A STUDY OF NEW ENGLAND SEISMICITY

Quarterly Earthquake Report

April - June, 2008

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

NEW ENGLAND SEISMIC NETWORK

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for
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Notice

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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 April-June, 2008. 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 18 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 18 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 HYPO78. 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 SAC, 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 Log(FMP) + 0.12Log(Dist) - 2.36 (Rosario, 1979)
MIT: 2.21 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

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TABLE 3

EARTHQUAKE HYPOCENTER LIST

DATE	TIME(UTC)	LAT	LONG	DEPTH(KM)	Mn	Mc	LOCATION
4/15/2008	06:54:17.1	44.60	-69.7	5.26	1.2	1.7	ME, 6.3KM NW OF WATERVILLE
4/15/2008	07:12:55.6	44.62	-69.68	2.51	1.8	2.2	ME, 6.7KM NW OF WATERVILLE
4/15/2008	20:00:14.0	45.17	-72.12	1.99		2.5	PQ, 26.9KM SW OF SHERBROOKE
4/19/2008	21:22:10.5	46.04	-66.12	13.58		2.8	NB, 4.5KM SW OF MINTO
4/29/2008	23:37:18.2	47.79	-66.01	0.03	2.2	2.8	NB, 19.9KM W OF PETIT ROCHER
5/06/2008	19:04:07.3	43.49	-71.53	0.04	2.2	2.4	NH, 3.7KM E OF SANBORNTON
5/13/2008	23:44:12.0	45.90	-65.75	14.53	2.5	2.9	NB, 26 KM SE OF MINTO
5/19/2008	12:59:20.7	46.66	-67.93	2.64		2.4	ME, 6KM ESE OF PRESQUE ISLE
5/24/2008	00:02:00.3	44.44	-68.14	5.63	1.1	2.4	ME, 7KM NE OF BAR HARBOR
5/28/2008	22:39:05.8	43.51	-73.50	5.00	1.8	2.7	NY, 39.9KM NNE OF SARATOGA SPRINGS
5/29/2008	04:33:13.4	44.47	-69.45	2.79	1.7	2.4	ME, 14.4KM SE OF WATERVILLE
5/30/2008	06:59:05.5	44.47	-68.13	4.41		2.4	ME, 9.1KM NE OF BAR HARBOR
6/01/2008	01:14:43.7	45.11	-74.01	5.00		2.4	PQ, 1.5KM SW OF ORMSTOWN
6/01/2008	03:42:24.9	45.62	-68.88	5.45	1.4	2.3	ME, 32KM NNE OF MILO
6/01/2008	12:35:55.4	43.71	-73.32	5.00	0.8	2.4	VT, 26.5KM WNW OF RUTLAND
6/08/2008	21:41:32.4	42.36	-65.58	0.04	2	2.9	ATLANTIC OCEAN, 365KM E OF BOSTON
6/11/2008	04:36:34.5	45.64	-75.42	16.82	2.4	3.2	PQ, 4KM N OF BUCKINGHAM
6/20/2008	05:28:44.90	45.88	-69.80	0.08	1.3	2.2	ME, 11.6KM NW OF SKOWHEGAN

* 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
April-June, 2008

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Run Hyp2000: Phase File: [26.X] Vel Mod: [12] ===> XX-File: 26.XX
 HYPOINVERSE 2000 (10/2006 VERSION) RUN ON Tue Apr 15 13:27:36 2008       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
200804150654 17.12 44-36.28   69-41.78    5.26   1.2 1.7        94   0.39  1.1  1.3
ME, 6.3KM NW OF WATERVILLE

 NSTA NPHS DMIN N.XMG N.FMG
    5  10   8.60    1    2

  STN   DIST AZM   RMK HRMN    SEC    TOBS    TCAL    RES    WT AMX PRX XMAG FMP FMAG ANG
  WVL    8.6 164 EPC0  654 18.81    1.69    1.69 -0.01 1.45 1.6 .10  1.2  28  1.0 120
                 S 0   654 20.04    2.92    3.01 -0.11 1.45
 PKME   80.0  23 EPC0  654 30.63   13.51   13.00  0.49 1.38                        72
                 S 0   654 39.83   22.71   23.14 -0.47 1.38
 EMMW 177.9   85 EPC0  654 46.95   29.83   28.40  1.42 0.02                        47
                 S 0   655  7.79   50.67   50.55  0.10 1.11
 LBNH 182.1 258 EPC0  654 46.71   29.59   28.91  0.62 1.09               76  2.4  47
                 S 0   655  8.04   50.92   51.46 -0.65 1.09
  MOQ 216.6 293 EPC0  654 51.79   34.67   33.17  1.36 0.06                        47
                 S 0   655 16.64   59.52   59.04  0.23 0.96



Run Hyp2000: Phase File: [29.X] Vel Mod: [12] ===> XX-File: 29.XX
 HYPOINVERSE 2000 (10/2006 VERSION) RUN ON Tue Apr 15 14:09:52 2008       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
200804150712 55.64 44-37.04   69-41.09    2.51   1.8 2.2        91   0.38  1.2  2.1
ME, 6.7KM NW OF WATERVILLE

 NSTA NPHS DMIN N.XMG N.FMG
    8  16   9.80    2    3

  STN   DIST AZM   RMK HRMN    SEC    TOBS    TCAL    RES    WT AMX PRX XMAG FMP FMAG ANG
  WVL    9.8 171 EPC0  712 57.23    1.59    1.71 -0.13 1.69 4.2 .10  1.7  33  1.2 101
                 S 0   712 58.63    2.99    3.04 -0.07 1.69
 PKME   78.3  23 EPC0  713  9.11   13.47   12.88  0.57 1.61               113  2.6  72
                 S 0   713 18.12   22.48   22.93 -0.48 1.61
 EMMW 176.9   85 EPC2  713 23.62   27.98   28.53 -0.56 0.65 0.2 .10  2.0            72
                 S 1   713 46.83   51.19   50.78  0.39 0.97
 LBNH 183.3 258 EPC0  713 25.10   29.46   29.37  0.03 1.27               109  2.7  47
                 S 0   713 46.40   50.76   52.28 -1.63 0.00
  FFD 202.9 232 EPC3  713 29.42   33.78   31.78  1.98 0.00                        47
                 S 1   713 51.98   56.34   56.57 -0.26 0.89
  MOQ 216.9 292 EPC2  713 30.50   34.86   33.52  1.20 0.15                        47
                 S 2   713 55.24   59.60   59.67 -0.31 0.56
  HNH 231.5 245 EPC1  713 31.71   36.07   35.32  0.72 0.79                        47
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                 S 2  713 59.80  64.16  62.87  1.24 0.10
  GGN 233.0  75 EPC4  713 34.76  39.12  35.50  3.61 0.00                          47
                 S 2  714  1.16  65.52  63.19  2.31 0.00


