

Republic of Lebanon
National Council for Scientific Research

Provisional Seismological Bulletin

from the

NATIONAL SEISMIC NETWORK

July

2010

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GENERAL BULLETIN INFORMATION

The National Centre for Geophysical Research is a governmental agency established 1975 in Lebanon by the National Council for Scientific Research (CNRS). The mission of the Centre, among other assignments, is the monitoring of seismic activity within the national territory. Currently, the national seismic network is under deployment; it has been officially registered as GRAL, an acronym for Geophysical Research Arrays of Lebanon. Station coordinates and status are given below.

Since 1993, the Centre has been participating in a regional initiative by the UNESCO and the USGS known as RELEMR, i.e. Reducing Earthquake Losses in the Eastern Mediterranean Region.

Within this framework, the Centre routinely contributes to the database set up for this purpose and maintained by the Euro-Mediterranean Seismological Centre (EMSC). For coherence, the Centre has adopted the recommended seismic analysis system SEISAN developed by Jens Havskov and Lars Ottemoller from the University of Bergen, Norway.

The localization program currently used for locating earthquakes is Hypocenter (Lienert et al., 1986). Plane parallel layers are assumed for local and regional events, while the IASPEI travel time tables are used for distant events.

The velocity model used for all local and regional events is the one currently adopted by the RELEMR initiative.

P-wave velocity (km/sec)	depth to top of layer (km)
6.2	0.0
6.8	14.0
8.05	34.0
8.25	50.0
8.5	80.0

Magnitudes are calculated from the coda duration. The coda wave magnitude is estimated via the formula:

$$M_c = 0.08 + 1.63 * \log_{10}(T) + 0.0009 * D.$$

where T is the coda duration (sec) and D is the epicentral distance (km). The coefficients above were adopted at the outset of our Centre in 1980 and thus are still in use for the sake of continuity.

All available coda values are used for magnitude calculations. No station corrections are used for either travel times or magnitudes calculations. The V_p/V_s velocity ratio used in both layered models above is 1.74.

As a general policy, neither depths, nor epicenters, are fixed unless stated otherwise since this might restrict later use of the data. Consequently, some event locations might be unrealistic such as zero depth earthquakes or teleseismic locations off by 1000 km. However, the locations are based on the available data and reflect the localization procedure and the models used.

STATIONS USED

The stations listed below are operated by the National Centre for Geophysical Research. They constitute the basic setup of the National Seismic Network of Lebanon.

However, readings from other cooperating agencies are also used in locating the events and thus more stations may appear in the event lists than in the station list; it is worth mentioning the systematic use of arrival times from the Cypriot seismic network CSS in order to constrain events corresponding to an active zone off the Lebanese shorelines.

STATION	LATITUDE	LONGITUDE	HEIGHT (m)	NAME	COMMENTS
BHL	3354.25N	3539.25E	1000	BHANNES	Opened May 1980
HWQ	3416.68N	3556.78E	1161	HAWQA	Opened Jan 2001
MATL	3329.32N	3519.78E	5	MATARIH	Opened Nov 2000
FKH	3414.69N	3624.61E	1152	FAKEHEH	Opened Dec 2004
RCY	3329.79N	3550.14E	1370	RACHAYA	Opened Jun 2006
DWR	3323.13N	3524.08E	420	DWEIR	Scheduled 2003
BEYL	3352.30N	3529.59E	49	BEIRUT	Opened Jul 2006
NAQL	3307.02N	3508.46E	83	NAQOURA	Opened Jul 2008
DQRL	3342.34N	3534.21E	963	DEIR QAMAR	Opened Mar 2010

REGIONAL AND DISTANT EARTHQUAKES

Because regional events and teleseisms are not localized, but simply identified, EMSC determination data are given along with phase arrivals (in general first arrival) at the stations of our network.

MACROSEISMIC DATA

Macroseismic data, if available, are included in the bulletin.

MONTHLY EPICENTER MAPS

Maps will be found on the last page.

ELECTRONIC PUBLICATION

This provisional bulletin is available for download in pdf format on:
<http://www.cnrs.edu.lb/grdownload.html>

REFERENCES

- Havskov, J. and Ottemoller, L.(2001). SEISAN: The Earthquake Analysis Software. -version 7.2-
Institute of Solid Earth Physics, University of Bergen.
<http://www.ifjf.uib.no/seismo/software/seisan.html>
- Lienert, B.R., Berg, E. and Frazer, L.N.(1986). Hypocenter: An earthquake location method using centered, scaled, and adaptively least squares. Bull. Seism. Soc. Am., 76., pp 771-783.

Abbreviations:

TIME: Origin time in UTC (hr. min. and sec.) or data file onset time if event is not located.

LAT: Latitude of epicenter

LON: Longitude of epicenter

DEPTH: Focal depth in kilometer (trailing F indicates fixed depth)

AGENCY: REL throughout the bulletin, aka. REsearch Lebanon

MAGNITUDES: Up to 3 different magnitudes can be given followed by type and reporting agency, e.g. 3.1 MC REL - coda magnitude calculated according to above mentioned formula.

EMSC: Euro-Mediterranean Seismological Centre.

OT: Origin Time

RMS: Root mean square value of travel time residuals

STAT: Station code

CO: Component; S:short period, L:long period, B:broadband.

DIST: Epicenter distance (km)

AZI: Azimuth from source to station

PHAS: Phase; The first letter characterizes onset E(mergent) or I(mpulsive)

P: Polarity (C for compression, D for dilatation)

HR: Hour

MN: Minute

SECON: Seconds

TRES: Residual (seconds)

CODA: Signal duration in seconds

AMPL: Ground Amplitude ($0.5 * (\text{peak to peak})$), (nm) at period PERI

PERI: Period where amplitude is measured

BAZ: Back azimuth (station to event)

ARES: Back azimuth residual

VELO: Apparent phase velocity (km/sec)

WT: Weight of phase in the location

*: An asterisk before the phase arrival time implies a potential timing error. If an S phase is read, differential S-P times will be used in the hypocenter location.

