

Republic of Lebanon  
National Council for Scientific Research

# Provisional Seismological Bulletin

from the

## NATIONAL SEISMIC NETWORK

February

2016

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.

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	Nov2000-Sep2012
FKH	3414.69N	3624.61E	1152	FAKEHEH	Opened Dec 2004
RCY	3329.79N	3550.14E	1370	RACHAYA	Opened Jun 2006
BEYL	3352.30N	3529.59E	49	BEIRUT	Opened Jul 2006
NAQL	3307.02N	3508.46E	83	NAQOURA	Jul2008-Jan2012
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
ZAHL	3351.48N	3553.12E	1211	ZAHLE	Opened Aug 2015

## 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.

February 1 2016 Hour: 5:38 6.1 Lat: 33.89N Lon: 35.85E Depth: 0 Agency: REL Local  
Magnitudes: 2.9MC REL Rms: 0.0 secs

ZAHLE REGION

STAT	CO	DIST	AZI	PHASE	P	HRMN	SECON	TRES	CODA	AMPL	PERI	BAZ	ARES	VELO	WT
ZAHL	SZ	4	139	EP		538	6.72	-0.08							1.0
BHL	BZ	19	276	EP		538	9.06	-0.01	50						1.0
BHL	BN	19	276	ES		538	11.30	0.01							1.0
DQRL	SZ	33	233	EP		538	11.44	0.02							1.0
DQRL	SN	33	233	ES		538	15.32	-0.05							1.0
RCY	SZ	43	182	EP		538	13.10	0.03							1.0
RCY	SN	43	182	ES		538	18.32	0.06							1.0
HWQ	SZ	44	11	EP		538	13.22	0.03							1.0
SHBL	BZ	61	190	EP		538	15.85	-0.01							1.0

February 1 2016 Hour: 12:33 59.9 Lat: 33.58N Lon: 36.00E Depth: 3 Agency: REL Local  
Magnitudes: 2.3MC REL Rms: 0.1 secs

RACHAYA REGION

STAT	CO	DIST	AZI	PHASE	P	HRMN	SECON	TRES	CODA	AMPL	PERI	BAZ	ARES	VELO	WT
RCY	SZ	18	240	EP		1234	2.97	0.15	21						1.0
RCY	SN	18	240	ES		1234	4.93	-0.07							1.0
SHBL	BZ	35	223	EP		1234	5.49	-0.05							1.0
DQRL	SZ	42	290	EP		1234	6.74	-0.02							1.0
DQRL	SE	42	290	ES		1234	11.88	0.04							1.0
BHL	BZ	49	319	EP		1234	7.68	-0.05							1.0

February 1 2016 Hour: 15:41 28.8 Lat: 33.64N Lon: 35.45E Depth: 7 Agency: REL Local  
Magnitudes: 3.0MC REL Rms: 0.1 secs

CHOUF REGION

STAT	CO	DIST	AZI	PHASE	P	HRMN	SECON	TRES	CODA	AMPL	PERI	BAZ	ARES	VELO	WT
DQRL	SZ	14	57	EP		1541	31.26	-0.13	60						1.0
DQRL	SN	14	57	ES		1541	33.37	0.06							1.0
BHL	BZ	35	33	EP		1541	34.58	-0.04							1.0
BHL	BN	35	33	ES		1541	38.97	0.03							1.0
RCY	SZ	39	114	EP		1541	35.33	0.03							1.0
RCY	SE	39	114	ES		1541	40.05	-0.07							1.0
SHBL	BZ	42	139	EP		1541	35.69	-0.10							1.0
SHBL	BE	42	139	ES		1541	41.07	0.11							1.0
HWQ	SZ	85	33	EP		1541	42.59	0.08							1.0

February 1 2016 Hour: 15:46 28.3 Lat: 33.78N Lon: 35.77E Depth: 6 Agency: REL Local  
Magnitudes: 2.5MC REL Rms: 0.1 secs

ALEY REGION

STAT	CO	DIST	AZI	PHASE	P	HRMN	SECON	TRES	CODA	AMPL	PERI	BAZ	ARES	VELO	WT
ZAHL	SZ	14	53	EP		1546	30.82	-0.02							1.0
ZAHL	SN	14	53	ES		1546	32.74	0.02							1.0
BHL	BZ	17	322	EP		1546	31.19	-0.13	28						1.0
DQRL	SZ	20	245	EP		1546	31.91	0.11							1.0
DQRL	SN	20	245	ES		1546	34.39	0.00							1.0
RCY	SZ	32	169	EP		1546	33.57	-0.12							1.0
RCY	SN	32	169	ES		1546	37.73	0.05							1.0
HWQ	SZ	57	17	EP		1546	37.71	0.09							1.0

February 1 2016 Hour: 17:7 6.3 Lat: 33.43N Lon: 35.68E Depth: 0 Agency: REL Local  
Magnitudes: 3.0MC REL Rms: 0.1 secs

HASBAYA REGION

STAT	CO	DIST	AZI	PHASE	P	HRMN	SECON	TRES	CODA	AMPL	PERI	BAZ	ARES	VELO	WT
SHBL	BZ	11	145	EP		17 7	7.94	-0.13							1.0
RCY	SZ	17	62	EP		17 7	9.07	0.04							1.0
RCY	SN	17	62	ES		17 7	11.05	0.03							1.0
DQRL	SZ	33	342	EP		17 7	11.49	-0.11	63						1.0
DQRL	SN	33	342	ES		17 7	15.43	-0.06							1.0
BHL	BZ	53	358	EP		17 7	14.80	-0.10							1.0
BHL	BN	53	358	ES		17 7	21.37	0.13							1.0

HWQ SZ 98 15 EP 17 7 22.15 0.05 1.0

February 1 2016 Hour: 19:044.8 Agency: REL Distant

EMSC OT=19:00:44.8 30.94S 179.96W 382Km M=6.2 KERMADEC ISLANDS REGION

STAT CO DIST AZI PHASE P HRMN SECON TRES CODA AMPL PERI BAZ ARES VELO WT
SHBL BZ EP 1919 46.04
BHL BZ EP 1919 44.74

February 2 2016 Hour: 14:19 22.2 Agency: REL Distant

EMSC OT=14:19:22.2 25.59N 123.47E 191Km M=5.7 NORTHEAST OF TAIWAN

STAT CO DIST AZI PHASE P HRMN SECON TRES CODA AMPL PERI BAZ ARES VELO WT
HWQ SZ EP 1430 38.27
BHL BZ EP 1430 39.77
SHBL BZ EP 1430 40.77

February 3 2016 Hour: 15:43 46.5 Lat: 33.80N Lon: 35.77E Depth: 15 Agency: REL Local
Magnitudes: 2.6MC REL Rms: 0.0 secs

ALEY REGION

STAT CO DIST AZI PHASE P HRMN SECON TRES CODA AMPL PERI BAZ ARES VELO WT
Z AHL SZ 12 60 EP 1543 49.87-0.04 1.0
Z AHL SN 12 60 ES 1543 52.41 0.02 1.0
BHL BZ 16 317 EP 1543 50.19-0.02 32 1.0
DQRL SZ 21 240 EP 1543 50.87 0.00 1.0
DQRL SN 21 240 ES 1543 54.08 0.01 1.0
RCY SZ 34 170 EP 1543 52.63-0.03 1.0
RCY SN 34 170 ES 1543 57.22 0.03 1.0
HWQ SZ 55 17 EP 1543 55.73 0.03 1.0

February 4 2016 Hour: 0:7 45.8 Agency: REL Distant

EMSC OT=00:07:45.8 30.54S 177.59W 10Km M=5.3 KERMADEC ISLANDS, NEW ZEALAND

STAT CO DIST AZI PHASE P HRMN SECON TRES CODA AMPL PERI BAZ ARES VELO WT
BHL BZ EP 027 41.15
SHBL BZ EP 027 41.37
DQRL SZ EP 027 41.73

February 4 2016 Hour: 0:48 10.9 Agency: REL Distant

EMSC OT=00:48:10.9 30.59S 177.54W 10Km M=5.1 KERMADEC ISLANDS, NEW ZEALAND

STAT CO DIST AZI PHASE P HRMN SECON TRES CODA AMPL PERI BAZ ARES VELO WT
SHBL BZ EP 1 8 5.95
BHL BZ EP 1 8 6.15
DQRL SZ EP 1 8 6.62

February 4 2016 Hour: 11:4 4.4 Lat: 33.49N Lon: 35.69E Depth: 6 Agency: REL Local
Magnitudes: 2.5MC REL Rms: 0.1 secs

