASTAL NEW ENGLAND

Table with columns: DATE, ORIGIN, LAT N, LONG W, DEPTH, MN, MC, ML, GAP, RMS, ERH, ERZ, Q. Includes station data for HRV, WES, BCX, BRYW, QUA2, UCCT, FFD, HNH, TRY, LBNH, MDV, NCB, LONY, PKME.

Run Hyp2000: Phase File: [45.X] Vel Mod: [1] ==> XX-File: 45.XX
HYPOINVERSE 2000 (10/2006 VERSION) RUN ON Tue Oct 23 11:16:42 2007 RUN LABEL=
CRUST MODEL 1: 1. SOUTH & COASTAL NEW ENGLAND

Table with columns: DATE, ORIGIN, LAT N, LONG W, DEPTH, MN, MC, ML, GAP, RMS, ERH, ERZ, Q. Includes station data for HRV, WES, BRYW, QUA2, UCCT, FFD.

Run Hyp2000: Phase File: [48.X] Vel Mod: [2] ==> XX-File: 48.XX
HYPOINVERSE 2000 (10/2006 VERSION) RUN ON Tue Oct 23 11:17:47 2007 RUN LABEL=
CRUST MODEL 1: 2. HUGHES AND LUETGERT NH

Table with columns: DATE, ORIGIN, LAT N, LONG W, DEPTH, MN, MC, ML, GAP, RMS, ERH, ERZ, Q. Includes station data for FFD, HRV, WES, HNH, QUA2, BRYW, LBNH, MDV, NCB.

Run Hyp2000: Phase File: [50.X] Vel Mod: [12] ==> XX-File: 50.XX
HYPOINVERSE 2000 (10/2006 VERSION) RUN ON Mon Oct 29 12:32:38 2007 RUN LABEL=
CRUST MODEL 1: 12. NORTHWEST MAINE CRUSTAL ST

Table with columns: DATE, ORIGIN, LAT N, LONG W, DEPTH, MN, MC, ML, GAP, RMS, ERH, ERZ, Q. Includes station data for MRHQ, LBNH, PKME, LMQ.

S 3 2249 8.08 69.42 70.22 -0.85 0.00

Run Hyp2000: Phase File: [69.X] Vel Mod: [2] ==> XX-File: 69.XX
HYPOINVERSE 2000 (10/2006 VERSION) RUN ON Mon Nov 12 13:51:12 2007 RUN LABEL=
CRUST MODEL 1: 2. HUGHES AND LUETGERT NH

DATE ORIGIN LAT N LONG W DEPTH MN MC ML GAP RMS ERH ERZ Q
200711070621 47.20 43-10.16 71-52.68 8.04 1.8 2.3 124 0.23 0.8 2.4
NH, 25KM WSW OF CONCORD

NSTA NPHS DMIN N.XMG N.FMG
10 17 38.00 5 8

Table with columns: STN, DIST, AZM, RMK, HRMN, SEC, TOBS, TCAL, RES, WT, AMX, PRX, XMAG, FMP, FMAG, ANG. Rows include stations like FFD, HNH, HRV, WES, QUA2, LBNH, MDV, BRYW, TRY, NCB.

Run Hyp2000: Phase File: [74.X] Vel Mod: [1] ==> XX-File: 74.XX
HYPOINVERSE 2000 (10/2006 VERSION) RUN ON Tue Nov 20 15:05:23 2007 RUN LABEL=
CRUST MODEL 1: 1. SOUTH & COASTAL NEW ENGLAND

DATE ORIGIN LAT N LONG W DEPTH MN MC ML GAP RMS ERH ERZ Q
200711201641 50.02 42-58.28 71- 1.25 0.79 2.4 2.4 232 0.19 2.4 2.8
NH, 5.25KM WSW OF EXETER

NSTA NPHS DMIN N.XMG N.FMG
15 30 69.70 7 8

Table with columns: STN, DIST, AZM, RMK, HRMN, SEC, TOBS, TCAL, RES, WT, AMX, PRX, XMAG, FMP, FMAG, ANG. Rows include stations like WES, BCX, FFD, BRYW, HNH, QUA2, LBNH, WVL, MDV, TRY, NCB, PKME, LONY, GGN, LMQ.