Run Hyp2000: Phase File: [32.X] Vel Mod: [2] ===> XX-File: 32.XX
 HYPOINVERSE 2000 (10/2006 VERSION) RUN ON Thu Apr 17 10:51:29 2008      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
200804152000 14.01 45-10.14  72- 7.03   1.99      2.5     120  0.26  1.1  1.8
PQ, 26.9KM (16.7mi) SW OF SHERBROOKE

 NSTA NPHS DMIN N.XMG N.FMG
   7  14  19.20   0   5

  STN  DIST AZM  RMK HRMN   SEC   TOBS   TCAL   RES   WT AMX PRX XMAG FMP FMAG ANG
  MOQ  19.2 326 EPC0 2000 17.59   3.58   3.32  0.12 1.87               51  1.7  93
                 S 1 2000 20.01   6.00   5.91 -0.16 1.40
 LBNH 104.3 171 EPC1 2000 31.47  17.46  17.47 -0.07 1.29               96  2.5  73
                 S 2 2000 47.28  33.27  31.10  2.07 0.00
  MDV 155.1 214 EPC2 2000 41.01  27.00  25.43  1.55 0.00                          66
                 S 2 2000 58.47  44.46  45.27 -0.84 0.61
 MRHQ 182.1 297 EPC2 2000 42.92  28.91  29.54 -0.70 0.70                          46
                 S 2 2001  4.94  50.93  52.58 -1.78 0.00
 LONY 204.1 254 EPC1 2000 46.70  32.69  32.26  0.36 0.98              101  2.7  46
                 S 2 2001 11.80  57.79  57.42  0.24 0.65
  NCB 213.6 233 EPC1 2000 47.60  33.59  33.43  0.06 0.95              109  2.7  46
                 S 2 2001 13.65  59.64  59.51 -0.04 0.63
 PKME 222.2  86 EPC1 2000 48.53  34.52  34.49  0.01 0.91              122  2.8  46
                 S 2 2001 13.37  59.36  61.39 -2.07 0.00


Run Hyp2000: Phase File: [34.X] Vel Mod: [12] ===> XX-File: 34.XX

 HYPOINVERSE 2000 (10/2006 VERSION) RUN ON Tue Apr 22 12:56:16 2008      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
200804192122 10.51 46- 2.54  66- 7.35  13.58      2.8     109  0.03  0.6  1.3
NB, 4.5KM SW OF MINTO

 NSTA NPHS DMIN N.XMG N.FMG
   6  11  104.30   0   4

  STN  DIST AZM  RMK HRMN   SEC   TOBS   TCAL   RES   WT AMX PRX XMAG FMP FMAG ANG
  LMN 104.3 101 EPC1 2122 27.47  16.96  16.91 -0.01 1.45               95  2.5  95
                 S 4 2122 43.04  32.53  30.10  2.32 0.00
  GGN 116.4 209 EPC1 2122 29.36  18.85  18.83  0.01 1.42              160  2.9  94
                 S 4 2122 43.47  32.96  33.52 -0.58 0.00
 BATG 137.3   1 EPC1 2122 32.71  22.20  22.14  0.00 1.35              184  3.1  93
                 S 4 2122 49.07  38.56  39.41 -0.96 0.00
 EMMW 181.3 216 EPC1 2122 38.52  28.01  27.98  0.02 1.20                          51
                 S 3 2123  0.82  50.31  49.80  0.49 0.00
 PKME 261.8 252 EPC2 2122 48.33  37.82  37.91 -0.11 0.57              136  2.9  51
                 S 4 2123 23.24  72.73  67.48  5.21 0.00
 LBNH 498.8 249 EPC3 2123 17.84  67.33  67.17  0.10 0.01                          51


Run Hyp2000: Phase File: [43.X] Vel Mod: [12] ===> XX-File: 43.XX
 HYPOINVERSE 2000 (10/2006 VERSION) RUN ON Tue May 13 13:36:52 2008      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
200804292337 18.15 47-47.33  66- 0.38   0.03  2.2 2.8     249  0.20  4.0  5.1
NB, 19.9KM W OF PETIT ROCHER, FELT

 NSTA NPHS DMIN N.XMG N.FMG
   4   8  234.00   1   2

  STN  DIST AZM  RMK HRMN   SEC   TOBS   TCAL   RES   WT AMX PRX XMAG FMP FMAG ANG
  LMN 234.0 156 EPC0 2337 54.05  35.90  35.91 -0.07 1.35              110  2.8  44
                 S 0 2338 22.22  64.07  63.92  0.04 1.35
  GGN 303.5 193 EPC3 2338  5.39  47.24  44.50  2.73 0.00              118  2.9  44
                 S 0 2338 37.08  78.93  79.21 -0.30 0.92
  LMQ 325.7 267 EPC0 2338  5.61  47.46  47.23  0.16 0.79                          44
                 S 0 2338 39.69  81.54  84.07 -2.65 0.00
 EMMW 360.1 199 EPC0 2338 12.89  54.74  51.48  3.25 0.00 0.1 .19  2.2            44
                 S 0 2338 50.39  92.24  91.63  0.59 0.59


Run Hyp2000: Phase File: [41.X] Vel Mod: [2] ===> XX-File: 41.XX
 HYPOINVERSE 2000 (10/2006 VERSION) RUN ON Wed May  7 12:07:12 2008      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
200805061904  7.27 43-29.52  71-32.10   0.04  2.2 2.4     191  0.33  1.3  3.7
NH, 3.7KM (2.3mi) E OF SANBORNTON

