

Republic of Lebanon
National Council for Scientific Research

Provisional Seismological Bulletin

from the

NATIONAL SEISMIC NETWORK

October

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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*

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.

October 2 2016 Hour: 11:37 56.5 Lat: 33.79N Lon: 35.80E Depth: 18 Agency: REL Local
Magnitudes: 3.1MC 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	11	48	EP		1138	0.01-0.00								1.0
BHL	BZ	18	313	EP		1138	0.57-0.10								1.0
BHL	BE	18	313	ES		1138	3.75-0.00								1.0
DQRL	SZ	23	246	EP		1138	1.24 0.01		66						1.0
DQRL	SN	23	246	ES		1138	4.84 0.10								1.0
QRWL	SZ	29	202	EP		1138	1.96-0.03								1.0
QRWL	SN	29	202	ES		1138	6.04-0.01								1.0
BEYL	SZ	30	287	EP		1138	1.22-0.74								0.2
HWQ	SZ	56	14	EP		1138	5.82 0.09								1.0

October 3 2016 Hour: 11:13 29.8 Agency: REL Regional

STAT	CO	DIST	AZI	PHASE	P	HRMN	SECON	TRES	CODA	AMPL	PERI	BAZ	ARES	VELO	WT
RCY	SZ			EP		1113	32.00								
DQRL	SZ			EP		1113	36.30								
BHL	BZ			EP		1113	38.24								
HWQ	SZ			EP		1113	43.81								

October 3 2016 Hour: 18:26 2.3 Lat: 32.11N Lon: 35.56E Depth: 0 Agency: REL Regional
Magnitudes: 3.0MC REL Rms: 0.1 secs

DEAD SEA REGION

STAT	CO	DIST	AZI	PHASE	P	HRMN	SECON	TRES	CODA	AMPL	PERI	BAZ	ARES	VELO	WT
RCY	SZ	156	10	EP		1826	27.02-0.13								1.0
RCY	SN	156	10	ES		1826	45.49-0.04								1.0
DQRL	SZ	177	0	EP		1826	30.34 0.13								1.0
DQRL	SN	177	0	ES		1826	50.93 0.07								1.0
BHL	BZ	199	3	EP		1826	33.22 0.07								1.0
HWQ	SZ	243	8	EP		1826	38.66 0.03								1.0

October 3 2016 Hour: 22:51 20.8 Lat: 33.80N Lon: 35.81E Depth: 16 Agency: REL Local
Magnitudes: 3.1MC 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	9	48	EP		2251	24.02 0.04								1.0
BHL	BZ	18	307	EP		2251	24.87-0.00								1.0
BHL	BN	18	307	ES		2251	27.88 0.01								1.0
DQRL	SZ	25	244	EP		2251	25.71 0.02		68						1.0
DQRL	SN	25	244	ES		2251	29.26-0.03								1.0
BEYL	SZ	31	284	EP		2251	26.40 0.05								0.2
QRWL	SZ	31	203	EP		2251	26.42-0.05								1.0
RCY	SZ	34	177	EP		2251	26.93-0.03								1.0
RCY	SN	34	177	ES		2251	31.50 0.00								1.0
HWQ	SZ	54	13	EP		2251	29.75-0.03								1.0

October 4 2016 Hour: 23: 3 18.8 Lat: 33.78N Lon: 35.79E Depth: 4 Agency: REL Local
Magnitudes: 2.9MC 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	12	44	EP		23 3	20.94-0.04								1.0
BHL	BZ	19	318	EP		23 3	21.86-0.13		49						1.0
DQRL	SZ	22	249	EP		23 3	22.56 0.10								1.0
DQRL	SN	22	249	ES		23 3	25.18 0.01								1.0
QRWL	SZ	27	202	EP		23 3	23.33 0.03								1.0
QRWL	SN	27	202	ES		23 3	26.67 0.04								1.0
HWQ	BZ	57	14	EP		23 3	28.22 0.13								1.0

October 6 2016 Hour: 15:51 59.9

Agency: REL Distant

STAT	CO	DIST	AZI	PHASE	P	HRMN	SECON	TRES	CODA	AMPL	PERI	BAZ	ARES	VELO	WT
BHL	BZ			EP		16	3	37.16							
QRWL	SZ			EP		16	3	37.87							
DQRL	SZ			EP		16	3	37.96							

October 7 2016 Hour: 14:16 24.0

Lat: 33.78N Lon: 35.76E Depth: 3 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	14	54	EP		1416	26.31	0.00							1.0
BHL	BZ	17	323	EP		1416	26.65	-0.07	37						1.0
DQRL	SZ	20	244	EP		1416	27.19	-0.04							1.0
DQRL	SN	20	244	ES		1416	29.72	0.06							1.0
RCY	SZ	33	168	EP		1416	29.25	-0.02							1.0
RCY	SN	33	168	ES		1416	33.21	0.00							1.0
HWQ	SZ	57	17	EP		1416	33.29	0.07							1.0

October 7 2016 Hour: 15:16 0.7

Lat: 33.80N Lon: 35.75E Depth: 6 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	14	62	EP		1516	3.22	0.00							1.0
BHL	BZ	15	321	EP		1516	3.36	0.02	38						1.0
DQRL	SZ	20	238	EP		1516	4.09	-0.03							1.0
DQRL	SN	20	238	ES		1516	6.66	0.01							1.0
RCY	SZ	35	167	EP		1516	6.46	0.06							1.0
RCY	SE	35	167	ES		1516	10.58	-0.04							1.0
HWQ	SZ	56	18	EP		1516	9.77	-0.02							1.0

October 7 2016 Hour: 15:20 34.6

Lat: 33.82N Lon: 35.78E Depth: 17 Agency: REL Local

Magnitudes: 2.7MC REL

Rms: 0.1 secs

BAABDA REGION

STAT	CO	DIST	AZI	PHASE	P	HRMN	SECON	TRES	CODA	AMPL	PERI	BAZ	ARES	VELO	WT
ZAHL	SZ	11	66	EP		1520	37.95	-0.06							1.0
BHL	BZ	15	310	EP		1520	38.43	0.10	41						1.0
DQRL	SZ	23	237	EP		1520	39.23	-0.02							1.0
DQRL	SN	23	237	ES		1520	42.63	-0.04							1.0
RCY	SZ	36	171	EP		1520	40.97	-0.08							1.0
RCY	SN	36	171	ES		1520	45.90	0.09							1.0
HWQ	SZ	53	17	EP		1520	43.50	0.01							1.0

