

UNITED STATES DEPARTMENT OF THE INTERIOR  
GEOLOGICAL SURVEY

EARTHQUAKE DATA REPORT  
MARCH 1990

by

U.S. Geological Survey  
NATIONAL EARTHQUAKE INFORMATION CENTER<sup>1</sup>

Open-File Report 90-603



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1990

<sup>1</sup>USGS, Denver, Colorado



U. S. DEPARTMENT OF THE INTERIOR  
Geological Survey  
EARTHQUAKE DATA REPORT

The Earthquake Data Report (EDR) is a bulletin of all seismic phase and amplitude data which were associated with events published in the Preliminary Determination of Epicenters (PDE) Monthly Listing. It also contains information about the hypocentral computations (such as standard errors) that are not included in the PDE Monthly Listing. A machine-readable version of this EDR is available from the Books and Open-File Reports Section of the U.S. Geological Survey.

All data in the EDR are grouped by event, with events listed by origin time in date/time order through the month. All times are in Coordinated Universal Time (UTC). Locations are in decimal degrees of geographic latitude and longitude. Depths are in kilometers below the free surface. Hypocentral coordinates are determined by a modified Geiger's method and may be constrained by reported first arriving P-waves, Pdiff, and the DF branch of PKP. Data are corrected for station elevation and for the ellipticity of the Earth. Outliers may be truncated (ie., removed from the calculation) either automatically or manually. The solution is allowed to converge between rounds of automatic truncation to insure a unique result. Convergence is aided by step length damping.

The error bars of the computed hypocentral coordinates are 90% marginal confidence intervals incorporating Bayesian information to stabilize estimates derived from small samples (Jordan and Sverdrup, 1981). It is assumed that the travel-time errors of the data used are independent, unbiased, and have an expected standard deviation of 1 s. Monte Carlo experiments suggest that the error bars are accurate for events constrained by more than about 30 data. However, care should be exercised in interpreting these numbers in terms of absolute location accuracy because of unmodeled biases. Analysis of events with independently known coordinates indicates that most PDE determinations are accurate to a few tenths of a degree in epicentral position and 25 km in depth. For special studies, we urge that inquiry be made to this office for possible recomputation of hypocenters of interest, using more complete instrumental data.

Restricted focal depths occur in four instances. If at any point in the computation the depth becomes negative, the solution is automatically restricted at 33 km and indicated by "NORMAL DEPTH." If the unrestricted depth computation is unsatisfactory, and in the judgment of the reviewing geophysicist the earthquake probably has a shallow focus, a solution may be held at 33 km. These are also indicated by "NORMAL DEPTH." The geophysicist may restrain the depth at any value indicated by evidence from available seismograms. These are indicated by, for example, "DEPTH = 100 KM (GEOPHYSICIST)." If two or more pP phases are identified, and in general, yield depths within 10 km of the mean, then the depth is automatically restricted to this value and denoted by, for example, "DEPTH = 51 KM (5 DEPTH PHASES)." pP phases may also appear as unidentified second arrivals with associated travel-time residuals. Hypocentral coordinates derived from other sources, such as the California Institute of Technology, the University of California at Berkeley, and the U. S. Department of Energy are noted on the EDR.

Two types of magnitude are computed: body-wave magnitude ( $m_b$ ) and surface-wave magnitude ( $M_{sz}$ ). Each is a 25% trimmed mean of individual station values. Station magnitudes not used in the trimmed mean are marked with an X. This includes station magnitudes of either type which deviate significantly from the mean and surface-wave magnitudes determined from horizontal amplitudes. Body-wave magnitudes are computed according to the formula  $\log(A/T) + Q$ , derived by Gutenberg and Richter (1956), where  $A$  is the P-wave amplitude in micrometers,  $T$  is the period in seconds, and  $Q$  is the depth-distance factor. Surface-wave magnitudes are computed from the formula  $\log(A/T) + 1.66 \log(\Delta) + 3.3$ , where  $A$  is the maximum vertical surface-wave amplitude in micrometers,  $T$  is the period in seconds, and  $\Delta$  is the epicentral distance in degrees. Surface-wave magnitudes are determined only for earthquakes whose focal depths (taking into account the computed standard deviations) are potentially less than 50 km, for stations having  $20^\circ \leq \Delta \leq 160^\circ$ , and for reported periods of  $18 \leq T \leq 22$  s. No correction for focal depth is used in the  $M_{sz}$  calculation. Body-wave magnitudes are not determined from PKP arrivals or for stations having  $\Delta \leq 5^\circ$ . Amplitude values stated in this report are in nanometers (nm) for body-waves and micrometers ( $\mu m$ ) for surface-waves.

The travel-time residual (observed - computed) is based on the 1940 Jeffreys-Bullen P and 1968 Bolt PKP travel-time tables. Phases not used in the computation are marked by an X. The azimuth from the epicenter to the station is measured clockwise from north. The epicentral distance is the central angle in degrees.



The pulse distortion of seismic phases that have ray paths that touch a single internal caustic (e.g., PP, pPP, SS and PKPab) can be corrected using the method of Hilbert transformation described by Choy and Richards (1975). Arrival times that are read from the phases that are corrected for pulse distortion are identified by the symbol H preceding the phase identifier (e.g., HPP, HpPP, HSS and HP'ab).

#### Hypocenter Symbols

- & Indicates that parameters of the hypocenter were supplied or determined by a computational procedure not normally used by the National Earthquake Information Service (NEIS). The source or nature of the determination is indicated by a 2 to 5 letter code enclosed by angle brackets and appearing in the first line of comments. A "-P" appended to the code indicates that the computation is preliminary. These codes are included with the list of abbreviations in the PDE Monthly Listing.
  - % Indicates a single network solution. A non-furnished hypocenter has been computed using data reported by a single network of stations for which the date and/or origin time cannot be confirmed from seismograms available to a NEIS analyst. Also, if we define  $\eta$  to be the geometric mean of the semi-major and semi-minor axes of the horizontal 90% confidence ellipse, then  $\eta \leq 16.0$  km.
  - \* Indicates a less reliable solution. In general,  $8.5 < \eta \leq 16.0$  km.
  - ? Indicates a poor solution, published for completeness of the catalog. In general,  $\eta > 16.0$  km. This includes poor solutions computed using data reported by a single network.
- The lack of any symbol indicates that  $\eta \leq 8.5$  km.

Note: On printers available to the NEIS for this publication, the symbol for degrees ( $^{\circ}$ ) appears as "°". Also note that certain phase codes are abbreviated because the data base and file format limit the length of the codes to five characters. Thus, PKP is occasionally abbreviated to P' and the numbers 2 and 3 are sometimes used to represent the AB (AC for SKKS) and BC branches of core phases, respectively. In some codes, R is used to represent repetition; for example, pRPPK represents the phase pPKPPK and RPPG represents PgPgPg.

#### References

- Bolt, Bruce A. (1968), Estimation of PKP Travel Times, *Bull. Seis. Soc. Am.*, **58**, pp. 1305-1324.
- Choy, George L. and P. G. Richards (1975), Pulse Distortion and Hilbert Transformation in Multiply Reflected and Refracted Body Waves, *Bull. Seis. Soc. Am.*, **65**, pp. 55-70.
- Gutenberg, B. and C. F. Richter (1956), Magnitude and Energy of Earthquakes, *Ann. di Geofisica*, **9**, no. 1, pp. 1-15.
- Jeffreys, Harold and K. E. Bullen (1940), *Seismological Tables*, British Assoc. for the Advancement of Science, Gray Milne Trust.
- Jordan, Thomas H. and Keith A. Sverdrup (1981), Teleseismic Location Techniques and their Application to Earthquake Clusters in the South-Central Pacific, *Bull. Seis. Soc. Am.*, **71**, pp. 1105-1130.



& MAR 01, 1990 00h 02m 08.90s  
34.130 N 117.710 W  
DEPTH = 5.0km  
SOUTHERN CALIFORNIA (43)  
<PAS-P>. ML 3.2 (PAS).

MWC	0.30	288	eP	02 14.50	-0.6
			eS	02 19.10	
RVR	0.31	116	eP	02 14.00	-1.2
			eS	02 18.90	
PAS	0.38	273	eP	02 16.50	-0.1
			eS	02 21.80	
PEC	0.51	117	iP	02 18.20	-1.0
SBB	0.57	350	iP	02 19.60	-0.6
			eS	02 28.60	
CIS	0.92	219	iP	02 25.70	-1.3
			iS	02 38.30	
PLM	1.05	137	eP	02 28.00	-1.3
ABL	1.44	300	eP	02 34.90	-1.0
BCH	2.22	299	e(P)	02 47.20	0.1

9 obs. associated

& MAR 01, 1990 00h 03m 21.20s  
34.150 N 117.700 W  
DEPTH = 9.0km  
SOUTHERN CALIFORNIA (43)  
<PAS-P>. ML 3.3 (PAS).

PEC	0.52	120	iP	03 30.70	-1.0
SBB	0.55	349	iPd	03 31.30	-1.0
CIS	0.94	219	iP	03 39.20	-0.1
			iS	03 52.20	
PLM	1.06	138	eP	03 40.40	-1.0
ABL	1.44	300	eP	03 47.50	-0.1

5 obs. associated

& MAR 01, 1990 00h 06m 29.90s  
34.140 N 117.700 W  
DEPTH = 5.0km  
SOUTHERN CALIFORNIA (43)  
<PAS-P>. ML 3.5 (PAS).

MWC	0.31	286	iPc	06 35.90	-0.3
PEC	0.51	119	iP	06 39.30	-0.9
SBB	0.56	349	iPd	06 40.30	-0.8
CIS	0.94	219	eP	06 47.10	-1.2
PLM	1.05	138	iPd	06 48.90	-1.4
TPC	1.37	91	iPc	06 55.00	-0.7
ABL	1.44	300	eP	06 55.60	-1.3
ISA	1.65	338	eP	06 59.20	-0.5
CLC	1.67	3	iPd	06 59.40	-0.7
BCH	2.22	299	eP	07 08.20	0.1
BLP	2.27	281	eP	07 07.20	-1.5
GLA	2.63	114	eP	07 11.70	-2.1

12 obs. associated

& MAR 01, 1990 00h 11m 10.70s  
34.130 N 117.710 W  
DEPTH = 5.0km  
SOUTHERN CALIFORNIA (43)  
<PAS-P>. ML 3.3 (PAS).

MWC	0.30	288	iPc	11 16.70	-0.2
PEC	0.51	117	iPc	11 20.30	-0.7
CIS	0.92	219	iP	11 27.70	-1.1
			iS	11 42.00	
PLM	1.05	137	iPc	11 29.80	-1.3
ABL	1.44	300	eP	11 36.30	-1.4
BCH	2.22	299	eP	11 48.00	-0.9
BLP	2.27	282	eP	11 48.00	-1.4
GLA	2.64	113	eP	11 52.80	-1.9

8 obs. associated

MAR 01, 1990 00h 25m 37.02±0.37s  
36.486 N ± 6.1km 68.860 E ± 5.9km  
DEPTH = 33.0km (normal)  
4.6mb (18 obs.)

HINDU KUSH REGION (718)

KSH	6.36	60	Pn	27 11.50	0.5
			Sn	28 26.00	
QUE	6.48	195	eP	27 13.30	0.5
MAIO	7.56	271	ePn	27 26.00	-1.7
			eSn	27 47.00	
NDI	10.49	135	eP	28 06.50	-1.7
	0.6s		8.00nm		5.1mb

GKN	15.79	118	P	29 13.60	-5.0X
	0.6s		25.00nm		4.6mb
WMQ	16.14	57	P	29 23.50	0.5
Z	10s		1.70um		
DMN	16.36	118	P	29 22.20	-3.8X
	0.6s		32.00nm		4.6mb
KKN	16.37	117	P	29 21.20	-4.9X
	0.6s		32.00nm		4.6mb
PKI	16.59	118	P	29 24.40	-4.7X
	0.6s		28.00nm		4.6mb
GUN	16.73	116	P	29 25.80	-5.1X
	0.6s		23.00nm		4.5mb
POO	18.42	165	eP	29 53.00	1.5
LSA	19.84	104	P	30 09.40	0.9
			eS	33 48.00	
HYB	20.84	153	iPc	30 18.00	-0.5
	1.0s		70.00nm		5.0mb
			iS	34 14.00	
GBA	24.05	159	Pc	30 50.70	0.6
	1.0s		11.70nm		4.4mb
GTA	24.53	74	eP	30 55.80	1.0
Z	17s		1.80um		4.6mszX
E	11s		1.50um		
KOD	27.27	161	eP	31 26.00	5.3X
CD2	29.46	91	eP	31 39.40	-0.6
CHG	31.75	116	eP	32 04.60	4.2X
CHTO	31.75	116	eP	32 00.20	-0.2
BTO	32.24	70	eP	32 11.00	6.4X
N	15s		1.10um		
E	15s		1.10um		
XAN	32.64	82	eP	32 06.60	-1.4
MLR	33.28	299	ePc	32 15.00	1.4
TIY	34.55	75	eP	32 27.30	2.8X
N	18s		1.60um		
NUR	36.84	325	eP	32 44.30	0.8
SUF	37.03	329	iP	32 45.80	0.7
	0.7s		5.30nm		4.5mb
KEV	40.18	339	eP	32 52.00	-19.4X
KBA	41.92	303	eP	33 28.00	1.8
	0.7s		3.10nm		4.1mb
HFS	42.02	322	eP	33 25.80	-0.7
	0.7s		19.50nm		4.9mb
NB2	43.36	323	P	33 36.90	-0.6
	0.7s		7.70nm		4.6mb
DAG	54.28	344	iPc	35 00.50	-1.1
	0.7s		4.79nm		4.6mb
BCAO	56.05	248	ePd	35 14.90	-0.4
	0.8s		18.00nm		5.2mb
			id	35 18.20	
MBC	67.42	2	ePd	36 31.00	0.2
	0.5s		3.00nm		4.6mb
IMA	72.64	17	eP	37 01.90	-1.0
	0.6s		3.70nm		4.6mb
INK	74.18	8	eP	37 12.00	0.4
PWA	77.28	18	eP	37 27.60	-1.7
TOA	77.75	16	eP	37 32.90	0.9
WRA	83.46	121	P	38 08.00	5.2X
	0.8s		2.60nm		4.4mb
FFC	88.81	355	eP	38 33.00	4.3X
	0.9s		10.00nm		5.1mb
EDM	90.64	1	eP	38 40.50	3.2X
BLP	108.79	8	ePKP	44 25.50	21.1X

S.D. = 1.1 on 26 of 40 obs.

MAR 01, 1990 00h 28m 24.51±0.86s  
34.139 N ± 11.2km 117.697 W ± 7.6km  
DEPTH = 5.0km (geophysicist)  
SOUTHERN CALIFORNIA (43)  
ML 2.6 (NEIS).

MWC	0.31	286	iPc	28 30.80	0.0
PEC	0.51	119	iPd	28 35.00	0.3
CIS	0.94	219	iP	28 43.00	0.1
PLM	1.05	138	eP	28 44.50	-0.4
ABL	1.45	300	eP	28 50.80	-0.8
BCH	2.23	299	eP	29 03.50	0.8

S.D. = 0.7 on 6 of 6 obs.

& MAR 01, 1990 00h 34m 57.10s  
34.130 N 117.700 W  
DEPTH = 4.0km  
SOUTHERN CALIFORNIA (43)  
<PAS-P>. ML 4.0 (PAS).

MWC	0.31	288	iPc	35 03.20	-0.2
PEC	0.51	118	iPc	35 06.50	-0.8
SBB	0.57	350	iPd	35 07.80	-0.6

CIS	0.93	219	iPd	35 14.30	-1.1
PLM	1.04	138	eP	35 16.00	-1.5
ABL	1.45	300	iPd	35 23.10	-1.2
BCH	2.23	299	eP	35 34.40	-1.1
BLP	2.28	282	eP	35 34.10	-1.9
GLA	2.63	113	eP	35 39.00	-2.1
PRI	3.15	310	eP	35 47.30	-1.3
FRI	3.29	331	eP	35 50.40	0.0
			eS	36 30.00	
PRS	3.72	307	eP	35 53.50	-3.1
TNP	3.96	6	eP	35 59.70	-0.5
SAO	4.03	312	eP	35 58.70	-2.3
CMB	4.46	332	eP	36 07.50	0.4
			eS	36 59.80	
ARN	4.48	317	eP	36 05.50	-1.8
KVN	4.92	356	eP	36 13.20	-0.6
ALQ	9.31	82	eP	37 12.50	-2.8

18 obs. associated

MAR 01, 1990 00h 39m 57.26±0.96s  
34.198 N ± 11.4km 117.652 W ± 7.8km  
DEPTH = 5.0km (geophysicist)  
SOUTHERN CALIFORNIA (43)  
ML 2.7 (NEIS).

MWC	0.34	275	iP	40 04.60	0.5
PEC	0.51	127	iPc	40 08.00	0.5
CIS	1.01	219	eP	40 16.70	-0.1
			iS	40 29.50	
PLM	1.07	142	eP	40 17.50	-0.5
ABL	1.45	297	eP	40 24.00	-0.4
BCH	2.23	297	eP	40 35.50	-0.1

S.D. = 0.6 on 6 of 6 obs.

\* MAR 01, 1990 00h 43m 48.06±0.92s  
34.107 N ± 12.4km 117.703 W ± 8.5km  
DEPTH = 5.0km (geophysicist)  
SOUTHERN CALIFORNIA (43)  
ML 2.7 (NEIS).

MWC	0.32	292	iP	43 54.20	-0.3
PEC	0.50	115	iPc	43 58.30	0.2
CIS	0.91	220	eP	44 06.10	0.1
PLM	1.03	137	eP	44 07.70	-0.4
ABL	1.46	301	eP	44 14.00	-1.3
BCH	2.24	299	eP	44 28.00	1.5

S.D. = 1.2 on 6 of 6 obs.

% MAR 01, 1990 00h 51m 50.93±0.90s  
40.575 N ± 7.4km 23.737 E ± 8.4km  
DEPTH = 10.0km (geophysicist)  
GREECE (364)  
ML 2.2 (THE).

OUR	0.30	142	ePg	51 57.10	-0.2
SOH	0.38	310	ePg	51 58.90	0.1
SRS	0.55	349	ePg	52 02.40	0.2
THE	0.59	276	ePg	52 02.00	-0.9
			eSg	52 08.60	
KNT	0.87	313	ePg	52 07.40	-0.2
LIT	1.06	244	ePg	52 11.80	0.8
			eSg	52 24.60	

S.D. = 0.7 on 6 of 6 obs.

MAR 01, 1990 00h 55m 44.69±0.95s  
34.225 N ± 10.9km 117.654 W ± 7.5km  
DEPTH = 5.0km (geophysicist)  
SOUTHERN CALIFORNIA (43)  
ML 2.6 (NEIS).

MWC	0.33	270	iP	55 51.40	-0.1
PEC	0.53	129	iPc	55 55.40	0.1
CIS	1.03	218	eP	56 04.70	0.1
PLM	1.09	143	eP	56 05.60	-0.2
ABL	1.44	296	eP	56 11.50	-0.1
BCH	2.22	296	e(P)	56 23.00	0.2

S.D. = 0.2 on 6 of 6 obs.

MAR 01, 1990 01h 08m 30.97±1.01s  
34.204 N ± 12.1km 117.679 W ± 8.2km  
DEPTH = 5.0km (geophysicist)  
SOUTHERN CALIFORNIA (43)  
ML 2.8 (NEIS).

MWC	0.31	274	iP	08 38.00	0.6
PEC	0.53	126	iP	08 42.20	0.6
CIS	1.00	217	eP	08 50.20	-0.2



01d 01h

PLM 1.09 141 iS 09 02.80  
 ABL 1.43 297 ePc 08 51.50 -0.5  
 BCH 2.21 297 e(P) 09 08.00 -1.0  
 S.D. = 0.8 on 6 of 6 obs.

& MAR 01, 1990 01h 35m 48.90s  
 34.130 N 117.710 W  
 DEPTH = 6.0km  
 SOUTHERN CALIFORNIA (43)  
 <PAS-P>. ML 3.3 (PAS).

MWC 0.30 288 iPc 35 54.70 -0.4  
 PEC 0.51 117 iPc 35 58.40 -0.8  
 SBB 0.57 350 iPd 35 59.40 -0.8  
 CIS 0.92 219 iPd 36 05.70 -1.2  
 PLM 1.05 137 eP 36 07.80 -1.4  
 ABL 1.44 300 eP 36 14.40 -1.4  
 BCH 2.22 299 eP 36 26.10 -0.8  
 BLP 2.27 282 eP 36 25.50 -2.0  
 GLA 2.64 113 P 36 31.00 -1.8  
 9 obs. associated

& MAR 01, 1990 01h 39m 56.80s  
 34.140 N 117.720 W  
 DEPTH = 9.0km  
 SOUTHERN CALIFORNIA (43)  
 <PAS-P>. ML 3.6 (PAS).

MWC 0.29 287 iPc 40 02.60 -0.3  
 PEC 0.53 118 iPc 40 06.30 -1.1  
 SBB 0.55 351 iPd 40 07.30 -0.7  
 CIS 0.93 218 eP 40 13.50 -1.1  
 PLM 1.06 137 iPc 40 15.90 -1.1  
 ABL 1.43 300 eP 40 22.30 -0.8  
 BCH 2.21 299 eP 40 34.30 0.0  
 BLP 2.26 281 eP 40 33.70 -1.1  
 GLA 2.65 113 eP 40 38.40 -2.1  
 TNP 3.95 6 eP 40 58.50 -0.6  
 SAO 4.01 312 eP 40 58.20 -1.6  
 KVN 4.91 357 eP 41 12.70 0.0  
 12 obs. associated

& MAR 01, 1990 01h 41m 43.70s  
 34.120 N 117.690 W  
 DEPTH = 6.0km  
 SOUTHERN CALIFORNIA (43)  
 <PAS-P>. ML 3.0 (PAS).

RVR 0.29 116 iP 41 49.40 -0.2  
 eS 41 54.60  
 e 41 58.10  
 MWC 0.32 289 iP 41 49.90 -0.4  
 eS 41 54.80  
 e 41 58.80  
 PAS 0.40 274 iP 41 51.10 -0.7  
 eS 41 56.60  
 PEC 0.50 117 iPc 41 53.20 -0.4  
 SBB 0.58 349 iP 41 54.30 -1.0  
 eS 42 01.60  
 CIS 0.93 220 eP 42 01.10 -0.7  
 iS 42 14.50  
 PLM 1.03 138 eP 42 02.00 -1.7  
 ABL 1.46 300 eP 42 08.50 -2.3  
 BCH 2.24 299 eP 42 21.50 -0.5  
 9 obs. associated

& MAR 01, 1990 01h 41m 47.30s  
 34.160 N 117.690 W  
 DEPTH = 6.0km  
 SOUTHERN CALIFORNIA (43)  
 <PAS-P>. ML 3.2 (PAS).

PAS 0.40 268 iP 41 54.80 -0.6  
 eS 42 00.60  
 SBB 0.54 348 eP 41 57.60 -0.5  
 eS 42 04.50  
 2 obs. associated

& MAR 01, 1990 02h 00m 22.50s  
 34.130 N 117.700 W  
 DEPTH = 5.0km  
 SOUTHERN CALIFORNIA (43)  
 <PAS-P>. ML 3.1 (PAS).

MWC 0.31 288 iPc 00 28.60 -0.2  
 PEC 0.51 118 iP 00 32.00 -0.7  
 SBB 0.57 350 iPd 00 33.20 -0.6  
 CIS 0.93 219 iPd 00 40.50 -0.2  
 PLM 1.04 138 eP 00 41.60 -1.2  
 ABL 1.45 300 eP 00 48.40 -1.2  
 BCH 2.23 299 eP 01 00.40 -0.4  
 7 obs. associated

MAR 01, 1990 02h 23m 25.10 ± 0.16s  
 53.340 N ± 4.1km 160.030 E ± 3.0km  
 DEPTH = 27.1km (11 depth phases)  
 5.4mb (60 obs.) 5.6MsZ (23 obs.)  
 NEAR EAST COAST OF KAMCHATKA (218)  
 Ms 5.3 (BRK). Felt (IV) at  
 Petropavlovsk-Kamchatskiy.  
 CENTROID, MOMENT TENSOR (HRV)  
 Data Used: GDSN  
 L.P.B.: 12S, 27C  
 Centroid Location:  
 Origin Time: 02:23:30.3 0.4  
 Lat 53.48N 0.07 Lon 160.06E 0.07  
 Dep 33.0 FIX Half-duration 3.1  
 Moment Tensor: Scale 10\*\*17 Nm  
 Mrr=-1.52 0.18 Mtt=-4.24 0.22  
 Mff= 5.76 0.24 Mrt= 1.60 0.51  
 Mrf= 0.83 0.58 Mtf=-0.50 0.28  
 Principal Axes:  
 T Val= 5.87 Plg= 6 Azm=268  
 N -0.82 64 10  
 P -5.04 25 175  
 Best Double Couple: Mo=5.5\*10\*\*17  
 NP1:Strike=315 Dip=68 Slip=-166  
 NP2: 219 77 -23

SMY 8.51 88 eP 25 26.70 -0.7  
 YSS 12.76 247 P 26 28.00 2.7  
 ADK 14.21 87 eP 26 45.20 0.8  
 SAP 16.11 238 eP 27 11.00 1.9  
 MDJ 21.66 259 ePd 28 09.70 -3.5X  
 Z 16s 31.20um 5.8MsZ  
 N 16s 15.70um

eP 28 19.20 35km  
 eS 32 00.00  
 ePcP 32 15.50  
 MAT 22.67 231 iPd 28 23.50 0.2  
 0.8s 283.58nm 5.8mb  
 Z 20s 12.41um 5.3MsZ

SDN 22.89 69 eP 28 26.50 1.3  
 CN2 24.57 261 Pd 28 39.20 -2.5  
 Z 15s 28.00um 5.9MsZ  
 N 15s 12.70um  
 E 15s 18.30um

sP 28 49.00  
 eS 32 53.00  
 TTA 24.62 50 iPc 28 42.50 0.4  
 SVW 24.80 54 ePc 28 44.50 0.7  
 IMA 25.88 42 ePc 28 53.70 -0.3  
 1.2s 107.40nm 5.3mb  
 BRW 26.05 30 eP 28 55.90 0.6  
 KDC 26.77 61 eP 29 00.80 -1.3  
 SNY 26.85 259 iPd 29 01.00 -2.0  
 Z 18s 21.00um 5.7MsZ  
 N 15s 17.50um  
 E 16s 10.80um

pP 29 10.00 32km  
 eS 33 34.00  
 PMR 27.88 52 eP 29 11.50 -0.6  
 0.8s 25.70nm 5.0mb  
 Z 20s 13.00um 5.5MsZ  
 FBA 28.28 45 ePc 29 15.20 -0.5  
 DL2 29.86 257 P 29 34.00 3.8X  
 Z 16s 10.80um 5.6MsZ  
 N 14s 13.70um  
 E 14s 11.70um

BJI 32.35 264 eP 29 50.00 -2.0  
 Z 16s 22.20um 5.9MsZ  
 N 12s 9.80um  
 E 13s 9.35um

INK 33.70 38 iPc 30 02.90 -0.5  
 0.8s 47.00nm 5.5mb  
 TIA 34.32 258 eP 30 07.60 -1.6  
 Z 21s 11.90um 5.6MsZ  
 N 14s 8.00um  
 HHC 34.61 269 eP 30 10.00 -1.8

Z 16s 11.90um 5.7MsZ  
 N 14s 8.50um  
 E 12s 2.10um  
 sP 30 22.00  
 BTO 35.69 270 eP 30 19.50 -1.5  
 N 13s 6.50um  
 E 13s 10.80um

sP 30 29.50  
 SSE 35.72 247 P 30 20.00 -1.1  
 Z 20s 8.40um 5.5MsZ  
 E 14s 6.70um  
 PP 31 46.00

TIY 36.08 264 eP 30 19.80 -4.5X  
 Z 18s 11.30um 5.7MsZ  
 N 13s 9.00um  
 pP 30 35.00 59kmX  
 PP 31 48.50  
 S 36 03.50

NJ2 36.30 251 P 30 28.00 2.0  
 Z 18s 7.20um 5.5MsZ  
 N 16s 10.50um  
 E 15s 5.00um

MBC 36.83 23 ePc 30 29.90 -0.1  
 0.5s 35.00nm 5.5mb  
 XAN 40.67 263 P 31 01.00 -1.5  
 N 17s 15.40um  
 E 16s 10.70um

S 37 13.50  
 GUMO 41.44 203 eP 31 09.00 0.1  
 Z 21s 1.95um 5.0MsZ  
 eS 37 30.50  
 GUA 41.48 203 eP 31 09.70 0.5  
 QZH 41.95 244 eP 31 14.50 1.5

Z 20s 3.70um 5.3MsZ  
 N 20s 9.10um  
 E 20s 9.60um  
 S 37 28.00  
 LZH 42.30 269 eP 31 15.00 -1.0  
 Z 15s 8.60um 5.8MsZ  
 N 13s 7.90um  
 E 13s 6.20um

pP 31 23.50 29km  
 sP 31 28.00  
 ScS 41 10.00  
 GTA 42.54 276 Pd 31 16.80 -1.1  
 E 12s 7.70um  
 PP 33 04.00  
 ScS 41 08.00

HON 45.17 118 P 31 50.00 10.9X  
 Z 20s 3.99um 5.3MsZ  
 PGC 46.24 63 eP 31 48.00 0.7  
 WMQ 46.85 289 P 31 51.00 -1.4  
 Z 17s 16.60um 6.1MsZ  
 N 14s 4.20um  
 E 14s 7.00um

S 38 38.00  
 ScS 41 40.00  
 GMW 47.25 64 P 31 56.00 0.6  
 GYA 47.52 257 P 32 00.60 2.8  
 N 18s 7.50um  
 E 18s 4.60um

PNT 47.87 60 eP 32 00.00 -0.2  
 0.7s 49.00nm 5.6mb  
 BAG 48.00 235 eP- 32 02.00 0.2  
 eS 38 55.00  
 LON 48.27 64 P 32 02.20 -1.2  
 EDM 48.65 53 iPc 32 06.20 0.0  
 0.8s 123.00nm 6.0mb

NEW 49.82 60 P 32 15.00 -0.3  
 1.0s 37.50nm 5.4mb  
 DAG 50.16 360 iPd 32 16.30 -1.1  
 0.8s 30.60nm 5.4mb  
 Z 18s 3.57um 5.4MsZ  
 N 18s 1.92um  
 E 17s 2.31um

KMI 50.83 260 Pd 32 20.50 -3.0X  
 Z 20s 8.20um 5.7MsZ  
 N 18s 6.50um  
 E 18s 5.30um  
 sP 32 33.50  
 ScS 42 10.00

FHC 50.87 72 eP 32 24.20 0.9  
 SES 51.53 55 ePc 32 27.50 -0.8  
 LBFM 51.69 70 P 32 30.80 1.0  
 WDC 51.83 71 eP 32 30.80 0.2  
 MIN 52.52 71 eP 32 35.50 -0.5  
 KEV 52.57 341 eP 32 34.00 -1.8



FFC	52.88	e	32	41.00	23km	SNG	0.7s	36.00nm	5.6mb	QIS	75.69	200	eP	35	06.00	-1.5						
	0.9s	22.00nm	32	37.60	-0.7		66.29	249	eP	BLA	75.77	46	P	35	08.20	0.2						
ORV	53.11	71	eP	32	41.30	1.1			eS	42	56.20					5.0mb						
LRM	53.83	60	eP	32	45.30	-0.4	MAIO	67.47	301	eP	34	23.00	4.5X	CVL	75.95	44	P	35	08.70	-0.2		
BKS	53.84	73	ePc	32	47.20	1.7			eS	34	45.00	85kmX	KBA	76.01	337	eP	35	10.00	0.7			
	0.9s	25.00nm			5.2mb	QUE	68.13	291	eP	34	22.00	-0.8		0.7s	36.10nm			35	12.20	7kmX		
Z	20s	2.50um			5.3Msz	IPM	68.20	247	ePc	34	24.70	1.5			i			35	16.40			
N	20s	0.90um				MEO	69.08	60	iPc	34	27.60	-0.8			i			35	38.40			
E	20s	2.50um				SIO	69.50	58	e(P)	34	30.00	-0.9	CDF	76.02	342	eP	35	08.90	-0.4			
		eS	40	22.00		LNO	69.63	57	P	34	21.20	-10.4X		0.8s	24.20nm			35	5.3mb			
		eLQ	46	56.00		TUL	69.63	57	ePd	34	31.50	-0.2	CBN	76.21	43	eP	35	10.00	-0.3			
		eLR	49	04.00			1.2s	62.70nm	5.6mb	WB5	76.22	205	eP	35	10.00	-0.5						
DAV	53.93	224	eP	32	40.00	-6.3X	Z	19s	6.08um	5.9Msz	WRA	76.29	205	Pd	35	10.40	-0.5					
LSA	54.38	273	eP	32	50.40	0.2			e	34	42.70	37km		0.9s	22.50nm			35	5.2mb			
					5.4MszX				LR	59	00.00		PTJ	76.48	335	eP	35	13.50	1.6			
Z	13s	2.40um				RLO	69.82	56	eP	34	32.20	-0.7	RBL	76.56	337	Pc	35	12.00	-0.3			
N	12s	1.50um				MTN	70.41	210	eP	34	36.50	-0.1	FVI	76.60	337	P	35	12.90	0.6			
E	13s	1.50um				FVM	70.61	52	P	34	36.40	-1.3	BBTK	76.64	321	eP	35	00.00	-12.9X			
MHC	54.55	73	eP	32	50.90	0.0	EKA	70.81	350	P	34	38.00	-0.6	BBTK	76.64	321	eP	35	22.00	9.1X		
ARN	54.60	73	P	32	51.60	0.3		0.5s	13.90nm	5.3mb	LJU	76.70	336	e(P)	35	26.00	13.0X					
PPR	54.62	233	iPd	32	58.50	7.1X	HYB	71.16	274	eP	34	41.00	-0.3	OGA	76.73	339	eP	35	14.60	1.2		
SOD	54.66	340	iP	32	51.00	-0.2			eS	43	48.00		VOY	76.87	337	e(P)	35	13.50	-0.5			
		e	32	58.00	23km	KRA	71.62	334	eP	34	43.80	0.3	FLN	76.94	347	eP	35	13.80	-0.4			
CMB	54.79	72	eP	32	52.70	0.1								0.8s	43.00nm			35	5.5mb			
GDH	55.27	14	iPc	32	54.50	-1.1	Z	20s	6.00um	5.9Msz	VBY	77.03	335	e(P)	35	15.30	0.5					
	1.0s	16.00nm			5.0mb	E	20s	8.60um		LDF	77.06	347	eP	35	13.40	-1.5						
		i	33	01.00	21km				e	34	52.30	27km		1.0s	34.00nm			35	5.3mb			
		e	40	40.00		UYO	71.68	57	eP	34	43.30	-0.8	TRI	77.20	336	P	35	10.50	-5.2X			
		e	47	10.00		CLE	71.72	44	iP	34	44.90	0.6	BHD	77.32	309	ePd	35	25.00	8.5X			
KVN	55.38	70	P	32	57.40	0.3	KSP	71.80	337	eP	34	44.00	-0.6			eS	45	24.00				
PRS	55.41	74	eP	32	57.00	-0.1		1.0s	37.00nm	5.4mb			GRR	77.36	347	eP	35	15.70	-0.8			
LLA	55.45	74	eP	32	57.40	0.0			i	34	45.50	5kmX		0.8s	48.35nm			35	5.6mb			
FR1	55.90	72	eP	33	00.30	-0.3			e	37	49.30		CTI	77.37	338	P	35	16.50	-0.3			
TNP	56.55	70	P	33	05.60	0.1	OLY	72.10	54	P	34	45.40	-1.2	KOD	77.43	270	eP	35	15.90	-1.9		
	1.0s	55.83nm			5.5mb	CLL	72.11	339	eP	34	46.00	-0.4			eS	45	00.00					
SHL	56.97	269	eP	33	07.40	-1.2		1.1s	52.00nm	5.5mb			PRM	77.54	49	P	35	18.20	0.4			
		eS	40	56.00		BRG	72.31	338	eP	34	53.00	22km	LOR	77.74	344	eP	35	18.60	-0.1			
FR8	57.30	23	eP	33	08.00	-2.2			i	34	48.40	0.8		0.6s	23.00nm			35	5.4mb			
BW06	57.43	61	P	33	11.40	-0.4	N	20s	3.00um				LBF	77.99	343	eP	35	19.70	-0.4			
SYF	57.48	75	eP	33	14.00	1.9	E	20s	7.00um					0.6s	10.80nm			35	5.1mb			
ISA	57.54	73	eP	33	11.00	-1.4	TAB	72.48	311	e(P)	34	55.00	6.0X	SSF	78.00	344	eP	35	20.10	0.0		
RAB	57.70	189	iPd	33	13.00	-0.5	PRU	73.01	338	Pd	34	52.70	1.0		0.6s	13.55nm			35	5.2mb		
CHG	57.92	258	eP	33	14.60	-0.5		Z	16s	4.90um	5.9MszX		SAL	78.04	339	P	35	26.00	5.7X			
CHTO	57.92	258	eP	33	13.80	-1.3		N	18s	5.30um			MDI	78.05	339	P	35	20.50	0.1			
	0.7s	2.70nm			4.4mb X		E	17s	5.40um			VAI	78.16	340	Pc	35	21.80	0.8				
CLC	57.93	72	eP	33	15.00	-0.1	MOX	73.03	340	eP	34	55.00	3.1X	AVF	78.28	344	eP	35	21.10	-0.6		
SBB	58.61	73	eP	33	19.00	-0.9			e	35	24.60	128kmX		0.6s	19.85nm			35	5.3mb			
GSC	58.75	72	eP	33	21.00	0.1		Z	26s	2.40um	5.4MszX		SMF	78.34	344	eP	35	21.20	-0.8			
PAS	58.80	74	eP	33	20.00	-1.1		N	15s	3.00um				0.9s	20.45nm			35	5.2mb			
MWC	58.81	74	eP	33	21.00	-0.4	POO	73.10	278	eP	34	55.50	2.7	ORX	78.55	340	P	35	27.79	4.5X		
GUN	58.83	276	P	33	20.20	-1.7	DLE	73.15	352	eP	34	51.70	-0.8	ORO	78.56	340	P	35	27.00	3.7X		
	0.4s	16.00nm			5.5mb			0.6s	50.00nm	5.7mb			SKO	78.59	330	eP	35	24.00	0.6			
MSU	59.05	66	P	33	21.00	-2.1	DCN	73.16	352	eP	34	52.30	-0.3		Z	21s	4.77um			5.8Msz		
RSON	59.17	45	P	33	22.20	-1.3		0.8s	103.00nm	5.9mb				N	21s	2.98um						
	Z	20s	6.78um		5.8Msz	VR1	73.43	328	eP	34	57.00	2.7	BGF	78.59	344	eP	35	23.50	0.1			
KKN	59.28	276	P	33	22.40	-2.4	PSZ	73.59	333	eP	35	04.20	9.0X		0.6s	9.90nm			35	5.0mb		
RSSD	59.30	56	P	33	24.20	-0.6	GRF	74.01	340	eP	35	03.00	5.4X	VAY	78.84	329	eP	35	24.50	-0.3		
PKI	59.36	276	P	33	22.80	-2.7		Z	19s	2.00um	5.4Msz		LSD	78.88	341	P	35	26.77	1.5			
	0.6s	23.00nm			5.5mb	MLR	74.02	328	eP	35	00.00	2.2	LPL	78.91	341	eP	35	25.50	0.1			
RVR	59.37	73	eP	33	24.00	-1.0	KHC	74.03	338	P	34	58.30	0.6		0.6s	28.85nm			35	5.5mb		
PEC	59.56	73	P	33	26.00	-0.5			e	35	04.70	21km	LPG	78.92	341	eP	35	25.90	0.3			
NST	59.70	255	eP	33	33.50	6.1X	ZST	74.06	335	eP	35	02.50	4.6X	TCF	78.96	345	eP	35	24.60	-0.8		
TPC	60.04	72	eP	33	29.00	-0.8			i	35	19.70	63kmX		0.8s	17.45nm			35	5.1mb			
PLM	60.12	73	eP	33	30.00	-0.5	CTA	74.09	193	iPd	34	57.20	-1.1	MAF	78.97	344	eP	35	25.40	-0.1		
BAR	60.72	74	eP	33	34.00	-0.4		1.0s	39.00nm	5.4mb				0.6s	24.80nm			35	5.4mb			
NUR	61.04	337	iP	33	35.00	-1.1			i	35	10.50	46kmX			iS	44	24.00					
	0.7s	24.00nm			5.4mb	ECB	74.09	352	eP	34	58.60	0.7	PUK	78.98	331	eP	35	26.70	1.2			
		i	33	44.00	29km		0.7s	38.00nm	5.5mb				MFF	79.01	346	eP	35	25.10	-0.5			
AKU	61.30	359	iP	33	39.70	2.0	SRO	74.10	334	eP	35	02.30	4.2X		0.8s	29.55nm			35	5.4mb		
	1.0s	40.00nm			5.5mb			e	35	31.00	113kmX	BOB	79.07	339	P	35	28.00	1.9				
GLA	61.51	72	eP	33	39.00	-0.7			e	35	01.00	2.8	LSF	79.10	345	eP	35	26.00	-0.2			
GOL	61.83	61	P	33	42.20	0.0	MEM	74.14	343	P	34	58.20	-0.5	PHP	79.15	330	eP	35	25.20	-1.2		
	1.0s	65.00nm			5.7mb	PWLA	74.16	52	P	35	05.40	6.8X	RSP	79.16	341	P	35	28.71	2.1			
Z	20s	4.50um			5.6Msz	VKA	74.19	336	i(P)	35	02.00	3.2X	SFI	79.34	337	P	35	30.00	2.6			
GLD	61.87	61	P	33	42.20	-0.1	BUD	74.22	334	eP	35	02.00	0.5	MME	79.34	338	P	35	29.30	1.5		
	Z	20s	4.00um		5.6Msz	ECP	74.24	351	eP	34	59.30	0.5	BNI	79.36	341	P	35	29.50	1.7			
REY	62.85	1	eP	33	48.50	0.4		0.9s	96.00nm	5.8mb	LACI	79.41	331	eP	35	31.50	3.6X					
UPP	63.19	340	iP	33	49.50	-0.9	SOP	74.67	335	e(P)	34	43.00	-18.4X									



01d 02h

CKI	79.65	340	P	35	31.00	1.9
DOI	79.78	341	P	35	31.00	1.0
PZZ	79.81	341	P	35	33.33	3.1X
ROB	79.85	340	P	35	31.28	0.9
ASS	79.95	336	P	35	32.00	1.1
ASPA	79.97	204	iPd	35	31.30	0.3
	0.6s	25.00nm				5.4mb
Z	22s	1.93um				5.4MsZ
		eS	45	35.80		
		LR	07	09.90		
ENR	80.01	340	P	35	32.82	1.6
STV	80.01	340	P	35	33.12	1.9
KBN	80.01	330	eP	35	36.60	5.5X
RMQ	80.09	190	eP	35	32.50	0.9
IMI	80.22	340	P	35	36.00	3.7X
CAF	80.31	344	eP	35	33.00	0.3
	0.8s	20.80nm				5.2mb
AQU	80.45	336	P	35	39.10	5.6X
LFF	80.50	345	eP	35	33.90	0.2
	1.0s	56.00nm				5.5mb
TPE	80.56	330	eP	35	32.50	-1.5
LPO	80.68	345	eP	35	34.70	0.0
	0.7s	44.10nm				5.6mb
AZI	80.78	335	P	35	34.00	-1.2
BRT	80.83	332	P	35	33.00	-2.5
DUI	80.83	335	P	35	37.00	1.4
SDI	80.95	335	P	35	35.50	-0.7
LRG	80.96	341	eP	35	36.20	0.1
	0.6s	28.85nm				5.5mb
LMR	81.05	341	eP	35	37.40	0.8
	1.0s	68.00nm				5.6mb
III	81.55	71	eP	35	41.00	1.2
ORI	81.80	333	P	35	41.50	1.0
MBL	81.93	217	iPd	35	40.60	-0.7
	0.5s	11.00nm				5.1mb
MGR	81.97	333	P	35	41.00	-0.4
TDS	82.20	333	P	35	44.50	1.8
EPF	82.43	345	eP	35	43.30	-0.6
	0.8s	14.10nm				5.1mb
GRI	82.97	332	P	35	50.80	4.1X
EMON	82.99	351	eP	35	56.00	9.2X
RYD	83.34	303	eP	35	47.00	-1.9
SOI	83.76	332	P	35	51.00	0.3
COO	83.86	187	iPc	35	52.90	1.8
WARB	84.34	210	eP	35	54.40	0.8
	0.5s	12.00nm				5.4mb
EZAM	84.39	352	e(P)	35	51.50	-2.4
EBR	84.56	345	eP	35	53.00	-1.7
EROO	84.58	345	eP	35	54.00	-0.8
NANU	84.83	221	eP	35	55.00	-1.1
ETOR	84.95	346	eP	35	58.00	1.2
GUD	85.40	348	eP	36	01.00	1.9
ECHE	86.00	345	eP	36	07.00	5.0X
TOL	86.14	348	eP	36	04.50	1.9
EPLA	86.20	349	eP	36	07.00	4.0X
EVIA	87.15	346	eP	36	08.50	0.8
EBAN	87.79	347	eP	36	12.00	1.3
BWA	87.98	190	eP	36	12.80	1.5
KMSA	88.03	302	eP	36	11.70	-0.4
ASMO	88.58	347	iPc	36	15.00	0.4
AAPN	88.68	347	iPc	36	15.00	-0.1
CNB	88.77	189	eP	36	16.70	1.5
CAN	88.81	189	eP	36	16.30	1.0
ALOJ	88.88	347	eP	36	16.00	-0.1
APHF	88.97	347	iPc	36	17.00	0.4
ATEJ	89.05	347	iPc	36	17.00	0.0
MAJ	89.29	348	eP	36	11.30	-6.5X
EFJF	89.70	348	eP	36	20.00	0.2
MRWA	90.67	217	eP	36	23.50	-0.6
IFR	92.55	348	iP	36	33.00	-0.2
AVE	93.03	349	eP	36	37.00	1.8
BCAO</						

SLR	134.89	288	ePKP	42	28.00	-13.1X
	0.9s	25.21nm				
Z	18s	3.09um				6.1MsZ
		i		42	41.50	
KSR	135.77	289	ePKP	42	26.00	-16.8X
BFS	136.63	289	iPKPc	42	45.00	0.6
	0.5s	14.08nm				
SEK	137.24	286	ePKP	42	34.00	-11.5X
SWZ	137.68	290	ePKP	42	36.00	-10.4X
	0.4s	21.19nm				
		e		42	47.50	
		i		46	20.00	
KIM	139.19	289	iPKPd	42	50.00	0.9
HVD	140.17	286	ePKP	42	41.00	-9.8X
POF	142.37	293	ePKP	42	52.00	-2.5X
CER	145.75	290	iPKPc	43	00.00	-0.2
	1.0s	166.00nm				
		e		46	45.00	
S.D. = 1.2 on 239 of 290 obs.						
MAR 01, 1990 02h 45m 27.37±0.87s						
34.147 N ±11.2km 117.681 W ± 7.6km						
DEPTH = 5.0km (geophysicist)						
SOUTHERN CALIFORNIA ( 43)						
ML 2.5 (NEIS).						
MWC	0.32	284	iP	45	34.30	0.4
PEC	0.50	120	iPc	45	37.90	0.5
CIS	0.95	219	eP	45	46.00	0.0
PLM	1.04	139	eP	45	47.20	-0.5
ABL	1.45	299	eP	45	53.80	-0.7
BCH	2.24	298	eP	46	00.00	0.3
S.D. = 0.6 on 6 of 6 obs.						
& MAR 01, 1990 03h 08m 45.10s						
34.130 N 117.700 W						
DEPTH = 5.0km						
SOUTHERN CALIFORNIA ( 43)						
<PAS-P>. ML 3.3 (PAS).						
MWC	0.31	288	iPc	08	51.30	-0.1
PEC	0.51	118	iPc	08	54.70	-0.6
PLM	1.04	138	iPc	09	04.20	-1.2
ABL	1.45	300	eP	09	11.10	-1.1
BCH	2.23	299	eP	09	22.80	-0.6
GLA	2.63	113	eP	09	26.80	-2.2
KVN	4.92	356	eP	10	02.00	0.3
7 obs. associated						
& MAR 01, 1990 03h 23m 03.00s						
34.150 N 117.720 W						
DEPTH = 11.0km						
4.3mb ( 7 obs.)						
SOUTHERN CALIFORNIA ( 43)						
<PAS-P>. ML 4.7 (PAS), 4.8						
(BRK). Felt throughout the Los						
Angeles-Long Beach-Riverside						
area.						
MWC	0.29	285	iPc	23	00.80	-0.4
RVR	0.33	119	iPc	23	09.20	-0.6
PAS	0.37	270	iPc	23	10.20	-0.5
PEC	0.53	119	iPc	23	12.80	-1.0
SBB	0.54	351	iPd	23	13.20	-0.8
CIS	0.93	218	iPd	23	20.10	-0.7
PLM	1.07	138	ePc	23	22.20	-1.0
SCI	1.36	211	ePd	23	26.50	

KVN	4.90	357	iPd	24	18.40	-0.1
PCC	5.05	313	eP	24	07.60	-12.8
BKS	5.22	317	eP	24	20.80	-2.0
			eLQ	25	44.00	
			eLR	26	24.00	
BRK	5.23	317	eP	24	20.40	-2.5
ORV	6.19	332	eP	24	35.50	-1.0
MSU	6.24	44	eP	24	37.50	0.0
ALQ	9.33	82	eP	25	19.00	-1.5
	1.0s	31.25nm				5.6mb X
LRM	12.33	17	eP	26	05.80	4.2
PNT	15.22	355	eP	26	44.00	4.6
MEO	15.80	82	eP	26	51.80	4.8
SES	16.96	15	eP	27	03.00	1.4
SIO	17.63	79	e(P)	27	11.20	1.1
TUL	18.04	78	eP	27	16.70	1.5
	1.0s	19.30nm				4.2mb
RLO	18.66	77	eP	27	24.80	1.9
UYO	19.25	83	e(P)	27	28.00	-2.0
EDM	19.32	8	eP	27	28.50	-2.3
FFC	23.34	23	eP	28	12.00	0.2
	1.0s	12.00nm				4.4mb
RSON	24.17	39	eP	28	19.60	-0.4
	0.8s	10.02nm				4.5mb
INK	35.37	350	eP	30	05.00	4.9
FBA	35.76	339	eP	30	03.00	-0.5
	0.6s	3.69nm				4.4mb
TTA	37.38	332	eP	30	16.20	-1.0
	0.8s	4.31nm				4.3mb
IMA	38.37	337	eP	30	24.40	-1.2
	1.0s	7.50nm				4.4mb
FRB	42.13	30	eP	30	56.00	-0.4
MBC	42.19	359	eP	30	57.00	0.2
	1.0s	4.00nm				4.1mb
	52 obs.	associated				
<hr/>						
* MAR 01, 1990 03h 29m 26.41± 2.57s						
38.034 N ±16.4km 14.305 E ±17.5km						
DEPTH = 10.0km (geophysicist)						
SICILY						(398)
GIB	0.87	195	P	29	43.50	0.3
			eSg	29	52.40	
MNO	0.95	161	P	29	44.00	-0.7
			eSg	29	54.00	
ATN	1.13	126	P	29	47.80	0.2
			eSg	29	59.00	
CZI	1.48	74	P	29	52.70	-0.3
			eSg	30	12.50	
SOI	1.57	118	P	29	54.80	0.5
			eSg	30	12.00	
FAI	1.63	198	P	29	57.70	2.4X
S.D. = 0.7 on 5 of 6 obs.						
<hr/>						
& MAR 01, 1990 03h 31m 14.90s						
34.150 N 117.720 W						
DEPTH = 12.0km						
SOUTHERN CALIFORNIA						( 43 )
<PAS-P>. ML 3.3 (PAS).						
MWC	0.29	285	iPc	31	20.70	-0.5
PEC	0.53	119	iPc	31	24.70	-1.0
CIS	0.93	218	iPd	31	32.10	-0.5
			iS	31	45.00	
PLM	1.07	138	eP	31	34.40	-0.6
ABL	1.42	300	eP	31	40.20	-0.5
BCH	2.21	299	eP	31	51.20	-0.7
BLP	2.26	281	eP	31	51.10	-1.4
KVN	4.90	357	eP	32	30.50	0.2
8 obs. associated						
<hr/>						
MAR 01, 1990 03h 57m 07.52± 0.35s						
40.918 N ± 4.0km 22.217 E ± 3.0km						
DEPTH = 8.9 ± 3.0 km						
GREECE						(364)
ML 3.5 (SKO), 3.2 (THE). MD 3.6						
(ATH).						
VAY	0.48	33	iPg	57	16.70	-0.6
			i	57	21.30	
			iSg	57	22.50	
KNT	0.57	64	ePg	57	18.90	-0.1
THE	0.64	116	ePg			



LIT	0.84	166	ePg	57	22.60	-1.3	RBL	0.89	113	P	iSg	06	35.60	-0.7	CRF	1.43	131	P	40	04.68	-2.2
			eSg	57	36.80							06	24.30		LMW	1.43	220	P	40	05.53	-1.5
SOH	0.87	96	ePg	57	24.30	0.0				eSg	06	36.10		BRVW	1.45	153	P	40	06.48	-0.8	
			eSg	57	38.40		CTI	0.90	214	P		06	25.00	-0.2	WRD	1.47	122	P	40	05.59	-1.9
SRS	1.06	79	ePb	57	27.40	-0.2				eSg	06	37.00		MCW	1.55	307	P	40	07.98	-0.7	
			eSb	57	42.70		VOY	1.30	126	ePg	06	33.40	1.5	GBL	1.56	139	P	40	07.27	-1.5	
PLG	1.08	120	ePb	57	28.00	0.0				eSg	06	48.20		KOSW	1.56	213	P	40	07.92	-0.9	
OHR	1.09	281	iPg	57	26.50	-1.7	TRI	1.45	138	P		06	34.50	0.4	APW	1.61	226	Pd	40	08.41	-1.1
			iSg	57	40.70					eSg	06	50.50		RSW	1.67	145	P	40	09.77	-0.7	
KBN	1.11	255	iPg	57	28.90	0.6	BRG	4.21	14	e(P)	07	03.00	-10.5X	SMW	1.68	255	P	40	09.70	-0.8	
KKB	1.15	34	iPg	57	29.00	-0.1								ASR	1.68	195	P	40	10.29	-0.3	
SKO	1.20	331	iPg	57	28.30	-1.8								CPW	1.68	242	P	40	09.79	-0.8	
	0.6s	364.00nm												CZM	1.71	219	P	40	10.24	-0.7	
SKO	1.20	331	iPn	57	29.50	-0.6X								SOSW	1.74	208	P	40	11.05	-0.4	
			iSg	57	42.70									ERK	1.75	213	P	40	10.61	-1.0	
			i	57	44.30									WIW	1.76	139	P	40	11.60	0.0	
MMB	1.32	59	ePg	57	33.00	0.9								ESD	1.78	208	P	40	12.12	0.1	
			Sg	57	52.00									YEL	1.78	209	P	40	11.83	-0.3	
OUR	1.46	113	ePb	57	34.30	0.2	TUNG	1.86	41	eP	29	20.20	-0.7	SHW	1.81	209	P	40	12.47	0.0	
PAIG	1.49	131	ePb	57	35.30	0.8				eS	29	43.00		GL2	1.82	177	P	40	11.82	-0.8	
PHP	1.54	300	ePg	57	33.70	-1.5	VC1	2.52	30	iP+	29	31.50	1.1	CDFW	1.82	205	P	40	12.31	-0.3	
BERA	1.73	264	ePn	57	39.10	1.1	GGP	2.85	22	iP+	29	35.80	0.7	DPW	1.86	86	P	40	11.10	-2.1	
KKS	1.78	311	ePn	57	40.00	1.3	QUR	2.88	24	iPd	29	35.90	0.5	STW	1.86	283	P	40	12.64	-0.5	
NEO	1.78	154	ePb	57	39.00	0.2				eS	30	10.00		GULW	1.90	194	P	40	14.44	0.6	
TPE	1.79	250	ePn	57	38.50	-0.3	CAYA	3.35	30	iP+	29	43.00	0.9	BMW	2.02	231	P	40	15.35	-0.2	
TIR	1.83	284	ePn	57	41.50	2.2	COTA	3.41	23	iP+	29	43.40	0.4	VLL	2.36	192	P	40	22.06	1.5	
VTS	1.83	24	iP	57	40.00	0.5	PURC	6.09	33	iPd	30	21.96	1.1	CROR	2.79	180	P	40	26.32	-0.3	
AGG	1.90	177	ePn	57	40.50	0.1	SILC	6.41	31	iPc	30	24.46	-0.8								
LACI	2.02	292	ePn	57	45.80	3.7X	ANCC	6.90	24	eP	30	27.73	-4.0X								
PUK	2.08	304	ePn	57	44.90	2.0	HOQC	6.95	26	eP	30	30.86	-1.8								
PGB	2.19	41	iP	57	45.00	0.4	DIAC	7.00	30	eP	30	31.65	-1.6								
KEK	2.21	238	ePb	57	49.00	4.1X	NNA	9.53	163	eP	31	09.00	0.9								
SDA	2.32	299	ePn	57	51.50	5.1X															
KDZ	2.52	72	eP	57	49.00	-0.3				0.5s	11.27nm	5.2mb X									
			iS	58	21.00		PT10	9.57	164	eP	31	07.00	-1.7								
			iSg	58	28.00					eS	32	56.00									
RDO	2.52	84	ePn	57	49.00	-0.3	ARE	15.76	150	eP	32	39.00	7.7X								
DIM	2.74	64	eP	57	54.00	1.6	LPB	17.75	141	eP	32	56.00	-0.5								
ALN	2.90	89	ePn	57	54.00	-0.7				1.0s	17.14nm	4.1mb		ADK	1.12	304	iPc	35	09.50	1.0	
PVL	3.26	44	eP	57	58.00	-1.9	CCH	19.64	138	P	33	20.90	2.2	SMY	6.78	287	eP	36	25.20	-3.5X	
EZN	3.32	108	ePn	57	50.00	-10.7X	TUL	41.38	340	eP	36	34.90	1.1	SDN	9.69	59	eP	37	09.10	0.0	
JMB	3.62	63	eP	58	04.00	-0.9				0.7s	5.20nm	4.4mb		SVW	14.62	40	eP	38	22.20	7.0X	
BZS	4.72	355	ePc	58	18.50	-2.0	EDM	62.57	338	eP	39	10.50	-1.4	KDC	14.64	55	eP	38	21.20	5.8X	
MLR	5.32	30	eP	58	30.00	0.8	KIC	75.37	83	P	40	30.60	-1.0	TTA	15.57	34	eP	38	34.00	6.5X	
VRI	5.94	32	eP	58	38.00	0.3	INK	80.00	342	eP	40	56.00	-0.1	IMA	18.42	28	eP	39	05.40	2.2	
							MBC	82.16	351	eP	41	08.00	0.7	TOA	19.09	44	eP	39	12.40	1.1	
														FBA	19.67	36	eP	39	17.00	-0.8	
															0.8s	32.76nm			4.7mb		
														BRW	21.77	16	e(P)	39	39.00	-0.3	
														INK	26.27	34	eP	40	23.00	0.5	
														MBC	32.87	21	eP	41	21.50	0.1	
															0.5s	2.00nm			4.3mb		
														PNT	34.84	71	eP	41	40.00	1.3	
															0.5s	2.00nm			4.3mb		
														MAT	36.02	264	(P)	41	48.00	-0.9	
															1.8s	77.27nm			5.3mb		
															Z	20s	0.71um			4.4Msz	
																	eS	48	00.00		
														NEW	36.78	71	eP	41	55.30	0.1	
														EDM	36.87	62	iPc	41	57.00	1.1	
															0.5s	12.00nm			5.0mb		
														CN2	39.79	283	eP	42	19.80	-0.5	
															Z	20s	1.50um			4.8Msz	
															N	17s	1.20um				
															E	17s	0.80um				
																	eP	42	27.00	24kmX	
														LRM	40.76	72	eP	42	29.00	0.4	
														KVN	41.06	84	e(P)	42	30.50	-0.5	
														SNY	42.03	282	Pd	42	40.20	1.5	
														TNP	42.20	85	e(P)	42	40.00	-0.4	
															0.9s	6.84nm			4.4mb		
														FFC	42.35	56	eP	42	42.00	0.8	
															0.6s	6.00nm			4.5mb		
														CLC	43.37	88	eP	42	56.00	6.2X	
																	e	43	25.00		
														SBB	43.94	89	eP	42	56.00	1.5	
														RSSD	46.69	70	eP	43	15.00	-1.4	
														BJI	47.61	285	eP	43	24.00	0.6	
														GOL	48.53	75	eP	43	31.00	0.1	
														RSON	48.64	57	eP	43	31.00	-0.3	
														HHC	49.89	288	eP	43	41.00	-0.2	
														BTO	50.97	289	P	43	51.00	1.6	
														TIY	51.34	285	eP	43	52.20	0.0	
															N	16s	1.00um				
														DAG	51.35	7	eP	43	50.00	-1.7	
																	iP	44	22.30	140kmX	
														FRB	51.91	33	eP	43	55.00	-1.1	
																	pP	44	28.00	143kmX	



01d 07h

XAN 55.90 283 P 44 25.50 -0.4  
 TUL 56.75 73 e(P) 44 48.20 16.3X  
 1.0s 4.00nm  
 LZH 57.58 289 Pc 44 37.60 -0.4  
 1.2s 26.00nm 5.2mb  
 Z 20s 1.50um 5.1MsZ  
 E 20s 1.40um  
 GTA 57.70 294 eP 44 37.60 -1.1  
 Z 18s 1.20um 5.0MsZ  
 SCH 58.69 40 eP 44 45.00 -0.3  
 pP 45 17.00 134kmX  
 WMO 61.29 305 iPd 45 02.40 -0.9  
 WNY 63.00 52 eP 45 13.90 -0.8  
 HBVT 63.41 52 eP 45 16.50 -0.9  
 CBM 63.88 47 eP 45 19.30 -1.0  
 BLA 64.73 62 eP 45 26.00 -0.1  
 0.5s 4.50nm 4.8mb  
 NB2 67.93 357 P 45 45.00 -1.1  
 0.7s 2.50nm 4.4mb  
 HFS 68.72 355 eP 45 49.50 -1.4  
 0.5s 7.40nm 5.0mb  
 Z 17s 0.24um 4.5MsZ  
 LR 10 07.00  
 GUN 73.99 295 P 46 23.90 0.5  
 KKN 74.42 295 P 46 26.20 0.5  
 0.6s 28.00nm 5.4mb  
 PKI 74.51 295 P 46 26.60 0.2  
 1.0s 42.00nm 5.4mb  
 GKN 74.62 295 P 46 27.10 0.3  
 0.6s 20.00nm 5.3mb  
 DMN 74.66 295 P 46 27.70 0.5  
 S.D. = 0.9 on 44 of 50 obs.

MAR 01, 1990 07h 35m 21.09±0.43s  
 51.218 N ±10.8km 175.214 W ±5.3km  
 DEPTH = 33.0km (normol)  
 4.9mb (27 obs.) 4.6MsZ (3 obs.)  
 ANDREANOF ISLANDS, ALEUTIAN IS. (7)  
 CENTROID, MOMENT TENSOR (HRV)  
 Data Used: GDSN  
 L.P.B.: 135, 23C  
 Centroid Location:  
 Origin Time 07:35:27.3 0.9  
 Lat 51.88N 0.17 Lon 175.14W 0.12  
 Dep 20.8 6.4 Half-duration 1.5  
 Moment Tensor: Scale 10\*\*16 Nm  
 Mrr=-2.95 0.42 Mtt=-1.19 0.69  
 Mff=-1.76 0.38 Mrt= 4.87 1.80  
 Mrf=-0.16 0.84 Mtf=-3.03 0.34  
 Principal Axes:  
 T Val= 6.59 Plg=52 Azm= 21  
 N -0.65 28 248  
 P -5.94 24 145  
 Best Double Couple: Mo=6.3\*10\*\*16  
 NP1: Strike=193 Dip=33 Slip= 30  
 NP2: 77 74 120

TTA 15.62 34 eP 39 02.50 2.3  
 PMR 17.65 44 eP 39 27.00 1.4  
 IMA 18.47 28 eP 39 36.50 0.6  
 FBA 19.73 36 eP 39 48.50 -1.9  
 0.6s 24.63nm 4.7mb  
 INK 26.32 34 eP 40 55.00 -0.1  
 MBC 32.93 21 ePc 41 53.90 0.0  
 0.5s 5.00nm 4.7mb  
 PNT 34.87 71 eP 42 10.00 -1.0  
 0.7s 18.00nm 5.1mb  
 MDJ 36.81 282 eP 42 27.20 -0.2  
 Z 20s 0.50um 4.3MsZ  
 eS 48 09.00  
 SS 50 36.00  
 NEW 36.82 71 eP 42 27.00 -0.5  
 0.8s 31.25nm 5.2mb  
 EDM 36.91 62 eP 42 29.00 0.8  
 0.6s 59.00nm 5.6mb  
 WDC 37.42 85 eP 42 37.00 4.4X  
 KVN 41.09 84 e(P) 43 04.50 1.2  
 SNY 42.02 282 iPc 43 10.00 -0.6  
 Z 19s 0.80um 4.6MsZ  
 N 16s 0.70um  
 E 19s 0.80um  
 FFC 42.40 55 eP 43 14.00 0.4  
 0.9s 23.00nm 4.9mb  
 ISA 42.93 88 eP 43 11.00 -7.3X  
 BW06 44.20 74 eP 43 29.00 0.3  
 0.7s 21.93nm 5.1mb  
 DL2 44.94 280 P 43 33.00 -1.4

PLM 45.44 90 eP 43 40.00 1.3  
 TPC 45.46 88 eP 43 52.00 13.3X  
 RSSD 46.72 69 eP 43 49.00 0.3  
 PV09 47.00 79 eP 43 51.50 0.4  
 BJI 47.60 285 eP 43 56.00 0.6  
 Z 18s 0.88um 4.8MsZ  
 GOL 48.56 75 eP 44 04.00 0.8  
 0.6s 11.73nm 5.1mb  
 RSON 48.68 57 eP 44 03.30 -0.4  
 0.6s 11.73nm 5.1mb  
 TIA 49.41 280 eP 44 08.60 -0.9  
 ALO 50.91 81 eP 44 19.80 -1.4  
 1.0s 4.25nm 4.4mb  
 BTO 50.96 289 eP 44 22.00 0.6  
 N 15s 0.50um  
 E 15s 0.60um  
 WHN 54.91 277 P 44 51.50 0.8  
 TUL 56.79 73 eP 45 04.00 -0.2  
 1.0s 8.30nm 4.7mb  
 RLO 57.08 72 eP 45 05.30 -1.0  
 SOD 60.59 350 eP 45 27.00 -3.2X  
 CD2 61.20 284 eP 45 33.20 -1.7  
 RSNY 62.60 52 eP 45 42.00 -2.0  
 0.7s 11.07nm 5.1mb  
 WNY 63.05 52 eP 45 46.00 -1.0  
 HBVT 63.46 52 eP 45 48.50 -1.2  
 CBM 63.93 47 eP 45 51.50 -1.2  
 BLA 64.77 62 eP 45 57.80 -0.6  
 SUF 65.16 349 eP 45 59.50 -0.9  
 PRM 65.94 65 eP 46 05.20 -0.6  
 JSC 66.43 64 eP 46 10.00 1.1  
 NUR 67.48 350 eP 46 11.00 -4.2X  
 NB2 67.98 357 P 46 16.80 -1.6  
 0.9s 7.40nm 4.8mb  
 HFS 68.77 355 eP 46 21.20 -2.1  
 0.5s 12.70nm 5.2mb  
 EKA 73.61 5 P 46 53.00 0.7  
 2.4s 228.30nm 5.7mb  
 MAIO 80.52 318 eP 47 32.00 0.8  
 HAU 81.15 359 eP 47 34.50 0.2  
 0.8s 10.75nm 4.9mb  
 BSF 81.32 359 eP 47 34.90 -0.3  
 0.6s 5.40nm 4.7mb  
 KBA 81.81 354 eP 47 38.00 0.1  
 0.7s 7.70nm 4.8mb  
 i 47 42.40  
 LOR 81.89 1 eP 47 38.40 0.3  
 0.6s 8.10nm 4.9mb  
 MLR 81.95 345 ePc 47 41.00 2.4  
 SSF 82.10 1 eP 47 39.20 0.0  
 0.6s 5.40nm 4.8mb  
 LBF 82.18 1 eP 47 39.60 0.0  
 0.6s 3.60nm 4.6mb  
 AVF 82.37 1 eP 47 40.90 0.4  
 0.8s 8.75nm 4.9mb  
 SMF 82.51 1 eP 47 41.50 0.1  
 0.6s 7.20nm 4.9mb  
 MAF 82.92 2 eP 47 44.80 1.3  
 0.7s 11.00nm 5.1mb  
 WRA 83.50 227 P 47 48.00 1.3  
 0.6s 1.30nm 4.2mb  
 HYB 86.36 293 eP 48 01.00 -0.2  
 ASPA 86.93 225 eP 48 11.70 8.0X  
 0.6s 2.00nm 4.5mb  
 POO 88.14 298 eP 48 12.50 2.7  
 GBA 90.04 292 Pd 48 19.20 0.4  
 0.7s 3.40nm 4.7mb  
 KIC 122.07 11 PKP 54 13.60 -0.2  
 BCOA 123.33 344 ePKPd 54 18.80 2.5X  
 0.5s 10.00nm  
 id 54 31.90  
 S.D. = 1.1 on 55 of 62 obs.

? MAR 01, 1990 10h 55m 24.34±3.43s  
 0.303 S ±11.6km 78.926 W ±33.5km  
 DEPTH = 33.0km (normol)  
 ECUADOR (107)

GGP 0.35 69 iP+ 55 32.70 -0.7  
 S 55 37.80  
 QUR 0.42 72 iPd 55 33.70 -0.4  
 S 55 41.10  
 VC1 0.62 122 iP+ 55 37.00 -0.2  
 S 55 46.50  
 COTA 0.86 43 P 55 40.50 -0.1  
 S 55 54.70  
 CAYA 1.02 68 P 55 43.90 1.1

TUNG 1.21 157 P 55 59.40 0.1  
 S 56 02.50  
 S.D. = 0.8 on 6 of 6 obs.

\* MAR 01, 1990 11h 27m 28.23±0.71s  
 51.094 N ±15.9km 175.101 W ±6.3km  
 DEPTH = 33.0km (normol)  
 4.4mb (8 obs.) 4.4MsZ (1 obs.)  
 ANDREANOF ISLANDS, ALEUTIAN IS. (7)

ADK 1.27 309 iPc 27 49.00 -0.7  
 SDN 9.73 58 eP 29 48.80 -0.1  
 KDC 14.70 54 eP 31 01.50 6.1X  
 SVW 14.72 40 eP 31 00.00 4.3X  
 TTA 15.69 34 eP 31 13.30 5.1X  
 IMA 18.55 28 eP 31 44.80 0.8  
 TOA 19.18 44 eP 31 53.10 1.5  
 FBA 19.79 35 eP 31 55.50 -2.7X  
 1.0s 11.50nm 4.1mb  
 INK 26.38 34 eP 33 03.00 0.2  
 MBC 33.02 21 eP 34 01.50 -0.3  
 0.5s 2.00nm 4.3mb  
 NEW 36.79 71 eP 34 34.20 -0.2  
 0.9s 5.48nm 4.4mb  
 EDM 36.91 62 eP 34 36.50 1.1  
 CN2 39.88 283 eP 35 00.00 -0.2  
 KVN 41.03 84 e(P) 35 13.50 3.5X  
 SNY 42.11 282 eP 35 16.60 -1.9  
 BW06 44.16 74 eP 35 36.00 0.5  
 0.7s 4.39nm 4.4mb  
 BJI 47.70 285 eP 36 03.00 -0.3  
 GOL 48.52 75 eP 36 08.00 -2.1  
 0.5s 2.70nm 4.5mb  
 RSON 48.69 57 eP 36 11.00 0.1  
 HHC 50.00 288 eP 36 21.80 0.6  
 BTO 51.07 289 eP 36 30.80 1.4  
 TIY 51.43 285 eP 36 32.80 0.7  
 LZH 57.69 289 eP 37 17.60 -0.3  
 1.8s 34.00nm 5.1mb  
 Z 20s 0.30um 4.4MsZ  
 WNY 63.07 52 eP 37 53.50 -0.8  
 KMI 66.07 281 eP 38 29.00 14.8X  
 NB2 68.10 357 P 38 24.80 -1.5  
 0.4s 1.00nm 4.3mb  
 HFS 68.90 355 eP 38 29.00 -2.2  
 0.3s 3.40nm 4.9mb  
 GUN 74.10 295 P 39 03.90 0.7  
 KKN 74.54 295 P 39 06.35 0.7  
 PKI 74.63 295 P 39 06.80 0.5  
 GKN 74.74 296 P 39 07.40 0.7  
 DMN 74.78 295 P 39 08.00 1.0  
 S.D. = 1.1 on 26 of 32 obs.

MAR 01, 1990 12h 06m 53.51±0.63s  
 40.533 N ±4.7km 23.753 E ±6.7km  
 DEPTH = 10.0km (geophysicist)  
 GREECE (364)  
 ML 2.3 (THE).

OUR 0.26 139 ePg 06 59.50 0.4  
 SOH 0.42 314 ePg 07 01.50 -0.6  
 SRS 0.60 348 ePg 07 04.70 -0.9  
 eSg 07 17.10  
 PAIG 0.61 185 iPg 07 04.90 -0.9  
 eSg 07 13.30  
 THE 0.61 280 ePg 07 05.40 -0.4  
 KNT 0.90 314 ePg 07 10.20 -0.6  
 eSg 07 23.40  
 MMB 1.06 359 ePg 07 13.00 -0.4  
 LIT 1.06 246 ePg 07 14.10 0.6  
 eSg 07 27.30  
 VAY 1.19 312 ePn 07 17.00 1.3  
 KKB 1.42 339 iP 07 20.00 0.6  
 Sg 07 40.00  
 VTS 2.10 349 eP 07 30.00 0.8  
 S.D. = 0.8 on 11 of 11 obs.

? MAR 01, 1990 12h 11m 55.62±6.02s  
 33.020 S ±16.8km 72.175 W ±43.4km  
 DEPTH = 10.0km (geophysicist)  
 OFF COAST OF CENTRAL CHILE (134)  
 LCCH 0.68 132 iP 12 08.40 -0.7  
 iS 12 18.50  
 ROCH 0.98 87 iPd 12 14.50 0.1  
 iS 12 27.30



01d 12h

LNV 1.13 146 iP 12 17.10 0.3  
 SAN 1.34 109 eP 12 20.50 0.2  
 JACH 1.37 76 eP 12 20.50 -0.4  
 FCH 1.61 101 iPc 12 25.00 0.5  
 S.D. = 0.6 on 6 of 6 obs.

? MAR 01, 1990 12h 12m 02.74 ± 9.88s  
 48.797 N ± 28.8km 8.978 E ± 65.3km  
 DEPTH = 10.0km (geophysicist)

GERMANY (543)  
 MD 1.0 (STR).

GWF 0.91 282 Pg 12 20.22 0.0  
 FEL 1.12 215 Pn 12 23.86 0.0  
 CDF 1.19 252 Pg 12 24.84 -0.2  
 ECH 1.34 245 Pg 12 27.80 0.3  
 S.D. = 0.4 on 4 of 4 obs.

& MAR 01, 1990 12h 46m 42.93s  
 60.996 N 149.438 W  
 DEPTH = 35.5km  
 KENAI PENINSULA, ALASKA (14)  
 <AGS-P>.

PMS 0.26 347 iP 46 49.97 -0.5  
 PLRM 0.62 14 eP 46 54.51 -0.6  
 SLKM 0.62 218 eP 46 54.43 -0.9  
 PWA 0.69 342 iP 46 55.81 -0.4  
 SUA 0.79 307 eP 46 57.20 -0.5  
 GHO 0.82 17 eP 46 57.82 -0.3  
 SEW 0.90 180 eP 46 57.88 -1.2  
 NKA 0.92 255 iP 47 00.61 1.2  
 GLI 1.15 95 iP 47 01.65 -1.1  
 CGLM 1.28 285 iP 47 04.54 -0.3  
 SPU 1.28 279 iP 47 04.30 -0.5  
 >NNL 1.33 225 eP 47 06.10 0.7  
 CRP 1.35 283 eP 47 05.70 -0.1  
 NCG 1.38 288 iP 47 06.12 -0.1  
 VZW 1.41 86 eP 47 05.89 -0.7  
 SKT 1.41 315 eP 47 06.59 0.0  
 CKL 1.42 279 iP 47 06.87 0.0  
 BGL 1.46 282 iP 47 07.18 -0.2  
 CUT 1.47 345 eP 47 08.08 0.7  
 RDT 1.52 255 eP 47 07.82 -0.4  
 NCA 1.60 50 iP 47 09.60 0.1  
 RED 1.74 252 eP 47 11.30 -0.1  
 KLU 1.77 72 eP 47 11.31 -0.6  
 TOA 1.92 53 eP 47 14.96 1.0  
 HUR 1.99 357 eP 47 16.37 1.5  
 RND 2.43 6 eP 47 22.45 1.2  
 PDB 2.65 245 eP 47 23.62 -0.7  
 KTH 2.66 346 eP 47 26.28 1.8  
 PAX 2.73 42 eP 47 26.98 1.6  
 GLB 2.76 78 eP 47 25.05 -0.8  
 30 obs. associated

MAR 01, 1990 13h 22m 38.04 ± 0.55s  
 39.811 N ± 5.4km 20.704 E ± 3.6km  
 DEPTH = 5.0km (geophysicist)  
 GREECE-ALBANIA BORDER REGION (392)  
 MD 3.4 (ATH). ML 3.1 (THE).

LSK 0.35 347 iPg 22 44.90 -0.2  
 SRN 0.55 277 ePg 22 48.60 -0.4  
 KEK 0.70 262 ePg 22 51.00 -1.1  
 TPE 0.72 312 ePg 22 51.00 -1.4  
 KBN 0.82 6 iPg 22 53.60 -0.7  
 KZN 0.96 59 ePg 22 56.00 -0.8  
 BERA 1.06 327 ePg 22 59.00 0.5  
 FNA 1.10 28 ePb 22 58.70 -0.5  
 Sb 23 13.90

VLO 1.14 306 iPg 23 00.60 0.9  
 OHR 1.30 3 iPn 23 03.00 0.4  
 Lg 23 26.20  
 LR 23 27.00  
 LIT 1.40 78 ePb 23 04.80 0.5  
 eSb 23 24.10  
 VLS 1.63 183 ePb 23 08.70 1.1  
 TIR 1.66 338 ePn 23 11.30 3.4X  
 PHP 1.89 354 ePn 23 13.10 2.0  
 LACI 1.97 338 ePn 23 16.50 4.1X  
 VAY 2.07 43 ePn 23 11.40 -2.5  
 i 23 16.60  
 iSn 23 42.70  
 LCI 2.17 285 P 23 15.00 -0.4  
 PLG 2.18 74 ePn 23 15.90 0.4  
 SKO 2.23 14 ePn 23 17.30 1.1  
 iSn 23 45.80  
 SOH 2.26 63 ePn 23 17.10 0.4  
 KKS 2.27 355 ePn 23 21.50 4.7X  
 PAIG 2.29 86 ePn 23 17.00 -0.1  
 PUK 2.31 345 ePn 23 18.60 1.3  
 OUR 2.57 77 ePn 23 20.30 -0.7  
 KKB 2.73 41 eP 23 24.00 0.6  
 RZN 3.58 57 eP 23 35.00 -0.5  
 S.D. = 1.0 on 23 of 26 obs.

MAR 01, 1990 13h 25m 34.44 ± 0.21s  
 51.851 N ± 6.9km 175.989 W ± 3.0km  
 DEPTH = 49.0km (10 depth phases)  
 5.3mb (36 obs.) 4.6MsZ (2 obs.)  
 ANDREANOF ISLANDS, ALEUTIAN IS. (7)  
 ML 5.1 (PMR). Felt (IV) on Adok.

ADK 0.43 275 iPc 25 48.30 3.4  
 SMY 6.14 282 eP 27 05.70 0.8  
 SDN 9.85 63 eP 27 57.60 1.5  
 SVW 14.52 42 eP 29 04.00 5.6X  
 KDC 14.74 57 eP 29 01.00 -0.2  
 TTA 15.38 36 eP 29 14.00 4.4X  
 PMR 17.54 46 eP 29 38.50 1.9  
 IMA 18.15 30 ePc 29 46.70 2.4  
 TOA 19.03 46 eP 29 57.70 2.7  
 FBA 19.50 37 eP 29 59.20 -0.8  
 BRW 21.36 17 ePc 30 20.70 1.7  
 INK 26.07 35 eP 31 04.00 -0.6  
 MBC 32.52 22 eP 32 03.00 1.0  
 0.6s 9.00nm 4.8mb  
 GMW 34.04 76 eP 32 17.00 1.4  
 RMW 34.67 75 eP 32 22.30 1.2  
 LON 35.00 76 eP 32 25.50 1.6  
 PNT 35.12 71 iPc 32 25.50 0.6  
 0.6s 34.00nm 5.5mb  
 pP 32 39.00 51km  
 MAT 35.59 263 iPc 32 29.30 0.4  
 1.2s 78.13nm 5.5mb  
 EDM 37.05 62 eP 32 40.50 -0.5  
 0.5s 34.00nm 5.5mb  
 NEW 37.08 72 eP 32 42.00 0.6  
 1.1s 77.16nm 5.5mb  
 LBFM 37.81 84 eP 32 49.00 1.2  
 WDC 37.85 86 eP 32 53.30 5.4X  
 e 35 03.00  
 MIN 38.57 85 eP 33 08.00 13.9X  
 CN2 39.17 282 eP 32 59.00 0.1  
 SES 39.58 66 ePc 33 01.80 -0.4  
 CMB 40.72 87 eP 33 12.30 0.6  
 e 35 12.00  
 LRM 41.06 72 eP 33 15.20 0.4  
 SNY 41.42 281 Pd 33 17.60 0.2  
 KVN 41.51 84 eP 33 19.00 0.6  
 e 33 32.50 51km  
 FFC 42.44 56 eP 33 25.00 -0.6  
 0.5s 7.00nm 4.6mb  
 TNP 42.65 85 eP 33 28.20 0.4  
 0.9s 11.07nm 4.6mb  
 PTI 42.75 76 eP 33 30.00 1.5  
 IMW 43.02 74 eP 33 31.50 0.6  
 ISA 43.40 89 eP 33 29.00 -4.8X  
 CLC 43.85 88 eP 33 38.00 0.6  
 e 33 51.00 48km  
 DUG 44.06 79 eP 33 39.90 0.8  
 1.0s 47.50nm 5.2mb  
 DL2 44.36 279 eP 33 41.50 0.1  
 1.0s 100.00nm 5.5mb  
 SBB 44.44 89 eP 33 42.00 -0.2  
 BW06 44.49 74 eP 33 43.00 0.3

1.0s 33.00nm 5.1mb  
 MWC 44.60 90 eP 33 42.00 -1.6  
 GSC 44.67 88 eP 33 44.00 -0.1  
 DAU 44.87 78 eP 33 46.70 0.8  
 MSU 45.48 81 P 33 51.70 1.1  
 PLM 45.92 90 eP 33 55.00 0.9  
 e 34 09.00 53km  
 TPC 45.93 88 eP 33 55.00 1.0  
 e 34 08.00 48km  
 BAR 46.49 90 eP 34 02.00 3.6X  
 RSSD 46.96 70 P 34 01.80 -0.4  
 BJI 46.98 283 eP 34 02.50 0.4  
 Z 24s 0.32um 4.2MsZ  
 PcP 35 33.00  
 GLA 47.39 89 eP 34 05.00 -0.5  
 e 34 21.00 62kmX  
 RSON 48.74 57 eP 34 14.00 -1.7  
 0.7s 17.30nm 5.2mb  
 TIA 48.83 279 eP 34 16.90 0.3  
 GOL 48.86 75 eP 34 17.60 0.4  
 1.0s 95.00nm 5.8mb  
 e 34 30.00 45km  
 GLD 48.92 75 eP 34 18.40 0.9  
 1.2s 70.71nm 5.6mb  
 HHC 49.23 287 P 34 20.80 1.0  
 SSE 49.75 271 Pc 34 24.50 0.8  
 pP 34 38.60 53km  
 BTO 50.31 288 eP 34 30.00 2.0  
 NJ2 50.54 274 Pc 34 29.60 -0.1  
 0.8s 100.00nm 5.9mb  
 TIY 50.71 284 eP 34 30.80 -0.3  
 Z 20s 0.60um 4.6MsZ  
 DAG 50.83 7 iPd 34 30.30 -1.1  
 0.9s 8.40nm 4.8mb  
 ANMO 51.29 81 eP 34 35.00 -0.6  
 1.2s 25.39nm 5.1mb  
 ALQ 51.29 81 eP 34 35.50 -0.1  
 1.0s 18.50nm 5.1mb  
 FRB 51.70 33 eP 34 36.00 -2.0  
 WHN 54.36 276 iPc 34 57.50 -0.8  
 1.0s 100.00nm 5.8mb  
 sP 35 16.50  
 PcP 36 01.50  
 XAN 55.28 283 P 35 04.00 -1.0  
 LZH 56.92 288 eP 35 16.30 -0.6  
 1.0s 23.00nm 5.2mb  
 Z 20s 0.40um 4.5MsZ  
 PcP 36 11.50  
 GTA 57.01 293 eP 35 16.00 -1.4  
 TUL 57.06 72 ePc 35 16.80 -0.9  
 1.0s 21.30nm 5.1mb  
 i 35 30.00 47km  
 i 35 35.90  
 RLO 57.34 72 eP 35 18.50 -1.1  
 e 35 31.50 46km  
 SCH 58.56 40 eP 35 27.00 -1.0  
 FVM 58.76 67 eP 35 27.90 -1.6  
 1.0s 200.00nm 6.2mb  
 OLY 59.88 70 eP 35 35.30 -2.0  
 e 35 48.60 48km  
 WMO 60.54 304 P 35 41.20 -0.6  
 CD2 60.58 283 P 35 41.90 -0.3  
 GYA 62.01 278 iPc 35 51.40 -0.6  
 1.2s 100.00nm 5.8mb  
 PWLA 62.22 68 eP 35 51.80 -1.3  
 WNY 63.04 52 eP 35 56.40 -2.1  
 RSCP 63.19 66 eP 35 58.10 -1.5  
 0.7s 76.12nm 5.9mb  
 CBM 63.85 47 eP 36 02.00 -1.7  
 GBTN 63.92 65 eP 36 03.40 -0.9  
 TKL 64.17 65 eP 36 05.00 -1.0  
 SUF 64.44 349 eP 36 07.80 0.5  
 NAV 64.62 62 eP 36 08.20 -0.7  
 BLA 64.89 61 eP 36 10.00 -0.7  
 1.1s 50.00nm 5.5mb  
 KMI 65.39 280 Pc 36 14.00 -0.2  
 1.2s 100.00nm 5.7mb  
 CVL 65.39 60 eP 36 13.50 -0.3  
 QIZ 65.52 270 eP 36 15.60 0.7  
 PRM 66.11 65 eP 36 17.80 -0.6  
 JSC 66.59 64 eP 36 21.10 -0.4  
 NUR 66.77 349 eP 36 21.00 -1.2  
 SGS 67.81 64 eP 36 29.00 -0.2  
 KSH 69.65 308 eP 36 40.20 -0.4  
 LOE 71.78 275 eP 36 53.00 -0.6  
 CHG 72.43 278 iPc 36 57.30 -0.2  
 1.1s 37.34nm 5.2mb



01d 13h

GUN 73.29 294 P 37 02.50 -0.3  
0.4s 20.00nm 5.4mb  
BDT 73.58 277 eP 37 04.00 -0.1  
KKN 73.72 294 P 37 04.80 -0.4  
0.6s 19.00nm 5.2mb  
PKI 73.81 294 P 37 05.20 -0.6  
GKN 73.92 295 P 37 05.50 -0.7  
0.4s 13.00nm 5.2mb  
DMN 73.96 294 P 37 06.50 -0.1  
0.6s 27.00nm 5.4mb  
DZM 75.20 197 iPc 37 13.60 0.2  
NNT 76.69 273 iPd 37 22.70 0.7  
CTA 78.86 216 iP 37 33.50 -0.2  
1.0s 25.00nm 5.1mb  
SNG 80.32 269 eP 37 36.00 -5.8X  
KBA 81.13 354 eP 37 45.50 -0.3  
0.7s 5.20nm 4.6mb  
IPM 82.08 267 ePd 37 52.80 1.8  
0.7s 21.60nm 5.3mb  
WB5 83.52 226 iPc 37 57.80 -0.4  
BRS 83.53 208 iPc 37 59.00 0.9  
WRA 83.59 226 Pd 37 58.50 0.0  
0.7s 18.00nm 5.0mb  
HYB 85.67 293 ePc 38 08.50 -0.7  
1.0s 30.00nm 5.4mb  
ASPA 87.04 225 iPc 38 15.00 -0.6  
1.0s 22.00nm 5.3mb  
WARB 92.50 229 iPd 38 42.10 0.9  
LKO 118.30 11 PKP 44 16.96 -1.0  
0.6s 8.50nm  
TIC 121.22 11 PKP 44 22.44 -1.1  
KIC 121.53 10 PKP 44 23.24 -0.9  
0.6s 6.00nm  
LIC 121.64 11 PKP 44 23.40 -0.9  
BCAO 122.58 343 iPKPd 44 25.40 -0.7  
0.4s 12.00nm  
KSR 148.78 317 ePKP 45 12.20 -1.7X  
0.8s 12.50nm  
PRY 149.47 316 iPKPc 45 19.20 4.3X  
1.0s 35.00nm  
BFS 149.74 317 ePKP 45 13.00 -2.3X  
1.0s 140.00nm  
SWZ 150.59 319 iPKPd 45 15.00 -1.6X  
0.5s 112.68nm  
SEK 150.61 314 iPKPc 45 22.00 5.4X  
0.4s 110.17nm  
KIM 152.20 318 ePKP 45 19.00 0.1  
1.3s 96.15nm  
POF 154.61 326 ePKP 45 23.00 1.0  
CER 158.45 323 ePKP 45 28.00 1.1  
S.D. = 1.0 on 112 of 124 obs.

? MAR 01, 1990 14h 29m 39.46±3.06s  
31.430 S ±23.8km 69.341 W ±29.9km  
DEPTH = 33.0km (normal)  
SAN JUAN PROVINCE, ARGENTINA (137)

ZON 0.58 102 iPc 29 52.00 0.8  
eS 30 06.00  
RTLL 0.75 83 eP 29 53.90 0.2  
RTCV 0.81 122 iPd 29 54.60 0.1  
CFA 0.96 101 iPd 29 55.50 -1.1  
RTRS 1.26 355 iPd 30 00.80 0.0  
S.D. = 1.0 on 5 of 5 obs.

& MAR 01, 1990 14h 43m 54.30s  
36.637 N 121.288 W  
DEPTH = 3.0km  
CENTRAL CALIFORNIA (39)  
<BRK>. ML 2.7 (BRK).

SAD 0.18 315 iPc 43 57.80 -0.1  
eS 43 59.45  
LLA 0.28 94 iPd 43 59.90 0.0  
PRS 0.31 192 iPd 44 00.50 -0.1  
GCC 0.69 305 eP 44 06.90 -1.2  
PRI 0.71 134 eP 44 07.70 -0.7  
ARN 0.74 345 iPc 44 08.90 -0.1  
MHC 0.76 338 eP 44 09.30 -0.2  
eS 44 21.70  
PKEM 1.11 121 eP 44 15.80 0.0  
PCC 1.23 315 ePc 44 16.50 -1.3  
FRI 1.32 74 ePc 44 17.80 -1.5  
BKS 1.45 329 e(P) 44 19.37 -2.1  
BRK 1.46 328 eP 44 22.00 0.5  
CMB 1.57 27 iPc 44 22.00 -1.2

BCH 1.75 146 eP 44 23.00 -2.8  
ABL 2.45 136 eP 44 33.00 -3.1  
KVN 3.49 45 eP 44 52.50 1.7  
16 obs. associated

? MAR 01, 1990 15h 06m 30.13±2.83s  
41.952 N ±28.2km 24.746 E ±9.9km  
DEPTH = 10.0km (geophysicist)  
GREECE-BULGARIA BORDER REGION (363)  
ML 2.7 (THE).

SRS 1.20 226 eP 06 52.10 -0.5  
eS 07 10.40  
ALN 1.44 137 eP 06 56.00 -0.2  
SOH 1.54 223 eP 06 57.50 -0.2  
eS 07 20.00  
KNT 1.60 241 eP 06 58.10 -0.4  
OUR 1.72 200 eP 07 00.90 0.7  
VAY 1.75 250 ePn 07 01.20 0.5  
S.D. = 0.6 on 6 of 6 obs.

% MAR 01, 1990 15h 39m 08.58±0.79s  
43.419 N ±5.2km 5.448 E ±6.4km  
DEPTH = 5.0km (geophysicist)  
NEAR SOUTH COAST OF FRANCE (379)  
MD 2.5 (STR).

GELF 0.04 203 Pg 39 09.71 -0.2  
BERF 0.21 121 Pg 39 12.81 0.0  
TREF 0.21 347 Pg 39 12.53 -0.4  
PUYF 0.22 58 Pg 39 12.35 -0.6  
PRAF 0.43 332 Pg 39 17.40 0.1  
VILF 0.47 24 Pg 39 17.40 -0.7  
TAVF 0.49 66 Pg 39 17.96 -0.4  
GANF 0.67 30 Pg 39 22.04 0.1  
FOUF 1.47 40 e(Pg) 39 37.76 2.1  
e(Sg) 39 55.87  
S.D. = 1.0 on 9 of 9 obs.

MAR 01, 1990 16h 06m 00.84±0.22s  
7.892 S ±4.2km 121.112 E ±6.1km  
DEPTH = 39.3km (20 depth phases)  
5.5mb (33 obs.) 4.9Msz (15 obs.)  
FLORES SEA (279)

Felt strongly on the ship USNS  
Harkness at 08° 01.5' S, 121°  
21.9' E. Felt at Lambego, Macan  
Islands.  
CENTROID, MOMENT TENSOR (HRV)  
Data Used: GDSN  
L.P.B.: 15S, 39C  
Centroid Location:  
Origin Time 16:06: 4.6 0.5  
Lat 7.665 0.05 Lon 121.65E 0.07  
Dep 33.5 4.7 Half-duration 2.0  
Moment Tensor: Scale 10\*\*17 Nm  
Mrr=-0.69 0.13 Mtl=-0.08 0.12  
Mff=-0.61 0.21 Mrl= 0.35 0.26  
Mrf=-0.20 0.27 Mlf=-2.93 0.13  
Principal Axes:  
T Vol= 2.68 Plg=11 Azm= 42  
N 0.61 79 229  
P -3.29 1 133  
Best Double Couple: Mo=3.0\*10\*\*17  
NP1: Strike=178 Dip=81 Slip= 7  
NP2: 87 83 171

MKS 3.12 328 iPd 06 50.00 1.3  
e(S) 08 48.60  
KHKI 5.47 265 ePd 07 20.00 -2.0  
eS 08 18.40  
MNI 9.99 22 eP 08 20.00 -5.0X  
MTN 11.01 117 iPc 08 35.50 -3.5X  
MBL 13.25 185 eP 09 05.10 -3.8X  
0.4s 13.00nm 5.2mb  
eS 11 25.00  
DAV 15.53 17 eP 09 39.00 0.2  
NANU 15.54 200 eP 09 35.00 -3.9X  
eS 12 18.00  
WB5 17.52 134 eP 09 58.70 -5.3X  
i 10 02.00  
eS 13 17.50  
WRA 17.54 134 P 10 00.00 -4.3X  
0.5s 11.80nm 4.3mb X  
PPR 17.71 352 ePc 10 11.00 4.7X  
1.0s 97.00nm 4.9mb  
MEKA 18.78 187 iPd 10 19.50 0.0

0.3s 18.00nm 4.8mb  
eS 13 35.00  
WARB 18.94 165 iPc 10 20.50 -0.9  
0.3s 33.00nm 5.0mb  
ASPA 19.91 143 iPd 10 30.10 -2.1  
1.0s 418.00nm 5.7mb  
Z 22s 5.90um  
iS 14 10.00  
iPcS 17 30.90  
LR 18 18.30  
KGM 20.29 298 ePc 10 37.00 0.8  
PGP 21.25 360 iPc 10 47.00 1.0  
1.5s 400.00nm 5.6mb  
MRWA 21.75 192 iPd 10 50.70 -0.3  
0.5s 58.00nm 5.3mb  
eS 14 50.00  
KLM 22.28 299 eP 11 00.00 3.7X  
COOL 22.87 180 eP 11 02.00 -0.1  
e 11 15.00 54kmX  
BAL 22.97 190 iPd 11 03.10 0.1  
e 11 14.50 45km  
IPM 23.56 301 ePd 11 11.00 2.2  
1.0s 281.20nm 5.7mb  
e 11 32.90 102kmX  
KLB 23.79 187 eP 11 11.00 0.1  
e 11 22.00 42km  
BAG 24.15 359 eP 11 13.00 -1.7  
eS 15 30.00  
MUN 24.40 190 eP 11 16.80 0.0  
e 11 29.00 49km  
eS 15 48.00  
NWA0 25.17 188 eP 11 13.50 -10.7X  
Z 20s 2.70um 4.8Msz  
SNG 25.33 306 ePc 11 27.00 1.1  
0.9s 221.85nm 5.7mb  
eS 16 06.00  
PIP 26.05 359 ePc 11 43.20 10.7X  
RKG 26.32 188 eP 11 40.00 5.1X  
CTA 27.19 119 iPd 11 42.10 -0.9  
1.2s 78.13nm 5.2mb  
i 11 54.10 47km  
i 12 07.50  
iS 16 18.00  
i 17 27.00  
QLP 28.77 133 eP 11 58.00 0.8  
NNT 29.42 314 eP 12 03.60 0.5  
HKC 30.77 347 eP 12 20.00 5.0X  
eS 17 16.00  
NST 31.31 318 iPc 12 21.50 1.7  
ADE 31.42 152 eP 12 20.00 -0.7  
LOE 31.60 323 eP 12 22.00 -0.4  
GUMO 31.81 48 eP 12 17.00 -7.2X  
1.3s 300.65nm 6.0mb  
eS 17 29.00  
PJG 31.81 48 eP 12 18.00 -6.2X  
GUA 31.81 48 eP 12 17.50 -6.7X  
0.9s 134.45nm 5.8mb  
RMO 32.11 129 iPc 12 27.20 0.4  
QZH 32.73 356 eP 12 33.00 0.9  
Z 20s 1.90um 4.8Msz  
S 17 48.00  
eS 18 32.00  
CMS 32.89 139 iPc 12 33.70 0.2  
BDT 33.19 319 eP 12 37.00 0.8  
0.6s 53.50nm 5.6mb  
CHG 34.38 321 iPd 12 47.80 1.2  
1.1s 28.16nm 5.1mb  
eS 18 30.00  
CHTO 34.38 321 iP 12 47.70 1.1  
1.4s 41.83nm 5.2mb  
BFD 35.05 149 eP 12 54.00 1.9  
BRS 35.69 127 iPd 12 58.30 0.5  
1.0s 25.00nm 5.1mb  
i 13 05.30 24kmX  
i 13 09.30  
e 13 32.00  
eS 18 32.00  
BWA 36.45 140 eP 13 05.80 1.8  
i 13 18.20 46km  
COO 36.58 132 eP 13 07.00 1.8  
e 13 19.00 44km  
TOO 36.89 147 iPc 13 09.20 1.5  
i 13 21.00 43km  
GYA 36.91 338 iPc 13 09.60 1.5  
Z 22s 1.60um 4.8Msz  
N 18s 2.10um  
E 18s 3.40um



KMI	37.38 332	pP	13 19.00	32km	PKI	49.36 317	E	15s	0.60um	ZOBO	154.31 159	PKP	25 51.00	-0.5																		
		S	18 53.00				sP	15 01.00	Z						23s	0.38um	5.2MszX															
		sS	19 10.00				eS	21 49.00																								
		Pd	13 14.50	2.4			P	14 48.60										-0.5														
		1.5s	100.00nm	5.5mb			0.6s	26.00nm										5.4mb														
Z	18s	2.70um	5.1Msz	SNY	49.53 2	iPc	14 48.40	-1.2																								
N	10s	1.10um		Z	19s	1.40um	5.0Msz																									
E	15s	2.50um		E	25s	3.40um																										
CAN	37.39 141	pP	13 24.50	34km	KKN	49.59 317	P	14 50.80	0.1	MGG	0.19	356	eP	24 47.09	1.8																	
		sP	13 26.00				0.8s	35.00nm	5.4mb																							
		S	19 03.50				49.59 317	P	14 50.80							0.1																
		eP	13 11.90	0.0			0.6s	13.00nm	5.1mb																							
		i	13 26.90	58kmX			GTA	51.04 339	Pc							15 02.20	0.8															
CNB	37.61 141	eP	13 15.00	1.2	Z	18s	1.10um	4.9Msz																								
HNR	38.41 95	eP	13 15.00	-5.7X	E	15s	1.20um																									
WHN	38.76 351	eP	13 25.00	1.6																												
Z	20s	1.30um	4.7Msz																													
E	12s	0.60um																														
SSE	38.76 0	Pc	13 23.00	-0.3	CN2	51.60 4	eP	15 03.00	-2.4	SEG	0.70 344	eP	24 51.41	-0.8																		
		S	19 20.00				Z	18s	1.20um						5.0Msz																	
		1.00um	4.6Msz	N			18s	1.00um																								
		1.30um		E			18s	1.00um																								
		1.10um																														
NJ2	39.78 357	iPc	13 32.50	0.7	MDJ	52.82 8	Pc	15 13.50	-1.1	MME	0.29 304	P	58 33.40	0.0																		
		S	19 36.50	41km			Z	24s	2.20um						5.1MszX																	
		300.00nm	6.0mb	53.50 300			iPc	15 19.50	-0.6																							
		0.60um	4.4Msz	54.54 300			eP	15 25.00	40km																							
		pP	14 01.00	34km			0.9s	25.21nm	5.2mb																							
CD2	42.01 337	Pc	13 51.00	0.8	BOM	54.54 300	eS	22 55.70		BDI	0.32 275	P	58 33.80	0.0																		
		S	19 36.50				eS	15 34.20	6.5X																							
		220.00nm	5.8mb	54.59 140			P	15 28.00	0.3																							
		1.80um	5.0MszX	pP			15 39.00	37km																								
		2.37um		NDI			55.80 313	eP	15 34.00						-2.6																	
XAN	43.27 345	Pd	14 00.90	0.4	MSZ	54.59 140	P	15 28.00	0.3	PIL	0.48 230	Pd	58 37.00	0.0																		
N	16s	1.90um		eS			23 18.00		PGD						0.52 108	P	58 38.00	0.3														
S	20 26.00		eS	16 00.00			9.2X																									
iP	14 04.50	-0.2	(S)	23 44.00				SFI											0.60 101	P	58 39.00	-0.3										
iS	20 32.00		WMO	59.71 333			iPc																16 04.60	0.6								
eP	14 06.20	-0.3	Z	22s	1.10um	4.9Msz	S.D. = 0.3 on 5 of 5 obs.																									
Z	20s	1.20um	4.8Msz	KSH	62.95 322	P	24 12.50			? MAR 01, 1990 18h 47m 26.79± 2.21s	28.503 N ±35.4km	88.599 E ±10.0km	DEPTH = 33.0km (normal)	4.3mb ( 1 obs.)	(306)																	
N	15s	1.00um		Z	20s	2.50um	5.4Msz									GUN	2.47 257	P					48 06.60	0.6								
S	20 35.00		QUE	64.28 309	eP	16 33.50	-1.5	PKI	2.97 253										P	48 12.20	-0.8											
iPc	14 21.00	-0.2	MAIO	72.54 312	eP	17 26.00	-0.1															KKN			3.02 257	P	48 13.60	0.0				
eP	14 22.30	-0.7	VNDA	72.75 171	e(P)	17 28.10	1.5																						DMN	3.21 255	P	48 15.60
N	15s	1.80um		IR4	78.69 308	eP	18 01.00			-0.1	GKN	3.53 263	P	48 20.20	-0.6																	
S	21 04.50		IR2	78.82 309	eP	18 02.00	0.2			SHL						4.14 134	iP	48 36.00					6.5X									
Pd	14 00.90	0.4	IR1	78.91 308	eP	18 01.00	-1.3	CHG	13.51 133										eP	50 38.50	-0.1											
S	20 26.00		IR7	79.06 309	eP	18 03.00	-0.1															CHTO		13.51 133	eP	50 37.00	-1.6					
iP	14 04.50	-0.2	SPA	82.16 180	eP	18 20.70	1.8																					HYB	14.39 222	eP	50 51.50	1.3
iS	20 32.00		0.7s	11.72nm	5.0mb	BHD	83.33 305				ePc	18 38.00	12.6X	WB5	65.33 132																	
eP	14 06.20	-0.3	SLY	83.02 307	ePd					18 31.00						7.3X	WRA	65.36 132					Pd									
Z	20s	1.20um	4.8Msz	TAB	83.02 310			eP	18 25.00	1.1						0.3s			0.80nm	4.3mb	S.D. = 1.3 on 9 of 11 obs.											
N	15s	1.00um		MSL	85.06 308			eP	18 37.00	3.0X												MAR 01, 1990 20h 01m 20.03± 0.55s		40.147 N ± 6.3km	25.217 E ± 4.5km	DEPTH = 10.0km (geophysicist)	(365)					
S	20 35.00		BUL	89.65 250	iPd			18 55.10	-1.7	EZN																		0.91 110	iP	01 37.10	-0.3	
iPc	14 21.00	-0.2	0.8s	35.45nm	5.7mb	OUR	0.96 282	ePg	01 38.70		0.4																					
eP	14 22.30	-0.7	PRY	89.70 243	eP							18 57.20	0.3	ALN	0.98 40		ePg	01 37.70					-0.9									
N	15s	1.80um		BFS	90.31 243							iPd	18 58.00			-1.7			RDO	1.03 14	ePb											01 38.10
S	21 04.50		KSR	90.37 244	eP							18 59.50	-0.6			PAIG						1.20 260		ePb	01 42.40	0.0						
Pd	14 00.90	0.4	KIM	91.76 241	eP					19 18.50		12.1X	PLG														1.37 280	ePb	01 45.00	-0.2		
S	20 26.00		POF	95.79 239	iPd	19 27.00	2.3	KDZ	1.51 6	iPd	01 46.00	-1.1																				
iP	14 04.50	-0.2	INK	102.96 22	ePd	20 08.00	12.0X							SRS	1.57 309		ePb	01 47.50					-0.5									
iS	20 32.00		MBC	104.44 12	ePd	20 11.50	9.0X												SOH	1.57 296	ePb										01 49.10	1.0
eP	14 06.20	-0.3	PRS	116.75 53	e(PKP)	24 42.00	-1.2									RZN						1.59 346		iPc	01 48.00	-0.4						
Z	20s	1.20um	4.8Msz	EDM	117.08 33	ePKP	24 42.50						-0.8														DIM	1.92 7	iP	01 54.00		
N	15s	1.00um		CMB	117.19 51	e(PKP)	24 49.00	5.0X	PLD	1.99 349	iPc	01 57.00	2.9																			
S	20 35.00		SES	119.59 36	ePKP	24 47.00	-1.2																									
iPc	14 21.00	-0.2	FFC	122.06 28	ePKPd	24 51.80	-0.9																									
eP	14 22.30	-0.7	KIC	126.28 272	PKP	25 00.40	-1.7																									
N	15s	1.80um		CBN	145.51 26	ePKP	25 36.00	-0.8																								
S	21 04.50		ARE	152.78 153	ePKP	26 05.00	16.0X																									
Pd	14 00.90	0.4	CAI	154.01 237	ePKP	25 58.90	8.4X																									
S	20 26.00		LPB	154.08 159	ePKP	25 49.00	-2.0																									
iP	14 04.50	-0.2	Z	20s	0.35um	5.2Msz																										
iS	20 32.00				eLR	22 40.00																										
eP	14 06.20	-0.3																														



01d 20h

KNT 2.03 301 ePn 01 54.70 0.0  
 EDC 2.04 84 ePn 02 22.90  
 BNT 2.08 83 iPn 01 56.70 1.3  
 VAY 2.33 301 ePn 02 03.40 4.4X  
 IZM 2.36 137 ePn 01 58.00 -1.5  
 AGG 2.50 244 ePn 02 01.30 -0.1  
 PGB 2.53 342 iP 02 00.00 -1.8  
 DST 2.68 101 ePn 02 04.00 0.0

S.D. = 1.2 on 19 of 20 obs.