 NSTA NPHS DMIN N.XMG N.FMG
   9  18   9.90   4   6

  STN  DIST AZM  RMK HRMN   SEC   TOBS   TCAL   RES   WT AMX PRX XMAG FMP FMAG ANG
  FFD   9.9 256 EPC1 1904  8.47   1.20   1.80 -0.62 1.37 20.3 .25  2.7  47  1.5  90
                 S 2 1904 10.71   3.44   3.20  0.20 1.01
  HNH  65.1 292 EPC2 1904 18.09  10.82  11.16 -0.37 0.98 0.5 .20  1.8            68
                 S 3 1904 26.62  19.35  19.86 -0.57 0.48
 LBNH  88.9 340 EPC0 1904 22.31  15.04  15.08 -0.10 1.90                          63
                 S 4 1904 35.71  28.44  26.84  1.49 0.00
  WES 124.2 171 EPC1 1904 28.15  20.88  20.81  0.06 1.34 0.9 .21  2.4  46  2.0  58
                 S 3 1904 43.74  36.47  37.04 -0.59 0.42
 QUA2 150.4 207 EPC2 1904 32.25  24.98  24.87  0.08 0.84 0.2 .20  1.8            58
                 S 4 1904 49.67  42.40  44.27 -1.92 0.00
  NCB 223.1 285 EPC2 1904 42.65  35.38  34.84  0.44 0.66               93  2.6  42
                 S 4 1905 10.45  63.18  62.02  0.99 0.00
 PKME 266.0  41 EPC4 1904 51.67  44.40  40.14  4.24 0.00               95  2.7  42
                 S 4 1905 21.50  74.23  71.45  2.75 0.00
 LONY 274.5 299 EPC2 1904 50.42  43.15  41.19  1.89 0.00               96  2.7  42
                 S 4 1905 24.87  77.60  73.32  4.16 0.00
  GGN 417.3  62 EPC4 1905 24.88  77.61  58.82 18.78 0.00               86  2.9  42
                 S 4 1905 47.28 100.01 104.70 -4.71 0.00


Run Hyp2000: Phase File: [44.X] Vel Mod: [12] ===> XX-File: 44.XX
 HYPOINVERSE 2000 (10/2006 VERSION) RUN ON Mon May 19 14:20:26 2008      RUN LABEL=
 CRUST MODEL  1: 12. NORTHWEST MAINE CRUSTAL ST
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  DATE     ORIGIN    LAT N    LONG W   DEPTH   MN  MC  ML GAP   RMS  ERH  ERZ Q
200805132344 11.98 45-53.82  65-45.29  14.53  2.5 2.9     132  0.04  0.8  1.2
NB, CANADA,20 KM NW OF STUDHOLM, 26 KM SE OF MINTO

 NSTA NPHS DMIN N.XMG N.FMG
   7  12  73.80   2   4

  STN  DIST AZM  RMK HRMN   SEC   TOBS   TCAL   RES   WT AMX PRX XMAG FMP FMAG ANG
  LMN  73.8  93 EPC0 2344 24.16  12.18  12.13 -0.01 1.60                      98
  GGN 120.3 225 EPC0 2344 31.46  19.48  19.45  0.02 1.49                      94
                S 2 2344 45.77  33.79  34.62 -0.85 0.00
 BATG 155.1 352 EPC0 2344 36.73  24.75  24.65  0.04 1.37             188  3.1  51
 EMMW 187.7 226 EPC1 2344 40.72  28.74  28.68  0.05 0.93 1.0 .10  2.6 138  2.9  51
                S 2 2345  3.00  51.02  51.05 -0.05 0.62
  PQI 194.1 298 EPC1 2344 41.38  29.40  29.47 -0.10 0.91 0.5 .10  2.3 113  2.7  51
                S 2 2345  3.44  51.46  52.46 -1.05 0.00
 PKME 284.9 257 EPC0 2344 52.19  40.21  40.67 -0.48 0.07             167  3.1  51
                S 2 2345 22.53  70.55  72.39 -1.88 0.00
  LMQ 394.9 300 EPC1 2345  5.71  53.73  54.25 -0.59 0.00                      51
                S 2 2345 47.80  95.82  96.56 -0.87 0.00


Run Hyp2000: Phase File: [45.X] Vel Mod: [12] ===> XX-File: 45.XX
 HYPOINVERSE 2000 (10/2006 VERSION) RUN ON Mon May 19 14:19:11 2008      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
200805191259 20.69 46-39.39  67-55.67   2.64      2.4     346  0.11  0.0  0.0
ME, 6KM ESE OF PRESQUE ISLE

 NSTA NPHS DMIN N.XMG N.FMG
   6  12   7.70   0   3

  STN  DIST AZM  RMK HRMN   SEC   TOBS   TCAL   RES   WT AMX PRX XMAG FMP FMAG ANG
  PQI   7.7 286 EPC0 1259 21.95   1.26   1.37 -0.14 1.69              66  1.8 106
                S 0 1259 23.25   2.56   2.44  0.07 1.69
 BATG 157.5  63 EPC2 1259 47.49  26.80  25.44  1.30 0.00             120  2.7  72
                S 4 1260  5.61  44.92  45.28 -0.47 0.00
 PKME 187.5 216 EPC2 1259 52.13  31.44  29.87  1.55 0.00             107  2.7  47
                S 4 1260 16.19  55.50  53.17  2.30 0.00
  GGN 190.6 153 EPC3 1259 50.37  29.68  30.26 -0.59 0.00                      47
                S 4 1260 17.55  56.86  53.86  2.98 0.00
  LMQ 208.3 300 EPC2 1259 53.10  32.41  32.44 -0.10 0.58                      47
                S 4 1260 17.18  56.49  57.74 -1.38 0.00
  LMN 255.9 109 EPC2 1259 59.52  38.83  38.31  0.46 0.05                      47
                S 4 1260 30.66  69.97  68.19  1.67 0.00


Run Hyp2000: Phase File: [54.X] Vel Mod: [12] ===> XX-File: 54.XX
 HYPOINVERSE 2000 (10/2006 VERSION) RUN ON Thu May 29 17:31:49 2008      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
200805240002  0.25 44-26.63  68- 8.46   5.63  1.1 2.4     207  0.39  1.9  3.8
ME, 7KM NE OF BAR HARBOR

 NSTA NPHS DMIN N.XMG N.FMG
   6  12  61.80   2   1

  STN  DIST AZM  RMK HRMN   SEC   TOBS   TCAL   RES   WT AMX PRX XMAG FMP FMAG ANG
 EMMW  61.8  61 EPC0    2  9.90   9.65  10.11 -0.47 1.28 0.1 .09  0.9           90
                S 0    2 18.58  18.33  18.00  0.32 1.28
  WVL 121.7 276 EPC0    2 19.62  19.37  19.62 -0.26 1.17 0.1 .06  1.2           90
                S 4    2 29.46  29.21  34.92 -5.73 0.00
  GGN 128.4  53 EPC0    2 21.41  21.16  20.68  0.47 1.15                      90
                S 0    2 36.69  36.44  36.81 -0.39 1.15
 PKME 128.8 316 EPC0    2 21.51  21.26  20.74  0.50 1.15              87  2.4  90
                S 0    2 37.00  36.75  36.92 -0.20 1.15
 LBNH 302.8 268 EPC0    2 44.66  44.41  43.77  0.58 0.56                      51
                S 0    3 18.11  77.86  77.91 -0.16 0.56
  LMN 305.5  57 EPC0    2 44.09  43.84  44.10 -0.32 0.55                      51
                S 3    3 17.18  76.93  78.50 -1.67 0.00


