

Republic of Lebanon  
National Council for Scientific Research

# Provisional Seismological Bulletin

from the

## NATIONAL SEISMIC NETWORK

July

2005

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.

| <b>P-wave velocity</b> | <b>depth to top of layer</b> |
|------------------------|------------------------------|
| <b>(km/sec)</b>        | <b>(km)</b>                  |
| <b>6.2</b>             | <b>0.0</b>                   |
| <b>6.8</b>             | <b>14.0</b>                  |
| <b>8.05</b>            | <b>34.0</b>                  |
| <b>8.25</b>            | <b>50.0</b>                  |
| <b>8.5</b>             | <b>80.0</b>                  |

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 Vp/Vs 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 | Opened Nov 2000 |
| FKH     | 3414.13N | 3624.11E  | 1170       | FAKEHEH | Opened Dec 2004 |
| RCY     | 3329.08N | 3549.13E  | 1360       | RACHAYA | Scheduled 2003  |
| DWR     | 3323.13N | 3524.08E  | 420        | DWEIR   | Scheduled 2003  |

## 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 will be available for download in pdf format on:  
<http://www.cnrs.edu.lb/geophysicalresearch/>

## 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.ifjff.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: GRL throughout the bulletin, aka. Geophysical Research Lebanon

MAGNITUDES: Up to 3 different magnitudes can be given followed by type and reporting agency, e.g. 3.1 MC GRL - coda magnitude calculated according to GRL standard parameters.

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 ( $0.5 \times (\text{peak to peak})$ ), (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.

**July 1 2005 Hour: 13: 5 0.6**

**Agency: REL Local**

| STAT | CO | DIST | AZI | PHASE | P | HRMN | SECON | TRES  | CODA | AMPL | PERI | BAZ | ARES | VELO | WT |
|------|----|------|-----|-------|---|------|-------|-------|------|------|------|-----|------|------|----|
| BHL  | SZ |      |     | IPG   |   | 13   | 6     | 59.22 |      |      |      |     |      |      |    |
| BHL  | SN |      |     | ISG   |   | 13   | 7     | 3.01  |      |      |      |     |      |      |    |
| HWQ  | SZ |      |     | IPG   |   | 13   | 6     | 59.83 |      |      |      |     |      |      |    |
| HWQ  | SE |      |     | ISG   |   | 13   | 7     | 6.37  |      |      |      |     |      |      |    |

**July 1 2005 Hour: 15:39 25.7**

**Lat: 34.58N**

**Lon: 36.88E**

**Depth: 0**

**Agency: REL Local**

**Magnitudes: 3.0MC REL**

**Rms: 0.9 secs**

| STAT | CO | DIST | AZI | PHASE | P | HRMN | SECON | TRES | CODA | AMPL | PERI | BAZ | ARES | VELO | WT  |
|------|----|------|-----|-------|---|------|-------|------|------|------|------|-----|------|------|-----|
| FKH  | SZ | 58   | 229 | IPG   |   | 1539 | 34.63 | -0.4 |      |      |      |     |      |      | 1.0 |
| FKH  | SE | 58   | 229 | ISG   |   | 1539 | 40.76 | -1.3 |      |      |      |     |      |      | 1.0 |
| HWQ  | SZ | 92   | 249 | IPG   |   | 1539 | 40.55 | 0.0  | 56   |      |      | 57  | -10  | 17.3 | 1.0 |
| HWQ  | SE | 92   | 249 | ISG   |   | 1539 | 51.21 | -0.3 |      |      |      |     |      |      | 1.0 |
| BHL  | SZ | 135  | 237 | IPG   |   | 1539 | 47.98 | 0.4  |      |      |      |     |      |      | 1.0 |
| BHL  | SE | 135  | 237 | ISG   |   | 1540 | 5.24  | 1.5  |      |      |      |     |      |      | 1.0 |

**July 2 2005 Hour: 2:30 48.8**

**NICARAGUA M=6.7**

**Agency: REL Distant**

| STAT | CO | DIST | AZI | PHASE | P | HRMN | SECON | TRES | CODA | AMPL | PERI | BAZ | ARES | VELO | WT |
|------|----|------|-----|-------|---|------|-------|------|------|------|------|-----|------|------|----|
| BHL  | BZ |      |     | EP    |   | 245  | 8.94  |      |      |      |      |     |      |      |    |

**July 2 2005 Hour: 10: 3 27.5**

**Lat: 34.11N**

**Lon: 35.41E**

**Depth: 15**

**Agency: REL Local**

**Magnitudes: 2.9MC REL**

**Rms: 1.0 secs**

| STAT | CO | DIST | AZI | PHASE | P | HRMN | SECON | TRES  | CODA | AMPL | PERI | BAZ | ARES | VELO | WT  |
|------|----|------|-----|-------|---|------|-------|-------|------|------|------|-----|------|------|-----|
| BHL  | SZ | 32   | 135 | IPG   |   | 10   | 3     | 34.44 | 1.2  |      |      | 275 | -39  | 41.8 | 1.0 |
| BHL  | SN | 32   | 135 | ISg   |   | 10   | 3     | 38.25 | 0.8  |      |      |     |      |      | 1.0 |
| HWQ  | SZ | 53   | 69  | IPG   |   | 10   | 3     | 35.44 | -0.9 | 47   |      |     |      |      | 1.0 |
| HWQ  | SN | 53   | 69  | ISG   |   | 10   | 3     | 41.73 | -1.1 |      |      |     |      |      | 1.0 |

**July 2 2005 Hour: 17:35 17.7**

**Lat: 35.17N**

**Lon: 27.26E**

**Depth: 0**

**Agency: REL Regional**

**Magnitudes: 4.6MC REL**

**Rms: 0.9 secs**

| STAT | CO | DIST | AZI | PHASE | P | HRMN | SECON | TRES | CODA | AMPL | PERI | BAZ | ARES | VELO | WT  |
|------|----|------|-----|-------|---|------|-------|------|------|------|------|-----|------|------|-----|
| AKMC | SZ | 462  | 91  | EP    |   | 1736 | 20.80 | -0.2 |      |      |      |     |      |      | 1.0 |
| PPCY | SZ | 465  | 92  | EP    |   | 1736 | 21.50 | 0.3  |      |      |      |     |      |      | 1.0 |
| ALFC | SZ | 486  | 89  | EP    |   | 1736 | 23.70 | -0.2 |      |      |      |     |      |      | 1.0 |
| SZAC | SZ | 515  | 94  | EP    |   | 1736 | 27.40 | 0.0  |      |      |      |     |      |      | 1.0 |
| MAMC | SZ | 542  | 88  | EP    |   | 1736 | 31.10 | 0.4  |      |      |      |     |      |      | 1.0 |
| CSS  | SZ | 554  | 91  | EP    |   | 1736 | 32.20 | 0.1  |      |      |      |     |      |      | 1.0 |
| PHNC | SZ | 617  | 90  | EP    |   | 1736 | 41.60 | 1.8  |      |      |      |     |      |      | 1.0 |
| MATL | SZ | 765  | 102 | EPN   |   | 1736 | 57.42 | -1.4 |      |      |      |     |      |      | 1.0 |
| BHL  | SZ | 783  | 98  | EPN   |   | 1736 | 59.84 | -1.3 |      |      |      |     |      |      | 1.0 |
| BHL  | BE | 783  | 98  | Sn    |   | 1738 | 16.69 | -0.9 |      |      |      |     |      |      | 1.0 |
| HWQ  | SZ | 801  | 95  | EPN   |   | 1737 | 1.83  | -1.6 | 203  |      |      |     |      |      | 1.0 |
| HWQ  | SN | 801  | 95  | SN    |   | 1738 | 22.81 | 1.2  |      |      |      |     |      |      | 1.0 |
| FKH  | SZ | 843  | 94  | EPN   |   | 1737 | 7.29  | -1.3 |      |      |      |     |      |      | 1.0 |

**July 3 2005 Hour: 2:24 43.5**

**Lat: 34.30N**

**Lon: 34.75E**

**Depth: 15**

**Agency: REL Local**

**Magnitudes: 3.6MC REL**

**Rms: 0.7 secs**

| STAT | CO | DIST | AZI | PHASE | P | HRMN | SECON | TRES | CODA | AMPL | PERI | BAZ | ARES | VELO | WT  |
|------|----|------|-----|-------|---|------|-------|------|------|------|------|-----|------|------|-----|
| BHL  | BZ | 94   | 117 | IPg   |   | 224  | 58.18 | -0.1 |      |      |      |     |      |      | 1.0 |
| BHL  | BN | 94   | 117 | ISg   |   | 225  | 7.80  | -1.5 |      |      |      |     |      |      | 1.0 |
| PHNC | SZ | 103  | 320 | EP    |   | 225  | 00.20 | 0.7  |      |      |      |     |      |      | 1.0 |
| MATL | SZ | 104  | 149 | IPG   |   | 224  | 59.60 | -0.2 |      |      |      |     |      |      | 1.0 |
| HWQ  | SZ | 110  | 91  | IPG   |   | 225  | 1.01  | 0.3  | 123  |      |      |     |      |      | 1.0 |
| HWQ  | SN | 110  | 91  | ISG   |   | 225  | 14.01 | 0.6  |      |      |      |     |      |      | 1.0 |
| CSS  | SZ | 150  | 300 | EP    |   | 225  | 05.90 | -0.6 |      |      |      |     |      |      | 1.0 |
| FKH  | SZ | 152  | 92  | IPG   |   | 225  | 7.12  | 0.3  |      |      |      |     |      |      | 1.0 |
| FKH  | SE | 152  | 92  | ISG   |   | 225  | 24.16 | 0.0  |      |      |      |     |      |      | 1.0 |
| MAMC | SZ | 171  | 305 | EP    |   | 225  | 09.30 | 0.1  |      |      |      |     |      |      | 1.0 |
| SZAC | SZ | 179  | 287 | EP    |   | 225  | 10.20 | -0.1 |      |      |      |     |      |      | 1.0 |
| ALFC | SZ | 219  | 296 | EP    |   | 225  | 15.10 | -0.2 |      |      |      |     |      |      | 1.0 |
| PPCY | SZ | 230  | 287 | EP    |   | 225  | 17.00 | 0.4  |      |      |      |     |      |      | 1.0 |
| AKMC | SZ | 236  | 291 | EP    |   | 225  | 18.00 | 0.6  |      |      |      |     |      |      | 1.0 |

**July 3 2005 Hour: 7: 9 37.6 Lat: 33.68N Lon: 35.54E Depth: 21 Agency: REL Local**  
**Magnitudes: 2.7MC REL Rms: 0.5 secs**

| STAT | CO | DIST | AZI | PHASE | P | HRMN | SECON | TRES | CODA | AMPL | PERI | BAZ | ARES | VELO | WT  |
|------|----|------|-----|-------|---|------|-------|------|------|------|------|-----|------|------|-----|
| BHL  | SZ | 27   | 22  | IPG   |   | 7 9  | 43.79 | 0.6  | 39   |      |      | 202 | 0    | 7.7  | 1.0 |
| BHL  | SE | 27   | 22  | ISG   |   | 7 9  | 46.88 | -0.4 |      |      |      |     |      |      | 1.0 |
| HWQ  | SZ | 76   | 29  | IPG   |   | 7 9  | 49.30 | -0.6 |      |      |      |     |      |      | 1.0 |
| HWQ  | SE | 76   | 29  | ISG   |   | 7 9  | 59.42 | 0.4  |      |      |      |     |      |      | 1.0 |