October 7 2016 Hour: 22:44 32.1

Lat: 33.67N Lon: 35.58E Depth: 4 Agency: REL Local

Magnitudes: 2.5MC REL

Rms: 0.3 secs

CHOUF REGION

STAT	CO	DIST	AZI	PHASE	P	HRMN	SECON	TRES	CODA	AMPL	PERI	BAZ	ARES	VELO	WT
DQRL	SZ	4	338	EP		2244	33.09	-0.07	30						1.0
DQRL	SE	4	338	ES		2244	34.01	0.06							1.0
QRWL	SZ	17	147	EP		2244	34.87	-0.04							1.0
QRWL	SN	17	147	ES		2244	37.02	0.02							1.0
BHL	BZ	26	14	EP		2244	36.46	0.04							1.0
BHL	BN	26	14	ES		2244	39.54	-0.09							1.0
HWQ	SZ	75	26	EP		2244	45.68	1.49							0.2

October 7 2016 Hour: 23:5 27.3

Lat: 33.81N Lon: 35.76E Depth: 5 Agency: REL Local

Magnitudes: 2.5MC REL

Rms: 0.0 secs

ALEY REGION

STAT	CO	DIST	AZI	PHASE	P	HRMN	SECON	TRES	CODA	AMPL	PERI	BAZ	ARES	VELO	WT
BHL	BZ	15	317	EP		23	5	29.89	-0.00	31					1.0
BHL	BN	15	317	ES		23	5	31.83	0.00						1.0
DQRL	SZ	21	238	EP		23	5	30.83	-0.02						1.0
QRWL	SZ	30	195	EP		23	5	32.23	0.04						1.0
RCY	SZ	35	169	EP		23	5	33.04	-0.02						1.0

RCY	SN	35	169	ES		23	5	37.33-0.00											1.0
HWQ	SZ	55	18	EP		23	5	36.20-0.00											1.0

October 8 2016 Hour: 19:41 17.2 Agency: REL Distant
EMSC OT=19:41:17.2 37.18S 178.94E 15Km M=5.6 OFF E. COAST OF N. ISLAND, N.Z
 STAT CO DIST AZI PHASE P HRMN SECON TRES CODA AMPL PERI BAZ ARES VELO WT
 BHL BZ EP 20 1 5.76
 DQRL SZ EP 20 1 5.56

October 9 2016 Hour: 11:3 39.0 Lat: 33.43N Lon: 36.35E Depth: 25 Agency: REL Local
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
 RCY SZ 48 279 EP 11 3 47.39-0.06 52 1.0
 RCY SN 48 279 ES 11 3 53.77 0.03 1.0
 ZAHL SZ 64 318 EP 11 3 49.71 0.09 1.0
 ZAHL SN 64 318 ES 11 3 57.47-0.04 1.0
 DQRL SZ 78 293 EP 11 3 51.65-0.00 1.0
 HWQ SZ 101 339 EP 11 3 54.84-0.12 0.2

October 9 2016 Hour: 20:58 0.0 Agency: REL Regional
 STAT CO DIST AZI PHASE P HRMN SECON TRES CODA AMPL PERI BAZ ARES VELO WT
 HWQ SZ EP 2058 54.36
 DQRL SZ EP 2059 3.05

October 11 2016 Hour: 14:56 20.6 Lat: 33.78N Lon: 35.78E Depth: 8 Agency: REL Local
Magnitudes: 2.4MC 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 49 EP 1456 23.24 0.04 1.0
 BHL BZ 18 319 EP 1456 23.77-0.08 27 1.0
 BHL BN 18 319 ES 1456 26.25-0.01 1.0
 DQRL SZ 21 246 EP 1456 24.44 0.09 1.0
 RCY SZ 32 171 EP 1456 25.97-0.06 1.0
 RCY SN 32 171 ES 1456 30.04-0.00 1.0
 HWQ SZ 57 16 EP 1456 29.95 0.02 1.0

October 11 2016 Hour: 15:58 14.5 Lat: 34.10N Lon: 36.03E Depth: 1 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
 HWQ SZ 21 339 EP 1558 17.88 0.01 1.0
 ZAHL SZ 30 206 EP 1558 19.29-0.09 1.0
 ZAHL SN 30 206 ES 1558 23.03 0.03 1.0
 BHL BZ 41 238 EP 1558 21.13 0.02 45 1.0
 BHL BN 41 238 ES 1558 26.01-0.00 1.0
 DQRL SZ 61 224 EP 1558 24.34-0.01 1.0
 RCY SZ 70 195 EP 1558 25.77 0.05 1.0

October 12 2016 Hour: 2:53 4.2 Lat: 35.71N Lon: 36.33E Depth: 0 Agency: REL Regional
Magnitudes: 3.5MC 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 163 193 EP 253 30.00-0.04 107 1.0
 HWQ SE 163 193 ES 253 49.04-0.16 1.0
 BHL BN 210 197 ES 254 0.29 0.10 1.0
 ZAHL SZ 210 191 EP 253 36.36 0.01 1.0
 BHL BZ 210 197 EP 253 36.32-0.04 1.0
 ZAHL SN 210 191 ES 254 0.31 0.13 1.0
 DQRL SZ 233 198 EP 253 39.20-0.05 1.0
 RCY SZ 250 191 EP 253 41.42 0.05 1.0

October 12 2016 Hour: 4:16 23.7

Agency: REL Distant

EMSC OT=04:16:23.7 20.93S 178.52W 581Km M=5.4 FIJI REGION

STAT	CO	DIST	AZI	PHASE	P	HRMN	SECON	TRES	CODA	AMPL	PERI	BAZ	ARES	VELO	WT
HWQ	SZ			EP		435	2.05								
BHL	BZ			EP		435	3.11								
DQRL	SZ			EP		435	3.86								