WEST BEKAA REGION

STAT CO DIST AZI PHASE P HRMN SECON TRES CODA AMPL PERI BAZ ARES VELO WT
QRWL SZ 7 356 EP 11 4 5.97-0.12 1.0
RCY SZ 14 85 EP 11 4 6.97-0.04 31 1.0
RCY SN 14 85 ES 11 4 8.97 0.04 1.0
SHBL BZ 16 161 EP 11 4 7.16-0.18 1.0
SHBL BN 16 161 ES 11 4 9.63 0.14 1.0
DQRL SZ 27 336 EP 11 4 9.05 0.14 1.0
BHL BZ 47 356 EP 11 4 12.17 0.13 0.2
HWQ SZ 91 15 EP 11 4 19.32 0.14 0.2

February 5 2016 Hour: 19:57 27.1 Agency: REL Distant

EMSC OT=19:57:27.1 22.93N 120.54E 17Km M=6.4 TAIWAN

STAT CO DIST AZI PHASE P HRMN SECON TRES CODA AMPL PERI BAZ ARES VELO WT
BHL BZ EP 20 9 0.20
SHBL BZ EP 20 9 0.91

February 5 2016 Hour: 23:126.7

Agency: REL Regional

EMSC OT=23:01:26.7 34.78N 25.80E 10Km M=4.7 CRETE, GREECE

STAT	CO	DIST	AZI	PHASE	P	HRMN	SECON	TRES	CODA	AMPL	PERI	BAZ	ARES	VELO	WT
DQRL	SZ			EP		23 3	24.17								
BHL	BZ			EP		23 3	24.48								
RCY	SZ			EP		23 3	26.31								
HWQ	SZ			EP		23 3	27.06								

February 7 2016 Hour: 12:27 12.1 Lat: 33.69N Lon: 35.81E Depth: 20 Agency: REL Local  
Magnitudes: 2.4MC REL Rms: 0.1 secs

WEST BEKAA REGION

STAT	CO	DIST	AZI	PHASE	P	HRMN	SECON	TRES	CODA	AMPL	PERI	BAZ	ARES	VELO	WT
ZAHL	SZ	20	21	EP		1227	16.72-0.06								1.0
ZAHL	SN	20	21	ES		1227	20.28 0.06								1.0
RCY	SZ	21	173	EP		1227	16.86-0.01	24							1.0
RCY	SN	21	173	ES		1227	20.38-0.01								1.0
DQRL	SZ	22	276	EP		1227	17.09 0.17								1.0
DQRL	SN	22	276	ES		1227	20.41-0.07								1.0
BHL	BZ	28	330	EP		1227	17.56-0.08								1.0

February 8 2016 Hour: 10:38 53.4 Lat: 33.46N Lon: 35.71E Depth: 16 Agency: REL Local  
Magnitudes: 2.7MC REL Rms: 0.0 secs

HASBAYA REGION

STAT	CO	DIST	AZI	PHASE	P	HRMN	SECON	TRES	CODA	AMPL	PERI	BAZ	ARES	VELO	WT
SHBL	BZ	12	167	EP		1038	56.79 0.01								1.0
SHBL	BN	12	167	ES		1038	59.29-0.00								1.0
RCY	SZ	12	68	EP		1038	56.79 0.01	38							1.0
RCY	SE	12	68	ES		1038	59.29-0.00								1.0
DQRL	SZ	31	334	EP		1038	58.98-0.02								1.0
DQRL	SN	31	334	ES		1039	3.16 0.01								1.0
BHL	BZ	50	354	EP		1039	1.83 0.06								0.2
HWQ	SZ	94	13	EP		1039	8.16-0.03								0.2

February 8 2016 Hour: 16:19 14.1 Agency: REL Distant  
EMSC OT=16:19:14.1 6.66S 154.72E 40Km M=6.5 BOUGAINVILLE REGION, P.N.G.

STAT	CO	DIST	AZI	PHASE	P	HRMN	SECON	TRES	CODA	AMPL	PERI	BAZ	ARES	VELO	WT
BHL	BZ			EP		1637	56.34								
SHBL	BZ			EP		1637	56.69								

February 8 2016 Hour: 23:58 52.7 Lat: 33.80N Lon: 35.80E Depth: 12 Agency: REL Local  
Magnitudes: 2.6MC REL Rms: 0.1 secs

ZAHLE REGION

STAT	CO	DIST	AZI	PHASE	P	HRMN	SECON	TRES	CODA	AMPL	PERI	BAZ	ARES	VELO	WT
ZAHL	SZ	10	49	EP		2358	55.38-0.07								1.0
ZAHL	SN	10	49	ES		2358	57.52 0.05								1.0
BHL	BZ	18	311	EP		2358	56.31-0.02	35							1.0
BHL	BN	18	311	ES		2358	58.94-0.06								1.0
DQRL	SZ	24	245	EP		2358	57.06-0.03								1.0
DQRL	SN	24	245	ES		2359	0.40 0.08								1.0
RCY	SZ	34	174	EP		2358	58.52-0.03								1.0
HWQ	SZ	55	14	EP		2359	1.93 0.08								1.0

February 9 2016 Hour: 14:59 0.9 Lat: 33.42N Lon: 35.67E Depth: 2 Agency: REL Local  
Magnitudes: 2.3MC REL Rms: 0.0 secs

HASBAYA REGION

STAT	CO	DIST	AZI	PHASE	P	HRMN	SECON	TRES	CODA	AMPL	PERI	BAZ	ARES	VELO	WT
SHBL	BZ	11	137	EP		1459	2.73-0.04	23							1.0
SHBL	BN	11	137	ES		1459	4.19 0.03								1.0
RCY	SZ	18	62	EP		1459	3.83-0.04								1.0
DQRL	SZ	33	345	EP		1459	6.21-0.01								1.0
DQRL	SN	33	345	ES		1459	10.15-0.01								1.0
ZAHL	SZ	53	23	EP		1459	9.44 0.03								1.0
BHL	BZ	54	359	EP		1459	9.60 0.03								1.0

February 9 2016 Hour: 15:30 38.7 Lat: 33.57N Lon: 36.49E Depth: 10 Agency: REL Local  
Magnitudes: 2.4MC REL Rms: 0.0 secs

SYRIA REGION

STAT	CO	DIST	AZI	PHASE	P	HRMN	SECON	TRES	CODA	AMPL	PERI	BAZ	ARES	VELO	WT
RCY	SZ	61	262	EP		1530	48.72	-0.02	26						1.0
RCY	SN	61	262	ES		1530	56.15	0.00							1.0
SHBL	BZ	73	250	EP		1530	50.71	0.01							1.0
BHL	BZ	85	296	EP		1530	52.53	0.00							1.0
BHL	BN	85	296	ES		1531	2.74	-0.00							1.0
DQRL	SZ	86	280	EP		1530	52.65	0.00							1.0

February 10 2016 Hour: 15:10 33.7

Agency: REL Distant

EMSC OT=15:10:33.7 20.27S 174.64W 40Km M=5.2 TONGA

STAT	CO	DIST	AZI	PHASE	P	HRMN	SECON	TRES	CODA	AMPL	PERI	BAZ	ARES	VELO	WT
BHL	BZ			EP		1530	20.80								
DQRL	SZ			EP		1530	21.16								
SHBL	BZ			EP		1530	21.47								

February 10 2016 Hour: 15:34 12.6 Lat: 33.80N Lon: 35.77E Depth: 13 Agency: REL Local  
Magnitudes: 2.4MC REL Rms: 0.0 secs

ZAHLE REGION

STAT	CO	DIST	AZI	PHASE	P	HRMN	SECON	TRES	CODA	AMPL	PERI	BAZ	ARES	VELO	WT
ZAHL	SZ	12	60	EP		1534	15.67	0.01							1.0
BHL	BZ	16	316	EP		1534	16.02	-0.01	27						1.0
DQRL	SZ	22	240	EP		1534	16.79	-0.00							1.0
DQRL	SN	22	240	ES		1534	19.90	0.01							1.0
RCY	SZ	35	170	EP		1534	18.68	0.01							1.0
RCY	SN	35	170	ES		1534	23.14	-0.01							1.0

February 11 2016 Hour: 9:51 37.9 Lat: 33.81N Lon: 35.79E Depth: 15 Agency: REL Local  
Magnitudes: 2.4MC REL Rms: 0.0 secs

ZAHLE REGION

STAT	CO	DIST	AZI	PHASE	P	HRMN	SECON	TRES	CODA	AMPL	PERI	BAZ	ARES	VELO	WT
BHL	BZ	17	311	EP		951	41.60	0.00	24						1.0
DQRL	SZ	23	242	EP		951	42.37	-0.03							1.0
DQRL	SN	23	242	ES		951	45.75	0.01							1.0
RCY	SZ	34	173	EP		951	44.02	0.03							1.0
RCY	SN	34	173	ES		951	48.49	-0.02							1.0
HWQ	SZ	54	15	EP		951	46.85	-0.04							0.2