Run Hyp2000: Phase File: [76.X] Vel Mod: [1] ==> XX-File: 76.XX
HYPOINVERSE 2000 (10/2006 VERSION) RUN ON Mon Nov 26 12:52:09 2007 RUN LABEL=
CRUST MODEL 1: 1. SOUTH & COASTAL NEW ENGLAND

DATE ORIGIN LAT N LONG W DEPTH MN MC ML GAP RMS ERH ERZ Q
200711220015 19.83 41-41.26 71-33.65 19.04 1.4 2.3 302 0.05 1.4 1.7
RI, 12.9KM W OF WARWICK

NSTA NPHS DMIN N.XMG N.FMG
9 14 25.90 3 3

Table with columns: STN, DIST, AZM, RMK, HRMN, SEC, TOBS, TCAL, RES, WT, AMX, PRX, XMAG, FMP, FMAG, ANG. Rows include stations like BRYW, BCX, WES, QUA2, FFD, TRY, HNH, LBNH, PKME.

Run Hyp2000: Phase File: [79.X] Vel Mod: [11] ==> XX-File: 79.XX
HYPOINVERSE 2000 (10/2006 VERSION) RUN ON Mon Dec 17 10:06:36 2007 RUN LABEL=

Run Hyp2000: Phase File: [84.X] Vel Mod: [11] ==> XX-File: 84.XX
 HYPOINVERSE 2000 (10/2006 VERSION) RUN ON Wed Jan 2 16:26:46 2008 RUN LABEL=
 CRUST MODEL 1: 11. SOUTHEAST MAINE CRUSTAL MO

DATE ORIGIN LAT N LONG W DEPTH MN MC ML GAP RMS ERH ERZ Q
 200712301201 56.62 45- 3.70 66-49.57 0.02 1.5 2.3 173 0.52 2.6 3.5
 CANADA, NB, Passamaquoddy Bay

NSTA NPHS DMIN N.XMG N.FMG
 6 12 6.20 1 4

STN	DIST	AZM	RMK	HRMN	SEC	TOBS	TCAL	RES	WT	AMX	PRX	XMAG	FMP	FMAG	ANG
GGN	6.2	3	EPC1	1201	57.30	0.68	1.08	-0.41	1.30				37	1.3	90
			S 1	1201	57.95	1.33	1.92	-0.61	1.30						
EMMW	63.4	233	EPC1	1202	6.95	10.33	10.56	-0.24	1.26	0.3	.14	1.5	162	2.8	64
			S 2	1202	14.02	17.40	18.80	-1.41	0.30						
LMN	180.8	60	EPC1	1202	25.42	28.80	28.64	0.10	0.98				98	2.6	44
			S 4	1202	45.87	49.25	50.98	-1.84	0.00						
PKME	195.2	278	EPC1	1202	28.04	31.42	30.42	0.98	0.92				99	2.6	44
			S 1	1202	50.44	53.82	54.15	-0.36	0.94						
BATG	253.2	13	EPC4	1202	35.03	38.41	37.58	0.77	0.00						44
			S 3	1203	7.55	70.93	66.89	3.93	0.00						
LBNH	414.9	260	EPC4	1203	1.16	64.54	57.55	6.93	0.00						44
			S 3	1203	51.56	114.94	102.44	12.39	0.00						

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TABLE 5
 MICROEARTHQUAKES AND OTHER NON-LOCATABLE EVENTS

Date	Sta	Arrival Time
Yr/Mo/Dy		Hr:Mn:Sec
None recorded this period.		

