

Republic of Lebanon  
National Council for Scientific Research

# Provisional Seismological Bulletin

from the

## NATIONAL SEISMIC NETWORK

August

2013

Prepared by  
The National Centre for Geophysical Research  
Bhannes

*P.o.b. : 165432  
Ashrafyeh Beirut 1100-2040*

*Tel : +9614-981885  
Fax : +9614-981886  
Email : [geophys@cnrs.edu.lb](mailto:geophys@cnrs.edu.lb)*

## 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
QRWL	3332.86N	3540.93E	875	QARAOUN	Opened Oct 2011
SHBL	3320.90N	3544.63E	1422	CHEBAA	Opened Oct 2011

## 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.

August 1 2013 Hour: 12:34 43.9 Lat: 33.79N Lon: 35.77E Depth: 5 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		1234	46.68	-0.01	39						1.0
DQRL	SZ	20	243	EP		1234	47.29	0.01							1.0
DQRL	SN	20	243	ES		1234	49.82	0.00							1.0
RCY	SZ	33	169	EP		1234	49.27	-0.02							1.0
RCY	SN	33	169	ES		1234	53.32	0.01							1.0
HWQ	SZ	57	17	EP		1234	53.09	0.01							1.0

August 1 2013 Hour: 20:1 44.0 Agency: REL Distant

EMSC OT=20:01:44.0 15.30S 173.55W 30Km M=6.0 TONGA

STAT	CO	DIST	AZI	PHASE	P	HRMN	SECON	TRES	CODA	AMPL	PERI	BAZ	ARES	VELO	WT
BHL	BZ			EP		2021	22.30								
SHBL	BZ			EP		2021	22.90								

August 2 2013 Hour: 1:10 31.0 Agency: REL Regional

EMSC OT=01:10:31.0 36.68N 43.27E 2Km M=4.2 IRAQ

STAT	CO	DIST	AZI	PHASE	P	HRMN	SECON	TRES	CODA	AMPL	PERI	BAZ	ARES	VELO	WT
HWQ	SZ			EP		112	6.99								
BHL	BZ			EP		112	12.14								
RCY	SZ			EP		112	13.52								
DQRL	SZ			EP		112	15.14								
SHBL	BZ			EP		112	14.86								

August 2 2013 Hour: 8:53 29.1 Lat: 33.79N Lon: 35.76E Depth: 13 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	322	EP		853	32.59	-0.02	41						1.0
DQRL	SZ	20	243	EP		853	33.10	0.02							1.0
DQRL	SN	20	243	ES		853	36.06	0.01							1.0
QRWL	SZ	28	196	EP		853	34.05	-0.06							1.0
QRWL	SE	28	196	ES		853	37.84	-0.01							1.0
RCY	SZ	33	168	EP		853	34.96	0.05							1.0
HWQ	SZ	57	17	EP		853	38.46	0.00							1.0

August 3 2013 Hour: 3:39 24.3 Lat: 33.46N Lon: 35.94E Depth: 4 Agency: REL Local  
Magnitudes: 2.5MC REL Rms: 0.1 secs

MOUNT HERMON REGION

STAT	CO	DIST	AZI	PHASE	P	HRMN	SECON	TRES	CODA	AMPL	PERI	BAZ	ARES	VELO	WT
RCY	SZ	11	291	EP		339	26.29	-0.01	32						1.0
SHBL	BZ	22	236	EP		339	28.19	0.12							1.0
SHBL	BN	22	236	ES		339	30.77	-0.06							1.0
QRWL	SZ	26	292	EP		339	28.52	-0.09							1.0
QRWL	SN	26	292	ES		339	31.85	0.07							1.0
DQRL	SZ	44	308	EP		339	31.41	-0.05							1.0
BHL	BZ	56	332	EP		339	33.42	0.03							1.0
RCY	SN			ES		339	27.80								

August 4 2013 Hour: 2:40 19.4 Lat: 33.18N Lon: 35.65E Depth: 12 Agency: REL Local  
Magnitudes: 2.4MC REL Rms: 0.0 secs

NORTH GALILEE

STAT	CO	DIST	AZI	PHASE	P	HRMN	SECON	TRES	CODA	AMPL	PERI	BAZ	ARES	VELO	WT
SHBL	BZ	21	25	EP		240	23.49	-0.01	27						1.0
SHBL	BE	21	25	ES		240	26.51	-0.01							1.0
RCY	SZ	40	26	EP		240	26.20	0.01							1.0
RCY	SN	40	26	ES		240	31.19	-0.01							1.0
DQRL	SZ	59	353	EP		240	29.22	0.00							1.0
BHL	BZ	81	0	EP		240	32.41	0.01							1.0

August 4 2013 Hour: 3:28 51.0 Agency: REL Distant  
**EMSC OT=03:28:51.0 38.26N 141.81E 60Km M=5.8 COAST OF HONSHU**  
 STAT CO DIST AZI PHASE P HRMN SECON TRES CODA AMPL PERI BAZ ARES VELO WT  
 SHBL BZ EP 341 0.78  
 BHL BZ EP 340 58.56

August 4 2013 Hour: 10:58 35.5 Lat: 33.74N Lon: 35.97E Depth: 0 Agency: REL Local  
 Magnitudes: 2.6MC REL Rms: 0.1 secs  
**CENTRAL BEKAA**

STAT	CO	DIST	AZI	PHASE	P	HRMN	SECON	TRES	CODA	AMPL	PERI	BAZ	ARES	VELO	WT
RCY	SZ	29	204	EP		1058	40.21	-0.04							1.0
BHL	BZ	34	303	EP		1058	41.12	0.04	36						1.0
BHL	BE	34	303	ES		1058	45.08	-0.09							1.0
DQRL	SZ	37	265	EP		1058	41.58	0.11							1.0
DQRL	SE	37	265	ES		1058	45.86	0.01							1.0
BEYL	BZ	46	289	EP		1058	43.00	0.00							1.0

August 4 2013 Hour: 13:29 40.7 Lat: 33.55N Lon: 35.71E Depth: 0 Agency: REL Local  
 Magnitudes: 2.4MC REL Rms: 0.0 secs  
**CENTRAL BEKAA**

STAT	CO	DIST	AZI	PHASE	P	HRMN	SECON	TRES	CODA	AMPL	PERI	BAZ	ARES	VELO	WT
QRWL	SZ	3	271	EP		1329	41.17	-0.01	28						1.0
RCY	SZ	13	116	EP		1329	42.68	-0.06							1.0
RCY	SN	13	116	ES		1329	44.30	0.04							1.0
DQRL	SZ	22	323	EP		1329	44.26	0.02							1.0
SHBL	BZ	22	173	EP		1329	44.28	0.00							1.0
SHBL	BN	22	173	ES		1329	46.95	0.01							1.0

