

Republic of Lebanon
National Council for Scientific Research

Provisional Seismological Bulletin

from the

NATIONAL SEISMIC NETWORK

August

2019

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
BEIL	3432.50N	3611.08E	572	BEINO	Opened Jan 2017

REGIONAL AND DISTANT EARTHQUAKES

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

MACROSEISMIC DATA

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

MONTHLY EPICENTER MAPS

Maps will be found on the last page.

ELECTRONIC PUBLICATION

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

REFERENCES

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

Abbreviations:

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

LAT: Latitude of epicenter

LON: Longitude of epicenter

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

AGENCY: REL throughout the bulletin, aka. REsearch Lebanon

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

EMSC: Euro-Mediterranean Seismological Centre.

OT: Origin Time

RMS: Root mean square value of travel time residuals

STAT: Station code

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

DIST: Epicenter distance (km)

AZI: Azimuth from source to station

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

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

HR: Hour

MN: Minute

SECON: Seconds

TRES: Residual (seconds)

CODA: Signal duration in seconds

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

PERI: Period where amplitude is measured

BAZ: Back azimuth (station to event)

ARES: Back azimuth residual

VELO: Apparent phase velocity (km/sec)

WT: Weight of phase in the location

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

August 2 2019 Hour: 12:3 26.2 Agency: REL Distant
EMSC OT=012:03:26.2 7.25S 104.82E 40Km M=6.8 SOUTHWEST SUMATRA, INDONESIA

STAT	CO	DIST	AZI	PHASE	P	HRMN	SECON	TRES	CODA	AMPL	PERI	BAZ	ARES	VELO	WT
RCY	SZ			EP		1215	14.71								
SHBL	SZ			EP		1215	14.71								
BEIL	SZ			EP		1215	14.71								
QRWL	SZ			EP		1215	15.43								
HWQ	BZ			EP		1215	15.71								
BHL	BZ			EP		1215	16.25								
DQRL	SZ			EP		1215	16.53								

August 2 2019 Hour: 16:33 35.0 Lat: 32.83N Lon: 35.51E 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
SHBL	SZ	61	20	EP		1633	44.75	-0.14	58						1.0
SHBL	SN	61	20	ES		1633	52.27	0.04							1.0
RCY	SZ	80	22	EP		1633	47.80	-0.06							1.0
RCY	SN	80	22	ES		1633	57.37	-0.03							1.0
QRWL	SZ	81	11	EP		1633	48.11	0.03							1.0
DQRL	SZ	97	3	EP		1633	50.73	0.05							1.0
ZAHL	SZ	119	17	EP		1633	54.27	0.06							1.0
BHL	BZ	120	6	EP		1633	54.35	0.03							1.0
HWQ	BZ	166	14	EP		1634	1.24	-0.03							1.0
FKH	SZ	178	28	EP		1634	3.85	0.80							0.2

August 3 2019 Hour: 1:9 39.8 Agency: REL Regional
EMSC OT=001:09:39.8 36.22N 31.89E 100Km M=3.4 WESTERN TURKEY

STAT	CO	DIST	AZI	PHASE	P	HRMN	SECON	TRES	CODA	AMPL	PERI	BAZ	ARES	VELO	WT
HWQ	BZ			EP		110	36.23								
BEIL	SZ			EP		110	36.23								
BHL	BZ			EP		110	35.81								
ZAHL	SZ			EP		110	38.75								
QRWL	SZ			EP		110	40.12								
RCY	SZ			EP		110	41.90								
SHBL	SZ			EP		110	42.46								

August 3 2019 Hour: 9:51 24.1 Agency: REL Regional
EMSC OT=009:51:24.1 35.12N 27.79E 10Km M=5.1 DODECANESE ISLANDS, GREECE

STAT	CO	DIST	AZI	PHASE	P	HRMN	SECON	TRES	CODA	AMPL	PERI	BAZ	ARES	VELO	WT
DQRL	SZ			EP		953	1.86								
BHL	BZ			EP		953	0.75								
QRWL	SZ			EP		953	1.61								
HWQ	BZ			EP		953	2.17								
SHBL	SZ			EP		953	2.72								
RCY	SZ			EP		953	3.55								
BEIL	SZ			EP		953	3.83								
FKH	SZ			EP		953	8.32								

August 3 2019 Hour: 18:55 14.4 Lat: 33.66N Lon: 35.48E Depth: 4 Agency: REL Local
Magnitudes: 2.4MC 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	9	58	EP		1855	16.21	0.04	26						1.0
DQRL	SN	9	58	ES		1855	17.43	-0.02							1.0
QRWL	SZ	22	124	EP		1855	18.02	-0.10							1.0
BHL	BZ	31	30	EP		1855	19.61	0.05							1.0
RCY	SZ	37	119	EP		1855	20.55	0.02							1.0
RCY	SN	37	119	ES		1855	25.09	0.05							1.0
SHBL	SZ	42	145	EP		1855	21.64	0.33							0.2
ZAHL	SZ	43	59	EP		1855	21.39	-0.06							1.0

August 4 2019 Hour: 1:57 59.8 Lat: 34.74N Lon: 34.31E Depth: 14 Agency: REL Regional
 Magnitudes: 3.0MC REL Rms: 0.2 secs

CYPRUS REGION

STAT	CO	DIST	AZI	PHASE	P	HRMN	SECON	TRES	CODA	AMPL	PERI	BAZ	ARES	VELO	WT
BHL	BZ	155	127	EP		158	23.38	-0.13							1.0
HWQ	BZ	159	109	EP		158	24.25	0.14	48						1.0
DQRL	SZ	163	135	EP		158	24.37	-0.33							1.0
DQRL	SN	163	135	ES		158	42.93	-0.20							1.0
BEIL	SZ	173	97	EP		158	25.81	-0.05							1.0
ZAHL	SZ	175	124	EP		158	26.27	0.11							1.0
QRWL	SZ	183	136	EP		158	27.08	-0.07							1.0
RCY	SZ	197	134	EP		158	29.03	0.09							1.0
FKH	SZ	200	105	EP		158	29.33	0.01							1.0
SHBL	SZ	203	139	EP		158	29.96	0.23							1.0
SHBL	SN	203	139	ES		158	52.11	0.21							1.0

August 4 2019 Hour: 10:23 3.8 Agency: REL Distant
 EMSC OT=010:23:03.8 37.82N 141.54E 40Km M=6.3 EAST COAST HONSHU, JAPAN

STAT	CO	DIST	AZI	PHASE	P	HRMN	SECON	TRES	CODA	AMPL	PERI	BAZ	ARES	VELO	WT
BEIL	SZ			EP		1035	9.99								
FKH	SZ			EP		1035	10.46								
HWQ	BZ			EP		1035	11.26								
ZAHL	SZ			EP		1035	13.47								
BHL	BZ			EP		1035	13.61								
DQRL	SZ			EP		1035	14.92								
RCY	SZ			EP		1035	14.84								
QRWL	SZ			EP		1035	14.99								
SHBL	SZ			EP		1035	15.57								

August 5 2019 Hour: 19:5 8.6 Lat: 33.37N Lon: 35.49E Depth: 0 Agency: REL Local
 Magnitudes: 3.0MC REL Rms: 0.1 secs

