

Republic of Lebanon  
National Council for Scientific Research

# Provisional Seismological Bulletin

from the

## NATIONAL SEISMIC NETWORK

October

2011

Prepared by  
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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.

<b>P-wave velocity (km/sec)</b>	<b>depth to top of layer (km)</b>
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:

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

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 Vp/Vs 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\*(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.

**October 1 2011 Hour: 12:57 0.0** Agency: REL Local  
 STAT CO DIST AZI PHASE P HRMN SECON TRES CODA AMPL PERI BAZ ARES VELO WT  
 FKH SZ EP 1257 35.24  
 HWQ SZ EP 1257 41.11

**October 1 2011 Hour: 13:9 0.0** Agency: REL Local  
 STAT CO DIST AZI PHASE P HRMN SECON TRES CODA AMPL PERI BAZ ARES VELO WT  
 FKH SZ EP 1310 18.46  
 HWQ SZ EP 1310 22.10

**October 2 2011 Hour: 10:3 6.9** Lat: 33.79N Lon: 35.80E Depth: 8 Agency: REL Local  
**Magnitudes: 2.7MC REL**  
**BEIRUT REGION**

STAT	CO	DIST	AZI	PHASE	P	HRMN	SECON	TRES	CODA	AMPL	PERI	BAZ	ARES	VELO	WT
BHL	BZ	18	314	EP		10	3	10.22	0.05	39					1.0
DQRL	SZ	23	246	EP		10	3	10.91	0.02						1.0
DQRL	SN	23	246	ES		10	3	13.79	-0.04						1.0
RCY	SZ	33	174	EP		10	3	12.44	0.01						1.0
RCY	SE	33	174	ES		10	3	16.51	-0.00						1.0
HWQ	SZ	56	14	EP		10	3	15.98	-0.04						1.0

**October 2 2011 Hour: 12:31 58.7** Lat: 33.79N Lon: 35.78E Depth: 4 Agency: REL Local  
**Magnitudes: 3.0MC REL**

**BEIRUT REGION**

STAT	CO	DIST	AZI	PHASE	P	HRMN	SECON	TRES	CODA	AMPL	PERI	BAZ	ARES	VELO	WT
BHL	BZ	17	318	EP		1232		1.51-0.07	58						1.0
BHL	BN	17	318	ES		1232		3.73	0.04						1.0
DQRL	SZ	21	243	EP		1232		2.25	-0.02						1.0
DQRL	SE	21	243	ES		1232		4.89	-0.01						1.0
BEYL	BZ	28	289	EP		1232		3.28	0.04						1.0
RCY	SZ	33	170	EP		1232		4.20	0.04						1.0
RCY	SN	33	170	ES		1232		8.19	-0.00						1.0
HWQ	SZ	56	16	EP		1232		7.82	-0.01						1.0

**October 2 2011 Hour: 14:13 5.5** Lat: 33.79N Lon: 35.78E Depth: 0 Agency: REL Local  
**Magnitudes: 2.6MC REL**

**BEIRUT REGION**

STAT	CO	DIST	AZI	PHASE	P	HRMN	SECON	TRES	CODA	AMPL	PERI	BAZ	ARES	VELO	WT
BHL	BZ	17	317	EP		1413		8.29-0.01	36						1.0
DQRL	SZ	22	244	EP		1413		9.01	-0.02						1.0
DQRL	SN	22	244	ES		1413		11.66	0.02						1.0
RCY	SZ	33	171	EP		1413		10.84	0.01						1.0
RCY	SE	33	171	ES		1413		14.77	-0.01						1.0
HWQ	SZ	56	16	EP		1413		14.57	0.01						1.0

**October 2 2011 Hour: 15:10 35.7** Lat: 33.79N Lon: 35.78E Depth: 2 Agency: REL Local  
**Magnitudes: 2.6MC REL**

**BEIRUT REGION**

STAT	CO	DIST	AZI	PHASE	P	HRMN	SECON	TRES	CODA	AMPL	PERI	BAZ	ARES	VELO	WT
BHL	BZ	17	317	EP		1510		38.50	-0.01	34					1.0
DQRL	SZ	22	244	EP		1510		39.23	0.00						1.0
DQRL	SN	22	244	ES		1510		41.83	0.00						1.0
RCY	SZ	33	171	EP		1510		41.06	-0.02						1.0
RCY	SN	33	171	ES		1510		45.05	0.01						1.0
HWQ	SZ	56	16	EP		1510		44.80	0.01						1.0

**October 3 2011 Hour: 13:25 39.7** Lat: 33.78N Lon: 35.76E Depth: 3 Agency: REL Local  
**Magnitudes: 3.0MC REL**

**BEIRUT REGION**

STAT	CO	DIST	AZI	PHASE	P	HRMN	SECON	TRES	CODA	AMPL	PERI	BAZ	ARES	VELO	WT
BHL	BZ	17	323	EP		1325		42.46	-0.08	60					1.0
BHL	BN	17	323	ES		1325		44.61	0.00						1.0
DQRL	SZ	20	245	EP		1325		42.96	-0.04						1.0

DQRL	SN	20	245	ES	1325	45.47	0.06		1.0
BEYL	BZ	27	292	EP	1325	44.11	0.01		1.0
RCY	SZ	32	168	EP	1325	45.00	-0.02		1.0
RCY	SN	32	168	ES	1325	48.93	0.00		1.0
HWQ	SZ	58	17	EP	1325	49.12	0.07		1.0

**October 3 2011 Hour: 14:30 37.2 Lat: 33.89N Lon: 35.83E Depth: 8 Agency: REL Local Magnitudes: 2.7MC REL**  
**BEIRUT REGION**

STAT	CO	DIST	AZI	PHASE	P	HRMN	SECON	TRES	CODA	AMPL	PERI	BAZ	ARES	VELO	WT
BHL	BZ	17	275	EP		1430	40.31	-0.01	41						1.0
BHL	BN	17	275	ES		1430	42.65	0.01							1.0
DQRL	SZ	32	230	EP		1430	42.57	-0.00							1.0
DQRL	SN	32	230	ES		1430	46.56	-0.01							1.0
RCY	SZ	44	180	EP		1430	44.44	0.03							1.0
RCY	SN	44	180	ES		1430	49.76	-0.01							1.0
HWQ	SZ	44	13	EP		1430	44.47	-0.01							1.0

**October 3 2011 Hour: 16:45 32.1 Lat: 33.79N Lon: 35.78E Depth: 0 Agency: REL Local Magnitudes: 2.6MC REL**  
**BEIRUT REGION**

STAT	CO	DIST	AZI	PHASE	P	HRMN	SECON	TRES	CODA	AMPL	PERI	BAZ	ARES	VELO	WT
BHL	BZ	17	318	EP		1645	34.87	-0.00	33						1.0
BHL	BE	17	318	ES		1645	36.91	-0.03							1.0
DQRL	SZ	21	245	EP		1645	35.47	-0.05							1.0
DQRL	SN	21	245	ES		1645	38.13	0.06							1.0
RCY	SZ	33	171	EP		1645	37.32	-0.04							1.0
RCY	SN	33	171	ES		1645	41.27	0.01							1.0
HWQ	SZ	57	16	EP		1645	41.26	0.06							1.0

**October 4 2011 Hour: 1:26 58.0 Lat: 33.38N Lon: 35.61E Depth: 16 Agency: REL Local Magnitudes: 2.7MC REL**  
**MOUNT HERMON REGION**

STAT	CO	DIST	AZI	PHASE	P	HRMN	SECON	TRES	CODA	AMPL	PERI	BAZ	ARES	VELO	WT
RCY	SZ	25	58	EP		127	2.83	0.01							1.0
RCY	SE	25	58	ES		127	6.38	-0.01							1.0
DQRL	SZ	36	354	EP		127	4.37	-0.02							1.0
DQRL	SN	36	354	ES		127	9.16	0.03							1.0
BHL	BZ	58	4	EP		127	7.56	-0.03	38						1.0
BHL	BN	58	4	ES		127	14.67	-0.02							1.0
HWQ	SZ	104	17	EP		127	14.42	0.05							1.0