August 4 2013 Hour: 15:55 46.6 Agency: REL Distant  
**EMSC OT=15:56:34.0 47.02N 145.30E 366Km M=5.8 SEA OF OKHOTSK**

STAT	CO	DIST	AZI	PHASE	P	HRMN	SECON	TRES	CODA	AMPL	PERI	BAZ	ARES	VELO	WT
BHL	BZ			EP		16 7	51.54								
BEYL	BZ			EP		16 7	51.91								
SHBL	BZ			EP		16 7	53.99								

August 4 2013 Hour: 16:10 55.2 Lat: 35.03N Lon: 36.83E Depth: 2 Agency: REL Regional  
 Magnitudes: 3.2MC REL Rms: 0.1 secs  
**SYRIA**

STAT	CO	DIST	AZI	PHASE	P	HRMN	SECON	TRES	CODA	AMPL	PERI	BAZ	ARES	VELO	WT
HWQ	SZ	116	224	EP		1611	14.11	0.10	69						1.0
HWQ	SE	116	224	ES		1611	27.87	-0.04							1.0
BHL	BZ	165	221	EP		1611	21.18	-0.09							1.0
DQRL	SZ	187	219	EP		1611	24.39	0.06							1.0
RCY	SZ	193	209	EP		1611	25.05	-0.08							1.0
RCY	SN	193	209	ES		1611	47.31	0.05							1.0

August 4 2013 Hour: 22:57 49.4 Lat: 33.79N Lon: 35.80E 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	313	EP		2257	52.28	-0.00	46						1.0
BHL	BE	18	313	ES		2257	54.40	-0.04							1.0
DQRL	SZ	23	245	EP		2257	53.16	0.06							1.0
BEYL	BZ	29	287	EP		2257	54.06	-0.05							0.2
RCY	SZ	33	174	EP		2257	54.66	-0.05							1.0
RCY	SN	33	174	ES		2257	58.67	0.00							1.0
HWQ	SZ	56	14	EP		2257	58.36	0.03							1.0

August 5 2013 Hour: 8:51 13.5 Lat: 33.38N Lon: 35.63E Depth: 5 Agency: REL Local  
Magnitudes: 2.6MC REL Rms: 0.0 secs

**MOUNT HERMON REGION**

STAT	CO	DIST	AZI	PHASE	P	HRMN	SECON	TRES	CODA	AMPL	PERI	BAZ	ARES	VELO	WT
QRWL	SZ	19	14	EP		851	16.67	-0.06							1.0
QRWL	SN	19	14	ES		851	19.13	-0.01							1.0
RCY	SZ	23	56	EP		851	17.37	0.03	33						1.0
RCY	SE	23	56	ES		851	20.18	-0.01							1.0
DQRL	SZ	36	351	EP		851	19.51	0.05							1.0
HWQ	SZ	104	16	EP		851	30.19	-0.04							0.2

August 6 2013 Hour: 13:34 50.0 Lat: 33.97N Lon: 36.41E Depth: 0 Agency: REL Local  
Magnitudes: 2.5MC REL Rms: 0.0 secs

**CENTRAL BEKAA**

STAT	CO	DIST	AZI	PHASE	P	HRMN	SECON	TRES	CODA	AMPL	PERI	BAZ	ARES	VELO	WT
HWQ	SZ	54	309	EP		1334	58.79	0.02	28						1.0
HWQ	SN	54	309	ES		1335	5.24	-0.02							1.0
RCY	SZ	75	225	EP		1335	2.09	0.03							1.0
RCY	SN	75	225	ES		1335	10.94	-0.04							1.0
DQRL	SZ	83	249	EP		1335	3.34	-0.03							1.0
DQRL	SN	83	249	ES		1335	13.32	0.05							1.0

August 6 2013 Hour: 14:10 58.7 Lat: 33.54N Lon: 35.71E Depth: 0 Agency: REL Local  
Magnitudes: 2.4MC REL Rms: 0.1 secs

**CENTRAL BEKAA**

STAT	CO	DIST	AZI	PHASE	P	HRMN	SECON	TRES	CODA	AMPL	PERI	BAZ	ARES	VELO	WT
QRWL	SZ	3	296	EP		1410	59.13	-0.09							1.0
RCY	SZ	13	111	EP		1411	0.76	-0.03	26						1.0
SHBL	BZ	21	171	EP		1411	2.16	-0.01							1.0
SHBL	BN	21	171	ES		1411	4.74	0.04							1.0
DQRL	SZ	23	326	EP		1411	2.50	0.08							1.0
DQRL	SN	23	326	ES		1411	5.15	0.01							1.0

August 6 2013 Hour: 14:54 47.0 Agency: REL Regional  
EMSC OT=14:54:47.0 36.37N 35.67E 10Km M=3.7 CENTRAL TURKEY

STAT	CO	DIST	AZI	PHASE	P	HRMN	SECON	TRES	CODA	AMPL	PERI	BAZ	ARES	VELO	WT
HWQ	SZ			EP		1455	23.18								
BHL	BZ			EP		1455	27.66								
DQRL	SZ			EP		1455	31.56								
RCY	SZ			EP		1455	34.98								
SHBL	BZ			EP		1455	36.31								

August 6 2013 Hour: 15:33 36.6 Lat: 33.80N Lon: 35.79E Depth: 13 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	314	EP		1533	40.20	-0.00	39						1.0
DQRL	SZ	23	243	EP		1533	40.89	-0.02							1.0
DQRL	SN	23	243	ES		1533	44.10	0.01							1.0
RCY	SZ	34	172	EP		1533	42.54	0.01							1.0
RCY	SN	34	172	ES		1533	46.88	-0.01							1.0
HWQ	SZ	55	15	EP		1533	45.84	0.01							1.0

August 6 2013 Hour: 20:10 48.9 Lat: 33.78N Lon: 35.77E Depth: 4 Agency: REL Local  
Magnitudes: 3.0MC 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		2010	51.81	-0.02	59						1.0
DQRL	SZ	20	245	EP		2010	52.30	0.00							1.0
DQRL	SN	20	245	ES		2010	54.83	0.04							1.0
QRWL	SZ	27	197	EP		2010	53.30	-0.09							1.0
RCY	SZ	32	169	EP		2010	54.22	0.00							1.0
RCY	SN	32	169	ES		2010	58.17	0.03							1.0

SHBL	BZ	48	183	EP	2010	56.80	0.05										1.0
SHBL	BN	48	183	ES	2011	2.48	-0.06										1.0
HWQ	SZ	57	17	EP	2010	58.24	0.01										1.0

**August 7 2013 Hour: 7:33 36.5 Lat: 33.35N Lon: 35.58E Depth: 13 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
SHBL	BZ	15	90	EP		733	39.94	0.01							1.0
SHBL	BN	15	90	ES		733	42.50	0.01							1.0
QRWL	SZ	24	23	EP		733	40.96	-0.05							1.0
RCY	SZ	29	55	EP		733	41.70	-0.02	30						1.0
RCY	SN	29	55	ES		733	45.61	0.01							1.0
DQRL	SZ	40	358	EP		733	43.34	0.04							1.0