NABATIYE REGION

STAT	CO	DIST	AZI	PHASE	P	HRMN	SECON	TRES	CODA	AMPL	PERI	BAZ	ARES	VELO	WT
SHBL	SZ	24	97	EP		19 5	12.36	-0.10							1.0
QRWL	SZ	27	43	EP		19 5	12.73	-0.11	59						1.0
QRWL	SN	27	43	ES		19 5	16.04	0.03							1.0
RCY	SZ	35	67	EP		19 5	14.23	-0.02							1.0
RCY	SN	35	67	ES		19 5	18.45	-0.00							1.0
DQRL	SZ	38	12	EP		19 5	14.59	-0.04							1.0
DQRL	SN	38	12	ES		19 5	19.08	-0.04							1.0
BHL	BZ	61	15	EP		19 5	18.32	-0.06							1.0
ZAHL	SZ	65	34	EP		19 5	19.16	0.08							1.0
HWQ	BZ	109	23	EP		19 5	26.12	-0.02							1.0
FKH	SZ	129	41	EP		19 5	29.62	0.25							1.0

August 6 2019 Hour: 14:41 19.8 Lat: 34.21N Lon: 36.44E Depth: 0 Agency: REL Local
 Magnitudes: 2.9MC REL Rms: 0.2 secs

BAALBECK REGION

STAT	CO	DIST	AZI	PHASE	P	HRMN	SECON	TRES	CODA	AMPL	PERI	BAZ	ARES	VELO	WT
FKH	SZ	5	320	EP		1441	20.33	-0.26	53						1.0
BEIL	SZ	44	327	EP		1441	27.05	0.21							1.0
BEIL	SN	44	327	ES		1441	32.23	0.15							1.0
HWQ	BZ	47	279	EP		1441	26.84	-0.43							1.0
HWQ	BN	47	279	ES		1441	32.88	0.05							1.0
ZAHL	SZ	65	233	EP		1441	30.36	0.15							1.0
BHL	BZ	81	245	EP		1441	32.91	0.16							1.0
RCY	SZ	97	216	EP		1441	35.37	-0.07							1.0
DQRL	SZ	98	236	EP		1441	35.63	0.01							0.2
SHBL	SZ	116	214	EP		1441	38.44	0.04							1.0

August 6 2019 Hour: 14:42 53.5 Lat: 34.69N Lon: 36.33E Depth: 15 Agency: REL Local
Magnitudes: 2.9MC REL Rms: 0.1 secs

AKKAR REGION

STAT	CO	DIST	AZI	PHASE	P	HRMN	SECON	TRES	CODA	AMPL	PERI	BAZ	ARES	VELO	WT
BEIL	SZ	21	220	EP		1442	58.03	0.21	53						1.0
BEIL	SN	21	220	ES		1443	0.87	-0.11							1.0
FKH	SZ	50	172	EP		1443	1.66	-0.22							1.0
FKH	SN	50	172	ES		1443	8.15	0.11							1.0
HWQ	BZ	58	218	EP		1443	3.00	-0.04							1.0
QRWL	SZ	140	206	EP		1443	15.12	-0.00							1.0
RCY	SZ	140	199	EP		1443	15.20	0.06							1.0

August 6 2019 Hour: 15:25 20.1 Lat: 33.60N Lon: 36.24E Depth: 0 Agency: REL Regional
Magnitudes: 2.8MC 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	39	254	EP		1525	26.31	-0.13	45						1.0
RCY	SN	39	254	ES		1525	31.13	-0.02							1.0
ZAHL	SZ	44	311	EP		1525	27.20	0.02							1.0
QRWL	SZ	52	264	EP		1525	28.50	-0.02							1.0
SHBL	SZ	54	239	EP		1525	28.90	0.11							1.0
SHBL	SN	54	239	ES		1525	35.23	-0.00							1.0
DQRL	SZ	64	281	EP		1525	30.37	0.04							1.0
BHL	BZ	64	302	EP		1525	30.50	0.05							1.0
HWQ	BZ	80	340	EP		1525	33.04	-0.00							1.0
BEIL	SZ	105	357	EP		1525	36.97	-0.04							1.0

August 6 2019 Hour: 22:14 14.6 Agency: REL Distant
EMSC OT=022:14:14.6 17.91S 168.62E 152Km M=5.9 VANUATU

STAT	CO	DIST	AZI	PHASE	P	HRMN	SECON	TRES	CODA	AMPL	PERI	BAZ	ARES	VELO	WT
BEIL	SZ			EP		2233	14.27								
HWQ	BZ			EP		2233	14.72								
BHL	BZ			EP		2233	15.10								
ZAHL	SZ			EP		2233	15.63								
RCY	SZ			EP		2233	15.63								
SHBL	SZ			EP		2233	16.24								

August 7 2019 Hour: 7: 6 40.8 Agency: REL Distant
EMSC OT=007:06:40.8 25.29S 179.94E 505Km M=4.8 SOUTH OF FIJI ISLANDS

STAT	CO	DIST	AZI	PHASE	P	HRMN	SECON	TRES	CODA	AMPL	PERI	BAZ	ARES	VELO	WT
BEIL	SZ			EP		725	28.60								
HWQ	BZ			EP		725	28.84								
BHL	BZ			EP		725	29.93								
DQRL	SZ			EP		725	30.48								

August 7 2019 Hour: 21: 8 8.6 Lat: 32.81N Lon: 35.20E Depth: 0 Agency: REL Regional
Magnitudes: 3.0MC REL Rms: 0.2 secs

DEAD SEA REGION

STAT	CO	DIST	AZI	PHASE	P	HRMN	SECON	TRES	CODA	AMPL	PERI	BAZ	ARES	VELO	WT
SHBL	SZ	79	40	EP		21 8	21.20	-0.03	60						1.0
SHBL	SN	79	40	ES		21 8	30.69	0.08							1.0
QRWL	SZ	94	28	EP		21 8	23.65	-0.02							1.0
QRWL	SN	94	28	ES		21 8	34.84	-0.01							1.0
RCY	SZ	97	37	EP		21 8	23.91	-0.25							1.0
DQRL	SZ	106	19	EP		21 8	25.83	0.25							1.0
BHL	BZ	129	19	EP		21 8	29.26	-0.09							1.0
ZAHL	SZ	133	28	EP		21 8	29.98	-0.01							1.0
HWQ	BZ	177	23	EP		21 8	36.35	-0.22							1.0
FKH	SZ	195	35	EP		21 8	39.24	0.30							1.0

August 7 2019 Hour: 21:28 5.2 Agency: REL Distant

EMSC OT=021:28:05.2 24.50N 121.95E 30Km M=5.8 TAIWAN

STAT	CO	DIST	AZI	PHASE	P	HRMN	SECON	TRES	CODA	AMPL	PERI	BAZ	ARES	VELO	WT
BEIL	SZ			EP		2139	33.72								
FKH	SZ			EP		2139	33.66								
HWQ	BZ			EP		2139	34.11								
BHL	BZ			EP		2139	36.79								
RCY	SZ			EP		2139	37.68								
DQRL	SZ			EP		2139	38.45								
QRWL	SZ			EP		2139	38.32								
SHBL	SZ			EP		2139	38.51								

August 8 2019 Hour: 0:45 26.4 Agency: REL Distant

EMSC OT=000:45:26.4 36.57N 70.23E 229Km M=5.8 HINDU KUSH REGION, AFGHANISTAN

STAT	CO	DIST	AZI	PHASE	P	HRMN	SECON	TRES	CODA	AMPL	PERI	BAZ	ARES	VELO	WT
FKH	SZ			EP		050	53.58								
BEIL	SZ			EP		050	54.27								
HWQ	BZ			EP		050	56.80								
ZAHL	SZ			EP		050	58.33								
RCY	SZ			EP		050	59.48								
BHL	BZ			EP		050	59.71								
QRWL	SZ			EP		051	0.32								
SHBL	SZ			EP		051	0.39								
DQRL	SZ			EP		051	0.85								

