

Republic of Lebanon
National Council for Scientific Research

Provisional Seismological Bulletin

from the

NATIONAL SEISMIC NETWORK

December

2017

Prepared by
The National Centre for Geophysical Research
Bhannes

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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.

December 1 2017 Hour: 1:53 44.8 Lat: 33.78N Lon: 35.76E Depth: 0 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 |
|------|----|------|-----|-------|---|------|-------|-------|------|------|------|-----|------|------|-----|
| ZAHL | SZ | 15 | 55 | EP | | 153 | 47.06 | -0.11 | | | | | | | 1.0 |
| BHL | BZ | 17 | 325 | EP | | 153 | 47.47 | -0.01 | 42 | | | | | | 1.0 |
| DQRL | SZ | 19 | 244 | EP | | 153 | 47.97 | 0.07 | | | | | | | 1.0 |
| DQRL | SN | 19 | 244 | ES | | 153 | 50.11 | -0.08 | | | | | | | 1.0 |
| RCY | SZ | 32 | 167 | EP | | 153 | 50.05 | 0.01 | | | | | | | 1.0 |
| RCY | SN | 32 | 167 | ES | | 153 | 53.92 | 0.01 | | | | | | | 1.0 |
| SHBL | SZ | 48 | 181 | EP | | 153 | 52.56 | 0.01 | | | | | | | 1.0 |
| HWQ | BZ | 58 | 18 | EP | | 153 | 54.25 | 0.13 | | | | | | | 1.0 |
| BEIL | SZ | 93 | 25 | EP | | 153 | 59.78 | -0.04 | | | | | | | 1.0 |

December 1 2017 Hour: 2:32 45.5 Agency: REL Distant

EMSC OT=02:32:45.5 30.74N 57.38E 10Km M=6.0 EASTERN IRAN

| STAT | CO | DIST | AZI | PHASE | P | HRMN | SECON | TRES | CODA | AMPL | PERI | BAZ | ARES | VELO | WT |
|------|----|------|-----|-------|---|------|-------|------|------|------|------|-----|------|------|----|
| BEIL | SZ | | | EP | | 236 | 59.36 | | | | | | | | |
| HWQ | BZ | | | EP | | 237 | 2.92 | | | | | | | | |
| ZAHL | SZ | | | EP | | 237 | 2.34 | | | | | | | | |
| RCY | SZ | | | EP | | 237 | 3.21 | | | | | | | | |
| SHBL | SZ | | | EP | | 237 | 4.09 | | | | | | | | |
| QRWL | SZ | | | EP | | 237 | 5.25 | | | | | | | | |
| BHL | BZ | | | EP | | 237 | 5.90 | | | | | | | | |
| DQRL | SZ | | | EP | | 237 | 6.05 | | | | | | | | |

December 1 2017 Hour: 3:35 1.3 Agency: REL Distant

EMSC OT=03:35:01.3 30.65N 57.41E 10Km M=5.4 EASTERN IRAN

| STAT | CO | DIST | AZI | PHASE | P | HRMN | SECON | TRES | CODA | AMPL | PERI | BAZ | ARES | VELO | WT |
|------|----|------|-----|-------|---|------|-------|------|------|------|------|-----|------|------|----|
| BEIL | SZ | | | EP | | 339 | 15.96 | | | | | | | | |
| HWQ | BZ | | | EP | | 339 | 18.22 | | | | | | | | |
| ZAHL | SZ | | | EP | | 339 | 18.30 | | | | | | | | |
| RCY | SZ | | | EP | | 339 | 18.22 | | | | | | | | |
| SHBL | SZ | | | EP | | 339 | 19.42 | | | | | | | | |
| BHL | BZ | | | EP | | 339 | 19.59 | | | | | | | | |
| DQRL | SZ | | | EP | | 339 | 21.20 | | | | | | | | |

December 2 2017 Hour: 2:3 4.5 Lat: 33.78N Lon: 35.76E Depth: 0 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 | | 2 3 | 6.77 | -0.08 | | | | | | | 1.0 |
| BHL | BZ | 17 | 325 | EP | | 2 3 | 7.18 | 0.01 | 32 | | | | | | 1.0 |
| DQRL | SZ | 19 | 244 | EP | | 2 3 | 7.65 | 0.06 | | | | | | | 1.0 |
| DQRL | SN | 19 | 244 | ES | | 2 3 | 9.85 | -0.04 | | | | | | | 1.0 |
| QRWL | SZ | 27 | 195 | EP | | 2 3 | 8.75 | -0.06 | | | | | | | 1.0 |
| RCY | SZ | 32 | 167 | EP | | 2 3 | 9.79 | 0.07 | | | | | | | 1.0 |
| RCY | SN | 32 | 167 | ES | | 2 3 | 13.58 | -0.01 | | | | | | | 1.0 |
| HWQ | BZ | 58 | 18 | EP | | 2 3 | 13.81 | 0.00 | | | | | | | 1.0 |
| BEIL | SZ | 93 | 25 | EP | | 2 3 | 19.55 | 0.05 | | | | | | | 1.0 |

December 2 2017 Hour: 10:47 3.8 Agency: REL Distant

EMSC OT=10:47:03.8 30.71N 57.42E 10Km M=5.1 EASTERN IRAN

| STAT | CO | DIST | AZI | PHASE | P | HRMN | SECON | TRES | CODA | AMPL | PERI | BAZ | ARES | VELO | WT |
|------|----|------|-----|-------|---|------|-------|------|------|------|------|-----|------|------|----|
| BEIL | SZ | | | EP | | 1051 | 18.28 | | | | | | | | |
| HWQ | BZ | | | EP | | 1051 | 20.25 | | | | | | | | |
| RCY | SZ | | | EP | | 1051 | 20.70 | | | | | | | | |
| SHBL | SZ | | | EP | | 1051 | 21.41 | | | | | | | | |
| BHL | BZ | | | EP | | 1051 | 23.29 | | | | | | | | |

December 2 2017 Hour: 14:46 23.4 Lat: 33.79N Lon: 35.79E Depth: 11 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 |
|------|----|------|-----|-------|---|------|-------|-------|------|------|------|-----|------|------|-----|
| ZAHL | SZ | 12 | 48 | EP | | 1446 | 26.22 | -0.00 | | | | | | | 1.0 |
| BHL | BZ | 18 | 315 | EP | | 1446 | 26.94 | -0.06 | 28 | | | | | | 1.0 |
| DQRL | SZ | 23 | 246 | EP | | 1446 | 27.55 | -0.04 | | | | | | | 1.0 |
| DQRL | SN | 23 | 246 | ES | | 1446 | 30.71 | 0.05 | | | | | | | 1.0 |
| RCY | SZ | 33 | 173 | EP | | 1446 | 29.09 | -0.00 | | | | | | | 1.0 |
| RCY | SN | 33 | 173 | ES | | 1446 | 33.27 | -0.00 | | | | | | | 1.0 |
| HWQ | BZ | 56 | 15 | EP | | 1446 | 32.79 | 0.05 | | | | | | | 1.0 |

December 3 2017 Hour: 11:54 39.6 Lat: 33.46N Lon: 35.68E Depth: 0 Agency: REL Local
Magnitudes: 2.9MC REL Rms: 0.1 secs

HASBAYA REGION

| STAT | CO | DIST | AZI | PHASE | P | HRMN | SECON | TRES | CODA | AMPL | PERI | BAZ | ARES | VELO | WT |
|------|----|------|-----|-------|---|------|-------|-------|------|------|------|-----|------|------|-----|
| SHBL | SZ | 13 | 155 | EP | | 1154 | 41.79 | 0.04 | | | | | | | 1.0 |
| RCY | SZ | 15 | 73 | EP | | 1154 | 41.97 | -0.02 | 56 | | | | | | 1.0 |
| RCY | SN | 15 | 73 | ES | | 1154 | 43.73 | -0.03 | | | | | | | 1.0 |
| DQRL | SZ | 30 | 339 | EP | | 1154 | 44.31 | -0.07 | | | | | | | 1.0 |
| DQRL | SN | 30 | 339 | ES | | 1154 | 47.85 | -0.06 | | | | | | | 1.0 |
| ZAHL | SZ | 48 | 23 | EP | | 1154 | 47.28 | -0.11 | | | | | | | 1.0 |
| BHL | BZ | 50 | 357 | EP | | 1154 | 47.61 | -0.01 | | | | | | | 1.0 |
| BHL | BN | 50 | 357 | ES | | 1154 | 53.65 | 0.10 | | | | | | | 1.0 |
| HWQ | BZ | 94 | 15 | EP | | 1154 | 54.98 | 0.17 | | | | | | | 1.0 |
| BEIL | SZ | 129 | 21 | EP | | 1155 | 0.38 | -0.02 | | | | | | | 1.0 |

December 3 2017 Hour: 14: 2 41.5 Lat: 32.73N Lon: 35.85E Depth: 2 Agency: REL Regional
Magnitudes: 3.2MC REL Rms: 0.0 secs

SYRIA REGION

| STAT | CO | DIST | AZI | PHASE | P | HRMN | SECON | TRES | CODA | AMPL | PERI | BAZ | ARES | VELO | WT |
|------|----|------|-----|-------|---|------|-------|-------|------|------|------|-----|------|------|-----|
| SHBL | SZ | 70 | 352 | EP | | 14 2 | 52.74 | 0.04 | | | | | | | 1.0 |
| RCY | SZ | 85 | 359 | EP | | 14 2 | 55.27 | 0.04 | 72 | | | | | | 1.0 |
| RCY | SN | 85 | 359 | ES | | 14 3 | 5.37 | -0.04 | | | | | | | 1.0 |
| DQRL | SZ | 111 | 346 | EP | | 14 2 | 59.40 | -0.07 | | | | | | | 1.0 |
| DQRL | SN | 111 | 346 | ES | | 14 3 | 12.83 | 0.04 | | | | | | | 1.0 |
| ZAHL | SZ | 125 | 1 | EP | | 14 3 | 1.69 | 0.02 | | | | | | | 1.0 |
| BHL | BZ | 132 | 352 | EP | | 14 3 | 2.56 | -0.03 | | | | | | | 1.0 |
| HWQ | BZ | 172 | 3 | EP | | 14 3 | 8.56 | 0.01 | | | | | | | 1.0 |