**August 7 2013 Hour: 7:58 3.1 Lat: 33.79N Lon: 35.76E Depth: 8 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	16	323	EP		758	6.10	-0.02	35						1.0
BHL	BN	16	323	ES		758	8.34	-0.00							1.0
DQRL	SZ	20	241	EP		758	6.73	0.04							1.0
DQRL	SN	20	241	ES		758	9.32	-0.01							1.0
RCY	SZ	34	167	EP		758	8.71	-0.06							1.0
RCY	SN	34	167	ES		758	12.99	0.03							1.0
HWQ	SZ	57	18	EP		758	12.44	0.02							1.0

**August 7 2013 Hour: 8:55 45.4 Lat: 33.04N Lon: 35.63E Depth: 14 Agency: REL Local**  
**Magnitudes: 2.7MC REL Rms: 0.0 secs**

**NORTH GALILEE**

STAT	CO	DIST	AZI	PHASE	P	HRMN	SECON	TRES	CODA	AMPL	PERI	BAZ	ARES	VELO	WT
SHBL	BZ	36	17	EP		855	51.68	-0.00							1.0
SHBL	BN	36	17	ES		855	56.34	-0.00							1.0
RCY	SZ	54	21	EP		855	54.38	0.01	39						1.0
RCY	SN	54	21	ES		856	1.03	0.00							1.0
QRWL	SZ	57	5	EP		855	54.66	-0.03							1.0
QRWL	SN	57	5	ES		856	1.57	-0.00							1.0
DQRL	SZ	74	356	EP		855	57.30	0.03							1.0

**August 7 2013 Hour: 11:48 42.3 Lat: 33.92N Lon: 35.88E Depth: 10 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	21	266	EP		1148	46.25	0.06	30						1.0
BHL	BN	21	266	ES		1148	49.05	-0.03							1.0
DQRL	SZ	37	231	EP		1148	48.53	-0.06							1.0
DQRL	SN	37	231	ES		1148	53.29	0.03							1.0
RCY	SZ	47	185	EP		1148	50.11	0.00							1.0

**August 8 2013 Hour: 8:25 38.3 Lat: 34.21N Lon: 34.52E Depth: 15 Agency: REL Local**  
**Magnitudes: 3.3MC REL Rms: 0.1 secs**

**OFFSHORE CENTRAL LEBANON**

STAT	CO	DIST	AZI	PHASE	P	HRMN	SECON	TRES	CODA	AMPL	PERI	BAZ	ARES	VELO	WT
BHL	BZ	110	108	EP		825	55.47	-0.04	87						1.0
DQRL	SZ	112	120	EP		825	55.86	0.05							1.0
DQRL	SN	112	120	ES		826	8.95	0.21							1.0
QRWL	SZ	130	124	EP		825	58.50	0.01							1.0
HWQ	SZ	131	87	EP		825	58.61	-0.05							1.0
HWQ	SE	131	87	ES		826	13.71	0.02							1.0
RCY	SZ	145	123	EP		826	0.80	0.08							0.2
RCY	SN	145	123	ES		826	17.07	-0.21							1.0
SHBL	BZ	148	130	EP		826	1.05	-0.13							0.2



August 8 2013 Hour: 22:12 0.0

Agency: REL Local

STAT	CO	DIST	AZI	PHASE	P	HRMN	SECON	TRES	CODA	AMPL	PERI	BAZ	ARES	VELO	WT
DQRL	SZ			EP		2213	23.27								
SHBL	BZ			EP		2213	17.24								

August 10 2013 Hour: 14:36 15.1

Lat: 33.78N

Lon: 35.78E

Depth: 1

Agency: REL Local

Magnitudes: 3.0MC 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	18	319	EP		1436	17.96	0.00	60						1.0
BHL	BN	18	319	ES		1436	20.06	-0.03							1.0
DQRL	SZ	21	246	EP		1436	18.53	0.01							1.0
DQRL	SN	21	246	ES		1436	21.12	0.06							1.0
BEYL	BZ	28	290	EP		1436	19.55	-0.08							1.0
RCY	SZ	32	171	EP		1436	20.23	-0.08							1.0
HWQ	SZ	57	16	EP		1436	24.35	0.07							1.0

August 11 2013 Hour: 8:1 38.6

Lat: 33.67N

Lon: 35.12E

Depth: 0

Agency: REL Local

Magnitudes: 2.9MC REL

Rms: 0.1 secs

OFFSHORE SOUTH LEBANON

STAT	CO	DIST	AZI	PHASE	P	HRMN	SECON	TRES	CODA	AMPL	PERI	BAZ	ARES	VELO	WT
BEYL	BZ	41	57	EP		8	1	45.32	-0.00						1.0
DQRL	SZ	42	84	EP		8	1	45.48	0.06	48					1.0
DQRL	SN	42	84	ES		8	1	50.45	0.01						1.0
QRWL	SZ	54	104	EP		8	1	47.33	-0.00						1.0
QRWL	SN	54	104	ES		8	1	53.76	-0.00						1.0
BHL	BZ	56	62	EP		8	1	47.56	-0.13						1.0
RCY	SZ	69	106	EP		8	1	49.79	-0.00						1.0
HWQ	SZ	102	48	EP		8	1	55.20	0.08						1.0

August 11 2013 Hour: 10:33 59.0

Agency: REL Distant

EMSC OT=10:33:59.0 29.20S 178.09W 220Km M=5.2 KERMADEC ISLANDS

STAT	CO	DIST	AZI	PHASE	P	HRMN	SECON	TRES	CODA	AMPL	PERI	BAZ	ARES	VELO	WT
BHL	BZ			EP		1053	26.46								
QRWL	SZ			EP		1053	26.75								

August 11 2013 Hour: 11:15 45.8

Lat: 33.47N

Lon: 35.69E

Depth: 1

Agency: REL Local

Magnitudes: 3.0MC REL

Rms: 0.1 secs

MOUNT HERMON REGION

STAT	CO	DIST	AZI	PHASE	P	HRMN	SECON	TRES	CODA	AMPL	PERI	BAZ	ARES	VELO	WT
QRWL	SZ	8	354	EP		1115	47.17	-0.07							1.0
RCY	SZ	14	79	EP		1115	48.00	-0.10							1.0
RCY	SN	14	79	ES		1115	49.91	0.13							1.0
SHBL	BZ	15	160	EP		1115	48.17	-0.09							1.0
SHBL	BN	15	160	ES		1115	50.05	-0.01							1.0
DQRL	SZ	28	337	EP		1115	50.42	0.04	61						1.0
DQRL	SN	28	337	ES		1115	53.79	0.03							1.0
BHL	BZ	48	356	EP		1115	53.52	-0.05							1.0
BHL	BN	48	356	ES		1115	59.35	0.05							1.0
HWQ	SZ	92	15	EP		1116	0.67	-0.06							1.0