August 8 2019 Hour: 8:39 8.2 Agency: REL Regional

EMSC OT=008:39:08.2 38.02N 26.90E 10Km M=4.6 WESTERN TURKEY

STAT	CO	DIST	AZI	PHASE	P	HRMN	SECON	TRES	CODA	AMPL	PERI	BAZ	ARES	VELO	WT
BEIL	SZ			EP		841	4.81								
HWQ	BZ			EP		841	7.50								
QRWL	SZ			EP		841	9.31								
RCY	SZ			EP		841	10.79								
SHBL	SZ			EP		841	11.93								

August 8 2019 Hour: 11:25 30.0 Agency: REL Regional

EMSC OT=011:25:30.0 37.88N 29.62E 7Km M=5.8 WESTERN TURKEY

STAT	CO	DIST	AZI	PHASE	P	HRMN	SECON	TRES	CODA	AMPL	PERI	BAZ	ARES	VELO	WT
HWQ	BZ			EP		1127	6.98								
BHL	BZ			EP		1127	3.76								
BEIL	SZ			EP		1127	2.97								
DQRL	SZ			EP		1127	4.72								
ZAHL	SZ			EP		1127	7.24								
QRWL	SZ			EP		1127	7.32								
RCY	SZ			EP		1127	8.96								
SHBL	SZ			EP		1127	9.49								

August 8 2019 Hour: 17:21 33.1 Lat: 34.04N Lon: 35.96E Depth: 0 Agency: REL Local

Magnitudes: 2.8MC REL

Rms: 0.1 secs

KESROUAN REGION

STAT	CO	DIST	AZI	PHASE	P	HRMN	SECON	TRES	CODA	AMPL	PERI	BAZ	ARES	VELO	WT
ZAHL	SZ	22	199	EP		1721	36.45	-0.15							1.0
ZAHL	SN	22	199	ES		1721	39.20	-0.00							1.0
HWQ	BZ	26	357	EP		1721	37.24	-0.02	47						1.0
BHL	BZ	32	241	EP		1721	38.28	-0.01							1.0
BHL	BN	32	241	ES		1721	42.18	0.04							1.0
FKH	SZ	47	62	EP		1721	40.74	0.07							1.0
DQRL	SZ	52	224	EP		1721	41.56	0.08							1.0
QRWL	SZ	61	205	EP		1721	42.80	-0.08							1.0
RCY	SZ	62	191	EP		1721	43.02	-0.03							1.0
RCY	SN	62	191	ES		1721	50.52	0.08							1.0
SHBL	SZ	80	195	EP		1721	45.96	0.02							1.0

August 9 2019 Hour: 2:24 30.6 Lat: 33.30N Lon: 35.48E Depth: 0 Agency: REL Local
 Magnitudes: 3.4MC REL Rms: 0.0 secs

MARJAAYOUN REGION

STAT	CO	DIST	AZI	PHASE	P	HRMN	SECON	TRES	CODA	AMPL	PERI	BAZ	ARES	VELO	WT
SHBL	SZ	25	77	EP		224	34.67	-0.03	100						1.0
SHBL	SN	25	77	ES		224	37.72	-0.01							1.0
QRWL	SZ	34	34	EP		224	35.98	-0.02							1.0
RCY	SZ	40	57	EP		224	37.04	0.01							1.0
RCY	SN	40	57	ES		224	41.81	0.02							1.0
DQRL	SZ	46	11	EP		224	37.99	-0.02							1.0
DQRL	SN	46	11	ES		224	43.50	0.01							1.0
BHL	BZ	69	14	EP		224	41.69	-0.05							1.0
ZAHL	SZ	73	31	EP		224	42.38	0.07							1.0
HWQ	BZ	117	22	EP		224	49.47	0.01							1.0
FKH	SZ	136	39	EP		224	52.47	-0.02							1.0
BEIL	SZ	153	25	EP		224	54.92	0.02							1.0

August 9 2019 Hour: 2:38 51.3 Lat: 33.29N Lon: 35.48E Depth: 0 Agency: REL Local
 Magnitudes: 2.6MC REL Rms: 0.1 secs

MARJAAYOUN REGION

STAT	CO	DIST	AZI	PHASE	P	HRMN	SECON	TRES	CODA	AMPL	PERI	BAZ	ARES	VELO	WT
SHBL	SZ	26	75	EP		238	55.40	-0.08	34						1.0
SHBL	SN	26	75	ES		238	58.52	-0.02							1.0
QRWL	SZ	34	33	EP		238	56.84	-0.06							1.0
QRWL	SN	34	33	ES		239	1.06	0.06							1.0
RCY	SZ	40	55	EP		238	57.99	0.12							1.0
DQRL	SZ	47	10	EP		238	58.92	-0.01							1.0
DQRL	SN	47	10	ES		239	4.54	-0.00							1.0
BHL	BZ	70	13	EP		239	2.45	-0.22							0.2
ZAHL	SZ	74	31	EP		239	3.19	-0.02							1.0
HWQ	BZ	118	21	EP		239	10.46	0.09							0.2

August 9 2019 Hour: 13:20 12.1 Lat: 33.86N Lon: 35.86E Depth: 11 Agency: REL Local
 Magnitudes: 2.5MC 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	2	102	EP		1320	14.25	0.02							1.0
BHL	BZ	20	284	EP		1320	15.79	-0.10							1.0
BHL	BN	20	284	ES		1320	18.69	0.02							1.0
DQRL	SZ	32	237	EP		1320	17.77	0.09							1.0
QRWL	SZ	39	205	EP		1320	18.67	-0.01							1.0
QRWL	SN	39	205	ES		1320	23.48	-0.04							1.0
RCY	SZ	41	183	EP		1320	18.95	-0.07	27						1.0
HWQ	BZ	47	10	EP		1320	19.97	0.02							1.0
SHBL	SZ	58	191	EP		1320	21.76	0.03							1.0
SHBL	SN	58	191	ES		1320	28.87	0.04							1.0

August 11 2019 Hour: 2:29 25.4 Lat: 33.76N Lon: 34.33E Depth: 21 Agency: REL Local
 Magnitudes: 3.0MC REL Rms: 0.0 secs

OFFSHORE CENTRAL LEBANON

STAT	CO	DIST	AZI	PHASE	P	HRMN	SECON	TRES	CODA	AMPL	PERI	BAZ	ARES	VELO	WT
DQRL	SZ	115	93	EP		229	43.36	0.06							1.0
QRWL	SZ	127	100	EP		229	45.12	-0.01	49						1.0
QRWL	SN	127	100	ES		229	59.72	-0.03							1.0
SHBL	SZ	139	109	EP		229	46.74	-0.06							1.0
SHBL	SN	139	109	ES		230	2.67	0.03							1.0
RCY	SZ	142	101	EP		229	47.27	0.02							1.0
ZAHL	SZ	144	85	EP		229	47.48	0.03							1.0
HWQ	BZ	160	68	EP		229	49.32	-0.05							1.0
BEIL	SZ	192	63	EP		229	53.28	0.02							1.0