February 11 2016 Hour: 14:46 34.6 Lat: 34.04N Lon: 35.74E Depth: 5 Agency: REL Local  
Magnitudes: 2.5MC REL Rms: 0.0 secs

KESROUAN REGION

STAT	CO	DIST	AZI	PHASE	P	HRMN	SECON	TRES	CODA	AMPL	PERI	BAZ	ARES	VELO	WT
BHL	BZ	17	208	EP		1446	37.48	-0.02	31						1.0
BHL	BN	17	208	ES		1446	39.68	0.01							1.0
ZAHL	SZ	24	147	EP		1446	38.63	0.01							1.0
ZAHL	SN	24	147	ES		1446	41.61	-0.01							1.0
HWQ	SZ	32	36	EP		1446	39.89	0.00							1.0
DQRL	SZ	40	203	EP		1446	41.16	0.00							1.0

February 11 2016 Hour: 14:53 12.9 Lat: 33.43N Lon: 35.66E Depth: 2 Agency: REL Local  
Magnitudes: 2.6MC REL Rms: 0.0 secs

WEST BEKAA REGION

STAT	CO	DIST	AZI	PHASE	P	HRMN	SECON	TRES	CODA	AMPL	PERI	BAZ	ARES	VELO	WT
SHBL	BZ	12	142	EP		1453	14.92	0.02							1.0
QRWL	SZ	13	8	EP		1453	14.97	-0.02	34						1.0
RCY	SZ	17	66	EP		1453	15.75	0.01							1.0
RCY	SN	17	66	ES		1453	17.85	-0.02							1.0
DQRL	SZ	31	344	EP		1453	17.98	0.02							1.0
ZAHL	SZ	51	23	EP		1453	21.10	-0.07							1.0
ZAHL	SN	51	23	ES		1453	27.37	0.05							1.0
BHL	BZ	52	359	EP		1453	21.30	-0.00							1.0



HWQ SZ 97 15 EP 1453 28.73 0.17 0.2

February 11 2016 Hour: 17:35 56.3 Lat: 33.33N Lon: 35.80E Depth: 8 Agency: REL Local  
Magnitudes: 2.8MC REL Rms: 0.0 secs

HASBAYA REGION

STAT	CO	DIST	AZI	PHASE	P	HRMN	SECON	TRES	CODA	AMPL	PERI	BAZ	ARES	VELO	WT
SHBL	BZ	6	294	EP		1735	58.15	0.02	48						1.0
SHBL	BN	6	294	ES		1735	59.43	-0.02							1.0
RCY	SZ	19	10	EP		1735	59.76	-0.00							1.0
RCY	SN	19	10	ES		1736	2.30	0.01							1.0
DQRL	SZ	47	333	EP		1736	4.09	0.01							1.0
DQRL	SE	47	333	ES		1736	9.81	0.01							1.0
BHL	BZ	65	348	EP		1736	6.96	-0.03							1.0

February 12 2016 Hour: 10: 2 24.4 Agency: REL Distant  
EMSC OT=10:02:24.4 9.83S 119.36E 35Km M=6.2 SUMBA REGION, INDONESIA

STAT	CO	DIST	AZI	PHASE	P	HRMN	SECON	TRES	CODA	AMPL	PERI	BAZ	ARES	VELO	WT
HWQ	BZ			EP		1015	22.11								
SHBL	BZ			EP		1015	22.51								
BHL	BZ			EP		1015	23.08								

February 12 2016 Hour: 14: 5 16.3 Lat: 33.92N Lon: 35.92E Depth: 13 Agency: REL Local  
Magnitudes: 2.8MC REL Rms: 0.1 secs

ZAHLE REGION

STAT	CO	DIST	AZI	PHASE	P	HRMN	SECON	TRES	CODA	AMPL	PERI	BAZ	ARES	VELO	WT
ZAHL	SZ	8	203	EP		14 5	18.94	-0.03	48						1.0
BHL	BZ	25	265	EP		14 5	21.01	0.12							1.0
DQRL	SZ	40	233	EP		14 5	23.13	-0.06							1.0
DQRL	SN	40	233	ES		14 5	28.24	-0.03							1.0
QRWL	SZ	47	208	EP		14 5	24.14	-0.08							1.0
RCY	SZ	48	189	EP		14 5	24.55	0.17							1.0
RCY	SN	48	189	ES		14 5	30.32	-0.03							1.0
SHBL	BZ	66	194	EP		14 5	26.84	-0.18							1.0
SHBL	BN	66	194	ES		14 5	35.07	0.12							1.0

February 12 2016 Hour: 18:58 18.4 Lat: 33.36N Lon: 35.47E Depth: 0 Agency: REL Local  
Magnitudes: 2.4MC REL Rms: 0.0 secs

NABATIYE REGION

STAT	CO	DIST	AZI	PHASE	P	HRMN	SECON	TRES	CODA	AMPL	PERI	BAZ	ARES	VELO	WT
SHBL	BZ	25	93	EP		1858	22.48	0.06	27						1.0
SHBL	BN	25	93	ES		1858	25.42	-0.02							1.0
QRWL	SZ	28	43	EP		1858	22.87	-0.07							1.0
RCY	SZ	37	66	EP		1858	24.32	0.01							1.0
DQRL	SZ	39	13	EP		1858	24.68	-0.02							1.0
DQRL	SE	39	13	ES		1858	29.44	0.04							1.0
BHL	BZ	63	15	EP		1858	28.42	-0.04							1.0
HWQ	SZ	111	23	EP		1858	36.28	0.05							1.0

February 12 2016 Hour: 19: 1 34.3 Lat: 33.37N Lon: 35.48E Depth: 1 Agency: REL Local  
Magnitudes: 2.8MC REL Rms: 0.0 secs

NABATIYE REGION

STAT	CO	DIST	AZI	PHASE	P	HRMN	SECON	TRES	CODA	AMPL	PERI	BAZ	ARES	VELO	WT
SHBL	BZ	25	96	EP		19 1	38.34	-0.03							1.0
SHBL	BN	25	96	ES		19 1	41.38	0.01							1.0
QRWL	SZ	27	44	EP		19 1	38.78	0.03	43						1.0
RCY	SZ	36	67	EP		19 1	40.16	-0.01							1.0
RCY	SN	36	67	ES		19 1	44.49	0.00							1.0
DQRL	SZ	38	13	EP		19 1	40.52	0.04							1.0
DQRL	SN	38	13	ES		19 1	45.01	-0.02							1.0
BHL	BZ	61	15	EP		19 1	44.21	-0.02							1.0

February 12 2016 Hour: 21: 7 53.0 Lat: 33.33N Lon: 35.41E Depth: 0 Agency: REL Local  
Magnitudes: 2.6MC REL Rms: 0.1 secs

**NABATIYE REGION**

STAT	CO	DIST	AZI	PHASE	P	HRMN	SECON	TRES	CODA	AMPL	PERI	BAZ	ARES	VELO	WT
SHBL	BZ	31	87	EP		21 7	58.06	0.01							1.0
QRWL	SZ	35	47	EP		21 7	58.50	-0.12	35						1.0
QRWL	SN	35	47	ES		21 8	2.76	-0.02							1.0
RCY	SZ	44	65	EP		21 8	0.11	0.06							1.0
RCY	SN	44	65	ES		21 8	5.26	-0.01							1.0
DQRL	SZ	44	20	EP		21 8	0.10	0.02							1.0
DQRL	SN	44	20	ES		21 8	5.37	0.04							1.0
BHL	BZ	67	20	EP		21 8	3.79	-0.06							1.0
ZAHL	SZ	73	37	EP		21 8	4.87	0.08							1.0

February 12 2016 Hour: 21:36 50.2 Lat: 33.34N Lon: 35.41E Depth: 9 Agency: REL Local  
Magnitudes: 2.5MC REL Rms: 0.1 secs

**NABATIYE REGION**

STAT	CO	DIST	AZI	PHASE	P	HRMN	SECON	TRES	CODA	AMPL	PERI	BAZ	ARES	VELO	WT
SHBL	BZ	31	88	EP		2136	55.40	-0.09							1.0
SHBL	BN	31	88	ES		2136	59.48	0.06							1.0
QRWL	SZ	34	48	EP		2136	55.82	-0.10	31						1.0
QRWL	SE	34	48	ES		2137	0.19	0.01							1.0
DQRL	SZ	43	20	EP		2136	57.36	0.05							1.0
RCY	SZ	43	66	EP		2136	57.48	0.13							1.0
RCY	SN	43	66	ES		2137	2.61	-0.06							1.0

