

Republic of Lebanon
National Council for Scientific Research

Provisional Seismological Bulletin

from the

NATIONAL SEISMIC NETWORK

November

2020

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
SAIL	3334.52N	3524.09E	159	SAIDA	Opened Jan 2020
CPTL	3353.47N	3528.60E	32	QRAYTEM	Opened Mar 2020

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.

November 2 2020 Hour: 12:11 53.7

Agency: REL Regional

EMSC OT=12:11:53.7 36.14N 27.54E 40Km M=3.2 DODECANESE-TURKEY REGION

STAT	CO	DIST	AZI	PHASE	P	HRMN	SECON	TRES	CODA	AMPL	PERI	BAZ	ARES	VELO	WT
HWQ	BZ			EP		1213	29.00								
BEIL	SZ			EP		1213	30.48								
SHBL	SZ			EP		1213	31.70								
RCY	SZ			EP		1213	31.84								

November 3 2020 Hour: 15:19 8.4 Lat: 34.29N Lon: 36.35E Depth: 7

Agency: REL Local

Magnitudes: 2.5MC REL

Rms: 0.1 secs

BAALBECK REGION

STAT	CO	DIST	AZI	PHASE	P	HRMN	SECON	TRES	CODA	AMPL	PERI	BAZ	ARES	VELO	WT
BEIL	SZ	31	332	EP		1519	13.74	0.08	30						1.0
BEIL	SN	31	332	ES		1519	17.41	-0.12							1.0
HWQ	BZ	37	268	EP		1519	14.58	0.05							1.0
HWQ	BN	37	268	ES		1519	19.14	0.08							1.0
ZAHL	SZ	64	222	EP		1519	19.02	0.14							1.0
ZAHL	SN	64	222	ES		1519	26.51	-0.12							1.0
BHL	BZ	77	236	EP		1519	20.82	-0.10							1.0
RCY	SZ	100	208	EP		1519	24.61	0.03							1.0
SHBL	SZ	119	208	EP		1519	27.26	-0.05							1.0

November 6 2020 Hour: 7:27 53.4 Lat: 33.57N Lon: 35.56E Depth: 11

Agency: REL Local

Magnitudes: 2.7MC REL

Rms: 0.0 secs

JEZZINE REGION

STAT	CO	DIST	AZI	PHASE	P	HRMN	SECON	TRES	CODA	AMPL	PERI	BAZ	ARES	VELO	WT
QRWL	SZ	12	103	EP		727	56.21	0.00	38						1.0
QRWL	SN	12	103	ES		727	58.25	-0.04							1.0
DQRL	SZ	15	5	EP		727	56.65	0.09							1.0
DQRL	SN	15	5	ES		727	58.89	-0.02							1.0
RCY	SZ	27	108	EP		727	58.24	-0.03							1.0
RCY	SN	27	108	ES		728	1.94	0.06							1.0
SHBL	SZ	30	145	EP		727	58.71	-0.01							1.0
BHL	BZ	38	14	EP		727	59.83	-0.02							1.0
HWQ	BZ	86	25	EP		728	7.20	-0.01							1.0
BEIL	SZ	122	28	EP		728	12.45	-0.01							1.0

November 6 2020 Hour: 14:11 42.2 Lat: 33.75N Lon: 35.47E Depth: 0

Agency: REL Local

Magnitudes: 2.6MC 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	11	116	EP		1411	43.78	-0.15	37						1.0
DQRL	SN	11	116	ES		1411	45.19	0.01							1.0
BHL	BZ	25	44	EP		1411	46.14	-0.05							1.0
BHL	BN	25	44	ES		1411	49.17	0.05							1.0
QRWL	SZ	30	138	EP		1411	47.07	0.05							1.0
QRWL	SN	30	138	ES		1411	50.57	0.01							1.0
ZAHL	SZ	41	72	EP		1411	48.75	-0.02							1.0
RCY	SZ	44	129	EP		1411	49.37	0.05							1.0
SHBL	SZ	51	150	EP		1411	50.49	0.02							1.0
HWQ	BZ	74	37	EP		1411	54.14	0.03							1.0