Run Hyp2000: Phase File: [49.X] Vel Mod: [6] ===> XX-File: 49.XX
 HYPOINVERSE 2000 (10/2006 VERSION) RUN ON Thu May 29 15:46:55 2008      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
200805282239  5.79 43-30.30  73-30.24   5.00  1.8 2.7     124  0.15  0.8 17.4
NY, 39.9KM NNE OF SARATOGA SPRINGS

 NSTA NPHS DMIN N.XMG N.FMG
   9  18  77.90   5   8

  STN  DIST AZM  RMK HRMN   SEC   TOBS   TCAL   RES   WT AMX PRX XMAG FMP FMAG ANG
  NCB  77.9 313 EPC1 2239 17.98  12.19  12.07  0.02 1.59             133  2.7  90
                S 4 2239 31.82  26.03  21.48  4.37 0.00
  TRY  87.0 189 EPC2 2239 19.18  13.39  13.43 -0.09 1.05 0.2 .10  1.4 121  2.6  90
                S 4 2239 27.68  21.89  23.91 -2.10 0.00
  HNH 100.8  76 EPC2 2239 20.99  15.20  15.52 -0.35 1.03 0.3 .05  1.5 135  2.7  90
                S 3 2239 36.96  31.17  27.63  3.49 0.00
  FFD 149.7  90 EPC3 2239 28.80  23.01  22.93  0.06 0.46 1.9 .10  2.7 109  2.6  90
                S 3 2239 46.58  40.79  40.82 -0.06 0.46
 LBNH 150.9  56 EPC1 2239 29.10  23.31  23.10  0.15 1.39             129  2.8  90
                S 3 2239 45.55  39.76  41.12 -1.46 0.00
 LONY 151.0 326 EPC1 2239 28.92  23.13  23.13 -0.07 1.38             123  2.7  90
                S 3 2239 47.63  41.84  41.17  0.54 0.30
 QUA2 165.5 144 EPC1 2239 31.27  25.48  25.33  0.12 1.33 0.2 .10  1.7  94  2.5  90
                S 3 2239 49.01  43.22  45.09 -1.92 0.00
  WES 217.3 124 EPC3 2239 39.96  34.17  32.61  1.55 0.00 0.0 .15  1.5  90  2.6  54
                S 4 2240  2.69  56.90  58.05 -1.16 0.00
 BINY 249.8 236 EPC2 2239 44.29  38.50  36.62  1.80 0.00                      54
                S 4 2240 11.41  65.62  65.18  0.29 0.00


Run Hyp2000: Phase File: [53.X] Vel Mod: [11] ===> XX-File: 53.XX
 HYPOINVERSE 2000 (10/2006 VERSION) RUN ON Thu May 29 15:44:17 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
200805290433 13.40 44-28.38  69-27.30   2.79  1.7 2.4     185  0.05  0.9  1.5
ME, 14.4KM SE OF WATERVILLE

 NSTA NPHS DMIN N.XMG N.FMG
   7  13  18.00   3   5

  STN  DIST AZM  RMK HRMN   SEC   TOBS   TCAL   RES   WT AMX PRX XMAG FMP FMAG ANG
```

```
  WVL  18.0 291 EPC0  433 16.49   3.09   3.06  0.02 2.09 5.3 .10  2.0  34  1.3  96
                S 3  433 18.59   5.19   5.45 -0.27 0.52
 PKME  88.9   8 EPC0  433 27.87  14.47  14.44  0.01 1.97              123  2.6  72
                S 3  433 38.42  25.02  25.70 -0.72 0.03
 EMMW 160.8  79 EPC0  433 39.23  25.83  25.85 -0.03 1.69 0.1 .10  1.7 103  2.6  47
                S 1  433 59.44  46.04  46.01  0.01 1.27
 LBNH 198.7 264 EPC1  433 44.72  31.32  30.53  0.73 0.04              130  2.8  47
                S 3  434  7.92  54.52  54.34  0.07 0.37
  FFD 208.7 239  S 3  434  8.81  55.41  56.55 -1.18 0.00                   47
  GGN 220.3  70 EPC3  433 48.50  35.10  33.20  1.89 0.00              105  2.7  47
                S 4  434 10.94  57.54  59.10 -1.57 0.00
  WES 276.9 214 EPC2  433 52.34  38.94  40.18 -1.25 0.00 0.0 .10  1.5        47
                S 3  434 18.47  65.07  71.52 -6.47 0.00


Run Hyp2000: Phase File: [55.X] Vel Mod: [12] ===> XX-File: 55.XX
 HYPOINVERSE 2000 (10/2006 VERSION) RUN ON Fri May 30 14:00:34 2008      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
200805300659  5.53 44-28.17  68- 7.82   4.41      2.4     204  0.35  1.8  2.6
ME, 9.1KM NE OF BAR HARBOR

 NSTA NPHS DMIN N.XMG N.FMG
   7  14  59.70   0   2

  STN  DIST AZM  RMK HRMN   SEC   TOBS   TCAL   RES   WT AMX PRX XMAG FMP FMAG ANG
 EMMW  59.7  63 EPC0  659 15.23   9.70   9.83 -0.14 1.36                    72
                S 0  659 23.38  17.85  17.50  0.33 1.36
  GGN 126.1  54 EPC0  659 25.83  20.30  20.37 -0.08 1.23               85  2.4  72
                S 0  659 41.45  35.92  36.26 -0.36 1.23
 PKME 127.4 315 EPC0  659 26.65  21.12  20.57  0.53 1.23               90  2.5  72
                S 0  659 41.82  36.29  36.61 -0.36 1.23
  PQI 244.8   2 EPC0  659 44.00  38.47  36.74  1.70 0.00                   47
                S 0  660 11.48  65.95  65.40  0.50 0.82
  LMN 303.2  58 EPC0  659 48.32  42.79  43.96 -1.23 0.00                   47
                S 0  660 23.07  77.54  78.25 -0.82 0.36
 LBNH 303.8 267 EPC0  659 49.30  43.77  44.03 -0.32 0.59                   47
                S 0  660 23.89  78.36  78.37 -0.12 0.59
  FFD 303.9 250 EPC4  659 44.09  38.56  44.03 -5.49 0.00                   47
                S 4  660 20.80  75.27  78.37 -3.14 0.00