December 3 2017 Hour: 14:11 29.1 Lat: 33.78N Lon: 35.78E Depth: 2 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 |
|------|----|------|-----|-------|---|------|-------|-------|------|------|------|-----|------|------|-----|
| ZAHL | SZ | 13 | 49 | EP | | 1411 | 31.32 | 0.02 | | | | | | | 1.0 |
| BHL | BZ | 18 | 321 | EP | | 1411 | 31.96 | -0.07 | 32 | | | | | | 1.0 |
| DQRL | SZ | 21 | 247 | EP | | 1411 | 32.53 | 0.05 | | | | | | | 1.0 |
| DQRL | SN | 21 | 247 | ES | | 1411 | 35.01 | 0.01 | | | | | | | 1.0 |
| RCY | SZ | 32 | 170 | EP | | 1411 | 34.20 | -0.05 | | | | | | | 1.0 |
| RCY | SN | 32 | 170 | ES | | 1411 | 38.08 | 0.01 | | | | | | | 1.0 |
| HWQ | BZ | 58 | 16 | EP | | 1411 | 38.41 | 0.03 | | | | | | | 1.0 |

December 4 2017 Hour: 0: 8 4.0 Agency: REL Distant
EMSC OT=00:08:04.0 32.68S 178.54W 10Km M=5.7 SOUTH OF KERMADEC ISLANDS

| STAT | CO | DIST | AZI | PHASE | P | HRMN | SECON | TRES | CODA | AMPL | PERI | BAZ | ARES | VELO | WT |
|------|----|------|-----|-------|---|------|-------|------|------|------|------|-----|------|------|----|
| BHL | BZ | | | EP | | 027 | 49.87 | | | | | | | | |
| HWQ | BZ | | | EP | | 027 | 49.97 | | | | | | | | |

December 4 2017 Hour: 10:20 57.6 Lat: 34.56N Lon: 36.77E Depth: 12 Agency: REL Local
Magnitudes: 3.0MC REL Rms: 0.0 secs

SYRIA REGION

| STAT | CO | DIST | AZI | PHASE | P | HRMN | SECON | TRES | CODA | AMPL | PERI | BAZ | ARES | VELO | WT |
|------|----|------|-----|-------|---|------|-------|-------|------|------|------|-----|------|------|-----|
| BEIL | SZ | 54 | 268 | EP | | 1021 | 6.56 | 0.03 | 58 | | | | | | 1.0 |
| HWQ | BZ | 82 | 248 | EP | | 1021 | 10.74 | 0.04 | | | | | | | 1.0 |
| HWQ | BN | 82 | 248 | ES | | 1021 | 20.39 | -0.04 | | | | | | | 1.0 |
| BHL | BZ | 126 | 235 | EP | | 1021 | 17.17 | 0.01 | | | | | | | 1.0 |
| RCY | SZ | 146 | 217 | EP | | 1021 | 20.06 | -0.08 | | | | | | | 1.0 |
| RCY | SN | 146 | 217 | ES | | 1021 | 36.91 | 0.05 | | | | | | | 1.0 |
| DQRL | SZ | 146 | 230 | EP | | 1021 | 20.04 | -0.02 | | | | | | | 1.0 |
| SHBL | SZ | 165 | 216 | EP | | 1021 | 22.86 | 0.02 | | | | | | | 1.0 |

December 4 2017 Hour: 12: 5 16.7 Lat: 34.81N Lon: 34.05E Depth:104 Agency: REL Local
Magnitudes: 3.1MC REL Rms: 0.0 secs

EASTERN MEDITERRANEAN SEA

| STAT | CO | DIST | AZI | PHASE | P | HRMN | SECON | TRES | CODA | AMPL | PERI | BAZ | ARES | VELO | WT |
|------|----|------|-----|-------|---|------|-------|-------|------|------|------|-----|------|------|-----|
| HWQ | BZ | 184 | 108 | EP | | 12 5 | 44.12 | -0.01 | 55 | | | | | | 1.0 |
| HWQ | BN | 184 | 108 | ES | | 12 6 | 4.44 | 0.00 | | | | | | | 1.0 |
| DQRL | SZ | 186 | 131 | EP | | 12 5 | 44.27 | -0.11 | | | | | | | 0.2 |
| BEIL | SZ | 198 | 98 | EP | | 12 5 | 45.57 | -0.02 | | | | | | | 1.0 |
| BEIL | SN | 198 | 98 | ES | | 12 6 | 6.98 | 0.01 | | | | | | | 1.0 |
| ZAHL | SZ | 199 | 122 | EP | | 12 5 | 45.87 | 0.04 | | | | | | | 1.0 |
| RCY | SZ | 220 | 131 | EP | | 12 5 | 48.11 | -0.05 | | | | | | | 1.0 |
| RCY | SN | 220 | 131 | ES | | 12 6 | 11.44 | -0.01 | | | | | | | 1.0 |
| SHBL | SZ | 225 | 136 | EP | | 12 5 | 48.83 | 0.06 | | | | | | | 1.0 |

December 5 2017 Hour: 12:28 56.5 Lat: 34.03N Lon: 35.69E Depth: 16 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 |
|------|----|------|-----|-------|---|------|-------|-------|------|------|------|-----|------|------|-----|
| BHL | BZ | 14 | 192 | EP | | 1229 | 0.10 | -0.04 | | | | | | | 1.0 |
| ZAHL | SZ | 27 | 136 | EP | | 1229 | 1.71 | 0.09 | | | | | | | 1.0 |
| HWQ | BZ | 36 | 41 | EP | | 1229 | 2.87 | -0.08 | 43 | | | | | | 1.0 |
| HWQ | BN | 36 | 41 | ES | | 1229 | 7.76 | 0.06 | | | | | | | 1.0 |
| RCY | SZ | 61 | 167 | EP | | 1229 | 6.24 | -0.29 | | | | | | | 1.0 |
| RCY | SE | 61 | 167 | ES | | 1229 | 13.84 | -0.09 | | | | | | | 1.0 |
| BEIL | SZ | 73 | 39 | EP | | 1229 | 8.23 | 0.00 | | | | | | | 1.0 |
| SHBL | SZ | 76 | 176 | EP | | 1229 | 9.01 | 0.27 | | | | | | | 1.0 |
| SHBL | SN | 76 | 176 | ES | | 1229 | 17.86 | 0.09 | | | | | | | 1.0 |

December 5 2017 Hour: 17:21 50.7 Agency: REL Regional
EMSC OT=17:21:50.7 36.11N 31.15E 10Km M=3.6 WESTERN TURKEY

| STAT | CO | DIST | AZI | PHASE | P | HRMN | SECON | TRES | CODA | AMPL | PERI | BAZ | ARES | VELO | WT |
|------|----|------|-----|-------|---|------|-------|------|------|------|------|-----|------|------|----|
| BHL | BZ | | | EP | | 1722 | 57.72 | | | | | | | | |
| HWQ | BZ | | | EP | | 1722 | 58.49 | | | | | | | | |
| BEIL | SZ | | | EP | | 1722 | 58.27 | | | | | | | | |
| QRWL | SZ | | | EP | | 1723 | 0.23 | | | | | | | | |
| RCY | SZ | | | EP | | 1723 | 2.48 | | | | | | | | |
| SHBL | SZ | | | EP | | 1723 | 3.47 | | | | | | | | |

December 7 2017 Hour: 19:24 53.2 Lat: 33.82N Lon: 35.90E Depth: 0 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 | 4 | 344 | EP | | 1924 | 53.93 | -0.01 | | | | | | | 1.0 |
| BHL | BZ | 25 | 293 | EP | | 1924 | 57.04 | -0.09 | | | | | | | 1.0 |
| BHL | BN | 25 | 293 | ES | | 1925 | 0.11 | 0.05 | | | | | | | 1.0 |
| DQRL | SZ | 33 | 248 | EP | | 1924 | 58.50 | 0.01 | | | | | | | 1.0 |
| RCY | SZ | 36 | 189 | EP | | 1924 | 58.89 | -0.15 | 28 | | | | | | 1.0 |
| RCY | SN | 36 | 189 | ES | | 1925 | 3.49 | 0.11 | | | | | | | 1.0 |
| HWQ | BZ | 51 | 5 | EP | | 1925 | 1.48 | 0.08 | | | | | | | 1.0 |
| SHBL | SZ | 54 | 195 | EP | | 1925 | 1.93 | 0.01 | | | | | | | 1.0 |

December 8 2017 Hour: 4:31 50.2

Agency: REL Regional

EMSC OT=04:31:50.2 37.25N 37.18E 6Km M=3.9 CENTRAL TURKEY

| STAT | CO | DIST | AZI | PHASE | P | HRMN | SECON | TRES | CODA | AMPL | PERI | BAZ | ARES | VELO | WT |
|------|----|------|-----|-------|---|------|-------|------|------|------|------|-----|------|------|----|
| BEIL | SZ | | | EP | | 432 | 36.82 | | | | | | | | |
| ZAHL | SZ | | | EP | | 432 | 47.54 | | | | | | | | |
| BHL | BZ | | | EP | | 432 | 47.92 | | | | | | | | |
| DQRL | SZ | | | EP | | 432 | 50.37 | | | | | | | | |
| QRWL | SZ | | | EP | | 432 | 53.07 | | | | | | | | |
| RCY | SZ | | | EP | | 432 | 52.22 | | | | | | | | |
| SHBL | SZ | | | EP | | 432 | 54.91 | | | | | | | | |

December 8 2017 Hour: 5:20 39.7

Agency: REL Regional

EMSC OT=05:20:39.7 36.36N 27.65E 2Km M=4.5 DODECANESE-TURKEY

| STAT | CO | DIST | AZI | PHASE | P | HRMN | SECON | TRES | CODA | AMPL | PERI | BAZ | ARES | VELO | WT |
|------|----|------|-----|-------|---|------|-------|------|------|------|------|-----|------|------|----|
| BHL | BZ | | | EP | | 522 | 21.84 | | | | | | | | |
| DQRL | SZ | | | EP | | 522 | 21.70 | | | | | | | | |
| HWQ | BZ | | | EP | | 522 | 23.82 | | | | | | | | |
| QRWL | SZ | | | EP | | 522 | 24.93 | | | | | | | | |
| BEIL | SZ | | | EP | | 522 | 25.14 | | | | | | | | |
| ZAHL | SZ | | | EP | | 522 | 24.93 | | | | | | | | |
| SHBL | SZ | | | EP | | 522 | 26.67 | | | | | | | | |
| RCY | SZ | | | EP | | 522 | 26.46 | | | | | | | | |

