LCSN Partners

ACCN (Adirondack Com. College, NY)
Adirondack Community College, SUNY, Glens Falls, NY

ALLY (Allegheny, PA)
Allegheny College, PA (ALLY)

BRNJ (Basking Ridge, NJ)
William Annin Middle School, Basking Ridge, NJ

BRNY (Black Rock Forest, NY)
Black Rock Forest Consortium, Cornwall, NY

CPNY (Central Park, NYC)
Central Park Conservancy, New York City

CUNY (City University, NY)
Queens College, CUNY, Queens, NYC

FMPA (Franklin & Marshall College, PA)
Franklin and Marshall College, PA

FOR (Fordham University, NYC)
Fordham University, the Bronx

FRNY (Flat Rock, Altona, NY)
Miner Agricultural Research Institute

HBVT (Hainsburg, VT)
University of Vermont, Burlington, VT

HCNY (Howe Caverns, NY)
Howe Caverns, Cobleskill, New York
SUNY Cobleskill

LONY (Lake Ozonia, NY)
Advanced National Seismic System/USGS

LUPA (Lehigh University, PA))
Lehigh University, Lehigh, PA

MDV (Middlebury, VT)
Middlebury College, VT

MIV (Mineville, NY)
Middlebury College, VT

MEDO (Medina, NY)
POLARIS Consortium, Canada

MMNY (Mount Morris Dam, NY)
US Army Corps of Engineers, Buffalo District
Geneseo College, SUNY

MSNJ (Montclair State, NJ)
Montclair State University, NJ
Nature Centre, Rifle Camp Park, Passaic County, NJ

MVL (Millersville, PA)
Millersville University, PA

NCB (Newcomb, NY)
College of Environmental Science and Forestry, Syracuse, SUNY
U.S. National Seismic Network, US GS/NEIC, Golden, CO

NED (Newark, DE)
Delaware Geological Survey, MD

NPNY (New Paltz, NY)
Mohonk Preserve, New Paltz, NY
SUNY – New Paltz, NY

ODNJ (Ogdensburg, NJ)
Sterling Hill Mining Museum, Ogdens burg, NJ

PAL (Palisades, NY)
Lamont-Doherty Earth Observatory

PANJ (Princeton, NJ)
Princeton Academy of the Sacred Heart
Princeton University, NJ

PNZ (Plattsburgh, NY)
Plattsburgh State, SUNY

PRNY (Paleontological Res. Inst., NY)
Paleontological Research Institution, Museum of the Earth, Ithaca, NY
Cornell Univ., Ithaca, New York

PTN (Potsdam, NY), POTS (Potsdam, NY)
Potsdam College of Art & Science, SUNY

SDMD (Soldiers Delight, MD)
Maryland Geological Survey, MD
Towson University, MD

UCCT (University of Connecticut, CT)
University of Connecticut, Storrs, CT

WCCN (Westchester Com. College, NY)
Westchester Community College, SUNY, Vallhala, NY

WCNY (West Carthage, NY)
Carthage Central High School, NY

LCSN
Lamont-Doherty Cooperative Seismographic Network

ANSS

LCSN NEWSLETTER

May 2008

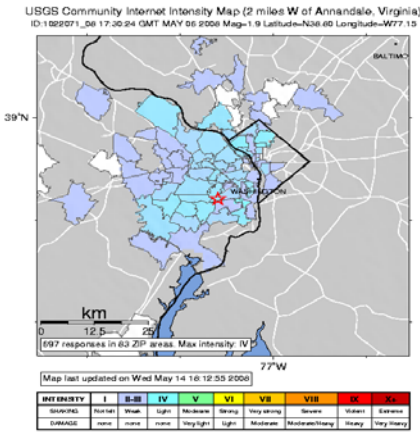
Earthquakes of the Month

On May 6, 2008 at 13:30:24 EDT, a magnitude 2.0 earthquake occurred in Annandale – Springfield, Virginia, suburb of Washington DC. The shock was felt Modified Mercali Intensity (MMI) III at Annandale, Springfield, Burke, Falls Church, Alexandria, Virginia and part of Washington DC, felt MMI II-III at Fairfax Station, McLean, Arlington, Fairfax and Vienna. Felt (II) at Bethesda, Rockville and Silver Spring, Maryland and at Washington D.C. as shown in the Community Internet Intensity Map (CIIM) below.