Run Hyp2000: Phase File: [60.X] Vel Mod: [6] ===> XX-File: 60.XX
 HYPOINVERSE 2000 (10/2006 VERSION) RUN ON Tue Jun  3 11:15:41 2008      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
200806010114 43.70 45- 6.85  74- 0.60   5.00      2.4     130  0.31  0.9  24.4
CANADA, PQ, 1.5KM SW OF ORMSTOWN

 NSTA NPHS DMIN N.XMG N.FMG
   6  12  52.80   0   5

  STN  DIST AZM  RMK HRMN   SEC   TOBS   TCAL   RES   WT AMX PRX XMAG FMP FMAG ANG
  MNT  52.8  34 EPC0  114 51.69   7.99   8.25 -0.28 1.09                    91
                S 0  114 58.06  14.36  14.68 -0.36 1.09
 LONY  71.2 220 EPC0  114 54.79  11.09  11.05 -0.03 1.07               78  2.2  90
                S 0  115  3.87  20.17  19.67  0.38 1.07
 MRHQ  87.3 350 EPC0  114 57.32  13.62  13.48  0.07 1.05               76  2.2  90
                S 0  115  8.09  24.39  23.99  0.27 1.05
  NCB 127.9 188 EPC0  115  2.87  19.17  19.62 -0.55 0.90              105  2.6  90
                S 0  115 18.53  34.83  34.92 -0.27 0.97
  MOQ 139.7  80 EPC0  115  5.32  21.62  21.41  0.07 0.95               69  2.3  90
                S 0  115 22.51  38.81  38.11  0.45 0.95
 LBNH 191.7 119 EPC0  115 15.05  31.35  29.29  2.00 0.00               80  2.5  90
                S 0  115 36.21  52.51  52.14  0.27 0.81


Run Hyp2000: Phase File: [59.X] Vel Mod: [11] ===> XX-File: 59.XX
 HYPOINVERSE 2000 (10/2006 VERSION) RUN ON Tue Jun  3 11:14:14 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
200806010342 24.94 45-37.16  68-52.64   5.45  1.4 2.3     248  0.02  1.5  1.1
ME, 32KM NNE OF MILO

 NSTA NPHS DMIN N.XMG N.FMG
   3   6  51.10   1   1

  STN  DIST AZM  RMK HRMN   SEC   TOBS   TCAL   RES   WT AMX PRX XMAG FMP FMAG ANG
 PKME  51.1 220 EPC0  342 33.34   8.40   8.36  0.02 1.11               87  2.3  91
                S 0  342 39.85  14.91  14.88 -0.01 1.11
 EMMW 150.5 131 EPC0  342 49.07  24.13  24.14 -0.02 0.94 0.1 .10  1.4        90
                S 0  343  7.95  43.01  42.97  0.02 0.94
  GGN 170.4 108 EPC0  342 52.37  27.43  26.75  0.67 0.00                   51
                S 0  343 12.58  47.64  47.61  0.01 0.89


Run Hyp2000: Phase File: [57.X] Vel Mod: [6] ===> XX-File: 57.XX
 HYPOINVERSE 2000 (10/2006 VERSION) RUN ON Tue Jun  3 11:12:04 2008      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
200806011235 55.37 43-42.39  73-19.14   5.00  0.8 2.4     128  0.15  0.6  17.6
VT, 26.5KM WNW OF RUTLAND

 NSTA NPHS DMIN N.XMG N.FMG
   5  10  78.50   1   3

  STN  DIST AZM  RMK HRMN   SEC   TOBS   TCAL   RES   WT AMX PRX XMAG FMP FMAG ANG
  NCB  78.5 293 EPC0 1236  7.65  12.28  12.16  0.02 1.04               87  2.3  90
                S 0 1236 17.23  21.86  21.64  0.04 1.04
  HNH  83.2  89 EPC0 1236  8.37  13.00  12.86  0.11 1.03 0.1 .05  0.8        90
                S 0 1236 18.35  22.98  22.89  0.04 1.03
  TRY 112.0 195 EPC0 1236 12.32  16.95  17.22 -0.32 0.98                   90
                S 0 1236 26.26  30.89  30.65  0.15 0.98
 LBNH 126.5  61 EPC0 1236 14.98  19.61  19.42  0.13 0.95               86  2.4  90
                S 0 1236 29.87  34.50  34.57 -0.17 0.95
 LONY 143.2 316 EPC0 1236 18.42  23.05  21.95  1.03 0.00               91  2.5  90
                S 0 1236 33.68  38.31  39.07 -0.89 0.00


Run Hyp2000: Phase File: [64.X] Vel Mod: [11] ===> XX-File: 64.XX
 HYPOINVERSE 2000 (10/2006 VERSION) RUN ON Mon Jun 16 13:25:10 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
```

```
200806082141 32.40 42-21.51  65-34.78   0.04  2.0 2.9      289  0.33  12.5  11.4
ATLANTIC OCEAN, 365KM E OF BOSTON

 NSTA NPHS DMIN N.XMG N.FMG
   7  13  299.90   1   3

  STN  DIST AZM  RMK HRMN    SEC    TOBS   TCAL   RES   WT AMX PRX XMAG FMP FMAG ANG
  HAL 299.9  31 EPCO 2142 15.67  43.27  43.35 -0.09 1.67                        44
                S 0 2142 49.75  77.35  77.16  0.17 1.67
 EMMW 302.2 331 EPCO 2142 16.52  44.12  43.63  0.48 1.64 0.1 .09  2.0 100  2.8  44
                S 0 2142 50.24  77.84  77.66  0.16 1.64
  GGN 322.4 343 EPCO 2142 16.69  44.29  46.12 -1.84 0.00               122  2.9  44
                S 0 2142 54.22  81.82  82.09 -0.29 1.42
  LMN 393.1   8 EPCO 2142 28.46  56.06  54.85  1.15 0.51               141  3.1  44
                S 0 2143  8.84  96.44  97.63 -1.30 0.30
  GBN 470.7  42 EPCO 2142 35.72  63.32  64.44 -1.13 0.14                        44
                S 0 2143 20.48 108.08 114.70 -6.64 0.00
 BATG 547.9 357 EPCO 2142 45.88  73.48  73.96 -0.54 0.00                        44
 LBNH 556.2 295 EPCO 2142 42.59  70.19  74.98 -4.85 0.00                        44
                S 0 2143 36.67 124.27 133.46 -9.30 0.00