July 1 2010 Hour: 10:34 31.4 Lat: 34.27N Lon: 36.56E Depth: 5 Agency: REL Local
Magnitudes: 2.8MC REL Rms: 0.1 secs

HERMEL BAALBEK REGION

STAT	CO	DIST	AZI	PHASE	P	HRMN	SECON	TRES	CODA	AMPL	PERI	BAZ	ARES	VELO	WT
HWQ	BZ	57	271	EP		1034	40.50	-0.11	45						1.0
HWQ	BN	57	271	ES		1034	47.45	0.06							1.0
RCY	SZ	109	218	EP		1034	49.13	0.10							1.0
RCY	SN	109	218	ES		1035	1.98	-0.06							1.0
DQRL	SZ	111	236	EP		1034	49.32	0.00							1.0
DQRL	SN	111	236	ES		1035	2.54	0.00							1.0

July 3 2010 Hour: 7:44 52.9 Lat: 34.13N Lon: 35.77E Depth: 0 Agency: REL Local
Magnitudes: 2.9MC REL Rms: 0.0 secs

KESROUANE

STAT	CO	DIST	AZI	PHASE	P	HRMN	SECON	TRES	CODA	AMPL	PERI	BAZ	ARES	VELO	WT
HWQ	BZ	24	44	EP		744	56.78	0.06	50						1.0
HWQ	BE	24	44	ES		744	59.51	-0.02							1.0
BHL	BZ	27	204	EP		744	57.27	0.05							0.2
BHL	BN	27	204	ES		745	0.37	-0.03							1.0
DQRL	SZ	50	202	EP		745	0.94	-0.04							1.0
FKH	SZ	61	77	EP		745	2.62	-0.06							1.0
RCY	SZ	70	175	EP		745	4.27	0.08							1.0
RCY	SN	70	175	ES		745	12.55	0.01							1.0

July 3 2010 Hour: 10:17 7.4 Lat: 34.42N Lon: 36.64E Depth: 6 Agency: REL Local
Magnitudes: 3.0MC REL Rms: 0.0 secs

NEBEK REGION

STAT	CO	DIST	AZI	PHASE	P	HRMN	SECON	TRES	CODA	AMPL	PERI	BAZ	ARES	VELO	WT
HWQ	BZ	66	256	EP		1017	18.12	0.00	56						1.0
HWQ	BE	66	256	ES		1017	26.06	0.00							1.0
BHL	BZ	108	238	EP		1017	24.71	0.00							1.0
DQRL	SZ	127	232	EP		1017	27.54	0.01							1.0
RCY	SZ	127	216	EP		1017	27.54	-0.01							1.0
RCY	SE	127	216	ES		1017	42.48	0.00							1.0

July 3 2010 Hour: 11:22 0.0 Agency: REL Local

STAT	CO	DIST	AZI	PHASE	P	HRMN	SECON	TRES	CODA	AMPL	PERI	BAZ	ARES	VELO	WT
HWQ	BZ			EP		1123	1.12								
RCY	SZ			EP		1123	10.53								

July 3 2010 Hour: 12:11 48.6 Lat: 33.78N Lon: 35.77E Depth: 7 Agency: REL Local
Magnitudes: 2.9MC REL Rms: 0.1 secs

BEIRUT REGION

STAT	CO	DIST	AZI	PHASE	P	HRMN	SECON	TRES	CODA	AMPL	PERI	BAZ	ARES	VELO	WT
BHL	BZ	17	322	EP		1211	51.57	-0.07	51						1.0
DQRL	SZ	20	245	EP		1211	52.12	0.03							1.0
DQRL	SN	20	245	ES		1211	54.75	0.04							1.0
BEYL	BZ	27	291	EP		1211	52.45	-0.68							0.2
RCY	SZ	32	169	EP		1211	53.95	-0.02							1.0
RCY	SE	32	169	ES		1211	57.97	-0.01							1.0
HWQ	BZ	57	17	EP		1211	57.99	0.07							1.0

July 3 2010 Hour: 15:13 42.3 Lat: 33.79N Lon: 35.78E Depth: 0 Agency: REL Local
Magnitudes: 2.7MC REL Rms: 0.0 secs

BEIRUT REGION

STAT	CO	DIST	AZI	PHASE	P	HRMN	SECON	TRES	CODA	AMPL	PERI	BAZ	ARES	VELO	WT
BHL	BZ	17	319	EP		1513	45.06	0.00	42						1.0
BHL	BE	17	319	ES		1513	47.08	-0.01							1.0
DQRL	SZ	21	244	EP		1513	45.75	0.02							1.0
RCY	SZ	33	170	EP		1513	47.62	-0.02							1.0
HWQ	BZ	57	16	EP		1513	51.44	0.01							1.0
HWQ	BN	57	16	ES		1513	58.17	0.00							1.0

July 4 2010 Hour: 9:39 0.0 Agency: REL Local
 STAT CO DIST AZI PHASE P HRMN SECON TRES CODA AMPL PERI BAZ ARES VELO WT
 FKH SZ EP 939 25.91
 HWQ BZ EP 939 31.21

July 4 2010 Hour: 21:55 51.2 Agency: REL Distant
EMSC OT=21:55:51.2 39.69N 142.48E 20Km mb=6.4 EAST OF HONSHU
 STAT CO DIST AZI PHASE P HRMN SECON TRES CODA AMPL PERI BAZ ARES VELO WT
 HWQ BZ EP 22 7 59.21
 BHL BZ EP 22 8 1.40
 BEYL BZ EP 22 8 2.22
 DQRL SZ EP 22 8 2.63
 RCY SZ EP 22 8 2.74

July 5 2010 Hour: 22: 5 18.6 Agency: REL Regional
EMSC OT=22:05:18.6 37.47N 35.58E 2Km ML=3.8 CENTRAL TURKEY
 STAT CO DIST AZI PHASE P HRMN SECON TRES CODA AMPL PERI BAZ ARES VELO WT
 HWQ BZ EP 22 6 8.96
 FKH SZ EP 22 6 10.94
 BHL BZ EP 22 6 14.16
 DQRL SZ EP 22 6 16.29

July 6 2010 Hour: 22:12 16.7 Lat: 33.03N Lon: 35.68E Depth: 2 Agency: REL Local
Magnitudes: 2.9MC REL Rms: 0.0 secs
NORTH GALILEE
 STAT CO DIST AZI PHASE P HRMN SECON TRES CODA AMPL PERI BAZ ARES VELO WT
 RCY SZ 54 15 EP 2212 25.48 0.00 53 1.0
 RCY SE 54 15 ES 2212 31.98 0.01 1.0
 DQRL SZ 76 352 EP 2212 29.10 0.08 1.0
 DQRL SE 76 352 ES 2212 38.12-0.01 1.0
 BHL BZ 98 358 EP 2212 32.38-0.08 1.0
 HWQ BZ 141 10 EP 2212 39.27 0.00 1.0