October 12 2016 Hour: 23:13 37.3 Lat: 33.69N Lon: 35.94E Depth: 29 Agency: REL Local
Magnitudes: 3.0MC 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	19	344	EP		2313	42.90	0.05							1.0
RCY	SZ	24	205	EP		2313	43.23	-0.03							1.0
RCY	SN	24	205	ES		2313	47.68	-0.02							1.0
QRWL	SZ	29	237	EP		2313	43.78	0.07							1.0
DQRL	SZ	35	273	EP		2313	44.41	0.07							1.0
DQRL	SN	35	273	ES		2313	49.53	-0.06							1.0
BHL	BZ	36	312	EP		2313	44.39	-0.09	62						1.0
BHL	BN	36	312	ES		2313	49.87	0.05							1.0
HWQ	SZ	65	0	EP		2313	48.28	-0.03							1.0

October 12 2016 Hour: 23:30 26.4 Lat: 33.62N Lon: 36.41E Depth: 21 Agency: REL Local
Magnitudes: 2.8MC 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	55	256	EP		2330	35.69	-0.04							1.0
RCY	SN	55	256	ES		2330	42.60	-0.01							1.0
ZAHL	SZ	56	299	EP		2330	35.90	0.10							1.0
QRWL	SZ	68	264	EP		2330	37.52	-0.04							1.0
BHL	BZ	77	295	EP		2330	38.84	-0.03	45						1.0
BHL	BN	77	295	ES		2330	48.05	-0.01							1.0
DQRL	SZ	79	278	EP		2330	39.07	-0.02							1.0
DQRL	SN	79	278	ES		2330	48.47	0.02							1.0
HWQ	SZ	85	330	EP		2330	40.03	-0.02							1.0

October 13 2016 Hour: 15:16 56.1 Lat: 33.81N Lon: 35.78E Depth: 15 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	11	62	EP		1516	59.31	-0.02							1.0
BHL	BZ	15	312	EP		1516	59.73	-0.00	34						1.0
DQRL	SZ	23	239	EP		1517	0.53	-0.05							1.0
DQRL	SN	23	239	ES		1517	3.91	0.04							1.0
RCY	SZ	35	171	EP		1517	2.26	-0.11							1.0
RCY	SN	35	171	ES		1517	7.08	0.09							1.0
HWQ	SZ	54	17	EP		1517	5.16	0.06							1.0

October 13 2016 Hour: 22:59 30.7 Lat: 33.81N Lon: 35.81E Depth: 13 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
ZAHL	SZ	9	51	EP		2259	33.50	-0.01							1.0
BHL	BZ	18	307	EP		2259	34.40	-0.05	39						1.0
BHL	BN	18	307	ES		2259	37.23	0.04							1.0
DQRL	SZ	25	243	EP		2259	35.25	-0.09							1.0
DQRL	SN	25	243	ES		2259	38.85	0.10							1.0
BEYL	SZ	30	284	EP		2259	35.99	-0.06							1.0
RCY	SZ	34	176	EP		2259	36.69	-0.08							1.0
RCY	SN	34	176	ES		2259	41.30	0.07							1.0
HWQ	SZ	54	14	EP		2259	39.81	0.09							1.0

October 14 2016 Hour: 15:31 55.2 Lat: 33.79N Lon: 35.78E Depth: 11 Agency: REL Local
Magnitudes: 2.4MC 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	12	55	EP		1531	58.12	0.04							1.0
BHL	BZ	17	317	EP		1531	58.57	-0.03	27						1.0
DQRL	SZ	22	243	EP		1531	59.38	0.11							1.0
DQRL	SN	22	243	ES		1532	2.22	-0.05							1.0
RCY	SZ	34	171	EP		1532	1.00	-0.02							1.0
RCY	SN	34	171	ES		1532	5.31	-0.02							1.0
HWQ	SZ	56	16	EP		1532	4.41	-0.04							1.0

October 15 2016 Hour: 5:32 55.5

Agency: REL Regional

EMSC OT=05:32:55.5 34.56N 26.52E 10Km M=4.5 CRETE, GREECE

STAT	CO	DIST	AZI	PHASE	P	HRMN	SECON	TRES	CODA	AMPL	PERI	BAZ	ARES	VELO	WT
HWQ	SZ			EP		534	50.20								
RCY	SZ			EP		534	48.76								

October 15 2016 Hour: 13:51 6.3 Lat: 33.78N Lon: 35.78E Depth: 11 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	13	51	EP		1351	9.17	0.02							1.0
BHL	BZ	18	319	EP		1351	9.68	-0.04	40						1.0
DQRL	SZ	21	246	EP		1351	10.21	-0.02							1.0
DQRL	SN	21	246	ES		1351	13.18	0.03							1.0
RCY	SZ	32	171	EP		1351	11.92	0.03							1.0
RCY	SN	32	171	ES		1351	16.01	-0.03							1.0
HWQ	SZ	57	16	EP		1351	15.67	0.01							1.0

October 15 2016 Hour: 14:32 57.4 Lat: 33.81N Lon: 35.80E Depth: 31 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	308	EP		1433	2.97	-0.03	26						1.0
DQRL	SZ	24	242	EP		1433	3.56	-0.01							1.0
DQRL	SN	24	242	ES		1433	8.15	0.02							1.0
QRWL	SZ	31	200	EP		1433	4.26	0.02							1.0
QRWL	SN	31	200	ES		1433	9.28	-0.01							1.0
HWQ	SZ	54	15	EP		1433	7.05	0.02							1.0

October 15 2016 Hour: 20:14 49.3

Agency: REL Regional

EMSC OT=20:14:49.3 39.78N 20.63E 10Km M=5.4 GREECE

STAT	CO	DIST	AZI	PHASE	P	HRMN	SECON	TRES	CODA	AMPL	PERI	BAZ	ARES	VELO	WT
BHL	BZ			EP		2017	55.93								
QRWL	SZ			EP		2018	1.43								
RCY	SZ			EP		2018	3.16								
SHBL	BZ			EP		2018	2.13								