& MAR 01, 1990 20h 32m 14.10s  
 34.130 N 117.700 W  
 DEPTH = 5.0km  
 SOUTHERN CALIFORNIA (43)  
 <PAS-P>. ML 3.0 (PAS).

RVR 0.30 117 iPc 32 19.90 -0.3  
 MWC 0.31 288 iPc 32 20.20 -0.2  
 PAS 0.39 273 iPc 32 21.60 -0.4  
 PEC 0.51 118 iPc 32 23.60 -0.7  
 SBB 0.57 350 iPd 32 24.90 -0.5  
 CIS 0.93 219 eP 32 31.30 -1.0  
 PLM 1.04 138 iPc 32 33.30 -1.1  
 TPC 1.37 91 ePc 32 39.40 -0.5  
 ABL 1.45 300 eP 32 40.20 -1.0  
 BCH 2.23 299 eP 32 51.50 -0.9  
 BLP 2.28 282 eP 32 51.40 -1.5  
 TNP 3.96 6 eP 33 16.70 -0.4  
 KVN 4.92 356 eP 33 31.00 0.3

13 obs. associated

MAR 01, 1990 20h 55m 05.65±0.33s  
 16.723 N ± 2.5km 60.947 W ± 1.9km  
 DEPTH = 42.0 ± 3.7 km  
 5.4mb (66 obs.) 4.6Msz (5 obs.)  
 LEEWARD ISLANDS (92)  
 Felt (11) on Guadeloupe.

DEG 0.42 195 iPd 55 14.55 -1.0  
 S 55 22.90  
 SFG 0.53 207 ePd 55 16.47 -0.3  
 SEG 0.62 239 iP 55 18.10 0.0  
 MGG 0.88 204 ePd 55 21.82 0.2  
 BPA 0.93 290 eP 55 21.19 -1.2  
 S 55 41.50  
 DOG 0.94 223 ePd 55 23.30 0.7  
 ANG 0.95 297 eP 55 21.52 -1.1  
 S 55 41.07  
 PAG 0.99 226 iPc 55 23.76 0.5  
 S 55 39.30  
 BTG 1.04 226 ePd 55 25.39 1.4  
 S 55 43.80  
 BBL 1.30 203 eP 55 27.98 0.3  
 MDN 1.47 197 eP 55 30.47 0.5  
 DPMT 1.52 196 eP 55 31.77 1.1  
 S 55 56.54  
 DGBT 1.52 194 eP 55 31.26 0.5  
 DSVT 1.54 195 eP 55 31.79 0.7  
 CRM 1.96 179 iPc 55 36.60 -0.4  
 FDF 1.99 186 iPc 55 36.93 -0.6  
 S 56 01.90

MVM 2.16 179 iPc 55 39.81 -0.1  
 BIM 2.20 183 iPc 55 40.33 -0.1  
 SLB 2.08 182 eP 55 50.65 0.4  
 S 56 27.27  
 SOA 3.34 183 eP 55 56.76 0.1  
 SSV 3.38 184 eP 55 57.88 0.4  
 SVV 3.40 184 eP 55 58.08 0.6  
 SVB 3.44 185 eP 55 58.93 0.7  
 S 56 42.21  
 GRW 4.59 189 eP 56 14.92 0.4  
 S 57 09.80  
 CPD 4.92 286 P 56 20.00 0.9  
 LPR 4.95 289 P 56 21.00 1.4  
 SJG 5.16 286 P 56 23.20 0.8  
 TPR 5.51 178 eP 56 28.40 1.0  
 S 57 49.79

PORP 5.59 285 P 56 28.30 -0.3  
 LRS 5.84 286 P 56 32.30 0.2  
 TRN 6.06 184 eP 56 35.79 0.7  
 TBH 6.20 181 eP 56 38.82 1.6  
 LLAV 8.43 223 eP 57 06.00 -2.3  
 CAR 8.48 224 eP 57 06.50 -2.6  
 GUAC 8.94 224 eP 57 13.20 -2.3  
 MORO 9.22 232 eP 57 17.00 -2.3

PLAV 9.33 224 eP 57 20.10 -0.8  
 FISA 9.78 237 eP 57 29.50 2.6  
 CEOS 10.50 224 eP 57 35.00 -1.8  
 TOV 11.03 232 eP 57 43.60 -0.4  
 BOG 17.61 228 eP 59 14.00 3.9X  
 S 02 34.00  
 UPA 19.67 249 eP 59 42.00 7.7X  
 S 44.00nm

PSO 22.32 228 eP 00 03.00 1.3  
 SGS 24.09 317 P 00 19.10 0.8  
 JSC 25.25 318 P 00 29.30 -0.1  
 CBN 25.81 329 eP 00 36.00 1.4  
 PRM 25.85 316 P 00 35.40 0.3  
 NA2 25.93 329 P 00 36.40 0.6  
 CVL 26.19 327 P 00 38.00 -0.1  
 BLA 26.69 324 P 00 43.20 0.4  
 S 08.8s 20.13nm

RSCP 28.89 315 P 01 02.60 -0.2  
 S 1.0s 97.61nm  
 NNA 32.57 210 eP 01 35.00 -0.4  
 S 1.0s 12.00nm  
 OLY 32.98 310 P 01 38.60 -0.2  
 FVM 33.44 315 P 01 42.80 0.0  
 ZOBO 33.54 193 Pd 01 43.00 -1.4  
 S 1.0s 8.75nm  
 Z 20s 1.17um

LPB 33.79 192 eP 01 45.00 -1.4  
 S 1.0s 40.00nm  
 Z 20s 1.06um  
 eLR 12 35.00

CCH 34.27 189 P 01 54.70 4.3X  
 RLO 35.88 309 eP 02 03.20 -0.5  
 PPM 35.89 280 iPd 02 04.00 -0.5  
 TUL 36.35 309 eP 02 07.00 -0.6  
 S 0.9s 74.00nm

SCH 38.28 355 eP 02 24.00 0.3  
 RSON 42.95 330 P 03 02.00 -0.1  
 S 1.2s 83.82nm  
 ALQ 44.38 303 iPc 03 14.00 -0.2  
 S 1.0s 17.50nm  
 ANMO 44.38 303 P 03 14.80 0.6  
 S 1.3s 38.46nm

GLD 44.68 310 P 03 17.40 0.9  
 S 1.4s 67.57nm  
 GOL 44.77 310 P 03 17.40 0.0  
 S 1.1s 35.26nm  
 Z 20s 1.25um

RSSD 45.38 316 P 03 22.30 0.2  
 FRB 47.27 355 eP 03 36.00 -0.4  
 BW06 48.70 313 P 03 48.60 0.4  
 S 1.2s 30.14nm

FFC 49.29 330 eP 03 51.00 -1.2  
 S 0.8s 16.00nm  
 DAU 49.31 309 P 03 53.80 0.8  
 MSU 49.60 307 P 03 56.40 1.2  
 IMW 49.99 314 P 03 58.40 0.2  
 DUG 50.42 309 P 04 01.90 0.5  
 S 1.0s 25.00nm

TIO 50.66 64 iP 04 04.00 0.7  
 AVE 50.71 60 iPc 04 03.50 0.1  
 LRM 51.57 316 eP 04 10.70 0.6  
 TPC 52.08 300 eP 04 14.00 0.1  
 SES 52.18 322 eP 04 14.00 -0.4  
 S 1.4s 141.00nm

EJIF 52.63 57 eP 04 19.00 1.1  
 IFR 52.63 60 iPd 04 18.50 0.3  
 EPLA 52.66 52 eP 04 18.00 -0.1  
 PLM 52.70 299 eP 04 19.00 0.3  
 GSC 52.81 302 eP 04 19.00 -0.4  
 EHOR 52.97 55 eP 04 21.00 0.6  
 RVR 53.17 300 eP 04 22.00 0.1  
 TNP 53.45 305 P 04 24.60 0.4  
 S 1.0s 13.33nm

CLC 53.50 302 eP 04 24.00 -0.4  
 SBB 53.59 301 eP 04 25.00 -0.1  
 MWC 53.75 300 eP 04 27.00 0.6  
 ALOJ 53.79 56 iPc 04 27.40 0.8  
 AAPN 53.80 56 iPc 04 27.00 0.4  
 ATEJ 53.84 56 iPc 04 27.60 0.6  
 PAS 53.84 300 eP 04 27.00 0.2  
 ACHM 54.01 56 iPc 04 28.50 0.4  
 ASMO 54.10 56 iPc 04 29.50 0.7  
 APHE 54.10 56 iPc 04 30.00 1.1  
 EBAN 54.16 55 eP 04 29.20 0.1  
 TOL 54.17 53 iPc 04 29.00 -0.2

ISA 1.1s 75.95nm 5.6mb  
 GUD 54.20 302 eP 04 30.00 0.4  
 LKO 54.21 52 eP 04 29.60 0.0  
 54.24 90 Pd 04 29.26 -0.8  
 S 1.0s 62.50nm

AFC 54.25 56 eP 04 30.40 0.4  
 KVN 54.26 306 P 04 29.70 -0.4  
 EDM 54.55 324 iPd 04 30.90 -0.9  
 EVIA 55.21 54 e(P) 04 36.00 -1.0  
 ENIJ 55.28 56 eP 04 37.60 0.2  
 DCN 55.30 36 eP 04 36.80 -0.4  
 S 0.7s 83.00nm

FRI 55.30 304 ePc 04 35.30 -2.2  
 NEW 55.30 318 P 04 36.80 -0.6  
 S 1.0s 31.25nm  
 SYP 55.36 301 eP 04 38.00 -0.1  
 BCH 55.48 301 P 04 40.00 1.0  
 TIC 55.52 93 P 04 38.26 -1.1  
 LIC 55.62 94 P 04 39.00 -1.1  
 S 0.8s 29.00nm

Z 20s 0.51um 4.6Msz  
 DLE 55.70 36 eP 04 40.00 0.0  
 ETOR 55.81 52 eP 04 42.00 0.8  
 KIC 55.86 94 P 04 40.90 -0.9  
 S 0.9s 46.00nm

CMB 55.93 305 ePc 04 41.70 -0.4  
 EALH 55.98 55 eP 04 42.90 0.5  
 LLA 56.26 303 ePc 04 43.90 -0.6  
 PRS 56.59 303 e(P) 04 46.10 -0.7  
 ARN 56.78 304 P 04 49.10 0.9  
 MHC 56.87 304 ePc 04 49.20 0.3  
 ORV 56.93 307 ePc 04 48.70 -0.5

MIN 57.09 307 eP 04 49.80 -0.7  
 PNT 57.16 318 eP 04 51.00 0.3  
 LBFM 57.41 309 P 04 53.40 0.6  
 PCC 57.47 304 eP 04 52.90 0.0  
 LPF 57.69 43 eP 04 54.00 -0.3  
 S 0.9s 16.40nm

WDC 57.82 308 eP 04 53.10 -2.3  
 EPF 57.86 49 eP 04 55.90 0.2  
 S 1.0s 88.00nm  
 GRR 57.88 43 eP 04 55.40 -0.3  
 S 0.8s 37.60nm

MFF 58.03 45 eP 04 56.80 0.0  
 S 0.8s 32.25nm  
 FLN 58.20 43 eP 04 57.70 -0.2  
 S 0.8s 45.65nm  
 EKA 58.23 35 P 04 59.00 1.0  
 S 1.0s 16.40nm

LFF 58.39 47 eP 04 59.30 0.0  
 S 1.2s 95.20nm  
 LDF 58.40 43 eP 04 58.70 -0.6  
 S 1.0s 48.00nm

LPO 58.67 48 eP 05 01.90 0.6  
 S 0.9s 72.05nm  
 RJF 58.99 47 eP 05 02.90 -0.6  
 S 0.9s 50.80nm

LSF 59.12 46 eP 05 04.10 -0.3  
 S 0.8s 32.90nm  
 CAF 59.32 47 eP 05 05.30 -0.5  
 S 0.9s 91.75nm

TCF 59.60 46 eP 05 07.40 -0.3  
 S 1.2s 53.55nm  
 MAF 59.83 46 eP 05 08.80 -0.5  
 S 1.1s 19.55nm

BGF 60.07 46 eP 05 10.20 -0.7  
 S 1.2s 62.50nm  
 WIGH 60.08 93 eP 05 11.00 -0.4  
 PYM 60.08 47 P 05 10.61 -0.5

KUK 60.09 92 eP 05 10.60 -0.9  
 LBL 60.19 47 P 05 11.91 0.2  
 KOGH 60.24 93 eP 05 16.00 3.4X  
 WEGH 60.29 93 eP 05 12.00 -0.9  
 GRC 60.32 45 P 05 12.18 -0.3

LEGH 60.42 93 eP 05 13.00 -0.7  
 AVF 60.44 45 eP 05 13.00 -0.4  
 S 1.0s 60.00nm  
 SHGH 60.47 93 eP 05 14.00 -0.1  
 PLDF 60.53 46 P 05 14.06 -0.1

SSF 60.58 45 eP 05 13.80 -0.5  
 S 0.8s 34.90nm  
 TECH 60.59 93 eP 05 14.00 -0.9  
 SMF 60.76 46 eP 05 14.90 -0.7  
 S 1.0s 58.00nm  
 LOR 60.84 45 eP 05 15.40 -0.8  
 S 0.8s 52.45nm

LBF 60.89 45 eP 05 15.60 -0.9



SNF	61.55	41 P	05 20.40	-0.4	HFS	68.00	31 eP	06 02.00	-0.5	SNG	150.06	39 ePKP	14 56.46	7.4X
VITF	62.37	44 P	05 25.84	-0.5	Z	0.9s	26.10nm	5.3mb		RMO	150.79	245 iPKPc	14 57.20	7.3X
FRF	62.49	49 eP	05 26.90	-0.4		17s	0.27um	4.5mszX			0.9s	66.00nm		
BNi	62.59	48 P	05 29.00	0.9	PRU	68.07	42 Pd	06 03.00	-0.1	IPM	152.33	42 ePKPc	15 01.10	8.6X
HAU	62.60	44 eP	05 27.00	-0.9		1.2s	29.70nm	5.2mb		CTA	153.99	258 iPKPc	15 03.90	9.3X
ENN	62.62	41 iPc	05 28.10	0.2							1.1s	25.32nm		
	0.9s	75.00nm	5.8mb		LJU	68.13	47 eP	06 03.00	-0.6	ASPA	164.45	241 iPKPc	15 07.20	0.8
MEM	62.65	41 Pc	05 28.30	0.1	LNK	68.15	338 iPd	06 02.30	-1.0		1.0s	5.00nm		
RRL	62.66	48 P	05 28.04	-0.7	DUI	68.27	51 P	06 05.00	0.4	WB5	165.12	255 ePKP	15 07.50	0.5
LPL	62.66	47 eP	05 29.00	0.3	PTJ	69.13	47 eP	06 09.10	-0.7			e	15 22.80	
	0.8s	25.50nm	5.4mb		KSP	69.19	41 iP	06 10.00	0.0	WRA	165.14	255 PKPc	15 07.80	0.8
LPG	62.67	47 eP	05 29.10	0.3	MGR	69.20	53 P	06 10.50	0.2		0.9s	10.90nm		
EMS	62.84	46 ePc	05 30.10	0.3	ZST	69.80	44 iP	06 13.50	-0.3		S.D. = 0.8 on 288 of 304 obs.			
LOMF	62.86	45 P	05 29.40	-0.4		1.0s	29.00nm	5.2mb		? MAR 01, 1990	21h 15m	46.72± 4.15s		
PZZ	62.87	48 P	05 29.99	0.1	TDS	69.84	53 P	06 14.50	0.3		3.456 S ±10.5km	80.854 W ±60.0km		
BSF	62.88	44 P	05 28.78	-1.1	UPP	69.96	32 iP	06 14.30	-0.1		DEPTH = 33.0km (normal)			
LSD	62.96	47 P	05 30.81	0.2	SRO	70.63	45 iP	06 19.00	0.2		PERU-ECUADOR BORDER REGION (110)			
DOI	62.97	48 P	05 31.00	0.5		0.7s	62.00nm	5.7mb		TUNG	3.14	50 P	16 35.20	-0.2
RSP	63.01	48 P	05 31.11	0.3	KRA	71.55	42 iPc	06 24.60	0.3	VC1	3.72	41 P	16 44.10	0.3
STV	63.01	49 P	05 31.01	0.2						GGP	3.96	35 P+	16 47.20	-0.1
ENR	63.08	49 P	05 31.11	-0.2	SPC	71.82	43 iP	06 26.60	0.4			S	17 30.30	
MOF	63.11	44 P	05 30.59	-0.8	OHR	73.07	51 eP	06 34.00	0.4	QUR	4.01	36 eP	16 48.20	0.4
ECH	63.15	44 P	05 31.05	-0.6		0.8s	0.06nm	2.6mb X				eS	17 31.40	
DIX	63.17	46 ePc	05 32.80	0.7	BZS	73.10	47 eP	06 34.50	0.9	COTA	4.53	34 P	16 54.80	-0.5
CDF	63.25	44 P	05 31.61	-0.7	SKO	73.43	50 iPc	06 36.00	0.4	CAYA	4.54	39 P	16 55.40	0.0
WLS	63.30	44 P	05 31.91	-0.7		0.7s	60.00nm	5.7mb		NNA	9.36	155 eP	18 02.50	0.0
WTS	63.32	40 eP	05 32.50	0.0	NUR	73.45	31 iP	06 35.00	-0.2			e	19 47.00	
	0.9s	57.00nm	5.7mb			0.8s	23.50nm	5.2mb			S.D. = 0.4 on 7 of 7 obs.			
BBS	63.33	45 P	05 32.22	-0.6	FNA	73.54	52 iPd	06 37.00	0.6		MAR 01, 1990 21h 27m 31.31± 0.65s			
IMI	63.41	49 P	05 31.63	-1.8	FBA	73.67	334 eP	06 36.50	0.0		38.553 N ± 6.9km	1.789 W ± 6.3km		
ROB	63.41	48 P	05 32.14	-1.3	SOD	73.78	24 iP	06 37.70	0.6		DEPTH = 10.0km (geophysicist)			
GWf	63.52	43 P	05 33.72	-0.3	KZN	73.91	52 eP	06 39.40	0.9	SPAIN	(377)			
ORO	63.54	47 P	05 34.50	0.2	SUF	73.97	29 iP	06 38.30	0.0		mbLg 3.3 (MDD).			
ORX	63.55	47 P	05 33.58	-0.8		0.8s	19.30nm	5.1mb		EVIA	0.57	279 iPg	27 43.20	0.3
ABH	63.56	42 eP	05 34.29	0.0	VAY	74.36	51 iPd	06 41.40	0.4			eSg	27 50.50	
FIN	63.65	49 P	05 34.40	-0.5	LIT	74.49	52 eP	06 42.20	0.4	EALH	0.75	157 ePg	27 45.00	-1.0
FEL	63.70	44 eP	05 34.54	-0.8	ITM	74.51	55 eP	06 43.10	1.1			eSg	27 57.00	
CKI	63.70	48 P	05 34.50	-0.8	AGG	74.53	53 ePd	06 42.60	0.5	ACU	1.08	92 iPg	27 52.30	0.6
DAG	63.78	10 iPc	05 35.00	-0.2	KNT	74.63	51 iPd	06 43.30	0.7			eSg	28 05.50	
	0.7s	17.12nm	5.2mb		VTS	74.64	50 iPc	06 43.00	0.2	ECHE	1.22	31 ePg	27 54.00	0.0
PCP	63.90	48 P	05 36.04	-0.6	KKB	74.66	50 iPd	06 44.00	1.3			eSg	28 11.00	
ZLA	63.93	45 ePc	05 36.80	0.0	SOH	75.02	51 iPd	06 46.10	1.2	ENIJ	1.62	192 ePn	28 01.00	1.1
SLE	64.02	45 ePc	05 37.00	-0.3	SRS	75.15	51 iPc	06 46.60	1.0			eSn	28 20.00	
VAI	64.11	47 P	05 38.00	0.2	PLG	75.16	52 eP	06 46.60	0.9	EBAN	1.62	257 ePn	27 59.40	-0.6
TNS	64.17	42 ePd	05 37.70	-0.6	PAIG	75.42	52 eP	06 47.70	0.6			eSn	28 21.00	
TMA	64.19	47 ePc	05 38.70	0.0	OUR	75.57	52 eP	06 49.00	1.0	AFC	1.90	227 ePg	28 08.00	3.8X
LLS	64.31	46 ePc	05 39.90	0.4	PLD	75.81	50 eP	06 50.00	0.7			eSg	28 32.00	
BOB	64.55	48 P	05 41.50	0.6	RZN	75.89	50 iPd	06 51.00	1.0	TOL	2.20	308 ePn	28 13.50	5.1X
SAX	64.56	45 ePc	05 41.60	0.4	IMA	75.97	335 eP	06 50.90	1.0			eSg	28 42.50	
VDL	64.62	46 ePc	05 41.90	0.4		1.7s	41.70nm	5.1mb		GUD	2.77	320 iPg	28 24.00	7.3X
OSS	65.09	46 ePc	05 44.70	0.2	PVL	76.08	49 iPd	06 50.00	-0.8			eSg	28 58.00	
PII	65.31	49 P	05 45.50	-0.2	MLR	76.12	46 ePd	06 51.50	0.3	EHOR	2.82	256 ePg	28 25.00	7.7X
SAL	65.33	47 P	05 45.00	-0.8	BRW	76.15	341 eP	06 52.10	1.5			eSg	28 59.00	
OGA	65.70	46 eP	05 48.20	-0.2	KDZ	76.42	50 eP	06 53.00	0.3	EROQ	2.83	36 ePn	28 17.00	-0.4
	0.8s	27.00nm	5.4mb		DIM	76.43	50 eP	06 54.00	1.2			eSn	28 49.50	
GRF	65.92	43 eP	05 49.30	-0.2	RDO	76.60	51 eP	06 54.40	0.7		S.D. = 0.9 on 7 of 11 obs.			
	1.6s	98.00nm	5.6mb		VRI	76.60	46 ePd	06 50.00	-3.7X	& MAR 01, 1990	21h 29m	06.60s		
Z	19s	0.30um	4.5msz		PRK	77.51	53 eP	06 43.30	-15.5X		38.363 N	118.920 W		
CTI	66.12	47 Pd	05 50.50	-0.5	SVW	77.76	330 eP	06 59.90	0.1		DEPTH = 9.0km			
PGD	66.17	49 P	05 50.50	-1.0	PSN	78.03	48 iPd	06 50.00	-11.6X		CALIFORNIA-NEVADA BORDER REGION ( 40)			
SFI	66.27	49 P	05 50.00	-1.8	BCAO	78.68	89 iPd	07 06.00	0.3		<BRK>. ML 3.8 (BRK).			
HOF	66.37	42 iPc	05 52.00	-0.4		0.7s	24.00nm	5.3mb		KVN	0.94	43 iPc	29 23.60	-1.2
ASS	66.87	50 P	05 55.00	-0.8	BBTK	82.25	51 iPd	07 25.00	0.6	CMB	1.20	255 iPc	29 28.40	-0.7
NB2	66.88	30 P	05 55.70	0.2	CER	91.18	124 eP	08 09.00	1.2			iS	29 45.20	
	0.9s	29.60nm	5.3mb		KIM	94.25	119 eP	08 24.00	1.8	TNP	1.37	101 iPd	29 31.20	-0.8
FVI	66.91	46 P	05 55.00	-0.8	SWZ	94.27	117 eP	08 22.00	-0.3	FRI	1.51	205 iPc	29 33.60	-0.1
RMP	66.95	51 P	05 56.50	0.3	BUL	95.22	109 iPd	08 25.80	-1.0			i	29 47.70	
RDP	66.96	51 P	05 56.50	0.1		0.8s	4.10nm	4.9mb				iS	29 53.20	
WET	66.99	43 iPd	05 56.10	-0.3	GTA	121.34	17 ePKP	13 56.60	0.3	ARN	2.30	245 eP	29 45.30	-0.1
	1.0s	36.00nm	5.4mb		BJI	123.47	3 ePKP	14 00.50	0.4	ORV	2.34	301 ePc	29 45.50	-0.3
ARV	67.07	49 P	05 55.80	-1.2	GKN	124.43	37 PKP	14 02.90	0.2	LLA	2.37	223 ePd	29 46.50	0.2
CLL	67.11	41 iP	05 56.90	-0.2	KKN	124.96	37 PKP	14 04.00	0.2			i	29 47.70	
	1.1s	51.00nm	5.5mb		DMN	125.00	37 PKP	14 04.10	0.2	MHC	2.38	246 ePc	29 46.70	0.1
KBA	67.29	45 iPd	05 55.50	-3.0X	PKI	125.20	37 PKP	14 04.20	-0.2	PKEM	2.49	203 eP	29 50.50	2.6
	1.3s	56.70nm	5.5mb		GUN	125.22	36 PKP	14 04.90	0.5	BKS	2.66	261 ePd	29 50.60	0.2
RBL	67.45	46 Pd	05 58.50	-0.9	XAN	128.61	11 PKP	14 10.50	0.1	ZSP	2.66	262 ePd	29 50.60	0.2
AZI	67.49	51 P	06 01.50	1.9	GBA	129.03	56 PKP	14 11.00	-0.6			iPg	29 54.30	
VOY	67.68	47 e(P)	06 01.50	0.6	NNT	145.17	34 iPKPc	14 41.10	-0.1	BRK	2.68	261 ePd	29 50.50	-0.2
SDI	67.78	51 P	06 01.50	-0.1	COO	147.05	239 iPKPc	14 48.10	4.1X	GCC	2.78	242 ePc	29 51.00	-1.1
					BRS	147.09	245 ePKP	14 46.00	1.9	PHAM	2.79	206 eP	29 54.00	1.8
					CNB	147.26	230 iPKPd	14 48.50	4.3X					
					CAN	147.52	229 ePKP	14 48.70	4.1X					
					BWA	148.35	231 ePKP	14 49.90	3.9X					



01d 21h

PRS 2.81 225 ePd 29 52.40 -0.2  
 PCC 2.87 254 e(P) 29 53.20 -0.1  
 MIN 2.87 314 e(P) 29 56.40 2.9  
 BCH 3.31 197 eP 30 02.50 2.8  
 LBFM 3.76 323 e(P) 30 06.50 0.3  
 DUG 5.08 67 eP 30 26.50 1.6  
 MSU 5.30 86 eP 30 28.50 0.4  
 22 obs. associated

MAR 01, 1990 21h 40m 58.94±0.93s  
 30.614 N ± 4.7km 131.099 E ± 4.6km  
 DEPTH = 57.5 ± 8.4 km  
 5.1mb (25 obs.) 5.0Msz (4 obs.)  
 KYUSHU, JAPAN (235)  
 CENTROID, MOMENT TENSOR (HRV)  
 Data Used: GDSN  
 L.P.B.: 6S, 9C  
 Centroid Location:  
 Origin Time 21:41: 1.4 1.8  
 Lot 30.37N 0.18 Lon 130.34E 0.26  
 Dep 55.215.3 Half-duration 1.5  
 Moment Tensor: Scale 10\*\*16 Nm  
 Mrr= 2.79 0.83 Mtt=-0.71 1.23  
 Mff=-2.08 1.63 Mrt= 6.87 1.24  
 Mrf= 3.97 1.29 Mtf=-3.32 1.37  
 Principal Axes:  
 T Vol= 8.27 Plg=54 Azm=347  
 N 1.25 14 238  
 P -9.52 32 139  
 Best Double Couple: Mo=8.9\*10\*\*16  
 NP1: Strike=188 Dip=18 Slip= 39  
 NP2: 60 79 104

SHK 4.13 18 eP 42 00.80 -0.1  
 MAT 8.37 43 iPd 42 57.40 -2.8  
 0.8s 23.88nm 5.1mb  
 (S) 44 55.00  
 SSE 8.54 276 P 43 01.50 -0.9  
 3.0s 400.00nm 5.8mb  
 Z 20s 3.70um  
 N 14s 2.10um  
 E 13s 4.80um

NJ2 10.57 281 Pd 43 30.00 -0.2  
 E 14s 3.10um  
 eS 45 35.00  
 OZH 12.43 246 eP 43 58.50 3.3X  
 Z 20s 1.90um  
 SNY 12.72 334 Pc 44 01.00 2.0  
 6.0s 600.00nm 5.7mb X  
 Z 14s 6.50um 5.3Msz  
 sP 44 12.00

TIA 12.94 299 eP 44 03.50 1.6  
 Z 14s 3.60um  
 N 13s 1.60um  
 E 13s 3.00um  
 CN2 13.91 343 Pc 44 16.00 1.4  
 4.0s 700.00nm 5.6mb X  
 Z 15s 8.50um  
 N 13s 5.00um  
 E 13s 1.00um

MDJ 14.03 356 eP 44 16.00 -0.2  
 Z 24s 2.50um  
 E 22s 3.30um  
 epP 44 21.60  
 esP 44 26.00

WHN 14.43 274 eP 44 23.50 2.0  
 Z 16s 2.40um  
 N 11s 1.01um  
 E 13s 2.50um  
 S 47 02.00

BJI 15.37 312 eP 44 33.00 -0.6  
 1.0s 96.00nm 4.9mb  
 Z 14s 6.27um  
 E 13s 2.55um

TIY 16.98 300 P 44 54.60 0.6  
 E 15s 2.60um  
 pP 45 04.00  
 sP 45 10.00

BAG 17.10 217 eP 44 54.20 -1.5  
 HKC 17.25 245 eP 45 08.00 10.6X  
 eS 48 44.00  
 HHC 18.83 308 P 45 16.00 -0.7  
 PP 45 37.50

XAN 19.05 286 P 45 17.50 -1.8  
 N 11s 1.40um  
 E 13s 3.90um  
 PGP 19.43 211 iPc 45 23.00 -0.5  
 BTO 19.78 306 P 45 28.00 0.8  
 N 14s 2.20um  
 E 14s 3.00um

GUMO 21.17 140 e(P) 45 42.50 1.0  
 1.2s 366.67nm 5.6mb  
 eS 49 42.00  
 PJG 21.17 140 e(P) 45 42.80 1.3  
 GUA 21.24 140 e(P) 45 42.30 0.1  
 0.9s 309.24nm 5.7mb

GYA 21.85 265 iPd 45 49.20 0.8  
 Z 18s 1.50um 4.4Msz  
 N 15s 1.30um  
 E 15s 0.70um  
 LZH 23.37 291 eP 46 03.00 -0.3  
 5.0s 390.00nm 5.1mb X  
 Z 18s 5.10um 5.0Msz  
 N 16s 1.50um  
 E 15s 2.70um

CD2 23.48 278 P 46 04.30 0.1  
 0.5s 100.00nm 5.5mb  
 Z 14s 1.40um 4.6MszX  
 N 12s 1.70um  
 PPR 23.72 212 ePd 46 09.50 2.9  
 KMI 25.62 265 Pd 46 25.50 0.5  
 Z 15s 2.90um 4.9MszX  
 N 15s 1.00um  
 E 15s 1.70um

GTA 26.98 298 eP 46 36.60 -0.6  
 Z 14s 1.80um 4.8MszX  
 E 13s 1.30um  
 CHG 31.37 256 ePc 47 15.80 -0.7  
 0.9s 16.39nm 4.8mb  
 LSA 34.43 279 eP 47 44.60 1.1  
 WMD 36.58 303 Pd 48 01.00 -0.2  
 Z 20s 2.20um 4.9Msz  
 IPM 38.38 234 ePd 48 17.70 1.3  
 0.8s 20.80nm 5.1mb

GUN 39.34 278 P 48 25.00 0.2  
 PKI 39.84 277 P 48 28.40 -0.5  
 0.8s 32.00nm 5.2mb  
 KKN 39.89 278 P 48 29.00 -0.1  
 0.8s 40.00nm 5.3mb  
 DMN 40.08 278 P 48 30.40 -0.4  
 0.6s 14.00nm 5.0mb  
 GKN 40.38 278 P 48 32.80 -0.3  
 0.6s 17.00nm 5.0mb

KSH 45.38 297 P 49 15.40 1.8  
 NDI 46.49 282 iPd 49 22.00 -0.3  
 0.7s 17.12nm 5.1mb  
 HYB 49.36 267 eP 49 43.50 -1.3  
 WB5 50.30 176 eP 49 50.90 -0.9  
 WRA 50.36 176 Pc 49 49.80 -2.4  
 0.8s 27.10nm 5.3mb  
 OIS 51.53 170 iPc 50 00.20 -0.9  
 0.8s 26.00nm 5.3mb

GBA 52.04 263 Pc 50 03.70 -1.4  
 0.7s 5.60nm 4.7mb  
 CTA 52.47 162 iPd 50 07.30 -0.9  
 1.0s 42.00nm 5.4mb  
 i 50 18.50

KOD 53.66 260 eP 50 17.00 -0.5  
 QUE 54.62 287 eP 50 24.00 -0.3  
 BRW 55.61 22 eP 50 30.70 0.1  
 IMA 56.47 28 ePc 50 37.20 0.1  
 MAIO 58.77 296 iPc 50 54.00 0.5  
 DZM 62.42 143 iPc 51 18.10 -0.3  
 INK 63.88 24 ePc 51 26.70 -0.6  
 MBC 64.98 14 ePc 51 34.00 -0.4  
 1.0s 27.00nm 5.2mb

KEV 66.30 338 eP 51 24.00 -18.9X  
 BWA 66.72 164 eP 51 47.60 1.5  
 SOD 67.43 336 iP 51 48.80 -1.3  
 CAN 67.71 164 eP 51 52.80 0.5  
 TAB 68.09 302 eP 51 55.00 0.0  
 SUF 69.68 332 iP 52 03.00 -1.1  
 0.8s 15.00nm 5.0mb

DAG 71.26 353 eP 52 10.80 -2.7  
 NUR 71.36 330 iP 52 12.70 -1.6  
 0.7s 17.40nm 5.1mb

UPP 74.68 331 iP 52 32.80 -0.9  
 HFS 76.11 333 eP 52 41.00 -0.9  
 1.4s 47.00nm 5.2mb  
 Z 16s 0.62um 5.0MszX  
 LR 23 54.00  
 NB2 76.49 334 P 52 42.50 -1.6  
 1.1s 9.60nm 4.7mb

PNT 78.65 39 eP 52 59.00 2.8  
 KRA 79.23 322 eP 52 59.60 0.3  
 EDM 79.56 33 eP 53 01.50 0.5  
 KSP 80.65 324 iPd 53 08.00 1.2  
 WDC 81.76 48 eP 53 16.80 4.0X  
 CLL 81.97 326 iPd 53 14.40 0.7  
 1.2s 29.00nm 5.2mb

SES 82.44 35 eP 53 17.00 0.7  
 ORV 82.99 48 eP 53 20.20 0.9  
 FFC 83.55 28 iPc 53 22.20 0.4  
 0.8s 11.00nm 4.9mb  
 GRF 83.89 326 eP 53 24.30 0.6  
 Z 18s 1.30um 5.4Msz  
 e 53 25.70  
 e 53 28.20

KBA 84.52 323 ePc 53 28.50 1.4  
 0.7s 6.70nm 4.8mb  
 CMB 84.57 49 eP 53 28.00 0.7  
 FRB 84.68 9 eP 53 27.00 -0.3  
 RBL 84.81 322 P 53 29.00 0.6  
 PRS 84.88 51 eP 53 29.50 0.6  
 FVI 85.13 322 P 53 28.50 -1.3  
 FRI 85.60 49 eP 53 33.10 0.7  
 CTI 86.08 323 P 53 35.00 0.2

LKO 122.36 307 PKP 59 48.24 -1.5  
 KIC 123.98 303 PKP 59 52.40 -0.5  
 0.8s 5.00nm  
 ZOBO 157.36 55 (PKP) 00 52.00 1.2  
 Z 23s 0.10um 4.6MszX  
 S.D. = 1.2 on 80 of 84 obs.

MAR 01, 1990 22h 56m 42.41±0.34s  
 14.004 S ± 6.5km 34.209 E ± 7.6km  
 DEPTH = 10.0km (geophysicist)  
 4.9mb (11 obs.) 4.7Msz (2 obs.)  
 MALAWI (577)  
 mbLg 4.2 (BUL).

SONG 2.11 221 iPg 57 54.70 36.4X  
 SONG 2.11 221 Pg 57 56.50 38.2X  
 eSg 58 25.00  
 BUL 8.12 220 iPn 58 43.20 -0.1  
 iSn 00 10.20  
 iSg 00 59.80  
 LWI 12.85 335 iPc 59 41.30 -6.9X  
 eS 01 53.90  
 KSR 13.65 209 eP 59 58.40 -0.3  
 S 02 20.00  
 PRY 14.32 205 iPd 00 11.20 3.8X  
 S 02 42.80

BFS 14.59 207 eP 00 11.00 0.1  
 1.0s 680.00nm 6.2mb X  
 S 02 46.00  
 SEK 15.51 202 iPd 00 27.00 4.0X  
 0.6s 160.00nm 5.5mb  
 S 03 11.50  
 SWZ 15.52 211 iPd 00 20.40 -2.7X  
 S 03 07.00  
 KIM 17.09 209 iPd 00 43.00 -0.1  
 POF 20.21 218 eP 01 23.50 3.2X  
 1.0s 80.00nm 5.0mb  
 S 04 56.50  
 CER 23.57 213 iPc 01 57.00 3.0X  
 1.0s 200.00nm 5.6mb  
 S 06 46.00  
 BCAO 24.03 319 iPc 01 57.40 -1.2  
 0.5s 30.00nm 5.1mb  
 id 02 24.20  
 ic 03 35.50  
 KIC 43.63 295 P 04 48.84 -0.2  
 0.7s 13.50nm 4.8mb  
 LIC 43.82 295 P 04 50.20 -0.4  
 Z 20s 0.31um 4.2Msz  
 TIC 44.01 295 P 04 52.00 -0.1  
 LKO 45.90 298 P 05 06.82 -0.5  
 0.9s 18.00nm 5.1mb  
 GBA 50.84 59 Pd 05 45.70 0.1  
 0.8s 9.10nm 4.8mb  
 VAY 56.09 349 iP 06 24.40 0.4



GKN	64.25	49 P	07 19.40	-1.0		E 20s	1.50um			1.2s	29.75nm			
DMN	64.38	50 P	07 20.60	-0.8			e(S)	20 48.00		AVF	148.96	3 ePKP	19 15.50	6.5X
PKI	64.58	50 P	07 21.80	-1.0			eLR	32 10.00			1.0s	18.00nm		
KKN	64.61	50 P	07 21.20	-1.6			e	39 56.00		KDZ	148.96	330 ePKP	19 12.00	2.8X
GUN	65.12	50 P	07 26.00	-0.3	MHC	72.48	42 ePc	10 52.50	0.0	SMF	149.13	2 ePKP	19 15.90	6.6X
KSH	65.90	34 eP	07 31.50	0.7	LLA	72.50	43 eP	10 52.70	0.1		1.2s	28.25nm		
NUR	74.65	355 eP	08 24.00	0.6	MWC	73.10	46 eP	10 56.00	-0.4	BGF	149.16	4 ePKP	19 16.20	6.9X
WMO	75.40	37 P	08 28.70	0.5	PLM	73.48	48 eP	10 58.00	-0.6		1.2s	66.95nm		
HFS	75.71	350 eP	08 29.40	-0.1	SBB	73.52	46 eP	10 58.00	-0.6	VTS	149.21	334 ePKP	19 16.00	6.3X
	0.4s	1.50nm		4.4mb	FRI	73.53	43 eP	10 58.30	-0.2	CTI	149.32	352 PKP	19 15.00	5.3X
SUF	76.74	356 iP	08 35.70	0.5	ISA	73.61	45 eP	10 59.00	-0.1	TCF	149.39	5 ePKP	19 16.80	7.1X
	0.8s	11.00nm		5.0mb	CMB	73.69	42 ePc	10 59.30	-0.2		1.3s	37.90nm		
NB2	77.01	349 P	08 38.00	1.1	WDC	73.87	39 ePc	11 00.20	-0.2	MAF	149.48	4 ePKP	19 17.30	7.5X
	0.9s	5.80nm		4.7mb	ORV	73.88	40 e(P)	11 00.00	-0.5		1.2s	41.65nm		
GTA	80.88	46 eP	08 59.80	1.3	CLC	74.29	45 eP	11 03.00	0.0	VAI	149.81	355 PKP	19 17.20	7.00
Z	22s	1.00um		5.1msz	MIN	74.29	39 e(P)	11 03.60	0.5	SAL	149.90	353 PKP	19 17.00	6.6X
WRA	94.54	112 P	10 09.00	4.0X	SPA	74.39	180 eP	11 13.50	10.2X	ORO	150.11	357 PKP	19 15.50	4.6X
	1.0s	3.20nm		4.7mb		1.0s	17.00nm			LPL	150.27	358 ePKP	19 20.20	8.9X
INK	125.16	354 ePdfff	12 18.00	-2.6X	TPC	74.45	47 eP	11 03.00	-1.0		1.1s	34.20nm		
FFC	127.03	330 ePdfff	12 40.00	10.7X	GSC	74.55	46 eP	11 03.00	-1.6	LPG	150.29	358 ePKP	19 20.40	9.0X
	1.2s	14.00nm			GLA	74.78	49 eP	11 06.00	0.1		1.0s	34.00nm		
GLA	146.05	309 ePKP	16 27.00	3.1X	MDJ	78.63	323 eP	11 26.00	-1.2	BNI	150.73	358 PKP	19 20.90	9.0X
MIN	146.29	326 ePKP	16 25.70	1.5	Z	24s	2.00um		5.4msz	BOB	150.85	354 PKP	19 18.00	6.0X
GSC	146.39	314 ePKP	16 29.00	4.5X	CN2	80.65	321 eP	11 36.00	-2.1	OHR	151.43	335 e(PKP)	19 18.00	5.1X
TPC	146.46	312 ePKP	16 28.00	3.4X	Z	20s	1.00um		5.2msz	PGD	151.43	351 PKP	19 22.50	9.5X
WDC	146.62	327 ePKP	16 27.00	2.5X	N	18s	0.70um			ARV	151.59	349 PKP	19 20.50	7.4X
CLC	146.66	316 ePKP	16 26.00	1.2	E	18s	0.20um			FIR	151.60	351 ePKP	19 20.50	7.5X
ORV	146.77	325 ePKP	16 28.00	3.2X			epP	11 47.00	36kmX	ASS	152.05	349 PKP	19 23.50	9.7X
ISA	147.33	316 ePKP	16 31.00	5.1X	PNT	80.84	33 eP	11 40.00	1.1	AZI	152.94	347 PKP	19 23.50	8.6X
FRI	147.36	319 ePKP	16 30.60	4.8X		0.5s	7.00nm		4.9mb	SDI	153.12	346 PKP	19 24.00	8.7X
PLM	147.42	311 ePKP	16 31.00	4.7X	ALQ	81.80	50 eP	11 39.80	-4.7X	BCAO	162.99	230 iPKPd	19 34.80	7.1X
SBB	147.43	314 ePKP	16 31.00	4.9X		1.0s	7.50nm		4.7mb		0.8s	11.00nm		
RVR	147.47	313 ePKP	16 31.00	4.9X	Z	20s	1.49um		5.3msz			id	20 24.10	
BAR	147.60	310 ePKP	16 32.00	5.6X	BJI	84.93	314 eP	11 59.00	-1.0		S.D. = 1.2 on 44 of 97 obs.			
PAS	147.95	314 ePKP	16 34.00	7.1X	Z	24s	0.70um		5.0msz					
LLA	148.37	320 ePKP	16 33.80	6.3X	SES	86.05	35 eP	12 05.00	-0.5		MAR 01, 1990 23h 01m 10.73±0.72s			
PRS	148.82	320 ePKP	16 30.90	2.7X	TIY	86.65	311 Pd	12 08.80	0.0		39.789 N ± 6.5km 5.719 E ± 4.0km			
	S.D. = 0.8 on 25 of 50 obs.				Z	22s	1.30um		5.3msz		DEPTH = 10.0km (geophysicist)			
					E	17s	1.10um				WESTERN MEDITERRANEAN SEA (387)			
							eS	22 52.00			ML 3.6 (LDG), MD 3.6 (STR).			
					XAN	87.97	306 P	12 14.80	-0.4					
					HHC	88.47	313 eP	12 17.30	-0.2	ESEL	2.18	270 eP	01 49.20	1.7
					BTO	89.47	313 eP	12 23.50	1.2			eS	02 12.80	
							S	23 16.00		ETER	3.31	320 eP	02 03.00	-0.7
					KMI	90.22	296 Pd	12 32.00	5.8X			eS	02 38.60	
						2.0s	0.10nm		2.8mb X	BERF	3.52	360 Pn	02 07.58	0.9
							pP	12 50.00	64kmX	LMR	3.59	9 Pn	02 07.90	0.3
							sP	13 14.50				Sn	02 44.00	
					CHTO	91.82	289 eP	12 31.00	-2.4	GELF	3.60	357 Pn	02 08.09	0.4
						1.0s	2.75nm		4.6mb	LRG	3.69	7 Pn	02 09.60	0.6
					KSP	143.89	348 ePKP	18 59.20	-1.3			Sn	02 47.60	
							e	19 06.70		PGF	3.71	41 Pn	02 10.40	1.1
					SPC	144.51	343 ePKP	19 06.60	4.7X			Sn	02 47.20	
					MLR	145.70	334 ePKPd	19 07.50	3.5X	PUYF	3.74	360 Pn	02 10.49	0.8
					GRF	145.79	353 ePKP	19 07.00	3.2X	FRF	3.83	10 Pn	02 11.40	0.4
					Z	19s	0.50um		5.3msz			Sn	02 50.60	
					BBTK	146.20	321 ePKP	19 06.00	1.1	TAVF	3.83	4 Pn	02 12.25	1.2
					ZST	146.23	346 ePKP	19 07.50	3.0X	TREF	3.84	356 Pn	02 12.04	0.9
					SRO	146.29	344 ePKP	19 06.80	2.2X	PRAF	4.03	354 Pn	02 14.58	0.7
					VKA	146.34	347 ePKPd	19 07.00	2.2X	CALN	4.06	12 Pn	02 15.56	1.3
						3.0s	224.00nm			VILF	4.06	360 Pn	02 15.21	1.0
					SOP	146.83	346 ePKP	19 09.30	3.8X	EBR	4.13	286 eP	02 58.00	42.9X
					LDF	146.88	7 ePKP	19 09.40	3.8X	REVF	4.14	17 Pn	02 16.21	0.9
						1.2s	71.40nm			EROQ	4.19	286 eP	02 15.00	-1.1
					BZS	147.26	339 ePKP	19 10.00	3.7X			eS	03 00.50	
					FUR	147.29	353 ePKP	19 11.70	5.4X	GANF	4.21	2 Pn	02 17.21	0.9
						1.5s	128.00nm			MVIF	4.24	14 Pn	02 17.62	0.7
					CDF	147.36	358 ePKP	19 11.10	4.6X	AURF	4.27	16 Pn	02 17.58	0.3
						1.3s	50.55nm			SBF	4.27	17 Pn	02 17.00	-0.3
					BHG	147.50	351 iPKPd	19 11.50	4.9X			Sn	03 01.30	
					HAU	147.79	359 ePKP	19 12.20	5.1X	TOUF	4.37	15 Pn	02 19.55	0.7
						1.0s	24.00nm			AUTN	4.39	16 Pn	02 19.62	0.5
					BSF	147.95	358 ePKP	19 12.50	5.0X	SAOF	4.41	18 Pn	02 19.33	0.1
						1.0s	12.00nm			IMI	4.43	21 P	02 17.86	-1.6
					KBA	148.05	350 ePKP	19 09.50	1.7			S	03 02.62	
						1.7s	42.20nm			STV	4.61	15 P	02 22.92	0.8
					BEO	148.35	340 ePKP	19 13.00	5.0X			S	03 08.27	
					LOR	148.50	2 ePKP	19 14.50	6.2X	ENR	4.61	15 P	02 21.58	-0.6
						1.4s	76.25nm					S	03 07.83	
					OGA	148.60	353 ePKP	19 15.60	6.9X	ROB	4.78	19 P	02 24.26	-0.3
						1.0s	22.00nm					S	03 10.19	
					FVI	148.62	350 PKP	19 09.50	1.1	FIN	4.79	22 P	02 23.51	-1.1
					RBL	148.63	349 PKP	19 14.00	5.4X			S	03 09.79	
					PTJ	148.65	346 ePKP	19 14.40	5.8X	FOUF	4.80	9 ePnc	02 26.00	1.3
					SSF	148.70	3 ePKP	19 15.20	6.6X			e(Sn)	03 14.91	
						1.3s	72.20nm			PZZ	4.82	12 P	02 26.34	1.1
					LBF	148.79	2 ePKP	19 15.20	6.4X			S	03 13.59	



DOI	4.85	13	P	02 27.30	1.8	OGE	0.59	305	Pg	19 43.90	-1.0	KKN	61.44	88	P	46 39.40	-5.7X
			eSn	03 17.00		LHE	0.60	278	Pg	19 45.27	0.1	GUN	61.51	88	P	46 46.00	0.2
ACU	4.93	257	eP	02 29.00	2.3				Sg	19 52.94		LKO	63.15	190	P	46 54.38	-1.9
			eS	03 21.00		ESCF	0.61	294	Pg	19 45.53	0.2		0.8s		14.50nm		5.2mb
CKI	5.01	22	P	02 28.80	1.1				Sg	19 52.05		KIC	66.27	188	P	47 15.10	-1.4
			eSn	03 19.00		ATE	0.70	291	Pg	19 47.30	0.5	BCAO	68.69	163	iPc	47 31.00	-0.8
ECHE	5.16	270	eP	02 30.40	0.4				Sg	19 55.21			0.6s		11.00nm		5.2mb
			eS	03 26.00		ISSF	0.75	285	Pg	19 47.63	-0.1	CHTO	73.98	79	eP	48 03.10	-0.4
EPF	5.18	310	Pn	02 30.80	0.6				Sg	19 57.55		S.D. = 1.1 on 34 of 40 obs.					
			Sn	03 26.00		MADF	0.80	293	Pg	19 49.04	0.5	? MAR 02, 1990 02h 22m 53.21± 2.42s					
RRL	5.19	8	P	02 32.14	1.7				Sg	19 58.96		32.235 S ± 19.4km 175.846 E ± 31.5km					
PCP	5.19	23	P	02 29.02	-1.3	LPO	1.98	21	Pg	20 08.40	1.5	DEPTH = 33.0km (normal)					
BN1	5.31	7	Pd	02 33.50	1.4				Sg	20 32.00		3.8mb ( 1 obs.)					
RSP	5.48	11	P	02 34.82	0.4	LFF	2.14	11	Pg	20 11.60	2.4	NORTH OF NEW ZEALAND (176)					
SSB	5.55	351	Pn	02 34.87	-0.6				Sg	20 36.00		HBZ	5.72	160	eP	24 18.50	0.5
BD1	5.61	39	P	02 37.50	1.2	CAF	2.49	32	Pn	20 11.40	-2.8		0.2s		20.00nm		5.3mb X
RDP	5.66	67	P	02 35.50	-1.6				Pg	20 18.00		MNG	8.37	182	eP	24 54.60	-0.6
RMP	5.67	67	P	02 35.80	-1.3				Sg	20 46.60			0.2s		120.00nm		6.7mb X
BOB	5.69	28	P	02 39.50	2.1	RJF	2.65	21	Pg	20 20.60	4.2X				eS	26 31.10	
LBL	5.74	342	Pn	02 36.87	-1.1				Sg	20 52.00		PGZ	8.37	178	eP	24 55.00	-0.2
LPG	5.76	7	Pn	02 40.40	1.9	BGF	4.17	26	Pg	20 48.20	10.1X	CAW	8.88	184	eP	25 02.50	0.3
LSD	5.76	10	P	02 40.32	1.8				Sg	21 39.60		MTW	8.91	182	eP	25 00.70	-1.9
LPL	5.77	7	Pn	02 40.60	1.9	S.D. = 1.5 on 11 of 13 obs.						MRW	9.03	185	eP	25 05.30	1.1
CAF	5.80	333	Pn	02 38.20	-0.7	MAR 02, 1990 01h 36m 26.37± 0.45s									eS	26 48.20	
			Sn	03 38.00		72.527 N ± 6.4km 3.007 E ± 8.7km						WDW	9.04	184	eP	25 03.70	-0.7
LPO	5.93	327	Pn	02 39.60	-1.1	DEPTH = 10.0km (geophysicist)						TCW	9.05	188	eP	25 05.90	1.4
			Sn	03 42.00		4.6mb ( 21 obs.)						MOW	9.18	183	P	25 06.60	0.2
ETOR	6.03	282	eP	02 42.80	0.6	NORWEGIAN SEA (642)						KHZ	10.33	190	eP	25 22.10	0.0
			eS	03 48.00		DAG	7.13	317	iPd	38 08.40	-4.7X	WRA	39.01	278	P	30 19.00	0.5
PGD	6.06	46	P	02 42.00	-0.7				iP	39 18.30			0.4s		0.80nm		3.8mb
ORO	6.07	15	P	02 42.50	-0.2				iP	38 46.30	-0.5	WB5	39.01	278	eP	30 18.00	-0.5
AZI	6.25	67	P	02 43.00	-2.1	SOD	9.56	111	iP	38 46.30	-0.5	S.D. = 1.0 on 12 of 12 obs.					
PYM	6.28	342	Pn	02 44.33	-1.4	NB2	11.96	160	P	39 15.20	-4.6X	? MAR 02, 1990 02h 40m 49.38± 5.56s					
RJF	6.32	332	Pn	02 44.80	-1.5				S	41 50.80		33.565 S ± 15.0km 72.091 W ± 46.4km					
			Sn	03 51.00		NRA0	12.30	160	Pn	39 20.90	-3.3X	DEPTH = 27.0 ± 9.5 km					
LFF	6.33	326	Pn	02 44.60	-1.7				Lg	43 13.60		OFF COAST OF CENTRAL CHILE (134)					
PLDF	6.37	347	Pn	02 45.84	-1.1	SUF	13.08	127	eP	39 32.50	-2.1	LCCH	0.44	78	iP	40 59.20	0.4
SOI	6.44	70	P	02 46.50	-1.5	HFS	13.13	156	eP	39 32.40	-2.8X				iS	41 04.00	
EVIA	6.49	262	eP	02 49.60	0.9				0.4s	3.30nm	4.8mb	IHA	0.66	35	iPc	41 01.20	-1.0
			eS	04 01.00		NUR	14.68	134	iP	39 50.40	-5.2X				iS	41 07.90	
AGO	6.54	344	Pn	02 48.21	-1.1				0.7s	12.00nm	4.6mb	LNv	0.69	125	iPc	41 02.50	-0.2
ECRI	6.82	297	eP	02 52.80	-0.5	CLL	21.74	163	ePd	41 19.00	-0.4				iS	41 11.00	
			eS	04 06.00					1.8s	42.00nm	4.6mb	ROCH	1.08	57	iPd	41 07.50	-1.5
MAF	6.83	341	Pn	02 52.10	-1.3	ENN	21.88	175	eP	41 20.50	-0.2				iS	41 22.50	
TCF	6.98	340	Pn	02 54.40	-1.1				1.0s	36.00nm	4.7mb	SAN	1.20	85	iPd	41 09.90	-0.6
SMF	6.99	349	Pn	02 54.50	-1.1	MEM	22.04	175	P	41 21.70	-0.6				iS	41 24.50	
BGF	7.08	344	Pn	02 55.40	-1.5	MOX	22.29	165	iPc	41 25.00	0.2	FCH	1.52	82	iPd	41 15.40	0.0
LSF	7.15	336	Pn	02 25.64	-32.2X				1.5s	42.00nm	4.7mb				iS	41 34.00	
			Sn	04 09.80		KSP	22.54	158	eP	41 27.20	-0.1	JACH	1.54	55	iPc	41 15.40	0.0
AVF	7.21	347	Pn	02 57.60	-1.0	HOF	22.64	165	iPc	41 28.60	0.3				iS	41 35.00	
LBf	7.30	351	Pn	02 58.40	-1.6				1.3s	40.00nm	4.8mb	RTCV	3.44	61	e(P)	41 46.80	4.2X
SSF	7.45	348	Pn	03 01.70	-0.3	PRU	23.20	161	ePc	41 34.50	0.8	RTCB	3.47	54	ePd	41 48.00	5.0X
LOR	7.60	350	Pn	03 03.20	-0.9	GRF	23.21	166	e(P)	41 36.00	2.1				eS	42 32.00	
GUD	7.60	280	eP	03 03.80	-0.6	KRA	23.78	152	eP	41 41.60	2.2	ZON	3.52	56	eP	41 43.00	-0.6
			eS	04 25.00		HAU	24.65	175	eP	41 49.10	1.2	RTLL	3.79	55	ePc	41 51.10	3.7X
CTI	7.62	33	P	03 04.00	-0.5				1.2s	17.85nm	4.6mb				eS	42 38.60	
HAU	8.23	3	Pn	03 10.80	-2.1	BSF	24.84	174	eP	41 50.80	1.0	CFA	3.79	60	iPd	41 51.80	4.3X
SNF	10.77	355	P	03 47.20	-0.7				1.0s	8.00nm	4.3mb				iS	42 40.00	
MEM	10.82	1	P	03 47.70	-0.9	ZST	25.24	158	eP	41 53.70	0.2	RTRS	4.06	34	ePd	41 52.00	0.8
S.D. = 1.2 on 75 of 77 obs.						LOR	25.34	179	eP	41 53.00	0.5				eS	42 44.60	
* MAR 02, 1990 00h 00m 11.40± 0.96s						SSF	25.55	179	eP	41 55.50	-0.9	GBA	145.93	118	PKPc	00 31.70	3.9X
34.158 N ± 24.1km 117.685 W ± 14.2km									1.0s	20.00nm	4.8mb	S.D. = 0.9 on 9 of 14 obs.					
DEPTH = 10.0km (geophysicist)						LBF	25.63	178	eP	41 57.70	0.5	* MAR 02, 1990 03h 04m 00.68± 1.06s					
SOUTHERN CALIFORNIA ( 43)									1.0s	10.00nm	4.5mb	0.243 S ± 9.6km 125.151 E ± 11.1km					
ML 2.9 (NEIS).									1.0s	14.00nm	4.6mb	DEPTH = 80.0 ± 12.4 km					
						SRO	25.76	156	eP	41 58.90	0.5	4.6mb ( 4 obs.)					
						AVF	25.82	179	eP	41 59.40	0.5	MOLUCCA SEA (269)					
									1.0s	16.00nm	4.7mb	MNI	1.70	349	iPd	04 29.00	-0.1
						SMF	25.97	179	eP	42 00.90	0.6				eS	04 53.00	
									1.0s	8.00nm	4.4mb	AAI	4.58	138	ePd	05 09.00	0.0
						BGF	26.05	180	eP	42 00.30	-0.8				eS	06 05.00	
									0.9s	12.30nm	4.6mb	PCI	5.35	263	ePd	05 19.80	0.0
						TCF	26.32	181	eP	42 02.40	-1.2				e(S)	06 25.00	
									1.0s	12.00nm	4.5mb	MKS	7.52	229	iPc	05 50.00	0.2
						MAF	26.39	181	eP	42 03.10	-1.1	KNA	15.02	167	iPd	07 39.60	-0.4
									0.8s	6.70nm	4.4mb	WB5	21.50	156	eP	08 43.80	-0.9
						MBC	27.52	334	eP	42 16.00	1.8	WRA	21.55	156	Pd	08 44.00	-1.2
						INK	36.54	335	eP	43 32.50	-0.7				0.5s	9.20nm	4.4mb
						YKA	38.81	319	eP	43 51.60	-0.6	OIS	24.65	146	iPd	09 16.90	1.5
									0.8s	0.90nm	3.5mb X	ASPA	24.79	161	iPd	09 17.30	0.6
						FFC	43.02	305	eP	44 27.00	0.0						
									0.9s	8.00nm	4.5mb						
						MAIO	45.84	110	eP	44 51.00	1.0						
						GKN	61.05	89	P	46 42.40	0.0						
EPF	0.22	30	Pg	19 37.60	-0.2												
			Sg	19 40.20													
BTH	0.41	315	ePg	19 40.30	-1.0												
			i	19 41.10													
			Sg	19 44.60													



1.2s 38.00nm 4.7mb  
Z 21s 0.24um 3.7msz  
CHG 31.95 308 eP 10 23.00 1.7  
CHTO 31.95 308 eP 10 22.90 1.6  
0.8s 1.65nm 3.9mb  
pP 10 30.10 25kmX  
SP 10 34.80  
BRS 37.84 138 iPd 11 12.00 0.5  
i 11 34.00  
e 14 04.00  
BWA 40.38 150 eP 11 36.30 3.9X  
TOO 41.62 155 iPc 11 45.90 3.3X  
GUN 46.91 310 P 12 23.40 -2.2  
0.6s 12.00nm 5.0mb  
KKN 47.31 309 P 12 25.40 -3.2X  
GKN 47.91 309 P 12 31.80 -1.4  
S.D. = 1.4 on 14 of 17 obs.

MAR 02, 1990 03h 15m 36.20±0.78s  
51.695 N ± 5.2km 16.308 E ± 7.1km  
DEPTH = 10.0km (geophysicist)  
POLAND (548)  
ML 3.9 (KBA).

KSP 0.85 181 iPd 15 52.50 -0.1  
0.5s 347.00nm  
iS 16 01.30  
PRU 2.04 214 Pnd 16 10.70 -0.3  
Pg 16 12.70  
Sn 16 29.50  
Sg 16 36.20  
CLL 2.10 261 iPn 16 11.90 0.1  
iPg 16 15.10  
iSg 16 40.90  
KRA 2.83 124 eP 16 32.40 10.2X  
eS 17 12.20  
HOF 3.12 245 iPnc 16 26.40 0.0  
MOX 3.13 252 ePn 16 27.50 1.0  
iPg 16 35.00  
iSg 17 14.00  
WET 3.36 222 iPnc 16 30.00 0.1  
VKA 3.43 180 ePn 16 31.00 0.2  
iPg 16 40.50  
iSg 17 23.30  
ZST 3.54 171 e(Pn) 16 32.90 0.6  
1.0s 0.04nm  
i 16 42.10  
e 17 01.00  
i(Sn) 17 26.50  
SPC 3.55 133 eP 16 45.90 13.2X  
GRF 3.80 240 ePn 16 36.20 0.1  
ePg 16 49.80  
e(Sn) 17 20.00  
eSg 17 34.40  
KMR 3.90 202 ePn 16 37.00 -0.5  
iSg 17 36.40  
SOP 4.02 178 eP 16 40.00 0.9  
BHG 4.56 211 ePn 17 01.30 14.5X  
FUR 4.80 225 ePn 16 50.00 -0.2  
KBA 5.01 204 iPnc 16 53.00 -0.3  
iSg 18 11.80  
i 18 15.70  
TNS 5.18 257 ePn 16 57.80 2.2X  
eSn 18 22.60  
RBL 5.56 200 P 17 00.00 -1.0  
eSn 18 28.50  
FVI 5.61 206 P 17 01.00 -0.6  
eSn 18 29.50  
OGA 5.94 218 eP 17 06.70 0.3  
CTI 6.43 210 P 17 13.60 0.3  
eSn 18 53.00  
NRA0 9.44 346 Pn 17 54.80 -0.3  
S 19 45.30  
Lg 20 22.50  
S.D. = 0.5 on 18 of 22 obs.

? MAR 02, 1990 03h 20m 04.84±6.42s  
33.529 S ± 13.7km 72.001 W ± 55.6km  
DEPTH = 33.0km (normal)  
OFF COAST OF CENTRAL CHILE (134)

LCCH 0.36 82 iPd 20 12.40 -1.1  
iS 20 17.00  
LNV 0.65 131 iPd 20 17.50 0.0  
iS 20 26.50

ROCH 1.00 56 iPd 20 22.40 -0.4  
iS 20 36.50  
SAN 1.12 86 iPd 20 24.70 0.4  
iS 20 39.50  
FCH 1.44 82 iPd 20 30.00 0.8  
iS 20 49.50  
JACH 1.45 55 eP 20 29.50 0.4  
iS 20 48.10  
S.D. = 0.8 on 6 of 6 obs.

\* MAR 02, 1990 04h 15m 27.00s  
43.300 N 102.500 W  
DEPTH = 5.0km (geophysicist)  
SOUTH DAKOTA (462)  
<MACRO>. ML 3.2 (NEIS). Felt  
(IV) at Oglala and Manderson.  
Felt (III) at Pine Ridge.

RSSD 1.38 307 P 15 54.00 0.8  
GLD 4.09 211 e(P) 16 35.00 3.2  
GOL 4.19 212 eP 16 35.00 1.7  
3 obs. associated

\* MAR 02, 1990 04h 58m 14.16±2.09s  
40.166 N ± 20.1km 24.204 E ± 6.0km  
DEPTH = 10.0km (geophysicist)  
AEGEAN SEA (365)  
ML 2.4 (THE).

OUR 0.24 315 ePg 58 19.40 0.1  
eSg 58 24.20  
PLG 0.62 290 ePb 58 25.80 -0.8  
SOH 0.92 316 ePg 58 31.80 0.0  
eSg 58 44.40  
THE 1.05 297 ePg 58 33.30 -0.7  
eSg 58 47.40  
SRS 1.06 334 ePb 58 34.60 0.5  
eSb 58 48.60  
KNT 1.41 315 ePb 58 40.30 0.5  
eSb 58 59.30  
RDO 1.41 46 ePn 58 39.70 -0.1  
eSb 58 53.70  
MMB 1.47 346 iPd 58 39.00 -1.7  
RZN 1.57 14 iPg 58 41.00 -1.3  
ALN 1.58 62 ePb 58 42.20 -0.1  
eSb 59 05.10  
VAY 1.69 313 ePn 58 46.00 2.1  
KDZ 1.74 31 iP 58 46.00 1.3  
KKB 1.90 334 iP 58 47.00 0.1  
PGB 2.38 359 iP 58 57.00 3.1X  
S.D. = 1.1 on 13 of 14 obs.

\* MAR 02, 1990 05h 26m 17.89±1.30s  
6.986 S ± 13.0km 155.769 E ± 9.4km  
DEPTH = 285.7 ± 14.3 km  
4.6mb (9 obs.)  
SOLOMON ISLANDS (193)

HNR 4.80 121 eP 27 35.00 2.0  
PMG 8.86 254 eP 28 20.50 -2.3  
CTA 15.96 214 iPc 29 48.80 -0.2  
0.8s 20.52nm 4.6mb  
i 30 02.00  
DZM 18.20 147 iPc 30 10.00 -2.5  
WB5 24.40 236 iPd 31 13.00 0.4  
WRA 24.46 236 Pc 31 12.60 -0.5  
0.4s 5.70nm 4.4mb  
MTN 24.95 255 iPd 31 18.00 0.5  
ASPA 26.76 229 iPd 31 33.70 -0.2  
0.4s 16.00nm 4.9mb  
MBL 37.48 244 iPd 33 06.50 0.2  
0.3s 6.00nm 4.5mb  
COOL 40.18 229 eP 33 29.40 0.9  
NANU 41.71 244 eP 33 42.00 1.0  
KLB 43.08 230 eP 33 52.20 0.2  
MRWA 43.48 234 iPc 33 56.30 1.1  
GUN 75.77 301 P 37 35.40 0.5  
0.6s 10.00nm 4.7mb  
PKI 76.08 301 P 37 36.60 0.0  
KKN 76.25 301 P 37 37.60 0.2  
0.4s 5.00nm 4.6mb  
GKN 76.85 301 P 37 41.00 0.4  
0.5s 9.00nm 4.8mb  
GBA 80.39 285 Pc 37 59.90 0.3  
0.9s 4.50nm 4.3mb  
INK 89.44 21 eP 38 43.00 -0.3  
MBC 95.51 14 eP 39 10.50 -0.6

YKA 95.97 28 eP 39 12.30 -1.0  
0.8s 0.50nm 3.8mb  
S.D. = 1.1 on 21 of 21 obs.

% MAR 02, 1990 06h 11m 23.59±0.68s  
46.255 N ± 5.8km 7.429 E ± 6.9km  
DEPTH = 10.0km (geophysicist)  
SWITZERLAND (544)

DIX 0.18 184 iPc 11 27.60 -0.1  
EMS 0.39 242 iPc 11 30.70 -1.0  
MMK 0.42 118 ePc 11 31.70 -0.6  
ORO 0.74 148 P 11 38.50 0.4  
eSg 11 48.50  
LLS 1.24 60 ePd 11 45.60 -1.2  
BNI 1.31 204 P 11 49.00 1.0  
ZLA 1.39 28 ePc 11 49.20 0.1  
SAX 1.65 52 ePd 11 54.20 1.2  
SLE 1.68 25 ePc 11 53.40 0.3  
OSS 1.93 76 ePc 12 00.40 3.5X  
S.D. = 1.0 on 9 of 10 obs.

MAR 02, 1990 07h 01m 47.73±0.74s  
38.868 N ± 7.9km 89.219 W ± 4.4km  
DEPTH = 10.0km (geophysicist)  
SOUTHERN ILLINOIS (488)

mbLg 3.6 (NEIS). Felt (V) at  
Greenville, Hagarstown, Saint  
Peter, Smithboro and Vernon;  
(IV) at Alma, Keyesport, Odion  
and Shobonier; (III) at  
Altamont, Ashley, Beecher City,  
Carlyle, Clay City, Edgewood,  
Effingham, Farina, Floro,  
Kinmundy, Mason, Okawville,  
Patoka, Ramsey, Saint Elmo,  
Salem and Vandalia.

BPIL 0.83 143 iPg 02 04.00 0.3  
SLM 0.83 254 iPg 02 04.00 0.3  
eSg 02 15.40  
FVM 1.30 227 iPd 02 11.90 0.2  
WDIN 1.41 123 iPn 02 13.70 0.3  
eSn 02 32.50  
CIRL 1.61 147 iPn 02 16.90 0.6  
DEK 3.08 6 (Pn) 02 40.00 2.7X  
Pg 02 44.00  
iSg 03 16.00  
POW 3.13 211 eP 02 38.60 0.6  
OLY 3.81 209 eP 02 48.00 0.3  
PWLA 3.99 166 eP 02 49.10 -1.1  
RSCP 4.36 137 eP 02 55.00 -0.6  
RLO 5.34 241 ePn 03 08.40 -1.1  
TUL 6.01 243 (Pn) 03 19.00 0.2  
0.5s 10.80nm 4.8mb X  
SIO 6.45 243 ePn 03 23.10 -2.0X  
BLA 7.14 101 eP 03 32.70 -2.1X  
ELF 7.37 52 P 03 38.05 0.1  
MEO 8.54 244 ePn 03 52.00 -2.4X  
RSON 12.40 347 eP 04 41.50 -5.5X  
S.D. = 0.7 on 12 of 17 obs.

\* MAR 02, 1990 07h 35m 36.83±1.77s  
18.021 S ± 11.6km 178.674 W ± 10.4km  
DEPTH = 620.0 ± 22.8 km  
5.0mb (13 obs.)  
FIJI ISLANDS REGION (181)

DZM 14.55 251 iPc 38 40.90 0.6  
iS 41 34.80  
COO 29.50 239 iPd 40 55.80 0.8  
RMQ 31.23 249 iPd 41 10.00 0.4  
0.8s 64.00nm 5.3mb  
CNB 33.16 232 iPc 41 26.70 0.9  
0.6s 65.00nm 5.4mb  
CTA 33.18 261 iPd 41 25.50 -0.5  
0.8s 44.78nm 5.1mb  
CAN 33.44 233 iPd 41 28.30 0.3  
BWA 33.55 234 iPd 41 27.30 -1.7  
PMG 34.23 280 iPd 41 34.90 0.2  
0.9s 75.63nm 5.3mb  
CMS 34.75 240 iPd 41 39.60 0.7  
0.8s 44.00nm 5.1mb  
TOO 36.90 231 iPd 41 57.90 1.4  
0.8s 56.00nm 5.2mb  
OIS 39.39 259 eP 42 16.00 -0.8  
ADE 41.36 237 iPd 42 32.60 0.2



02d 07h

WB5 44.34 260 iPd 42 55.00 -0.8  
WRA 44.36 260 Pc 42 55.30 -0.6  
0.6s 20.30nm 4.8mb  
ASPA 44.52 254 iPd 42 57.00 -0.1  
0.6s 187.00nm 5.8mb  
iPcP 44 26.90  
iS 48 49.70  
KNA 50.21 264 iPd 43 39.20 -0.7  
0.5s 40.00nm 5.1mb  
COOL 55.68 245 iPd 44 17.30 -1.2  
0.3s 11.00nm 4.6mb  
MBL 57.71 256 iPd 44 31.70 -0.7  
0.4s 13.00nm 4.5mb  
KLB 58.55 244 iPd 44 37.00 -0.9  
NWA0 58.93 242 eP 44 40.00 -0.4  
RKG 59.08 241 iPd 44 41.90 0.5  
BAL 59.51 245 eP 44 43.30 -1.0  
0.4s 10.00nm 4.4mb  
MUN 59.85 243 eP 44 46.20 -0.3  
MRWA 60.23 246 eP 44 48.70 -0.3  
NANU 61.45 254 iPd 44 57.20 0.2  
SPA 72.09 180 iPd 46 02.10 0.8  
1.0s 12.00nm 4.4mb  
GCC 76.47 43 e(P) 46 25.60 -0.2  
PRS 76.49 44 ePc 46 26.00 0.1  
SAO 76.68 44 e(P) 46 26.70 -0.3  
MHC 76.88 43 ePc 46 28.00 -0.2  
CMB 78.09 43 ePc 46 34.10 -0.4  
MDJ 78.13 325 eP 46 35.00 0.5  
CN2 79.95 323 Pc 46 44.80 0.8  
SNG 83.44 280 eP 47 04.30 2.1  
PNT 84.97 34 eP 47 09.00 0.1  
TIY 85.15 312 Pd 47 10.60 0.4  
XAN 86.13 307 P 47 16.00 1.1  
INK 92.06 15 eP 47 40.50 -1.0  
NB2 136.46 353 PKP 53 39.80 -10.8X  
0.9s 3.10nm  
CLL 145.51 347 iPKPc 54 08.70 2.0X  
1.1s 21.00nm  
DOU 147.89 356 Pd diff 51 31.10 -19.4X  
0.4s 13.60nm  
DOU 147.89 356 PKP 54 14.90 4.3X  
FLN 149.30 2 ePKP 54 18.20 5.4X  
0.6s 5.40nm  
CDF 149.30 352 ePKP 54 18.40 5.5X  
0.4s 2.30nm  
LDF 149.48 2 ePKP 54 18.50 5.4X  
0.6s 5.40nm  
GRR 149.66 3 ePKP 54 19.00 5.7X  
0.4s 4.60nm  
HAU 149.81 353 ePKP 54 19.50 5.9X  
0.6s 5.40nm  
BSF 149.93 353 ePKP 54 19.80 5.9X  
0.4s 2.30nm  
LPF 150.01 3 ePKP 54 19.90 6.0X  
0.6s 7.20nm  
LOR 150.76 356 ePKP 54 21.90 6.8X  
0.6s 7.20nm  
SSF 150.98 357 ePKP 54 22.60 7.2X  
0.4s 3.45nm  
LBF 151.03 356 ePKP 54 22.40 6.9X  
0.6s 3.60nm  
BCAO 158.42 233 ePKPc 54 47.10 21.0X  
0.7s 6.00nm  
S.D. = 0.8 on 38 of 53 obs.  
\* MAR 02, 1990 07h 48m 17.33±1.85s  
36.796 N ±16.3km 6.312 E ±9.6km  
DEPTH = 10.0km (geophysicist)  
3.6mb (1 obs.)  
ALGERIA (396)  
ML 4.2 (LDG).  
ESEL 4.00 319 ePn 49 20.70 0.7  
eSn 50 03.00  
ACU 5.60 290 ePn 49 42.60 -0.2  
eSn 50 40.50  
PGF 6.11 19 Pn 49 50.00 0.1  
eSn 50 58.40  
ETER 6.11 335 ePn 49 52.00 2.2  
eSn 50 57.00  
EROO 6.12 313 ePn 49 49.00 -0.9  
eSn 50 53.00  
EALH 6.25 282 ePn 49 52.90 1.0  
ECHE 6.38 298 ePn 49 54.00 0.3  
eSn 50 56.70  
LMR 6.53 1 Pn 49 55.20 -0.6

LRG 6.65 0 Pn 51 06.80  
eSn 51 11.00  
MAO 6.74 32 P 50 00.20 1.4  
FRF 6.76 2 Pn 49 58.80 -0.2  
eSn 51 12.50  
ENIJ 6.84 274 ePn 49 58.20 -1.9  
SBF 7.11 7 Pn 50 03.00 -1.0  
eSn 51 23.00  
IMI 7.21 9 P 50 05.54 0.2  
EVIA 7.23 287 ePn 50 05.20 -0.5  
ENR 7.47 6 P 50 08.75 -0.3  
STV 7.48 6 P 50 07.82 -1.3  
FIN 7.54 10 P 50 07.90 -2.1  
ROB 7.58 9 P 50 10.49 -0.1  
ETOR 7.67 304 ePn 50 12.80 1.0  
PZZ 7.72 4 P 50 12.98 0.4  
DOI 7.73 5 P 50 14.50 1.8  
eSn 51 39.00  
EPF 7.73 325 Pn 50 13.00 0.3  
eSn 51 36.00  
CKI 7.77 10 P 50 12.50 -0.6  
eSn 51 41.00  
AFC 7.90 276 ePn 50 15.50 0.4  
PCP 7.92 12 P 50 14.87 -0.4  
BDI 7.96 23 P 50 17.00 1.2  
MME 8.11 23 P 50 19.70 1.6  
RRL 8.12 2 P 50 18.57 0.3  
BNI 8.25 2 P 50 20.40 0.4  
eSn 51 50.50  
BOB 8.31 16 P 50 22.50 1.7  
eSn 51 55.50  
RSP 8.38 5 P 50 18.97 -2.8  
LSD 8.68 4 P 50 27.92 1.9  
LPG 8.70 2 Pn 50 27.00 0.6  
CAF 8.73 340 Pn 50 26.00 -0.6  
ORO 8.91 8 P 50 26.50 -2.6  
ECRI 8.94 313 ePn 50 30.30 0.8  
GUD 9.04 298 ePn 50 31.00 0.1  
eSn 52 03.80  
CTI 10.07 22 P 50 45.00 -0.1  
HAU 11.20 0 Pn 50 59.00 -1.5  
GUN 66.03 72 P 59 00.00 -6.8X  
YKA 70.32 335 eP 59 32.10 -0.5  
0.6s 0.30nm 3.6mb  
MNI 111.61 71 ePKP 06 54.50 0.3X  
S.D. = 1.2 on 41 of 43 obs.  
\* MAR 02, 1990 08h 11m 32.00±0.85s  
32.837 S ±18.5km 178.626 E ±41.5km  
DEPTH = 49.0km (5 depth phases)  
5.0mb (1 obs.)  
SOUTH OF KERMADEC ISLANDS (179)  
HBZ 4.76 183 P 12 44.10 1.1  
TTH 6.85 192 P 13 15.60 3.3X  
PGZ 7.99 193 P 13 27.30 -0.9  
MNG 8.17 197 P 13 30.70 0.1  
S 15 03.20  
KIW 8.55 199 P 13 36.80 0.9  
MTW 8.67 196 P 13 35.10 -2.5  
CAW 8.73 198 P 13 38.70 0.2  
BLW 8.88 196 P 13 39.70 -0.8  
WDW 8.90 198 P 13 40.10 -0.7  
MRW 8.95 199 P 13 41.90 0.5  
S 15 22.50  
WEL 8.98 199 eP 13 45.00 3.2X  
S 15 22.00  
TCW 9.05 201 P 13 43.70 0.8  
KHZ 10.38 201 P 14 01.80 0.8  
MSZ 14.45 212 P 15 04.00 8.8X  
SPA 57.34 180 iPd 21 17.90 0.6  
1.0s 16.00nm 5.0mb  
PRS 88.77 44 ePc 24 21.50 -0.1  
eP 24 35.90 49km  
MHC 89.30 44 e(P) 24 24.30 0.0  
eP 24 38.80 49km  
FRI 90.20 45 ePc 24 27.80 -0.5  
eP 24 42.40 50km  
CMB 90.50 44 ePc 24 29.40 -0.4  
eP 24 43.80 49km  
WDC 91.02 41 ePd 24 32.60 0.6  
eP 24 47.00 49km  
MIN 91.38 41 e(P) 24 34.00 0.1  
INK 106.91 17 ePd diff 25 40.40 -2.8X  
YKA 108.89 27 ePKP 30 13.80 17.1X  
0.5s 0.20nm

MBC 115.43 14 ePKP 30 25.00 16.1X  
LIC 153.30 172 PKP 31 28.70 9.8X  
S.D. = 0.9 on 18 of 25 obs.  
% MAR 02, 1990 09h 30m 01.09±3.57s  
44.084 N ±15.7km 7.050 E ±21.4km  
DEPTH = 10.0km (geophysicist)  
NORTHERN ITALY (545)  
ML 1.7 (GEN).  
STV 0.25 51 P 30 06.80 0.3  
S 30 09.28  
ENR 0.30 62 P 30 07.66 0.2  
S 30 10.43  
PZZ 0.42 5 P 30 09.71 0.0  
S 30 15.25  
ROB 0.63 70 P 30 13.05 -0.7  
IMI 0.63 106 P 30 13.96 0.1  
S.D. = 0.6 on 5 of 5 obs.  
\* MAR 02, 1990 09h 52m 19.00±0.75s  
5.267 S ±12.9km 102.850 E ±10.4km  
OEPH = 33.0km (normal)  
4.8mb (4 obs.) 3.7Msz (1 obs.)  
SOUTHERN SUMATRA (274)  
KLI 2.04 79 ePd 52 53.00 1.3  
eS 53 25.00  
e 53 58.00  
PPI 5.37 333 eP 53 41.00 2.1  
e(S) 54 50.00  
TPI 5.40 63 ePd 53 38.00 -1.4  
e 56 25.00  
WB5 33.92 118 eP 59 01.20 -0.3  
WRA 33.92 118 Pd 59 01.50 0.0  
0.4s 3.20nm 4.6mb  
ASPA 35.05 125 iPd 59 11.90 0.7  
0.7s 8.00nm 4.8mb  
Z 19s 0.13um 3.7Msz  
LR 13 01.90  
PKI 36.74 334 P 59 24.80 -0.8  
GUN 36.83 334 P 59 26.00 -0.4  
DMN 36.90 333 P 59 26.70 -0.3  
KKN 36.98 334 P 59 27.00 -0.6  
0.4s 6.00nm 4.8mb  
GKN 37.45 333 P 59 31.00 -0.5  
0.4s 7.00nm 4.9mb  
OIS 38.79 116 eP 59 42.50 -0.1  
CTA 44.67 113 eP 00 18.50 -12.4X  
SUF 88.59 333 eP 05 09.70 0.1  
S.D. = 1.0 on 13 of 14 obs.  
\* MAR 02, 1990 09h 52m 53.00±1.34s  
38.128 N ±14.0km 28.905 E ±8.2km  
DEPTH = 10.0km (geophysicist)  
TURKEY (366)  
KHL 0.52 68 iPg 53 02.30 -1.4  
eSg 53 09.80  
CIN 0.83 231 ePg 53 50.00 40.9X  
iSg 54 02.00  
IZM 1.32 282 ePn 53 16.10 -1.3  
ALT 1.32 45 iPn 53 17.20 -0.3  
BCK 1.49 116 ePn 53 21.00 1.1  
DST 1.49 352 iPn 53 20.00 0.1  
BNT 2.35 341 ePn 53 34.00 1.7  
YLV 2.46 8 iPn 53 37.90 4.0X  
S.D. = 1.6 on 6 of 8 obs.  
? MAR 02, 1990 10h 35m 24.97±1.01s  
39.174 N ±8.8km 27.632 E ±16.0km  
DEPTH = 10.0km (geophysicist)  
TURKEY (366)  
IZM 0.83 201 ePg 35 41.00 0.0  
eSg 35 52.00  
DST 0.88 61 ePn 35 42.00 0.0  
EDC 1.18 9 ePn 35 47.50 0.4  
BNT 1.20 11 iPn 35 46.90 -0.4  
S.D. = 0.6 on 4 of 4 obs.  
\* MAR 02, 1990 11h 25m 16.45±3.05s  
33.135 S ±8.6km 71.984 W ±24.4km  
DEPTH = 10.0km (geophysicist)  
NEAR COAST OF CENTRAL CHILE (135)  
IHA 0.31 69 iPd 25 23.20 0.4



02d 11h

LCCH	0.48	134	iS	25 33.00	
		iPd	25 26.80	0.5	
		iS	25 36.00		
ROCH	0.83	79	iPd	25 31.70	-1.0
		iS	25 45.10		
LNv	0.95	150	iPc	25 34.10	-0.4
		iS	25 48.10		
SAN	1.15	106	ePd	25 37.70	-0.3
		iS	25 55.10		
JACH	1.25	69	iPc	25 38.10	-1.7
		iS	25 55.50		
FCH	1.43	98	iPd	25 42.40	-0.4
		iS	26 04.70		
RTCB	3.16	59	iPc	26 09.00	1.8
		eS	26 53.40		
RTCV	3.18	67	e(P)	26 10.30	2.8X
ZON	3.22	61	eP	26 11.00	3.0X
RTLL	3.48	60	ePd	26 13.10	1.3
CFA	3.52	65	ePc	26 14.00	1.7
RTRS	3.66	37	ePc	26 12.30	-1.9

S.D. = 1.4 on 11 of 13 obs.

\* MAR 02, 1990 11h 31m 41.41 ± 0.96s  
 20.039 N ± 5.7km 122.014 E ± 16.8km  
 DEPTH = 31.6 ± 7.9 km  
 4.1mb ( 4 obs.)

PHILIPPINE ISLANDS REGION (248)

PIP	2.16	218	ePc	32 16.00	0.2
	1.0s	444.00nm			
CVP	2.33	185	ePc	32 19.30	1.0
		eS	32 47.50		
TWG	2.90	343	ePc	32 26.10	-0.3
TWF1	3.36	349	ePc	32 33.30	0.3
TWC	4.55	358	eP	32 50.30	0.4
BJI	20.56	347	eP	36 25.00	5.0X
CHG	21.79	271	eP	36 39.30	6.6X
CHTO	21.79	271	eP	36 32.30	-0.4
	1.1s	4.12nm		3.8mb	
GUN	33.84	290	P	38 00.00	-23.6X
WB5	41.48	162	eP	39 26.00	-1.3
WRA	41.53	162	Pd	39 26.80	-0.9
	0.7s	2.20nm		4.0mb	
ASPA	44.96	164	eP	39 56.50	0.9
	1.0s	4.00nm		4.3mb	
YKA	86.47	23	eP	44 22.30	0.2
	0.9s	1.30nm		4.2mb	

S.D. = 0.9 on 10 of 13 obs.

? MAR 02, 1990 11h 50m 00.02 ± 1.11s  
 44.473 N ± 14.3km 7.172 E ± 12.4km  
 DEPTH = 11.2km (geophysicist)  
 NORTHERN ITALY (545)  
 ML 1.5 (GEN).

PZZ	0.06	302	P	50 02.59	0.0
		S	50 03.92		
STV	0.25	154	P	50 05.65	0.1
		S	50 09.75		
ENR	0.30	144	P	50 06.28	-0.2
		S	50 10.79		
ROB	0.53	109	P	50 10.84	0.0
		S	50 18.18		

S.D. = 0.2 on 4 of 4 obs.

? MAR 02, 1990 13h 02m 58.94 ± 7.96s  
 33.561 S ± 16.3km 71.966 W ± 70.2km  
 DEPTH = 33.0km (normol)  
 NEAR COAST OF CENTRAL CHILE (135)

LCCH	0.34	76	iPd	03 06.00	-1.2
		iS	03 11.00		
LNv	0.61	131	iPd	03 11.00	0.0
		iS	03 20.00		
ROCH	0.99	54	iPd	03 17.00	0.2
		iS	03 31.00		
SAN	1.09	85	iP	03 18.40	0.4
		iS	03 33.90		
		i	03 35.50		
FCH	1.42	81	iPd	03 23.40	0.4
		iS	03 42.00		

S.D. = 1.0 on 5 of 5 obs.

% MAR 02, 1990 13h 15m 08.68 ± 1.19s  
 44.589 N ± 8.8km 7.394 E ± 8.7km  
 DEPTH = 10.0km (geophysicist)  
 NORTHERN ITALY (545)

PZZ	0.23	248	P	15 13.66	0.0
		S	15 16.32		
STV	0.35	188	P	15 15.87	0.0
		S	15 21.41		
ENR	0.36	177	P	15 15.92	-0.3
		S	15 20.32		
ROB	0.45	131	P	15 17.78	-0.1
RRL	0.55	308	P	15 19.81	0.0

S.D. = 0.2 on 5 of 5 obs.

MAR 02, 1990 13h 17m 42.32 ± 0.71s  
 42.572 N ± 6.6km 23.832 E ± 10.6km  
 DEPTH = 10.0km (geophysicist)  
 BULGARIA (359)  
 ML 2.9 (THE).

SRS	1.47	187	ePb	18 08.20	-0.6
		eSb	18 31.70		
VAY	1.57	217	iPb	18 11.40	1.2
		iSn	18 37.40		
		Lg	18 39.00		
		LR	18 41.40		
KNT	1.57	207	ePb	18 11.20	0.9
		eSb	18 34.10		
SOH	1.79	192	ePn	18 14.20	0.7
		eSn	18 40.70		
SKO	1.87	252	ePn	18 12.00	-2.7
THE	2.04	199	ePn	18 17.30	0.2
		eSn	18 48.60		
OUR	2.24	177	ePn	18 20.40	0.4
		eSn	18 53.50		
ALN	2.35	135	ePn	18 20.30	-1.3
MLR	3.29	27	eP	18 34.00	-1.1
BZS	3.44	333	ePc	18 38.00	1.1
VRI	3.90	31	ePc	18 44.50	1.0

S.D. = 1.4 on 11 of 11 obs.

? MAR 02, 1990 13h 26m 00.70 ± 1.85s  
 11.019 N ± 11.0km 61.848 W ± 28.9km  
 DEPTH = 33.0km (normol)  
 WINDWARD ISLANDS (95)  
 MD 3.1 (TRN).

TCE	0.33	164	eP	26 09.77	0.9
		eS	26 19.04		
TRN	0.57	130	eP	26 12.73	0.4
		eS	26 26.28		
TPP	0.80	151	eP	26 14.07	-1.4
		eS	26 27.96		
TBH	0.93	125	eP	26 17.67	0.2
		eS	26 35.11		
GRW	1.15	9	eP	26 20.50	-0.1
		eS	26 38.75		

S.D. = 1.2 on 5 of 5 obs.

MAR 02, 1990 15h 07m 29.63 ± 0.60s  
 36.133 N ± 6.8km 139.964 E ± 6.3km  
 DEPTH = 68.0 ± 4.9 km  
 4.9mb ( 7 obs.)  
 HONSHU, JAPAN (227)

KAKJ	0.18	67	iP+	07 40.20	0.2
		S	07 46.20		
CHJJ	0.79	264	iPd	07 44.90	-0.8
		S	07 54.80		
NIJJ	1.35	325	iPd	07 53.30	0.4
		eS	08 10.70		
IIDJ	1.79	249	iP+	08 00.50	1.5
		S	08 22.50		
MTMJ	1.80	285	iPd	07 59.70	0.5
TSRJ	3.29	261	P	08 20.80	1.0
WKYJ	4.06	243	P	08 30.10	-0.6
TKSJ	5.30	248	P	08 47.80	-0.3
YONJ	5.38	262	P	08 49.40	0.3
MRRJ	6.34	7	eP	09 08.30	5.8X
HOJJ	6.75	21	eP	09 07.70	-0.5
		eS	10 18.00		
KUSJ	7.86	26	eP	09 21.40	-2.1
		eS	10 46.20		
ASAJ	8.23	14	eP	09 28.50	-0.2
MDJ	11.58	320	eP	10 18.00	3.8X
CN2	13.50	309	Pc	10 48.60	9.1X
SNY	13.95	299	eP	10 52.60	7.2X
DL2	14.81	286	eP	11 01.40	4.8X
TIA	18.44	277	eP	11 42.50	0.5
BJI	19.11	289	eP	11 54.00	4.2X
GYA	29.92	261	P	13 31.80	-1.6

GTA	31.72	288	eP	13 48.00	-1.2
KMI	33.67	262	eP	14 05.00	-1.4
GUN	46.08	276	P	15 49.20	0.2
	0.8s	23.00nm		5.2mb	
PKI	46.60	276	P	15 52.80	-0.3
	0.6s	14.00nm		5.1mb	
KKN	46.62	276	P	15 53.40	0.3
	0.6s	19.00nm		5.2mb	
DMN	46.83	276	P	15 54.80	-0.1
GKN	47.05	276	P	15 56.40	0.0
INK	55.72	27	eP	17 02.50	1.6
WB5	55.96	186	eP	17 02.70	-0.4
WRA	56.02	186	Pd	17 02.60	-1.0
	0.3s	2.90nm		4.8mb	
HYB	57.01	268	eP	17 06.00	-4.9X
MBC	57.72	16	eP	17 16.50	1.5
ASPA	59.75	186	eP	17 29.70	0.0
	0.7s	4.00nm		4.7mb	
GBA	59.98	265	Pc	17 30.80	-0.7
	0.7s	6.70nm		4.9mb	
KOD	61.86	262	eP	17 44.90	0.3
WARB	63.24	193	eP	17 54.50	1.4
YKA	65.17	30	eP	18 06.40	1.1
	0.7s	0.60nm		3.7mb	
NB2	74.56	337	P	19 03.10	0.6
	0.7s	2.10nm		4.2mb	

S.D. = 1.0 on 31 of 38 obs.

MAR 02, 1990 16h 20m 34.19 ± 0.33s  
 46.311 N ± 3.0km 7.386 E ± 3.6km  
 DEPTH = 10.0km (geophysicist)  
 SWITZERLAND (544)  
 ML 3.0 (LDG).

DIX	0.23	176	iPc	20 38.60	-0.7
EMS	0.40	233	ePc	20 41.70	-0.7
MMK	0.48	123	ePd	20 42.60	-1.4
ORX	0.80	148	P	20 49.23	-0.5
		S	20 59.07		
ORO	0.80	149	P	20 48.80	-1.0
		eSg	20 59.60		
LSD	0.87	191	P	20 50.92	-0.2
		S	21 01.23		
LPL	0.92	210	Pg	20 51.40	-0.5
LPG	0.93	209	Pg	20 51.60	-0.5
		Sg	21 03.70		
TMA	1.05	101	eP	20 53.60	-0.6
VAI	1.06	114	P	20 55.10	0.9
RSP	1.16	184	P	20 55.51	-0.5
		S	21 11.99		
BNI	1.35	202	P	20 57.60	-1.6
		eSn	21 13.70		
ZLA	1.36	30	eP	21 00.10	0.9
RRL	1.45	197	P	21 01.26	0.5
		S	21 21.53		
BSF	1.57	345	Pn	21 01.70	-0.6
		Pg	21 03.30		
		Sg	21 24.20		
SLE	1.64	27	eP	21 02.10	-1.1
SAX	1.64	54	eP	21 04.90	1.4
PZZ	1.82	186	P	21 07.21	1.3
		S	21 31.68		
HAU	1.84	338	Pn	21 05.50	-0.5
		Pg	21 08.40		
		Sg	2		



02d 16h

FRF 2.80 191 Pg 21 25.50 5.6X  
 AVF 2.82 281 Pn 21 19.80 -0.4  
 BGF 3.15 276 Pn 21 24.50 -0.2  
 Sg 22 02.00  
 DOU 4.22 335 iP 21 39.60 -0.4  
 S.D. = 1.0 on 32 of 34 obs.

\* MAR 02, 1990 16h 50m 03.75 ± 1.77s  
 0.954 S ± 11.1km 77.399 W ± 19.9km  
 DEPTH = 33.0km (normal)  
 ECUADOR (107)

VC1 1.05 287 iPd 50 21.50 -1.2  
 S 50 32.70  
 TUNG 1.14 246 P 50 24.50 0.7  
 S 50 39.50  
 QUR 1.37 305 Pd 50 27.50 0.3  
 eS 50 42.50  
 GGP 1.43 303 iP+ 50 28.10 0.0  
 COTA 1.59 324 iP+ 50 30.70 0.3  
 S 50 49.50  
 NNA 10.98 177 eP 52 41.50 -0.2  
 e 54 45.00  
 ZOBO 17.75 149 eP 54 18.00 7.3X  
 (S) 59 52.00  
 S.D. = 0.8 on 6 of 7 obs.

MAR 02, 1990 17h 25m 08.89 ± 0.46s  
 56.808 N ± 9.9km 33.969 W ± 5.8km  
 DEPTH = 10.0km (geophysicist)  
 4.7mb (26 obs.) 3.7Msz (1 obs.)  
 NORTH ATLANTIC OCEAN (402)

FRB 18.30 307 eP 29 23.00 -1.1  
 SCH 18.45 278 eP 29 26.00 0.0  
 DAG 20.78 10 iPd 29 53.80 1.8  
 1.0s 9.00nm 4.1mb  
 FLN 21.61 98 eP 30 01.40 0.7  
 1.0s 20.00nm 4.5mb  
 GRR 21.62 99 eP 30 01.50 0.7  
 0.8s 13.45nm 4.4mb  
 LPF 21.73 100 eP 30 01.80 -0.1  
 1.0s 20.00nm 4.5mb  
 LDF 21.90 98 eP 30 04.00 0.4  
 1.2s 29.75nm 4.6mb  
 NB2 23.33 61 P 30 17.10 -0.5  
 1.2s 15.90nm 4.4mb  
 TCF 24.55 100 eP 30 29.80 0.2  
 1.0s 16.00nm 4.6mb  
 BGF 24.73 99 eP 30 31.20 -0.1  
 0.8s 20.80nm 4.8mb  
 SSF 24.78 97 eP 30 31.50 -0.3  
 0.8s 13.45nm 4.7mb  
 MAF 24.79 100 eP 30 31.70 -0.1  
 1.0s 18.00nm 4.7mb  
 RJF 24.80 102 eP 30 32.20 0.2  
 1.2s 32.75nm 4.9mb  
 LOR 24.85 96 eP 30 32.20 -0.3  
 0.8s 12.10nm 4.6mb  
 AVF 24.86 98 eP 30 32.20 -0.3  
 1.0s 10.00nm 4.4mb  
 LBF 25.09 97 eP 30 34.30 -0.4  
 0.8s 9.40nm 4.5mb  
 SMF 25.22 98 eP 30 35.00 -0.9  
 1.2s 22.30nm 4.7mb  
 RUP 25.24 89 eP 30 29.73 -6.4X  
 ABH 25.41 88 eP 30 30.28 -7.4X  
 HAU 25.78 93 eP 30 41.10 -0.2  
 1.2s 35.70nm 4.9mb  
 MOX 27.24 83 eP 30 53.00 -1.6  
 1.4s 36.00nm 4.9mb  
 GRF 27.53 86 eP 30 57.40 0.2  
 Z 18s 0.20um 3.7Msz  
 CLL 27.66 81 eP 30 58.00 -0.4  
 1.5s 22.00nm 4.7mb  
 SOD 29.01 44 eP 31 27.00 16.7X  
 KHC 29.12 85 P 31 12.20 0.5  
 KSP 29.68 80 iP 31 15.60 -1.0  
 NUR 29.84 58 eP 31 17.00 -0.9  
 SUF 29.83 53 iP 31 17.40 -0.4  
 0.8s 7.90nm 4.6mb  
 KRA 32.08 79 ePd 31 37.00 -0.7  
 1.3s 58.00nm 5.3mb  
 e 31 41.90  
 MBC 34.77 335 eP 32 00.50 -0.3  
 1.0s 5.00nm 4.4mb

SKO 37.88 89 iPd 32 27.50 0.1  
 0.9s 32.00nm 5.1mb  
 YKA 38.63 313 eP 32 45.60 12.2X  
 1.1s 1.70nm  
 JSC 39.00 255 eP 32 31.80 -5.0X  
 INK 42.15 327 eP 33 01.00 -1.4  
 SES 43.91 296 eP 33 17.00 0.0  
 TIC 54.96 144 P 34 43.00 0.7  
 WMO 68.45 41 eP 36 13.80 1.0  
 GTA 76.51 35 eP 36 58.60 -1.9  
 BTO 78.31 27 eP 37 12.00 1.6  
 GKN 80.96 52 P 37 25.20 0.3  
 0.8s 16.00nm 5.1mb  
 KKN 81.42 51 P 37 28.00 0.6  
 0.8s 20.00nm 5.2mb  
 DMN 81.50 52 P 37 28.60 0.7  
 0.8s 23.00nm 5.3mb  
 GUN 81.57 51 P 37 29.00 0.6  
 0.8s 17.00nm 5.2mb  
 PKI 81.66 51 P 37 29.20 0.3  
 GYA 90.64 35 P 38 14.80 2.0  
 SPA 146.63 180 iPKPd 44 51.20 2.1X  
 1.0s 14.00nm  
 S.D. = 0.9 on 40 of 46 obs.