Run Hyp2000: Phase File: [62.X] Vel Mod: [6] ===> XX-File: 62.XX
 HYPOINVERSE 2000 (10/2006 VERSION) RUN ON Mon Jun 16 12:56:27 2008       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
200806110436 34.50 45-38.20  75-25.19  16.82  2.4 3.2     264  0.19  1.2  1.3
PQ, 4KM N OF BUCKINGHAM

 NSTA NPHS DMIN N.XMG N.FMG
  14  28  97.90   5   4

  STN  DIST AZM  RMK HRMN    SEC    TOBS   TCAL   RES   WT AMX PRX XMAG FMP FMAG ANG
 MRHQ  97.9  73 EPCO  436 49.70  15.20  15.23 -0.10 1.58               194  3.1  98
                S 0  437  1.74  27.24  27.11  0.01 1.58
  MNT 141.1  95 EPCO  436 56.02  21.52  21.72 -0.22 1.45               193  3.1  95
                S 0  437 13.36  38.86  38.66  0.16 1.45
  NCB 207.7 152 EPCO  437  5.30  30.80  30.39  0.31 1.17               216  3.3  54
                S 0  437 28.50  54.00  54.09 -0.27 1.17
  MOQ 250.2  97 EPCO  437 10.52  36.02  35.63  0.25 0.98                        54
                S 0  437 38.09  63.59  63.42 -0.08 0.98
 LBNH 316.5 118 EPCO  437 18.58  44.08  43.82  0.20 0.65               242  3.4  54
                S 0  437 51.08  76.58  78.00 -1.53 0.00
  HNH 328.4 129 EPC1  437 21.59  47.09  45.29  1.77 0.00 0.2 .20  2.5            54