October 16 2016 Hour: 8:59 46.9

Agency: REL Regional

STAT	CO	DIST	AZI	PHASE	P	HRMN	SECON	TRES	CODA	AMPL	PERI	BAZ	ARES	VELO	WT
QRWL	SZ			EP		9 0	5.26								
DQRL	SZ			EP		9 0	7.93								
BHL	BZ			EP		9 0	11.41								

October 17 2016 Hour: 7:14 48.3

Agency: REL Distant

EMSC OT=07:14:48.3 32.91N 94.91E 20Km M=5.9 XIZANG-QINGHAI BORDER REGION

STAT	CO	DIST	AZI	PHASE	P	HRMN	SECON	TRES	CODA	AMPL	PERI	BAZ	ARES	VELO	WT
HWQ	SZ			EP		723	31.17								
BHL	BZ			EP		723	33.92								
QRWL	SZ			EP		723	34.46								
DQRL	SZ			EP		723	34.73								

October 17 2016 Hour: 9:145.3 Lat: 33.89N Lon: 35.86E Depth: 5 Agency: REL Local
Magnitudes: 2.7MC REL Rms: 0.0 secs

BAABDA REGION

STAT	CO	DIST	AZI	PHASE	P	HRMN	SECON	TRES	CODA	AMPL	PERI	BAZ	ARES	VELO	WT
ZAHL	SZ	4	143	EP		9	1	46.61-0.01							1.0
BHL	BZ	19	276	EP		9	1	48.62 0.03	41						1.0
BHL	BN	19	276	ES		9	1	51.02 0.01							1.0
DQRL	SZ	34	233	EP		9	1	50.82-0.00							1.0
DQRL	SN	34	233	ES		9	1	54.87-0.04							1.0
RCY	SZ	43	183	EP		9	1	52.35-0.05							1.0
RCY	SN	43	183	ES		9	1	57.70 0.06							1.0
HWQ	SZ	44	10	EP		9	1	52.52 0.00							1.0

October 17 2016 Hour: 10:22 33.7 Lat: 33.51N Lon: 35.69E Depth: 0 Agency: REL Local
Magnitudes: 2.3MC 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	4	345	EP		1022	34.26-0.05		24						1.0
RCY	SZ	14	99	EP		1022	35.89 0.01								1.0
RCY	SN	14	99	ES		1022	37.49-0.01								1.0
DQRL	SZ	24	332	EP		1022	37.58 0.02								1.0
DQRL	SN	24	332	ES		1022	40.43 0.01								1.0
BHL	BZ	43	355	EP		1022	40.72 0.05								0.2
HWQ	SZ	88	15	EP		1022	47.87 0.02								1.0

October 17 2016 Hour: 14:32 18.6 Lat: 34.00N Lon: 36.18E Depth: 0 Agency: REL Local
Magnitudes: 3.0MC REL Rms: 0.0 secs

BAALBECK REGION

STAT	CO	DIST	AZI	PHASE	P	HRMN	SECON	TRES	CODA	AMPL	PERI	BAZ	ARES	VELO	WT
HWQ	SZ	38	325	EP		1432	24.71-0.01								1.0
HWQ	SN	38	325	ES		1432	29.25-0.00								1.0
BHL	BZ	50	258	EP		1432	26.64 0.03		58						1.0
RCY	SZ	64	210	EP		1432	28.87-0.05								1.0
RCY	SN	64	210	ES		1432	36.56-0.00								1.0
DQRL	SZ	65	240	EP		1432	29.11 0.02								1.0
DQRL	SN	65	240	ES		1432	36.83-0.02								1.0
QRWL	SZ	68	223	EP		1432	29.54-0.01								1.0

October 17 2016 Hour: 15:1 12.3 Lat: 33.79N Lon: 35.79E Depth: 10 Agency: REL Local
Magnitudes: 2.6MC REL Rms: 0.1 secs

BAABDA REGION

STAT	CO	DIST	AZI	PHASE	P	HRMN	SECON	TRES	CODA	AMPL	PERI	BAZ	ARES	VELO	WT
BHL	BZ	18	314	EP		15	1	15.78 0.07	36						1.0
DQRL	SZ	23	245	EP		15	1	16.41 0.04							1.0
DQRL	SN	23	245	ES		15	1	19.36-0.05							1.0
QRWL	SZ	29	201	EP		15	1	17.20-0.07							1.0
RCY	SZ	33	173	EP		15	1	18.00 0.10							1.0
RCY	SN	33	173	ES		15	1	22.06-0.02							1.0
HWQ	SZ	56	15	EP		15	1	21.39-0.07							1.0

October 17 2016 Hour: 17:21 34.8 Lat: 33.68N Lon: 35.82E Depth: 18 Agency: REL Local
Magnitudes: 2.3MC 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	20	220	EP		1721	39.08-0.06		22						1.0
RCY	SZ	21	175	EP		1721	39.36 0.02								1.0
RCY	SN	21	175	ES		1721	42.70 0.01								1.0
DQRL	SZ	23	276	EP		1721	39.61 0.06								1.0
DQRL	SN	23	276	ES		1721	43.05-0.01								1.0
BHL	BZ	29	328	EP		1721	40.24-0.02								1.0

October 18 2016 Hour: 15: 2 0.0 Lat: 33.81N Lon: 35.78E 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
ZAHL	SZ	12	61	EP		15	2	3.26	-0.02						1.0
ZAHL	SN	12	61	ES		15	2	5.69	0.01						1.0
BHL	BZ	16	314	EP		15	2	3.65	0.00	27					1.0
DQRL	SZ	22	239	EP		15	2	4.44	0.01						1.0
DQRL	SN	22	239	ES		15	2	7.67	-0.01						1.0
RCY	SZ	35	171	EP		15	2	6.22	0.00						1.0
HWQ	SZ	55	17	EP		15	2	9.10	0.02						0.2

October 18 2016 Hour: 16:36 40.9 Agency: REL Distant

EMSC OT=16:36:40.9 23.36S 179.90W 540Km M=6.0 SOUTH OF FIJI ISLANDS

STAT	CO	DIST	AZI	PHASE	P	HRMN	SECON	TRES	CODA	AMPL	PERI	BAZ	ARES	VELO	WT
BHL	BZ			EP		1655	24.62								
QRWL	SZ			EP		1655	25.00								
DQRL	SZ			EP		1655	25.16								