**October 4 2011 Hour: 9:34 9.2 Lat: 34.41N Lon: 36.94E Depth: 0 Agency: REL Local Magnitudes: 3.0MC REL**  
**NEBEK REGION**

STAT	CO	DIST	AZI	PHASE	P	HRMN	SECON	TRES	CODA	AMPL	PERI	BAZ	ARES	VELO	WT
FKH	SZ	52	249	EP		934	17.51	-0.08	56						1.0
HWQ	SZ	92	261	EP		934	24.18	0.07							1.0
HWQ	SN	92	261	ES		934	35.12	-0.02							1.0
BHL	BZ	131	245	EP		934	30.38	0.03							1.0
RCY	SZ	144	225	EP		934	32.28	-0.03							1.0
RCY	SN	144	225	ES		934	49.42	0.02							1.0

**October 5 2011 Hour: 14:41 32.0** Agency: REL Regional  
**EMSC OT=14:41:32.0 36.07N 23.38E 80Km M=4.3 SOUTHERN GREECE**

STAT	CO	DIST	AZI	PHASE	P	HRMN	SECON	TRES	CODA	AMPL	PERI	BAZ	ARES	VELO	WT
HWQ	SZ			EP		1443	54.68								
RCY	SZ			EP		1443	55.91								

**October 5 2011 Hour: 16:9 44.9** Agency: REL Regional

**EMSC OT=16:09:44.9 34.08N 32.31E 2Km M=3.2 CYPRUS REGION**

STAT	CO	DIST	AZI	PHASE	P	HRMN	SECON	TRES	CODA	AMPL	PERI	BAZ	ARES	VELO	WT
HWQ	SZ			EP		1610	38.76								
RCY	SZ			EP		1610	38.65								

**October 6 2011 Hour: 0:39 33.0** Agency: REL Distant

**EMSC OT=00:39:33.0 57.95N 32.58W 10Km M=5.6 REYKJANES RIDGE**

STAT	CO	DIST	AZI	PHASE	P	HRMN	SECON	TRES	CODA	AMPL	PERI	BAZ	ARES	VELO	WT
BHL	BZ			EP		048	32.56								
HWQ	SZ			EP		048	30.40								

**October 6 2011 Hour: 16:12 47.8 Lat: 34.55N Lon: 36.41E Depth: 0** Agency: REL Local  
Magnitudes: 2.9MC REL

**HERMEL BAALBEK REGION**

STAT	CO	DIST	AZI	PHASE	P	HRMN	SECON	TRES	CODA	AMPL	PERI	BAZ	ARES	VELO	WT
FKH	SZ	34	179	EP		1612	53.32-0.01		50						1.0
FKH	SN	34	179	ES		1612	57.42 0.00								1.0
HWQ	SZ	52	234	EP		1612	56.23 0.01								1.0
HWQ	SE	52	234	ES		1613	2.44-0.00								1.0
BHL	BZ	100	224	EP		1613	3.90-0.02								1.0
DQRL	SZ	122	220	EP		1613	7.43 0.02								1.0

**October 8 2011 Hour: 8:53 12.0** Agency: REL Distant

**EMSC OT=08:53:12.0 20.56S 173.17W 8Km M=5.9 TONGA**

STAT	CO	DIST	AZI	PHASE	P	HRMN	SECON	TRES	CODA	AMPL	PERI	BAZ	ARES	VELO	WT
DQRL	SZ			EP		913	1.76								
BHL	BZ			EP		913	0.32								

**October 8 2011 Hour: 12:34 12.4 Lat: 33.88N Lon: 35.84E 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	281	EP		1234	15.24 0.00		54						1.0
DQRL	SZ	31	233	EP		1234	17.53 0.06								1.0
DQRL	SE	31	233	ES		1234	21.19-0.01								1.0
BEYL	BZ	32	269	EP		1234	17.55-0.04								1.0
RCY	SZ	42	180	EP		1234	19.22 0.02								1.0
RCY	SN	42	180	ES		1234	24.20-0.03								1.0
HWQ	SZ	46	12	EP		1234	19.79-0.00								1.0

**October 8 2011 Hour: 12:47 12.2 Lat: 34.03N Lon: 36.14E Depth: 44** Agency: REL Local  
Magnitudes: 2.8MC 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	SZ	33	327	EP		1247	20.45-0.00		45						1.0
HWQ	SN	33	327	ES		1247	26.59 0.01								1.0
BHL	BZ	47	253	EP		1247	21.68-0.05								1.0
DQRL	SZ	64	236	EP		1247	23.59 0.05								1.0
RCY	SZ	65	206	EP		1247	23.77-0.00								1.0
RCY	SE	65	206	ES		1247	32.35-0.00								1.0

**October 9 2011 Hour: 1:16 30.4 Lat: 33.89N Lon: 35.99E Depth: 3** Agency: REL Local  
Magnitudes: 3.2MC REL

Rms: 0.0 secs

**HERMEL BAALBEK REGION**

STAT	CO	DIST	AZI	PHASE	P	HRMN	SECON	TRES	CODA	AMPL	PERI	BAZ	ARES	VELO	WT
BHL	BZ	32	272	EP		116	35.47-0.02		77						1.0
BHL	BN	32	272	ES		116	39.28 0.00								1.0
HWQ	SZ	43	354	EP		116	37.30-0.03								1.0
DQRL	SZ	44	242	EP		116	37.53-0.03								1.0
DQRL	SN	44	242	ES		116	42.93 0.04								1.0
RCY	SZ	46	199	EP		116	37.81-0.06								1.0
RCY	SN	46	199	ES		116	43.44 0.01								1.0

FKH SZ 55 44 EP	116 39.26 0.04	1.0
FKH SN 55 44 ES	116 45.78 0.00	1.0

**October 9 2011 Hour: 12:42 8.1 Lat: 34.42N Lon: 36.81E Depth: 0 Agency: REL Local Magnitudes: 3.0MC REL**

**NEBEK REGION**

STAT	CO	DIST	AZI	PHASE	P	HRMN	SECON	TRES	CODA	AMPL	PERI	BAZ	ARES	VELO	WT
FKH	SZ	41	242	EP		12 4	34.65	-0.11	58						1.0
HWQ	SZ	81	259	EP		12 4	41.20	0.12							1.0
HWQ	SN	81	259	ES		12 4	50.69	-0.03							1.0
BHL	BZ	121	242	EP		12 4	47.55	-0.00							1.0
RCY	SZ	136	221	EP		12 4	50.05	-0.02							1.0
RCY	SN	136	221	ES		12 5	6.41	0.05							1.0
DQRL	SZ	139	235	EP		12 4	50.45	0.01							1.0
DQRL	SN	139	235	ES		12 5	6.98	-0.02							1.0

**October 10 2011 Hour: 6:16 43.4 Lat: 34.12N Lon: 36.22E Depth: 17 Agency: REL Local Magnitudes: 3.1MC REL**

**HERMEL BAALBEK REGION**

STAT	CO	DIST	AZI	PHASE	P	HRMN	SECON	TRES	CODA	AMPL	PERI	BAZ	ARES	VELO	WT
FKH	SZ	23	51	EP		616	48.08	0.02							1.0
FKH	SN	23	51	ES		616	51.49	-0.01							1.0
HWQ	SZ	31	306	EP		616	49.11	-0.01	73						1.0
HWQ	SN	31	306	ES		616	53.35	0.01							1.0
BHL	BZ	57	246	EP		616	52.77	-0.09							1.0
BHL	BN	57	246	ES		616	59.82	-0.03							1.0
DQRL	SZ	75	233	EP		616	55.60	0.09							1.0
DQRL	SN	75	233	ES		617	4.50	0.05							1.0
RCY	SZ	77	207	EP		616	55.81	-0.02							1.0
RCY	SN	77	207	ES		617	5.01	-0.01							1.0