This event was somewhat unusual for its relatively large felt area for a magnitude 2.0 event. The shock was well covered by news media, perhaps due to its location close to the nation's capital. Nearly 700 people filed felt reports through USGS "Did-You-Feel-It" web site, an unusually large number.

The shock was located with large uncertainty due to relatively poor seismic station coverage around Washington D.C. The closest station was CBN (Corbin, Va; USNSN; D=68 km, AZ=192), followed by SDMD (Soldiers Delight, Md; LCSN; D=75 km, AZ=25). Other stations were farther than 130 km from the epicenter and hence, the event is poorly covered. LCSN is planning to deploy broadband stations in Washington D.C. and west of the city during 2008. Visit LCSN web site for more details

On May 12, 2008, a great earthquake with moment magnitude Mw 7.9 occurred in Sichuan Province in western China. The death toll exceeded 50,000 people as of May 22th, and will likely increase as remote villages in the epicentral area are visited by rescuers. For more details, please visit NEIC/USGS web site at http://earthquake.usgs.gov/eqcenter/recenteqsww/Quakes/us2008ryan.php>. A good summary poster is found at http://earthquake.usgs.gov/eqcenter/eqarchives/poster/2008/20080512.php>. NEIC site might move the web page for the event, then please try their archive of significant events at http://earthquake.usgs.gov/regional/world/historical.php>.



Network Update

During 2007, LCSN has deployed five new broadband seismographic stations in the northeastern United States as listed below. Station code, Latitude, Longitude, Elevation in meters and starting date of operation are given.

ODNJ 41.0829N 74.6056W 187m 06/23/2007
Ogdensburg, NJ; Sterling Hill Mine Museum
Site condition: concrete vault inside old zinc mine tunnel
Geology: Allentown dolomite (Lower Ordovician and Upper Cambrian)

WCNY 43.981N 75.6549W 245m 06/27/2007
West Carthage, NY; Carthage Central High School, NY
Site condition: concrete vault on bedrock
Geology: Chaumont Limestone (Middle Ordovician).

NPNY 41.7546N 74.1435W 216m 09/07/2007
New Paltz, NY; Mohonk Preserve and SUNY-New Paltz
Site condition: concrete vault on shale bedrock
Geology: Shale, Middle Ordovician Normanskill Formation

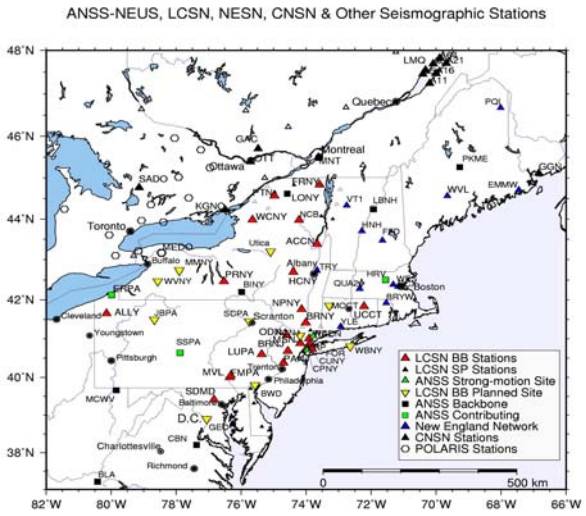
MSNJ 40.8841N 74.1815W 132m 11/02/2007
Montclair State University, New Jersey
and Nature Center at the Rifle Camp Park, Passaic County, New Jersey
Site condition: concrete vault on basalt outcrop
Geology: Lower Jurassic Orange Mountain basalt (First Watchung Mountain)

PANJ 40.3769N 74.7029W 100m 02/15/2008
Princeton, NJ; Princeton Academy of the Sacred Heart and Princeton University
Site: concrete vault on diabase outcrop
Geology: Jurassic diabase

In addition the following two stations were relocated with new vaults and instruments.

LUPA 40.5987N 75.3718W 255m 08/01/2006
Lehigh University, Pennsylvania (PI, Anne Meltzer)
Site condition: concrete vault on granite bedrock
The station is relocated and a new concrete vault constructed.