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NESN Station Map

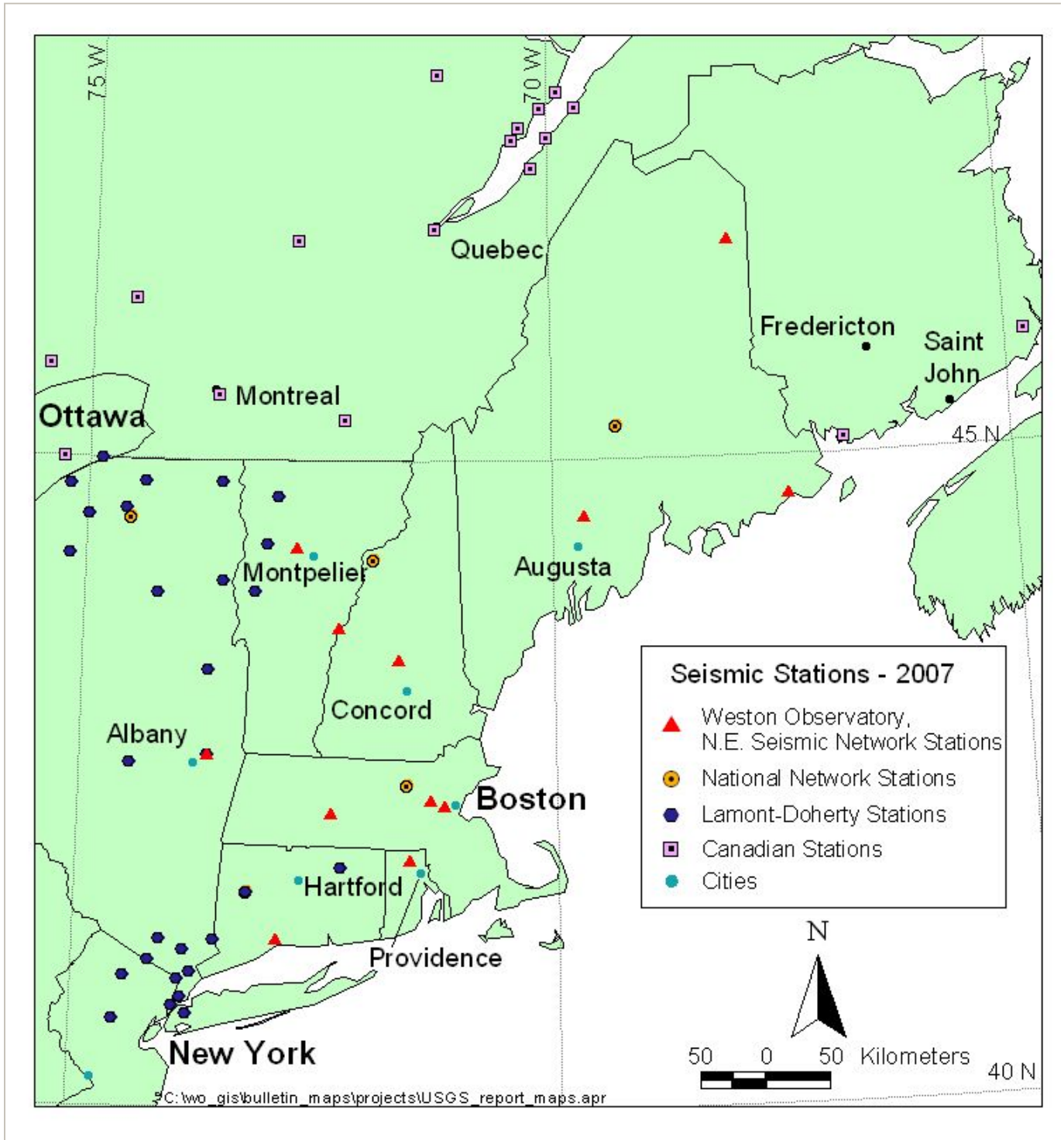


Figure 1: Map of stations of the New England Seismic Network (NESN) in operation during the period of this report. Also included are other Northeast U.S. and Canadian seismic stations in operation during this period.