August 11 2019 Hour: 7:250.1

Agency: REL Regional

EMSC OT=007:02:50.1 34.28N 24.96E 10Km M=5.0 CRETE, GREECE

STAT	CO	DIST	AZI	PHASE	P	HRMN	SECON	TRES	CODA	AMPL	PERI	BAZ	ARES	VELO	WT
DQRL	SZ			EP		7 4	55.67								
BHL	BZ			EP		7 4	54.42								
QRWL	SZ			EP		7 4	54.92								
SHBL	SZ			EP		7 4	58.54								
RCY	SZ			EP		7 4	57.92								
ZAHL	SZ			EP		7 4	59.91								
HWQ	BZ			EP		7 4	59.41								
BEIL	SZ			EP		7 5	1.23								
FKH	SZ			EP		7 5	4.28								

August 11 2019 Hour: 12:35 8.8

Agency: REL Regional

EMSC OT=012:35:08.8 35.14N 27.97E 5Km M=3.6 DODECANESE ISLANDS, GREECE

STAT	CO	DIST	AZI	PHASE	P	HRMN	SECON	TRES	CODA	AMPL	PERI	BAZ	ARES	VELO	WT
DQRL	SZ			EP		1236	42.46								
QRWL	SZ			EP		1236	44.28								
HWQ	BZ			EP		1236	44.93								
ZAHL	SZ			EP		1236	45.94								
SHBL	SZ			EP		1236	45.43								
RCY	SZ			EP		1236	46.07								
BEIL	SZ			EP		1236	46.18								

August 11 2019 Hour: 19:46 50.9

Agency: REL Regional

EMSC OT=019:46:50.9 35.20N 27.91E 2Km M=3.3 DODECANESE ISLANDS, GREECE

STAT	CO	DIST	AZI	PHASE	P	HRMN	SECON	TRES	CODA	AMPL	PERI	BAZ	ARES	VELO	WT
QRWL	SZ			EP		1948	26.57								
HWQ	BZ			EP		1948	27.44								
SHBL	SZ			EP		1948	28.18								
RCY	SZ			EP		1948	28.53								
BEIL	SZ			EP		1948	29.32								

August 11 2019 Hour: 21:50 24.5 Lat: 33.69N Lon: 36.22E Depth: 9 Agency: REL Regional
Magnitudes: 2.7MC REL Rms: 0.1 secs

SYRIA REGION

STAT	CO	DIST	AZI	PHASE	P	HRMN	SECON	TRES	CODA	AMPL	PERI	BAZ	ARES	VELO	WT
ZAHL	SZ	36	301	EP		2150	30.51-0.08		39						1.0
RCY	SZ	42	239	EP		2150	31.36-0.06								1.0
RCY	SN	42	239	ES		2150	36.62 0.05								1.0
QRWL	SZ	52	253	EP		2150	33.06-0.03								1.0
BHL	BZ	58	295	EP		2150	33.89-0.04								1.0
BHL	BN	58	295	ES		2150	40.96 0.02								1.0
SHBL	SZ	58	230	EP		2150	34.09 0.06								1.0
DQRL	SZ	60	272	EP		2150	34.37 0.01								1.0
HWQ	BZ	70	339	EP		2150	36.00 0.08								1.0

August 12 2019 Hour: 1:57 18.3

Agency: REL Regional

EMSC OT=001:57:18.3 37.11N 36.22E 7Km M=3.2 CENTRAL TURKEY

STAT	CO	DIST	AZI	PHASE	P	HRMN	SECON	TRES	CODA	AMPL	PERI	BAZ	ARES	VELO	WT
BEIL	SZ			EP		158	0.56								
HWQ	BZ			EP		158	5.41								
ZAHL	SZ			EP		158	10.15								
BHL	BZ			EP		158	11.19								
DQRL	SZ			EP		158	14.35								
QRWL	SZ			EP		158	13.71								
SHBL	SZ			EP		158	17.89								

August 12 2019 Hour: 7:57 8.4 Agency: REL Regional

EMSC OT=007:57:08.4 35.81N 25.66E 56Km M=4.5 CRETE, GREECE

STAT	CO	DIST	AZI	PHASE	P	HRMN	SECON	TRES	CODA	AMPL	PERI	BAZ	ARES	VELO	WT
BEYL	SZ			EP		759	2.90								
DQRL	SZ			EP		759	3.58								
BHL	BZ			EP		759	3.44								
QRWL	SZ			EP		759	5.73								
HWQ	BZ			EP		759	5.65								
ZAHL	SZ			EP		759	6.49								
SHBL	SZ			EP		759	6.93								
RCY	SZ			EP		759	7.52								
BEIL	SZ			EP		759	7.82								
FKH	SZ			EP		759	11.82								

August 12 2019 Hour: 13:34 29.5 Agency: REL Regional

EMSC OT=013:34:29.5 38.33N 40.82E 7Km M=4.1 EASTERN TURKEY

STAT	CO	DIST	AZI	PHASE	P	HRMN	SECON	TRES	CODA	AMPL	PERI	BAZ	ARES	VELO	WT
FKH	SZ			EP		1335	50.77								
BEIL	SZ			EP		1335	49.57								
HWQ	BZ			EP		1335	54.02								
ZAHL	SZ			EP		1335	56.62								
BHL	BZ			EP		1336	20.00								
RCY	SZ			EP		1336	2.20								
QRWL	SZ			EP		1335	54.92								
DQRL	SZ			EP		1336	7.00								
SHBL	SZ			EP		1336	4.86								

August 12 2019 Hour: 17:20 22.1 Agency: REL Distant

EMSC OT=017:20:22.1 23.74S 179.30W 475Km M=4.8 SOUTH OF FIJI ISLANDS

STAT	CO	DIST	AZI	PHASE	P	HRMN	SECON	TRES	CODA	AMPL	PERI	BAZ	ARES	VELO	WT
FKH	SZ			EP		1739	13.10								
BEIL	SZ			EP		1739	13.48								
ZAHL	SZ			EP		1739	14.58								
BHL	BZ			EP		1739	14.71								
RCY	SZ			EP		1739	14.84								
QRWL	SZ			EP		1739	14.91								
DQRL	SZ			EP		1739	15.41								
SHBL	SZ			EP		1739	15.10								

August 12 2019 Hour: 21:29 50.3 Lat: 33.26N Lon: 35.45E Depth: 11 Agency: REL Local
Magnitudes: 2.9MC REL Rms: 0.1 secs

MARJAAYOUN REGION

STAT	CO	DIST	AZI	PHASE	P	HRMN	SECON	TRES	CODA	AMPL	PERI	BAZ	ARES	VELO	WT
SHBL	SZ	29	71	EP		2129	55.46	0.09	54						1.0
SHBL	SN	29	71	ES		2129	59.12	-0.02							1.0
QRWL	SZ	38	35	EP		2129	56.72	-0.01							1.0
RCY	SZ	44	54	EP		2129	57.81	0.12	53						1.0
RCY	SN	44	54	ES		2130	3.04	-0.13							1.0
DQRL	SZ	50	13	EP		2129	58.39	-0.22							1.0
DQRL	SN	50	13	ES		2130	4.92	0.15							1.0
BHL	BZ	73	15	EP		2130	2.17	-0.08							1.0
ZAHL	SZ	77	31	EP		2130	2.92	0.09							1.0

August 13 2019 Hour: 0:10 18.2 Lat: 33.25N Lon: 35.48E Depth: 11 Agency: REL Local
Magnitudes: 2.6MC REL Rms: 0.0 secs

MARJAAYOUN REGION

STAT	CO	DIST	AZI	PHASE	P	HRMN	SECON	TRES	CODA	AMPL	PERI	BAZ	ARES	VELO	WT
SHBL	SZ	27	66	EP		010	23.03	-0.06							1.0
QRWL	SZ	38	30	EP		010	24.68	-0.02	32						1.0
RCY	SZ	43	51	EP		010	25.61	0.11							1.0
RCY	SN	43	51	ES		010	30.90	0.00							1.0
DQRL	SZ	51	10	EP		010	26.75	0.01							1.0
DQRL	SN	51	10	ES		010	33.04	-0.01							1.0