October 18 2016 Hour: 22: 8 13.9 Agency: REL Distant

EMSC OT=22:08:13.9 15.20N 61.48W 147Km M=5.6 DOMINICA REGION

STAT	CO	DIST	AZI	PHASE	P	HRMN	SECON	TRES	CODA	AMPL	PERI	BAZ	ARES	VELO	WT
BHL	BZ			EP		2220	44.18								
DQRL	SZ			EP		2220	45.51								
QRWL	SZ			EP		2220	46.15								

October 19 2016 Hour: 0:26 2.5 Agency: REL Distant

EMSC OT=00:26:02.5 4.92S 108.24E 645Km M=6.6 JAVA SEA

STAT	CO	DIST	AZI	PHASE	P	HRMN	SECON	TRES	CODA	AMPL	PERI	BAZ	ARES	VELO	WT
HWQ	SZ			EP		036	58.55								
RCY	SZ			EP		036	58.55								
QRWL	SZ			EP		036	59.77								
BHL	BZ			EP		036	59.28								
DQRL	SZ			EP		036	59.97								

October 19 2016 Hour: 12:18 47.4 Agency: REL Regional

EMSC OT=12:18:47.4 36.08N 30.50E 60Km M=4.7 WESTERN TURKEY

STAT	CO	DIST	AZI	PHASE	P	HRMN	SECON	TRES	CODA	AMPL	PERI	BAZ	ARES	VELO	WT
DQRL	SZ			EP		1219	55.87								
HWQ	SZ			EP		1219	56.69								
RCY	SZ			EP		1220	0.30								

October 19 2016 Hour: 14:23 32.4 Lat: 33.81N Lon: 35.75E Depth: 21 Agency: REL Local

Magnitudes: 2.7MC REL

Rms: 0.1 secs

BAABDA REGION

STAT	CO	DIST	AZI	PHASE	P	HRMN	SECON	TRES	CODA	AMPL	PERI	BAZ	ARES	VELO	WT
BHL	BZ	14	319	EP		1423	36.40	-0.09	38						1.0
DQRL	SZ	21	236	EP		1423	37.06	-0.07							1.0
DQRL	SE	21	236	ES		1423	40.71	0.09							1.0
RCY	SZ	36	168	EP		1423	39.02	0.01							1.0
RCY	SE	36	168	ES		1423	43.87	-0.01							1.0
HWQ	SZ	55	19	EP		1423	41.70	0.07							1.0

October 19 2016 Hour: 15: 7 47.3 Lat: 33.78N Lon: 35.78E Depth: 8 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	13	51	EP		15	7	49.80	-0.07						1.0
ZAHL	SE	13	51	ES		15	7	51.85	0.04						1.0
BHL	BZ	17	319	EP		15	7	50.45	-0.02	37					1.0
DQRL	SZ	21	245	EP		15	7	51.04	0.05						1.0
DQRL	SN	21	245	ES		15	7	53.74	-0.02						1.0
HWQ	SZ	57	16	EP		15	7	56.58	0.02						1.0

October 20 2016 Hour: 10:35 48.9 Lat: 33.54N Lon: 35.68E Depth: 0 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
QRWL	SZ	1	358	EP		1035	48.95	-0.13	27						1.0
DQRL	SZ	21	331	EP		1035	52.31	0.02							1.0
DQRL	SN	21	331	ES		1035	54.85	0.03							1.0
SHBL	BZ	22	165	EP		1035	52.38	-0.02							1.0
SHBL	BN	22	165	ES		1035	55.04	0.03							1.0
HWQ	SZ	86	17	EP		1036	2.72	0.06							1.0

October 20 2016 Hour: 14:14 44.9 Lat: 33.77N Lon: 35.77E Depth: 0 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	14	48	EP		1414	47.17	0.00							1.0
ZAHL	SE	14	48	ES		1414	48.83	-0.03							1.0
BHL	BZ	18	323	EP		1414	47.81	-0.02	25						1.0
DQRL	SZ	20	248	EP		1414	48.16	0.02							1.0
DQRL	SN	20	248	ES		1414	50.53	-0.02							1.0
HWQ	SZ	58	16	EP		1414	54.34	0.05							1.0

October 21 2016 Hour: 10:55 17.5 Lat: 33.80N Lon: 35.76E Depth: 18 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	14	62	EP		1055	21.34	0.02							1.0
ZAHL	SN	14	62	ES		1055	24.14	-0.01							1.0
BHL	BZ	15	321	EP		1055	21.39	-0.01	32						1.0
DQRL	SZ	20	238	EP		1055	21.94	-0.01							1.0
DQRL	SN	20	238	ES		1055	25.26	0.01							1.0
QRWL	SZ	29	194	EP		1055	23.02	0.02							1.0
RCY	SZ	35	168	EP		1055	23.79	-0.01							1.0
RCY	SN	35	168	ES		1055	28.46	-0.01							1.0

October 21 2016 Hour: 15:10 46.3 Lat: 33.78N Lon: 35.76E Depth: 5 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	15	54	EP		1510	48.80	-0.05							1.0
ZAHL	SN	15	54	ES		1510	50.78	0.03							1.0
BHL	BZ	17	325	EP		1510	49.25	0.09	32						1.0
DQRL	SZ	19	244	EP		1510	49.65	0.08							1.0
DQRL	SN	19	244	ES		1510	51.91	-0.09							1.0
RCY	SZ	32	167	EP		1510	51.65	0.03							1.0
HWQ	SZ	58	17	EP		1510	55.58	-0.07							1.0

October 21 2016 Hour: 22:53 49.9 Lat: 33.79N Lon: 35.79E Depth: 7 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	12	49	EP		2253	52.20	0.01							1.0
BHL	BZ	18	315	EP		2253	53.02	-0.06	36						1.0
DQRL	SZ	23	246	EP		2253	53.78	0.02							1.0
DQRL	SN	23	246	ES		2253	56.63	0.02							1.0
QRWL	SZ	29	201	EP		2253	54.70	0.00							1.0
RCY	SZ	33	173	EP		2253	55.31	-0.04							1.0
RCY	SN	33	173	ES		2253	59.39	0.01							1.0
HWQ	SZ	56	15	EP		2253	59.08	0.04							1.0