August 11 2013 Hour: 17:23 21.0

Agency: REL Regional

EMSC OT=17:23:21.0 33.76N 27.72E 60Km M=4.4 EASTERN MED SEA

STAT	CO	DIST	AZI	PHASE	P	HRMN	SECON	TRES	CODA	AMPL	PERI	BAZ	ARES	VELO	WT
DQRL	SZ			EP		1724	53.09								
BHL	BZ			EP		1724	54.14								
SHBL	BZ			EP		1724	55.99								
RCY	SZ			EP		1724	56.73								
HWQ	SZ			EP		1724	58.61								

August 11 2013 Hour: 21: 9 38.3 Lat: 34.04N Lon: 35.77E Depth: 0 Agency: REL Local  
Magnitudes: 2.6MC REL Rms: 0.0 secs

**KESROUANE**

STAT	CO	DIST	AZI	PHASE	P	HRMN	SECON	TRES	CODA	AMPL	PERI	BAZ	ARES	VELO	WT
BHL	BZ	19	216	EP		21	9	41.31	0.00	32					1.0
HWQ	SZ	31	31	EP		21	9	43.25	-0.03						1.0
HWQ	SE	31	31	ES		21	9	46.99	0.02						1.0
DQRL	SZ	42	207	EP		21	9	45.04	0.04						1.0
DQRL	SN	42	207	ES		21	9	49.93	-0.03						1.0
RCY	SZ	61	174	EP		21	9	48.03	-0.04						1.0
SHBL	BZ	77	182	EP		21	9	50.73	0.05						1.0
SHBL	BN	77	182	ES		21	9	59.84	-0.00						1.0

August 11 2013 Hour: 21:23 45.0 Agency: REL Distant  
EMSC OT=21:23:45.0 30.14N 98.03E 30Km M=5.7 EASTERN XIZANG

STAT	CO	DIST	AZI	PHASE	P	HRMN	SECON	TRES	CODA	AMPL	PERI	BAZ	ARES	VELO	WT
BHL	BZ			EP		2132	53.80								
SHBL	BZ			EP		2132	54.88								

August 12 2013 Hour: 0:53 44.0 Agency: REL Distant  
EMSC OT=00:53:44.0 07.30S 129.94E 110Km M=6.1 INDONESIA

STAT	CO	DIST	AZI	PHASE	P	HRMN	SECON	TRES	CODA	AMPL	PERI	BAZ	ARES	VELO	WT
BHL	BZ			EP		1	7	7.04							
SHBL	BZ			EP		1	7	6.99							

August 12 2013 Hour: 4:16 48.0 Agency: REL Distant  
EMSC OT=04:16:48.0 30.66S 179.58W 348Km M=6.1 KERMADEC ISLANDS

STAT	CO	DIST	AZI	PHASE	P	HRMN	SECON	TRES	CODA	AMPL	PERI	BAZ	ARES	VELO	WT
BHL	BZ			EP		435	59.24								
SHBL	BZ			EP		435	59.24								

August 12 2013 Hour: 7:12 17.6 Lat: 33.35N Lon: 35.60E Depth: 14 Agency: REL Local  
Magnitudes: 2.6MC REL Rms: 0.0 secs

**MOUNT HERMON REGION**

STAT	CO	DIST	AZI	PHASE	P	HRMN	SECON	TRES	CODA	AMPL	PERI	BAZ	ARES	VELO	WT
SHBL	BZ	14	91	EP		712	20.92	-0.03							1.0
SHBL	BN	14	91	ES		712	23.49	0.03							1.0
QRWL	SZ	23	20	EP		712	21.98	-0.07							1.0
RCY	SZ	28	54	EP		712	22.69	0.02	33						1.0
RCY	SE	28	54	ES		712	26.45	-0.01							1.0
DQRL	SZ	40	356	EP		712	24.42	0.06							1.0
DQRL	SN	40	356	ES		712	29.40	0.00							1.0

August 12 2013 Hour: 22:17 8.9 Lat: 33.89N Lon: 35.85E Depth: 2 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	18	275	EP		2217	11.90	-0.04	38						1.0
BHL	BN	18	275	ES		2217	14.17	0.01							1.0
DQRL	SZ	33	232	EP		2217	14.33	0.02							1.0
QRWL	SZ	41	202	EP		2217	15.64	0.05							1.0
RCY	SZ	44	182	EP		2217	15.96	-0.05							1.0
RCY	SN	44	182	ES		2217	21.28	0.02							1.0
HWQ	SZ	44	11	EP		2217	16.04	0.02							1.0
SHBL	BZ	61	189	EP		2217	18.76	-0.03							1.0

August 13 2013 Hour: 8:10 52.2 Lat: 33.39N Lon: 35.65E Depth: 0 Agency: REL Local  
Magnitudes: 2.5MC REL Rms: 0.0 secs

**MOUNT HERMON REGION**

STAT	CO	DIST	AZI	PHASE	P	HRMN	SECON	TRES	CODA	AMPL	PERI	BAZ	ARES	VELO	WT
SHBL	BZ	10	118	EP		810	53.88	-0.04							1.0
SHBL	BE	10	118	ES		810	55.19	0.02							1.0
QRWL	SZ	18	11	EP		810	55.00	-0.04							1.0

QRWL	SE	18	11	ES		810	57.14	0.01								1.0
RCY	SZ	21	57	EP		810	55.65	0.02	28							1.0
DQRL	SZ	35	349	EP		810	58.00	0.07								1.0
DQRL	SN	35	349	ES		811	2.11	-0.04								1.0

**August 13 2013 Hour: 11:16 43.0 Lat: 33.54N Lon: 35.71E Depth: 0 Agency: REL Local**  
**Magnitudes: 2.8MC REL Rms: 0.0 secs**

**CENTRAL BEKAA**

STAT	CO	DIST	AZI	PHASE	P	HRMN	SECON	TRES	CODA	AMPL	PERI	BAZ	ARES	VELO	WT
QRWL	SZ	3	295	EP		1116	43.44	-0.04							1.0
RCY	SZ	12	111	EP		1116	44.98	0.01	45						1.0
RCY	SN	12	111	ES		1116	46.43	-0.02							1.0
SHBL	BZ	21	172	EP		1116	46.37	-0.00							1.0
SHBL	BN	21	172	ES		1116	48.90	0.01							1.0
DQRL	SZ	23	325	EP		1116	46.70	0.03							1.0