**July 3 2005 Hour: 10: 5 41.9 Lat: 34.15N Lon: 35.51E Depth: 15 Agency: REL Local**  
**Magnitudes: 2.8MC REL Rms: 0.6 secs**

| STAT | CO | DIST | AZI | PHASE | P | HRMN | SECON | TRES | CODA | AMPL | PERI | BAZ | ARES | VELO | WT  |
|------|----|------|-----|-------|---|------|-------|------|------|------|------|-----|------|------|-----|
| BHL  | SZ | 31   | 154 | IPG   |   | 10 5 | 48.17 | 0.7  | 47   |      |      | 235 | -99  | 11.7 | 1.0 |
| BHL  | SN | 31   | 154 | ISG   |   | 10 5 | 51.86 | 0.3  |      |      |      |     |      |      | 1.0 |
| HWQ  | SZ | 43   | 71  | IPG   |   | 10 5 | 48.76 | -0.4 |      |      |      |     |      |      | 1.0 |
| HWQ  | SE | 43   | 71  | ISG   |   | 10 5 | 53.81 | -0.7 |      |      |      |     |      |      | 1.0 |

**July 3 2005 Hour: 22:39 19.6 Lat: 34.40N Lon: 27.11E Depth: 0 Agency: REL Regional**  
**Magnitudes: 4.7MC REL Rms: 0.5 secs**

| STAT | CO | DIST | AZI | PHASE | P | HRMN | SECON | TRES | CODA | AMPL | PERI | BAZ | ARES | VELO | WT  |
|------|----|------|-----|-------|---|------|-------|------|------|------|------|-----|------|------|-----|
| PPCY | SZ | 483  | 82  | EP    |   | 2240 | 25.40 | 0.1  |      |      |      |     |      |      | 1.0 |
| AKMC | SZ | 483  | 80  | EP    |   | 2240 | 25.30 | -0.1 |      |      |      |     |      |      | 1.0 |
| ALFC | SZ | 509  | 79  | EP    |   | 2240 | 28.00 | -0.6 |      |      |      |     |      |      | 1.0 |
| SZAC | SZ | 531  | 84  | EP    |   | 2240 | 31.60 | 0.4  |      |      |      |     |      |      | 1.0 |
| MAMC | SZ | 565  | 80  | EP    |   | 2240 | 35.00 | -0.3 |      |      |      |     |      |      | 1.0 |
| CSS  | SZ | 573  | 82  | EP    |   | 2240 | 35.90 | -0.4 |      |      |      |     |      |      | 1.0 |
| PHNC | SZ | 638  | 82  | EP    |   | 2240 | 45.20 | 1.1  |      |      |      |     |      |      | 1.0 |
| MATL | SZ | 766  | 95  | EPN   |   | 2241 | 1.20  | 0.4  |      |      |      |     |      |      | 1.0 |
| BHL  | SZ | 790  | 92  | EPN   |   | 2241 | 3.61  | -0.2 |      |      |      |     |      |      | 1.0 |
| BHL  | SN | 790  | 92  | SN    |   | 2242 | 20.26 | -0.7 |      |      |      |     |      |      | 1.0 |
| HWQ  | SZ | 813  | 88  | EPN   |   | 2241 | 6.16  | -0.5 | 242  |      |      |     |      |      | 1.0 |
| HWQ  | SN | 813  | 88  | SN    |   | 2242 | 26.64 | 0.7  |      |      |      |     |      |      | 1.0 |

**July 4 2005 Hour: 7:47 45.9 Lat: 33.83N Lon: 35.00E Depth: 15 Agency: REL Local**  
**Magnitudes: 2.9MC REL Rms: 0.5 secs**

| STAT | CO | DIST | AZI | PHASE | P | HRMN | SECON | TRES | CODA | AMPL | PERI | BAZ | ARES | VELO | WT  |
|------|----|------|-----|-------|---|------|-------|------|------|------|------|-----|------|------|-----|
| BHL  | SZ | 61   | 83  | IPG   |   | 747  | 56.48 | 0.5  | 48   |      |      | 106 | -99  | 73.4 | 1.0 |
| BHL  | SN | 61   | 83  | ISG   |   | 748  | 3.81  | 0.5  |      |      |      |     |      |      | 1.0 |
| HWQ  | SZ | 101  | 60  | IPG   |   | 748  | 1.06  | -0.7 |      |      |      |     |      |      | 1.0 |
| HWQ  | SE | 101  | 60  | ISG   |   | 748  | 13.05 | -0.3 |      |      |      |     |      |      | 1.0 |

**July 4 2005 Hour: 13: 4 1.1 Agency: REL Local**

| STAT | CO | DIST | AZI | PHASE | P | HRMN | SECON | TRES | CODA | AMPL | PERI | BAZ | ARES | VELO | WT |
|------|----|------|-----|-------|---|------|-------|------|------|------|------|-----|------|------|----|
| BHL  | SZ |      |     | IPG   |   | 13 4 | 34.85 |      |      |      |      |     |      |      |    |
| HWQ  | SZ |      |     | IPG   |   | 13 4 | 35.17 |      |      |      |      |     |      |      |    |
| BHL  | SN |      |     | ISG   |   | 13 4 | 39.03 |      |      |      |      |     |      |      |    |
| HWQ  | SN |      |     | ISG   |   | 13 4 | 42.08 |      |      |      |      |     |      |      |    |

**July 4 2005 Hour: 17:42 1.4 Agency: REL Local**

| STAT | CO | DIST | AZI | PHASE | P | HRMN | SECON | TRES | CODA | AMPL | PERI | BAZ | ARES | VELO | WT |
|------|----|------|-----|-------|---|------|-------|------|------|------|------|-----|------|------|----|
| HWQ  | SZ |      |     | IPG   |   | 1742 | 39.65 |      |      |      |      |     |      |      |    |
| HWQ  | SE |      |     | ISG   |   | 1742 | 49.65 |      |      |      |      |     |      |      |    |
| BHL  | SZ |      |     | IPG   |   | 1742 | 47.63 |      |      |      |      |     |      |      |    |
| BHL  | SE |      |     | ISG   |   | 1743 | 4.84  |      |      |      |      |     |      |      |    |

**July 5 2005 Hour: 1:49 17.5 SUMATRA M=6.6 Agency: REL Distant**

| STAT | CO | DIST | AZI | PHASE | P | HRMN | SECON | TRES | CODA | AMPL | PERI | BAZ | ARES | VELO | WT |
|------|----|------|-----|-------|---|------|-------|------|------|------|------|-----|------|------|----|
| BHL  | BZ |      |     | EP    |   | 2 2  | 45.95 |      |      |      |      |     |      |      |    |

**July 5 2005 Hour: 12:47 0.3** **Agency: REL Local**  
 STAT CO DIST AZI PHASE P HRMN SECON TRES CODA AMPL PERI BAZ ARES VELO WT  
 HWQ SZ IPG 1248 11.09  
 HWQ SN ISG 1248 20.84  
 BHL SN ISG 1248 33.67

**July 5 2005 Hour: 19:58 1.6** **TURKEY M=3.6** **Agency: REL Regional**  
 STAT CO DIST AZI PHASE P HRMN SECON TRES CODA AMPL PERI BAZ ARES VELO WT  
 HWQ SZ EPN 1958 41.99

**July 6 2005 Hour: 12:35 16.7** **Lat: 33.36N Lon: 33.11E Depth: 0** **Agency: REL Regional**  
**Magnitudes: 3.6MC REL** **Rms: 3.9 secs**  
 STAT CO DIST AZI PHASE P HRMN SECON TRES CODA AMPL PERI BAZ ARES VELO WT  
 MATL SZ 207 85 EPN 1235 48.55 0.2 1.0  
 BHL SZ 244 75 EPN 1235 47.58 -5.5 1.0  
 BHL SN 244 75 SN 1236 22.87 2.9 1.0  
 HWQ SZ 282 68 EPN 1236 3.08 5.3 102 1.0  
 HWQ SN 282 68 SN 1236 25.33 -2.9 1.0

**July 6 2005 Hour: 18:18 44.0** **Lat: 35.42N Lon: 32.83E Depth: 0** **Agency: REL Regional**  
**Magnitudes: 3.6MC REL** **Rms: 0.5 secs**  
 STAT CO DIST AZI PHASE P HRMN SECON TRES CODA AMPL PERI BAZ ARES VELO WT  
 BHL SZ 309 122 EPN 1819 27.99 -0.5 1.0  
 BHL SE 309 122 SN 1820 0.84 -0.5 1.0  
 HWQ SZ 312 113 EPN 1819 28.56 -0.3 100 1.0  
 HWQ SN 312 113 SN 1820 1.95 -0.1 1.0  
 MATL SZ 314 132 EPN 1819 29.81 0.8 1.0  
 FKH SZ 352 111 EPN 1819 33.84 0.0 1.0  
 FKH SE 352 111 SN 1820 11.45 0.7 1.0

**July 7 2005 Hour: 23: 2 28.0** **Lat: 33.91N Lon: 36.17E Depth: 52** **Agency: REL Local**  
**Magnitudes: 2.7MC REL** **Rms: 0.1 secs**  
 STAT CO DIST AZI PHASE P HRMN SECON TRES CODA AMPL PERI BAZ ARES VELO WT  
 FKH SN 43 31 IPG 23 2 37.95 0.2 1.0  
 FKH SZ 43 31 ISG 23 2 44.80 -0.1 1.0  
 HWQ SZ 46 334 IPG 23 2 37.91 -0.1 39 1.0  
 HWQ SE 46 334 ISG 23 2 45.54 0.1 1.0  
 BHL SZ 47 270 IPG 23 2 38.03 -0.1 1.0  
 BHL SE 47 270 ISG 23 2 45.71 0.1 1.0

**July 8 2005 Hour: 8:51 7.5** **FIJI M=4.9** **Agency: REL Distant**  
 STAT CO DIST AZI PHASE P HRMN SECON TRES CODA AMPL PERI BAZ ARES VELO WT  
 BHL BZ EP 851 39.81

**July 8 2005 Hour: 18: 9 1.3** **GREECE M=4.2** **Agency: REL Regional**  
 STAT CO DIST AZI PHASE P HRMN SECON TRES CODA AMPL PERI BAZ ARES VELO WT  
 HWQ SZ EPN 1810 8.65  
 FKH SZ EPN 1810 14.44

**July 9 2005 Hour: 10: 7 30.0** **TALAUD ISLANDS M=5.8** **Agency: REL Distant**  
 STAT CO DIST AZI PHASE P HRMN SECON TRES CODA AMPL PERI BAZ ARES VELO WT  
 BHL BZ EP 1019 55.77

**July 9 2005 Hour: 13:29 40.4** **Lat: 34.01N Lon: 35.47E Depth: 46** **Agency: REL Local**  
**Magnitudes: 2.8MC REL** **Rms: 1.1 secs**  
 STAT CO DIST AZI PHASE P HRMN SECON TRES CODA AMPL PERI BAZ ARES VELO WT  
 BHL SZ 21 125 IPg 1329 49.62 1.7 42 302 -2 27.2 1.0  
 BHL SE 21 125 ISg 1329 53.57 0.0 1.0  
 HWQ SZ 53 56 IPg 1329 50.40 -0.3 1.0  
 HWQ SE 53 56 ISg 1329 56.97 -1.4 1.0