July 8 2010 Hour: 10: 2 49.2 Lat: 34.40N Lon: 36.70E Depth: 7 Agency: REL Local
Magnitudes: 3.1MC REL Rms: 0.1 secs
NEBEK REGION
 STAT CO DIST AZI PHASE P HRMN SECON TRES CODA AMPL PERI BAZ ARES VELO WT
 HWQ BZ 71 259 EP 10 3 0.63-0.06 64 1.0
 HWQ BE 71 259 ES 10 3 9.23 0.04 1.0
 BHL BZ 111 240 EP 10 3 7.17 0.15 0.2
 RCY SZ 129 219 EP 10 3 9.65 0.07 1.0
 RCY SN 129 219 ES 10 3 24.63-0.04 1.0
 DQRL SZ 130 234 EP 10 3 9.75-0.01 1.0

July 8 2010 Hour: 10:22 58.7 Lat: 33.78N Lon: 35.77E Depth: 12 Agency: REL Local
Magnitudes: 2.9MC REL Rms: 0.1 secs
BEIRUT REGION
 STAT CO DIST AZI PHASE P HRMN SECON TRES CODA AMPL PERI BAZ ARES VELO WT
 BHL BZ 17 323 EP 1023 1.99-0.20 1.0
 BHL BN 17 323 ES 1023 4.87 0.08 1.0
 DQRL SN 20 246 ES 1023 5.43 0.03 1.0
 RCY SZ 32 169 EP 1023 4.39 0.12 55 1.0
 RCY SE 32 169 ES 1023 8.34-0.07 1.0
 HWQ BZ 58 16 EP 1023 8.27 0.04 1.0

July 8 2010 Hour: 12: 7 38.1 Lat: 33.34N Lon: 35.35E Depth: 0 Agency: REL Local
Magnitudes: 2.9MC REL Rms: 0.1 secs
SOUTH LEBANON
 STAT CO DIST AZI PHASE P HRMN SECON TRES CODA AMPL PERI BAZ ARES VELO WT
 DQRL SZ 46 26 EP 12 7 45.37-0.08 1.0
 RCY SZ 48 68 EP 12 7 45.80-0.06 53 1.0
 RCY SE 48 68 ES 12 7 51.65 0.04 1.0
 BHL BZ 69 24 EP 12 7 49.30 0.10 1.0

BHL	BN	69	24	ES		12	7	57.39	-0.03									1.0
HWQ	BZ	118	28	EP		12	7	57.14	0.02									1.0

July 8 2010 Hour: 12:48 22.4 Agency: REL Distant
EMSC OT=12:48:22.4 23.94S 179.73W 514Km mb=5.4 S OF FIJI ISLANDS

STAT	CO	DIST	AZI	PHASE	P	HRMN	SECON	TRES	CODA	AMPL	PERI	BAZ	ARES	VELO	WT
HWQ	BZ			EP		13	7	8.54							
RCY	SZ			EP		13	7	9.38							
BHL	BZ			EP		13	7	9.59							
DQRL	SZ			EP		13	7	9.93							

July 8 2010 Hour: 14:41 4.1 Lat: 33.97N Lon: 36.18E Depth: 0 Agency: REL Local
Magnitudes: 2.8MC REL Rms: 0.1 secs

HERMEL BAALBEK REGION

STAT	CO	DIST	AZI	PHASE	P	HRMN	SECON	TRES	CODA	AMPL	PERI	BAZ	ARES	VELO	WT
HWQ	BZ	40	327	EP		1441	10.62	0.07	46						1.0
HWQ	BN	40	327	ES		1441	15.25	-0.09							1.0
BHL	BZ	50	261	EP		1441	12.15	0.08							1.0
RCY	SZ	62	211	EP		1441	14.03	-0.06							1.0
RCY	SN	62	211	ES		1441	21.46	-0.04							1.0
DQRL	SZ	64	242	EP		1441	14.46	0.04							1.0

July 10 2010 Hour: 15:27 28.1 Lat: 33.79N Lon: 35.78E Depth: 0 Agency: REL Local
Magnitudes: 2.8MC REL Rms: 0.0 secs

BEIRUT REGION

STAT	CO	DIST	AZI	PHASE	P	HRMN	SECON	TRES	CODA	AMPL	PERI	BAZ	ARES	VELO	WT
BHL	BZ	17	320	EP		1527	30.87	-0.01	46						1.0
BHL	BE	17	320	ES		1527	32.93	-0.01							1.0
DQRL	SZ	21	245	EP		1527	31.51	0.02							1.0
RCY	SZ	33	170	EP		1527	33.38	0.01							1.0
RCY	SN	33	170	ES		1527	37.25	-0.02							1.0
HWQ	BZ	57	16	EP		1527	37.28	0.01							1.0

July 10 2010 Hour: 23: 4 23.6 Agency: REL Distant
EMSC OT=23:04:23.6 30.62S 179.91W 407Km mb=5.1 KERMADEC ISLANDS

STAT	CO	DIST	AZI	PHASE	P	HRMN	SECON	TRES	CODA	AMPL	PERI	BAZ	ARES	VELO	WT
HWQ	BZ			EP		2323	25.43								
RCY	SZ			EP		2323	26.07								
BHL	BZ			EP		2323	26.35								
DQRL	SZ			EP		2323	26.95								

July 11 2010 Hour: 8:26 56.4 Lat: 33.56N Lon: 35.99E Depth: 35 Agency: REL Local
Magnitudes: 2.7MC REL Rms: 0.0 secs

CENTRAL BEKAA

STAT	CO	DIST	AZI	PHASE	P	HRMN	SECON	TRES	CODA	AMPL	PERI	BAZ	ARES	VELO	WT
RCY	SZ	16	245	EP		827	2.41	-0.04	36						1.0
RCY	SN	16	245	ES		827	6.98	0.02							1.0
DQRL	SZ	42	293	EP		827	4.92	0.11							0.2
BHL	BZ	50	322	EP		827	5.66	-0.01							1.0
HWQ	BZ	80	357	EP		827	9.51	0.04							1.0
HWQ	BN	80	357	ES		827	19.15	-0.02							1.0

July 11 2010 Hour: 11:50 17.4 Lat: 33.79N Lon: 35.77E Depth: 0 Agency: REL Local
Magnitudes: 2.9MC REL Rms: 0.0 secs