BHL	BZ	75	13	EP		010	30.35	0.03										1.0
ZAHL	SZ	78	29	EP		010	30.72	-0.05										1.0

August 13 2019 Hour: 0:45 52.8 Lat: 33.26N Lon: 35.46E Depth: 7 Agency: REL Local
Magnitudes: 2.7MC REL Rms: 0.1 secs

MARJAAYOUN REGION

STAT	CO	DIST	AZI	PHASE	P	HRMN	SECON	TRES	CODA	AMPL	PERI	BAZ	ARES	VELO	WT
SHBL	SZ	28	71	EP		045	57.60	0.08							1.0
QRWL	SZ	37	33	EP		045	58.83	-0.16	36						1.0
RCY	SZ	43	54	EP		045	59.97	0.05							1.0
RCY	SN	43	54	ES		046	5.16	-0.03							1.0
DQRL	SZ	50	12	EP		046	0.99	0.04							1.0
DQRL	SN	50	12	ES		046	7.06	0.07							1.0
BHL	BZ	73	14	EP		046	4.63	-0.03							1.0
ZAHL	SZ	77	31	EP		046	5.19	-0.04							1.0
HWQ	BZ	121	22	EP		046	12.03	0.02							1.0

August 14 2019 Hour: 16:57 27.9 Lat: 33.79N Lon: 35.77E Depth: 8 Agency: REL Local
Magnitudes: 3.0MC 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	53	EP		1657	30.52	-0.05	64						1.0
BHL	BZ	17	321	EP		1657	31.05	-0.00							1.0
DQRL	SZ	21	244	EP		1657	31.61	0.02							1.0
DQRL	SN	21	244	ES		1657	34.26	-0.02							1.0
QRWL	SZ	28	197	EP		1657	32.61	-0.04							1.0
RCY	SZ	33	169	EP		1657	33.38	-0.07	60						1.0
RCY	SN	33	169	ES		1657	37.58	0.06							1.0
SHBL	SZ	49	183	EP		1657	36.00	0.05							1.0
HWQ	BZ	57	17	EP		1657	37.34	0.10							1.0
BEIL	SZ	92	24	EP		1657	42.79	-0.04							1.0

August 15 2019 Hour: 17:18 54.9 Lat: 32.78N Lon: 35.04E Depth: 20 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
SHBL	SZ	91	46	EP		1719	9.42	0.11	55						1.0
SHBL	SN	91	46	ES		1719	19.96	-0.02							1.0
QRWL	SZ	104	35	EP		1719	11.15	-0.03							1.0
RCY	SZ	108	43	EP		1719	11.82	-0.08							1.0
DQRL	SZ	114	26	EP		1719	12.66	0.03							1.0
DQRL	SN	114	26	ES		1719	25.78	0.03							1.0
BHL	BZ	137	24	EP		1719	16.00	-0.04							1.0
ZAHL	SZ	143	33	EP		1719	16.89	0.04							1.0
HWQ	BZ	186	27	EP		1719	22.16	-0.04							1.0

August 16 2019 Hour: 4:37 16.6 Lat: 36.08N Lon: 36.15E Depth: 0 Agency: REL Regional
Magnitudes: 3.4MC REL Rms: 0.1 secs

TURKEY REGION

STAT	CO	DIST	AZI	PHASE	P	HRMN	SECON	TRES	CODA	AMPL	PERI	BAZ	ARES	VELO	WT
BEIL	SZ	171	179	EP		437	43.51	-0.11	85						1.0
BEIL	SN	171	179	ES		438	3.69	0.06							1.0
HWQ	BZ	201	185	EP		437	47.51	-0.19							1.0
HWQ	BN	201	185	ES		438	10.68	-0.06							1.0
FKH	SZ	205	173	EP		437	48.24	0.02							1.0
QRWL	SZ	285	189	EP		437	57.99	-0.04							1.0
RCY	SZ	288	186	EP		437	58.65	0.09							1.0
SHBL	SZ	306	187	EP		438	0.94	0.23							1.0

August 17 2019 Hour: 19:39 39.9 Lat: 34.57N Lon: 36.02E Depth: 0 Agency: REL Local
Magnitudes: 2.5MC REL Rms: 0.0 secs

AKKAR REGION

STAT	CO	DIST	AZI	PHASE	P	HRMN	SECON	TRES	CODA	AMPL	PERI	BAZ	ARES	VELO	WT
BEIL	SZ	15	101	EP		1939	42.37	0.05	31						1.0
BEIL	SN	15	101	ES		1939	44.10	-0.03							1.0
HWQ	BZ	33	192	EP		1939	45.17	-0.04							1.0
HWQ	BN	33	192	ES		1939	49.18	0.03							1.0
FKH	SZ	51	135	EP		1939	48.04	0.00							1.0
BHL	BZ	81	205	EP		1939	52.96	-0.02							0.2
QRWL	SZ	118	196	EP		1939	58.77	-0.07							0.2
SHBL	SZ	138	191	EP		1940	2.10	0.01							0.2

August 20 2019 Hour: 8:28 49.2 Lat: 34.28N Lon: 36.10E Depth: 19 Agency: REL Local
Magnitudes: 2.6MC REL Rms: 0.1 secs

BCHARRE REGION

STAT	CO	DIST	AZI	PHASE	P	HRMN	SECON	TRES	CODA	AMPL	PERI	BAZ	ARES	VELO	WT
HWQ	BZ	15	271	EP		828	53.15	0.01	34						1.0
HWQ	BN	15	271	ES		828	56.04	-0.00							1.0
FKH	SZ	28	97	EP		828	54.67	-0.02							1.0
FKH	SN	28	97	ES		828	58.75	0.01							1.0
BEIL	SZ	30	14	EP		828	55.00	0.12							1.0
BEIL	SN	30	14	ES		828	58.98	-0.10							1.0
BHL	BZ	59	225	EP		828	58.86	-0.03							0.2
DQRL	SZ	80	218	EP		829	2.02	-0.03							0.2
QRWL	SZ	90	206	EP		829	3.37	-0.06							0.2
RCY	SZ	90	196	EP		829	3.40	-0.10							0.2

August 20 2019 Hour: 9:34 58.5 Lat: 36.06N Lon: 31.32E Depth: 79 Agency: REL Regional
Magnitudes: 4.5MC REL Rms: 0.0 secs

TURKEY REGION

STAT	CO	DIST	AZI	PHASE	P	HRMN	SECON	TRES	CODA	AMPL	PERI	BAZ	ARES	VELO	WT
BHL	BZ	462	120	EP		935	57.92	0.07							1.0
HWQ	BZ	466	114	EP		935	58.21	-0.04							1.0
DQRL	SZ	468	123	EP		935	58.52	-0.01							1.0
BEIL	SZ	474	109	EP		935	59.11	-0.01							1.0
ZAHL	SZ	483	119	EP		936	0.36	0.03							1.0
QRWL	SZ	487	124	EP		936	0.66	-0.05	294						1.0
RCY	SZ	502	123	EP		936	2.56	0.05							1.0
RCY	SN	502	123	ES		936	49.85	-0.04							1.0
SHBL	SZ	505	125	EP		936	2.82	-0.05							1.0
SHBL	SN	505	125	ES		936	50.55	0.04							1.0
FKH	SZ	506	112	EP		936	2.97	0.01							1.0