**July 9 2005 Hour: 14:33 59.9 Lat: 34.93N Lon: 36.43E Depth: 14 Agency: REL Local**  
**Magnitudes: 3.1MC REL Rms: 0.3 secs**

|      |    |      |     |       |   |      |       |      |      |      |      |     |      |      |     |
|------|----|------|-----|-------|---|------|-------|------|------|------|------|-----|------|------|-----|
| STAT | CO | DIST | AZI | PHASE | P | HRMN | SECON | TRES | CODA | AMPL | PERI | BAZ | ARES | VELO | WT  |
| HWQ  | SZ | 85   | 212 | IPg   |   | 1434 | 13.47 | 0.1  | 62   |      |      | 328 | 63   | 29.1 | 1.0 |
| HWQ  | SE | 85   | 212 | ISg   |   | 1434 | 22.86 | -0.4 |      |      |      |     |      |      | 1.0 |
| BHL  | SZ | 134  | 213 | IPg   |   | 1434 | 20.41 | -0.2 |      |      |      |     |      |      | 1.0 |
| BHL  | SN | 134  | 213 | ISg   |   | 1434 | 36.40 | 0.5  |      |      |      |     |      |      | 1.0 |

**July 9 2005 Hour: 18:23 53.6 FIJI M=5.8 Agency: REL Distant**

|      |    |      |     |       |   |      |       |      |      |      |      |     |      |      |    |
|------|----|------|-----|-------|---|------|-------|------|------|------|------|-----|------|------|----|
| STAT | CO | DIST | AZI | PHASE | P | HRMN | SECON | TRES | CODA | AMPL | PERI | BAZ | ARES | VELO | WT |
| BHL  | BZ |      |     | EP    |   | 1842 | 35.00 |      |      |      |      |     |      |      |    |
| FKH  | SZ |      |     | EP    |   | 1842 | 33.77 |      |      |      |      |     |      |      |    |

**July 9 2005 Hour: 23:35 54.4 HONSHU M=5.9 Agency: REL Distant**

|      |    |      |     |       |   |      |       |      |      |      |      |     |      |      |    |
|------|----|------|-----|-------|---|------|-------|------|------|------|------|-----|------|------|----|
| STAT | CO | DIST | AZI | PHASE | P | HRMN | SECON | TRES | CODA | AMPL | PERI | BAZ | ARES | VELO | WT |
| BHL  | BZ |      |     | EP    |   | 2349 | 31.29 |      |      |      |      |     |      |      |    |

**July 9 2005 Hour: 23:58 29.9 MINAHASSA PENINSULA M=5.7 Agency: REL Distant**

|      |    |      |     |       |   |      |       |      |      |      |      |     |      |      |    |
|------|----|------|-----|-------|---|------|-------|------|------|------|------|-----|------|------|----|
| STAT | CO | DIST | AZI | PHASE | P | HRMN | SECON | TRES | CODA | AMPL | PERI | BAZ | ARES | VELO | WT |
| BHL  | BZ |      |     | EP    |   | 2359 | 45.47 |      |      |      |      |     |      |      |    |

**July 10 2005 Hour: 0: 6 34.7 Agency: REL Distant**

|      |    |      |     |       |   |      |       |      |      |      |      |     |      |      |    |
|------|----|------|-----|-------|---|------|-------|------|------|------|------|-----|------|------|----|
| STAT | CO | DIST | AZI | PHASE | P | HRMN | SECON | TRES | CODA | AMPL | PERI | BAZ | ARES | VELO | WT |
| BHL  | BZ |      |     | EP    |   | 011  | 54.95 |      |      |      |      |     |      |      |    |
| FKH  | SZ |      |     | EP    |   | 011  | 52.55 |      |      |      |      |     |      |      |    |

**July 10 2005 Hour: 11:18 1.3 Agency: REL Local**

|      |    |      |     |       |   |      |       |      |      |      |      |     |      |      |    |
|------|----|------|-----|-------|---|------|-------|------|------|------|------|-----|------|------|----|
| STAT | CO | DIST | AZI | PHASE | P | HRMN | SECON | TRES | CODA | AMPL | PERI | BAZ | ARES | VELO | WT |
| HWQ  | SZ |      |     | IPg   |   | 1118 | 54.26 |      |      |      |      |     |      |      |    |
| HWQ  | SN |      |     | ISg   |   | 1119 | 3.03  |      |      |      |      |     |      |      |    |
| BHL  | SZ |      |     | IPg   |   | 1118 | 59.41 |      |      |      |      |     |      |      |    |
| BHL  | SN |      |     | ISg   |   | 1119 | 15.97 |      |      |      |      |     |      |      |    |

**July 10 2005 Hour: 13: 3 4.1 BALKAN PEN M=5.2 Agency: REL Regional**

|      |    |      |     |       |   |      |       |      |      |      |      |     |      |      |    |
|------|----|------|-----|-------|---|------|-------|------|------|------|------|-----|------|------|----|
| STAT | CO | DIST | AZI | PHASE | P | HRMN | SECON | TRES | CODA | AMPL | PERI | BAZ | ARES | VELO | WT |
| BHL  | BZ |      |     | EPn   |   | 1313 | 52.05 |      |      |      |      |     |      |      |    |
| BHL  | BN |      |     | Sn    |   | 1319 | 20.77 |      |      |      |      |     |      |      |    |
| HWQ  | SZ |      |     | EPn   |   | 1313 | 54.75 |      |      |      |      |     |      |      |    |

**July 11 2005 Hour: 12:18 18.2 EASTER ISLAND M=6.0 Agency: REL Distant**

|      |    |      |     |       |   |      |       |      |      |      |      |     |      |      |    |
|------|----|------|-----|-------|---|------|-------|------|------|------|------|-----|------|------|----|
| STAT | CO | DIST | AZI | PHASE | P | HRMN | SECON | TRES | CODA | AMPL | PERI | BAZ | ARES | VELO | WT |
| BHL  | BZ |      |     | EP    |   | 1221 | 26.46 |      |      |      |      |     |      |      |    |

**July 11 2005 Hour: 17:21 0.6 GREECE M=4.2 Agency: REL Regional**

|      |    |      |     |       |   |      |       |      |      |      |      |     |      |      |    |
|------|----|------|-----|-------|---|------|-------|------|------|------|------|-----|------|------|----|
| STAT | CO | DIST | AZI | PHASE | P | HRMN | SECON | TRES | CODA | AMPL | PERI | BAZ | ARES | VELO | WT |
| HWQ  | SZ |      |     | EPn   |   | 1722 | 8.35  |      |      |      |      |     |      |      |    |
| BHL  | SZ |      |     | EPn   |   | 1722 | 6.71  |      |      |      |      |     |      |      |    |

**July 12 2005 Hour: 10: 8 0.8 Agency: REL Regional**

|      |    |      |     |       |   |      |       |      |      |      |      |     |      |      |    |
|------|----|------|-----|-------|---|------|-------|------|------|------|------|-----|------|------|----|
| STAT | CO | DIST | AZI | PHASE | P | HRMN | SECON | TRES | CODA | AMPL | PERI | BAZ | ARES | VELO | WT |
| BHL  | SZ |      |     | EPn   |   | 10 9 | 5.44  |      |      |      |      |     |      |      |    |
| BHL  | SE |      |     | Sn    |   | 10 9 | 34.93 |      |      |      |      |     |      |      |    |
| HWQ  | SE |      |     | Sn    |   | 10 9 | 36.15 |      |      |      |      |     |      |      |    |

**July 12 2005 Hour: 10:22 16.3 Lat: 33.78N Lon: 35.65E Depth: 15 Agency: REL Local**  
**Magnitudes: 3.0MC REL Rms: 1.1 secs**

|      |    |      |     |       |   |      |       |      |      |      |      |     |      |      |     |
|------|----|------|-----|-------|---|------|-------|------|------|------|------|-----|------|------|-----|
| STAT | CO | DIST | AZI | PHASE | P | HRMN | SECON | TRES | CODA | AMPL | PERI | BAZ | ARES | VELO | WT  |
| BHL  | SZ | 14   | 360 | IPg   |   | 1022 | 18.66 | -1.1 | 62   |      |      |     |      |      | 1.0 |
| BHL  | SE | 14   | 360 | ISg   |   | 1022 | 22.40 | 0.2  |      |      |      |     |      |      | 1.0 |
| MATL | SZ | 44   | 223 | IPg   |   | 1022 | 24.54 | 0.8  |      |      |      |     |      |      | 1.0 |
| HWQ  | SZ | 61   | 26  | IPg   |   | 1022 | 24.96 | -1.4 |      |      |      |     |      |      | 1.0 |
| HWQ  | SE | 61   | 26  | ISg   |   | 1022 | 35.30 | 1.5  |      |      |      |     |      |      | 1.0 |



**July 12 2005 Hour: 14:46 1.1** **Agency: REL Local**  
 STAT CO DIST AZI PHASE P HRMN SECON TRES CODA AMPL PERI BAZ ARES VELO WT  
 BHL SZ IPg 1447 27.11  
 BHL SE ISg 1447 31.03  
 HWQ SZ IPg 1447 30.00  
 HWQ SE ISg 1447 34.54

**July 13 2005 Hour: 14:37 6.4 Lat: 34.08N Lon: 35.78E Depth: 29 Agency: REL Local**  
**Magnitudes: 2.7MC REL Rms: 0.2 secs**  
 STAT CO DIST AZI PHASE P HRMN SECON TRES CODA AMPL PERI BAZ ARES VELO WT  
 BHL SZ 23 210 IPg 1437 12.58 0.3 39 1.0  
 BHL SN 23 210 ISg 1437 16.44 -0.1 1.0  
 HWQ SZ 27 36 IPg 1437 12.58 -0.1 1.0  
 MATL SZ 78 212 IPg 1437 18.98 -0.1 1.0

**July 14 2005 Hour: 13:33 25.9 Lat: 33.67N Lon: 35.77E Depth: 23 Agency: REL Local**  
**Magnitudes: 2.6MC REL Rms: 0.6 secs**  
 STAT CO DIST AZI PHASE P HRMN SECON TRES CODA AMPL PERI BAZ ARES VELO WT  
 BHL SZ 28 337 IPg 1333 32.45 0.8 36 157 0 10.6 1.0  
 BHL SE 28 337 ISg 1333 35.54 -0.4 1.0  
 HWQ SZ 69 13 IPg 1333 36.45 -0.8 1.0  
 HWQ SE 69 13 ISg 1333 46.07 0.4 1.0

**July 15 2005 Hour: 12:47 6.2 Lat: 33.62N Lon: 35.86E Depth: 0 Agency: REL Local**  
**Magnitudes: 2.9MC REL Rms: 1.5 secs**  
 STAT CO DIST AZI PHASE P HRMN SECON TRES CODA AMPL PERI BAZ ARES VELO WT  
 BHL SZ 37 329 IPg 1247 9.57 -2.6 48 1.0  
 BHL SE 37 329 ISg 1247 17.00 0.4 1.0  
 MATL SZ 52 254 IPg 1247 15.73 1.2 1.0  
 HWQ SZ 74 6 IPg 1247 17.61 -0.4 1.0  
 HWQ SE 74 6 ISg 1247 28.22 1.4 1.0