December 8 2017 Hour: 12:14 22.1 Lat: 33.47N Lon: 35.69E Depth: 0 Agency: REL Local

Magnitudes: 3.1MC REL

Rms: 0.1 secs

WEST BEKAA REGION

| STAT | CO | DIST | AZI | PHASE | P | HRMN | SECON | TRES | CODA | AMPL | PERI | BAZ | ARES | VELO | WT |
|------|----|------|-----|-------|---|------|-------|-------|------|------|------|-----|------|------|-----|
| QRWL | SZ | 9 | 358 | EP | | 1214 | 23.40 | -0.13 | | | | | | | 1.0 |
| SHBL | SZ | 14 | 158 | EP | | 1214 | 24.38 | 0.02 | | | | | | | 1.0 |
| RCY | SZ | 14 | 77 | EP | | 1214 | 24.31 | -0.07 | 69 | | | | | | 1.0 |
| RCY | SN | 14 | 77 | ES | | 1214 | 26.13 | 0.03 | | | | | | | 1.0 |
| DQRL | SZ | 29 | 338 | EP | | 1214 | 26.71 | 0.02 | 70 | | | | | | 1.0 |
| DQRL | SN | 29 | 338 | ES | | 1214 | 30.10 | -0.00 | | | | | | | 1.0 |
| BHL | BZ | 49 | 357 | EP | | 1214 | 29.99 | 0.08 | | | | | | | 1.0 |
| HWQ | BZ | 93 | 15 | EP | | 1214 | 37.47 | 0.38 | | | | | | | 0.2 |
| BEIL | SZ | 128 | 21 | EP | | 1214 | 43.17 | 0.48 | | | | | | | 0.2 |

December 8 2017 Hour: 16:14 12.0 Lat: 32.32N Lon: 36.59E Depth: 4 Agency: REL Regional

Magnitudes: 3.2MC REL

Rms: 0.2 secs

JORDAN REGION

| STAT | CO | DIST | AZI | PHASE | P | HRMN | SECON | TRES | CODA | AMPL | PERI | BAZ | ARES | VELO | WT |
|------|----|------|-----|-------|---|------|-------|-------|------|------|------|-----|------|------|-----|
| RCY | SZ | 148 | 332 | EP | | 1614 | 35.16 | -0.33 | 64 | | | | | | 1.0 |
| RCY | SN | 148 | 332 | ES | | 1614 | 53.05 | 0.19 | | | | | | | 1.0 |
| DQRL | SZ | 181 | 328 | EP | | 1614 | 40.41 | 0.24 | | | | | | | 1.0 |
| DQRL | SN | 181 | 328 | ES | | 1615 | 0.84 | -0.15 | | | | | | | 1.0 |
| ZAHL | SZ | 183 | 339 | EP | | 1614 | 40.60 | 0.16 | | | | | | | 1.0 |
| ZAHL | SN | 183 | 339 | ES | | 1615 | 1.43 | -0.04 | | | | | | | 1.0 |
| BHL | BZ | 196 | 334 | EP | | 1614 | 42.10 | 0.02 | | | | | | | 1.0 |
| HWQ | BZ | 225 | 345 | EP | | 1614 | 45.58 | -0.13 | | | | | | | 1.0 |
| BEIL | SZ | 249 | 351 | EP | | 1614 | 48.68 | 0.05 | | | | | | | 1.0 |

December 8 2017 Hour: 17:22 8.9 Lat: 32.60N Lon: 36.81E Depth: 5 Agency: REL Regional

Magnitudes: 2.9MC REL

Rms: 0.3 secs

SYRIA REGION

| STAT | CO | DIST | AZI | PHASE | P | HRMN | SECON | TRES | CODA | AMPL | PERI | BAZ | ARES | VELO | WT |
|------|----|------|-----|-------|---|------|-------|-------|------|------|------|-----|------|------|-----|
| RCY | SZ | 135 | 318 | EP | | 1722 | 29.69 | -0.61 | 48 | | | | | | 1.0 |
| RCY | SN | 135 | 318 | ES | | 1722 | 46.11 | -0.04 | | | | | | | 1.0 |
| ZAHL | SZ | 164 | 329 | EP | | 1722 | 34.52 | -0.07 | | | | | | | 1.0 |
| DQRL | SZ | 168 | 317 | EP | | 1722 | 35.92 | 0.68 | | | | | | | 1.0 |
| DQRL | SN | 168 | 317 | ES | | 1722 | 54.79 | 0.04 | | | | | | | 1.0 |
| BHL | BZ | 180 | 324 | EP | | 1722 | 36.72 | -0.17 | | | | | | | 1.0 |
| HWQ | BZ | 203 | 337 | EP | | 1722 | 39.91 | 0.22 | | | | | | | 1.0 |
| BEIL | SZ | 223 | 345 | EP | | 1722 | 42.11 | -0.06 | | | | | | | 1.0 |

December 8 2017 Hour: 23:42 13.1

Agency: REL Distant

EMSC OT=23:42:13.1 16.11S 173.98W 150Km M=5.8 TONGA

| STAT | CO | DIST | AZI | PHASE | P | HRMN | SECON | TRES | CODA | AMPL | PERI | BAZ | ARES | VELO | WT |
|------|----|------|-----|-------|---|------|-------|-------|------|------|------|-----|------|------|----|
| BEIL | SZ | | | EP | | 24 | 1 | 39.71 | | | | | | | |
| HWQ | BZ | | | EP | | 24 | 1 | 40.28 | | | | | | | |
| ZAHL | SZ | | | EP | | 24 | 1 | 41.36 | | | | | | | |
| BHL | BZ | | | EP | | 24 | 1 | 41.49 | | | | | | | |
| DQRL | SZ | | | EP | | 24 | 1 | 42.19 | | | | | | | |
| RCY | SZ | | | EP | | 24 | 1 | 41.94 | | | | | | | |
| QRWL | SZ | | | EP | | 24 | 1 | 42.19 | | | | | | | |
| SHBL | SZ | | | EP | | 24 | 1 | 42.38 | | | | | | | |

December 9 2017 Hour: 13: 8 28.1 Lat: 33.78N Lon: 35.77E Depth: 0 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 |
|------|----|------|-----|-------|---|------|-------|-------|-------|------|------|-----|------|------|-----|
| ZAHL | SZ | 14 | 52 | EP | | 13 | 8 | 30.35 | 0.02 | | | | | | 1.0 |
| BHL | BZ | 17 | 323 | EP | | 13 | 8 | 30.78 | -0.08 | 29 | | | | | 1.0 |
| BHL | BE | 17 | 323 | ES | | 13 | 8 | 32.93 | 0.01 | | | | | | 1.0 |
| DQRL | SZ | 20 | 246 | EP | | 13 | 8 | 31.37 | 0.06 | | | | | | 1.0 |
| RCY | SZ | 32 | 169 | EP | | 13 | 8 | 33.21 | -0.05 | | | | | | 1.0 |
| RCY | SE | 32 | 169 | ES | | 13 | 8 | 37.10 | 0.01 | | | | | | 1.0 |
| HWQ | BZ | 58 | 17 | EP | | 13 | 8 | 37.40 | 0.03 | | | | | | 1.0 |

December 10 2017 Hour: 4:23 9.3 Lat: 33.74N Lon: 35.43E Depth: 0 Agency: REL Local

Magnitudes: 2.6MC REL

Rms: 0.1 secs

OFFSHORE CENTRAL LEBANON

| STAT | CO | DIST | AZI | PHASE | P | HRMN | SECON | TRES | CODA | AMPL | PERI | BAZ | ARES | VELO | WT |
|------|----|------|-----|-------|---|------|-------|-------|------|------|------|-----|------|------|-----|
| DQRL | SZ | 13 | 105 | EP | | 423 | 11.44 | 0.02 | 36 | | | | | | 1.0 |
| BEYL | SZ | 16 | 21 | EP | | 423 | 11.95 | 0.10 | | | | | | | 1.0 |
| BHL | BZ | 28 | 48 | EP | | 423 | 13.52 | -0.23 | | | | | | | 1.0 |
| BHL | BN | 28 | 48 | ES | | 423 | 17.05 | -0.01 | | | | | | | 1.0 |
| ZAHL | SZ | 44 | 72 | EP | | 423 | 16.40 | 0.01 | | | | | | | 1.0 |
| ZAHL | SN | 44 | 72 | ES | | 423 | 21.71 | 0.05 | | | | | | | 1.0 |
| RCY | SZ | 46 | 125 | EP | | 423 | 16.70 | 0.00 | | | | | | | 1.0 |
| HWQ | BZ | 77 | 38 | EP | | 423 | 22.19 | 0.57 | | | | | | | 0.2 |
| BEIL | SZ | 113 | 38 | EP | | 423 | 27.78 | 0.27 | | | | | | | 0.2 |

December 10 2017 Hour: 4:51 37.4 Lat: 33.71N Lon: 35.34E Depth: 0 Agency: REL Local

Magnitudes: 2.6MC REL

Rms: 0.4 secs

OFFSHORE CENTRAL LEBANON

| STAT | CO | DIST | AZI | PHASE | P | HRMN | SECON | TRES | CODA | AMPL | PERI | BAZ | ARES | VELO | WT |
|------|----|------|-----|-------|---|------|-------|-------|------|------|------|-----|------|------|-----|
| DQRL | SZ | 21 | 91 | EP | | 451 | 40.75 | -0.07 | 36 | | | | | | 1.0 |
| DQRL | SN | 21 | 91 | ES | | 451 | 43.36 | 0.03 | | | | | | | 1.0 |
| BEYL | SZ | 23 | 38 | EP | | 451 | 41.14 | 0.05 | | | | | | | 1.0 |
| BHL | BZ | 36 | 53 | EP | | 451 | 42.98 | -0.25 | | | | | | | 1.0 |
| RCY | SZ | 51 | 117 | EP | | 451 | 45.75 | 0.02 | | | | | | | 1.0 |
| ZAHL | SZ | 53 | 72 | EP | | 451 | 46.05 | 0.10 | | | | | | | 1.0 |
| ZAHL | SN | 53 | 72 | ES | | 451 | 52.24 | -0.01 | | | | | | | 1.0 |
| HWQ | BZ | 84 | 41 | EP | | 451 | 52.99 | 1.99 | | | | | | | 0.2 |