**October 11 2011 Hour: 12:30 46.5 Lat: 32.86N Lon: 35.33E Depth: 1 Agency: REL Local Magnitudes: 3.1MC REL**

**NORTH GALILEE**

STAT	CO	DIST	AZI	PHASE	P	HRMN	SECON	TRES	CODA	AMPL	PERI	BAZ	ARES	VELO	WT
RCY	SZ	85	34	EP		1231	0.25	-0.04	66						1.0
RCY	SN	85	34	ES		1231	10.52	0.02							1.0
DQRL	SZ	97	13	EP		1231	2.20	0.06							1.0
DQRL	SN	97	13	ES		1231	13.69	-0.02							1.0
BHL	BZ	120	15	EP		1231	5.87	-0.02							1.0
HWQ	SZ	168	20	EP		1231	13.01	0.00							1.0

**October 11 2011 Hour: 16:20 30.4 Lat: 34.38N Lon: 36.73E Depth: 0 Agency: REL Local Magnitudes: 3.2MC REL**

**NEBEK REGION**

STAT	CO	DIST	AZI	PHASE	P	HRMN	SECON	TRES	CODA	AMPL	PERI	BAZ	ARES	VELO	WT
FKH	SZ	33	244	EP		1620	34.66	-1.10							0.2
HWQ	SZ	73	261	EP		1620	42.23	0.01	76						1.0
HWQ	SN	73	261	ES		1620	50.87	-0.09							1.0
BHL	BZ	113	242	EP		1620	48.61	0.05							1.0
BHL	BN	113	242	ES		1621	2.08	0.09							1.0
RCY	SZ	128	221	EP		1620	51.16	0.07							1.0
RCY	SN	128	221	ES		1621	6.26	-0.14							1.0
DQRL	SZ	131	236	EP		1620	51.45	-0.04							1.0
DQRL	SN	131	236	ES		1621	7.20	0.10							1.0

**October 12 2011 Hour: 20:51 33.0 Lat: 35.36N Lon: 30.21E Depth: 40Km M=4.5 EASTERN MED SEA Agency: REL Regional**

**EMSC OT=20:51:33.0 35.36N 30.21E 40Km M=4.5 EASTERN MED SEA**

STAT	CO	DIST	AZI	PHASE	P	HRMN	SECON	TRES	CODA	AMPL	PERI	BAZ	ARES	VELO	WT
DQRL	SZ			EP		2052	44.26								
HWQ	SZ			EP		2052	45.84								
RCY	SZ			EP		2052	48.13								

**October 13 2011 Hour: 3:16 32.0** Agency: REL Distant

**EMSC OT=03:16:32.0 09.44S 114.61E 60Km M=6.1 SOUTH OF BALI**

STAT	CO	DIST	AZI	PHASE	P	HRMN	SECON	TRES	CODA	AMPL	PERI	BAZ	ARES	VELO	WT
RCY	SZ			EP			329	7.70							
HWQ	SZ			EP			329	7.75							
BHL	BZ			EP			329	8.43							
DQRL	SZ			EP			329	8.73							

**October 13 2011 Hour: 5:38 27.1 Lat: 33.81N Lon: 35.78E Depth: 22 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	312	EP			538	31.59-0.00		30					1.0
DQRL	SZ	23	239	EP			538	32.23-0.03							1.0
DQRL	SN	23	239	ES			538	36.06 0.02							1.0
RCY	SZ	35	171	EP			538	33.82 0.03							1.0
RCY	SE	35	171	ES			538	38.69-0.02							1.0

**October 13 2011 Hour: 10:10 43.9 Lat: 33.81N Lon: 35.70E Depth: 12 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	12	340	EP			1010	46.78-0.06		38					1.0
BHL	BN	12	340	ES			1010	49.01 0.02							1.0
DQRL	SZ	16	227	EP			1010	47.33-0.04							1.0
DQRL	SE	16	227	ES			1010	49.95 0.05							1.0
HWQ	SZ	57	24	EP			1010	53.48 0.05							1.0
FKH	SZ	82	53	EP			1010	57.03-0.03							1.0
FKH	SN	82	53	ES			1011	6.79 0.02							1.0

**October 13 2011 Hour: 12:51 9.6 Lat: 33.90N Lon: 35.83E 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	17	270	EP			1251	12.28-0.03		35					1.0
BHL	BN	17	270	ES			1251	14.28-0.02							1.0
DQRL	SZ	33	228	EP			1251	14.94 0.03							1.0
DQRL	SE	33	228	ES			1251	18.86 0.03							1.0
HWQ	SZ	43	14	EP			1251	16.54 0.01							1.0
RCY	SZ	45	180	EP			1251	16.87-0.02							1.0
RCY	SE	45	180	ES			1251	22.26-0.01							1.0

**October 13 2011 Hour: 12:54 5.1 Lat: 34.31N Lon: 36.71E Depth: 2 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	SZ	70	268	EP			1254	16.45 0.03							1.0
HWQ	SE	70	268	ES			1254	24.79-0.01							1.0
RCY	SZ	121	222	EP			1254	24.52-0.06							1.0
RCY	SN	121	222	ES			1254	39.02 0.03							1.0
DQRL	SZ	124	238	EP			1254	25.15 0.03		54					1.0
DQRL	SN	124	238	ES			1254	39.92-0.02							1.0

**October 13 2011 Hour: 13:37 57.6 Lat: 34.37N Lon: 36.72E Depth: 4 Agency: REL Local Magnitudes: 3.2MC REL Rms: 0.0 secs**

**NEBEK REGION**

STAT	CO	DIST	AZI	PHASE	P	HRMN	SECON	TRES	CODA	AMPL	PERI	BAZ	ARES	VELO	WT
HWQ	SZ	72	263	EP			1338	9.18 0.01		72					1.0
HWQ	SN	72	263	ES			1338	17.70-0.04							1.0
BHL	BZ	111	243	EP			1338	15.49 0.05							1.0
RCY	SZ	126	220	EP			1338	17.74-0.02							1.0
RCY	SN	126	220	ES			1338	32.67-0.03							1.0
DQRL	SZ	129	236	EP			1338	18.08-0.03							1.0

DQRL SN 129 236 ES 1338 33.37 0.06 1.0

**October 13 2011 Hour: 15:19 44.9 Lat: 33.83N Lon: 35.76E Depth: 29 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	13	308	EP		1519	49.94	0.00	25						1.0
DQRL	SZ	23	231	EP		1519	50.73	0.01							1.0
DQRL	SN	23	231	ES		1519	54.99	-0.01							1.0
RCY	SZ	38	169	EP		1519	52.42	-0.01							1.0
RCY	SN	38	169	ES		1519	58.00	0.01							1.0
HWQ	SZ	52	19	EP		1519	54.18	-0.00							1.0

**October 13 2011 Hour: 17:14 14.0 EMSC OT=17:14:14.0 35.71N 31.91E 65Km M=4.1 CYPRUS REGION Agency: REL Regional**

STAT	CO	DIST	AZI	PHASE	P	HRMN	SECON	TRES	CODA	AMPL	PERI	BAZ	ARES	VELO	WT
BHL	BZ			EP		1715	7.09								
HWQ	SZ			EP		1715	8.62								
DQRL	SZ			EP		1715	8.00								
NAQL	SZ			EP		1715	9.83								
RCY	SZ			EP		1715	12.69								
FKH	SZ			EP		1715	13.82								

**October 14 2011 Hour: 9:52 26.0 Lat: 33.38N Lon: 35.60E Depth: 7 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
QRWL	SZ	20	22	EP		952	29.47	-0.00							1.0
QRWL	SE	20	22	ES		952	32.02	-0.03							1.0
RCY	SZ	25	59	EP		952	30.30	0.01	30						1.0
RCY	SE	25	59	ES		952	33.48	0.01							1.0
DQRL	SZ	36	355	EP		952	31.98	-0.01							1.0
DQRL	SN	36	355	ES		952	36.44	0.02							1.0
HWQ	SZ	105	18	EP		952	42.82	-0.01							1.0