**July 15 2005 Hour: 16:55 14.2 Lat: 34.10N Lon: 35.38E Depth: 15 Agency: REL Local**  
**Magnitudes: 2.8MC REL Rms: 1.2 secs**  
 STAT CO DIST AZI PHASE P HRMN SECON TRES CODA AMPL PERI BAZ ARES VELO WT  
 BHL SZ 33 132 IPg 1655 21.51 1.4 46 280 -31 27.7 1.0  
 BHL SE 33 132 ISg 1655 25.49 1.0 1.0  
 HWQ SZ 55 69 IPg 1655 22.24 -1.1 1.0  
 HWQ SE 55 69 ISg 1655 28.81 -1.3 1.0

**July 16 2005 Hour: 12:40 46.0 Lat: 33.66N Lon: 35.52E Depth: 13 Agency: REL Local**  
**Magnitudes: 2.7MC REL Rms: 0.2 secs**  
 STAT CO DIST AZI PHASE P HRMN SECON TRES CODA AMPL PERI BAZ ARES VELO WT  
 BHL SZ 30 24 IPg 1240 51.41 0.1 38 171 -32 9.9 1.0  
 BHL SE 30 24 ISg 1240 55.10 -0.2 1.0  
 HWQ SZ 79 30 IPg 1240 58.89 -0.1 1.0  
 HWQ SE 79 30 ISg 1241 8.84 0.3 1.0

**July 16 2005 Hour: 14:45 0.4 Agency: REL Local**  
 STAT CO DIST AZI PHASE P HRMN SECON TRES CODA AMPL PERI BAZ ARES VELO WT  
 HWQ SZ IPg 1445 38.26  
 HWQ SE ISg 1445 47.74  
 BHL SZ IPg 1445 45.82  
 BHL SE ISg 1446 0.97

**July 17 2005 Hour: 1:13 22.3 MYANMAR M=5.2 Agency: REL Distant**  
 STAT CO DIST AZI PHASE P HRMN SECON TRES CODA AMPL PERI BAZ ARES VELO WT  
 BHL BZ EP 113 54.16

**July 17 2005 Hour: 16:32 1.7** **Agency: REL Local**

|      |    |      |     |       |   |      |       |      |      |      |      |     |      |      |    |
|------|----|------|-----|-------|---|------|-------|------|------|------|------|-----|------|------|----|
| STAT | CO | DIST | AZI | PHASE | P | HRMN | SECON | TRES | CODA | AMPL | PERI | BAZ | ARES | VELO | WT |
| BHL  | SZ |      |     | IPg   |   | 1633 | 16.42 |      |      |      |      |     |      |      |    |
| BHL  | SN |      |     | ISg   |   | 1633 | 22.62 |      |      |      |      |     |      |      |    |
| HWQ  | SZ |      |     | IPg   |   | 1633 | 21.38 |      |      |      |      |     |      |      |    |
| HWQ  | SE |      |     | ISg   |   | 1633 | 31.05 |      |      |      |      |     |      |      |    |

**July 18 2005 Hour: 9:51 0.6** **DEAD SEA REGION M=3.7** **Agency: REL Regional**

|      |    |      |     |       |   |      |       |      |      |      |      |     |      |      |    |
|------|----|------|-----|-------|---|------|-------|------|------|------|------|-----|------|------|----|
| STAT | CO | DIST | AZI | PHASE | P | HRMN | SECON | TRES | CODA | AMPL | PERI | BAZ | ARES | VELO | WT |
| HWQ  | SZ |      |     | EPn   |   | 953  | 47.43 |      |      |      |      |     |      |      |    |
| HWQ  | SN |      |     | Sn    |   | 954  | 32.60 |      |      |      |      |     |      |      |    |
| BHL  | SZ |      |     | EPn   |   | 953  | 41.47 |      |      |      |      |     |      |      |    |
| BHL  | SN |      |     | Sn    |   | 954  | 17.35 |      |      |      |      |     |      |      |    |

**July 18 2005 Hour: 17:52 0.9** **Agency: REL Local**

|      |    |      |     |       |   |      |       |      |      |      |      |     |      |      |    |
|------|----|------|-----|-------|---|------|-------|------|------|------|------|-----|------|------|----|
| STAT | CO | DIST | AZI | PHASE | P | HRMN | SECON | TRES | CODA | AMPL | PERI | BAZ | ARES | VELO | WT |
| HWQ  | SZ |      |     | IPg   |   | 1752 | 56.70 |      |      |      |      |     |      |      |    |
| BHL  | SZ |      |     | IPg   |   | 1752 | 56.83 |      |      |      |      |     |      |      |    |
| HWQ  | SE |      |     | ISg   |   | 1753 | 4.93  |      |      |      |      |     |      |      |    |
| BHL  | SN |      |     | ISg   |   | 1753 | 4.97  |      |      |      |      |     |      |      |    |

**July 18 2005 Hour: 19:46 48.6** **MOLUCCA SEA M=5.8** **Agency: REL Distant**

|      |    |      |     |       |   |      |       |      |      |      |      |     |      |      |    |
|------|----|------|-----|-------|---|------|-------|------|------|------|------|-----|------|------|----|
| STAT | CO | DIST | AZI | PHASE | P | HRMN | SECON | TRES | CODA | AMPL | PERI | BAZ | ARES | VELO | WT |
| FKH  | SZ |      |     | EP    |   | 1950 | 14.86 |      |      |      |      |     |      |      |    |
| BHL  | BZ |      |     | EP    |   | 1950 | 17.02 |      |      |      |      |     |      |      |    |

**July 19 2005 Hour: 4:49 27.7** **Agency: REL Regional**

|      |    |      |     |       |   |      |       |      |      |      |      |     |      |      |    |
|------|----|------|-----|-------|---|------|-------|------|------|------|------|-----|------|------|----|
| STAT | CO | DIST | AZI | PHASE | P | HRMN | SECON | TRES | CODA | AMPL | PERI | BAZ | ARES | VELO | WT |
| FKH  | SZ |      |     | EPn   |   | 450  | 41.90 |      |      |      |      |     |      |      |    |
| FKH  | SN |      |     | Sn    |   | 451  | 7.68  |      |      |      |      |     |      |      |    |
| HWQ  | SZ |      |     | EPn   |   | 450  | 40.96 |      |      |      |      |     |      |      |    |
| HWQ  | SN |      |     | Sn    |   | 451  | 6.14  |      |      |      |      |     |      |      |    |

**July 19 2005 Hour: 9:50 1.0** **Agency: REL Local**

|      |    |      |     |       |   |      |       |      |      |      |      |     |      |      |    |
|------|----|------|-----|-------|---|------|-------|------|------|------|------|-----|------|------|----|
| STAT | CO | DIST | AZI | PHASE | P | HRMN | SECON | TRES | CODA | AMPL | PERI | BAZ | ARES | VELO | WT |
| HWQ  | SZ |      |     | IPg   |   | 951  | 41.43 |      |      |      |      |     |      |      |    |
| HWQ  | SE |      |     | ISg   |   | 951  | 56.15 |      |      |      |      |     |      |      |    |
| BHL  | SN |      |     | ISg   |   | 952  | 10.66 |      |      |      |      |     |      |      |    |

**July 19 2005 Hour: 14:39 0.7** **Agency: REL Local**

|      |    |      |     |       |   |      |       |      |      |      |      |     |      |      |    |
|------|----|------|-----|-------|---|------|-------|------|------|------|------|-----|------|------|----|
| STAT | CO | DIST | AZI | PHASE | P | HRMN | SECON | TRES | CODA | AMPL | PERI | BAZ | ARES | VELO | WT |
| HWQ  | SZ |      |     | IPg   |   | 1439 | 51.74 |      |      |      |      |     |      |      |    |
| HWQ  | SE |      |     | ISg   |   | 1439 | 58.66 |      |      |      |      |     |      |      |    |
| BHL  | SN |      |     | ISg   |   | 1439 | 54.96 |      |      |      |      |     |      |      |    |

**July 19 2005 Hour: 22: 6 20.2** **KERMADEC ISLANDS M=5.2** **Agency: REL Distant**

|      |    |      |     |       |   |      |       |      |      |      |      |     |      |      |    |
|------|----|------|-----|-------|---|------|-------|------|------|------|------|-----|------|------|----|
| STAT | CO | DIST | AZI | PHASE | P | HRMN | SECON | TRES | CODA | AMPL | PERI | BAZ | ARES | VELO | WT |
| BHL  | BZ |      |     | EP    |   | 22 7 | 15.76 |      |      |      |      |     |      |      |    |

**July 20 2005 Hour: 12:52 1.5** **Agency: REL Local**

|      |    |      |     |       |   |      |       |      |      |      |      |     |      |      |    |
|------|----|------|-----|-------|---|------|-------|------|------|------|------|-----|------|------|----|
| STAT | CO | DIST | AZI | PHASE | P | HRMN | SECON | TRES | CODA | AMPL | PERI | BAZ | ARES | VELO | WT |
| HWQ  | SZ |      |     | IPg   |   | 1253 | 26.36 |      |      |      |      |     |      |      |    |
| HWQ  | SN |      |     | ISg   |   | 1253 | 32.78 |      |      |      |      |     |      |      |    |
| BHL  | SE |      |     | ISg   |   | 1253 | 31.16 |      |      |      |      |     |      |      |    |

**July 20 2005 Hour: 16:34 10.5** **Lat: 34.15N Lon: 35.44E Depth: 15** **Agency: REL Local**  
**Magnitudes: 2.8MC REL Rms: 0.6 secs**

|      |    |      |     |       |   |      |       |      |      |      |      |     |      |      |     |
|------|----|------|-----|-------|---|------|-------|------|------|------|------|-----|------|------|-----|
| STAT | CO | DIST | AZI | PHASE | P | HRMN | SECON | TRES | CODA | AMPL | PERI | BAZ | ARES | VELO | WT  |
| BHL  | SZ | 34   | 145 | IPg   |   | 1634 | 17.34 | 0.8  | 47   |      |      | 303 | -21  | 23.3 | 1.0 |
| BHL  | SE | 34   | 145 | ISg   |   | 1634 | 21.37 | 0.4  |      |      |      |     |      |      | 1.0 |
| HWQ  | SZ | 48   | 73  | IPg   |   | 1634 | 18.17 | -0.5 |      |      |      |     |      |      | 1.0 |
| HWQ  | SN | 48   | 73  | ISg   |   | 1634 | 23.90 | -0.7 |      |      |      |     |      |      | 1.0 |

**July 20 2005 Hour: 16:41 0.7** **Agency: REL Local**  
 STAT CO DIST AZI PHASE P HRMN SECON TRES CODA AMPL PERI BAZ ARES VELO WT  
 HWQ SZ IPg 1641 37.17  
 HWQ SN ISg 1641 51.53  
 BHL SZ IPg 1641 38.73  
 BHL SE ISg 1641 54.25