February 13 2016 Hour: 0:16 0.4 Lat: 33.35N Lon: 35.45E Depth: 3 Agency: REL Local  
Magnitudes: 2.4MC REL Rms: 0.1 secs

**NABATIYE REGION**

STAT	CO	DIST	AZI	PHASE	P	HRMN	SECON	TRES	CODA	AMPL	PERI	BAZ	ARES	VELO	WT
SHBL	BZ	27	90	EP		016	4.90	-0.02							1.0
SHBL	BN	27	90	ES		016	8.25	0.02							1.0
QRWL	SZ	31	44	EP		016	5.32	-0.14	24						1.0
QRWL	SN	31	44	ES		016	9.18	0.01							1.0
RCY	SZ	39	65	EP		016	6.91	0.07							1.0
RCY	SN	39	65	ES		016	11.57	-0.01							1.0
DQRL	SZ	41	16	EP		016	7.17	0.07							1.0

February 13 2016 Hour: 10:51 21.9 Lat: 33.48N Lon: 35.68E Depth: 0 Agency: REL Local  
Magnitudes: 2.3MC REL Rms: 0.1 secs

**WEST BEKAA REGION**

STAT	CO	DIST	AZI	PHASE	P	HRMN	SECON	TRES	CODA	AMPL	PERI	BAZ	ARES	VELO	WT
QRWL	SZ	8	359	EP		1051	23.13	-0.08	23						1.0
QRWL	SN	8	359	ES		1051	24.19	0.02							1.0
RCY	SZ	14	81	EP		1051	24.26	0.02							1.0
SHBL	BZ	15	159	EP		1051	24.32	-0.09							1.0
SHBL	BN	15	159	ES		1051	26.32	0.06							1.0
DQRL	SZ	28	337	EP		1051	26.43	0.07							1.0

February 13 2016 Hour: 14: 5 41.6 Lat: 34.01N Lon: 35.75E Depth: 1 Agency: REL Local  
Magnitudes: 2.6MC REL Rms: 0.1 secs

**KESROUAN REGION**

STAT	CO	DIST	AZI	PHASE	P	HRMN	SECON	TRES	CODA	AMPL	PERI	BAZ	ARES	VELO	WT
BHL	BZ	15	218	EP		14 5	43.94	-0.07	36						1.0
BHL	BN	15	218	ES		14 5	45.82	0.01							1.0
HWQ	SZ	35	31	EP		14 5	47.23	0.04							1.0
DQRL	SZ	38	207	EP		14 5	47.61	-0.07							1.0
DQRL	SN	38	207	ES		14 5	52.28	0.09							1.0
QRWL	SZ	52	187	EP		14 5	49.97	0.05							1.0
RCY	SZ	57	172	EP		14 5	50.81	-0.05							1.0
RCY	SN	57	172	ES		14 5	57.72	-0.00							1.0

**February 13 2016 Hour: 22: 6 29.8 Lat: 33.35N Lon: 35.46E Depth: 1 Agency: REL Local**  
**Magnitudes: 3.1MC REL Rms: 0.1 secs**

**NABATIYE REGION**

STAT	CO	DIST	AZI	PHASE	P	HRMN	SECON	TRES	CODA	AMPL	PERI	BAZ	ARES	VELO	WT
SHBL	BZ	27	91	EP		22	6	34.09-0.01							1.0
SHBL	BN	27	91	ES		22	6	37.35 0.05							1.0
QRWL	SZ	30	44	EP		22	6	34.58-0.07							1.0
RCY	SZ	39	65	EP		22	6	36.02-0.01							1.0
RCY	SN	39	65	ES		22	6	40.60-0.04							1.0
DQRL	SZ	41	15	EP		22	6	36.34-0.01	69						1.0
DQRL	SN	41	15	ES		22	6	41.22 0.02							1.0
BEYL	SZ	58	3	EP		22	6	38.80-0.30							0.2
BHL	BZ	64	16	EP		22	6	40.09-0.01							1.0
ZAHL	SZ	69	35	EP		22	6	41.41 0.53							0.2
HWQ	SZ	112	24	EP		22	6	47.96 0.07							1.0

**February 13 2016 Hour: 23:31 37.1 Lat: 33.40N Lon: 35.61E Depth: 17 Agency: REL Local**  
**Magnitudes: 2.3MC REL Rms: 0.0 secs**

**MARJAAYOUN REGION**

STAT	CO	DIST	AZI	PHASE	P	HRMN	SECON	TRES	CODA	AMPL	PERI	BAZ	ARES	VELO	WT
SHBL	BZ	14	112	EP		2331		40.88-0.00							1.0
QRWL	SZ	18	22	EP		2331		41.29 0.01	22						1.0
QRWL	SE	18	22	ES		2331		44.34-0.00							1.0
DQRL	SZ	35	354	EP		2331		43.37 0.00							1.0
DQRL	SN	35	354	ES		2331		47.97-0.00							1.0

**February 14 2016 Hour: 0:13 43.6 Agency: REL Distant**  
**EMSC OT=00:13:43.6 43.47S 172.84E 10Km M=5.8 SOUTH ISLAND OF NEW ZEALAND**

STAT	CO	DIST	AZI	PHASE	P	HRMN	SECON	TRES	CODA	AMPL	PERI	BAZ	ARES	VELO	WT
HWQ	BZ			EP		033		22.02							
SHBL	BZ			EP		033		22.09							
BHL	BZ			EP		033		22.02							

**February 14 2016 Hour: 5:55 7.8 Agency: REL Regional**  
**EMSC OT=05:55:07.8 36.17N 36.08E 14Km M=3.3 TURKEY-SYRIA BORDER REGION**

STAT	CO	DIST	AZI	PHASE	P	HRMN	SECON	TRES	CODA	AMPL	PERI	BAZ	ARES	VELO	WT
HWQ	BZ			EP		555		39.45							
BHL	BZ			EP		555		43.81							
ZAHL	SZ			EP		555		44.66							
DQRL	SZ			EP		555		46.37							
QRWL	SZ			EP		555		48.40							
RCY	SZ			EP		555		49.18							

**February 14 2016 Hour: 12:19 5.3 Lat: 33.82N Lon: 35.81E Depth: 24 Agency: REL Local**  
**Magnitudes: 2.8MC REL Rms: 0.1 secs**

**ZAHLE REGION**

STAT	CO	DIST	AZI	PHASE	P	HRMN	SECON	TRES	CODA	AMPL	PERI	BAZ	ARES	VELO	WT
BHL	BZ	17	303	EP		1219		10.14 0.11	46						1.0
DQRL	SZ	25	240	EP		1219		10.79-0.08							1.0
DQRL	SE	25	240	ES		1219		14.97 0.00							1.0
QRWL	SZ	32	201	EP		1219		11.61-0.07							1.0
RCY	SZ	36	176	EP		1219		12.38 0.20							1.0
RCY	SN	36	176	ES		1219		17.17-0.08							1.0
HWQ	SZ	52	14	EP		1219		14.26-0.08							1.0

**February 14 2016 Hour: 18: 9 26.5 Agency: REL Distant**  
**EMSC OT=18:09:26.5 30.31N 138.80E 417Km M=5.5 IZU ISLANDS, JAPAN REGION**

STAT	CO	DIST	AZI	PHASE	P	HRMN	SECON	TRES	CODA	AMPL	PERI	BAZ	ARES	VELO	WT
HWQ	BZ			EP		1821		6.09							
ZAHL	SZ			EP		1821		7.99							
BHL	BZ			EP		1821		8.25							
RCY	SZ			EP		1821		9.00							
DQRL	SZ			EP		1821		9.39							

QRWL SZ EP 1821 9.21  
 SHBL BZ EP 1821 9.60

**February 15 2016 Hour: 10:24 27.1 Lat: 34.51N Lon: 36.79E Depth: 0 Agency: REL Local**  
**Magnitudes: 3.1MC REL Rms: 0.0 secs**

**SYRIA REGION**

STAT	CO	DIST	AZI	PHASE	P	HRMN	SECON	TRES	CODA	AMPL	PERI	BAZ	ARES	VELO	WT
HWQ	SZ	82	252	EP		1024	40.24	0.00	66						1.0
HWQ	SN	82	252	ES		1024	49.96	-0.04							1.0
BHL	BZ	124	238	EP		1024	47.16	0.06							1.0
RCY	SZ	143	219	EP		1024	49.88	-0.08							1.0
DQRL	SZ	143	232	EP		1024	50.08	0.02							1.0
DQRL	SN	143	232	ES		1025	7.11	0.03							1.0