                S 0  437 54.39  79.89  80.62 -0.78 0.00
  TRY 352.1 155 EPC1  437 23.14  48.64  48.21  0.38 0.36 0.1 .20  2.3            54
                S 0  438  0.45  85.95  85.81  0.05 0.49
 BINY 385.3 187 EPCO  437 27.99  53.49  52.32  1.09 0.00                        54
                S 0  438  6.46  91.96  93.13 -1.31 0.00
  LMQ 444.5  59 EPCO  437 34.06  59.56  59.63 -0.14 0.15                        54
                S 0  438 18.89 104.39 106.14 -1.88 0.00
 QUA2 447.0 145 EPC2  437 43.58  69.08  59.94  9.11 0.00 0.1 .21  2.5            54
                S 0  438 26.36 111.86 106.69  5.11 0.00
  WES 488.5 136 EPC1  437 44.48  69.98  65.06  4.91 0.00 0.1 .16  2.4            54
                S 0  438 31.21 116.71 115.81  0.89 0.00
 BRYW 518.1 141 EPC2  437 45.29  70.79  68.71  2.02 0.00 0.1 .24  2.5            54
                S 1  438 35.77 121.27 122.30 -1.14 0.00
  GGN 676.9  91 EPCO  438  1.33  86.83  88.31 -1.49 0.00                        54
                S 0  439  8.76 154.26 157.19 -2.95 0.00
 BATG 742.8  72 EPCO  438  9.57  95.07  96.45 -1.44 0.00                        54
                S 0  439 21.13 166.63 171.68 -5.16 0.00
```

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TABLE 5

MICROEARTHQUAKES AND OTHER NON-LOCATABLE EVENTS