**August 13 2013 Hour: 16:1 14.8 Lat: 33.79N Lon: 35.79E Depth: 3 Agency: REL Local**  
**Magnitudes: 2.3MC 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	316	EP		16	1	17.67	-0.02	21					1.0
BHL	BN	18	316	ES		16	1	19.86	0.01						1.0
DQRL	SZ	22	245	EP		16	1	18.42	0.01						1.0
RCY	SZ	33	172	EP		16	1	20.14	0.00						1.0
RCY	SN	33	172	ES		16	1	24.11	-0.00						1.0
HWQ	SZ	56	15	EP		16	1	23.84	0.01						1.0

**August 15 2013 Hour: 12:41 43.1 Lat: 33.38N Lon: 35.64E Depth: 3 Agency: REL Local**  
**Magnitudes: 2.5MC REL Rms: 0.0 secs**

**MOUNT HERMON REGION**

STAT	CO	DIST	AZI	PHASE	P	HRMN	SECON	TRES	CODA	AMPL	PERI	BAZ	ARES	VELO	WT
SHBL	BZ	11	111	EP		1241	44.98	0.01							1.0
SHBL	BN	11	111	ES		1241	46.36	-0.00							1.0
QRWL	SZ	19	13	EP		1241	46.17	-0.03							1.0
RCY	SZ	22	55	EP		1241	46.76	-0.01	29						1.0
RCY	SN	22	55	ES		1241	49.52	0.01							1.0
DQRL	SZ	36	350	EP		1241	49.02	0.02							1.0
DQRL	SN	36	350	ES		1241	53.39	0.00							1.0

**August 15 2013 Hour: 15:1 22.5 Lat: 33.45N Lon: 35.65E Depth: 0 Agency: REL Local**  
**Magnitudes: 2.6MC REL Rms: 0.0 secs**

**MOUNT HERMON REGION**

STAT	CO	DIST	AZI	PHASE	P	HRMN	SECON	TRES	CODA	AMPL	PERI	BAZ	ARES	VELO	WT
QRWL	SZ	11	16	EP		15	1	24.24	-0.07						1.0
QRWL	SN	11	16	ES		15	1	25.66	0.01						1.0
SHBL	BZ	14	142	EP		15	1	24.82	0.00						1.0
SHBL	BN	14	142	ES		15	1	26.53	-0.00						1.0
RCY	SZ	18	73	EP		15	1	25.44	0.03	34					1.0
DQRL	SZ	29	345	EP		15	1	27.25	0.03						1.0
DQRL	SN	29	345	ES		15	1	30.72	0.00						1.0

**August 16 2013 Hour: 2:31 7.0 Agency: REL Distant**  
**EMSC OT=02:31:07.0 41.72S 174.13E 2Km M=6.5 COOK STRAIT**

STAT	CO	DIST	AZI	PHASE	P	HRMN	SECON	TRES	CODA	AMPL	PERI	BAZ	ARES	VELO	WT
QRWL	SZ			EP		250	48.49								
BHL	BZ			EP		250	48.68								
SHBL	BZ			EP		250	49.03								

August 16 2013 Hour: 5:31 18.0

Agency: REL Distant

EMSC OT=05:31:18.0 41.66S 174.06E 21Km M=5.8 COOK STRAIT

STAT	CO	DIST	AZI	PHASE	P	HRMN	SECON	TRES	CODA	AMPL	PERI	BAZ	ARES	VELO	WT
SHBL	BZ			EP		550	55.39								
BHL	BZ			EP		550	55.15								

August 16 2013 Hour: 9:40 49.6

Lat: 33.45N

Lon: 35.63E

Depth: 0

Agency: REL Local

Magnitudes: 2.7MC REL

Rms: 0.0 secs

MOUNT HERMON REGION

STAT	CO	DIST	AZI	PHASE	P	HRMN	SECON	TRES	CODA	AMPL	PERI	BAZ	ARES	VELO	WT
QRWL	SZ	12	25	EP		940	51.41	-0.10							1.0
SHBL	BZ	16	137	EP		940	52.13	0.01							1.0
SHBL	BN	16	137	ES		940	53.97	-0.02							1.0
RCY	SZ	20	75	EP		940	52.86	0.05	42						1.0
RCY	SN	20	75	ES		940	55.20	0.01							1.0
DQRL	SZ	29	349	EP		940	54.28	0.03							1.0
DQRL	SN	29	349	ES		940	57.71	0.02							1.0

August 16 2013 Hour: 15: 9 15.1

Lat: 33.41N

Lon: 35.70E

Depth: 21

Agency: REL Local

Magnitudes: 2.6MC REL

Rms: 0.0 secs

MOUNT HERMON REGION

STAT	CO	DIST	AZI	PHASE	P	HRMN	SECON	TRES	CODA	AMPL	PERI	BAZ	ARES	VELO	WT
SHBL	BZ	8	148	EP		15	9	18.86	-0.02						1.0
SHBL	BN	8	148	ES		15	9	21.70	0.01						1.0
RCY	SZ	16	52	EP		15	9	19.47	0.02	34					1.0
RCY	SN	16	52	ES		15	9	22.69	-0.01						1.0
DQRL	SZ	35	340	EP		15	9	21.58	-0.00						1.0

August 16 2013 Hour: 16:48 28.3

Lat: 33.79N

Lon: 35.78E

Depth: 5

Agency: REL Local

Magnitudes: 2.2MC 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	318	EP		1648	31.30	-0.05	20						1.0
BHL	BN	18	318	ES		1648	33.62	0.02							1.0
DQRL	SZ	22	246	EP		1648	31.96	0.01							1.0
RCY	SZ	33	171	EP		1648	33.67	0.01							1.0
RCY	SN	33	171	ES		1648	37.62	-0.01							1.0
HWQ	SZ	57	15	EP		1648	37.52	0.01							1.0

August 17 2013 Hour: 7:39 4.6

Lat: 33.34N

Lon: 35.60E

Depth: 6

Agency: REL Local

Magnitudes: 2.8MC REL

Rms: 0.1 secs

SOUTH LEBANON

STAT	CO	DIST	AZI	PHASE	P	HRMN	SECON	TRES	CODA	AMPL	PERI	BAZ	ARES	VELO	WT
QRWL	SZ	25	19	EP		739	8.71	-0.05							1.0
QRWL	SN	25	19	ES		739	11.70	-0.11							1.0
RCY	SZ	28	52	EP		739	9.40	0.04	44						1.0
RCY	SN	28	52	ES		739	12.91	0.04							1.0
DQRL	SZ	41	357	EP		739	11.31	-0.01							1.0
DQRL	SN	41	357	ES		739	16.38	0.10							1.0
HWQ	SZ	109	17	EP		739	22.21	-0.02							1.0