**February 15 2016 Hour: 10:28 20.8 Lat: 33.47N Lon: 35.67E Depth: 0 Agency: REL Local**  
**Magnitudes: 2.5MC REL Rms: 0.1 secs**

**WEST BEKAA REGION**

STAT	CO	DIST	AZI	PHASE	P	HRMN	SECON	TRES	CODA	AMPL	PERI	BAZ	ARES	VELO	WT
QRWL	SZ	9	9	EP		1028	22.12	-0.11	29						1.0
SHBL	BZ	15	153	EP		1028	23.37	0.02							1.0
RCY	SZ	16	80	EP		1028	23.39	-0.02							1.0
RCY	SN	16	80	ES		1028	25.35	0.04							1.0
DQRL	SZ	28	341	EP		1028	25.27	-0.02							1.0
DQRL	SN	28	341	ES		1028	28.65	0.08							1.0

**February 15 2016 Hour: 15: 2 32.7 Agency: REL Distant**

**EMSC OT=15:02:32.7 21.14S 175.47W 10Km M=6.0 TONGA**

STAT	CO	DIST	AZI	PHASE	P	HRMN	SECON	TRES	CODA	AMPL	PERI	BAZ	ARES	VELO	WT
RCY	SZ			EP		1522	23.83								
BHL	BZ			EP		1522	23.55								
QRWL	SZ			EP		1522	23.62								
DQRL	SZ			EP		1522	24.18								
SHBL	BZ			EP		1522	24.11								

**February 15 2016 Hour: 15:40 43.4 Lat: 33.79N Lon: 35.76E Depth: 9 Agency: REL Local**  
**Magnitudes: 2.4MC REL Rms: 0.0 secs**

**ALEY REGION**

STAT	CO	DIST	AZI	PHASE	P	HRMN	SECON	TRES	CODA	AMPL	PERI	BAZ	ARES	VELO	WT
ZAHL	SZ	13	57	EP		1540	46.09	0.02							1.0
ZAHL	SN	13	57	ES		1540	48.07	0.00							1.0
BHL	BZ	16	320	EP		1540	46.39	-0.02	26						1.0
DQRL	SZ	20	242	EP		1540	47.04	0.01							1.0
DQRL	SN	20	242	ES		1540	49.74	0.00							1.0
RCY	SZ	34	169	EP		1540	48.96	-0.06							1.0
SHBL	BZ	49	182	EP		1540	51.54	0.05							1.0

**February 15 2016 Hour: 18: 2 19.1 Lat: 34.04N Lon: 35.72E Depth: 6 Agency: REL Local**  
**Magnitudes: 3.0MC REL Rms: 0.1 secs**

**KESROUAN REGION**

STAT	CO	DIST	AZI	PHASE	P	HRMN	SECON	TRES	CODA	AMPL	PERI	BAZ	ARES	VELO	WT
BHL	BZ	16	204	EP		18 2	21.92	-0.07	63						1.0
BHL	BE	16	204	ES		18 2	24.15	0.03							1.0
ZAHL	SZ	25	143	EP		18 2	23.25	-0.06							1.0
ZAHL	SN	25	143	ES		18 2	26.33	-0.09							1.0
BEYL	SZ	28	229	EP		18 2	23.58	-0.21							0.2
HWQ	SZ	34	37	EP		18 2	24.61	-0.06							1.0
HWQ	SE	34	37	ES		18 2	28.91	0.12							1.0
DQRL	SZ	40	201	EP		18 2	25.68	0.08	64						1.0
DQRL	SN	40	201	ES		18 2	30.39	-0.01							1.0
QRWL	SZ	55	184	EP		18 2	27.94	-0.04							1.0
RCY	SZ	61	170	EP		18 2	28.90	-0.12							1.0
RCY	SN	61	170	ES		18 2	36.58	0.23							1.0
SHBL	BZ	77	179	EP		18 2	31.52	0.01							1.0

February 15 2016 Hour: 18:55 0.7

Agency: REL Regional

EMSC OT=18:55:00.7 37.58N 21.70E 5Km M=5.1 SOUTHERN GREECE

STAT	CO	DIST	AZI	PHASE	P	HRMN	SECON	TRES	CODA	AMPL	PERI	BAZ	ARES	VELO	WT
BHL	BZ			EP		1857	46.99								
DQRL	SZ			EP		1857	48.46								
QRWL	SZ			EP		1857	50.25								
ZAHL	SZ			EP		1857	50.29								
RCY	SZ			EP		1857	51.82								
SHBL	BZ			EP		1857	51.40								

February 16 2016 Hour: 3:49 41.8

Agency: REL Regional

EMSC OT=03:49:41.8 36.46N 35.70E 6Km M=3.2 CENTRAL TURKEY

STAT	CO	DIST	AZI	PHASE	P	HRMN	SECON	TRES	CODA	AMPL	PERI	BAZ	ARES	VELO	WT
HWQ	SZ			EP		350	20.01								
BHL	BZ			EP		350	24.46								
ZAHL	SZ			EP		350	25.77								
DQRL	SZ			EP		350	27.52								
QRWL	SZ			EP		350	29.52								
RCY	SZ			EP		350	30.34								
SHBL	BZ			EP		350	32.47								

February 16 2016 Hour: 4:56 51.0 Lat: 33.79N Lon: 35.07E Depth: 33

Agency: REL Local

Magnitudes: 3.0MC REL

Rms: 0.1 secs

OFFSHORE CENTRAL LEBANON

STAT	CO	DIST	AZI	PHASE	P	HRMN	SECON	TRES	CODA	AMPL	PERI	BAZ	ARES	VELO	WT
DQRL	SZ	48	101	EP		457	0.07	0.10	55						1.0
DQRL	SN	48	101	ES		457	6.79	0.19							1.0
BHL	BZ	56	77	EP		457	0.90	-0.12							1.0
QRWL	SZ	63	115	EP		457	1.99	0.02							1.0
QRWL	SN	63	115	ES		457	9.85	-0.22							1.0
ZAHL	SZ	76	84	EP		457	3.78	0.08							1.0
ZAHL	SN	76	84	ES		457	13.11	0.03							1.0
RCY	SZ	79	114	EP		457	3.95	-0.05							1.0
SHBL	BZ	80	128	EP		457	4.23	0.06							1.0
HWQ	SZ	98	56	EP		457	6.26	-0.09							1.0

February 16 2016 Hour: 14:58 8.4 Lat: 33.88N Lon: 35.85E Depth: 3

Agency: REL Local

Magnitudes: 2.9MC REL

Rms: 0.0 secs

ZAHLE REGION

STAT	CO	DIST	AZI	PHASE	P	HRMN	SECON	TRES	CODA	AMPL	PERI	BAZ	ARES	VELO	WT
ZAHL	SZ	4	123	EP		1458	9.31	0.01							1.0
BHL	BZ	19	280	EP		1458	11.44	-0.02	50						1.0
BHL	BN	19	280	ES		1458	13.71	-0.03							1.0
DQRL	SZ	32	234	EP		1458	13.73	0.10							1.0
DQRL	SE	32	234	ES		1458	17.54	0.03							1.0
QRWL	SZ	40	204	EP		1458	14.76	-0.05							1.0
QRWL	SN	40	204	ES		1458	19.53	-0.04							1.0
HWQ	SZ	45	11	EP		1458	15.74	-0.00							1.0

February 17 2016 Hour: 11:19 10.7 Lat: 33.48N Lon: 35.67E Depth: 3

Agency: REL Local

Magnitudes: 2.6MC REL

Rms: 0.0 secs

WEST BEKAA REGION

STAT	CO	DIST	AZI	PHASE	P	HRMN	SECON	TRES	CODA	AMPL	PERI	BAZ	ARES	VELO	WT
QRWL	SZ	8	5	EP		1119	12.10	-0.01							1.0
RCY	SZ	15	82	EP		1119	13.21	-0.03	36						1.0
RCY	SN	15	82	ES		1119	15.13	0.02							1.0
SHBL	BZ	16	156	EP		1119	13.34	0.01							1.0
DQRL	SZ	27	339	EP		1119	15.14	0.01							1.0
DQRL	SN	27	339	ES		1119	18.40	0.00							1.0

February 18 2016 Hour: 2:40 22.7

Agency: REL Regional

EMSC OT=02:40:22.7 34.83N 26.36E 10Km M=4.7 CRETE, GREECE

STAT	CO	DIST	AZI	PHASE	P	HRMN	SECON	TRES	CODA	AMPL	PERI	BAZ	ARES	VELO	WT
DQRL	SZ			EP		242	13.43								
BHL	BZ			EP		242	15.47								
SHBL	BZ			EP		242	16.49								
ZAHL	SZ			EP		242	16.90								
RCY	SZ			EP		242	17.39								
HWQ	SZ			EP		242	17.23								