BEIRUT REGION

STAT	CO	DIST	AZI	PHASE	P	HRMN	SECON	TRES	CODA	AMPL	PERI	BAZ	ARES	VELO	WT
BHL	BZ	17	319	EP		1150	20.09	-0.03							1.0
DQRL	SZ	21	244	EP		1150	20.81	0.02	53						1.0
DQRL	SN	21	244	ES		1150	23.30	0.00							1.0
RCY	SZ	33	170	EP		1150	22.72	0.00							1.0
RCY	SN	33	170	ES		1150	26.65	-0.01							1.0
HWQ	BZ	57	16	EP		1150	26.53	0.02							1.0

July 13 2010 Hour: 3:18 10.4 Agency: REL Regional
EMSC OT=03:18:10.4 36.23N 21.81E 30Km mb=4.7 SOUTHERN GREECE
 STAT CO DIST AZI PHASE P HRMN SECON TRES CODA AMPL PERI BAZ ARES VELO WT
 HWQ BZ EP 320 51.87

July 13 2010 Hour: 7:45 0.0 Agency: REL Local
 STAT CO DIST AZI PHASE P HRMN SECON TRES CODA AMPL PERI BAZ ARES VELO WT
 RCY SZ EP 746 7.12
 HWQ BZ EP 746 7.68

July 13 2010 Hour: 10: 4 7.0 Lat: 34.45N Lon: 36.66E Depth: 14 Agency: REL Local
Magnitudes: 3.0MC REL Rms: 0.1 secs
NEBEK REGION
 STAT CO DIST AZI PHASE P HRMN SECON TRES CODA AMPL PERI BAZ ARES VELO WT
 HWQ BZ 69 254 EP 10 4 17.85-0.19 55 1.0
 HWQ BE 69 254 ES 10 4 26.26 0.01 1.0
 BHL BZ 111 237 EP 10 4 24.43 0.18 1.0
 RCY SZ 130 216 EP 10 4 26.99-0.14 1.0
 RCY SN 130 216 ES 10 4 42.04-0.03 1.0
 DQRL SZ 130 231 EP 10 4 27.27 0.18 1.0

July 13 2010 Hour: 10:23 16.0 Lat: 33.79N Lon: 35.76E Depth: 6 Agency: REL Local
Magnitudes: 2.7MC REL Rms: 0.0 secs
BEIRUT REGION
 STAT CO DIST AZI PHASE P HRMN SECON TRES CODA AMPL PERI BAZ ARES VELO WT
 BHL BZ 16 324 EP 1023 18.86-0.01 38 1.0
 DQRL SZ 19 242 EP 1023 19.38 0.01 1.0
 DQRL SN 19 242 ES 1023 21.85 0.00 1.0
 RCY SZ 33 167 EP 1023 21.48-0.02 1.0
 RCY SN 33 167 ES 1023 25.56 0.01 1.0
 HWQ BZ 57 18 EP 1023 25.34 0.01 1.0

July 14 2010 Hour: 13:40 42.8 Lat: 33.90N Lon: 35.82E Depth: 0 Agency: REL Local
Magnitudes: 2.8MC REL Rms: 0.1 secs
BEIRUT REGION
 STAT CO DIST AZI PHASE P HRMN SECON TRES CODA AMPL PERI BAZ ARES VELO WT
 BHL BZ 16 270 EP 1340 45.28-0.07 43 1.0
 DQRL SZ 32 227 EP 1340 48.12 0.11 1.0
 DQRL SN 32 227 ES 1340 51.85-0.01 1.0
 HWQ BZ 43 15 EP 1340 49.73 0.01 1.0
 HWQ BN 43 15 ES 1340 54.85 0.00 1.0
 RCY SZ 45 179 EP 1340 50.06-0.05 44 1.0

July 15 2010 Hour: 11:25 53.7 Agency: REL Regional
EMSC OT=11:25:53.7 28.94N 34.81E 10Km ML=4.2 EGYPT
 STAT CO DIST AZI PHASE P HRMN SECON TRES CODA AMPL PERI BAZ ARES VELO WT
 RCY SZ EP 1127 17.26
 DQRL SZ EP 1127 21.09
 BHL BZ EP 1127 23.57
 HWQ BZ EP 1127 23.73

July 15 2010 Hour: 13: 9 0.0 Agency: REL Regional
 STAT CO DIST AZI PHASE P HRMN SECON TRES CODA AMPL PERI BAZ ARES VELO WT
 HWQ BZ EP 13 9 3.55

July 15 2010 Hour: 13:22 26.0 Lat: 34.64N Lon: 35.75E Depth: 6 Agency: REL Local
Magnitudes: 3.3MC REL Rms: 0.0 secs
OFFSHORE NORTH LEBANON
 STAT CO DIST AZI PHASE P HRMN SECON TRES CODA AMPL PERI BAZ ARES VELO WT
 HWQ BZ 44 155 EP 1322 33.19-0.01 92 1.0
 HWQ BN 44 155 ES 1322 38.55 0.01 1.0
 BHL BZ 82 186 EP 1322 39.29 0.02 1.0
 BHL BN 82 186 ES 1322 49.08-0.02 1.0

DQRL	SZ	105	189	EP		1322	42.95	0.08									0.2
DQRL	SN	105	189	ES		1322	55.38	0.01									1.0
RCY	SZ	127	176	EP		1322	46.13	-0.02									1.0

July 15 2010 Hour: 15:57 50.0 Lat: 33.97N Lon: 36.17E Depth: 4 Agency: REL Local
Magnitudes: 2.8MC REL Rms: 0.1 secs

HERMEL BAALBEK REGION

STAT	CO	DIST	AZI	PHASE	P	HRMN	SECON	TRES	CODA	AMPL	PERI	BAZ	ARES	VELO	WT
HWQ	BZ	40	329	EP		1557	56.43	-0.04							1.0
HWQ	BN	40	329	ES		1558	1.29	0.03							1.0
BHL	BZ	48	261	EP		1557	57.67	-0.08	44						1.0
RCY	SZ	61	210	EP		1557	59.84	0.01							1.0
RCY	SN	61	210	ES		1558	7.09	-0.01							1.0
DQRL	SZ	62	242	EP		1558	0.18	0.09							1.0

July 16 2010 Hour: 8:11 1.8 Agency: REL Regional
EMSC OT=08:11:01.8 36.79N 26.84E 168Km Mw=5.1 DODECANESE ISLANDS