**July 20 2005 Hour: 22: 3 1.4** **MONGOLIA M=5.5** **Agency: REL Distant**  
 STAT CO DIST AZI PHASE P HRMN SECON TRES CODA AMPL PERI BAZ ARES VELO WT  
 BHL BZ EP 22 3 48.61

**July 21 2005 Hour: 10:13 45.1 Lat: 33.49N Lon: 36.51E Depth: 15 Agency: REL Local**  
**Magnitudes: 2.8MC REL Rms: 0.2 secs**  
 STAT CO DIST AZI PHASE P HRMN SECON TRES CODA AMPL PERI BAZ ARES VELO WT  
 BHL SZ 92 300 IPg 1013 59.34 -0.3 39 179 60 16.6 1.0  
 BHL SN 92 300 ISg 1014 10.58 0.2 1.0  
 HWQ SZ 102 329 IPg 1014 1.26 0.2 1.0  
 HWQ SN 102 329 ISg 1014 12.78 -0.1 1.0

**July 21 2005 Hour: 14:52 0.7 Lat: 34.00N Lon: 35.59E Depth: 55 Agency: REL Local**  
**Magnitudes: 2.9MC REL Rms: 0.3 secs**  
 STAT CO DIST AZI PHASE P HRMN SECON TRES CODA AMPL PERI BAZ ARES VELO WT  
 BHL SZ 12 150 IPg 1452 8.55 -0.3 49 330 0 11.4 1.0  
 BHL SE 12 150 ISg 1452 15.15 0.2 1.0  
 HWQ SZ 45 47 IPg 1452 11.28 0.3 1.0  
 HWQ SE 45 47 ISg 1452 18.32 -0.2 1.0

**July 22 2005 Hour: 18:41 22.4 Lat: 34.03N Lon: 35.97E Depth: 30 Agency: REL Local**  
**Magnitudes: 2.8MC REL Rms: 0.0 secs**  
 STAT CO DIST AZI PHASE P HRMN SECON TRES CODA AMPL PERI BAZ ARES VELO WT  
 HWQ SZ 28 355 IPg 1841 28.90 0.1 43 1.0  
 HWQ SE 28 355 ISg 1841 33.58 0.0 1.0  
 BHL SZ 33 245 IPg 1841 29.30 -0.1 1.0  
 BHL SN 33 245 ISg 1841 34.54 0.0 1.0  
 MATL SZ 85 225 IPg 1841 36.11 0.0 1.0

**July 23 2005 Hour: 6:28 21.6 Lat: 34.26N Lon: 35.54E Depth: 14 Agency: REL Local**  
**Magnitudes: 2.8MC REL Rms: 0.0 secs**  
 STAT CO DIST AZI PHASE P HRMN SECON TRES CODA AMPL PERI BAZ ARES VELO WT  
 HWQ SZ 37 87 IPg 628 28.16 0.0 46 267 0 27.9 1.0  
 HWQ SE 37 87 ISg 628 32.88 0.0 1.0  
 BHL SZ 41 166 IPg 628 28.60 0.0 1.0  
 BHL SE 41 166 ISg 628 33.85 0.0 1.0

**July 23 2005 Hour: 7:38 3.0 HONSHU M=6.1** **Agency: REL Distant**  
 STAT CO DIST AZI PHASE P HRMN SECON TRES CODA AMPL PERI BAZ ARES VELO WT  
 BHL BZ EP 747 6.69

**July 23 2005 Hour: 9: 5 13.0** **Agency: REL Distant**  
 STAT CO DIST AZI PHASE P HRMN SECON TRES CODA AMPL PERI BAZ ARES VELO WT  
 BHL BZ EP 911 38.20

**July 23 2005 Hour: 10: 7 1.1** **Agency: REL Local**  
 STAT CO DIST AZI PHASE P HRMN SECON TRES CODA AMPL PERI BAZ ARES VELO WT  
 BHL SZ IPg 10 7 31.51  
 BHL SE ISg 10 7 43.21  
 HWQ SZ IPg 10 7 33.74  
 HWQ SN ISg 10 7 44.92

**July 23 2005 Hour: 13:29 14.2 Lat: 34.69N Lon: 36.58E Depth: 14 Agency: REL Local**  
**Magnitudes: 3.2MC REL Rms: 0.1 secs**

| STAT | CO | DIST | AZI | PHASE | P | HRMN | SECON | TRES | CODA | AMPL | PERI | BAZ | ARES | VELO | WT  |
|------|----|------|-----|-------|---|------|-------|------|------|------|------|-----|------|------|-----|
| HWQ  | SZ | 74   | 232 | IPg   |   | 1329 | 26.51 | 0.2  | 76   |      |      | 52  | 0    | 21.3 | 1.0 |
| HWQ  | SN | 74   | 232 | ISg   |   | 1329 | 35.20 | -0.1 |      |      |      |     |      |      | 1.0 |
| BHL  | SZ | 121  | 225 | IPg   |   | 1329 | 33.79 | -0.2 |      |      |      |     |      |      | 1.0 |
| BHL  | SE | 121  | 225 | ISg   |   | 1329 | 48.66 | 0.1  |      |      |      |     |      |      | 1.0 |

**July 23 2005 Hour: 23: 1 21.3 Agency: REL Distant**

| STAT | CO | DIST | AZI | PHASE | P | HRMN | SECON | TRES | CODA | AMPL | PERI | BAZ | ARES | VELO | WT |
|------|----|------|-----|-------|---|------|-------|------|------|------|------|-----|------|------|----|
| BHL  | BZ |      |     | EP    |   | 23 3 | 50.14 |      |      |      |      |     |      |      |    |

**July 24 2005 Hour: 10:38 0.5 Agency: REL Local**

| STAT | CO | DIST | AZI | PHASE | P | HRMN | SECON | TRES | CODA | AMPL | PERI | BAZ | ARES | VELO | WT |
|------|----|------|-----|-------|---|------|-------|------|------|------|------|-----|------|------|----|
| HWQ  | SZ |      |     | IPg   |   | 1038 | 28.93 |      |      |      |      |     |      |      |    |
| BHL  | SZ |      |     | IPg   |   | 1038 | 27.37 |      |      |      |      |     |      |      |    |
| BHL  | SN |      |     | ISg   |   | 1038 | 39.22 |      |      |      |      |     |      |      |    |
| HWQ  | SE |      |     | ISg   |   | 1038 | 41.72 |      |      |      |      |     |      |      |    |

**July 24 2005 Hour: 11:36 10.6 Lat: 37.25N Lon: 35.95E Depth: 0 Agency: REL Regional**  
**Magnitudes: 4.2MC REL Rms: 2.8 secs**

| STAT | CO | DIST | AZI | PHASE | P | HRMN | SECON | TRES | CODA | AMPL | PERI | BAZ | ARES | VELO | WT  |
|------|----|------|-----|-------|---|------|-------|------|------|------|------|-----|------|------|-----|
| GAZ  | SZ | 112  | 94  | EPG   |   | 1136 | 28.60 | 0.0  |      |      |      |     |      |      | 1.0 |
| HTY  | SZ | 126  | 172 | EPG   |   | 1136 | 27.52 | -3.4 |      |      |      |     |      |      | 1.0 |
| NIG  | SZ | 152  | 309 | EPN   |   | 1136 | 38.11 | 2.4  |      |      |      |     |      |      | 1.0 |
| IKL  | SZ | 231  | 242 | EPN   |   | 1136 | 43.92 | -1.4 |      |      |      |     |      |      | 1.0 |
| MYA  | SZ | 249  | 60  | EPN   |   | 1136 | 48.68 | 1.1  |      |      |      |     |      |      | 1.0 |
| HWQ  | SZ | 330  | 180 | EPn   |   | 1136 | 55.32 | -2.3 | 213  |      |      |     |      |      | 1.0 |
| HWQ  | SE | 330  | 180 | Sn    |   | 1137 | 34.61 | 2.1  |      |      |      |     |      |      | 1.0 |
| LEF  | SZ | 363  | 230 | EPN   |   | 1136 | 59.12 | -2.5 |      |      |      |     |      |      | 1.0 |
| BHL  | SZ | 372  | 184 | EPn   |   | 1137 | 2.79  | -0.1 |      |      |      |     |      |      | 1.0 |
| BHL  | SN | 372  | 184 | Sn    |   | 1137 | 48.12 | 6.5  |      |      |      |     |      |      | 1.0 |
| MATL | SZ | 421  | 188 | EPn   |   | 1137 | 5.16  | -3.7 |      |      |      |     |      |      | 1.0 |
| ISP  | SZ | 484  | 279 | EPN   |   | 1137 | 18.18 | 1.4  |      |      |      |     |      |      | 1.0 |

**July 24 2005 Hour: 12:46 0.3 Agency: REL Regional**

| STAT | CO | DIST | AZI | PHASE | P | HRMN | SECON | TRES | CODA | AMPL | PERI | BAZ | ARES | VELO | WT |
|------|----|------|-----|-------|---|------|-------|------|------|------|------|-----|------|------|----|
| BHL  | SN |      |     | Sn    |   | 1247 | 14.93 |      |      |      |      |     |      |      |    |
| HWQ  | SN |      |     | Sn    |   | 1247 | 29.03 |      |      |      |      |     |      |      |    |

**July 24 2005 Hour: 12:50 12.7 Lat: 34.68N Lon: 36.54E Depth: 0 Agency: REL Local**  
**Magnitudes: 3.0MC REL Rms: 1.0 secs**

| STAT | CO | DIST | AZI | PHASE | P | HRMN | SECON | TRES | CODA | AMPL | PERI | BAZ | ARES | VELO | WT  |
|------|----|------|-----|-------|---|------|-------|------|------|------|------|-----|------|------|-----|
| HWQ  | SZ | 70   | 231 | IPg   |   | 1250 | 24.00 | 0.0  | 56   |      |      | 52  | 2    | 11.9 | 1.0 |
| HWQ  | SN | 70   | 231 | ISg   |   | 1250 | 31.00 | -1.4 |      |      |      |     |      |      | 1.0 |
| BHL  | SZ | 118  | 224 | IPg   |   | 1250 | 31.78 | 0.0  |      |      |      |     |      |      | 1.0 |
| BHL  | SE | 118  | 224 | ISg   |   | 1250 | 47.28 | 1.4  |      |      |      |     |      |      | 1.0 |

**July 24 2005 Hour: 13: 5 0.3 Agency: REL Regional**

| STAT | CO | DIST | AZI | PHASE | P | HRMN | SECON | TRES | CODA | AMPL | PERI | BAZ | ARES | VELO | WT |
|------|----|------|-----|-------|---|------|-------|------|------|------|------|-----|------|------|----|
| HWQ  | SZ |      |     | EPn   |   | 13 5 | 25.17 |      |      |      |      |     |      |      |    |
| BHL  | SZ |      |     | EPn   |   | 13 5 | 19.29 |      |      |      |      |     |      |      |    |
| BHL  | SN |      |     | Sn    |   | 13 5 | 39.88 |      |      |      |      |     |      |      |    |
| HWQ  | SE |      |     | Sn    |   | 13 5 | 50.20 |      |      |      |      |     |      |      |    |