& MAR 02, 1990 17h 26m 25.40s  
 34.140 N 117.690 W  
 DEPTH = 6.0km  
 4.5mb (6 obs.)  
 SOUTHERN CALIFORNIA (43)  
 <PAS-P>. ML 4.6 (PAS), 4.6  
 (BRK). Felt in the Los Angeles  
 area.

RVR 0.30 119 iPd 26 31.20 -0.3  
 TCC 0.30 242 P 26 31.66 0.1  
 MWC 0.32 285 iPc 26 31.50 -0.4  
 VPD 0.33 191 P 26 32.40 0.3  
 PAS 0.40 271 iPc 26 32.90 -0.6  
 PEC 0.50 119 iPd 26 34.80 -0.7  
 CIS 0.94 219 iPd 26 42.80 -1.0  
 PLM 1.04 138 iPd 26 44.40 -1.2  
 CPE 1.35 158 iPd 26 49.10 -1.6  
 TPC 1.36 91 iPc 26 50.50 -0.4  
 GSC 1.37 32 iPc 26 50.60 -0.5  
 ABL 1.45 300 eP 26 51.20 -1.2  
 CLC 1.67 3 iPd 26 54.80 -0.6  
 BAR 1.69 149 iPd 26 54.60 -1.0  
 HAY 1.76 104 iPd 26 55.40 -1.2  
 SYP 1.93 282 eP 26 58.00 -1.2  
 BCH 2.23 299 eP 27 02.60 -1.0  
 BLP 2.28 281 eP 27 02.40 -1.8  
 GLA 2.62 114 eP 27 07.00 -2.1  
 PKEM 2.76 315 eP 27 10.10 -0.9  
 PHAM 2.79 308 eP 27 11.00 -0.5  
 FRI 3.29 331 eP 27 17.80 -0.6  
 LLA 3.63 314 eP 27 21.20 -2.1  
 PRS 3.72 307 eP 27 21.60 -3.1  
 TNP 3.95 5 eP 27 28.40 0.3  
 SAO 4.03 312 eP 27 27.00 -2.0  
 CMB 4.46 331 ePc 27 34.40 -0.7  
 eS 28 45.00  
 ARN 4.47 317 eP 27 34.20 -1.1  
 MHC 4.53 316 eP 27 35.00 -1.2  
 GCC 4.54 311 eP 27 43.60 7.4  
 KVN 4.91 356 eP 27 41.60 -0.1  
 BKS 5.24 317 eP 27 45.10 -1.1  
 BRK 5.25 316 eP 27 45.00 -1.3  
 MSU 6.23 44 eP 27 59.80 -0.6  
 DUG 7.19 31 eP 28 14.00 0.3  
 DAU 8.09 37 eP 28 27.50 1.0  
 ALQ 9.30 82 eP 28 40.00 -3.2  
 ANMO 9.30 82 eP 28 41.50 -1.7  
 BW06 10.72 34 eP 29 03.00 0.3  
 GOL 11.31 57 eP 29 09.80 -1.1  
 LRM 12.34 17 eP 29 28.40 3.7  
 PNT 15.23 355 eP 30 06.00 3.4  
 SES 16.96 15 ePd 30 25.80 1.0  
 EDM 19.32 8 eP 30 51.50 -2.5  
 FFC 23.34 23 iPd 31 34.70 -0.3  
 0.9s 14.00nm 4.5mb  
 RSON 24.16 39 eP 31 41.70 -1.4  
 0.8s 12.02nm 4.6mb  
 RSCP 26.32 78 eP 32 03.20 -0.5  
 0.6s 18.12nm 5.0mb  
 BLA 30.30 73 eP 32 37.60 -2.1  
 1.0s 10.00nm 4.6mb

FBA 35.77 339 P 33 28.50 1.7  
 1.0s 7.50nm 4.5mb  
 IMA 38.39 337 P 33 48.80 -0.2  
 0.8s 4.31nm 4.2mb  
 FRB 42.13 30 eP 34 19.00 -0.6  
 51 obs. associated

MAR 02, 1990 18h 08m 35.15 ± 0.35s  
 39.045 N ± 2.9km 23.667 E ± 2.2km  
 DEPTH = 23.5 ± 3.2 km  
 4.4mb (25 obs.)  
 AEGEAN SEA (365)  
 ML 4.3 (ATH), 4.1 (THE). Felt at  
 Athens, Volos, Loris and on  
 Evvoia.

NEO 0.43 307 iPbc 08 43.90 -0.3  
 PAIG 0.88 1 iPgC 08 52.00 0.3  
 AGG 1.04 269 iP 08 54.00 -0.3  
 ATH 1.07 178 iPnd 08 55.00 0.3  
 OUR 1.31 11 iPbc 08 58.50 0.5  
 PLG 1.34 353 iPbc 08 58.60 0.1  
 LIT 1.39 320 iP 08 59.50 0.3  
 THE 1.67 341 iP 09 04.20 0.9  
 iS 09 25.20  
 SOH 1.79 352 iPbc 09 05.60 0.6  
 KZN 1.93 311 iPnd 09 08.00 0.9  
 PRK 2.04 84 iPnd 09 08.80 0.3  
 SRS 2.07 358 iP 09 08.90 -0.2  
 KNT 2.19 345 iP 09 11.50 0.7  
 EZN 2.20 68 iPn 09 10.90 0.0  
 ITM 2.31 217 iPnd 09 13.80 1.3  
 VLI 2.39 194 ePn 09 12.90 -0.7  
 VAY 2.42 340 iPnc 09 14.00 0.0  
 i 09 14.60  
 i 09 21.60  
 i 09 37.40

APE 2.46 143 iPnd 09 15.70 1.0  
 MMB 2.54 1 iPc 09 15.00 -0.8  
 RDO 2.54 34 iPnc 09 14.90 -0.9  
 VLS 2.56 251 ePn 09 17.90 1.8  
 ALN 2.60 44 iP 09 15.70 -0.9  
 iS 09 50.50  
 LSK 2.61 296 eP 09 18.80 1.9  
 KBN 2.70 307 iPc 09 21.00 3.0X  
 RZN 2.76 17 iP 09 29.00 10.0X  
 SMG 2.83 117 ePn 09 20.00 0.3  
 KKB 2.85 351 iP 09 20.00 -0.1  
 IZM 2.89 102 iPn 09 21.30 0.6  
 KDZ 2.93 27 iPc 09 20.00 -1.2  
 SRN 2.96 288 iPn 09 24.40 2.8  
 OHR 3.02 314 iPn 09 24.00 1.5  
 iSg 10 12.40  
 Lg 10 18.60  
 LR 10 22.80

KEK 3.07 284 iPnd 09 25.30 2.0  
 TPE 3.09 295 iPnd 09 25.00 1.5  
 PLD 3.16 14 iPc 09 25.00 0.5  
 BERA 3.30 301 ePn 09 29.10 2.6  
 DIM 3.32 25 ePc 09 27.00 0.2  
 SKO 3.38 331 iPnc 09 27.70 0.1  
 iPbd 09 34.20  
 i 09 37.00  
 SKO 3.38 331 i(Pg)c 09 42.20 14.6X  
 i 09 59.00  
 iSn 10 12.20  
 i 10 17.50  
 i 10 21.20  
 i 10 30.80  
 Lg 10 42.80  
 LR 10 43.60  
 EDC 3.49 67 iPn 09 31.00 1.8  
 VLO 3.52 295 iPn 09 33.00 3.4X  
 BNT 3.53 67 iPn 09 28.90 -1.0  
 VTS 3.56 355 iPc 09 31.00 0.6  
 PHP 3.61 318 iPnd 09 31.10 0.2  
 VAM 3.66 173 ePn 09 32.00 0.4  
 TIR 3.71 310 iPnd 09 35.70 3.4X  
 CIN 3.76 111 eP 10 16.00 42.9X  
 DST 3.89 80 iPn 09 36.00 1.1  
 KKS 3.91 322 ePn 09 36.50 1.4  
 LACI 3.98 312 ePn 09 42.00 5.9X  
 JMB 4.07 32 eP 09 37.00 -0.5  
 NPS 4.08 157 ePn 09 37.40 -0.3  
 YER 4.11 116 ePn 09 37.00 -1.1  
 PUK 4.15 317 eP 09 20.50 -18.1X  
 DMK 4.18 47 iPn 09 37.30 -1.7



CTT	4.21	59	iPn	09 39.10	-0.4	VOY	10.03	317	eP	10 59.00	-1.9	GUN	52.16	82	P	17 45.80	-0.7
SDA	4.35	314	eP	09 20.10	-21.2X				eS	12 47.60		SHL	57.98	82	eP	18 44.00	15.5X
ULC	4.45	312	ePn	09 44.50	1.6	SOP	10.06	331	eP	11 02.40	1.2	SCH	59.46	318	eP	18 37.00	-1.3
			eSn	10 30.00		PGD	10.18	302	P	11 01.00	-2.1	MBC	62.60	351	eP	18 59.00	-0.1
KAP	4.47	140	ePn	09 43.00	-0.2	RBL	10.47	318	P	11 04.50	-2.4	HHC	64.50	57	eP	19 12.20	-0.1
PVY	4.52	323	ePn	09 45.00	1.0	FVI	10.98	317	P	11 12.30	-1.5	XAN	66.23	65	eP	19 25.00	1.6
			eSn	10 31.50					eSn	13 07.80		CHG	67.13	84	eP	19 31.00	1.7
ARG	4.53	127	ePn	09 44.30	0.3	KBA	11.01	320	ePd	11 13.50	-0.9	CHTO	67.13	84	eP	19 30.30	1.0
LCI	4.59	288	P	09 43.50	-1.4				i	11 30.30			1.0s	7.00nm			4.8mb
ISK	4.60	62	ePn	09 48.40	3.3X				e(S)	13 14.50		INK	71.61	351	eP	19 55.00	-1.0
KHL	4.64	97	ePn	09 46.50	0.8	HLW	11.14	143	eP	11 15.00	-1.0	YKA	73.39	341	eP	20 05.80	-0.8
YLV	4.65	69	iPn	09 45.90	0.1	CTI	11.29	312	P	11 15.00	-3.1X		0.6s	2.10nm			4.3mb
TTG	4.76	317	ePn	09 48.60	1.4	KOT	11.31	141	ePd	11 15.50	-2.8	FFC	75.65	331	iPc	20 20.20	0.4
			eSn	10 38.40		BHG	11.69	321	iPc	11 28.10	4.7X		0.7s	6.00nm			4.7mb
IVA	4.77	324	ePn	09 49.00	1.6	BOB	12.03	303	P	11 27.00	-1.2	S.D. = 1.4 on 152 of 188 obs.					
			eSn	10 40.00		KHC	12.41	328	P	11 32.50	-0.6	MAR 02, 1990 18h 43m 15.38±0.73s					
GBZT	4.77	67	ePn	09 54.50	7.1X	PRU	12.72	332	eP	11 41.50	4.3X	39.100 N ± 6.0km 23.566 E ± 6.7km					
BDV	4.90	313	ePn	09 50.40	1.2				e	12 25.00		DEPTH = 10.0km (geophysicist)					
			eSn	10 42.00		GRF	13.85	324	eP	12 00.00	7.8X	AEGEAN SEA (365)					
HRT	4.94	67	ePn	09 48.60	-1.3				Z 17s 0.50um			ML 3.0 (ATH), 2.7 (THE).					
ALT	5.02	88	iPn	09 51.90	0.9	LPG	14.07	303	eP	12 03.60	8.1X	NEO	0.34	308	ePb	43 23.50	1.1
NKY	5.16	318	ePn	09 54.20	1.2				0.7s 18.75nm			PAIG	0.83	6	ePg	43 31.70	0.3
			eSn	10 48.50		LPL	14.09	303	eP	12 03.50	7.8X				eSg	43 43.90	
HCY	5.19	313	ePn	09 53.20	-0.1				0.8s 18.80nm			AGG	0.97	266	ePg	43 34.50	0.7
			eSn	10 48.00		CLL	14.36	332	eP	12 11.00	12.1X				eSg	43 49.30	
GPA	5.27	74	ePn	09 54.00	-0.6	MOX	14.38	328	eP	12 09.00	9.8X	ATH	1.13	174	ePn	43 35.00	-1.6
BRT	5.29	292	P	09 54.90	0.1				e	12 42.00		OUR	1.27	14	ePb	43 38.10	-0.9
PLE	5.36	324	ePn	09 57.50	1.7	SMF	16.38	304	eP	12 28.10	3.1X				eSb	43 54.90	
			eSn	10 57.50					0.8s 9.40nm			PLG	1.28	356	iPnc	43 38.30	-0.8
BRY	5.46	316	ePn	09 57.50	0.2	LBF	16.41	305	eP	12 28.60	3.1X	LIT	1.30	321	ePb	43 39.10	-0.4
			eSn	10 57.50					0.8s 14.10nm			THE	1.60	343	ePb	43 43.60	-0.1
KSL	5.53	120	ePn	10 02.00	3.8X	LOR	16.59	306	eP	12 30.40	2.6	SDH	1.73	355	ePb	43 06.60	-39.1X
BUC1	5.58	18	eP	10 20.00	21.2X				1.0s 10.00nm						eSb	44 06.60	
BAI	5.61	294	P	09 58.50	-0.8	SSF	16.74	305	eP	12 31.60	2.0	KZN	1.84	312	ePn	43 47.60	0.3
DRA	5.65	4	iPd	09 59.00	-0.7				1.0s 14.00nm			SRS	2.01	1	ePn	43 48.70	-1.1
BUC	5.66	18	ePd	10 30.00	30.1X	AVF	16.74	304	eP	12 31.90	2.3				eSn	44 13.20	
ORI	5.67	283	P	09 58.80	-1.3				0.9s 16.40nm			PRK	2.11	85	ePn	43 53.50	2.4
BCK	5.67	104	eP	10 01.40	1.2	BGF	16.99	303	eP	12 35.10	2.3	KNT	2.12	346	iPnc	43 51.20	-0.1
TDS	5.71	278	P	10 00.80	0.1				0.8s 25.50nm						eSn	44 17.60	
CSI	5.76	280	P	10 01.70	0.3	MAF	17.07	302	eP	12 36.30	2.5	VAY	2.35	341	ePn	43 54.60	0.1
CZI	5.86	274	P	10 03.00	0.3				0.8s 10.75nm			FNA	2.38	316	ePn	43 55.10	0.0
MMN	6.00	281	P	10 06.20	1.5	TCF	17.33	302	eP	12 40.60	3.6X				eSn	44 24.50	
SOI	6.04	263	P	10 04.40	-0.9				1.0s 18.00nm			RDO	2.54	36	ePb	44 10.00	12.7X
BE0	6.25	339	ePn	10 08.50	0.3	TAB	17.75	86	eP	12 50.00	7.6X	S.D. = 1.1 on 14 of 16 obs.					
			e(Sg)	11 57.50		MFF	18.98	301	eP	13 02.90	5.6X	MAR 02, 1990 19h 08m 04.19±3.27s					
CMP	6.30	9	iPc	10 05.00	-4.0X				1.0s 20.00nm			1.208 S ±27.0km 77.312 W ±19.5km					
MGR	6.36	282	P	10 10.10	0.3	LDF	19.57	307	eP	13 03.30	-0.9	DEPTH = 33.0km (normol)					
			eSn	11 19.60					0.8s 10.75nm			ECUADOR (107)					
TLB	6.43	29	eP	10 10.00	-0.7	FLN	19.85	307	eP	13 07.20	0.0	TUNG	1.15	260	iP	08 24.00	-0.4
ISR	6.45	18	eP	10 09.00	-2.2				0.8s 18.80nm						S	08 43.30	
ATN	6.49	265	P	10 10.80	-0.8	GRR	19.96	306	eP	13 06.60	-1.8	VC1	1.23	297	iP+	08 27.10	1.5
SGO	6.61	286	Pd	10 13.30	0.0				0.9s 26.20nm			CAYA	1.44	332	P	08 32.30	3.6X
MLR	6.66	14	iPc	10 13.00	-1.1	LPF	19.97	305	eP	13 10.40	2.0	QUR	1.59	310	Pd	08 30.00	-0.8
BZS	6.74	348	ePc	10 13.50	-1.6				1.0s 16.00nm			GGP	1.64	309	iPd	08 31.00	-0.7
HVAR	6.84	309	iPn	10 14.30	-2.2	TOL	21.39	281	eP	13 23.50	0.4	COTA	1.84	326	eP	08 35.40	0.9
DEV	6.86	356	ePd	10 16.00	-0.7	NUR	21.50	1	eP	13 27.00	3.0X	PURC	3.63	15	iPc	09 03.15	3.2X
CFR	6.98	27	eP	10 18.00	-0.5	ASMO	21.58	274	iPc	13 26.60	1.4	SILC	3.99	14	iPc	09 07.02	2.0
BSS	7.03	287	P	10 18.50	-0.7	APHE	21.63	273	eP	13 28.00	2.2	DIAC	4.61	14	eP	09 14.18	0.7
			eSn	11 34.50		AAPN	21.88	274	iPc	13 27.00	-1.3	HOQC	4.69	8	eP	09 13.02	-1.8
BBTK	7.08	81	ePn	10 22.00	1.9	ATEJ	21.89	273	iPc	13 30.00	1.6	ANCC	4.71	5	eP	09 13.46	-1.4
			i	10 48.00		AL0J	21.92	274	iPc	13 26.00	-2.6	S.D. = 1.5 on 9 of 11 obs.					
			iS	11 12.00		HFS	22.03	347	eP	13 30.70	1.3	MAR 02, 1990 22h 06m 25.25±0.26s					
MNO	7.13	264	P	10 19.40	-1.4				0.6s 5.50nm			21.934 S ± 7.5km 174.135 W ± 4.4km					
MEU	7.16	257	P	10 18.50	-2.6				Z 16s 0.15um			DEPTH = 33.0km (normol)					
			eSn	11 37.00					LR	20 10.00		5.4mb (24 obs.) 4.9Msz (8 obs.)					
VRI	7.18	17	ePc	10 21.50	0.1	NB2	23.34	345	P	13 43.60	1.3	TONGA ISLANDS (173)					
DUI	7.50	293	P	10 25.10	-0.8				0.8s 7.50nm			CENTROID, MOMENT TENSOR (HRV)					
GIB	7.63	265	P	10 26.50	-1.3	SUF	23.75	3	eP	13 51.40	5.2X	Data Used: GDSN					
CLI	7.96	18	ePd	10 31.00	-1.2				0.6s 4.80nm			L.P.B.: 13S, 23C					
SDI	7.98	293	P	10 30.70	-1.8	IFR	23.80	266	iPd	13 49.00	1.8	Centroid Location:					
			eSn	11 56.60		EKA	24.22	321	P	13 52.00	1.2	Origin Time 22:06:35.2 2.8					
MCT	8.01	263	P	10 32.00	-1.1				0.9s 18.40nm			Lat 21.88S 0.18 Lon 174.68W 0.19					
KAS	8.07	70	eP	10 42.00	8.1X	AVE	25.66	267	iP	13 52.00	-12.8X	Dep 15.0 FLX Half-duration 1.7					
USI	8.19	271	P	10 33.30	-2.1				i	14 05.00		Moment Tensor; Scale 10**16 Nm					
AZI	8.33	294	P	10 37.50	0.1	TIO	26.51	262	iPd	14 13.50	0.7	Mrr=-3.54 0.41 Mtt=-3.14 0.77					
BMR	8.62	359	ePc	11 04.00	22.6X	SOD	28.43	2	eP	14 32.00	2.4	Mff=-0.40 0.52 Mrt= 4.87 1.26					
RDP	8.78	291	P	10 41.60	-2.1	BCAO	34.77	189	iPd	15 25.40	-0.5	Mrf= 1.99 1.21 Mtf=-2.05 0.41					
ZAG	8.83	322	iP	10 47.00	2.7				0.6s 13.00nm			Principal Axes:					
PTJ	8.90	323	eP	10 43.10	-2.3				ic	15 47.00		T Vol= 6.21 Plg=63 Azm=343					
BUD	9.09	340	e(P)	10 51.00	3.2X	TIC	41.35	226	P	16 20.40	-0.5	N 0.66 3 246					
ARV	9.22	302	P	10 47.00	-2.7	KIC	41.42										



NP1:Strike=236 Dip=18 Slip= 79						IMA 89.09 8 eP 19 17.50 -0.7						1.0s 16.00nm					
NP2: 67 72 94						BJI 1.3s 19.60nm 5.3mb						CDF 153.56 358 ePKP 26 22.30 8.4X					
SVA	7.93	297	eP	08 21.40	0.2												
			eS	10 15.50													
VUN	7.98	298	iPc	08 21.20	-0.7												
SGE	8.64	299	eP	08 32.20	1.1												
DZM	18.01	266	iP	10 35.60	0.7												
PGZ	20.33	201	eP	11 05.30	4.1X	LOE	91.14	288	eP	19 29.80	1.4						
	0.8s	80.00nm			5.1mb	EDM	91.39	32	eP	19 28.50	-0.4						
MNG	20.60	203	eP	11 05.50	1.3	XAN	91.88	306	Pc	19 32.00	0.4						
TCW	21.57	204	eP	11 13.00	-0.9	HHC	92.95	313	eP	19 36.20	-0.3						
PPT	23.51	84	eP	11 32.00	-1.2	KMI	93.21	296	Pc	19 39.50	1.3						
	1.2s	80.00nm			5.1mb												
PMO	25.80	79	eP	11 56.00	0.9												
	1.2s	40.00nm			4.9mb	BDT	93.49	287	eP	19 40.00	0.8						
VAH	25.96	80	eP	11 57.00	0.3												
	1.2s	15.00nm			4.5mb	BTO	93.89	312	eP	19 41.00	0.2						
TPT	26.06	79	eP	11 57.00	-0.6	CHG	94.12	289	iPc	19 43.80	1.6						
	1.2s	30.00nm			4.8mb												
RUV	26.21	80	eP	11 58.00	-0.9	CHTO	94.12	289	iP	19 43.40	1.3						
	1.2s	25.00nm			4.7mb												
COO	31.57	247	eP	12 47.00	-0.1	CD2	94.60	301	eP	19 43.50	-0.7						
RMQ	34.07	255	eP	13 09.00	0.1	INK	94.74	14	eP	19 43.00	-1.0						
CAN	34.80	239	eP	13 14.80	-0.2	YKA	96.33	24	eP	19 49.20	-2.1						
BWA	35.08	241	eP	13 16.80	-0.7												
CMS	36.84	246	eP	13 32.00	-0.3	LZH	96.51	306	eP	19 53.60	0.6						
PMG	39.18	282	eP	13 50.00	-2.1												
ASPA	47.72	257	iPc	14 59.20	-1.9												
	1.0s	31.00nm			5.3mb	Z	19s	0.20um		4.6Msz							
Z	19s	1.01um			4.8Msz	ZOBO	98.20	111	eP	20 07.00	5.5X						
											</						



? MAR 02, 1990 23h 37m 04.02 ± 1.61s  
45.045 N ± 36.0km 152.528 E ± 21.9km  
DEPTH = 33.0km (normal)  
4.7mb ( 8 obs.)

KURIL ISLANDS REGION (222)

INK 43.32 31 eP 45 05.00 1.1  
MBC 46.34 19 eP 45 28.00 0.0  
0.9s 11.00nm 4.8mb  
CHTO 51.34 257 eP 46 07.10 -0.2  
0.9s 1.49nm 4.0mb  
YKA 52.54 36 eP 46 15.30 -0.6  
0.8s 1.90nm 4.1mb  
GUN 54.75 276 P 46 33.60 0.5  
KKN 55.25 276 P 46 37.00 0.5  
0.8s 13.00nm 5.0mb  
PKI 55.29 276 P 46 37.10 0.1  
DMN 55.48 276 P 46 37.20 -1.1  
GKN 55.57 277 P 46 39.40 0.6  
0.8s 15.00nm 5.1mb  
FFC 62.31 39 iPd 47 24.80 -0.2  
0.8s 12.00nm 5.1mb  
NB2 69.71 341 P 48 12.20 0.1  
1.3s 8.80nm 4.7mb  
HFS 69.91 339 eP 48 12.50 -0.8  
0.5s 1.90nm 4.4mb  
S.D. = 0.7 on 12 of 12 obs.

\* MAR 02, 1990 23h 42m 29.60 ± 2.59s  
32.190 S ± 10.8km 71.733 W ± 25.5km  
DEPTH = 33.0km (normal)

NEAR COAST OF CENTRAL CHILE (135)

ROCH 0.99 142 eP 42 47.60 0.2  
iS 43 01.00  
LCCH 1.29 174 iPd 42 59.90 8.5X  
iS 43 08.10  
SAN 1.55 145 iP 42 55.20 0.0  
iS 43 13.80  
FCH 1.66 133 iPd 42 56.20 -0.9  
i 43 15.50  
iS 43 18.10  
LNV 1.78 171 iPd 42 58.90 0.4  
i 43 16.00  
iS 43 20.80  
RTCV 2.73 84 e(P) 43 12.00 -0.2  
e(S) 43 42.50  
RTRS 2.80 45 ePd 43 12.40 -0.6  
RTLL 2.91 74 e(P) 43 15.80 1.1  
CFA 3.03 80 e(P) 43 27.00 10.6X  
S.D. = 0.8 on 7 of 9 obs.

& MAR 03, 1990 00h 14m 50.18s  
61.751 N 151.706 W  
DEPTH = 83.5km  
3.5mb ( 2 obs.)

SOUTHERN ALASKA ( 2)

<AGS-P>.

SKT 0.24 20 iP 15 02.03 -0.8  
eS 15 11.73  
NCG 0.41 212 iP 15 03.38 -0.5  
CGLM 0.47 198 iP 15 03.62 -0.7  
CRP 0.53 204 eP 15 02.35 -2.6  
SUA 0.54 122 iP 15 04.87 -0.1  
eS 15 16.02  
BGL 0.59 214 iP 15 05.02 -0.4  
SPU 0.60 196 iP 15 04.63 -0.7  
CKL 0.63 209 iP 15 05.17 -0.6  
PWA 0.88 96 iPc 15 08.30 0.1  
CUT 0.94 45 iP 15 08.17 -0.8  
NKA 1.04 167 iP 15 11.32 1.2  
PMS 1.15 115 iPc 15 11.00 -0.6  
RDT 1.23 196 iP 15 11.95 -0.7  
eS 15 29.30  
PLRM 1.24 96 iP 15 11.32 -1.3  
eS 15 30.12  
PMR 1.24 96 iPc 15 11.40 -1.2  
GHO 1.32 88 eP 15 12.55 -1.3  
RED 1.43 202 iP 15 14.73 -0.5  
eS 15 34.57  
SLKM 1.44 149 eP 15 14.32 -1.0  
HUR 1.56 37 eP 15 15.65 -1.2  
eS 15 35.55  
NNL 1.73 173 iP 15 19.37 0.3  
KTH 1.84 11 eP 15 19.13 -1.6  
SEW 1.99 145 eP 15 22.02 -0.5

SVW 1.99 253 iPc 15 21.00 -1.6  
RND 2.12 37 eP 15 22.85 -1.6  
CNPM 2.24 174 iP 15 24.55 -1.5  
PDB 2.32 213 iP 15 26.30 -0.7  
NCA 2.33 82 iP 15 25.55 -1.7  
TTA 2.33 302 iPc 15 25.10 -2.2  
MCK 2.36 31 eP 15 26.33 -1.4  
GLI 2.39 109 iP 15 25.07 -3.0  
eS 15 54.15

TOA 2.64 80 iPc 15 30.00 -1.6  
KLU 2.78 93 iP 15 30.67 -2.7  
CDD 2.99 200 iP 15 35.40 -0.9  
SDG 3.00 72 eP 15 35.40 -1.0  
NEA 3.08 22 iP 15 35.03 -2.5  
PAX 3.15 64 eP 15 36.73 -1.9  
WRH 3.19 29 eP 15 36.60 -2.4  
DDM 3.38 50 iP 15 41.82 0.1  
CCB 3.40 30 eP 15 39.35 -2.6  
HDA 3.43 37 eP 15 39.90 -2.5  
DMW 3.58 47 eP 15 43.85 -0.6  
FBA 3.62 27 iP 15 42.80 -2.2  
GLM 3.79 29 eP 15 45.33 -2.0  
GLB 3.79 91 eP 15 44.38 -3.0  
eS 16 27.05

DOT 4.00 58 P 15 47.95 -2.4  
KDC 4.04 186 e(P) 15 49.00 -1.8  
TGL 4.40 99 eP 15 53.67 -2.4  
IMA 4.42 350 eP 15 53.40 -3.0  
HYT 6.91 91 P 16 27.00 -3.8  
INK 10.08 42 eP 17 11.00 -2.9  
YKA 17.22 71 eP 18 42.70 -3.6  
0.7s 0.60nm 2.9mb  
MBC 18.16 24 eP 18 53.50 -4.2  
0.6s 7.00nm 4.1mb  
52 obs. associated

\* MAR 03, 1990 01h 36m 06.98 ± 1.33s  
36.053 N ± 12.8km 21.444 E ± 7.4km  
DEPTH = 33.0km (normal)

SOUTHERN GREECE (368)

ML 3.4 (ATH).

ITM 1.19 19 ePg 36 27.50 0.1  
VLI 1.38 61 ePb 36 30.00 0.0  
VLS 2.23 342 ePg 36 53.00 10.7X  
VAM 2.33 105 ePn 36 42.20 -1.6  
ATH 2.64 43 ePn 36 50.00 1.8  
APE 3.44 72 ePn 37 01.50 1.8  
NPS 3.48 102 ePb 37 07.00 6.8X  
NEO 3.54 23 ePn 37 01.90 0.9  
KEK 3.88 341 ePn 37 07.00 1.3  
KZN 4.25 3 ePn 37 11.00 -0.2  
PLG 4.59 19 ePn 37 14.60 -1.3  
SOI 4.76 297 P 37 18.00 -0.2  
OHR 5.08 354 ePn 37 22.50 -0.3  
ATN 5.22 296 P 37 20.50 -4.4X  
CZI 5.27 308 P 37 26.00 0.6  
VAY 5.33 9 ePn 37 24.70 -1.6  
TDS 5.41 313 P 37 28.00 0.5  
SKO 5.91 360 ePn 37 32.70 -1.8  
S.D. = 1.3 on 15 of 18 obs.

MAR 03, 1990 02h 00m 34.01 ± 0.76s  
35.622 N ± 11.8km 26.746 E ± 5.1km  
DEPTH = 10.0km (geophysicist)

CRETE (370)

MD 3.5 (ATH).

KAP 0.36 101 iPc 00 40.50 -0.8  
NPS 0.99 249 ePg 00 53.50 0.7  
ARG 1.27 62 ePn 00 57.50 0.0  
APE 1.75 326 ePb 01 04.30 -0.3  
VAM 2.09 265 ePg 01 13.50 4.0X  
CIN 2.25 28 eP 01 54.00 42.2X  
KSL 2.36 77 ePn 01 13.60 0.3  
VLI 3.27 291 ePn 01 25.60 -0.7  
BCK 3.60 58 ePn 01 32.00 1.0  
S.D. = 0.8 on 7 of 9 obs.

MAR 03, 1990 02h 25m 39.01 ± 1.16s  
8.484 S ± 9.6km 159.138 E ± 6.8km  
DEPTH = 105.9 ± 11.4 km  
5.0mb ( 10 obs.)

SOLOMON ISLANDS (193)

HNR 1.24 140 eP 26 02.00 -0.8  
eS 26 19.00

PMG 11.88 265 eP 28 27.00 0.8  
DZM 15.23 153 iPc 29 17.30 7.6X  
CTA 16.98 226 iPc 29 33.90 2.4  
0.9s 26.05nm 4.5mb  
i 29 36.10  
i 30 43.50

RMQ 20.44 208 eP 30 10.00 -0.1  
QIS 22.36 235 iPc 30 29.70 0.4  
0.9s 33.00nm 4.7mb  
COO 23.00 196 eP 30 36.50 1.1  
WB5 26.51 242 iPc 31 07.40 -1.2  
WRA 26.56 242 P 31 07.50 -1.5  
1.0s 24.50nm 4.7mb  
ASPA 28.49 235 iPc 31 24.30 -2.2  
0.5s 17.00nm 4.9mb  
WARB 35.51 236 eP 32 26.90 -0.7  
PMO 52.16 102 iP 34 41.70 0.6  
1.0s 20.00nm 5.1mb  
VAH 52.42 103 iP 34 43.10 0.0  
1.0s 25.00nm 5.2mb  
TPT 52.43 102 iP 34 43.30 0.2  
1.0s 30.00nm 5.2mb  
RUV 52.66 103 iP 34 45.10 0.3  
1.0s 25.00nm 5.2mb

MDJ 59.20 336 eP 35 31.00 -0.2  
CN2 60.34 332 P 35 38.80 -0.1  
XAN 63.64 315 P 36 00.50 -0.8  
LZH 68.27 314 eP 36 32.00 1.1  
1.5s \*\*\*\*\*nm 8.2mb X

GTA 72.64 316 iP 36 57.80 0.6  
WMO 82.72 316 P 37 53.00 0.6  
INK 89.68 20 eP 38 26.00 0.1  
YKA 95.73 28 eP 38 53.20 -0.6  
0.7s 3.00nm 4.9mb  
MBC 96.16 14 eP 38 55.50 -0.1  
0.6s 7.00nm 5.4mb

SLL 122.18 341 ePKP 44 20.00 -2.5X  
0.5s 0.90nm  
NB2 122.41 342 PKP 44 21.70 -1.3X  
1.0s 2.40nm

S.D. = 1.0 on 23 of 26 obs.

? MAR 03, 1990 04h 26m 53.96 ± 6.78s  
62.373 N ± 48.7km 5.274 E ± 52.3km  
DEPTH = 10.0km (geophysicist)

SOUTHERN NORWAY (535)

MD 1.0 (BER).

MOL 1.07 78 iPc 27 14.12 0.0  
iS 27 29.73  
SUE 1.34 191 eP 27 19.35 0.7  
eS 27 40.05  
ASK 1.90 181 eP 27 25.44 -1.2  
eS 27 56.04  
ODD1 2.56 165 eP 27 35.97 -0.2  
eS 28 09.92  
BLS1 3.09 165 eP 27 44.42 0.7  
eS 28 21.95

S.D. = 1.1 on 5 of 5 obs.

MAR 03, 1990 04h 42m 31.05 ± 1.06s  
35.293 N ± 11.7km 23.063 E ± 5.8km  
DEPTH = 68.3 ± 8.6 km  
3.6mb ( 1 obs.)

CRETE (370)

MD 3.8 (ATH).

VAM 0.94 83 iPnd 42 49.50 0.6  
VLI 1.43 356 ePn 42 55.70 0.4  
NPS 2.09 90 ePn 43 06.00 1.5  
ITM 2.09 334 ePn 43 06.50 1.9  
APE 2.67 48 ePn 43 11.50 -1.1  
ATH 2.73 11 ePn 43 14.30 1.0  
KAP 3.37 84 ePn 43 22.50 0.1  
VLS 3.50 326 ePn 43 26.00 1.8  
SMG 3.88 50 ePb 43 34.00 4.5X  
NEO 4.01 2 ePn 43 31.70 0.3  
ARG 4.22 76 ePn 43 34.00 -0.3  
IZM 4.58 46 eP 43 58.00 18.6X  
CIN 4.66 59 eP 44 23.00 42.5X  
PLG 5.08 3 ePn 43 46.00 -0.4  
KZN 5.11 349 ePn 43 46.00 -0.9  
KEK 5.12 331 ePn 43 47.50 0.6  
KSL 5.37 79 ePn 43 48.50 -1.9  
KHL 6.00 58 eP 43 59.40 0.1  
OHR 6.08 344 ePn 43 59.20 -1.1  
SOI 6.28 298 P 44 02.50 -0.6



03d 04h

BCK 6.45 68 eP 44 04.70 -0.8  
 LCI 6.45 323 P 44 02.10 -3.4X  
 CZI 6.77 307 P 44 08.70 -1.2  
 eS 45 13.00  
 SKO 6.79 350 ePn 44 13.20 3.0X  
 TDS 6.90 311 P 44 11.50 -0.2  
 MGR 7.67 311 P 44 20.40 -1.9  
 SGO 8.07 313 P 44 13.50 -14.4X  
 BBTk 8.94 57 eP 44 40.00 0.1  
 KHC 15.49 336 eP 45 54.80 -11.9X  
 GKN 52.20 80 P 51 37.60 0.3  
 DMN 52.74 80 P 51 41.60 0.1  
 KKN 52.80 80 P 51 41.70 -0.2  
 PKI 53.00 80 P 51 43.40 -0.1  
 GUN 53.23 79 P 51 45.40 -0.2  
 YKA 76.78 341 eP 54 18.10 1.7  
 0.7s 0.50nm 3.6mb  
 S.D. = 1.1 on 28 of 35 obs.

\* MAR 03, 1990 04h 59m 46.76 ± 1.40s  
 5.174 S ± 11.0km 151.217 E ± 15.7km  
 DEPTH = 32.9 ± 14.7 km  
 4.5mb ( 3 obs.) 3.8msz ( 1 obs.)  
 NEW BRITAIN REGION (192)

RAB 1.36 44 iPc 00 09.00 -0.6  
 PMG 5.83 224 eP 01 14.50 1.3  
 eS 02 26.00  
 CTA 15.59 198 iPc 03 30.60 4.7X  
 1.1s 27.85nm 4.4mb  
 OIS 19.00 215 eP 04 09.00 0.5  
 GUA 19.62 341 e(P) 03 57.50 -18.1X  
 PJG 19.68 341 eP 04 15.20 -1.1  
 RMQ 21.33 186 eP 04 32.50 -0.7  
 WB5 21.97 227 eP 04 38.00 -1.7  
 i 04 42.20  
 WRA 22.03 227 P 04 40.00 -0.3  
 0.7s 12.70nm 4.5mb  
 BRS 22.14 176 iP 04 40.80 -0.6  
 i 04 44.00  
 i 04 58.90  
 DZM 22.35 140 iPd 04 45.20 1.7  
 ASPA 24.83 221 iPc 05 07.10 -0.5  
 1.2s 22.00nm 4.6mb  
 Z 18s 0.31um 3.8msz  
 eS 09 33.90  
 LR 16 41.60  
 WARB 31.44 226 eP 06 07.00 -0.5  
 XAN 55.82 318 P 09 26.00 2.6  
 KMI 55.90 305 eP 09 30.00 5.6X  
 HHC 58.44 325 P 09 45.80 3.8X  
 LZH 60.41 317 P 10 00.00 4.3X  
 GUN 70.97 302 P 11 00.00 -3.9X  
 S.D. = 1.5 on 12 of 18 obs.

MAR 03, 1990 05h 11m 33.72 ± 0.15s  
 32.097 N ± 3.2km 139.619 E ± 2.8km  
 DEPTH = 142.5km ( 7 depth phases)  
 5.3mb ( 65 obs.)

SOUTH OF HONSHU, JAPAN (211)  
 CENTROID, MOMENT TENSOR (HRV)  
 Data Used: GDSN  
 L.P.B.: 9S, 11C  
 Centroid Location:  
 Origin Time 05:11:37.2 1.1  
 Lat 32.14N 0.09 Lon 139.31E 0.13  
 Dep 145.9 3.1 Half-duration 1.5  
 Moment Tensor: Scale 10<sup>16</sup> Nm  
 Mrr=-1.25 0.69 Mtt= 0.40 1.07  
 Mff= 0.85 0.88 Mrt= 1.05 0.73  
 Mrf=-7.59 0.61 Mtf=-1.71 0.84  
 Principal Axes:  
 T Val= 7.98 Plg=39 Azm= 71  
 N -0.11 11 170  
 P -7.88 48 273  
 Best Double Couple: Mo=7.9\*10<sup>16</sup>  
 NP1:Strike=103 Dip=12 Slip=-158  
 NP2: 351 86 -79

IIDJ 3.66 338 iPd 12 31.70 1.6  
 CHJJ 3.98 353 iP+ 12 34.20 0.0  
 S 13 19.10  
 WKYJ 3.99 303 iPd 12 37.50 3.1X  
 KAKJ 4.12 6 iP+ 12 33.70 -2.4  
 eS 13 17.70  
 TSRJ 4.57 320 iPd 12 44.80 2.6  
 MTMJ 4.72 342 P 12 45.00 0.8

TKSJ 5.04 293 P 12 52.00 3.6X  
 S 13 51.20  
 NIJJ 5.16 355 iP+ 12 47.80 -2.1  
 S 13 44.90  
 YONJ 5.99 303 iPd 13 04.50 3.3X  
 S 14 13.80  
 SHK 6.30 295 iPd 13 08.20 2.8  
 1.0s 708.00nm 5.9mb  
 SHNJ 7.42 288 P 13 24.30 3.7X  
 MDJ 14.75 331 Pc 14 56.00 -0.4  
 Z 16s 0.50um  
 E 12s 0.40um  
 SSE 15.74 271 Pd 15 10.00 1.2  
 5.0s 800.00nm 5.3mb X  
 N 12s 0.30um  
 E 12s 0.30um

SNY 16.06 312 Pd 15 10.00 -2.6  
 Z 15s 0.50um  
 S 15 54.00  
 S 18 06.00

DL2 16.14 300 iPc 15 16.50 2.9  
 3.0s 1100.00nm 5.6mb  
 N 10s 0.60um  
 eS 18 13.00

CN2 16.14 320 Pd 15 13.30 -0.4  
 1.0s 100.00nm 5.1mb  
 eS 18 08.00

NJ2 17.60 275 Pc 15 32.00 0.5  
 2.0s 600.00nm 5.6mb  
 ScP 23 24.50

PJG 19.04 164 eP 15 50.70 3.4X  
 e 16 15.50  
 TIA 19.05 289 eP 15 47.50 0.2  
 E 11s 0.50um

GUA 19.10 164 eP 15 51.70 3.8X  
 0.8s 185.07nm 5.5mb  
 eS 19 10.00

OZH 19.79 254 P 15 57.20 2.3  
 BJI 20.50 299 eP 16 01.00 -1.1  
 1.3s 71.00nm 4.9mb

Z 20s 0.60um 4.0msz  
 N 10s 0.27um  
 eS 19 44.00

ScP 23 30.00  
 eScS 27 12.00  
 WHN 21.63 273 eP 16 13.50 0.1  
 0.7s 100.00nm 5.3mb

iScP 23 34.50  
 PIP 21.94 236 ePc 16 17.00 0.6  
 SZP 22.58 235 iPd 16 24.00 1.4

TIY 22.95 292 eP 16 26.60 0.4  
 E 10s 0.40um  
 SP 17 14.00

S 20 27.00  
 S 21 19.00  
 HHC 24.11 299 Pc 16 37.40 -0.1  
 BTO 25.22 298 P 16 47.00 -0.8

N 14s 0.30um  
 E 14s 0.70um  
 eS 21 05.00

XAN 25.75 283 P 16 51.50 -1.2  
 GYA 29.22 267 P 17 23.60 -0.6  
 PcP 20 28.20

OIZ 29.74 251 eP 17 29.20 0.6  
 LZH 29.79 288 eP 17 27.40 -1.8  
 1.8s 20.00nm 4.5mb

Z 15s 0.40um 4.2msz X  
 N 11s 0.30um  
 E 10s 0.20um

PP 18 31.00  
 ScP 23 58.00  
 PcS 24 04.00

ScS 27 52.50  
 CD2 30.51 277 P 17 35.00 -0.5  
 SMY 32.30 40 e(P) 17 51.40 0.7

GTA 32.91 294 Pd 17 54.80 -1.6  
 ScP 24 07.60  
 ADK 37.31 45 iPc 18 33.20 -0.2

0.6s 78.00nm 5.6mb  
 PMG 41.89 169 eP 19 15.50 4.0X  
 WMQ 41.95 302 P 19 12.50 0.6

MTN 45.42 192 eP 19 39.00 -0.8  
 KHKI 46.31 214 ePc 19 45.90 -1.0

GUN 46.33 279 P 22 25.00 0.0  
 PKI 46.84 279 P 19 50.90 -0.6  
 KKN 46.87 280 P 19 51.40 -0.2  
 DMN 47.08 279 P 19 53.10 -0.2  
 GKN 47.34 280 P 19 54.80 -0.4  
 SDN 47.37 42 eP 19 53.20 -1.6  
 PSI 48.12 241 ePd 20 00.30 -0.8  
 0.9s 10.00nm 4.6mb

e 21 27.00  
 e 22 30.00  
 PPI 49.21 237 eP 20 09.50 0.1

SVW 50.36 35 ePc 20 18.30 0.6  
 BRW 51.53 22 iPc 20 26.90 0.5  
 IMA 51.70 29 iPc 20 27.70 -0.3

1.2s 43.20nm 5.1mb  
 KDC 51.86 39 eP 20 28.10 -0.9  
 WB5 51.92 186 eP 20 27.80 -2.1

iPcP 21 41.50  
 WRA 51.99 186 Pd 20 28.90 -1.5  
 0.8s 25.20nm 5.0mb

CTA 52.28 172 iPc 20 32.50 0.0  
 0.9s 18.91nm 4.9mb  
 OIS 52.35 180 ePc 20 32.00 -1.1

NDI 53.28 284 iPd 20 38.80 -1.1  
 PMR 53.50 34 ePc 20 39.90 -1.1  
 1.0s 60.00nm 5.4mb

FBA 54.08 30 eP 20 44.70 -0.6  
 TOA 54.88 34 eP 20 51.00 -0.3  
 ASPA 55.72 186 eP 20 55.80 -1.8

0.6s 17.00nm 5.1mb  
 ePP 21 56.00  
 iS 28 31.30

HYB 56.68 271 iPd 21 03.40 -1.3  
 1.0s 65.00nm 5.5mb  
 RMQ 58.91 170 eP 21 20.00 0.1

WARB 59.26 194 eP 21 22.30 -0.1  
 GBA 59.42 267 Pc 21 20.50 -3.2X  
 0.9s 66.80nm 5.6mb

INK 59.46 26 iPc 21 22.50 -0.7  
 0.8s 33.00nm 5.3mb  
 DZM 59.67 151 iPc 21 26.80 1.5

POO 60.16 274 iPd 21 26.50 -2.3  
 0.8s 52.24nm 5.5mb  
 BRS 60.47 167 iPc 21 30.50 -0.1

0.8s 27.50nm 5.3mb  
 KOD 61.08 264 iPd 21 34.50 -0.9  
 1.0s 50.00nm 5.4mb

QUE 61.09 289 iPd 21 34.10 -1.0  
 MBC 61.67 15 ePc 21 35.40 -2.7  
 0.9s 59.00nm 5.5mb

COO 63.41 168 iPc 21 51.00 0.9  
 MAIO 64.58 298 iPd 21 58.00 0.2  
 BWA 66.68 172 iPd 22 12.10 1.0

CAN 67.64 172 eP 22 17.60 0.5  
 YKA 68.83 29 eP 22 22.10 -2.0  
 0.9s 13.00nm 4.8mb

SOD 68.94 338 iP 22 24.60 -0.1  
 TOO 69.52 175 iPc 22 29.90 1.3  
 DAG 70.56 355 iPd 22 34.10 -0.3

0.8s 14.18nm 4.8mb  
 PGC 70.86 44 eP 22 37.00 0.3  
 IR2 71.20 301 iPd 22 39.00 -0.1

IR4 71.38 300 iPd 22 41.00 0.7  
 IR7 71.39 301 iPd 22 40.00 -0.3  
 IR1 71.46 301 iPd 22 40.50 -0.2

SUF 71.73 334 iP 22 41.30 -0.3  
 0.6s 54.80nm 5.5mb  
 PNT 72.78 42 ePc 22 48.00 -0.1

NUR 73.61 332 iP 22 52.30 -0.3  
 0.9s 50.70nm 5.3mb  
 EDM 74.16 37 iPc 22 55.70 -0.3

1.0s 61.00nm 5.3mb  
 FHC 74.19 52 eP 22 58.00 1.6  
 NEW 74.73 42 P 23 00.00 0.6

SLY 75.12 303 ePc 23 01.00 -0.8  
 WDC 75.26 51 iPc 23 03.10 0.6  
 ePc 23 38.90 144km

MIN 76.00 51 ePc 23 06.60 -0.3  
 MSL 76.40 304 ePc 23 12.50 3.5X  
 ORV 76.46 52 eP 23 09.40 0.1

UPP 76.73 334 iP 23 10.30 0.0  
 BRK 76.80 54 ePc 23 11.80 0.7  
 PCC 76.90 54 eP 23 12.00 0.3

SES 76.92 38 iPc 23 11.20 -0.4  
 MHC 77.49 54 ePc 23 15.80 0.7  
 HFS 77.96 336 eP 23 16.30 -0.8



	0.9s	62.20nm	5.4mb	1.0s	3.75nm	4.4mb	Sg	24	32.20			
Z	18s	0.10um	4.2Msz	ALQ	88.93	49 eP	24 49.50 143km	LZH	4.52	207 ePg	23 54.50	17.1X
CMB	77.99	53 iPc	23 18.50 0.7	1.0s	5.00nm	4.5mb	24 12.50 -1.1	TIY	5.34	115 Pg	24 03.70	14.7X
NP2	78.15	337 P	23 18.20 0.0	SLE	89.21	329 eP	24 14.70 0.2	XAN	6.45	161 ePn	24 04.50	0.0
PR5	0.8s	48.10nm	5.3mb	CDF	89.23	330 eP	24 14.60 0.0	GUN	20.84	240 P	27 11.00	-0.1
LLA	78.20	55 iPc	23 19.60 0.7	SAX	0.8s	6.70nm	4.7mb	0.6s	11.00nm		4.4mb	
FFC	78.34	54 ePc	23 20.30 0.6	OSS	89.24	329 eP	24 14.90 0.0	PKI	21.38	240 P	27 16.60	0.1
LRM	78.67	31 iPc	23 21.40 0.3	VDL	89.31	328 eP	24 15.30 0.2	YKA	72.53	19 eP	33 57.50	3.0X
KVN	0.8s	33.00nm	5.1mb	BSF	89.76	328 eP	24 17.50 0.2	0.8s	0.30nm		3.3mb	
FRI	78.74	43 iPc	23 22.50 0.5	HAU	89.89	330 eP	24 17.30 -0.4	8WA	83.76	146 e	34 49.30	-7.0X
SYF	78.98	51 P	23 24.00 0.7	0.7s	4.40nm	4.6mb		CAN	84.77	146 eP	34 56.70	-4.6X
ISA	78.99	53 ePc	23 23.60 0.4	0.8s	6.70nm	4.7mb		e	35 03.90			
CLC	80.11	56 eP	23 30.00 0.6	TMA	90.32	328 eP	24 19.50 -0.3	S.D. = 0.2 on 5 of 10 obs.				
VR1	80.54	54 eP	23 31.00 -0.6	MMK	90.77	329 eP	24 22.30 0.3	MAR 03, 1990 06h 25m 22.59± 1.24s				
SBB	81.06	53 eP	23 34.00 -0.2	DIX	90.99	329 eP	24 23.40 0.4	20.557 N ± 6.4km 143.842 E ± 8.5km				
PAS	81.51	319 ePd	23 36.50 0.2	EMS	91.21	329 eP	24 23.90 0.0	DEPTH = 68.4 ± 12.0 km				
MWC	81.52	54 eP	23 38.00 1.3	LOR	91.54	332 iPd	24 25.20 0.0	4.9mb ( 11 obs.)				
GSC	81.57	55 eP	23 37.00 0.1	LBF	91.72	331 iPd	24 25.90 -0.2	MARIANA ISLANDS REGION (215)				
FRB	81.61	55 eP	23 38.00 0.7	LPL	91.73	329 iPd	24 26.50 0.1	PJG	7.00	172 eP	27 05.00	0.3
MLR	81.88	53 eP	23 39.00 0.4	LPG	0.8s	20.15nm	5.3mb	GUA	7.05	172 eP	27 04.80	-0.7
BW06	81.90	12 eP	23 38.00 0.0	SSF	91.73	329 iPd	24 26.60 0.1	1.0s	160.00nm		5.6mb	
RVR	82.18	319 ePd	23 40.00 0.0	FLN	0.7s	20.95nm	5.4mb	KAKJ	15.92	349 eP	29 11.90	8.2X
KRA	82.20	44 P	23 40.00 -0.3	LDF	91.85	332 iPd	24 26.70 0.1	CHJJ	16.01	346 P	29 06.10	1.2
PEC	82.21	55 eP	23 40.00 -0.2	SMF	1.0s	28.00nm	5.4mb	TSRJ	16.44	337 eP	29 10.50	0.2
SPC	82.33	326 iPc	23 40.90 0.4	AVF	91.97	335 iPd	24 27.20 0.1	MTMJ	16.82	343 P	29 15.50	0.4
CMP	0.7s	51.00nm	5.4mb	GRR	0.6s	14.45nm	5.3mb	NIJ	17.15	347 P	29 18.10	-1.2
PLM	82.41	55 P	23 40.50 -0.8	BGF	91.98	335 iPd	24 27.20 0.0	SSE	22.89	302 eP	30 20.00	-1.2
TPC	82.77	325 iP	23 42.90 -0.1	PLDF	0.6s	27.05nm	5.6mb	Z	18s	0.40um		3.9Msz
BAR	82.82	320 ePc	23 42.00 -1.1	LPF	92.05	331 iPd	24 27.50 -0.1	E	10s	0.20um		
KSP	82.92	55 eP	23 44.00 -0.1	AGO	0.8s	22.85nm	5.4mb	SNY	27.26	326 eP	31 00.40	-1.8
GLA	83.06	54 eP	23 44.00 -0.6	MAF	0.8s	24.85nm	5.4mb	CD2	37.38	294 eP	32 30.60	0.0
RSSD	83.43	56 eP	23 47.00 0.5	TCF	92.42	335 iPd	24 29.60 0.4	KMI	38.05	285 eP	32 40.00	3.5X
CLL	83.50	328 iPd	23 47.30 0.9	PYM	0.6s	21.65nm	5.5mb	LZH	38.17	303 eP	32 37.60	0.3
PPCY	1.1s	80.00nm	5.5mb	LSF	92.53	332 iPd	24 29.90 0.2	2.0s	0.00000nm		7.8mb X	
SRO	83.58	290 iP	23 47.30 -0.1	LBL	0.7s	12.15nm	5.2mb	Z	28s	0.30um		4.0MszX
MOX	83.62	312 eP	23 47.70 0.3	MFF	92.69	331 P	24 31.00 0.4	0.8s	0.30um			
BHG	83.91	308 eP	23 48.80 0.0	RJF	92.79	335 iPd	24 31.50 0.6	WRA	41.07	186 eP	33 00.00	-1.2
KBA	84.42	304 iPd	23 52.00 0.6	CAF	0.7s	41.90nm	5.8mb	0.8s	3.60nm		4.2mb	
GLD	84.42	312 eP	23 49.00 -2.5	LFF	92.82	331 P	24 31.37 0.2	LSA	48.22	292 P	34 01.00	1.9
ANMO	84.50	54 eP	23 53.00 1.1	LPO	92.91	332 iPd	24 32.10 0.6	WMO	51.78	310 eP	34 26.00	0.4
	0.8s	40.00nm	5.3mb	BUL	0.8s	25.50nm	5.5mb	GUN	52.95	290 P	34 35.70	0.8
VAY	84.58	44 P	24 00.00 1.5	TIC	93.00	332 iPd	24 32.30 0.3	PKI	53.40	290 P	34 38.40	0.3
EKA	84.61	308 eP	23 52.00 -0.3	KIC	0.7s	25.35nm	5.6mb	KKN	53.49	290 P	34 39.70	1.0
OGA	84.64	325 iPc	23 52.90 0.7	LIC	93.12	331 P	24 32.90 0.3	0.8s	23.00nm		5.3mb	
	0.8s	32.50nm	5.0mb	ARE	93.30	332 iPd	24 33.70 0.4	DMN	53.67	290 P	34 40.40	0.4
	1.0s	40.00nm	5.3mb	ZOBO	93.44	331 P	24 34.42 0.5	GKN	54.04	290 P	34 43.40	0.8
	0.8s	40.00nm	5.3mb		93.66	333 iPd	24 35.30 0.4	0.8s	35.00nm		5.4mb	
	0.8s	40.00nm	5.3mb		0.8s	25.50nm	5.5mb	GBA	63.50	275 Pc	35 48.40	0.2
	0.8s	40.00nm	5.3mb		94.08	332 iPd	24 37.60 0.6	0.8s	5.30nm		4.6mb	
	0.8s	40.00nm	5.3mb		0.8s	26.85nm	5.6mb	INK	68.36	23 eP	36 18.00	-0.5
	0.8s	40.00nm	5.3mb		94.17	331 iPd	24 38.30 0.9	MBC	71.80	14 eP	36 39.00	-0.2
	0.8s	40.00nm	5.3mb		0.8s	16.10nm	5.3mb	0.8s	43.00nm		5.4mb	
	0.8s	40.00nm	5.3mb		94.70	332 iPd	24 40.60 0.9	YKA	77.17	28 eP	37 09.80	-0.4
	0.8s	40.00nm	5.3mb		0.6s	19.85nm	5.6mb	0.7s	3.10nm		4.4mb	
	0.8s	40.00nm	5.3mb		94.73	332 iPd	24 40.60 0.7	PNT	78.81	42 eP	37 20.00	0.4
	0.8s	40.00nm	5.3mb		0.8s	5.35nm	4.9mb	SOD	81.02	340 eP	37 32.00	1.0
	0.8s	40.00nm	5.3mb		117.83	263 iPKPd	30 02.90 -2.4X	EDM	81.14	36 eP	37 32.00	0.1
	0.8s	40.00nm	5.3mb		0.6s	4.00nm		CMB	81.97	53 eP	37 37.80	1.2
	0.8s	40.00nm	5.3mb		128.82	312 PKP	30 26.10 -0.3	FRI	82.83	53 eP	37 42.20	1.2
	0.8s	40.00nm	5.3mb		128.86	312 PKP	30 26.80 0.3	SES	83.58	38 ePd	37 45.80	1.2
	0.8s	40.00nm	5.3mb		129.14	312 PKP	30 27.10 0.1	SUF	83.73	336 eP	37 43.20	-1.9
	0.8s	40.00nm	5.3mb		147.80	68 iPKPd	31 05.80 4.8X	0.7s	9.30nm		4.9mb	
	0.8s	40.00nm	5.3mb		150.31	65 PKPc	31 12.20 7.0X	LRM	84.59	43 eP	37 51.20	1.1
	0.8s	40.00nm	5.3mb		1.0s	25.00nm		NUR	85.57	334 eP	37 52.00	-2.3
	0.8s	40.00nm	5.3mb					FFC	86.46	32 iPd	37 59.90	1.0
	0.8s	40.00nm	5.3mb					1.4s	30.00nm		5.2mb	
	0.8s	40.00nm	5.3mb					HFS	90.01	338 eP	38 13.60	-2.1
	0.8s	40.00nm	5.3mb					0.7s	2.10nm		4.5mb	
	0.8s	40.00nm	5.3mb					N82	90.23	339 P	38 15.60	-1.2
	0.8s	40.00nm	5.3mb					0.8s	2.70nm		4.6mb	
	0.8s	40.00nm	5.3mb					ALQ	93.47	51 eP	38 31.00	-1.4
	0.8s	40.00nm	5.3mb					ARE	146.29	89 e(PKP)	45 01.00	4.0X
	0.8s	40.00nm	5.3mb					ZOBO	149.40	87 PKP	45 04.30	2.1X
	0.8s	40.00nm	5.3mb					1.4s	23.02nm			
	0.8s	40.00nm	5.3mb					Z	22s	0.05um		4.3Msz
	0.8s	40.00nm	5.3mb					LR			35 00.00	
	0.8s	40.00nm	5.3mb					LPB	149.48	88 PKPc	45 06.00	3.8X
	0.8s	40.00nm	5.3mb					1.3s	42.31nm			
	0.8s	40.00nm	5.3mb					S.D. = 1.1 on 36 of 41 obs.				
	0.8s	40.00nm	5.3mb					* MAR 03, 1990 07h 29m 17.24± 0.85s				



03d 07h

26.988 S  $\pm$  10.4km 26.732 E  $\pm$  9.0km  
 DEPTH = 5.0km (geophysicist)  
 REPUBLIC OF SOUTH AFRICA (584)  
 mbLg 3.6 (BUL).

BFS	0.10	28	iPc	29	18.00	-1.5
PRY	0.66	85	iPc	29	31.80	1.2
			S	29	38.70	
KSR	1.13	8	iPd	29	39.40	0.4
			S	29	50.50	
SWZ	1.27	261	iPd	29	42.60	1.2
SLR	1.87	48	iPd	29	52.50	2.2X
			S	30	16.50	
KIM	2.46	224	iPc	30	01.50	2.6X
			S	30	31.40	
HVD	3.76	196	iPd	30	33.00	15.6X
			S	31	17.00	
POF	6.44	247	eP	30	56.00	0.9
	0.5s	147.89nm			6.2mb	X
			S	32	06.00	
BUL	7.03	15	iPn	31	00.50	-3.0X
			iSn	32	17.00	
			iSg	32	52.60	
SUR	7.44	222	iPc	31	08.00	-1.3
	0.7s	9.59nm			5.1mb	X
			S	32	16.50	
CER	9.04	224	iPc	31	30.50	-0.9
			S	33	08.50	

S.D. = 1.5 on 7 of 11 obs.

MAR 03, 1990 08h 40m 55.07  $\pm$  0.97s  
 40.205 N  $\pm$  10.4km 25.188 E  $\pm$  8.5km  
 DEPTH = 10.0km (geophysicist)  
 AEGEAN SEA (365)  
 ML 3.1 (ATH).

EZN	0.95	113	iPg	41	12.30	-0.9
			iSg	41	25.30	
RDO	0.98	16	ePb	41	13.00	-0.6
PRK	1.27	139	ePb	41	18.50	-0.2
PLG	1.34	278	ePb	41	20.00	0.2
EDC	2.05	85	ePn	41	31.50	1.5

S.D. = 1.3 on 5 of 5 obs.

MAR 03, 1990 08h 26m 00.20  $\pm$  0.54s  
 24.302 N  $\pm$  10.6km 66.368 E  $\pm$  6.1km  
 DEPTH = 33.0km (normol)  
 4.5mb (6 obs.)

PAKISTAN (710)

QUE	5.89	5	eP	27	25.50	-2.2
			eS	29	55.50	
BOM	8.06	131	ePn	27	52.00	-5.9X
			ePg	28	01.50	
			eSn	28	18.50	
			eSg	29	31.40	
POO	9.03	128	eP	28	11.00	-0.4
			iS	30	19.00	
NDI	10.65	63	iPd	28	33.00	-0.7
	0.3s	19.48nm			5.8mb	X
			eS	30	29.00	
MAIO	13.34	335	eP	29	05.00	-4.9X
GKN	16.81	73	P	29	57.40	2.4
DMN	17.17	75	P	29	58.00	-1.6
KKN	17.35	74	P	30	01.60	-0.1
GUN	17.89	74	P	30	07.60	-1.0
RYD	17.99	275	eP	30	08.50	-1.0
KMSA	20.60	263	eP	30	38.50	-0.9
OASM	20.74	280	eP	30	40.30	-0.4
SUF	46.82	336	eP	34	29.10	0.6
	0.6s	5.30nm			4.7mb	
GRF	49.47	315	eP	34	50.70	1.4
SOD	49.54	341	eP	34	50.00	0.4
BCAO	50.05	255	iPd	34	54.60	0.4
	0.8s	46.00nm			5.6mb	
			id	34	57.30	
HFS	50.86	329	eP	34	59.70	0.0
	0.5s	2.40nm			4.4mb	
NB2	52.32	330	P	35	10.60	-0.2
	0.6s	1.40nm			4.1mb	
BUL	57.47	223	iPd	35	48.60	-0.2
	1.0s	8.00nm			4.7mb	
KIC	70.21	268	P	37	12.00	-0.4
INK	86.51	7	eP	38	43.00	2.3
YKA	93.50	0	eP	39	15.20	1.6
	0.5s	0.60nm			4.3mb	

S.D. = 1.3 on 20 of 22 obs.

MAR 03, 1990 08h 41m 44.25  $\pm$  0.30s  
 16.128 N  $\pm$  5.2km 94.307 W  $\pm$  3.4km  
 DEPTH = 88.2  $\pm$  2.9 km  
 5.4mb (52 obs.)

OAXACA, MEXICO (60)

PSM	0.91	309	iP	42	01.47	-1.7
			iS	42	15.00	
SCX	1.71	69	iP	42	14.40	1.3
			iS	42	37.79	
TPX	2.32	121	iP	42	20.09	-1.1
			iS	42	51.58	
OXX	2.50	293	iP	42	22.55	-1.4
			iS	42	51.24	
CUSS	4.75	117	eP	42	55.60	0.6
IIT	4.78	308	eP	42	56.00	0.5
			iS	43	47.00	
PPM	5.05	306	iP	43	00.14	0.6
			(S)	43	36.43	
TME	5.22	113	eP	43	01.80	0.3
ACX	5.38	279	eP	42	59.19	-4.4X
			(S)	43	52.64	
III	5.41	295	iP	43	03.17	-1.2
			(S)	44	10.82	
VSS	5.44	115	iPd	43	06.50	1.9
SJAS	5.54	116	eP	43	06.20	0.2
			eS	44	05.70	
UNM	5.63	305	(P)	43	09.00	1.5
OZA	5.75	116	iPd	43	07.50	-1.3
IIC	5.94	308	eP	43	12.42	0.7
CRX	6.07	303	eP	43	14.10	0.6
IJJ	6.29	306	(P)	43	18.24	1.5
MRX	7.46	300	(P)	43	32.17	-0.1
AGX	9.48	308	(P)	44	05.00	5.1X
UPA	16.07	114	eP	45	26.20	-0.1
TUL	19.75	356	eP	46	07.50	-2.1
	1.1s	104.50nm			5.1mb	
RLO	19.97	358	eP	46	10.30	-1.6
ALO	21.67	332	iPc	46	30.00	0.7
	1.0s	33.75nm			4.7mb	
ANMO	21.67	332	P	46	30.00	0.7
	1.1s	37.97nm			4.7mb	
BLA	24.34	28	P	46	55.00	-0.1
	1.1s	112.50nm			5.2mb	
GLA	25.06	316	eP	47	03.00	1.0
GLD	25.39	340	P	47	06.00	0.8
	1.5s	109.38nm			5.1mb	
GOL	25.39	340	P	47	05.50	0.2
BAR	26.11	313	eP	47	17.00	5.3X
TPC	26.51	316	eP	47	16.00	0.6
PLM	26.62	314	eP	47	17.00	0.5
PEC	27.13	315	P	47	21.00	0.0
RVR	27.34	315	eP	47	23.00	0.2
GSC	27.73	318	eP	47	27.00	0.5
MWC	27.93	315	eP	47	28.00	-0.4
SBB	28.04	316	eP	47	29.00	-0.2
CLC	28.56	318	eP	47	34.00	0.1
ISA	29.04	317	eP	47	38.00	-0.2
RSSD	29.10	346	P	47	38.50	-0.4
BW06	29.59	337	P	47	42.50	-0.8
	1.5s	48.63nm			5.0mb	
KVN	30.91	322	P	47	55.50	0.6
CMB	31.67	319	eP	48	01.40	0.0
LRM	33.28	337	iPc	48	16.00	0.5
ORV	33.28	320	eP	48	16.30	1.0
RSON	34.65	1	P	48	24.50	-2.4
	1.5s	172.81nm			5.7mb	
SES	36.75	342	iPc	48	44.50	-0.3
NEW	37.12	335	P	48	47.50	-0.4
FFC	38.97	353	iPc	49	03.00	-0.3
	0.6s	52.00nm			5.6mb	
PNT	38.98	334	ePc	49	04.00	0.6
	0.7s	27.00nm			5.2mb	
EDM	39.92	342	iPc	49	11.00	-0.2
	0.5s	45.00nm			5.6mb	
PGC	40.24	330	eP	49	14.00	0.3
ZOBO	41.27	140	iPc	49	22.00	-1.3
	25s	0.10um			3.6mszx	
		LR	02	30.00		
LPB	41.49	140	Pc	49	23.70	-1.1
	1.0s	16.00nm			4.8mb	
SCH	44.07	23	eP	49	43.00	-2.0
YKA	48.47	348	eP	50	17.80	-1.7
	0.7s	21.70nm			5.2mb	
FRB	50.79	14	eP	50	34.00	-3.1X
INK	57.78	344	iPc	51	27.50	-0.6

MBC	61.55	353	eP	51	53.00	-0.9
DAG	71.10	14	iPc	52	52.80	-1.7
	0.6s	28.00nm			5.3mb	
DCN	75.48	38	eP	53	19.60	-0.7
	0.7s	95.00nm			5.8mb	
ECB	75.91	39	iPd	53	22.30	-0.5
	0.7s	51.00nm			5.5mb	
DLE	75.92	38	eP	53	22.20	-0.6
	0.7s	46.00nm			5.5mb	
ECP	76.18	39	iPd	53	23.80	-0.5
	0.6s	74.00nm			5.7mb	
KBS	77.36	11	iPd	53	32.00	1.5
EKA	77.55	36	Pd	53	31.80	-0.1
	0.7s	51.40nm			5.5mb	
EPLA	78.47	52	eP	53	37.00	-0.4
AVE	78.79	58	iPc	53	43.50	4.4X
TIO	79.41	61	iP	53	38.00	-4.8X
GUD	79.80	51	iPc	53	45.00	0.4
LPF	80.34	43	iPc	53	46.90	-0.2
	0.9s	91.75nm			5.7mb	
GRR	80.37	42	iPc	53	47.10	-0.2
FLN	80.53	42	iPc	53	48.20	0.1
	0.6s	55.90nm			5.6mb	
AAPN	80.55	54	iPd	53	49.00	0.3
ECRI	80.56	48	iPc	53	49.10	0.6
IFR	80.61	58	iP	53	49.50	0.4
ALOJ	80.61	54	iPd	53	49.50	0.5
EBAN	80.62	53	eP	53	48.90	0.0
ATEJ	80.73	54	iPc	53	50.00	0.4
LDF	80.80	42	iPc	53	49.50	-0.1



STR	85.82	41 P	54 15.84	0.7	ML 2.3 (SKO), 2.2 (THE).	RDT	0.65 264 iP	09 11.92	-0.8
TOD	86.11	39 eP	54 16.73	0.1		SPU	0.71 319 iP	09 12.79	-0.7
EMS	86.11	43 ePc	54 17.50	0.6	THE	0.26 173 ePg	36 27.80	-0.5	
LPL	86.16	44 iPc	54 18.10	0.9		eSg	36 31.40		
	1.2s	53.55nm		5.5mb	SOH	0.34 102 iPgd	36 29.40	-0.4	
LPG	86.18	44 iPc	54 18.20	0.8		eSg	36 33.00		
	1.2s	65.45nm		5.5mb	VAY	0.51 329 iPgc	36 33.40	0.3	
FEL	86.21	41 eP	54 17.15	-0.1		iSg	36 42.00		
BNI	86.28	44 P	54 18.50	0.8	SRS	0.56 66 ePg	36 33.60	-0.6	
SOD	86.37	19 iP	54 16.60	-0.9		eSg	36 42.20		
RRL	86.39	44 P	54 18.87	0.5	LIT	0.85 203 ePg	36 39.00	-0.3	
DIX	86.43	43 eP	54 19.60	1.0		eSg	36 50.90		
FOUF	86.52	45 ePc	54 19.54	0.9	OUR	0.98 124 ePg	36 42.40	1.0	
SLE	86.55	41 ePc	54 18.90	0.1		eSg	36 57.00		
LRG	86.58	46 iPc	54 19.50	0.5	PAIG	1.12 149 ePb	36 44.50	0.6	
	0.8s	61.80nm		5.7mb		eSb	36 59.10		
ZLA	86.59	42 ePc	54 19.20	0.2	S.D. = 0.8 on 7 of 7 obs.				
RSP	86.63	44 P	54 20.00	0.6	MAR 03, 1990 10h 11m 56.27± 1.24s				
STU	86.64	40 iPc	54 19.00	-0.2	11.742 S ± 12.8km 73.903 W ± 7.2km				
	1.0s	90.00nm		5.8mb	DEPTH = 52.3 ± 14.8 km				
LMR	86.72	46 iPc	54 19.90	0.2	4.7mb ( 6 obs.)				
PZZ	86.74	45 P	54 20.51	0.5	PERU		(116)		
FRF	86.74	46 iPc	54 19.80	0.0					
	1.0s	66.00nm		5.7mb	PT08	2.60 265 iPd	12 38.20	1.2	
MMK	86.80	43 eP	54 21.60	1.3		iS	13 12.60		
DOI	86.84	45 P	54 20.50	0.1	PT02	2.75 244 eP	12 38.80	-0.1	
ORX	86.95	43 P	54 20.92	0.0		eS	13 17.90		
ORO	86.95	43 P	54 21.50	0.6	NNA	2.89 265 iPc	12 41.30	0.4	
STV	86.98	45 P	54 21.23	0.2		0.5s 38.73nm			
ENR	87.05	45 P	54 21.64	0.2		eS	13 11.60		
SAX	87.28	42 ePc	54 23.00	0.3	PT03	2.90 219 iP	12 40.00	-1.1	
ROB	87.33	45 P	54 22.36	-0.3	PT10	3.02 263 iP	12 43.20	0.4	
TMA	87.37	43 ePc	54 23.30	0.3		eS	13 26.00		
VAL	87.39	43 P	54 22.80	0.0	PT06	3.15 229 eP	12 43.70	-0.9	
MOX	87.42	38 eP	54 24.00	1.1		eS	13 22.00		
IMI	87.48	45 P	54 22.87	-0.5	ARE	5.24 154 eP	13 15.00	0.6	
TIC	87.50	84 Pc	54 23.36	-0.6	ZOBO	7.19 129 Pc	13 41.00	-0.9	
	1.1s	33.00nm		5.3mb	Z	22s 0.42um			
GRF	87.55	39 eP	54 24.00	0.4		S	15 09.00		
	1.3s	71.00nm		5.6mb		LR	16 20.00		
CKI	87.56	44 P	54 23.00	-0.7	LPB	7.37 131 Pd	13 44.90	0.6	
FIN	87.59	45 P	54 23.18	-0.7		0.9s 109.24nm		5.6mb	
LIC	87.61	84 Pc	54 24.04	-0.4		i	14 13.00		
	1.1s	53.50nm		5.6mb		S	15 22.00		
VDL	87.63	42 eP	54 25.30	1.0		LR	16 46.00		
PCP	87.70	44 P	54 23.79	-0.7	UPA	21.34 345 ePc	16 41.00	-0.1	
KIC	87.84	84 Pc	54 25.26	-0.3		1.0s 40.00nm		4.7mb	
	1.0s	44.50nm		5.5mb	BAO	25.46 102 Pd	17 21.90	0.5	
CLL	87.97	37 iPd	54 25.70	0.2	ALO	55.75 328 eP	21 29.00	-1.4	
	1.3s	21.00nm		5.1mb		0.8s 5.04nm		4.6mb	
OSS	87.99	42 ePc	54 26.60	0.6	GLA	59.22 320 eP	21 55.00	0.3	
MDI	88.04	43 P	54 25.50	-0.4	TPC	60.68 320 eP	22 06.00	1.3	
BOB	88.23	44 P	54 27.00	0.0	SBB	62.18 320 eP	22 14.00	-0.8	
SUF	88.83	23 eP	54 28.40	-1.0	CLC	62.76 321 eP	22 18.00	-0.6	
	0.7s	17.20nm		5.3mb	SCH	66.57 4 eP	22 42.00	-0.9	
KHC	89.18	39 iPc	54 31.50	0.1	SES	69.86 336 ePc	23 03.50	0.0	
	1.0s	14.00nm		5.1mb	FFC	70.33 343 iPd	23 06.10	-0.2	
CTI	89.19	42 Pd	54 31.50	-0.1		0.7s 8.00nm		4.8mb	
PRU	89.40	38 P	54 32.60	0.2	PNT	72.87 331 eP	23 23.00	1.5	
	1.2s	19.80nm		5.2mb		0.7s 9.00nm		4.8mb	
NUR	89.45	26 iP	54 31.40	-1.0	EDM	72.95 336 ePc	23 21.50	-0.5	
	0.8s	22.00nm		5.4mb	FRB	75.37 2 eP	23 35.00	-0.6	
FVI	89.70	41 P	54 33.00	-0.8	YKA	80.47 342 eP	24 02.80	-0.9	
KBA	89.87	41 ePc	54 34.50	-0.3		0.9s 6.60nm		4.6mb	
	0.9s	13.10nm		5.1mb	INK	90.20 341 eP	24 53.00	1.1	
PGD	90.07	44 P	54 35.50	-0.3	WMQ	144.31 23 iPKPd	31 28.50	0.1	
SFI	90.14	44 P	54 36.50	0.6	BJI	150.44 344 ePKP	31 45.00	6.8X	
RBL	90.26	41 P	54 36.50	0.0	HHC	150.61 352 ePKP	31 45.20	6.5X	
ZST	91.70	39 iP	54 43.70	0.7	BTO	151.05 354 ePKP	31 46.50	7.2X	
SRO	92.59	39 eP	54 47.80	0.7	GTA	151.89 10 PKPc	31 48.00	7.3X	
BUL	125.82 103 iPKPc	00 34.10	-4.2X		GBA	151.98 83 PKPc	31 42.30	1.1	
WB5	133.68 258 ePKP	00 51.30	-1.8			0.8s 2.00nm			
WRA	133.71 258 PKP	00 53.00	-0.2		TIY	153.52 349 ePKP	31 52.10	9.2X	
	0.7s	3.80nm			S.D. = 0.9 on 26 of 31 obs.				
HYB	145.93 12 iPKPc	01 14.40	-0.9		& MAR 03, 1990 11h 08m 59.53s				
	0.8s	88.00nm			60.652 N 151.093 W				
MUN	148.12 235 iPKPc	01 20.10	1.7		DEPTH = 47.0km				
GBA	149.35 16 PKPc	01 19.50	-1.2		2.5mb ( 1 obs.)				
	0.5s	23.20nm			KENAI PENINSULA, ALASKA ( 14)				
KOD	152.57 18 iPKPc	01 32.70	6.8X		<AGS-P>				
	1.0s	28.00nm			NKA	0.12 322 iP	09 08.79	3.4	
S.D. = 0.7 on 173 of 181 obs.					SLKM	0.45 108 iP	09 09.78	-0.4	
MAR 03, 1990 09h 36m 22.86± 0.76s					NNL	0.62 189 iP	09 12.55	0.3	
40.890 N ± 5.7km 22.921 E ± 6.7km									
DEPTH = 10.0km (geophysicist)									
GREECE (364)									
					INK	89.79 14 eP	11 24.00	-1.6	
					YKA	91.39 23 eP	11 32.20	-0.9	
						1.1s 2.40nm		4.5mb	



SVA	5.05	38	iPd	17	38.10	-5.2X
VUN	5.14	38	iPc	17	33.90	-10.7X
SGE	5.20	30	iPd	17	38.10	-7.6X
YSA	5.86	23	iP	17	45.20	-9.6X
MBU	6.12	34	iP	17	49.40	-9.2X
NDE	6.76	36	iP	17	58.80	-8.8X
PVC	7.78	303	iPc	18	23.50	1.8

WB5	38.07	266	LR eP	23 23	51.80 43.10	-2.4
			i	23	46.80	
WRA	38.09	266	Pd	23	41.70	-3.9x
	0.9s	16.90nm				4.9mb X
MTN	42.87	275	eP	24	25.00	-0.1
KNA	44.21	270	eP	24	33.60	-2.4

ADK	74.03	5 eP	28 01.00	-0.9
		i	28 03.70	
MCO	74.41	302 eP	28 09.40	4.6X
SMY	74.54	359 P	28 06.70	1.9
	1.3 s	1069.18 nm		6.7 mb
Z	20 s	200.00 um		7.4 ms z



YSS	74.79	338	iPc	28 04.00	-2.4	BRK	83.74	45	eP	28 54.50	-0.5				sP	29 17.00			
			iS	37 44.00			Z 20s	143.00um			7.3msz		GSC	86.08	49	eP	29 04.00	-2.9X	
GZH	75.09	303	Pd	28 07.00	-1.7	TIY	83.75	315	eP	28 54.00	-1.2				ePP	32 27.00			
	Z 48s		247.00um		7.1mszX		N 27s	230.00um					HAY	86.12	51	eP	29 11.50	4.4X	
	N 23s		181.00um				E 22s	137.00um					SVW	86.23	14	eP	29 07.00	0.0	
	E 26s		380.00um					pP	29 05.50	37kmX			GLA	86.39	52	eP	29 06.00	-2.4	
			iS	37 47.00				SKS	39 16.00						ePP	32 29.00			
PPI	75.72	275	eP	28 10.50	-2.0	BKS	83.76	45	eP	28 55.10	0.0		CD2	86.40	305	eP	29 08.40	-0.1	
QIZ	75.82	298	Pd	28 12.00	-1.0		2.0s	5881.00nm			7.4mb X				1.4s	100.00nm		5.9mb	
	E 16s		59.80um					ePP	32 15.60					Z 40s		223.00um		7.3mszX	
			PcP	28 22.50				e	33 41.90					N 15s		47.40um			
			PP	30 56.00				eS	39 17.20						pP	29 18.00	30kmX		
			SKS	38 13.00				eSS	44 45.40						S	39 34.00			
KLM	75.96	279	eP	28 17.50	3.6X			e(LSS)	48 05.60				HIA	86.45	327	ePc	29 07.94	-0.4	
NJ2	76.17	313	Pc	28 14.00	-0.6			eLO	50 32.80						ePc	29 16.88	28kmX		
	N 22s		125.00um			PRI	83.85	47	eP	28 55.00	-0.2				esPc	29 21.85			
	E 22s		83.50um			MHC	83.85	46	eP	28 55.50	-0.3				eS	39 42.76			
			pP	28 23.00	29kmX			e	29 26.00				BTO	86.90	316	P	29 10.00	-0.8	
PET	76.19	350	eP	28 11.00	-3.2X			ePP	32 06.00					N 25s		179.00um			
IPM	77.12	280	ePd	28 19.90	-0.4			eS	39 20.00					E 27s		0.90um			
MAW	77.82	201	iPc+	28 28.50	5.3X			eSP	41 10.00							SKS	39 27.00		
	1.0s		346.00nm		6.3mb			eSS	44 32.00							S	39 40.00		
			i	29 09.70				eSSS	47 47.00							ePc	29 11.00	-1.1	
			eS	39 46.00				e	48 42.00							P	29 09.00	-3.5X	
			e	54 18.00				eSSSS	49 23.00							P	29 20.10	6.0X	
			e	56 15.00				eLQ	50 19.00							P	29 15.20	0.7	
PSI	78.30	278	ePc	28 24.60	-2.2			eLR	53 53.00							eP	29 15.70	-0.8	
	1.3s		10.00nm		4.7mb X	LLA	83.92	47	eP	28 55.70	-0.3			Z 19s		328.00um		7.8msz	
			e	31 20.00		CIS	83.98	50	eP	29 00.40	4.0X					i	29 18.80		
			e	39 37.50		KDC	84.03	17	eP	28 54.80	-1.2					eP	29 19.50	0.4	
			e	55 31.00		XAN	84.17	310	P	28 57.20	-0.1					64	eP	29 20.36	0.2
MDJ	78.37	329	eP	28 25.70	-0.9		N 38s	537.00um											
	N 18s		565.00um				E 37s	482.00um											
	E 32s		144.00um				84.31	42	e(P)	28 57.80	-0.1					epPc	29 30.95	33kmX	
			epP	28 36.00	33kmX	KMI	84.51	300	ePd	28 59.45	0.0					esP	29 36.25		
WHN	78.42	310	ePd	28 26.50	-0.6		Z 40s	140.00um			7.0mszX					SKS	39 48.00		
	5.0s		9600.00nm		7.1mb X		N 26s	227.00um											
	Z 38s		121.00um		6.9mszX		E 22s	95.80um											
	N 24s		221.00um					epPc	29 09.88	33kmX									
	E 28s		91.90um					eS	39 28.40										
			pP	28 36.00	30kmX			esS	39 49.92										
			S	38 20.00		PAS	84.53	50	ePc	28 57.10	-2.0								
DL2	78.71	320	Pc	28 29.00	0.5			epPc	29 08.36	36kmX									
	N 14s		27.30um					ePP	32 21.21										
TSI	78.94	278	eP	28 34.00	3.7X			eSKS	39 00.00										
SNY	79.52	323	iPc	28 31.00	-1.9			eS	39 36.03										
	5.5s		5500.00nm		6.8mb X			eSS	48 31.00										
	Z 23s		70.90um		6.9mszX			eLg	50 58.00										
	N 19s		86.30um			MWC	84.65	50	eP	29 00.00	0.1								
	E 24s		120.00um					epP	32 17.00										
			sP	28 40.00		CPE	84.65	51	eP	29 00.50	0.8								
			iS	38 30.00		BAR	84.86	52	eP	29 01.00	0.2								
			sS	38 40.00				epP	32 10.00										
TIA	79.82	316	Pd	28 33.20	-1.5	FRI	84.96	47	e(P)	28 57.50	-3.6X								
	Z 25s		166.00um		7.3mszX			eSKS	40 04.00										
	N 24s		199.00um					ePKKP	44 52.10										
	E 18s		98.00um					eP	29 01.00	-0.5									
			S	38 27.00		RVR	85.01	50	ePP	32 21.00									
CN2	79.87	326	iPc	28 32.00	-2.7	SBB	85.05	50	eP	29 01.00	-0.8								
	6.0s		*****nm		7.1mb X	PLM	85.06	51	eP	29 01.00	-1.0								
	N 20s		79.00um					epP	32 25.00										
	E 20s		107.00um			CMB	85.06	46	ePc	28 59.62	-2.1								
			pP	28 42.00	32kmX			epPd	29 09.39	31kmX									
			S	38 36.00				eS	39 40.30										
SDN	79.90	14	eP	28 47.00	12.4X			eSKS	40 04.50										
	Z 20s		250.00um		7.6msz			ePKKP	44 52.70										
AIA	81.89	159	eP	28 47.60	2.5			eLR	51 00.00										
GYA	82.02	303	P	28 46.00	-0.6	WDC	85.08	43	eP	28 58.40	-3.3X								
	Z 28s		37.00um		6.6mszX			e	37 47.00										
	N 20s		37.00um					eSKS	40 04.60										
	E 20s		66.00um			ISA	85.10	48	eP	29 01.00	-1.0								
			epPc	28 59.43	28kmX			epP	32 30.00										
BSI	82.72	279	eP	28 52.50	2.2	PEC	85.11	51	eP	29 01.00	-1.1								
GCC	83.44	46	eP	28 53.00	-0.5	ORV	85.17	44	eP	28 58.40	-3.8X								
PCC	83.45	45	eP	28 52.80	-0.7			e	37 47.10										
SYP	83.45	49	eP	28 54.00	0.2			eSKS	40 04.90										
			epP	32 14.00		PFO	85.48	51	eP	29 01.65	-2.4								
SCI	83.65	51	eP	28 59.10	4.4X	MIN	85.54	43	e(P)	29 00.30	-3.9X								
SAO	83.66	46	eP	28 54.00	-0.7	CLC	85.79	49	eP	29 02.00	-3.4X								
	Z 20s		123.00um		7.3msz			epP	32 32.00										
	N 20s		48.00um			TPC	86.02	51	eP	29 06.00	-0.6								
	E 20s		88.00um					epP	32 15.00										
BCH	83.73	48	eP	28 53.00	-2.2	HHC	86.05	317	P	29 06.20	-0.5								
							Z 22s	85.30um			7.1msz								
							N 20s	78.80um											
							E 12s	8.30um											



03d 12h

BRW	95.20	9	eP	29	48.30	-0.4	SLR	122.60	216	iPd	31	42.00	-10.4X	CSS	144.33	300	ePKP	35	59.80	-2.8X		
LNW	95.64	130	iPd	29	55.60	3.9X			i	35	26.50		BIR	144.33	320	ePKP	36	00.00	-2.2X			
LSA	95.76	300	P	29	52.20	-0.6	KBS	122.62	356	ePKP	35	21.90	1.2	PPE	144.36	320	ePKP	36	01.00	-1.3		
	N	22s					MAIO	123.03	300	ePKP	35	22.00	-0.9	CLI	144.38	321	ePKPc	36	02.00	-0.3		
			pP	30	03.00	34kmX	NPA	123.13	233	iPKP	35	24.50	1.0	CFR	144.56	318	ePKPc	36	02.00	-0.6		
GOL	96.17	50	eP	29	55.00	0.8	BAO	123.47	128	ePKP	35	22.00	-2.3	PTT	144.69	322	ePKP	36	05.00	2.2X		
	1.5s	550.31nm			6.8mb		POF	123.50	206	ePKP	35	24.00	0.1	TLB	144.93	318	ePKPd	36	01.50	-1.7		
IRK	96.23	324	eP	29	59.00	5.2X		0.5s	24.65nm				BRD	145.07	320	ePKP	36	05.00	1.5			
GLD	96.29	50	P	29	54.50	-0.1	BDF	123.51	128	ePd	32	04.13	7.5X	VR1	145.07	320	ePKPd	36	02.00	-1.5		
	Z	20s	300.00um		7.8msz				eSKS	42	05.93		GPA	145.20	310	ePKP	36	00.00	-4.0X			
SAN	96.43	130	eP	29	57.00	1.6			eSDIF	45	10.76		PSN	145.26	316	iPKPc	36	05.00	1.1			
FCH	96.76	130	eP	30	02.00	4.7X			ePS	47	09.12		AGAL	145.31	280	ePKP	36	03.50	-1.0			
EDM	97.01	35	ePc	29	54.50	-2.9	SCH	123.90	38	ePKPd	35	22.60	-1.3	AGRW	145.35	280	ePKP	36	04.00	-0.6		
	1.4s	241.00nm			6.5mb			1.6s	395.00nm			HRT	145.46	311	ePKP	36	01.80	-2.6X				
INK	97.59	17	eP	29	58.00	-1.6	CBM	123.94	48	ePKP	35	21.00	-3.2X	ISR	145.57	319	ePKPc	36	05.00	0.5		
	1.5s	197.00nm			6.4mb		GDH	124.61	19	ePKP	35	05.00	-19.8X	ANMR	145.59	280	ePKP	36	06.50	1.5		
MDZ	98.02	130	i(P)	30	08.00	5.4X			i	35	26.00		GBZT	145.63	311	ePKP	36	05.50	0.7			
TIK	98.74	347	ePc	30	03.00	-1.7			i	37	06.00		MLR	145.74	320	ePKPd	36	03.50	-1.4			
			eS	41	49.00		TRN	124.82	92	ePKP	35	27.80	1.0	YLV	145.76	310	iPKP	36	03.00	-2.0X		
RSSD	98.80	46	eP	30	03.40	-2.5	TBH	125.07	93	ePKP	35	32.18	4.8X	ALT	145.76	308	ePKP	36	04.20	-0.9		
GUN	99.44	296	P	30	11.40	2.1	BUL	126.78	220	iPKPd	35	27.20	-3.5X	ISK	145.79	311	ePKP	36	01.80	-3.1X		
PKI	99.72	296	P	30	11.90	1.3			i	35	38.50		ITU	145.81	311	iPKPc	36	04.00	-0.9			
KKN	99.90	296	P	30	13.00	1.7	APA	128.73	342	iPKPc	35	37.80	5.0X	BCK	145.90	305	ePKP	36	03.20	-2.1X		
DMN	99.99	296	P	30	13.50	1.8	TEH	129.58	299	ePKP	35	47.00	11.4X	KRA	145.99	331	ePKP	36	03.70	-1.2		
GKN	100.51	296	Pd	30	14.80	0.8	IR4	129.97	298	ePKP	35	36.00	-0.4		1.0s	602.00nm						
YKA	100.72	26	ePd	30	09.90	-4.0X	IR2	129.97	299	ePKP	35	35.00	-1.3			e	36	07.60				
	1.3s	11.30nm			5.3mb		DHR	129.99	286	ePKP	35	39.60	3.1X			i	36	10.00				
KOD	100.85	277	ePd	30	21.10	5.1X	IR1	130.14	298	ePKP	35	37.00	0.3			i	36	29.00				
			eSKS	40	56.00		IR7	130.21	299	ePKP	35	37.00	0.2			i	48	23.00				
ANT	101.64	122	ePd	30	22.00	3.1X	TRO	130.38	349	ePKP	35	34.50	-1.3	BUC	146.22	319	iPKPd	36	09.50	4.1X		
NNA	101.71	108	iPd	30	22.00	2.5X	RYD	132.94	284	ePKP	35	43.60	1.4	KOT	146.26	291	ePKP	36	08.50	2.5X		
TUL	101.89	56	ePd	30	25.00	5.2X	KER	133.10	297	ePKP	35	45.00	2.7X	BUC1	146.29	318	iPKPd	36	08.00	2.4X		
	0.9s	15.10nm			5.6mb		ARO	133.33	265	ePKP+	35	44.20	1.0	DMK	146.37	313	iPKP	36	06.20	0.4		
GBA	102.05	280	Pd	30	29.00	8.1X	SUF	134.31	341	ePKP	35	39.80	-3.7X	CEI	146.39	326	ePKP	36	14.00	8.4X		
	1.0s	10.20nm			5.4mb		SLY	134.37	299	ePKPd	35	44.00	-0.5	CMP	146.40	321	iPKPc	36	14.00	8.2X		
HYB	102.31	284	ePd	30	19.00	-3.1X	iPP	38	42.00				KHL	146.44	307	ePKP	36	06.00	-0.2			
RLO	102.56	56	ePd	30	27.80	5.0X	iPP	41	15.50				SPC	146.47	330	ePKP	36	05.80	-0.2			
WMO	103.22	312	ePd	30	27.00	1.4	iSKS	42	32.00						i	36	08.60					
	Z	32s	65.00um		7.0msz		OBN	134.90	328	iPKP	35	51.00	6.1X			e	47	13.50				
	N	20s	42.60um				Z	24s	75.50um			7.3msz	BRL	146.64	340	ePKP	36	06.50	0.7			
	E	22s	48.80um				PUL	134.96	336	ePKPc	35	51.00	6.2X	DST	146.65	309	iPKP	36	06.00	-0.4		
			PP	34	46.00		BHD	135.38	295	ePKPd	35	49.00	2.5X	HLW	146.68	291	ePKPd	36	08.00	1.3		
			SKS	41	06.00				iPP	38	33.00		BRN	146.72	340	ePKP	36	06.00	0.0			
FFC	103.77	36	ePd	30	29.10	1.4			iPKS	39	18.00		EKA	146.81	358	PKP	36	07.00	0.9			
	1.2s	19.00nm			5.8mb				iPPP	41	43.00			1.0s	36.80nm							
ARE	104.31	115	ePd	30	32.00	0.7			iSKS	42	57.00		ESK	146.83	358	ePKPd	36	06.25	0.2			
OLY	105.12	58	ePd	30	40.50	6.3X	AKU	135.60	8	iPKP	36	00.10	14.2X	JMB	146.86	315	iPKPd	36	07.00	0.4		
FVM	106.61	55	ePKP	35	04.00	12.5X		1.2s	162.50nm				EDC	146.91	311	iPKP	36	08.50	1.8			
PSO	106.66	96	ePd	30	51.00	9.0X	Z	23s	125.76um			7.6msz	KSP	146.92	335	ePKP	36	02.00	-4.4X			
POO	106.91	283	ePd	30	47.50	5.0X	QASM	135.87	285	ePKP	35	50.70	3.0X		1.0s	63.00nm						
			iS	41	28.40		AAE	136.19	260	ePKP	35	53.00	4.0X			i	36	07.50				
SLM	106.92	55	Pd	30	48.00	5.9X	MSL	136.22	300	ePKPc	35	54.00	6.0X	KSL	147.04	303	ePKP	36	07.50	0.5		
	Z	20s	125.00um		7.5msz				ePP	38	34.50		DRA	147.19	320	ePKP	36	07.00	0.0			
NDI	106.94	295	ePd	30	46.00	3.6X			eSKP	39	21.00		DEV	147.27	323	ePKPd	36	08.50	1.4			
			ePP	35	05.00				ePKS	39	28.00		PVL	147.30	317	iPKPd	36	08.00	0.8			
			ePPP	37	20.00				ePPP	41	39.50		PSZ	147.52	328	iPKP	36	08.50	0.9			
			ePS	44	16.00				e	42	15.00		CLL	147.73	339	iPKP	36	08.00	0.4			
UPA	107.45	87	ePd	30	44.80	-0.2			eSKS	42	51.00			1.3s	1050.00nm							
	Z	30s	6080.00nm		8.2mb	X			e	44	03.50			Z	18s	66.00um			7.5msz			
			36.88um		6.9msz		NUR	136.45	339	iPKP	35	45.80	-1.8			i	36	15.60				
RSON	107.53	42	ePd	30	52.50	8.0X		0.9s	22.00nm						i	36	36.00					
BOM	107.95	284	ePd	30	43.00	-4.1X			i	35	54.20		DIM	147.75	315	iPKP	36	12.00	4.0X			
			ePP	32	26.00				eSKP	38	49.00		YER	147.75	305	iPKP	36	12.00	3.8X			
TLG	110.33	309	ePd	30	17.80	20.6X	REY	136.49	11	iPKP	36	01.70	14.1X	ALN	147.93	313	ePKPd	36	08.90	0.6		
PRM	112.03	61	ePKP	35	15.00	13.2X	CAI	137.43	128	ePKP	35	40.30	-10.7X	KDZ	148.01	315	iPKPd	36	10.00	1.5		
FRU	112.24	309	ePd	30	16.00	10.3X	UPP	139.09	343	iPKP	35	54.50	2.0	IZM	148.08	308	iPKP	36	12.00	3.3X		
BLA	114.19	58	ePKP	35	00.00	-6.0X	LWI	139.19	238	iPKPc	35	49.70	-4.8X	WIT	148.11	347	ePKP	36	11.00	2.8X		
DSH	115.95	303	ePd	30	28.00	5.6X	NB2	139.53	348	PKP	35	47.30	-6.1X			e	36	18.50				
CBN	116.73	57	ePKP	35	20.00	9.3X		1.4s	137.50nm						ePKPP	47	17.00					
			e	36	44.00		HFS	139.83	346	ePKP	35	45.20	-8.7X	BZS	148.14	324	ePKP	36	07.00	-1.5		
RSNY	119.46	50	ePKP	35	24.00	8.3X		0.9s	14.40nm				ARG	148.15	304	ePKP	36	12.00	3.2X			
PNJ	119.50	55	e(PKP)	35	13.50	-2.4X	Z	20s	60.37um			7.3msz	RDO	148.17	314	ePKP	36	12.00	3.3X			
CAR	119.65	90	iPd	30	40.00	0.6			LR	24	44.00		EZN	148.20	311	ePKP	36	10.00	1.2			
HVD	120.02	210	ePd	30	52.00	11.2X	KVT	140.81	308	ePKP	35	57.20	0.8	BUD	148.24	329	ePKP	36	10.00	1.4		
			e	35	34.00		BER	141.11	352	ePKP	35	58.00	1.8	PRU	148.28	336	ePKP	36	09.70	1.1		
FRB	121.20	28	ePKP	35	15.00	-3.4X	KAS	142.36	310	ePKP	35	56.50	-2.7X		Z	19s	90.20um			7.6msz		
FRB	121.20	28	ePd	30	58.00	13.0X	DSI	143.08	293	e(PKP)												