STAT	CO	DIST	AZI	PHASE	P	HRMN	SECON	TRES	CODA	AMPL	PERI	BAZ	ARES	VELO	WT
NAQL	SZ			EP		812	49.62								
BHL	BZ			EP		812	48.85								
DQRL	SZ			EP		812	49.65								
HWQ	BZ			EP		812	51.31								

July 16 2010 Hour: 10:52 47.7 Lat: 33.79N Lon: 35.77E Depth: 9 Agency: REL Local
Magnitudes: 2.7MC REL Rms: 0.0 secs

BEIRUT REGION

STAT	CO	DIST	AZI	PHASE	P	HRMN	SECON	TRES	CODA	AMPL	PERI	BAZ	ARES	VELO	WT
BHL	BZ	17	321	EP		1052	50.84	0.02	39						1.0
DQRL	SZ	20	243	EP		1052	51.38	0.02							1.0
DQRL	SN	20	243	ES		1052	54.09	-0.02							1.0
RCY	SZ	33	169	EP		1052	53.27	0.00							1.0
RCY	SE	33	169	ES		1052	57.43	0.00							1.0
HWQ	BZ	57	17	EP		1052	56.95	-0.02							1.0

July 17 2010 Hour: 14:23 1.9 Lat: 33.83N Lon: 35.85E Depth: 0 Agency: REL Local
Magnitudes: 2.6MC REL Rms: 0.0 secs

BEIRUT REGION

STAT	CO	DIST	AZI	PHASE	P	HRMN	SECON	TRES	CODA	AMPL	PERI	BAZ	ARES	VELO	WT
BHL	BZ	20	296	EP		1423	5.12	-0.05							1.0
DQRL	SZ	29	243	EP		1423	6.66	0.05	36						1.0
DQRL	SN	29	243	ES		1423	10.08	0.00							1.0
RCY	SZ	36	182	EP		1423	7.80	-0.01							1.0
RCY	SE	36	182	ES		1423	12.16	-0.01							1.0
HWQ	BZ	51	10	EP		1423	10.18	0.02							1.0

July 17 2010 Hour: 18:15 44.5 Lat: 33.46N Lon: 35.49E Depth: 9 Agency: REL Local
Magnitudes: 2.5MC REL Rms: 0.0 secs

SOUTH LEBANON

STAT	CO	DIST	AZI	PHASE	P	HRMN	SECON	TRES	CODA	AMPL	PERI	BAZ	ARES	VELO	WT
DQRL	SZ	29	15	EP		1815	49.45	0.02							1.0
DQRL	SE	29	15	ES		1815	53.04	-0.01							1.0
RCY	SZ	32	82	EP		1815	50.01	-0.01	29						1.0
RCY	SE	32	82	ES		1815	54.09	0.01							1.0
BHL	BZ	52	17	EP		1815	53.04	-0.02							1.0
HWQ	BZ	100	25	EP		1816	0.60	0.00							1.0

July 18 2010 Hour: 11:27 29.2 Lat: 34.38N Lon: 36.68E Depth: 5 Agency: REL Local
Magnitudes: 3.0MC REL Rms: 0.0 secs

NEBEK REGION

STAT	CO	DIST	AZI	PHASE	P	HRMN	SECON	TRES	CODA	AMPL	PERI	BAZ	ARES	VELO	WT
HWQ	BZ	69	261	EP		1127	40.21	-0.07	57						1.0
HWQ	BN	69	261	ES		1127	48.51	0.01							1.0
BHL	BZ	108	241	EP		1127	46.73	0.07							1.0
RCY	SZ	125	219	EP		1127	49.12	-0.03							1.0

RCY	SN	125	219	ES		1128	3.92	-0.02											1.0
DQRL	SZ	127	234	EP		1127	49.42	0.04											1.0

July 18 2010 Hour: 11:38 58.3 Lat: 34.25N Lon: 36.50E Depth: 6 Agency: REL Local
Magnitudes: 2.7MC REL Rms: 0.0 secs

HERMEL BAALBEK REGION

STAT	CO	DIST	AZI	PHASE	P	HRMN	SECON	TRES	CODA	AMPL	PERI	BAZ	ARES	VELO	WT
HWQ	BZ	51	274	EP		1139	6.62	-0.04	39						1.0
HWQ	BN	51	274	ES		1139	12.87	0.00							1.0
BHL	BZ	87	244	EP		1139	12.41	0.03							1.0
RCY	SZ	104	217	EP		1139	14.98	-0.03							1.0
RCY	SN	104	217	ES		1139	27.39	-0.02							1.0
DQRL	SZ	105	235	EP		1139	15.25	0.06							1.0

July 20 2010 Hour: 6: 2 32.5 Agency: REL Regional
EMSC OT=06:02:32.5 36.99N 32.04E 2Km ML=3.9 CENTRAL TURKEY

STAT	CO	DIST	AZI	PHASE	P	HRMN	SECON	TRES	CODA	AMPL	PERI	BAZ	ARES	VELO	WT
HWQ	BZ			EP		6	3	38.97							
RCY	SZ			EP		6	3	45.59							

July 20 2010 Hour: 9:42 0.0 Agency: REL Local

STAT	CO	DIST	AZI	PHASE	P	HRMN	SECON	TRES	CODA	AMPL	PERI	BAZ	ARES	VELO	WT
HWQ	BZ			EP		942	34.99								
RCY	SZ			EP		942	44.08								

July 20 2010 Hour: 10:13 0.0 Agency: REL Local

STAT	CO	DIST	AZI	PHASE	P	HRMN	SECON	TRES	CODA	AMPL	PERI	BAZ	ARES	VELO	WT
RCY	SZ			EP		1013	50.56								
HWQ	BZ			EP		1013	41.61								

July 20 2010 Hour: 14:13 0.0 Agency: REL Local

STAT	CO	DIST	AZI	PHASE	P	HRMN	SECON	TRES	CODA	AMPL	PERI	BAZ	ARES	VELO	WT
HWQ	BZ			EP		1413	38.31								
RCY	SZ			EP		1413	47.56								

July 20 2010 Hour: 19:38 10.3 Agency: REL Distant

EMSC OT=19:38:10.3 27.09N 53.87E 10Km Mw=5.8 SOUTHERN IRAN

STAT	CO	DIST	AZI	PHASE	P	HRMN	SECON	TRES	CODA	AMPL	PERI	BAZ	ARES	VELO	WT
RCY	SZ			EP		1942	7.08								
HWQ	BZ			EP		1942	8.01								
BHL	BZ			EP		1942	9.13								
DQRL	SZ			EP		1942	10.06								
BEYL	BZ			EP		1942	10.62								