February 18 2016 Hour: 11:4 23.3 Lat: 33.43N Lon: 35.68E Depth: 10 Agency: REL Local  
Magnitudes: 2.8MC REL Rms: 0.1 secs

HASBAYA REGION

STAT	CO	DIST	AZI	PHASE	P	HRMN	SECON	TRES	CODA	AMPL	PERI	BAZ	ARES	VELO	WT
SHBL	BZ	11	148	EP		11	4	25.98	0.06						1.0
SHBL	BN	11	148	ES		11	4	27.85	-0.02						1.0
QRWL	SZ	13	360	EP		11	4	25.99	-0.15						1.0
RCY	SZ	16	62	EP		11	4	26.62	0.07	43					1.0
DQRL	SZ	32	341	EP		11	4	28.89	0.04						1.0
DQRL	SN	32	341	ES		11	4	33.07	0.10						1.0
BHL	BZ	53	357	EP		11	4	31.90	-0.11						1.0
HWQ	SZ	97	14	EP		11	4	38.82	0.02						1.0

February 18 2016 Hour: 12:21 19.5 Lat: 34.02N Lon: 35.73E Depth: 7 Agency: REL Local  
Magnitudes: 2.7MC REL Rms: 0.0 secs

KESROUAN REGION

STAT	CO	DIST	AZI	PHASE	P	HRMN	SECON	TRES	CODA	AMPL	PERI	BAZ	ARES	VELO	WT
BHL	BZ	14	208	EP		1221	22.08	-0.10	37						1.0
BHL	BN	14	208	ES		1221	24.20	0.04							1.0
HWQ	SZ	35	35	EP		1221	25.39	0.02							1.0
DQRL	SZ	37	203	EP		1221	25.74	0.05							1.0
RCY	SZ	59	170	EP		1221	29.06	-0.00							1.0
RCY	SN	59	170	ES		1221	36.14	-0.00							1.0

February 18 2016 Hour: 15:58 29.7 Lat: 33.79N Lon: 35.76E Depth: 4 Agency: REL Local  
Magnitudes: 2.5MC REL Rms: 0.1 secs

ALEY REGION

STAT	CO	DIST	AZI	PHASE	P	HRMN	SECON	TRES	CODA	AMPL	PERI	BAZ	ARES	VELO	WT
ZAHL	SZ	14	55	EP		1558	32.09	0.01							1.0
ZAHL	SN	14	55	ES		1558	33.86	0.01							1.0
BHL	BZ	16	322	EP		1558	32.41	-0.04	30						1.0
BHL	BN	16	322	ES		1558	34.49	-0.01							1.0
DQRL	SZ	20	243	EP		1558	33.07	0.06							1.0
RCY	SZ	33	168	EP		1558	35.02	-0.05							1.0
HWQ	SZ	57	17	EP		1558	39.18	0.27							0.2

February 18 2016 Hour: 20:29 38.7 Agency: REL Distant  
EMSC OT=20:29:38.7 17.04N 60.08E 10Km M=5.0 OWEN FRACTURE ZONE REGION

STAT	CO	DIST	AZI	PHASE	P	HRMN	SECON	TRES	CODA	AMPL	PERI	BAZ	ARES	VELO	WT
BHL	BZ			EP		2035	27.82								
SHBL	BZ			EP		2035	24.53								

February 19 2016 Hour: 3:56 41.1 Lat: 32.99N Lon: 35.68E Depth: 8 Agency: REL Regional  
Magnitudes: 2.9MC REL Rms: 0.1 secs

SYRIA REGION

STAT	CO	DIST	AZI	PHASE	P	HRMN	SECON	TRES	CODA	AMPL	PERI	BAZ	ARES	VELO	WT
SHBL	BZ	41	9	EP		356	47.91	0.10	53						1.0
SHBL	BN	41	9	ES		356	52.83	0.03							1.0
RCY	SZ	59	15	EP		356	50.63	-0.00							1.0
RCY	SN	59	15	ES		356	57.65	-0.06							1.0
QRWL	SZ	62	0	EP		356	51.12	-0.10							1.0
DQRL	SZ	80	353	EP		356	54.17	0.04							1.0
ZAHL	SZ	99	11	EP		356	56.96	-0.00							1.0

ZAHL SN 99 11 ES 357 8.76 0.03 1.0  
 BHL BZ 102 359 EP 356 57.39-0.03 1.0

**February 19 2016 Hour: 13:37 57.9 Lat: 35.96N Lon: 36.83E Depth: 0 Agency: REL Regional**  
**Magnitudes: 3.2MC REL Rms: 0.2 secs**

**SYRIA REGION**

STAT	CO	DIST	AZI	PHASE	P	HRMN	SECON	TRES	CODA	AMPL	PERI	BAZ	ARES	VELO	WT
HWQ	SZ	203	204	EP		1338	29.00	-0.32	66						1.0
HWQ	SN	203	204	ES		1338	52.39	-0.15							1.0
BHL	BZ	252	206	EP		1338	35.41	0.04							1.0
BHL	BN	252	206	ES		1339	3.26	0.19							1.0
DQRL	SZ	275	205	EP		1338	38.38	0.12							1.0
DQRL	SN	275	205	ES		1339	8.05	-0.04							1.0
RCY	SZ	288	199	EP		1338	40.03	0.16							1.0

**February 20 2016 Hour: 1:40 16.5 Lat: 32.37N Lon: 35.31E Depth: 9 Agency: REL Regional**  
**Magnitudes: 3.0MC REL Rms: 0.0 secs**

**DEAD SEA REGION**

STAT	CO	DIST	AZI	PHASE	P	HRMN	SECON	TRES	CODA	AMPL	PERI	BAZ	ARES	VELO	WT
RCY	SZ	135	21	EP		140	37.61	0.03	53						1.0
RCY	SN	135	21	ES		140	53.16	-0.04							1.0
QRWL	SZ	136	15	EP		140	37.70	0.01							1.0
DQRL	SZ	151	9	EP		140	39.85	-0.05							1.0
DQRL	SE	151	9	ES		140	57.27	0.03							1.0
BHL	BZ	174	10	EP		140	43.12	-0.06							1.0
HWQ	SZ	220	15	EP		140	49.04	0.06							1.0

**February 20 2016 Hour: 7:18 39.4 Lat: 33.41N Lon: 35.66E Depth: 7 Agency: REL Local**  
**Magnitudes: 2.4MC REL Rms: 0.0 secs**

**HASBAYA REGION**

STAT	CO	DIST	AZI	PHASE	P	HRMN	SECON	TRES	CODA	AMPL	PERI	BAZ	ARES	VELO	WT
SHBL	BZ	11	131	EP		718	41.67	0.04	26						1.0
SHBL	BE	11	131	ES		718	43.26	-0.02							1.0
QRWL	SZ	15	9	EP		718	42.18	-0.01							1.0
RCY	SZ	19	61	EP		718	42.79	0.00							1.0
DQRL	SZ	34	346	EP		718	44.94	-0.04							1.0
DQRL	SN	34	346	ES		718	49.12	0.02							1.0

**February 20 2016 Hour: 11:36 31.2 Lat: 33.47N Lon: 35.68E Depth: 3 Agency: REL Local**  
**Magnitudes: 2.4MC REL Rms: 0.0 secs**

**WEST BEKAA REGION**

STAT	CO	DIST	AZI	PHASE	P	HRMN	SECON	TRES	CODA	AMPL	PERI	BAZ	ARES	VELO	WT
QRWL	SZ	8	4	EP		1136	32.66	-0.04	26						1.0
QRWL	SE	8	4	ES		1136	33.83	0.02							1.0
RCY	SZ	15	80	EP		1136	33.76	0.00							1.0
SHBL	BZ	15	156	EP		1136	33.81	0.02							1.0
SHBL	BN	15	156	ES		1136	35.69	-0.01							1.0
DQRL	SZ	28	339	EP		1136	35.72	0.01							1.0

**February 20 2016 Hour: 15:51 22.7 Agency: REL Distant**

**EMSC OT=15:51:22.7 21.98S 179.39W 576Km M=5.8 FIJI REGION**

STAT	CO	DIST	AZI	PHASE	P	HRMN	SECON	TRES	CODA	AMPL	PERI	BAZ	ARES	VELO	WT
SHBL	BZ			EP		16	9	59.00							
BHL	BZ			EP		16	9	58.65							

**February 21 2016 Hour: 11:21 6.8 Lat: 33.51N Lon: 35.69E Depth: 0 Agency: REL Local**  
**Magnitudes: 2.6MC REL Rms: 0.1 secs**