			i	36	16.80		BHG	150.76	335	ePKP	36	13.70	1.2		1.2s	41.65nm				
SMG	148.64	307	ePKP	36	12.00	2.5X	SNF	150.77	348	PKPc	36	15.60	3.2X	BRT	153.62	320	PKP	36	25.00	8.2X
MOX	148.75	340	ePKPc	36	11.00	1.6				e	47	25.40		VAI	153.84	338	PKP	36	16.60	-0.3
	1.5s						IVA	150.80	321	ePKP	36	18.00	5.2X	LOR	153.95	346	ePKP	36	16.40	-0.7
			i	36	20.00		PLE	150.81	322	ePKP	36	18.00	5.2X		1.2s	26.80nm				
DCN	148.77	3	iPKPc	36	12.50	3.2X	ATH	150.82	309	ePKP	36	16.50	3.7X	MMK	153.95	339	ePKP	36	20.80	3.4X
	1.3s		e	37	08.00		PTJ	150.85	329	ePKP	36	14.30	1.5	LPF	153.97	354	ePKP	36	16.50	-0.5
WTS	148.85	346	ePKP	36	11.00	1.6	ZAG	150.90	329	iPKPd	36	15.00	2.3X		1.3s	57.75nm				
	1.4s						RUP	150.91	344	ePKP	36	14.01	1.3	RSM	153.97	331	PKP	36	26.10	9.0X
			e	36	16.50		FUR	150.99	337	ePKP	36	14.30	1.5	ARV	154.07	329	PKP	36	23.90	6.5X
			e	36	23.50			Z 18s	75.00um			7.5MsZ	DIX	154.10	340	ePKP	36	19.80	2.1X	
			e	36	27.00		KTD	150.99	342	ePKP	36	16.93	4.1X	LBF	154.19	346	ePKP	36	17.20	-0.3
			ePKKP	45	00.00		BLY	151.07	326	ePKP	36	23.50	10.5X		1.2s	26.80nm				
			ePKPP	47	18.00		KZN	151.08	315	ePKP	36	17.50	4.2X	SSF	154.22	347	ePKP	36	17.00	-0.4
DLE	148.86	2	ePKP	36	11.90	2.5X	FNA	151.08	316	ePKP	36	17.60	4.3X		1.2s	32.75nm				
	1.1s						KBA	151.09	334	ePKPd	36	14.00	0.8	SFI	154.24	331	PKP	36	21.00	3.5X
VKA	148.91	332	ePKPc	36	10.00	0.3		1.1s	463.00nm				EMS	154.26	341	ePKP	36	19.60	1.8	
	4.0s		*****nm							i	36	19.90		ORX	154.31	339	PKP	36	19.75	2.0
	Z 26s					7.4MsZ				i	36	24.10		ORO	154.32	339	PKP	36	22.20	4.4X
			i	36	16.80					i	36	44.30		PGD	154.34	332	PKP	36	21.30	3.4X
			i	36	35.00					ePP	40	07.00		AVF	154.51	347	ePKP	36	17.20	-0.6
			ePP	39	57.00					i	41	05.70			1.0s	20.00nm				
			(PPP)	44	50.00		DOU	151.11	347	eSKS	43	11.00		MME	154.52	333	PKP	36	28.80	10.6X
HOF	148.95	339	iPKPd	36	11.80	2.1				PKP	36	17.30	4.4X	ASS	154.53	329	PKP	36	28.30	10.3X
	Z 17s					7.1MsZ				e	36	22.00		BOB	154.54	336	PKP	36	15.30	-2.7X
KAP	149.08	303	ePKP	36	13.50	3.2X				PKKP	44	53.60		SMF	154.54	346	ePKP	36	17.00	-0.9
DBN	149.09	348	ePKP	36	10.00	0.2				i	45	07.00			1.2s	44.65nm				
			eSKSP	50	12.00					e	47	24.30		ORI	154.57	320	PKP	36	28.30	10.2X
			eSS	58	30.00		KRW	151.18	342	PSKS	50	21.00		FIR	154.62	332	ePKP	36	19.00	1.0
MMB	149.15	316	ePKP	36	12.00	1.7				ePKP	36	10.76	-2.2X	DUI	154.65	325	PKP	36	28.70	10.4X
SOP	149.25	331	ePKP	36	10.30	0.1	OHR	151.27	317	ePKPc	36	14.70	1.2	BDI	154.67	333	PKP	36	26.20	8.0X
BEO	149.28	323	iPKP	36	15.60	5.3X		1.3s	0.28nm				AQU	154.70	327	PKP	36	23.00	4.7X	
			i	36	20.40					i	36	20.60			1.1s	234.40nm				
KHC	149.34	336	iPKPc	36	12.00	1.6				i	36	25.30		LPL	154.82	341	ePKP	36	18.40	-0.2
	1.1s									i	36	54.50			1.2s	38.70nm				
	Z 20s					7.4MsZ				e	54	49.50		LPG	154.83	341	ePKP	36	18.60	-0.1
	N 20s						AGG	151.33	312	ePKP	36	19.20	5.6X		1.4s	65.35nm				
	E 20s						BCAO	151.33	236	ePKP	36	15.50	1.1	BGF	154.84	347	ePKP	36	17.70	-0.5
KKB	149.42	317	iPKPc	36	14.00	3.3X		1.6s	398.00nm				TDS	154.89	319	PKP	36	28.70	10.2X	
SRS	149.47	315	ePKPc	36	21.30	10.5X				id	36	21.20		SGO	154.93	322	PKP	36	27.60	9.1X
WET	149.59	337	ePKP	36	12.40	1.7				id	37	39.50		AZI	154.95	326	PKP	36	28.60	10.1X
	Z 18s					7.5MsZ				ic	39	15.60		MMN	154.95	320	PKP	36	33.00	14.4X
OUR	149.59	313	ePKPc	36	15.40	4.5X				id	40	52.30		SDI	154.96	326	PKP	36	25.80	7.2X
GRF	149.70	339	ePKP	36	13.00	2.2X	LJU	151.40	331	ePKP	36	14.00	0.5	PII	154.98	333	PKP	36	23.30	4.8X
	Z 22s					7.5MsZ	GWf	151.43	343	PKP	36	14.50	1.0	RSP	154.98	339	PKP	36	18.93	0.3
ECB	149.77	2	iPKPc	36	13.80	3.0X	VAM	151.43	304	ePKP	36	17.50	3.6X	MGR	155.06	321	PKP	36	28.00	9.3X
	1.4s						VBY	151.47	330	i(PKP)	36	16.50	2.9X	BSS	155.06	323	PKP	36	29.40	10.7X
SOH	149.77	315	ePKP	36	18.90	7.6X	RBL	151.51	333	PKP	36	16.60	2.9X	PCP	155.07	337	PKP	36	19.54	0.8
APE	149.84	306	ePKP	36	16.00	4.5X	CEY	151.68	331	ePKP	36	15.50	1.5	MAF	155.22	348	ePKP	36	18.60	-0.2
PLG	149.93	314	ePKP	36	16.00	4.5X	VOY	151.69	332	ePKPd	36	15.20	1.1		1.2s	31.25nm				
VAL	149.94	7	ePKP	36	19.00	8.0X	FVI	151.71	334	PKP	36	16.00	2.1X	TCF	155.22	348	ePKP	36	18.70	-0.1
ECP	149.97	2	ePKP	36	14.10	3.0X	ULC	151.73	320	ePKP	36	21.20	7.1X		1.4s	61.00nm				
	1.0s						BDV	151.79	321	ePKP	36	20.00	5.8X	PLDF	155.23	346	PKP	36	20.45	1.6
KMR	149.99	334	iPKP+	36	07.90	-3.4X	HCY	151.88	322	ePKP	36	21.00	6.7X	BNI	155.25	340	PKP	36	20.10	1.1
			i	36	19.10		VLI	151.90	307	ePKP	36	16.00	1.5	AGO	155.26	347	PKP	36	21.41	2.5X
			i	36	37.50		RIY	152.00	330	ePKP	36	21.00	6.7X	CKI	155.26	337	PKP	36	23.20	4.3X
VAY	150.03	316	iPKPd	36	19.80	8.2X	TRI	152.00	332	iPKPc	36	14.90	0.6	CZI	155.28	318	PKP	36	28.80	9.8X
	1.4s									e	43	48.30		MFF	155.28	352	ePKP	36	18.30	-0.5
			i	36	25.30		WLS	152.02	343	PKP	36	16.00	1.6		1.2s	59.50nm				
			i	36	41.00		SLE	152.26	340	ePKP	36	15.90	1.2	RRL	155.34	340	PKP	36	21.90	2.6X
			i	36	50.20		FEL	152.31	341	PKP	36	15.50	0.6	GRI	155.34	317	PKP	36	24.87	5.7X
TNS	150.07	343	ePKPd	36	13.20	1.8	IGT	152.42	315	ePKPd	36	22.90	7.7X		1.8s	915.60nm				
			ic	36	17.80		SAX	152.44	339	ePKP	36	18.50	3.2X	LSF	155.38	349	ePKP	36	18.50	-0.5
			id	54	46.70		ITM	152.44	309	ePKP	36	16.50	1.2		1.2s	29.75nm				
THE	150.13	315	ePKPc	36	16.50	4.8X	HVAR	152.54	325	iPKP	36	22.80	7.6X	RMP	155.46	327	PKP	36	26.00	6.8X
MEM	150.32	346	PKP	36	12.40	0.7	ZLA	152.55	340	ePKP	36	17.60	2.4X	FIN	155.48	337	PKP	36	19.03	-0.2
			e	47	22.60		VITF	152.56	344	PKP	36	18.00	3.0X	ROB	155.52	338	PKP	36	19.64	0.3
NPS	150.38	303	ePKP	36	14.80	2.5X	CTI	152.61	335	PKP	36	16.50	1.1	DOI	155.56	339	PKP	36	30.50	11.1X
SKO	150.40	318	ePKPd	36	14.00	1.9	OSS	152.65	337	ePKP	36	14.00	-1.5	PYM	155.57	347	PKP	36	21.90	2.5X
	1.7s						HAU	152.66	344	ePKP	36	14.60	-0.7	PZZ	155.60	339	PKP	36	20.26	0.7
			i	36	20.50			1.2s	62.50nm				ENR	155.74	338	PKP	36	19.54	-0.2	
			i	36	23.50		KEK	152.68	316	ePKP	36	20.90	5.4X	STV	155.76	338	PKP	36	21.59	1.9
			i	36	31.60		BSF	152.70	343	ePKP	36	14.50	-0.9	IMI	155.85	337	PKP	36	18.82	-1.0
			i	36	45.50			1.0s	48.00nm				TOUF	155.99	338	PKP	36	21.00	0.8	
			i	36	51.00		VLS	152.93	312	ePKP	36	23.50	7.6X	SOI	156.01	316	PKP	36	24.00	3.9X
			i	37	16.00		VDL	153.06	338	ePKP	36	17.60	1.5	LBL	156.01	346	PKP	36	20.59	0.7
			i	38	26.00		LOMF	153.13	342	PKP	36	16.50	0.5	GMB	156.08	317	PKP	36	29.97	9.5X
			i	39	36.00		FLN	153.19	354	ePKP	36	15.20	-0.7		1.1s	146.10nm				
			i	41	45.00			1.2s	116.05nm				LDF	153.32	353	ePKP	36	15.80	-0.3	
			i	44	12.00			1.2s	71.40nm											
			i	45	05.00		SAL	153.42	335	PKP	36	22.50	6.2X	PGF						



							ePKKP	37	04.00		1.2s	60.00nm	5.4mb	1.2s	139.00nm					
							iPKS	39	50.00		TPT	35.33	86 iP	41 52.80	-0.9	GRF	149.36	340 iPKPd	54 46.40	4.7X
							iPP	40	58.00			1.2s	115.00nm	5.7mb	ECP	149.39	3 iPKPd	54 45.30	3.7X	
							eSKS	42	50.00		RUV	35.49	86 iP	41 53.80	-1.3					
							ePPP	44	50.00			1.2s	125.00nm	5.7mb	MEM	149.91	347 PKP	54 42.40	0.0	
							iPPS	54	39.00		ASPA	38.60	259 iPc	42 22.20	1.0	TOD	150.16	343 ePKP	54 46.59	3.7X
							iSS	01	20.00			1.5s	166.00nm	5.6mb	ABH	150.23	345 ePKP	54 47.01	4.0X	
WIGH	162.85	194	ePKP	36	34.00	5.7X	WRA	38.68	265 Pc	42 22.00	0.1	SNF	150.33	349 PKP	54 48.60	5.6X				
							e	41	05.00			1.0s	151.00nm	5.7mb	BHG	150.47	336 iPKPd	54 48.40	5.0X	
TEGH	162.96	197	ePKP	36	37.00	8.6X	WARB	44.94	254 eP	43 13.00	-0.1	RUP	150.52	345 ePKP	54 47.82	4.4X				
							e	41	07.00		AAI	49.44	284 e(P)	43 48.00	-0.5	PTJ	150.64	331 e (PKP)	54 43.20	-0.6
LEGH	163.01	196	ePKP	36	32.00	3.5X	KLB	52.30	246 eP	44 09.40	-0.7	DOU	150.68	348 PKP	54 47.90	4.3X				
							e	41	07.00		RKG	52.80	243 eP	44 13.00	-0.7	ZAG	150.69	330 iPKP	54 49.20	5.5X
SHGH	163.25	197	ePKP	36	36.00	7.3X	MUN	53.59	246 eP	44 19.90	0.3	KBA	150.82	335 iPKPd	54 48.70	4.5X				
							e	41	07.00		NANU	55.48	257 eP	44 33.00	-0.5					
KUK	163.58	196	ePKP	36	32.00	2.9X	KAKJ	66.58	329 P	45 47.30	-1.0									
							e	41	00.00		IIDJ	67.11	327 P	45 51.30	-0.5	RBL	151.25	334 PKP	54 49.00	4.3X
LIC	164.19	179	PKP	36	31.36	1.7	NIJJ	67.97	329 P	45 57.00	-0.1	FVI	151.44	335 PKP	54 49.50	4.7X				
KIC	164.33	180	PKP	36	31.38	1.6	MTMJ	68.03	328 P	45 57.10	-0.6	CDF	151.66	344 ePKP	54 50.80	5.5X				
TIC	164.61	179	PKP	36	31.82	1.7	TSRJ	68.15	326 P	45 58.10	-0.2									
AAPN	164.85	358	ePKP	36	29.50	-0.3	SHK	69.19	323 eP	46 03.90	-0.9	HAU	152.27	345 ePKP	54 51.90	5.8X				
AFC	164.88	356	e (PKP)	36	40.00	10.1X	SSE	74.02	313 eP	46 25.00	-8.7X									
ALJO	165.05	358	iPKPd	36	33.50	3.5X	NJ2	76.18	313 eP	46 45.50	-0.6	BSF	152.32	344 ePKP	54 51.90	5.6X				
APHE	165.19	356	iPKPd	36	32.50	2.4X	MDJ	78.18	328 eP	46 57.50	0.6									
ATEJ	165.24	357	iPKPc	36	33.00	2.8X	WHN	78.48	309 Pd	46 59.00	0.2	CTI	152.33	336 PKP	54 52.60	6.3X				
MAL	165.44	359	iPKPc	36	34.00	3.9X	SNY	79.40	323 eP	47 01.20	-2.4	FLN	152.69	355 ePKP	54 52.60	6.0X				
MBO	166.16	122	iPKPc	36	35.00	4.4X	CN2	79.71	326 iPd	47 05.70	0.5									
TBT	166.50	58	ePKP	36	39.50	8.3X	AIA	82.21	158 eP	47 20.70	2.6	LDF	152.82	354 ePKP	54 52.90	6.1X				
							i (PP)	41	39.00		BJJ	82.66	318 eP	47 22.50	1.8					
CHIE	166.85	62	ePKP	36	38.00	6.5X	BKS	1.5s	100.00nm	5.7mb	GRR	153.09	355 ePKP	54 53.60	6.5X					
							i (PP)	41	32.40			82.97	45 eP	47 23.10	0.6					
LKO	167.47	177	PKP	36	34.28	1.9	PRI	1.8s	339.00nm	6.1mb	SAL	153.13	337 PKP	54 52.50	5.2X					
CTFE	167.89	56	ePKP	36	36.50	4.3X	TIY	83.06	47 eP	47 24.20	1.1	MDI	153.28	338 PKP	54 53.00	5.6X				
							i (PP)	41	34.30		PAS	83.74	315 eP	47 26.40	-0.1	LPF	153.46	355 ePKP	54 54.60	6.9X
AVE	168.64	11	ePKP	36	33.00	0.5	MWC	83.74	50 eP	47 27.00	0.5									
							i	36	36.00		BAR	83.86	50 eP	47 28.00	0.7	VAI	153.52	339 PKP	54 47.50	-0.3
							i	36	45.50		FRI	84.08	52 eP	47 16.00	-12.2X	LOR	153.52	348 ePKP	54 54.80	6.9X
							i	38	00.50		RVR	84.17	47 eP	47 29.20	0.7					
IFR	168.65	1	iPKPd	36	34.50	1.7	SBB	84.23	50 eP	47 25.00	-3.9X	LBF	153.77	347 ePKP	54 55.40	7.2X				
							i	36	37.00		PLM	84.27	49 eP	47 29.00	-0.2					
							i	36	46.00		CMB	84.28	45 eP	47 30.00	0.6	SSF	153.79	348 ePKP	54 55.30	7.1X
CFTV	169.55	51	iPKP	36	34.90	1.6	WDC	84.28	45 eP	47 29.70	0.5									
							i (PP)	41	47.10		ISA	84.30	42 eP	47 30.00	0.9	ORO	153.99	340 PKP	54 56.00	7.3X
TIO	170.97	13	iPKP	36	35.50	1.4	ORV	84.32	48 eP	47 31.00	1.6	BOB	154.24	337 PKP	54 57.00	8.0X				
							i	37	40.00		KMI	84.38	44 eP	47 30.20	0.6	FIR	154.37	333 ePKP	55 01.00	12.0X
S.D. = 1.3 on 322 of 556 obs.							CLC	84.70	299 Pd	47 30.50	-1.3	MFF	154.79	353 ePKP	54 57.50	8.0X				
							TPC	85.01	49 eP	47 33.00	0.1									
MAR 03, 1990 12h 34m 59.26± 0.20s							GLA	85.24	51 eP	47 35.00	0.9									
21.557 S ± 4.7km 175.753 E ± 4.4km							GSC	85.30	49 eP	47 24.00	-10.4X									
DEPTH = 33.0km (normal)							CD2	85.61	52 eP	47 36.00	0.1									
5.6mb ( 14 obs.) 6.2Msz ( 1 obs.)							BTO	86.53	305 P	47 41.20	0.7									
SOUTH OF FIJI ISLANDS (171)							LZH	86.87	316 eP	47 40.00	-2.0									
							ALO	88.86	310 P	47 51.00	-0.7									
NDF	4.10	23	eP	35	54.00	-7.3X	ALJ	2.5s	170.00nm	5.9mb										
							eS	36	36.00			92.67	53 eP	48 08.50	-1.0					
PVC	7.97	297	iP	37	02.00	6.2X	GTA	1.0s	18.25nm	5.5mb										
DZM	8.66	265	iP	37	07.80	2.4	Z	93.20	311 eP	48 12.00	0.3	NDF	5.56	34 eP	45 42.00	-3.0X				
WHH	17.28	178	eP	39	03.10	3.4X	SUF	22s	10.50um	6.2Msz										
MNG	19.00	181	P	39	19.80	-1.1		133.96	341 iPKP	54 13.60	-0.6	SVA	5.87	44 iPc	45 44.10	-5.3X				
CAW	19.50	182	eP	39	25.70	-0.9	NUR	0.7s	10.10nm				eS	46	16.50					
MRW	19.64	182	eP	39	27.90	-0.1		136.11	340 iPKP	54 17.20	-1.1	DZM	7.16	271 iP	46 09.50	1.9				
							e	41	08.00				iS	47	26.50					
TCW	19.64	183	eP	39	27.40	-0.7	NB2	0.8s	14.70nm			PVC	7.20	309 iPc	46 16.00	8.0X				
							e	41	07.40				HBZ	15.56	168 eP	48 07.10	6.2X			
WDW	19.66	182	eP	39	28.00	-0.4	HFS	1.3s	16.50nm			WHH	16.55	174 eP	48 16.20	2.6				
							e	41	07.50				MNG	18.19	177 eP	48 34.10	0.0			
BLW	19.75	181	P	39	28.00	-1.3	CSS	1.0s	18.60nm			KIW	18.41	178 eP	48 36.80	0.0				
MOW	19.81	181	eP	39	29.60	-0.3	KRA	144.52	300 ePKP	54 30.00	-4.3X	CAW	18.66	178 eP	48 39.00	-0.9				
							e	41	10.60				MTW	18.73	177 P	48 39.00	-1.7			
KHZ	20.88	185	eP	39	40.40	-0.6	SPC	145.75	332 ePKP	54 34.40	-1.5	TCW	18.75	180 P	48 41.10	0.2				
BRS	21.69	250	iPd	39	50.50	1.1	EKA	1.8s	240.00nm			MRW	18.78	179 P	48 41.40	0.2				
MSZ	23.94	194	P	40	14.00	2.8	CLL	146.25	331 e (PKP)	54 36.70	-0.3	WDW	18.82	178 eP	48 41.10	-0.7				
CNB	26.85	234	eP	40	40.00	1.1		1.7s	244.60nm			BLW	18.94	177 P	48 41.90	-1.3				
CAN	27.13	234	eP	40	41.00	-0.3	WIT	147.39	340 iPKPd	54 40.50	2.0	MOW	18.98	177 P	48 42.40	-1.4				
TOO	30.61	232	eP	41	13.00	0.4	PRU	1.4s	100.00nm			CCW	19.29	180 eP	48 48.50	1.1				
AFR	32.69	89	eP	41	32.00	1.1	SRO	147.69	348 ePKP	54 42.00	3.2X	BRS	20.02	251 iPd	48 56.00	0.6				
							1.0s	90.00nm	5.6mb	DCN	148.13	331 ePKP	54 41.80	2.1X						
PAE	32.84	89	eP	41	32.00	-0.2		1.0s	202.00nm				e	49	26.00					
							1.0s	55.00nm	5.4mb	DLE	148.18	3 ePKP	54 42.90	3.1X	COO	21.51	243 iPc	49 13.40	2.7	
PPN	33.01	89	eP	41	35.00	1.3	ZST	148.27	3 ePKP	54 42.90	3.1X	MSZ	22.80	192 eP	49 27.00	3.8X				
							1.0s	35.00nm	5.2mb	MOX	148.38	332 i (PKP)	54 43.40	3.1X	CNB	25.16	234 eP	49 47.50	1.1	
TVO	33.12	90	eP	41	35.00	0.2		1.0s	176.00nm				i	49	57.30					
							1.0s	70.00nm	5.5mb	WTS	148.41	341 ePKP	54 44.00	3.9X	CAN	25.44	234 eP	49 50.50	1.6	
PMO	35.07	86	iP	41	50.40	-1.0	KHC	2.0s	176.00nm				CMS	26.77	244 eP	50 02.00	0.8			
							1.2s	90.00nm	5.6mb	BE0	148.43	347 ePKP	54 43.00	2.9X	QLP	27.52	255 eP	50 09.00	0.9	
VAH	35.25	86	iP	41	52.70	-0.3	ECB	149.04	337 PKP	54 45.30	4.1X	TOO	28.93	232 iPd	50 21.70	1.0				
													BFD	30.97	234 eP	50 38.60	-0.2			



AFR	34.18	88 iP	51 06.30	-0.7	CLC	86.67	49 iP+	57 05.00	0.8		1.5s	122.80nm		
	1.4s	320.00nm		6.1mb	TPC	86.92	51 iP+	57 06.00	0.5			e	04 17.10	
PAE	34.33	89 iP	51 07.50	-0.8	GSC	86.97	50 iP+	57 06.00	0.3	WIT	148.16	346 ePKP	04 06.00	3.3X
	1.4s	310.00nm		6.0mb	GLA	87.29	53 iP+	57 08.50	1.2	ZST	148.41	330 ePKP	04 02.50	-0.8
PPT	34.36	89 iP	51 08.00	-0.6	KVN	87.98	46 P	57 10.00	-0.7	KAP	148.45	302 ePKP	04 06.20	2.4X
	1.4s	385.00nm		6.1mb	TTA	88.26	13 eP	57 11.20	-0.1	VTS	148.54	317 iPKP	04 02.00	-2.0X
PPN	34.50	89 iP	51 09.20	-0.6	LZH	88.27	310 eP	57 12.00	-0.1	MOX	148.68	330 ePKP	04 07.00	3.3X
	1.4s	175.00nm		5.8mb		3.5s	370.00nm		6.1mb X		1.6s	164.00nm		
TVO	34.61	89 iP	51 10.20	-0.6	PMR	88.74	17 eP	57 12.50	-1.0			e	06 13.00	
	1.4s	385.00nm		6.1mb		1.3s	122.60nm		6.1mb	VKA	148.72	331 iPKPd	04 07.10	3.2X
PMO	36.60	85 iP	51 27.20	-0.4	PGC	89.95	36 eP	57 20.00	0.6	WTS	148.89	345 ePKP	04 06.50	2.6X
	1.4s	455.00nm		6.2mb		1.3s	338.00nm		6.5mb		1.2s	201.00nm		
VAH	36.78	86 iP	51 28.40	-0.7	TOA	89.96	17 eP	57 19.30	-0.1	8EO	148.95	322 ePKP	04 06.70	2.4X
	1.4s	405.00nm		6.1mb	IMA	91.51	13 eP	57 26.40	-0.1	KKB	148.98	315 iPKPd	04 07.00	2.5X
TPT	36.87	85 iP	51 29.30	-0.5		2.0s	216.00nm		6.2mb	SRS	149.01	314 ePKPd	04 06.50	1.9
	1.4s	640.00nm		6.3mb	FBA	91.83	15 ePc	57 26.50	-1.3	DCN	149.09	2 ePKP	04 07.40	3.2X
ASPA	36.99	260 iPd	51 30.10	-0.8	PNT	92.43	37 eP	57 31.00	0.1		1.2s	306.00nm		
	1.0s	27.00nm		5.1mb X	GTA	92.65	312 eP	57 32.00	-0.3	OUR	149.10	312 ePKP	04 06.20	1.5
RUV	37.02	86 iP	51 30.80	-0.3		Z 18s	21.80um		6.6Msz	DLE	149.16	1 ePKP	04 07.20	2.9X
	1.4s	690.00nm		6.3mb	E 16s	17.80um					1.2s	119.00nm		
WRA	37.14	266 P	51 32.00	-0.2	NEW	93.29	39 P	57 35.00	0.0	KHC	149.21	335 PKP	04 04.00	-0.6
	1.1s	26.60nm		5.0mb X	ALQ	94.35	54 ePc	57 40.00	-0.4			i	04 07.60	
WARB	43.29	255 eP	52 23.00	0.0		1.2s	97.66nm		6.1mb	KNT	149.45	314 ePKPd	04 07.20	2.0
GUA	45.80	318 eP	52 42.50	-0.6	ANMO	94.36	54 P	57 40.00	-0.4	VAY	149.59	315 iPKPd	04 08.00	2.6X
PJG	45.87	318 eP	52 41.50	-2.1		1.0s	73.75nm		6.1mb		1.3s	0.13nm		
		e	52 45.20		LRM	94.92	42 eP	57 42.90	0.1	GRF	149.62	338 ePKP	04 03.00	-2.2X
NWAO	50.97	245 eP	53 22.30	-0.8	BW06	95.44	46 P	57 45.00	-0.2			ic	04 09.10	
RKG	51.10	244 eP	53 24.30	0.2	GOL	97.06	50 P	57 53.00	0.3			e	04 21.00	
MUN	51.90	246 eP	53 30.00	-0.2	GLD	97.18	50 P	57 54.50	1.4	NPS	149.75	302 ePKP	04 10.00	4.1X
DAV	55.87	296 eP	53 58.10	-1.4		1.0s	100.00nm		6.3mb	SKO	149.98	317 ePKP	04 03.50	-2.5X
PPR	63.03	294 ePd	54 47.00	-1.9	EDM	97.78	35 ePd	57 54.80	-0.5		1.5s	56.00nm		
BAG	65.11	302 eP	55 00.60	-2.1	INK	98.13	17 eP	57 56.00	-0.5			i	04 09.10	
KAKJ	66.56	330 P	55 10.80	-0.6		1.5s	63.00nm		5.9mb			e	04 21.00	
CHJJ	66.98	330 P	55 13.50	-0.6	RSSD	99.66	46 P	58 05.00	0.7	TNS	150.05	341 ePKPd	04 09.80	3.9X
NIIJ	67.95	330 P	55 19.70	-0.4	YKA	101.38	27 ePd	58 10.30	-1.0	ECB	150.08	1 ePKP	04 10.10	4.4X
MTMJ	67.98	329 P	55 20.10	-0.4		1.1s	4.90nm		5.0mb X		1.2s	204.00nm		
TSRJ	68.04	327 P	55 21.50	0.8	HYB	101.49	284 ePd	58 07.50	-5.4X	LIT	150.22	313 iPKPd	04 09.70	3.3X
SHK	68.99	324 eP	55 25.70	-1.0	MAIO	122.37	300 ePKP	03 15.00	-1.1	ECP	150.27	1 ePKP	04 10.80	4.0X
HOQJ	70.49	336 eP	55 36.50	0.9	SCH	124.69	38 ePKP	03 18.00	-1.9X		1.2s	170.00nm		
KUSJ	70.60	338 eP	55 36.10	-0.2	SUF	134.27	340 ePKP	03 37.30	-0.6	ATH	150.27	308 ePKP	04 10.00	3.5X
MRRJ	71.38	335 eP	55 40.70	-0.3		0.7s	10.70nm			MEM	150.36	345 iPKPd	04 10.40	4.2X
ASAJ	72.22	337 eP	55 47.20	1.1	NUR	136.38	339 iPKP	03 42.00	0.0	BCAO	150.41	236 iPKPd	04 01.70	-5.0X
SSE	73.55	314 P	55 53.40	-0.6		0.7s	17.40nm				0.4s	13.00nm		
ADK	74.40	6 eP	55 58.00	-0.5	NB2	139.61	347 PKP	03 43.00	-5.0X			id	05 39.60	
	2.1s	1653.80nm		6.7mb		0.7s	4.40nm			TOD	150.49	340 ePKP	04 10.53	4.0X
NJ2	75.69	314 Pd	56 06.50	0.1	SLL	139.66	345 ePKP	03 39.20	-8.9X	PTJ	150.61	328 e(PKP)	04 04.80	-2.1X
MDJ	78.14	329 Pd	56 20.00	0.3		0.6s	3.00nm			KZN	150.61	314 ePKP	04 10.00	2.9X
DL2	78.34	321 eP	56 20.80	-0.2	HRI	141.90	296 e(PKP)	03 53.00	-0.1	ABH	150.62	342 ePKP	04 11.00	4.4X
SNY	79.20	324 Pc	56 28.80	3.2X	DSI	142.34	293 e(PKP)	03 50.00	-3.8X	FNA	150.64	315 ePKPd	04 10.30	3.2X
TIA	79.38	316 eP	56 26.50	-0.3	MBH	142.85	290 ePKP	03 50.00	-4.7X	ZAG	150.66	328 iPKP	04 00.60	-6.2X
CN2	79.59	326 Pc	56 27.00	-0.7	BIR	143.95	319 ePKP	03 54.00	-2.1X	VAM	150.81	303 ePKP	04 12.00	4.6X
	1.0s	100.00nm		5.8mb	CFR	144.15	318 ePKPd	03 54.00	-2.4X	AGG	150.83	311 ePKPd	04 10.20	2.8X
Z 20s	31.00um			6.6Msz	TLB	144.50	317 ePKPd	03 55.00	-2.0X	OHR	150.84	316 ePKPd	04 11.20	3.8X
N 15s	16.70um				GPA	144.66	309 ePKP	03 54.00	-3.5X		1.4s	0.37nm		
E 15s	31.00um				VRI	144.69	319 ePKPd	03 55.50	-1.9X	SNF	150.85	347 PKP	04 12.00	5.1X
	pP	56 37.00	32kmx		PSN	144.81	315 iPKPd	03 57.00	-0.6	RUP	150.92	343 ePKP	04 11.91	4.7X
	eS	06 32.00			HRT	144.94	310 ePKP	03 54.80	-3.2X	KBA	150.93	332 ePKP	04 11.50	4.0X
AIA	81.97	159 eP	56 39.20	-0.7	ALT	145.20	307 ePKP	03 56.00	-2.6X		0.8s	36.50nm		
BJI	82.31	319 eP	56 42.00	-0.1	YLV	145.24	310 iPKP	03 56.00	-2.5X			e	07 50.00	
	2.0s	140.00nm		5.7mb	BCK	145.29	304 iPKP	03 55.60	-3.1X			e	10 11.50	
TIY	83.29	315 eP	56 47.50	0.1	KOT	145.49	291 ePKP	03 57.50	-1.7			e	16 17.00	
GCC	84.30	46 ePc	56 53.40	1.1	KRA	145.78	330 ePKP	03 57.80	-1.2	STU	151.10	339 ePKPd	04 12.60	5.2X
PCC	84.31	46 ePc	56 53.50	1.2			e	04 01.50			1.5s	222.22nm		
SYF	84.34	49 eP	56 54.00	1.2			e	04 09.00		Z 20s	9.93um		6.6Msz	
SAO	84.53	47 eP	56 54.40	0.9	KHL	145.86	306 ePKP	03 58.00	-1.7	DOU	151.17	346 PKP	04 12.00	4.5X
KDC	84.57	17 eP	56 53.30	0.1	SPC	146.23	329 ePKP	04 00.00	-0.1	LJU	151.19	330 ePKP	04 12.00	4.3X
BRK	84.59	45 ePc	56 54.80	1.0	JMB	146.40	314 ePKP	04 01.00	0.7	VBY	151.24	328 iPKP	04 12.90	5.2X
BCH	84.61	49 P	56 55.50	1.4	KSL	146.41	302 ePKP	03 59.50	-1.0	RBL	151.32	331 PKP	04 11.80	3.9X
BKS	84.61	45 eP	56 53.20	-0.7	BRL	146.58	339 ePKP	04 02.00	1.8	VLI	151.33	306 ePKP	04 10.80	2.7X
	1.4s	492.00nm		6.5mb	KSP	146.78	334 ePKP	04 00.00	-0.7	CEY	151.46	329 ePKP	04 14.00	5.9X
MHC	84.71	46 ePc	56 55.80	1.2		1.2s	1459.00nm			VOY	151.49	330 e(PKP)	04 13.50	5.3X
PRI	84.72	48 ePc	56 56.10	1.5			ic	04 01.50		FVI	151.55	332 PKP	04 12.50	4.4X
LLA	84.79	47 eP	56 56.00	1.2	PVL	146.87	316 iPKPd	04 01.00	0.0	TRI	151.79	330 PKP	04 13.50	5.0X
FHC	85.14	42 eP	56 58.00	1.5	EKA	147.06	357 PKPd	04 02.10	1.2	ITM	151.89	308 ePKP	04 13.90	4.9X
PAS	85.42	50 eP	56 58.00	0.0		1.3s	113.80nm			IGT	151.95	313 iPKPd	04 14.20	5.2X
MWC	85.54	50 eP	57 00.00	1.2	DIM	147.29	314 iPKP	04 04.00	2.3X	CDF	152.02	341 ePKP	04 07.80	-1.1
BAR	85.76	52 eP	57 01.00	1.2	IZM	147.52	307 ePKP	04 02.70	0.4	CTI	152.46	333 PKP	04 15.40	5.7X
FRI	85.82	47 iPc	57 00.70	0.8	ARG	147.52	303 ePKP	04 02.90	0.6	HAU	152.65	342 ePKP	04 08.70	-1.0
RVR	85.91	51 eP	57 01.00	0.6	KDZ	147.54	314 iPKPd	04 01.00	-1.2		1.4s	26.15nm		
WDC	85.92	43 iPc	57 01.40	1.0	CLL	147.65	338 iPKPd	04 03.30	1.3	BSF	152.68	341 ePKP	04 08.70	-1.2
CMB	85.92	46 ePc	57 01.10	0.6		1.5s	190.00nm				1.2s	17.85nm		
SBB	85.94	50 iP+	57 01.00	0.3	RDO	147.68	313 ePKP	04 03.20	0.8	FLN	153.35	352 ePKP	04 09.70	-0.9
PLM	85.96	52 iP+	57 01.50	0.5	PGB	147.94	316 ePKP	04 05.00	2.1		1.2s	29.75nm		
ISA	85.98	49 iP+	57 01.00	0.1	RZN	147.99	314 ePKP	04 01.00	-2.2X	MDI	153.46	335 PKP	04 15.50	4.6X
PEC	86.01	51 P	57 00.10	-0.9	SMG	148.06	306 ePKP	04 04.80	1.7	LDF	153.47	351 ePKP	04 10.10	-0.7
ORV	86.01	44 eP	57 01.70	0.8	SRO	148.11	329 ePKP	04 04.50	1.6		1.2s	17.85nm		
MIN	86.38	44 eP	57 03.30	0.5	PRU	148.15	335 iPKPd	04 05.00	2.1	VAI	153.74	337 PKP	04 09.80	-1.5



03d 13h

LOR 153.99 345 ePKP 04 10.80 -0.8  
 1.3s 18.05nm  
 SFI 154.04 330 PKP 04 20.00 8.3X  
 LPF 154.14 353 ePKP 04 11.20 -0.5  
 1.2s 17.85nm  
 LBF 154.23 344 ePKP 04 11.20 -0.8  
 1.3s 18.05nm  
 ORO 154.24 337 PKP 04 18.50 6.4X  
 SSF 154.27 345 ePKP 04 11.10 -0.9  
 1.0s 14.00nm  
 BOB 154.40 334 PKP 04 17.00 4.7X  
 FIR 154.42 330 ePKP 04 08.00 -4.2X  
 BNI 155.19 339 PKP 04 12.50 -0.9  
 LIC 163.90 183 PKP 04 22.96 -0.9  
 KIC 164.01 184 PKP 04 22.86 -1.1  
 TIC 164.31 183 PKP 04 23.16 -1.1  
 LKO 167.21 181 PKP 04 25.08 -1.6  
 IFR 168.91 357 iPKP 04 24.00 -3.4X  
 AVE 169.06 7 ePKP 04 25.50 -1.8  
 i 05 37.00  
 TIO 171.42 8 iPKP 04 30.00 1.2  
 S.D. = 1.0 on 156 of 231 obs.

? MAR 03, 1990 13h 04m 03.99±1.19s  
 46.159 N ±21.0km 154.397 E ±21.2km  
 DEPTH = 33.0km (normal)  
 4.6mb ( 7 obs.)

## KURIL ISLANDS REGION (222)

YKA 50.87 37 eP 13 05.30 2.1  
 0.7s 0.70nm 3.7mb  
 CHTO 52.86 258 e(P) 13 20.00 1.3  
 GUN 55.94 276 P 13 41.80 0.2  
 KKN 56.43 277 P 13 45.70 0.7  
 0.6s 10.00nm 5.0mb  
 PKI 56.48 276 P 13 45.50 0.0  
 DMN 56.66 277 P 13 47.00 0.3  
 GKN 56.74 277 P 13 47.60 0.4  
 SUF 63.91 336 eP 14 33.90 -1.4  
 0.5s 2.30nm 4.5mb  
 WRA 68.25 200 P 15 02.00 -1.5  
 1.0s 3.50nm 4.4mb  
 NB2 69.07 342 P 15 07.20 -1.0  
 0.7s 3.20nm 4.5mb  
 HFS 69.32 340 eP 15 08.20 -1.4  
 0.8s 6.60nm 4.8mb  
 CLL 77.37 336 eP 15 57.00 0.3  
 1.2s 13.00nm 4.8mb  
 e 16 36.00  
 S.D. = 1.3 on 12 of 12 obs.

MAR 03, 1990 13h 11m 38.27±0.79s  
 38.385 N ±7.3km 21.918 E ±9.3km  
 DEPTH = 10.0km (geophysicist)  
 GREECE (364)  
 ML 3.0 (ATH).

VLS 1.07 259 ePb 11 58.90 0.6  
 ITM 1.20 180 ePb 12 00.00 -0.7  
 NEO 1.37 48 ePb 12 03.60 0.1  
 ATH 1.48 106 ePn 12 06.00 1.1  
 VLI 1.85 154 ePn 12 10.00 -0.3  
 KZN 1.92 357 ePn 12 12.60 1.2  
 KEK 2.12 309 ePg 12 21.50 7.3X  
 VAY 2.98 10 ePn 12 24.30 -2.0  
 S.D. = 1.4 on 7 of 8 obs.

? MAR 03, 1990 13h 18m 28.88±1.81s  
 21.274 S ±59.8km 174.151 E ±31.8km  
 DEPTH = 33.0km (normal)  
 4.3mb ( 2 obs.)

## VANUATU ISLANDS REGION (185)

NDF 4.68 42 eP 19 41.00 1.9  
 eS 20 41.00  
 SGE 5.11 45 eP 19 49.30 4.0X  
 eS 20 58.00  
 SVA 5.13 53 eP 19 43.60 -1.9  
 VUN 5.20 52 eP 19 45.30 -1.2  
 MBU 6.08 46 eP 20 01.50 2.6X  
 DZM 7.21 262 iPc 20 13.40 -1.4  
 iS 21 32.10  
 ASPA 37.19 259 eP 25 39.30 0.3  
 1.2s 10.00nm 4.6mb  
 YKA 100.38 27 ePdiff 32 13.60 0.2  
 0.8s 0.50nm 4.1mb  
 SPC 145.26 330 ePKP 38 06.20 1.3

KSP 145.76 335 ePKP 38 06.00 0.5  
 CLL 146.60 338 ePKP 38 07.00 0.2  
 e 38 36.00  
 PRU 147.12 336 PKPd 38 10.80 3.1X  
 ZST 147.43 331 i(PKP) 38 11.40 3.2X  
 KHC 148.18 336 PKP 38 13.50 4.0X  
 SKO 149.14 318 e(PKP) 38 15.50 4.3X  
 MEM 149.27 345 PKP 38 16.50 5.4X  
 TOD 149.43 341 ePKP 38 16.15 4.7X  
 ABH 149.54 343 ePKP 38 16.59 5.0X  
 RUP 149.84 343 ePKP 38 17.44 5.4X  
 OHR 150.02 317 ePKP 38 17.30 4.7X  
 DOU 150.07 346 PKPc 38 18.20 5.9X  
 BCAO 151.01 238 ePKPd 38 17.40 2.6X  
 0.6s 5.00nm  
 S.D. = 1.5 on 9 of 22 obs.

? MAR 03, 1990 13h 37m 31.64±1.11s  
 21.000 S ±41.3km 174.671 E ±15.8km  
 DEPTH = 33.0km (normal)  
 4.5mb ( 2 obs.)

## VANUATU ISLANDS REGION (185)

SVA 4.58 52 iP 38 32.10 -8.3X  
 VUN 4.65 51 eP 38 40.80 -0.7  
 MBU 5.54 44 eP 38 58.00 3.9X  
 DZM 7.73 261 iPc 39 24.10 -0.8  
 PMG 28.89 289 eP 43 30.50 0.7  
 ASPA 37.72 258 iPd 44 41.20 -5.0X  
 1.6s 13.00nm 4.5mb  
 CHTO 84.03 293 eP 50 00.60 0.0  
 0.7s 2.06nm 4.4mb  
 SBB 84.68 50 eP 50 04.00 0.4  
 ISA 84.71 49 eP 50 03.00 -0.8  
 PLM 84.72 51 eP 50 05.00 1.0  
 CLC 85.40 49 eP 50 06.00 -1.2  
 TPC 85.67 51 eP 50 10.00 1.4  
 CLL 146.52 339 ePKP 57 08.00 -1.5  
 KHC 148.13 336 PKP 57 13.00 0.8  
 GRF 148.49 339 e(PKP) 57 13.30 0.6  
 SKO 149.26 319 ePKP 57 04.50 -9.7X  
 e 57 23.50  
 S.D. = 1.0 on 12 of 16 obs.

? MAR 03, 1990 13h 43m 15.16±2.60s  
 21.426 S ±40.4km 176.042 E ±30.9km  
 DEPTH = 33.0km (normal)  
 4.1mb ( 2 obs.)

## SOUTH OF FIJI ISLANDS (171)

NDF 3.88 20 eP 44 13.50 -0.5  
 eS 45 02.50  
 SVA 4.00 35 iP 44 15.60 -0.1  
 VUN 4.09 34 eP 44 16.10 -0.9  
 eS 45 05.50  
 SGE 4.21 25 eP 44 19.50 0.7  
 MBU 5.10 30 eP 44 32.00 0.6  
 DZM 8.94 264 iPc 45 25.10 -0.1  
 WRA 38.96 264 Pd 50 39.50 -0.7  
 0.9s 3.00nm 4.1mb  
 CHTO 85.37 292 e(P) 55 51.90 1.1  
 1.0s 1.75nm 4.2mb  
 S.D. = 0.9 on 8 of 8 obs.

? MAR 03, 1990 13h 52m 30.48±3.26s  
 21.185 S ±70.1km 175.297 E ±43.2km  
 DEPTH = 33.0km (normal)  
 4.2mb ( 3 obs.)

## SOUTH OF FIJI ISLANDS (171)

SVA 4.26 45 eP 53 36.00 1.2  
 VUN 4.35 44 eP 53 33.90 -2.1  
 SGE 4.35 35 eP 53 36.00 -0.1  
 MBU 5.30 38 eP 53 50.10 0.7  
 DZM 8.28 262 iPc 54 31.00 -0.4  
 iS 56 03.00  
 MRW 19.99 181 P 57 31.00 28.0X  
 ASPA 38.25 258 iPc 59 49.40 -0.2  
 0.9s 5.00nm 4.4mb  
 BJI 82.10 318 eP 04 56.00 6.9X  
 PAS 83.83 50 eP 05 28.00 29.9X  
 BAR 84.18 52 eP 05 36.00 36.0X  
 ISA 84.39 48 eP 05 30.00 29.0X  
 CHTO 84.64 292 e(P) 05 03.30 0.8  
 1.1s 2.65nm 4.3mb  
 GSC 85.38 49 eP 05 24.00 18.0X  
 GLA 85.72 52 eP 05 30.00 22.3X

YKA 99.83 26 eP 06 21.60 9.2X  
 0.7s 0.20nm 3.8mb  
 KSP 146.12 336 ePKP 12 15.50 7.8X  
 e 12 45.50  
 CLL 146.90 340 ePKP 12 18.00 9.1X  
 PRU 147.47 337 ePKP 12 19.70 9.8X  
 MOX 147.92 340 ePKP 12 25.00 14.4X  
 KHC 148.53 337 PKP 12 21.60 9.9X  
 e 12 51.20  
 GRF 148.87 340 e(PKP) 12 23.00 10.8X  
 SKO 149.78 319 ePKP 12 02.50 -11.3X  
 e 12 24.00  
 KBA 150.31 335 e(PKP) 12 25.50 10.9X  
 0.5s 1.60nm  
 e 29 45.50  
 i(Sg) 30 22.10  
 S.D. = 1.3 on 7 of 23 obs.

? MAR 03, 1990 14h 24m 44.63±0.86s  
 41.124 N ±7.6km 28.464 E ±7.7km  
 DEPTH = 10.0km (geophysicist)

## TURKEY (366)

BNT 0.87 209 iPg 25 01.40 0.0  
 DMK 0.88 323 iPg 25 01.50 0.0  
 KCT 0.88 185 iPg 25 01.40 -0.1  
 YLV 0.89 129 ePn 25 02.00 0.3  
 HRT 0.96 108 ePn 25 02.70 -0.2  
 S.D. = 0.3 on 5 of 5 obs.

? MAR 03, 1990 14h 30m 43.61±2.90s  
 40.880 N ±22.7km 28.399 E ±14.1km  
 DEPTH = 10.0km (geophysicist)

## TURKEY (366)

KCT 0.63 183 iPg 30 55.90 -0.4  
 BNT 0.64 215 iPg 30 56.40 0.0  
 YLV 0.80 113 iPg 30 58.90 -0.4  
 HRT 0.96 93 ePn 31 02.20 0.2  
 DST 1.28 172 ePn 31 08.00 0.5  
 S.D. = 0.6 on 5 of 5 obs.

MAR 03, 1990 14h 42m 07.21±0.48s  
 22.273 S ±6.2km 175.301 E ±10.5km  
 DEPTH = 33.0km (normal)  
 4.7mb ( 2 obs.)

## SOUTH OF FIJI ISLANDS (171)

SVA 5.09 36 eP 43 21.90 -1.3  
 eS 44 24.20  
 VUN 5.18 36 eP 43 24.10 -0.4  
 SGE 5.27 28 eP 43 26.50 0.6  
 MBU 6.18 32 eP 43 39.70 1.1  
 DZM 8.21 270 iP 44 07.00 -0.1  
 iS 45 36.10  
 MNG 18.29 180 P 46 20.40 0.3  
 KIW 18.54 181 P 46 23.70 0.6  
 MTW 18.83 180 P 46 25.30 -1.4  
 TCW 18.90 182 P 46 27.80 0.2  
 BLW 19.04 180 P 46 29.20 0.0  
 ASPA 38.05 260 iPc 49 20.20 -4.4X  
 1.2s 13.00nm 4.7mb  
 BJI 82.91 318 eP 54 29.00 -1.0  
 SBB 85.05 50 eP 54 45.00 4.0X  
 CHTO 85.06 292 eP 54 40.50 -0.8  
 1.3s 6.94nm 4.7mb  
 ISA 85.10 48 eP 54 50.00 8.7X  
 CLC 85.79 49 eP 54 47.00 2.3X  
 TPC 86.02 51 eP 54 51.00 5.1X  
 GSC 86.08 49 eP 54 45.00 -1.2  
 GLA 86.38 52 eP 54 44.00 -3.7X  
 LZM 88.99 310 eP 55 02.50 2.2X  
 i 55 09.50  
 SPC 146.66 330 ePKP 02 00.00 14.4X  
 KSP 147.11 335 ePKP 01 47.50 1.5  
 CLL 147.91 339 ePKP 01 49.00 1.8  
 e 02 09.00  
 PRU 148.46 336 ePKP 01 51.00 2.8X  
 e 01 54.00  
 SRO 148.54 330 ePKP 01 57.00 8.7X  
 e 16 52.80  
 ZST 148.81 331 ePKP 01 54.80 6.0X  
 KHC 149.53 336 PKP 01 55.70 5.8X  
 GRF 149.89 339 ePKP 01 55.00 4.6X  
 SKO 150.59 318 ePKP 01 42.50 -9.2X  
 KBA 151.29 334 e(PKP) 02 00.00 7.2X  
 BCAO 151.35 235 iPKPc 02 04.00 10.3X



0.5s 5.00nm  
S.D. = 1.1 on 15 of 31 obs.  
? MAR 03, 1990 14h 43m 55.82±1.48s  
50.998 N ±32.0km 179.706 E ±10.5km  
DEPTH = 33.0km (normal)  
5.1mb ( 2 obs.)

## RAT ISLANDS, ALEUTIAN ISLANDS ( 6 )

ADK	2.43	67	eP	44	36.00	2.0
SMY	3.88	299	e(P)	44	56.00	1.4
IMA	20.27	32	eP	48	30.50	-0.5
YKA	36.17	46	eP	50	55.20	-1.4
	0.7s	0.80nm			3.7mb	X
NB2	67.93	354	P	54	51.60	-1.3
	1.4s	16.80nm			4.9mb	
GUN	71.12	291	P	55	13.30	0.0
	0.8s	18.00nm			5.2mb	
KKN	71.56	291	P	55	15.70	-0.1
PKI	71.65	291	P	55	16.10	-0.3
GKN	71.78	292	P	55	16.90	-0.1
DMN	71.80	291	P	55	17.50	0.3

S.D. = 1.2 on 10 of 10 obs.

\* MAR 03, 1990 14h 57m 04.20±0.80s  
21.376 S ±15.0km 176.053 E ±14.1km  
DEPTH = 33.0km (normal)  
4.8mb ( 5 obs.)

## SOUTH OF FIJI ISLANDS (171)

NDF	3.83	20	eP	58	01.50	-0.8
			eS	58	48.00	
SVA	3.95	35	eP	58	03.80	-0.3
			eS	59	03.40	
VUN	4.05	35	iP	58	04.10	-1.3
			eS	58	51.30	
SGE	4.16	25	eP	58	08.00	0.9
MBU	5.05	30	eP	58	20.00	0.2
			eS	59	21.00	
DZM	8.96	264	iP	59	14.50	0.0
BRS	22.02	250	iP	01	56.00	-1.5
ASPA	38.90	258	eP	04	27.90	-0.8
	1.0s	8.00nm			4.4mb	
WB5	38.96	264	eP	04	27.90	-1.3
WRA	38.98	264	Pd	04	31.40	2.1
	1.4s	23.10nm			4.8mb	
SPA	68.76	180	iPd	08	06.70	-0.2
	1.2s	22.54nm			5.1mb	
BJI	82.71	318	eP	09	27.50	1.6
FRI	83.84	46	eP	09	38.60	6.8X
RVR	83.90	50	eP	09	39.00	6.8X
SBB	83.94	49	eP	09	39.00	6.5X
PLM	83.95	51	eP	09	40.00	7.3X
CMB	83.95	45	eP	09	39.50	7.0X
WDC	83.98	42	e(P)	09	39.80	7.3X
ISA	83.99	48	eP	09	40.00	7.3X
ORV	84.06	44	eP	09	39.90	7.0X
MIN	84.43	43	e(P)	09	41.60	6.6X
CLC	84.68	48	eP	09	43.00	6.8X
KMI	84.86	299	eP	09	44.50	7.0X
TPC	84.91	51	eP	09	44.00	6.7X
GSC	84.97	49	eP	09	40.00	2.3X
GLA	85.28	52	eP	09	47.00	7.8X
CHTO	85.36	292	eP	09	39.40	-0.4
	1.1s	3.83nm			4.5mb	
LZH	88.96	310	eP	10	01.80	4.6X
	1.5s	37.00nm			5.5mb	
PNT	90.56	36	eP	10	11.00	6.9X
PRNI	143.98	292	ePKP	16	38.00	-0.5
MBH	144.13	292	e(PKP)	16	33.00	-5.6X
SPC	146.23	331	ePKP	16	47.50	5.6X
KSP	146.58	337	ePKP	16	45.50	3.4X
CLL	147.32	340	ePKP	16	44.00	0.7
	1.5s	27.00nm				
		i		16	51.30	
PRU	147.92	337	ePKP	16	49.00	4.7X
ZST	148.35	333	e(PKP)	16	53.80	8.8X
KHC	148.98	337	PKP	16	52.50	6.4X
	1.3s	14.00nm				
GRF	149.29	341	ePKP	16	53.00	6.5X
ABH	150.13	345	ePKP	16	58.91	11.1X
SKO	150.38	320	ePKP	16	50.00	1.6
RUP	150.41	345	ePKP	16	59.55	11.3X
DOU	150.55	349	PKP	16	56.20	7.9X
KBA	150.78	335	e(PKP)	16	55.50	6.5X
	1.2s	9.30nm				

i 17 05.00  
LJU 151.13 333 e(PKP)16 56.00 7.4X  
VOY 151.41 334 e(PKP)16 57.00 7.1X  
BCAO 152.43 235 iPKPd 17 00.30 8.0X  
0.9s 14.00nm  
S.D. = 1.2 on 16 of 46 obs.

\* MAR 03, 1990 15h 35m 32.63±0.74s  
22.084 S ±21.4km 174.148 E ±12.1km  
DEPTH = 33.0km (normal)  
3.8mb ( 1 obs.)

## LOYALTY ISLANDS REGION (189)

SVA	5.65	47	iP	36	54.90	-1.7
SGE	5.71	39	eP	36	58.00	0.5
MBU	6.67	41	eP	37	11.80	0.9
DZM	7.14	269	iPc	37	17.90	0.3
			iS	38	36.20	
CAN	25.61	234	eP	40	58.50	-2.3X
CHTO	84.00	293	eP	48	00.30	-1.1
	0.8s	0.55nm			3.8mb	
FRI	85.62	47	eP	48	09.40	0.3
WDC	85.69	43	e(P)	48	10.00	0.5
CMB	85.71	46	eP	48	09.80	0.1
SBB	85.74	50	eP	48	10.00	0.1
PLM	85.77	52	eP	48	10.00	-0.2
CLC	86.47	49	eP	48	13.00	-0.5
TPC	86.73	51	eP	48	15.00	0.2
GLA	87.11	53	eP	48	17.00	0.4
DAG	124.89	4	ePd	51	13.00	7.2X
CLL	147.34	338	ePKP	55	12.00	0.3

S.D. = 0.7 on 14 of 16 obs.

\* MAR 03, 1990 15h 54m 44.41±0.77s  
21.158 S ±23.2km 175.282 E ±17.6km  
DEPTH = 33.0km (normal)  
4.4mb ( 1 obs.)

## SOUTH OF FIJI ISLANDS (171)

NDF	3.95	32	eP	55	46.00	1.7
			eS	56	37.00	
SVA	4.26	45	eP	55	46.80	-1.8
			eS	56	44.30	
SVA	4.26	45	eP	55	50.50	1.9
			eS	56	47.00	
SGE	4.34	36	eP	55	50.50	0.6
VUN	4.34	44	eP	55	47.40	-2.4
			eS	56	42.00	
MBU	5.28	39	eP	56	03.20	0.0
DZM	8.27	262	iP	56	44.00	-1.2
BRS	21.42	249	iP	59	27.00	-4.8X
			i	59	29.50	
SBB	84.34	50	eP	07	14.00	-0.7
CHTO	84.62	292	eP	07	15.90	-0.4
	1.4s	3.85nm			4.4mb	
CLC	85.07	49	eP	07	18.00	-0.3
TPC	85.33	51	eP	07	19.00	-0.7
GLA	85.71	52	eP	07	21.00	-0.6
PNT	90.81	36	eP	07	45.00	-0.5
KSP	146.09	336	iPKPd	14	21.00	-0.6
CLL	146.87	340	iPKPc	14	22.30	-0.5
	0.9s	11.00nm				
PRU	147.44	337	PKPc	14	24.20	0.4
ZST	147.83	332	ePKP	14	25.60	1.2
MOX	147.89	340	e(PKP)	14	34.00	9.5X
KHC	148.50	337	PKPc	14	27.00	1.4
	1.2s	10.00nm				
GRF	148.84	340	ePKP	14	28.30	2.3X
		e		14	31.50	
RUP	150.02	345	ePKP	14	32.44	4.6X
KBA	150.28	335	ePKP	14	29.00	0.5
	0.8s	5.40nm				
		e(Sg)		22	15.50	
LJU	150.61	332	e(PKP)	14	32.80	4.0X
VBY	150.70	331	e(PKP)	14	33.00	4.1X
VOY	150.89	333	e(PKP)	14	32.00	2.6X
BCAO	151.96	237	iPKPd	14	33.60	1.8
	1.0s	15.00nm				
		id		14	37.80	

S.D. = 1.3 on 20 of 27 obs.

\* MAR 03, 1990 16h 51m 24.43±1.49s  
28.609 S ±10.5km 69.903 W ±33.5km  
DEPTH = 155.3 ± 47.0 km

## CHILE-ARGENTINA BORDER REGION (127)

RTRS	1.60	166	iPc	51	55.60	-0.2
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RTLL	2.98	156	e(P)	52	11.20	-1.2
			iS	52	47.00	
ZON	3.11	160	eP	52	16.00	2.0
CFA	3.32	155	iPd	52	16.00	-0.6
RTCV	3.45	160	ePd	52	18.20	-0.2
FCH	4.72	184	eP	52	36.50	1.2
ANT	4.91	355	e(P)	52	37.50	0.1
LNV	5.48	193	eP	52	44.00	-1.1

S.D. = 1.5 on 8 of 8 obs.

\* MAR 03, 1990 16h 53m 44.16s  
60.075 N 141.896 W  
DEPTH = 0.0km  
SOUTHEASTERN ALASKA ( 19 )  
<AGS-P>.

PCA	0.82	88	iP	54	00.39	-0.2
			iS	54	14.03	
TGL	0.83	326	iP	54	00.42	-0.2
			eS	54	13.73	
GLB	1.66	326	iP	54	13.18	-1.6
			iS	54	37.79	
KLU	2.43	308	iP	54	24.30	-1.6
VZW	2.50	295	iP	54	26.35	-0.5

5 obs. associated

\* MAR 03, 1990 17h 03m 15.99±0.60s  
21.118 S ±19.9km 174.988 E ±14.5km  
DEPTH = 33.0km (normal)  
5.1mb ( 2 obs.)

## VANUATU ISLANDS REGION (185)

SVA	4.43	48	eP	04	21.50	-1.1
			eS	05	21.50	
SGE	4.47	39	eP	04	21.50	-1.9
VUN	4.51	47	iPd	04	19.00	-4.8X
			eS	05	13.10	
MBU	5.43	41	eP	04	34.10	-2.7
PVC	7.14	297	iPc	05	15.00	14.2X
DZM	8.01	262	iPc	05	13.10	0.0
BRS	21.18	248	iP	07	59.30	-1.6
MSZ	24.21	192	eP	08	28.00	-2.5
RMQ	24.57	252	eP	08	33.50	-0.7
PRS	82.91	47	eP	15	41.00	2.1
PRI	83.29	47	eP	15	41.00	0.0
KMI	83.87	300	eP	15	47.50	3.2X
MWC	84.13	50	eP	15	52.00	6.6X
CHTO	84.35	293	eP	15	46.60	0.1
	1.6s	11.15nm			4.8mb	
FRI	84.39	47	eP	15	46.10	-0.3
WDC	84.46	43	eP	15	47.90	1.2
CMB	84.48	46	eP	15	45.40	-1.5
RVR	84.50	51	eP	15	41.00	-6.0X
SBB	84.53	50	eP	15	48.00	0.8
PLM	84.56	51	eP	15	49.00	1.4
ISA	84.56	49	eP	15	50.00	2.6X
MIN	84.92	43	eP	15	52.00	2.8X
CLC	85.25	49	eP	15	50.00	-0.8
TPC	85.52	51	eP	15	54.00	1.8
GSC	85.56	50	eP	15	54.00	1.6
GLA	85.91	52	eP	15	54.00	-0.1
LZH	88.03	310	eP	16	03.70	-0.8
	1.5s	29.00nm			5.4mb	
PNT	90.94	37	eP	16	19.00	1.3
SPC	145.52	330	ePKP	22	54.00	1.5
KSP	145.94	336	ePKP	22	53.50	0.6
CLL	146.73	339	ePKP	22	56.00	1.9
	1.0s	14.00nm				
PRU	147.30	336	PKP	22	58.00	2.9X
ZST	147.66	33				



03d 17h

## FOX ISLANDS, ALEUTIAN ISLANDS ( 9 )

ADK	4.74	268	eP	16	46.00	1.5
KDC	10.95	53	e(P)	18	12.00	1.1
TTA	12.73	28	eP	18	36.00	1.2
IMA	15.84	23	eP	19	18.00	2.5
FBA	16.69	33	eP	19	23.00	-3.2X
INK	23.32	33	eP	20	37.00	-1.9
YKA	30.15	49	eP	21	42.20	0.0

NEW	32.83	76	eP	22	06.00	0.1
EDM	33.00	66	eP	22	07.50	0.2
KVN	37.19	90	eP	22	53.00	9.6X
FFC	38.59	59	eP	22	55.00	0.3

BW06	40.21	79	eP	23	09.00	0.4
GOL	44.58	80	eP	23	45.20	0.9
RSN	44.86	60	eP	23	46.00	0.0
ANMO	46.97	86	eP	24	08.50	5.3X
DAG	49.85	9	iPd	24	23.30	-1.4

SSE	54.01	276	P	24	57.50	1.0
JSC	62.48	69	eP	26	01.30	5.5X
NB2	67.04	360	P	26	22.90	-2.1
HFS	67.93	359	eP	26	28.40	-2.1

KMI	69.49	285	Pc	26	42.50	1.5
GUN	76.95	299	P	27	24.80	0.1
KKN	77.37	299	P	27	26.90	0.0
PKI	77.47	299	P	27	27.30	-0.3
GKN	77.55	300	P	27	27.50	-0.3

DMN	77.61	299	P	27	29.20	1.0
GRF	78.41	360	e(P)	27	29.00	-3.0
SRO	80.10	355	eP	27	41.70	0.6
KBA	81.01	358	ePc	27	47.00	0.8

FVI	81.50	359	P	27	48.00	-0.5
RBL	81.64	358	P	27	49.50	0.2
CTI	82.06	360	P	27	51.00	-0.6
VAI	82.22	2	P	27	53.00	0.8
BOB	83.33	1	P	27	59.50	1.4

HYB	89.37	298	eP	28	28.00	-0.2
GBA	93.11	297	Pd	28	44.90	-0.4
BUL	145.11	330	ePKP	35	06.20	-3.0

S.D.	= 1.3	on 33	of 37	obs.
?	MAR 03, 1990	17h 22m	11.24±1.36s	
	21.887 S	±29.5km	175.277 E	±21.4km
	DEPTH =	33.0km	(normal)	
	4.5mb	( 1 obs.)		

## SOUTH OF FIJI ISLANDS (171)

SVA	4.80	39	eP	23	21.50	-1.5
VUN	4.89	38	eP	23	22.60	-1.8
SGE	4.95	31	eP	23	27.00	1.6
MBU	5.87	34	eP	23	39.10	0.8
DZM	8.20	267	iPd	24	11.00	0.0

BRS	21.16	250	iPc	26	55.00	-1.0
CHTO	84.89	292	eP	34	44.40	-0.1
KVN	86.88	46	eP	34	54.80	0.6
KSP	146.75	335	ePKP	41	50.50	1.1
CLL	147.54	339	ePKP	41	51.00	0.3

PRU	148.10	336	ePKP	41	53.50	1.9X
KHC	149.17	336	PKP	41	56.30	2.9X
S.D.	= 1.3	on 10	of 12	obs.		
?	MAR 03, 1990	17h 55m	06.71±4.44s			
	21.289 S	±75.9km	175.895 E	±51.5km		
	DEPTH =	33.0km	(normal)			
	3.9mb	( 1 obs.)				

## SOUTH OF FIJI ISLANDS (171)

SVA	3.97	38	iPc	56	06.30	-0.6
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VUN	4.06	37	iPc	56	06.90	-1.3
SGE	4.15	28	eP	56	10.50	1.0
MBU	5.06	32	eP	56	22.90	0.6
DZM	8.82	263	iPc	57	14.00	-1.1
WRA	38.84	264	P	02	32.00	1.3

S.D.	= 1.4	on 6	of 6	obs.
*	MAR 03, 1990	17h 57m	46.41±0.53s	
	21.944 S	±13.6km	174.911 E	±12.3km
	DEPTH =	33.0km	(normal)	
	4.2mb	( 1 obs.)		

## VANUATU ISLANDS REGION (185)

SVA	5.06	42	eP	59	00.40	-1.6
VUN	5.15	41	eP	59	01.80	-1.4
SGE	5.18	34	eP	59	05.00	1.2
MBU	6.11	37	eP	59	17.20	0.3
PVC	7.49	303	iP	59	55.00	18.9X
DZM	7.86	268	iPc	59	41.00	-0.4

BRS	20.82	250	eP	02	14.00	-13.7X
MSZ	23.39	193	eP	02	52.00	-1.0
CAN	26.27	234	eP	03	16.10	-4.5X
BJI	82.42	319	eP	10	19.00	12.3X

KMI	84.21	300	eP	10	35.00	18.5X
CHTO	84.60	293	eP	10	16.60	-1.6
MWC	84.71	50	eP	10	41.00	22.3X
FRI	85.00	47	eP	10	20.00	0.2
CMB	85.11	46	eP	10	20.70	0.3

WDC	85.11	43	eP	10	20.80	0.5
SBB	85.11	50	eP	10	21.00	0.4
CLC	85.85	49	eP	10	38.00	13.8X
LZH	88.50	310	eP	10	48.00	10.8X
YKA	100.66	26	ePd	11	44.00	11.9X

KRA	145.72	331	ePKP	17	34.10	11.2X
EKA	146.63	358	PKPd	17	42.00	17.8X
KSP	146.66	335	ePKP	17	24.00	-0.5
CLL	147.48	339	iPKP	17	25.90	0.2

PRU	148.02	336	ePKP	17	27.50	0.8
SRO	148.08	330	ePKP	17	40.40	13.6X
ZST	148.35	331	ePKP	17	28.00	0.8
MDX	148.50	339	ePKP	17	32.00	4.6X
SOP	148.98	331	ePKP	17	31.10	2.8X

KHC	149.08	336	iPKPd	17	30.80	2.3X
GRF	149.45	339	ePKP	17	31.50	2.5X
VAY	149.74	316	ePKP	17	30.20	0.6
MEM	150.09	346	PKP	17	33.70	3.9X
SKO	150.11	318	ePKPd	17	32.70	2.5X

TOD	150.29	342	ePKP	17	33.41	3.2X
ABH	150.39	343	ePKP	17	34.00	3.6X
KBA	150.83	334	ePKP	17	33.50	2.2X
DOU	150.89	347	PKP	17	34.30	3.3X
OHR	150.99	317	ePKP	17	33.00	1.4

LJU	151.13	331	e(PKP)	17	35.50	3.9X
VOY	151.42	332	e(PKP)	17	35.20	3.1X
S.D.	= 1.0	on 17	of 41	obs.		
?	MAR 03, 1990	18h 32m	50.56±0.15s			
	21.721 S	±3.6km	175.344 E	±3.9km		
	DEPTH =	33.0km	(normal)			
	5.3mb	( 17 obs.)	5.0msz	( 1 obs.)		

## SOUTH OF FIJI ISLANDS (171)

NDF	4.41	27	eP	33	50.50	-6.5X
SVA	4.63	40	eP	33	58.00	-2.0
VUN	4.72	39	iPc	33	55.30	-6.0X

SGE	4.77	31	eP	33	58.00	-4.2X
MBU	5.70	35	iP	34	10.40	-4.8X
PVC	7.72	300	iPc	34	48.00	4.5X
DZM	8.27	266	iPc	34	51.70	0.4
HBZ	16.03	171	P	36	37.60	2.5

MNG	18.84	180	P	37	09.60	-0.6
PGZ	18.86	178	P	37	09.70	-0.6
CAW	19.33	181	P	37	15.40	-0.6
TCW	19.45	182	P	37	17.00	-0.4
MRW	19.46	181	P	37	17.20	-0.2

WDW	19.49	181	P	37	16.90	-0.9
WEL	19.51	181	P	37	18.00	0.0
BLW	19.59	180	P	37	17.10	-1.8
KHZ	20.69	184	P	37	30.60	0.2
BRS	21.28	250	iPc	37	36.50	0.0

COO	22.79	242	ePd	37	53.50	1.9
MSZ	23.70	193	P	38	00.00	-0.1
RMQ	24.71	254	ePc	38	12.00	1.8
CNB	26.45	234	eP	38	28.00	1.5
CAN	26.72	234	eP	38	30.00	1.0

CTA	27.21	268	iPc	38	41.00	7.6X
CMS	28.05	244	eP	38	41.00	0.0
PMG	29.72	290	eP	38	55.50	-0.7
TOO	30.21	232	eP	39	01.00	0.6
QIS	33.31	265	eP	39	27.50	-0.1

ADE	34.64	240	eP	39	39.40	0.3
WB5	38.27	265	eP	40	08.60	-1.2
WRA	38.29	265	Pd	40	08.90	-1.0
KLB	51.89	246	eP	41	57.60	-0.7
NWAO	52.25	245	eP	42	00.50	-0.5

BAL	52.87	247	eP	42	05.00	-0.6
MUN	53.18	246	eP	42	07.80	-0.1
PCI	57.84	283	ePc	42	43.00	1.3
PPR	63.75	293	ePc	43	21.00	-0.8
SPA	68.41	180	iPd	43	50.90	-0.2

NJ2	76.02	313	Pd	44	36.20	-0.2
MDJ	78.12	328	eP	44	49.20	1.4
WHN	78.29	310	Pd	44	48.50	-0.6
CN2	79.63	326	iPd	44	56.00	-0.1
TIA	79.65	316	eP	44	55.60	-0.8

GYA	81.95	302	P	45	08.60	-0.3
BJI	82.52	318	eP	45	11.00	-0.3
GCC	83.04	46	eP	45	14.80	0.7
PCC	83.05	45	eP	45	14.60	0.5
SYP	83.06	49	eP	45	15.00	0.5

PRS	83.08	47	eP	45	15.30	0.9
BCH	83.34	48	P	45	17.20	1.4
BKS	83.35	45	e(P)	45	16.70	1.0
MHC	83.45	46	eP	45	17.10	0.7
PRI	83.45	47	eP	45	17.40	1.0

LLA	83.52	47	eP	45	17.30	0.7
TIY	83.59	315	Pd	45	17.60	0.6
PAS	84.14	50	eP	45	20.00	0.2
MWC	84.26	50	eP	45	21.00	0.4
KMI	84.45	300	Pd	45	23.00	1.2

BAR	84.48	52	eP	45	22.00	0.5
FRI	84.56	47	eP	45	22.00	0.2
RVR	84.63	50	eP	45	22.00	-0.2
SBB	84.66	50	eP	45	23.00	0.5
CMB	84.66	46	eP	45	22.50	0.1

WDC	84.67	43</
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CHTO	84.88	292	iPc	45	24.70	0.9	MEM	149.98	346	PKPc	52	37.90	4.1X	XAN	28.26	331	P	07	47.00	-1.2
	1.6s	76.77nm			5.6mb		UCC	150.13	348	PKP	52	43.00	9.0X	CD2	28.76	320	eP	07	52.00	-0.8
MIN	85.13	43	eP	45	24.40	-0.4	TOD	150.20	342	ePKP	52	38.46	4.2X	BJI	31.17	347	eP	08	13.00	-1.0
CLC	85.40	49	eP	45	26.00	-0.1	SKO	150.21	319	iPKPd	52	38.80	4.3X		1.5s	37.00nm			5.0mb	
TPC	85.64	51	eP	45	27.00	-0.3		1.5s	136.00nm					SNY	32.02	358	eP	08	20.00	-1.4
GSC	85.69	49	eP	45	28.00	0.4	ABH	150.29	344	ePKP	52	38.94	4.6X	LZH	32.42	327	Pc	08	25.60	0.3
HHC	85.88	317	eP	45	28.40	0.0	SNF	150.42	348	PKP	52	39.70	5.2X		1.6s	46.00nm			5.1mb	
GLA	86.01	52	eP	45	30.00	0.8	BHG	150.47	336	ePKP	52	39.10	4.4X			sP		08	41.00	
CD2	86.31	305	eP	45	31.20	0.5		1.4s	76.00nm					HHC	33.16	342	Pd	08	31.80	0.3
KVN	86.72	46	P	45	33.10	0.3	PTJ	150.59	330	ePKP	52	39.50	4.5X	QIS	33.42	154	eP	08	34.00	0.1
BTO	86.73	316	P	45	32.50	-0.1	ZAG	150.64	330	iPKPc	52	39.70	4.7X	CN2	33.98	1	Pd	08	38.00	-0.5
TNP	86.81	47	P	45	32.50	-0.8	DOU	150.76	348	PKP	52	40.30	5.3X	SHL	34.95	301	eP	08	46.50	-0.8
	1.0s	28.75nm			5.5mb		KBA	150.81	334	ePKPc	52	39.00	3.6X	MDJ	35.04	6	eP	08	48.00	0.4
		pP		45	53.00	75kmX		1.0s	36.60nm					LSA	37.17	307	P	09	07.00	0.7
LZH	88.67	310	Pc	45	42.50	0.4	OHR	151.09	318	ePKP	52	40.00	4.1X	GUN	40.79	302	P	09	36.50	0.2
	1.5s	91.00nm			5.9mb			1.3s	0.13nm						0.6s	12.00nm			4.8mb	
Z	20s	0.60um			5.0Msz		LJU	151.13	332	ePKPc	52	40.50	4.8X	PKI	41.08	301	P	09	38.40	-0.3
N	15s	0.43um					VBY	151.21	330	ePKPc	52	41.50	5.7X	KKN	41.25	301	P	09	41.20	1.2
PGC	88.76	36	eP	45	43.00	1.0	RBL	151.23	333	PKP	52	40.50	4.6X	DMN	41.35	301	P	09	41.80	1.0
FBA	90.88	15	P	45	49.80	-1.8	CEY	151.41	331	ePKPc	52	41.00	4.8X	GKN	41.86	301	P	09	44.50	-0.4
	1.0s	14.00nm			5.3mb		VOY	151.41	332	iPKPc	52	40.80	4.5X	HYB	45.48	285	eP	10	15.00	0.9
PNT	91.23	36	eP	45	54.00	0.5	FVI	151.43	334	PKP	52	40.50	4.4X	BRS	45.79	144	e(P)	10	14.00	-2.4
	1.1s	46.00nm			5.8mb		BCAO	151.70	236	iPKPd	52	36.50	-1.0	WMQ	46.77	323	iPd	10	25.00	0.9
PV09	92.62	50	P	46	01.00	0.4		0.8s	46.00nm					MAIO	64.41	306	iPc	12	31.40	0.0
GTA	93.02	311	P	46	02.60	0.4			id		52	43.00		KEV	83.65	340	eP	14	23.00	1.0
ALO	93.07	54	ePc	46	02.20	-0.4	CDF	151.70	343	ePKP	52	42.30	5.7X	SOD	84.24	337	iP	14	25.20	0.2
	1.0s	14.75nm			5.4mb			1.0s	36.00nm					INK	85.36	21	eP	14	32.00	-1.4
ANMO	93.07	54	P	46	03.00	0.4	TRI	151.72	332	PKP	52	47.00	10.4X	SUF	85.38	333	iP	14	30.50	-0.3
	1.0s	10.25nm			5.2mb		SLE	151.94	341	ePKP	52	42.40	5.5X		0.6s	11.30nm			5.2mb	
SHL	93.57	296	eP	46	05.00	-0.1	FEL	151.98	342	ePKP	52	42.34	5.2X	NUR	86.57	331	eP	14	30.00	-6.7X
LRM	93.69	42	eP	46	05.50	0.2	SAX	152.13	339	ePKP	52	43.60	6.1X	DAG	91.13	352	iPd	14	56.80	-1.3
GOL	95.78	50	P	46	15.00	-0.1	ZLA	152.23	341	ePKP	52	43.30	5.9X		0.7s	4.11nm			4.9mb	
	1.0s	10.00nm			5.2mb		HAU	152.32	344	ePKP	52	43.40	6.0X	HFS	91.86	332	eP	15	00.00	-1.7
EDM	96.59	35	eP	46	16.50	-1.6		1.2s	32.75nm						0.6s	2.70nm			4.8mb	
SES	96.59	38	ePd	46	17.80	-0.4	CTI	152.32	335	PKP	52	42.50	4.9X		Z	18s	0.18um		4.6Msz	
RSSD	98.40	46	P	46	28.00	1.3	OSS	152.35	338	ePKP	52	44.10	6.4X			LR		48	19.00	
YKA	100.29	26	ePd	46	33.20	-1.4	BSF	152.37	343	ePKP	52	43.40	5.8X							
	0.9s	1.20nm			4.4mb			0.9s	19.65nm											
MAIO	122.98	300	ePKP	51	45.00	-0.4	VDL	152.75	338	ePKP	52	45.00	6.7X							
SUF	133.99	341	iPKP	52	04.90	-0.7	FLN	152.81	354	ePKP	52	44.40	6.4X							
	0.8s	9.90nm						1.0s	24.00nm											
NUR	136.13	340	ePKP	52	06.80	-2.9X	LDF	152.94	353	ePKP	52	44.60	6.4X							
NB2	139.18	348	PKP	52	05.80	-9.6X		1.0s	12.00nm											
	0.9s	5.10nm					SAL	153.12	336	PKP	52	43.50	4.9X							
SLL	139.26	346	ePKP	52	06.20	-9.3X	GRR	153.22	354	ePKP	52	45.50	6.9X							
	0.5s	1.20nm						0.8s	14.80nm											
BBTK	143.46	308	iPKPd	52	20.00	-3.8X	TMA	153.29	339	ePKP	52	45.80	6.7X	KAP	0.49	183	ePb	03	42.70	1.0
PRNI	143.50	292	iPKPd	52	21.00	-3.0X	VAI	153.53	339	PKP	52	38.00	-1.1	ARG	0.76	77	ePn	03	45.40	-1.2
MBH	143.64	291	iPKPd	52	21.00	-3.2X	LPF	153.59	355	ePKP	52	46.60	7.5X	NPS	1.51	240	ePn	03	58.00	-0.9
TLB	144.74	318	ePKPc	52	24.00	-1.6		0.8s	13.45nm					SMG	1.69	350	ePb	04	03.00	1.7
VRI	144.87	321	ePKPd	52	24.50	-1.3	LOR	153.60	347	ePKP	52	46.50	7.2X	APE	1.69	308	ePn	04	01.00	-0.5
MLR	145.54	321	ePKPc	52	26.00	-1.1		1.0s	10.00nm					CIN	1.71	24	eP	04	42.00	40.4X
		e		12	25.00		MMK	153.63	340	ePKP	52	46.50	6.9X	KSL	1.93	87	ePn	04	05.00	0.2
KRA	145.72	332	ePKP	52	25.90	-1.2	DIX	153.78	341	ePKP	52	47.70	7.8X	VAM	2.53	256	ePb	04	19.00	5.6X
	1.2s	75.00nm					LBF	153.84	347	ePKP	52	47.00	7.4X	BCK	3.06	61	ePn	04	29.00	7.9X
		e		52	44.60			1.0s	8.00nm					VLI	3.51	282	ePn	04	27.00	-0.4
BCK	145.80	305	ePKP	52	26.70	-1.1	SSF	153.87	347	ePKP	52	46.10	6.5X							
CMP	146.19	321	ePKPc	52	26.00	-2.1X		1.0s	16.00nm											
SPC	146.20	330	ePKP	52	27.50	-0.7	BNI	154.93	341	PKP	52	52.50	11.3X							
KHL	146.33	307	ePKP	52	28.00	-0.6														
KSP	146.63	336	ePKP	52	28.50	-0.1														
	1.1s	72.00nm																		
		id		52	30.20															
HLW	146.70	292	ePKP	52	30.00	0.7														
PSZ	147.27	329	ePKP	52	31.20	1.4														
CLL	147.41	339	iPKP	52	30.80	1.0														
BZS	147.92	324	ePKP	52	30.50	-0.3														
PRU	147.98	336	PKPc	52	33.00	2.3X														
	1.2s	49.50nm																		
		e		52	45.50															
SRO	148.09	330	iPKP	52	33.30	2.3X														
ZST	148.35	332	iPKP	52	33.50	2.1X														
DCN	148.37	3	ePKP	52	20.10	-11.1X														
MOX	148.43	340	ePKP	52	34.50	3.0X														
	1.4s	34.00nm																		
		i		52	39.00															
DLE	148.45	2	ePKP	52	22.50	-8.9X														
HOF	148.64	339	ePKP	52	34.90	3.1X														
SOP	148.98	332	iPKPc	52	30.70	-1.7	WHN	22.90	336	eP	07	00.60	2.7	BAR	84.48	52	eP	33	35.00	1.7
KHC	149.04	336	iPKP	52	31.50	-1.0	NJ2	22.91	347	Pd	06	59.00	1.0	FRI	84.52	47	eP	33	32.60	-0.7
		i		52	36.00		GYA	23.90	317	P	07	07.00	-0.9	WDC	84.59	43	eP	33	33.60	0.0
WET	149.28	337	iPKPc	52	36.30	3.4X	IPM	24.08	259	ePd	07	11.60	2.0	CMB	84.61	46	eP	33	33.40	-0.5
	1.3s	73.00nm						0.8s	26.10nm			4.8mb		SBB	84.65	50	eP	33	33.00	-1.1
GRF	149.39	340	ePKPc	52	37.10	4.1X	CHTO	26.58	293	eP	07	32.00	-1.1	CLC	85.37	49	eP	33	37.00	-0.7
		e		52	43.00			1.7s	6.10nm			3.9mb		TPC	85.63	51	eP	33	38.00	-1.1
TNS	149.74	343	ePKPc	52	37.															



03d 19h

KHC	148.51	336	iPKPd	40	45.40	1.9	CLC	85.22	49	eP	41	36.00	-0.4	GRR	153.20	355	ePKP	48	56.40	6.6X
KBA	150.28	334	e(PKP)	40	46.00	-0.4	TPC	85.45	51	eP	41	38.00	0.4		0.8s	8.05nm				
BCAO	151.65	237	iPKPd	40	50.00	0.8	GSC	85.51	49	eP	41	38.00	0.0	LPF	153.57	355	ePKP	48	57.90	7.5X
	0.7s	23.00nm					GLA	85.82	52	eP	41	40.00	0.5		0.8s	5.35nm				
			id	43	23.20		HHC	85.99	317	P	41	40.20	0.0	VAI	153.57	339	PKP	48	49.00	-1.4
			ic	44	38.40		CD2	86.46	305	eP	41	42.40	-0.3		S.D. = 1.1	on 85 of 123 obs.				
	S.D. = 1.2	on 22 of 22 obs.					KVN	86.54	46	P	41	42.90	-0.2							
							TNP	86.64	47	P	41	43.50	-0.1							
								1.0s	17.50nm				5.2mb							
MAR 03, 1990 19h 29m 01.79± 0.25s							BTO	86.85	316	eP	41	44.00	-0.4		MAR 03, 1990 19h 44m 26.70± 0.22s					
21.683 S ± 7.9km 175.569 E ± 5.5km							LZH	88.81	310	eP	41	54.50	0.5		22.501 S ± 4.2km 174.205 E ± 5.3km					
DEPTH = 33.0km (normal)								Z 20s	0.30um			4.7Msz		DEPTH = 33.0km (normal)						
5.1mb ( 9 obs.) 4.8Msz ( 2 obs.)														5.0mb ( 11 obs.) 4.7Msz ( 1 obs.)						
SOUTH OF FIJI ISLANDS (171)							RMW	88.83	37	P	41	54.00	0.2	LOYALTY ISLANDS REGION (189)						
							MSU	90.31	48	P	42	02.00	0.9							
NDF	4.29	25	eP	30	01.00	-5.4X	FBA	90.80	15	P	42	00.00	-2.5	NDF	5.62	33	eP	45	45.00	-5.1X
			eS	30	49.00			0.9s	8.33nm			5.1mb					eS	46	49.00	
SVA	4.47	38	iP	30	08.00	-0.4	PNT	91.07	36	eP	42	04.00	-0.1	SVA	5.91	43	eP	45	51.00	-3.3X
			eS	31	03.50		ALQ	92.88	54	eP	42	12.00	-1.0				eS	47	00.00	
VUN	4.56	37	iPd	30	04.90	-5.4X		1.0s	8.75nm			5.1mb		VUN	6.00	43	eP	45	49.00	-6.5X
			eS	30	57.70		ANMO	92.88	54	P	42	12.00	-1.0				eS	46	53.00	
SGE	4.64	29	iP	30	08.60	-2.9	GTA	93.15	311	eP	42	14.00	0.0	SGE	6.01	36	eP	45	51.00	-4.8X
MBU	5.55	33	iP	30	20.90	-3.4X	LRM	93.52	42	eP	42	15.00	-0.7	MBU	6.95	39	eP	46	04.70	-4.2X
			eS	32	23.10		IMW	93.60	44	P	42	16.00	-0.2				eS	47	21.50	
DZM	8.48	266	iPc	31	06.00	0.5	GOL	95.60	50	P	42	26.00	0.6	DZM	7.20	272	iPc	46	11.30	-1.2
			iS	32	42.00		YKA	100.16	26	ePd iff	42	43.60	-1.7				iS	47	30.00	
HNR	19.34	307	eP	33	28.00	0.5		0.8s	0.70nm			4.2mb		PVC	7.29	309	iP	46	17.00	3.4X
			eS	48	47.00		FRB	120.64	28	ePKP	47	49.00	-2.2X	HBZ	15.46	168	P	48	09.70	5.8X
WEL	19.56	182	P	33	29.00	-0.7	BUL	127.36	220	ePKP	48	01.20	-4.5X		0.8s	204.00nm			5.4mb	
BRS	21.49	250	iPc	33	49.00	-0.8	PRNI	143.68	292	ePKP	48	32.00	-3.5X	MNG	18.10	177	P	48	37.50	0.3
			e	49	11.00		MBH	143.82	291	ePKP	48	33.00	-2.7X		0.8s	60.00nm			4.8mb	
			eS	49	22.00		TLB	144.86	318	ePKP	48	35.50	-1.5	PGZ	18.15	175	P	48	37.80	0.0
			eS	52	48.00				e	03	58.00			0.8s	160.00nm			5.2mb		
COO	22.99	242	iPd	34	06.10	1.3	VRI	144.98	321	ePKPd	48	36.00	-1.2	KIW	18.32	178	P	48	40.90	1.0
MSZ	23.78	194	P	34	15.00	2.8X	MLR	145.64	321	ePKPc	48	37.50	-1.1	CAW	18.57	178	P	48	43.20	0.3
RMQ	24.92	254	ePc	34	24.50	1.1	KRA	145.78	332	ePKP	48	37.30	-1.1	MTW	18.64	177	P	48	42.80	-1.0
CNB	26.64	234	eP	34	40.00	0.6	EKA	146.39	359	PKP	48	40.00	0.7	TCW	18.66	180	P	48	44.70	0.7
CAN	26.91	234	eP	34	42.00	0.1		2.4s	242.70nm					MRW	18.68	179	P	48	44.10	-0.2
CTA	27.42	268	iPc	34	49.30	2.7	KSP	146.68	336	iPKPd	48	41.50	1.6	WDW	18.72	178	P	48	44.10	-0.7
	1.5s	80.56nm				5.2mb	HLW	146.88	292	ePKP	48	41.00	0.2	WEL	18.74	179	P	48	45.10	0.1
CMS	28.26	244	eP	34	53.50	-0.6	CLL	147.45	340	iPKP	48	42.30	1.2	BLW	18.84	177	P	48	45.20	-1.1
PMG	29.91	290	eP	35	10.00	1.0		1.5s	36.00nm					MOW	18.89	178	P	48	45.60	-1.3
TOO	30.40	232	iPd	35	13.40	0.2	PRU	148.03	337	PKP	48	44.00	1.9	KHZ	19.87	181	P	48	57.60	-0.3
WB5	38.48	265	eP	36	21.00	-1.8		1.5s	29.00nm						1.0s	66.00nm			4.9mb	
WRA	38.50	265	P	36	23.00	0.1	SRO	148.16	330	i(PKP)	48	45.40	3.1X	BRS	20.03	252	iPc	48	58.50	-1.2
	0.9s	9.30nm				4.6mb			e	04	13.60					e	49	11.00		
KLB	52.10	246	eP	38	09.60	-1.5	ZST	148.41	332	ePKP	48	44.60	1.9				e	49	22.00	
NWAO	52.46	245	eP	38	12.70	-1.1			e	04	09.70					i	51	18.00		
MUN	53.39	246	eP	38	19.80	-0.8			e	04	11.70			COO	21.50	243	eP	49	16.50	1.7
PCI	58.04	283	ePc	38	55.00	0.7	MOX	148.47	340	ePKP	48	46.00	3.2X	MSZ	22.71	192	eP	49	29.00	2.3
SPA	68.45	180	iPd	40	01.20	-1.4	SOP	149.04	332	iPKPd	48	48.00	4.3X	RIV	23.19	236	eP	49	35.00	3.5X
	0.9s	80.00nm				5.8mb	KHC	149.09	337	iPKPc	48	42.20	-1.6	RMQ	23.48	255	eP	49	36.00	1.6
WHN	78.43	309	eP	40	58.50	-2.5		1.2s	22.00nm					CNB	25.14	234	iPc	49	52.00	1.6
CN2	79.72	326	Pc	41	07.20	-0.6	WET	149.33	337	iPKPc	48	48.00	3.8X	CAN	25.41	234	eP	49	54.00	1.0
	Z 20s	0.50um				4.9Msz	GRF	149.42	340	ePKPc	48	48.20	3.9X	BWA	25.52	237	eP	49	52.80	-1.2
			eP	41	17.00	31kmX	VAY	149.98	317	ePKP	48	48.40	3.1X	CTA	26.14	270	iPc	50	01.00	1.2
			eS	51	14.00		MEM	149.99	347	PKP	48	50.30	5.3X		1.2s	39.84nm			4.9mb	
TIA	79.77	316	eP	41	07.30	-1.0	TOD	150.23	343	ePKP	48	49.53	4.0X	CMS	26.76	244	eP	50	05.00	-0.4
AIA	82.16	158	eP	41	10.50	-9.8X	ABH	150.31	344	ePKP	48	49.99	4.4X	TOO	28.90	232	eP	50	25.00	0.2
BJI	82.64	318	eP	41	23.00	-0.2	SKO	150.32	319	ePKPd	48	50.20	4.3X	PMG	29.02	292	eP	50	26.50	0.6
GCC	82.87	46	eP	41	25.20	0.8		1.2s	57.00nm					ADE	33.34	240	iPc	51	03.50	-0.4
SYF	82.88	49	eP	41	27.00	2.2	BHG	150.52	336	iPKPd	48	50.80	4.8X	TPT	36.84	85	eP	51	19.00	-14.8X
PRS	82.90	47	eP	41	25.30	0.6	RUP	150.59	345	ePKP	48	50.84	4.7X		1.0s	35.00nm				
SAO	83.09	46	eP	41	26.80	1.2	DOU	150.76	348	PKP	48	50.90	4.7X	RUV	36.99	86	eP	51	21.00	-14.1X
BCH	83.16	48	P	41	26.80	0.6	KBA	150.86	335	ePKP	48	50.50	3.7X		1.0s	35.00nm				
BKS	83.18	45	e(P)	41	27.20	1.1		1.0s	14.70nm					WB5	37.16	266	eP	51	34.00	-2.6
	1.0s	43.00nm				5.5mb	LJU	151.19	332	ePKP	48	51.50	4.5X	WRA	37.17	266	Pc	51	33.50	-3.2X
MHC	83.27	46	eP	41	27.20	0.5	OHR	151.21	318	ePKP	48	50.00	2.7X		0.4s	2.40nm			4.4mb	
PRI	83.27	47	eP	41	27.60	0.9	VBY	151.28	330	iPKPd	48	53.00	5.8X	MUN	51.90	246	eP	53	33.50	-1.0
LLA	83.34	46	e(P)	41	27.40	0.4	RBL	151.29	334	PKP	48	52.50	5.2X	PCI	57.00	284	ePc	54	13.00	1.1
ARN	83.35	46	P	41	28.00	1.0	CEY	151.48	332	e(PKP)	48	52.30	4.8X	ADK	74.49	6	P	56	02.50	-0.8
ABL	83.58	49	P	41	28.60	0.1	VOY	151.48	333	ePKP	48	52.20	4.6X	NJ2	75.79	314	eP	56	17.00	5.8X
TIY	83.71	315	eP	41	29.40	0.5	FVI	151.48	335	PKP	48	52.50	5.1X	WHN	77.98	310	eP	56	30.00	6.5X
PAS	83.96	50	eP	41	31.00	0.9	CDF	151.73	343	ePKP	48	53.80	5.9X	MDJ	78.24	329	eP	56	26.50	1.9
MWC	84.07	50	eP	41	31.00	0.1		0.9s	13.10nm					SNY	79.30	324	eP	56	32.90	2.5
XAN	84.18	310	P	41	31.50	0.2	BCAO	151.89	236	iPKPd	48	47.40	-1.7	TIA	79.48	316	eP	56	31.30	-0.3
FRI	84.38	47	eP	41	32.40	0.3		0.9s	34.00nm					CN2	79.69	326	Pd	56	31.00	-1.5
RVR	84.44	50	eP	41	33															



ARN	84.83	46 P	56 59.00	-0.3	59.996 N	151.621 W	NJ2	83.69	308 Pd	38 52.00	0.0			
ABL	85.07	49 P	57 00.50	-0.3	DEPTH = 73.0km		MDJ	83.94	323 eP	38 53.00	0.0			
PAS	85.45	50 eP	57 07.00	4.6X	KENAI PENINSULA, ALASKA	( 14 )	ALQ	85.69	50 eP	39 02.50	0.3			
MWC	85.57	50 eP	57 03.00	-0.3	<AGS-P>.			1.0s	14.75nm		5.2mb			
BAR	85.79	52 eP	57 05.00	0.8			Z	20s	0.35um		4.8msz			
FR1	85.86	47 eP	57 04.30	-0.1	NNL	0.17 74 iP	09 35.12	2.2	SNY	85.79	318 eP	39 01.40	-0.8	
CD2	85.90	306 eP	57 04.40	-0.4	CNPM	0.51 157 iP	09 36.26	-0.6	CN2	85.81	321 Pc	39 01.80	-0.5	
RVR	85.94	51 eP	57 05.00	0.1		eS	09 46.26		PNT	86.08	32 eP	39 03.00	-0.6	
CMB	85.96	46 eP	57 05.80	0.8	RDT	0.70 326 iP	09 38.18	-0.7		1.0s	17.00nm		5.2mb	
WDC	85.96	43 eP	57 05.90	1.1		iS	09 50.02		WHN	86.31	305 eP	39 05.50	0.4	
SBB	85.97	50 eP	57 04.00	-1.1	RED	0.71 307 iP	09 38.28	-0.8	TIA	87.03	311 eP	39 08.70	0.2	
PLM	85.99	52 eP	57 05.00	-0.4		eS	09 50.06		PSI	88.14	274 ePd	39 15.50	1.2	
ISA	86.01	49 eP	57 11.00	5.7X	NKA	0.77 14 iP	09 41.11	1.5		e		41 58.00		
ORV	86.06	44 eP	57 06.10	0.7	SLKM	0.87 53 iP	09 40.15	-0.7	BJI	89.59	314 eP	39 20.00	-0.6	
BTO	86.56	317 eP	57 12.00	4.1X		eS	09 53.26			2.0s	55.00nm		5.5mb	
CLC	86.71	49 eP	57 08.00	-0.7	AUE	1.09 235 iP	09 42.59	-1.0	TIY	91.05	311 eP	39 28.30	0.8	
TPC	86.95	51 eP	57 10.00	0.1	SEW	1.09 83 iP	09 42.73	-0.8	SES	91.13	35 eP	39 27.00	-0.6	
GSC	87.00	50 eP	57 11.00	0.8	AUL	1.11 237 iP	09 42.85	-0.9	HHC	93.07	313 eP	39 37.20	0.4	
GLA	87.32	53 eP	57 11.00	-0.7	SPU	1.21 350 iP	09 44.71	-0.4	KMI	93.28	296 Pd	39 40.00	1.7	
KVN	88.02	46 P	57 14.00	-1.1		iS	10 01.60			pP		39 45.00	16kmX	
TNP	88.12	47 P	57 16.00	0.4	CKL	1.26 344 iP	09 45.44	-0.4	CHTO	94.16	288 eP	39 43.50	1.4	
	1.2s	17.47nm		5.2mb	CRP	1.30 349 iP	09 46.41	-0.1		1.0s	7.25nm		5.1mb	
LZH	88.36	310 eP	57 23.00	6.2X		iS	10 04.58		INK	94.96	14 eP	39 44.00	-0.7	
	Z	20s	0.30um	4.7msz	PDB	1.31 262 iP	09 44.68	-1.8	YKA	96.54	24 eP	39 50.50	-1.6	
		pP	57 28.50	17kmX		eS	10 01.04			0.8s	0.80nm		4.3mb	
		SP	57 33.00		BGL	1.33 344 iP	09 46.59	-0.2	MSL	144.73	302 ePKP	46 01.50	1.2	
RMW	90.25	38 P	57 24.50	-0.8		iS	10 05.33		LWI	146.97	226 ePKPc	46 08.70	3.7X	
MSU	91.80	49 P	57 34.30	1.5	CGLM	1.33 352 iP	09 46.61	-0.2	KRA	150.02	342 ePKP	46 07.30	-1.0	
PNT	92.48	37 eP	57 37.00	1.6	NGC	1.44 350 iP	09 48.19	0.0		e		46 13.30		
GTA	92.74	312 eP	57 35.00	-2.0	CDD	1.49 225 iP	09 47.12	-1.7	KSP	150.22	347 iPKPc	46 14.20	5.5X	
ALO	94.38	54 eP	57 43.00	-1.8		iS	10 06.65		CLL	150.36	351 iPKPd	46 14.90	6.1X	
	1.0s	11.25nm		5.3mb	SUA	1.53 16 iP	09 49.39	-0.2	SPC	150.69	341 ePKP	46 27.40	17.7X	
ANMO	94.38	54 P	57 43.00	-1.8	PMS	1.61 38 iP	09 50.27	-0.3	VRI	150.85	329 ePKPc	46 10.50	0.7	
LRM	94.97	42 eP	57 47.30	0.0		iS	10 10.92		BBTK	151.12	314 iPKPd	46 17.00	6.5X	
BRW	95.71	9 eP	57 59.70	9.9X	PWA	1.87 26 eP	09 53.77	-0.2	MOX	151.20	352 ePKP	46 17.00	6.9X	
GOL	97.09	50 P	57 56.80	-0.3	PLRM	2.01 36 iP	09 54.89	-1.1		1.4s	29.00nm			
YKA	101.45	27 ePd	58 19.60	3.7X	GHO	2.22 35 eP	09 57.92	-0.9	PRU	151.38	348 PKPc	46 17.00	6.6X	
	0.5s	0.50nm		4.4mb	GLI	2.41 66 eP	10 00.03	-1.5	MLR	151.50	330 ePKP	46 17.50	6.6X	
BUL	125.92	221 iPKPc	03 31.10	3.3X	CUT	2.50 15 eP	10 02.03	-0.7	MEM	151.60	360 PKP	46 18.10	7.4X	
	1.0s	5.00nm			VZW	2.72 65 eP	10 04.17	-1.7	DOU	152.09	2 PKP	46 19.20	7.8X	
VRI	144.79	319 ePKPc	04 09.50	7.7X	HUR	3.14 17 eP	10 11.81	0.2	GRF	152.19	352 ePKPd	46 19.70	8.1X	
MLR	145.45	319 ePKPc	04 02.00	-1.1	KLU	3.18 59 iP	10 10.40	-1.8	ABH	152.29	358 ePKP	46 19.14	7.3X	
KRA	145.88	330 ePKP	04 12.80	9.3X		iS	10 46.57		KHC	152.38	349 iPKP	46 19.50	7.5X	
	1.6s	104.00nm			KTH	3.59 5 eP	10 17.79	-0.1		1.0s	7.00nm			
CMP	146.12	320 ePKPc	04 07.00	2.9X	RND	3.67 20 eP	10 18.36	-0.7	RUP	152.49	358 ePKP	46 19.62	7.5X	
SPC	146.34	329 ePKP	04 03.90	-0.6	CCB	4.99 19 eP	10 35.76	-1.8	ZST	152.49	344 ePKP	46 21.50	9.4X	
KSP	146.88	334 iPKPd	04 05.00	-0.1					TOD	152.50	356 ePKP	46 19.22	7.1X	
			04 16.00		30 obs. associated				SRO	152.50	342 ePKP	46 20.20	8.1X	
			05 06.00		* MAR 03, 1990 20h 41m 11.37± 1.27s					i	46 24.60			
CLL	147.75	338 i(PKP)	04 07.10	0.7	33.000 S ±11.2km 70.809 W ±10.6km				PRNI	152.66	293 ePKP	46 21.00	8.1X	
	1.1s	13.00nm			DEPTH = 78.5 ± 18.3 km				MBH	152.86	292 e(PKP)	46 19.00	5.9X	
			04 17.70		CHILE-ARGENTINA BORDER REGION (127)					S.D. = 1.2 on 30 of 50 obs.				
PRU	148.25	335 PKP	04 08.50	1.2	ROCH	0.17 279 iP	41 23.00	-0.5	? MAR 03, 1990 22h 02m 46.43± 3.67s					
		e	04 19.00		SAN	0.47 165 eP	41 25.50	0.6	43.817 N ±17.7km 16.378 E ±27.1km					
MOX	148.78	338 ePKP	04 15.00	6.8X		iS	42 35.30		DEPTH = 10.0km (geophysicist)					
	1.4s	34.00nm			FCH	0.54 127 iPc	41 26.00	0.1	YUGOSLAVIA (383)					
SOP	149.14	330 ePKP	04 12.30	3.5X		iS	41 36.70		ML 4.8 (LDG).					
KHC	149.31	335 iPKPd	04 11.50	2.4X	LCCH	0.79 233 iPc	41 28.50	0.4						
		i	04 22.40			iS	41 42.00							
VAY	149.68	315 ePKP	04 07.00	-2.8X	LNV	1.08 208 iPd	41 31.00	-0.5	PGF	5.54	259 Pn	04 11.90	0.8	
GRF	149.73	338 ePKP	04 12.60	3.0X		iS	41 46.50		SBF	6.47	273 Pn	04 24.40	0.3	
SKO	150.08	317 ePKPc	04 24.80	14.4X	RTCV	2.23 60 ePd	41 47.00	0.0		Sn		05 42.60		
		e	04 29.70			eS	42 15.60		FRF	7.06	271 Pn	04 32.60	0.3	
BCAD	150.39	236 ePKPc	04 15.30	3.6X	CFA	2.58 58 ePc	41 51.90	0.1		Sn		05 59.30		
	1.2s	14.00nm			RTLL	2.59 51 iPd	41 51.30	-0.7	LPG	7.07	287 Pn	04 33.00	0.3	
		id	04 23.80		RTRS	3.05 23 iPd	41 58.00	0.6		Sn		05 59.00		
		id	05 34.00		S.D. = 0.6 on 9 of 9 obs.				LPL	7.08	287 Pn	04 33.30	0.4	
MEM	150.46	345 PKP	04 14.60	4.0X	* MAR 03, 1990 21h 26m 25.03± 0.66s					Sn		05 59.30		
OHR	150.94	316 ePKP	04 14.30	2.5X	22.151 S ±18.8km 174.166 W ± 7.9km				LMR	7.18	270 Pn	04 34.20	0.2	
KBA	151.03	332 e(PKP)	04 14.50	2.6X	DEPTH = 33.0km (normal)					Sn		06 02.10		
	0.8s	9.30nm			5.1mb ( 6 obs.) 4.8msz ( 1 obs.)				BRG	7.25	348 iPn	04 34.50	-0.4	
		i	04 22.30		TONGA ISLANDS REGION (174)					i		04 43.00		
DOU	151.27	346 PKP	04 24.10	12.2X						i		05 10.00		
LJU	151.29	330 e(PKP)	04 11.00	-1.1	SVA	8.01 299 ePd	28 21.70	-0.3		i		05 37.50		
RBL	151.43	331 PKP	04 16.00	3.6X	VUN	8.06 299 iPd	28 22.00	-0.8	LRG	7.28	271 Pn	04 35.80	0.5	
VOY	151.59	330 e(PKP)	04 15.80	3.1X	SGE	8.72 300 eP	28 32.50	0.5		Sn		06 03.20		
FVI	151.65	332 PKP	04 15.50	3.0X	NDF	9.01 298 eP	28 36.50	0.6	BSF	7.81	304 Pn	04 44.40	1.6	
CTI	152.56	333 PKP	04 16.50	2.4X	DZM	17.97 267 iPc	30 36.00	1.9		Sn		06 16.00		
VAI	153.85	337 PKP	04 16.50	0.8	PMG	39.20 283 eP	33 51.00	-1.0	CDF	7.82	309 Pn	04 43.80	0.8	
LOR	154.09	345 ePKP	04 35.10	19.1X	WB5	47.91 263 eP	35 00.20	-2.3		Sn		06 16.00		
	0.8s	4.70nm			WRA	47.92 263 Pd	35 00.20	-2.3	HAU	8.15	304 Pn	04 48.60	1.0	
SSF	154.37	345 ePKP	04 35.70	19.3X		0.9s	15.20nm	5.0mb		Sn		06 24.80		
	1.0s	6.00nm			SBB	77.82	45 eP	38 25.00	4.1X	LBF	9.28	294 Pn	05 02.70	-0.6
	S.D. = 1.1 on 72 of 114 obs.				CLC	78.65	44 eP	38 28.00	2.5		Sn		06 50.00	
& MAR 03, 1990 20h 09m 23.50s					GSC	78.85	45 eP	38 26.00	-0.7					



NDF	4.54	26	eP	14	05.50	-2.2
			eS	15	04.00	
SVA	4.73	39	iPd	14	09.60	-0.8
			eS	15	15.90	
VUN	4.82	38	ePc	14	10.50	-1.2
			eS	15	08.10	
SGE	4.89	30	iP	14	14.00	1.2
MBU	5.81	34	eP	14	25.90	0.1
			eS	15	23.10	
BRS	21.24	250	iPc	17	43.50	-1.6
MSZ	23.56	193	eP	18	06.00	-1.8
RMQ	24.68	254	eP	18	19.00	0.1
PRI	83.54	47	e(P)	25	25.20	-0.6
MWC	84.34	50	eP	25	34.00	4.0X
FRI	84.65	47	ePd	25	31.90	0.7
SB8	84.75	50	eP	25	32.00	0.1
CMB	84.76	46	ePd	25	32.40	0.6
WDC	84.77	43	ePd	25	32.70	1.0
ORV	84.86	44	ePd	25	32.80	0.6
CHG	84.95	292	eP	25	34.90	1.8
CHTO	84.95	292	eP	25	34.50	1.4
	1.2s	6.25nm				4.7mb
MIN	85.23	43	eP	25	34.70	0.4
CLC	85.49	49	eP	25	36.00	0.5
TPC	85.72	51	eP	25	47.00	10.3X
GSC	85.78	49	eP	25	37.00	0.0
LZH	88.77	310	eP	25	49.00	-2.6
	2.0s	33.00nm				5.3mb
PNT	91.34	36	eP	26	03.00	0.0
ALO	93.15	54	eP	26	12.00	0.1
MLR	145.66	321	ePKP	32	31.50	-4.8X
SPC	146.33	330	ePKP	32	31.00	-6.4X
			e	32	37.60	
KSP	146.76	336	ePKP	32	37.50	-0.2
			e	35	32.00	
CLL	147.55	339	ePKP	32	39.00	0.0
	1.3s	21.00nm				
PRU	148.11	336	ePKP	32	41.70	1.8
SRO	148.22	330	ePKP	32	41.10	1.0
ZST	148.48	332	ePKP	32	42.70	2.1X
KHC	149.18	336	iPKP	32	44.60	2.9X
	1.2s	10.00nm				
			e	34	39.30	
GRF	149.52	340	ePKP	32	45.60	3.4X
MEM	150.12	346	PKP	32	46.80	3.9X
SKO	150.32	319	ePKPc	32	46.00	2.4X
LJU	151.26	332	ePKP	32	49.00	4.1X
VOY	151.55	332	e(PKP)	32	45.00	-0.4
BCAO	151.62	236	iPKPc	32	49.70	3.3X
	0.4s	5.00nm				



? MAR 04, 1990 01h 40m 27.74±3.74s  
34.347 N ±35.1km 14.843 W ±23.5km  
DEPTH = 10.0km (geophysicist)  
MADEIRA ISLANDS REGION (393)  
MD 3.6 (RBA).