**October 14 2011 Hour: 13:13 36.9 Lat: 34.10N Lon: 35.55E Depth: 15 Agency: REL Local Magnitudes: 2.7MC REL Rms: 0.0 secs**

**OFFSHORE CENTRAL LEBANON**

STAT	CO	DIST	AZI	PHASE	P	HRMN	SECON	TRES	CODA	AMPL	PERI	BAZ	ARES	VELO	WT
BHL	BZ	24	155	EP		1313	41.47	0.02	40						1.0
BHL	BN	24	155	ES		1313	44.83	-0.00							1.0
HWQ	SZ	42	61	EP		1313	44.10	0.03							1.0
HWQ	SN	42	61	ES		1313	49.36	-0.03							1.0
DQRL	SZ	43	177	EP		1313	44.21	-0.06							1.0
RCY	SZ	72	158	EP		1313	48.49	0.04							1.0

**October 15 2011 Hour: 8:27 5.0 EMSC OT=08:27:05.0 35.59N 30.16E 20Km M=3.8 EASTERN MED SEA Agency: REL Regional**

STAT	CO	DIST	AZI	PHASE	P	HRMN	SECON	TRES	CODA	AMPL	PERI	BAZ	ARES	VELO	WT
HWQ	SZ			EP		828	17.65								
RCY	SZ			EP		828	19.09								

**October 15 2011 Hour: 9:15 16.4 Lat: 34.62N Lon: 36.39E Depth: 1 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
FKH	SZ	42	178	EP		915	23.09	-0.04	43						1.0
HWQ	SZ	56	227	EP		915	25.28	-0.11							1.0
HWQ	SN	56	227	ES		915	31.99	-0.06							1.0
BHL	BZ	104	221	EP		915	33.43	0.19							1.0
DQRL	SZ	127	217	EP		915	36.75	-0.06							1.0
DQRL	SN	127	217	ES		915	51.99	0.08							1.0
RCY	SZ	135	202	EP		915	38.13	0.04							1.0
RCY	SN	135	202	ES		915	54.10	-0.03							1.0

**October 15 2011 Hour: 10:40 0.0** Agency: REL Local  
 STAT CO DIST AZI PHASE P HRMN SECON TRES CODA AMPL PERI BAZ ARES VELO WT  
 HWQ SZ EP 1041 0.11  
 RCY SZ EP 1041 7.34

**October 16 2011 Hour: 1:21 40.0** Agency: REL Distant  
**EMSC OT=01:21:40.0 31.64S 179.73W 206Km M=5.1 KERMADEC ISLANDS**  
 STAT CO DIST AZI PHASE P HRMN SECON TRES CODA AMPL PERI BAZ ARES VELO WT  
 FKH SZ EP 141 5.10  
 BHL BZ EP 141 6.27  
 DQRL SZ EP 141 6.72

**October 16 2011 Hour: 9:28 44.0** Agency: REL Regional  
**EMSC OT=09:28:44.0 35.63N 29.83E 20Km M=3.6 EASTERN MED SEA**  
 STAT CO DIST AZI PHASE P HRMN SECON TRES CODA AMPL PERI BAZ ARES VELO WT  
 HWQ SZ EP 930 2.45  
 RCY SZ EP 930 4.38

**October 16 2011 Hour: 14:21 58.7 Lat: 34.05N Lon: 35.99E Depth: 51 Agency: REL Local**  
**Magnitudes: 2.6MC REL**  
**HERMEL BAALBEK REGION**  
 STAT CO DIST AZI PHASE P HRMN SECON TRES CODA AMPL PERI BAZ ARES VELO WT  
 HWQ SZ 26 351 EP 1422 7.09-0.00 35 1.0  
 HWQ SN 26 351 ES 1422 13.28-0.01 1.0  
 BHL BZ 35 243 EP 1422 7.79 0.08 1.0  
 DQRL SZ 54 226 EP 1422 9.38-0.08 1.0  
 RCY SZ 63 193 EP 1422 10.41 0.02 1.0  
 RCY SE 63 193 ES 1422 19.02-0.01 1.0

**October 16 2011 Hour: 23:37 23.2 Lat: 33.78N Lon: 35.78E Depth: 0 Agency: REL Local**  
**Magnitudes: 2.9MC REL**  
**BEIRUT REGION**  
 STAT CO DIST AZI PHASE P HRMN SECON TRES CODA AMPL PERI BAZ ARES VELO WT  
 BHL BZ 18 320 EP 2337 26.05-0.02 51 1.0  
 BHL BN 18 320 ES 2337 28.18-0.03 1.0  
 DQRL SZ 21 247 EP 2337 26.56-0.00 1.0  
 DQRL SN 21 247 ES 2337 29.10 0.03 1.0  
 BEYL BZ 28 291 EP 2337 27.75 0.02 1.0  
 RCY SZ 32 170 EP 2337 28.26-0.06 1.0  
 RCY SN 32 170 ES 2337 32.16 0.03 1.0  
 HWQ SZ 57 16 EP 2337 32.48 0.06 1.0

**October 17 2011 Hour: 13:30 34.3 Lat: 34.55N Lon: 36.37E Depth: 0 Agency: REL Local**  
**Magnitudes: 2.9MC REL**  
**HERMEL BAALBEK REGION**  
 STAT CO DIST AZI PHASE P HRMN SECON TRES CODA AMPL PERI BAZ ARES VELO WT  
 FKH SZ 35 174 EP 1330 39.81-0.08 48 1.0  
 HWQ SZ 50 232 EP 1330 42.22-0.08 1.0  
 HWQ SE 50 232 ES 1330 48.12-0.09 1.0  
 BHL BZ 98 223 EP 1330 50.10 0.03 1.0  
 DQRL SZ 120 218 EP 1330 53.73 0.14 1.0  
 DQRL SN 120 218 ES 1331 7.92 0.06 1.0  
 RCY SZ 127 203 EP 1330 54.86 0.02 1.0  
 RCY SN 127 203 ES 1331 10.02-0.01 1.0

**October 17 2011 Hour: 16:3 0.0** Agency: REL Local  
 STAT CO DIST AZI PHASE P HRMN SECON TRES CODA AMPL PERI BAZ ARES VELO WT  
 HWQ SZ EP 16 3 43.08  
 FKH SZ EP 16 3 37.64

**October 18 2011 Hour: 9:22 45.2 Lat: 33.87N Lon: 35.85E Depth: 0 Agency: REL Local Magnitudes: 3.1MC 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	18	284	EP		922	48.07	-0.03	67						1.0
DQRL	SZ	31	235	EP		922	50.17	-0.01							1.0
DQRL	SN	31	235	ES		922	53.87	-0.01							1.0
BEYL	BZ	33	271	EP		922	50.44	0.02							1.0
QRWL	SZ	38	203	EP		922	51.34	-0.02							1.0
QRWL	SN	38	203	ES		922	55.98	0.04							1.0
RCY	SZ	41	181	EP		922	51.75	-0.03							1.0
RCY	SN	41	181	ES		922	56.68	0.01							1.0
HWQ	SZ	47	12	EP		922	52.73	0.03							1.0

**October 18 2011 Hour: 15:30 54.7 Lat: 33.80N Lon: 35.77E Depth: 12 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	317	EP		1530	57.98	-0.02	40						1.0
BHL	BN	16	317	ES		1531	0.49	0.01							1.0
DQRL	SZ	21	241	EP		1530	58.70	0.01							1.0
RCY	SZ	34	170	EP		1531	0.56	0.01							1.0
RCY	SN	34	170	ES		1531	4.91	-0.00							1.0
HWQ	SZ	56	17	EP		1531	3.89	0.01							1.0

**October 19 2011 Hour: 2:52 40.8** Agency: REL Distant  
**EMSC OT=02:52:40.0 28.09N 54.31E 12Km M=5.5 SOUTHERN IRAN**

STAT	CO	DIST	AZI	PHASE	P	HRMN	SECON	TRES	CODA	AMPL	PERI	BAZ	ARES	VELO	WT
HWQ	SZ			EP		256	36.30								
BHL	BZ			EP		256	38.35								
RCY	SZ			EP		256	38.35								
DQRL	SZ			EP		256	38.65								