August 21 2019 Hour: 8:36 14.8 Lat: 33.85N Lon: 36.09E Depth: 12 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	273	EP		836	18.59	0.03							0.2
BHL	BZ	41	279	EP		836	21.81	0.10							1.0
BHL	BN	41	279	ES		836	26.69	-0.12							1.0
RCY	SZ	46	211	EP		836	22.30	-0.23							1.0
RCY	SN	46	211	ES		836	28.37	0.14							1.0
HWQ	BZ	49	345	EP		836	23.13	0.08	58						1.0
QRWL	SZ	50	228	EP		836	23.27	0.03							1.0
DQRL	SZ	51	252	EP		836	23.72	0.46							0.2
FKH	SZ	53	34	EP		836	23.60	-0.04							1.0
SHBL	SZ	64	210	EP		836	25.40	-0.00							1.0
BEIL	SZ	77	7	EP		836	27.26	0.01							1.0

August 21 2019 Hour: 23:58 36.9 Lat: 33.65N Lon: 34.97E Depth: 32 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
DQRL	SZ	56	83	EP		2358	46.87	0.04							1.0
QRWL	SZ	67	99	EP		2358	48.32	0.03	39						1.0
QRWL	SN	67	99	ES		2358	56.69	-0.05							1.0
BHL	BZ	69	66	EP		2358	48.65	0.02							1.0
SHBL	SZ	79	115	EP		2358	49.92	-0.08							1.0
SHBL	SN	79	115	ES		2358	59.77	0.05							1.0
RCY	SZ	82	102	EP		2358	50.40	0.05							1.0
ZAHL	SZ	88	74	EP		2358	51.00	-0.06							1.0
HWQ	BZ	114	52	EP		2358	54.31	0.01							1.0

August 22 2019 Hour: 15:29 57.9 Agency: REL Distant

EMSC OT=015:29:57.9 17.66S 178.57W 538Km M=5.2 FIJI REGION

STAT	CO	DIST	AZI	PHASE	P	HRMN	SECON	TRES	CODA	AMPL	PERI	BAZ	ARES	VELO	WT
BEIL	SZ			EP		1548	35.19								
FKH	SZ			EP		1548	35.19								
HWQ	BZ			EP		1548	35.04								
ZAHL	SZ			EP		1548	36.41								
BHL	BZ			EP		1548	36.70								
DQRL	SZ			EP		1548	37.58								
RCY	SZ			EP		1548	37.19								
QRWL	SZ			EP		1548	37.24								

August 22 2019 Hour: 22:12 9.5 Lat: 32.95N Lon: 35.68E Depth: 0 Agency: REL Regional

Magnitudes: 2.8MC 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	SZ	45	8	EP		2212	16.61	-0.10	47						1.0
SHBL	SN	45	8	ES		2212	22.12	0.04							1.0
RCY	SZ	63	14	EP		2212	19.74	0.16							1.0
RCY	SN	63	14	ES		2212	27.03	-0.04							1.0
QRWL	SZ	67	0	EP		2212	20.20	-0.00							1.0
DQRL	SZ	85	353	EP		2212	23.15	0.03							1.0
ZAHL	SZ	103	11	EP		2212	25.97	-0.08							1.0
HWQ	BZ	150	10	EP		2212	33.37	-0.02							1.0
BEIL	SZ	183	15	EP		2212	38.26	0.02							1.0

August 22 2019 Hour: 22:54 26.2 Agency: REL Distant

EMSC OT=022:54:26.2 12.57S 167.04E 217Km M=5.6 SANTA CRUZ ISLANDS

STAT	CO	DIST	AZI	PHASE	P	HRMN	SECON	TRES	CODA	AMPL	PERI	BAZ	ARES	VELO	WT
HWQ	BZ			EP		2313	10.85								
BHL	BZ			EP		2313	12.43								

August 24 2019 Hour: 8:15 35.2 Lat: 32.04N Lon: 35.44E Depth: 0 Agency: REL Regional

Magnitudes: 3.1MC REL

Rms: 0.4 secs

DEAD SEA REGION

STAT	CO	DIST	AZI	PHASE	P	HRMN	SECON	TRES	CODA	AMPL	PERI	BAZ	ARES	VELO	WT
SHBL	SZ	147	11	EP		815	58.59	-0.20							1.0
RCY	SZ	165	13	EP		816	1.35	-0.06	61						1.0
RCY	SN	165	13	ES		816	20.89	0.07							1.0
QRWL	SZ	168	8	EP		816	1.82	-0.00							1.0
DQRL	SZ	185	4	EP		816	4.21	-0.03							1.0
DQRL	SN	185	4	ES		816	25.71	-0.03							1.0
BHL	BZ	207	5	EP		816	9.11	2.06							0.2
HWQ	BZ	252	11	EP		816	12.77	0.13							1.0

August 24 2019 Hour: 15:51 28.1 Agency: REL Distant
EMSC OT=015:51:28.1 14.29S 167.20E 127Km M=6.0 VANUATU
 STAT CO DIST AZI PHASE P HRMN SECON TRES CODA AMPL PERI BAZ ARES VELO WT
 HWQ BZ EP 1612 50.22
 BHL BZ EP 1612 52.66

August 24 2019 Hour: 21:21 27.1 Agency: REL Distant
EMSC OT=021:21:27.1 20.24S 175.65W 217Km M=5.4 TONGA
 STAT CO DIST AZI PHASE P HRMN SECON TRES CODA AMPL PERI BAZ ARES VELO WT
 FKH SZ EP 2140 48.47
 BEIL SZ EP 2140 48.65
 HWQ BZ EP 2140 49.37
 BHL BZ EP 2140 50.14

August 25 2019 Hour: 1:53 30.4 Agency: REL Regional
EMSC OT=001:05:30.4 34.42N 32.17E 10Km M=2.8 CYPRUS REGION
 STAT CO DIST AZI PHASE P HRMN SECON TRES CODA AMPL PERI BAZ ARES VELO WT
 QRWL SZ EP 1 6 18.17
 SHBL SZ EP 1 6 19.04
 RCY SZ EP 1 6 19.04
 BEIL SZ EP 1 6 21.31

August 26 2019 Hour: 9:13 28.2 Lat: 33.62N Lon: 35.67E Depth: 4 Agency: REL Local
Magnitudes: 3.0MC REL Rms: 0.0 secs
CHOUF REGION
 STAT CO DIST AZI PHASE P HRMN SECON TRES CODA AMPL PERI BAZ ARES VELO WT
 QRWL SZ 8 171 EP 913 29.71-0.05 62 1.0
 QRWL SN 8 171 ES 913 30.88-0.01 1.0
 DQRL SZ 13 316 EP 913 30.64 0.12 1.0
 RCY SZ 21 131 EP 913 31.70 0.02 1.0
 RCY SN 21 131 ES 913 34.26 0.04 1.0
 SHBL SZ 31 167 EP 913 33.26-0.04 1.0
 BHL BZ 32 357 EP 913 33.34-0.06 1.0
 BHL BN 32 357 ES 913 37.17-0.05 1.0
 ZAHL SZ 33 37 EP 913 33.67 0.01 1.0
 HWQ BZ 77 19 EP 913 40.72-0.03 1.0
 FKH SZ 98 44 EP 913 44.02 0.03 1.0
 BEIL SZ 113 25 EP 913 46.47 0.02 1.0