**July 24 2005 Hour: 13:25 1.6 Agency: REL Regional**

| STAT | CO | DIST | AZI | PHASE | P | HRMN | SECON | TRES | CODA | AMPL | PERI | BAZ | ARES | VELO | WT |
|------|----|------|-----|-------|---|------|-------|------|------|------|------|-----|------|------|----|
| HWQ  | SZ |      |     | EPn   |   | 1326 | 16.81 |      |      |      |      |     |      |      |    |
| BHL  | SZ |      |     | EPn   |   | 1326 | 20.85 |      |      |      |      |     |      |      |    |
| HWQ  | SE |      |     | Sn    |   | 1326 | 53.38 |      |      |      |      |     |      |      |    |
| BHL  | SE |      |     | Sn    |   | 1327 | 3.89  |      |      |      |      |     |      |      |    |

**July 24 2005 Hour: 14:54 0.2** **Agency: REL Regional**

| STAT | CO | DIST | AZI | PHASE | P | HRMN | SECON | TRES | CODA | AMPL | PERI | BAZ | ARES | VELO | WT |
|------|----|------|-----|-------|---|------|-------|------|------|------|------|-----|------|------|----|
| HWQ  | SZ |      |     | EPn   |   | 1454 | 55.50 |      |      |      |      |     |      |      |    |
| HWQ  | SN |      |     | Sn    |   | 1455 | 22.21 |      |      |      |      |     |      |      |    |
| BHL  | SZ |      |     | EPn   |   | 1455 | 3.87  |      |      |      |      |     |      |      |    |
| BHL  | SN |      |     | Sn    |   | 1455 | 32.60 |      |      |      |      |     |      |      |    |

**July 24 2005 Hour: 15:25 36.8** **NICOBAR ISLANDS M=7.2** **Agency: REL Distant**

| STAT | CO | DIST | AZI | PHASE | P | HRMN | SECON | TRES | CODA | AMPL | PERI | BAZ | ARES | VELO | WT |
|------|----|------|-----|-------|---|------|-------|------|------|------|------|-----|------|------|----|
| BHL  | BZ |      |     | EP    |   | 1551 | 59.90 |      |      |      |      |     |      |      |    |

**July 24 2005 Hour: 15:31 10.3** **Lat: 34.45N Lon: 35.94E Depth:124** **Agency: REL Local**  
**Magnitudes: 3.3MC REL** **Rms: 0.2 secs**

| STAT | CO | DIST | AZI | PHASE | P | HRMN | SECON | TRES | CODA | AMPL | PERI | BAZ | ARES | VELO | WT  |
|------|----|------|-----|-------|---|------|-------|------|------|------|------|-----|------|------|-----|
| HWQ  | SZ | 19   | 177 | IPg   |   | 1531 | 26.84 | 0.2  | 79   |      |      |     |      |      | 1.0 |
| HWQ  | SN | 19   | 177 | ISg   |   | 1531 | 38.65 | -0.2 |      |      |      |     |      |      | 1.0 |
| BHL  | SZ | 66   | 203 | IPg   |   | 1531 | 28.65 | 0.1  |      |      |      |     |      |      | 1.0 |
| BHL  | SN | 66   | 203 | ISg   |   | 1531 | 42.24 | 0.2  |      |      |      |     |      |      | 1.0 |
| MATL | SZ | 121  | 208 | IPg   |   | 1531 | 32.27 | -0.2 |      |      |      |     |      |      | 1.0 |

**July 24 2005 Hour: 17:58 0.1** **Lat: 34.46N Lon: 35.40E Depth: 15** **Agency: REL Local**  
**Magnitudes: 2.8MC REL** **Rms: 0.2 secs**

| STAT | CO | DIST | AZI | PHASE | P | HRMN | SECON | TRES | CODA | AMPL | PERI | BAZ | ARES | VELO | WT  |
|------|----|------|-----|-------|---|------|-------|------|------|------|------|-----|------|------|-----|
| HWQ  | SZ | 54   | 111 | IPg   |   | 1758 | 8.97  | -0.2 | 43   |      |      | 97  | 166  | 28.1 | 1.0 |
| HWQ  | SE | 54   | 111 | ISg   |   | 1758 | 15.89 | 0.1  |      |      |      |     |      |      | 1.0 |
| BHL  | SZ | 66   | 159 | IPg   |   | 1758 | 11.10 | 0.3  |      |      |      |     |      |      | 1.0 |
| BHL  | SN | 66   | 159 | ISg   |   | 1758 | 18.36 | -0.3 |      |      |      |     |      |      | 1.0 |

**July 25 2005 Hour: 4:47 6.9** **Lat: 35.78N Lon: 36.50E Depth: 0** **Agency: REL Regional**  
**Magnitudes: 3.6MC REL** **Rms: 2.9 secs**

| STAT | CO | DIST | AZI | PHASE | P | HRMN | SECON | TRES | CODA | AMPL | PERI | BAZ | ARES | VELO | WT  |
|------|----|------|-----|-------|---|------|-------|------|------|------|------|-----|------|------|-----|
| HTY  | SZ | 50   | 319 | EPg   |   | 447  | 16.40 | 1.5  |      |      |      |     |      |      | 1.0 |
| GAZ  | SZ | 166  | 22  | EPn   |   | 447  | 34.60 | 0.9  |      |      |      |     |      |      | 1.0 |
| FKH  | SZ | 172  | 183 | EPn   |   | 447  | 32.73 | -1.7 |      |      |      |     |      |      | 1.0 |
| FKH  | SE | 172  | 183 | Sn    |   | 447  | 52.69 | -2.1 |      |      |      |     |      |      | 1.0 |
| HWQ  | SZ | 175  | 197 | EPn   |   | 447  | 33.09 | -1.7 | 122  |      |      |     |      |      | 1.0 |
| HWQ  | SE | 175  | 197 | Sn    |   | 447  | 53.55 | -1.8 |      |      |      |     |      |      | 1.0 |
| BHL  | SZ | 223  | 201 | EPn   |   | 447  | 39.66 | -1.0 |      |      |      |     |      |      | 1.0 |
| BHL  | SN | 223  | 201 | Sn    |   | 448  | 5.64  | 0.0  |      |      |      |     |      |      | 1.0 |
| IKL  | SZ | 259  | 282 | EPn   |   | 447  | 41.80 | -3.3 |      |      |      |     |      |      | 1.0 |
| MATL | SZ | 277  | 203 | Sn    |   | 448  | 25.46 | 8.3  |      |      |      |     |      |      | 1.0 |
| NIG  | SZ | 308  | 327 | EPn   |   | 447  | 50.60 | -0.8 |      |      |      |     |      |      | 1.0 |
| MYA  | SZ | 330  | 31  | EPn   |   | 447  | 55.70 | 1.7  |      |      |      |     |      |      | 1.0 |

**July 25 2005 Hour: 8:27 0.3** **Agency: REL Local**

| STAT | CO | DIST | AZI | PHASE | P | HRMN | SECON | TRES | CODA | AMPL | PERI | BAZ | ARES | VELO | WT |
|------|----|------|-----|-------|---|------|-------|------|------|------|------|-----|------|------|----|
| HWQ  | SZ |      |     | IPg   |   | 827  | 59.02 |      |      |      |      |     |      |      |    |
| HWQ  | SE |      |     | ISg   |   | 828  | 10.06 |      |      |      |      |     |      |      |    |
| BHL  | SN |      |     | ISg   |   | 828  | 8.78  |      |      |      |      |     |      |      |    |

**July 25 2005 Hour: 17:33 1.6** **Agency: REL Regional**

| STAT | CO | DIST | AZI | PHASE | P | HRMN | SECON | TRES | CODA | AMPL | PERI | BAZ | ARES | VELO | WT |
|------|----|------|-----|-------|---|------|-------|------|------|------|------|-----|------|------|----|
| HWQ  | SZ |      |     | EPn   |   | 1734 | 7.20  |      |      |      |      |     |      |      |    |
| BHL  | SZ |      |     | EPn   |   | 1734 | 14.79 |      |      |      |      |     |      |      |    |
| HWQ  | SN |      |     | Sn    |   | 1734 | 43.90 |      |      |      |      |     |      |      |    |
| BHL  | SE |      |     | Sn    |   | 1734 | 54.31 |      |      |      |      |     |      |      |    |

**July 26 2005 Hour: 4:48 49.1 Lat: 33.93N Lon: 35.64E Depth: 62 Agency: REL Local**  
**Magnitudes: 2.9MC REL Rms: 1.8 secs**

| STAT | CO | DIST | AZI | PHASE | P | HRMN | SECON | TRES | CODA | AMPL | PERI | BAZ | ARES | VELO | WT  |
|------|----|------|-----|-------|---|------|-------|------|------|------|------|-----|------|------|-----|
| BHL  | SZ | 3    | 152 | IPg   |   | 449  | 0.68  | 2.7  | 49   |      |      | 332 | 0    | 11.7 | 1.0 |
| BHL  | SE | 3    | 152 | ISg   |   | 449  | 4.69  | 0.2  |      |      |      |     |      |      | 1.0 |
| HWQ  | SZ | 48   | 36  | IPg   |   | 449  | 1.37  | 1.2  |      |      |      |     |      |      | 1.0 |
| HWQ  | SE | 48   | 36  | ISg   |   | 449  | 6.43  | -1.9 |      |      |      |     |      |      | 1.0 |
| MATL | SZ | 57   | 210 | IPg   |   | 448  | 58.70 | -2.1 |      |      |      |     |      |      | 1.0 |

**July 26 2005 Hour: 5:26 30.2 Agency: REL Local**

| STAT | CO | DIST | AZI | PHASE | P | HRMN | SECON | TRES | CODA | AMPL | PERI | BAZ | ARES | VELO | WT |
|------|----|------|-----|-------|---|------|-------|------|------|------|------|-----|------|------|----|
| FKH  | SZ |      |     | IPg   |   | 526  | 50.01 |      |      |      |      |     |      |      |    |
| FKH  | SN |      |     | ISg   |   | 526  | 58.50 |      |      |      |      |     |      |      |    |

**July 26 2005 Hour: 8:10 54.6 Lat: 33.29N Lon: 35.17E Depth: 0 Agency: REL Local**  
**Magnitudes: 3.1MC REL Rms: 1.1 secs**

| STAT | CO | DIST | AZI | PHASE | P | HRMN | SECON | TRES | CODA | AMPL | PERI | BAZ | ARES | VELO | WT  |
|------|----|------|-----|-------|---|------|-------|------|------|------|------|-----|------|------|-----|
| MATL | SZ | 26   | 34  | IPg   |   | 810  | 57.57 | -1.2 |      |      |      |     |      |      | 1.0 |
| BHL  | SZ | 81   | 33  | IPg   |   | 811  | 9.16  | 1.5  |      |      |      |     |      |      | 1.0 |
| BHL  | SN | 81   | 33  | ISg   |   | 811  | 18.49 | 1.1  |      |      |      |     |      |      | 1.0 |
| HWQ  | SZ | 131  | 33  | IPg   |   | 811  | 15.39 | -0.3 | 57   |      |      |     |      |      | 1.0 |
| HWQ  | SE | 131  | 33  | ISg   |   | 811  | 30.11 | -1.1 |      |      |      |     |      |      | 1.0 |