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NESN Strong-Motion Station Map

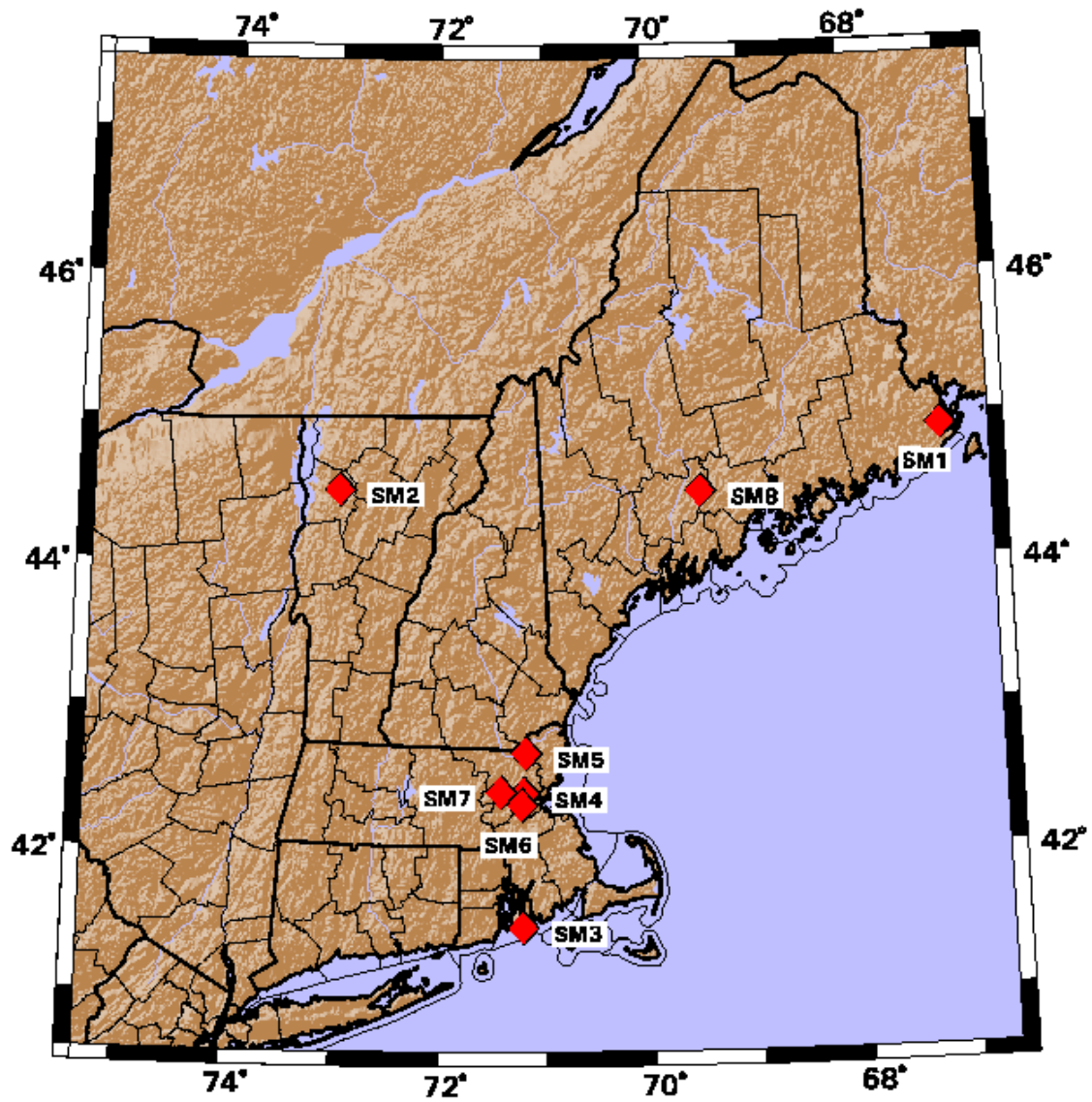


Figure 2: Map of strong-motion stations of the New England Seismic Network (NESN) in operation during the period of this report.