December 10 2017 Hour: 15: 4 32.7 Lat: 34.03N Lon: 35.94E Depth: 11 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 |
|------|----|------|-----|-------|---|------|-------|-------|-------|------|------|-----|------|------|-----|
| ZAHL | SZ | 20 | 195 | EP | | 15 | 4 | 36.57 | -0.04 | 32 | | | | | 1.0 |
| ZAHL | SN | 20 | 195 | ES | | 15 | 4 | 39.48 | -0.00 | | | | | | 1.0 |
| HWQ | BZ | 27 | 1 | EP | | 15 | 4 | 37.61 | 0.03 | | | | | | 1.0 |
| BHL | BZ | 30 | 242 | EP | | 15 | 4 | 38.03 | -0.01 | | | | | | 1.0 |
| DQRL | SZ | 50 | 224 | EP | | 15 | 4 | 40.99 | -0.09 | | | | | | 1.0 |
| DQRL | SN | 50 | 224 | ES | | 15 | 4 | 47.32 | 0.06 | | | | | | 1.0 |
| RCY | SZ | 60 | 189 | EP | | 15 | 4 | 42.77 | 0.06 | | | | | | 1.0 |

December 10 2017 Hour: 15: 8 25.0 Lat: 34.03N Lon: 35.74E Depth: 0 Agency: REL Local
Magnitudes: 3.0MC REL Rms: 0.1 secs

KESROUAN REGION

| STAT | CO | DIST | AZI | PHASE | P | HRMN | SECON | TRES | CODA | AMPL | PERI | BAZ | ARES | VELO | WT |
|------|----|------|-----|-------|---|------|-------|------------|------|------|------|-----|------|------|-----|
| BHL | BZ | 16 | 209 | EP | | 15 | 8 | 27.54-0.13 | 59 | | | | | | 1.0 |
| ZAHL | SZ | 24 | 145 | EP | | 15 | 8 | 28.75-0.10 | | | | | | | 1.0 |
| ZAHL | SN | 24 | 145 | ES | | 15 | 8 | 31.69 0.02 | | | | | | | 1.0 |
| HWQ | BZ | 33 | 35 | EP | | 15 | 8 | 30.33-0.06 | | | | | | | 1.0 |
| HWQ | BN | 33 | 35 | ES | | 15 | 8 | 34.43 0.07 | | | | | | | 1.0 |
| DQRL | SZ | 40 | 203 | EP | | 15 | 8 | 31.44 0.03 | | | | | | | 1.0 |
| DQRL | SN | 40 | 203 | ES | | 15 | 8 | 36.24 0.11 | | | | | | | 1.0 |
| QRWL | SZ | 54 | 186 | EP | | 15 | 8 | 33.79 0.03 | | | | | | | 1.0 |
| RCY | SZ | 60 | 171 | EP | | 15 | 8 | 34.74 0.00 | | | | | | | 1.0 |
| BEIL | SZ | 70 | 36 | EP | | 15 | 8 | 36.70 0.42 | | | | | | | 0.2 |

December 11 2017 Hour: 10:34 2.0 Lat: 33.52N Lon: 35.69E Depth: 0 Agency: REL Local
Magnitudes: 2.6MC REL Rms: 0.1 secs

WEST BEKAA REGION

| STAT | CO | DIST | AZI | PHASE | P | HRMN | SECON | TRES | CODA | AMPL | PERI | BAZ | ARES | VELO | WT |
|------|----|------|-----|-------|---|-------|-------|------------|------|------|------|-----|------|------|-----|
| QRWL | SZ | 3 | 350 | EP | | 1034 | | 2.41-0.09 | | | | | | | 1.0 |
| RCY | SZ | 14 | 101 | EP | | 1034 | | 4.20-0.07 | 36 | | | | | | 1.0 |
| RCY | SN | 14 | 101 | ES | | 1034 | | 6.01 0.06 | | | | | | | 1.0 |
| DQRL | SZ | 23 | 332 | EP | | 1034 | | 5.84 0.09 | | | | | | | 1.0 |
| DQRL | SE | 23 | 332 | ES | | 1034 | | 8.51-0.01 | | | | | | | 1.0 |
| ZAHL | SZ | 42 | 26 | EP | | 1034 | | 8.62-0.09 | | | | | | | 0.2 |
| BHL | BZ | 43 | 356 | EP | | 1034 | | 9.15 0.28 | | | | | | | 0.2 |
| HWQ | BZ | 87 | 16 | EP | | 1034 | | 16.09 0.01 | | | | | | | 1.0 |
| BEIL | SZ | 122 | 22 | EP | | *1034 | | 21.52-0.18 | | | | | | | 0.0 |

December 11 2017 Hour: 14: 9 56.0 Agency: REL Regional
EMSC OT=14:09:56.0 34.90N 45.82E 10Km M=5.4 IRAN-IRAQ BORDER REGION

| STAT | CO | DIST | AZI | PHASE | P | HRMN | SECON | TRES | CODA | AMPL | PERI | BAZ | ARES | VELO | WT |
|------|----|------|-----|-------|---|------|-------|-------|------|------|------|-----|------|------|----|
| BEIL | SZ | | | EP | | 1411 | | 52.05 | | | | | | | |
| HWQ | BZ | | | EP | | 1411 | | 54.84 | | | | | | | |
| ZAHL | SZ | | | EP | | 1411 | | 57.99 | | | | | | | |
| RCY | SZ | | | EP | | 1411 | | 58.14 | | | | | | | |
| BHL | BZ | | | EP | | 1412 | | 0.61 | | | | | | | |
| QRWL | SZ | | | EP | | 1412 | | 0.77 | | | | | | | |
| DQRL | SZ | | | EP | | 1412 | | 3.80 | | | | | | | |

December 11 2017 Hour: 14:25 56.0 Lat: 33.47N Lon: 35.69E Depth: 4 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 | 9 | 353 | EP | | 1425 | | 57.60-0.14 | | | | | | | 1.0 |
| RCY | SZ | 14 | 76 | EP | | 1425 | | 58.47 0.04 | 60 | | | | | | 1.0 |
| RCY | SN | 14 | 76 | ES | | 1426 | | 0.23 0.01 | | | | | | | 1.0 |
| SHBL | SZ | 14 | 160 | EP | | 1425 | | 58.47-0.01 | | | | | | | 1.0 |
| DQRL | SZ | 29 | 337 | EP | | 1426 | | 0.89 0.13 | | | | | | | 1.0 |
| DQRL | SN | 29 | 337 | ES | | 1426 | | 4.29 0.01 | | | | | | | 1.0 |
| ZAHL | SZ | 47 | 22 | EP | | 1426 | | 3.66 0.02 | | | | | | | 1.0 |
| BHL | BZ | 49 | 356 | EP | | 1426 | | 3.91-0.01 | | | | | | | 0.2 |
| HWQ | BZ | 93 | 15 | EP | | 1426 | | 10.98-0.06 | | | | | | | 0.2 |
| BEIL | SZ | 128 | 21 | EP | | 1426 | | 16.29-0.05 | | | | | | | 1.0 |

December 12 2017 Hour: 8:43 17.7 Agency: REL Distant
EMSC OT=08:43:17.7 30.68N 57.28E 10Km M=5.9 EASTERN IRAN

| STAT | CO | DIST | AZI | PHASE | P | HRMN | SECON | TRES | CODA | AMPL | PERI | BAZ | ARES | VELO | WT |
|------|----|------|-----|-------|---|------|-------|-------|------|------|------|-----|------|------|----|
| BEIL | SZ | | | EP | | 847 | | 31.63 | | | | | | | |
| HWQ | BZ | | | EP | | 847 | | 34.94 | | | | | | | |
| ZAHL | SZ | | | EP | | 847 | | 35.21 | | | | | | | |
| RCY | SZ | | | EP | | 847 | | 34.66 | | | | | | | |
| QRWL | SZ | | | EP | | 847 | | 36.04 | | | | | | | |

BHL BZ EP 847 37.21
 DQRL SZ EP 847 37.76

December 12 2017 Hour: 11:37 28.3 Lat: 34.53N Lon: 36.83E Depth: 1 Agency: REL Regional
Magnitudes: 3.1MC REL Rms: 0.1 secs

SYRIA REGION

| STAT | CO | DIST | AZI | PHASE | P | HRMN | SECON | TRES | CODA | AMPL | PERI | BAZ | ARES | VELO | WT |
|------|----|------|-----|-------|---|------|-------|-------|------|------|------|-----|------|------|-----|
| BEIL | SZ | 59 | 272 | EP | | 1137 | 37.83 | -0.03 | 65 | | | | | | 1.0 |
| BEIL | SN | 59 | 272 | ES | | 1137 | 44.88 | -0.06 | | | | | | | 1.0 |
| HWQ | BZ | 86 | 251 | EP | | 1137 | 42.22 | 0.07 | | | | | | | 1.0 |
| HWQ | BN | 86 | 251 | ES | | 1137 | 52.44 | 0.02 | | | | | | | 1.0 |
| BHL | BZ | 129 | 238 | EP | | 1137 | 49.16 | 0.12 | | | | | | | 1.0 |
| RCY | SZ | 147 | 219 | EP | | 1137 | 51.51 | -0.23 | | | | | | | 1.0 |
| DQRL | SZ | 148 | 232 | EP | | 1137 | 51.98 | 0.12 | | | | | | | 1.0 |