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

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NESN Station Map

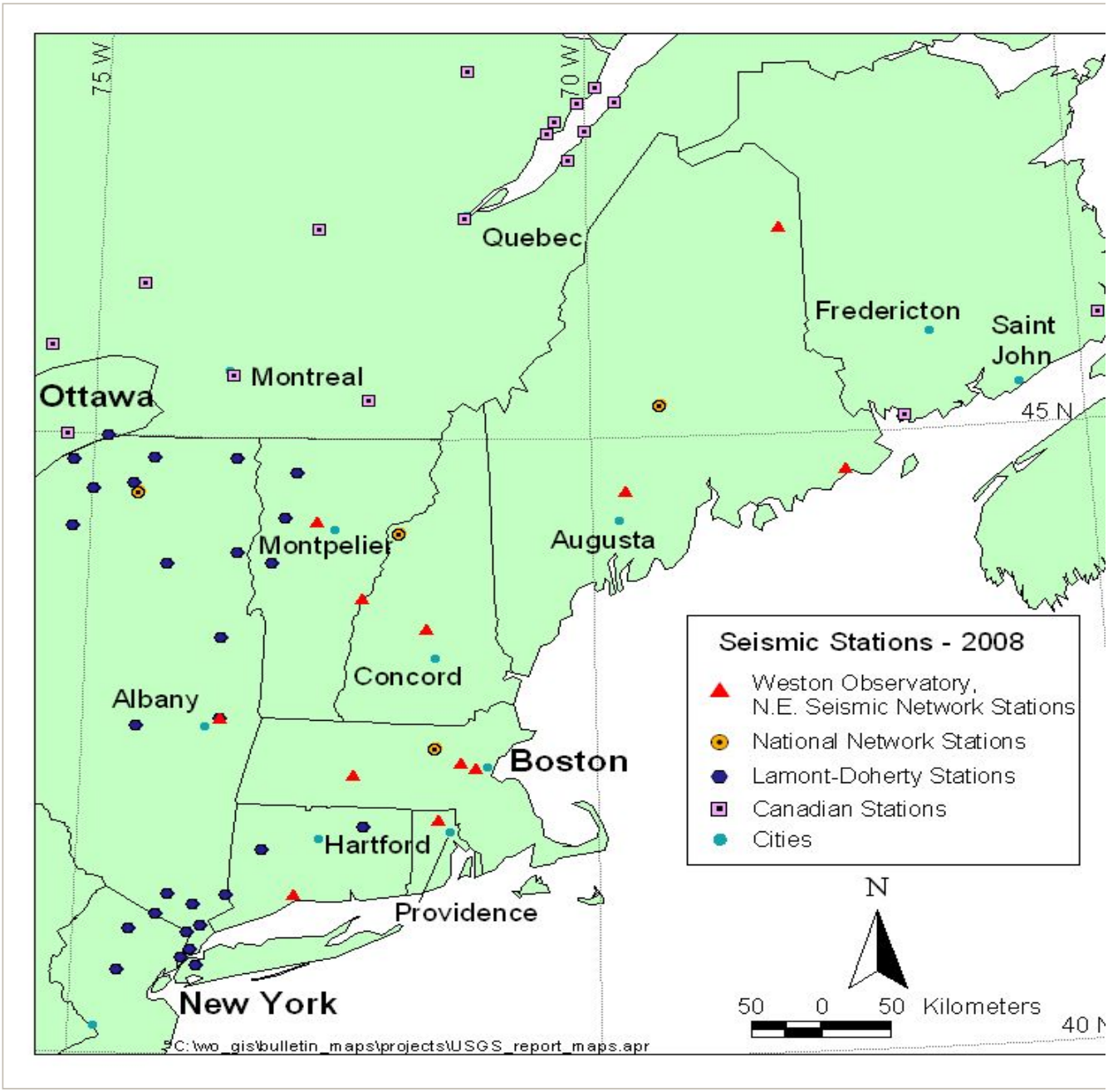

Figure 1: Map of stations of the New England Seismic Network (NESN) in operation during the period of this report. Also included are other Northeast U.S. and Canadian seismic stations in operation during this period.

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NESN Strong-Motion Station Map

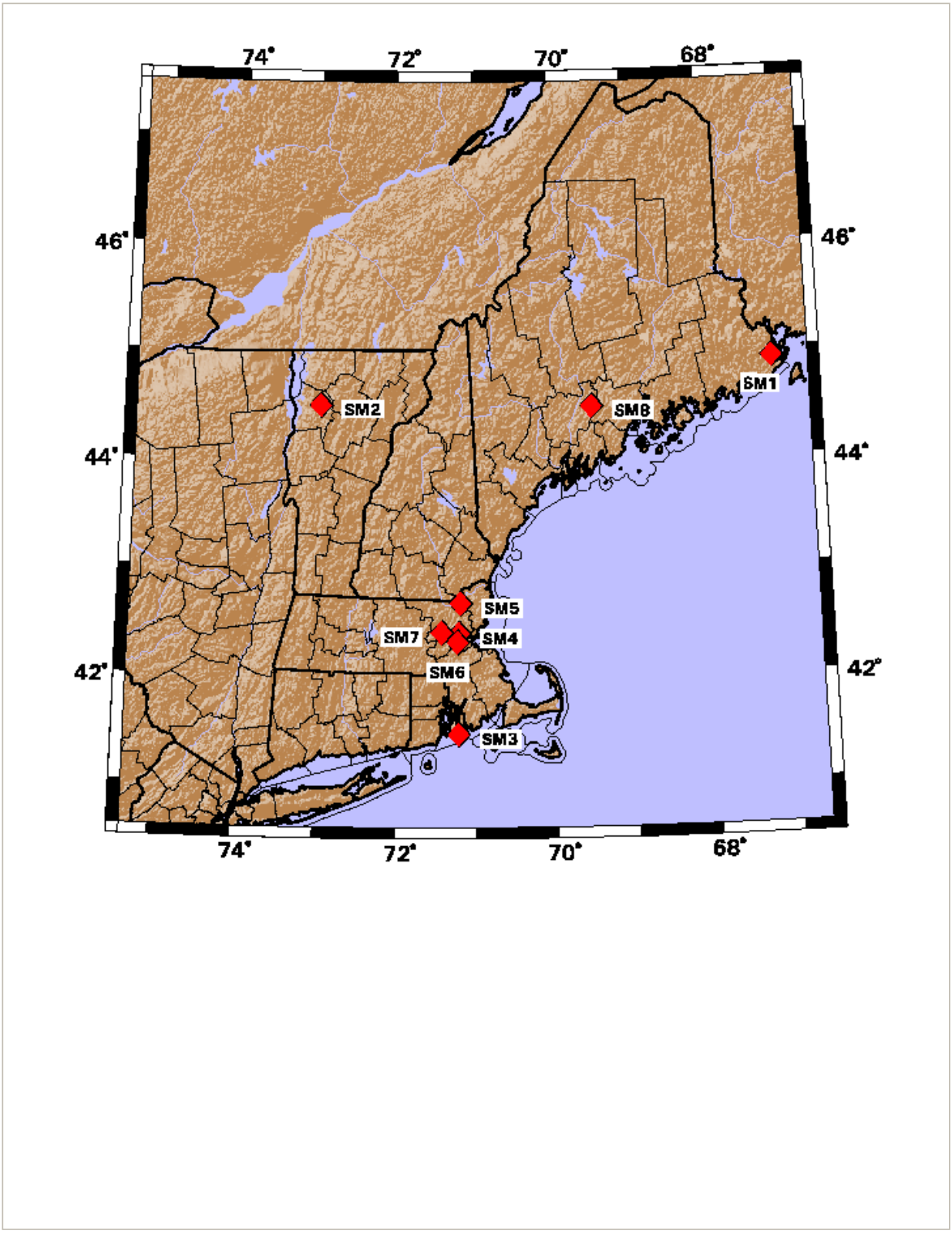

Figure 2: Map of strong-motion stations of the New England Seismic Network (NESN) in operation during the period of this report.

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NESN Quarterly Seismicity Map

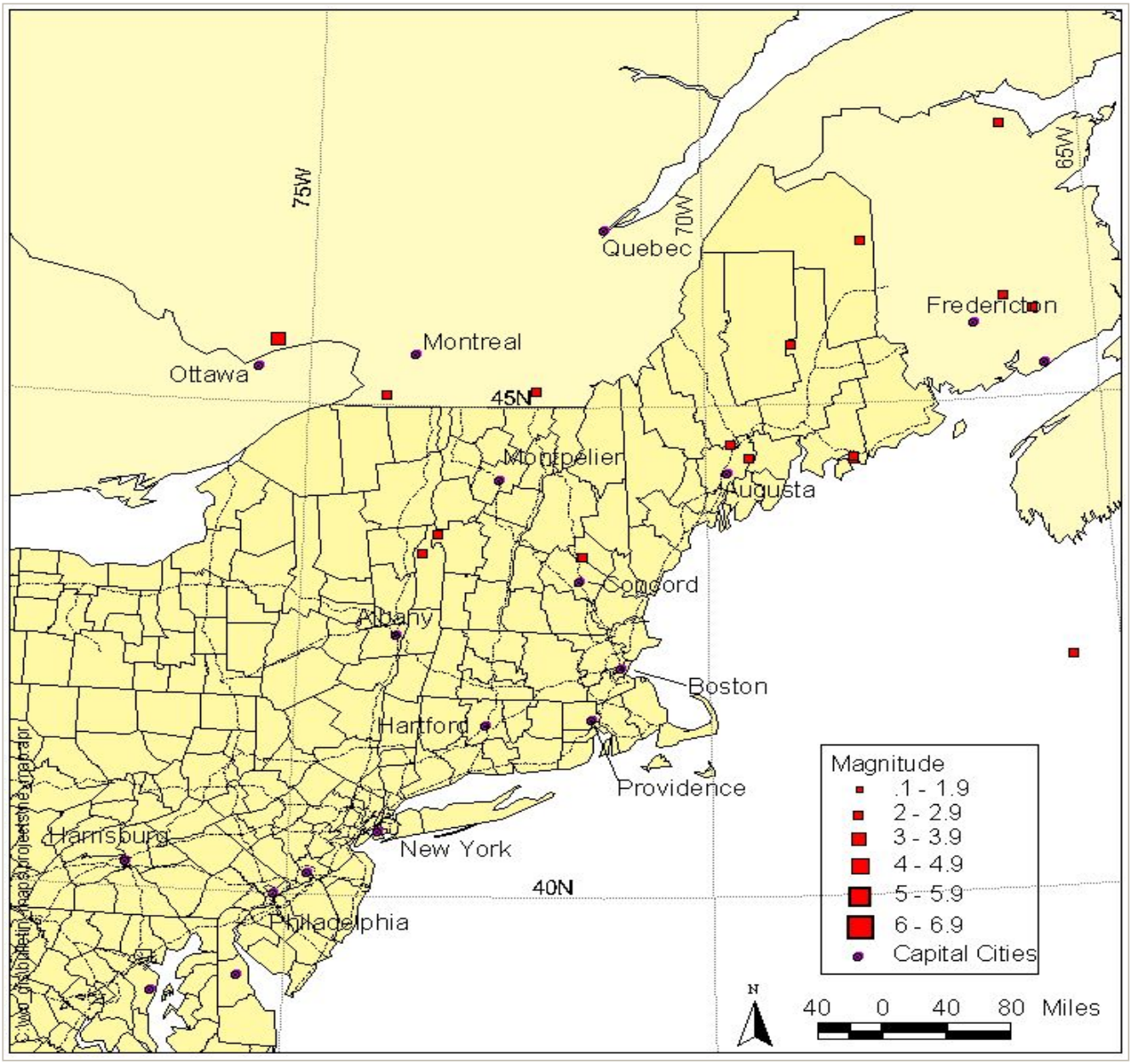

Figure 3: Earthquake epicenters located by the NESN during the period of this report.

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NESN Cumulative Seismicity Map

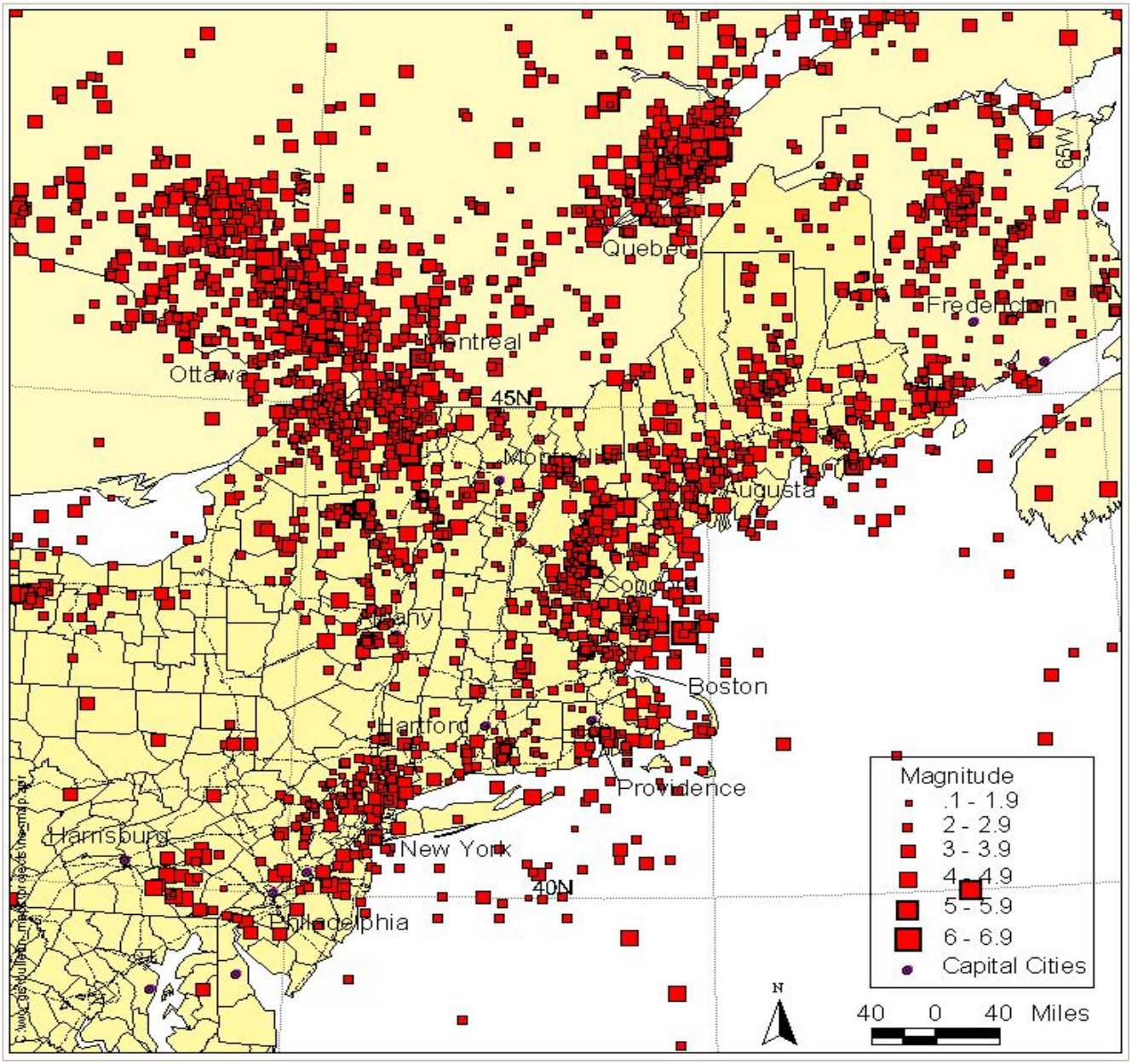

Figure 4: Seismicity for period October, 1975 - June, 2008.

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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.

References

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