**July 26 2005 Hour: 10:53 0.2 Agency: REL Local**

| STAT | CO | DIST | AZI | PHASE | P | HRMN | SECON | TRES | CODA | AMPL | PERI | BAZ | ARES | VELO | WT |
|------|----|------|-----|-------|---|------|-------|------|------|------|------|-----|------|------|----|
| HWQ  | SZ |      |     | IPg   |   | 1054 | 31.75 |      |      |      |      |     |      |      |    |
| HWQ  | SN |      |     | ISg   |   | 1054 | 41.83 |      |      |      |      |     |      |      |    |
| BHL  | SN |      |     | ISg   |   | 1054 | 39.15 |      |      |      |      |     |      |      |    |

**July 26 2005 Hour: 12:19 56.4 KAMCHATKA M=5.5 Agency: REL Distant**

| STAT | CO | DIST | AZI | PHASE | P | HRMN | SECON | TRES | CODA | AMPL | PERI | BAZ | ARES | VELO | WT |
|------|----|------|-----|-------|---|------|-------|------|------|------|------|-----|------|------|----|
| BHL  | BZ |      |     | EP    |   | 1229 | 25.67 |      |      |      |      |     |      |      |    |

**July 26 2005 Hour: 17:11 10.4 Lat: 34.68N Lon: 36.39E Depth: 0 Agency: REL Local**  
**Magnitudes: 3.2MC REL Rms: 0.8 secs**

| STAT | CO | DIST | AZI | PHASE | P | HRMN | SECON | TRES | CODA | AMPL | PERI | BAZ | ARES | VELO | WT  |
|------|----|------|-----|-------|---|------|-------|------|------|------|------|-----|------|------|-----|
| HWQ  | SZ | 61   | 222 | IPg   |   | 1711 | 20.37 | 0.2  | 76   |      |      | 52  | 9    | 19.1 | 1.0 |
| HWQ  | SN | 61   | 222 | ISg   |   | 1711 | 26.00 | -1.4 |      |      |      |     |      |      | 1.0 |
| BHL  | SZ | 110  | 218 | IPg   |   | 1711 | 28.50 | 0.4  |      |      |      |     |      |      | 1.0 |
| BHL  | SE | 110  | 218 | ISg   |   | 1711 | 41.96 | 0.8  |      |      |      |     |      |      | 1.0 |

**July 26 2005 Hour: 17:31 23.0 Lat: 34.62N Lon: 36.48E Depth: 0 Agency: REL Local**  
**Magnitudes: 3.1MC REL Rms: 1.0 secs**

| STAT | CO | DIST | AZI | PHASE | P | HRMN | SECON | TRES | CODA | AMPL | PERI | BAZ | ARES | VELO | WT  |
|------|----|------|-----|-------|---|------|-------|------|------|------|------|-----|------|------|-----|
| FKH  | SZ | 43   | 190 | IPg   |   | 1731 | 29.97 | 0.1  |      |      |      |     |      |      | 1.0 |
| FKH  | SN | 43   | 190 | ISg   |   | 1731 | 35.44 | 0.4  |      |      |      |     |      |      | 1.0 |
| HWQ  | SZ | 62   | 233 | IPg   |   | 1731 | 32.17 | -0.8 | 65   |      |      | 57  | 4    | 16.7 | 1.0 |
| HWQ  | SN | 62   | 233 | ISg   |   | 1731 | 38.86 | -1.5 |      |      |      |     |      |      | 1.0 |
| BHL  | SZ | 110  | 224 | IPg   |   | 1731 | 41.15 | 0.4  |      |      |      |     |      |      | 1.0 |
| BHL  | SN | 110  | 224 | ISg   |   | 1731 | 55.27 | 1.4  |      |      |      |     |      |      | 1.0 |

**July 27 2005 Hour: 9:13 37.3 Lat: 33.90N Lon: 35.99E Depth: 15 Agency: REL Local**  
**Magnitudes: 2.7MC REL Rms: 0.3 secs**

| STAT | CO | DIST | AZI | PHASE | P | HRMN | SECON | TRES | CODA | AMPL | PERI | BAZ | ARES | VELO | WT  |
|------|----|------|-----|-------|---|------|-------|------|------|------|------|-----|------|------|-----|
| BHL  | BZ | 32   | 272 | IPg   |   | 913  | 43.22 | 0.2  | 37   |      |      | 154 | 62   | 19.0 | 1.0 |
| BHL  | BN | 32   | 272 | ISg   |   | 913  | 47.02 | -0.2 |      |      |      |     |      |      | 1.0 |
| HWQ  | SZ | 43   | 354 | IPg   |   | 913  | 44.91 | 0.3  |      |      |      |     |      |      | 1.0 |
| HWQ  | SN | 43   | 354 | ISg   |   | 913  | 49.67 | -0.4 |      |      |      |     |      |      | 1.0 |

**July 27 2005 Hour: 13:53 32.0 Lat: 33.69N Lon: 35.69E Depth: 15 Agency: REL Local**  
**Magnitudes: 3.1MC REL Rms: 1.4 secs**

| STAT | CO | DIST | AZI | PHASE | P | HRMN | SECON | TRES | CODA | AMPL | PERI | BAZ | ARES | VELO | WT  |
|------|----|------|-----|-------|---|------|-------|------|------|------|------|-----|------|------|-----|
| BHL  | SZ | 24   | 353 | IPG   |   | 1353 | 35.42 | -1.1 | 69   |      |      | 227 | 54   | 18.5 | 1.0 |
| BHL  | SN | 24   | 353 | ISG   |   | 1353 | 39.54 | -0.4 |      |      |      |     |      |      | 1.0 |
| MATL | SZ | 40   | 236 | IPG   |   | 1353 | 41.38 | 2.6  |      |      |      |     |      |      | 1.0 |
| HWQ  | SZ | 69   | 20  | IPG   |   | 1353 | 41.82 | -1.3 |      |      |      | 96  | -99  | 26.8 | 1.0 |
| HWQ  | SE | 69   | 20  | ISG   |   | 1353 | 51.71 | 0.3  |      |      |      |     |      |      | 1.0 |

**July 27 2005 Hour: 14:37 55.6 Lat: 34.90N Lon: 36.43E Depth: 14 Agency: REL Local**  
**Magnitudes: 3.3MC REL Rms: 0.1 secs**

| STAT | CO | DIST | AZI | PHASE | P | HRMN | SECON | TRES | CODA | AMPL | PERI | BAZ | ARES | VELO | WT  |
|------|----|------|-----|-------|---|------|-------|------|------|------|------|-----|------|------|-----|
| HWQ  | SZ | 82   | 213 | IPg   |   | 1438 | 8.64  | 0.0  | 86   |      |      | 33  | 0    | 32.7 | 1.0 |
| HWQ  | SN | 82   | 213 | ISg   |   | 1438 | 18.06 | -0.2 |      |      |      |     |      |      | 1.0 |
| BHL  | SZ | 131  | 213 | IPg   |   | 1438 | 15.82 | 0.0  |      |      |      |     |      |      | 1.0 |
| BHL  | SN | 131  | 213 | ISg   |   | 1438 | 31.08 | 0.2  |      |      |      |     |      |      | 1.0 |

**July 27 2005 Hour: 22:16 1.0 Lat: 34.35N Lon: 36.54E Depth: 0 Agency: REL Local**  
**Magnitudes: 3.0MC REL Rms: 0.2 secs**

| STAT | CO | DIST | AZI | PHASE | P | HRMN | SECON | TRES | CODA | AMPL | PERI | BAZ | ARES | VELO | WT  |
|------|----|------|-----|-------|---|------|-------|------|------|------|------|-----|------|------|-----|
| FKH  | SZ | 18   | 224 | IPg   |   | 2216 | 3.98  | 0.1  | 63   |      |      |     |      |      | 1.0 |
| FKH  | SE | 18   | 224 | ISg   |   | 2216 | 5.79  | -0.2 |      |      |      |     |      |      | 1.0 |
| HWQ  | SZ | 55   | 262 | IPg   |   | 2216 | 9.51  | -0.3 |      |      |      | 81  | 0    | 16.1 | 1.0 |
| HWQ  | SE | 55   | 262 | ISg   |   | 2216 | 16.54 | 0.1  |      |      |      |     |      |      | 1.0 |
| BHL  | SZ | 95   | 239 | IPg   |   | 2216 | 16.63 | 0.3  |      |      |      |     |      |      | 1.0 |
| BHL  | SE | 95   | 239 | ISg   |   | 2216 | 27.81 | 0.1  |      |      |      |     |      |      | 1.0 |

**July 28 2005 Hour: 1: 2 21.7 Lat: 33.91N Lon: 35.99E Depth: 15 Agency: REL Local**  
**Magnitudes: 2.5MC REL Rms: 0.5 secs**

| STAT | CO | DIST | AZI | PHASE | P | HRMN | SECON | TRES | CODA | AMPL | PERI | BAZ | ARES | VELO | WT  |
|------|----|------|-----|-------|---|------|-------|------|------|------|------|-----|------|------|-----|
| BHL  | SZ | 31   | 269 | IPG   |   | 1 2  | 27.02 | -0.3 | 31   |      |      | 41  | -46  | 98.0 | 1.0 |
| BHL  | SN | 31   | 269 | ISG   |   | 1 2  | 30.68 | -0.7 |      |      |      |     |      |      | 1.0 |
| HWQ  | SZ | 41   | 355 | IPG   |   | 1 2  | 29.39 | 0.6  |      |      |      |     |      |      | 1.0 |
| HWQ  | SE | 41   | 355 | ISG   |   | 1 2  | 34.29 | 0.3  |      |      |      |     |      |      | 1.0 |

**July 28 2005 Hour: 9:12 50.4 Lat: 33.33N Lon: 35.65E Depth: 0 Agency: REL Local**  
**Magnitudes: 3.2MC REL Rms: 1.5 secs**

| STAT | CO | DIST | AZI | PHASE | P | HRMN | SECON | TRES | CODA | AMPL | PERI | BAZ | ARES | VELO | WT  |
|------|----|------|-----|-------|---|------|-------|------|------|------|------|-----|------|------|-----|
| MATL | SZ | 35   | 300 | IPG   |   | 912  | 56.99 | 1.0  |      |      |      |     |      |      | 1.0 |
| BHL  | SZ | 64   | 0   | IPG   |   | 912  | 59.18 | -1.4 |      |      |      |     |      |      | 1.0 |
| BHL  | SE | 64   | 0   | ISG   |   | 913  | 6.73  | -1.5 |      |      |      |     |      |      | 1.0 |
| HWQ  | SZ | 108  | 14  | IPG   |   | 913  | 7.45  | -0.4 | 76   |      |      |     |      |      | 1.0 |
| HWQ  | SE | 108  | 14  | ISG   |   | 913  | 23.13 | 2.3  |      |      |      |     |      |      | 1.0 |