August 26 2019 Hour: 14:22 16.9 Lat: 33.60N Lon: 36.30E Depth: 0 Agency: REL Regional
Magnitudes: 2.8MC 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 45 255 EP 1422 24.12-0.02 1.0
 RCY SN 45 255 ES 1422 29.45-0.06 1.0
 ZAHL SZ 48 307 EP 1422 24.57-0.11 1.0
 QRWL SZ 58 265 EP 1422 26.49 0.24 1.0
 SHBL SZ 59 242 EP 1422 26.35-0.06 42 1.0
 BHL BZ 69 300 EP 1422 28.05 0.02 1.0
 DQRL SZ 69 280 EP 1422 27.97-0.06 1.0
 DQRL SN 69 280 ES 1422 36.31 0.03 1.0
 HWQ BZ 82 336 EP 1422 30.19 0.03 1.0
 BEIL SZ 105 354 EP 1422 33.81-0.05 0.2

August 27 2019 Hour: 2:55 52.2 Lat: 34.84N Lon: 33.29E Depth: 45 Agency: REL Regional
Magnitudes: 3.3MC REL Rms: 0.3 secs
CYPRUS REGION
 STAT CO DIST AZI PHASE P HRMN SECON TRES CODA AMPL PERI BAZ ARES VELO WT
 BHL BZ 240 115 EP 2 6 24.98-0.20 1.0
 HWQ BZ 251 104 EP 2 6 26.38-0.11 1.0
 HWQ BN 251 104 ES 2 6 52.05 0.20 1.0
 ZAHL SZ 262 114 EP 2 6 27.61-0.20 1.0
 QRWL SZ 263 122 EP 2 6 27.85 0.01 1.0

QRWL	SN	263	122	ES		2	6	53.59	-0.61								1.0
BEIL	SZ	267	96	EP		2	6	28.12	-0.21	69							1.0
BEIL	SN	267	96	ES		2	6	54.77	-0.28								1.0
RCY	SZ	278	122	EP		2	6	29.94	0.23								1.0
RCY	SE	278	122	ES		2	6	57.80	0.34								1.0
SHBL	SZ	280	125	EP		2	6	30.25	0.24								1.0
FKH	SZ	293	102	EP		2	6	31.87	0.26								1.0
FKH	SN	293	102	ES		2	7	1.10	0.33								1.0

August 27 2019 Hour: 4:31 23.1 Agency: REL Regional
EMSC OT=004:31:23.1 35.69N 27.64E 10Km M=4.3 DODECANESE ISLANDS, GREECE

STAT	CO	DIST	AZI	PHASE	P	HRMN	SECON	TRES	CODA	AMPL	PERI	BAZ	ARES	VELO	WT
HWQ	BZ			EP		433	3.89								
QRWL	SZ			EP		433	3.71								
SHBL	SZ			EP		433	5.14								
BEIL	SZ			EP		433	4.96								
RCY	SZ			EP		433	5.14								
FKH	SZ			EP		433	8.47								

August 27 2019 Hour: 13:18 20.7 Lat: 33.97N Lon: 36.15E Depth: 6 Agency: REL Local
Magnitudes: 2.8MC REL Rms: 0.1 secs

BAALBECK REGION

STAT	CO	DIST	AZI	PHASE	P	HRMN	SECON	TRES	CODA	AMPL	PERI	BAZ	ARES	VELO	WT
ZAHL	SZ	28	243	EP		1318	25.29	-0.08							1.0
FKH	SZ	39	38	EP		1318	27.08	0.00							1.0
HWQ	BZ	39	331	EP		1318	27.27	0.11	43						1.0
HWQ	BN	39	331	ES		1318	31.91	-0.01							1.0
RCY	SZ	60	209	EP		1318	30.42	-0.11							1.0
RCY	SN	60	209	ES		1318	37.86	0.09							1.0
BEIL	SZ	64	3	EP		1318	31.00	-0.03							1.0
QRWL	SZ	64	223	EP		1318	31.07	-0.06							1.0
SHBL	SZ	79	209	EP		1318	33.60	0.10							1.0

August 27 2019 Hour: 16:51 42.9 Lat: 34.28N Lon: 36.46E Depth: 0 Agency: REL Local
Magnitudes: 3.1MC REL Rms: 0.2 secs

BAALBECK REGION

STAT	CO	DIST	AZI	PHASE	P	HRMN	SECON	TRES	CODA	AMPL	PERI	BAZ	ARES	VELO	WT
FKH	SZ	7	229	EP		1651	43.28	-0.67	69						1.0
BEIL	SZ	38	318	EP		1651	49.18	0.12							1.0
BEIL	SN	38	318	ES		1651	53.79	0.14							1.0
HWQ	BZ	48	269	EP		1651	50.30	-0.26							1.0
HWQ	BN	48	269	ES		1651	56.18	-0.07							1.0
ZAHL	SZ	71	229	EP		1651	54.44	0.07							1.0
ZAHL	SN	71	229	ES		1652	2.99	0.10							1.0
BHL	BZ	86	241	EP		1651	56.73	0.03							0.2
DQRL	SZ	105	232	EP		1651	59.96	0.23							1.0
RCY	SZ	105	214	EP		1651	59.88	0.09							1.0
RCY	SE	105	214	ES		1652	12.50	0.19							1.0
QRWL	SZ	109	222	EP		1652	0.50	0.04							1.0
SHBL	SZ	123	213	EP		1652	2.78	0.02							1.0

August 28 2019 Hour: 11:58 13.7 Agency: REL Regional
EMSC OT=011:58:13.7 35.65N 27.56E 10Km M=4.8 DODECANESE ISLANDS, GREECE

STAT	CO	DIST	AZI	PHASE	P	HRMN	SECON	TRES	CODA	AMPL	PERI	BAZ	ARES	VELO	WT
DQRL	SZ			EP		1159	57.50								
BHL	BZ			EP		1159	56.82								
HWQ	BZ			EP		1159	59.30								
QRWL	SZ			EP		1159	59.83								
SHBL	SZ			EP		12	0	0.65							
BEIL	SZ			EP		12	0	0.88							
RCY	SZ			EP		12	0	1.48							
FKH	SZ			EP		12	0	4.85							

August 28 2019 Hour: 15: 8 50.4 Agency: REL Regional
EMSC OT=015:08:50.4 35.77N 27.57E 10Km M=3.8 DODECANESE ISLANDS, GREECE
 STAT CO DIST AZI PHASE P HRMN SECON TRES CODA AMPL PERI BAZ ARES VELO WT
 QRWL SZ EP 1510 30.21
 HWQ BZ EP 1510 30.57
 SHBL SZ EP 1510 31.29
 BEIL SZ EP 1510 31.43
 RCY SZ EP 1510 32.01

August 28 2019 Hour: 15:31 47.5 Agency: REL Regional
EMSC OT=015:31:47.5 35.78N 27.57E 10Km M=3.7 DODECANESE ISLANDS, GREECE
 STAT CO DIST AZI PHASE P HRMN SECON TRES CODA AMPL PERI BAZ ARES VELO WT
 QRWL SZ EP 1533 27.66
 RCY SZ EP 1533 28.80
 BEIL SZ EP 1533 28.95

August 28 2019 Hour: 16:56 13.9 Lat: 34.04N Lon: 35.95E Depth: 0 Agency: REL Local
Magnitudes: 2.8MC REL Rms: 0.1 secs
KESROUAN REGION