**October 20 2011 Hour: 14:6 44.0 Lat: 33.88N Lon: 35.84E 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	280	EP		14	6	46.75	-0.05	44					1.0
DQRL	SZ	31	233	EP		14	6	49.02	-0.02						1.0
DQRL	SN	31	233	ES		14	6	52.85	0.05						1.0
RCY	SZ	42	181	EP		14	6	50.74	-0.04						1.0
RCY	SN	42	181	ES		14	6	55.83	0.01						1.0
HWQ	SZ	46	12	EP		14	6	51.39	0.06						1.0
HWQ	SN	46	12	ES		14	6	56.75	-0.02						1.0

**October 21 2011 Hour: 2:38 28.0 Lat: 33.82N Lon: 35.71E 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	10	332	EP		238	30.61	-0.01	32						1.0
DQRL	SZ	18	225	EP		238	31.57	0.02							1.0
DQRL	SN	18	225	ES		238	34.15	0.00							1.0
QRWL	SZ	31	184	EP		238	33.30	-0.02							1.0
RCY	SZ	38	162	EP		238	34.55	0.06							1.0
RCY	SN	38	162	ES		238	39.26	-0.01							1.0
SHBL	BZ	53	176	EP		238	36.72	-0.04							1.0
SHBL	BE	53	176	ES		238	43.21	-0.01							1.0
HWQ	SZ	55	24	EP		238	37.16	-0.01							0.2

**October 21 2011 Hour: 2:53 7.1 Lat: 33.81N Lon: 35.71E 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	12	333	EP		253	9.00	0.03	29						1.0
BHL	BN	12	333	ES		253	10.36	-0.02							1.0
DQRL	SZ	18	228	EP		253	9.95	0.01							1.0
DQRL	SN	18	228	ES		253	12.05	-0.01							1.0
RCY	SZ	37	162	EP		253	12.99	-0.04							1.0
RCY	SN	37	162	ES		253	17.47	0.02							1.0
SHBL	BZ	52	177	EP		253	15.41	0.02							1.0
HWQ	SZ	56	23	EP		253	16.06	-0.06							0.2

**October 21 2011 Hour: 2:54 5.2 Lat: 33.81N Lon: 35.72E Depth: 1 Agency: REL Local Magnitudes: 2.4MC 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	13	330	EP		254	7.16	-0.12	26						1.0
BHL	BN	13	330	ES		254	8.85	0.05							1.0
DQRL	SZ	18	232	EP		254	8.11	-0.02							1.0
DQRL	SN	18	232	ES		254	10.32	0.04							1.0
RCY	SZ	36	163	EP		254	11.12	0.08							1.0
SHBL	BZ	51	178	EP		254	13.52	0.09							1.0
SHBL	BN	51	178	ES		254	19.38	-0.12							1.0
HWQ	SZ	56	22	EP		254	14.32	0.00							1.0

**October 21 2011 Hour: 13:40 22.1 Lat: 33.78N Lon: 35.78E 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	19	320	EP		1340	25.09	-0.05	55						1.0
BHL	BN	19	320	ES		1340	27.35	-0.01							1.0
DQRL	SZ	21	248	EP		1340	25.57	0.01							1.0
DQRL	SN	21	248	ES		1340	28.14	0.05							1.0
QRWL	SZ	27	200	EP		1340	26.48	-0.01							1.0
BEYL	BZ	29	292	EP		1340	26.77	-0.02							1.0
SHBL	BZ	48	184	EP		1340	29.81	-0.01							1.0
SHBL	BN	48	184	ES		1340	35.48	-0.01							1.0
HWQ	SZ	58	15	EP		1340	31.52	0.06							1.0

**October 21 2011 Hour: 14: 6 35.5 Lat: 33.29N Lon: 35.41E Depth: 49 Agency: REL Local Magnitudes: 2.6MC 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	32	79	EP		14	6	44.14	0.01						1.0
SHBL	BN	32	79	ES		14	6	50.51	0.01						1.0
RCY	SZ	46	60	EP		14	6	45.29	-0.03	34					1.0
RCY	SN	46	60	ES		14	6	52.57	-0.00						1.0
DQRL	SZ	48	18	EP		14	6	45.50	-0.01						1.0
HWQ	SZ	120	24	EP		14	6	53.79	0.02						1.0

**October 21 2011 Hour: 15:36 16.7 Lat: 33.80N Lon: 35.77E Depth: 20 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	16	316	EP		1536	20.88	0.00	23						1.0
DQRL	SZ	22	240	EP		1536	21.50	0.01							1.0
DQRL	SN	22	240	ES		1536	25.02	-0.01							1.0
RCY	SZ	35	170	EP		1536	23.12	-0.01							1.0
RCY	SE	35	170	ES		1536	27.88	0.00							1.0

**October 21 2011 Hour: 16:38 2.6** Agency: REL Regional

STAT	CO	DIST	AZI	PHASE	P	HRMN	SECON	TRES	CODA	AMPL	PERI	BAZ	ARES	VELO	WT
SHBL	BZ			EP		1638	9.70								
DQRL	SZ			EP		1638	16.39								
HWQ	SZ			EP		1638	24.76								

**October 21 2011 Hour: 17:57 18.1** Agency: REL Local

**EMSC OT=17:57:18.1 28.89S 176.14W 40Km M=7.4 KERMADEC ISLANDS**

STAT	CO	DIST	AZI	PHASE	P	HRMN	SECON	TRES	CODA	AMPL	PERI	BAZ	ARES	VELO	WT
FKH	SZ			EP		1817	2.02								
HWQ	SZ			EP		1817	1.74								
BHL	BZ			EP		1817	2.85								
RCY	SZ			EP		1817	2.85								
BEYL	BZ			EP		1817	2.67								
DQRL	SZ			EP		1817	2.79								
QRWL	SZ			EP		1817	2.76								
SHBL	BZ			EP		1817	2.85								

**October 22 2011 Hour: 12:29 9.5 Lat: 34.47N Lon: 36.86E Depth: 0** Agency: REL Local

**Magnitudes: 2.9MC REL**

**NEBEK REGION**

STAT	CO	DIST	AZI	PHASE	P	HRMN	SECON	TRES	CODA	AMPL	PERI	BAZ	ARES	VELO	WT
FKH	SZ	48	239	EP		1229	16.85-0.45	54							1.0
HWQ	SZ	87	256	EP		1229	23.57 0.10								1.0
HWQ	SN	87	256	ES		1229	33.80 0.00								1.0
BHL	BZ	127	241	EP		1229	30.35 0.26								1.0
RCY	SZ	144	221	EP		1229	32.70 0.13								1.0
RCY	SN	144	221	ES		1229	49.65 0.02								1.0
DQRL	SZ	146	235	EP		1229	32.84-0.07								1.0

**October 23 2011 Hour: 10:41 23.0** Agency: REL Regional

**EMSC OT=10:41:23.0 38.78N 43.40E 10Km M=7.2 EASTERN TURKEY**

STAT	CO	DIST	AZI	PHASE	P	HRMN	SECON	TRES	CODA	AMPL	PERI	BAZ	ARES	VELO	WT
FKH	SZ			EP		1043	8.71								
HWQ	SZ			EP		1043	12.53								
BHL	BZ			EP		1043	18.05								
BEYL	BZ			EP		1043	21.87								
RCY	SZ			EP		1043	21.10								
DQRL	SZ			EP		1043	21.48								
QRWL	SZ			EP		1043	21.97								
SHBL	BZ			EP		1043	22.78								

**October 23 2011 Hour: 11:32 41.0** Agency: REL Regional

**EMSC OT=11:32:41.0 38.82N 43.33E 17Km M=5.9 EASTERN TURKEY**

STAT	CO	DIST	AZI	PHASE	P	HRMN	SECON	TRES	CODA	AMPL	PERI	BAZ	ARES	VELO	WT
HWQ	SZ			EP		1134	29.83								
BHL	BZ			EP		1134	36.74								
RCY	SZ			EP		1134	38.62								
BEYL	BZ			EP		1134	47.39								
DQRL	SZ			EP		1134	38.29								