November 7 2020 Hour: 9:27 8.9

Agency: REL Distant

EMSC OT=09:27:08.9 15.26S 173.71W 64Km M=6.2 TONGA

STAT	CO	DIST	AZI	PHASE	P	HRMN	SECON	TRES	CODA	AMPL	PERI	BAZ	ARES	VELO	WT
BEIL	SZ			EP		946	36.40								
HWQ	BZ			EP		946	37.03								
BHL	BZ			EP		946	37.21								

November 11 2020 Hour: 0:48 43.4

Agency: REL Distant

EMSC OT=00:48:43.4 19.73S 177.54W 412Km M=6.0 FIJI REGION

STAT	CO	DIST	AZI	PHASE	P	HRMN	SECON	TRES	CODA	AMPL	PERI	BAZ	ARES	VELO	WT
HWQ	BZ			EP		1 7	31.57								
BHL	BZ			EP		1 7	32.84								
BEIL	SZ			EP		1 7	33.29								

November 11 2020 Hour: 1:50 50.8 Lat: 35.33N Lon: 38.21E Depth: 33

Agency: REL Regional

Magnitudes: 3.9MC REL

Rms: 0.1 secs

SYRIA REGION

STAT	CO	DIST	AZI	PHASE	P	HRMN	SECON	TRES	CODA	AMPL	PERI	BAZ	ARES	VELO	WT
BEIL	SZ	205	245	EP		151	19.14-0.16		175						1.0
BEIL	SN	205	245	ES		151	40.60	0.17							1.0
HWQ	BZ	238	241	EP		151	23.46-0.02								1.0
HWQ	BN	238	241	ES		151	47.52-0.17								1.0
ZAHL	SZ	269	233	EP		151	27.26-0.06								1.0
BHL	BZ	283	237	EP		151	29.19	0.13							1.0
RCY	SZ	299	228	EP		151	31.01-0.03								1.0
DQRL	SZ	302	234	EP		151	31.53	0.08							1.0
QRWL	SZ	305	230	EP		151	32.00	0.18							1.0
SHBL	SZ	316	227	EP		151	33.11-0.12								1.0

November 11 2020 Hour: 23:52 22.7

Agency: REL Regional

EMSC OT=23:52:22.7 38.37N 39.14E 7Km M=3.4 EASTERN TURKEY

STAT	CO	DIST	AZI	PHASE	P	HRMN	SECON	TRES	CODA	AMPL	PERI	BAZ	ARES	VELO	WT
BEIL	SZ			EP		2353	32.50								
HWQ	BZ			EP		2353	37.40								
ZAHL	SZ			EP		2353	43.17								
BHL	BZ			EP		2353	43.71								
DQRL	SZ			EP		2353	46.44								
SHBL	SZ			EP		2353	50.36								

November 14 2020 Hour: 20:33 54.5 Lat: 32.33N 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
SHBL	SZ	114	8	EP		2034	12.96	0.00	51						1.0
SHBL	SN	114	8	ES		2034	26.61	0.01							1.0
RCY	SZ	132	11	EP		2034	15.86	0.05							1.0
RCY	SN	132	11	ES		2034	31.51-0.05								1.0
QRWL	SZ	136	5	EP		2034	16.22-0.16								1.0
DQRL	SZ	153	0	EP		2034	18.92	0.02							1.0
DQRL	SN	153	0	ES		2034	37.01	0.07							1.0
ZAHL	SZ	172	10	EP		2034	21.79	0.01							1.0
BHL	BZ	175	3	EP		2034	22.06-0.11								1.0
HWQ	BZ	219	9	EP		2034	28.03	0.15							1.0

November 17 2020 Hour: 1:44 9.1

Agency: REL Distant

EMSC OT= 01:44:09.1 2.69S 99.24E 10Km M=5.8 KEP. MENTAWAI REGION

STAT	CO	DIST	AZI	PHASE	P	HRMN	SECON	TRES	CODA	AMPL	PERI	BAZ	ARES	VELO	WT
BEIL	SZ			EP		155	20.31								
HWQ	BZ			EP		155	20.70								
BHL	BZ			EP		155	21.66								