STAT	CO	DIST	AZI	PHASE	P	HRMN	SECON	TRES	CODA	AMPL	PERI	BAZ	ARES	VELO	WT
ZAHL	SZ	21	196	EP		1656	17.24	-0.17							1.0
HWQ	BZ	26	359	EP		1656	18.08	-0.06	44						1.0
HWQ	BN	26	359	ES		1656	21.28	0.04							1.0
BHL	BZ	31	240	EP		1656	18.93	-0.08							1.0
FKH	SZ	48	62	EP		1656	21.57	-0.12							1.0
DQRL	SZ	51	223	EP		1656	22.21	-0.02							1.0
BEIL	SZ	59	21	EP		1656	23.66	0.14							1.0
QRWL	SZ	60	204	EP		1656	23.76	0.08							1.0
RCY	SZ	62	190	EP		1656	23.93	0.04							1.0
RCY	SN	62	190	ES		1656	31.30	0.05							1.0
SHBL	SZ	80	194	EP		1656	26.88	0.11							1.0

August 29 2019 Hour: 9:28 32.0 Lat: 33.73N Lon: 35.70E Depth: 13 Agency: REL Local
Magnitudes: 2.7MC 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	12	259	EP		928	35.03	0.00	37						1.0
DQRL	SN	12	259	ES		928	37.33	0.02							1.0
QRWL	SZ	20	184	EP		928	35.77	-0.16							1.0
BHL	BZ	20	348	EP		928	36.02	0.03							1.0
ZAHL	SZ	23	50	EP		928	36.39	0.04							1.0
RCY	SZ	29	153	EP		928	37.09	-0.07							1.0
RCY	SN	29	153	ES		928	41.04	0.03							1.0
SHBL	SZ	42	174	EP		928	39.32	0.15							1.0
HWQ	BZ	65	20	EP		928	42.53	-0.05							1.0

August 29 2019 Hour: 16: 0 35.9 Lat: 33.97N Lon: 36.25E Depth: 0 Agency: REL Local
Magnitudes: 3.0MC REL Rms: 0.1 secs
BAALBECK REGION

STAT	CO	DIST	AZI	PHASE	P	HRMN	SECON	TRES	CODA	AMPL	PERI	BAZ	ARES	VELO	WT
FKH	SZ	34	26	EP		16	0	41.39	-0.03	58					1.0
ZAHL	SZ	36	250	EP		16	0	41.53	-0.07						1.0
ZAHL	SN	36	250	ES		16	0	45.84	-0.00						1.0
HWQ	BZ	44	321	EP		16	0	43.09	0.07						1.0
HWQ	BN	44	321	ES		16	0	48.32	0.02						1.0
BHL	BZ	55	263	EP		16	0	44.82	0.04						0.2
BEIL	SZ	64	355	EP		16	0	46.01	-0.20						0.2
RCY	SZ	65	216	EP		16	0	46.38	0.09						1.0
QRWL	SZ	70	229	EP		16	0	47.09	-0.07						1.0
SHBL	SZ	83	214	EP		16	0	49.42	0.17						0.2

August 29 2019 Hour: 17:25 2.0 Lat: 35.28N Lon: 36.31E 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
BEIL	SZ	83	188	EP		1725	15.25	-0.10	75						1.0
BEIL	SN	83	188	ES		1725	25.31	0.05							1.0
HWQ	BZ	116	197	EP		1725	20.50	-0.22							1.0
FKH	SZ	116	175	EP		1725	20.41	-0.19							1.0
FKH	SN	116	175	ES		1725	34.46	0.06							1.0
ZAHL	SZ	163	194	EP		1725	27.98	0.15							1.0
BHL	BZ	164	202	EP		1725	28.03	-0.01							1.0
DQRL	SZ	188	201	EP		1725	31.29	-0.10							1.0
QRWL	SZ	201	197	EP		1725	33.07	0.04							1.0
RCY	SZ	203	192	EP		1725	33.81	0.48							1.0
RCY	SN	203	192	ES		1725	56.52	-0.03							1.0
SHBL	SZ	221	194	EP		1725	35.44	-0.12							1.0

August 29 2019 Hour: 17:41 24.6 Lat: 33.61N Lon: 35.79E Depth: 6 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	12	233	EP		1741	26.77	-0.19	25						1.0
QRWL	SN	12	233	ES		1741	28.79	0.10							1.0
RCY	SZ	14	161	EP		1741	27.08	-0.13							1.0
DQRL	SZ	23	297	EP		1741	28.46	-0.02							1.0
ZAHL	SZ	29	18	EP		1741	29.50	0.10							1.0
SHBL	SZ	30	188	EP		1741	29.72	0.11							1.0
SHBL	SN	30	188	ES		1741	33.33	0.04							1.0
BHL	BZ	34	339	EP		1741	30.04	-0.28							0.2

August 29 2019 Hour: 22:15 7.1 Agency: REL Regional
EMSC OT=022:15:07.1 36.30N 35.45E 10Km M=3.8 CENTRAL TURKEY

STAT	CO	DIST	AZI	PHASE	P	HRMN	SECON	TRES	CODA	AMPL	PERI	BAZ	ARES	VELO	WT
BEIL	SZ			EP		2215	40.03								
HWQ	BZ			EP		2215	42.90								
FKH	SZ			EP		2215	45.20								
BHL	BZ			EP		2215	47.88								
ZAHL	SZ			EP		2215	49.14								
DQRL	SZ			EP		2215	50.04								
QRWL	SZ			EP		2215	52.46								
RCY	SZ			EP		2215	53.18								
SHBL	SZ			EP		2215	55.38								

August 30 2019 Hour: 15:38 14.3 Agency: REL Regional
EMSC OT=015:38:14.3 37.53N 26.77E 10Km M=4.6 DODECANESE ISLANDS, GREECE

STAT	CO	DIST	AZI	PHASE	P	HRMN	SECON	TRES	CODA	AMPL	PERI	BAZ	ARES	VELO	WT
HWQ	BZ			EP		1540	11.72								
BEIL	SZ			EP		1540	12.86								
QRWL	SZ			EP		1540	12.86								
SHBL	SZ			EP		1540	14.69								
RCY	SZ			EP		1540	14.25								

August 30 2019 Hour: 17:21 5.0 Agency: REL Regional
EMSC OT=017:21:05.0 37.53N 26.78E 10Km M=4.5 DODECANESE ISLANDS, GREECE

STAT	CO	DIST	AZI	PHASE	P	HRMN	SECON	TRES	CODA	AMPL	PERI	BAZ	ARES	VELO	WT
DQRL	SZ			EP		1723	1.34								
HWQ	BZ			EP		1723	1.42								
BEIL	SZ			EP		1723	2.87								
QRWL	SZ			EP		1723	3.35								
RCY	SZ			EP		1723	5.19								
SHBL	SZ			EP		1723	6.07								
FKH	SZ			EP		1723	6.95								

August 31 2019 Hour: 20:10 31.2 Lat: 33.70N Lon: 35.70E Depth: 13 Agency: REL Local
Magnitudes: 2.4MC 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	12	274	EP		2010	34.28	0.01	25						1.0
DQRL	SN	12	274	ES		2010	36.55	0.00							1.0
QRWL	SZ	17	187	EP		2010	34.74	-0.02							1.0
BHL	BZ	23	349	EP		2010	35.59	-0.03							1.0
ZAHL	SZ	24	43	EP		2010	35.86	0.06							1.0
ZAHL	SN	24	43	ES		2010	39.21	0.00							1.0
RCY	SZ	26	151	EP		2010	35.82	-0.13							1.0
SHBL	SZ	39	174	EP		2010	37.97	0.05							1.0
SHBL	SN	39	174	ES		2010	42.95	0.05							1.0

Epicentral Map of Lebanon

AUGUST 2019