December 12 2017 Hour: 14:53 24.1 Lat: 34.03N Lon: 35.76E Depth: 0 Agency: REL Local
Magnitudes: 2.9MC 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 | 17 | 213 | EP | | 1453 | 26.80 | -0.10 | 56 | | | | | | 1.0 |
| BHL | BN | 17 | 213 | ES | | 1453 | 28.97 | 0.00 | | | | | | | 1.0 |
| ZAHL | SZ | 23 | 149 | EP | | 1453 | 27.74 | -0.07 | | | | | | | 1.0 |
| HWQ | BZ | 32 | 33 | EP | | 1453 | 29.32 | 0.05 | | | | | | | 1.0 |
| HWQ | BN | 32 | 33 | ES | | 1453 | 33.10 | -0.01 | | | | | | | 1.0 |
| DQRL | SZ | 40 | 205 | EP | | 1453 | 30.66 | 0.05 | | | | | | | 1.0 |
| QRWL | SZ | 55 | 187 | EP | | 1453 | 32.94 | 0.05 | | | | | | | 1.0 |
| RCY | SZ | 60 | 173 | EP | | 1453 | 33.86 | 0.05 | | | | | | | 1.0 |
| BEIL | SZ | 69 | 35 | EP | | 1453 | 35.14 | -0.02 | | | | | | | 1.0 |

December 12 2017 Hour: 15:21 24.3 Lat: 34.27N Lon: 36.40E Depth: 6 Agency: REL Local
Magnitudes: 2.9MC 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 | 36 | 328 | EP | | 1521 | 30.12 | -0.11 | 49 | | | | | | 1.0 |
| BEIL | SN | 36 | 328 | ES | | 1521 | 34.80 | 0.15 | | | | | | | 1.0 |
| HWQ | BZ | 42 | 272 | EP | | 1521 | 30.83 | -0.25 | | | | | | | 1.0 |
| HWQ | BN | 42 | 272 | ES | | 1521 | 36.12 | 0.00 | | | | | | | 1.0 |
| BHL | BZ | 79 | 240 | EP | | 1521 | 37.14 | 0.01 | | | | | | | 1.0 |
| DQRL | SZ | 98 | 231 | EP | | 1521 | 40.37 | 0.18 | | | | | | | 1.0 |
| RCY | SZ | 100 | 211 | EP | | 1521 | 40.44 | 0.01 | | | | | | | 1.0 |

December 12 2017 Hour: 21:41 31.4 Agency: REL Distant

EMSC OT=21:41:31.4 30.77N 57.25E 10Km M=6.1 EASTERN IRAN

| STAT | CO | DIST | AZI | PHASE | P | HRMN | SECON | TRES | CODA | AMPL | PERI | BAZ | ARES | VELO | WT |
|------|----|------|-----|-------|---|------|-------|------|------|------|------|-----|------|------|----|
| ZAHL | SZ | | | EP | | 2145 | 46.06 | | | | | | | | |
| RCY | SZ | | | EP | | 2145 | 46.06 | | | | | | | | |
| QRWL | SZ | | | EP | | 2145 | 47.73 | | | | | | | | |
| SHBL | SZ | | | EP | | 2145 | 46.76 | | | | | | | | |
| BHL | BZ | | | EP | | 2145 | 49.67 | | | | | | | | |
| DQRL | SZ | | | EP | | 2145 | 49.88 | | | | | | | | |
| HWQ | BZ | | | EP | | 2145 | 47.17 | | | | | | | | |
| BEIL | SZ | | | EP | | 2145 | 42.94 | | | | | | | | |

December 13 2017 Hour: 14: 5 25.5 Lat: 33.84N Lon: 36.09E Depth: 10 Agency: REL Local
Magnitudes: 2.9MC 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 | 19 | 275 | EP | | 14 5 | 29.10 | 0.04 | | | | | | | 1.0 |
| BHL | BZ | 41 | 279 | EP | | 14 5 | 32.18 | -0.15 | | | | | | | 1.0 |
| BHL | BN | 41 | 279 | ES | | 14 5 | 37.40 | 0.02 | | | | | | | 1.0 |
| RCY | SZ | 45 | 211 | EP | | 14 5 | 32.93 | -0.09 | 49 | | | | | | 1.0 |
| RCY | SN | 45 | 211 | ES | | 14 5 | 38.61 | 0.03 | | | | | | | 1.0 |
| HWQ | BZ | 50 | 345 | EP | | 14 5 | 33.70 | -0.06 | | | | | | | 1.0 |
| QRWL | SZ | 50 | 229 | EP | | 14 5 | 33.82 | 0.04 | | | | | | | 1.0 |

| | | | | | | | | | | | | | | | | | |
|---------|----|-----|----|----|---|-------|------|--|--|--|--|--|--|--|--|--|-----|
| DQRL SZ | 51 | 252 | EP | 14 | 5 | 33.92 | 0.07 | | | | | | | | | | 1.0 |
| BEIL SZ | 78 | 6 | EP | 14 | 5 | 38.28 | 0.10 | | | | | | | | | | 1.0 |

December 14 2017 Hour: 12:12 20.2 Lat: 33.46N Lon: 35.68E Depth: 1 Agency: REL Local
Magnitudes: 2.7MC REL Rms: 0.1 secs

HASBAYA REGION

| STAT | CO | DIST | AZI | PHASE | P | HRMN | SECON | TRES | CODA | AMPL | PERI | BAZ | ARES | VELO | WT |
|------|----|------|-----|-------|---|------|-------|-------|------|------|------|-----|------|------|-----|
| QRWL | SZ | 9 | 0 | EP | | 1212 | 21.62 | -0.08 | | | | | | | 1.0 |
| SHBL | SZ | 14 | 156 | EP | | 1212 | 22.48 | -0.00 | | | | | | | 1.0 |
| RCY | SZ | 15 | 76 | EP | | 1212 | 22.51 | -0.07 | 38 | | | | | | 1.0 |
| RCY | SN | 15 | 76 | ES | | 1212 | 24.40 | 0.03 | | | | | | | 1.0 |
| DQRL | SZ | 29 | 339 | EP | | 1212 | 24.93 | 0.12 | | | | | | | 1.0 |
| DQRL | SN | 29 | 339 | ES | | 1212 | 28.18 | -0.06 | | | | | | | 1.0 |
| ZAHL | SZ | 48 | 23 | EP | | 1212 | 27.92 | 0.08 | | | | | | | 1.0 |
| BHL | BZ | 49 | 357 | EP | | 1212 | 28.10 | 0.05 | | | | | | | 0.2 |
| HWQ | BZ | 94 | 15 | EP | | 1212 | 35.26 | 0.01 | | | | | | | 1.0 |
| BEIL | SZ | 128 | 21 | EP | | 1212 | 40.24 | -0.58 | | | | | | | 0.2 |

December 14 2017 Hour: 15:35 18.9 Lat: 33.78N Lon: 35.77E Depth: 3 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 | 13 | 51 | EP | | 1535 | 21.25 | 0.02 | | | | | | | 1.0 |
| BHL | BZ | 17 | 321 | EP | | 1535 | 21.83 | -0.01 | 32 | | | | | | 1.0 |
| DQRL | SZ | 21 | 246 | EP | | 1535 | 22.36 | 0.00 | | | | | | | 1.0 |
| DQRL | SN | 21 | 246 | ES | | 1535 | 24.88 | -0.02 | | | | | | | 1.0 |
| QRWL | SZ | 27 | 198 | EP | | 1535 | 23.51 | 0.08 | | | | | | | 1.0 |
| RCY | SZ | 32 | 170 | EP | | 1535 | 24.03 | -0.18 | | | | | | | 1.0 |
| RCY | SN | 32 | 170 | ES | | 1535 | 28.16 | 0.04 | | | | | | | 1.0 |
| SHBL | SZ | 48 | 183 | EP | | 1535 | 26.83 | 0.06 | | | | | | | 1.0 |
| HWQ | BZ | 57 | 16 | EP | | 1535 | 28.20 | 0.01 | | | | | | | 1.0 |

December 15 2017 Hour: 16:48 0.0 Agency: REL Distant

EMSC OT=16:48:00.0 7.60S 108.15E 111Km M=6.5 JAVA, INDONESIA

| STAT | CO | DIST | AZI | PHASE | P | HRMN | SECON | TRES | CODA | AMPL | PERI | BAZ | ARES | VELO | WT |
|------|----|------|-----|-------|---|------|-------|------|------|------|------|-----|------|------|----|
| BEIL | SZ | | | EP | | 1659 | 56.29 | | | | | | | | |
| RCY | SZ | | | EP | | 1659 | 56.73 | | | | | | | | |
| SHBL | SZ | | | EP | | 1659 | 57.05 | | | | | | | | |
| HWQ | BZ | | | EP | | 1659 | 57.09 | | | | | | | | |
| QRWL | SZ | | | EP | | 1659 | 57.27 | | | | | | | | |
| BHL | BZ | | | EP | | 1659 | 57.94 | | | | | | | | |
| DQRL | SZ | | | EP | | 1659 | 58.43 | | | | | | | | |

December 16 2017 Hour: 2:9 15.1 Lat: 33.78N Lon: 35.76E Depth: 0 Agency: REL Local
Magnitudes: 2.8MC REL Rms: 0.1 secs

ALEY REGION

| STAT | CO | DIST | AZI | PHASE | P | HRMN | SECON | TRES | CODA | AMPL | PERI | BAZ | ARES | VELO | WT |
|------|----|------|-----|-------|---|------|-------|-------|------|------|------|-----|------|------|-----|
| ZAHL | SZ | 15 | 53 | EP | | 2 9 | 17.46 | -0.03 | | | | | | | 1.0 |
| BHL | BZ | 17 | 325 | EP | | 2 9 | 17.90 | 0.02 | 47 | | | | | | 1.0 |
| DQRL | SZ | 19 | 245 | EP | | 2 9 | 18.29 | 0.03 | | | | | | | 1.0 |
| DQRL | SN | 19 | 245 | ES | | 2 9 | 20.55 | -0.03 | | | | | | | 1.0 |
| QRWL | SZ | 27 | 196 | EP | | 2 9 | 19.37 | -0.07 | | | | | | | 1.0 |
| RCY | SZ | 32 | 167 | EP | | 2 9 | 20.39 | 0.07 | | | | | | | 1.0 |
| RCY | SN | 32 | 167 | ES | | 2 9 | 24.15 | -0.01 | | | | | | | 1.0 |
| HWQ | BZ | 58 | 17 | EP | | 2 9 | 24.46 | -0.03 | | | | | | | 1.0 |
| BEIL | SZ | 93 | 25 | EP | | 2 9 | 30.88 | 0.71 | | | | | | | 0.2 |