**October 23 2011 Hour: 15:20 44.3 Lat: 33.42N Lon: 35.66E Depth: 0** Agency: REL Local

**Magnitudes: 2.6MC REL**

**MOUNT HERMON REGION**

STAT	CO	DIST	AZI	PHASE	P	HRMN	SECON	TRES	CODA	AMPL	PERI	BAZ	ARES	VELO	WT
SHBL	BZ	11	134	EP		1520	46.12 0.02								1.0
SHBL	BN	11	134	ES		1520	47.39-0.01								1.0
QRWL	SZ	15	8	EP		1520	46.64-0.09								1.0
RCY	SZ	19	61	EP		1520	47.36 0.01	32							1.0
RCY	SN	19	61	ES		1520	49.59 0.02								1.0
DQRL	SZ	33	345	EP		1520	49.76 0.05								1.0
DQRL	SN	33	345	ES		1520	53.68 0.01								1.0

**October 23 2011 Hour: 15:57 58.0** Agency: REL Regional

**EMSC OT=15:57:58.0 38.55N 43.39E 10Km M=4.6 EASTERN TURKEY**

STAT	CO	DIST	AZI	PHASE	P	HRMN	SECON	TRES	CODA	AMPL	PERI	BAZ	ARES	VELO	WT
SHBL	BZ			EP		16	0	0.04							
DQRL	SZ			EP		1559	58.49								

**October 23 2011 Hour: 18:10 45.0** Agency: REL Regional

**EMSC OT=18:10:45.0 38.66N 43.17E 12Km M=5.1 EASTERN TURKEY**

STAT	CO	DIST	AZI	PHASE	P	HRMN	SECON	TRES	CODA	AMPL	PERI	BAZ	ARES	VELO	WT
HWQ	SZ			EP		1812	33.30								
FKH	SZ			EP		1812	30.06								
BHL	BZ			EP		1812	42.28								
DQRL	SZ			EP		1812	35.30								
RCY	SZ			EP		1812	44.30								
SHBL	BZ			EP		1812	45.23								

**October 23 2011 Hour: 18:27 3.0** Agency: REL Regional

**EMSC OT=18:27:03.0 38.57N 43.54E 10Km M=4.7 EASTERN TURKEY**

STAT	CO	DIST	AZI	PHASE	P	HRMN	SECON	TRES	CODA	AMPL	PERI	BAZ	ARES	VELO	WT
FKH	SZ			EP		1828	49.27								
HWQ	SZ			EP		1828	53.26								
DQRL	SZ			EP		1829	1.21								
SHBL	BZ			EP		1829	3.58								

**October 23 2011 Hour: 18:53 48.0** Agency: REL Regional

**EMSC OT=18:53:48.0 38.72N 43.47E 2Km M=4.6 EASTERN TURKEY**

STAT	CO	DIST	AZI	PHASE	P	HRMN	SECON	TRES	CODA	AMPL	PERI	BAZ	ARES	VELO	WT
FKH	SZ			EP		1855	34.52								
HWQ	SZ			EP		1855	38.37								
BHL	BZ			EP		1855	44.52								
RCY	SZ			EP		1855	46.75								
DQRL	SZ			EP		1855	47.59								
SHBL	BZ			EP		1855	48.67								

**October 23 2011 Hour: 19: 6 7.0** Agency: REL Regional

**EMSC OT=19:06:07.0 38.80N 43.39E 10Km M=4.8 EASTERN TURKEY**

STAT	CO	DIST	AZI	PHASE	P	HRMN	SECON	TRES	CODA	AMPL	PERI	BAZ	ARES	VELO	WT
FKH	SZ			EP		19	7	51.94							
HWQ	SZ			EP		19	7	55.85							
BHL	BZ			EP		19	8	2.78							
DQRL	SZ			EP		19	8	6.29							
RCY	SZ			EP		19	8	5.21							
SHBL	BZ			EP		19	8	7.11							

**October 23 2011 Hour: 19:25 34.0** Agency: REL Regional

**EMSC OT=19:25:34.0 38.66N 43.21E 2Km M=4.2 EASTERN TURKEY**

STAT	CO	DIST	AZI	PHASE	P	HRMN	SECON	TRES	CODA	AMPL	PERI	BAZ	ARES	VELO	WT
DQRL	SZ			EP		1927	38.70								
SHBL	BZ			EP		1927	34.84								

**October 23 2011 Hour: 19:43 25.0** Agency: REL Regional

**EMSC OT=19:43:25.0 38.70N 43.17E 2Km M=4.7 EASTERN TURKEY**

STAT	CO	DIST	AZI	PHASE	P	HRMN	SECON	TRES	CODA	AMPL	PERI	BAZ	ARES	VELO	WT
FKH	SZ			EP		1945	8.74								
HWQ	SZ			EP		1945	12.09								
DQRL	SZ			EP		1945	26.04								
SHBL	BZ			EP		1945	25.46								

**October 23 2011 Hour: 20:45 37.0** Agency: REL Regional

**EMSC OT=20:45:37.0 38.64N 43.22E 10Km M=6.0 EASTERN TURKEY**

STAT	CO	DIST	AZI	PHASE	P	HRMN	SECON	TRES	CODA	AMPL	PERI	BAZ	ARES	VELO	WT
FKH	SZ			EP		2047		19.17							
HWQ	SZ			EP		2047		23.61							
BHL	BZ			EP		2047		30.18							
BEYL	BZ			EP		2047		32.05							
RCY	SZ			EP		2047		32.11							
DQRL	SZ			EP		2047		33.47							
QRWL	SZ			EP		2047		33.68							
SHBL	BZ			EP		2047		33.90							
NAQL	SZ			EP		2047		42.58							

**October 23 2011 Hour: 20:56 36.0** Agency: REL Regional

**EMSC OT=20:56:36.0 38.63N 43.21E 2Km M=4.9 EASTERN TURKEY**

STAT	CO	DIST	AZI	PHASE	P	HRMN	SECON	TRES	CODA	AMPL	PERI	BAZ	ARES	VELO	WT
FKH	SZ			EP		2058		21.92							
HWQ	SZ			EP		2058		26.00							
DQRL	SZ			EP		2058		37.59							

**October 24 2011 Hour: 1:39 16.0** Agency: REL Regional

**EMSC OT=01:39:16.0 38.72N 43.44E 2Km M=4.0 EASTERN TURKEY**

STAT	CO	DIST	AZI	PHASE	P	HRMN	SECON	TRES	CODA	AMPL	PERI	BAZ	ARES	VELO	WT
FKH	SZ			EP		141		2.30							
HWQ	SZ			EP		141		6.44							
SHBL	BZ			EP		141		16.94							

**October 24 2011 Hour: 8:50 0.0** Agency: REL Local

STAT	CO	DIST	AZI	PHASE	P	HRMN	SECON	TRES	CODA	AMPL	PERI	BAZ	ARES	VELO	WT
SHBL	BZ			EP		851		20.33							
HWQ	SZ			EP		851		11.52							

**October 24 2011 Hour: 10:14 41.0** Agency: REL Regional

**EMSC OT=10:14:41.0 36.46N 28.77E 12Km M=4.2 DODECANESE ISLANDS**

STAT	CO	DIST	AZI	PHASE	P	HRMN	SECON	TRES	CODA	AMPL	PERI	BAZ	ARES	VELO	WT
HWQ	SZ			EP		1016		12.75							
RCY	SZ			EP		1016		15.43							

**October 24 2011 Hour: 23:55 16.0** Agency: REL Regional

**EMSC OT=23:55:16.0 38.68N 43.63E 10Km M=4.6 EASTERN TURKEY**

STAT	CO	DIST	AZI	PHASE	P	HRMN	SECON	TRES	CODA	AMPL	PERI	BAZ	ARES	VELO	WT
FKH	SZ			EP		2357		2.15							
SHBL	BZ			EP		2357		16.81							