October 22 2016 Hour: 10:58 50.2 Lat: 33.82N Lon: 35.78E Depth: 16 Agency: REL Local
Magnitudes: 2.6MC REL Rms: 0.0 secs

BAABDA REGION

STAT	CO	DIST	AZI	PHASE	P	HRMN	SECON	TRES	CODA	AMPL	PERI	BAZ	ARES	VELO	WT
ZAHL	SZ	11	67	EP		1058	53.48	-0.03							1.0
BHL	BZ	15	309	EP		1058	53.91	0.03	35						1.0
BHL	BN	15	309	ES		1058	56.60	-0.00							1.0
DQRL	SZ	23	237	EP		1058	54.82	-0.02							1.0
RCY	SZ	36	172	EP		1058	56.56	-0.07							1.0
RCY	SN	36	172	ES		1059	1.45	0.06							1.0
HWQ	SZ	53	17	EP		1058	59.06	0.03							1.0

October 22 2016 Hour: 14:41 13.6 Lat: 33.78N Lon: 35.75E Depth: 7 Agency: REL Local
Magnitudes: 2.8MC 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	15	56	EP		1441	16.32	-0.00							1.0
ZAHL	SN	15	56	ES		1441	18.38	0.01							1.0
BHL	BZ	16	325	EP		1441	16.53	0.02	43						1.0
DQRL	SZ	19	243	EP		1441	17.01	0.07							1.0
DQRL	SN	19	243	ES		1441	19.38	-0.05							1.0
RCY	SZ	33	167	EP		1441	19.05	-0.01							1.0
HWQ	SZ	58	18	EP		1441	22.91	-0.04							1.0

October 22 2016 Hour: 15:42 4.1 Lat: 34.03N Lon: 35.72E Depth: 0 Agency: REL Local
Magnitudes: 2.6MC 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	15	205	EP		1542	6.41	-0.03	37						1.0
BHL	BN	15	205	ES		1542	8.19	-0.01							1.0
ZAHL	SZ	24	140	EP		1542	7.96	0.02							1.0
ZAHL	SN	24	140	ES		1542	10.80	-0.00							1.0
HWQ	SZ	35	37	EP		1542	9.72	0.01							1.0
DQRL	SZ	38	201	EP		1542	10.24	0.04							1.0
RCY	SZ	60	170	EP		1542	13.65	-0.02							1.0

October 23 2016 Hour: 8:22 4.1 Agency: REL Regional
EMSC OT=08:22:04.1 38.37N 42.10E 14Km M=4.3 EASTERN TURKEY

STAT	CO	DIST	AZI	PHASE	P	HRMN	SECON	TRES	CODA	AMPL	PERI	BAZ	ARES	VELO	WT
HWQ	SZ			EP		823	36.54								
BHL	BZ			EP		823	41.87								
DQRL	SZ			EP		823	43.47								

October 23 2016 Hour: 20:25 27.4 Agency: REL Distant
EMSC OT=20:25:27.4 44.08N 148.13E 40Km M=5.8 KURIL ISLANDS

STAT	CO	DIST	AZI	PHASE	P	HRMN	SECON	TRES	CODA	AMPL	PERI	BAZ	ARES	VELO	WT
HWQ	SZ			EP		2037	36.00								
ZAHL	SZ			EP		2037	38.60								
BHL	BZ			EP		2037	38.68								
RCY	SZ			EP		2037	40.10								
QRWL	SZ			EP		2037	40.10								
SHBL	BZ			EP		2037	41.13								

October 24 2016 Hour: 17:8 24.2 Lat: 33.67N Lon: 35.72E Depth: 6 Agency: REL Local
Magnitudes: 3.0MC 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	14	194	EP		17 8	26.65	-0.06							1.0
QRWL	SN	14	194	ES		17 8	28.62	0.07							1.0
DQRL	SZ	14	287	EP		17 8	26.70	-0.10	58						1.0
DQRL	SN	14	287	ES		17 8	28.73	0.02							1.0
RCY	SZ	22	150	EP		17 8	27.91	-0.04							1.0
BHL	BZ	27	347	EP		17 8	28.75	0.06							1.0

SHBL	BZ	36	176	EP		17	8	30.09	0.01								1.0
SHBL	BN	36	176	ES		17	8	34.38	-0.03								1.0
HWQ	SZ	71	17	EP		17	8	35.87	0.17								0.2

October 25 2016 Hour: 14:30 19.8 Lat: 33.78N Lon: 35.78E Depth: 7 Agency: REL Local
Magnitudes: 2.9MC 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	46	EP		1430	22.26	-0.04							1.0
BHL	BZ	19	320	EP		1430	22.94	-0.13	49						1.0
BHL	BN	19	320	ES		1430	25.64	0.13							1.0
DQRL	SZ	21	249	EP		1430	23.50	0.05							1.0
DQRL	SN	21	249	ES		1430	26.08	-0.10							1.0
QRWL	SZ	27	200	EP		1430	24.38	0.06							1.0
RCY	SZ	31	171	EP		1430	25.04	0.03							1.0
RCY	SN	31	171	ES		1430	28.90	0.00							1.0
HWQ	SZ	58	15	EP		1430	29.18	-0.00							1.0

October 25 2016 Hour: 14:38 17.0 Lat: 33.79N Lon: 35.79E Depth: 3 Agency: REL Local
Magnitudes: 2.7MC REL Rms: 0.1 secs

ALEY REGION

STAT	CO	DIST	AZI	PHASE	P	HRMN	SECON	TRES	CODA	AMPL	PERI	BAZ	ARES	VELO	WT
BHL	BZ	18	316	EP		1438	19.97	-0.02							1.0
DQRL	SZ	22	246	EP		1438	20.65	-0.01	41						1.0
DQRL	SN	22	246	ES		1438	23.38	0.01							1.0
RCY	SZ	33	172	EP		1438	22.32	-0.00							1.0
RCY	SN	33	172	ES		1438	26.26	0.00							1.0
HWQ	SZ	56	15	EP		1438	26.34	0.23							0.2