CFTV 5.95 174 eP 41 57.50 -0.5  
eS 42 56.80  
TBT 6.23 206 eP 42 02.20 0.3  
iS 43 04.80  
AVE 6.27 98 iPn 42 02.80 0.2  
eSn 43 06.00  
TIO 7.25 116 iPnc 42 17.00 0.6  
iSn 43 31.00  
i 43 34.00  
IFR 8.12 93 iPn 42 28.00 -0.6  
iSn 43 45.00  
i 43 49.00

S.D. = 0.8 on 5 of 5 obs.

? MAR 04, 1990 01h 51m 13.21±0.64s  
9.870 N ±12.2km 124.890 E ±14.0km  
DEPTH = 33.0km (normal)  
4.6mb (2 obs.)  
MINDANAO, PHILIPPINE ISLANDS (259)

PPR 6.07 270 eP 52 43.00 -0.1  
PMG 29.29 130 eP 57 25.50 10.5X  
BJI 31.03 347 eP 57 30.00 -0.1  
WRA 31.05 163 Pc 57 29.10 -1.5  
1.1s 3.30nm 4.1mb  
OIS 33.52 154 iPd 57 51.00 -1.1  
0.6s 14.00nm 5.1mb  
GUN 40.81 302 P 58 54.40 0.5  
ADE 46.47 164 eP 59 39.10 0.0  
BWA 49.38 154 eP 00 04.00 2.2  
CAN 50.39 154 eP 00 10.20 0.7  
INK 85.15 21 eP 03 47.00 0.0  
SUF 85.29 333 eP 03 47.20 -0.6

S.D. = 1.1 on 10 of 11 obs.

% MAR 04, 1990 01h 56m 59.43±1.75s  
44.233 N ±13.9km 7.294 E ±13.2km  
DEPTH = 10.0km (geophysicist)  
NORTHERN ITALY (545)  
ML 2.2 (GEN).

STV 0.02 63 P 57 02.23 0.7  
S 57 03.97  
ENR 0.09 94 P 57 02.33 0.2  
S 57 04.08  
PZZ 0.31 333 P 57 05.62 -0.2  
S 57 09.72  
ROB 0.42 81 P 57 07.26 -0.7  
S 57 12.79  
IMI 0.54 127 P 57 10.33 0.0  
S 57 17.10

S.D. = 0.8 on 5 of 5 obs.

MAR 04, 1990 01h 57m 11.24±0.64s  
36.113 N ±7.0km 27.249 E ±6.2km  
DEPTH = 10.0km (geophysicist)  
DODECANESE ISLANDS (369)  
MD 3.3 (ATH).

KAP 0.56 186 ePb 57 22.90 0.2  
ARG 0.72 81 ePb 57 25.10 -0.3  
NPS 1.58 238 ePb 57 39.00 -0.3  
SMG 1.63 348 ePb 57 40.00 0.0  
CIN 1.63 24 eP 58 22.00 42.0X  
APE 1.68 305 ePb 57 41.00 0.2  
KSL 1.89 89 ePn 57 44.00 0.2

S.D. = 0.3 on 6 of 7 obs.

\* MAR 04, 1990 02h 46m 04.49±0.92s  
21.103 S ±18.0km 175.485 E ±14.9km  
DEPTH = 33.0km (normal)  
4.9mb (5 obs.)  
SOUTH OF FIJI ISLANDS (171)

SVA 4.08 44 iP 47 07.10 0.9  
VUN 4.17 43 eP 47 04.60 -2.8X  
SGE 4.19 34 iP 47 07.10 -0.7  
MBU 5.12 37 eP 47 20.20 -0.8  
DZM 8.47 262 iPd 48 08.00 0.0  
BRS 21.62 249 iP 51 03.50 9.6X

MSZ 24.32 193 eP 51 20.00 -0.2  
RMQ 25.01 252 e(P) 51 31.00 4.0X  
ASPA 38.44 258 iPc 53 25.20 0.1  
1.1s 20.00nm 4.8mb  
Z 23s 0.63um 4.4mszX

WB5 38.46 264 eP 53 24.30 -1.0  
WRA 38.48 264 Pd 53 24.50 -0.9  
0.8s 5.20nm 4.4mb  
MAT 67.28 328 eP 57 05.00 6.9X  
1.0s 28.00nm 5.3mb  
FRI 84.04 47 e(P) 58 38.70 5.6X  
WDC 84.13 43 ePc 58 39.90 6.4X  
CMB 84.14 46 ePc 58 40.00 6.3X  
KMI 84.26 300 eP 58 42.50 7.7X  
CHG 84.77 292 eP 58 44.90 7.7X  
CHTO 84.77 292 eP 58 39.80 2.6  
1.2s 3.82nm 4.5mb

LZH 88.38 310 eP 58 44.90 16kmX  
1.5s 25.00nm 5.3mb  
ALO 92.60 54 eP 59 19.00 4.6X  
MLR 145.14 321 ePKP 05 46.50 6.1X  
KRA 145.24 332 ePKP 05 45.50 5.3X  
KSP 146.12 336 ePKP 05 48.50 6.8X  
CLL 146.88 340 iPKPc 05 50.10 7.2X  
PRU 147.47 337 ePKP 05 52.50 8.6X  
SRO 147.62 331 ePKP 05 56.10 11.9X  
ZST 147.87 332 ePKP 05 54.10 9.5X  
KHC 148.53 337 iPKPd 05 55.30 9.6X  
GRF 148.85 340 ePKP 05 56.00 9.9X  
KBA 150.31 335 ePKP 05 59.00 10.4X  
e 06 24.30  
LJU 150.65 332 ePKP 05 59.00 10.1X  
VOY 150.93 333 e(PKP)06 01.50 12.0X  
BCAO 152.15 237 iPKPd 06 02.90 10.8X  
0.6s 7.00nm

S.D. = 1.3 on 9 of 33 obs.

? MAR 04, 1990 03h 49m 06.80±1.74s  
22.097 S ±30.2km 175.546 E ±22.9km  
DEPTH = 33.0km (normal)  
SOUTH OF FIJI ISLANDS (171)

SVA 4.81 35 iP 50 19.00 0.2  
eS 51 16.50  
VUN 4.91 34 iP 50 19.00 -1.2  
eS 51 15.30  
SGE 5.01 27 iP 50 22.50 0.7  
MBU 5.91 31 eP 50 35.00 0.5  
eS 51 42.90  
DZM 8.44 268 iPc 51 09.40 -0.5  
iS 52 42.50  
BRS 21.33 251 eP 53 54.00 0.7  
KSP 147.04 336 ePKP 08 48.00 2.5X  
CLL 147.83 339 iPKP 08 51.10 4.4X  
PRU 148.40 336 PKP 08 52.50 4.9X  
KHC 149.46 336 ePKP 08 49.00 -0.4  
GRF 149.80 340 ePKP 08 56.50 6.6X  
BCAO 151.64 235 ePKPc 09 01.60 7.9X  
0.5s 6.00nm  
ic 12 30.90

S.D. = 0.9 on 7 of 12 obs.

\* MAR 04, 1990 04h 08m 46.11±1.02s  
21.654 S ±16.3km 175.782 E ±15.2km  
DEPTH = 33.0km (normal)  
4.5mb (2 obs.)  
SOUTH OF FIJI ISLANDS (171)

SVA 4.33 36 eP 09 54.50 3.2X  
eS 10 51.00  
VUN 4.42 35 iP 09 51.40 -1.2  
eS 10 42.70  
SGE 4.52 27 eP 09 54.50 0.3  
MBU 5.42 31 eP 10 07.40 0.6  
eS 11 15.00  
DZM 8.68 266 iPc 10 52.00 -0.6  
MNDI 34.67 292 eP 15 48.00 12.8X  
SPA 68.48 180 iPc 19 47.00 -0.1  
1.0s 6.50nm 4.7mb  
CHTO 85.24 292 eP 21 22.00 0.9  
1.0s 1.95nm 4.3mb

S.D. = 1.0 on 6 of 8 obs.

\* MAR 04, 1990 04h 23m 48.19±1.00s

7.227 N ±16.9km 82.363 W ±14.9km  
DEPTH = 10.0km (geophysicist)  
4.3mb (2 obs.) 3.4msz (1 obs.)  
SOUTH OF PANAMA (83)  
MD 4.4 (UPA).

UPA 3.30 58 ePd 24 41.00 0.1  
0.6s 106.67nm  
i 25 22.00  
ZOBO 27.27 149 P 29 35.50 0.0  
Z 22s 0.11um 3.4msz  
LR 38 10.00  
ALO 35.38 325 eP 30 47.00 0.6  
KVN 45.13 320 e(P) 32 05.90 -1.1  
LRM 46.40 331 eP 32 18.20 1.3  
YKA 59.98 343 eP 33 55.10 -1.8  
0.7s 1.10nm 4.1mb  
INK 69.67 342 eP 35 01.00 1.3  
MBC 71.88 351 eP 35 12.50 -0.4  
0.9s 4.00nm 4.5mb

S.D. = 1.3 on 8 of 8 obs.

\* MAR 04, 1990 04h 38m 30.18±1.37s  
41.254 N ±12.0km 20.093 E ±7.8km  
DEPTH = 10.0km (geophysicist)  
ALBANIA (391)  
ML 2.0 (SKO).

TIR 0.19 298 iPgc 38 34.00 -0.5  
LACI 0.48 323 iPgc 38 40.00 0.1  
PHP 0.51 31 iPgc 38 39.80 -0.6  
OHR 0.55 105 iPg 38 41.60 0.2  
iSg 38 51.10  
PUK 0.80 349 ePg 38 46.50 0.8  
KBN 0.83 139 ePg 38 34.50 -11.8X  
SKO 1.24 54 ePg 38 57.00 3.8X  
iSg 39 11.70

S.D. = 0.8 on 5 of 7 obs.

MAR 04, 1990 05h 19m 41.71±1.30s  
51.254 N ±12.0km 15.686 E ±6.2km  
DEPTH = 5.0km (geophysicist)  
POLAND (548)  
ML 4.0 (KBA), 3.8 (VKA), 3.8 (GRF).

KSP 0.56 137 iP 19 51.50 -1.5  
0.3s 80.00nm  
iS 19 58.50  
PRU 1.46 210 Pn 20 09.40 0.6  
Pg 20 11.40  
Sn 20 28.00  
eSg 20 35.50  
CLL 1.69 273 iPn 20 10.50 -1.4  
0.4s 26.00nm  
iPg 20 14.10  
iSg 20 39.90  
KHC 2.52 213 iPn 20 24.00 0.0  
Pg 20 30.60  
eSn 21 00.00  
Sg 21 08.70  
HOF 2.59 250 iPnc 20 24.80 -0.2  
MOX 2.64 258 iPg 20 33.00 7.2X  
iSg 21 12.00  
WET 2.78 222 iPnc 20 28.50 0.8  
KRA 2.96 112 eP 20 31.90 1.7  
eS 21 08.30  
VKA 3.02 172 ePn 20 30.00 -1.1  
iPg 20 39.10  
iSg 21 22.40  
ZST 3.20 163 eP 20 59.50 25.9X  
i 21 28.00  
GRF 3.25 243 ePn 20 34.60 0.2  
iPg 20 46.50  
eSg 21 33.50  
SOP 3.62 171 eP 20 50.80 11.2X  
SRO 3.85 153 eP 20 51.40 8.6X  
BHG 3.98 208 ePn 20 56.60 11.9X  
KBA 4.45 201 iPnc 20 51.50 -0.1  
eSg 22 11.70  
TNS 4.71 260 ePn 20 59.20 4.1X  
eSn 22 17.00  
SCE 4.96 213 iPnd 20 59.20 0.4  
RBL 5.02 197 P 20 59.00 -0.5  
FVI 5.04 203 P 21 00.00 0.3  
OGA 5.35 217 iPnc 21 05.00 0.6  
CTI 5.86 209 P 21 11.50 0.2



04d 05h

S.D. = 0.9 on 15 of 21 obs.			CHTO	37.39 291 iP	42 42.90 0.0	SVA	4.88 39 eP	40 42.00 0.0
* MAR 04, 1990 06h 04m 00.20 ± 1.73s			CD2	1.1s 13.84nm	4.7mb	VUN	eS	41 41.50
28.543 N ± 11.7km 139.802 E ± 15.3km			HHC	37.71 312 eP	42 46.20 0.7		4.97 38 iP	40 39.60 -3.8X
DEPTH = 466.1 ± 18.8 km			BTO	39.32 331 P	42 59.60 0.7		eS	41 35.00
4.2mb ( 10 obs.)			LZH	39.90 329 P	43 04.00 0.3	SGE	5.03 31 eP	40 42.00 -2.4
BONIN ISLANDS REGION (212)				40.50 319 iPc	43 09.60 0.8	MBU	5.96 34 eP	40 54.70 -2.6
MAT 8.09 351 (P) 05 58.00 -0.2			1.2s 90.00nm	5.4mb	DZM	eS	42 04.00	
0.5s 6.34nm			Z 20s 0.30um	4.1msz		iPd	41 29.80 1.6	
eS 07 29.00 4.2mb			CAN	44.69 165 eP	43 44.40 1.7	MNG	iS	43 08.50
BJI 22.57 307 eP 08 26.00 0.9			GTA	45.03 320 iPc	43 45.20 -0.4		18.60 179 P	43 44.40 -1.3
CHTO 38.49 265 eP 10 41.10 -1.3			LSA	47.15 304 eP	44 04.20 1.3	HNR	eP	43 42.00 -11.8X
0.8s 1.65nm			VUN	49.34 122 eP	44 23.90 4.5X	BRS	iPc	44 16.10 3.0X
GUN 47.17 283 P 11 51.80 0.3			SVA	49.38 122 eP	44 36.50 16.7X	MSZ	eP	44 37.00 0.9
0.8s 43.00nm			GUN	51.12 300 P	44 33.40 0.0	RMO	eP	44 47.50 0.5
PKI 47.66 282 P 11 55.20 0.1			PKI	51.45 299 P	44 35.30 -0.6	WRA	eP	46 48.00 0.7
KKN 47.71 283 P 11 55.40 0.0			KKN	51.61 299 P	44 36.80 -0.2		1.1s 5.30nm	4.3mb
DMN 47.91 283 P 11 56.80 -0.2			DMN	51.72 299 P	44 37.60 -0.2	KLB	eP	48 33.00 -2.3
GKN 48.21 283 P 11 59.00 -0.1			GKN	52.21 299 P	44 41.00 -0.4	NWAO	eP	48 36.00 -1.9
0.4s 9.00nm			WMO	55.08 319 iPc	45 01.70 -0.6	MAT	eP	50 25.00 -1.4
WB5 48.42 187 eP 11 58.00 -1.7			HYB	56.48 286 eP	45 11.70 -0.9		1.0s 8.00nm	4.8mb
WRA 48.49 187 Pd 12 03.30 2.3				1.2s 35.70nm	5.3mb	SPA	iPc	50 26.20 -1.9
0.4s 0.50nm			GBA	57.51 281 P	45 17.60 -2.3		1.1s 17.86nm	5.1mb
KEV 70.92 340 eP 14 25.00 -5.4X			QUE	1.0s 9.00nm	4.8mb	PSI	ePc	51 27.00 -1.1
YKA 71.87 28 eP 14 35.40 -0.6			MAIO	67.83 299 eP	46 27.80 -0.8		e	52 50.00
0.7s 0.80nm			INK	74.37 305 iPc	47 08.00 0.3	WHN	eP	51 27.50 -0.4
SOD 72.28 338 iP 14 39.70 1.4			MBC	1.1s 15.31nm	4.9mb	TIA	eP	51 35.20 -0.2
SUF 74.98 334 eP 14 53.70 0.0				83.05 22 eP	47 54.00 -0.2	CN2	eP	51 34.00 -1.3
0.5s 4.30nm			SOD	85.96 13 ePd	48 08.80 0.1	GCC	eP	51 54.40 0.6
NUR 76.82 333 iP 15 03.80 0.0			SUF	0.8s 20.00nm	5.4mb	PCC	eP	51 54.10 0.3
0.6s 17.00nm				90.06 339 iP	48 26.80 -1.7	PRS	e(P)	51 54.90 0.9
HFS 81.26 336 eP 15 26.60 -0.7			YKA	91.91 334 eP	48 34.80 -2.3	BRK	e(P)	51 55.80 0.5
0.5s 5.80nm				0.8s 10.40nm	5.3mb	TIY	Pc	51 56.20 0.3
NB2 81.48 337 P 15 28.20 -0.3			NUR	91.99 26 eP	48 36.70 -0.8	MHC	ePd	51 56.90 0.8
0.7s 3.50nm				0.8s 10.20nm	5.3mb	PRI	eP	51 57.00 0.9
S.D. = 1.1 on 16 of 17 obs.			WDC	93.40 332 eP	48 47.00 3.0X	PAS	eP	52 03.00 3.6X
MAR 04, 1990 06h 35m 30.98 ± 0.28s			DAG	93.73 48 ePc	48 46.20 0.2	FRI	ePd	52 01.90 0.5
7.823 N ± 5.1km 135.782 E ± 6.1km				94.27 354 iPc	48 46.00 -1.7	RVR	eP	52 03.00 1.2
DEPTH = 33.0km (normal)			MIN	0.9s 8.40nm	5.2mb	CHG	eP	52 03.20 1.0
5.1mb ( 17 obs.) 4.3msz ( 4 obs.)			ORV	94.48 48 eP	48 49.20 -0.4	CHTO	eP	52 02.80 0.6
WEST CAROLINE ISLANDS (209)			CMB	94.75 49 eP	48 50.50 -0.2		0.8s 2.93nm	4.5mb
OCP 15.93 296 eP 39 26.50 12.1X			EDM	95.97 50 eP	48 56.50 0.1	SBB	eP	52 02.00 -0.1
BAG 17.13 301 eP 39 32.00 2.2			PRI	96.98 34 ePc	48 55.80 -0.3	CMB	ePd	52 02.50 0.5
eS 42 52.00			FRI	96.76 51 eP	49 04.20 6.5X	PLM	eP	52 03.00 0.7
PMG 20.53 146 eP 40 08.50 -0.8			HFS	98.42 335 eP	49 01.90 2.0	WDC	ePd	52 03.60 1.6
MKS 20.80 232 ePc 40 13.00 0.9				0.6s 2.50nm	4.9mb	ISA	eP	52 03.00 0.7
MTN 21.05 193 e(P) 40 14.00 -0.7			LRM	99.22 41 eP	49 11.20 0.0	ORV	eP	52 02.80 0.3
SSE 26.87 331 P 41 10.20 -0.5			FFC	101.33 30 iPd	49 19.80 -0.3	CLC	eP	52 06.00 0.3
Z 20s 0.60um			NNA	1.1s 13.00nm	5.4mb	TPC	eP	52 07.00 0.1
pP 41 18.50 29kmX				147.61 100 ePKP	55 13.50 1.6	GSC	eP	52 07.00 -0.3
eS 45 44.00			ZOBO	1.2s 28.13nm		HHC	eP	52 08.20 0.8
eSS 46 02.00				155.18 112 PKP	55 25.00 1.4	CD2	eP	52 08.90 -0.5
WB5 27.56 183 eP 41 18.00 0.9				1.5s 10.75nm		LZH	eP	52 21.50 0.6
WRA 27.63 183 Pd 41 19.00 1.3				S.D. = 1.0 on 57 of 63 obs.		PNT	eP	52 34.00 0.8
0.8s 10.40nm				* MAR 04, 1990 08h 33m 22.50 ± 1.08s			1.1s 17.00nm	5.4mb
CTA 29.59 160 ePc 41 31.50 -3.9X				11.586 S ± 15.2km 73.776 W ± 8.6km		ALO	eP	52 42.00 -0.1
e 42 13.50				DEPTH = 33.0km (normal)			1.0s 2.50nm	4.6mb
ASPA 31.35 183 eP 41 49.80 -1.1				3.8mb ( 1 obs.)		YKA	ePd	53 17.10 2.9X
0.6s 4.00nm			PERU		(116)		0.7s 0.30nm	3.9mb
Z 22s 0.34um				PT02 2.93 242 eP	34 07.80 -0.1	MLR	ePKP	59 05.00 -0.8
LR 53 30.20				eS 34 45.60		KRA	ePKP	59 05.70 -0.1
TIA 32.99 332 P 42 05.00 -0.1				3.03 262 iPc	34 09.40 0.1	SPC	ePKP	59 06.40 -0.5
GYA 33.29 307 iPc 42 09.00 1.0				0.7s 10.27nm		KSP	iPKPc	59 08.30 1.0
LOE 34.51 289 eP 42 18.00 -0.5				iS 34 51.90		CLL	iPKP	59 10.50 2.0
SNG 34.87 271 eP 42 21.30 -0.3				iS 34 44.60	3.7X		1.2s 32.00nm	
WARB 34.95 194 iPd 42 21.00 -1.1				PT03 3.10 219 iPd	34 14.00	PRU	ePKP	59 11.50 2.0X
SNY 35.55 344 eP 42 28.00 1.0				iS 34 54.80			1.0s 14.50nm	
Z 17s 0.50um				PT06 3.34 228 eP	34 13.00 -0.7	ZST	ePKP	59 12.90 2.8X
eS 48 06.00				ARE 5.33 156 eP	34 47.00 4.8X	MOX	ePKP	59 13.00 2.8X
KMI 35.90 303 P 42 32.00 1.4				ZOBO 7.19 131 eP	35 09.00 0.3		1.6s 40.00nm	
1.2s 100.00nm						KHC	iPKPd	59 14.70 3.4X
XAN 35.97 320 P 42 30.30 -0.5							1.2s 15.00nm	
TIY 36.50 328 eP 42 35.00 -0.3						GRF	ePKP	59 16.10 4.4X
Z 20s 0.60um						SKO	iPKP	59 17.60 4.5X
e 42 28.00						ABH	ePKP	59 17.20 4.1X
BJI 36.56 334 ePc 42 36.00 0.4						RUP	ePKP	59 17.97 4.4X
1.0s 48.00nm						KBA	ePKP	59 17.00 2.9X
Z 20s 0.60um							0.8s 8.30nm	
e 45 50.00						LJU	e(PKP)	59 19.00 4.6X
CN2 36.96 348 Pd 42 39.30 0.4						VBY	ePKP	59 19.80 5.3X
PSI 37.04 264 ePd 42 39.50 -0.5						BCAO	ePKPd	59 14.10 -1.6
1.0s 10.50nm							0.9s 36.00nm	
e 45 50.00							ic 59 20.50	
MDJ 37.05 353 eP 42 39.50 -0.1						CEY	e(PKP)	59 21.00 6.1X
CHG 37.39 291 eP 42 43.00 0.1						VOY	ePKP	59 19.90 4.9X
1.1s 14.87nm							S.D. = 1.1 on 47 of 65 obs.	
S.D. = 0.7 on 6 of 9 obs.								
MAR 04, 1990 08h 39m 29.01 ± 0.32s								
21.963 S ± 8.3km 175.233 E ± 7.3km								
DEPTH = 33.0km (normal)								
4.6mb ( 7 obs.)								
SOUTH OF FIJI ISLANDS (171)								



04d 08h

? MAR 04, 1990 08h 55m 35.54±7.37s  
11.947 S ±47.4km 75.646 W ±52.4km  
DEPTH = 33.0km (normol)

PERU (116)

NNA 1.17 268 iPd 55 56.20 0.5  
0.6s 20.00nm

iS 57 11.50

PT02 1.26 218 iPd 55 57.00 0.1

iS 56 13.90

PT10 1.30 264 eP 55 57.00 -0.5

iS 56 13.60

PT06 1.99 200 eP 56 52.90 45.4X

PT03 2.04 184 iPc 56 08.20 0.0

iS 56 33.50

S.D. = 0.7 on 4 of 5 obs.

\* MAR 04, 1990 09h 18m 38.85±1.11s  
7.919 N ±11.5km 74.578 W ±12.4km  
DEPTH = 78.9 ± 11.3 km  
4.6mb ( 3 obs.)

NORTHERN COLOMBIA ( 99)

BMG 1.71 119 eP 19 07.00 -0.5

BOG 3.31 171 eP 19 31.00 1.2

eS 20 08.00

UPA 5.01 283 eP 19 52.80 -0.4

PSO 7.22 202 eP 21 01.50 37.3X

ARE 24.42 173 eP 23 52.00 0.2

ZOBO 24.87 165 iPd 23 55.40 -1.0

0.5s 14.29nm 4.7mb

Z 20s 0.06um 3.1Msz

eLR 31 20.00

LPB 25.13 165 Pd 23 58.10 -0.5

1.0s 36.00nm 4.8mb

YKA 61.74 340 eP 28 50.50 -0.5

0.5s 0.90nm 4.1mb

MBC 72.47 350 eP 29 59.50 1.2

GBA 144.94 53 PKPc 38 09.70 0.3

0.6s 1.30nm

S.D. = 1.0 on 9 of 10 obs.

? MAR 04, 1990 10h 09m 02.42±2.32s  
20.069 S ±33.1km 177.162 E ±25.7km  
DEPTH = 33.0km (normol)

4.6mb ( 1 obs.)

SOUTH OF FIJI ISLANDS (171)

VUN 2.39 31 eP 09 39.50 -0.6

MBU 3.42 26 eP 09 55.40 0.6

HNR 19.70 300 eP 13 32.00 -0.1

BRS 23.46 247 iP 14 05.50 -4.5X

WB5 40.14 263 eP 16 37.20 0.0

CHTO 85.84 292 e(P) 21 40.60 0.1

1.0s 3.75nm 4.6mb

S.D. = 0.7 on 5 of 6 obs.

MAR 04, 1990 11h 51m 11.43±0.26s  
34.616 N ±5.1km 79.849 E ±4.5km  
DEPTH = 33.0km (normol)

4.7mb ( 27 obs.) 4.2Msz ( 1 obs.)

KASHMIR-TIBET BORDER REGION (304)

NDI 6.33 201 iPc 52 50.00 5.2X

0.5s 71.83nm 5.7mb

eS 54 04.50

GKN 7.76 147 P 53 05.60 0.5

KKN 8.24 144 P 53 11.80 0.0

DMN 8.31 146 P 53 12.80 0.0

GUN 8.44 141 P 53 14.20 -0.5

PKI 8.49 144 P 53 14.80 -0.5

LSA 10.76 114 P 53 47.40 0.7

N 10s 2.36um

WMO 11.02 31 eP 53 45.50 -4.3X

Z 12s 1.40um

eS 55 50.00

QUE 11.76 252 eP 53 59.20 -0.9

eS 56 12.50

SHL 13.77 128 iP 54 22.00 -4.7X

iS 57 52.00

GTA 16.64 67 eP 54 59.80 -4.0X

Z 14s 2.20um

N 10s 1.30um

MAIO 16.67 282 eP 55 02.00 -2.2

eS 58 03.00

BOM 16.86 204 eP 55 08.60 2.1

eS 57 46.00

POO 16.89 200 eP 55 08.00 1.1

HYB 17.17 184 eP 55 08.00 -2.5

0.8s 29.20nm 4.5mb

eS 58 12.00

LZH 19.62 79 eP 55 37.50 -2.7

2.0s 70.00nm 4.6mb

Z 22s 0.70um

N 12s 0.90um

E 10s 0.40um

eS 59 18.00

CD2 20.43 94 eP 55 46.70 -1.9

Z 10s 1.00um 4.5MszX

N 13s 1.20um

GBA 21.03 187 Pc 55 54.10 -0.7

0.7s 7.40nm 4.2mb

KMI 21.95 109 Pc 56 04.20 0.0

Z 15s 1.30um 4.5MszX

CHG 23.14 128 eP 56 15.40 -0.4

1.0s 26.50nm 4.7mb

CHTO 23.14 128 iP 56 15.40 -0.4

1.2s 35.76nm 4.7mb

XAN 23.98 83 eP 56 23.00 -0.9

BDT 24.34 130 eP 56 28.10 0.8

0.5s 20.90nm 4.9mb

GYA 24.43 102 P 56 28.60 0.2

BTO 24.56 67 eP 56 30.00 0.5

N 11s 0.30um

E 11s 0.50um

eS 00 51.00

HHC 25.75 67 eP 56 42.00 1.2

N 11s 0.77um

LOE 25.99 126 eP 56 42.50 -0.5

NST 26.23 131 eP 56 47.50 2.3

TIY 26.42 74 eP 56 47.40 0.5

Z 12s 0.96um 4.6MszX

N 11s 0.60um

NNT 28.40 136 iPc 57 05.80 0.8

BJI 29.25 69 eP 57 16.00 3.6X

1.0s 12.00nm 4.6mb

Z 20s 0.60um 4.2Msz

E 10s 0.31um

CN2 36.11 61 P 58 13.00 0.9

ELL 40.25 288 eP 58 47.00 0.0

MLR 41.95 302 ePd 59 04.00 3.2X

SUF 43.38 327 eP 59 13.90 1.9

0.6s 4.90nm 4.4mb

NUR 43.59 324 eP 59 19.00 5.3X

SOD 44.56 334 eP 59 23.00 1.5

KEV 45.29 337 eP 59 30.00 2.7X

HFS 48.97 323 eP 59 55.70 -0.6

0.6s 6.80nm 4.9mb

LJU 49.79 304 e(P) 00 06.00 3.2X

KHC 49.88 308 eP 00 05.00 1.5

NB2 50.19 324 P 00 04.90 -0.8

0.8s 5.60nm 4.6mb

VOY 50.22 304 e(P) 59 55.00 -11.3X

TRI 50.38 304 eP 00 08.00 0.7

KBA 50.39 306 e(P) 00 13.50 5.9X

GRF 51.30 309 eP 00 15.40 1.1

BSF 54.56 308 eP 00 38.40 -0.3

0.8s 12.10nm 5.0mb

LPG 55.21 305 eP 00 43.90 0.3

0.8s 5.35nm 4.6mb

LPL 55.21 305 eP 00 43.90 0.3

1.0s 10.00nm 4.8mb

DOU 55.40 311 P 00 48.10 3.5X

LOR 56.63 308 eP 00 53.10 -0.4

0.8s 5.35nm 4.6mb

LBF 56.63 307 eP 00 52.80 -0.8

1.0s 4.00nm 4.4mb

SMF 56.82 307 eP 00 54.30 -0.6

0.8s 5.35nm 4.6mb

SSF 56.92 308 eP 00 55.00 -0.5

0.6s 3.60nm 4.6mb

MAF 57.79 307 eP 01 02.10 0.5

0.8s 4.70nm 4.6mb

LDF 58.79 310 eP 01 07.60 -1.0

0.8s 14.80nm 5.2mb

GRR 59.32 310 eP 01 11.40 -0.8

0.9s 18.00nm 5.2mb

BCAO 64.01 257 iPc 01 44.60 0.3

0.6s 29.00nm 5.6mb

ic 01 53.00

MBC 68.74 5 eP 02 12.50 -0.9

0.8s 17.00nm 5.2mb

BUL 73.05 230 eP 02 38.90 -1.4

0.9s 4.62nm 4.5mb

INK 74.40 12 eP 02 47.00 -0.3

WRA 74.99 128 Pc 02 54.90 3.4X

0.9s 4.10nm 4.4mb

KIC 81.98 272 P 03 31.70 1.9

YKA 82.53 7 eP 03 30.40 -1.4

0.8s 4.50nm 4.6mb

FFC 91.01 1 eP 04 14.00 0.7

1.0s 16.00nm 5.3mb

ZOBO 146.00 294 PKP 10 51.20 1.4

S.D. = 1.1 on 53 of 66 obs.

\* MAR 04, 1990 12h 28m 08.61±0.93s  
59.950 N ± 8.0km 153.363 W ±10.3km  
DEPTH = 153.2 ± 12.9 km  
3.3mb ( 1 obs.)

SOUTHERN ALASKA ( 2)

SVW 1.61 317 iPc 28 40.10 0.1

KDC 2.26 168 iPd 28 47.20 -0.1

PMS 2.28 54 eP 28 47.80 0.1

PMR 2.65 50 eP 28 52.30 0.1

TTA 3.25 338 iPd 29 00.00 0.1

FBA 5.60 25 eP 29 30.00 -0.8

IMA 6.14 359 eP 29 38.20 -0.1

INK 11.99 37 eP 30 56.00 0.6

YKA 18.64 65 eP 32 16.60 -0.1

0.5s 0.80nm 3.3mb

S.D. = 0.5 on 9 of 9 obs.

MAR 04, 1990 12h 28m 25.22±0.41s  
22.481 S ± 8.6km 174.512 E ±10.1km  
DEPTH = 33.0km (normol)

4.5mb ( 3 obs.)

LOYALTY ISLANDS REGION (189)

SVA 5.71 41 eP 29 51.00 1.1

VUN 5.79 41 eP 29 49.20 -2.0

SGE 5.83 34 eP 29 51.00 -0.8

MBU 6.76 37 eP 30 04.20 -0.6

DZM 7.48 272 iPd 30 10.50 -4.5X

iS 31 32.00

CAW 18.58 179 eP 32 42.80 1.2

TCW 18.68 181 P 32 43.80 1.0

BLW 18.85 178 eP 32 42.20 -2.7

HNR 19.07 311 eP 32 36.00 -11.7X

BRS 20.30 252 iPc 33 05.70 4.6X

COO 21.76 243 eP 33 15.00 -1.0

MSZ 22.79 192 eP 33 32.00 6.0X

RMQ 23.76 255 eP 33 34.00 -1.6

CAN 25.66 234 eP 33 55.00 1.2

BWA 25.77 237 eP 33 54.30 -0.5

ASPA 37.29 260 eP 35 37.10 0.9

0.8s 5.00nm 4.4mb

MAT 67.98 329 (P) 39 24.00 0.8

2.0s 94.12nm 5.5mb X

CHTO 84.46 293 eP 40 56.30 0.0

1.3s 3.68nm 4.4mb

MHC 84.53 46 ePc 40 57.60 1.1

PAS 85.22 50 eP 41 03.00 3.2X

MWC 85.34 50 eP 41 02.00 1.3



04d 12h

44.680 N  $\pm$  15.9km 140.972 E  $\pm$  23.1km  
 DEPTH = 253.2  $\pm$  27.1 km  
 4.4mb ( 7 obs.)  
 EASTERN SEA OF JAPAN (223)

MAT 8.40 195 eP 59 40.00 0.1  
 0.7s 19.18nm 4.2mb  
 eS 01 16.00  
 INK 47.83 30 eP 05 54.50 0.1  
 MBC 49.33 18 eP 06 05.00 -0.8  
 YKA 57.44 32 eP 07 04.90 -0.2  
 0.6s 4.40nm 4.3mb  
 WRA 64.59 187 Pd 07 52.80 -0.3  
 0.5s 1.40nm 3.9mb  
 HFS 67.02 334 eP 08 07.60 -0.6  
 0.5s 9.40nm 4.8mb  
 NB2 67.04 336 P 08 08.00 -0.4  
 0.5s 2.40nm 4.2mb  
 FFC 67.51 34 iPc 08 12.10 0.8  
 0.6s 7.00nm 4.6mb  
 CLL 74.33 329 iP 08 53.00 1.1  
 0.9s 13.00nm 4.7mb  
 S.D. = 0.8 on 9 of 9 obs.

MAR 04, 1990 13h 24m 06.86  $\pm$  0.64s  
 21.247 S  $\pm$  5.5km 67.758 W  $\pm$  8.4km  
 DEPTH = 199.6  $\pm$  8.9 km  
 4.6mb ( 6 obs.)  
 CHILE-BOLIVIA BORDER REGION (124)

ANT 3.47 225 iPd 25 22.80 20.3X  
 iS 25 43.50  
 CCH 4.14 22 iPc 25 10.30 -0.9  
 LPB 4.70 356 iPc 25 19.30 0.8  
 1.0s 2100.00nm  
 ZOBO 4.96 356 iPc 25 22.30 0.3  
 Z 19s 0.22um  
 S 26 10.00  
 LR 27 30.00  
 ARE 5.93 323 iPc 25 32.50 -1.7  
 iS 26 36.00  
 RTRS 9.02 189 e(P) 26 14.00 -0.2  
 RTLL 10.06 183 iPc 26 25.80 -2.0  
 RTCB 10.24 185 e(P) 26 29.70 -0.5  
 CFA 10.33 182 iPc 26 29.50 -1.8  
 eS 28 20.10  
 PT03 10.52 312 eP 26 33.20 -0.7  
 RTCV 10.59 184 e(P) 26 33.20 -1.5  
 PT02 11.70 314 eP 26 49.50 0.5  
 eS 28 50.00  
 ROCH 12.03 193 eP 26 55.50 2.2  
 FCH 12.24 190 eP 26 57.00 0.9  
 iS 27 04.50  
 SAN 12.43 191 ePd 26 59.00 0.8  
 PT08 12.50 316 eP 27 00.30 0.8  
 eS 29 09.80  
 NNA 12.67 315 eP 27 01.50 0.2  
 0.9s 12.60nm 4.3mb  
 i 27 09.00  
 ITB1 12.77 108 Pc 27 05.40 2.8  
 ITB 12.97 108 Pc 27 07.40 2.4  
 LNV 13.07 194 iP 27 05.90 -0.2  
 ITB7 13.07 110 Pc 27 08.60 2.2  
 BAO 19.56 77 Pd 28 18.70 -2.9  
 CAI 33.04 68 eP 30 23.00 -2.5  
 ALO 66.88 326 ePc 34 41.00 1.3  
 0.8s 2.43nm 4.0mb  
 LIC 67.29 73 Pd 34 40.78 -1.6  
 TIC 67.48 73 Pd 34 41.96 -1.7  
 KIC 67.60 73 Pd 34 42.92 -1.5  
 0.5s 34.50nm 5.4mb  
 LKO 68.27 70 Pd 34 46.84 -1.7  
 0.6s 28.00nm 5.2mb  
 KUK 71.46 75 iPc 35 06.70 -1.1  
 SCH 75.76 1 eP 35 32.00 0.2  
 TIO 77.85 50 iP 35 45.20 1.1  
 AVE 79.06 48 eP 35 46.00 -4.4X  
 IFR 80.78 49 iPd 36 00.00 0.3  
 ALOJ 83.42 46 iPc 36 14.50 1.3  
 AAPN 83.52 46 iPc 36 14.80 1.1  
 APHE 83.62 46 eP 36 14.80 0.6  
 BUL 88.51 111 iPc 36 37.10 -1.4  
 0.8s 9.70nm 4.7mb  
 YKA 91.31 340 eP 36 52.00 1.7  
 0.6s 1.90nm 4.3mb

KOD 144.86 103 ePKP 43 23.80 1.1  
 GBA 145.99 97 PKPd 43 25.60 1.5  
 0.6s 8.30nm  
 HYB 148.02 91 ePKP 43 32.00 4.6X  
 e 43 42.00  
 GKN 154.06 69 PKP 43 47.00 10.8X  
 DMN 154.53 70 PKP 43 49.40 12.4X  
 KKN 154.65 70 PKP 43 48.90 11.8X  
 PKI 154.80 70 PKP 43 49.60 12.2X  
 GUN 155.16 69 PKP 43 49.00 11.1X  
 S.D. = 1.5 on 38 of 46 obs.

? MAR 04, 1990 14h 48m 12.58  $\pm$  1.16s  
 23.311 S  $\pm$  17.4km 176.263 E  $\pm$  27.9km  
 DEPTH = 33.0km (normal)  
 4.5mb ( 2 obs.)  
 SOUTH OF FIJI ISLANDS (171)

SVA 5.56 22 eP 49 35.30 0.1  
 eS 50 37.90  
 VUN 5.67 22 eP 49 36.00 -0.7  
 eS 50 40.50  
 SGE 5.90 16 eP 49 39.50 -0.7  
 MBU 6.72 21 eP 49 52.00 0.5  
 eS 51 06.00  
 DZM 9.15 276 iPc 50 17.00 -8.4X  
 iS 51 48.90  
 HNR 20.84 309 eP 52 20.00 -34.0X  
 BRS 21.60 254 eP 53 14.30 12.5X  
 MSZ 22.38 196 eP 53 09.00 -0.3  
 ASPA 38.75 261 eP 55 33.90 -1.9  
 1.0s 7.00nm 4.4mb  
 CHG 86.27 292 eP 00 54.30 1.6  
 CHTO 86.27 292 eP 00 54.00 1.3  
 1.2s 3.82nm 4.5mb  
 PRU 149.77 336 ePKP 08 04.50 9.0X  
 KHC 150.83 336 PKP 08 01.60 4.4X  
 BCAO 151.46 232 ePKPd 08 11.90 12.7X  
 0.8s 7.00nm  
 S.D. = 1.4 on 8 of 14 obs.

\* MAR 04, 1990 14h 50m 42.06  $\pm$  0.85s  
 17.047 S  $\pm$  10.5km 64.880 W  $\pm$  9.3km  
 DEPTH = 33.0km (normal)  
 4.6mb ( 1 obs.)  
 BOLIVIA (120)

CCH 1.25 254 iPc 51 02.80 -0.8  
 LPB 3.12 279 P 51 31.90 1.3  
 i 51 38.00  
 S 52 14.00  
 LR 52 34.00  
 ZOBO 3.20 284 iPc 51 32.40 0.6  
 Z 15s 1.88um  
 iS 52 13.00  
 LR 52 34.00  
 ARE 6.36 274 eP 52 19.00 2.7X  
 NNA 12.62 292 eP 53 41.00 -1.2  
 BAO 16.27 87 e(P) 54 30.00 0.0  
 FCH 16.93 196 eP 54 40.00 1.6  
 SAN 17.15 197 eP 54 41.50 0.7  
 LNV 17.83 198 eP 54 47.00 -2.2  
 KVN 74.74 320 eP 02 21.00 0.2  
 YKA 88.33 339 eP 03 31.10 -0.2  
 0.8s 2.70nm 4.6mb  
 S.D. = 1.3 on 10 of 11 obs.

MAR 04, 1990 15h 07m 41.89  $\pm$  0.57s  
 34.088 N  $\pm$  7.0km 117.703 W  $\pm$  5.4km  
 DEPTH = 5.0km (geophysicist)  
 SOUTHERN CALIFORNIA (43)  
 ML 2.7 (NEIS).

MWC 0.32 295 iPd 07 48.80 0.3  
 iS 07 53.80  
 PEC 0.49 113 iPc 07 51.90 0.1  
 CIS 0.90 221 eP 08 00.10 0.6  
 eS 08 13.30  
 PLM 1.01 136 iPc 08 01.30 -0.4  
 ABL 1.47 302 eP 08 08.80 -0.4  
 BCH 2.25 300 eP 08 20.60 0.2  
 BLP 2.28 283 e(P) 08 20.00 -0.8  
 TNP 4.00 5 eP 08 45.80 0.4  
 S.D. = 0.6 on 8 of 8 obs.

MAR 04, 1990 15h 08m 17.71  $\pm$  0.66s  
 40.864 N  $\pm$  4.8km 22.958 E  $\pm$  6.2km

DEPTH = 10.0km (geophysicist)  
 GREECE (364)  
 ML 2.1 (THE), 1.7 (SKO).

THE 0.23 179 ePg 08 22.60 -0.1  
 eSg 08 26.40  
 KNT 0.30 351 iPg 08 24.30 0.3  
 eSg 08 28.70  
 SOH 0.30 98 iPg 08 24.30 0.2  
 eSg 08 28.50  
 SRS 0.54 62 ePg 08 28.40 -0.3  
 eSg 08 36.10  
 VAY 0.54 327 iPg 08 28.50 -0.2  
 iSg 08 36.70  
 LIT 0.84 205 ePg 08 34.00 0.0  
 S.D. = 0.3 on 6 of 6 obs.

MAR 04, 1990 15h 42m 04.87  $\pm$  0.77s  
 37.737 N  $\pm$  7.0km 21.132 E  $\pm$  6.5km  
 DEPTH = 10.0km (geophysicist)  
 4.4mb ( 5 obs.)  
 SOUTHERN GREECE (368)  
 ML 3.8 (THE), 3.4 (ATH).

VLS 0.61 316 ePg 42 17.50 0.3  
 AGG 1.59 36 ePb 42 34.70 1.5  
 eSb 42 56.10  
 VLI 1.76 125 ePg 42 39.40 3.8X  
 IGT 1.90 341 ePb 42 38.20 0.6  
 ATH 2.06 83 ePb 42 41.00 1.1  
 eSn 43 06.50  
 KEK 2.23 333 ePb 42 44.70 2.3  
 NEO 2.27 46 ePn 42 43.50 0.5  
 LIT 2.59 24 ePn 42 49.10 1.6  
 eSn 43 18.70  
 KZN 2.61 11 ePn 42 48.50 0.6  
 FNA 3.05 3 ePn 42 54.30 0.3  
 eSn 43 29.50  
 PLG 3.19 34 ePn 42 55.50 -0.5  
 THE 3.22 26 ePn 42 56.10 -0.4  
 eSn 43 33.80  
 OHR 3.38 356 iPn 42 59.10 0.3  
 1.0s 0.17nm  
 eSn 43 52.00  
 LO 44 05.00  
 VAM 3.39 132 ePn 43 00.00 1.1  
 OUR 3.41 40 ePn 42 59.30 0.1  
 eSn 43 39.70  
 SOH 3.53 29 ePn 43 01.50 0.6  
 eSn 43 40.40  
 APE 3.57 99 ePn 43 02.00 0.6  
 KNT 3.68 21 ePnd 43 02.70 -0.4  
 VAY 3.75 17 iPn 43 03.30 -0.7  
 i 43 08.80  
 SRS 3.88 29 ePn 43 05.40 -0.4  
 SOI 4.03 276 P 43 45.50 37.6X  
 SKO 4.24 3 ePn 43 09.50 -1.4  
 i 43 20.40  
 SMG 4.52 89 ePn 43 14.50 -0.4  
 RDO 4.82 44 ePn 43 17.80 -1.3  
 MGR 4.96 301 P 43 23.00 1.8  
 KBA 10.96 331 eP 44 51.00 6.1X  
 NUR 22.90 4 eP 47 10.00 0.5  
 HFS 22.91 350 eP 47 07.20 -2.5  
 0.6s 3.30nm 4.0mb  
 EKA 24.07 325 P 47 29.00 8.1X  
 2.8s 249.50nm 5.3mb  
 NB2 24.15 348 P 47 19.60 -2.1  
 0.7s 1.50nm 3.7mb  
 SUF 25.20 5 eP 47 29.50 -2.3  
 0.3s 1.20nm 4.1mb  
 BCAO 33.23 185 iPd 48 42.90 -1.4  
 0.3s 8.00nm 5.1mb  
 S.D. = 1.3 on 28 of 32 obs.

MAR 04, 1990 16h 06m 11.37  $\pm$  0.74s  
 39.393 N  $\pm$  4.8km 23.621 E  $\pm$  6.8km  
 DEPTH = 10.0km (geophysicist)  
 AEGEAN SEA (365)  
 MD 3.2 (ATH), ML 3.1 (THE).

NEO 0.32 255 ePb 06 17.50 -0.5  
 OUR 0.98 16 ePg 06 29.40 -0.6  
 PLG 0.99 352 iPnc 06 29.70 -0.5  
 eSn 06 45.30  
 AGG 1.07 250 ePb 06 31.40 -0.1  
 eSb 06 47.60



04d 16h

LIT 1.12 309 ePb 06 32.50 0.1  
 THE 1.34 338 eSb 06 48.80  
 ATH 1.42 177 ePn 06 37.40 0.2  
 SOH 1.44 352 ePb 06 37.60 0.0  
 KZN 1.69 303 ePn 06 40.90 -0.3  
 SRS 1.72 359 eSb 06 41.80 0.3  
 KNT 1.85 343 ePb 06 43.10 -0.3  
 VAY 2.09 338 ePn 06 48.00 1.2  
 FNA 2.21 310 ePn 06 49.60 0.9  
 OHR 2.76 309 e(Pn) 07 08.70 12.2X  
 S.D. = 0.6 on 13 of 14 obs.

MAR 04, 1990 16h 24m 27.10 ± 0.37s  
 10.707 N ± 5.3km 126.257 E ± 7.4km  
 DEPTH = 33.0km (normal)  
 4.5mb ( 3 obs.)

## PHILIPPINE ISLANDS REGION (248)

DAV 3.66 191 eP 25 29.00 6.2X  
 PGP 5.88 299 eP 25 55.00 0.7  
 OCP 6.39 308 eP 26 01.70 0.3  
 BAG 7.91 316 eP 26 21.50 -1.4  
 GUMO 18.42 79 eP 28 41.00 -0.7  
 SSE 20.83 348 P 29 08.70 0.3  
 NJ2 22.32 343 eP 29 24.00 0.7  
 XAN 28.13 328 eP 30 17.20 -1.1  
 TIY 29.62 337 eP 30 30.90 -0.8  
 BJI 30.55 345 eP 30 39.50 -0.3  
 SNY 31.09 356 iPc 30 45.00 0.5  
 HHC 32.71 339 P 30 58.80 0.0  
 MDJ 33.91 4 eP 31 09.50 0.4  
 ASPA 34.97 168 eP 31 17.60 -0.9  
 0.3s 6.00nm 5.0mb  
 WARB 36.67 179 eP 31 33.00 0.2  
 MEKA 37.85 191 eP 31 52.20 9.5X  
 COOL 41.64 187 eP 32 15.00 0.9  
 MUN 43.52 192 eP 32 29.00 -0.3  
 NWA0 44.23 191 eP 32 35.00 -0.1  
 RKG 45.39 191 eP 32 48.60 4.2X  
 WMO 46.87 322 eP 32 56.20 0.1  
 MBC 85.29 13 eP 37 02.50 1.0  
 0.8s 2.00nm 4.4mb  
 YKA 93.37 24 eP 37 40.50 0.6  
 0.8s 0.90nm 4.3mb  
 BBL 152.84 17 ePKP 44 04.80 -11.0X  
 S.D. = 0.7 on 20 of 24 obs.

MAR 04, 1990 16h 30m 52.06 ± 1.12s  
 20.069 S ± 11.5km 69.311 W ± 14.5km  
 DEPTH = 125.0 ± 15.3 km  
 4.2mb ( 1 obs.)

## NORTHERN CHILE (123)

LPB 3.70 18 Pd 31 50.50 1.5  
 0.9s 75.63nm  
 ANT 3.76 196 eP 31 49.70 0.4  
 ZOBO 3.94 17 iPc 31 52.90 0.5  
 0.8s 32.92nm  
 CCH 4.02 49 P 31 51.80 -1.3  
 ARE 4.14 330 eP 31 55.00 0.2  
 PT02 9.84 315 eP 33 09.90 -1.8  
 0.5s 34 52.40  
 KIC 68.67 74 P 41 43.20 -1.2  
 YKA 89.72 341 eP 43 38.50 1.7  
 0.7s 1.60nm 4.2mb  
 S.D. = 1.7 on 8 of 8 obs.

MAR 04, 1990 16h 45m 15.70s  
 34.120 N 117.680 W  
 DEPTH = 4.0km  
 SOUTHERN CALIFORNIA ( 43)  
 <PAS-P>. ML 3.4 (PAS).

RVR 0.28 116 iPc 45 21.20 -0.2  
 MWC 0.33 288 iPc 45 22.10 -0.3  
 PAS 0.41 274 iPc 45 23.40 -0.5  
 PEC 0.49 118 iPc 45 24.90 -0.6  
 SBB 0.58 348 iPd 45 26.70 -0.6

PVPS 0.69 241 eP 45 28.70 -0.7  
 CIS 0.93 220 ePd 45 32.80 -1.3  
 PLM 1.02 138 iPc 45 34.30 -1.5  
 SCI 1.35 213 iPd 45 39.50 -1.6  
 TPC 1.35 90 iPc 45 40.70 -0.6  
 GSC 1.38 31 iPd 45 41.40 -0.4  
 ABL 1.47 300 eP 45 41.70 -1.5  
 BAR 1.67 149 ePc 45 44.50 -1.3  
 8CH 2.25 299 eP 45 53.40 -1.0  
 BLP 2.29 282 eP 45 52.00 -2.9  
 GLA 2.61 113 eP 45 57.40 -2.0  
 TNP 3.97 5 eP 46 18.60 -0.3  
 SAO 4.05 312 eP 46 18.20 -1.6  
 CMB 4.48 331 eP 46 25.80 -0.2  
 KVN 4.93 356 eP 46 32.50 -0.1  
 MSU 6.24 44 P 46 50.00 -1.1  
 21 obs. associated

MAR 04, 1990 16h 46m 25.46 ± 0.49s  
 44.560 N ± 4.1km 6.876 E ± 4.3km  
 DEPTH = 5.0km (geophysicist)

## FRANCE (53B)

## ML 2.5 (GEN).

FOUF 0.07 245 iPg 46 27.30 0.1  
 e(Sg) 46 28.18  
 46 28.36  
 PZZ 0.17 109 P 46 29.67 0.6  
 S 46 32.54  
 DOI 0.27 102 P 46 31.20 0.2  
 eSg 46 34.80  
 RRL 0.37 350 P 46 32.75 -0.1  
 S 46 38.39  
 STV 0.45 134 P 46 35.21 0.7  
 S 46 40.85  
 BNI 0.51 344 P 46 35.90 0.2  
 eSg 46 42.80  
 ENR 0.51 130 P 46 36.00 0.2  
 S 46 42.39  
 TOUF 0.61 154 Pg 46 37.82 0.2  
 Sg 46 45.99  
 SAOF 0.75 139 Pg 46 39.64 -1.0  
 Sg 46 50.39  
 ROB 0.76 110 P 46 40.30 -0.5  
 S 46 50.15  
 IMI 0.98 131 P 46 44.23 -0.3  
 S 46 56.92  
 FIN 1.02 110 P 46 44.85 -0.4  
 S 46 58.15  
 PCP 1.19 90 P 46 48.13 -0.1  
 S 47 02.91

S.D. = 0.5 on 13 of 13 obs.

MAR 04, 1990 17h 21m 59.05 ± 0.69s  
 15.539 S ± 3.9km 167.568 E ± 3.3km  
 DEPTH = 141.4 ± 6.2 km  
 5.4mb ( 36 obs.)

## VANUATU ISLANDS (186)

## CENTROID, MOMENT TENSOR (HRV)

Data Used: GDSN

L.P.B.: 14S, 28C

Centroid Location:

Origin Time 17:21:40.4 0.8

Lat 15.68S 0.10 Lon 168.62E 0.09

Dep 33.0 FIX Half-duration 1.6

Moment Tensor: Scale 10<sup>16</sup> Nm

Mrr= 1.98 0.49 Mtt= 1.25 0.94

Mff=-3.22 0.93 Mrt=-1.44 1.38

Mrf=-0.14 1.35 Mtr= 7.78 0.58

Principal Axes:

T Vol= 7.39 Plg=13 Azm=144

N 1.75 77 306

P -9.14 4 53

Best Double Couple: Mo=8.3\*10<sup>16</sup>

NP1: Strike=187 Dip=78 Slip= 174

NP2: 279 84 12

PVC 2.30 162 iPc 22 36.90 -0.8  
 iS 23 06.50  
 DZM 6.58 189 iP 23 33.20 -1.6  
 iS 24 43.60  
 HNR 9.60 308 eP 24 14.00 -1.1  
 eS 26 02.00  
 VUN 10.72 105 eP 24 32.40 2.5  
 MBU 10.81 99 eP 24 33.30 2.2  
 BRS 18.11 227 iPc+ 26 03.50 0.6  
 i 26 08.50

eS 29 21.00  
 i 30 30.50  
 i(ScP) 33 54.50  
 RMO 20.64 235 iPd 26 30.10 0.9  
 0.9s 231.00nm 5.6mb  
 COO 20.75 221 iPd 26 31.50 1.2  
 e 30 34.00  
 CTA 20.78 254 iPc 26 31.50 0.9  
 0.9s 106.72nm 5.3mb  
 i 26 45.00  
 iS 30 17.00  
 PMG 20.83 285 eP 26 32.50 1.4  
 RIV 23.48 216 eP 26 58.00 1.2  
 QLP 24.35 239 iPd 27 06.10 0.8  
 CMS 25.41 228 iPd 27 15.60 0.5  
 BWA 25.51 219 iPd 27 15.20 -0.8  
 CNB 25.57 216 iPc 27 17.50 0.9  
 0.9s 50.00nm 5.1mb  
 e 27 42.50  
 CAN 25.78 217 iPd 27 19.00 0.4  
 i 27 49.20  
 MNG 25.92 166 P 27 19.30 -0.4  
 PGZ 26.11 165 eP 27 20.90 -0.5  
 TCW 26.24 169 eP 27 23.30 0.8  
 e 27 52.10  
 CAW 26.30 167 eP 27 22.50 -0.6  
 MRW 26.34 168 eP 27 22.60 -0.9  
 MTW 26.44 166 P 27 23.20 -1.2  
 e 27 53.20  
 BLW 26.63 167 eP 27 25.20 -1.0  
 e 27 54.20  
 MOW 26.64 167 eP 27 25.20 -1.0  
 MSZ 29.04 179 eP 27 59.00 11.2X  
 TOO 29.38 217 iPd 27 51.50 0.5  
 0.9s 59.00nm 5.3mb  
 WB5 31.89 257 eP 28 11.00 -2.1  
 eS 33 11.00  
 eScP 34 35.50  
 WRA 31.92 257 Pd 28 11.50 -1.8  
 0.8s 42.10nm 5.3mb  
 ADE 32.30 228 eP 28 17.00 0.4  
 ASPA 32.67 250 iPd 28 18.50 -1.4  
 0.7s 129.00nm 5.8mb  
 Z 18s 1.03um 4.6msz  
 eS 33 16.10  
 iScP 34 36.30  
 iScS 38 32.40  
 LR 41 33.20  
 MTN 35.40 270 eP 28 43.00 -0.3  
 GUA 36.56 321 eP 28 52.00 -1.0  
 0.7s 71.23nm 5.5mb  
 GUMO 36.63 321 eP 28 52.50 -1.0  
 0.4s 54.66nm 5.7mb  
 PJG 36.63 321 eP 28 52.50 -1.0  
 KNA 37.33 264 iPd 28 58.80 -0.7  
 0.5s 86.00nm 5.8mb  
 WARB 39.53 248 iPd 29 18.00 0.2  
 AAI 40.48 283 e(P) 29 25.00 -0.6  
 COOL 44.99 242 iPd 30 00.80 -1.3  
 MNI 45.40 288 e(P) 30 06.00 0.0  
 MBL 45.52 255 iPd 30 06.50 0.2  
 0.3s 12.00nm 5.0mb  
 MEKA 46.81 248 eP 30 16.50 0.0  
 KLB 47.96 241 eP 30 25.00 -0.4  
 0.5s 11.00nm 4.9mb  
 NWA0 48.59 240 eP 30 30.00 -0.1  
 1.0s 122.00nm 5.6mb  
 BAL 48.74 243 eP 30 31.00 -0.4  
 RKG 48.94 238 iPc 30 34.00 1.1  
 MRWA 49.23 245 iPd 30 35.00 -0.2  
 0.4s 13.00nm 5.1mb  
 PCI 49.27 282 ePc 30 40.00 4.4X  
 MUN 49.32 241 eP 30 35.00 -0.8  
 NANU 49.48 253 eP 30 37.00 -0.1  
 TSM 52.78 288 ePc 31 03.90 1.9  
 TRT 54.24 272 iPc 31 12.50 -0.3  
 0.8s 112.50nm 5.8mb  
 PGP 54.39 300 iPd 31 12.50 -1.3  
 PPR 54.52 294 ePd 31 15.00 0.2  
 1.0s 159.00nm 5.8mb  
 BAG 56.20 302 eP 31 25.90 -1.1  
 MAT 58.75 332 iPc 31 42.90 -1.5  
 VNDA 62.06 181 iPc 32 06.90 0.6  
 SSE 64.30 316 Pd 32 19.50 -2.1  
 pP 32 33.20 48kmX  
 HKC 64.42 304 iP 32 23.60 1.1  
 OIZ 66.38 299 eP 32 26.00 0.8



04d 17h

NJ2	66.45	316	Pc	32	35.20	-0.1	ALQ	95.52	55	(P)	35	07.50	-2.1	VDL	144.14	334	ePKP	41	19.10	-0.7
	1.0s	100.00nm				5.7mb		1.0s	2.50nm				4.6mb	SAL	144.36	332	PKP	41	18.90	-1.0
WHN	68.69	312	iPc	32	49.50	0.1	YKA	98.13	27	eP	35	18.00	-2.4	MDI	144.59	333	PKP	41	18.50	-1.8
	1.0s	100.00nm				5.6mb		0.8s	3.00nm				4.9mb	TMA	144.69	334	ePKPc	41	20.10	-0.6
IPM	68.81	281	ePc	32	51.10	0.6	MAIO	113.48	303	iPKPd	40	23.00	0.6	ARV	144.72	327	PKPc	41	20.80	0.1
	1.0s	68.60nm				5.4mb	FRB	118.52	25	ePKP	40	29.00	-1.9	VAI	144.92	334	PKPc	41	20.60	-0.2
DL2	69.11	323	eP	32	51.50	-0.2	SOD	122.35	343	ePKP	40	38.00	-0.2	ORI	144.93	320	PKPc	41	21.50	0.4
	1.1s	300.00nm				6.0mb	PRY	122.70	223	iPKPc	40	40.40	0.1	SFI	144.98	329	PKP	41	22.00	1.0
MDJ	69.13	332	Pc	32	51.90	0.2		0.6s	3.57nm					PGD	145.08	329	PKP	41	22.00	0.5
SNY	70.04	326	iPc	32	56.80	-0.5	CER	122.71	212	iPKPd	40	39.50	-0.5	MMK	145.11	335	ePKPc	41	22.10	0.5
SNG	70.04	284	eP	32	58.60	0.7		0.4s	4.55nm					DUI	145.13	324	PKP	41	21.00	-0.5
PSI	70.23	279	ePc	32	58.50	-0.6	SLR	122.96	225	iPKPc	40	40.20	-0.6	TDS	145.23	319	PKP	41	22.30	0.7
	1.0s	20.00nm				4.9mb		0.9s	12.60nm					AQU	145.26	325	PKP	41	22.70	1.0
		e		36	40.00		KIM	123.14	219	iPKPc	40	41.20	0.1	DIX	145.31	335	ePKPd	41	22.60	0.7
CN2	70.48	329	iPc	32	59.70	-0.3	BFS	123.17	222	iPKPd	40	36.50	-4.7X	SGO	145.33	321	PKP	41	22.00	0.3
	4.0s	500.00nm				5.7mb X	SWZ	123.91	221	iPKPd	40	41.30	-1.4	MME	145.34	330	PKP	41	22.90	0.9
		epP		33	14.00	50kmX		0.6s	13.33nm					FIR	145.38	329	ePKP	41	22.00	0.3
		S		42	04.00		SLY	124.84	303	ePKPc	40	44.00	0.0	MGR	145.43	321	PKP	41	21.80	-0.2
GYA	72.41	305	iPc	33	12.40	0.4	POF	125.49	215	iPKPc	40	47.00	1.6	ORX	145.44	334	PKP	41	21.18	-0.8
	1.2s	100.00nm				5.4mb		0.5s	9.15nm					FLN	145.45	346	ePKP	41	20.50	-1.2
		pP		33	29.00	60kmX	SUF	125.70	339	iPKP	40	44.30	-0.5		0.8s	146.90nm				
LOE	72.69	294	iPc	33	14.00	0.4		0.6s	22.30nm					ORO	145.45	334	PKP	41	21.70	-0.3
NNT	72.70	289	iPc	33	14.80	1.1	BUL	126.29	230	iPKPd	40	44.60	-2.9X	SDI	145.47	324	PKP	41	22.00	0.0
BJI	73.07	321	Pc	33	16.00	0.6		0.8s	14.93nm					BSS	145.48	322	PKP	41	21.90	-0.1
	1.0s	61.00nm				5.3mb	MSL	126.65	304	ePKPd	40	51.50	4.0X	BDI	145.49	330	PKP	41	21.50	-0.5
Z	40s	0.46um				4.5MsZ X	NUR	127.72	338	iPKP	40	48.80	0.1	BOB	145.49	332	PKP	41	21.80	-0.2
NST	73.45	292	iPc	33	19.50	1.5		0.8s	32.30nm					AZI	145.49	325	PKP	41	20.00	-1.9
TIY	74.05	317	Pc	33	22.00	0.8	NB2	131.48	345	PKP	40	56.20	0.2	EMS	145.51	336	ePKPd	41	22.70	0.5
	3.0s	600.00nm				5.8mb		0.8s	9.50nm					LDF	145.52	346	ePKP	41	20.90	-0.9
Z	14s	0.50um				5.0MsZ X	HFS	131.58	343	ePKP	40	54.90	-1.2	LOR	145.59	340	ePKP	41	21.00	-1.0
XAN	74.45	313	iPc	33	23.80	0.2		0.6s	4.60nm						1.0s	156.25nm				
BSI	74.52	280	iPd	33	25.00	0.7	MLR	136.12	321	ePKPc	41	05.00	-0.4	PII	145.78	330	PKPc	41	21.80	-0.6
SPA	74.56	180	iPc	33	25.00	1.1	KRA	136.74	330	ePKPd	41	06.70	0.5	LBF	145.80	340	ePKP	41	21.40	-1.0
	1.0s	75.50nm				5.4mb	SPC	137.16	329	ePKP	41	05.80	-1.5	GRC	145.82	341	PKP	41	24.05	1.7
		i		34	00.80		KSP	137.88	333	ePKP	40	58.00	-10.4X	GRR	145.88	346	ePKP	41	22.00	-0.4
KMI	74.97	302	Pc	33	28.50	1.4		1.0s	25.00nm					SSF	145.89	340	ePKP	41	21.60	-0.9
	3.5s	700.00nm				5.8mb X			id		41	09.00		RMP	146.01	325	PKPc	41	24.10	1.2
		PcP		33	42.50		BZS	138.61	324	ePKP	41	05.00	-4.8X	RDP	146.04	325	PKPc	41	24.40	1.4
		S		42	58.00		CLL	138.90	336	iPKP	41	10.50	0.3	LPL	146.04	336	ePKP	41	23.30	0.2
CHG	75.67	294	iPc	33	31.90	1.1		1.1s	26.00nm					LPG	146.05	336	ePKP	41	23.40	0.2
	1.0s	42.75nm				5.1mb	SRO	139.03	328	ePKP	41	11.60	1.1		0.8s	62.95nm				
CHTO	75.67	294	iPc	33	31.90	1.1			e		44	35.30		PCP	146.07	333	PKP	41	22.51	-0.5
	1.1s	52.41nm				5.2mb	PRU	139.27	333	ePKP	41	07.00	-3.9X	SMF	146.14	340	ePKP	41	21.70	-1.3
		epP		34	04.10	128kmX			e		41	13.00		AVF	146.18	340	ePKP	41	21.80	-1.2
		sP		34	15.90		ZST	139.37	330	iPKP	41	11.30	0.2	LPF	146.26	346	ePKP	41	23.40	0.3
HHC	76.38	320	iPc	33	35.30	0.8			e		44	37.00		CKI	146.28	333	PKP	41	22.60	-0.6
CD2	76.73	308	iPc	33	37.00	0.4	KHC	140.33	333	ePKP	41	06.70	-6.2X	SOI	146.32	317	PKP	41	25.40	2.0
BTO	77.22	319	P	33	39.50	0.4			i		41	13.50		BNI	146.45	335	PKP	41	24.10	0.4
LZH	79.07	312	iPc	33	51.00	1.5	VAY	140.34	317	ePKP	41	09.70	-3.4X	FIN	146.48	333	PKP	41	22.20	-1.4
	4.0s	560.00nm				5.7mb X			i		41	11.60		RRL	146.51	335	PKP	41	24.36	0.5
		pP		33	55.00	13kmX			i		41	15.00		BGF	146.55	341	ePKP	41	23.20	-0.4
GTA	83.43	314	iPc	34	13.40	1.3			i		44	29.00		ROB	146.56	333	PKP	41	22.30	-1.5
GCC	84.34	49	e(P)	34	16.80	0.3	SKD	140.73	319	iPKP	41	07.10	-6.7X	ATN	146.65	318	PKP	41	24.00	0.0
BRK	84.49	48	e(P)	34	13.10	-4.1X		1.0s	59.00nm					DOI	146.66	334	PKP	41	23.90	-0.1
BKS	84.51	48	e(P)	34	17.60	0.2			i		41	14.00		PZZ	146.72	334	PKP	41	23.84	-0.3
	1.0s	39.00nm				5.2mb			i		44	40.00		ENR	146.81	334	PKP	41	24.77	0.6
PRI	84.96	51	e(P)	34	18.30	-1.5	GRF	140.88	336	ePKP	41	09.20	-4.6X	PLDF	146.81	339	PKP	41	26.99	2.9X
WDC	85.42	46	ePc	34	22.30	0.5			e		41	14.50		FOUF	146.83	335	ePKPc	41	24.86	0.8
ORV	85.72	47	ePc	34	23.40	0.0			e		41	16.70		STV	146.84	334	PKP	41	24.77	0.5
CMB	85.91	49	ePc	34	24.80	0.4	PTJ	141.51	328	ePKP	41	11.70	-3.5X	IMI	146.86	333	PKP	41	24.05	-0.2
FRI	86.00	50	eP	34	24.90	0.1	OHR	141.59	318	ePKP	41	09.50	-6.0X	AGO	146.90	340	PKP	41	26.91	2.7X
MWC	86.21	53	eP	34	26.00	-0.1	KBA	141.96	331	ePKP	41	10.50	-5.6X	MAF	146.93	341	ePKP	41	24.20	0.0
LSA	86.23	302	P	34	28.00	1.3		1.1s	13.40nm					TCF	146.99	341	ePKP	41	24.90	0.6
ISA	86.42	52	eP	34	27.00	0.0	MEM	141.98	341	PKP	41	10.70	-5.0X	SSB	147.08	338	PKP	41	25.73	1.2
SB8	86.56	53	eP	34	25.00	-2.7	ABH	142.10	339	ePKP	41	11.69	-4.3X	CAI	147.14	130	ePKP	41	26.50	1.0
RVR	86.65	54	eP	34	28.00	0.0	LJU	142.13	329	e(PKP)	41	11.50	-4.7X	PYM	147.21	340	PKP	41	28.02	3.2X
PLM	86.83	54	eP	34	30.00	0.9	VBY	142.14	328	ePKP	41	12.00	-4.2X	LSF	147.23	342	ePKP	41	25.10	0.4
CLC	87.14	52	eP	34	31.00	0.6			i		41	17.10		MNO	147.28	318	PKP	41	28.40	3.1X
GSC	87.56	52	eP	34	33.00	0.5	RBL	142.32	330	PKP	41	12.00	-4.6X	MFF	147.37	344	ePKP	41	25.40	0.5
TPC	87.72	54	eP	34	34.00	0.8	CEY	142.40	329	ePKP	41	12.50	-4.2X	LBL	147.58	339	PKP	41	29.28	4.1X
GUN	90.04	299	P	34	45.00	0.3	RUP	142.42	339	ePKP	41	12.72	-3.9X	BCAO	147.62	253	iPKPd	41	26.40	0.1
	0.6s	12.00nm				5.1mb	VOY	142.45	330	ePKP	41	12.50	-4.4X		0.8s	165.00nm				
PKI	90.33	298	P	34	46.00	0.0	FVI	142.58	331	PKP	41	12.60	-4.2X			ic		41	29.10	
	0.8s	27.00nm				5.4mb	TRI	142.75	329	PKP	41	11.00	-6.2X			ic		42	26.10	
KKN	90.51	299	P	34	47.00	0.3	DOU	142.87	342	PKP	41	13.80	-3.5X	RJF	148.08	341	ePKP	41		



LKO 171.05 229 PKP 41 51.86 -0.1  
S.D. = 0.9 on 204 of 244 obs.

MAR 04, 1990 19h 40m 28.17±0.63s  
21.267 S ±10.8km 175.939 E ±11.1km  
DEPTH = 33.0km (normol)  
4.9mb (4 obs.)

SOUTH OF FIJI ISLANDS (171)

NDF 3.77 22 eP 41 24.50 -0.9  
eS 42 10.50  
SVA 3.93 38 iPc 41 27.90 0.2  
eS 42 31.10  
VUN 4.02 37 iPc 41 28.00 -1.0  
eS 42 15.50  
SGE 4.11 27 eP 41 31.00 0.6  
MBU 5.02 32 eP 41 43.90 0.7  
eS 42 46.20  
DZM 8.87 263 iPc 42 36.50 -0.7  
HNR 19.37 305 eP 44 57.00 2.7X  
MRW 19.93 183 eP 45 01.00 0.9  
BRS 21.95 249 e(P) 45 20.00 -0.9  
COO 23.49 242 eP 45 37.00 1.0  
RMO 25.37 253 eP 45 55.50 1.4  
CAN 27.44 234 eP 46 13.80 0.7  
ASPA 38.82 258 iPc 47 52.30 0.3  
eS 48 06.6s 10.00nm 4.8mb  
WB5 38.87 264 eP 47 50.80 -1.6  
WRA 38.88 264 Pd 47 51.60 -0.9  
eS 48 08.8s 7.50nm 4.5mb  
MAT 67.65 328 iPc 51 26.00 1.9  
eS 51 10.0s 17.00nm 5.1mb  
SPA 68.86 180 iPd 51 29.70 -1.8  
eS 51 10.0s 18.50nm 5.1mb  
PRS 82.37 46 ePc 52 53.80 5.5X  
FRI 83.85 47 eP 52 59.30 3.5X  
SBB 83.95 49 eP 53 01.00 4.5X  
CMB 83.95 45 ePc 53 01.30 4.9X  
WDC 83.97 42 ePc 53 01.50 5.1X  
ORV 84.05 44 ePc 53 02.00 5.1X  
MIN 84.43 43 e(P) 53 03.80 4.9X  
CLC 84.68 48 eP 53 03.00 2.8X  
KMI 84.71 299 eP 52 53.00 -7.8X  
GLA 85.30 52 eP 53 07.00 3.7X  
PNT 90.54 36 eP 53 31.00 3.0X  
KBS 121.82 356 iPd 55 54.10 6.4X  
CLL 147.18 340 e(PKP) 00 11.00 4.0X  
PRU 147.78 337 ePKP 00 12.00 3.9X  
e 00 29.50

S.D. = 1.2 on 16 of 31 obs.

MAR 04, 1990 19h 46m 19.67±0.15s  
28.925 N ±4.0km 66.331 E ±2.3km  
DEPTH = 10.1km (10 depth phases)  
5.8mb (71 obs.) 6.1MsZ (34 obs.)

PAKISTAN (710)

At least 11 people killed, about  
40 injured and many homes and  
buildings damaged in the Kolat  
oreo. Also felt at Quetta and  
Mastung. Complex event, observed  
on broadband displacement  
seismograms.

FAULT PLANE SOLUTION: P-Waves

NP1:Strike=235 Dip=55 Slip= 45

NP2: 115 55 135

Principal Axes:

T P1g=55 Azm= 85

P 0 355

Comment: The focal mechanism is  
poorly controlled and  
corresponds to reverse  
faulting with a large strike-  
slip component. The preferred  
fault plane is not determined.

RADIATED ENERGY

No. of sta: 7 Focal mech. F

Energy 6.2±1.7\*10<sup>12</sup> Nm

MOMENT TENSOR SOLUTION

Dep 30 No. of sta: 13

Moment Tensor: Scale 10<sup>17</sup> Nm

Mrr= 4.62 Mtt=-8.06

Mff= 3.44 Mrt=-2.37

Mrf=-3.52 Mtf=-2.12

Principal axes:

T Val= 7.61 P1g=51 Azm= 93

N 1.50 37 247

P -9.11 13 347

Best Double Couple: Mo=8.4\*10<sup>17</sup>

NP1:Strike=114 Dip=45 Slip= 147

NP2: 229 67 50

CENTROID, MOMENT TENSOR (HRV)

Data Used: GDSN

L.P.B.: 14S, 35C

Centroid Location:

Origin Time 19:46:23.9 0.3

Lot 28.66N 0.04 Lon 66.16E 0.03

Dep 28.0 FIX Half-duration 4.0

Moment Tensor: Scale 10<sup>18</sup> Nm

Mrr= 0.02 0.03 Mtt=-0.36 0.05

Mff= 0.34 0.04 Mrt= 0.14 0.10

Mrf= 0.28 0.10 Mtf=-1.27 0.04

Principal Axes:

T Val= 1.32 P1g= 6 Azm=233

N 0.07 77 350

P -1.39 11 142

Best Double Couple: Mo=1.4\*10<sup>18</sup>

NP1:Strike=278 Dip=78 Slip=-176

NP2: 187 86 -12

QUE 1.37 23 iPc+ 46 47.00 2.1

MAIO 9.34 324 iPd 48 38.40 1.0

1.2s 208.33nm 6.4mb

eS 50 42.00

NDI 9.55 89 iPc 48 36.60 -3.6X

0.7s 308.22nm 6.8mb X

iS 50 18.00

BOM 11.61 148 eP 49 00.70 -7.7X

eS 51 25.00

POO 12.42 145 iPd 49 17.20 -2.2

1.2s 281.25nm 6.4mb

BJA 14.26 262 (P) 49 41.80 -1.9

BEE 14.33 262 eP 49 43.90 -0.7

BBU 14.34 263 eP 49 43.70 -1.0

TEH 14.34 302 eP 49 47.00 2.2

IR4 14.51 300 eP 49 47.00 -0.1

DHR 14.59 264 iP+ 49 46.60 -1.4

IR2 14.67 301 eP 49 49.00 -0.2

IR1 14.74 300 eP 49 51.00 1.0

IR7 14.90 301 eP 49 52.00 -0.2

HYB 16.03 133 ePc 50 02.00 -4.8X

1.2s 642.90nm 5.6mb

iS 50 03.80

iS 53 20.00

GKN 16.13 89 P 50 03.00 -5.2X

DMN 16.60 90 P 50 10.40 -3.8X

KKN 16.72 89 P 50 11.40 -4.4X

PKI 16.87 90 P 50 12.40 -5.3X

GUN 17.23 89 P 50 17.40 -4.9X

RYD 18.09 261 eP 50 30.00 -2.7

GBA 18.41 144 Pd 50 31.40 -5.2X

1.2s 80.70nm 4.8mb X

SLY 18.82 296 ePc 50 41.00 -0.5

iPP 50 57.00

iPP 51 07.50

iS 54 15.50

iSS 54 43.00

iPcP 55 04.00

iLO 57 20.00

iP- 50 44.00 0.3

iPc 50 41.00 -6.3X

iPP 51 10.50

iPPP 51 21.00

iS 54 14.00

iSS 54 49.00

iPcP 55 06.50

iLO 57 10.00

OASM 20.41 267 ePd 50 58.00 -1.7

MSL 20.86 297 ePd 51 06.50 2.4

ePP 51 25.00

ePPP 51 45.00

eS 55 03.50

eSS 55 32.00

eSSS 55 52.50

e 56 55.00

KOD 21.32 148 eP 51 08.00 -1.4

eS 55 04.00

KMSA 21.57 252 eP+ 51 09.80 -1.7

LSA 21.65 82 iP 51 13.00 0.3

E 10s 13.60um

pP 51 20.00 25kmX

iS 55 07.00

WMQ 22.64 43 iPc 51 23.00 0.9

3.0s 6600.00nm 6.6mb

Z 18s 49.20um 6.0MsZ

N 13s 61.30um

E 11s 50.70um

SHL 22.95 92 iP 51 26.00 0.6

iS 55 34.00

SHBJ 24.94 285 Pd 51 46.90 2.3

HLBJ 26.02 284 P 51 56.40 1.7

MDSJ 26.08 283 Pc 51 56.90 1.7

BURJ 26.44 285 Pc 52 00.20 1.6

SHMJ 26.47 286 Pd 52 02.00 4.0X

HRI 26.50 287 eP 52 01.00 1.9

AYN 26.52 277 ePd 52 00.70 1.5

DSI 26.82 283 eP 52 03.00 1.0

HOL 27.30 278 ePd 52 07.70 1.4

MBH 27.39 280 eP 52 08.00 0.9

BADA 27.44 277 ePd 52 08.90 1.3

KVT 27.47 304 iP 52 08.50 0.6

ARO 27.93 237 eP+ 52 12.00 -0.2

KAS 29.21 304 Pc 52 25.40 1.9

GTA 29.46 60 P 52 25.60 -0.4

Z 20s 39.10um 6.0MsZ

N 13s 44.90um

sP 52 42.00

S 57 10.00

SS 57 32.00

BBTK 29.61 300 eP 52 28.00 0.7

HLW 30.43 280 ePc 52 36.00 1.5

eS 57 36.00

AGRW 30.45 268 iPd 52 37.00 2.3

AGAL 30.50 268 iPd 52 36.50 1.4

ANMR 30.67 268 iPd 52 39.00 2.3

AGMR 30.72 268 iPd 52 39.00 1.9

BCK 30.95 295 eP 52 39.50 0.4

CHG 31.39 101 eP 52 42.00 -1.0

0.9s 48.74nm 5.4mb

eS 57 48.00

ELL 31.44 294 eP 52 42.00 -1.5

ALT 31.51 298 eP 52 44.00 0.0

GPA 31.54 301 eP 52 43.00 -1.2

KHL 31.88 297 eP 52 46.00 -1.3

BDT 32.12 104 eP 52 47.00 -2.4

0.5s 20.90nm 5.3mb

LZH 32.28 67 Pc 52 51.00 0.1

3.0s 1070.00nm 6.3mb

Z 28s 99.40um 6.4MsZ X

N 15s 71.20um

pP 52 56.50 19km

sP 52 59.00

CD2 32.40 77 P 52 51.00 -0.9

Z 18s 20.00um 5.9MsZ

N 16s 55.50um

PP 54 06.00

eS 58 10.00

KMI 32.57 88 Pd 52 53.30 -0.3

1.5s 0.20nm 2.8mb X

AAE 32.58 238 eP 52 55.50 1.7

DST 32.72 299 eP 52 53.00 -1.5

BNT 33.36 300 iP 52 59.80 -0.2

PSN 33.77 306 iPc 53 03.00 -0.5

NST 33.81 106 eP 53 04.00 -0.1

TLB 34.08 308 eP 53 06.00 -0.2

CFR 34.15 309 ePc 53 07.50 0.7

LOE 34.38 102 eP 53 08.50 -0.6

EZN 34.51 299 iP 53 09.50 -0.5

JMB 34.67 304 eP 53 13.00 1.6

ALN 34.84 301 iPc 53 12.60 -0.2

NNT 35.05 111 eP 53 15.70 0.9

CLI 35.11 311 ePd 53 16.00 0.9

ISR 35.24 308 ePd 53 18.00 1.7

VR1 35.30 310 ePc 53 18.00 1.3

DIM 35.38 303 eP 53 18.00 0.6

BUC 35.39 307 ePd 53 17.00 -0.5

KDZ 35.41 302 iPc 53 18.00 0.3

BUC1 35.43 307 iPc 53 20.00 2.2

GYA 35.68 84 P 53 19.00 -1.3

Z 18s 12.50um 5.7MsZ

N 15s 38.70um

E 15s 6.90um

sP 53 37.00

S 58 52.00

PVL 35.71 305 iPc 53 22.00 1.8

RZN 35.93 302 iP 53 22.00 -0.4

BSI 35.97 125 iPd 53 24.00 1.3

0.7s 172.70nm 6.0mb

PLD 36.00 303 eP 53 23.00 0.3



04d 19h																				
PGB	36.45	303	iP	53	22.00	-4.6X	BLY	41.74	306	eP	54	08.00	-2.4	BHG	44.98	310	eP	54	56.10	19.4X
XAN	36.48	71	P	53	25.00	-1.9	BJI	42.07	61	eP	54	13.00	-0.2		1.1s	100.00nm				
	N 12s	22.10um						1.5s	240.00nm			5.7mb		UPP	44.98	328	eP	54	25.00	-11.5X
	E 16s	35.90um						Z 20s	37.70um			6.3Msz				iS		01	16.00	
		S		59	09.00			N 16s	28.30um					NJ2	45.01	72	Pc	54	37.00	-0.1
MMB	36.66	302	eP	53	28.00	-0.3			ePP	55	48.00				1.1s	200.00nm			6.0mb	
SOH	36.86	300	iPc	53	30.10	0.1	NUR	42.09	331	iP	54	13.30	0.3		Z 22s	10.70um			5.7Msz	
MDB	36.95	309	eP	53	19.00	-11.6X		1.0s	198.00nm			5.8mb			N 15s	34.60um				
VTB	37.16	303	eP	53	32.00	-0.6			i	55	48.20	517kmX		E 13s	11.10um					
KKB	37.17	302	iP	53	32.00	-0.5	TDS	42.19	298	P	54	16.30	2.1			S		01	14.00	
KNT	37.24	301	iPc	53	32.00	-0.3	ZST	42.21	311	eP	54	14.20	-0.1	RSM	45.09	304	P	54	38.00	0.4
BTO	37.38	60	P	53	34.50	0.0	CZI	42.36	298	P	54	15.70	0.2	WET	45.11	312	eP	54	38.20	0.4
	N 13s	26.20um					GZH	42.44	87	P	54	16.20	-0.2		Z 12s	9.00um			5.9MszX	
	E 13s	28.90um						Z 18s	13.40um			5.9Msz		SOD	45.20	340	iP	54	38.30	0.1
		sP		53	51.00			N 15s	20.50um						e		56	20.00	559kmX	
		PP		55	01.00			E 15s	10.00um					CLL	45.32	315	iP	54	40.20	0.9
		S		59	17.00		MMN	42.45	299	P	54	17.40	1.1		2.2s	270.00nm			5.8mb	
		sS		59	38.00		SOI	42.47	296	P	54	16.50	0.1			i		54	48.80	29kmX
LIT	37.47	299	iPd	53	33.90	-1.2	SOP	42.50	310	iPd	54	18.90	2.3			eS		01	22.00	
VAY	37.50	301	iP	53	34.30	-1.0	SUF	42.64	334	eP	54	17.60	0.1	BRL	45.33	317	eP	54	41.00	1.6
	1.2s	0.12nm				2.6mb X		0.8s	163.30nm			5.8mb		BRN	45.37	316	ePc	54	42.50	2.8
FNA	38.36	300	ePd	53	42.20	-0.4	ZAG	42.68	307	eP	54	18.50	0.4	SFI	45.52	304	P	54	42.40	1.4
SKO	38.40	302	ePc	53	42.70	-0.2	PTJ	42.71	308	eP	54	16.90	-1.5	PGD	45.61	304	eP	54	42.50	0.5
	1.2s	132.00nm				5.5mb	VKA	42.74	311	iPd	54	19.50	0.9			eS		01	27.00	
	Z 18s	12.17um				5.8Msz		2.0s	493.00nm			5.9mb		CTI	45.71	307	P	54	41.10	-1.6
	N 17s	9.32um						Z 19s	7.50um			5.6Msz		HOF	45.89	313	eP	54	44.80	0.8
	E 18s	14.77um							e(PP)	56	22.00		FIR	45.95	304	eP	54	45.00	0.6	
		iPP		55	18.50				eS	01	40.00				S		01	30.00		
		iPPP		55	44.00		MGR	42.78	299	P	54	19.20	0.2	FUR	46.08	310	iPc	54	45.90	0.4
		iS		59	35.00		ATN	42.93	296	P	54	21.50	1.2		1.0s	58.00nm			5.5mb	
		iSS		02	30.00		SGO	42.96	300	P	54	20.70	0.2	MOX	46.10	314	iP	54	47.00	1.5
		iScS		03	45.00										1.5s	275.00nm			6.0mb	
		LR		10	46.00		TIA	43.02	67	Pd	54	21.40	0.4		Z 16s	12.30um			5.9MszX	
HHC	38.57	60	eP	53	44.60	0.1		Z 22s	33.70um			6.2Msz			N 18s	21.90um				
	N 15s	28.00um						N 14s	31.40um						E 18s	10.30um				
	E 14s	11.50um						E 13s	10.10um							eS		01	32.00	
		sP		53	57.00				pP	54	24.00	9km		OGA	46.18	309	eP	54	45.30	-1.2
		S		59	40.00				PcP	56	15.20			GRF	46.25	312	eP	54	47.70	0.9
CEI	38.58	311	eP	53	49.00	4.7X			S	00	45.00				Z 19s	10.00um			5.8Msz	
KBN	38.77	300	iPd	53	45.50	-0.5	VBY	43.16	307	eP	54	22.60	0.6	DL2	46.34	62	eP	54	46.00	-1.6
OHR	38.81	301	eP	53	45.50	-0.9	KSP	43.19	315	iPd	54	22.50	0.3		1.1s	400.00nm			6.4mb	
	1.0s	0.02nm				1.8mb X		1.0s	111.00nm			5.6mb			Z 18s	21.80um			6.1Msz	
		i		53	54.00				ic	54	26.50	13km			N 15s	16.20um				
		i		54	09.00		BSS	43.34	300	P	54	24.10	0.5		E 15s	16.00um				
SNG	38.88	117	eP	53	47.60	0.5	HKC	43.41	87	eP	54	24.30	0.0			eS		55	04.00	
		eS		59	37.50				eS	01	00.00					esP		01	28.00	
TIM	39.04	308	iPc	53	50.00	1.9	MNO	43.55	296	P	54	24.60	-1.0	MME	46.35	305	P	54	47.90	0.0
PHP	39.12	302	eP	53	50.30	1.4	DUI	43.60	301	P	54	27.30	1.6	BDI	46.43	305	P	54	46.90	-1.4
TIY	39.18	65	Pc	53	49.00	-0.6	LJU	43.71	308	eP	54	26.00	-0.5	OZH	46.46	82	eP	54	49.00	0.3
	3.0s	700.00nm				5.8mb			eS	00	58.00				Z 18s	17.40um			6.1Msz	
	N 14s	28.50um					CEY	43.76	307	eP	54	26.50	-0.4		N 16s	29.40um				
		PP		55	25.00		RIY	43.76	307	eP	54	27.10	0.2			eS		01	32.00	
		S		59	48.00		SDI	44.08	301	P	54	29.50	-0.1			SS		04	52.00	
BEO	39.43	306	eP	53	51.50	0.1	PRU	44.15	313	P	54	30.50	0.5	PII	46.48	304	P	54	46.10	-2.5
TIR	39.53	301	eP	53	51.20	-1.1		Z 17s	13.30um			5.9MszX		SAL	46.49	307	P	54	49.40	0.8
IVA	39.61	303	eP	53	54.50	1.4		N 18s	24.40um					KEV	46.60	342	eP	54	44.00	-5.2X
SDA	39.84	302	eP	53	54.30	-0.6		E 20s	8.50um						1.0s	92.00nm			5.8mb	
PLE	40.02	304	eP	53	56.00	-0.5			e	56	20.50	639kmX				i		54	51.80	26kmX
ULC	40.03	302	eP	53	56.00	-0.4			S	01	04.00					e		56	27.00	
PSZ	40.32	311	iP	53	59.00	0.2	VOY	44.15	308	eP	54	29.40	-0.8	OSS	46.78	308	eP	54	50.20	-1.0
SPC	40.36	313	iP	54	01.60	2.4	KMR	44.17	310	iP+	54	32.00	1.8	HFS	46.93	327	eP	54	52.50	0.5
PSI	40.51	124	ePd	54	01.00	0.4			i	54	40.10	27kmX			1.3s	451.70nm			6.4mb	
	0.9s	23.00nm				4.9mb	TRI	44.22	307	ePc	54	29.50	-1.1		Z 18s	12.61um			5.9Msz	
		e		03	00.00				eS	01	03.40					LR		08	27.00	
KRA	40.75	314	eP	54	02.70	0.5			eSS	04	28.00		MDI	47.06	307	P	54	51.70	-1.5	
	1.5s	260.00nm				5.7mb			eLR	07	50.00		SSE	47.14	73	Pc	54	54.50	0.5	
	Z 22s	10.60um				5.7Msz	KGM	44.23	120	ePd	54	32.00	1.0		1.4s	420.00nm			6.3mb	
	E 22s	13.30um					AZI	44.36	302	P	54	32.60	0.8		Z 20s	10.60um			5.8Msz	
		e		54	06.10	11km	AQU	44.38	302	P	54	32.70	0.6		N 18s	65.30um				
		e		54	12.40		RBL	44.41	308	P	54	31.70	-0.5		E 18s	12.40um				
		eS		00	10.00		FAI	44.41	295	P	54	36.50	4.2X			sP		55	10.00	
QIZ	40.77	94	eP	54	04.00	1.3	KBA	44.61	309	ePd	54	32.90	-1.1			S		01	46.00	
	E 15s	25.40um						1.1s	180.00nm			5.9mb				sS		02	04.00	
		eS		00	09.00				id	54	34.30	5km		VDL	47.24	308	eP	54	53.90	-1.0
		SS		03	03.00				ePP	56	35.50			BOB	47.24	306	P	54	54.30	-0.5
BUD	40.82	310	e(P)	54	02.00	-0.8			i	56	54.80			SAX	47.34	309	eP	54	54.50	-1.3
IPM	40.83	120	ePd	54	05.10	1.8			eS	01	10.00			LWI	47.47	236	iPc	54	57.20	0.2
	1.0s	41.50nm				5.1mb	KHC	44.66	312	P	54	33.70	-0.5	SNY	47.61	58	iPd	54	57.00	-0.6
		e		54	21.90	67kmX		1.0s	36.00nm			5.2mb			Z 18s	26.60um			6.3Msz	
SRO	41.35	311	iP	54	07.60	0.4		Z 20s	9.10um			5.7Msz			N 14s	20.70um				
		i		55	34.80	463kmX		N 20s	11.90um						E 18s	9.50um				
WHN	41.48	76	Pd	54	08.50	0.1		E 20s	11.00um							pP		55	09.00	43kmX
	3.0s	1100.00nm				6.1mb														



PCP	47.89	305	P	54	58.36	-1.5	CAF	52.48	306	eP	55	34.20	-0.7	SEK	67.91	217	iPd	57	21.50	0.6
SLE	47.93	310	eP	54	58.50	-1.6	PPR	52.53	100	ePd	55	31.50	-4.0X	SWZ	0.6s	90.00nm			6.1mb	
ZLA	48.00	309	eP	54	59.00	-1.7	LSF	52.74	308	eP	55	35.70	-1.1		68.24	219	iPc	57	18.70	-4.2X
TNS	48.08	313	ePc	55	02.90	1.7	PGP	52.75	95	ePc	55	37.00	-0.2		1.2s	312.50nm			6.4mb	
CKI	48.09	305	P	55	00.00	-1.3		1.0s	41.00nm			5.3mb	LKO	69.66	270	P	57	30.90	-1.0	
FIN	48.14	305	P	55	00.62	-1.2	RJF	52.83	307	eP	55	36.90	-0.6		0.9s	163.00nm			6.2mb	
FEL	48.26	310	eP	55	01.56	-1.2	LPO	53.13	306	eP	55	39.10	-0.5	KIC	70.39	266	Pc	57	35.82	-0.5
ORX	48.27	307	P	55	00.72	-2.2		1.4s	200.40nm			5.9mb		1.0s	113.50nm			6.0mb		
ORO	48.27	307	P	55	00.00	-2.9	LFF	53.41	306	eP	55	41.10	-0.6	Z	20s	5.00um			5.8Msz	
MMK	48.28	307	eP	55	01.50	-1.6	LDF	53.68	311	eP	55	42.60	-1.0							
NB2	48.37	328	P	55	02.00	-1.3		1.1s	131.85nm			5.8mb	TIC	70.50	267	P	57	36.50	-0.5	
	1.1s	165.90nm			6.0mb		MFF	53.86	308	eP	55	43.90	-1.0	HVD	70.85	217	iPd	57	54.00	15.2X
ROB	48.38	305	P	55	02.57	-1.1		1.2s	89.25nm			5.7mb		1.2s	109.38nm					
IMI	48.38	305	P	55	02.16	-1.6	FLN	53.90	311	eP	55	44.40	-0.8	TBT	72.12	293	eP	57	52.00	5.5X
STR	48.44	311	P	55	04.08	0.1		1.0s	125.00nm			5.9mb	CHIE	72.54	292	eP	57	51.20	2.2	
GWF	48.55	311	P	55	04.35	-0.5	EBR	54.15	301	eP	55	48.00	0.9	GDH	72.90	341	iPc	57	44.00	-6.4X
ABH	48.64	313	eP	55	05.64	0.1			eS		03	20.00			0.8s	14.93nm			5.1mb	
DIX	48.66	307	eP	55	04.50	-1.6	GRR	54.18	311	eP	55	46.20	-1.1							
ENR	48.71	305	P	55	05.03	-1.2		1.0s	68.00nm			5.6mb								
SBF	48.71	304	eP	55	04.80	-1.5	EROQ	54.21	301	eP	55	46.80	-0.8							
CDF	48.76	311	P	55	06.09	-0.5	LPF	54.33	310	eP	55	47.80	-0.6							
STV	48.78	305	P	55	05.54	-1.2		1.0s	36.00nm			5.4mb	POF	72.97	221	iPc	57	57.50	6.2X	
TRO	48.82	340	iPc	55	08.80	2.3	ESCF	54.59	304	P	55	50.88	0.5		1.3s	105.77nm			5.8mb	
DOI	48.82	305	P	55	05.20	-1.9	LHE	54.65	304	P	55	50.97	0.0	GUMO	73.64	83	eP	57	54.00	-1.5
MOF	48.85	310	P	55	07.07	-0.2	ATE	54.68	304	P	55	51.40	0.3	Z	22s	0.75um			4.9MszX	
CN2	48.88	56	Pc	55	07.00	-0.4	ISSF	54.76	304	P	55	51.90	0.1	PJG	73.63	83	eP	57	53.80	-1.7
	6.0s	1000.00nm			6.0mb	X	MADF	54.76	304	P	55	51.96	0.3	MBC	75.02	1	ePc	58	02.30	-0.2
Z	20s	44.00um			6.4Msz		TSM	54.79	107	eP	55	49.00	-3.2X		0.8s	63.00nm			5.7mb	
N	13s	17.00um					EKA	55.22	319	P	55	55.00	0.2	BRW	75.58	13	eP	58	05.20	-0.6
E	13s	21.00um						1.6s	149.70nm			5.8mb	CER	76.31	219	iPd	58	11.50	1.0	
		pP	55	17.00	34kmX		SHK	55.81	66	eP	56	00.50	1.1		0.9s	92.31nm			5.9mb	
ANP	48.92	81	eP	55	08.00	-0.1	ETOR	56.06	302	eP	56	02.00	0.9	MUN	76.91	138	eP	58	14.00	0.1
		eS	02	20.00			ECRI	56.07	304	eP	56	02.20	1.0	MBO	77.40	280	iPc	58	20.00	3.1X
PZZ	48.93	305	P	55	06.05	-1.9	DLE	57.33	317	eP	56	13.30	3.4X	KLB	77.55	137	eP	58	17.00	-0.4
RUP	48.94	312	eP	55	08.05	0.1	ECP	57.34	316	eP	56	12.50	2.5	NWAO	78.19	138	eP	58	20.00	-0.9
BSF	49.08	310	eP	55	07.80	-1.3		0.8s	63.00nm			5.7mb	RKG	78.88	139	eP	58	27.00	2.3	
	1.6s	223.90nm			5.9mb		ECB	57.57	316	eP	56	12.30	0.7	COOL	79.13	134	eP	58	25.00	-1.2
RRL	49.13	306	P	55	09.13	-0.5	TRT	57.58	122	ePc	56	00.20	-12.0X	WARB	79.69	127	eP	58	29.00	-0.3
LPG	49.14	307	eP	55	08.50	-1.3	GUD	57.65	302	eP	56	12.80	0.3	IMA	80.48	15	eP	58	32.20	-0.8
	1.4s	272.30nm			6.1mb		TOL	57.74	301	eP	56	16.50	3.5X		1.2s	73.80nm			5.6mb	
LPL	49.15	307	eP	55	08.60	-1.2			iS		04	09.00		FRB	81.03	341	eP	58	35.00	-0.7
FOUF	49.15	305	e(P)d	55	08.28	-1.2			eSS		08	20.00			1.1s	117.00nm			5.8mb	
		e	55	08.46	1kmX		DCN	57.76	317	eP	56	15.40	2.5	WB5	81.61	118	eP	58	38.00	-1.5
BNI	49.21	306	P	55	08.40	-1.7	EBAN	57.92	299	eP	56	14.00	-0.3	WRA	81.63	118	Pd	58	38.80	-0.8
WTS	49.22	315	iPc	55	11.90	2.0	ASMO	58.08	298	eP	56	17.50	2.0		0.8s	29.90nm			5.4mb	
	1.0s	79.00nm			5.7mb		APHE	58.13	298	iPd	56	15.60	-0.3	INK	81.95	7	eP	58	40.00	-0.4
		e	55	32.00	82kmX		ACHM	58.20	298	iPc	56	16.50	0.2		0.7s	38.00nm			5.6mb	
WIT	49.37	316	eP	55	13.50	2.5	ATEJ	58.39	298	iPd	56	17.30	-0.5	TTA	82.45	18	P	58	42.80	-0.5
HAU	49.38	310	eP	55	10.10	-1.2	ALOJ	58.42	298	iPd	56	17.00	-0.9	FBA	82.78	14	eP	58	44.70	-0.2
	1.6s	223.90nm			5.9mb		PCI	59.09	110	ePc	56	24.50	1.8	ASPA	83.42	121	iPd	58	47.40	-1.4
VITF	49.63	310	P	55	11.62	-1.4		1.6s	3.50nm			4.2mb	X		1.1s	64.00nm			5.7mb	
MEM	49.66	313	iPc	55	14.50	1.3	EHOR	59.12	299	eP	56	22.40	-0.2	Z	22s	3.24um			5.6MszX	
		PP	57	17.60			DAV	59.74	99	eP	56	28.00	0.7			LR	34	21.00		
DOU	50.55	313	P	55	21.70	1.6	IFR	60.18	294	eP	56	23.00	-7.2X	SVW	84.03	19	eP	58	53.00	1.6
		ScP	00	19.00					i		56	26.00	10km	PMR	85.35	16	eP	58	57.80	-0.1
		S	02	36.00					i		56	30.50			1.0s	50.00nm			5.7mb	
SSB	50.70	306	P	55	19.98	-1.5	KHKI	60.24	120	ePd	56	27.70	-2.9X	Z	20s	11.00um			6.2Msz	
UCC	50.71	314	P	55	22.00	0.7			e		58	55.30		PMG	86.57	103	eP	59	04.50	-0.2
SNF	50.75	313	Pc	55	20.70	-0.9	EVAL	60.33	299	eP	56	31.00	0.1	SCH	87.39	335	eP	59	11.00	2.9X
NPA	50.99	214	iP	55	24.40	0.6	STS	60.38	305	e(P)	56	32.20	1.0	KDC	87.71	20	eP	59	10.80	1.3
	1.0s	220.00nm			6.0mb		BUL	60.87	221	eP	56	29.40	-5.6X	YKA	88.90	0	eP	59	14.20	-0.9
		e	55	27.00	9km			0.9s	142.86nm			6.1mb		0.8s	22.70nm			5.5mb		
LBF	51.01	309	eP	55	22.60	-1.1	DAG	60.96	345	iPc	56	33.00	-1.8	CTA	91.15	112	iPd	59	28.00	1.7
LOR	51.08	309	eP	55	23.00	-1.2		0.8s	67.16nm			5.8mb		1.1s	63.29nm			5.9mb		
	1.2s	93.00nm			5.6mb				iP		56	36.10	10km	FFC	96.09	353	eP	59	50.00	1.4
SMF	51.12	308	eP	55	23.50	-1.0	AKU	61.76	332	iP	56	43.90	3.6X		1.1s	35.00nm			5.8mb	
BAG	51.19	92	eP	55	26.00	0.3		1.4s	148.84nm			6.0mb	EDM	98.20	360	eP	00	01.50	3.3X	
		eS	02	44.00			AVE	62.07	294	eP	56	42.50	-0.3	RSON	98.63	347	P	00	00.00	-0.1
PLDF	51.31	307	P	55	24.94	-1.1			i		57	09.00	107kmX	Z	20s	9.04um			6.3Msz	
SSF	51.33	309	eP	55	25.00	-1.1	TIO	62.69	292	iP	56	45.70	-1.5	SES	101.00	358	ePd	00	13.00	2.4X
BCAO	51.38	251	iPd	55	25.40	-1.5			i		57	00.00	51kmX	WDC	110.36	7	ePKP	04	53.40	-0.2
	0.8s	56.00nm			5.5mb		SLR	65.49	218	iPd+	57	03.50	-2.0			e	05	26.40		
		id	55	26.80	5km			1.2s	109.38nm			5.9mb			e	15	54.70			
AVF	51.45	308	eP	55	25.90	-1.1	Z	19s	3.47um			5.6Msz	RSCP	110.58	336	PKP	05	00.00	5.7X	
GRC	51.61	309	P	55	27.18	-1.0	KSR	66.34	219	iPd	57	11.80	0.8	Z	22s	5.08um			6.1Msz	
LBL	51.62	307	P	55	27.93	-0.3		0.9s	50.00nm			5.7mb	GLD	111.23	353	PKP	04	57.00	1.4	
AGO	51.64	308	P	55	27.40	-1.1	SHGH	66.49	264	eP	57	13.00	1.0	Z	20s	8.00um			6.3Msz	
PYM	51.75	307	P	55	28.16	-1.2	TEGH	66.60	263	eP	57	15.00	2.4	GOL	111.29	353	PKP	04	57.00	1.2
MDJ	51.79	54	eP	55																