**October 25 2011 Hour: 9:32 56.0 Lat: 34.54N Lon: 36.80E Depth: 15** Agency: REL Local  
Magnitudes: 3.0MC REL Rms: 0.4 secs

**NEBEK REGION**

STAT	CO	DIST	AZI	PHASE	P	HRMN	SECON	TRES	CODA	AMPL	PERI	BAZ	ARES	VELO	WT
FKH	SZ	48	228	EP		933	2.10-1.99	55							0.2
HWQ	SZ	84	250	EP		933	9.37	0.09							1.0
HWQ	SN	84	250	ES		933	19.06	-0.08							1.0
BHL	BZ	127	237	EP		933	15.67	0.05							1.0
DQRL	SZ	146	231	EP		933	18.53	0.06							1.0
DQRL	SN	146	231	ES		933	35.17	0.05							1.0
SHBL	BZ	164	217	EP		933	20.94	-0.06							1.0
SHBL	BN	164	217	ES		933	39.55	0.02							1.0

**October 25 2011 Hour: 9:48 57.4 Lat: 33.79N Lon: 35.78E Depth: 11 Agency: REL Local  
Magnitudes: 2.7MC REL**

**BEIRUT REGION**

STAT	CO	DIST	AZI	PHASE	P	HRMN	SECON	TRES	CODA	AMPL	PERI	BAZ	ARES	VELO	WT
BHL	BZ	17	317	EP		949	0.80	-0.04	42						1.0
DQRL	SZ	22	244	EP		949	1.47	0.02							1.0
DQRL	SN	22	244	ES		949	4.46	0.01							1.0
BEYL	BZ	28	289	EP		949	2.30	-0.01							1.0
RCY	SZ	33	171	EP		949	3.08	-0.04							1.0
RCY	SN	33	171	ES		949	7.37	0.01							1.0
HWQ	SZ	56	16	EP		949	6.71	0.03							1.0

**October 25 2011 Hour: 14:14 56.5 Lat: 33.41N Lon: 35.36E Depth: 11 Agency: REL Local  
Magnitudes: 2.5MC REL**

**SOUTH LEBANON**

STAT	CO	DIST	AZI	PHASE	P	HRMN	SECON	TRES	CODA	AMPL	PERI	BAZ	ARES	VELO	WT
SHBL	BZ	37	100	EP		1415	2.74	-0.01							1.0
SHBL	BN	37	100	ES		1415	7.33	-0.04							1.0
DQRL	SZ	38	31	EP		1415	2.98	-0.02							1.0
RCY	SZ	46	78	EP		1415	4.20	0.07	29						1.0
RCY	SN	46	78	ES		1415	9.77	0.01							1.0
HWQ	SZ	111	29	EP		1415	13.99	-0.02							1.0

**October 25 2011 Hour: 14:55 8.0**

**Agency: REL Regional**

**EMSC OT=14:55:08.0 38.85N 43.60E 10Km M=5.6 EASTERN TURKEY**

STAT	CO	DIST	AZI	PHASE	P	HRMN	SECON	TRES	CODA	AMPL	PERI	BAZ	ARES	VELO	WT
FKH	SZ			EP		1456	56.59								
HWQ	SZ			EP		1456	59.88								
DQRL	SZ			EP		1457	10.18								
RCY	SZ			EP		1457	8.77								
SHBL	BZ			EP		1457	10.41								

**October 26 2011 Hour: 11:26 14.6 Lat: 34.42N Lon: 36.75E Depth: 0 Agency: REL Local  
Magnitudes: 2.8MC REL**

**Rms: 0.2 secs**

**NEBEK REGION**

STAT	CO	DIST	AZI	PHASE	P	HRMN	SECON	TRES	CODA	AMPL	PERI	BAZ	ARES	VELO	WT
FKH	SZ	37	238	EP		1126	19.76	-0.78	44						0.2
HWQ	SZ	75	258	EP		1126	26.70	-0.08							1.0
HWQ	SN	75	258	ES		1126	35.82	0.03							1.0
RCY	SZ	133	220	EP		1126	35.93	-0.11							1.0
RCY	SE	133	220	ES		1126	51.89	-0.00							1.0
DQRL	SZ	135	234	EP		1126	36.48	0.15							1.0
SHBL	BZ	151	218	EP		1126	38.86	0.09							1.0
SHBL	BN	151	218	ES		1126	56.61	-0.03							1.0

**October 26 2011 Hour: 15:14 27.3 Lat: 33.79N Lon: 35.79E Depth: 4 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	315	EP		1514	30.30	0.00	37						1.0
DQRL	SZ	23	246	EP		1514	30.97	-0.03							1.0
DQRL	SN	23	246	ES		1514	33.77	0.02							1.0
RCY	SZ	33	173	EP		1514	32.68	0.04							1.0
RCY	SN	33	173	ES		1514	36.59	-0.02							1.0
HWQ	SZ	56	15	EP		1514	36.36	-0.00							1.0

**October 27 2011 Hour: 0:15 25.0**

**Agency: REL Distant**

**EMSC OT=00:15:25.0 17.87S 179.55W 619Km M=6.0 FIJI REGION**

STAT	CO	DIST	AZI	PHASE	P	HRMN	SECON	TRES	CODA	AMPL	PERI	BAZ	ARES	VELO	WT
FKH	SZ			EP		033	52.79								
BHL	BZ			EP		033	54.17								
DQRL	SZ			EP		033	55.31								
SHBL	BZ			EP		033	55.24								

**October 27 2011 Hour: 0:55 58.2 Lat: 34.01N Lon: 35.67E Depth: 7 Agency: REL Local  
Magnitudes: 2.4MC REL**

**KESROUANE**

STAT	CO	DIST	AZI	PHASE	P	HRMN	SECON	TRES	CODA	AMPL	PERI	BAZ	ARES	VELO	WT
BHL	BZ	12	185	EP		056	0.57	0.03	26						1.0
BHL	BE	12	185	ES		056	2.26	-0.00							1.0
DQRL	SZ	35	195	EP		056	3.98	-0.04							1.0
HWQ	SZ	39	41	EP		056	4.73	0.03							1.0
HWQ	SN	39	41	ES		056	9.47	-0.03							1.0
SHBL	BZ	74	174	EP		056	10.23	0.01							1.0

**October 27 2011 Hour: 8: 4 22.0** Agency: REL Regional  
**EMSC OT=08:04:22.0 37.21N 43.93E 10Km M=5.1 TURKEY-IRAQ BORDER**

STAT	CO	DIST	AZI	PHASE	P	HRMN	SECON	TRES	CODA	AMPL	PERI	BAZ	ARES	VELO	WT
FKH	SZ			EP		8	6	1.86							
HWQ	SZ			EP		8	6	6.68							
BHL	BZ			EP		8	6	12.01							
RCY	SZ			EP		8	6	13.32							
DQRL	SZ			EP		8	6	14.68							
SHBL	BZ			EP		8	6	15.46							

**October 27 2011 Hour: 10: 3 5.1** Lat: 33.91N Lon: 35.83E Depth: 0 Agency: REL Local  
Magnitudes: 2.6MC REL

**BEIRUT REGION**

STAT	CO	DIST	AZI	PHASE	P	HRMN	SECON	TRES	CODA	AMPL	PERI	BAZ	ARES	VELO	WT
BHL	BZ	16	266	EP		10	3	7.68-0.03	36						1.0
BHL	BN	16	266	ES		10	3	9.64-0.01							1.0
DQRL	SZ	33	226	EP		10	3	10.46-0.00							1.0
DQRL	SE	33	226	ES		10	3	14.47 0.04							1.0
HWQ	SZ	42	15	EP		10	3	11.86 0.02							1.0
RCY	SZ	46	179	EP		10	3	12.54-0.02							1.0