**WEST BEKAA REGION**

STAT	CO	DIST	AZI	PHASE	P	HRMN	SECON	TRES	CODA	AMPL	PERI	BAZ	ARES	VELO	WT
QRWL	SZ	5	352	EP		1121	7.52	-0.06							1.0
RCY	SZ	14	95	EP		1121	9.07	0.03	37						1.0
RCY	SN	14	95	ES		1121	10.69	0.02							1.0
DQRL	SZ	25	333	EP		1121	10.81	0.00							1.0
DQRL	SN	25	333	ES		1121	13.85	0.10							1.0

BHL BZ 44 356 EP 1121 13.86-0.09 1.0

February 22 2016 Hour: 7:11 14.4 Lat: 34.02N Lon: 36.08E Depth: 11 Agency: REL Local  
Magnitudes: 2.8MC REL Rms: 0.0 secs

BAALBECK REGION

STAT	CO	DIST	AZI	PHASE	P	HRMN	SECON	TRES	CODA	AMPL	PERI	BAZ	ARES	VELO	WT
ZAHL	SZ	25	226	EP		711	19.00	0.08	46						1.0
ZAHL	SN	25	226	ES		711	22.25	-0.02							1.0
HWQ	SZ	31	337	EP		711	19.91	0.06							1.0
HWQ	SE	31	337	ES		711	23.84	-0.05							1.0
BHL	BZ	41	252	EP		711	21.30	-0.04							1.0
BHL	BN	41	252	ES		711	26.50	0.03							1.0
DQRL	SZ	58	234	EP		711	24.01	-0.01							1.0
RCY	SZ	62	201	EP		711	24.56	-0.04							1.0

February 22 2016 Hour: 14: 5 21.7 Lat: 33.80N Lon: 35.77E Depth: 14 Agency: REL Local  
Magnitudes: 2.7MC REL Rms: 0.0 secs

ALEY REGION

STAT	CO	DIST	AZI	PHASE	P	HRMN	SECON	TRES	CODA	AMPL	PERI	BAZ	ARES	VELO	WT
ZAHL	SZ	12	59	EP		14 5	24.93	-0.03							1.0
ZAHL	SN	12	59	ES		14 5	27.37	0.02							1.0
BHL	BZ	16	317	EP		14 5	25.28	-0.03							1.0
DQRL	SZ	21	241	EP		14 5	26.00	0.02							1.0
DQRL	SN	21	241	ES		14 5	29.12	0.00							1.0
RCY	SZ	34	170	EP		14 5	27.79	-0.01	38						1.0
HWQ	SZ	55	17	EP		14 5	30.92	0.02							1.0

February 23 2016 Hour: 11:30 35.6 Lat: 33.47N Lon: 35.69E Depth: 0 Agency: REL Local  
Magnitudes: 2.5MC REL Rms: 0.1 secs

WEST BEKAA REGION

STAT	CO	DIST	AZI	PHASE	P	HRMN	SECON	TRES	CODA	AMPL	PERI	BAZ	ARES	VELO	WT
QRWL	SZ	8	355	EP		1130	36.77	-0.15	29						1.0
QRWL	SN	8	355	ES		1130	37.87	-0.04							1.0
RCY	SZ	14	79	EP		1130	37.87	0.07							1.0
SHBL	BZ	15	160	EP		1130	37.94	-0.03							1.0
SHBL	BN	15	160	ES		1130	39.80	0.06							1.0
DQRL	SZ	28	337	EP		1130	39.96	-0.15							1.0
DQRL	SN	28	337	ES		1130	43.70	0.24							1.0

February 24 2016 Hour: 8:25 54.2 Agency: REL Regional

STAT	CO	DIST	AZI	PHASE	P	HRMN	SECON	TRES	CODA	AMPL	PERI	BAZ	ARES	VELO	WT
SHBL	BZ			EP		826	4.15								
QRWL	SZ			EP		826	7.83								
DQRL	SZ			EP		826	11.07								

February 24 2016 Hour: 10:51 59.9 Lat: 33.48N Lon: 35.66E Depth: 5 Agency: REL Local  
Magnitudes: 2.8MC REL Rms: 0.0 secs

WEST BEKAA REGION

STAT	CO	DIST	AZI	PHASE	P	HRMN	SECON	TRES	CODA	AMPL	PERI	BAZ	ARES	VELO	WT
QRWL	SZ	8	12	EP		1052	1.51	-0.02							1.0
QRWL	SN	8	12	ES		1052	2.77	0.01							1.0
SHBL	BZ	16	152	EP		1052	2.67	-0.01							1.0
SHBL	BE	16	152	ES		1052	4.76	0.01							1.0
RCY	SZ	16	82	EP		1052	2.70	0.00	48						1.0
DQRL	SZ	27	341	EP		1052	4.35	0.01							1.0

February 24 2016 Hour: 15: 1 8.4 Lat: 33.79N Lon: 35.78E Depth: 5 Agency: REL Local  
Magnitudes: 2.8MC REL Rms: 0.1 secs

ALEY REGION

STAT	CO	DIST	AZI	PHASE	P	HRMN	SECON	TRES	CODA	AMPL	PERI	BAZ	ARES	VELO	WT
ZAHL	SZ	13	51	EP		15 1	10.74	0.03							1.0
BHL	BZ	17	318	EP		15 1	11.37	-0.04	43						1.0
DQRL	SZ	21	245	EP		15 1	12.10	0.09							1.0
DQRL	SN	21	245	ES		15 1	14.67	-0.01							1.0



QRWL	SZ	28	199	EP	15	1	12.90	-0.15								1.0
RCY	SZ	33	171	EP	15	1	13.71	-0.08								1.0
SHBL	BZ	49	184	EP	15	1	16.47	0.12								1.0
SHBL	BN	49	184	ES	15	1	22.27	0.04								1.0

**February 24 2016 Hour: 16:13 0.1 Lat: 33.80N Lon: 35.77E Depth: 11 Agency: REL Local**  
**Magnitudes: 2.6MC REL Rms: 0.0 secs**

**ALEY REGION**

STAT	CO	DIST	AZI	PHASE	P	HRMN	SECON	TRES	CODA	AMPL	PERI	BAZ	ARES	VELO	WT
ZAHL	SZ	13	60	EP		1613	2.93	-0.01							1.0
BHL	BZ	16	318	EP		1613	3.29	0.03	34						1.0
DQRL	SZ	21	240	EP		1613	3.97	-0.01							1.0
DQRL	SN	21	240	ES		1613	6.87	0.00							1.0
QRWL	SZ	29	196	EP		1613	5.06	-0.09							1.0
SHBL	BZ	50	182	EP		1613	8.45	0.04							1.0
SHBL	BE	50	182	ES		1613	14.62	0.04							1.0

**February 25 2016 Hour: 11:32 13.8 Lat: 33.79N Lon: 35.78E Depth: 12 Agency: REL Local**  
**Magnitudes: 2.7MC REL Rms: 0.1 secs**

**ZAHLE REGION**

STAT	CO	DIST	AZI	PHASE	P	HRMN	SECON	TRES	CODA	AMPL	PERI	BAZ	ARES	VELO	WT
BHL	BZ	17	317	EP		1132	17.18	-0.10	37						1.0
DQRL	SZ	21	243	EP		1132	17.84	-0.08							1.0
DQRL	SN	21	243	ES		1132	21.04	0.10							1.0
RCY	SZ	34	170	EP		1132	19.70	0.02							1.0
RCY	SN	34	170	ES		1132	23.99	-0.02							1.0
HWQ	SZ	56	16	EP		1132	23.20	0.08							1.0

**February 25 2016 Hour: 12:12 58.4 Lat: 33.48N Lon: 35.68E Depth: 0 Agency: REL Local**  
**Magnitudes: 2.6MC REL Rms: 0.0 secs**

**WEST BEKAA REGION**

STAT	CO	DIST	AZI	PHASE	P	HRMN	SECON	TRES	CODA	AMPL	PERI	BAZ	ARES	VELO	WT
QRWL	SZ	8	1	EP		1212	59.63	-0.04	34						1.0
RCY	SZ	15	81	EP		1213	0.77	0.01							1.0
SHBL	BZ	15	158	EP		1213	0.86	-0.04							1.0
SHBL	BE	15	158	ES		1213	2.78	0.03							1.0
DQRL	SZ	27	338	EP		1213	2.84	0.02							1.0
DQRL	SN	27	338	ES		1213	6.10	0.02							1.0

**February 25 2016 Hour: 16:15 23.8 Lat: 33.80N Lon: 35.77E Depth: 18 Agency: REL Local**  
**Magnitudes: 2.4MC REL Rms: 0.0 secs**