November 17 2020 Hour: 15:35 2.8 Lat: 33.62N Lon: 35.99E Depth: 2

Agency: REL Local

Magnitudes: 2.7MC REL

Rms: 0.1 secs

LEBANON - SYRIA BORDER REGION

STAT	CO	DIST	AZI	PHASE	P	HRMN	SECON	TRES	CODA	AMPL	PERI	BAZ	ARES	VELO	WT
RCY	SZ	20	228	EP		1535	5.92-0.09		37						1.0
RCY	SN	20	228	ES		1535	8.37-0.04								1.0
ZAHL	SZ	29	339	EP		1535	7.49	0.06							1.0
QRWL	SZ	30	255	EP		1535	7.55-0.07								1.0
SHBL	SZ	38	218	EP		1535	8.93	0.05							1.0

SHBL	SN	38	218	ES		1535	13.52	0.12									1.0
DQRL	SZ	41	284	EP		1535	9.21	-0.12									1.0
DQRL	SN	41	284	ES		1535	14.32	0.14									1.0
BHL	BZ	45	316	EP		1535	9.85	-0.18									1.0
HWQ	BZ	74	357	EP		1535	14.77	0.12									1.0

November 18 2020 Hour: 23:33 31.9 Lat: 34.17N Lon: 35.72E Depth: 30 Agency: REL Local
Magnitudes: 3.0MC REL Rms: 0.0 secs

JBEIL REGION

STAT	CO	DIST	AZI	PHASE	P	HRMN	SECON	TRES	CODA	AMPL	PERI	BAZ	ARES	VELO	WT
HWQ	BZ	24	61	EP		2333	38.09	0.05	60						1.0
HWQ	BN	24	61	ES		2333	42.55	-0.05							1.0
BHL	BZ	30	191	EP		2333	38.53	-0.10							1.0
ZAHL	SZ	38	156	EP		2333	39.58	0.06							1.0
BEYL	SZ	39	212	EP		2333	39.56	0.02							1.0
DQRL	SZ	54	195	EP		2333	41.44	0.02							1.0
DQRL	SN	54	195	ES		2333	48.52	0.04							1.0
BEIL	SZ	59	46	EP		2333	42.18	0.01							1.0
BEIL	SN	59	46	ES		2333	49.79	0.01							1.0
QRWL	SZ	69	183	EP		2333	43.53	-0.01							1.0
RCY	SZ	76	172	EP		2333	44.44	-0.03							1.0
SHBL	SZ	91	179	EP		2333	46.62	-0.02							1.0

November 19 2020 Hour: 18:21 39.1 Lat: 34.17N Lon: 34.74E Depth: 5 Agency: REL Local
Magnitudes: 2.9MC REL Rms: 0.1 secs

OFFSHORE CENTRAL LEBANON

STAT	CO	DIST	AZI	PHASE	P	HRMN	SECON	TRES	CODA	AMPL	PERI	BAZ	ARES	VELO	WT
BHL	BZ	90	109	EP		1821	53.71	0.04	48						1.0
BHL	BN	90	109	ES		1822	4.37	-0.07							1.0
DQRL	SZ	93	124	EP		1821	54.17	0.01							1.0
DQRL	SN	93	124	ES		1822	5.33	0.04							1.0
ZAHL	SZ	112	108	EP		1821	57.21	0.06							1.0
HWQ	BZ	112	84	EP		1821	57.17	-0.03							1.0
QRWL	SZ	112	128	EP		1821	57.24	0.12							1.0
RCY	SZ	127	126	EP		1821	59.37	0.05							1.0
RCY	SN	127	126	ES		1822	14.29	0.02							1.0
SHBL	SZ	131	134	EP		1821	59.72	-0.23							1.0

November 21 2020 Hour: 3:47 7.6 Lat: 34.20N Lon: 34.69E Depth: 3 Agency: REL Local
Magnitudes: 2.9MC REL Rms: 0.1 secs