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NESN Quarterly Seismicity Map

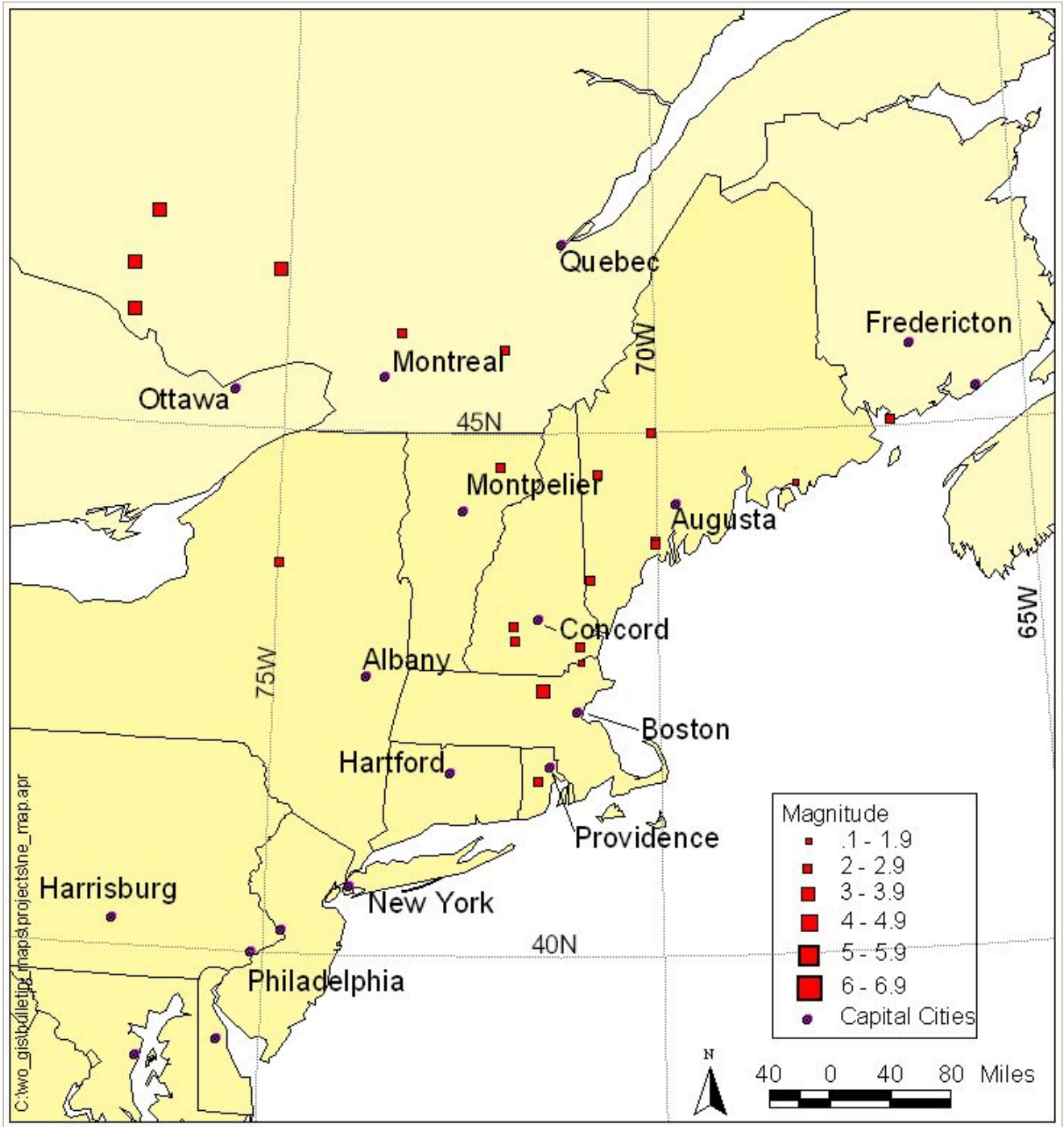


Figure 3: Earthquake epicenters located by the NESN during the period of this report.