December 16 2017 Hour: 12:26 12.6 Lat: 33.47N Lon: 35.69E Depth: 0 Agency: REL Local
Magnitudes: 2.8MC REL Rms: 0.1 secs

WEST BEKAA REGION

| STAT | CO | DIST | AZI | PHASE | P | HRMN | SECON | TRES | CODA | AMPL | PERI | BAZ | ARES | VELO | WT |
|------|----|------|-----|-------|---|------|-------|-------|------|------|------|-----|------|------|-----|
| QRWL | SZ | 9 | 354 | EP | | 1226 | 14.00 | -0.01 | | | | | | | 1.0 |
| RCY | SZ | 14 | 78 | EP | | 1226 | 14.76 | -0.08 | 48 | | | | | | 1.0 |
| RCY | SN | 14 | 78 | ES | | 1226 | 16.49 | 0.01 | | | | | | | 1.0 |

| | | | | | | | | | | | | | | | | |
|------|----|-----|-----|----|--|------|-------|-------|--|--|--|--|--|--|--|-----|
| SHBL | SZ | 14 | 160 | EP | | 1226 | 14.98 | 0.03 | | | | | | | | 1.0 |
| DQRL | SZ | 28 | 337 | EP | | 1226 | 17.13 | -0.07 | | | | | | | | 1.0 |
| DQRL | SN | 28 | 337 | ES | | 1226 | 20.61 | 0.01 | | | | | | | | 1.0 |
| ZAHL | SZ | 47 | 23 | EP | | 1226 | 20.12 | -0.01 | | | | | | | | 1.0 |
| BHL | BZ | 48 | 356 | EP | | 1226 | 20.48 | 0.08 | | | | | | | | 1.0 |
| HWQ | BZ | 93 | 15 | EP | | 1226 | 27.98 | 0.42 | | | | | | | | 0.2 |
| BEIL | SZ | 127 | 21 | EP | | 1226 | 33.36 | 0.22 | | | | | | | | 0.2 |

December 16 2017 Hour: 15:13 23.0 Lat: 33.79N Lon: 35.78E Depth: 6 Agency: REL Local
Magnitudes: 2.5MC REL Rms: 0.1 secs

ALEY REGION

| STAT | CO | DIST | AZI | PHASE | P | HRMN | SECON | TRES | CODA | AMPL | PERI | BAZ | ARES | VELO | WT |
|------|----|------|-----|-------|---|------|-------|-------|------|------|------|-----|------|------|-----|
| ZAHL | SZ | 12 | 51 | EP | | 1513 | 25.31 | -0.00 | | | | | | | 1.0 |
| BHL | BZ | 18 | 317 | EP | | 1513 | 25.98 | -0.06 | 31 | | | | | | 1.0 |
| DQRL | SZ | 22 | 245 | EP | | 1513 | 26.73 | 0.06 | | | | | | | 1.0 |
| DQRL | SN | 22 | 245 | ES | | 1513 | 29.44 | 0.03 | | | | | | | 1.0 |
| QRWL | SZ | 28 | 199 | EP | | 1513 | 27.55 | -0.13 | | | | | | | 1.0 |
| RCY | SZ | 33 | 171 | EP | | 1513 | 28.42 | 0.02 | | | | | | | 1.0 |
| RCY | SN | 33 | 171 | ES | | 1513 | 32.44 | 0.02 | | | | | | | 1.0 |
| HWQ | BZ | 56 | 16 | EP | | 1513 | 32.09 | -0.05 | | | | | | | 1.0 |
| BEIL | SZ | 91 | 24 | EP | | 1513 | 37.85 | 0.09 | | | | | | | 1.0 |

December 16 2017 Hour: 15:25 27.4 Lat: 34.00N Lon: 35.98E Depth: 31 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 |
|------|----|------|-----|-------|---|------|-------|-------|------|------|------|-----|------|------|-----|
| ZAHL | SZ | 18 | 208 | EP | | 1525 | 32.93 | -0.16 | 35 | | | | | | 1.0 |
| ZAHL | SN | 18 | 208 | ES | | 1525 | 37.37 | 0.04 | | | | | | | 1.0 |
| HWQ | BZ | 31 | 355 | EP | | 1525 | 34.26 | -0.01 | | | | | | | 1.0 |
| HWQ | BN | 31 | 355 | ES | | 1525 | 39.40 | 0.03 | | | | | | | 1.0 |
| BHL | BZ | 32 | 250 | EP | | 1525 | 34.34 | 0.01 | | | | | | | 1.0 |
| DQRL | SZ | 50 | 229 | EP | | 1525 | 36.48 | -0.00 | | | | | | | 1.0 |
| RCY | SZ | 57 | 193 | EP | | 1525 | 37.58 | 0.08 | | | | | | | 1.0 |
| BEIL | SZ | 63 | 18 | EP | | 1525 | 38.32 | 0.14 | | | | | | | 0.2 |

December 17 2017 Hour: 3:25 47.8

Agency: REL Regional

| STAT | CO | DIST | AZI | PHASE | P | HRMN | SECON | TRES | CODA | AMPL | PERI | BAZ | ARES | VELO | WT |
|------|----|------|-----|-------|---|------|-------|------|------|------|------|-----|------|------|----|
| BEIL | SZ | | | EP | | 327 | 5.70 | | | | | | | | |
| HWQ | BZ | | | EP | | 327 | 8.60 | | | | | | | | |
| BHL | BZ | | | EP | | 327 | 12.13 | | | | | | | | |
| ZAHL | SZ | | | EP | | 327 | 15.34 | | | | | | | | |
| DQRL | SZ | | | EP | | 327 | 14.14 | | | | | | | | |

December 17 2017 Hour: 13:13 16.0 Lat: 34.18N Lon: 36.46E Depth: 7 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 |
|------|----|------|-----|-------|---|------|-------|-------|------|------|------|-----|------|------|-----|
| BEIL | SZ | 48 | 328 | EP | | 1313 | 23.78 | 0.07 | 46 | | | | | | 1.0 |
| BEIL | SN | 48 | 328 | ES | | 1313 | 29.45 | -0.01 | | | | | | | 1.0 |
| HWQ | BZ | 48 | 283 | EP | | 1313 | 23.70 | -0.16 | | | | | | | 1.0 |
| HWQ | BN | 48 | 283 | ES | | 1313 | 29.77 | 0.07 | | | | | | | 1.0 |
| BHL | BZ | 80 | 248 | EP | | 1313 | 28.90 | -0.03 | | | | | | | 1.0 |
| RCY | SZ | 95 | 217 | EP | | 1313 | 31.37 | 0.05 | | | | | | | 1.0 |
| DQRL | SZ | 97 | 238 | EP | | 1313 | 31.69 | 0.01 | | | | | | | 1.0 |

December 18 2017 Hour: 15: 3 41.5 Lat: 33.45N Lon: 35.61E Depth: 9 Agency: REL Local
Magnitudes: 2.4MC 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 | 13 | 32 | EP | | 15 | 3 | 44.18 | 0.03 | | | | | | 1.0 |
| SHBL | SZ | 17 | 132 | EP | | 15 | 3 | 44.73 | -0.01 | | | | | | 1.0 |
| RCY | SZ | 22 | 76 | EP | | 15 | 3 | 45.46 | 0.04 | 24 | | | | | 1.0 |
| RCY | SN | 22 | 76 | ES | | 15 | 3 | 48.28 | -0.03 | | | | | | 1.0 |
| DQRL | SZ | 29 | 353 | EP | | 15 | 3 | 46.39 | -0.03 | | | | | | 1.0 |

DQRL SN 29 353 ES 15 3 50.05 0.01 1.0

December 18 2017 Hour: 16:13 39.6 Lat: 33.47N Lon: 35.68E Depth: 1 Agency: REL Local
Magnitudes: 2.5MC 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 | 9 | 2 | EP | | 1613 | 41.05 | -0.01 | | | | | | | 1.0 |
| SHBL | SZ | 15 | 156 | EP | | 1613 | 42.02 | 0.01 | | | | | | | 1.0 |
| RCY | SZ | 15 | 78 | EP | | 1613 | 42.00 | -0.04 | 30 | | | | | | 1.0 |
| RCY | SN | 15 | 78 | ES | | 1613 | 43.87 | 0.03 | | | | | | | 1.0 |
| DQRL | SZ | 28 | 339 | EP | | 1613 | 44.20 | 0.03 | | | | | | | 1.0 |
| DQRL | SN | 28 | 339 | ES | | 1613 | 47.53 | -0.01 | | | | | | | 1.0 |

December 19 2017 Hour: 13:13 22.8 Lat: 33.99N Lon: 36.09E Depth: 23 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 | 24 | 232 | EP | | 1313 | 28.15 | 0.07 | | | | | | | 1.0 |
| HWQ | BZ | 35 | 338 | EP | | 1313 | 29.29 | -0.10 | 46 | | | | | | 1.0 |
| HWQ | BN | 35 | 338 | ES | | 1313 | 34.27 | 0.01 | | | | | | | 1.0 |
| BHL | BZ | 41 | 257 | EP | | 1313 | 30.00 | -0.21 | | | | | | | 0.2 |
| DQRL | SZ | 57 | 237 | EP | | 1313 | 32.43 | 0.01 | | | | | | | 1.0 |
| RCY | SZ | 59 | 203 | EP | | 1313 | 32.68 | -0.07 | | | | | | | 1.0 |
| RCY | SN | 59 | 203 | ES | | 1313 | 40.07 | -0.03 | | | | | | | 1.0 |
| QRWL | SZ | 62 | 218 | EP | | 1313 | 33.12 | 0.08 | | | | | | | 1.0 |
| BEIL | SZ | 62 | 8 | EP | | 1313 | 33.13 | 0.05 | | | | | | | 1.0 |