OFFSHORE CENTRAL LEBANON

STAT	CO	DIST	AZI	PHASE	P	HRMN	SECON	TRES	CODA	AMPL	PERI	BAZ	ARES	VELO	WT
BHL	BZ	95	110	EP		347	22.96	0.03	46						1.0
BHL	BN	95	110	ES		347	34.13	-0.13							1.0
DQRL	SZ	98	124	EP		347	23.46	0.01							1.0
HWQ	BZ	116	85	EP		347	26.40	0.04							1.0
HWQ	BN	116	85	ES		347	40.34	0.11							1.0
QRWL	SZ	117	128	EP		347	26.52	0.07							1.0
ZAHL	SZ	117	109	EP		347	26.44	-0.01							1.0
RCY	SZ	132	126	EP		347	28.63	-0.02							1.0
RCY	SN	132	126	ES		347	44.23	0.02							1.0
BEIL	SZ	143	74	EP		347	30.11	-0.12							1.0

November 22 2020 Hour: 3:53 8.4 Agency: REL Distant
EMSC OT=03:53:08.4 36.61N 6.75E 10Km M=5.1 NORTHERN ALGERIA

STAT	CO	DIST	AZI	PHASE	P	HRMN	SECON	TRES	CODA	AMPL	PERI	BAZ	ARES	VELO	WT
HWQ	BZ			EP		358	22.22								
BHL	BZ			EP		358	22.33								
BEIL	SZ			EP		358	23.67								

November 24 2020 Hour: 2:52 32.0 Lat: 33.68N Lon: 35.85E Depth: 12 Agency: REL Local
Magnitudes: 2.4MC REL Rms: 0.2 secs

WEST BEKAA REGION

STAT	CO	DIST	AZI	PHASE	P	HRMN	SECON	TRES	CODA	AMPL	PERI	BAZ	ARES	VELO	WT
ZAHL	SZ	20	9	EP		252	35.87	-0.01							1.0
RCY	SZ	21	184	EP		252	36.04	-0.02	25						1.0
RCY	SN	21	184	ES		252	39.10	0.04							1.0
QRWL	SZ	22	226	EP		252	36.13	-0.03							1.0
DQRL	SZ	26	275	EP		252	36.79	0.01							1.0
DQRL	SN	26	275	ES		252	40.46	0.14							1.0
BHL	BZ	31	323	EP		252	37.23	-0.18							1.0
HWQ	BZ	67	7	EP		252	42.86	-0.01							1.0
BEIL	SZ	100	18	EP		252	48.63	0.87							0.2

November 24 2020 Hour: 22:18 16.8

Agency: REL Regional

EMSC OT=22:18:16.8 32.63N 29.73E 10Km M=4.0 EASTERN MEDITERRANEAN SEA

STAT	CO	DIST	AZI	PHASE	P	HRMN	SECON	TRES	CODA	AMPL	PERI	BAZ	ARES	VELO	WT
DQRL	SZ			EP		2219	31.23								
BHL	BZ			EP		2219	31.31								
RCY	SZ			EP		2219	33.85								
ZAHL	SZ			EP		2219	34.61								
HWQ	BZ			EP		2219	36.72								
BEIL	SZ			EP		2219	40.74								

November 26 2020 Hour: 22: 8 24.4 Lat: 33.74N Lon: 36.95E Depth: 0 Agency: REL Regional
Magnitudes: 4.4MC REL Rms: 0.4 secs

Earthquake was felt

SYRIA REGION

STAT	CO	DIST	AZI	PHASE	P	HRMN	SECON	TRES	CODA	AMPL	PERI	BAZ	ARES	VELO	WT
ZAHL	SZ	100	278	EP		22 8	40.34	-0.13							1.0
ZAHL	SN	100	278	ES		22 8	51.78	-0.56							1.0
RCY	SZ	107	256	EP		22 8	41.45	-0.20							1.0
RCY	SN	107	256	ES		22 8	55.44	1.04							1.0
HWQ	BZ	110	303	EP		22 8	42.28	0.05							1.0
HWQ	BN	110	303	ES		22 8	55.08	-0.32							1.0
BEIL	SZ	114	322	EP		22 8	43.21	0.44							1.0
BEIL	SN	114	322	ES		22 8	56.65	0.31							1.0
QRWL	SZ	119	260	EP		22 8	43.44	-0.26							1.0
BHL	BZ	121	279	EP		22 8	43.98	-0.02	369						1.0
DQRL	SZ	128	269	EP		22 8	44.63	-0.43							1.0
BEYL	SZ	136	277	EP		22 8	46.33	0.09							1.0