October 25 2016 Hour: 15:0 3.9 Lat: 33.79N Lon: 35.78E 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	13	52	EP		15	0	7.19	-0.01						1.0
BHL	BZ	17	320	EP		15	0	7.61	-0.04	42					1.0
BHL	BN	17	320	ES		15	0	10.44	0.02						1.0
DQRL	SZ	21	245	EP		15	0	8.15	0.04						1.0
QRWL	SZ	28	198	EP		15	0	8.95	-0.07						1.0
RCY	SZ	33	170	EP		15	0	9.82	0.08						1.0
RCY	SN	33	170	ES		15	0	14.03	-0.02						1.0

October 25 2016 Hour: 17:53 6.8 Agency: REL Regional

STAT	CO	DIST	AZI	PHASE	P	HRMN	SECON	TRES	CODA	AMPL	PERI	BAZ	ARES	VELO	WT
HWQ	SZ			EP		1753	24.11								
BHL	BZ			EP		1753	30.77								
DQRL	SZ			EP		1753	33.31								

October 26 2016 Hour: 14:15 37.8 Agency: REL Distant
EMSC OT=14:15:37.8 39.50N 54.59E 10Km M=5.3 TURKMENISTAN

STAT	CO	DIST	AZI	PHASE	P	HRMN	SECON	TRES	CODA	AMPL	PERI	BAZ	ARES	VELO	WT
HWQ	SZ			EP		1419	25.58								
BHL	BZ			EP		1419	26.17								
QRWL	SZ			EP		1419	28.16								

October 26 2016 Hour: 17:10 37.1 Agency: REL Distant
EMSC OT=17:10:37.1 42.88N 13.13E 9Km M=5.5 CENTRAL ITALY

STAT	CO	DIST	AZI	PHASE	P	HRMN	SECON	TRES	CODA	AMPL	PERI	BAZ	ARES	VELO	WT
BHL	BZ			EP		1715	8.31								
DQRL	SZ			EP		1715	9.64								
QRWL	SZ			EP		1715	11.23								
RCY	SZ			EP		1715	13.09								

October 26 2016 Hour: 19:18 7.2 Agency: REL Distant

EMSC OT=19:18:07.2 42.92N 13.13E 8Km M=6.1 CENTRAL ITALY

STAT	CO	DIST	AZI	PHASE	P	HRMN	SECON	TRES	CODA	AMPL	PERI	BAZ	ARES	VELO	WT
BHL	BZ			EP		1922	38.86								
DQRL	SZ			EP		1922	39.82								
QRWL	SZ			EP		1922	42.07								
RCY	SZ			EP		1922	43.81								

October 26 2016 Hour: 21:42 2.4 Agency: REL Distant

EMSC OT=21:42:02.4 42.86N 13.13E 10Km M=4.7 CENTRAL ITALY

STAT	CO	DIST	AZI	PHASE	P	HRMN	SECON	TRES	CODA	AMPL	PERI	BAZ	ARES	VELO	WT
BHL	BZ			EP		2146	35.04								
ZAHL	SZ			EP		2146	38.05								

October 27 2016 Hour: 8:17 51.2 Agency: REL Distant

EMSC OT=08:17:51.2 1.40N 125.75E 80Km M=5.8 MOLUCCA SEA

STAT	CO	DIST	AZI	PHASE	P	HRMN	SECON	TRES	CODA	AMPL	PERI	BAZ	ARES	VELO	WT
HWQ	SZ			EP		830	37.86								
BHL	BZ			EP		830	39.25								
QRWL	SZ			EP		830	39.40								

October 27 2016 Hour: 15:38 21.1 Lat: 33.65N Lon: 34.82E Depth: 24 Agency: REL Local
Magnitudes: 3.8MC REL Rms: 0.2 secs

OFFSHORE SOUTH LEBANON

STAT	CO	DIST	AZI	PHASE	P	HRMN	SECON	TRES	CODA	AMPL	PERI	BAZ	ARES	VELO	WT
BEYL	SZ	67	68	EP		1538	32.08	0.03							0.2
DQRL	SZ	70	85	EP		1538	32.73	0.20							1.0
DQRL	SN	70	85	ES		1538	40.96	-0.04							1.0
QRWL	SZ	81	98	EP		1538	34.18	0.07							1.0
BHL	BZ	82	70	EP		1538	34.02	-0.28	168						1.0
SHBL	BZ	92	111	EP		1538	35.57	-0.22							1.0
SHBL	BN	92	111	ES		1538	46.68	0.01							1.0
RCY	SZ	96	100	EP		1538	36.42	0.11							1.0
ZAHL	SZ	101	77	EP		1538	37.26	0.17							1.0
HWQ	SZ	125	56	EP		1538	40.46	-0.01							1.0

October 28 2016 Hour: 0:21 57.3 Lat: 34.05N Lon: 36.22E Depth: 0 Agency: REL Local
Magnitudes: 2.6MC REL Rms: 0.1 secs

BAALBECK REGION

STAT	CO	DIST	AZI	PHASE	P	HRMN	SECON	TRES	CODA	AMPL	PERI	BAZ	ARES	VELO	WT
HWQ	SZ	36	316	EP		022	3.03	-0.08	35						1.0
HWQ	SN	36	316	ES		022	7.44	0.05							1.0
ZAHL	SZ	37	236	EP		022	3.29	-0.05							1.0
BHL	BZ	55	253	EP		022	6.10	-0.02							1.0
BHL	BN	55	253	ES		022	12.64	0.00							1.0
DQRL	SZ	71	238	EP		022	8.92	0.15							1.0
DQRL	SN	71	238	ES		022	17.20	-0.05							1.0

October 28 2016 Hour: 2:9 37.2 Lat: 33.62N Lon: 34.97E Depth: 33 Agency: REL Local
Magnitudes: 2.8MC REL Rms: 0.0 secs