**October 27 2011 Hour: 15:30 54.9** Lat: 33.79N Lon: 35.78E Depth: 4 Agency: REL Local  
Magnitudes: 2.6MC REL

**BEIRUT REGION**

STAT	CO	DIST	AZI	PHASE	P	HRMN	SECON	TRES	CODA	AMPL	PERI	BAZ	ARES	VELO	WT
BHL	BZ	18	317	EP		1530	57.88	-0.02	36						1.0
DQRL	SZ	22	246	EP		1530	58.50	-0.01							1.0
DQRL	SZ	22	246	ES		1531	1.20	0.02							1.0
RCY	SZ	32	172	EP		1531	0.19	-0.01							1.0
RCY	SN	32	172	ES		1531	4.12	0.00							1.0
HWQ	SZ	57	15	EP		1531	4.09	0.02							1.0

**October 28 2011 Hour: 15:46 8.5** Lat: 33.79N Lon: 35.79E Depth: 2 Agency: REL Local  
Magnitudes: 2.8MC REL

**BEIRUT REGION**

STAT	CO	DIST	AZI	PHASE	P	HRMN	SECON	TRES	CODA	AMPL	PERI	BAZ	ARES	VELO	WT
BHL	BZ	18	315	EP		1546	11.42	0.01	43						1.0
BHL	BN	18	315	ES		1546	13.54	-0.01							1.0
DQRL	SZ	22	245	EP		1546	12.13	-0.03							1.0
DQRL	SN	22	245	ES		1546	14.88	0.02							1.0
RCY	SZ	33	172	EP		1546	13.90	0.02							1.0
RCY	SN	33	172	ES		1546	17.84	-0.01							1.0
HWQ	SZ	56	15	EP		1546	17.56	0.00							1.0

**October 28 2011 Hour: 16: 1 31.7** Lat: 34.52N Lon: 36.38E Depth: 0 Agency: REL Local  
Magnitudes: 2.7MC REL

**HERMEL BAALBEK REGION**

STAT	CO	DIST	AZI	PHASE	P	HRMN	SECON	TRES	CODA	AMPL	PERI	BAZ	ARES	VELO	WT
FKH	SZ	31	174	EP		16	1	36.67	38						1.0
FKH	SN	31	174	ES		16	1	40.35	-0.01						1.0
HWQ	SZ	48	236	EP		16	1	39.40	-0.03						1.0
HWQ	SN	48	236	ES		16	1	45.16	0.00						1.0

BHL BZ 96 224 EP	16 1 47.14 0.04	1.0
DQRL SZ 117 220 EP	16 1 50.59-0.00	1.0

**October 29 2011 Hour: 15:9 17.6 Lat: 33.85N Lon: 36.92E Depth: 14 Agency: REL Local Magnitudes: 3.1MC REL Rms: 0.0 secs**

**DAMASCUS REGION**

STAT	CO	DIST	AZI	PHASE	P	HRMN	SECON	TRES	CODA	AMPL	PERI	BAZ	ARES	VELO	WT
FKH	SZ	64	313	EP	15	9	28.04	-0.03	68						1.0
FKH	SN	64	313	ES	15	9	35.82	0.01						1.0	
HWQ	SZ	102	298	EP	15	9	33.59	0.02						1.0	
BHL	BZ	117	273	EP	15	9	35.88	0.01						1.0	
BHL	BE	117	273	ES	15	9	49.37	-0.00						1.0	
DQRL	SZ	126	263	EP	15	9	37.18	0.01						1.0	
DQRL	SN	126	263	ES	15	9	51.61	-0.01						1.0	

**October 29 2011 Hour: 15:18 33.9 Lat: 33.78N 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	18	320	EP	1518	36.75	-0.03	37							1.0
DQRL	SZ	21	246	EP	1518	37.37	0.06							1.0	
DQRL	SN	21	246	ES	1518	39.81	-0.02							1.0	
RCY	SZ	32	170	EP	1518	39.10	-0.01							1.0	
RCY	SN	32	170	ES	1518	42.94	-0.01							1.0	
HWQ	SZ	57	16	EP	1518	43.15	0.01							1.0	

**October 29 2011 Hour: 22:24 23.0**

**Agency: REL Regional**

**EMSC OT=22:24:23.0 38.83N 43.60E 2Km M=5.1 EASTERN TURKEY**

STAT	CO	DIST	AZI	PHASE	P	HRMN	SECON	TRES	CODA	AMPL	PERI	BAZ	ARES	VELO	WT
FKH	SZ			EP	2226		12.48								
HWQ	SZ			EP	2226		16.40								
BHL	BZ			EP	2226		26.50								
RCY	SZ			EP	2226		25.83								
DQRL	SZ			EP	2226		25.09								
SHBL	BZ			EP	2226		26.62								

**October 30 2011 Hour: 1:55 5.0**

**Agency: REL Regional**

**EMSC OT=01:55:05.0 38.72N 43.58E 21Km M=4.5 EASTERN TURKEY**

STAT	CO	DIST	AZI	PHASE	P	HRMN	SECON	TRES	CODA	AMPL	PERI	BAZ	ARES	VELO	WT
FKH	SZ			EP	156		53.84								
HWQ	SZ			EP	156		57.50								
SHBL	BZ			EP	157		7.92								

**October 31 2011 Hour: 13:48 34.6 Lat: 34.28N Lon: 36.51E Depth: 11 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
FKH	SZ	10	246	EP	1348	37.19	0.06	40							1.0
FKH	SN	10	246	ES	1348	38.99	-0.04							1.0	
HWQ	SZ	52	270	EP	1348	43.12	-0.01							1.0	
HWQ	SN	52	270	ES	1348	49.47	0.01							1.0	
BHL	BZ	89	242	EP	1348	48.79	-0.03							1.0	
RCY	SZ	107	216	EP	1348	51.43	-0.03							1.0	
RCY	SN	107	216	ES	1349	3.98	0.03							1.0	

**October 31 2011 Hour: 15:14 0.6 Lat: 33.82N Lon: 36.05E 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
BHL	BZ	38	285	EP	1514	6.62	-0.02								1.0
RCY	SZ	41	209	EP	1514	7.19	0.01	27						1.0	
RCY	SN	41	209	ES	1514	12.00	-0.06							1.0	
DQRL	SZ	46	254	EP	1514	8.01	0.01							1.0	
DQRL	SN	46	254	ES	1514	13.49	0.01							1.0	

SHBL BZ	59	208	EP	1514	10.16-0.00	1.0
SHBL BN	59	208	ES	1514	17.29 0.04	1.0

**October 31 2011 Hour: 15:17 54.1 Lat: 33.81N Lon: 35.77E Depth: 21 Agency: REL Local Magnitudes: 2.4MC REL**

**BEIRUT REGION**

STAT	CO	DIST	AZI	PHASE	P	HRMN	SECON	TRES	CODA	AMPL	PERI	BAZ	ARES	VELO	WT
BHL	BZ	15	313	EP		1517	58.33-0.06	25							1.0
DQRL	SZ	22	237	EP		1517	59.05-0.04								1.0
DQRL	SN	22	237	ES		1518	2.81 0.06								1.0
RCY	SZ	36	170	EP		1518	0.78 0.01								1.0
RCY	SE	36	170	ES		1518	5.67-0.01								1.0
HWQ	SZ	54	17	EP		1518	3.32 0.04								1.0

**October 31 2011 Hour: 21:58 15.0**

**Agency: REL Distant**

**EMSC OT=21:58:15.0 32.61N 105.33E 10Km M=5.7 SICHUAN-GANSU REG**

STAT	CO	DIST	AZI	PHASE	P	HRMN	SECON	TRES	CODA	AMPL	PERI	BAZ	ARES	VELO	WT
FKH	SZ			EP		22	7	59.15							
HWQ	SZ			EP		22	8	1.16							
BHL	BZ			EP		22	8	3.44							
RCY	SZ			EP		22	8	4.09							
SHBL	BZ			EP		22	8	4.87							

# Epicentral Map of Lebanon

## OCTOBER 2011