November 27 2020 Hour: 8:27 55.9

Agency: REL Regional

EMSC OT=08:27:55.9 38.18N 38.58E 5Km M=4.6 EASTERN TURKEY

STAT	CO	DIST	AZI	PHASE	P	HRMN	SECON	TRES	CODA	AMPL	PERI	BAZ	ARES	VELO	WT
BEIL	SZ			EP		828	58.61								
HWQ	BZ			EP		829	2.74								
BHL	BZ			EP		829	8.42								
ZAHL	SZ			EP		829	9.30								
DQRL	SZ			EP		829	12.84								
QRWL	SZ			EP		829	13.81								

November 28 2020 Hour: 5:40 16.8 Lat: 33.77N Lon: 36.81E Depth: 26 Agency: REL Regional
Magnitudes: 3.2MC 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	86	276	EP		540	30.78	0.04	71						1.0
ZAHL	SN	86	276	ES		540	41.06	0.03							1.0
HWQ	BZ	98	305	EP		540	32.05	-0.31							1.0
BEIL	SZ	103	326	EP		540	33.27	0.17							1.0
BEIL	SN	103	326	ES		540	45.17	0.03							1.0
QRWL	SZ	108	257	EP		540	33.87	0.05							1.0
BHL	BZ	108	278	EP		540	33.87	-0.01							1.0

DQRL SZ 115 267 EP 540 34.84 0.01 1.0

November 28 2020 Hour: 11:53 22.1 Lat: 33.78N Lon: 36.77E Depth: 25 Agency: REL Regional
Magnitudes: 4.2MC 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	82	276	EP		1153	35.32	-0.04							1.0
ZAHL	SN	82	276	ES		1153	45.25	0.08							1.0
HWQ	BZ	94	306	EP		1153	36.92	-0.14	296						1.0
HWQ	BN	94	306	ES		1153	48.03	-0.09							1.0
BEIL	SZ	100	328	EP		1153	38.03	0.08							1.0
BEIL	SN	100	328	ES		1153	49.76	0.10							1.0
QRWL	SZ	104	256	EP		1153	38.58	0.10							1.0
BHL	BZ	104	278	EP		1153	38.32	-0.19							1.0
DQRL	SZ	111	266	EP		1153	39.65	0.09							1.0
BEYL	SZ	118	275	EP		1153	40.52	0.01							1.0

November 28 2020 Hour: 15: 4 29.0 Lat: 34.76N Lon: 36.56E Depth: 1 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
BEIL	SZ	42	235	EP		15 4	35.68	-0.08	44						1.0
BEIL	SN	42	235	ES		15 4	40.81	0.03							1.0
HWQ	BZ	78	227	EP		15 4	41.61	0.11							1.0
HWQ	BN	78	227	ES		15 4	50.72	-0.06							1.0
ZAHL	SZ	118	212	EP		15 4	47.95	-0.02							1.0
BHL	BZ	126	221	EP		15 4	49.39	0.04							1.0
DQRL	SZ	148	218	EP		15 4	52.56	-0.03							1.0
DQRL	SN	148	218	ES		15 5	10.09	0.03							1.0
QRWL	SZ	157	211	EP		15 4	53.84	-0.02							1.0

November 29 2020 Hour: 0:55 53.1 Lat: 33.52N Lon: 34.57E Depth: 10 Agency: REL Local
Magnitudes: 2.8MC 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	95	77	EP		056	8.41	0.10	40						1.0
DQRL	SN	95	77	ES		056	19.64	0.07							1.0
QRWL	SZ	103	88	EP		056	9.48	-0.05							1.0
QRWL	SN	103	88	ES		056	21.61	-0.08							1.0
BHL	BZ	109	67	EP		056	10.46	0.08							1.0
ZAHL	SZ	127	73	EP		056	13.15	0.04							1.0
HWQ	BZ	152	56	EP		056	16.61	-0.16							1.0
BEIL	SZ	187	52	EP		056	21.41	0.02							1.0