OFFSHORE SOUTH LEBANON

STAT	CO	DIST	AZI	PHASE	P	HRMN	SECON	TRES	CODA	AMPL	PERI	BAZ	ARES	VELO	WT
DQRL	SZ	57	80	EP		2 9	47.35	0.00	46						1.0
DQRL	SN	57	80	ES		2 9	54.84	-0.00							1.0
BHL	BZ	71	63	EP		2 9	49.19	-0.01							1.0
RCY	SZ	82	99	EP		2 9	50.59	0.02							1.0
RCY	SN	82	99	ES		210	0.44	-0.01							1.0
HWQ	SN	116	51	ES		210	7.89	0.01							1.0

October 28 2016 Hour: 17:11 58.9 Lat: 34.56N Lon: 36.06E Depth: 0 Agency: REL Local
Magnitudes: 3.0MC REL Rms: 0.1 secs

AKKAR REGION

STAT	CO	DIST	AZI	PHASE	P	HRMN	SECON	TRES	CODA	AMPL	PERI	BAZ	ARES	VELO	WT
HWQ	SZ	33	199	EP		1712	4.02	-0.12	56						1.0
HWQ	SE	33	199	ES		1712	8.00	-0.03							1.0
BHL	BZ	82	208	EP		1712	12.03	0.01							1.0
DQRL	SZ	105	206	EP		1712	15.80	0.04							1.0
DQRL	SE	105	206	ES		1712	28.28	0.03							1.0
RCY	SZ	119	190	EP		1712	18.19	0.07							1.0

October 28 2016 Hour: 20: 2 49.1 Agency: REL Distant

EMSC OT=20:02:49.1 39.35N 13.44E 449Km M=5.8 TYRRHENIAN SEA

STAT	CO	DIST	AZI	PHASE	P	HRMN	SECON	TRES	CODA	AMPL	PERI	BAZ	ARES	VELO	WT
BHL	BZ			EP		20 6	37.29								
DQRL	SZ			EP		20 6	38.37								
HWQ	SZ			EP		20 6	38.79								
QRWL	SZ			EP		20 6	39.67								
RCY	SZ			EP		20 6	40.96								

October 29 2016 Hour: 14:26 55.8 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	13	58	EP		1426	58.99	0.02							1.0
ZAHL	SN	13	58	ES		1427	1.33	-0.01							1.0
BHL	BZ	16	318	EP		1426	59.31	0.01							1.0
DQRL	SZ	21	241	EP		1426	59.95	0.03	42						1.0
DQRL	SN	21	241	ES		1427	2.99	-0.01							1.0
RCY	SZ	34	169	EP		1427	1.74	-0.02							1.0
HWQ	SZ	56	17	EP		1427	4.97	-0.02							1.0

October 29 2016 Hour: 15: 1 50.8 Lat: 34.03N Lon: 35.75E Depth: 0 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	16	213	EP		15 1	53.27	-0.10	35						1.0
ZAHL	SZ	23	145	EP		15 1	54.39	-0.05							1.0
ZAHL	SN	23	145	ES		15 1	57.15	0.02							1.0
HWQ	SZ	34	33	EP		15 1	56.27	0.03							1.0
DQRL	SZ	39	205	EP		15 1	57.13	0.04							1.0
DQRL	SN	39	205	ES		15 2	1.80	0.06							1.0

October 30 2016 Hour: 6:40 18.3 Agency: REL Distant

EMSC OT=06:40:18.3 42.84N 13.11E 10Km M=6.5 CENTRAL ITALY

STAT	CO	DIST	AZI	PHASE	P	HRMN	SECON	TRES	CODA	AMPL	PERI	BAZ	ARES	VELO	WT
BHL	BZ			EP		644	50.77								
DQRL	SZ			EP		644	51.28								
QRWL	SZ			EP		644	52.48								
RCY	SZ			EP		644	54.54								

October 31 2016 Hour: 7:54 6.2 Lat: 33.86N Lon: 35.85E Depth: 4 Agency: REL Local
Magnitudes: 2.7MC 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	95	EP		754	7.22	0.01							1.0
BHL	BZ	19	285	EP		754	9.25	-0.02	42						1.0
BHL	BN	19	285	ES		754	11.56	-0.00							1.0
DQRL	SZ	31	236	EP		754	11.27	0.04							1.0
QRWL	SZ	38	204	EP		754	12.34	-0.01							1.0
RCY	SZ	40	182	EP		754	12.80	0.05							1.0
RCY	SN	40	182	ES		754	17.57	-0.05							1.0
HWQ	SZ	47	11	EP		754	13.82	-0.02							1.0

October 31 2016 Hour: 19:20 24.6 Lat: 33.61N Lon: 34.87E Depth: 24 Agency: REL Local
Magnitudes: 2.6MC REL Rms: 0.1 secs

OFFSHORE SOUTH LEBANON

STAT	CO	DIST	AZI	PHASE	P	HRMN	SECON	TRES	CODA	AMPL	PERI	BAZ	ARES	VELO	WT
DQRL	SZ	66	81	EP		1920	35.67	0.13	33						1.0
DQRL	SN	66	81	ES		1920	43.66	0.05							1.0
BHL	BZ	80	66	EP		1920	37.37	-0.13							1.0
SHBL	BZ	87	110	EP		1920	38.55	0.01							1.0
RCY	SZ	91	98	EP		1920	39.11	-0.03							1.0
RCY	SN	91	98	ES		1920	49.83	-0.05							1.0
HWQ	SZ	124	53	EP		1920	43.91	0.02							1.0

October 31 2016 Hour: 23:51 41.0 Lat: 33.79N Lon: 35.79E Depth: 8 Agency: REL Local
Magnitudes: 2.8MC 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	11	50	EP		2351	43.46	0.02							1.0
BHL	BZ	18	314	EP		2351	44.33	0.04	44						1.0
BHL	BE	18	314	ES		2351	46.66	-0.04							1.0
DQRL	SZ	23	245	EP		2351	45.02	0.02							1.0
DQRL	SN	23	245	ES		2351	47.93	0.00							1.0
RCY	SZ	33	173	EP		2351	46.57	-0.03							1.0
HWQ	SZ	56	15	EP		2351	50.15	-0.02							1.0

Epicentral Map of Lebanon

OCTOBER 2016