**ALEY REGION**

STAT	CO	DIST	AZI	PHASE	P	HRMN	SECON	TRES	CODA	AMPL	PERI	BAZ	ARES	VELO	WT
ZAHL	SZ	13	58	EP		1615	27.47	-0.02							1.0
ZAHL	SN	13	58	ES		1615	30.24	0.02							1.0
BHL	BZ	16	317	EP		1615	27.80	0.02	27						1.0
BHL	BN	16	317	ES		1615	30.68	-0.03							1.0
DQRL	SZ	21	241	EP		1615	28.40	0.05							1.0
QRWL	SZ	29	196	EP		1615	29.27	-0.04							1.0

**February 25 2016 Hour: 19:21 4.9 Lat: 34.04N Lon: 35.71E Depth: 0 Agency: REL Local**  
**Magnitudes: 2.4MC REL Rms: 0.1 secs**

**KESROUAN REGION**

STAT	CO	DIST	AZI	PHASE	P	HRMN	SECON	TRES	CODA	AMPL	PERI	BAZ	ARES	VELO	WT
BHL	BZ	16	198	EP		1921	7.44	-0.10	25						1.0
BHL	BN	16	198	ES		1921	9.50	0.04							1.0
HWQ	SZ	34	40	EP		1921	10.53	0.08							1.0
HWQ	SN	34	40	ES		1921	14.48	-0.05							1.0
DQRL	SZ	39	199	EP		1921	11.30	0.00							1.0
RCY	SZ	62	169	EP		1921	14.84	-0.04							1.0
SHBL	BZ	77	178	EP		1921	17.42	0.06							1.0

February 27 2016 Hour: 2:41 46.2

Agency: REL Distant

EMSC OT=02:41:46.2 4.53N 32.73W 10Km M=5.5 CENTRAL MID-ATLANTIC RIDGE

STAT	CO	DIST	AZI	PHASE	P	HRMN	SECON	TRES	CODA	AMPL	PERI	BAZ	ARES	VELO	WT
BHL	BZ			EP		252	54.22								
QRWL	SZ			EP		252	54.76								

February 27 2016 Hour: 17:56 56.4 Lat: 36.25N Lon: 34.25E Depth: 34 Agency: REL Regional  
Magnitudes: 3.5MC REL Rms: 0.1 secs

OFFSHORE TURKEY

STAT	CO	DIST	AZI	PHASE	P	HRMN	SECON	TRES	CODA	AMPL	PERI	BAZ	ARES	VELO	WT
HWQ	BZ	268	144	EP		1757	32.81	-0.10	88						1.0
HWQ	BN	268	144	ES		1757	59.91	0.02							1.0
BHL	BZ	291	153	EP		1757	35.81	0.15							1.0
DQRL	SZ	307	156	EP		1757	37.65	-0.10							1.0
QRWL	SZ	328	156	EP		1757	40.27	0.02							1.0
RCY	SZ	339	154	EP		1757	41.82	0.17							1.0
SHBL	BZ	350	157	EP		1757	42.93	-0.14							1.0
SHBL	BN	350	157	ES		1758	17.55	-0.02							1.0

February 28 2016 Hour: 4: 2 52.6 Lat: 33.22N Lon: 35.59E Depth: 10 Agency: REL Local  
Magnitudes: 2.6MC REL Rms: 0.1 secs

DEAD SEA REGION

STAT	CO	DIST	AZI	PHASE	P	HRMN	SECON	TRES	CODA	AMPL	PERI	BAZ	ARES	VELO	WT
SHBL	BZ	21	44	EP		4 2	56.55	0.10	34						1.0
QRWL	SZ	38	13	EP		4 2	58.71	-0.28							1.0
QRWL	SN	38	13	ES		4 3	3.73	0.02							1.0
DQRL	SZ	54	358	EP		4 3	1.71	0.13							1.0
DQRL	SN	54	358	ES		4 3	8.24	0.02							1.0
BHL	BZ	77	4	EP		4 3	5.11	0.02							1.0

February 28 2016 Hour: 8:42 17.9 Lat: 33.41N Lon: 35.71E Depth: 13 Agency: REL Local  
Magnitudes: 2.7MC REL Rms: 0.0 secs

HASBAYA REGION

STAT	CO	DIST	AZI	PHASE	P	HRMN	SECON	TRES	CODA	AMPL	PERI	BAZ	ARES	VELO	WT
SHBL	BZ	7	153	EP		842	20.52	0.02							1.0
QRWL	SZ	16	351	EP		842	21.21	-0.06	37						1.0
QRWL	SN	16	351	ES		842	23.80	0.01							1.0
DQRL	SZ	36	339	EP		842	24.00	-0.02							1.0
DQRL	SN	36	339	ES		842	28.60	0.02							1.0
BHL	BZ	55	355	EP		842	27.06	0.02							1.0

February 28 2016 Hour: 13:20 22.4 Lat: 33.40N Lon: 35.64E Depth: 13 Agency: REL Local  
Magnitudes: 2.4MC REL Rms: 0.1 secs

HASBAYA REGION

STAT	CO	DIST	AZI	PHASE	P	HRMN	SECON	TRES	CODA	AMPL	PERI	BAZ	ARES	VELO	WT
SHBL	BZ	11	120	EP		1320	25.31	-0.01	25						1.0
SHBL	BN	11	120	ES		1320	27.58	0.06							1.0
QRWL	SZ	17	13	EP		1320	25.74	-0.18							1.0
RCY	SZ	21	59	EP		1320	26.51	0.01							1.0
DQRL	SZ	35	349	EP		1320	28.42	0.02							1.0
DQRL	SN	35	349	ES		1320	32.94	0.07							1.0
BHL	BZ	56	1	EP		1320	31.68	0.04							1.0

February 28 2016 Hour: 16:32 28.7 Lat: 33.58N Lon: 36.24E Depth: 5 Agency: REL Local  
Magnitudes: 2.7MC REL Rms: 0.0 secs

SYRIA REGION

STAT	CO	DIST	AZI	PHASE	P	HRMN	SECON	TRES	CODA	AMPL	PERI	BAZ	ARES	VELO	WT
RCY	SZ	39	257	EP		1632	35.10	-0.02	39						1.0
RCY	SN	39	257	ES		1632	39.83	-0.02							1.0
ZAHL	SZ	46	313	EP		1632	36.13	-0.05							1.0
ZAHL	SN	46	313	ES		1632	41.73	0.04							1.0
QRWL	SZ	52	267	EP		1632	37.23	-0.01							1.0
SHBL	BZ	53	242	EP		1632	37.43	0.07							1.0

DQRL	SZ	64	283	EP		1632	39.13	-0.02									1.0
BHL	BZ	66	304	EP		1632	39.39	0.00									1.0

**February 29 2016 Hour: 9: 3 20.0 Lat: 32.34N Lon: 35.49E Depth: 1 Agency: REL Regional**  
**Magnitudes: 3.1MC REL Rms: 0.2 secs**

**DEAD SEA REGION**

STAT	CO	DIST	AZI	PHASE	P	HRMN	SECON	TRES	CODA	AMPL	PERI	BAZ	ARES	VELO	WT
RCY	SZ	132	14	EP		9	3	41.55	0.23						1.0
QRWL	SZ	135	7	EP		9	3	41.37	-0.34						1.0
QRWL	SE	135	7	ES		9	3	57.56	-0.21						1.0
DQRL	SZ	151	3	EP		9	3	44.16	0.01	57					1.0
DQRL	SE	151	3	ES		9	4	2.23	0.22						1.0
HWQ	SZ	219	11	EP		9	3	53.35	0.09						1.0

**February 29 2016 Hour: 13: 2 33.1 Lat: 34.48N Lon: 36.74E Depth: 8 Agency: REL Local**  
**Magnitudes: 3.1MC REL Rms: 0.1 secs**

**SYRIA REGION**

STAT	CO	DIST	AZI	PHASE	P	HRMN	SECON	TRES	CODA	AMPL	PERI	BAZ	ARES	VELO	WT
HWQ	SZ	77	253	EP		13	2	45.68	0.11	63					1.0
HWQ	SN	77	253	ES		13	2	54.74	-0.06						1.0
BHL	BZ	119	238	EP		13	2	52.03	0.08						1.0
RCY	SZ	137	218	EP		13	2	54.53	-0.16						1.0
RCY	SN	137	218	ES		13	3	10.79	0.11						1.0
DQRL	SZ	138	232	EP		13	2	54.74	-0.03						1.0
DQRL	SN	138	232	ES		13	3	10.75	-0.05						1.0



# Epicentral Map of Lebanon

## February 2016