December 19 2017 Hour: 13:59 42.0 Lat: 33.46N Lon: 35.69E Depth: 0 Agency: REL Local
Magnitudes: 2.9MC 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 | 10 | 358 | EP | | 1359 | 43.32 | -0.24 | | | | | | | 1.0 |
| SHBL | SZ | 13 | 156 | EP | | 1359 | 44.16 | 0.02 | | | | | | | 1.0 |
| RCY | SZ | 15 | 73 | EP | | 1359 | 44.24 | -0.09 | 53 | | | | | | 1.0 |
| RCY | SN | 15 | 73 | ES | | 1359 | 46.11 | 0.03 | | | | | | | 1.0 |
| DQRL | SZ | 29 | 339 | EP | | 1359 | 46.63 | -0.07 | | | | | | | 1.0 |
| DQRL | SN | 29 | 339 | ES | | 1359 | 50.30 | 0.09 | | | | | | | 1.0 |
| ZAHL | SZ | 48 | 23 | EP | | 1359 | 50.10 | 0.39 | | | | | | | 0.2 |
| HWQ | BZ | 94 | 15 | EP | | 1359 | 57.30 | 0.17 | | | | | | | 1.0 |
| HWQ | BN | 94 | 15 | ES | | 14 0 | 8.26 | -0.09 | | | | | | | 1.0 |
| BEIL | SZ | 129 | 21 | EP | | 14 0 | 2.89 | 0.17 | | | | | | | 1.0 |

December 20 2017 Hour: 10:12 23.9 Lat: 34.51N Lon: 36.83E Depth: 0 Agency: REL Regional
Magnitudes: 3.1MC 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 | 59 | 273 | EP | | 1012 | 33.15 | -0.24 | 69 | | | | | | 1.0 |
| BEIL | SN | 59 | 273 | ES | | 1012 | 40.55 | 0.11 | | | | | | | 1.0 |
| HWQ | BZ | 85 | 253 | EP | | 1012 | 37.71 | 0.13 | | | | | | | 1.0 |
| HWQ | BN | 85 | 253 | ES | | 1012 | 47.55 | -0.17 | | | | | | | 1.0 |
| BHL | BZ | 127 | 238 | EP | | 1012 | 44.79 | 0.38 | | | | | | | 1.0 |
| RCY | SZ | 145 | 219 | EP | | 1012 | 46.90 | -0.25 | | | | | | | 1.0 |
| DQRL | SZ | 146 | 233 | EP | | 1012 | 47.36 | 0.05 | | | | | | | 1.0 |

December 21 2017 Hour: 13:19 45.6 Lat: 33.43N Lon: 35.67E Depth: 1 Agency: REL Local
Magnitudes: 3.0MC REL Rms: 0.2 secs

HASBAYA REGION

| STAT | CO | DIST | AZI | PHASE | P | HRMN | SECON | TRES | CODA | AMPL | PERI | BAZ | ARES | VELO | WT |
|------|----|------|-----|-------|---|------|-------|-------|------|------|------|-----|------|------|-----|
| QRWL | SZ | 13 | 6 | EP | | 1319 | 47.49 | -0.26 | | | | | | | 1.0 |
| RCY | SZ | 17 | 64 | EP | | 1319 | 48.39 | -0.01 | 62 | | | | | | 1.0 |
| RCY | SN | 17 | 64 | ES | | 1319 | 50.53 | 0.03 | | | | | | | 1.0 |
| DQRL | SZ | 32 | 344 | EP | | 1319 | 50.79 | 0.03 | | | | | | | 1.0 |
| DQRL | SN | 32 | 344 | ES | | 1319 | 54.60 | -0.01 | | | | | | | 1.0 |
| ZAHL | SZ | 52 | 23 | EP | | 1319 | 54.14 | 0.21 | | | | | | | 0.2 |

| | | | | | | | | | | | | | | | | | |
|------|----|-----|-----|----|--|------|-------|-------|--|--|--|--|--|--|--|--|-----|
| BHL | BZ | 53 | 359 | EP | | 1319 | 54.33 | 0.23 | | | | | | | | | 1.0 |
| HWQ | BZ | 98 | 15 | EP | | 1320 | 2.18 | 0.85 | | | | | | | | | 0.2 |
| BEIL | SZ | 132 | 21 | EP | | 1320 | 6.75 | -0.07 | | | | | | | | | 1.0 |

December 21 2017 Hour: 17:446.1

Agency: REL Distant

EMSC OT=17:04:46.1 31.36N 56.32E 10Km M=5.2 CENTRAL IRAN

| STAT | CO | DIST | AZI | PHASE | P | HRMN | SECON | TRES | CODA | AMPL | PERI | BAZ | ARES | VELO | WT |
|------|----|------|-----|-------|---|------|-------|------|------|------|------|-----|------|------|----|
| HWQ | BZ | | | EP | | 17 8 | 49.71 | | | | | | | | |
| RCY | SZ | | | EP | | 17 8 | 50.64 | | | | | | | | |
| BHL | BZ | | | EP | | 17 8 | 51.99 | | | | | | | | |
| QRWL | SZ | | | EP | | 17 8 | 52.56 | | | | | | | | |

December 22 2017 Hour: 14:10 30.3 Lat: 33.46N Lon: 35.67E Depth: 0 Agency: REL Local

Magnitudes: 2.8MC 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 | 10 | 7 | EP | | 1410 | 31.85 | -0.08 | | | | | | | 1.0 |
| SHBL | SZ | 14 | 151 | EP | | 1410 | 32.73 | 0.07 | | | | | | | 1.0 |
| RCY | SZ | 16 | 75 | EP | | 1410 | 32.75 | -0.19 | 46 | | | | | | 1.0 |
| RCY | SN | 16 | 75 | ES | | 1410 | 34.97 | 0.11 | | | | | | | 1.0 |
| DQRL | SZ | 29 | 341 | EP | | 1410 | 34.97 | -0.01 | | | | | | | 1.0 |
| DQRL | SN | 29 | 341 | ES | | 1410 | 38.48 | 0.07 | | | | | | | 1.0 |
| BHL | BZ | 49 | 358 | EP | | 1410 | 38.27 | -0.01 | | | | | | | 1.0 |
| HWQ | BZ | 94 | 16 | EP | | 1410 | 46.06 | 0.52 | | | | | | | 0.2 |
| BEIL | SZ | 129 | 22 | EP | | 1410 | 51.34 | 0.19 | | | | | | | 0.2 |

December 25 2017 Hour: 10:8 17.1 Lat: 33.58N Lon: 36.48E Depth: 0 Agency: REL Regional

Magnitudes: 3.1MC REL

Rms: 0.2 secs

SYRIA REGION

| STAT | CO | DIST | AZI | PHASE | P | HRMN | SECON | TRES | CODA | AMPL | PERI | BAZ | ARES | VELO | WT |
|------|----|------|-----|-------|---|------|-------|-------|------|------|------|-----|------|------|-----|
| RCY | SZ | 61 | 262 | EP | | 10 8 | 26.70 | -0.14 | 69 | | | | | | 1.0 |
| RCY | SN | 61 | 262 | ES | | 10 8 | 34.09 | 0.01 | | | | | | | 1.0 |
| ZAHL | SZ | 63 | 300 | EP | | 10 8 | 27.42 | 0.13 | | | | | | | 1.0 |
| SHBL | SZ | 73 | 250 | EP | | 10 8 | 28.85 | -0.00 | | | | | | | 1.0 |
| BHL | BZ | 85 | 296 | EP | | 10 8 | 30.76 | 0.02 | | | | | | | 1.0 |
| DQRL | SZ | 86 | 280 | EP | | 10 8 | 31.05 | 0.16 | | | | | | | 1.0 |
| DQRL | SN | 86 | 280 | ES | | 10 8 | 41.07 | -0.05 | | | | | | | 1.0 |
| HWQ | BZ | 92 | 328 | EP | | 10 8 | 31.74 | -0.18 | | | | | | | 1.0 |
| BEIL | SZ | 110 | 346 | EP | | 10 8 | 35.70 | 0.83 | | | | | | | 0.2 |

December 25 2017 Hour: 11:26 56.2 Lat: 33.53N Lon: 35.71E Depth: 0 Agency: REL Local

Magnitudes: 2.5MC REL

Rms: 0.2 secs

RACHAYA REGION

| STAT | CO | DIST | AZI | PHASE | P | HRMN | SECON | TRES | CODA | AMPL | PERI | BAZ | ARES | VELO | WT |
|------|----|------|-----|-------|---|------|-------|-------|------|------|------|-----|------|------|-----|
| QRWL | SZ | 3 | 303 | EP | | 1126 | 56.55 | -0.09 | | | | | | | 1.0 |
| RCY | SZ | 13 | 110 | EP | | 1126 | 58.17 | -0.13 | 30 | | | | | | 1.0 |
| RCY | SN | 13 | 110 | ES | | 1126 | 59.84 | -0.01 | | | | | | | 1.0 |
| SHBL | SZ | 21 | 170 | EP | | 1126 | 59.74 | 0.12 | | | | | | | 1.0 |
| DQRL | SZ | 23 | 327 | EP | | 1126 | 59.90 | 0.04 | | | | | | | 1.0 |
| DQRL | SN | 23 | 327 | ES | | 1127 | 2.57 | 0.00 | | | | | | | 1.0 |
| ZAHL | SZ | 40 | 25 | EP | | 1127 | 2.91 | 0.33 | | | | | | | 0.2 |
| BHL | BZ | 41 | 353 | EP | | 1127 | 3.13 | 0.28 | | | | | | | 0.2 |
| HWQ | BZ | 85 | 15 | EP | | 1127 | 10.49 | 0.51 | | | | | | | 0.2 |

December 26 2017 Hour: 14:56 54.0 Lat: 34.04N Lon: 35.75E Depth: 1 Agency: REL Local