**July 28 2005 Hour: 9:34 28.4 Lat: 33.80N Lon: 36.29E Depth: 0 Agency: REL Local**  
**Magnitudes: 2.8MC REL Rms: 0.9 secs**

| STAT | CO | DIST | AZI | PHASE | P | HRMN | SECON | TRES | CODA | AMPL | PERI | BAZ | ARES | VELO | WT  |
|------|----|------|-----|-------|---|------|-------|------|------|------|------|-----|------|------|-----|
| BHL  | SZ | 60   | 282 | IPg   |   | 934  | 37.45 | -0.6 |      |      |      |     |      |      | 1.0 |
| BHL  | SN | 60   | 282 | ISg   |   | 934  | 44.56 | -0.7 |      |      |      |     |      |      | 1.0 |
| HWQ  | SZ | 62   | 329 | IPg   |   | 934  | 39.85 | 1.4  | 45   |      |      | 143 | -5   | 23.3 | 1.0 |
| HWQ  | SE | 62   | 329 | ISg   |   | 934  | 45.70 | -0.1 |      |      |      |     |      |      | 1.0 |

**July 28 2005 Hour: 12:22 1.2 Agency: REL Local**

| STAT | CO | DIST | AZI | PHASE | P | HRMN | SECON | TRES | CODA | AMPL | PERI | BAZ | ARES | VELO | WT |
|------|----|------|-----|-------|---|------|-------|------|------|------|------|-----|------|------|----|
| HWQ  | SE |      |     | ISg   |   | 1223 | 31.04 |      |      |      |      |     |      |      |    |
| BHL  | SN |      |     | ISg   |   | 1223 | 42.85 |      |      |      |      |     |      |      |    |
| HWQ  | SZ |      |     | IPg   |   | 1223 | 15.75 |      |      |      |      |     |      |      |    |

**July 28 2005 Hour: 14:45 55.5 Lat: 33.75N Lon: 35.98E Depth: 15 Agency: REL Local**  
**Magnitudes: 2.9MC REL Rms: 0.7 secs**

| STAT | CO | DIST | AZI | PHASE | P | HRMN | SECON | TRES | CODA | AMPL | PERI | BAZ | ARES | VELO | WT  |
|------|----|------|-----|-------|---|------|-------|------|------|------|------|-----|------|------|-----|
| BHL  | SZ | 35   | 300 | IPg   |   | 1446 | 1.48  | -0.1 | 48   |      |      | 211 | 91   | 19.0 | 1.0 |
| BHL  | SN | 35   | 300 | ISg   |   | 1446 | 7.01  | 0.9  |      |      |      |     |      |      | 1.0 |
| HWQ  | SZ | 59   | 357 | IPg   |   | 1446 | 5.50  | 0.4  |      |      |      |     |      |      | 1.0 |
| HWQ  | SE | 59   | 357 | ISg   |   | 1446 | 11.09 | -1.1 |      |      |      |     |      |      | 1.0 |

**July 30 2005 Hour: 15:19 28.9 SUMATRA M=5.9 Agency: REL Distant**

| STAT | CO | DIST | AZI | PHASE | P | HRMN | SECON | TRES | CODA | AMPL | PERI | BAZ | ARES | VELO | WT |
|------|----|------|-----|-------|---|------|-------|------|------|------|------|-----|------|------|----|
| BHL  | BZ |      |     | EP    |   | 1523 | 34.36 |      |      |      |      |     |      |      |    |

**July 30 2005 Hour: 16:33 14.9 Lat: 34.75N Lon: 33.78E Depth:103 Agency: REL Local**  
**Magnitudes: 3.6MC REL Rms: 1.8 secs**

| STAT | CO | DIST | AZI | PHASE | P | HRMN | SECON | TRES | CODA | AMPL | PERI | BAZ | ARES | VELO | WT  |
|------|----|------|-----|-------|---|------|-------|------|------|------|------|-----|------|------|-----|
| PHNC | SZ | 37   | 39  | IPg   |   | 1633 | 28.30 | -1.0 |      |      |      |     |      |      | 1.0 |
| PHNC | SZ | 37   | 39  | ISg   |   | 1633 | 40.30 | 0.3  |      |      |      |     |      |      | 1.0 |
| CSS  | SZ | 47   | 300 | IPg   |   | 1633 | 28.90 | -1.0 |      |      |      |     |      |      | 1.0 |
| CSS  | SZ | 47   | 300 | ISg   |   | 1633 | 40.80 | -0.2 |      |      |      |     |      |      | 1.0 |
| SZAC | SZ | 82   | 271 | IPG   |   | 1633 | 29.20 | -3.0 |      |      |      |     |      |      | 1.0 |
| ALFC | SZ | 117  | 293 | IPG   |   | 1633 | 36.10 | 0.8  |      |      |      |     |      |      | 1.0 |
| ALFC | SZ | 117  | 293 | ISG   |   | 1633 | 53.90 | 3.5  |      |      |      |     |      |      | 1.0 |
| PPCY | SZ | 132  | 277 | IPG   |   | 1633 | 35.10 | -1.6 |      |      |      |     |      |      | 1.0 |
| BHL  | BZ | 196  | 118 | IPg   |   | 1633 | 46.70 | 3.0  |      |      |      |     |      |      | 1.0 |
| BHL  | BE | 196  | 118 | ISg   |   | 1634 | 6.15  | 1.2  |      |      |      |     |      |      | 1.0 |
| MATL | SZ | 200  | 134 | ISg   |   | 1634 | 5.44  | 0.0  |      |      |      |     |      |      | 1.0 |
| HWQ  | SZ | 206  | 104 | IPg   |   | 1633 | 44.59 | -0.1 | 103  |      |      |     |      |      | 1.0 |
| HWQ  | SE | 206  | 104 | ISg   |   | 1634 | 4.99  | -1.8 |      |      |      |     |      |      | 1.0 |

**July 30 2005 Hour: 21:41 25.3 TURKEY M=4.7 Agency: REL Regional**

| STAT | CO | DIST | AZI | PHASE | P | HRMN | SECON | TRES | CODA | AMPL | PERI | BAZ | ARES | VELO | WT |
|------|----|------|-----|-------|---|------|-------|------|------|------|------|-----|------|------|----|
| HWQ  | SZ |      |     | EPN   |   | 2146 | 27.06 |      |      |      |      |     |      |      |    |
| BHL  | SZ |      |     | EPN   |   | 2146 | 30.95 |      |      |      |      |     |      |      |    |
| MATL | SZ |      |     | EPN   |   | 2146 | 35.07 |      |      |      |      |     |      |      |    |

**July 31 2005 Hour: 15:54 30.1 Lat: 36.83N Lon: 29.76E Depth: 0 Agency: REL Regional**  
**Magnitudes: 4.4MC REL Rms: 1.4 secs**

| STAT | CO | DIST | AZI | PHASE | P | HRMN | SECON | TRES | CODA | AMPL | PERI | BAZ | ARES | VELO | WT  |
|------|----|------|-----|-------|---|------|-------|------|------|------|------|-----|------|------|-----|
| AKMC | SZ | 306  | 130 | EP    |   | 1555 | 13.70 | -0.5 |      |      |      |     |      |      | 1.0 |
| ALFC | SZ | 316  | 125 | EP    |   | 1555 | 15.80 | 0.3  |      |      |      |     |      |      | 1.0 |
| ALFC | SZ | 316  | 125 | ES    |   | 1555 | 49.80 | 0.8  |      |      |      |     |      |      | 1.0 |
| PPCY | SZ | 318  | 132 | EP    |   | 1555 | 15.20 | -0.4 |      |      |      |     |      |      | 1.0 |
| MAMC | SZ | 362  | 120 | EP    |   | 1555 | 22.50 | 1.4  |      |      |      |     |      |      | 1.0 |
| SZAC | SZ | 364  | 128 | EP    |   | 1555 | 20.80 | -0.6 |      |      |      |     |      |      | 1.0 |
| SZAC | SZ | 364  | 128 | ES    |   | 1555 | 59.60 | 0.2  |      |      |      |     |      |      | 1.0 |
| CSS  | SZ | 383  | 122 | EP    |   | 1555 | 24.00 | 0.2  |      |      |      |     |      |      | 1.0 |
| CSS  | SZ | 383  | 122 | ES    |   | 1556 | 06.00 | 2.5  |      |      |      |     |      |      | 1.0 |
| BHL  | SZ | 626  | 120 | EPn   |   | 1555 | 52.62 | -1.4 |      |      |      |     |      |      | 1.0 |
| BHL  | SN | 626  | 120 | Sn    |   | 1556 | 52.51 | -3.6 |      |      |      |     |      |      | 1.0 |
| HWQ  | SZ | 628  | 115 | EPn   |   | 1555 | 54.17 | -0.1 | 193  |      |      |     |      |      | 1.0 |
| HWQ  | SE | 628  | 115 | Sn    |   | 1556 | 56.74 | 0.2  |      |      |      |     |      |      | 1.0 |
| FKH  | SZ | 667  | 114 | EPn   |   | 1556 | 0.09  | 0.9  |      |      |      |     |      |      | 1.0 |

**July 31 2005 Hour: 16:15 54.0 Lat: 28.38N Lon: 41.82E Depth: 7 Agency: REL Regional**  
**Magnitudes: 4.6MC REL Rms:12.2 secs**

| STAT | CO | DIST | AZI | PHASE | P | HRMN | SECON | TRES  | CODA | AMPL | PERI | BAZ | ARES | VELO | WT  |
|------|----|------|-----|-------|---|------|-------|-------|------|------|------|-----|------|------|-----|
| MATL | SZ | 840  | 314 | EPn   |   | 1617 | 53.64 | 10.1  |      |      |      |     |      |      | 1.0 |
| BHL  | SZ | 849  | 318 | EPn   |   | 1617 | 59.57 | 14.8  |      |      |      |     |      |      | 1.0 |
| BHL  | SN | 849  | 318 | Sn    |   | 1619 | 3.42  | -3.3  |      |      |      |     |      |      | 1.0 |
| HWQ  | SZ | 860  | 321 | EPn   |   | 1618 | 6.16  | 20.0  | 186  |      |      |     |      |      | 1.0 |
| HWQ  | SN | 860  | 321 | Sn    |   | 1619 | 13.31 | 4.1   |      |      |      |     |      |      | 1.0 |
| CSS  | SZ | 1086 | 314 | EPn   |   | 1617 | 58.10 | -16.1 |      |      |      |     |      |      | 1.0 |
| SZAC | SZ | 1104 | 312 | EPn   |   | 1617 | 53.90 | -22.5 |      |      |      |     |      |      | 1.0 |



|      |    |      |     |     |      |            |     |
|------|----|------|-----|-----|------|------------|-----|
| MAMC | SZ | 1109 | 315 | EPn | 1618 | 00.70-16.3 | 1.0 |
| PPCY | SZ | 1152 | 311 | EPn | 1617 | 53.90-28.4 | 0.9 |
| ALFC | SZ | 1152 | 313 | EPn | 1617 | 57.70-24.6 | 0.9 |

**July 31 2005 Hour: 23:39 58.5**

**Agency: REL Distant**

|      |    |      |     |       |   |      |       |      |      |      |      |     |      |      |    |
|------|----|------|-----|-------|---|------|-------|------|------|------|------|-----|------|------|----|
| STAT | CO | DIST | AZI | PHASE | P | HRMN | SECON | TRES | CODA | AMPL | PERI | BAZ | ARES | VELO | WT |
| BHL  | BZ |      |     | EP    |   | 2343 | 3.92  |      |      |      |      |     |      |      |    |



# Epicentral Map of Lebanon JULY 2005

## Magnitudes

- MI = 2
- MI = 3
- MI = 4
- MI = 5