August 17 2013 Hour: 10:21 27.2

Lat: 33.88N

Lon: 35.84E

Depth: 7

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	277	EP		1021	30.35	-0.01	43						1.0
BHL	BN	17	277	ES		1021	32.69	0.00							1.0
DQRL	SZ	32	232	EP		1021	32.58	0.01							1.0
RCY	SZ	43	181	EP		1021	34.31	-0.02							1.0
RCY	SE	43	181	ES		1021	39.60	0.01							1.0
HWQ	SZ	45	13	EP		1021	34.56	0.01							1.0

**August 17 2013 Hour: 16:32 31.0 Agency: REL Distant**  
**EMSC OT=16:32:31.0 34.92S 54.00E 10Km M=6.1 INDIAN RIDGE**  
 STAT CO DIST AZI PHASE P HRMN SECON TRES CODA AMPL PERI BAZ ARES VELO WT  
 BHL BZ EP 1643 47.80  
 SHBL BZ EP 1643 44.59

**August 19 2013 Hour: 15:33 52.3 Lat: 33.79N Lon: 35.79E Depth: 3 Agency: REL Local**  
**Magnitudes: 2.7MC 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 18 317 EP 1533 55.15-0.14 41 1.0  
 DQRL SZ 22 246 EP 1533 55.91-0.01 1.0  
 DQRL SN 22 246 ES 1533 58.68 0.09 1.0  
 QRWL SZ 28 200 EP 1533 56.76-0.14 1.0  
 QRWL SN 28 200 ES 1534 0.35 0.05 1.0  
 RCY SZ 32 172 EP 1533 57.53-0.07 1.0  
 SHBL BZ 49 185 EP 1534 0.21 0.01 1.0  
 SHBL BN 49 185 ES 1534 6.10 0.06 1.0  
 HWQ SZ 57 15 EP 1534 1.61 0.15 1.0

**August 19 2013 Hour: 15:42 1.4 Lat: 33.78N Lon: 35.79E Depth: 1 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 18 318 EP 1542 4.31-0.09 32 1.0  
 BHL BN 18 318 ES 1542 6.61 0.01 1.0  
 DQRL SZ 22 247 EP 1542 5.00 0.03 1.0  
 DQRL SN 22 247 ES 1542 7.61 0.02 1.0  
 RCY SZ 32 172 EP 1542 6.60-0.01 1.0  
 RCY SN 32 172 ES 1542 10.44 0.00 1.0  
 HWQ SZ 57 15 EP 1542 10.67 0.05 1.0

**August 19 2013 Hour: 16:14 45.0 Lat: 33.45N Lon: 35.64E Depth: 0 Agency: REL Local**  
**Magnitudes: 2.6MC REL Rms: 0.0 secs**  
**MOUNT HERMON REGION**  
 STAT CO DIST AZI PHASE P HRMN SECON TRES CODA AMPL PERI BAZ ARES VELO WT  
 QRWL SZ 11 22 EP 1614 46.84-0.02 1.0  
 QRWL SN 11 22 ES 1614 48.20-0.01 1.0  
 SHBL BZ 15 139 EP 1614 47.52-0.01 1.0  
 SHBL BE 15 139 ES 1614 49.37-0.00 1.0  
 RCY SZ 19 76 EP 1614 48.15 0.02 32 1.0  
 DQRL SZ 29 348 EP 1614 49.67 0.01 1.0

**August 19 2013 Hour: 22:28 31.6 Lat: 33.48N Lon: 35.63E Depth: 1 Agency: REL Local**  
**Magnitudes: 2.6MC REL Rms: 0.0 secs**  
**SAIDA REGION**  
 STAT CO DIST AZI PHASE P HRMN SECON TRES CODA AMPL PERI BAZ ARES VELO WT  
 QRWL SZ 8 34 EP 2228 32.93-0.05 1.0  
 QRWL SN 8 34 ES 2228 34.09 0.06 1.0  
 SHBL BZ 18 145 EP 2228 34.56-0.01 1.0  
 RCY SZ 19 86 EP 2228 34.71 0.03 36 1.0  
 RCY SN 19 86 ES 2228 36.94-0.04 1.0  
 DQRL SZ 25 347 EP 2228 35.69 0.05 1.0  
 DQRL SE 25 347 ES 2228 38.59-0.07 1.0  
 BHL BZ 47 3 EP 2228 39.12 0.03 1.0

**August 20 2013 Hour: 8:21 21.2 Lat: 33.32N Lon: 35.65E Depth: 17 Agency: REL Local**  
**Magnitudes: 2.6MC REL Rms: 0.0 secs**  
**MOUNT HERMON REGION**  
 STAT CO DIST AZI PHASE P HRMN SECON TRES CODA AMPL PERI BAZ ARES VELO WT  
 SHBL BZ 9 68 EP 821 24.56-0.00 1.0  
 SHBL BN 9 68 ES 821 27.06 0.00 1.0  
 RCY SZ 26 40 EP 821 26.31 0.00 34 1.0

DQRL SZ 44 350 EP 821 28.70 0.00 1.0  
 DQRL SN 44 350 ES 821 34.25-0.00 1.0

**August 21 2013 Hour: 8:25 5.0 Agency: REL Distant**  
**EMSC OT=08:25:05.0 47.91N 152.79E 149Km M=5.2 KURIL ISLANDS**  
 STAT CO DIST AZI PHASE P HRMN SECON TRES CODA AMPL PERI BAZ ARES VELO WT  
 BHL BZ EP 837 3.79  
 RCY SZ EP 837 5.38  
 QRWL SZ EP 837 5.46  
 SHBL BZ EP 837 6.33

**August 21 2013 Hour: 15:52 34.8 Lat: 33.54N Lon: 35.71E Depth: 0 Agency: REL Local**  
**Magnitudes: 2.5MC REL Rms: 0.0 secs**  
**CENTRAL BEKAA**  
 STAT CO DIST AZI PHASE P HRMN SECON TRES CODA AMPL PERI BAZ ARES VELO WT  
 QRWL SZ 3 289 EP 1552 35.16-0.09 1.0  
 RCY SZ 13 112 EP 1552 36.79-0.04 31 1.0  
 SHBL BZ 21 172 EP 1552 38.30 0.05 1.0  
 SHBL BN 21 172 ES 1552 40.82 0.01 1.0  
 DQRL SZ 23 325 EP 1552 38.44 0.02 1.0  
 DQRL SN 23 325 ES 1552 41.15 0.04 1.0

**August 22 2013 Hour: 22:25 5.2 Lat: 33.71N Lon: 35.85E Depth: 5 Agency: REL Local**  
**Magnitudes: 2.3MC 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 24 183 EP 2225 9.23 0.01 23 1.0  
 RCY SN 24 183 ES 2225 12.17-0.01 1.0  
 DQRL SZ 26 269 EP 2225 9.47-0.02 1.0  
 DQRL SN 26 269 ES 2225 12.64 0.01 1.0  
 BHL BZ 28 320 EP 2225 9.83 0.00 1.0  
 SHBL BZ 41 193 EP 2225 12.00 0.00 1.0