POTS 44.6634N 74.9732W 112m 05/22/2006
SUNY Potsdam College, NY (PI Frank Revetta)
Site condition: basement of the Timerman Hall, SUNY
Geology: Potsdam Sandstone



Education & Outreach

Recently, a new member of the LCSN, the Mohonk Preserve, New Paltz, NY had a public lecture in their visitor center to announce that scientists are studying earthquakes around the Mohonk Preserve. Nano Seeber (LDEO and research associate of the Preserve) delivered the lecture and contributed the following. Even though the Hudson Valley is considered geologically stable, earthquakes do occur occasionally. Some of the earthquakes were triggered by human activities, some caused damage. By learning about these earthquakes in the past we can learn more about what to expect in the future. Natural science usually happens in artificial environments. In this instance, however, a mixed group of professional and amateur scientists discussed fundamental research on earthquakes and mountain building in the natural setting of the Mohonk Preserve on the Shawangunk Mountain near New Paltz, NY. The beautiful lodge that serves and a reference for Preserve administration, visitors, and research hosted an evening talk by Nano Seeber on earthquakes. The talk compared earthquakes in tectonically active environments along plate boundaries, with earthquakes in stable environments, such as the New York city area in the middle of the North American plate. Source structure and effects vary widely over the magnitude range but the talk focused on systematic differences between interplate and intraplate earthquakes. Examples included one of the largest known earthquakes, the magnitude M9.3 Sumatra-Andamann earthquake of 2004 responsible for the devastating tsunami, and the recent magnitude 2.3 earthquake in the upper Walkill Valley, one of the smallest earthquakes to cause damaging intensities (MMVI: objects folling from shelves; cracked walls). This earthquake was very shallow, in the upper 1km, and produced an astonishingly high intensity of MMVI in a small area only a km across. In contrast, a typical earthquake of this size in California would be recorded instrumentally but would not be felt. This pronounced difference at the M2-3 level may be a curiosity, but it could translate into serious damage for very shallow M4-5 earthquakes in the EUS. Recognition of potential earthquake sources from geologic observations in the EUS is also problematic because EUS earthquakes seem to originate mostly from subtle faults with very little accumulated displacement and are thus hard to recognize. Well defined earthquake sources aligned with the Ramapo Fault, the border fault of the Newark Basin, illustrate this point because despite their spatial association with this regional fault, they originate from much smaller, unknown faults a high angle to the Ramapo fault.

The next morning, on Saturday, a beautiful spring day, a Nano Seeber lead a party of amateur seismo-geologists in a 3-hour walk through the forest of the Preserve to visit a spectacular thrust fault that appears to offset the glacial surface and thus could have experienced a surface rupture later than the last de-glaciation.

Letter from the Director of LCSN

The Newsletter is for the participants of the LCSN . It was suggested at the first LCSN Station Operators Workshop held in the fall of 2005. We hope to publish it as a monthly newsletter for the LCSN community. This newsletter contains issues of common interests such as, News from the Network – new seismographic stations deployed, some hints and help for improved station operation and maintenance; News from Partners – any interesting and newsworthy items from the partners are welcome; Education & Outreach – new developments and useful tools for the Earth Science class room activities, exhibitions and display; Earthquakes of the Month – analysis of seismic records and implications of earthquakes that occurred recently; Announcements – scientific meetings of interests, news from ANSS (Advanced National Seismic System) etc. The format of the newsletter is not fixed and we should make it flexible to best serve LCSN community. Please send any suggestions and contributions with interesting photos and maps you have.

Won-Young Kim
Sr. Research Scientist
Lamont-Earth Observatory

A group photo from the LCSN station operators workshop held at Lamont-Doherty Earth Observatory in the fall of 2006

ANNOUNCEMENTS

LCSN Advisory Committee Meeting and 4th Annual LCSN Station Operators Workshop is being scheduled in late Ocotber 2008 in the Seismology Building at Lamont. Following individuals serve as members of the **LCSN Advisory Committee since 2006.**

Charles Scharnberger, Millersville University (Chair)
Don Minkel, Adirondack Community College
Zach Miller, Carthage Central High School
William Brennan, SUNY- Geneseo
Stefanie Baxter, Delaware Geological Survey
Rob Sternberg, Franklin and Marshall College
Rob Ross, Paleontological Research Institution/Cornell University
Frank Revetta, SUNY – Potsdam
Won-Young Kim, Director of LCSN, LDEO, non-voting member