July 21 2010 Hour: 0: 3 47.0 Lat: 33.79N Lon: 35.79E Depth: 0 Agency: REL Local
Magnitudes: 2.8MC REL Rms: 0.0 secs

BEIRUT REGION

STAT	CO	DIST	AZI	PHASE	P	HRMN	SECON	TRES	CODA	AMPL	PERI	BAZ	ARES	VELO	WT
BHL	BZ	18	315	EP		0	3	49.94	-0.04						1.0
DQRL	SZ	23	246	EP		0	3	50.77	0.07	44					1.0
DQRL	SN	23	246	ES		0	3	53.40	-0.01						1.0
RCY	SZ	33	173	EP		0	3	52.30	0.00						1.0
RCY	SE	33	173	ES		0	3	56.18	-0.02						1.0
HWQ	BZ	56	14	EP		0	3	56.10	0.02						1.0

July 21 2010 Hour: 7:31 43.7 Lat: 33.78N Lon: 35.76E Depth: 0 Agency: REL Local
Magnitudes: 2.7MC REL Rms: 0.0 secs

BEIRUT REGION

STAT	CO	DIST	AZI	PHASE	P	HRMN	SECON	TRES	CODA	AMPL	PERI	BAZ	ARES	VELO	WT
BHL	BZ	17	323	EP		731	46.44	-0.02							1.0
DQRL	SZ	20	245	EP		731	46.99	0.06	42						1.0
DQRL	SN	20	245	ES		731	49.28	-0.02							1.0
RCY	SZ	32	168	EP		731	48.92	-0.01							1.0
RCY	SE	32	168	ES		731	52.78	-0.01							1.0

HWQ BZ 58 17 EP 731 53.01 0.01 1.0

July 21 2010 Hour: 9:35 0.0

Agency: REL Local

STAT	CO	DIST	AZI	PHASE	P	HRMN	SECON	TRES	CODA	AMPL	PERI	BAZ	ARES	VELO	WT
HWQ	BZ			EP		935	59.37								
RCY	SZ			EP		935	59.09								

July 21 2010 Hour: 13:17 30.1

Lat: 33.80N Lon: 35.78E Depth: 0 Agency: REL Local

Magnitudes: 2.8MC REL

Rms: 0.0 secs

BEIRUT REGION

STAT	CO	DIST	AZI	PHASE	P	HRMN	SECON	TRES	CODA	AMPL	PERI	BAZ	ARES	VELO	WT
BHL	BZ	16	313	EP		1317	32.75	0.00							1.0
DQRL	SZ	23	241	EP		1317	33.78	0.04	45						1.0
DQRL	SN	23	241	ES		1317	36.42	-0.02							1.0
RCY	SZ	34	172	EP		1317	35.66	0.02							1.0
RCY	SN	34	172	ES		1317	39.73	-0.02							1.0
HWQ	BZ	55	16	EP		1317	38.91	-0.01							1.0

July 21 2010 Hour: 13:30 56.6

Lat: 33.91N Lon: 35.81E Depth: 7 Agency: REL Local

Magnitudes: 2.9MC REL

Rms: 0.0 secs

BEIRUT REGION

STAT	CO	DIST	AZI	PHASE	P	HRMN	SECON	TRES	CODA	AMPL	PERI	BAZ	ARES	VELO	WT
BHL	BZ	15	269	EP		1330	59.36	0.02							1.0
BHL	BN	15	269	ES		1331	1.35	-0.01							1.0
DQRL	SZ	32	225	EP		1331	1.90	0.00							1.0
HWQ	BZ	43	17	EP		1331	3.68	0.00							1.0
RCY	SZ	46	177	EP		1331	4.10	0.00	49						1.0
RCY	SN	46	177	ES		1331	9.64	0.00							1.0

July 21 2010 Hour: 15:0 43.7

Lat: 33.78N Lon: 35.80E Depth: 13 Agency: REL Local

Magnitudes: 2.8MC REL

Rms: 0.0 secs

BEIRUT REGION

STAT	CO	DIST	AZI	PHASE	P	HRMN	SECON	TRES	CODA	AMPL	PERI	BAZ	ARES	VELO	WT
BHL	BZ	19	315	EP		15	0	47.57	0.00						1.0
DQRL	SZ	23	248	EP		15	0	48.09	-0.01	42					1.0
DQRL	SN	23	248	ES		15	0	51.37	0.01						1.0
RCY	SZ	32	174	EP		15	0	49.44	0.01						1.0
RCY	SE	32	174	ES		15	0	53.66	-0.01						1.0
HWQ	BZ	56	14	EP		15	0	52.99	0.00						1.0

July 21 2010 Hour: 20:12 15.4

Agency: REL Regional

EMSC OT=20:12:15.4 34.61N 29.91E 10Km mb=4.3 EASTERN MED SEA

STAT	CO	DIST	AZI	PHASE	P	HRMN	SECON	TRES	CODA	AMPL	PERI	BAZ	ARES	VELO	WT
DQRL	SZ			EP		2013	26.88								
BHL	BZ			EP		2013	27.08								
HWQ	BZ			EP		2013	29.81								
RCY	SZ			EP		2013	31.14								

July 23 2010 Hour: 22:8 11.3

Agency: REL Distant

EMSC OT=22:08:11.3 06.72N 123.49E 600Km Mw=7.3 MORO GULF, MINDANAO

STAT	CO	DIST	AZI	PHASE	P	HRMN	SECON	TRES	CODA	AMPL	PERI	BAZ	ARES	VELO	WT
RCY	SZ			EP		2219	40.85								
HWQ	BZ			EP		2219	40.10								
BHL	BZ			EP		2219	42.46								
DQRL	SZ			EP		2219	42.08								
BEYL	BZ			EP		2219	43.78								
NAQL	SZ			EP		2219	43.31								

July 23 2010 Hour: 22:51 12.5

Agency: REL Distant

EMSC OT=22:51:12.5 06.51N 123.54E 589Km Mw=7.4 MORO GULF, MINDANAO

STAT	CO	DIST	AZI	PHASE	P	HRMN	SECON	TRES	CODA	AMPL	PERI	BAZ	ARES	VELO	WT
RCY	SZ			EP		23	2	45.18							
NAQL	SZ			EP		23	2	47.76							
DQRL	SZ			EP		23	2	46.51							
BHL	BZ			EP		23	2	50.34							
HWQ	BZ			EP		23	2	48.84							
BEYL	BZ			EP		23	2	50.92							