**August 24 2013 Hour: 8:59 0.0 Agency: REL Distant**  
**EMSC OT=08:40:28.0 22.63S 175.22W 10Km M=5.7 TONGA REGION**  
 STAT CO DIST AZI PHASE P HRMN SECON TRES CODA AMPL PERI BAZ ARES VELO WT  
 BHL BZ EP 9 0 21.60  
 SHBL BZ EP 9 0 21.07

**August 24 2013 Hour: 12:33 13.0 Lat: 33.78N Lon: 35.77E Depth: 1 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 17 322 EP 1233 15.69-0.03 37 1.0  
 BHL BN 17 322 ES 1233 17.77-0.01 1.0  
 DQRL SZ 20 245 EP 1233 16.32 0.07 1.0  
 DQRL SN 20 245 ES 1233 18.70 0.01 1.0  
 QRWL SZ 27 197 EP 1233 17.29-0.10 1.0  
 RCY SZ 33 169 EP 1233 18.25 0.03 1.0  
 RCY SN 33 169 ES 1233 22.12 0.01 1.0  
 HWQ SZ 57 17 EP 1233 22.21 0.02 1.0

**August 25 2013 Hour: 9:44 15.0 Lat: 33.79N Lon: 35.78E Depth: 4 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 17 317 EP 944 17.98 0.03 32 1.0  
 DQRL SZ 22 244 EP 944 18.68 0.03 1.0  
 DQRL SE 22 244 ES 944 21.32-0.03 1.0  
 RCY SZ 33 171 EP 944 20.44-0.00 1.0  
 RCY SE 33 171 ES 944 24.46 0.00 1.0  
 HWQ SZ 56 16 EP 944 24.09-0.02 1.0

August 26 2013 Hour: 7:27 1.6 Lat: 33.72N Lon: 35.72E Depth: 14 Agency: REL Local  
Magnitudes: 2.4MC REL Rms: 0.0 secs

BEIRUT REGION

STAT	CO	DIST	AZI	PHASE	P	HRMN	SECON	TRES	CODA	AMPL	PERI	BAZ	ARES	VELO	WT
DQRL	SZ	14	264	EP		727	4.94	-0.00							1.0
DQRL	SN	14	264	ES		727	7.40	0.00							1.0
QRWL	SZ	19	190	EP		727	5.59	0.01	24						1.0
QRWL	SN	19	190	ES		727	8.51	-0.01							1.0
BHL	BZ	21	344	EP		727	5.87	0.00							1.0

August 26 2013 Hour: 10: 9 38.5 Lat: 33.39N Lon: 35.65E Depth: 1 Agency: REL Local  
Magnitudes: 2.6MC REL Rms: 0.0 secs

MOUNT HERMON REGION

STAT	CO	DIST	AZI	PHASE	P	HRMN	SECON	TRES	CODA	AMPL	PERI	BAZ	ARES	VELO	WT
SHBL	BZ	10	118	EP		10 9	40.27	0.01							1.0
QRWL	SZ	18	11	EP		10 9	41.34	-0.06							1.0
RCY	SZ	21	57	EP		10 9	41.99	0.01	34						1.0
RCY	SN	21	57	ES		10 9	44.52	0.00							1.0
DQRL	SZ	35	349	EP		10 9	44.29	0.02							1.0
DQRL	SN	35	349	ES		10 9	48.53	0.02							1.0

August 26 2013 Hour: 15:25 28.6 Lat: 33.47N Lon: 35.69E Depth: 4 Agency: REL Local  
Magnitudes: 3.2MC REL Rms: 0.0 secs

MOUNT HERMON REGION

STAT	CO	DIST	AZI	PHASE	P	HRMN	SECON	TRES	CODA	AMPL	PERI	BAZ	ARES	VELO	WT
QRWL	SZ	8	353	EP		1525	30.17	-0.07							1.0
RCY	SZ	13	79	EP		1525	31.04	0.04	77						1.0
RCY	SN	13	79	ES		1525	32.75	-0.02							1.0
SHBL	BZ	15	161	EP		1525	31.16	-0.02							1.0
SHBL	BN	15	161	ES		1525	33.12	0.04							1.0
DQRL	SZ	28	336	EP		1525	33.31	0.05							1.0
DQRL	SN	28	336	ES		1525	36.71	0.01							1.0
BHL	BZ	48	356	EP		1525	36.46	0.06							1.0
HWQ	SZ	92	15	EP		1525	43.47	-0.06							1.0

August 26 2013 Hour: 17:16 20.6 Lat: 33.81N Lon: 35.78E Depth: 14 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	16	314	EP		1716	24.12	-0.02	29						1.0
DQRL	SZ	22	239	EP		1716	24.90	-0.04							1.0
DQRL	SN	22	239	ES		1716	28.21	0.04							1.0
RCY	SZ	35	171	EP		1716	26.75	-0.01							1.0
RCY	SN	35	171	ES		1716	31.33	0.01							1.0
HWQ	SZ	55	17	EP		1716	29.64	0.03							1.0

August 26 2013 Hour: 21: 7 41.7 Lat: 34.13N Lon: 36.28E Depth: 21 Agency: REL Local  
Magnitudes: 3.1MC 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	SZ	35	298	EP		21 7	48.24	0.01	68						1.0
HWQ	SE	35	298	ES		21 7	53.08	-0.00							1.0
BHL	BZ	63	247	EP		21 7	52.04	-0.05							1.0
DQRL	SZ	81	235	EP		21 7	54.73	0.08							1.0
DQRL	SN	81	235	ES		21 8	4.23	-0.03							1.0
RCY	SZ	81	211	EP		21 7	54.67	-0.08							1.0
RCY	SN	81	211	ES		21 8	4.47	0.03							1.0
QRWL	SZ	85	221	EP		21 7	55.32	0.06							1.0
SHBL	BZ	100	210	EP		21 7	57.43	-0.02							1.0



August 27 2013 Hour: 8:27 3.8 Lat: 33.39N Lon: 35.65E Depth: 1 Agency: REL Local  
Magnitudes: 2.4MC REL Rms: 0.0 secs

**MOUNT HERMON REGION**

STAT	CO	DIST	AZI	PHASE	P	HRMN	SECON	TRES	CODA	AMPL	PERI	BAZ	ARES	VELO	WT
SHBL	BZ	10	116	EP		827	5.47	-0.03							1.0
SHBL	BN	10	116	ES		827	6.78	0.02							1.0
QRWL	SZ	18	11	EP		827	6.64	-0.06							1.0
QRWL	SE	18	11	ES		827	8.86	0.01							1.0
RCY	SZ	21	56	EP		827	7.27	0.01	26						1.0
DQRL	SZ	36	349	EP		827	9.63	0.06							1.0
DQRL	SN	36	349	ES		827	13.83	-0.02							1.0