04d 20h

Z 18s 6.96um 6.3msz	POO	12.32 144 eP	37 56.50 1.8	BUL	60.61 221 iPc	45 07.80 -2.1
SBB 116.61 4 ePKP 05 08.00 2.1	HYB	15.98 132 eP	38 41.30 -1.6		1.0s 9.50nm	4.9mb
GLA 118.35 1 ePKP 05 12.00 2.8X			42 23.00	LKO	69.52 270 P	46 08.24 0.6
SPA 118.76 180 iPKPc 05 10.50 1.5	GKN	16.27 88 P	38 41.40 -5.2X		0.8s 15.50nm	5.2mb
	DMN	16.73 89 P	38 48.60 -4.0X	KIC	70.24 266 P	46 12.50 0.5
Z 20s 5.99um 6.2msz	KKN	16.86 89 P	38 50.80 -3.4X	TIC	70.35 267 P	46 13.30 0.6
IIJ 129.79 343 (PKP) 05 35.00 2.9X	PKI	17.01 89 P	38 52.90 -3.2X	LIC	70.56 266 P	46 14.40 0.5
PPM 130.13 341 (PKP) 05 35.00 2.2X	GUN	17.37 88 P	38 56.10 -4.7X	MBC	75.25 1 eP	46 40.50 0.0
III 131.02 342 (PKP) 05 36.50 2.4X		0.4s 11.00nm	4.3mb		0.9s 5.00nm	4.6mb
OXX 131.42 338 (PKP) 05 39.00 4.2X	GBA	18.31 143 P	39 13.00 0.9	WRA	81.64 118 P	47 20.00 3.7X
AIA 132.58 206 ePKP 05 33.00 -2.3X		1.1s 15.30nm	4.1mb		0.9s 3.70nm	4.5mb
ZOBO 136.36 277 ePKP 05 41.00 -3.7X	KOD	21.21 148 eP	39 48.50 3.7X	INK	82.18 7 eP	47 18.00 -0.3
	WMQ	22.90 43 P	40 02.00 0.8	YKA	89.12 0 eP	47 52.20 -0.6
Z 19s 4.10um 6.2msz	SHL	23.08 92 eP	40 01.50 -1.8		0.6s 0.90nm	4.2mb
			44 24.00	S.D. = 1.1 on 62 of 73 obs.		
LPB 136.44 276 ePKP 05 38.00 -6.7X	GTA	29.69 60 eP	41 05.80 1.1	* MAR 04, 1990 21h 02m 32.62 ± 0.78s		
Z 22s 6.67um 6.3msz	CHG	31.48 101 eP	41 20.70 0.2	12.987 N ± 14.9km 50.555 E ± 8.6km		
	CHTO	31.48 101 eP	41 20.60 0.1	DEPTH = 10.0km (geophysicist)		
ARE 139.36 278 ePKP 05 54.00 4.1X		1.0s 2.50nm	4.1mb	4.8mb (12 obs.)		
AFR 145.07 79 iPKP 06 00.50 1.1	LZH	32.50 67 eP	41 29.00 -0.4	EASTERN GULF OF ADEN (415)		
	CD2	32.59 77 eP	41 31.00 0.9	BHD	20.97 345 ePd	07 17.00 -1.3
PPT 145.25 79 iPKP 06 01.30 1.5	GYA	35.84 84 P	41 59.20 0.9	MBH	22.14 321 eP	07 30.00 -0.1
	XAN	36.69 71 eP	42 05.00 -0.2	PRNI	22.48 323 eP	07 35.00 1.4
PAE 145.29 79 iPKP 06 01.00 1.2	BTO	37.61 60 eP	42 14.40 1.4	SLY	22.97 349 ePd	07 39.00 0.7
	NUR	42.22 331 eP	42 51.50 0.8	MSL	24.23 345 ePd	07 55.50 5.0X
PPN 145.36 79 iPKP 06 01.60 1.6	BJI	42.30 61 eP	42 51.00 -0.7	MAIO	24.57 18 iPd	07 55.00 1.0
	SUF	42.78 334 iP	42 55.20 -0.1	TAB	25.26 352 eP	08 06.00 5.3X
PMO 145.51 74 iPKP 06 02.40 2.2X		0.6s 9.30nm	4.7mb	GBA	26.16 86 Pc	08 12.90 3.8X
	TIA	43.23 66 eP	43 00.60 1.2		0.9s 4.40nm	4.1mb
TVO 145.62 79 iPKP 06 02.30 1.8	SDI	44.08 302 P	43 05.50 -0.7	BCAO	32.74 258 iPc	09 07.20 -0.8
	AZI	44.36 302 P	43 10.00 1.6		9.7s 8.00nm	
TPT 145.73 73 iPKP 06 03.20 2.6X	RBL	44.43 308 P	43 07.50 -1.6		ic	11 38.10
	KBA	44.64 309 e(P)	43 11.00 0.1	GKN	35.10 60 P	09 27.80 -0.7
VAH 145.84 74 iPKP 06 03.40 2.6X		1.2s 16.40nm	4.8mb		1.2s 60.00nm	5.3mb
	KHC	44.70 312 P	43 12.50 1.3	DMN	35.38 60 P	09 30.40 -0.6
RUV 146.03 74 iPKP 06 04.00 2.9X	ARV	44.74 304 P	43 12.80 1.3	KKN	35.58 60 P	09 32.20 -0.4
	ASS	44.94 303 P	43 11.00 -2.2		0.8s 28.00nm	5.2mb
TBI 147.47 89 iPKP 06 10.40 7.1X	FVI	44.99 308 P	43 13.00 -0.4	PKI	35.62 61 P	09 32.40 -0.7
	SOD	45.36 340 eP	43 18.00 1.9	GUN	36.12 60 P	09 37.00 -0.4
S.D. = 1.2 on 339 of 394 obs.	PGD	45.63 305 P	43 19.00 0.2	SRO	43.89 329 eP	10 45.00 4.0X
* MAR 04, 1990 20h 18m 52.61 ± 1.91s	CTI	45.74 308 P	43 15.50 -4.1X	ZST	44.76 328 eP	10 56.40 8.4X
28.986 N ± 14.2km 66.649 E ± 12.8km	MOX	46.15 314 eP	43 26.00 3.4X		e	13 27.60
DEPTH = 53.9 ± 18.2 km	OGA	46.21 309 eP	43 22.50 -0.9	CHTO	46.79 76 e(P)	11 06.00 1.5
4.3mb (8 obs.)	GRF	46.30 313 eP	43 26.00 2.2	PRU	47.20 329 eP	11 08.00 0.7
PAKISTAN (710)	KEV	46.77 342 eP	43 33.00 5.8X	CLL	48.79 329 eP	11 27.00 7.4X
	HFS	47.05 327 eP	43 29.70 0.2		2.2s 51.00nm	5.2mb
QUE 1.23 12 eP 19 14.70 0.8		0.6s 7.20nm	4.9mb	NUR	51.10 344 eP	11 44.00 6.8X
MAIO 9.46 322 eP 21 09.00 0.0	MDI	47.08 307 P	43 29.50 -0.5	LBF	51.58 321 eP	11 43.50 2.4X
GKN 15.85 89 P 22 34.00 0.2	BOB	47.26 306 P	43 33.50 1.9		1.2s 11.90nm	4.7mb
HYB 15.87 134 eP 22 35.00 1.0	VAI	47.74 307 P	43 35.00 -0.2	LOR	51.77 321 eP	11 44.20 1.6
	NB2	48.48 328 P	43 40.80 0.0		1.2s 14.90nm	4.8mb
DMN 16.32 90 P 22 39.40 -0.5		0.8s 6.80nm	4.8mb	SSF	51.90 321 eP	11 45.80 2.3
KKN 16.44 90 P 22 39.00 -2.4	SBF	48.73 305 eP	43 41.70 -1.3		1.0s 8.00nm	4.6mb
PKI 16.59 90 P 22 42.20 -1.2		0.6s 14.45nm	5.2mb	MEM	52.07 325 P	11 47.90 3.2X
GUN 16.95 89 P 22 43.60 -4.3X	CN2	49.12 55 eP	43 49.00 3.1X	DOU	52.61 324 P	11 47.60 -1.2
	LPG	49.16 307 eP	43 45.80 -0.8	SUF	52.61 346 iP	11 46.20 -2.4
GBA 18.29 145 Pc 23 04.40 0.2		0.8s 7.40nm	4.8mb		0.8s 6.30nm	4.6mb
	LPL	49.17 307 eP	43 45.80 -0.8	HFS	54.29 338 eP	11 57.50 -3.5X
CHTO 31.12 102 eP 25 11.30 2.9		1.0s 11.00nm	4.8mb		0.7s 4.40nm	4.6mb
	BNI	49.23 306 P	43 46.00 -0.9	LKO	55.08 273 P	12 06.74 -0.9
NUR 42.17 330 eP 26 42.30 1.1	DOU	50.60 313 P	43 59.50 2.4	LIC	55.13 269 P	12 07.10 -0.8
SUF 42.70 334 eP 26 45.30 -0.2	LBF	51.04 309 eP	43 59.90 -0.7	NB2	55.81 338 P	12 08.80 -3.3X
		1.0s 8.00nm	4.6mb		1.0s 8.60nm	4.7mb
HFS 47.04 327 eP 27 18.70 -1.5	LOR	51.11 309 eP	44 00.60 -0.5	BJI	63.13 52 eP	13 02.00 -0.9
		1.0s 7.00nm	4.5mb	WRA	88.65 111 P	15 30.00 2.1
NB2 48.47 328 P 27 32.40 1.0	SMF	51.15 308 eP	44 00.80 -0.6		0.8s 6.30nm	5.0mb
		0.8s 17.45nm	5.0mb	MBC	90.74 358 ePc	15 36.50 -0.1
LKO 69.94 270 P 29 58.76 -1.9	BCAO	51.18 251 ePd	44 02.90 0.9		1.0s 5.00nm	4.8mb
		0.7s 6.00nm	4.6mb	S.D. = 1.3 on 22 of 33 obs.		
MBC 74.96 1 eP 30 30.00 0.8	SSF	51.36 309 eP	44 02.50 -0.5	* MAR 04, 1990 22h 12m 40.35 ± 0.58s		
YKA 88.84 1 eP 31 41.40 -0.3		0.8s 13.45nm	4.9mb	21.276 S ± 10.6km 175.960 E ± 11.1km		
	AVF	51.48 309 eP	44 03.20 -0.6	DEPTH = 33.0km (normol)		
S.D. = 1.5 on 16 of 17 obs.		1.0s 7.00nm	4.5mb	4.5mb (3 obs.)		
MAR 04, 1990 20h 34m 56.28 ± 0.30s	BGF	51.84 308 eP	44 05.80 -0.8	SOUTH OF FIJI ISLANDS (171)		
28.703 N ± 6.8km 66.175 E ± 4.4km	TCF	52.29 308 eP	44 08.90 -1.2	NDF	3.77 22 eP	13 35.50 -2.1
DEPTH = 10.0km (geophysicist)		1.0s 8.00nm	4.6mb		eS	14 25.00
4.7mb (27 obs.)	CAF	52.50 306 eP	44 11.30 -0.4	SVA	3.93 37 iPc	13 38.60 -1.2
PAKISTAN (710)		0.8s 9.40nm	4.8mb		eS	14 28.80
Felt at Kalat.	LSF	52.77 308 eP	44 13.10 -0.5	VUN	4.02 36 iPc	13 39.80 -1.4
		1.2s 17.85nm	4.9mb		eS	14 27.20
QUE 1.63 24 eP 35 23.70 -1.5	LFF	53.44 306 eP	44 18.40 -0.1	SCE	4.11 27 eP	13 42.50 0.0
MHI 9.44 325 eP 37 17.00 1.6		0.8s 10.75nm	4.9mb	MBU	5.01 32 eP	13 55.00 -0.4
	FLN	53.95 311 eP	44 21.40 -0.8		eS	14 58.00
NDI 9.70 87 eP 37 17.00 -1.9		0.8s 10.75nm	4.9mb			



DZM	8.88	263	iPc	14	48.80	-0.8	38.390 N ± 3.2km	25.052 E ± 2.8km	eP*	00	37.50					
PGZ	19.28	179	P	17	03.10	-2.1	DEPTH = 12.6 ± 1.9 km		iPg	00	41.50					
HNR	19.40	305	eP	17	06.00	-0.7	AEGEAN SEA	(365)	iSn	01	16.00					
MRW	19.92	183	eP	17	08.00	-4.2X	ML 3.7 (ATH), 3.5 (THE).		i	01	19.50					
BRS	21.97	249	e(P)	17	20.00	-13.2X			eP	00	49.00	-1.4				
MSZ	24.26	194	eP	17	54.00	-1.4	ATH	1.13 249 ePn	20	44.00	0.0	TAB	4.54 90 eP	00	49.00	-1.8
WRA	38.90	264	P	20	07.00	2.1	APE	1.37 164 ePn	20	47.60	-0.4	SLY	4.73 122 iPnc	00	52.50	-0.8
	0.8s	2.90nm			4.1mb		SMG	1.56 115 ePn	20	50.50	-0.1		iP*	01	01.50	
MAT	67.66	328	(P)	23	32.00	-4.4X	NEO	1.70 303 ePn	20	52.70	0.1		iPg	01	11.20	
	1.0s	14.00nm			5.0mb		IZM	1.74 89 iPn	20	54.10	0.9		iSn	01	49.00	
FRI	83.84	47	e(P)	25	09.20	1.2	EZN	1.74 34 ePn	20	53.30	0.1		iS*	02	04.00	
SBB	83.94	49	eP	25	05.00	-3.6X	OUR	2.11 337 ePn	20	58.60	0.1	BHD	5.82 147 ePnd	01	37.50	28.8X
CMB	83.94	45	ePc	25	09.80	1.2	AGG	2.22 287 ePn	21	00.60	0.4		eP*	01	48.00	
WDC	83.96	42	eP	25	09.90	1.4	PLG	2.34 328 ePn	21	01.50	-0.4		iSn	02	54.00	
ORV	84.05	44	eP	25	10.20	1.2	VLI	2.37 226 ePn	21	01.00	-1.3		iS*	03	31.50	
MIN	84.42	43	e(P)	25	12.70	1.7	CIN	2.52 107 P	21	47.00	42.6X	KAS	6.12 303 eP	01	28.00	15.0X
CLC	84.68	48	eP	25	13.00	0.7	ALN	2.62 17 ePn	21	05.20	-0.6	BBTK	6.30 287 eP	01	13.00	-2.6
TPC	84.91	51	eP	25	15.00	1.5	LIT	2.62 311 ePn	21	06.10	0.2		e	01	32.00	
CHG	85.25	292	eP	25	16.00	0.6	ITM	2.76 245 ePn	21	03.60	-4.2X		iS	03	01.00	
CHTO	85.25	292	eP	25	14.10	-1.3	SOH	2.76 332 ePnc	21	08.20	0.3	CSS	6.67 243 eP	01	20.00	-0.6
	1.0s	3.00nm			4.5mb		THE	2.76 325 ePn	21	08.00	0.2	HLBJ	7.05 211 Pc	01	26.30	0.3
CLL	147.20	340	ePKP	32	19.00	-0.2	RDO	2.78 8 ePn	21	07.50	-0.6	BURJ	7.12 215 Pc	01	27.30	0.2
KHC	148.86	337	ePKP	32	27.90	5.8X	EDC	2.93 47 ePn	21	10.50	0.3	MDSJ	7.46 210 Pd	01	32.00	0.2
KBA	150.65	335	e(PKP)	32	32.00	7.0X	SRS	2.95 338 ePn	21	10.40	-0.1	MAIO	15.19 91 eP	03	18.00	1.7
BCAO	152.42	236	ePKPc	32	33.10	4.7X	BNT	2.97 48 iPn	21	10.00	-0.7	ZST	19.73 308 e(P)	04	11.50	-0.7
	0.9s	5.00nm					DST	3.04 65 ePn	21	11.90	0.1	CEY	20.78 300 e(P)	04	22.00	-1.1
S.D. = 1.4 on 20 of 27 obs.							VAM	3.05 193 ePb	21	21.00	9.0X		e	04	23.50	
? MAR 04, 1990 23h 09m 01.47 ± 1.13s							KZN	3.18 308 ePn	21	14.30	0.4	VOY	21.21 300 e(P)	04	29.20	1.7
13.329 N ± 21.9km 50.361 E ± 12.3km							KNT	3.23 330 iPnc	21	14.80	0.3		e	04	34.80	
DEPTH = 10.0km (geophysicist)								eSn	21	56.00		KSP	21.31 314 eP	04	49.00	20.6X
4.7mb ( 8 obs.)							KDZ	3.27 5 iPd	21	14.00	-1.1	RBL	21.51 301 P	04	31.00	0.4
EASTERN GULF OF ADEN (415)							RZN	3.30 356 iP	21	16.00	0.3	ASS	21.68 292 P	04	33.00	0.8
TEH	22.33	2	eP	13	36.00	-25.1X	KAP	3.30 148 ePn	21	14.60	-1.0	FVI	22.08 301 P	04	32.50	-3.6X
MAIO	24.30	18	eP	14	23.00	2.8	MMB	3.35 343 eP	21	16.00	-0.3	PGD	22.42 294 P	04	39.50	-0.2
GBA	26.33	86	Pd	14	41.90	2.4	VAY	3.50 328 iPn	21	19.00	0.8	CTI	22.74 299 P	04	41.50	-1.3
	1.5s	13.10nm			4.4mb		KHL	3.52 90 ePn	21	21.00	2.4	CLL	23.39 313 iP	04	49.70	0.8
GKN	35.09	60	P	15	56.60	-0.7	DIM	3.67 6 eP	21	21.00	0.2		1.2s	10.00nm		4.2mb
DMN	35.37	61	P	15	59.20	-0.6	FNA	3.71 311 ePn	21	21.00	-0.4	GRF	23.89 308 eP	04	55.00	1.2
KKN	35.57	61	P	16	01.00	-0.4	PLD	3.72 356 eP	21	22.00	0.5	MDI	24.04 298 P	04	56.00	0.8
	0.6s	18.00nm			5.1mb		KKB	3.79 337 iP	21	22.00	-0.4	NUR	24.48 341 eP	05	03.00	3.7X
PKI	35.62	61	P	16	01.00	-1.0	DMK	4.01 30 iPn	21	24.50	-1.0	VAI	24.70 298 P	05	01.00	-0.7
GUN	36.12	61	P	16	05.60	-0.6	ALT	4.01 79 ePn	21	26.00	0.3	SUF	26.07 345 eP	05	17.10	2.7
	0.6s	17.00nm			5.1mb		PGB	4.21 351 eP	21	28.00	-0.4	BNI	26.10 296 P	05	14.50	-0.5
NUR	50.73	344	eP	18	03.20	0.0	JMB	4.24 16 eP	21	29.00	0.2	GKN	37.98 92 P	06	59.20	0.0
SUF	52.24	346	iP	18	14.40	-0.3	DHR	4.26 311 ePn	21	30.50	1.3	DMN	38.53 92 P	07	03.80	-0.1
	0.6s	2.90nm			4.4mb		KEK	4.30 290 ePn	21	30.60	0.9	KKN	38.59 92 P	07	03.60	-0.7
HFS	53.91	338	eP	18	26.20	-0.8	HRT	4.31 54 ePn	21	33.00	3.1X	PKI	38.79 92 P	07	06.20	0.0
	0.6s	5.50nm			4.8mb		VTs	4.43 342 eP	21	32.00	0.4	GUN	39.00 92 P	07	07.80	-0.2
LKO	54.88	272	P	18	35.42	0.5	SKO	4.52 323 ePn	21	32.50	-0.3	LIC	52.10 244 P	08	54.00	2.3
NB2	55.42	338	P	18	37.40	-0.8	PVL	4.83 2 iPd	21	35.00	-2.1		0.8s	5.50nm		4.6mb
	0.8s	4.20nm			4.5mb		S.D. = 0.8 on 40 of 44 obs.				MBC	65.10 355 eP	10	22.00	0.5	
BJI	63.07	52	eP	19	30.00	-1.4	? MAR 05, 1990 02h 45m 52.97 ± 1.75s					1.0s	6.00nm		4.6mb	
WRA	88.95	111	Pc	21	57.90	-0.2	28.579 N ± 23.8km 66.532 E ± 16.1km				YKA	77.67 348 eP	11	35.70	-1.1	
	0.8s	3.80nm			4.7mb		DEPTH = 33.0km (normal)					0.8s	0.40nm		3.5mb	
MBC	90.39	358	eP	22	05.00	1.1	4.2mb ( 4 obs.)				S.D. = 1.2 on 30 of 36 obs.					
	0.9s	6.00nm			4.9mb		PAKISTAN (710)				* MAR 05, 1990 04h 05m 34.49 ± 2.76s					
S.D. = 1.3 on 15 of 16 obs.							QUE	1.64 13 eP	46	19.70	-0.4	33.423 S ± 9.3km 71.896 W ± 26.1km				
* MAR 04, 1990 23h 42m 07.64 ± 0.87s							eS	46	47.30		DEPTH = 33.0km (normal)					
28.967 N ± 18.0km 66.574 E ± 9.6km							NDI	9.39 87 eP	48	13.50	4.5X	NEAR COAST OF CENTRAL CHILE (135)				
DEPTH = 33.0km (normal)							eS	49	53.00		LCCH	0.28 101 iPd	05	41.40	-0.6	
4.4mb ( 3 obs.)							MAIO	9.72 324 eP	48	15.00	1.3		iS	05	45.50	
PAKISTAN (710)							eS	50	28.00		IHA	0.45 28 eP	05	43.50	-0.8	
NDI	9.34 89 eP	44	24.00	1.0			HYB	15.67 133 eP	49	18.00	-15.0X		iS	05	49.20	
	eS	46	09.00				e	49	37.50		LNv	0.67 143 iPd	05	47.50	0.1	
MHI	9.44 323 eP	44	25.00	0.6			GUN	17.06 88 P	49	51.40	0.4		iS	05	57.40	
	eS	46	35.00				GBA	18.02 144 Pc	50	09.30	6.7X	ROCH	0.87 59 iP	05	49.50	-1.0
HYB	15.91 134 eP	46	25.00	34.3X			1.5s	24.30nm		4.1mb			iS	06	00.50	
GKN	15.91 89 P	45	50.80	-0.1			HFS	47.32 327 eP	54	23.50	-1.6	SAN	1.03 92 iP	05	53.00	0.3
DMN	16.38 90 P	45	59.00	2.0			0.6s	2.00nm		4.3mb			iS	06	06.40	
KKN	16.51 90 P	45	58.00	-0.5			MBC	75.36 1 eP	57	34.50	0.2		i	06	09.20	
PKI	16.65 90 P	46	00.00	-0.5			0.7s	3.00nm		4.4mb		JACH	1.32 56 eP	05	57.00	0.1
GUN	17.02 89 P	46	03.00	-2.1			YKA	89.24 1 eP	58	46.70	0.1		iS	06	14.00	
	0.4s	13.00nm			4.4mb		0.4s	0.30nm		4.0mb		FCH	1.35 86 iP	05	58.00	0.6
GBA	18.31 144 Pd	46	21.10	0.2			S.D. = 1.2 on 6 of 9 obs.						iS	06	14.50	
	0.8s	1.70nm			3.3mb X		MAR 05, 1990 02h 59m 42.46 ± 0.39s					RTCV	3.23 62 e(P)	06	30.00	5.9X
LOR	51.22 309 eP	51	08.50	-1.5			38.211									



05d 04h

STRAIT OF GIBRALTAR						(385)						PRU						GUMO					
mbLg 3.4 (MDD)												GRF						7.17 172 e(P)					
EVAL	1.36	38	ePg	37 28.50	0.7	KHC	149.79	348	ePKPd	18 26.00	5.1X	GUA	7.23	172	e(P)	14 53.50	0.4						
			eSg	37 42.70			149.63	352	ePKP	18 29.30	7.1X		1.5s	558.56nm		6.4mb X							
EJIF	1.88	91	ePn	37 36.40	1.1				e	18 34.00		GUA	7.23	172	e(P)	14 53.70	-0.2						
			eSn	37 57.00		ZST	149.87	343	ePKP	18 28.70	6.1X	CHJJ	15.84	345	P	16 54.80	4.6X						
EPRU	2.11	77	ePn	37 39.70	1.0	SRO	149.88	342	ePKP	18 28.80	6.2X	TSRJ	16.29	337	eP	17 05.50	9.7X						
			eSn	38 01.00		FLN	150.69	7	ePKP	18 30.10	6.3X	MTMJ	16.65	343	P	17 04.50	3.9X						
EHOR	2.42	57	iPnd	37 43.50	0.5				1.4s	47.90nm		NIJJ	16.98	347	P	17 05.40	0.8						
			eSn	38 09.00		LDF	150.90	7	ePKP	18 30.80	6.7X	CVP	21.00	266	eP	17 53.00	1.6						
AVE	3.22	174	iPn	37 56.00	1.5				1.4s	39.20nm		DAV	22.28	235	eP	18 13.00	8.7X						
			iSn	38 31.50		GRR	151.02	8	ePKP	18 31.00	6.7X	BAG	22.45	263	eP	18 06.00	-0.2						
AFC	3.49	77	ePn	37 58.00	-0.4				1.6s	55.95nm		SSE	22.80	302	P	18 10.00	0.7						
			eSn	38 35.00		CDF	151.28	357	ePKP	18 32.80	8.0X	Z	20s	0.50um		4.0Msz							
EBAN	3.60	62	iPnc	37 59.00	-0.8				1.4s	21.80nm		E	10s	1.00um									
			eSn	38 37.00		LPF	151.34	8	ePKP	18 32.00	7.2X			eS	22 16.00								
IFR	3.71	143	iPn	38 00.00	-1.6				1.6s	74.65nm		QZH	23.63	285	eP	18 17.50	0.1						
			iSn	38 38.50		HAU	151.73	358	ePKP	18 32.60	7.2X	NJ2	25.00	302	eP	18 26.60	-4.0X						
EPLA	3.80	20	ePn	38 03.40	0.8				1.4s	34.85nm		MDJ	26.59	337	eP	18 44.00	-1.3						
			eSn	38 43.00		BSF	151.89	357	ePKP	18 33.40	7.6X	SNY	27.12	325	eP	18 48.70	-1.4						
TOL	4.48	40	e(Pb)	38 12.20	0.0	LOR	152.49	1	ePKP	18 34.80	8.3X		Z	22s	0.60um		4.1Msz						
			ePg	38 27.20					1.2s	11.90nm		N	16s	0.60um									
			eSn	38 59.20		SSF	152.68	2	ePKP	18 35.40	8.6X	CN2	27.64	331	eP	18 55.00	0.1						
			eSg	39 32.20		MFF	152.86	7	ePKP	18 35.60	8.6X		Z	14s	0.50um		4.2MszX						
GUD	5.01	34	ePn	38 19.60	-0.4				1.4s	34.85nm		N	14s	0.40um									
			eSn	39 12.70					S.D. = 1.2 on 28 of	48 obs.		E	14s	0.40um									
TIO	5.59	175	iPn	38 27.50	-0.7									eP	18 59.00	14km							
			iSn	39 27.00								TIA	27.97	309	eP	18 58.20	0.2						
ETOR	6.22	45	ePn	38 35.80	-1.1							WHN	28.25	296	Pd	19 02.50	1.9						
			eSn	39 40.60								BJI	30.46	315	eP	19 18.00	-2.3						
STS	6.39	355	ePn	38 39.20	-0.1								Z	20s	0.30um		3.9Msz						
ECRI	7.33	32	ePn	38 52.00	-0.5							TIY	32.01	309	eP	19 34.90	0.9						
			eSn	40 08.40									Z	17s	0.70um		4.4MszX						
S.D. = 1.0 on 15 of 15 obs.												XAN	33.55	301	eP	19 47.50	0.1						
* MAR 05, 1990 04h 59m 07.37 ± 2.23s												HHC	33.94	313	eP	19 50.00	-0.8						
19.696 S ± 15.6km 175.216 W ± 14.4km												BTO	34.89	312	eP	19 58.00	-1.0						
DEPTH = 261.0 ± 18.7 km												CD2	37.30	294	eP	20 19.20	-0.2						
4.6mb ( 9 obs.)												KMI	38.00	285	eP	20 27.50	2.0						
TONGA ISLANDS						(173)							Z	20s	0.50um		4.3Msz						
SVA	6.19	284	eP	00 40.00	1.3	RTRS	1.09	131	iPd	06 41.40	0.8			pP	20 33.50	20km							
SGE	6.83	287	eP	00 40.00	-6.9X	RTLL	2.51	138	ePc	06 59.70	0.7			sS	26 26.00								
PVC	15.73	274	iPc	02 36.00	-1.2	ZON	2.56	145	eP	06 59.00	-0.7												
DZM	17.30	259	iPc	02 53.90	-0.4	RTCV	2.89	146	eP	07 04.70	0.5												
MNG	22.32	199	eP	03 45.20	0.9	JACH	3.22	183	iPc	07 10.50	1.8												
CTA	36.18	263	iP	05 46.20	-0.8				iS	07 49.00													
	1.0s	127.00nm			5.4mb	ROCH	3.54	188	iPd	07 13.00	-0.2												
PMG	37.75	280	eP	05 59.00	-1.2				iS	07 56.50													
WB5	47.29	261	eP	07 15.60	-1.3	MDZ	3.67	159	eP	07 09.00	-5.9X												
WRA	47.30	261	Pd	07 15.60	-1.5				i	07 24.00													
	0.4s	5.60nm			4.2mb	IHA	3.71	196	eP	07 15.00	-0.3												
WARB	53.57	252	iPc	08 03.70	-0.4				i	07 21.00													
MBL	60.49	256	iPc	08 52.00	-0.5	FCH	3.86	178	eP	07 18.70	1.0												
NANU	64.13	254	eP	09 17.00	0.6				iS	08 03.00													
KVN	79.16	42	e(P)	10 44.00	-0.9	SAN	3.99	183	iP	07 19.50	0.3												
MDJ	81.39	324	eP	10 57.00	0.7				i	07 51.50													
CN2	83.29	321	Pd	11 06.00	0.0				iS	08 07.00													
TTA	83.73	9	eP	11 07.20	-0.7	LCC	4.12	194	iPc	07 19.60	-1.5												
	1.0s	8.75nm			4.5mb				iS	08 08.50													
WHN	84.10	305	Pc	11 12.00	1.7	LNV	4.56	190	iPc	07 25.00	-2.1												
PNT	84.55	33	eP	11 12.00	-0.2	ANT	5.73	0	eP	07 41.80	-1.5												
TIA	84.69	311	eP	11 13.80	0.6				i	07 47.10													
ALO	84.87	50	eP	11 16.00	1.6	CCH	12.64	19	eP	09 20.00	3.0X												
	1.1s	6.33nm			4.4mb	ARE	12.97	355	eP	09 26.00	4.6X												
FBA	86.92	11	eP	11 21.90	-1.5	LPB	13.04	10	eP	09 29.00	6.6X												
	0.9s	15.63nm			4.9mb	ZOBO	13.30	10	P	09 26.50	0.7												
IMA	87.04	9	e(P)	11 22.60	-1.5				0.7s	4.61nm													
	1.0s	3.75nm			4.2mb	Z	22s		LR	44 50.00													
BJI	87.18	314	eP	11 26.00	0.8	TUL	69.27	338	eP	17 19.20	1.4												
	1.5s	58.00nm			5.2mb				0.9s	13.90nm													
TIY	88.71	311	eP	11 33.50	0.8	KIC	72.35	72	P	17 35.20	-1.6												
XAN	89.75	306	P	11 39.00	1.5	ALO	72.52	330	eP	17 39.50	1.9												
HHC	90.68	313	eP	11 43.00	1.3				1.0s	4.50nm													
KMI	91.33	296	Pc	11 48.00	2.8X	LKO	73.42	69	Pd	17 41.76	-1.3												
	2.0s	0.10nm			2.4mb X				0.7s	14.50nm													
CHTO	92.44	289	iP	11 52.40	2.3	YKA	98.22	341	eP	19 45.70	-0.3												
	1.6s	29.53nm			5.1mb				0.8s	0.70nm													
INK	92.83	14	eP	11 50.00	-0.9	MBC	109.75	349	ePKPd	24 27.60	-11.8X												
YKA	94.71	24	eP	11 58.50	-1.1				1.1s	96.00nm													
	0.9s	0.80nm			3.9mb	WRA	125.39	209	PKPc	25 10.90	0.0												
KRA	147.39	342	ePKP	18 22.50	3.8X				0.5s	2.70nm													
KSP	147.61	346	iPKPd	18 23.00	4.0X	GBA	146.34	111	PKPd	25 49.90	0.4												
CLL	147.79	350	iPKP	18 23.40	4.1X				0.7s	5.60nm													
	1.6s	45.00nm							S.D. = 1.3 on 20 of	25 obs.													
		e		19 10.00																			
						MAR 05, 1990 06h 13m 06.87 ± 0.24s						BMW											
						20.730 N ± 5.3km 143.838 E ± 4.5km						77.22											
						DEPTH = 21.8km ( 20 depth phases)						45 P											
						5.0mb ( 18 obs.) 4.1Msz ( 5 obs.)						pP											
						MARIANA ISLANDS REGION						77.87											
						(215)						44 P											
												pP											
												25 02.00											
												25 09.00											
												25 01.30											
												25 08.70											
												25 07.00											
												25 05.70											
												25 12.50											



PNT	78.68	42 eP	25 09.00	0.0	RTLL	38.38	165 iPc	39 25.80	-6.0X		0.8s	2.70nm		4.0mb	
VGB	79.14	45 P	25 11.50	-0.1			iS	55 57.80		CHTO	42.12	275 eP	08 41.10	1.7	
		pP	25 19.20	25km	ALO	38.42	322 eP	39 33.00	0.7		1.0s	2.25nm		3.9mb	
WDC	79.46	51 ePd	25 15.20	1.8			13.03nm		4.8mb			pP	08 50.50	32kmX	
		eP	25 21.70	21km	RSON	46.44	347 eP	40 36.50	-0.6	GUN	52.84	290 P	10 04.20	0.5	
LBFM	79.68	50 P	25 14.00	-0.9	SCH	49.73	9 eP	41 05.00	2.3	PKI	53.29	289 P	10 06.40	-0.5	
DPW	80.04	43 P	25 16.40	0.0	YKA	62.21	342 eP	42 29.70	-2.5	KKN	53.38	290 P	10 07.40	-0.1	
		pP	25 23.50	23km			0.8s	2.70nm	4.4mb		1.0s	23.00nm		5.1mb	
MIN	80.21	51 e(P)	25 18.50	0.9	INK	71.96	341 eP	43 34.00	0.5	DMN	53.55	290 P	10 08.60	-0.2	
ORV	80.54	51 eP	25 24.30	18km	MBC	73.68	351 eP	43 43.50	0.0	GKN	53.92	290 P	10 11.50	0.1	
NEW	80.59	42 P	25 19.30	0.0			1.0s	21.00nm	5.1mb		0.9s	36.00nm		5.4mb	
		pP	25 26.60	23km	WRA	144.76	244 PKPd	51 48.80	1.1	GBA	63.41	275 Pd	11 16.30	-1.1	
SOD	80.86	340 iP	25 19.60	-0.7			0.7s	1.70nm			1.0s	3.70nm		4.5mb	
EDM	81.01	36 ePd	25 21.00	-0.4	GBA	149.59	50 PKPd	52 01.50	5.9X	INK	68.26	23 eP	11 47.00	-0.7	
CMB	81.87	53 ePd	25 26.50	0.3			0.5s	1.30nm		MBC	71.68	14 eP	12 08.00	-0.4	
		eP	25 33.30	22km	S.D. = 1.4 on 12 of 14 obs.						0.5s	2.00nm		4.4mb	
PRI	82.30	54 e(P)	25 32.40	3.8X	MAR 05, 1990 06h 50m 56.22±0.29s					YKA	77.08	28 eP	12 38.40	-1.3	
FRI	82.73	53 eP	25 30.70	0.1	43.401 N ± 2.0km 110.717 W ± 2.8km					PNT	78.75	42 eP	12 57.00	7.8X	
		eP	25 37.80	22km	DEPTH = 5.0km (geophysicist)					CMB	81.94	53 eP	13 07.90	1.5	
KVN	83.19	51 P	25 33.50	0.3	3.5mb ( 1 obs.)							e	13 13.40		
		pP	25 40.60	22km	WYOMING	(460)					FRI	82.80	53 eP	13 11.80	0.9
SES	83.45	38 ePd	25 33.80	-0.3	ML 3.9 (NEIS), 4.1 (BUT), Felt							e	13 17.70		
SUF	83.58	336 iP	25 33.20	-1.2	(IV) at Wilson and (III) at					SES	83.52	38 eP	13 14.00	-0.3	
			8.60nm	5.1mb	Moran, Felt (III) at Irwin and					FFC	86.38	32 eP	13 28.00	-0.5	
ISA	84.13	54 eP	25 44.00	6.1X	Swan Valley, Idaho. Also felt at							0.8s	8.00nm	5.0mb	
TNP	84.19	52 P	25 38.30	0.0	Jackson, Wyoming.					ZOBO	149.47	87 PKPd	20 36.90	4.3X	
			7.16nm	4.9mb	SNOW	0.07	336 iPd	50 57.87	-0.2		1.1s	13.63nm			
		pP	25 45.60	23km	REDW	0.11	249 iPc	50 58.91	0.3	Z	24s	0.05um		4.2MszX	
LRM	84.47	43 eP	25 40.00	0.4	TPAW	0.19	298 iPc	51 00.42	0.2			LR	55 30.00		
CLC	84.74	54 eP	25 42.00	1.1	AVOW	0.22	341 iPd	51 00.75	-0.1	LPB	149.55	88 ePKP	20 34.00	1.5	
SBB	84.98	55 eP	25 40.00	-2.2	LOHW	0.23	21 iPd	51 01.21	0.3	CCH	151.56	88 ePKP	20 42.00	6.6X	
NUR	85.42	334 eP	25 33.00	-10.7X	ALPW	0.32	219 ePd	51 02.85	0.1	S.D. = 1.0 on 17 of 21 obs.					
		e	25 49.00		MUDI	0.34	310 iPc	51 03.04	-0.1	MAR 05, 1990 07h 30m 53.13±0.67s					
GSC	85.53	54 eP	25 46.00	1.0	MOOW	0.35	357 iPd	51 03.07	-0.2	17.768 N ±13.7km 65.668 W ± 8.3km					
IMW	86.25	44 P	25 49.50	0.9	TRXW	0.37	18 iPd	51 03.85	0.2	DEPTH = 10.0km (geophysicist)					
		pP	25 56.50	22km	CHOI	0.37	256 iPc	51 03.58	-0.2	PUERTO RICO REGION ( 90)					
FFC	86.32	32 iPd	25 48.30	0.0	TARW	0.41	331 iPc	51 04.26	-0.3	CPD	0.36	319 P	31 01.00	0.5	
			40.00nm	5.5mb			eS	51 09.79		LPR	0.57	340 P	31 04.10	-0.6	
DUG	86.52	48 P	25 50.00	0.2	PINI	0.47	283 iPc	51 05.29	-0.4	SJG	0.57	307 iP	31 04.60	-0.1	
			16.18nm	5.1mb	RAMW	0.52	341 iPc	51 06.25	-0.4	PORP	0.97	287 P	31 11.90	0.4	
TPC	86.56	55 eP	25 51.00	1.0	IMW	0.52	342 iPc	51 06.20	-0.5	LRS	1.24	295 P	31 15.90	-0.2	
BW06	87.64	45 P	25 55.00	-0.3	PACW	0.53	18 iPd	51 07.01	0.2	BPA	3.71	101 eP	31 51.85	0.1	
			8.22nm	4.9mb	COLW	0.55	2 iPd	51 07.05	-0.3			eS	32 41.93		
		pP	26 01.90	22km	STEW	0.65	2 iPd	51 08.81	-0.4	ANG	3.71	99 eP	31 51.89	0.1	
HFS	89.85	338 eP	26 02.30	-2.9			eS	51 16.99				eS	32 43.59		
			3.60nm	4.8mb	BW06	1.05	126 eP	51 17.20	0.5	PAG	4.19	114 eP	31 57.80	-0.8	
NB2	90.06	339 P	26 04.00	-2.2	PTI	1.32	247 eP	51 21.20	0.0			S	32 41.00		
			15.00nm	5.1mb	LTMT	1.51	319 iPc	51 23.80	-0.4	SEG	4.21	108 eP	31 58.60	-0.1	
RSSD	90.56	42 P	26 08.60	-0.5	8GMT	2.06	333 iPnc	51 33.30	1.1	SFG	4.54	109 eP	32 07.00	3.6X	
		pP	26 15.80	22km	MCMT	2.10	314 iPnc	51 34.00	1.3	BBL	4.60	118 eP	32 03.00	-1.3	
GLD	91.94	46 P	26 16.40	1.0	MEMT	2.21	355 iPnc	51 36.40	2.1X	DEG	4.64	107 eP	32 07.20	2.2	
			35.35nm	5.7mb	LCCM	2.57	342 ePnc	51 41.90	2.5X	S.D. = 1.0 on 11 of 12 obs.					
FRB	92.09	14 eP	26 14.00	-1.4	LRM	2.72	334 ePnd	51 43.80	2.2X	* MAR 05, 1990 07h 54m 43.87±1.25s					
ALO	93.36	51 eP	26 22.50	0.4	SXM	2.77	353 ePnd	51 44.40	2.1X	28.960 S ± 9.5km 70.968 W ±21.0km					
			14.42nm	5.2mb	BUT	2.93	334 ePg	51 49.70	5.3X	DEPTH = 33.0km (normal)					
KSP	95.14	330 eP	26 36.00	6.3X			eSg	52 27.40		CENTRAL CHILE (136)					
CLL	96.33	331 iP	26 33.40	-1.7	DAU	3.01	188 eP	51 46.00	0.2	RTRS	1.78	133 iPc	55 12.90	0.1	
LKO	137.47	312 PKP	32 39.46	7.7X	HRV	3.40	347 ePn	51 52.30	1.1	RTCV	3.57	145 eP	55 38.00	-0.4	
KIC	139.04	308 PKP	32 35.30	0.7	DUG	3.57	207 eP	51 53.50	0.0			eS	56 12.10		
ARE	146.29	89 ePKP	32 51.00	3.5X	RSSD	4.89	79 eP	52 12.70	0.3	JACH	3.72	175 iP	55 42.00	1.5	
ZOBO	149.40	87 ePKP	32 52.00	-0.7	PV09	5.04	166 eP	52 13.00	-1.6	ROCH	4.00	181 eP	55 46.50	1.9	
			61.12nm		GOL	5.45	131 eP	52 21.00	0.6			iS	56 35.00		
		Z	21s	0.14um	NEW	6.61	320 eP	52 37.00	0.6	IHA	4.09	188 eP	55 50.00	4.3X	
		i	32 57.40		KVN	7.06	235 eP	52 42.00	-0.9			eS	56 35.00		
LPB	149.48	88 PKPc	32 58.00	5.3X	TNP	7.25	225 e(P)	52 46.00	0.4	FCH	4.39	173 eP	55 51.00	0.7	
			62.50nm		LON	8.53	297 e(P)	53 04.50	1.1			iS	56 40.00		
		LR	46 00.00		PNT	8.53	171 P	53 09.00	5.6X	SAN	4.49	177 eP	55 49.00	-2.4	
CCH	151.49	88 PKP	33 01.00	5.5X	ANMO	9.07	157 eP	53 08.50	-2.4X			i	56 41.50		
				S.D. = 1.1 on 82 of 97 obs.	ALQ	9.07	157 eP	53 08.00	-2.9X	LCCH	4.53	186 eP	55 52.00	0.1	
					EDM	9.98	351 P	53 22.50	-0.8			iS	56 43.50		
<hr/>					YKA	19.26	355 eP	55 22.40	-1.7	LNV	4.99	184 iPd	55 57.00	-1.5	
? MAR 05, 1990 06h 32m 11.68±0.68s					S.D. = 0.7 on 34 of 42 obs.					ANT					
5.925 N ±15.8km 78.983 W ±40.7km					* MAR 05, 1990 07h 00m 48.37±0.48s					ARE					
DEPTH = 33.0km (normal)					20.699 N ±11.8km 143.764 E ± 9.8km					S.D. = 1.5 on 9 of 11 obs.					
4.6mb ( 4 obs.)					DEPTH = 33.0km (normal)					MAR 05, 1990 08h 06m 55.11±0.30s					
SOUTH OF PANAMA ( 83)					4.7mb ( 9 obs.)					20.702 N ± 6.6km 143.820 E ± 6.7km					
UPA	3.09	350 iPc	32 58.20	-1.0	MARIANA ISLANDS REGION (215)					DEPTH = 22.9km ( 10 depth phases)					
			169.01nm		CTA	40.61	176 ePc	08 26.50	-0.4	4.9mb ( 7 obs.)					
		iS	33 39.50		WB5	41.36	193 eP	08 46.70	13.6X	MARIANA ISLANDS REGION (215)					
ARE	23.45	162 e(P)	37 20.00	0.5	WRA	41.43	193 P	08 33.00	-0.6						
ZOBO	24.53	154 eP	37 29.00	-1.3											
			3.76nm	4.0mb											
CCH	26.41	151 P	37 47.50	-0.1											
FVM	33.57	344 eP	38 51.20	0.4											



GUMO	7.14	172	eP	08	41.50	0.6	NCG	1.33	20	eP	15	19.20	-0.7	BNT	1.23	8	iPn	59	42.50	0.0	
GUA	7.20	171	eP	08	42.00	0.3	SLKM	1.47	75	eP	15	20.54	-0.8	EZN	1.27	303	ePn	59	44.00	0.9	
SNY	27.13	325	eP	12	35.80	-2.5	SVW	1.57	308	eP	15	19.78	-2.7	S.D. = 1.3 on 5 of 5 obs.							
CD2	37.30	294	eP	14	07.60	0.1	SUA	1.74	40	eP	15	23.79	-0.8	* MAR 05, 1990 12h 58m 21.82± 0.78s							
KMI	37.99	285	eP	14	15.00	1.5			eS	15	49.08		26.341 S ± 10.5km 127.880 E ± 7.9km								
CTA	40.61	176	iPc	14	32.00	-3.0	SEW	1.82	90	eP	15	24.59	-0.7	DEPTH = 10.0km (geophysicist)							
	1.5s	56.94nm			5.1mb		PMS	2.05	56	eP	15	26.96	-1.2	WESTERN AUSTRALIA (590)							
WRA	41.45	194	P	14	42.00	0.1	PLRM	2.41	52	eP	15	30.34	-2.3	WARB	1.12	278	iPd	58	44.00	1.1	
	0.7s	2.40nm			4.0mb		PMR	2.41	52	e(P)	15	30.00	-2.6	FORR	4.50	178	eP	59	32.50	1.0	
CHG	42.18	275	eP	14	49.10	1.1	KDC	2.44	172	e(P)	15	30.00	-3.0			eS	00	24.50			
CHTO	42.18	275	eP	14	49.20	1.2	GHO	2.60	50	eP	15	32.90	-2.3	ASPA	6.08	65	eP	59	53.40	-0.5	
WMO	51.67	310	iPc	16	03.00	0.5	CUT	2.63	30	eP	15	34.20	-1.3		0.7s	16.00nm			4.9mb X		
		PP		18	01.00		GLI	3.05	74	eP	15	39.97	-1.0	COOL	7.45	231	eP	00	11.50	-1.7	
GUN	52.88	290	P	16	12.60	0.4	TTA	3.11	335	eP	15	38.50	-3.4			eS	01	33.70			
PKI	53.33	289	P	16	15.30	-0.1	KLU	3.76	66	eP	15	47.83	-2.6	WB5	8.77	44	eP	00	32.00	0.3	
KKN	53.42	290	P	16	16.20	0.2	FBA	5.35	25	eP	16	09.10	-2.7			eS	02	06.00			
DMN	53.60	290	P	16	17.20	-0.1	IMA	5.94	358	e(P)	16	18.00	-1.9	MBL	8.99	303	eP	00	31.30	-3.4X	
GKN	53.97	290	P	16	20.00	0.1	30 obs. associated								eS	02	07.00				
HYB	61.41	279	eP	17	11.50	-0.8	* MAR 05, 1990 08h 26m 27.35± 0.58s						KLB	10.29	237	eP	00	50.00	-2.6X		
GBA	63.46	275	Pd	17	24.60	-1.3	13.126 N ± 10.2km 50.423 E ± 7.4km								eS	02	35.00				
	0.9s	4.40nm			4.6mb		DEPTH = 10.0km (geophysicist)						MUN	11.64	238	eP	01	11.30	0.3		
POO	65.46	282	eP	17	39.50	0.5	4.8mb ( 13 obs.)								eS	03	07.00				
INK	68.24	23	eP	17	55.00	-0.7	EASTERN GULF OF ADEN (415)						NANU	11.86	286	eP	01	13.50	-0.5		
MSZ	68.68	162	eP	17	58.00	-0.7	BHD	20.80	346	ePd	31	11.50	0.2			eS	03	15.00			
MBC	71.66	14	ePd	18	16.00	-0.5			e	38	05.00		S.D. = 1.2 on 7 of 9 obs.								
	1.0s	14.00nm			5.0mb		IR4	22.02	1	eP	31	22.00	-1.9	& MAR 05, 1990 14h 13m 05.43s							
YKA	77.05	28	eP	18	46.20	-1.6	IR1	22.19	1	eP	31	26.50	0.9	60.089 N 152.913 W							
	0.9s	6.60nm			4.7mb		IR2	22.44	1	eP	31	29.50	1.5	DEPTH = 110.8km							
GMW	77.24	44	eP	18	50.00	0.9	IR7	22.48	0	eP	31	29.00	0.6	4.1mb ( 2 obs.)							
		e		18	57.30	23km	SLY	22.81	350	Pd	31	34.00	2.5	SOUTHERN ALASKA ( 2 )							
PNT	78.72	42	eP	18	58.00	0.8	MSL	24.06	345	ePd	31	55.50	11.8X	<AGS-P>.							
KEV	79.49	342	eP	18	52.00	-9.0X	MAIO	24.47	18	eP	31	49.00	1.2	RED	0.34	12	iP	13	21.17	-0.6	
MIN	80.24	51	eP	19	04.70	-1.1	GBA	26.28	86	Pc	32	06.20	1.3	RDT	0.55	27	iP	13	22.33	-0.7	
		epP		19	12.60	25km		1.6s	19.00nm			4.5mb				eS	13	37.16			
BRK	80.55	53	eP	19	09.40	2.1	BCAO	32.64	258	ePc	33	02.00	0.1	AUL	0.76	201	iP	13	23.79	-0.8	
		epP		19	17.30	25km		0.6s	5.00nm			4.6mb				eS	13	38.96			
NEW	80.62	42	eP	19	07.60	0.0	GKN	35.14	60	P	33	23.47	-0.1	AUE	0.77	198	iP	13	23.64	-1.0	
		e		19	14.70	23km		1.0s	30.00nm			5.1mb		NNL	0.81	93	iP	13	25.28	0.2	
SOD	80.88	340	eP	18	56.00	-12.5X	DMN	35.42	61	P	33	26.20	0.1			eS	13	42.93			
EDM	81.04	36	ePc	19	09.90	0.3	KKN	35.62	60	P	33	27.87	0.1	XLV	0.88	136	iP	13	24.77	-1.0	
CMB	81.90	53	ePc	19	15.00	0.6		0.6s	29.00nm			5.3mb				eS	13	41.79			
		epP		19	21.60	21km	PKI	35.67	61	P	33	27.90	-0.4	CNPM	1.02	123	iP	13	26.47	-0.7	
82.76	53	ePc		19	19.40	0.6		0.6s	10.00nm			4.9mb				iS	13	43.43			
		epP		19	26.30	22km	GUN	36.16	60	P	33	32.47	0.0	NKA	1.06	51	iP	13	28.50	0.9	
KVN	83.22	51	eP	19	21.50	0.0		0.8s	38.00nm			5.3mb				eS	13	45.41			
		e		19	28.80	23km	WMO	44.21	39	eP	34	39.50	1.1	BRLK	1.07	107	eP	13	27.38	-0.4	
SES	83.48	38	eP	19	22.00	-0.4	KMI	50.57	68	eP	35	28.50	-0.3			eS	13	45.17			
SUF	83.59	336	iP	19	21.40	-1.2	NUR	50.94	344	iP	35	30.70	0.0	CKL	1.15	14	iP	13	27.91	-0.8	
	0.8s	7.60nm			4.9mb			0.7s	14.70nm			5.0mb		SPU	1.18	21	iP	13	27.98	-1.0	
TNP	84.22	52	eP	19	26.80	0.2			i			35	45.20				iS	13	46.24		
		e		19	33.80	22km	SUF	52.45	346	iP	35	41.30	-0.8	BGL	1.21	12	iP	13	28.71	-0.6	
LRM	84.50	43	eP	19	28.30	0.4		0.6s	8.30nm			4.8mb		CRP	1.24	17	iP	13	29.09	-0.7	
		e		19	35.20	22km	HFS	54.12	338	eP	35	52.70	-1.8	CGLM	1.30	20	iP	13	29.47	-0.9	
NUR	85.43	334	eP	19	21.00	-10.9X		0.7s	8.90nm			4.9mb		NCG	1.37	15	iP	13	30.31	-0.9	
FFC	86.35	32	eP	19	37.00	0.4	GYA	54.18	67	P	35	54.00	-1.6	SLKM	1.40	71	eP	13	30.00	-1.6	
	1.2s	30.00nm			5.4mb				pP			35	59.00	16kmX	SVW	1.68	309	iPc	13	32.90	-2.1
ARE	146.31	89	ePKP	26	37.00	1.4	LKO	54.95	273	P	36	01.66	0.3	SEW	1.74	88	eP	13	33.57	-1.9	
ZOBO	149.41	87	PKP	26	40.30	-0.5	LIC	55.00	268	P	36	02.30	0.6	SUA	1.74	37	iP	13	34.75	-1.0	
		e		28	43.00		NB2	55.63	338	P	36	03.40	-2.2			eS	13	59.32			
CCH	151.51	88	ePKP	26	50.00	6.4X		0.8s	5.40nm			4.6mb		PMS	2.02	53	ePd	13	37.50	-1.7	
S.D. = 1.1 on 38 of 42 obs.							XAN	56.74	58	P	36	12.50	-1.5	PWA	2.16	42	ePd	13	39.00	-2.0	
& MAR 05, 1990 08h 14m 52.99s							KEV	58.49	351	eP	36	29.00	3.4X	KDC	2.36	175	eP	13	40.50	-3.1	
60.158 N 153.087 W							HHC	59.75	50	Pc	36	35.60	0.5	PLRM	2.39	49	eP	13	41.35	-2.6	
DEPTH = 132.9km							TIY	60.00	54	Pc	36	36.00	-0.8	PMR	2.39	49	ePd	13	41.30	-2.7	
SOUTHERN ALASKA ( 2 )							BJI	63.14	52	eP	36	57.50	-0.3	GHO	2.58	47	eP	13	43.87	-2.7	
<AGS-P>.							TIA	63.62	56	eP	37	00.40	-0.6	CUT	2.65	28	eP	13	45.69	-1.8	
RED 0.31 31 eP 15 10.95 0.7							CN2	70.25	48	Pc	37	42.70	-0.1			eS	14	17.99			
RDT 0.54 39 eP 15 12.16 -0.8							DAG	72.59	347	eP	37	55.00	-1.3	GLI	2.99	72	eP	13	48.83	-3.2	
AUL 0.80 193 eP 15 13.87 -0.8								0.7s	4.79nm			4.7mb		TTA	3.21	334	ePd	13	52.40	-2.7	
AUE 0.81 190 eP 15 13.77 -1.0							WRA	88.82	111	Pc	39	24.60	1.2	VZW	3.29	70	eP	13	52.92	-3.2	
NNL 0.90 97 eP 15 16.07 0.5								1.2s	7.60nm			4.9mb		HUR	3.30	27	eP	13	54.58	-1.6	
XLV 0.99 135 eP 15 15.72 -0.6							WB5	88.83	111	eP	39	23.80	0.4	MID	3.39	98	ePc	13	55.80	-1.6	
NKA 1.09 57 eP 15 18.31 1.1							MBC	90.60	358	eP	39	31.50	0.8	NCA	3.52	55	eP	13	56.40	-2.9	
CKL 1.11 19 eP 15 16.88 -0.7								1.0s	4.00nm			4.7mb				eS	14	38.10			
CNPM 1.13 123 iP 15 17.43 -0.3							S.D. = 1.1 on 33 of 35 obs.						KTH	3.60	14	eP	13	57.86	-2.5		
SPU 1.15 26 eP 15 17.03 -0.9							% MAR 05, 1990 11h 59m 19.64± 1.05s						KLU	3.71	65	eP	13	58.44	-3.4		
BGL 1.16 17 eP 15 17.57 -0.6							39.136 N ± 8.6km 27.696 E ± 10.6km						TOA	3.85	55	eP	14	01.32	-2.4		
CRP 1.20 22 eP 15 17.97 -0.7							DEPTH = 10.0km (geophysicist)						RND	3.85	28	eP	14	00.98	-2.8		
CDD 1.26 193 eP 15 17.72 -1.4							TURKEY (366)						MCK	4.11	26	eP	14	05.03	-2.2		
CGLM 1.27 24 eP 15 18.08 -0.9							Izm	0.81	205	ePg	59	35.00	-0.4	PAX	4.59	48	eP	14	11.16	-2.7	
									eSg	59	45.00		GLB	4.67	69	eP	14	11.50	-3.4		
							EDC	1.22	6	ePn	59	41.00	-1.3	NEA	4.85	20	eP	14	14.18	-3.1	



WRH 4.94 25 eP 14 15.34 -3.2  
 DDM 4.98 39 eP 14 17.71 -1.5  
 TGL 5.04 78 eP 14 17.62 -2.5  
 HDA 5.15 30 eP 14 18.19 -3.3  
 CCB 5.15 25 eP 14 17.92 -3.6  
 DMW 5.22 37 eP 14 19.90 -2.5  
 FBA 5.38 24 iPd 14 21.10 -3.5  
 GLM 5.54 25 eP 14 23.64 -3.2  
 IMA 6.01 357 ePc 14 30.50 -3.0  
 YKU 6.67 89 e(P) 14 40.10 -2.2  
 DWY 7.47 52 P 14 50.80 -2.4  
 HYT 7.65 78 P 14 54.30 -1.6  
 INK 11.74 37 P 15 46.00 -4.3  
 YKA 18.38 66 eP 17 09.60 -4.3  
 0.4s 4.40nm 4.1mb  
 MBC 19.92 23 eP 17 26.00 -4.0  
 0.6s 6.00nm 4.1mb  
 55 obs. associated

MAR 05, 1990 15h 57m 18.13 ± 0.87s  
 5.309 S ± 3.4km 146.405 E ± 7.1km  
 DEPTH = 184.9 ± 8.0 km  
 5.0mb (12 obs.)

# EAST PAPUA NEW GUINEA REGION (207)

MNDI 2.86 253 eP 58 06.00 0.0  
 PMG 4.14 170 iPd 58 16.70 -5.1X  
 0.4s 59 02.50  
 HNR 14.04 108 eP 00 26.00 -4.3X  
 CTA 14.69 181 iPc 00 43.70 5.2X  
 0.4s 12.71nm 4.7mb  
 MTN 16.83 243 eP 01 05.00 0.3  
 WB5 18.63 218 eP 01 23.40 -0.9  
 0.4s 04 46.30  
 WRA 18.69 218 Pc 01 24.60 -0.4  
 0.5s 43.50nm 5.2mb  
 GUA 18.78 355 eP 01 25.30 -0.6  
 0.7s 82.19nm 5.3mb  
 GUMO 18.84 355 eP 01 26.30 -0.2  
 0.8s 146.41nm 5.5mb  
 PJG 18.84 355 eP 01 26.20 -0.3  
 RMO 21.18 174 eP 01 51.00 0.9  
 ASPA 21.87 212 iPd 01 57.80 1.0  
 0.4s 29.00nm 5.1mb  
 0.5s 05 47.80  
 DZM 25.57 133 iPd 02 32.00 0.1  
 WARB 28.07 220 iPd 02 55.00 0.5  
 FORR 30.69 212 iPd 03 16.30 -1.2  
 0.4s 24.00nm 5.3mb  
 MEKA 34.00 228 eP 03 46.20 -0.2  
 COOL 34.80 220 iPd 03 53.00 -0.1  
 0.4s 18.00nm 5.1mb  
 MRWA 37.31 227 iPc 04 14.70 0.5  
 0.4s 9.00nm 4.8mb  
 KLB 37.47 222 iPd 04 15.10 -0.4  
 0.3s 5.00nm 4.7mb  
 BAL 37.60 224 iPd 04 16.50 -0.1  
 0.4s 10.00nm 4.8mb  
 NWA0 38.65 221 eP 04 25.00 -0.3  
 MUN 38.75 223 eP 04 26.30 0.1  
 RKG 39.52 220 eP 04 36.00 3.6X  
 OZH 40.45 319 eP 04 41.20 1.1  
 SSE 43.48 328 P 05 05.50 0.8  
 WHN 47.03 321 Pc 05 34.50 1.7  
 MDJ 51.94 345 eP 06 09.50 -0.6  
 CN2 52.42 341 eP 06 13.00 -0.6  
 CHG 52.54 298 iPc 05 08.70 -66.2X  
 1.0s 89.50nm  
 XAN 52.78 321 P 06 16.00 -0.4  
 BJI 53.01 331 eP 06 18.00 0.1  
 1.2s \*\*\*\*\*nm 7.5mb X  
 TIY 53.21 326 eP 06 19.20 -0.3  
 CD2 54.37 314 P 06 28.40 0.2  
 BTO 56.58 327 eP 06 44.00 0.1  
 GTA 61.83 320 iPd 07 20.40 0.4  
 GUN 67.00 303 P 07 53.60 -0.2  
 PKI 67.28 303 P 07 55.00 -0.6  
 KKN 67.46 303 P 07 56.40 -0.1  
 DMN 67.54 303 P 07 57.00 -0.1  
 GKN 68.06 303 P 07 59.80 -0.4  
 SPA 84.73 180 iPd 09 32.10 -0.2  
 0.8s 12.50nm 4.7mb  
 INK 91.23 21 ePc 10 03.00 0.0  
 YKA 98.84 28 eP 10 38.20 0.4  
 0.6s 0.40nm 4.1mb  
 LKO 151.92 280 PKP 16 52.64 5.9X  
 S.D. = 0.6 on 38 of 44 obs.

? MAR 05, 1990 16h 15m 40.04 ± 11.76s  
 15.016 N ± 997.1km 99.246 W ± 35.6km  
 DEPTH = 33.0km (normal)  
 OFF COAST OF GUERRERO, MEXICO (65)

ACX 1.93 342 iP 16 11.00 -0.2  
 0.4s 16 28.00  
 OXX 3.18 49 iP 16 29.00 -0.1  
 0.4s 17 06.00  
 III 3.35 356 eP 16 31.00 -0.5  
 0.4s 16 59.00  
 PPM 4.07 8 iP 16 42.00 -0.1  
 0.4s 17 23.00  
 IIT 4.08 13 (P) 16 37.00 -5.0X  
 0.4s 17 19.00  
 CRX 4.39 355 (P) 16 53.00 6.6X  
 0.4s 17 41.00  
 IJJ 4.72 354 (P) 16 52.00 0.8  
 0.4s 17 31.00  
 S.D. = 0.7 on 5 of 7 obs.

MAR 05, 1990 16h 38m 12.57 ± 0.12s  
 18.318 S ± 3.5km 168.063 E ± 3.1km  
 DEPTH = 20.7km (geophysicist)  
 5.6mb (34 obs.) 7.0Msz (32 obs.)  
 VANUATU ISLANDS (186)

Ms 7.0 (BRK), 6.8 (PAS).  
 Mo=6.0\*10\*\*19 Nm (PPT). Felt (V)  
 at Port Vila. Depth from  
 broadband displacement  
 seismograms.  
 FAULT PLANE SOLUTION: P-Waves  
 NP1: Strike=155 Dip=70 Slip= 45  
 NP2: 46 48 153  
 Principal Axes:  
 T P1g=45 Azm= 20  
 P 13 276

Comment: The focal mechanism is  
 poorly controlled and  
 corresponds to reverse  
 faulting with a large strike-  
 slip component. The preferred  
 fault plane is not determined.

RADIATED ENERGY  
 No. of sta: 8 Focal mech. C  
 Energy 1.3 ± 0.3 \* 10\*\*14 Nm

MOMENT TENSOR SOLUTION  
 Dep 22 No. of sta: 16  
 Moment Tensor; Scale 10\*\*19 Nm  
 Mrr= 0.95 Mtt= 3.74  
 Mff=-4.69 Mrt= 2.05  
 Mrf=-0.75 Mtf=-2.21

Principal axes:  
 T Val= 5.35 P1g=26 Azm= 14  
 N -0.11 64 189  
 P -5.25 2 283

Best Double Couple: Mo=5.3\*10\*\*19  
 NP1: Strike= 56 Dip=70 Slip= 162  
 NP2: 152 73 21

CENTROID, MOMENT TENSOR (HRV)  
 Data Used: GDSN  
 L.P.B.: 17S, 49C M.W.: 11S, 29C

Centroid Location:  
 Origin Time 16:38:21.8 0.2  
 Lat 18.35S 0.01 Lon 168.04E 0.01

Dep 36.9 0.7 Half-duration 9.0  
 Moment Tensor; Scale 10\*\*19 Nm  
 Mrr= 2.76 0.03 Mtt=-0.32 0.02  
 Mff=-2.43 0.03 Mrt= 1.07 0.07  
 Mrf=-1.65 0.07 Mtf= 0.77 0.02

Principal Axes:  
 T Val= 3.42 P1g=71 Azm= 47  
 N -0.13 7 157  
 P -3.29 18 249

Best Double Couple: Mo=3.3\*10\*\*19  
 NP1: Strike=350 Dip=28 Slip= 104  
 NP2: 153 63 83

PVC 0.62 22 iPd 38 26.50 1.9  
 DZM 4.03 202 iPd 39 12.40 -2.2  
 0.4s 39 54.20

NDF 8.95 88 iPd 40 25.20 1.5  
 YSA 9.22 81 eP 40 31.30 3.9X  
 SGE 9.41 87 eP 40 32.80 2.6  
 SVA 9.88 90 ePc 40 40.40 3.8X  
 VUN 9.89 90 eP 40 38.00 1.3

OVA 10.22 88 eP 40 46.10 4.8X  
 MBU 10.25 84 eP 40 43.20 1.5  
 KRO 10.84 86 eP 40 53.20 3.5X  
 NDE 10.88 83 eP 40 55.60 5.2X  
 HNR 11.83 317 ePc 41 03.00 -0.2  
 0.4s 41 09.00

BRS 16.72 235 iPc+ 42 08.00 0.7  
 0.4s 42 16.00  
 0.4s 42 23.00  
 0.4s 43 44.00  
 0.4s 44 51.00  
 0.4s 45 19.50  
 0.4s 50 34.00  
 0.4s 54 14.00

COO 19.09 227 ePc 42 38.50 1.8  
 RMO 19.60 242 iPd 42 44.00 1.3  
 CTA 20.67 262 iPd- 42 54.80 0.9  
 1.0s 350.00nm 5.7mb

0.4s 43 01.00  
 0.4s 46 35.00  
 0.4s 42 58.00 1.2  
 0.4s 46 52.00

RAB 20.95 310 iS 46 52.00  
 RIV 21.61 221 eP 43 07.00 3.7X  
 0.4s 47 00.00

PMG 22.13 291 eP 43 10.00 1.4  
 MNG 23.12 166 P 43 17.40 -0.9  
 0.4s 47 25.70

KIW 23.23 167 eP 43 18.50 -0.8  
 PGZ 23.32 164 eP 43 19.30 -0.8  
 TCW 23.43 168 P 43 21.40 0.2

QLP 23.48 245 ePd 43 23.50 1.7  
 CAW 23.50 167 eP 43 20.90 -1.0  
 MRW 23.54 167 P 43 22.60 0.4

WEL 23.60 167 eP 43 22.60 -0.2  
 WDW 23.63 167 P 43 22.10 -1.0  
 MTW 23.64 166 eP 43 22.70 -0.6

CNB 23.70 221 iPc 43 26.20 2.2  
 0.4s 43 31.00  
 0.4s 47 40.00

BLW 23.84 166 eP 43 24.10 -1.0  
 MOW 23.84 167 eP 43 23.90 -1.3  
 CAN 23.93 221 iPd 43 28.80 2.6

CMS 23.99 233 eP 43 29.00 2.2  
 0.4s 43 40.00  
 0.4s 43 30.10 -1.2

KHZ 24.47 170 eP 43 47.00 -1.2  
 MSZ 26.27 180 eP 43 51.40 -0.8  
 MHZ 26.68 178 eP 43 56.00 1.6

QIS 26.92 261 eP 43 59.00  
 0.4s 44 02.40 2.4  
 0.4s 44 05.40

TOO 27.54 221 eP 44 02.40 2.4  
 0.4s 44 05.40  
 0.4s 49 00.00

BFD 29.23 225 eP 44 22.00 6.8X  
 RAR 30.38 101 P 44 16.00 -9.5X  
 0.4s 49 16.00

ADE 30.88 232 eP- 44 30.00 0.1  
 1.2s 281.25nm 6.0mb  
 WB5 31.85 262 eP 44 57.10 18.5X  
 0.4s 16 15.00

WRA 31.87 262 Pd 44 41.50 2.7  
 1.2s 80.70nm 5.5mb  
 ASPA 32.28 255 iPd 44 41.10 -1.3  
 1.1s 306.00nm 6.1mb

0.4s 44 53.10  
 0.4s 57 04.10  
 MTN 35.94 273 eP 45 13.00 -0.9

FORR 38.23 243 iPc 45 33.20 0.3  
 WARB 39.00 251 iPd 45 40.50 1.0  
 GUA 39.03 323 eP+ 45 41.00 1.2  
 0.8s 83.58nm 5.5mb  
 Z 21s 137.84um 6.8Msz

0.4s 51 39.00  
 0.4s 45 40.50 0.2  
 GUMO 39.09 323 eP+ 45 40.50 0.2  
 1.4s 323.08nm 5.8mb

AFR 40.06 96 iP 45 49.40 1.1  
 0.8s 70.00nm 5.4mb  
 PAE 40.23 96 iP 45 50.20 0.5  
 0.8s 60.00nm 5.4mb

PPT 40.24 96 iP 45 51.10 1.2  
 0.8s 90.00nm 5.5mb  
 PPN 40.38 96 iP 45 52.10 1.1  
 0.8s 60.00nm 5.4mb

TVO 40.52 96 iP 45 53.40 1.2  
 0.8s 80.00nm 5.5mb  
 AAI 41.62 286 eP 46 00.00 -1.2  
 PMO 42.25 92 iP 46 05.60 -0.7  
 1.0s 115.00nm 5.6mb



[illegible]



			ePPS	02	54.00		ALQ	96.70	56	eP+	51	44.20	1.1	KER	125.43	299	ePKP	57	17.00	2.7X
			eSS	07	06.00		Z	19s	41.67um				6.9Msz	RYD	125.50	288	ePKP+	57	13.60	-1.0
			eLR	14	00.00		ANMO	96.70	56	P	51	45.50	2.4X	TAB	125.89	304	ePdiff	53	56.00	2.7X
FRI	87.42	50	ePc	50	58.10	-1.7	Z	19s	36.46um				6.9Msz				e	57	15.00	
MWC	87.50	53	e	51	01.00	0.5	ANMO	96.70	56	iPDIFc	51	41.42	-1.7	SLY	126.71	301	ePKPc	57	17.50	1.0
			e	51	07.00		Z	19s	36.46um				6.9Msz				iPKS	00	15.00	
MIN	87.54	46	e(P)	50	58.00	-2.5			iHPP	55	34.59			ARO	126.79	271	ePKP+	57	17.00	-0.4
AIA	87.77	161	eP	51	03.20	2.2	EDM	97.85	37	eP	51	52.50	4.8X	KMSA	126.93	282	ePKP+	57	16.30	-1.2
ISA	87.77	51	eP	51	02.00	0.4	IIJ	98.00	72	(P)	51	53.00	3.4X	BHD	127.73	298	iPKPd	57	19.00	0.5
			e	51	08.00		SES	98.27	40	eP	51	53.00	3.4X				e	57	53.00	
LBFM	87.79	45	P	50	59.00	-2.8	GOL	98.91	51	P	51	58.00	5.0X				ePSKS	00	42.00	
SBB	87.86	52	eP	51	03.00	0.9	GLD	99.03	51	P	51	58.00	4.5X				eSKS	04	17.00	
			e	51	07.00		Z	21s	91.84um				7.3Msz	NAI	128.27	253	ePdiff	54	14.00	9.4X
RVR	87.92	53	eP	51	04.00	1.7	NDI	99.29	297	eP	51	53.00	-1.7	NAI	128.27	253	iPKP	57	22.00	1.6
			e	51	07.00		NDI	99.29	297	iPc	51	56.00	1.3X	SUF	128.45	339	ePKP	57	16.70	-2.3X
TOA	87.94	20	eP	51	04.00	2.2			ePP	56	02.00		MSL	128.55	302	ePKPd	57	23.00	3.0X	
BAR	87.94	55	eP	51	04.00	1.6			SKS	02	34.00					ePKS	00	45.00		
			e	51	07.00				PS	04	40.00					ePPP	02	23.00		
PLM	88.06	54	eP	51	05.00	1.8	POO	99.49	286	iP+	51	58.00	2.2				eSKS	04	23.50	
			e	51	09.00		OXX	100.01	75	(Pdiff)	52	03.50	4.9X				eSKKS	06	07.00	
LSA	88.10	302	iPc	51	04.60	0.8	YKA	100.37	27	ePdiff	51	57.10	-1.7	AAE	130.02	266	Pdiff	54	16.00	3.6X
N	12s							0.8s	5.30nm			5.1mb	AAE	130.02	266	PKP	57	25.00	1.2	
E	12s						KSH	102.97	307	Pdiff	52	16.00	4.8X	NUR	130.46	337	iPKP	57	21.90	-0.9
			pP	51	18.00	45kmX	Z	24s	49.60um			7.0MszX					i	57	26.80	
			SKS	01	31.50		N	18s	26.30um					BAO	131.02	131	PKPd	57	24.60	-0.8
PFO	88.47	54	iP	51	02.99	-2.1			ePP	56	28.00		BDF	131.06	131	ePKP	57	22.59	-2.9X	
			ePP	54	31.00		SAN	103.94	133	ePdiff	52	15.50	0.0				ePP	59	37.47	
			eHPP	54	31.56				ePP	56	31.00						eHPP	59	37.81	
CLC	88.49	52	eP	51	02.00	-3.0X			eSP	03	20.00						eSKP	00	45.75	
			e	51	09.00				eSKKS	03	39.00		FDF	132.79	87	ePKP	57	30.50	1.8	
SIT	88.63	27	P	51	15.00	10.0X			eSS	11	01.00		NB2	134.27	345	PKP	57	25.80	-4.4X	
Z	20s						FFC	104.72	37	ePdiff	52	25.00	6.6X							
GSC	88.87	52	eP	51	08.00	1.1	MDZ	105.52	133	e(Pdiff)	52	09.00	-13.6X	HFS	134.36	342	ePKP	57	27.70	-2.6X
			e	51	13.00		QUE	108.35	296	iPdiff	52	30.00	-5.4X							
IMA	88.91	15	P	51	05.00	-1.5			eSKS	03	23.00									
TPC	88.98	54	eP	51	08.00	0.6	NNA	109.25	110	iPdiff	52	40.00	0.4	Z	23s		LR	41	13.00	7.4MszX
			e	51	13.00		SLM	110.19	55	Pdiff	52	50.00	6.8X							
BMW	89.28	40	P	51	11.00	2.5	Z	18s	27.95um			6.9Msz	KAS	134.83	311	ePKP	57	34.50	2.6X	
KVN	89.43	48	ePc	51	07.60	-2.0	ARE	111.96	117	ePdiff	52	54.00	2.1X	HRI	134.94	299	ePKP	57	33.00	0.6
GLA	89.52	55	eP	51	12.00	2.0	UPA	113.96	88	ePdiff	53	04.00	3.5X	LWI	135.00	247	ePKPc	57	30.40	-2.8X
			e	51	17.00		LPB	114.77	119	(PKP)	56	57.00	2.3X	DSI	135.44	297	ePKP	57	32.00	-1.2
COL	89.53	17	iPc	51	06.63	-2.6			(SKS)	03	42.00		BBTK	135.99	309	iPKPd	57	37.00	2.8X	
			eHPP	54	35.52				LR	32	30.00		MBH	136.02	294	ePKP	57	30.00	-4.4X	
			ePP	54	37.51		LPB	114.77	119	Pdiff	53	07.00	2.4X	GPA	137.66	310	ePKP	57	39.00	1.7
			e	03	07.56		ZOBO	114.88	118	Pdiff	53	09.00	3.8X	PSN	137.90	316	ePKP	57	39.00	1.4
FBA	89.53	17	eP	51	06.60	-2.7	MAIO	115.37	302	ePKP	56	55.00	0.1	HRT	137.95	311	ePKP	57	39.00	1.2
TNP	89.67	50	ePc	51	09.30	-1.5	BOG	117.88	95	ePdiff	53	20.00	1.6	ALT	138.18	309	ePKP	57	38.00	-0.4
PGC	90.16	38	eP	51	13.00	0.5			ePP	56	16.00		ITU	138.31	312	iPKPc	57	20.00	-18.4X	
LON	90.27	40	P	51	14.00	0.8	NPA	119.62	240	ePKP	57	03.40	0.0	MLR	138.54	319	ePKP	57	39.00	0.1
LON	90.27	40	iPc	51	10.43	-2.7X	FRB	120.82	26	ePKP	57	02.00	-2.2X	KHL	138.84	308	ePKP	57	41.00	1.4
			eSPd	51	20.53		PRY	120.97	221	ePKP	57	04.40	-1.5	BUC	138.95	318	ePKP	57	28.00	-11.4X
			eHPP	54	43.79				0.7s	10.00nm			ELL	138.98	305	ePKP	57	41.00	1.1	
			ePP	54	46.82		SLR	121.29	223	iPdiff	53	32.00	-1.1	HLW	139.07	295	ePKPc	57	30.00	-10.1X
MCW	90.54	38	P	51	13.80	-0.5	SLR	121.29	223	ePKP	57	02.50	-4.0X	KRA	139.36	328	ePKP	57	33.00	-7.0X
RMW	90.59	40	P	51	13.60	-1.1			1.5s	69.44nm			Z	22s						
GUN	91.78	299	P	51	20.90	0.0				i	07	00.50		E	22s					
PKI	92.06	298	P	51	21.80	-0.4	DAG	121.42	2	iPKPd	57	02.00	-3.1X				e	57	42.60	
KKN	92.24	298	P	51	23.00	0.1			0.7s	24.66nm							e	57	55.80	
DMN	92.33	298	P	51	23.60	0.3	E	24s		15.50um							e	01	38.00	
PNT	92.72	39	eP	51	23.00	-1.3				ipP	58	35.00		SPC	139.75	327	ePKP	57	40.70	-0.3
	0.9s								isP	08	22.00						e	09	12.30	
			pP	51	31.00	25kmX	BFS	121.42	221	ePKP	57	04.00	-2.8X	PVL	139.98	316	iPKP	57	40.00	-1.3
GKN	92.85	298	P	51	25.00	-0.6			0.5s	19.72nm			DEV	140.19	321	ePKPd	57	34.00	-7.6X	
MZX	93.09	67	(P)	51	28.00	1.5	KSR	122.08	222	ePKP	57	07.10	-1.0	KSP	140.55	332	ePKP	57	33.00	-9.1X
DUG	93.64	49	P	51	34.00	5.1X			0.8s	12.50nm							id	57	45.80	
KOD	93.72	279	eP	51	30.00	0.0	SWZ	122.11	220	iPKPd	57	05.00	-3.1X				e	00	51.50	
			eS	02	04.00				0.7s	44.52nm			KDZ	140.60	314	iPKPd	57	38.00	-4.5X	
GBA	94.77	283	Pd	51	35.70	1.3	IR4	122.30	300	ePKP	57	07.50	-0.7	PSZ	140.72	326	ePKP	57	39.50	-3.1X
	1.1s						IR2	122.31	301	ePKP	57	08.00	-0.2	BZS	141.09	322	ePKP	57	38.50	-4.7X
DAU	94.83	49	P	51	40.40	5.7X	IR1	122.48	301	ePKP	57	08.00	-0.5	BUD	141.45	326	ePKP	57	39.00	-4.8X
HYB	94.89	287	iPc	51	35.00	0.1	IR7	122.55	301	ePKP	57	05.00	-3.6X	BRG	141.55	334	iPKP	57	40.90	-3.0X
			e	54	00.00		KEV	123.37	345	ePKP	57	07.00	-2.0	Z	20s					
			e	02	10.00				0.8s	33.70nm			N	22s						
WMQ	95.77	314	iPDIFc	51	38.83	0.3				i	57	11.60		E	22s					
Z	28s						HRV	124.44	51	iPdiff	53	48.51	2.0X				i	57	46.40	
N	20s									eSKS	04	27.02					i	00	54.00	
E	18s									eSKKS	06	02.70					i	01	07.60	
			eP	51	46.28	23kmX	BUL	124.84	228	iPKPc+	57	09.70	-3.8X				i	09	30.00	
			eHPP	55	31.33				0.9s	42.02nm							i	13	10.00	
			ePP	55	32.16		Z	17s	140.14um			7.7MszX	CLL	141.61	335	ePKP	57	41.00	-3.0X	
			SKS	02	13.00		N	17s	223.13um								i	19	32.00	
			iS	02	56.92		E	18s	50.86um				Z	21s						







	0.8s	167.90nm					VAI	147.52	333	PKP	11	04.50	2.1X	MTN	35.90	273	eP	17	38.00	-0.8
LMR	150.59	332	ePKP	58	00.20	1.3	PGD	147.60	327	PKP	11	02.50	-0.4	WARB	38.94	251	iPc	18	04.40	0.1
FAI	150.66	315	PKP	58	02.50	3.3X	FLN	148.14	346	ePKP	11	06.70	3.4X	COOL	44.10	244	eP	18	45.80	-0.8
RJF	150.85	340	ePKP	58	01.30	2.0		0.8s	13.45nm					KLB	47.05	244	eP	19	09.00	-1.0
CAF	151.00	339	ePKP	58	01.90	2.3X	LDF	148.21	345	ePKP	11	07.00	3.5X	NWAO	47.59	242	iPd	19	13.60	-0.7
LFF	151.42	341	ePKP	58	02.20	2.1X		1.0s	12.00nm						0.6s	30.00nm			5.5mb	
LPO	151.51	340	ePKP	58	02.60	2.3X	LOR	148.25	339	ePKP	11	07.70	4.1X	MUN	48.39	243	iPd	19	19.60	-0.9
BTH	153.35	341	PKP	58	06.00	3.0X		1.0s	14.00nm					MRWA	48.47	247	eP	19	21.00	-0.2
ECRI	154.50	344	e(PKP)	58	09.00	4.4X	LBF	148.46	339	ePKP	11	08.10	4.1X	PPR	56.09	296	eP	20	18.00	-0.2
EBR	155.16	337	iPKP	58	04.00	-1.4		0.8s	5.35nm					IPM	69.80	282	ePd	21	49.10	-0.1
			iPP	02	12.00		SSF	148.55	340	ePKP	11	08.40	4.3X	WHN	70.90	313	eP	21	55.00	-0.5
EROQ	155.19	337	e(PKP)	58	08.90	3.4X		1.0s	15.00nm					PSI	71.09	279	ePd	21	55.50	-0.6
STS	155.34	354	e(PKP)	58	09.00	3.4X	GRR	148.58	346	ePKP	11	08.00	3.9X		e			24	00.00	
ETOR	156.02	341	e(PKP)	58	08.30	1.5		1.0s	26.00nm					SPA	71.76	180	iPc	21	59.20	-1.2
GUD	156.76	345	e(PKP)	58	09.50	1.6	LPL	148.66	334	ePKP	11	09.10	4.5X		1.0s	31.50nm			5.3mb	
PDA	157.22	29	iPKPc	58	10.00	1.7		0.6s	2.25nm					MDJ	71.80	332	Pc	22	00.00	-0.7
TOL	157.45	344	iPKP+	58	08.00	-0.6	LPG	148.67	334	ePKP	11	08.50	3.8X	SNY	72.61	327	eP	22	03.70	-1.8
			ePKKp	58	45.00			0.8s	5.35nm					CN2	73.10	329	iPc	22	07.40	-1.0
			iPP	02	22.00		LPG	148.67	334	ePKP	11	08.50	3.8X			PP		22	16.60	
			eSKS	05	06.00			1.1s	29.30nm					LOE	74.24	295	eP	22	15.80	0.3
			iPPP	05	55.00		BNI	149.06	334	PKP	11	10.50	5.4X	GYA	74.36	305	P	22	18.00	1.8
			iPPS	15	29.00		BGF	149.21	340	ePKP	11	09.80	4.7X	BJI	75.52	321	eP	22	21.50	-0.9
			iSS	22	28.00			1.0s	10.00nm						2.2s	75.00nm			5.3mb	
MAL	160.50	342	iPKPc	58	11.00	-0.9	MAF	149.60	340	ePKP	11	11.00	5.3X	TIY	76.40	318	P	22	27.80	0.2
			iPP	02	36.00			0.8s	6.05nm					CD2	78.78	308	eP	22	38.60	-2.2
LEGH	162.96	224	ePKP	58	18.00	2.9X	TCF	149.66	340	ePKP	11	11.30	5.5X	HMC	78.80	320	P	22	40.60	-0.2
			e	02	53.00			0.9s	7.35nm					BTO	79.61	319	eP	22	45.20	0.0
WEGH	163.02	223	ePKP	58	18.00	2.9X	SBF	149.68	332	ePKP	11	11.80	5.8X	LZH	81.28	312	Pc	22	55.00	0.8
WIGH	163.03	222	ePKP	58	19.00	3.9X		0.9s	13.10nm						2.5s	150.00nm			5.6mb	
SHGH	163.08	225	ePKP	58	18.00	2.8X	LSF	149.90	341	ePKP	11	11.50	5.3X	GTA	85.68	314	Pc	23	16.60	0.1
			e	02	53.00			1.2s	20.85nm					PRI	86.42	50	ePc	23	16.80	-3.5X
KOGH	163.33	225	ePKP	58	14.00	-1.5	PGF	149.93	328	ePKP	11	11.60	5.1X	LLA	86.42	50	eP	23	15.60	-4.5X
KUK	163.49	225	ePKP	58	14.50	-1.1		0.8s	10.75nm					WDC	87.07	46	e(P)	23	21.90	-1.2
IFR	163.68	339	iPKP	58	15.50	0.0	MFF	150.06	344	ePKP	11	11.80	5.4X	ORV	87.32	47	ePc	23	22.50	-1.9
			i	58	17.00			1.0s	16.00nm					CMB	87.44	49	ePc	23	22.90	-2.2
AVE	164.54	346	ePKP	58	13.00	-3.1X	FRF	150.27	332	ePKP	11	13.20	6.4X	FRI	87.48	50	ePc	23	23.20	-2.0
			i	59	10.00			1.0s	8.00nm					LSA	88.08	302	P	23	29.20	0.4
KIC	166.20	211	PKP	58	16.52	-1.5	LMR	150.51	332	ePKP	11	12.90	5.7X	GUN	91.76	299	P	23	45.60	-0.3
LIC	166.22	210	PKP	58	16.44	-1.5		1.2s	20.85nm					PKI	92.04	298	P	23	46.80	-0.4
	Z 20s	44.80um					RJF	150.75	340	ePKP	11	13.80	6.3X	KKN	92.22	298	P	23	47.60	-0.3
TIC	166.58	211	PKP	58	16.80	-1.5		0.8s	5.35nm					DMN	92.30	298	P	23	48.10	-0.2
TIO	166.75	342	iPKP	58	18.00	-0.2	LPO	151.41	340	ePKP	11	15.10	6.6X	PNT	92.77	39	eP	23	49.00	-0.7
			i	59	26.40			0.8s	8.05nm					GKN	92.83	298	P	23	49.60	-1.0
TBT	168.32	27	iPKP	58	24.00	4.9X		S.D. = 1.2 on 20 of 48 obs.					HYB	94.85	287	eP	24	08.20	8.3X	
CHIE	169.12	30	iPKP	58	24.30	4.7X							WMO	95.76	314	P	24	03.50	-0.1	
LKO	169.32	216	PKPc	58	18.72	-1.4		MAR 05, 1990 17h 10m 39.57± 1.02s					YKA	100.42	27	ePd	24	22.40	-1.8	
CFTV	169.76	11	iPKPc	58	24.50	4.5X		18.353 S ± 5.3km 168.013 E ± 5.1km						0.6s	0.40nm			4.1mb X		
MBO	173.80	128	iPKPc	58	22.00	0.0		DEPTH = 33.6 ± 9.1 km					BUL	124.78	228	iPKPc	29	34.20	-4.3X	
	S.D. = 1.2 on 335 of 506 obs.						5.4mb ( 6 obs.)						SPC	139.76	327	ePKP	30	06.80	0.8	
													BRG	141.56	334	ePKP	30	09.60	0.6	
														1.8s	38.00nm					
															e			33	54.00	
																iPKPc		30	07.50	-4.1X
																e		33	19.50	
																iPKP		30	07.50	-4.4X
																ePKPc		30	08.80	-3.8X
																e		30	24.00	
																ePKP		30	08.40	-4.8X
																ePKP		30	09.70	-3.8X
																0.19nm				
																e		30	22.50	
																ePKP		30	10.00	-3.7X
																iPKPd		30	11.20	-2.5X
																ePKP		30	10.70	-3.2X
																iPKPd		30	11.60	-2.3X
																ePKP		30	17.80	3.7X
																ePKP		30	18.70	4.5X
																ePKP		30	12.30	-2.2X
																iPKPc		30	11.40	-3.2X
																57.70nm				
																i		30	26.80	
																ePKP		30	11.20	-3.1X
																ePKP		30	12.50	-2.1X
																ePKP		30	12.80	-1.8
																ePKP		30	12.50	-2.1X
																ePKPc		30	12.10	-2.3X
																ePKP		30	12.65	-2.1X
																iPKPc		30	12.10	-2.5X
																0.9s	148.00nm			
																ePKP		30	12.00	-3.0X
																iPKPc		30	11.40	-4.5X
																e(PKP)		30	13.20	-1.9
																ePKP		30	12.60	-2.7X
																ePKP		30	13.00	-2.8X
																ePKPc		30	13.60	-1.6
																0.9s	70.59nm			
																ePKP		30	13.86	-1.4



05d 17h

FVI	145.22	330	PKPd	30	13.20	-2.1X	IMI	149.52	331	PKP	30	23.83	1.3	CHTO	77.19	295	eP	29	54.40	1.2				
TRI	145.36	328	ePKP	30	13.40	-2.2X	MAF	149.71	340	iPKPc	30	26.20	3.6X		0.9s	2.56nm			4.3mb					
SNF	145.38	342	PKP	30	14.20	-1.3		1.2s	38.70nm						pP	30	06.70	41km						
DOU	145.66	341	PKPc	30	15.00	-1.0	SBF	149.77	331	iPKPc	30	26.20	3.4X	GTA	85.59	314	eP	30	38.20	1.2				
ECB	145.81	354	ePKP	30	14.90	-1.3		1.0s	46.00nm					CMB	87.31	49	ePc	30	44.90	-0.5				
	1.0s	78.00nm					TCF	149.77	340	iPKPc	30	26.40	3.7X	FRI	87.35	50	e(P)	30	46.10	0.6				
OGA	145.84	331	ePKP	30	16.00	-0.7		1.0s	50.00nm					YKA	100.27	27	ePdiff	31	44.00	-0.4				
ECP	145.96	354	ePKP	30	15.30	-1.1	PGF	150.01	328	iPKPc	30	27.00	3.7X		0.5s	0.30nm			4.1mb					
	1.1s	371.00nm						1.0s	60.00nm					MEM	144.63	340	PKP	37	34.80	-0.2				
CTI	146.16	330	PKP	30	16.70	-0.4	LSF	150.02	341	iPKPc	30	26.80	3.7X	DOU	145.52	341	PKP	37	37.00	0.4				
CDF	146.18	337	iPKPc	30	16.90	-0.2		1.0s	38.00nm					CTI	146.04	330	PKP	37	36.50	-1.3				
	0.8s	22.85nm					MFF	150.18	343	iPKPc	30	27.20	3.9X	CDF	146.04	337	ePKP	37	38.60	0.9				
SLE	146.23	335	ePKPc	30	16.70	-0.4		1.0s	48.00nm					HAU	146.73	337	ePKP	37	39.60	0.9				
SAX	146.28	333	ePKPc	30	17.50	0.0	FRF	150.36	332	iPKPc	30	27.70	4.1X	ARV	147.18	326	PKP	37	38.50	-1.1				
FEL	146.33	335	ePKP	30	17.15	-0.2		1.1s	39.05nm					BCAO	147.20	249	iPKPd	37	42.40	1.9				
OSS	146.37	332	ePKPc	30	17.00	0.2	LRG	150.57	332	iPKPc	30	28.60	4.7X		0.6s	6.00nm								
VDL	146.83	332	ePKPc	30	19.10	0.8		1.2s	59.50nm					VAI	147.49	333	PKP	37	40.50	0.6				
BSF	146.84	337	iPKPc	30	18.70	0.5	LMR	150.60	332	iPKPc	30	28.30	4.3X	PGD	147.56	327	PKP	37	38.50	-1.9X				
	1.0s	28.00nm						1.0s	64.00nm				FLN	148.12	346	ePKP	37	43.90	3.0X					
HAU	146.86	337	iPKPc	30	18.70	0.6	RJF	150.87	340	ePKP	30	29.10	4.7X		1.0s	12.00nm								
	1.0s	32.00nm						1.0s	28.00nm				LDF	148.19	345	ePKP	37	45.00	4.0X					
SAL	147.01	330	PKP	30	17.00	-1.3	CAF	151.02	339	ePKP	30	29.80	5.2X		0.8s	8.05nm								
BCAO	147.12	249	ePKPd	30	17.70	-1.8		0.8s	6.70nm				LOR	148.23	339	ePKP	37	44.70	3.6X					
	0.5s	36.00nm					LFF	151.44	341	ePKP	30	30.40	5.2X		0.8s	5.35nm								
		ic	30	20.40				0.8s	18.80nm				LBF	148.44	339	ePKP	37	44.80	3.3X					
		ic	31	46.00			LPO	151.53	340	ePKP	30	30.70	5.3X		0.8s	4.70nm								
RSM	147.26	326	PKP	30	20.80	2.0		0.8s	22.40nm				SSF	148.53	340	ePKP	37	45.40	3.8X					
MDI	147.26	331	PKP	30	16.00	-2.7X	KIC	166.14	212	PKP	30	41.00	-2.0X		0.8s	4.70nm								
ARV	147.29	325	PKP	30	17.70	-1.2	LKO	169.27	216	PKP	30	41.74	-3.4X	GRR	148.56	346	ePKP	37	45.30	3.7X				
TMA	147.38	333	ePKPc	30	20.00	0.8	S.D. = 1.2 on 114 of 182 obs.											1.0s	12.00nm					
SFI	147.58	327	PKP	30	21.40	2.1	* MAR 05, 1990 18h 01m 23.52±1.53s										LPL	148.63	334	ePKP	37	46.10	4.0X	
TDS	147.60	317	PKP	30	21.50	2.0	38.576 N ±11.7km 12.840 E ± 9.6km											0.8s	2.70nm					
VAI	147.61	332	PKP	30	17.90	-1.4	DEPTH = 10.0km (geophysicist)										LPG	148.64	334	ePKP	37	46.40	4.2X	
PGD	147.68	327	PKP	30	22.00	2.3X	SICILY						(398)		0.8s	4.05nm								
ASS	147.73	325	PKP	30	21.00	1.3								LPF	148.93	346	ePKP	37	46.50	4.3X				
SGO	147.75	319	PKP	30	21.00	1.3									1.2s	26.80nm								
MMK	147.82	334	ePKPc	30	22.10	2.1	USI	0.30	64	P	01	30.20	0.5	BNI	149.03	334	PKP	37	47.00	4.4X				
SDI	147.96	322	PKP	30	21.50	1.4			eSg	01	36.20		BGF	149.19	340	ePKP	37	46.90	4.2X					
MME	147.97	328	PKP	30	22.60	2.3X	ERC	0.57	200	P	01	34.70	-0.5		1.0s	7.00nm								
CZI	147.97	316	PKP	30	20.70	0.6			eSg	01	43.20		TCF	149.63	340	ePKP	37	48.20	4.8X					
FIR	147.98	327	ePKP	30	23.00	3.1X	LVI	0.71	214	P	01	37.60	0.1		1.0s	7.00nm								
AZI	148.00	323	PKP	30	21.50	1.5			eSg	01	48.40		SBF	149.65	332	ePKP	37	48.80	5.3X					
DIX	148.02	334	ePKPc	30	22.60	2.3X	GIB	1.10	122	P	01	43.70	-0.6		0.8s	5.35nm								
BDI	148.11	328	PKP	30	21.00	0.7			eSg	02	00.60		PGF	149.90	328	ePKP	37	48.80	4.8X					
ORX	148.14	333	PKP	30	21.17	0.8	MCT	1.13	146	P	01	46.00	1.2		1.0s	8.00nm								
ORO	148.15	333	PKP	30	21.50	1.2			eSg	02	01.90		MFF	150.04	344	ePKP	37	49.00	5.1X					
BOB	148.15	330	PKP	30	21.90	1.6	FAI	1.46	153	P	01	50.40	0.6		1.0s	8.00nm								
EMS	148.23	335	ePKPc	30	22.90	2.3X	MNO	1.60	113	P	01	50.80	-1.2	S.D. = 1.2 on 32 of 50 obs.										
FLN	148.26	345	iPKPc	30	22.10	1.9	ATN	2.10	101	P	01	59.20	0.0	* MAR 05, 1990 19h 16m 42.98±0.56s										
	0.8s	29.55nm					MEU	2.21	131	P	02	00.90	0.0	18.437 S ±11.8km 168.061 E ±16.4km										
LDF	148.33	345	ePKP	30	22.20	1.8	S.D. = 0.8 on 9 of 9 obs.										DEPTH = 10.0km (geophysicist)							
	0.6s	19.85nm					MAR 05, 1990 18h 18m 01.91±0.38s										4.4mb ( 5 obs.)							
LOR	148.37	339	iPKPc	30	22.80	2.3	18.195 S ± 6.7km 168.046 E ± 8.2km										VANUATU ISLANDS (186)							
	1.0s	40.00nm					DEPTH = 45.2km ( 2 depth phases)										PVC							
PII	148.40	328	PKP	30	22.00	1.4	4.4mb ( 6 obs.)										0.73 19 iPd 16 56.50 -0.9							
RMP	148.54	323	PKP	30	23.50	2.5X	VANUATU ISLANDS (186)										iS 17 05.00							
RDP	148.56	323	PKP	30	23.50	2.4X	PVC	0.52	29	iPd	18	12.50	-0.6	DZM	3.92	202	iPc	17	43.50	-1.1				
LBF	148.57	339	iPKPc	30	23.20	2.3X			iS	18	21.50				iS	18	28.60							
	1.0s	19.00nm					DZM	4.14	201	iPc	19	00.20	-4.2X											
SOI	148.63	315	PKP	30	21.50	0.4			iS	19	44.10			RMO	19.54	242	iPc	21	15.00	1.1				
SSF	148.66	339	iPKPc	30	23.70	2.7X	HNR	11.73	317	eP	20	48.00	-1.5	CTA	20.65	262	iP	21	26.00	0.5				
	1.0s	52.00nm					BRS	16.78	234	eP	21	56.00	0.6		1.0s	15.00nm			4.3mb					
GRR	148.70	346	iPKPc	30	23.40	2.4X	RMO	19.64	242	iPc	22	30.60	0.7	CNB	23.61	221	eP	21	56.00	1.0				
	1.2s	86.30nm					CTA	20.67	261	eP	22	41.00	0.4		32.25	255	iPd	23	11.80	-2.2				
PCP	148.74	331	PKP	30	22.81	1.6		1.1s	39.24nm						0.4s	5.00nm			4.8mb					
LPL	148.76	334	iPKPc	30	24.50	3.0X								SPA	71.68	180	eP	28	06.00	-0.9				
	1.2s	35.70nm													0.9s	8.64nm			4.9mb					
LPG	148.77	334	iPKPc	30	24.60	3.0X								CHTO	77.30	295	eP	28	39.20	-0.6				
	1.2s	43.15nm					MNG	23.25	166	P	23	05.30	-0.8		1.0s	2.00nm			4.2mb					
SMF	148.91	339	iPKPc	30	24.10	2.7X	PGZ	23.44	164	P	23	06.20	-1.7	YKA	100.47	27	ePdiff	30	28.20	-3.2X				
	1.2s	35.70nm					TCW	23.56	168	P	23	09.30	0.3		0.4s	0.20nm			4.0mb					
CKI	148.95	331	PKP	30	23.70	2.2X	CAW	23.62	167	P	23													



0.6s 3.60nm  
LBF 148.67 339 ePKP 36 28.10 -0.1  
0.8s 2.70nm  
SSF 148.76 339 ePKP 36 29.80 1.5  
0.8s 6.05nm  
GRR 148.79 346 ePKP 36 29.20 1.0  
0.8s 6.70nm  
LPF 149.17 346 ePKP 36 30.50 1.7  
0.8s 6.70nm  
TCF 149.86 340 ePKP 36 32.40 2.4X  
0.8s 5.35nm  
SBF 149.86 331 ePKP 36 32.40 2.3X  
0.8s 8.05nm  
PGF 150.11 328 ePKP 36 33.20 2.6X  
1.0s 10.00nm  
LSF 150.11 341 ePKP 36 32.90 2.6X  
0.8s 6.05nm  
MFF 150.27 343 ePKP 36 33.20 2.7X  
0.8s 5.35nm  
LMR 150.70 332 ePKP 36 34.50 3.2X  
0.8s 8.05nm

S.D. = 1.2 on 20 of 31 obs.

\* MAR 05, 1990 20h 02m 31.63±0.83s  
3.668 N ±15.6km 126.393 E ±25.2km  
DEPTH = 33.0km (normal)  
4.6mb ( 4 obs.)

# TALAUD ISLANDS (263)

MTN 17.07 164 eP 06 28.00 -1.5  
WB5 24.68 162 eP 07 51.80 0.8  
WRA 24.73 162 Pd 07 52.10 0.6  
0.8s 16.70nm 4.7mb  
LOE 27.77 301 eP 08 20.50 0.8X  
ASPA 28.14 165 eP 08 23.40 0.4  
0.4s 3.00nm 4.3mb  
CHG 30.77 301 eP 08 38.70 -7.8X  
BJI 37.37 347 eP 09 42.50 -0.5  
CMS 39.56 153 iPd 09 56.50 -5.0X  
GUN 45.49 306 P 10 50.60 0.3  
0.6s 12.00nm 5.0mb  
PKI 45.73 306 P 10 52.20 0.0  
KKN 45.92 306 P 10 54.00 0.4  
GKN 46.53 306 P 10 58.30 0.0  
GBA 49.31 285 Pc 11 19.40 -0.5  
0.8s 5.20nm 4.6mb  
SPA 93.64 180 eP 16 00.80 15.0X  
1.0s 13.50nm

S.D. = 0.8 on 10 of 14 obs.

MAR 05, 1990 20h 47m 00.76±0.11s  
36.907 N ±2.8km 73.021 E ±1.8km  
DEPTH = 12.2km (geophysicist)  
5.8mb ( 90 obs.) 6.0Msz ( 12 obs.)

# NORTHWESTERN KASHMIR (720)

Felt (IV) at Khorog, Ishkashim  
and Murgab; (III) at Rushan and  
Kulyab, USSR. Also felt at  
Chitral, Pakistan. Depth from  
broadband displacement  
seismograms.