July 23 2010 Hour: 23:15 10.1

Agency: REL Distant

EMSC OT=23:15:10.1 06.83N 123.27E 639Km Mw=7.4 MORO GULF, MINDANAO

STAT	CO	DIST	AZI	PHASE	P	HRMN	SECON	TRES	CODA	AMPL	PERI	BAZ	ARES	VELO	WT
HWQ	BZ			EP		2326	36.80								
RCY	SZ			EP		2326	37.93								
BHL	BZ			EP		2326	38.26								
DQRL	SZ			EP		2326	38.82								
BEYL	BZ			EP		2326	38.21								
NAQL	SZ			EP		2326	40.23								

July 24 2010 Hour: 5:35 2.0

Agency: REL Distant

EMSC OT=05:35:02.0 06.26N 123.58E 561Km Mw=6.5 MORO GULF, MINDANAO

STAT	CO	DIST	AZI	PHASE	P	HRMN	SECON	TRES	CODA	AMPL	PERI	BAZ	ARES	VELO	WT
HWQ	BZ			EP		546	35.92								
RCY	SZ			EP		546	36.99								
BHL	BZ			EP		546	36.84								
DQRL	SZ			EP		546	38.52								

July 24 2010 Hour: 9:46 0.0

Agency: REL Local

STAT	CO	DIST	AZI	PHASE	P	HRMN	SECON	TRES	CODA	AMPL	PERI	BAZ	ARES	VELO	WT
HWQ	BZ			EP		946	44.58								
RCY	SZ			EP		946	54.19								

July 24 2010 Hour: 13:32 26.0

Lat: 33.66N Lon: 35.89E Depth: 16 Agency: REL Local

Magnitudes: 2.7MC REL

Rms: 0.0 secs

CENTRAL BEKAA

STAT	CO	DIST	AZI	PHASE	P	HRMN	SECON	TRES	CODA	AMPL	PERI	BAZ	ARES	VELO	WT
RCY	SZ	19	194	EP		1332	30.05	-0.06							1.0
RCY	SN	19	194	ES		1332	33.20	0.03							1.0
DQRL	SZ	30	280	EP		1332	31.52	0.06	40						1.0
DQRL	SN	30	280	ES		1332	35.53	0.00							1.0
BHL	BZ	35	322	EP		1332	32.07	-0.07							1.0
HWQ	BZ	69	5	EP		1332	37.16	0.04							1.0

July 24 2010 Hour: 16:16 14.4

Lat: 33.59N Lon: 36.00E Depth: 16 Agency: REL Local

Magnitudes: 2.6MC REL

Rms: 0.0 secs

CENTRAL BEKAA

STAT	CO	DIST	AZI	PHASE	P	HRMN	SECON	TRES	CODA	AMPL	PERI	BAZ	ARES	VELO	WT
RCY	SZ	19	236	EP		1616	18.40	-0.04	34						1.0
RCY	SE	19	236	ES		1616	21.48	0.02							1.0
DQRL	SZ	42	288	EP		1616	21.64	0.06							1.0
DQRL	SN	42	288	ES		1616	26.91	-0.01							1.0
BHL	BZ	47	317	EP		1616	22.29	-0.07							1.0
HWQ	BZ	76	356	EP		1616	26.65	0.04							1.0

July 24 2010 Hour: 20: 6 15.6

Lat: 33.79N Lon: 35.77E Depth: 0 Agency: REL Local

Magnitudes: 2.7MC REL

Rms: 0.0 secs

BEIRUT REGION

STAT	CO	DIST	AZI	PHASE	P	HRMN	SECON	TRES	CODA	AMPL	PERI	BAZ	ARES	VELO	WT
BHL	BZ	17	318	EP		20	6	18.29	-0.03						1.0
DQRL	SZ	21	243	EP		20	6	19.08	0.03	39					1.0
DQRL	SN	21	243	ES		20	6	21.58	0.00						1.0
RCY	SZ	33	170	EP		20	6	20.99	-0.01						1.0

RCY	SE	33	170	ES		20	6	24.96	-0.01										1.0
HWQ	BZ	56	16	EP		20	6	24.71	0.02										1.0

July 25 2010 Hour: 12:57 1.4 Agency: REL Distant
EMSC OT=12:57:01.4 49.72N 154.69E 130Km Mw=5.6 KURIL ISLANDS

STAT	CO	DIST	AZI	PHASE	P	HRMN	SECON	TRES	CODA	AMPL	PERI	BAZ	ARES	VELO	WT
HWQ	BZ			EP		13	8	58.82							
BHL	BZ			EP		13	9	1.19							
RCY	SZ			EP		13	9	2.45							

July 25 2010 Hour: 17: 6 22.2 Agency: REL Regional
EMSC OT=17:06:22.2 36.98N 30.41E 10Km mb=4.2 WESTERN TURKEY

STAT	CO	DIST	AZI	PHASE	P	HRMN	SECON	TRES	CODA	AMPL	PERI	BAZ	ARES	VELO	WT
HWQ	BZ			EP		17	7	38.92							
BHL	BZ			EP		17	7	39.78							
DQRL	SZ			EP		17	7	39.78							
RCY	SZ			EP		17	7	45.99							

July 27 2010 Hour: 12:17 0.0 Agency: REL Local

STAT	CO	DIST	AZI	PHASE	P	HRMN	SECON	TRES	CODA	AMPL	PERI	BAZ	ARES	VELO	WT
HWQ	BZ			EP		1217	26.48								
RCY	SZ			EP		1217	30.00								

July 27 2010 Hour: 16: 7 43.0 Agency: REL Regional
EMSC OT=16:07:43.0 35.03N 33.15E 60Km ML=4.0 CYPRUS REGION

STAT	CO	DIST	AZI	PHASE	P	HRMN	SECON	TRES	CODA	AMPL	PERI	BAZ	ARES	VELO	WT
BHL	BZ			EP		16	8	19.03		172					
DQRL	SZ			EP		16	8	18.98							
HWQ	BZ			EP		16	8	20.83							
NAQL	SZ			EP		16	8	22.48							
RCY	SZ			EP		16	8	24.81							