November 29 2020 Hour: 4:24 28.1 Agency: REL Distant
EMSC OT=04:24:28.1 27.39N 54.10E 10Km M=4.9 SOUTHERN IRAN

STAT	CO	DIST	AZI	PHASE	P	HRMN	SECON	TRES	CODA	AMPL	PERI	BAZ	ARES	VELO	WT
BHL	BZ			EP		428	23.32								
ZAHL	SZ			EP		428	23.61								
HWQ	BZ			EP		428	23.78								
BEIL	SZ			EP		428	24.16								

November 29 2020 Hour: 21:45 22.8 Agency: REL Distant
EMSC OT=21:45:22.8 31.92S 179.50E 485Km M=5.3 KERMADEC ISLANDS

STAT	CO	DIST	AZI	PHASE	P	HRMN	SECON	TRES	CODA	AMPL	PERI	BAZ	ARES	VELO	WT
BEIL	SZ			EP		22 4	17.41								
HWQ	BZ			EP		22 4	17.35								
ZAHL	SZ			EP		22 4	17.83								
BHL	BZ			EP		22 4	18.28								
QRWL	SZ			EP		22 4	18.45								
DQRL	SZ			EP		22 4	18.74								

November 30 2020 Hour: 23:56 54.5

Agency: REL Distant

EMSC OT=23:56:54.5 17.77S 174.77W 10Km M=5.7 TONGA

STAT	CO	DIST	AZI	PHASE	P	HRMN	SECON	TRES	CODA	AMPL	PERI	BAZ	ARES	VELO	WT
HWQ	BZ			EP		016	38.32								
BHL	BZ			EP		016	38.76								

November 30 2020 Hour: 1:48 24.8 Lat: 34.19N Lon: 36.35E Depth: 8 Agency: REL Local
Magnitudes: 2.6MC REL Rms: 0.0 secs

BAALBECK REGION

STAT	CO	DIST	AZI	PHASE	P	HRMN	SECON	TRES	CODA	AMPL	PERI	BAZ	ARES	VELO	WT
HWQ	BZ	39	285	EP		148	31.22	0.02							1.0
HWQ	BN	39	285	ES		148	35.93	-0.03							1.0
BEIL	SZ	42	338	EP		148	31.62	-0.06	35						1.0
BEIL	SN	42	338	ES		148	36.83	0.04							1.0
ZAHL	SZ	57	230	EP		148	34.09	0.02							1.0
BHL	BZ	72	244	EP		148	36.48	0.00							1.0
DQRL	SZ	90	234	EP		148	39.40	0.02							1.0
QRWL	SZ	95	221	EP		148	40.00	-0.02							1.0

November 30 2020 Hour: 13:47 6.7 Lat: 35.34N Lon: 36.33E Depth: 0 Agency: REL Regional
Magnitudes: 4.0MC REL Rms: 0.1 secs

Earthquake was felt

SYRIA REGION

STAT	CO	DIST	AZI	PHASE	P	HRMN	SECON	TRES	CODA	AMPL	PERI	BAZ	ARES	VELO	WT
BEIL	SZ	90	189	EP		1347	21.25	0.09							1.0
BEIL	SN	90	189	ES		1347	31.91	0.03							1.0
HWQ	BZ	123	197	EP		1347	26.54	-0.00	231						1.0
HWQ	BN	123	197	ES		1347	41.21	-0.05							1.0
ZAHL	SZ	170	194	EP		1347	33.35	-0.20							1.0
BHL	BZ	171	201	EP		1347	33.79	0.02							1.0
BHL	BN	171	201	ES		1347	53.86	0.04							1.0
DQRL	SZ	195	201	EP		1347	37.00	0.04							1.0
QRWL	SZ	208	197	EP		1347	38.60	-0.00							1.0
SAIL	SZ	214	204	EP		1347	39.30	0.02							1.0
SHBL	SZ	228	194	EP		1347	41.14	0.01							1.0

Epicentral Map of Lebanon

NOVEMBER 2020