## MOMENT TENSOR SOLUTION

Dep 22 No. of sto: 10

Moment Tensor; Scale 10\*\*18 Nm

Mrr=-1.43 Mtt=0.26

Mff=1.17 Mrt=1.08

Mrf=-0.62 Mtf=-0.79

Principal axes:

T Val= 1.98 Plg=18 Azm= 54

N -0.01 16 319

P -1.98 65 191

Best Double Couple: Mo=2.0\*10\*\*18

NP1: Strike=169 Dip=30 Slip=-57

NP2: 311 65 -108

CENTROID, MOMENT TENSOR (HRV)

Data Used: GDSN

L.P.B.: 12S, 31C

Centroid Location:

Origin Time 20:47: 6.7 0.2

Lat 37.04N 0.06 Lon 72.85E 0.05

Dep 17.5 2.7 Half-duration 4.3

Moment Tensor; Scale 10\*\*18 Nm

Mrr=-1.26 0.08 Mtt=-0.42 0.12

Mff=1.67 0.07 Mrt=0.84 0.20

Mrf=-0.75 0.25 Mtf=-0.59 0.06

Principal Axes:

T Val= 2.10 Plg=16 Azm= 71

N -0.29 24 334  
P -1.81 60 192  
Best Double Couple: Mo=2.0\*10\*\*18  
NP1: Strike=192 Dip=36 Slip=-46  
NP2: 322 65 -117  
KSH 3.45 42 iPd 48 02.00 6.5X  
QUE 8.40 219 iPd- 49 05.90 0.6  
0.9s 1302.52nm 7.2mb X  
NDI 8.93 156 iPd 49 11.50 -0.9  
0.7s 363.01nm 6.8mb X  
MAIO 10.89 271 iPd 49 37.60 -1.9  
0.7s 95.30nm 6.2mb  
WMO 13.14 54 ePd 50 08.66 -1.1  
3.0s 4100.00nm 7.0mb X  
GKN 13.22 129 P 50 06.60 -4.3X  
KKN 13.77 128 P 50 13.80 -4.5X  
DMN 13.79 129 P 50 14.50 -4.1X  
PKI 14.01 128 P 50 16.90 -4.6X  
GUN 14.07 126 P 50 17.70 -4.7X  
LSA 16.76 110 P 50 55.00 -2.3

N 10s 78.90um  
E 10s 54.60um

PP 51 04.00  
PP 51 18.00  
TEH 17.47 273 eP 51 09.00 3.1X  
eS 54 36.00  
IR2 17.88 273 eP 51 11.50 0.6  
BOM 17.94 181 eP 51 09.70 -2.0  
eS 54 30.20  
IR1 18.09 272 eP 51 14.50 0.9  
IR7 18.10 273 eP 51 15.50 1.8  
POO 18.32 177 iPd 51 16.40 0.0  
1.2s 328.13nm 5.4mb  
HYB 20.02 164 iPd 51 33.70 -2.6  
1.0s 375.00nm 5.7mb  
i 55 07.00  
iS 55 18.00  
GTA 21.19 75 iPd 51 49.00 0.6  
Z 12s 53.00um 6.1MszX  
N 10s 85.20um

pP 51 57.50 31kmX  
sP 52 06.00  
PP 52 14.00  
S 55 42.00  
sS 55 54.00  
TAB 21.19 281 iPd- 51 50.00 1.5  
KER 21.20 271 iPd 51 49.70 1.1  
BBU 21.93 247 iP 51 54.50 -1.2  
BJA 21.95 247 iP 51 54.40 -1.5  
BEE 22.00 247 iP 51 55.30 -1.1  
DHR 22.12 248 iPd+ 51 56.90 -0.7  
SLY 22.21 275 iPd 52 01.00 2.6  
iPP 52 29.00  
iPP 52 55.50  
iS 56 11.00  
iSS 56 50.00  
iSSS 57 26.00  
iPcS 59 32.00  
iLQ 00 24.50

GBA 23.54 169 Pc 52 13.60 2.0  
0.7s 150.10nm 5.7mb  
BHD 23.67 270 iPd 52 15.50 2.7  
iPP 52 59.00  
iPP 53 15.00  
iPcP 56 25.50  
iS 56 30.00  
iSS 57 27.50  
iSSS 57 57.00  
iScP 59 31.00

MSL 23.93 278 ePd 52 21.00 5.6X  
ePP 52 47.50  
ePPP 53 16.00  
e 56 23.50  
eS 56 36.00  
eS 56 47.00  
eSS 57 35.50  
eSSS 58 17.00  
eLQ 00 39.50  
LZH 24.74 83 ePd 52 25.02 1.6  
5.0s 7140.00nm 6.6mb X  
Z 14s 53.70um 6.2MszX  
N 10s 32.50um

E 10s 21.30um  
sP 52 35.60  
eS 56 39.07  
sS 56 56.00  
RYD 25.64 249 iPd+ 52 31.00 -0.9  
CD2 26.13 94 iPd 52 37.70 1.3  
8.0s 3700.00nm 6.1mb X  
Z 14s 26.70um 5.9MszX  
N 10s 54.70um  
S 57 10.00  
KOD 26.86 170 iPd 52 44.10 0.7  
1.0s 190.00nm 5.7mb  
eS 57 12.00  
OASM 27.26 255 ePd 52 46.00 -0.7  
KMI 27.93 106 ePd 52 52.74 -0.4  
7.0s 1.80nm 3.0mb X  
Z 24s 36.20um 5.9MszX  
N 15s 38.20um  
E 12s 15.50um  
PP 53 40.00  
S 57 34.00  
sS 57 54.00  
KVT 28.90 290 iPd 53 02.60 1.2  
BTO 28.95 71 P 53 03.00 1.0

N 15s 30.00um  
E 15s 68.80um

pP 53 12.00 31kmX  
S 57 49.00  
CHG 29.01 121 eP 53 02.00 -0.6  
1.3s 38.46nm 5.0mb  
CHTO 29.01 121 eP 53 02.00 -0.6  
1.6s 156.17nm 5.5mb  
XAN 29.27 85 Pc 53 04.50 -0.4  
6.0s 1400.00nm 5.9mb X  
N 12s 33.30um  
E 10s 15.20um  
S 57 58.00

SHBJ 29.43 272 Pd 53 07.90 1.5  
KMSA 29.81 244 iPd 53 08.20 -1.7  
BDT 30.15 124 eP 53 12.10 -0.7  
1.1s 79.40nm 5.5mb  
GYA 30.33 100 iPd 53 14.80 0.4  
5.0s 2000.00nm 6.2mb X  
N 13s 36.00um  
E 13s 19.60um

HLBJ 30.52 272 Pc 53 16.40 0.3  
KAS 30.59 291 iPd 53 17.70 1.1  
HRI 30.60 274 eP 53 18.00 1.3  
MDSJ 30.71 271 Pc 53 18.80 1.0  
BURJ 30.87 272 Pc 53 20.00 0.9  
TIY 31.20 76 P 53 22.00 0.0

N 14s 39.20um  
pP 53 32.00 36kmX  
sP 53 37.00  
PcP 56 15.00  
S 58 26.00  
sS 58 41.00  
SS 00 18.50

DSI 31.43 271 eP 53 23.00 -0.9  
ANTO 31.49 288 iPd 53 25.75 1.3  
iPd 53 29.39 13kmX  
BBTK 31.52 288 iPd 53 26.00 1.2  
LOE 31.90 120 iPd 53 27.20 -1.0  
e 02 47.00

AYN 31.95 266 ePd+ 53 29.10 0.6  
NST 32.03 124 iPd 53 47.70 18.4X  
MBH 32.49 269 eP 53 33.00 -0.2  
WAJH 32.69 261 ePd+ 53 34.80 -0.2  
BADA 32.89 266 ePd+ 53 36.90 0.2  
GPA 33.32 289 eP 53 41.20 0.8  
BCK 33.60 284 eP 53 42.90 -0.1  
ALT 33.66 287 eP 53 44.00 0.5  
BJI 33.69 71 eP 53 44.23 0.7  
6.0s 1.14nm 3.0mb X

N 12s 24.20um  
ePP 53 47.38 11kmX  
eS 53 49.53  
eS 59 04.42  
HRT 33.73 290 eP 53 43.60 -0.4  
GBZT 33.90 290 iPd 54 04.00 18.6X  
YLV 33.99 290 iPd 53 45.20 -1.1

ISK 34.15 291 eP 53 47.30 -0.3  
ITU 34.18 291 iPd 53 46.00 -1.8  
KHL 34.25 286 iP 53 49.10 0.5  
ELL 34.29 283 eP 53 49.00 0.0  
CFR 34.46 298 eP 53 55.00 4.8X  
PSN 34.53 296 eP 53 52.00 1.2



05d 20h									
TLB	34.58	297	eP	53	51.50	0.4			
DST	34.70	288	iP	53	52.20	-0.2			
WHN	34.75	88	Pd	53	53.50	0.7			
	6.0s	2100.00nm			6.2mb X				
Z	16s	14.90um			5.8MsZ X				
N	10s	28.20um							
E	12s	17.10um							
		pP		53	59.00	19kmX			
		S		59	24.00				
BIR	34.80	300	eP	53	54.00	0.9			
PPE	34.81	300	ePd	53	53.50	0.3			
CLI	35.04	301	ePd	53	56.00	0.9			
BNT	35.11	290	iP	53	56.70	0.8			
EDC	35.16	290	iP	53	56.50	0.3			
TIA	35.20	78	Pd	53	57.60	1.0			
					5.7MsZ				
Z	18s	11.40um							
N	11s	12.40um							
E	12s	19.20um							
VRI	35.44	299	ePc	54	00.00	1.4			
ISR	35.60	298	ePd	54	02.50	2.5			
PTT	35.65	301	eP	54	01.00	0.7			
HIA	35.73	55	eP	54	01.16	0.1			
		epP		54	04.47	11kmX			
		eS		59	35.00				
JMB	35.81	294	iPd	54	03.00	1.2			
ARG	35.81	283	eP	54	02.00	0.2			
BUC	35.97	297	ePd	54	01.00	-2.0			
IZM	35.98	287	eP	54	03.60	0.3			
MLR	36.01	299	iPd	54	06.00	2.5			
EZN	36.41	289	iP	54	07.50	0.7			
ALN	36.43	291	iPd	54	07.50	0.5			
SMG	36.46	286	eP	54	08.00	0.8			
DIM	36.64	293	eP	54	10.00	1.3			
CMP	36.66	299	iPd	54	07.00	-1.9			
KAP	36.74	282	eP	54	10.00	0.4			
RDO	36.77	292	eP	54	10.00	0.2			
KDZ	36.78	292	iPd	54	10.00	0.0			
OIZ	36.79	109	Pc	54	11.00	0.8			
N	21s	44.30um							
E	20s	43.30um							
		S		59	51.00				
		sS		00	11.00				
		SS		02	17.00				
TDD	36.83	235	iPd	54	12.33	1.8			
AGAL	36.99	260	iPd	54	13.00	1.2			
MDB	37.06	300	iPd	54	00.00	-12.2X			
ARO	37.07	235	iPd	54	14.28	1.6			
ANMR	37.09	261	iPd	54	13.00	0.4			
AGMR	37.16	261	iPd	54	12.00	-1.2			
DAF	37.22	235	iPd	54	15.40	1.5			
PLD	37.24	293	iPd	54	15.00	1.2			
GZH	37.26	100	iPc	54	16.00	1.9			
	5.0s	2900.00nm			6.3mb X				
Z	14s	23.30um			6.1MsZ X				
N	14s	31.40um							
		S		00	00.00				
SGH	37.28	235	iPd	54	16.46	2.1			
HLD	37.29	235	iPd	54	15.86	1.4			
RZN	37.30	293	iPd	54	16.00	1.5			
BSI	37.32	142	ePc	54	14.00	-0.6			
	1.0s	250.00nm			5.9mb				
KSU	37.34	235	iPd	54	16.53	1.6			
PGB	37.57	294	iPd	54	18.00	1.4			
GBR	37.60	235	iPd	54	19.06	1.9			
NJ2	37.81	83	Pc	54	19.60	0.9			
	6.0s	1600.00nm			6.0mb X				
Z	16s	12.10um			5.8MsZ X				
N	13s	32.90um							
E	12s	9.80um							
		S		00	09.00				
MMB	38.04	293	iPd	54	22.00	1.4			
DL2	38.05	72	P	54	22.00	1.5			
	6.0s	1750.00nm			6.0mb X				
N	15s	29.10um							
E	15s	23.50um							
		S		00	13.00				
OUR	38.08	291	iPd	54	21.60	0.8			
DEV	38.11	300	ePd	54	22.50	1.5			
SRS	38.23	292	iPd	54	22.80	0.7			
GZR	38.24	299	ePc	54	22.00	-0.2			
VTS	38.27	294	iPd	54	24.00	1.4			
CEI	38.30	303	eP	54	26.00	3.5X			
HKC	38.32	101	iP	54	28.00	5.0X			
		eS		00	22.00				
SUF	38.45	327	eP	54	22.90	-0.7			
	0.8s	182.90nm			5.9mb				
NUR	38.46	324	iP	54	23.90	0.2			
	0.9s	290.60nm							
		i		54	27.90				
				55	51.20				
SOH	38.46	292	iPd	54	24.60	0.5			
KKB	38.47	293	iPd	54	25.00	0.8			
PLG	38.47	291	eP	54	25.00	0.8			
KNT	38.73	292	iPd	54	26.90	0.6			
ATH	38.79	287	eP	54	28.00	1.2			
NEO	38.86	289	eP	54	28.00	0.5			
SNY	38.94	67	iPd	54	27.90	-0.1			
	1.0s	100.00nm			5.5mb				
Z	14s	43.40um			6.4MsZ X				
N	12s	8.10um							
E	11s	21.30um							
		PP		56	08.00				
		S		00	21.00				
VAY	38.95	292	iPc	54	28.40	0.3			
	1.4s	0.22nm			2.6mb X				
		i		54	31.40				
				54	39.30				
				55	03.00				
				55	56.60				
				58	40.50				
BZS	39.03	299	iPc	54	30.00	1.3			
LIT	39.25	291	iPd	54	30.70	0.1			
TIM	39.29	300	iPd	54	34.00	3.1X			
AGG	39.60	289	iPc	54	33.90	0.3			
SKO	39.66	294	iPd	54	34.10	0.0			
	8.0s	2939.00nm			6.0mb X				
Z	13s	9.56um			5.8MsZ X				
N	16s	8.94um							
E	17s	12.36um							
				54	36.50				
				54	50.40				
				54	55.00				
				56	14.20				
				56	21.90				
				56	32.00				
				56	35.00				
				56	22.00				
				56	28.00				
				56	42.00				
				56	39.00				
				56	50.00				
				56	45.00				
				16	09.00				
SPC	39.70	305	eP	54	34.50	0.0			
VLI	39.72	285	eP	54	33.00	-1.6			
KZN	39.74	291	eP	54	35.00	0.2			
KRA	39.87	306	iPd	54	36.00	0.3			
	1.0s	260.00nm			5.9mb				
Z	14s	12.40um			5.9MsZ X				
E	14s	15.80um							
				54	40.40				
				54	44.60				
				54	47.00				
				00	19.00				
BEO	39.93	298	eP	54	37.00	0.8			
				54	41.20				
FNA	39.94	292	iPd	54	36.30	-0.1			
CN2	39.98	63	iPd	54	37.00	0.4			
	5.0s	1000.00nm			5.7mb X				
Z	15s	43.00um			6.4MsZ X				
N	12s	33.00um							
E	12s	16.00um							
		pP		54	45.00	27kmX			
		PP		56	12.00				
		eS		00	37.00				
PSZ	40.01	303	eP	54	37.30	0.4			
SSE	40.01	84	P	54	37.50	0.5			
	6.0s	2.10nm			3.0mb X				
Z	20s	13.40um			5.8MsZ				
N	14s	36.00um							
E	14s	10.80um							
		S		00	43.00				
		sS		00	52.00				
SOD	40.07	334	iP	54	37.30	0.2			
OHR	40.30	293	eP	54	31.50	-7.9X			
	1.2s	0.09nm			2.3mb X				
		e		55	09.50				
		e		55	54.80				
		e(PP)		56	22.50				
ITM	40.37	286	eP	54	38.70	-1.3			
KBN	40.39	292	eP	54	39.00	-1.0			
PHP	40.45	294	iPc	54	39.90	-0.6			
OZH	40.52	94	eP	54	42.50				



E	16s	11.50um				BLS2	47.17	320	iP	55	36.00	1.3	GRC	51.31	305	P	56	06.01	-0.6	
		e	57	01.50		SAX	47.17	304	ePd	55	34.40	-0.7	MRRJ	51.41	61	eP	56	06.30	-1.1	
		S	01	44.00		MDI	47.23	302	P	55	35.00	-0.2	AGO	51.61	303	P	56	08.53	-0.4	
RIY	44.10	300	eP	55	10.00	-0.3	VDL	47.24	303	ePd	55	34.80	-0.7	BGF	51.66	304	iPd	56	08.50	-0.8
MMN	44.15	292	P	55	12.20	1.5	ODD1	47.30	321	eP	55	35.50	-0.1		1.2s	77.35nm			5.5mb	
CLL	44.20	309	iPd	55	11.20	0.2	SLE	47.63	304	ePd	55	37.60	-0.8	LBL	51.76	302	P	56	09.95	-0.1
	1.8s	180.00nm			5.6mb		BOB	47.64	300	P	55	39.30	0.7	PYM	51.78	303	P	56	09.78	-0.5
		(PP)	57	14.60			KAGJ	47.66	79	eP	55	38.80	0.0	MAF	51.94	304	iPd	56	11.10	-0.3
CZI	44.22	291	P	55	10.10	-1.2	TMA	47.73	302	ePd	55	38.10	-1.3	ASAJ	51.99	59	eP	56	10.90	-0.9
VOY	44.32	301	iPd	55	12.20	0.0	ZLA	47.76	304	eP	55	38.60	-0.8	TCF	52.16	304	iPd	56	12.80	-0.3
MGR	44.41	293	P	55	12.50	-0.4	SHK	47.80	74	eP	55	38.50	-1.4	TSM	52.52	117	ePd	56	14.90	-1.2
TRI	44.46	301	ePd	55	13.20	0.0	ABH	47.84	307	eP	55	40.18	0.2	LSF	52.62	304	iPd	56	15.60	-0.9
		e	05	13.00			VAI	47.85	302	P	55	38.70	-1.4	CAF	52.66	302	iPd	56	16.80	0.0
		e	09	44.00			WIT	47.91	311	eP	55	41.50	1.1		1.6s	171.00nm			5.7mb	
		i	13	10.00					e	57	36.00		RJF	52.91	303	iPd	56	18.60	-0.1	
RBL	44.47	302	P	55	13.50	0.1	BER	47.92	322	eP	55	41.00	0.6		1.2s	124.95nm			5.7mb	
SGO	44.48	293	P	55	14.00	0.6	FEL	47.92	305	eP	55	40.18	-0.6	ETER	52.94	299	eP	56	19.00	0.1
KBA	44.52	303	iPd	55	13.60	-0.3	WTS	47.95	310	iPd	55	40.90	0.2	HOOU	52.98	61	eP	56	19.30	0.1
	1.2s	138.00nm			5.7mb			0.9s	148.00nm			6.1mb	LDF	53.03	307	iPd	56	18.30	-1.2	
		i	55	21.30					i	55	45.30			1.6s	323.40nm				6.0mb	
		iPP	57	32.80					e	57	35.00		EKA	53.12	316	P	56	19.00	-1.1	
WET	44.52	306	eP	55	14.00	0.3	GWF	47.96	306	P	55	40.55	-0.4		1.2s	105.20nm			5.7mb	
	2.0s	290.00nm			5.8mb		OCF	48.03	104	eP	55	31.50	-10.3X	FLN	53.21	308	iPd	56	19.60	-1.2
Z	10s	15.00um			6.2MsZx		YONJ	48.17	73	eP	55	41.40	-1.4		1.2s	124.95nm			5.7mb	
KGM	44.56	134	eP	55	15.50	1.2	CDF	48.30	306	P	55	42.57	-1.1	LPO	53.32	302	iPd	56	21.30	-0.4
SOI	44.60	290	P	55	14.30	-0.1	PCP	48.32	300	P	55	42.97	-0.9		1.4s	78.40nm			5.5mb	
GMB	44.72	290	P	55	16.70	1.1	MMK	48.36	302	eP	55	43.30	-1.0	LFF	53.55	303	iPd	56	23.00	-0.3
BHG	44.73	304	iPd	55	15.60	0.2	ORX	48.44	302	P	55	42.66	-2.2		1.4s	165.55nm			5.8mb	
BSS	44.79	294	P	55	16.70	0.7	ORO	48.45	302	P	55	44.00	-0.9	GRR	53.55	307	iPd	56	22.20	-1.1
DUI	44.83	295	P	55	16.50	0.1	MOF	48.51	305	P	55	44.80	-0.5		1.4s	278.80nm			6.1mb	
FVI	44.98	302	P	55	17.10	-0.3	PGF	48.52	298	iPd	55	44.90	-0.6	MFF	53.62	305	iPd	56	22.80	-1.1
HOF	45.02	307	iPd	55	18.00	0.3		1.4s	104.55nm			5.7mb		1.6s	217.65nm				5.9mb	
	1.8s	140.00nm			5.6mb		CKI	48.54	300	P	55	45.10	-0.3	KUSJ	53.74	60	eP	56	23.80	-0.9
LOF	45.02	333	iP	55	15.75	-1.6	KBS	48.58	347	iPc	55	44.00	-1.3	LPF	53.78	307	iPd	56	24.00	-0.9
NSS	45.02	328	iPc	55	16.17	-1.3	PGP	48.61	106	iPc	55	47.00	0.7		1.4s	74.05nm			5.5mb	
ATN	45.02	290	P	55	17.30	-0.6		1.0s	41.00nm			5.4mb	EPF	54.44	301	iPd	56	28.50	-1.5	
NB2	45.04	323	P	55	17.10	-0.6	FIN	48.64	300	P	55	44.82	-1.5		1.4s	69.70nm			5.5mb	
MOX	45.14	308	iPd	55	19.50	0.8	MEM	48.68	309	Pd	55	46.50	0.1	BTH	54.79	301	P	56	35.00	2.5
	1.6s	167.00nm			5.7mb		DIX	48.72	302	ePd	55	46.80	-0.4	DAG	54.83	344	iPc	56	31.20	-1.2
Z	10s	15.70um			6.2MsZx		BSF	48.74	305	iPd	55	46.70	-0.4			iP	00	43.50		
N	12s	18.70um						1.4s	226.55nm			6.0mb	EBR	55.11	298	eP	56	35.00	0.1	
E	12s	7.10um					ROB	48.85	300	P	55	46.87	-1.1			e	01	48.00		
		i	55	37.00			IMI	48.94	300	P	55	48.30	-0.3	EROO	55.17	298	eP	56	35.00	-0.3
		i	55	53.00			HAU	48.99	305	iPd	55	48.70	-0.2	DLE	55.58	314	iPd	56	38.10	0.0
		eS	02	03.00				1.3s	129.95nm			5.8mb		1.0s	116.00nm				5.9mb	
SDI	45.29	295	P	55	20.10	0.1	EMS	49.05	303	ePd	55	49.00	-0.6			e	00	53.00		
AQU	45.43	296	P	55	22.10	1.0	TKSJ	49.06	74	P	55	49.40	-0.2	BKB2	55.63	123	iPc	56	40.00	1.1
ARV	45.49	298	P	55	22.00	0.5	VITF	49.18	306	P	55	50.08	-0.2	ECP	55.81	313	eP	56	38.70	-1.0
AZI	45.49	296	P	55	22.10	0.6	ENR	49.18	300	P	55	49.53	-1.0		0.9s	200.00nm			6.1mb	
GRF	45.52	307	iPd	55	22.90	1.2	DOI	49.23	300	P	55	49.40	-1.5	DCN	55.98	315	iPd	56	40.40	-0.5
	1.8s	483.00nm			6.2mb		STV	49.24	300	P	55	49.12	-1.9		1.0s	383.00nm			6.4mb	
Z	18s	11.00um			5.8MsZ		PPR	49.26	111	ePc	55	53.00	1.7	ECB	55.99	313	eP	56	40.20	-0.8
		e	55	27.50			SBF	49.27	300	iPd	55	51.00	-0.2		0.9s	152.00nm			6.0mb	
		e	55	40.80			LPG	49.31	302	iPd	55	51.80	0.0	DAV	56.15	108	eP	56	43.00	0.3
RGS	45.54	325	eP	55	33.50	11.9X		1.4s	204.20nm			5.9mb	ECRI	56.55	301	eP	56	45.20	-0.2	
MNO	45.67	290	P	55	22.50	-0.7	LPL	49.32	302	iPd	55	51.90	0.1	LWI	56.58	237	iPd	56	44.40	-1.6
FUR	45.72	305	iPd	55	24.00	0.7	PZZ	49.33	301	P	55	49.94	-1.8	ETOR	56.91	299	eP	56	46.80	-1.1
	1.8s	44.00nm			5.1mb		RRL	49.44	301	P	55	51.99	-0.7	AKU	57.47	331	iP	56	52.30	0.9
RSM	45.74	299	P	55	24.50	1.1	BNI	49.48	301	P	55	52.40	-0.5		1.4s	204.65nm			6.0mb	
MEU	45.74	289	P	55	24.70	1.0	FOUF	49.54	301	iPd	55	52.90	-0.2	EALH	57.62	295	eP	56	53.20	0.4
ASS	45.79	297	P	55	25.40	1.5	DOU	49.67	308	P	55	54.00	0.0	TRT	57.83	132	ePd	56	53.20	-1.3
CTI	45.85	302	P	55	24.10	-0.3			e	00	10.90			1.1s	83.60nm				5.7mb	
RMP	46.06	296	P	55	25.90	-0.2			S	03	06.00		EVIA	58.08	297	eP	56	55.00	-1.2	
RDP	46.07	296	P	55	26.00	-0.1	UCC	49.67	309	P	55	56.00	2.0	VAL	58.15	314	eP	56	55.00	-1.3
OGA	46.12	303	iPd	55	26.00	-0.6	SNF	49.78	309	P	55	55.30	0.5			S	05	05.00		
GIB	46.15	290	P	55	26.20	-0.7			e	00	11.50		GUD	58.44	299	eP	56	57.80	-1.0	
SFI	46.16	299	P	55	27.90	1.2	FRF	49.90	299	iPd	55	55.50	-0.4	ENIJ	58.56	295	eP	56	58.80	-0.7
PGD	46.26	299	P	55	29.00	1.2		1.4s	182.95nm			5.9mb	TOL	58.68	299	iPc	56	59.50	-0.8	
MCT	46.56	290	P	55	31.20	1.0	TSRJ	49.97	72	P	55	56.80	0.2			ePP	59	10.00		
USI	46.57	291	P	55	29.60	-0.5	LMR	50.06	299	iPd	55	56.80	-0.4			iPPP	01	13.00		
BAG	46.60	103	eP	55	31.90	1.1		1.4s	91.50nm			5.6mb			iS	05	08.00			
		e	59	44.30			LRG	50.13	299	iPd	55	57.70	0.0			eSS	06	48.00		
FIR	46.61	299	eP	55	32.00	1.7		1.4s	139.40nm			5.7mb	EBAN	59.19	297	eP	57	03.00	-0.9	
		S	02	16.00			WKYJ	50.16	73	eP	55	58.40	0.3	BCAO	59.33	251	ePd	57	01.50	-3.6X
FAI	46.64	289	P	55	32.00	1.4	LBF	50.80	304	iPd	56	01.80	-1.0		0.9s	123.00nm			6.0mb	
SAL	46.71	301	P	55	31.60	0.6		1.6s	121.25nm			5.6mb			ePc	57	05.64	14kmX		
SHNJ	46.73	75	eP	55	32.40	1.0	LOR	50.80	305	iPd	56	01.80	-1.0			i	58	23.90		
OSS	46.75	303	ePd	55	31.10	-0.5		1.4s	37.15nm			5.1mb			i	59	59.00			
CVP	46.84	101	eP	55	34.00															



	Z	20s	3.55um	6.1msz
			(PP)	09 28.00
			LR	54 10.00
ARE	142.62	293	ePKP	06 37.00 0.8
NNA	143.29	305	ePKP	06 33.00 -4.1
	1.0s	20.00nm		
ANT	146.01	282	ePKP	06 40.20 -1.2
RTLL	147.79	268	ePKPd	06 44.20 0.0
RTRS	148.16	271	ePKPc	06 46.00 1.3
FCH	149.90	266	ePKP	06 52.50 4.8
SAN	150.23	266	ePKP	06 52.20 4.4
LCCH	150.96	266	ePKP	06 54.00 5.1
LVN	150.97	265	iPKPd	06 53.60 4.8
	S.D. = 1.1 on 439 of 488 obs.			
	MAR 05, 1990	20h	51m	13.06 ± 0.36
	36.738 N ± 9.8km		73.061 E ± 6.2km	
	DEPTH = 10.0km (geophysicist)			
	5.7mb ( 15 obs.)			
	NORTHWESTERN KASHMIR			(720)
KSH	3.56	39	ePn	52 17.00 7.4
			Sn	53 02.00
GBA	23.37	169	Pd	56 24.70 2.1
	1.1s	157.60nm		5.5mb
NST	31.91	124	eP	57 59.00 18.9
KHL	34.33	286	eP	57 59.00 -2.9
ELL	34.36	283	eP	58 01.00 -1.3
SUF	38.61	327	iP	58 36.30 -1.3
	0.9s	148.60nm		5.7mb
NUR	38.61	324	iP	58 36.60 -1.1
	1.0s	170.00nm		5.7mb
SNY	38.97	67	eP	58 42.20 1.2
	0.8s	40.00nm		5.1mb
KRA	40.00	307	iP	58 52.50 3.1
			i	59 01.30
SSE	40.00	84	P	58 50.20 0.6
	1.2s	80.00nm		5.3mb
CN2	40.02	63	P	58 48.00 -1.7
SOD	40.23	334	iP	58 50.00 -1.1
KEV	41.20	338	iP	58 57.70 -1.3
MDJ	42.84	61	eP	59 12.00 -0.8
HFS	43.91	322	eP	59 19.90 -1.3
	0.8s	177.70nm		5.9mb
TDS	44.04	292	P	59 22.50 -0.1
CZI	44.31	291	iP	59 22.00 -2.7
KGM	44.42	134	eP	59 44.00 18.2
MGR	44.50	293	P	59 26.00 -0.3
SGO	44.58	293	P	59 27.00 0.1
TRI	44.58	301	iPd	59 28.10 1.3
RBL	44.59	302	P	59 29.00 2.0
KBA	44.63	303	eP	59 28.00 0.5
	1.8s	121.00nm		5.5mb
			i	59 32.70
			i	59 41.10
			e	01 19.00
			i	01 47.60
SOI	44.69	290	P	59 26.50 -1.3
FVI	45.10	302	P	59 30.50 -0.4
ATN	45.11	290	P	59 32.50 1.3
NB2	45.19	323	P	59 30.00 -1.6
SDI	45.39	295	P	59 35.50 2.1
ARV	45.59	298	P	59 36.50 1.5
ASS	45.89	297	P	59 38.00 0.6
CTI	45.97	302	P	59 40.00 2.0
RMP	46.17	296	P	59 39.50 0.0
PGD	46.37	299	P	59 42.50 1.2
FAI	46.73	289	P	59 49.50 5.5
CVP	46.78	100	eP	59 46.00 1.4
BDI	47.12	299	P	59 46.50 -0.6
BOB	47.75	300	P	59 54.00 1.9
VAI	47.97	302	P	59 56.00 2.4
FEL	48.05	305	P	59 54.88 0.4
GWF	48.09	306	P	59 56.59 2.0
CDF	48.42	306	P	59 58.83 1.5
BBS	48.47	304	P	59 57.08 -0.5
ORO	48.56	302	P	59 57.00 -1.4
MOF	48.63	305	P	00 00.62 1.7
BSF	48.86	305	P	00 02.33 1.7
VITF	49.31	306	P	00 06.02 2.1
DOI	49.34	301	P	00 04.00 -0.4
8NI	49.59	301	P	00 05.50 -0.9
MRRJ	51			



MBC	1.0s	220.00nm	6.1mb	DZM	1.0s	3.40nm	4.3mb	LRM	78.64	41 ePd	14 07.00	0.7		
	67.02	3 ePd	02 06.30	-1.4		56.23	152 iPc	05 04.00	0.3	CMB	78.71	51 ePd	14 07.30	0.7
	1.0s	142.00nm	6.1mb	CMS	60.49	176 eP	05 32.50	-0.6	PRS	79.07	53 ePd	14 09.00	0.5	
MBL	72.55	135 eP	02 42.00	-0.3	FORR	61.16	193 iPc	05 36.00	-1.7	LLA	79.19	53 eP	14 09.90	0.8
SHGH	72.94	265 eP	02 42.00	-2.8	INK	61.23	25 eP	05 38.00	0.2	KVN	79.55	49 eP	14 12.00	0.8
TEGH	73.08	264 eP	02 43.00	-2.6	CAN	64.55	174 iPd	06 00.20	0.0	PRI	79.65	53 eP	14 10.80	-0.8
LEGH	73.22	264 eP	02 44.00	-2.4	CNB	64.58	173 eP	06 00.00	-0.4	FRI	79.76	52 eP	14 12.50	0.5
WEGH	73.37	265 eP	02 46.00	-1.3	TOO	66.53	177 eP	06 13.00	0.2	SBB	82.37	53 eP	14 26.00	0.3
INK	73.40	10 eP	02 45.00	-1.5	WDC	75.54	52 ePc	07 07.70	0.5	PAS	82.48	53 eP	14 26.00	-0.1
	1.0s	104.00nm	5.9mb				e	07 12.50		GSC	82.65	52 eP	14 27.00	-0.1
MTN	73.57	120 eP	02 48.00	-0.3	NEW	75.55	43 eP	07 07.50	0.3	KBA	82.92	324 eP	14 29.00	0.6
		i	03 21.90			0.7s	15.60nm	5.1mb			0.7s	5.20nm	4.4mb	
WIGH	73.74	264 eP	02 48.00	-1.4	MIN	76.29	51 e(P)	07 12.20	0.6	RVR	83.09	53 eP	14 29.00	-0.2
FBA	73.77	17 eP	02 47.80	-1.0	ORV	76.72	52 ePc	07 13.90	0.1	PLM	83.82	53 eP	14 33.00	-0.2
	0.9s	12.00nm	4.9mb		BRK	76.94	54 e(P)	07 12.60	-2.5	TPC	83.88	52 eP	14 26.00	-7.3X
MRWA	77.00	142 eP	03 08.00	0.3	PCC	77.02	54 ePc	07 12.80	-2.8	BAR	84.37	54 eP	14 36.00	0.3
MUN	79.38	144 eP	03 20.60	-0.1	CMB	78.19	53 ePc	07 22.70	0.7	CDF	84.68	328 eP	14 37.50	0.5
NWAO	80.65	144 eP	03 26.50	-0.9			e	07 27.40			0.7s	4.40nm	4.4mb	
COOL	80.96	140 eP	03 29.00	-0.1	PRS	78.28	55 ePc	07 23.10	0.6	HAU	85.39	328 eP	14 40.60	0.2
PMG	83.08	107 eP	03 43.60	3.2X	LLA	78.45	55 ePc	07 24.10	0.6	LPG	87.15	327 eP	14 49.40	0.1
FORR	84.72	135 iPd	03 49.00	0.6	PRI	78.87	55 eP	07 25.90	0.0		0.5s	5.10nm	4.7mb	
FFC	88.80	357 eP	04 07.50	-0.7	FRI	79.15	54 ePc	07 27.70	0.5	SSF	87.33	329 eP	14 50.00	0.2
	1.0s	120.00nm	6.1mb		LRM	79.53	43 eP	07 30.40	0.9	FLN	87.53	333 eP	14 50.60	-0.1
CTA	89.14	116 iPc	04 10.00	-0.2	FFC	80.10	32 eP	07 33.00	1.0		0.5s	2.90nm	4.4mb	
	1.0s	25.00nm	5.4mb			1.0s	24.00nm	5.1mb		LDF	87.54	332 eP	14 50.60	-0.1
		e	05 34.00		HFS	81.36	337 eP	07 39.90	1.4	AVF	87.61	329 eP	14 51.00	-0.1
EDM	90.24	4 iPc	04 14.60	-0.4		0.4s	2.10nm	4.5mb			0.7s	3.30nm	4.3mb	
	0.8s	89.00nm	6.1mb		NB2	81.53	338 P	07 46.20	6.7X	GRR	87.98	333 eP	14 53.10	0.3
PNT	93.59	8 eP	04 31.00	0.5		1.0s	15.00nm	5.0mb		BGF	88.01	329 eP	14 53.00	0.0
	1.0s	31.00nm	5.7mb		ZOBO	149.60	71 PKP	15 14.00	5.6X		0.5s	1.45nm	4.1mb	
BRS	98.34	118 iPd	05 10.80	18.6X		1.0s	28.75nm			LPF	88.35	332 eP	14 55.30	0.7
		i	05 14.00		LPB	149.75	72 ePKP	15 11.00	2.6X		0.5s	2.20nm	4.3mb	
KVN	103.89	9 e(Pdiff)	17.90	0.7		1.0s	60.00nm			MAF	88.39	329 eP	14 55.80	1.0
CLC	107.14	9 ePdiff	48.00	16.4X			i	15 18.00			0.5s	2.20nm	4.3mb	
CAI	110.05	277 ePdiff	55.50	10.6X	CCH	151.80	71 PKP	15 13.80	2.5X	TCF	88.49	330 eP	14 55.70	0.4
	S.D. = 1.4	on 67 of 77 obs.				S.D. = 1.4	on 35 of 44 obs.				0.5s	1.45nm	4.1mb	
<hr/>														
7 MAR 05, 1990 20h 51m 14.41± 8.59s														
39.843 N ±54.2km 23.839 E ±41.1km														
DEPTH = 10.0km (geophysicist)														
AEGEAN SEA (365)														
PAIG	0.15	305 eP	51 17.20	-0.6	SHK	2.44	251 iPd	03 40.00	0.5	LSF	88.80	330 eP	14 57.20	0.5
OUR	0.50	13 eP	51 24.30	-0.3		0.6s	1173.33nm				0.5s	1.80nm	4.2mb	
SOH	1.05	339 eP	51 34.40	0.2	TTA	49.52	34 eP	10 58.70	-0.4	MFF	89.18	331 eP	14 59.00	0.5
LIT	1.07	284 eP	51 34.50	0.0	SVW	49.73	36 ePd	11 01.20	0.5		0.5s	3.65nm	4.5mb	
SRS	1.29	352 eP	51 54.20	15.9X	BRW	49.84	23 ePd	11 01.30	0.0	ALQ	89.29	46 eP	15 00.00	0.5
KNT	1.50	332 eP	51 41.50	0.1	IMA	50.56	30 ePd	11 06.60	-0.3	LFF	90.18	330 eP	15 04.00	0.9
	S.D. = 0.5	on 5 of 6 obs.				1.0s	27.50nm	4.5mb			0.7s	8.80nm	4.8mb	
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MAR 05, 1990 20h 55m 24.15± 0.40s														
29.224 N ± 6.6km 141.848 E ±11.5km														
DEPTH = 33.0km (normal)														
5.1mb ( 9 obs.)														
SOUTH OF HONSHU, JAPAN (211)														
KAKJ	7.10	349 P	56 17.20	-51.2X	KDC	51.58	41 ePd	11 13.30	-1.0	<hr/>				
		S	57 10.40		PMR	52.81	36 ePd	11 22.30	-1.0	* MAR 05, 1990 21h 34m 20.71± 3.61s				
CHJJ	7.22	341 P	56 11.60	-58.4X		0.8s	44.50nm	4.8mb		14.834 S ±25.0km 167.292 E ± 8.2km				
		S	57 12.40		FBA	53.06	31 ePd	11 24.80	-0.3	DEPTH = 148.3 ± 32.2 km				
HOOJ	13.18	5 P	58 29.20	-2.3	WB5	54.93	181 eP	11 37.90	-1.1	4.6mb ( 7 obs.)				
KUSJ	14.04	9 eP	58 38.40	-4.3X	WRA	55.00	181 Pc	11 38.40	-1.0	VANUATU ISLANDS (186)				
		eS	01 03.60			0.5s	2.80nm	3.9mb		DZM	7.24	186 iP	36 04.00	-1.3
ASAJ	14.88	2 P	58 54.60	0.8	INK	58.04	26 iPd	11 59.10	-1.0			iS	37 23.90	
PJG	15.81	169 e(P)	59 07.80	1.8		0.6s	30.00nm	4.9mb		BRS	18.40	225 iPc	38 28.00	0.8
GUMO	15.81	169 e(P)	59 07.80	1.8	MBC	59.47	16 ePd	12 08.70	-1.1	PMG	20.41	283 eP	38 50.00	2.1
	1.1s	358.07nm	5.4mb			0.5s	22.00nm	4.9mb		CTA	20.73	252 iPc	38 52.30	1.1
	Z 22s	2.64um			KEV	63.27	338 eP	12 39.00	4.1X		1.3s	96.15nm	5.1mb	
GUA	15.87	169 e(P)	59 06.60	-0.1	SOD	64.60	336 iP	12 43.00	-0.4	RMQ	20.83	233 iPd	38 53.20	1.0
	1.0s	160.00nm	5.1mb		SUF	67.26	332 iP	12 59.20	-1.0	COO	21.11	219 iP	38 56.50	1.5
PIP	22.21	245 ePd	00 18.00	-1.3		0.6s	7.30nm	4.6mb		WB5	31.79	256 eP	40 31.50	-1.8
PGP	24.90	235 iPc	00 47.50	2.0	YKA	67.62	28 eP	13 01.10	-1.2	WRA	31.82	256 Pc	40 31.80	-1.7
		eS	01 02.00			0.8s	7.70nm	4.5mb			1.2s	10.10nm	4.5mb	
PPR	29.03	233 ePd	01 21.50	-1.9	NUR	69.10	330 iP	13 10.70	-0.7	ASPA	32.66	249 iPd	40 39.30	-1.5
PMG	38.75	172 eP	02 45.00	-2.2			i	13 32.00			0.9s	21.00nm	4.9mb	
NST	40.63	260 iPd	03 19.80	17.0X	PNT	72.67	41 eP	13 33.00	0.3	WARB	39.56	247 iPc	41 59.00	20.0X
KKHI	45.12	218 ePc	03 39.80	0.5		0.7s	10.00nm	4.6mb		PMO	43.24	96 iP	42 09.60	0.5
		e	05 21.00		HFS	73.55	334 eP	13 36.50	-1.1		0.6s	15.00nm	4.8mb	
IPM	45.74	245 ePd	03 48.00	3.7X		0.5s	6.50nm	4.6mb		VAH	43.48	97 iP	42 11.20	0.2
	1.0s	36.00nm	5.2mb		EDM	73.58	36 iPd	13 37.70	-0.2		0.6s	5.00nm	4.3mb	
PSI	48.54	245 e(P)	04 09.00	2.7		0.8s	25.00nm	5.0mb		TPT	43.51	96 iP	42 11.70	0.4
WB5	49.35	189 eP	04 10.90	-1.5	NB2	73.79	335 P	13 37.80	-1.2		0.6s	5.00nm	4.3mb	
		e	09 23.20			0.7s	4.20nm	4.2mb		RUV	43.72	97 iP	42 13.20	0.2
WRA	49.41	189 Pd	04 11.70	-1.2	WDC	75.88	50 iPd	13 51.50	0.5		0.6s	10.00nm	4.6mb	
	1.0s	89.00nm	5.7mb		MIN	76.60	50 eP	13 55.20	0.0	SAL	143.61	332 PKP	53 38.00	-1.5
FBA	55.62	29 e(P)	04 59.70	0.9	ORV	77.12	51 ePd	13 57.90	0.0	ARV	143.99	328 PKP	53 39.00	-1.3
					BRK	77.60	52 ePd	14 00.60	0.1	VAI	144.18	334 PKP	53 39.00	-1.4
					BKS	77.62	52 eP	14 01.60	1.0	SFI	144.24	329 PKP	53 40.00	-0.6
						0.8s	31.00nm	5.2mb		PGD	144.34	329 PKP	53 40.50	-0.5
					FFC	77.64	30 iPd	14 00.30	-0.1	ASS	144.44	327 PKP	53 40.00	-1.1
						0.6s	15.00nm	5.0mb		TDS	144.53	320 PKP	53 41.00	-0.3
					PCC	77.74	53 ePd	14 01.30	0.1	ORX	144.69	335 PKP	53 40.10	-1.4
					MHC	78.31	53 ePd	14 05.10	0.6	ORO	144.70	335 PKP	53 39.00	-2.5X
										FLN	144.70	346 ePKP	53 39.60	-1.6
											0.			



05d 21h

BOB	144.75	332	PKP	53	41.00	-0.6	PKI	13.92	128	P	07	36.20	-4.7X	MLR	36.08	299	eP	11	27.00	2.6
BDI	144.75	330	PKP	53	40.00	-1.6	GUN	13.99	125	P	07	36.60	-5.2X	CMP	36.73	299	ePd	11	29.00	-0.7
AZI	144.76	325	PKP	53	41.00	-0.5	LSA	16.71	110	P	08	14.80	-2.3	SUF	38.57	327	eP	11	45.00	0.1
LDF	144.77	345	ePKP	53	39.90	-1.5	N	10s	5.00um						0.7s	25.90nm			5.1mb	
	0.6s	4.00nm					E	10s	1.78um					NUR	38.57	324	iP	11	43.50	-1.4
LOR	144.84	340	ePKP	53	41.00	-0.6	TEH	17.49	273	eP	08	35.00	8.4X		0.8s	32.30nm			5.1mb	
	0.6s	4.95nm					BOM	17.81	181	eP	08	31.20	0.8	SNY	38.98	67	eP	11	49.60	1.0
PII	145.04	330	PKP	53	40.00	-1.9			eS	11	54.70		VAY	39.01	293	eP	11	50.20	1.3	
LBF	145.05	340	iPKPc	53	41.70	-0.3	IR2	17.89	273	eP	08	22.50	-9.1X	SPC	39.79	305	eP	11	53.30	-2.2
	0.6s	7.20nm					IR4	17.97	272	eP	08	33.00	0.5	KRA	39.96	307	ePd	11	57.50	0.9
SSF	145.14	340	iPKPc	53	41.90	-0.2	IR1	18.10	272	eP	08	34.00	-0.2		0.7s	30.00nm			5.1mb	
	0.6s	18.95nm					IR7	18.12	273	eP	08	35.00	0.6			e		12	02.00	15km
GRR	145.14	346	ePKP	53	41.20	-0.8	POO	18.18	178	iP	08	35.70	0.5	SSE	40.02	84	P	12	00.60	3.2X
	0.6s	9.90nm						iS	12	27.50				1.0s	20.00nm			4.8mb		
LPG	145.30	336	ePKP	53	43.10	0.3	HYB	19.89	164	iPd	08	53.30	-2.0	Z	20s	0.90um			4.6Msz	
	0.6s	11.70nm						1.0s	70.00nm			4.9mb	N	15s	2.00um					
PCP	145.32	333	PKP	53	42.87	0.3			eS	12	36.70				eS		18	05.00		
SMF	145.39	340	ePKP	53	42.30	-0.2	KER	21.21	271	eP	09	10.00	1.0	CN2	40.03	63	eP	11	58.50	1.2
	0.9s	11.45nm					GTA	21.22	75	eP	09	07.80	-1.3	N	13s	1.60um				
AVF	145.43	340	ePKP	53	42.60	0.1	Z	12s	2.40um			4.8MszX	E	13s	0.60um					
LPF	145.52	346	ePKP	53	42.90	0.3	N	10s	2.20um						pP		12	03.00	15km	
	0.6s	3.60nm						S	13	00.00					eS		17	59.00		
CKI	145.53	333	PKP	53	42.50	-0.3			sS	13	14.00		SOD	40.19	334	iP	11	58.40	0.0	
BNI	145.70	335	PKP	53	44.50	1.2	TAB	21.23	282	eP	09	12.00	2.8	IPM	41.06	135	ePc	12	08.20	2.2
FIN	145.73	333	PKP	53	43.38	0.2	BBU	21.89	248	iP	09	14.50	-1.1	SRO	41.16	303	eP	12	06.50	0.0
RRL	145.77	335	PKP	53	44.72	1.2	BJA	21.90	247	iP	09	14.90	-0.9			e		14	05.50	
BGF	145.80	341	ePKP	53	43.80	0.6	BEE	21.95	247	iP	09	15.50	-0.8	KEV	41.16	338	eP	12	06.00	-0.3
	0.6s	6.30nm					SLY	22.23	275	ePd	09	22.00	3.0X	SOP	42.35	303	eP	12	18.00	1.7
ROB	145.81	333	PKP	53	43.69	0.3			ePP	10	02.50		MDJ	42.85	61	eP	12	21.50	1.1	
PZZ	145.97	334	PKP	53	42.97	-0.8			eS	13	29.50		Z	15s	2.30um			5.2MszX		
IMI	146.11	333	PKP	53	44.00	0.1			eSS	13	52.50		N	12s	1.10um					
MAF	146.18	341	ePKP	53	45.20	1.3			eSSS	14	12.50				eS		18	45.00		
	0.6s	3.60nm					GBA	23.40	169	Pd	09	31.20	0.6	PRU	43.44	307	eP	12	25.00	-0.1
TCF	146.24	341	ePKP	53	45.10	1.1		0.7s	65.40nm			5.3mb			e		14	17.50	668kmX	
	0.9s	6.55nm					BHD	23.68	270	eP	09	32.00	-1.2	VBY	43.54	300	e(P)	12	28.00	2.0
SBF	146.35	333	ePKP	53	45.70	1.4			eS	13	52.50		BRG	43.74	308	iP	12	28.00	0.4	
	0.6s	11.70nm					MSL	23.96	278	ePd	09	40.50	4.6X		2.0s	52.00nm			5.0mb X	
LSF	146.48	342	ePKP	53	45.70	1.4			eS	14	06.50				i		12	35.10	24km	
	0.6s	5.40nm					LZH	24.75	82	eP	09	45.00	1.1			e		14	07.00	
MFF	146.63	344	ePKP	53	45.90	1.4		2.5s	70.00nm			4.8mb X	HFS	43.87	322	eP	12	27.50	-1.0	
	0.6s	5.40nm					Z	20s	2.30um			4.7Msz		0.6s	26.60nm			5.2mb		
PGF	146.66	330	ePKP	53	46.20	1.3	N	12s	1.70um				Z	15s	0.81um			4.8MszX		
	0.6s	2.70nm					E	13s	1.60um						LR		29	38.00		
FRF	146.93	334	ePKP	53	46.80	1.7			pP	09	53.00	28km	LJU	43.95	301	e(P)	12	30.50	1.1	
	0.6s	2.70nm						sP	09	58.00		TDS	44.01	292	P	12	31.50	1.6		
LMR	147.17	334	ePKP	53	47.40	1.9			PP	10	18.00		CEY	44.08	301	e(P)	12	32.00	1.6	
	0.6s	5.40nm						eS	14	07.00		KHC	44.15	306	P	12	29.90	-1.1		
RJF	147.33	341	ePKP	53	48.40	2.7X			sS	14	18.00				e		13	53.20	430kmX	
	0.5s	2.20nm					CD2	26.12	94	eP	09	57.40	0.9	CZI	44.28	291	P	12	31.30	-0.7
CAF	147.50	340	ePKP	53	48.90	2.9X		Z	14s	1.00um		4.5MszX	CLL	44.29	309	eP	12	33.00	1.0	
	0.5s	1.45nm					N	12s	3.20um				VOY	44.39	301	e(P)	12	33.50	0.4	
BCAO	147.56	255	iPKPc	53	49.10	2.1			eS	14	28.00		MGR	44.47	293	P	12	35.00	1.4	
	0.5s	8.00nm					KMI	27.89	106	eP	10	12.50	-0.5	TRI	44.54	301	eP	12	35.50	1.4
LFF	147.90	342	ePKP	53	50.00	3.4X		Z	14s	1.50um		4.7MszX	SGO	44.54	293	P	12	35.00	0.8	
	0.6s	5.40nm					N	13s	1.10um				RBL	44.55	302	P	12	33.50	-0.8	
LPO	147.99	341	ePKP	53	50.20	3.4X		E	12s	0.50um			KBA	44.59	303	eP	12	34.50	-0.3	
	0.5s	5.10nm					CHG	28.93	121	eP	10	26.40	4.2X	FVI	45.06	302	P	12	39.00	0.8
EPF	149.75	341	ePKP	53	54.80	5.2X	CHTO	28.93	121	eP	10	22.60	0.4	ATN	45.07	290	P	12	40.00	1.5
	0.6s	2.70nm						1.3s	7.35nm			4.3mb	NB2	45.15	323	P	12	37.00	-1.9	
								pP	10	28.10	19km			0.8s	18.80nm			5.1mb		
							BTO	28.99	71	eP	10	24.00	1.4	MOX	45.23	308	eP	12	39.00	-0.6
							N	16s	2.80um				SDI	45.35	295	P	12	42.50	1.8	
							E	16s	4.80um				AZI	45.56	296	P	12	46.00	3.8X	
								eS	10	33.00		ARV	45.56	298	P	12	42.30	0.0		
								eS	15	16.00		GRF	45.61	307	eP	12	43.30	0.7		
							XAN	29.28	85	P	10	24.00	-1.2	ASS	45.85	297	P	12	46.00	1.3
							N	10s	1.10um				CTI	45.93	302	P	12	45.50	0.2	
							E	10s	0.90um				RDP	46.13	296	P	12	48.00	1.1	
							HHC	30.14	70	P	10	33.00	0.1	SFI	46.23	299	P	12	49.50	2.0
							Z	18s	4.75um			5.2Msz	PGD	46.34	299	P	12	50.00	1.4	
							N	11s	1.46um				SAL	46.79	301	P	12	52.00	0.1	
							E	15s	2.17um				MME	46.98	299	P	12	55.50	1.7	
							GYA	30.29	100	P	10	34.00	-0.5	BDI	47.08	299	P	12	55.00	0.6
							N	15s	2.40um				MDI	47.31	302	P	12	57.00	1.0	
							E	15s	0.60um				BOB	47.72	300	P	12	58.00	-1.4	
							TIY	31.23	76	eP	10	44.80	2.3	VAI	47.93	302	P	12	58.50	-2.4
							N	12s	1.70um				PGF	48.59	298	eP	13	07.80	1.5	
								S	15	47.00				0.9s	13.10nm			5.0mb		
							BBTK	31.56	288	eP	10	46.00	0.5	BSF	48.82	305	eP	13	07.50	-0.5
							BJI	33.73	71	eP	11	06.00	1.8		0.8s	8.05nm			4.8mb	
							Z	18s	4.10um			5.2Msz	HAU	49.07	305	eP	13	09.70	-0.1	
							E	16s	2.09um					0.8s	5.35nm			4.6mb		
								eS	16	28.00			DOI	49.31	301	P	13	10.00	-1.7	
							YLV	34.04	290	eP	11	02.00	-5.0X	SBF	49.34	300	eP	13	12.00	0.0
							KHL	34.30	286	eP	11	07.00	-2.2		0.9s	26.20nm			5.3mb	
							ELL	34.33	283	eP	11	09.00								



BNI	49.56	301 P	13 11.50	-2.2		MEMT	1.87	45 eP	24 24.20	0.8	KSP	0.50	143 iP	49 34.00	-1.4
FRF	49.97	300 eP	13 16.40	-0.3			S.D. = 1.1	on 8 of 9 obs.				0.3s	38.00nm		
	0.9s	13.10nm		4.9mb									iS	49 43.50	
LMR	50.13	299 eP	13 18.50	0.6		* MAR 06, 1990 01h 19m 57.36±0.54s							iLR	49 51.50	
	0.9s	6.55nm		4.6mb		36.679 N ±12.9km 73.073 E ±10.6km					BRG	1.24	253 iPn	49 49.00	0.6
NAI	50.62	230 iP	13 25.30	3.1X		DEPTH = 10.0km (geophysicist)							iPg	49 49.80	
LBF	50.88	304 eP	13 23.20	-0.4		4.6mb ( 9 obs.)							iSg	50 19.80	
LOR	50.88	305 eP	13 23.20	-0.4		NORTHWESTERN KASHMIR					PRU	1.50	214 Pn	49 52.50	0.2
SMF	51.06	304 eP	13 24.60	-0.3									Pg	49 54.60	
	0.9s	16.40nm		5.0mb		QUE	8.25	220 eP	22 04.10	4.0X			Sn	50 11.50	
SSF	51.17	305 eP	13 25.50	-0.3		MAIO	10.94	272 eP	22 37.00	-0.1			Sg	50 19.00	
AVF	51.34	304 eP	13 26.70	-0.4				eS	24 37.00		CLL	1.77	273 iPn	49 54.20	-2.0
	0.9s	15.55nm		4.9mb		GKN	13.04	128 P	23 07.00	1.5			iPg	49 57.60	
BGF	51.74	304 eP	13 29.50	-0.6				0.4s	9.00nm	5.3mb			iSg	50 22.00	
	0.9s	9.85nm		4.7mb		KKN	13.60	127 P	23 12.00	-0.9	KHC	2.56	215 Pn	50 07.80	0.2
MAF	52.02	304 eP	13 32.10	-0.2				0.6s	19.00nm	5.2mb			Pg	50 13.50	
	0.9s	16.40nm		5.0mb		PKI	13.83	128 P	23 16.00	-0.1			eSg	50 53.00	
TCF	52.24	304 eP	13 33.80	-0.1				0.6s	14.00nm	5.0mb	MOX	2.73	259 ePg	50 17.00	7.0X
	0.8s	12.10nm		4.9mb		GUN	13.91	125 P	23 16.80	-0.3			iSg	50 57.00	
LSF	52.70	304 eP	13 36.80	-0.6				0.5s	9.00nm	4.9mb	WET	2.83	223 iPnd	50 11.90	0.5
	0.8s	6.70nm		4.6mb		HYB	19.79	164 eP	24 40.00	9.2X	KRA	2.87	113 eP	50 14.20	2.2
CAF	52.73	302 eP	13 37.80	0.1		GBA	23.31	169 P	25 16.00	9.7X			eS	50 53.10	
	0.7s	4.40nm		4.5mb				0.4s	1.00nm	3.7mb	VKA	3.00	174 iPgd	50 21.90	8.1X
RJF	52.99	303 eP	13 39.90	0.4		HFS	43.96	322 eP	28 06.00	0.1			iSg	51 05.60	
LDF	53.11	307 eP	13 39.50	-0.9				0.4s	1.30nm	4.1mb	ZST	3.16	164 eP	50 57.60	41.6X
	0.8s	8.05nm		4.7mb		NB2	45.24	323 P	28 16.60	0.3			e	51 08.30	
EKA	53.23	316 P	13 41.00	-0.1				0.6s	2.10nm	4.3mb			e	51 14.30	
	0.8s	8.10nm		4.7mb		MBC	67.07	3 ePd	30 52.80	0.4	GRF	3.33	244 ePn	50 19.40	0.9
FLN	53.30	308 eP	13 39.70	-2.0				0.5s	2.00nm	4.6mb			ePg	50 30.10	
	0.7s	6.60nm		4.7mb		INK	73.45	10 eP	31 31.50	0.3			eSg	51 17.00	
LFF	53.63	303 eP	13 44.20	0.1		YKA	80.98	4 eP	32 12.00	-1.1	SPC	3.50	124 eP	50 20.00	-1.1
	0.7s	11.00nm		5.0mb				0.6s	0.70nm	3.9mb			e	50 27.20	
GRR	53.64	307 eP	13 43.00	-1.2			S.D. = 0.8	on 10 of 13 obs.					e	50 30.00	
	0.8s	17.45nm		5.1mb									e	51 14.20	
MFF	53.71	305 eP	13 44.00	-0.7		MAR 06, 1990 02h 26m 54.00±0.54s					KBA	4.47	202 iPnc	50 34.70	-0.2
	0.8s	6.70nm		4.7mb		44.231 N ± 3.5km 6.693 E ± 4.8km							i	51 57.70	
DAG	54.96	344 ePd	13 50.00	-3.6X		DEPTH = 10.0km (geophysicist)									
	0.9s	33.61nm		5.4mb		FRANCE									
TOL	58.75	299 eP	14 21.00	0.0		ML 2.4 (GEN), 2.2 (LDG).									
BCAO	59.29	251 ePc	14 19.40	-5.6X											
	0.6s	8.00nm		5.0mb		PZZ	0.40	47 P	27 01.98	-0.3					
		ic	14 21.40	7kmX				S	27 08.65						
		ic	14 32.30			STV	0.45	88 P	27 02.91	-0.4					
		id	15 26.10					S	27 09.98						
MBC	66.98	3 eP	15 12.50	-2.5		ENR	0.52	90 P	27 03.93	-0.7					
	0.6s	49.00nm		5.8mb				S	27 11.42		CRM	0.71	259 iPd	59 56.15	-0.3
BUL	70.44	224 eP	15 32.30	-5.0X		SBF	0.65	124 Pg	27 08.40	1.3			S	00 06.40	
	0.8s	14.55nm		5.2mb		FRF	0.67	183 Pg	27 07.00	-0.3	MYM	0.76	244 iPd	59 56.91	-0.1
								Sg	27 13.30				S	00 08.10	
IMA	71.36	18 eP	15 41.70	-0.6		RRL	0.69	5 P	27 07.42	-0.4	BIM	0.93	247 iPd	59 59.40	-0.1
	0.7s	6.40nm		4.8mb				S	27 16.65				S	00 12.70	
TTA	73.19	21 eP	15 52.50	-0.6		LRG	0.81	197 Pg	27 10.00	0.3	FDF	0.94	261 iPd	59 59.57	-0.1
INK	73.37	10 eP	15 51.50	-2.4				Sg	27 20.50				S	00 12.90	
FBA	73.75	17 eP	15 55.50	-0.7		ROB	0.85	85 P	27 10.50	0.1	SLB	1.34	218 eP	00 06.51	1.1
FRB	75.28	343 eP	16 04.00	-1.0				S	27 21.06				eS	00 22.11	
PMR	76.19	19 eP	16 09.80	-0.4		LMR	0.91	189 Pg	27 10.70	-0.7	BBL	1.39	297 eP	00 06.80	0.6
KIC	76.43	268 P	16 10.00	-2.4				Sg	27 21.50		DEG	1.65	330 eP	00 10.00	0.1
TIC	76.49	268 P	16 10.40	-2.3		IMI	0.92	110 P	27 12.03	0.4			S	00 30.00	
TOA	76.51	18 eP	16 12.00	-0.1		FIN	1.09	91 P	27 14.29	-0.2	PAG	1.83	309 eP	00 12.50	0.0
WB5	80.73	123 eP	16 34.70	-1.0		LPG	1.27	2 Pg	27 18.30	0.6			S	00 34.00	
WRA	80.76	123 Pc	16 36.00	0.2		LPL	1.29	1 Pg	27 18.20	0.2	SVB	1.91	213 eP	00 12.81	-0.8
	1.0s	15.10nm		5.0mb			S.D. = 0.6	on 13 of 13 obs.					eS	00 34.33	
YKA	80.89	4 eP	16 32.20	-3.6X		% MAR 06, 1990 02h 44m 10.41±0.89s					SEG	1.97	320 eP	00 14.00	-0.5
	0.6s	10.30nm		5.0mb		37.331 N ± 6.9km 2.097 W ± 8.7km									
SCH	82.47	338 eP	16 43.00	-1.3		DEPTH = 10.0km (geophysicist)									
ASPA	83.08	126 iPc	16 47.10	-0.7		SPAIN									
	1.0s	10.00nm		4.9mb		mbLg 2.7 (MDD).									
PMG	83.11	107 eP	16 42.00	-6.1X		ENIJ	0.37	195 iPgc	44 17.90	-0.2					
EDM	90.21	4 iPd	17 23.40	1.1				eSg	44 22.20		FCH	0.26	291 iPd	18 14.00	0.3
	0.6s	24.00nm		5.6mb		EALH	0.75	45 ePg	44 25.30	0.2	SAN	0.55	267 iPd	18 15.10	0.4
PNT	93.56	8 eP	17 40.00	2.2				eSg	44 35.50				iS	18 27.70	
	S.D. = 1.3	on 125 of 145 obs.				AFC	1.16	267 ePg	44 32.50	0.4	ROCH	0.96	298 iPc	18 17.90	-0.6
								eSg	44 48.00				iS	18 32.50	
* MAR 06, 1990 00h 23m 50.26±1.28s						EVIA	1.34	346 ePn	44 35.00	-0.2	LNv	1.29	245 iPc	18 21.90	0.2
44.287 N ± 7.1km 112.836 W ±12.8km								eSn	44 52.50				iS	18 40.00	
DEPTH = 5.0km (geophysicist)						EBAN	1.58	302 ePn	44 38.30	-0.2	LCCH	1.31	267 iPc	18 22.10	0.1
EASTERN IDAHO								eSn	45 00.00				iS	18 39.80	
ML 3.1 (BUT).							S.D. = 0.4	on 5 of 5 obs.			IHA	1.43	286 eP	18 23.00	-0.4
													eS	18 38.00	
MCMT	0.54	359 iPc	24 00.90	-0.2		* MAR 06, 1990 02h 49m 25.33±1.59s					RTCV	1.99	39 iPd	18 30.90	0.6
LTMT	0.57	65 ePc	24 02.80	1.0		51.243 N ±17.1km 15.827 E ± 7.2km					ZON	2.18	31 iPc	18 31.50	-1.3
BGMT	1.10	31 eP	24 10.50	-1.1		DEPTH = 10.0km (geophysicist)							eS	18 57.00	
IMW	1.42	105 e(P)	24 15.50	-1.6		POLAND							iPd	18 35.30	0.4
PTI	1.46	166 e(P)	24 18.00	0.6		ML 3.6 (GRF), 3.5 (VKA), 3.2					CFA	2.34	40 iPd	19 22.50	
LRM	1.56	10 ePn	24 19.10	0.2		(KBA), 2.8 (KRA).							(S)		
LCCM	1.69	23 eP	24 21.00	0.2											
BUT	1.74	6 ePg	24 24.60	3.2X											
		eSg	24 42.90												



06d 04h

RTLL	2.46	32	iPd	18	36.10	-0.3	MAT	61.36	333	(P)	33	06.00	-1.8	id	43	19.10			
			iS	19	05.00			1.0s	11.00nm				4.9mb	SFI	147.53	327 PKP	42	36.50	4.0X
RTRS	3.27	8	iPd	18	47.60	0.3	MDJ	71.73	332	Pc	34	14.10	0.6	VAI	147.54	333 PKP	42	34.50	2.1X
LPB	16.90	6	eP	21	50.00	1.8	SPA	71.94	180	iPc	34	23.80	9.1X	PGD	147.63	327 PKP	42	35.00	2.1X
ARE	16.94	355	e(P)	21	49.00	0.4		0.9s	32.27nm				5.3mb	ASS	147.69	325 PKP	42	34.50	1.6
ZOBO	17.16	6	Pd	21	50.00	-1.6					34	26.00		MME	147.91	329 PKP	42	36.90	3.5X
	0.8s		4.33nm			3.8mb	SNY	72.56	327	eP	34	17.50	-1.0	BDI	148.06	329 PKP	42	35.80	2.3X
LIC	72.98	70	P	29	16.30	0.3	CN2	73.05	329	Pc	34	21.20	-0.1	ORX	148.07	333 PKP	42	35.60	2.1X
TIC	73.24	70	P	29	17.30	-0.2	XAN	76.68	313	P	34	43.00	0.6	ORO	148.07	333 PKP	42	36.00	2.5X
KIC	73.29	70	P	29	18.00	0.2	KMI	76.89	302	eP	34	45.00	1.0	BOB	148.09	331 PKP	42	36.80	3.3X
ALO	76.11	330	eP	29	34.00	0.2					34	53.00		FLN	148.14	346 iPKPc	42	36.20	2.9X
	1.0s		3.25nm			4.1mb	CHG	77.32	295	Pc	34	47.50	1.2		0.8s	37.60nm			
GBA	144.44	116	PKPd	37	20.90	-0.7		0.6s	16.00nm				5.2mb	LDF	148.21	345 iPKPc	42	36.20	2.8X
	0.7s		2.60nm				CHTO	77.32	295	iPc	34	47.20	1.0		0.8s	24.20nm			
	S.D. = 0.8	on	19 of 19 obs.					0.9s	19.18nm				5.1mb	LOR	148.27	340 iPKPc	42	36.80	3.2X
											34	56.30	29kmX		0.8s	38.95nm			
? MAR 06, 1990 04h 36m 18.33±1.01s							HHC	78.78	320	eP	34	55.00	1.0	LBF	148.48	339 iPKPc	42	37.30	3.3X
41.074 N ±10.7km 23.434 E ±7.4km							LZH	81.29	312	eP	35	07.50	-0.1		0.8s	13.45nm			
DEPTH = 10.0km (geophysicist)								2.0s	37.00nm				5.0mb	GRC	148.50	340 PKP	42	37.93	4.0X
GREECE-BULGARIA BORDER REGION (363)							GCC	85.59	49	ePc	35	30.20	1.0	RDP	148.53	324 PKP	42	38.00	3.7X
ML 1.8 (THE).							GTA	85.69	314	Pc	35	30.80	0.9	SSF	148.57	340 iPKPc	42	37.80	3.7X
							PRS	85.74	50	ePc	35	29.80	-0.2		0.8s	48.35nm			
SRS	0.13	70	ePgd	36	21.20	-0.2	SHL	85.99	298	iP	35	31.60	-0.1	GRR	148.58	346 iPKPc	42	37.40	3.4X
			eSg	36	23.10		PRI	86.17	50	e(P)	35	31.40	-0.9		0.8s	25.50nm			
KNT	0.41	282	iPgd	36	27.10	0.3	WDC	86.81	46	ePc	35	34.90	-0.3	PCP	148.67	331 PKP	42	37.14	2.7X
			eSg	36	32.90		ORV	87.07	47	eP	35	36.30	-0.1	LPG	148.69	335 iPKPc	42	38.60	3.9X
THE	0.57	219	ePg	36	29.30	-0.5	CMB	87.18	49	ePc	35	36.40	-0.7		0.7s	20.95nm			
			eSg	36	37.70		FRI	87.23	50	eP	35	37.10	-0.1	SMF	148.82	339 ePKP	42	38.20	3.7X
OUR	0.85	150	ePg	36	35.10	0.4	MIN	87.34	46	e(P)	35	39.40	1.5	AVF	148.85	340 iPKPc	42	38.00	3.5X
			eSg	36	46.20		PKI	92.12	298	P	36	00.60	-0.2		0.8s	16.10nm			
	S.D. = 0.8	on	4 of 4 obs.				KKN	92.30	298	P	36	02.00	0.5	CKI	148.88	332 PKP	42	37.50	2.8X
							DMN	92.39	298	P	36	02.50	0.5	LPF	148.96	346 iPKPc	42	38.60	4.0X
? MAR 06, 1990 05h 19m 02.42±0.67s							GKN	92.91	298	P	36	04.10	-0.1		0.8s	52.40nm			
25.019 N ±13.2km 126.856 E ±12.2km							YKA	100.18	27	ePdiff	36	35.90	-0.5	BNI	149.08	334 PKP	42	39.30	4.2X
DEPTH = 33.0km (normol)								0.7s	0.60nm				4.2mb	FIN	149.08	331 PKP	42	37.96	2.9X
4.2mb ( 6 obs.)							DAG	121.27	2	iPKPc	41	41.00	-2.1X	RRL	149.14	334 PKP	42	39.29	3.9X
RYUKYU ISLANDS (238)								0.6s	5.33nm					ROB	149.17	332 PKP	42	38.26	3.1X
LZH	22.62	305	eP	23	51.00	-10.9X	BUL	125.03	228	iPKPd	41	48.70	-3.5X	BGF	149.22	340 iPKPc	42	39.20	4.1X
			pP	24	00.50	35kmX		0.7s	3.77nm						0.7s	27.55nm			
CHTO	26.59	262	eP	24	39.90	0.3	BAO	131.00	131	e(PKP)	41	50.00	-13.7X	PZZ	149.34	333 PKP	42	38.47	2.9X
	0.7s		1.43nm			3.7mb	NB2	134.17	345	PKP	42	07.10	-1.2	ENR	149.42	332 PKP	42	38.78	3.1X
			pP	24	51.00	42kmX		0.8s	4.50nm					STV	149.45	332 PKP	42	39.08	3.4X
GUN	36.68	284	P	26	08.50	-0.1	KHC	142.94	332	ePKP	42	22.80	-2.0X	FOUF	149.46	333 ePKPd	42	40.53	5.0X
PKI	37.12	283	P	26	12.20	-0.1	GRF	143.52	335	ePKP	42	23.30	-2.4X	IMI	149.46	331 PKP	42	39.29	3.6X
	0.4s		8.00nm			4.9mb	TOD	144.53	337	ePKP	42	25.81	-1.6	PLDF	149.48	339 PKP	42	40.40	4.8X
KKN	37.22	284	P	26	13.20	0.3	KBA	144.55	330	iPKPd	42	25.70	-2.0X	AGO	149.57	339 PKP	42	40.21	4.5X
	0.6s		13.00nm			5.0mb		0.9s	13.70nm					MAF	149.61	340 iPKPc	42	40.30	4.6X
DMN	37.39	283	P	26	14.40	0.0	MEM	144.66	340	PKP	42	26.60	-0.9		0.7s	11.00nm			
GKN	37.76	284	P	26	17.60	0.2	VBY	144.68	326	e(PKP)	42	27.20	-0.6	TCF	149.67	341 iPKPc	42	40.40	4.6X
WB5	45.22	170	eP	27	18.00	-0.4	FUR	144.68	333	iPKPc	42	26.90	-0.8		0.8s	22.85nm			
WRA	45.28	170	Pc	27	19.20	0.3		0.9s	67.00nm					SBF	149.70	332 iPKPc	42	40.20	4.2X
	0.8s		3.70nm			4.3mb	LJU	144.69	328	ePKP	42	26.50	-1.3		0.8s	26.85nm			
INK	70.49	23	eP	30	18.00	2.7	DLE	144.72	355	ePKP	42	28.60	1.1	PYM	149.88	339 PKP	42	41.28	5.0X
MBC	71.29	13	eP	30	19.00	-1.1	DCN	144.73	355	iPKPc	42	26.30	-1.3	LSF	149.91	341 iPKPc	42	41.00	4.8X
HFS	79.31	332	eP	31	05.10	-0.9		0.7s	109.00nm						0.8s	36.25nm			
YKA	80.14	24	eP	31	09.30	-1.1	ABH	144.76	338	ePKP	42	26.69	-1.1	PGF	149.96	328 iPKPc	42	41.20	4.7X
	0.8s		0.70nm			3.7mb	RBL	144.89	329	PKP	42	26.00	-2.2X		0.8s	37.60nm			
	S.D. = 1.1	on	12 of 13 obs.				CEY	144.95	327	ePKP	42	27.30	-1.0	MFF	150.07	344 iPKPc	42	41.20	4.8X
							CAI	144.95	132	iPKPd	42	26.50	-2.7X		0.8s	37.60nm			
							VOY	145.02	328	ePKP	42	26.90	-1.6	LBL	150.25	338 PKP	42	42.50	5.9X
														FRF	150.29	332 iPKPc	42	41.70	4.9X
MAR 06, 1990 05h 22m 52.76±0.24s							RUP	145.09	338	ePKP	42	27.79	-0.6		0.8s	18.80nm			
18.178 S ±7.1km 168.208 E ±6.2km							FVI	145.16	330	PKP	42	27.30	-1.2	LRG	150.50	333 iPKPc	42	42.50	5.4X
DEPTH = 33.0km (normol)							SNF	145.28	342	PKP	42	28.50	-0.1		0.8s	18.80nm			
4.9mb ( 9 obs.) 4.6Msz ( 1 obs.)							TRI	145.31	328	PKP	42	28.00	-0.8	LMR	150.53	332 iPKPc	42	42.30	5.1X
VANUATU ISLANDS (186)							DOU	145.55	341	PKPc	42	29.00	-0.1		0.8s	45.65nm			
DZM	4.21	203	iPc	23	52.20	-4.2X	ECB	145.66	355	ePKP	42	29.00	-0.2	RJF	150.76	341 iPKPc	42	43.20	5.7X
			iS	24	36.70			0.8s	79.00nm						0.8s	17.45nm			
SVA	9.74	91	eP	25	15.10	1.3	OGA	145.78	332	ePKP	42	30.50	0.6	CAF	150.92	340 iPKPc	42	43.60	5.8X
BRS	16.92	234	iPd	26	48.20	-0.5	ECF	145.80	354	iPKPc	42	29.50	0.1		0.8s	8.05nm			
COO	19.29	227	eP	27	18.50	0.6		0.8s	229.00nm					LFF	151.33	341 iPKPc	42	44.50	6.2X
CTA	20.83	261	iPd	27	34.30	0.1	CDF	146.09	337	iPKPc	42	30.90	0.7		0.8s	29.55nm			
	0.9s		21.01nm			4.5mb		0.8s	34.90nm					LPO	151.42	340 iPKPc	42	44.70	6.2X
PMG	22.21	290	eP	27	40.00	-8.0X	CTI	146.10	330	PKP	42	30.00	-0.3		0.8s	21.50nm			
MNG	23.23	166	P	27	57.30	-0.6	FEL	146.25	336	ePKP	42	31.06	0.5						
PGZ	23.42	164	P	27	58.90	-0.8	BSF	146.75	337	iPKPc	42	32.60	1.3						
CNB	23.90	221	e(P)	28	08.00	3.5X		0.8s	10.75nm										
BWA	23.94	224	eP	28	04.80	-0.1	HAU	146.77	338	iPKPc	42	32.80	1.6						
CAN	24.13	221	eP	28	08.30	1.6		0.8s	21.50nm										
			i	28	14.90		SAL	146.95	331	PKP	42	33.00	1.5						
WRA	32.03	261	P	29	2														



0.4s 7.00nm 4.9mb  
 KKN 37.33 283 P 43 08.20 0.1  
 0.7s 15.00nm 5.0mb  
 DMN 37.51 283 P 43 09.80 0.2  
 GKN 37.88 284 P 43 12.60 0.0  
 WB5 45.38 170 eP 44 13.80 -0.1  
 WRA 45.44 170 Pc 44 14.40 0.0  
 0.8s 2.30nm 4.1mb  
 INK 70.25 23 eP 47 13.00 4.9X  
 MBC 71.07 13 eP 47 12.00 -1.0  
 YKA 79.90 25 eP 48 04.20 0.9  
 0.8s 0.80nm 3.8mb  
 S.D. = 0.5 on 10 of 11 obs.

MAR 06, 1990 07h 12m 48.14 ± 0.30s  
 3.841 N ± 5.4km 126.422 E ± 8.2km  
 DEPTH = 33.0km (normal)  
 5.0mb (17 obs.) 3.6Msz (1 obs.)  
 TALAUD ISLANDS (263)

TSM 8.34 273 ePd 14 57.20 7.5X  
 0.6s 16.00nm 4.9mb  
 KKN 10.40 283 eP 15 25.00 6.7X  
 MTN 17.23 164 eP 16 44.00 -4.0X  
 KNA 19.60 173 eP 17 16.40 -0.4  
 QZH 22.29 341 iP 17 44.00 -0.2  
 GZH 22.94 328 eP 17 51.20 0.6  
 WB5 24.83 162 eP 18 07.70 -1.3  
 WRA 24.88 162 Pd 18 07.60 -1.9  
 1.2s 44.00nm 4.9mb  
 IPM 25.34 273 ePd 18 19.40 5.5X  
 MBL 25.67 194 eP 18 18.00 1.1  
 OIS 27.48 152 eP 18 32.00 -1.6  
 SSE 27.56 350 eP 18 34.70 0.6  
 ASPA 28.30 165 ePc 18 43.50 2.6  
 0.6s 7.00nm 4.5mb  
 Z 21s 0.18um 3.6Msz

WHN 28.90 338 eP 18 45.50 -0.7  
 NJ2 28.95 347 eP 18 46.50 -0.1  
 CHG 30.70 301 eP 19 03.20 0.7  
 1.0s 15.75nm 4.8mb  
 CHTO 30.70 301 eP 19 03.00 0.5  
 1.0s 17.00nm 4.8mb  
 CTA 30.74 141 eP 19 04.50 1.7  
 KMI 31.08 315 eP 19 10.00 4.0X  
 TIA 33.33 346 eP 19 24.20 -1.1  
 XAN 34.18 334 Pc 19 31.80 -0.9  
 CD2 34.37 324 eP 19 33.60 -0.8  
 TIY 36.06 341 Pd 19 48.50 -0.2  
 BJ1 37.21 347 eP 19 58.50 0.3  
 1.0s 42.00nm 5.3mb  
 SNY 37.91 357 iPc 20 04.60 0.6  
 LZH 38.25 330 Pc 20 07.00 -0.2  
 1.2s 48.00nm 5.2mb  
 HHC 39.20 342 eP 20 15.00 0.0  
 CN2 39.80 359 Pc 20 19.00 -0.8  
 MDJ 40.70 3 Pc 20 29.00 1.8  
 LSA 42.14 312 P 20 41.70 1.9  
 GTA 42.84 329 eP 20 45.00 0.0  
 GUN 45.41 306 P 21 06.50 0.3  
 PKI 45.65 305 P 21 07.80 -0.3  
 KKN 45.85 306 P 21 09.60 0.1  
 DMN 45.92 305 P 21 09.90 -0.2  
 GKN 46.45 306 P 21 14.00 -0.2  
 0.6s 14.00nm 5.1mb

KOD 48.95 280 eP 21 34.70 0.6  
 GBA 49.29 285 Pc 21 36.00 -0.3  
 0.9s 18.50nm 5.1mb  
 WMO 52.46 325 P 22 00.00 -0.1  
 POO 53.39 290 iPd 22 07.20 -0.1  
 0.8s 26.87nm 5.3mb  
 SVW 80.83 29 eP 25 01.30 1.3  
 IMA 82.41 24 eP 25 09.40 1.1  
 0.7s 5.70nm 4.7mb  
 PMR 84.00 29 eP 25 16.00 -0.2  
 0.8s 10.30nm 5.0mb  
 FBA 84.75 25 eP 25 20.00 0.0  
 TOA 85.41 28 eP 25 24.70 1.2  
 KEV 89.68 340 eP 25 54.00 10.1X  
 INK 90.17 21 eP 25 45.50 -0.7  
 SOD 90.25 338 eP 25 50.00 3.5X  
 SUF 91.31 333 eP 25 50.80 -0.7  
 0.5s 5.40nm 5.2mb

MBC 91.91 13 eP 25 54.50 0.4  
 NUR 92.46 331 eP 25 39.00 -17.8X

DAG 97.12 352 iPd 26 16.90 -1.0  
 0.5s 3.52nm 5.1mb  
 HFS 97.78 332 eP 26 19.20 -1.9  
 0.8s 2.60nm 4.8mb  
 NB2 98.55 334 P 26 23.20 -1.5  
 0.8s 5.70nm 5.2mb  
 YKA 99.52 24 eP 26 28.50 -0.5  
 0.7s 0.50nm 4.2mb  
 BRG 100.96 323 i(Pd) 26 36.10 0.4  
 1.0s 12.00nm 5.4mb  
 S.D. = 1.0 on 48 of 56 obs.

? MAR 06, 1990 07h 46m 42.81 ± 1.08s  
 37.127 N ± 13.5km 74.004 E ± 20.5km  
 DEPTH = 33.0km (normal)  
 4.0mb (3 obs.)

TAJIK-XINJIANG BORDER REGION (719)

NDI 8.84 161 eP 48 52.80 1.5  
 0.6s 16.00nm 5.3mb X  
 GKN 12.76 132 P 49 44.40 -0.5  
 0.6s 16.00nm 5.3mb X  
 KKN 13.31 131 P 49 51.30 -0.8  
 DMN 13.33 132 P 49 53.60 1.1  
 PKI 13.54 131 P 49 55.00 -0.3  
 GUN 13.58 129 P 49 55.80 -0.1  
 GBA 23.62 172 Pc 51 50.40 -1.4  
 0.6s 2.60nm 3.9mb  
 MBC 66.58 3 eP 57 32.00 0.7  
 0.7s 3.00nm 4.5mb  
 WRA 80.31 124 P 00 01.00 68.8X  
 0.6s 0.30nm 3.6mb  
 YKA 80.48 4 eP 58 52.00 -0.4  
 0.4s 0.30nm 3.6mb  
 S.D. = 1.1 on 9 of 10 obs.

\* MAR 06, 1990 08h 25m 28.16 ± 1.31s  
 31.329 S ± 11.3km 68.982 W ± 18.2km  
 DEPTH = 114.4 ± 18.8 km

SAN JUAN PROVINCE, ARGENTINA (137)

ZON 0.34 130 iPd 25 43.50 -1.4  
 RTLL 0.44 90 iPc 25 45.00 -0.4  
 RTCV 0.65 145 iPc 25 47.90 1.0  
 CFA 0.69 114 iPd 25 47.50 0.3  
 (S) 27 14.00  
 RTRS 1.23 340 iPc 25 53.00 0.6  
 FCH 2.28 209 iP 26 07.50 1.7  
 0.8s 26.34.00  
 ROCH 2.38 226 iP 26 07.00 0.1  
 0.8s 26.36.50  
 LCCH 3.06 225 eP 26 19.50 3.7X  
 0.8s 26.46.50  
 LNV 3.33 217 iPd 26 17.60 -1.7  
 0.8s 26.49.10  
 ZOBO 15.01 3 eP 28 56.00 -0.1  
 0.8s 30.20.00  
 S.D. = 1.4 on 9 of 10 obs.

\* MAR 06, 1990 09h 16m 05.00 ± 1.46s  
 36.881 N ± 8.9km 72.759 E ± 9.1km  
 DEPTH = 47.7 ± 15.4 km  
 4.7mb (11 obs.)

AFGHANISTAN-USSR BORDER REGION (717)

KSH 3.61 44 eP 17 00.50 0.5  
 QUE 8.25 218 eP 18 07.00 2.0  
 0.4s 38.14nm 5.8mb X  
 NDI 8.99 154 iPc 18 13.50 -1.6  
 0.4s 38.14nm 5.8mb X  
 MAIO 10.68 271 eP 18 36.60 -1.7  
 0.8s 13.18nm 5.1mb  
 0.8s 37.38.00  
 WMO 13.32 54 eP 19 07.80 -5.8X  
 GKN 13.37 128 P 19 02.80 -11.5X  
 0.4s 19.00nm  
 KKN 13.92 127 P 19 09.90 -11.8X  
 0.6s 15.00nm  
 DMN 13.94 128 P 19 11.40 -10.5X  
 0.4s 11.00nm  
 PKI 14.16 127 P 19 13.50 -11.3X  
 0.4s 13.00nm  
 GUN 14.23 125 P 19 14.00 -11.8X  
 0.4s 18.00nm  
 HYB 20.05 164 eP 20 36.00 -1.0  
 0.8s 26.90nm 4.6mb

i 20 40.30  
 eS 20 11.00  
 GTA 21.40 75 eP 20 49.20 -1.6  
 GBA 23.55 169 Pd 20 12.60 0.7  
 0.6s 8.00nm 4.4mb  
 LZH 24.96 82 eP 20 27.50 1.9  
 CHTO 29.18 121 e(P) 22 04.60 0.5  
 0.6s 0.42nm 3.3mb X  
 GYA 30.53 100 P 22 17.40 1.2  
 HFS 43.64 322 eP 24 08.10 1.9  
 0.6s 6.00nm 4.5mb  
 NB2 44.93 323 P 24 18.40 1.7  
 0.9s 4.30nm 4.3mb  
 DAG 54.79 344 eP 25 30.00 -1.8  
 0.5s 4.93nm 4.8mb  
 BCAO 59.12 250 ePd 26 07.50 4.3X  
 0.3s 4.00nm 5.0mb  
 MBC 66.89 3 ePc 26 53.40 -0.3  
 0.8s 12.00nm 5.0mb  
 INK 73.30 10 eP 27 32.00 -0.7  
 YKA 80.79 3 eP 28 13.30 -1.2  
 0.8s 2.30nm 4.2mb  
 WB5 80.98 123 eP 28 15.90 -0.2  
 WRA 81.00 123 Pc 28 16.00 -0.3  
 0.6s 2.90nm 4.4mb  
 FFC 88.65 357 eP 28 54.00 0.0  
 0.8s 9.00nm 5.1mb  
 S.D. = 1.4 on 19 of 26 obs.

MAR 06, 1990 09h 33m 18.85 ± 0.50s  
 42.502 N ± 4.1km 19.330 E ± 4.6km  
 DEPTH = 10.0km (geophysicist)  
 YUGOSLAVIA (383)  
 ML 2.5 (TTG).

TTG 0.09 216 iPg 33 22.90 1.5  
 iSg 33 26.30  
 NKY 0.40 322 iPg 33 27.60 0.6  
 iSg 33 35.60  
 BDV 0.43 240 iPg 33 27.40 -0.3  
 eSg 33 34.50  
 PVY 0.48 79 iPg 33 28.20 -0.5  
 iSg 33 36.50  
 SDA 0.50 166 ePg 33 28.50 -0.5  
 ULC 0.54 186 ePg 33 28.40 -1.4  
 eSg 33 37.00  
 IVA 0.56 48 ePg 33 30.10 -0.1  
 eSg 33 39.40  
 HCY 0.62 265 ePg 33 30.60 -0.7  
 iSg 33 41.00  
 PUK 0.62 138 iPg 33 39.90 8.6X  
 BRY 0.70 305 ePg 33 32.50 -0.3  
 eSg 33 44.80  
 PLE 0.83 3 ePg 33 35.00 0.0  
 eSg 33 49.00  
 LACI 0.91 162 iPg 33 37.50 1.3  
 SKO 1.65 108 ePg 34 03.00 15.0X  
 iSg 34 09.70  
 OHR 1.77 141 ePn 33 50.20 0.4  
 S.D. = 0.9 on 12 of 14 obs.

% MAR 06, 1990 09h 55m 47.64 ± 1.21s  
 40.454 N ± 15.4km 29.091 E ± 8.0km  
 DEPTH = 10.0km (geophysicist)  
 TURKEY (366)

YLV 0.24 62 iPg 55 53.00 0.1  
 iSg 55 56.00  
 HRT 0.57 50 iPg 55 59.10 -0.2  
 ISK 0.61 358 ePg 56 00.00 0.0  
 BNT 0.90 264 iPg 56 05.00 0.1  
 EDC 0.94 264 ePg 56 05.50 -0.1  
 eSg 56 18.50  
 S.D. = 0.2 on 5 of 5 obs.

? MAR 06, 1990 11h 36m 51.38 ± 9.59s  
 33.673 S ± 16.1km 72.032 W ± 81.5km  
 DEPTH = 33.0km (normal)  
 OFF COAST OF CENTRAL CHILE (134)

LCCH 0.43 63 iP 37 00.50 -0.5  
 iS 37 06.20  
 LNV 0.59 119 iPc 37 03.20 0.0  
 iS 37 11.50  
 ROCH 1.10 51 iPd 37 11.00 0.2  
 iS 37 24.60  
 SAN 1.17 80 eP 37 11.20 -0.3



06d 11h

FCH 1.50 77 iS 37 25.70  
 12.124 N  $\pm$  6.0km 143.833 E  $\pm$  7.9km  
 DEPTH = 19.3  $\pm$  5.8 km  
 4.8mb ( 7 obs.)  
 S.D. = 0.6 on 5 of 5 obs.

MAR 06, 1990 11h 40m 52.76  $\pm$  0.75s  
 12.124 N  $\pm$  6.0km 143.833 E  $\pm$  7.9km  
 DEPTH = 19.3  $\pm$  5.8 km  
 4.8mb ( 7 obs.)

## SOUTH OF MARIANA ISLANDS (210)

GUA 1.76 37 eP 41 22.50 0.0  
 GUMO 1.77 35 eP 41 22.30 -0.4  
 PJG 1.77 35 eP 41 22.50 -0.2  
 CTA 32.10 176 eP 47 21.50 0.5  
 WB5 33.14 196 eP 47 30.40 0.3  
 WRA 33.21 196 Pd 47 30.70 0.0  
 ASPA 36.87 195 eP 48 01.60 -0.4  
 BJI 36.99 324 eP 48 03.00 0.2  
 GYA 37.71 298 P 48 11.60 2.4  
 TIY 37.89 318 P 48 11.40 0.8  
 BRS 40.23 168 iP 48 30.50 0.5  
 DZM 40.58 147 iPd 48 33.20 0.1  
 CD2 41.42 303 P 48 40.40 0.5  
 GTA 47.41 313 eP 49 28.00 0.0  
 GUN 56.19 295 P 50 34.40 -0.1  
 PKI 56.59 295 P 50 36.80 -0.6  
 KKN 56.71 295 P 50 37.80 -0.3  
 DMN 56.86 295 P 50 38.80 -0.4  
 GKN 57.30 296 P 50 41.80 -0.4  
 WMO 57.42 314 eP 50 42.70 0.0  
 INK 76.10 22 eP 52 40.00 -0.6  
 MBC 79.93 14 eP 53 01.50 0.0  
 YKA 84.62 27 eP 53 26.10 0.1  
 CMB 87.12 52 eP 53 40.20 1.2  
 PRI 87.33 54 e(P) 53 44.40 4.3X  
 KEV 87.59 342 eP 53 46.00 5.4X  
 FRI 87.88 53 e(P) 53 43.40 0.8  
 EDM 87.92 36 eP 53 43.00 0.5  
 SOD 88.89 340 eP 53 47.00 0.2  
 SUF 91.38 336 eP 53 57.50 -1.0  
 NUR 93.13 334 eP 54 02.00 -4.6X  
 HFS 97.75 337 eP 54 18.00 -9.7X  
 KIC 143.76 299 PKP 00 28.00 -1.3  
 TIC 143.85 299 PKP 00 28.00 -1.5  
 LIC 144.07 299 PKP 00 28.60 -1.2  
 ZOBO 148.77 101 PKPd 00 43.20 5.0X  
 Z 16s 0.09um 4.7mszX  
 LR 07 55.00  
 S.D. = 0.8 on 31 of 36 obs.

MAR 06, 1990 12h 24m 43.52  $\pm$  0.65s  
 20.267 S  $\pm$  10.5km 177.882 W  $\pm$  6.1km  
 DEPTH = 551.7  $\pm$  7.8 km  
 5.0mb ( 15 obs.)

## FIJI ISLANDS REGION (181)

SVA 4.07 301 iP 26 13.40 6.8X  
 VUN 4.12 302 eP 26 06.90 -0.1  
 MBU 4.59 315 iPd 26 11.50 0.7  
 DZM 14.73 260 iPd 27 54.20 4.1X  
 BRS 27.72 250 iPc 29 50.50 0.8  
 PMO 29.03 84 iP 30 00.90 -0.1  
 VAH 29.22 85 iP 30 02.30 -0.4  
 TPT 29.29 85 iP 30 03.40 0.1  
 RUV 29.46 85 iP 30 04.60 -0.2  
 RMO 31.19 252 iPd 30 20.10 0.6  
 CTA 33.62 264 iPd 30 40.20 0.2  
 PMG 35.40 283 iPd 30 54.90 0.1  
 S.D. = 0.9 on 35 of 62 obs.

OIS 39.76 262 iPd 31 29.90 -0.5  
 ASPA 44.68 256 iPd 32 09.20 -0.1  
 WB5 44.73 262 iPd 32 18.90 9.2X  
 WRA 44.74 262 Pd 32 08.80 -1.0  
 MTN 49.27 270 iPc 32 43.20 -1.0  
 WARB 51.01 252 iPd 32 56.20 -0.7  
 COOL 55.42 246 iPd 33 27.30 -1.0  
 MBL 57.92 257 iPd 33 44.70 -0.7  
 KLB 58.25 245 eP 33 47.00 -0.6  
 BAL 59.25 246 eP 33 53.40 -0.9  
 MUN 59.53 244 iPc 33 56.00 -0.1  
 MRWA 60.04 247 iPc 33 59.00 -0.5  
 NANU 61.56 255 iPd 34 09.60 0.1  
 SPA 69.86 180 iPc 35 02.30 1.8  
 MAT 70.09 324 iPd 35 00.60 -1.4  
 KUSJ 71.83 332 eP 35 11.70 -0.2  
 MRRJ 72.97 329 eP 35 18.50 0.0  
 ASAJ 73.56 331 eP 35 23.20 1.4  
 BJI 85.80 315 eP 36 26.00 0.4  
 BDT 89.65 288 eP 36 45.20 1.2  
 CHG 90.27 290 ePd 36 48.80 1.9  
 CHTO 90.27 290 iPd 36 48.70 1.8  
 INK 94.02 15 ePd 37 02.20 -0.9  
 YKA 96.25 25 eP 37 12.00 -1.3  
 HFS 139.33 351 ePKP 42 59.60 -9.5X  
 EKA 144.76 5 PKP 43 19.00 0.3  
 KAS 145.92 315 iPKPc 43 24.20 3.1X  
 KSP 147.50 343 iPKPd 43 26.80 3.5X  
 SPC 147.70 338 ePKP 43 28.00 4.1X  
 CLL 147.86 347 iPKP 43 27.80 4.0X  
 BRG 148.06 346 iPKP 43 28.10 4.0X  
 MLR 148.09 327 ePKP 43 29.00 4.5X  
 PRNI 148.73 295 e(PKP) 43 26.00 0.2  
 PRU 148.74 344 PKPd 43 30.40 5.2X  
 MOX 148.77 348 ePKP 43 30.00 4.8X  
 MEM 149.57 355 PKP 43 31.90 5.5X  
 ZST 149.62 340 ePKP 43 32.30 5.7X  
 GRF 149.75 348 ePKP 43 32.80 6.0X  
 DOU 150.17 357 PKP 43 33.50 6.2X  
 FLN 151.49 4 ePKP 43 36.10 6.8X  
 CDF 151.61 353 ePKP 43 36.80 7.1X  
 LDF 151.68 3 ePKP 43 36.30 6.7X  
 KBA 151.73 344 ePKP 43 35.50 5.5X  
 GRR 151.84 4 ePKP 43 36.80 7.0X  
 LPF 152.18 5 ePKP 43 37.80 7.5X  
 BSF 152.24 353 ePKP 43 37.90 7.3X  
 RBL 152.26 343 PKPc 43 49.80 19.2X  
 LOR 153.03 357 ePKP 43 40.10 8.5X  
 LBF 153.31 357 ePKP 43 40.50 8.5X  
 MFF 153.67 4 ePKP 43 41.10 8.7X  
 MAR 06, 1990 13h 00m 18.48  $\pm$  0.29s  
 40.822 N  $\pm$  3.6km 28.100 E  $\pm$  2.6km  
 DEPTH = 10.0km (geophysicist)  
 3.4mb ( 1 obs.)  
 TURKEY (366)  
 ML 3.5 (THE). Felt at Istanbul.