Magnitudes: 3.0MC 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 | 18 | 212 | EP | | 1456 | 56.80 | -0.08 | 59 | | | | | | 1.0 |
| BHL | BN | 18 | 212 | ES | | 1456 | 59.05 | 0.03 | | | | | | | 1.0 |
| ZAHL | SZ | 24 | 149 | EP | | 1456 | 57.78 | -0.04 | | | | | | | 1.0 |
| ZAHL | SN | 24 | 149 | ES | | 1457 | 0.68 | 0.03 | | | | | | | 1.0 |
| HWQ | BZ | 32 | 34 | EP | | 1456 | 59.16 | 0.02 | 62 | | | | | | 1.0 |
| HWQ | BN | 32 | 34 | ES | | 1457 | 2.93 | -0.02 | | | | | | | 1.0 |

| | | | | | | | | | | | | | | | | | |
|------|----|----|-----|----|--|------|------|-------|--|--|--|--|--|--|--|--|-----|
| DQRL | SZ | 41 | 205 | EP | | 1457 | 0.65 | 0.06 | | | | | | | | | 1.0 |
| RCY | SZ | 61 | 173 | EP | | 1457 | 3.78 | -0.03 | | | | | | | | | 1.0 |
| BEIL | SZ | 68 | 35 | EP | | 1457 | 5.05 | 0.03 | | | | | | | | | 1.0 |

December 27 2017 Hour: 1:56 56.5 Lat: 35.53N Lon: 36.59E Depth: 0 Agency: REL Regional
Magnitudes: 3.1MC REL Rms: 0.1 secs

SYRIA REGION

| STAT | CO | DIST | AZI | PHASE | P | HRMN | SECON | TRES | CODA | AMPL | PERI | BAZ | ARES | VELO | WT |
|------|----|------|-----|-------|---|------|-------|-------|------|------|------|-----|------|------|-----|
| BEIL | SZ | 116 | 199 | EP | | 157 | 15.16 | -0.04 | 60 | | | | | | 1.0 |
| BEIL | SN | 116 | 199 | ES | | 157 | 28.94 | -0.10 | | | | | | | 1.0 |
| HWQ | BZ | 151 | 203 | EP | | 157 | 20.60 | -0.05 | | | | | | | 1.0 |
| HWQ | BN | 151 | 203 | ES | | 157 | 38.65 | 0.14 | | | | | | | 1.0 |
| BHL | BZ | 200 | 206 | EP | | 157 | 27.43 | -0.03 | | | | | | | 1.0 |
| DQRL | SZ | 223 | 205 | EP | | 157 | 30.26 | -0.09 | | | | | | | 1.0 |
| RCY | SZ | 236 | 197 | EP | | 157 | 32.18 | 0.17 | | | | | | | 1.0 |

December 27 2017 Hour: 10:47 29.3 Lat: 34.53N Lon: 36.75E Depth: 15 Agency: REL Regional
Magnitudes: 3.0MC 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 | 52 | 272 | EP | | 1047 | 37.95 | -0.06 | 57 | | | | | | 1.0 |
| BEIL | SN | 52 | 272 | ES | | 1047 | 44.52 | 0.10 | | | | | | | 1.0 |
| HWQ | BZ | 79 | 250 | EP | | 1047 | 41.77 | -0.22 | | | | | | | 1.0 |
| HWQ | BN | 79 | 250 | ES | | 1047 | 51.25 | -0.09 | | | | | | | 1.0 |
| BHL | BZ | 122 | 236 | EP | | 1047 | 48.53 | 0.17 | | | | | | | 1.0 |
| RCY | SZ | 142 | 217 | EP | | 1047 | 51.12 | -0.15 | | | | | | | 1.0 |
| DQRL | SZ | 142 | 231 | EP | | 1047 | 51.47 | 0.24 | | | | | | | 1.0 |

December 27 2017 Hour: 14:31 1.4 Lat: 34.67N Lon: 36.11E Depth: 0 Agency: REL Regional
Magnitudes: 2.4MC 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 | 16 | 154 | EP | | 1431 | 3.98 | -0.01 | 26 | | | | | | 1.0 |
| BEIL | SN | 16 | 154 | ES | | 1431 | 5.92 | 0.03 | | | | | | | 1.0 |
| HWQ | BZ | 46 | 199 | EP | | 1431 | 8.71 | -0.13 | | | | | | | 1.0 |
| HWQ | BN | 46 | 199 | ES | | 1431 | 14.32 | -0.01 | | | | | | | 1.0 |
| DQRL | SZ | 118 | 205 | EP | | 1431 | 20.62 | 0.18 | | | | | | | 1.0 |
| RCY | SZ | 133 | 191 | EP | | 1431 | 22.74 | -0.07 | | | | | | | 1.0 |

December 30 2017 Hour: 12:38 49.9 Lat: 34.46N Lon: 36.06E Depth: 65 Agency: REL Local
Magnitudes: 2.7MC REL Rms: 0.3 secs

AKKAR REGION

| STAT | CO | DIST | AZI | PHASE | P | HRMN | SECON | TRES | CODA | AMPL | PERI | BAZ | ARES | VELO | WT |
|------|----|------|-----|-------|---|------|-------|-------|------|------|------|-----|------|------|-----|
| BEIL | SZ | 15 | 54 | EP | | 1238 | 59.45 | 0.18 | 38 | | | | | | 1.0 |
| BEIL | SN | 15 | 54 | ES | | 1239 | 6.13 | -0.06 | | | | | | | 1.0 |
| HWQ | BZ | 23 | 206 | EP | | 1238 | 59.38 | -0.29 | | | | | | | 1.0 |
| HWQ | BN | 23 | 206 | ES | | 1239 | 6.99 | 0.10 | | | | | | | 1.0 |
| ZAHL | SZ | 69 | 193 | EP | | 1239 | 3.11 | -0.02 | | | | | | | 1.0 |
| BHL | BZ | 72 | 211 | EP | | 1239 | 4.00 | 0.58 | | | | | | | 0.2 |
| DQRL | SZ | 95 | 208 | EP | | 1239 | 6.69 | 0.87 | | | | | | | 0.2 |

December 30 2017 Hour: 14:26 16.1 Lat: 33.46N Lon: 35.64E Depth: 0 Agency: REL Local
Magnitudes: 2.6MC REL Rms: 0.2 secs

WEST BEKAA REGION

| STAT | CO | DIST | AZI | PHASE | P | HRMN | SECON | TRES | CODA | AMPL | PERI | BAZ | ARES | VELO | WT |
|------|----|------|-----|-------|---|------|-------|-------|------|------|------|-----|------|------|-----|
| QRWL | SZ | 10 | 20 | EP | | 1426 | 17.67 | -0.14 | | | | | | | 1.0 |
| SHBL | SZ | 15 | 143 | EP | | 1426 | 18.65 | 0.03 | 33 | | | | | | 1.0 |
| SHBL | SN | 15 | 143 | ES | | 1426 | 20.46 | -0.00 | | | | | | | 1.0 |
| DQRL | SZ | 28 | 346 | EP | | 1426 | 20.68 | 0.01 | | | | | | | 1.0 |
| DQRL | SN | 28 | 346 | ES | | 1426 | 24.06 | 0.02 | | | | | | | 1.0 |
| BHL | BZ | 49 | 1 | EP | | 1426 | 24.10 | 0.02 | | | | | | | 1.0 |
| ZAHL | SZ | 50 | 27 | EP | | 1426 | 24.07 | -0.05 | | | | | | | 1.0 |
| HWQ | BZ | 95 | 17 | EP | | 1426 | 32.30 | 0.85 | | | | | | | 0.2 |
| BEIL | SZ | 130 | 22 | EP | | 1426 | 37.93 | 0.84 | | | | | | | 0.2 |

December 31 2017 Hour: 22:047.2 Lat: 33.83N Lon: 35.85E Depth: 0 Agency: REL Local
 Magnitudes: 2.9MC 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 | 4 | 50 | EP | | 22 0 | 47.90 | -0.01 | | | | | | | 1.0 |
| BHL | BZ | 20 | 294 | EP | | 22 0 | 50.15 | -0.19 | 51 | | | | | | 1.0 |
| BHL | BN | 20 | 294 | ES | | 22 0 | 52.82 | 0.13 | | | | | | | 1.0 |
| DQRL | SZ | 29 | 241 | EP | | 22 0 | 51.90 | -0.00 | | | | | | | 1.0 |
| DQRL | SN | 29 | 241 | ES | | 22 0 | 55.36 | -0.05 | | | | | | | 1.0 |
| BEYL | SZ | 33 | 278 | EP | | 22 0 | 52.51 | -0.01 | | | | | | | 0.2 |
| QRWL | SZ | 35 | 206 | EP | | 22 0 | 52.93 | 0.10 | | | | | | | 1.0 |
| HWQ | BZ | 50 | 10 | EP | | 22 0 | 55.36 | 0.08 | | | | | | | 1.0 |
| BEIL | SZ | 85 | 21 | EP | | 22 1 | 0.76 | -0.05 | | | | | | | 1.0 |

December 31 2017 Hour: 22:13 24.0 Lat: 33.87N Lon: 35.85E Depth: 2 Agency: REL Local
 Magnitudes: 2.7MC REL Rms: 0.2 secs

ZAHLE REGION

| STAT | CO | DIST | AZI | PHASE | P | HRMN | SECON | TRES | CODA | AMPL | PERI | BAZ | ARES | VELO | WT |
|------|----|------|-----|-------|---|------|-------|-------|------|------|------|-----|------|------|-----|
| ZAHL | SZ | 4 | 104 | EP | | 2213 | 24.80 | -0.01 | | | | | | | 1.0 |
| BHL | BZ | 18 | 283 | EP | | 2213 | 26.91 | -0.05 | 38 | | | | | | 1.0 |
| DQRL | SZ | 31 | 235 | EP | | 2213 | 28.90 | -0.12 | | | | | | | 1.0 |
| DQRL | SN | 31 | 235 | ES | | 2213 | 32.91 | 0.15 | | | | | | | 1.0 |
| BEYL | SZ | 33 | 271 | EP | | 2213 | 29.22 | -0.03 | | | | | | | 1.0 |
| QRWL | SZ | 39 | 203 | EP | | 2213 | 30.17 | -0.02 | | | | | | | 1.0 |
| QRWL | SN | 39 | 203 | ES | | 2213 | 34.80 | 0.00 | | | | | | | 1.0 |
| HWQ | BZ | 47 | 11 | EP | | 2213 | 31.78 | 0.28 | | | | | | | 0.2 |
| BEIL | SZ | 81 | 22 | EP | | 2213 | 38.06 | 1.00 | | | | | | | 0.2 |

Epicentral Map of Lebanon

DECEMBER 2017