August 27 2013 Hour: 15: 9 37.4 Lat: 33.79N Lon: 35.78E Depth: 12 Agency: REL Local  
Magnitudes: 2.4MC 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	317	EP		15 9	41.02	-0.02	27						1.0
DQRL	SZ	22	245	EP		15 9	41.57	-0.06							1.0
DQRL	SN	22	245	ES		15 9	44.77	0.05							1.0
RCY	SZ	33	172	EP		15 9	43.20	-0.04							1.0
RCY	SN	33	172	ES		15 9	47.55	0.03							1.0
HWQ	SZ	56	15	EP		15 9	46.83	0.04							1.0

August 27 2013 Hour: 15:50 49.6 Lat: 33.79N Lon: 35.80E Depth: 4 Agency: REL Local  
Magnitudes: 2.4MC 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	314	EP		1550	52.61	-0.06	25						1.0
DQRL	SZ	23	246	EP		1550	53.38	-0.04							1.0
DQRL	SN	23	246	ES		1550	56.30	0.06							1.0
RCY	SZ	33	174	EP		1550	54.97	-0.02							1.0
RCY	SN	33	174	ES		1550	58.97	0.00							1.0
HWQ	SZ	56	14	EP		1550	58.70	0.06							1.0

August 28 2013 Hour: 3:13 0.0 Agency: REL Distant

STAT	CO	DIST	AZI	PHASE	P	HRMN	SECON	TRES	CODA	AMPL	PERI	BAZ	ARES	VELO	WT
SHBL	BZ			EP		313	29.16								
BHL	BZ			EP		313	29.24								

August 28 2013 Hour: 12: 5 42.0 Lat: 33.54N Lon: 35.74E Depth: 6 Agency: REL Local  
Magnitudes: 2.5MC 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	10	119	EP		12 5	44.07	-0.01	30						1.0
RCY	SE	10	119	ES		12 5	45.63	0.01							1.0
SHBL	BZ	22	179	EP		12 5	45.68	0.00							1.0
DQRL	SZ	24	319	EP		12 5	46.04	0.01							1.0
DQRL	SN	24	319	ES		12 5	49.02	-0.01							1.0

August 29 2013 Hour: 11:29 55.1 Lat: 33.78N Lon: 35.77E Depth: 2 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	17	321	EP		1129	57.87	-0.02	36						1.0
DQRL	SZ	21	245	EP		1129	58.45	0.01							1.0
DQRL	SN	21	245	ES		1130	0.92	0.00							1.0
RCY	SZ	33	169	EP		1130	0.33	-0.03							1.0
RCY	SN	33	169	ES		1130	4.28	0.02							1.0
HWQ	SZ	57	16	EP		1130	4.33	0.02							1.0



August 29 2013 Hour: 20:19 14.5 Lat: 33.80N Lon: 35.73E Depth: 3 Agency: REL Local  
Magnitudes: 2.1MC 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	14	329	EP		2019	16.77	-0.02	18						1.0
BHL	BN	14	329	ES		2019	18.52	0.00							1.0
DQRL	SZ	18	236	EP		2019	17.44	-0.02							1.0
DQRL	SN	18	236	ES		2019	19.70	0.02							1.0
SHBL	BZ	50	179	EP		2019	22.55	0.01							1.0
SHBL	BN	50	179	ES		2019	28.51	-0.01							1.0
HWQ	SZ	57	20	EP		2019	23.67	0.01							1.0

August 30 2013 Hour: 16:25 0.0 Agency: REL Distant

EMSC OT=16:25:00.0 51.79N 175.24W 10Km M=7.0 ANDREANOF ISLANDS

STAT	CO	DIST	AZI	PHASE	P	HRMN	SECON	TRES	CODA	AMPL	PERI	BAZ	ARES	VELO	WT
BHL	BZ			EP		1638	1.15								
SHBL	BZ			EP		1638	1.94								

August 31 2013 Hour: 8:13 37.2 Lat: 33.30N Lon: 35.67E Depth: 20 Agency: REL Local  
Magnitudes: 2.5MC REL Rms: 0.1 secs

MOUNT HERMON REGION

STAT	CO	DIST	AZI	PHASE	P	HRMN	SECON	TRES	CODA	AMPL	PERI	BAZ	ARES	VELO	WT
SHBL	BZ	9	53	EP		813	40.80	-0.08							1.0
SHBL	BE	9	53	ES		813	43.64	0.06							1.0
RCY	SZ	27	36	EP		813	42.60	-0.03	31						1.0
DQRL	SZ	46	349	EP		813	45.20	0.08							1.0
DQRL	SE	46	349	ES		813	50.91	-0.05							1.0
HWQ	SZ	112	13	EP		813	54.70	0.02							1.0

August 31 2013 Hour: 11:1 3.9 Lat: 34.08N Lon: 36.18E Depth: 62 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	SZ	31	317	EP		11 1	13.87	0.08							1.0
HWQ	SN	31	317	ES		11 1	21.06	-0.05							1.0
BHL	BZ	52	249	EP		11 1	15.34	0.02							1.0
DQRL	SZ	70	234	EP		11 1	16.93	-0.02							1.0
RCY	SZ	72	206	EP		11 1	17.13	-0.08	44						1.0
RCY	SE	72	206	ES		11 1	27.12	0.05							1.0

August 31 2013 Hour: 14:19 7.3 Lat: 33.80N Lon: 35.80E Depth: 9 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	312	EP		1419	10.66	0.03	44						1.0
DQRL	SZ	23	245	EP		1419	11.33	-0.08							1.0
DQRL	SE	23	245	ES		1419	14.50	0.02							1.0
RCY	SZ	33	174	EP		1419	12.92	-0.03							1.0
RCY	SE	33	174	ES		1419	17.16	0.01							1.0
HWQ	SZ	55	14	EP		1419	16.33	-0.00							1.0

August 31 2013 Hour: 14:50 19.7 Lat: 33.45N Lon: 35.59E Depth: 9 Agency: REL Local  
Magnitudes: 2.4MC REL Rms: 0.0 secs

SAIDA REGION

STAT	CO	DIST	AZI	PHASE	P	HRMN	SECON	TRES	CODA	AMPL	PERI	BAZ	ARES	VELO	WT
QRWL	SZ	14	39	EP		1450	22.50	-0.02	25						1.0
QRWL	SN	14	39	ES		1450	24.55	-0.01							1.0
SHBL	BZ	18	128	EP		1450	23.20	0.02							1.0
SHBL	BN	18	128	ES		1450	25.72	-0.00							1.0
RCY	SZ	24	78	EP		1450	23.93	0.01							1.0
DQRL	SZ	28	357	EP		1450	24.56	-0.04							1.0
DQRL	SE	28	357	ES		1450	28.24	0.04							1.0



# Epicentral Map of Lebanon

## AUGUST 2013