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NESN Cumulative Seismicity Map

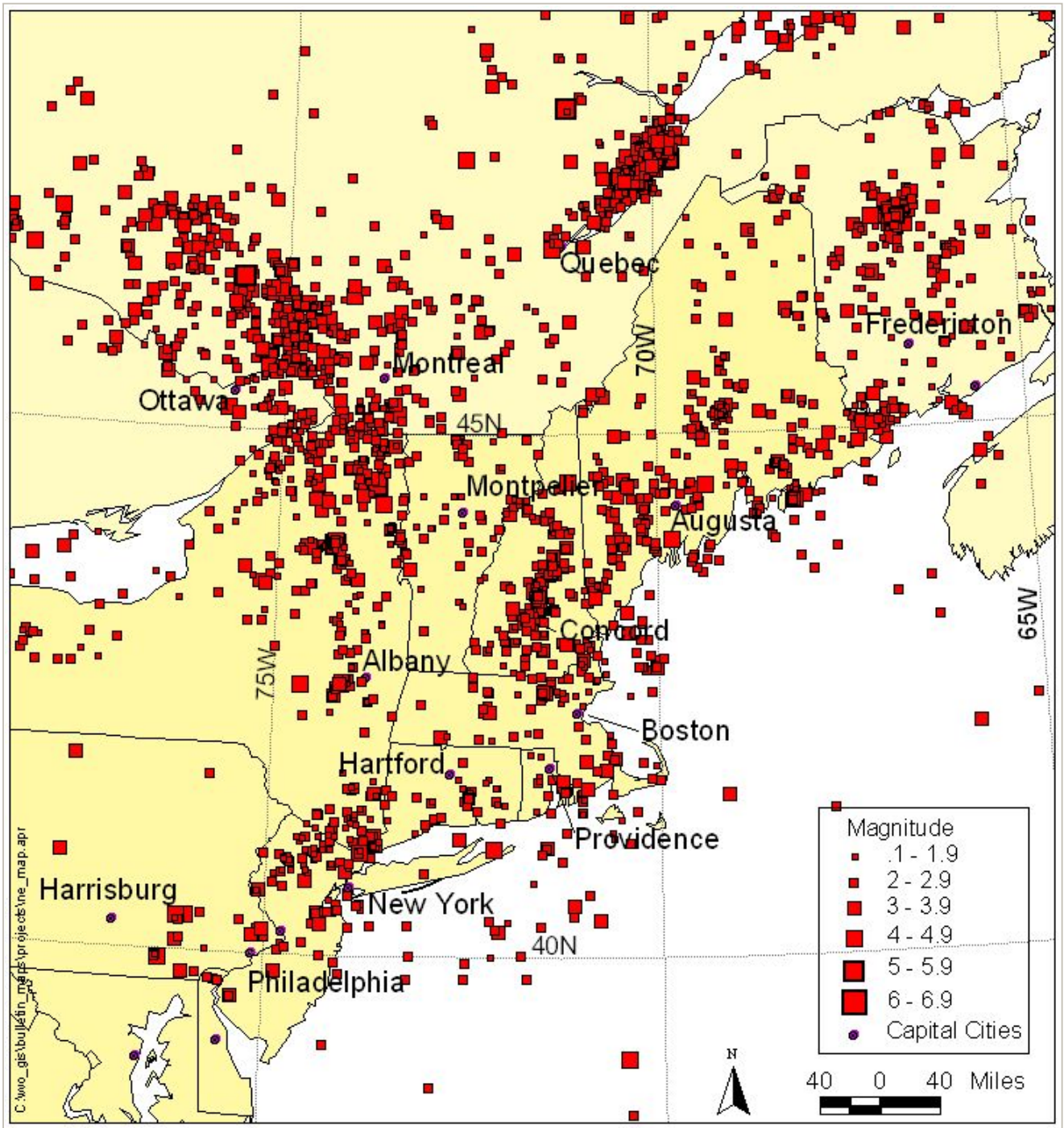


Figure 4: Seismicity for period October, 1975 - December, 2007.

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Acknowledgments

Our map database has been developed in-house using ArcView and in part basemap data provided by ESRI, Inc., USGS GTOPO30 Elevation Data, and TIGER/Line '94, '95, and '97 (US Census Bureau) spatial data.

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