July 28 2010 Hour: 10:56 0.0 Agency: REL Local

STAT	CO	DIST	AZI	PHASE	P	HRMN	SECON	TRES	CODA	AMPL	PERI	BAZ	ARES	VELO	WT
HWQ	BZ			EP		1056	58.30								
RCY	SZ			EP		1056	57.52								

July 29 2010 Hour: 7:35 9.7 Agency: REL Regional
EMSC OT=07:35:09.7 36.31N 31.85E 100Km ML=3.6 WESTERN TURKEY

STAT	CO	DIST	AZI	PHASE	P	HRMN	SECON	TRES	CODA	AMPL	PERI	BAZ	ARES	VELO	WT
RCY	SZ			EP		736	13.89								
HWQ	BZ			EP		736	7.99								

July 29 2010 Hour: 7:31 57.1 Agency: REL Distant
EMSC OT=07:31:57.1 06.58N 123.35E 616Km Mw=6.5 MORO GULF, MINDANAO

STAT	CO	DIST	AZI	PHASE	P	HRMN	SECON	TRES	CODA	AMPL	PERI	BAZ	ARES	VELO	WT
HWQ	BZ			EP		743	25.68								
RCY	SZ			EP		743	26.75								
BHL	BZ			EP		743	26.93								
DQRL	SZ			EP		743	27.58								

July 29 2010 Hour: 9:22 39.1 Lat: 33.78N Lon: 35.77E Depth: 3 Agency: REL Local
Magnitudes: 2.8MC REL Rms: 0.0 secs
BEIRUT REGION

STAT	CO	DIST	AZI	PHASE	P	HRMN	SECON	TRES	CODA	AMPL	PERI	BAZ	ARES	VELO	WT
BHL	BZ	17	321	EP		922	41.94	0.00	42						1.0
DQRL	SZ	20	245	EP		922	42.45	-0.01	45						1.0
DQRL	SE	20	245	ES		922	44.96	0.00							1.0
BEYL	BZ	27	291	EP		922	43.60	0.05							0.2
RCY	SZ	33	169	EP		922	44.39	0.00							1.0
HWQ	BZ	57	17	EP		922	48.35	0.01	43						1.0
HWQ	BN	57	17	ES		922	55.18	-0.01							1.0

July 29 2010 Hour: 16:58 3.5 Lat: 33.79N Lon: 35.77E Depth: 9 Agency: REL Local
Magnitudes: 2.9MC REL Rms: 0.0 secs

BEIRUT REGION

STAT	CO	DIST	AZI	PHASE	P	HRMN	SECON	TRES	CODA	AMPL	PERI	BAZ	ARES	VELO	WT
BHL	BZ	16	321	EP		1658	6.50	-0.04							1.0
DQRL	SZ	20	242	EP		1658	7.15	0.02							1.0
DQRL	SN	20	242	ES		1658	9.86	0.01							1.0
RCY	SZ	33	169	EP		1658	9.03	-0.06	48						1.0
RCY	SE	33	169	ES		1658	13.28	0.03							1.0
HWQ	BZ	57	17	EP		1658	12.77	0.04							1.0

July 30 2010 Hour: 3:56 16.3 Agency: REL Distant
EMSC OT=03:56:16.3 52.48N 159.96E 40Km Mw=6.4 COAST OF KAMCHATKA

STAT	CO	DIST	AZI	PHASE	P	HRMN	SECON	TRES	CODA	AMPL	PERI	BAZ	ARES	VELO	WT
HWQ	BZ			EP		4 8	24.99								
BHL	BZ			EP		4 8	26.97								
DQRL	SZ			EP		4 8	29.30								
RCY	SZ			EP		4 8	29.59								

July 30 2010 Hour: 13:50 12.0 Agency: REL Distant
EMSC OT=13:50:12.0 35.24N 59.44E 9Km mb=5.6 NORTHEASTERN IRAN

STAT	CO	DIST	AZI	PHASE	P	HRMN	SECON	TRES	CODA	AMPL	PERI	BAZ	ARES	VELO	WT
HWQ	BZ			EP		1354	38.07								
BHL	BZ			EP		1354	42.23								

July 30 2010 Hour: 14:17 0.3 Lat: 33.77N Lon: 35.75E Depth: 0 Agency: REL Local
Magnitudes: 2.7MC REL Rms: 0.0 secs

BEIRUT REGION

STAT	CO	DIST	AZI	PHASE	P	HRMN	SECON	TRES	CODA	AMPL	PERI	BAZ	ARES	VELO	WT
BHL	BZ	17	328	EP		1417	3.07	-0.01							1.0
DQRL	SZ	18	246	EP		1417	3.32	0.03							1.0
DQRL	SN	18	246	ES		1417	5.48	-0.01							1.0
RCY	SZ	32	166	EP		1417	5.43	0.01	40						1.0
RCY	SN	32	166	ES		1417	9.19	-0.01							1.0
HWQ	BZ	59	18	EP		1417	9.81	0.00							1.0

July 30 2010 Hour: 15:27 29.4 Lat: 33.94N Lon: 35.73E Depth: 11 Agency: REL Local
Magnitudes: 2.5MC REL Rms: 0.0 secs

BEIRUT REGION

STAT	CO	DIST	AZI	PHASE	P	HRMN	SECON	TRES	CODA	AMPL	PERI	BAZ	ARES	VELO	WT
BHL	BZ	8	241	EP		1527	31.69	-0.01	28						1.0
DQRL	SZ	30	210	EP		1527	34.55	0.01							1.0
HWQ	BZ	43	28	EP		1527	36.53	-0.03							1.0
HWQ	BN	43	28	ES		1527	41.88	0.02							1.0
RCY	SZ	50	168	EP		1527	37.70	0.01							1.0
RCY	SE	50	168	ES		1527	43.83	-0.01							1.0

July 31 2010 Hour: 6:56 0.0 Agency: REL Distant
EMSC OT=06:52:56.4 29.48N 56.84E 10Km mb=5.3 SOUTHERN IRAN

STAT	CO	DIST	AZI	PHASE	P	HRMN	SECON	TRES	CODA	AMPL	PERI	BAZ	ARES	VELO	WT
BHL	BZ			EP		657	12.77								
HWQ	BZ			EP		657	10.25								
DQRL	SZ			EP		657	14.21								
RCY	SZ			EP		657	9.35								

Epicentral Map of Lebanon

JULY 2010