BNT 0.49 197 iPg 00 28.20 -0.1  
 EDC 0.51 201 iPg 00 29.00 0.2  
 MFT 0.62 267 iPg 00 30.20 -0.9  
 ITU 0.75 67 iPg 00 33.00 -0.1  
 ISK 0.77 71 ePg 00 33.80 0.4  
 YLV 1.00 104 iPg 00 36.20 -1.3  
 GBZT 1.02 91 iPg 00 37.00 -0.8  
 DMK 1.03 346 iPg 00 51.00 0.3  
 HRT 1.19 90 iPg 00 40.70 0.0  
 DST 1.28 161 iPn 00 42.60 0.3  
 EZN 1.68 234 iPn 00 47.50 -0.6  
 GPA 1.77 107 ePn 00 49.50 0.2  
 RDO 1.97 280 iPbd 00 52.40 0.2  
 JMB 2.00 326 iP 00 54.00 1.4  
 KDZ 2.19 293 iPc 01 00.00 4.6X  
 DIM 2.29 303 eP 00 57.00 0.2  
 ALT 2.35 138 ePn 00 57.50 -0.3  
 IZM 2.51 195 ePn 01 00.50 0.5  
 RZN 2.69 290 iP 01 03.00 0.2  
 KHL 2.73 156 iPn 01 10.00 6.8X  
 PLD 2.86 290 eP 01 05.00 0.1  
 PVL 3.16 320 iPd 01 09.00 -0.1  
 OUR 3.17 263 ePg 01 07.30 -2.1  
 SMG 3.26 198 ePn 01 20.00 9.4X  
 MMB 3.39 285 eP 01 12.00 -0.5  
 PGB 3.41 302 eP 01 12.00 -0.9  
 SRS 3.43 276 ePg 01 15.60 2.6  
 PAIG 3.49 257 ePg 01 14.00 0.1  
 PLG 3.57 264 ePb 01 18.70 3.6X  
 BBTk 3.69 104 eP 01 19.00 2.0  
 BCK 3.87 149 ePn 01 24.00 4.6X  
 THE 3.91 269 ePg 01 16.90 -2.9X  
 KKB 3.92 287 iP 01 21.00 1.0  
 KNT 3.95 277 ePg 01 21.20 0.7  
 VTS 4.07 297 iP 01 22.00 -0.2  
 VAY 4.21 279 ePn 01 23.50 -0.6  
 ELL 4.31 160 ePn 01 31.00 5.4X  
 KAS 4.32 81 iPnd 01 25.50 -0.2  
 CFR 4.36 0 eP 01 37.00 10.8X  
 ISR 4.46 346 ePd 01 45.00 17.3X  
 DRA 4.78 325 eP 02 20.00 47.8X  
 KZN 4.85 266 ePn 01 33.00 -0.3  
 MLR 4.93 342 eP 01 06.00 -28.4X  
 SKO 5.14 285 ePn 01 46.80 9.5X  
 VRI 5.14 349 ePd 01 36.00 -1.3  
 OHR 5.54 275 ePn 02 06.50 23.5X  
 BZS 6.74 317 eP 02 13.00 13.2X  
 PTJ 10.19 304 eP 03 07.60 19.7X  
 TRI 11.53 300 eP 02 53.70 -12.4X  
 YKA 72.76 343 eP 11 52.90 4.6X  
 S.D. = 0.9 on 33 of 50 obs.  
 \* MAR 06, 1990 13h 22m 19.99  $\pm$  2.94s  
 15.048 N  $\pm$  6.4km 60.277 W  $\pm$  27.4km  
 DEPTH = 33.0km (normal)  
 LEEWARD ISLANDS (92)  
 ML 2.8 (FDF).  
 CRM 0.68 245 iPd 22 32.99 -0.2  
 MVM 0.77 231 iPd 22 34.55 0.1  
 FDF 0.90 250 iPd 22 36.35 0.0  
 BIM 0.93 236 eP 22 36.85 0.1  
 MDN 1.12 284 eP 22 39.15 -0.2  
 BBL 1.25 292 eP 22 41.30 0.0  
 MGG 1.32 311 eP 22 42.19 -0.1  
 SLB 1.42 211 eP 22 55.47 11.7X  
 DEG 1.47 329 eP 22 44.00 -0.4



CD2	43.83	343	iPd	39	04.20	-0.6
	1.2s	300.00nm				6.0mb
Z	20s	0.70um				4.6MsZ
		pP	39	11.30		24km
		sP	39	17.00		

KOD	45.06	297	eP	39	15.00	-0.2
			eS	45	52.00	
XAN	45.66	350	Pd	39	18.00	-1.4
	1.5s	100.00nm				5.5mb
N	12s	1.10um				
			S	45	57.00	
TIA	47.10	360	Pd	39	29.50	-1.2
HYB	47.76	306	iPc	39	49.10	12.8X
	1.0s	345.00nm				
			eS	46	26.50	
LSA	47.87	329	Pc	39	37.60	0.2
			iS	46	31.00	
DZM	48.02	110	iPc	39	39.20	0.9
LZH	48.70	345	Pd	39	42.50	-0.9
	1.6s	0.21nm				2.9mb X
Z	25s	1.30um				4.8Ms z X
			pP	39	47.00	15km
			sP	39	50.00	
			eS	46	43.00	
TIY	48.83	355	Pd	39	43.00	-1.2
	1.1s	100.00nm				5.8mb
N	15s	0.70um				
			pP	39	50.50	25km
			sP	39	57.00	
			S	46	41.00	

GUN	49.41	322 P	39	48.88	-0.8
PKI	49.45	322 P	39	48.40	-1.1
TSRJ	49.63	20 P	39	49.30	-1.0
DMN	49.66	321 P	39	50.00	-1.0
KKN	49.69	322 P	39	50.40	-0.8
DL2	49.94	4 Pd	39	51.50	-1.1

	1.0s	100.00nm	5.8mb
Z	28s	0.70um	4.5Ms z x
	pP	39 59.00	25km
	S	46 57.00	

			sS	47	12.00	
GKN	50.23	321	P	39	54.20	-1.1
IIDJ	50.25	22	P	39	53.60	-1.6
RJJ	50.94	359	eP	39	59.00	-1.2

1.4s	0.23nm	2.9mb X
Z 23s	0.94um	4.7Ms z X
eS	47	08.00
eSS	50	40.00

CHJJ	51.16	22 P	40 00.20	-1.8
MTMJ	51.20	21 eP	39 57.40	-5.0X
MAT	51.31	21 iPd	40 01.00	-2.2
	1.5s	138.89nm		5.7mb

	Z	20s	0.71um	4.7MsZ
			eS	47 10.00
KAKJ	51.75	23	eP	40 00.20 -6.2X
RIO	51.94	353	iPd	40 07.00 -1.0

N	16s	1.00um	
E	16s	0.90um	
		PP	42 08.00
		S	47 27.50

HHC	52.02	354	iPd	40	07.60	-0.9
			pP	40	15.00	25 km
POO	52.14	304	iPd	40	09.50	-0.3
	1.0 s	84	00 nm			5.6 mb

	52.22	22	iS	47	28.00	
NIIJ			eP	40	07.90	-2.1
GTA	52.90	343	iPd	40	15.00	-0.3
	1.4s	200.00nm				5.9mb

Z	20s	1.10um	4.9MsZ
		eS	47 38.00
SNY	53.01	6 iPd	40 14.00 -1.8
	8.0s	600.00nm	5.6mb X

	Z	18s	0.60um			4.7MsZ
MSZ		54.54	137 P	40	26.00	-1.0
CN2		55.17	7 Pd	40	29.30	-2.3
	Z	15s	0.70um			4.9MsZ X

L	15s	0.70um			
N	15s	0.40um			
E	15s	0.40um			
		pP	40	41.00	40kmX
		PcP	41	32.00	

NDI	55.48	316	iPd	40	30.30	-3.9X
	0.5s	214.79nm	eS	48	09.00	6.4mb
MDI	56.58	10	iPd	40	40.50	-1.3

Z 20s 1.40um 5.1MsZ  
PP 42 50.00



06d 13h

		iS	48	30.00		LJU	106.89	315	e(PKP)	49	24.00	-0.1	OPX	146.38	76	(PKP)	50	35.00	-4.1X	
		SS	52	22.00					e	49	32.00		PWLA	146.82	40	PKP	50	40.50	1.4	
TCW	57.92	132	P	40	50.10	-1.3	CEY	106.97	314	ePKP	49	35.50	11.2X	TBR	148.41	17	PKP	50	45.00	3.5X
MRW	58.24	132	P	40	52.20	-1.4	BRG	107.08	320	e(PKP)	49	06.30	-18.0X	LVNJ	148.55	18	PKP	50	45.50	3.8X
SNZO	58.26	132	P	40	55.40	1.7				e	49	35.60		TKL	148.93	35	PKP	50	46.30	3.8X
		S	48	52.00					i	49	42.00		CAI	149.20	236	ePKP	50	47.70	4.2X	
		SS	52	56.00									NAV	149.21	29	PKP	50	47.00	4.1X	
CAW	58.48	132	P	40	54.00	-1.3	INK	107.30	22	ePdiff	45	16.00	0.7	BLA	149.47	29	PKP	50	47.50	4.2X
MNG	58.67	131	P	40	55.40	-1.3	VOY	107.33	315	e(PKP)	49	18.20	-6.9X	BAO	149.73	209	e(PKP)	50	40.00	-4.4X
MTW	58.81	131	P	40	56.30	-1.3				e	49	40.00		CBN	149.97	24	ePKP	50	49.80	5.9X
WMO	61.04	336	iPd	41	12.00	-0.9				e	49	47.70			1.0s	80.00nm				
Z	24s	1.00um			4.9mszX		KHC	107.41	318	ePKP	49	16.00	-9.1X							
		S	49	28.00					e	49	42.50		TPX	150.84	79	(PKP)	50	54.00	8.2X	
QUE	63.61	312	iPd	41	30.90	0.5	TRI	107.43	314	PKP	49	35.50	10.4X	ARE	151.18	162	e(PKP)	51	00.00	13.3X
		eS	50	01.00			SDI	107.48	310	PKP	49	38.50	13.1X	PT03	151.79	152	ePKP	50	51.30	4.0X
VNDA	70.12	171	iPc	42	10.30	-0.4	RBL	107.54	315	PKP	49	42.50	17.1X	LPB	151.96	169	PKP	50	50.70	2.6X
MAIO	72.09	314	iPd	42	23.10	-0.2	CLL	107.64	320	e(PKP)	49	45.00	19.7X		1.0s	170.00nm				
	0.8s	25.99nm			5.3mb		KBA	107.67	316	iPKPd	49	43.00	17.2X	Z	25s	0.40um		5.1mszX		
DHR	75.21	301	ePd	42	41.50	-0.1				i	50	01.20								
RYD	77.69	298	eP	42	55.00	-0.6	CTI	108.89	315	PKP	49	28.50	0.5	ZOBO	152.21	168	PKPd	50	49.80	1.2
IR4	77.91	310	eP	42	56.50	-0.2	BDI	109.76	313	PKP	49	44.00	14.3X							
IR2	78.07	310	eP	42	57.00	-0.6	VAI	110.91	315	PKP	49	31.50	-0.1	SGS	152.56	34	PKP	50	56.00	8.1X
IR1	78.14	310	eP	42	57.00	-0.9	YKA	116.77	24	ePdiff	46	08.50	10.9X	NNA	152.99	148	iPKPc	50	50.50	1.4
IR7	78.31	310	eP	42	59.00	0.1				0.7s	0.60nm				1.0s	39.00nm				
SPA	78.93	180	iPd	43	00.90	-0.8	GMW	118.13	42	PKP	49	46.40	0.9							
	0.9s	20.00nm			5.1mb		RMW	118.79	42	PKP	49	45.80	-1.0							
Z	20s	2.61um			5.6msz		LON	118.98	42	PKP	49	47.20	0.0							
		i	43	16.60	56kmX		PNT	119.64	39	ePKP	49	49.00	0.7							
KER	80.48	308	e(P)	43	10.00	-0.7	LBFM	120.22	49	PKP	49	50.70	0.8							
NAI	80.57	271	iP	43	16.00	4.3X	MIN	120.64	50	ePKP	49	50.50	-0.2							
	1.0s	35.00nm			5.3mb		ORV	120.88	51	PKP	49	50.70	-0.3							
OASM	80.76	299	eP	43	11.90	-0.3	ARN	121.28	53	PKP	49	53.00	1.2							
AAE	80.77	281	eP	43	14.00	1.3	NEW	121.54	40	PKP	49	52.40	0.4							
SLY	82.15	309	ePc	43	18.50	-0.6	EDM	121.77	33	ePKPd	49	52.50	0.2							
		i	43	26.50	25km		CMB	122.04	52	ePKP	49	53.90	0.6							
BHD	82.26	306	iPc	43	21.00	1.3				ePKP	50	09.80								
TAB	82.37	311	eP	43	21.00	0.5	BLP	122.65	56	PKP	49	57.70	3.3X							
MSL	84.20	309	ePc	43	34.00	4.3X	KIC	122.73	270	PKP	49	55.00	-0.2							
SLR	84.49	245	iPd	43	31.50	-0.1	LIC	122.99	270	PKP	49	55.44	-0.2							
	0.9s	12.60nm			5.1mb															
Z	20s	3.55um			5.7msz															
		i	43	45.20	47kmX		TIC	123.05	271	PKP	49	55.50	-0.3							
SEK	84.64	242	iPc	43	32.50	0.2	KVN	123.57	50	PKP	49	57.00	0.6							
PRY	85.01	244	iPc	43	33.50	-0.6	ISA	124.01	54	ePKP	49	57.00	-0.2							
	1.0s	15.00nm			5.2mb		SES	124.33	35	ePKPd	49	56.70	-0.6							
BUL	85.14	251	iPc	43	32.50	-2.4	TNP	124.47	51	PKP	49	59.10	0.9							
	1.0s	28.50nm			5.5mb		PAS	124.54	56	ePKP	50	03.00	4.8X							
		iP	43	47.10	50kmX					e	50	13.00								
BFS	85.62	244	iPd	43	31.00	-6.2X	SBB	124.72	55	ePKP	50	00.00	1.4							
	0.5s	42.25nm			5.9mb					e	50	15.00								
KSR	85.70	245	iPd	43	37.70	0.0	RVR	125.22	56	ePKP	50	06.00	6.5X							
	0.7s	10.00nm			5.1mb					e	50	15.00								
SWZ	86.85	243	iPd	43	40.70	-2.5	LRM	125.41	41	ePKP	50	00.80	1.0							
	0.7s	41.10nm			5.8mb					e	50	15.80								
KIM	87.02	241	iPd	43	45.00	0.9	PEC	125.41	56	ePKP	50	01.10	1.2							
AYN	87.94	300	ePd	43	53.70	5.5X				ePKP	50	16.50								
LWI	88.24	268	ePc	43	48.40	-1.9	GSC	125.42	55	ePKP	50	01.00	1.0							
MDSJ	88.40	303	Pc	43	52.20	1.7				e	50	16.00								
HOL	88.85	300	ePd	43	53.70	1.2	BAR	126.04	58	ePKP	50	18.00	16.8X							
BURJ	88.91	303	Pc	43	54.40	1.4	TPC	126.28	56	ePKP	50	03.00	1.3							
DSI	89.10	302	eP	43	55.00	1.3				e	50	18.00								
MBH	89.11	300	eP	43	55.00	1.2	PTI	126.57	44	PKP	50	03.80	1.7							
PRNI	89.14	301	eP	43	55.00	1.0	FFC	126.60	27	iPKPc	50	02.40	0.9							
BBTK	93.01	310	iPc	44	12.00	0.2				1.0s	24.00nm									
TTA	98.27	27	P	44	36.00	0.9	DUG	127.17	48	PKP	50	04.40	1.1							
	1.3s	33.02nm			5.7mb		FRB	127.31	3	ePKP	50	02.00	-0.5							
MLR	98.89	315	eP	44	45.00	6.6X	GLA	127.49	57	ePKP	50	06.00	2.0							
BRW	99.13	19	eP	44	41.10	2.3				e	50	21.00								
BCAO	99.57	273	iPd	44	41.20	-0.9	MSU	128.17	49	PKP	50	06.70	1.3							
	0.7s	7.00nm			5.3mb		GOL	132.66	45	PKP	50	14.30	0.4							
		ic	49	00.40			ALO	133.67	52	ePKP	50	05.00	-10.9X							
IMA	99.65	24	eP	44	42.50	1.0				e	50	16.50								
	1.1s	12.50nm			5.4mb		TUL	141.13	45	ePKP	50	23.50	-5.9X							
SUF	100.41	332	ePdiff	44	47.10	2.3X				1.3s	41.30nm									
SOD	100.51	337	ePdiff	44	44.00	-1.2	FVM	143.44	38	PKP	50	30.00	-3.4X							
KEV	100.52	339	ePdiff	44	29.00	-16.1X	ILI	143.65	74	(PKP)	50	33.00	-1.5							
VAY	100.90	310	ePdiff	44	45.30	-2.2X	CBM	144.02	6	PKP	50	32.20	-1.9							
TOA	102.76	29	ePdiff	44	57.20	1.8	POW	144.10	41	PKP	50	32.00	-2.5X							
ZST	105.10	317	ePKP	49	25.20	4.6X	OLY	144.29	43	PKP	50	32.80	-2.1X							
KSP	105.59	320	ePKP	49	09.00	-12.5X	PPM	144.36	73	(PKP)	50	36.00	-0.1							
		ed	49	29.00			RSNY	145.16	15	PKP	50	35.30	-0.8							
		e	49	35.00			WNY	145.47	14	PKP	50	36.40	-0.3							
MGR	106.16	309	PKP	49	40.00	17.1X	CLE	145.49	26	iPKP	50	38.00	1.3							
SGO	106.35	309	PKP	49	38.00	14.8X	MIM	145.57	8	PKP	50	37.90	1.2							
VBY	106.39	314	ePKP	49	35.00	11.8X	HBVT	145.69	13	PKP	50	37.80	0.8							
		e	49	42.00			BNH	145.84	11	PKP	50	38.20	0.9							
PRU	106.74	319	PKP	49	38.00	14.3X	EMM	146.26	6	PKP	50	39.50	1.6							

S.D. = 1.2 on 165 of 236 obs.&lt;/



LR	44	30.10		ANP	1.49	343	iP	08	18.60	0.3		PP	33	04.50					
BJI	75.66	322	eP	37	53.00	-1.0		S	08	32.00		SSE	41.88	2	eP	32	49.00	-4.0X	
KMI	76.87	302	Pc	38	02.00	0.5		ePn	09	37.50	-3.7X		sP	33	06.50				
			pP	39	10.00	292kmX		eS	10	53.50		NJ2	42.00	359	eP	33	02.00	1.5	
CHG	77.24	295	eP	38	04.00	0.7		Lg	11	40.50		CD2	44.31	341	P	33	12.60	-0.3	
CHTO	77.24	295	eP	38	02.30	-1.0			20	16.10	-0.7	SHL	45.19	324	iP	33	19.00	-1.3	
	1.3s	21.24nm			5.0mb							XAN	45.89	348	P	33	25.00	-0.5	
			pP	38	12.30	32kmX						KOD	46.79	295	eP	33	33.80	0.7	
LZH	81.37	313	eP	38	24.50	-1.0						GBA	48.33	299	Pd	33	43.70	-1.2	
	2.0s	37.00nm			5.0mb								0.6s	21.40nm			5.4mb		
WDC	87.33	46	ePc	38	55.50	0.3						LSA	48.80	327	P	33	49.00	0.1	
ORV	87.58	47	ePc	38	57.70	1.3						TIY	48.89	353	eP	33	47.80	-1.2	
CMB	87.69	49	ePc	38	57.40	0.3						LZH	49.09	343	eP	33	51.00	0.4	
FRI	87.73	50	eP	38	57.40	0.2							1.4s	25.00nm			5.1mb		
MIN	87.86	46	ePc	38	58.70	0.8							sP	34	04.50				
YKA	100.70	27	ePd	39	53.40	-2.8X						HYB	49.31	304	iPd	33	51.20	-1.2	
	0.4s	0.20nm			4.0mb								0.8s	57.70nm			5.7mb		
KBA	144.78	329	iPKPc	45	42.10	-3.5X						MAT	50.46	20	iPc	34	00.40	-0.6	
	1.0s	8.10nm										GUN	50.53	321	P	34	01.40	-0.7	
VBY	144.88	326	e(PKP)	45	43.40	-2.2X						PKI	50.59	320	P	34	01.30	-1.2	
LJU	144.90	327	e(PKP)	45	43.00	-2.7X						DMN	50.81	320	P	34	03.10	-0.9	
MEM	144.97	340	PKP	45	42.70	-2.9X							0.8s	42.00nm			5.5mb		
ABH	145.06	338	ePKP	45	43.45	-2.4X						KKN	50.82	320	P	34	03.40	-0.7	
RBL	145.11	328	PKP	45	36.50	-9.6X							0.8s	40.00nm			5.4mb		
CEY	145.16	327	e(PKP)	45	43.50	-2.6X						BJI	50.86	357	eP	34	01.50	-2.3	
VOY	145.23	328	e(PKP)	45	42.50	-3.8X							SP	34	16.00				
RUP	145.38	338	ePKP	45	44.63	-1.8						GKN	51.38	320	P	34	07.30	-1.0	
FVI	145.39	329	PKP	45	38.00	-8.4X						HHC	52.09	352	eP	34	13.10	-0.3	
DOU	145.87	341	PKP	45	45.70	-1.4						SNY	52.69	4	eP	34	16.80	-0.8	
OGA	146.02	331	ePKP	45	47.00	-0.8						GTA	53.38	341	eP	34	23.00	0.0	
CTI	146.33	330	PKP	45	42.50	-5.7X						P00	53.72	303	iPc	34	26.30	0.6	
CDF	146.37	336	ePKP	45	48.00	-0.2						CN2	54.80	5	P	34	31.80	-1.4	
	0.8s	5.35nm											sP	34	44.60				
BCAO	146.92	249	iPKPc	45	50.60	0.6						MDJ	56.10	9	eP	34	41.70	-0.8	
	0.7s	12.00nm										WMO	61.74	334	P	35	22.00	0.1	
		id	46	05.50								KSH	64.43	324	P	35	40.50	0.7	
BSF	147.04	336	ePKP	45	48.70	-0.6						QUE	65.01	311	eP	35	44.60	0.8	
	0.8s	5.35nm										MAIO	73.43	313	iPd	36	36.20	0.8	
HAU	147.06	337	ePKP	45	49.00	-0.2						SPA	79.08	180	eP	37	09.00	2.3	
	1.0s	12.00nm											1.0s	6.50nm			4.6mb		
MDI	147.44	331	PKP	45	48.00	-1.8						BUL	87.08	250	iPd	37	48.30	-0.3	
ARV	147.44	325	PKP	45	48.50	-1.4						YKA	115.80	25	ePKP	43	46.00	1.4	
VAI	147.80	332	PKP	45	48.50	-1.8							0.6s	1.10nm					
PGD	147.84	327	PKP	45	50.50	-0.3						KIC	124.72	270	PKP	44	05.10	2.0X	
SDI	148.10	322	PKP	45	50.00	-1.1						LIC	124.98	270	PKPc	44	05.30	1.7	
BOB	148.32	330	PKP	45	53.00	1.6						TIC	125.04	270	PKP	44	05.50	1.7	
FLN	148.49	345	ePKP	45	51.20	-0.2						ARE	150.65	158	e(PKP)	45	00.00	10.0X	
	1.0s	16.00nm										LPB	151.65	165	PKPc	45	02.50	10.8X	
LOR	148.57	339	ePKP	45	52.90	1.3							1.0s	30.00nm					
	1.0s	12.00nm										ZOBO	151.89	164	PKPd	45	02.20	10.0X	
LBF	148.78	339	ePKP	45	53.90	1.9							1.1s	14.50nm					
	1.0s	6.00nm										NNA	152.00	144	ePKPd	45	02.50	10.7X	
SSF	148.87	339	ePKP	45	54.00	1.9							0.7s	8.90nm					
	1.0s	16.00nm											S.D. = 1.2 on 58 of 73 obs.						
GRR	148.93	345	ePKP	45	53.40	1.3													
	1.2s	23.80nm																	
LPL	148.95	334	ePKP	45	54.90	2.3X													
	1.2s	8.95nm																	
LPG	148.96	334	ePKP	45	54.90	2.2X													
	1.0s	7.00nm																	
AVF	149.16	339	ePKP	45	54.80	2.3X													
	0.8s	5.35nm																	
LPF	149.31	345	ePKP	45	54.70	2.0													
	1.0s	20.00nm																	
BNI	149.35	333	PKP	45	56.00	2.9X													
TCF	149.98	340	ePKP	45	56.70	2.9X													
	1.0s	10.00nm																	
LSF	150.23	341	ePKP	45	57.00	2.8X													
	1.0s	12.00nm																	
MFF	150.40	343	ePKP	45	57.20	2.8X													
	1.2s	20.85nm																	
	S.D. = 1.2 on 38 of 58 obs.																		
	MAR 06, 1990 15h 07m 53.40±1.52s																		
	23.747 N ±11.0km 121.990 E ±14.9km																		
	DEPTH = 33.0km (normol)																		
	3.7mb ( 1 obs.)																		
TAIWAN						(244)													
TWD	0.49	313	iPd	08	03.90	0.0													
TWF1	0.75	238	iPc	08	08.10	0.6													
			eS	08	18.10														
TWC	0.87	351	ePc	08	10.20	1.0													
			eS	08	21.20														
TWO	1.18	297	iPd	08	12.80	-0.9													
			eS	08	25.70														
TWZ	1.40	345	ePc	08	16.30	-0.5													



06d 16h

\* MAR 06, 1990 16h 15m 25.63±1.98s  
 34.203 S ±13.8km 176.800 E ±24.6km  
 DEPTH = 10.0km (geophysicist)  
 3.8mb ( 1 obs.)

NORTH OF NEW ZEALAND (176)

HBZ 3.60 161 eP 16 23.10 0.5  
 PGZ 6.42 184 eP 17 01.80 -0.7  
 MNG 6.49 189 P 17 04.30 0.8  
 KIW 6.82 192 P 17 09.50 1.4  
 MTW 7.02 188 P 17 09.50 -1.4  
 CAW 7.03 191 eP 17 10.80 -0.3  
 WDW 7.20 191 eP 17 13.00 -0.4  
 MRW 7.21 193 eP 17 13.90 0.3  
 TCW 7.28 195 eP 17 15.50 1.0  
 MOW 7.31 189 P 17 13.70 -1.3  
 KHZ 8.59 196 eP 17 33.00 0.1  
 WRA 40.10 280 Pd 23 03.30 0.2  
 0.6s 1.30nm 3.8mb  
 WB5 40.11 280 eP 23 03.00 -0.2  
 S.D. = 0.9 on 13 of 13 obs.

? MAR 06, 1990 17h 07m 10.83±0.99s  
 38.185 N ± 8.5km 23.264 E ±10.6km  
 DEPTH = 10.0km (geophysicist)

GREECE (364)  
 ML 2.3 (ATH).

ATH 0.42 121 ePg 07 19.00 -0.3  
 eSg 07 25.50  
 NEO 1.12 358 ePb 07 32.00 0.1  
 ITM 1.46 227 ePb 07 36.50 -0.7  
 VLI 1.49 190 ePn 07 38.50 0.9  
 S.D. = 1.2 on 4 of 4 obs.

? MAR 06, 1990 17h 16m 22.96±2.18s  
 37.357 N ±10.4km 73.331 E ±10.2km  
 DEPTH = 33.0km (normol)  
 4.6mb ( 3 obs.)

TAJIK SSR (715)

QUE 8.90 218 eP 18 33.50 1.0  
 eS 20 07.00  
 NDI 9.24 158 eP 18 42.60 5.6X  
 eS 20 15.00  
 MAIO 11.14 269 eP 19 03.00 -0.1  
 eS 21 07.00  
 GKN 13.32 131 P 19 33.60 1.3  
 0.4s 7.00nm 5.0mb  
 KKN 13.86 130 P 19 39.60 0.1  
 0.5s 6.00nm 4.6mb  
 DMN 13.89 131 P 19 40.60 0.7  
 PKI 14.10 130 P 19 42.60 -0.2  
 GUN 14.15 128 P 19 43.00 -0.4  
 HYB 20.39 166 eP 20 57.00 -2.8  
 GBA 23.94 170 Pd 21 35.40 0.4  
 0.4s 3.40nm 4.2mb  
 S.D. = 1.4 on 9 of 10 obs.

MAR 06, 1990 18h 01m 48.03±0.46s  
 34.133 N ± 5.6km 117.679 W ± 4.5km  
 DEPTH = 5.0km (geophysicist)  
 SOUTHERN CALIFORNIA ( 43)  
 ML 3.5 (NEIS).

MWC 0.33 286 iPd 01 54.80 0.1  
 PEC 0.49 119 iPc 01 58.60 0.7  
 CIS 0.94 220 iP 02 06.80 0.3  
 i(S) 02 19.70  
 PLM 1.03 139 eP 02 08.00 -0.1  
 ABL 1.46 300 eP 02 14.80 -0.5  
 BCH 2.24 299 eP 02 26.50 0.0  
 BLP 2.29 281 eP 02 27.00 -0.1  
 GLA 2.61 114 eP 02 30.80 -0.9  
 TNP 3.96 5 eP 02 51.50 0.6  
 KVN 4.92 356 eP 03 04.50 -0.1  
 S.D. = 0.5 on 10 of 10 obs.

MAR 06, 1990 18h 07m 04.76±0.23s  
 36.909 N ± 5.6km 73.038 E ± 3.5km  
 DEPTH = 19.6km ( 7 depth phases)  
 5.0mb ( 40 obs.) 4.9MsZ ( 6 obs.)  
 NORTHWESTERN KASHMIR (720)  
 CENTROID, MOMENT TENSOR (HRV)  
 Data Used: GDSN  
 L.P.B.: 11S, 23C  
 Centroid Location:

Origin Time 18:07: 8.7 0.6  
 Lat 37.18N 0.11 Lon 72.84E 0.08  
 Dep 33.0 FIX Half-duration 1.9  
 Moment Tensor: Scale 10\*\*17 Nm  
 Mrr=-0.85 0.08 Mtt=-0.31 0.15  
 Mff= 1.15 0.10 Mrt= 0.72 0.17  
 Mrf=-0.64 0.22 Mtf=-0.37 0.10

Principal Axes:  
 T Val= 1.52 Plg=20 Azm= 71  
 N -0.13 25 331  
 P -1.39 58 195  
 Best Double Couple: Mo=1.5\*10\*\*17  
 NP1: Strike=195 Dip=33 Slip= -41  
 NP2: 321 69 -116

KSH 3.44 41 Pn 08 03.00 4.4X  
 Sn 08 48.00  
 QUE 8.41 219 eP 09 09.90 1.2  
 eS 10 33.20  
 NDI 8.92 156 iPc 09 14.00 -1.6  
 0.5s 112.68nm 6.4mb X  
 MAIO 10.91 271 iPd 09 40.70 -2.2  
 0.7s 42.25nm 5.8mb  
 eS 11 30.00  
 WMO 13.13 54 P 10 11.00 -1.8  
 Z 18s 6.20um  
 N 11s 9.50um  
 E 11s 11.10um

GKN 13.21 129 P 10 29.00  
 KKN 13.76 128 P 10 08.00 -6.0X  
 DMN 13.78 129 P 10 15.30 -6.1X  
 PKI 14.00 128 P 10 16.20 -5.4X  
 GUN 14.06 126 P 10 18.40 -6.2X  
 LSA 14.06 126 P 10 19.20 -6.2X  
 16.75 110 eP 10 56.70 -3.5X  
 N 11s 9.90um  
 E 11s 2.60um

TEH 17.49 273 eP 11 13.00 3.8X  
 IR2 17.89 273 eP 11 15.50 1.3  
 IR4 17.97 271 eP 11 15.00 -0.2  
 IR1 18.11 272 eP 11 19.00 2.1  
 IR7 18.12 273 eP 11 19.00 2.0  
 POO 18.32 178 eP 11 19.30 -0.2  
 IS 14 50.00  
 SHL 19.65 120 iP 11 28.50 -7.0X  
 IS 14 57.00  
 HYB 20.02 164 eP 11 37.00 -2.3  
 1.0s 90.00nm 5.1mb  
 eS 15 12.00  
 GTA 21.18 75 iPc 11 50.60 -0.7  
 1.0s 100.00nm 5.2mb  
 Z 14s 2.90um 4.8MsZ X  
 N 14s 5.70um

TAB 21.21 281 eP 11 55.00 3.4X  
 KER 21.21 271 ePc 11 53.50 1.8  
 BBU 21.95 247 iP 12 00.00 1.1  
 BJA 21.96 247 eP 11 59.60 0.6  
 DHR 22.13 248 eP 12 05.50 4.8X  
 SLY 22.22 275 ePd 12 05.50 3.9X  
 eS 16 14.00  
 eSS 17 01.00  
 eSSS 17 18.00  
 eScP 19 33.50  
 eLQ 21 16.50

GBA 23.54 169 Pd 12 15.20 0.6  
 0.8s 63.00nm 5.2mb  
 BHD 23.68 270 ePc 12 19.00 3.1X  
 iPP 13 20.00  
 iS 16 39.00  
 iS 17 08.00  
 iSS 17 42.00  
 MSL 23.95 278 ePc 12 25.50 7.0X  
 eS 16 56.00  
 LZH 24.73 83 Pc 12 26.50 0.2  
 4.0s 0.55nm 2.5mb X  
 Z 12s 4.20um 5.2MsZ X  
 N 11s 3.60um  
 E 11s 1.70um

PP 12 34.00  
 eS 16 44.00  
 SS 16 55.00  
 RYD 25.65 249 eP 12 34.20 -0.8  
 CD2 26.12 94 P 12 41.10 1.9  
 1.4s 100.00nm 5.3mb  
 Z 15s 1.90um 4.8MsZ X  
 N 12s 5.10um

S 17 12.00  
 sS 17 26.00  
 KMI 27.92 106 Pc 12 57.00 1.0  
 Z 16s 3.10um 5.0MsZ X  
 N 15s 4.00um  
 E 15s 1.50um

eS 17 39.00  
 BTO 28.94 71 P 13 05.00 0.2  
 N 15s 7.20um  
 E 15s 6.80um  
 pP 13 12.00 24km  
 S 17 57.50  
 CHG 29.00 121 eP 13 05.80 0.3  
 1.2s 23.44nm 4.8mb  
 eS 18 20.00  
 CHTO 29.00 121 eP 13 06.00 0.5  
 1.3s 22.47nm 4.8mb  
 XAN 29.26 85 P 13 07.00 -0.7  
 N 12s 3.80um  
 E 12s 1.70um

S 18 00.00  
 KMSA 29.83 244 eP 13 11.30 -1.7  
 HHC 30.08 70 eP 13 16.80 1.7  
 Z 12s 7.10um 5.5MsZ X  
 N 10s 1.80um  
 E 12s 2.00um  
 sP 13 23.00  
 eS 18 16.00

BDT 30.14 124 eP 13 14.60 -1.0  
 GYA 30.31 100 P 13 18.40 1.1  
 Z 24s 2.30um 4.7MsZ X  
 N 14s 4.70um  
 E 14s 2.20um  
 TIY 31.19 76 eP 13 25.50 0.7  
 N 15s 5.20um

S 18 33.00  
 BBTK 31.53 288 eP 13 29.00 1.2  
 LOE 31.89 120 eP 13 29.00 -2.0  
 BJI 33.68 71 P 13 48.00 1.6  
 Z 17s 7.36um 5.5MsZ X  
 N 15s 4.57um  
 eS 19 12.00

YLV 34.00 290 iP 13 58.40 9.1X  
 NNT 34.04 128 eP 13 49.10 -0.7  
 KHL 34.26 286 eP 13 51.60 0.0  
 ELL 34.31 283 eP 13 52.00 -0.1  
 WHN 34.74 88 eP 13 55.50 -0.1  
 Z 12s 1.80um 5.0MsZ X  
 N 12s 3.90um

S 19 29.00  
 TIA 35.18 78 eP 14 00.80 1.4  
 Z 18s 2.00um 4.9MsZ  
 N 17s 4.90um  
 E 14s 1.30um  
 eS 19 34.00  
 VRI 35.45 299 ePc 14 05.00 3.4X  
 MLR 36.02 299 eP 14 08.00 1.4  
 PVL 36.65 295 eP 14 15.00 3.3X  
 QIZ 36.78 109 eP 14 16.40 3.3X

N 18s 3.70um  
 E 18s 3.70um  
 eS 19 58.00  
 KDZ 36.80 292 iP 14 04.00 -9.0X  
 GZH 37.25 100 eP 14 18.60 1.7  
 N 13s 3.30um  
 E 13s 1.60um

PGB 37.58 294 eP 14 22.00 2.3  
 NJ2 37.80 83 eP 14 23.50 2.0  
 Z 20s 1.50um 4.8MsZ  
 N 14s 2.70um  
 E 14s 1.00um  
 DL2 38.03 72 eP 14 24.00 0.6  
 Z 18s 2.70um 5.1MsZ  
 N 16s 2.30um  
 E 17s 3.80um

S 20 17.00  
 VTS 38.28 294 eP 14 26.00 0.4  
 SUF 38.45 327 eP 14 30.00 3.4X  
 NUR 38.46 324 iP 14 26.60 -0.1  
 0.8s 36.70nm 5.2mb  
 KKB 38.49 293 eP 14 30.00 2.8  
 SNY 38.92 67 eP 14 32.90 2.1  
 Z 16s 3.90um 5.3MsZ X  
 N 12s 1.10um  
 E 12s 1.50um  
 VAY 38.96 292 eP 14 31.40 0.3  
 BZS 39.04 299 eP 14 33.00 1.3



SKO	39.68	294	eP	14	36.00	-1.1	BSF	48.75	305	eP	15	48.80	-1.3	ML 2.3 (LDG).						
SPC	39.71	305	eP	14	37.80	0.3		1.2s	20.85nm			5.0mb								
KRA	39.88	306	eP	14	39.00	0.3	HAU	49.00	305	eP	15	50.70	-1.2	CAF	0.61	254	Pg	17	49.40	-0.9
			e	14	44.80	20km		1.2s	23.80nm			5.1mb					Sn	18	00.60	
CN2	39.96	63	P	14	42.60	3.2X	DOI	49.24	301	P	15	57.50	3.6X				Sn	18	02.70	
Z	15s		4.00um			5.4MsZ	SBF	49.28	300	eP	15	53.10	-1.1	RJF	0.99	282	Pn	17	57.50	0.7
N	15s		5.00um					1.0s	24.00nm			5.2mb					Pg	17	58.10	
E	15s		3.00um				LPG	49.32	302	eP	15	54.10	-0.7				Sg	18	13.70	
			ePP	14	50.00	25km		0.8s	8.05nm			4.8mb		MAF	1.14	349	Pg	17	59.10	-0.3
			eS	20	43.00		LPL	49.33	302	eP	15	53.90	-0.8				Sg	18	17.00	
SSE	40.00	84	P	14	42.00	2.1		1.0s	14.00nm			4.9mb		TCF	1.28	338	Pg	18	01.80	0.1
Z	20s		2.00um			5.0MsZ	BNI	49.49	301	P	15	57.30	1.5				Sg	18	21.40	
N	15s		3.50um				DOU	49.68	308	Pc	15	59.00	2.0	LPO	1.28	252	Pn	18	00.70	-1.0
E	16s		1.10um				NAI	50.72	230	eP	16	11.00	5.4X				Pg	18	02.20	
			sP	14	53.00		LBF	50.81	304	eP	16	04.40	-1.3				Sg	18	21.60	
SOD	40.07	334	iP	14	40.00	0.0		1.2s	8.95nm			4.6mb		BGF	1.46	359	Pn	18	02.50	-1.8
OMR	40.31	293	eP	14	44.20	1.8	LOR	50.81	305	eP	16	04.10	-1.6				Pg	18	04.20	
	1.5s		0.05nm			2.0mb X		1.2s	11.90nm			4.7mb					Sg	18	25.00	
			e	16	28.30		SMF	50.99	304	eP	16	05.60	-1.5	LSF	1.49	321	Pn	18	04.60	-0.2
KEV	41.04	338	iP	14	47.70	-0.2		1.2s	20.85nm			4.9mb					Pg	18	07.10	
	0.7s		26.70nm			5.1mb	SSF	51.10	305	eP	16	06.40	-1.5				Sg	18	30.00	
SRO	41.09	303	iP	14	50.30	1.7		1.2s	11.90nm			4.7mb		LFF	1.53	265	Pg	18	07.20	1.8
IPM	41.15	135	eP	14	51.00	1.6	AVF	51.27	304	eP	16	07.60	-1.6				Sg	18	30.50	
UPP	41.77	321	iP	14	53.00	-1.0		1.0s	20.00nm			5.0mb		AVF	1.72	11	Pg	18	08.00	-0.1
ZST	41.86	304	eP	14	58.50	3.6X	MAT	51.28	70	eP	16	08.00	-1.4				Sg	18	31.80	
			e	16	38.50	559kmX		0.8s	13.43nm			4.9mb		SSF	2.01	12	Pg	18	13.90	1.6
KSP	42.18	308	eP	14	52.00	-5.5X			eS	23	27.00					Sg	18	48.90		
			e	16	38.50		MAF	51.95	304	eP	16	13.50	-0.9	S.D. = 1.3 on 10 of 10 obs.						
SOP	42.28	303	eP	14	58.00	-0.4		1.0s	16.00nm			4.9mb		* MAR 06, 1990 18h 22m 12.79±0.59s						
MDJ	42.77	61	Pc	15	04.00	1.5	TCF	52.17	304	eP	16	14.90	-1.2	36.954 N ± 9.5km 73.460 E ± 9.5km						
	Z	16s	3.60um			5.4MsZ		1.2s	17.85nm			4.9mb	DEPTH = 10.0km (geophysicist)							
	N	14s	1.40um				LSF	52.63	304	eP	16	17.90	-1.6	4.1mb ( 4 obs.)						
			ePP	15	11.00	23km	CAF	52.67	302	eP	16	18.60	-1.2	NORTHWESTERN KASHMIR (720)						
			ePP	16	45.00			1.0s	10.00nm			4.7mb	QUE 8.66 221 eP 24 21.00 -0.2							
			eS	21	24.00		LDF	53.04	307	eP	16	20.60	-1.9	GKN 12.98 130 P 25 20.40 0.3						
			SS	24	30.00			1.0s	12.00nm			4.8mb	KKN 13.53 129 P 25 27.00 -0.4							
PTJ	42.93	301	eP	14	57.40	-6.4X	EKA	53.13	316	P	16	22.00	-1.1	DMN 13.55 130 P 25 27.60 -0.1						
PRU	43.36	307	P	15	07.50	0.3		1.1s	17.00nm			4.9mb	PKI 13.76 129 P 25 30.10 -0.5							
			e	15	13.00	18km	GRR	53.56	307	eP	16	24.30	-2.0	GUN 13.82 127 P 25 30.60 -0.8						
VBY	43.48	300	e(P)	15	12.00	3.8X		1.0s	24.00nm			5.1mb	GBA 23.52 170 Pc 27 25.10 1.3							
BRG	43.66	308	iP	15	09.70	0.1	DAG	54.83	344	iPd	16	33.80	-1.5	0.6s 4.00nm 4.2mb						
	1.0s		14.00nm			4.7mb		0.7s	28.77nm			5.4mb	CHTO 28.74 122 e(P) 28 12.90 0.4							
			i	16	59.20	637kmX	TOL	58.69	299	eP	17	06.00	2.8	HFS 43.94 321 ePKP 30 21.70 0.5						
HFS	43.76	322	eP	15	09.20	-1.1	BCAO	59.34	251	iPd	17	05.50	-2.5	0.7s 3.20nm 4.3mb						
	0.7s		24.90nm			5.1mb		0.6s	20.00nm			5.4mb	NB2 45.21 323 P 30 29.40 -2.1							
Z	17s		1.94um			5.1MsZ			id	17	10.40	16km	0.7s 1.60nm 4.1mb							
			LR	32	42.00				ic	17	40.60		MBC 66.78 3 eP 33 07.00 1.1							
LJU	43.89	301	eP	15	12.20	0.7			id	18	40.40		YKA 80.68 4 eP 34 27.50 0.6							
CEY	44.01	301	eP	15	15.50	2.9	MBC	66.85	3	ePd	17	55.80	-1.0	0.5s 0.70nm 3.9mb						
KHC	44.08	306	iP	15	13.60	0.5		0.7s	60.00nm			5.9mb	S.D. = 1.0 on 12 of 12 obs.							
			e	15	42.00	124kmX	BUL	70.54	224	eP	18	16.50	-4.1X	* MAR 06, 1990 19h 02m 04.27±5.00s						
CLL	44.21	309	eP	15	13.00	-1.0	IMA	71.23	18	eP	18	22.70	-1.5	43.326 N ± 25.0km 127.493 W ± 31.6km						
CZI	44.23	291	P	15	14.50	0.2		0.8s	6.80nm			4.8mb	DEPTH = 10.0km (geophysicist)							
VOY	44.33	301	eP	15	17.00	1.8	INK	73.23	10	eP	18	34.00	-1.8	OFF COAST OF OREGON ( 30)						
MGR	44.42	293	P	15	15.80	-0.1	FBA	73.61	17	eP	18	37.00	-1.1	CL 3.2 (SEA).						
RBL	44.48	302	P	15	16.50	0.1	FRB	75.15	343	eP	18	46.00	-1.0	GROR	3.41	52	P	02	58.42	-0.3
SGO	44.49	293	P	15	17.00	0.6	PMR	76.05	19	eP	18	51.20	-0.9	KMOR	3.68	50	P	03	01.67	-0.8
KBA	44.53	303	iPd	15	15.50	-1.4		0.9s	18.70nm			5.1mb	NLO 3.99 45 P 03 06.86 0.0							
	1.1s		18.90nm			4.9mb	TOA	76.37	18	eP	18	53.80	-0.3	PGO	4.20	58	P	03	09.92	0.2
			i	15	28.90	50kmX	KIC	76.44	268	P	18	52.80	-2.3	TCO	4.34	78	P	03	12.08	0.1
			i	15	38.40		TIC	76.50	268	P	18	53.00	-2.4	BMW	4.37	42	P	03	11.48	-0.8
			e	17	12.00		LIC	76.75	268	P	18	54.50	-2.3				S	04	03.52	
SOI	44.61	290	P	15	19.50	2.1		Z	20s		0.47um		4.8MsZ	RVW	4.41	49	P	03	12.54	-0.2
DUI	44.84	295	P	15	19.50	0.1	SWZ	77.95	222	eP	19	01.00	-2.3	ONR	4.42	35	P	03	12.51	-0.4
FVI	44.99	302	P	15	24.50	4.1X		0.7s	10.27nm			5.0mb		VLMM	4.49	59	P	03	14.18	0.2
ATN	45.03	290	P	15	20.00	-0.9	YKA	80.75	4	eP	19	16.20	-1.5	TDH	4.54	62	P	03	14.88	0.2
NB2	45.04	323	P	15	19.20	-1.5		0.8s	10.60nm			4.9mb		LVP	4.54	51	P	03	14.91	0.2
	1.0s		31.60nm			5.2mb	WB5	80.81	123	eP	19	19.00	0.3	VBEM	4.59	66	P	03	15.71	0.3
MOX	45.15	308	e(P)	15	26.00	4.3X			i	19	22.30	11km		MTMW	4.63	53	P	03	16.01	0.0
SDI	45.30	295	P	15	28.00	5.0X	WRA	80.83	123	Pc	19	18.90	0.0	FL2	4.65	50	P	03	16.61	



06d 19h

SOSW 4.80 51 P 03 18.57 0.2  
 APM 4.80 58 P 03 18.64 0.2  
 TDL 4.82 49 P 03 18.63 -0.1  
 KOSW 4.90 48 P 03 19.85 0.1  
 GULW 4.95 56 P 03 20.38 -0.1  
 CROR 4.96 68 P 03 20.01 -0.7  
 LMW 4.98 46 P 03 20.74 -0.1  
 OOW 4.98 27 P 03 20.80 -0.1  
 ASR 5.06 54 P 03 22.22 0.1  
 VIPM 5.10 74 P 03 22.34 -0.4  
 MEW 5.17 40 P 03 23.99 0.5  
 GLK 5.28 50 P 03 25.40 0.1  
 VTHM 5.31 67 P 03 25.42 -0.2  
 RVC 5.32 45 P 03 25.73 0.0  
 WPW 5.40 49 P 03 26.80 -0.1  
 S 04 30.34  
 GL2 5.44 59 P 03 27.20 -0.2  
 FMW 5.47 47 P 03 27.91 -0.1  
 GSM 5.59 44 P 03 29.31 -0.2  
 RMW 5.75 42 P 03 31.62 -0.2  
 JBO 5.89 66 P 03 33.66 0.0  
 HTW 6.02 40 P 03 34.55 -0.9  
 JCW 6.23 37 P 03 38.60 0.1  
 MCW 6.26 30 P 03 40.26 1.3  
 RSW 6.40 59 P 03 40.65 -0.3  
 RPW 6.61 37 P 03 43.41 -0.4

S.D. = 0.4 on 52 of 52 obs.

% MAR 06, 1990 19h 05m 08.47 ± 0.79s  
 33.445 S ± 10.7km 70.895 W ± 8.1km  
 DEPTH = 33.0km (normal)

CHILE-ARGENTINA BORDER REGION (127)

SAN 0.20 92 iPc 05 14.20 -0.9  
 ROCH 0.48 348 iP 05 19.00 0.0  
 IS 05 25.40  
 FCH 0.52 77 iPc 05 20.40 0.7  
 IS 05 28.30  
 LCCH 0.56 267 iPd 05 20.00 0.0  
 IS 05 27.50  
 LNV 0.67 220 iPc 05 21.60 0.2  
 IS 05 30.60

S.D. = 0.8 on 5 of 5 obs.

? MAR 06, 1990 20h 32m 35.38 ± 1.81s  
 36.168 N ± 21.7km 71.377 E ± 11.5km  
 DEPTH = 33.0km (normal)

AFGHANISTAN-USSR BORDER REGION (717)

QUE 7.02 213 eP 34 18.70 0.0  
 eS 35 34.30  
 GKN 13.87 122 P 35 52.00 0.0  
 0.4s 8.00nm 4.8mb  
 DMN 14.44 122 P 36 00.60 1.0  
 KKN 14.45 121 P 35 58.80 -0.8  
 PKI 14.67 122 P 36 02.80 0.1  
 GUN 14.79 120 P 36 03.80 -0.4  
 0.4s 6.00nm 4.3mb  
 PIP 46.73 99 ePc 41 03.50 0.3  
 CVP 48.03 99 eP 41 13.20 -0.2

S.D. = 0.6 on 8 of 8 obs.

MAR 06, 1990 21h 09m 56.20 ± 0.60s  
 41.053 N ± 6.2km 22.428 E ± 4.6km  
 DEPTH = 10.0km (geophysicist)

YUGOSLAVIA (383)

ML 2.1 (THE), 1.7 (SKO).

VAY 0.29 22 iPg 10 01.80 -0.4  
 ISg 10 05.80  
 KNT 0.37 73 iPgd 10 04.00 0.2  
 eSg 10 08.70  
 THE 0.59 136 iPgd 10 07.20 -0.8  
 eSg 10 15.20  
 SOH 0.74 108 iPgd 10 10.40 -0.3  
 eSg 10 19.60  
 FNA 0.84 252 ePg 10 12.80 0.3  
 eSg 10 24.00  
 SRS 0.88 85 ePg 10 14.20 1.0  
 eSg 10 24.90  
 LIT 0.95 177 ePg 10 14.60 0.3  
 eSg 10 28.60  
 OHR 1.23 273 ePn 10 19.00 -0.2

S.D. = 0.7 on 8 of 8 obs.

MAR 06, 1990 21h 11m 08.24 ± 0.74s  
 42.632 N ± 7.9km 140.982 E ± 7.1km

DEPTH = 155.9 ± 7.0 km

4.5mb (15 obs.)

HOKKAIDO, JAPAN REGION

(224)

MRRJ 0.22 162 P 11 29.10 0.1  
 S 11 44.70  
 MAT 6.45 200 eP 12 43.00 1.1  
 0.8s 26.12nm 4.6mb  
 eS 13 55.00  
 MDJ 8.50 287 eP 13 09.20 -0.1  
 CN2 11.40 281 eP 13 48.00 0.6  
 BJI 18.79 270 eP 15 16.00 -2.0  
 TIA 19.48 259 eP 15 22.70 -2.5  
 TIY 22.31 267 eP 15 52.50 -0.8  
 XAN 26.45 262 eP 16 31.00 -1.3  
 GUMO 29.13 172 eP 16 43.20 -13.3X  
 GTA 31.01 278 eP 17 13.00 0.0  
 WMO 38.28 291 P 18 15.40 0.5  
 BRW 41.45 26 eP 18 40.20 -0.2  
 IMA 42.12 34 eP 18 45.80 -0.4  
 0.6s 3.70nm 4.2mb  
 CHG 42.65 249 eP 18 52.50 1.7  
 FBA 44.63 35 eP 19 06.80 0.6  
 GUN 46.54 270 P 19 22.90 0.7  
 KKN 47.05 270 P 19 26.80 0.8  
 0.6s 14.00nm 4.7mb  
 PKI 47.07 270 P 19 26.80 0.4  
 0.6s 12.00nm 4.7mb  
 DMN 47.28 270 P 19 28.60 0.7  
 0.7s 17.00nm 4.8mb  
 GKN 47.40 271 P 19 29.10 0.4  
 INK 49.61 29 eP 19 44.50 -0.4  
 MBC 51.28 18 eP 19 57.50 0.0  
 YKA 59.18 32 eP 20 53.30 -1.1  
 0.7s 2.00nm 4.1mb  
 DAG 60.19 355 iPd 21 00.00 -1.1  
 0.6s 6.00nm 4.7mb  
 WB5 62.50 187 eP 21 16.90 -0.2  
 WRA 62.56 187 Pd 21 17.00 -0.5  
 0.7s 7.80nm 4.7mb  
 SUF 62.87 332 eP 21 24.10 5.0X  
 NUR 64.88 331 iP 21 31.70 -0.5  
 ASPA 66.29 187 eP 21 40.50 -1.1  
 0.8s 6.00nm 4.5mb  
 HFS 68.87 335 eP 21 56.40 -0.9  
 1.2s 37.70nm 5.1mb  
 NB2 68.92 336 P 21 57.40 -0.2  
 0.7s 6.20nm 4.5mb  
 FRB 71.41 13 eP 22 12.00 -0.6  
 CLL 76.10 329 iP 22 39.90 0.1  
 i 22 45.20  
 LOR 82.77 332 eP 23 21.80 6.1X  
 0.8s 4.05nm 4.3mb  
 LPL 83.24 330 eP 23 21.00 2.7  
 0.6s 2.25nm 4.2mb  
 LPG 83.25 330 eP 23 20.40 1.9  
 0.6s 2.25nm 4.2mb  
 MAF 84.12 332 eP 23 23.70 1.2  
 0.6s 2.70nm 4.2mb  
 TIC 122.02 319 PKP 29 46.00 0.2  
 KIC 122.13 319 PKP 29 46.20 0.2  
 LIC 122.39 319 PKP 29 46.70 0.2

S.D. = 1.1 on 37 of 40 obs.

MAR 06, 1990 21h 39m 50.26 ± 0.17s  
 36.913 N ± 4.2km 73.095 E ± 2.6km  
 DEPTH = 24.1km (4 depth phases)

5.2mb (55 obs.) 4.7MsZ (11 obs.)

NORTHWESTERN KASHMIR (720)

CENTROID, MOMENT TENSOR (HRV)

Data Used: GDSN

L.P.B.: 10S, 22C

Centroid Location:

Origin Time 21:39:53.8 0.7

Lat 37.20N 0.12 Lon 73.08E 0.10

Dep 17.4 4.8 Half-duration 1.6

Moment Tensor; Scale 10<sup>16</sup> Nm

Mrr=-5.89 0.75 Mtt=-0.92 1.09

Mff=6.80 0.62 Mrt=-0.63 1.34

Mrr=0.03 2.24 Mtf=-0.76 0.61

Principal Axes:

T Val=6.88 Plg=0 Azm=264

N -0.91 7 354

P -5.97 83 174

Best Double Couple: Mo=6.4\*10<sup>16</sup>

NP1: Strike=347 Dip=45 Slip=-100

NP2: 182 45 -80

KSH 3.41 41 Pnd 40 49.00 5.8X  
 QUE 8.44 219 eP 41 54.50 0.3  
 eS 43 26.80  
 NDI 8.91 156 iPc 41 59.00 -1.5  
 0.5s 80.99nm 6.2mb  
 iS 43 39.00  
 MAIO 10.95 271 iPc 42 25.40 -3.2X  
 0.8s 60.40nm 5.9mb  
 eS 44 23.00  
 WMO 13.09 54 iPc 42 55.70 -1.6  
 Z 22s 5.70um  
 N 10s 3.40um  
 E 10s 3.40um  
 PP 43 08.50  
 GKN 13.18 129 P 42 53.40 -5.2X  
 KKN 13.73 128 P 43 00.20 -5.8X  
 DMN 13.75 129 P 43 01.60 -4.7X  
 PKI 13.97 128 P 43 03.40 -5.8X  
 GUN 14.03 126 P 43 04.60 -5.5X  
 LSA 16.71 110 P 43 41.30 -3.5X  
 Z 10s 3.60um  
 N 10s 4.80um  
 E 10s 1.30um  
 pP 43 49.00  
 TEH 17.53 273 eP 43 58.00 3.2X  
 IR2 17.94 273 eP 44 01.00 1.2  
 IR4 18.02 271 eP 44 01.00 0.2  
 IR1 18.15 272 eP 44 03.00 0.5  
 IR7 18.16 273 eP 44 04.00 1.4  
 POO 18.32 178 iP 44 04.00 -0.6  
 iS 47 34.00  
 SHL 19.61 120 iP 44 13.80 -6.2X  
 iS 47 42.00  
 HYB 20.01 165 iPd 44 22.00 -2.2  
 1.0s 75.00nm 5.0mb  
 GTA 21.13 75 Pd 44 36.00 0.2  
 1.4s 400.00nm 5.7mb  
 Z 18s 3.20um 4.7MsZ  
 N 13s 2.70um  
 pP 44 44.00 29km  
 TAB 21.25 281 eP 44 39.00 2.0  
 KER 21.26 271 ePc 44 37.50 0.4  
 BBU 21.99 247 iP 44 43.00 -1.2  
 DHR 22.18 248 eP 44 45.00 -1.1  
 SLV 22.27 275 iPd 44 49.50 2.5  
 iPP 45 21.00  
 iPPP 45 48.00  
 eS 49 02.50  
 eSS 50 05.00  
 eScP 52 20.50  
 eLR 54 39.00  
 GBA 23.53 169 P 45 01.00 1.5  
 1.0s 57.90nm 5.1mb  
 BHD 23.73 270 iPd 45 03.50 2.2  
 e 45 21.00 77kmX  
 iS 49 22.00  
 i 49 41.50  
 i 49 56.00  
 MSL 23.99 278 ePc 45 08.50 4.7X  
 eS 49 28.50  
 LZH 24.68 83 P 45 11.50 0.7  
 4.0s 0.79nm 2.7mb X  
 Z 18s 3.70um 4.9MsZ  
 N 13s 2.50um  
 E 12s 1.50um  
 PP 45 51.50  
 sS 49 44.00  
 RYD 25.70 249 ePd 45 19.00 -1.3  
 CD2 26.07 94 P 45 24.20 0.5  
 1.2s 100.00nm 5.3mb  
 Z 17s 1.40um 4.6MsZ X  
 N 11s 2.30um  
 sS 50 07.00  
 KMI 27.88 106 P 45 40.00 -0.5  
 Z 24s 2.30um 4.7MsZ X  
 N 15s 1.70um  
 E 15s 1.10um  
 sP 45 55.50  
 PP 46 35.00  
 BTO 28.89 71 P 45 50.50 1.2  
 N 15s 4.40um  
 E 15s 5.60um  
 PP 46 40.00  
 eS 50 38.00  
 CHG 28.96 121 eP 45 52.00 2.0  
 CHTO 28.96 121 eP 45 48.00 -2.0  
 0.8s 7.87nm 4.5mb



XAN	29.21	85	P	45	51.60	-0.6	KSP	42.21	308	ePc	49	19.60	562kmX	EMS	49.10	303	eP	48	36.70	-1.0	
N	14s		1.90um							i	47	43.00	0.3	DOI	49.28	301	P	48	38.00	-1.0	
E	12s		1.30um							e	49	22.00	549kmX	SBF	49.32	300	eP	48	38.90	-0.4	
			S	50	43.00		SOP	42.31	303	eP	47	46.40	2.8X		0.8s		37.60nm			5.5mb	
HHC	30.04	71	eP	46	01.00		MDJ	42.73	61	Pd	47	48.50	1.5	LPG	49.36	302	eP	48	39.70	-0.2	
Z	18s		3.60um			5.1Msz		Z	16s		3.10um		5.3MszX		1.4s		61.00nm			5.4mb	
N	12s		1.00um					N	10s		0.70um			LPL	49.37	302	eP	48	39.50	-0.4	
E	12s		1.60um								eS	54	07.50		1.4s		61.00nm			5.4mb	
			eS	51	00.00						ScS	57	46.50		BNI	49.53	301	P	48	41.00	0.0
BDT	30.10	124	eP	46	01.00	0.8	PRU	43.39	307	P	47	53.10	0.8	DOU	49.71	308	P	48	43.00	0.9	
Gya	30.27	100	P	46	01.60	-0.2				e	49	41.00	623kmX	SNF	49.82	309	P	48	43.20	0.3	
Z	22s		1.50um			4.6Msz	VBY	43.52	300	eP	47	55.30	1.9	FRF	49.95	299	eP	48	43.10	-1.0	
N	14s		1.50um				BRG	43.69	308	iPc	47	55.60	0.9		1.0s		24.00nm			5.2mb	
E	14s		1.20um							1.7s		70.00nm		5.2mb	NAI	50.75	230	iP	48	55.00	4.3X
KAS	30.64	291	eP	46	06.50	1.6				i	48	04.00	28km		1.0s		32.00nm			5.2mb	
TIY	31.14	76	Pc	46	10.00	0.7				i	49	40.00		LBF	50.84	304	eP	48	49.70	-1.2	
N	19s		3.40um							i	49	56.00			1.0s		12.00nm			4.8mb	
			S	51	13.50		HFS	43.79	321	eP	47	54.00	-1.4	LOR	50.85	305	eP	48	49.80	-1.1	
BBTK	31.57	288	iP	46	14.00	0.9				1.1s		80.20nm		5.4mb		1.2s		14.90nm			4.8mb
			e	46	28.00	56kmX	Z	16s		0.34um			4.4MszX	SMF	51.02	304	eP	48	51.60	-0.6	
BJI	33.63	71	eP	46	31.50	0.6				LR	05	14.00			1.4s		74.05nm			5.4mb	
Z	18s		6.75um			5.4Msz	LJU	43.92	301	eP	47	57.00	0.3	SSF	51.13	305	eP	48	52.10	-0.9	
E	16s		2.78um							eP	49	43.00	602kmX		1.2s		32.75nm			5.1mb	
			ePcP	49	12.00		CEY	44.05	301	eP	47	59.00	1.3	MAT	51.23	70	eP	48	54.00	0.0	
			eS	51	48.00		KHC	44.11	306	iPc	47	59.50	1.3		1.5s		72.22nm			5.4mb	
HRT	33.78	290	eP	46	33.60	1.3				e	48	05.20	19km	AVF	51.31	304	eP	48	53.40	-0.9	
NNT	34.01	129	eP	46	34.00	-0.4	CLL	44.24	309	iPc	47	59.70	0.5		1.2s		44.65nm			5.3mb	
YLV	34.04	290	iP	46	33.70	-0.8				1.4s		28.00nm		4.9mb	BGF	51.70	304	eP	48	56.60	-0.8
KHL	34.31	286	eP	46	36.70	-0.2	VOY	44.36	301	iP	48	00.60	0.2		1.2s		23.80nm			5.0mb	
ELL	34.35	283	eP	46	37.30	0.0	MGR	44.46	293	Pd	48	01.00	-0.1	MAF	51.98	304	eP	48	59.00	-0.5	
WHN	34.69	88	eP	46	41.00	0.8	TRI	44.51	301	eP	48	01.30	-0.1		1.2s		53.55nm			5.3mb	
Z	16s		0.70um			4.5MszX	RBL	44.52	302	P	48	01.50	-0.1	TCF	52.20	304	eP	49	00.80	-0.4	
N	15s		2.10um				SGO	44.53	293	P	48	02.00	0.4		1.2s		44.65nm			5.3mb	
TIA	35.14	78	eP	46	44.70	0.8	KBA	44.56	303	iPc	48	02.20	0.1	LSF	52.67	304	eP	49	03.70	-0.9	
Z	18s		1.40um			4.8Msz				1.4s		26.90nm		4.9mb		1.2s		20.85nm			4.9mb
N	11s		1.10um							i	48	15.00	47kmX	CAF	52.70	302	eP	49	04.70	-0.3	
			eS	52	12.00		SOI	44.65	290	P	48	02.00	-0.6		1.2s		20.85nm			4.9mb	
MLR	36.05	299	iPc	46	54.00	2.2	BHG	44.77	304	iPd	48	04.60	1.1	RJF	52.96	303	eP	49	06.80	0.0	
PVL	36.69	295	iPc	47	00.00	3.1X	BSS	44.84	294	Pc	48	05.10	0.9		1.2s		26.80nm			5.0mb	
KDZ	36.84	292	iP	47	00.00	1.8	DUI	44.88	295	P	48	05.00	0.4	LDF	53.07	307	eP	49	06.40	-1.2	
PLD	37.29	293	iP	47	03.00	1.0	FVI	45.02	302	P	48	06.00	0.5	EKA	53.16	316	P	49	07.00	-1.1	
PGB	37.62	294	eP	47	07.00	2.1	NB2	45.07	323	P	48	04.30	-1.5		1.1s		22.30nm			5.0mb	
NJ2	37.75	84	eP	47	07.00	1.0				1.1s		59.80nm		5.4mb	FLN	53.25	308	eP	49	07.60	-1.3
Z	20s		1.20um			4.7Msz	ATN	45.07	299	P	48	06.00	-0.1		1.0s		16.00nm			4.9mb	
N	11s		1.10um				MOX	45.19	308	eP	48	08.00	1.2	LPO	53.37	302	eP	49	09.60	-0.2	
E	10s		0.40um							1.8s		54.00nm		5.2mb		1.2s		11.90nm			4.7mb
			S	53	00.00		SDI	45.34	295	P	48	07.50	-0.7	LFF	53.59	303	eP	49	11.10	-0.3	
VTS	38.32	294	iP	47	11.00	0.2	ARV	45.54	298	P	48	10.20	0.5		1.2s		29.75nm			5.2mb	
SUF	38.47	327	eP	47	15.10	3.4X	AZI	45.54	296	P	48	10.50	0.8	GRR	53.60	307	eP	49	10.10	-1.3	
NUR	38.49	323	iP	47	11.40	-0.4	GRF	45.56	307	ePc	48	11.20	1.4		1.0s		40.00nm			5.4mb	
	1.0s		60.00nm			5.3mb		Z	19s		0.20um		4.1Msz	MFF	53.67	305	eP	49	10.80	-1.2	
KKB	38.52	293	iP	47	23.00	10.6X	FUR	45.76	305	iPc	48	12.60	1.2		1.2s		29.75nm			5.2mb	
SNY	38.88	67	eP	47	15.00	-0.3	ASS	45.84	297	P	48	13.80	1.7	LPF	53.82	307	eP	49	11.80	-1.2	
Z	16s		4.30um			5.4MszX	CTI	45.90	302	P	48	12.50	-0.1		1.2s		20.85nm			5.0mb	
E	14s		2.10um				RMP	46.11	296	P	48	14.00	-0.2	EPF	54.49	301	eP	49	16.50	-1.7	
			S	53	10.00		RDP	46.12	296	P	48	14.00	-0.3		1.2s		11.90nm			4.8mb	
VAY	39.00	292	iPc	47	16.80	0.4	OGA	46.16	303	eP	48	14.50	-0.3	DAG	54.84	344	iP	49	18.70	-1.5	
BZS	39.07	299	eP	47	18.00	1.1	GIB	46.21	290	P	48	14.00	-1.1	EROQ	55.22	298	e(P)	49	23.00	-0.4	
SKO	39.71	294	ePc	47	22.70	0.4	SFI	46.21	299	P	48	16.60	1.7	GUD	58.49	299	eP	49	47.00	0.1	
			e	47	28.70	20km	PGD	46.31	299	P	48	17.00	1.0	TOL	58.72	299	iPd	49	48.50	0.2	
			i	47	38.70		FAI	46.69	289	P	48	18.50	-0.3		1.7s		153.85nm			5.8mb	
SPC	39.75	305	iP	47	23.60	0.9	SAL	46.76	301	P	48	20.00	0.8	EBAN	59.24	297	eP	49	51.70	-0.3	
KRA	39.91	306	eP	47	23.40	-0.4	OSS	46.79	303	ePc	48	18.80	-0.9	BCAO	59.38	251	iPc	49	50.10	-3.1X	
	0.7s		51.00nm			5.4mb	MME	46.95	299	P	48	23.00	1.9		0.8s		38.00nm			5.6mb	
			i	47	24.40	3kmX	BDI	47.06	299	P	48	22.00	0.2				id	50	13.10	92kmX	
			e	47	28.00		SAX	47.21	304	eP	48	22.00	-1.2				id	50	24.70		
CN2	39.92	63	eP	47	25.00	1.0	MDI	47.28	302	P	48	22.00	-1.3	ASMO	59.55	296	eP	49	53.00	-1.2	
Z	14s		2.90um			5.3MszX	VDL	47.29	303	eP	48	22.70	-1.0	APHE	59.69	295	iPd	49	53.50	-1.7	
N	10s		0.70um				BOB	47.69	300	P	48	28.50	1.8	AAPN	59.85	296	eP	49	54.50	-1.7	
E	10s		0.50um				TMA	47.77	302	ePc	48	26.00	-1.5	EPLA	60.07	300	eP	49	57.70	0.1	
			PP	47	38.00		ZLA	47.80	304	eP	48	26.40	-1.2	IFR	62.27	292	iPd	50	13.00	0.2	
			eS	53	29.00		ABH	47.88	307	eP	48	28.85	0.7	AVE	64.06	293	eP	50	23.00	-1.4	
SSE	39.95	84	P	47	24.50	0.1	VAI	47.90	302	P	48	27.30	-0.9	TIO	65.09	291	iPd	50	31.50	0.2	
Z	18s		1.60um			4.9Msz	FEL	47.97	305	eP	48	28.98	0.0	BRW	66.46	16	eP	50	39.20	-0.1	
N	10s		0.50um				RUP	48.23	307	eP	48	31.77	0.9	MBC	66.84	3	ePd	50	41.30	-0.3	
E	12s		1.00um				CDF	48.34	306	eP	48	31.70	-0.1		0.7s		52.00nm			5.8mb	
			eS	53	22.00					1.2s		11.90nm		4.8mb	BUL	70.57	224	iPc	51	01.20	-4.4X
PSZ	40.05	303	eP	47	26.10	1.0	ORO	48.49	302	P	48	33.00	0.0		0.8s		20.52nm			5.3mb	
SOD	40.09	334	iP	47	24.80	-0.2	KBS	48.59	347	iPc	48	34.00	0.8	IMA	71.21	18	eP	51	07.70	-1.2	
OHR	40.35	293	eP	47	18.00	-9.6X	MEM	48.72	309	P	48	34.80	0.3		1.3s		21.20nm			5.1mb	
	2.1s		0.13nm																		



06d 21h

SVW 74.58 22 eP 51 29.70 1.0  
 FRB 75.16 343 eP 51 31.00 -0.9  
 PMR 76.03 19 eP 51 35.70 -1.1  
 TOA 76.36 18 eP 51 39.00 0.2  
 KIC 76.49 268 Pc 51 38.12 -2.1  
 TIC 76.54 268 P 51 38.42 -2.1  
 LIC 76.80 268 P 51 39.70 -2.2  
 Z 20s 0.31um 4.6Msz  
 YKA 80.74 4 eP 52 01.90 -0.6  
 0.8s 14.30nm 5.1mb  
 WB5 80.77 123 eP 52 03.80 0.4  
 WRA 80.80 123 P 52 04.00 0.5  
 0.8s 16.90nm 5.1mb  
 SCH 82.36 338 eP 52 11.00 -0.2  
 ASPA 83.12 126 eP 52 15.40 -0.1  
 1.7s 39.00nm 5.3mb  
 FFC 88.63 357 eP 52 43.00 0.7  
 EDM 90.06 4 ePd 52 49.00 -0.2  
 ZOBO 140.05 290 PKP 59 18.70 -0.9  
 Z 21s 0.11um 4.6Msz  
 LR 50 45.00  
 S.D. = 1.0 on 183 of 202 obs.

% MAR 06, 1990 22h 58m 45.91 ± 0.93s  
 17.016 N ± 7.6km 99.790 W ± 11.6km  
 DEPTH = 10.0km (geophysicist)  
 GUERRERO, MEXICO (59)  
 Felt at Acapulco.

ACX 0.16 204 iP 58 49.50 -0.1  
 0.8s 58 54.90  
 III 1.39 13 iP 59 10.50 -1.0  
 0.8s 59 30.00  
 PIO 1.71 111 iP 59 15.50 -0.4  
 0.8s 59 43.00  
 PPM 2.32 28 iP 59 24.50 -0.7  
 (S) 00 01.00  
 CRX 2.38 2 iP 59 29.50 3.6X  
 (S) 00 03.00  
 IJJ 2.70 1 iP 59 32.00 1.3  
 (S) 00 09.00  
 OXX 2.93 88 iP 59 34.50 0.8  
 (S) 00 22.50  
 MRX 2.99 334 iP 59 37.00 2.8X  
 0.8s 00 14.00  
 S.D. = 1.2 on 6 of 8 obs.

MAR 06, 1990 23h 13m 01.77 ± 0.36s  
 44.064 N ± 2.7km 7.243 E ± 3.3km  
 DEPTH = 10.0km (geophysicist)  
 NORTHERN ITALY (545)  
 ML 2.3 (GEN), 2.1 (LDG), MD 1.7  
 (STR).

TOUF 0.05 176 Pg 13 03.47 -0.7  
 AUTN 0.15 117 Pg 13 05.64 0.2  
 MVIF 0.18 201 Pg 13 05.94 0.0  
 Sg 13 09.19  
 AURF 0.19 161 Pg 13 05.84 -0.1  
 STV 0.19 18 P 13 06.05 0.0  
 S 13 08.86  
 ENR 0.21 38 P 13 06.35 0.0  
 S 13 09.33  
 SAOF 0.24 109 Pg 13 07.05 0.2  
 Sg 13 10.53  
 SBF 0.24 145 Pg 13 07.30 0.3  
 Sg 13 10.40  
 REVF 0.34 164 Pg 13 08.95 0.2  
 PZZ 0.45 347 P 13 11.08 0.1  
 S 13 16.98  
 IMI 0.49 108 P 13 11.54 -0.2  
 S 13 18.32  
 ROB 0.51 63 P 13 11.91 -0.2  
 S 13 19.34  
 FRF 0.66 221 Pg 13 14.50 -0.5  
 Sg 13 23.20  
 LRG 0.88 227 Pg 13 19.00 0.3  
 Sg 13 30.80  
 LMR 0.90 216 Pg 13 19.40 0.3  
 Sg 13 31.30  
 S.D. = 0.3 on 15 of 15 obs.

\* MAR 06, 1990 23h 28m 51.61 ± 0.45s  
 21.435 S ± 13.0km 175.819 E ± 8.3km  
 DEPTH = 50.4km (4 depth phases)  
 5.1mb (8 obs.)  
 SOUTH OF FIJI ISLANDS (171)

NDF 3.97 23 eP 29 45.00 -6.5X  
 eS 30 29.00  
 SVA 4.13 37 iP 29 52.00 -1.8  
 e 29 59.60  
 e 30 08.10  
 e 30 11.20  
 eS 30 46.10  
 MBU 5.22 32 iPd 30 04.20 -5.0X  
 DZM 8.74 264 iPc 30 58.00 -0.3  
 HNR 19.38 306 eP 33 16.00 -0.3  
 BRS 21.79 250 iP 33 31.00 -10.1X  
 i 33 44.00 55km  
 COO 23.31 242 eP 33 56.00 -0.1  
 RMO 25.22 253 eP 34 15.00 0.6  
 e 34 27.00 48km  
 CTA 27.66 267 ePc 34 47.50 10.6X  
 1.1s 31.01nm  
 e 34 50.00 9kmX  
 iS 39 29.00  
 ASPA 38.68 259 iPd 36 11.90 -0.5  
 0.8s 8.00nm 4.6mb  
 Z 22s 0.57um 4.3MszX  
 iPP 36 23.50  
 LR 50 53.00  
 WB5 38.74 265 eP 36 11.30 -1.7  
 i 36 22.90 42km  
 WRA 38.75 265 Pd 36 11.40 -1.7  
 1.2s 14.20nm 4.7mb  
 GUMO 46.20 316 eP 37 12.00 -1.6  
 eS 44 14.00  
 MAT 67.73 328 eP 39 46.00 0.0  
 1.0s 25.00nm 5.2mb  
 SPA 68.70 180 iPd 39 49.90 -2.0  
 1.0s 25.00nm 5.1mb  
 i 40 07.90 67kmX  
 CN2 79.65 325 P 40 54.60 -0.6  
 PRS 82.56 46 ePc 41 10.80 0.1  
 MHC 82.94 45 ePc 41 13.10 0.4  
 TIY 83.70 314 eP 41 17.30 0.8  
 FRI 84.04 47 ePc 41 18.00 -0.1  
 CMB 84.15 45 ePc 41 18.60 -0.2  
 i 41 22.30 12kmX  
 WDC 84.17 42 ePc 41 18.80 0.1  
 i 41 22.50 12kmX  
 ORV 84.25 44 eP 41 18.80 -0.4  
 MIN 84.62 43 eP 41 20.80 -0.4  
 CHG 85.19 292 ePc 41 25.10 0.8  
 1.2s 23.05nm 5.2mb  
 CHTO 85.19 292 iP 41 25.10 0.9  
 1.3s 21.65nm 5.1mb  
 pP 41 41.50 58km  
 HHC 85.97 317 eP 41 28.80 0.9  
 CD2 86.51 305 eP 41 32.00 1.4  
 LZH 88.83 310 eP 41 42.00 0.2  
 1.5s 27.00nm 5.3mb  
 ALO 92.54 53 eP 41 58.80 -0.3  
 1.0s 7.75nm 5.1mb  
 GTA 93.16 311 eP 42 02.00 0.2  
 NB2 138.99 349 PKP 48 12.80 -1.1  
 0.9s 2.80nm  
 HFS 139.32 346 ePKP 48 08.00 -6.4X  
 0.7s 2.70nm  
 PRNI 143.80 292 ePKP 48 20.00 -3.3X  
 MBH 143.95 291 ePKPd 48 21.00 -2.5X  
 KRA 145.68 332 ePKP 48 24.90 -1.0  
 e 48 28.80  
 EKA 146.14 359 PKP 48 26.00 -0.5  
 1.2s 26.50nm  
 SPC 146.17 331 ePKP 48 27.40 0.4  
 i(Sg) 09 46.10  
 KSP 146.55 336 iPKPc 48 28.00 0.7  
 1.1s 19.00nm  
 CLL 147.30 340 iPKP 48 30.40 2.0  
 1.1s 31.00nm  
 PRU 147.89 337 PKP 48 32.00 2.6X  
 SRO 148.06 331 ePKP 48 31.20 1.5  
 ZST 148.30 332 i(PKP) 48 32.00 1.9  
 MOX 148.31 341 ePKP 48 32.00 1.9  
 SOP 148.93 332 ePKP 48 36.10 4.9X  
 KHC 148.95 337 iPKP 48 34.90 3.7X  
 1.2s 20.00nm  
 e 48 46.00  
 GRF 149.27 340 ePKPc 48 35.60 3.9X  
 e 48 39.00  
 MEM 149.80 347 PKP 48 36.90 4.6X  
 VAY 149.95 317 ePKP 48 36.20 3.3X  
 TOD 150.06 343 ePKP 48 39.55 6.7X

ABH 150.13 345 ePKP 48 38.41 5.5X  
 SNF 150.23 349 PKP 48 38.30 5.3X  
 SKO 150.29 319 ePKPc 48 37.00 3.6X  
 RUP 150.42 345 ePKP 48 39.44 6.0X  
 PTJ 150.56 331 ePKP 48 38.50 4.7X  
 DOU 150.57 348 PKP 48 38.80 5.3X  
 KBA 150.74 335 iPKPd 48 38.30 4.1X  
 0.7s 9.50nm  
 i 48 51.40  
 LJU 151.08 332 ePKP 48 39.50 5.0X  
 i 48 43.60  
 RBL 151.17 334 PKP 48 34.00 -0.7  
 OHR 151.18 319 ePKP 48 37.00 2.2  
 1.2s 0.07nm  
 VBY 151.18 331 ePKPd 48 40.50 5.9X  
 FVI 151.36 335 PKP 48 27.00 -7.8X  
 VOY 151.36 333 ePKP 48 39.70 4.7X  
 i 48 43.90  
 e 48 55.00  
 CEY 151.37 332 ePKP 48 40.50 5.6X  
 CDF 151.56 344 ePKP 48 40.90 5.7X  
 1.2s 41.65nm  
 TRI 151.68 333 PKP 48 40.50 5.2X  
 HAU 152.17 345 ePKP 48 42.10 6.0X  
 1.2s 26.80nm  
 BCAO 152.22 236 iPKPc 48 42.20 5.1X  
 0.6s 13.00nm  
 CTI 152.25 336 PKP 48 41.00 4.7X  
 FLN 152.57 355 ePKP 48 42.90 6.4X  
 0.8s 21.50nm  
 LDF 152.71 354 ePKP 48 43.00 6.3X  
 0.8s 10.75nm  
 GRR 152.98 355 ePKP 48 43.80 6.7X  
 0.8s 12.10nm  
 LPF 153.34 355 ePKP 48 45.00 7.4X  
 1.0s 24.00nm  
 LOR 153.42 348 ePKP 48 45.20 7.4X  
 1.0s 14.00nm  
 VAI 153.42 340 PKP 48 36.00 -1.8  
 LBF 153.67 347 ePKP 48 45.40 7.2X  
 0.8s 4.05nm  
 SSF 153.69 348 ePKP 48 45.70 7.5X  
 1.0s 16.00nm  
 ARV 153.78 331 PKP 48 44.00 5.6X  
 MFF 154.68 353 ePKP 48 47.80 8.3X  
 0.8s 8.05nm  
 TDS 154.76 321 PKP 48 49.50 9.7X  
 S.D. = 1.1 on 39 of 80 obs.

? MAR 07, 1990 00h 48m 13.50 ± 7.91s  
 31.746 S ± 46.9km 69.905 W ± 57.5km  
 DEPTH = 33.0km (normol)  
 SAN JUAN PROVINCE, ARGENTINA (137)

RTCB 0.98 75 iPd 48 31.80 0.8  
 eS 48 48.90  
 RTCV 1.17 96 ePc 48 33.80 0.1  
 S 48 52.80  
 RTLL 1.29 72 iPc 48 35.00 -0.4  
 iS 48 55.30  
 CFA 1.43 85 iPd 48 36.80 -0.6  
 eS 48 57.40  
 RTRS 1.62 14 iPd 48 40.00 0.0  
 eS 49 02.00  
 S.D. = 0.8 on 5 of 5 obs.

MAR 07, 1990 01h 31m 10.81 ± 0.48s  
 38.615 N ± 4.8km 14.367 E ± 5.1km  
 DEPTH = 15.9 ± 6.2 km  
 SICILY (398)

GIB 0.68 203 P 31 23.60 -0.3  
 eSg 31 35.00  
 MNO 0.73 159 Pd 31 25.30 0.5  
 eSg 31 37.00  
 USI 0.94 276 P 31 27.30 -0.9  
 eSg 31 42.80  
 ATN 0.97 117 P 31 29.00 0.1  
 eSg 31 44.80  
 MCT 1.14 211 P 31 33.00 1.2  
 SOI 1.43 112 P 31 35.40 -0.7  
 eSg 31 55.50  
 FAI 1.44 202 P 31 36.60 0.3  
 CZI 1.50 66 P 31 36.60 -0.5  
 CVT 1.55 233 P 31 38.10 0.3  
 MEU 1.58 163 P 31 38.40 0.1  
 eSg 31 59.90



MGR 1.78 31 P 31 41.50 0.4  
 MMN 1.79 44 P 31 42.00 0.7  
 TDS 1.85 55 P 31 43.00 0.8  
 CSI 1.89 52 P 31 44.30 1.5  
 ROI 1.96 60 P 31 42.10 -1.7  
 SGO 2.07 20 P 31 46.00 0.7

S.D. = 0.9 on 16 of 16 obs.

MAR 07, 1990 02h 13m 31.03±0.62s  
 33.802 S ± 8.1km 70.079 W ± 7.1km

DEPTH = 109.4 ± 4.7 km

4.8mb ( 4 obs.)

CHILE-ARGENTINA BORDER REGION (127)  
 Felt (III) at Valparaiso, Chile.

FCH 0.51 340 iPd 13 49.00 0.5  
 SAN 0.60 305 iPc 13 48.60 -0.2

iS 13 58.50  
 i 14 03.70

LNK 1.12 262 iPc 13 53.50 -0.2

ROCH 1.14 316 iPc 13 53.60 -0.6

JACH 1.20 339 iPc 13 54.50 -0.2

LCCH 1.29 284 iPc 13 55.00 -0.6

MDZ 1.38 49 eP 14 09.00 12.2X

iS 14 18.50

IHA 1.52 300 iPd 13 58.20 -0.2

iS 14 17.00

RTCV 2.33 34 ePc 14 09.50 0.6

ZON 2.54 28 iPd 14 12.00 0.3

RTCB 2.55 25 iPd 14 12.80 1.0

CFA 2.68 36 iPd 14 14.00 0.5

RTLL 2.82 29 iPd 14 15.60 0.3

RTRS 3.66 8 iPd 14 27.00 0.3

ANT 10.07 358 e(P) 16 09.20 15.2X

CCH 16.73 13 P 17 22.50 2.1X

LPB 17.29 6 P 17 28.00 0.6

ARE 17.31 355 eP 17 26.00 -1.6

ZOBO 17.55 6 P 17 29.50 -1.2

0.9s 7.14nm 3.9mb

Z 24s 0.08um 4.8msz

LR 25 40.00

NNA 22.58 343 iPd 18 26.50 3.5X

BAO 26.91 53 eP 19 01.70 -2.2

SPA 56.38 180 iPd 23 04.00 1.1

0.9s 19.55nm 5.1mb

KIC 73.48 70 (P) 24 53.00 -0.6

ALO 76.41 330 eP 25 09.90 -0.2

1.0s 9.50nm 4.6mb

HVD 77.83 119 eP 25 36.00 17.8X

SWZ 79.53 116 iPd 25 25.20 -2.3

PRY 81.27 116 e(P) 25 44.00 7.3X

KSR 81.42 115 eP 25 31.70 -5.8X

SLR 82.54 116 eP 25 43.20 -0.1

LLA 84.61 321 eP 25 54.40 1.2

PRS 84.61 321 eP 25 54.50 1.3

CMB 85.40 322 e(P) 25 57.70 0.5

ORV 87.12 323 eP 26 06.50 1.0

LRM 88.03 332 eP 26 10.30 0.3

WDC 88.42 323 ePd 26 11.10 -0.6

BCAO 91.29 86 ePc 26 26.90 1.2

0.4s 5.00nm 5.1mb

IMA 117.89 333 ePd 28 35.30 11.2X

S.D. = 1.0 on 29 of 37 obs.

MAR 07, 1990 02h 16m 18.28±0.94s

3.517 N ± 3.9km 126.702 E ± 5.9km

DEPTH = 85.4 ± 9.7 km

5.1mb ( 11 obs.)

TALAUD ISLANDS (263)

CENTROID, MOMENT TENSOR (HRV)

Data Used: GDSN

L.P.B.: 11S, 22C

Centroid Location:

Origin Time 02:16:15.7 0.9

Lat 4.01N 0.13 Lon 127.56E 0.16

Dep 15.710.0 Half-duration 1.5

Moment Tensor: Scale 10<sup>16</sup> Nm

Mrr=-0.04 0.79 Mtt=2.66 0.42

Mff=-2.62 0.91 Mrt=-3.95 3.06

Mrf=0.38 1.25 Mtf=3.89 0.75

Principal Axes:

T Val= 6.51 Plg=28 Azm=158

N -0.80 51 289

P -5.72 25 54

Best Double Couple: Mo=6.1\*10<sup>16</sup>

NP1: Strike=195 Dip=51 Slip=177

NP2: 287 88 39

DAV 3.72 342 eP 17 13.90 -0.7

AAI 7.31 168 ePd 18 04.40 0.1

PCI 8.15 238 ePd 18 17.00 1.1

i(S) 18 27.50

TSM 8.64 275 eP 18 23.00 0.4

KKM 10.75 284 eP 18 50.00 -1.3

PGP 11.43 331 eP 19 11.00 10.7X

BAG 14.16 335 eP 19 31.00 -5.3X

eS 22 24.00

CVP 14.89 342 eP 19 47.20 1.6

JAY 15.22 113 ePd 19 52.00 2.1

0.6s 132.70nm 5.3mb

PIP 15.88 338 ePd 19 57.00 -1.1

MTN 16.84 165 iPd 20 05.80 -4.4X

eS 23 19.00

TRT 17.92 232 ePd 20 26.20 2.7

KNA 19.25 174 eP 20 36.10 -2.7

0.6s 212.00nm 5.6mb

GUMO 20.54 60 eP 20 52.00 -0.2

Z 23s 0.73um 4.0mszX

GUA 20.56 60 eP 20 51.70 -0.7

OIZ 22.57 314 eP 21 07.00 -5.3X

OZH 22.69 341 eP 21 13.00 -0.5

GZH 23.36 328 eP 21 24.30 4.4X

WB5 24.44 162 iPd 21 29.00 -1.5

eS 25 50.10

WRA 24.49 162 P 21 29.80 -1.2

0.8s 273.40nm 5.7mb

MBL 25.43 195 iPd 21 41.00 1.2

OIS 27.07 153 eP 21 53.00 -1.8

ASPA 27.91 166 iPd 22 01.00 -1.5

0.7s 21.00nm 4.9mb

Z 22s 0.25um 3.7mszX

ePcP 24 25.00

iS 26 43.10

iPdS 27 52.40

LR 36 35.80

SSE 27.92 350 eP 22 06.00 3.6X

Z 22s 0.50um 4.1msz

eS 26 37.00

LOE 28.11 301 eP 22 03.40 -0.9

NST 28.80 297 eP 22 21.00 10.5X

WHN 29.31 338 eP 22 14.50 -0.4

NJ2 29.33 346 eP 22 15.20 0.2

WARB 29.52 180 iPd 22 17.00 0.1

GYA 29.82 322 P 22 20.20 0.6

CTA 30.32 141 eP 22 24.00 0.1

MEKA 30.98 194 eP 22 29.80 0.1

CHG 31.11 301 eP 22 31.00 0.0

KMI 31.51 315 eP 22 28.50 -6.2X

TIA 33.71 346 eP 22 52.30 -1.1

FORR 34.20 178 iPd 22 56.50 -1.1

0.4s 71.00nm 5.9mb

MAT 34.53 16 (P) 22 56.00 -4.5X

CD2 34.80 324 eP 23 06.90 4.1X

BAL 35.25 195 eP 23 06.30 -0.3

DL2 35.53 353 eP 23 09.70 0.9

KLB 35.94 193 eP 23 12.20 -0.2

TIY 36.46 341 eP 23 16.20 -0.6

N 14s 0.60um

RMO 36.67 146 eP 23 17.00 -1.6

MUN 36.68 195 eP 23 18.40 -0.2

NWAO 37.34 193 eP 23 23.00 -1.1

BJI 37.59 347 eP 23 26.00 -0.1

1.5s 0.20nm 2.8mb X

Z 20s 0.30um 4.1msz

eS 29 12.00

SNY 38.25 356 eP 23 30.60 -1.0

Z 24s 0.65um 4.4mszX

S 29 24.00

RKG 38.49 193 eP 23 29.50 -4.3X

LZH 38.67 330 P 23 35.00 -0.5

Z 25s 1.00um 4.5mszX

sP 24 00.50

HHC 39.59 342 eP 23 44.00 1.0

BRS 39.71 142 iPd 23 39.10 -5.0X

BRS 39.71 142 iPd 23 43.20 -0.9

e 25 19.00

ADE 39.91 165 eP 23 46.10 0.5

0.9s 47.06nm 5.4mb

SHL 39.98 307 iPd 23 45.50 -1.0

CN2 40.13 359 eP 23 47.20 0.0

MDJ 41.01 3 P 23 55.00 0.6

LSA 42.56 312 P 24 08.30 0.4

BWA 42.92 153 eP 24 12.00 1.7

BFD 43.09 161 eP 24 14.00 2.5

e 25 51.00

GTA 43.26 329 eP 24 13.00 -0.1

CAN 43.93 153 eP 24 19.80 1.3

TOO 44.45 159 eP 24 25.00 2.4

PKI 46.07 306 P 24 35.40 -0.6

KKN 46.26 306 P 24 37.20 -0.2

0.4s 7.00nm 4.9mb

DMN 46.33 305 P 24 37.80 -0.2

DZM 46.44 125 iPd 24 37.60 -1.0

GKN 46.87 306 P 24 41.80 -0.3

0.4s 6.00nm 4.8mb

HYB 49.16 290 eP 24 59.50 -0.4

WMQ 52.88 325 eP 25 24.50 -3.2X

MAIO 69.62 307 eP 27 21.00 0.3

VNDA 83.22 173 P 28 27.10 -8.8X

PMR 84.14 29 eP 28 41.50 0.6

INK 90.37 21 eP 29 12.00 1.1

MBC 92.17 13 eP 29 20.50 1.5

0.6s 2.00nm 4.7mb

VRI 94.43 316 ePd 29 26.50 -3.5X

DAG 97.48 352 iPd 29 43.20 -0.1

0.8s 5.22nm 5.1mb

HFS 98.19 332 eP 29 49.00 2.2

0.4s 0.70nm 4.6mb

ARE 157.98 127 ePKP 36 46.00 38.5X

ZOBO 160.69 132 PKP 36 17.00 6.2X

e 36 35.00

S.D. = 1.2 on 62 of 79 obs.

MAR 07, 1990 02h 32m 52.90±0.45s

40.494 N ± 5.0km 22.666 E ± 3.7km

DEPTH = 10.0km (geophysicist)

GREECE (364)

ML 3.1 (SKO), 2.9 (THE), MD 3.3

(ATH).

THE 0.27 59 iPd 32 58.70 0.2

eSg 33 03.20

LIT 0.42 199 iPd 33 01.30 -0.1

eSg 33 08.60

PLG 0.61 101 iPd 33 05.30 0.1

SOH 0.62 58 ePg 33 05.20 -0.2

eSg 33 14.20

KNT 0.69 15 iPd 33 06.20 -0.4

eSg 33 16.10

KZN 0.71 255 iPd 33 05.40 -1.5

VAY 0.83 355 iPd 33 08.00 -0.9

iSg 33 20.30

SRS 0.94 48 ePg 33 10.70 -0.1



07d 02h

KHL 2.13 171 ePn 48 17.00 0.4  
 EZN 2.22 255 iPn 48 18.00 0.2  
 IZM 2.48 216 ePn 48 21.30 -0.3  
 BBTK 2.86 101 eP 48 34.00 6.9X  
 iS 49 17.00  
 BCK 3.18 158 ePn 48 32.00 0.4  
 KAS 3.65 74 ePn 48 45.00 6.7X  
 iSg 49 35.50  
 VAY 5.04 282 eP 49 10.50 12.7X  
 KBA 13.18 305 iP 50 44.00 -6.4X  
 1.7s 33.80nm 5.2mb  
 e 51 20.00

S.D. = 0.5 on 15 of 19 obs.

% MAR 07, 1990 03h 19m 11.31 ± 1.12s  
 12.777 S ± 9.2km 76.730 W ± 26.4km  
 DEPTH = 10.0km (geophysicist)  
 NEAR COAST OF PERU (115)

PT10 0.74 342 iPc 19 25.80 0.0  
 iS 19 35.90  
 NNA 0.79 352 iPd 19 26.40 -0.3  
 iS 19 37.00  
 PT08 0.83 12 iPc 19 28.00 0.4  
 PT06 1.12 160 iPc 19 32.70 0.5  
 iS 19 47.50  
 PT03 1.51 143 iPc 19 37.90 -0.5  
 S.D. = 0.6 on 5 of 5 obs.

? MAR 07, 1990 03h 27m 04.61 ± 1.84s  
 45.094 N ± 7.2km 7.308 E ± 19.8km  
 DEPTH = 10.0km (geophysicist)  
 NORTHERN ITALY (545)  
 ML 2.0 (GEN).

RSP 0.07 328 P 27 07.83 0.8  
 S 27 10.29  
 LSD 0.38 344 P 27 11.83 -0.6  
 S 37 16.44  
 RRL 0.41 245 P 27 13.06 0.0  
 S 27 18.39  
 PZZ 0.61 194 P 27 16.85 -0.1  
 S 27 24.85  
 S.D. = 1.0 on 4 of 4 obs.

\* MAR 07, 1990 04h 18m 21.47 ± 1.17s  
 41.138 N ± 12.4km 22.625 E ± 6.5km  
 DEPTH = 10.0km (geophysicist)  
 YUGOSLAVIA (383)  
 ML 1.7 (SKO).

VAY 0.19 347 iPg 18 26.60 1.0  
 iSg 18 28.70  
 KNT 0.21 83 iPc 18 29.00 3.0X  
 eSn 30 24.80  
 SRS 0.73 91 eP 18 37.30 1.5  
 eS 18 48.00  
 KKB 0.81 25 iPg 18 33.00 -4.1X  
 MMB 0.94 61 ePg 18 39.00 -0.5  
 SKO 1.22 314 ePn 18 45.00 0.8  
 OHR 1.38 269 ePn 18 46.00 -0.8  
 VTS 1.52 17 iPg 18 48.00 -0.8  
 RZN 1.67 70 eP 18 52.00 1.0  
 PGB 1.82 39 eP 18 52.00 -1.1  
 KDZ 2.16 75 iP 18 57.00 -1.0  
 S.D. = 1.2 on 9 of 11 obs.

? MAR 07, 1990 05h 25m 41.90 ± 6.03s  
 32.917 S ± 17.5km 72.395 W ± 42.7km  
 DEPTH = 10.0km (geophysicist)  
 OFF COAST OF CENTRAL CHILE (134)

IHA 0.64 100 iPc 25 55.00 0.2  
 iS 26 00.20  
 LCCH 0.89 129 iPd 25 59.00 0.1  
 iS 26 07.40  
 ROCH 1.17 93 iPd 26 03.60 -0.2  
 iS 26 14.30  
 LNV 1.32 142 iPc 26 06.30 0.0  
 iS 26 19.90  
 JACH 1.54 82 iP 26 09.60 0.1  
 iS 26 27.40  
 SAN 1.55 111 eP 26 09.50 -0.1  
 iS 26 26.00  
 FCH 1.81 104 iPc 26 13.60 -0.1  
 iS 26 35.00  
 S.D. = 0.2 on 7 of 7 obs.

\* MAR 07, 1990 05h 56m 31.30 ± 0.63s  
 29.080 N ± 10.3km 130.107 E ± 11.2km  
 DEPTH = 33.0km (normal)  
 4.1mb (3 obs.)

RYUKYU ISLANDS (238)

MAT 10.09 40 eP 58 58.00 1.0  
 BJI 15.83 317 eP 00 14.00 0.8  
 LZH 23.16 294 P 01 37.00 1.0  
 pP 01 45.50 31kmX  
 i 02 04.50  
 CHTO 30.18 257 eP 02 39.60 -1.2  
 0.5s 0.51nm 3.6mb  
 WB5 48.85 175 eP 05 16.00 0.3  
 WRA 48.91 175 Pc 05 17.00 0.9  
 0.7s 2.20nm 4.3mb  
 INK 65.62 24 eP 07 13.00 -0.8  
 MBC 66.67 14 eP 07 19.50 -1.0  
 YKA 75.25 26 eP 08 12.00 -0.2  
 0.7s 2.10nm 4.2mb  
 FRB 86.32 8 eP 09 10.00 -0.8  
 S.D. = 1.0 on 10 of 10 obs.

MAR 07, 1990 06h 50m 03.50 ± 0.70s  
 45.703 N ± 7.4km 26.492 E ± 6.8km  
 DEPTH = 162.3 ± 7.2 km  
 3.2mb (1 obs.)

ROMANIA (358)

VRI 0.23 44 iPc 50 24.50 -0.4  
 BRD 0.43 115 iPc 50 27.00 1.5  
 MLR 0.44 241 iPc 50 26.00 0.3  
 ISR 0.57 176 iPc 50 27.00 0.1  
 CFR 1.28 113 iPd 50 31.00 -1.1  
 BUC1 1.40 194 iPc 50 32.00 -1.2  
 TLB 1.56 135 iPd 50 35.00 0.1  
 DRA 1.88 238 iP 50 38.00 -0.4  
 PSN 2.35 149 iPd 50 44.00 0.1  
 PVL 2.62 199 iPc 50 49.00 1.9  
 GZR 2.63 265 iPd 50 47.00 -0.3  
 JMB 3.24 179 eP 51 02.00 7.1X  
 BZS 3.42 270 eP 50 57.50 0.3  
 PGB 3.57 209 eP 50 59.00 -0.2  
 DIM 3.72 191 eP 51 36.00 35.0X  
 PLD 3.82 200 eP 51 40.00 37.6X  
 VTS 3.91 218 iPd 51 03.00 -0.6  
 KDZ 4.13 191 iP 51 06.00 -0.4  
 KKB 4.56 214 eP 51 12.00 -0.1  
 MMB 4.58 207 eP 51 13.00 0.7  
 VAY 5.23 214 ePn 51 20.60 -0.2  
 YKA 67.75 342 eP 00 45.00 0.1  
 0.5s 0.20nm 3.2mb  
 S.D. = 0.8 on 19 of 22 obs.

% MAR 07, 1990 07h 11m 03.24 ± 0.67s  
 44.144 N ± 6.3km 7.930 E ± 4.8km  
 DEPTH = 10.0km (geophysicist)  
 NORTHERN ITALY (545)  
 ML 2.3 (GEN).

ROB 0.16 344 P 11 07.24 0.3  
 S 11 09.35  
 FIN 0.21 72 P 11 07.50 -0.3  
 S 11 09.96  
 IMI 0.24 187 P 11 08.45 0.1  
 S 11 12.02  
 ENR 0.38 283 P 11 10.87 -0.1  
 S 11 17.04  
 STV 0.45 283 P 11 12.78 0.4  
 S 11 19.09  
 PCP 0.59 48 P 11 15.56 0.3  
 S 11 22.58  
 PZZ 0.70 302 P 11 16.44 -0.7  
 S 11 26.88  
 S.D. = 0.5 on 7 of 7 obs.

& MAR 07, 1990 07h 16m 36.70s  
 37.468 N 118.620 W  
 DEPTH = 11.0km  
 CALIFORNIA-NEVADA BORDER REGION (40)  
 <BRK>. ML 4.0 (BRK). Felt (III)  
 at Benton and Bishop,  
 California.

PPK 0.57 94 iPc 16 47.10 -1.2  
 SVP 0.70 69 iPc 16 49.60 -1.0

LCH 0.81 106 iPc 16 51.40 -1.0  
 MGM 0.89 91 iPc 16 53.10 -0.8  
 FRI 0.99 242 iPc 16 54.70 -0.7  
 iS 17 07.30  
 TNP 1.27 61 iPc 17 00.00 -0.3  
 CMB 1.51 293 iPc 17 03.80 0.1  
 iS 17 23.30

KVN 1.63 14 eP 17 05.00 -0.6  
 PKEM 1.84 221 eP 17 09.00 0.5  
 LSM 2.01 110 iPc 17 10.80 -0.3  
 LLA 2.04 246 ePc 17 11.80 0.4  
 PRI 2.11 232 iPc 17 13.00 0.5  
 PHAM 2.17 222 eP 17 13.30 0.1  
 ARN 2.32 268 eP 17 15.50 0.0  
 SAO 2.36 254 iPc 17 16.40 0.4  
 eS 17 52.00  
 MHC 2.41 268 ePc 17 17.20 0.4  
 eS 17 53.20  
 PRS 2.48 244 iPc 17 18.10 0.5  
 BCH 2.57 208 eP 17 18.20 -0.8  
 GCC 2.73 262 e(P) 17 20.60 -0.6  
 BKS 2.90 279 eP 17 23.35 -0.2  
 eS 18 03.30  
 BRK 2.92 279 e(P) 17 23.50 -0.3  
 ZSP 2.92 280 ePc 17 24.70 0.8  
 eS 18 06.90  
 PCC 2.99 272 ePc 17 24.30 -0.6  
 ORV 3.07 314 e(P) 17 24.90 -1.2  
 BLP 3.24 207 eP 17 29.00 0.5  
 MIN 3.70 322 e(P) 17 34.80 -0.3  
 PEC 3.76 161 eP 17 35.50 -0.4  
 PLM 4.35 160 eP 17 44.00 -0.4  
 28 obs. associated

\* MAR 07, 1990 07h 20m 48.23 ± 1.01s  
 1.835 N ± 20.7km 127.507 E ± 30.4km  
 DEPTH = 33.0km (normal)  
 4.9mb (5 obs.)

HALMAHERA (267)

AAI 5.53 173 ePc 22 19.00 8.6X  
 MTN 15.02 166 eP 24 22.00 2.1  
 WB5 22.61 163 iPc 25 47.50 0.0  
 WRA 22.66 163 Pc 25 47.80 -0.2  
 0.4s 12.80nm 4.7mb  
 QIS 25.22 153 iPc 26 12.80 0.1  
 0.3s 17.00nm 5.1mb  
 ASPA 26.10 167 iPc 26 19.60 -1.4  
 0.5s 12.00nm 4.8mb  
 eS 30 49.70  
 WARB 27.87 182 eP 26 36.00 -1.1  
 CTA 28.51 141 eP 26 49.00 6.1X  
 i 28 56.00  
 CHTO 32.68 303 eP 27 19.90 0.0  
 0.7s 1.91nm 4.1mb  
 BRS 37.90 142 eP 28 04.30 0.0  
 GUN 47.47 307 P 29 23.00 0.4  
 0.5s 15.00nm 5.3mb  
 PKI 47.70 306 P 29 24.20 -0.2  
 KKN 47.90 307 P 29 25.90 0.1  
 DMN 47.96 306 P 29 26.50 0.2  
 GKN 48.50 307 P 29 30.40 0.0  
 S.D. = 0.9 on 13 of 15 obs.

% MAR 07, 1990 08h 56m 30.84 ± 0.75s  
 43.413 N ± 5.5km 5.453 E ± 6.0km  
 DEPTH = 10.0km (geophysicist)  
 NEAR SOUTH COAST OF FRANCE (379)  
 MD 2.6 (STR).

GELF 0.03 212 Pg 56 32.46 -0.5  
 BERF 0.20 120 Pg 56 35.90 0.6  
 PUYF 0.22 56 Pg 56 35.06 -0.5  
 TREF 0.22 347 Pg 56 35.30 -0.2  
 PRAF 0.44 332 Pg 56 40.39 0.5  
 VILF 0.48 23 Pg 56 40.69 0.1  
 TAVF 0.49 65 Pg 56 40.58 -0.1  
 S.D. = 0.5 on 7 of 7 obs.

MAR 07, 1990 09h 06m 47.54 ± 0.23s  
 22.151 S ± 6.6km 174.949 E ± 5.1km  
 DEPTH = 33.0km (normal)  
 5.2mb (10 obs.) 3.9MsZ (1 obs.)  
 LOYALTY ISLANDS REGION (189)

SVA 5.19 40 eP 08 01.60 -3.4X  
 S 09 01.60



VUN	5.28	39	iP	08 02.00	-4.2X	ELL	146.47	304	ePKP	26 25.00	-0.9	RTLL	0.82	51	iPc	18 14.10	-0.8
SGE	5.33	32	iP	08 04.70	-2.3	EKA	146.83	358	PKP	26 23.00	-2.7X				iS	18 26.80	
			eS	09 10.00			1.2s	21.20nm				CFA	0.86	74	iPd	18 14.00	-1.5
MBU	6.26	35	eP	08 17.80	-2.3	KSP	146.86	335	ePKP	26 26.50	0.6				eS	18 27.50	
DZM	7.89	269	iPc	08 42.20	-0.7	GZR	147.53	322	ePKPd	26 31.50	4.2X	RTRS	1.69	353	iPc	18 26.80	-0.5
			iS	10 14.20		CLL	147.68	339	iPKPd	26 29.80	2.6X	FCH	1.73	211	eP	18 28.50	0.2
MNG	18.42	179	P	11 00.60	-1.4		1.2s	39.00nm							iS	18 54.00	
SNZO	19.10	181	P	11 10.00	-0.2	BRG	147.72	337	ePKP	26 26.50	-0.8	ROCH	1.89	233	iPd	18 30.50	0.0
			S	15 08.00				i	26 29.30						iS	18 55.40	
BRS	20.79	251	iPc	11 29.30	0.8	KDZ	147.89	314	iPKP	26 30.00	2.1X	SAN	2.01	217	eP	18 32.00	-0.1
			i	11 37.30		IZM	147.94	308	ePKP	26 29.00	0.9				iS	18 58.80	
MSZ	23.20	193	eP	11 54.00	1.7	PRU	148.22	336	PKPc	26 30.50	2.4X	LNV	2.80	221	iPc	18 39.50	-3.6X
RMO	24.24	254	eP	12 03.00	0.4		1.0s	18.80nm							iS	19 09.10	
CTA	26.83	269	eP	12 26.00	-1.0	SRO	148.27	329	ePKP	26 32.80	4.6X						
AFR	33.45	89	iP	13 27.30	1.5	ZST	148.55	331	ePKP	26 32.30	3.6X						
	1.2s	125.00nm			5.7mb	MOX	148.71	339	e(PKP)	26 36.00	7.1X						
PMO	35.86	85	iP	13 46.10	-0.3	VTS	148.85	317	ePKP	26 28.00	-1.6						
	1.0s	25.00nm			5.1mb	MM8	149.03	315	ePKP	26 33.00	3.3X						
VAH	36.04	86	iP	13 46.40	-1.5	SOP	149.18	331	ePKP	26 34.80	5.1X						
	1.0s	25.00nm			5.1mb	KHC	149.28	336	PKP	26 33.50	3.6X						
TPT	36.12	85	iP	13 47.50	-1.2		1.2s	24.00nm									
RUV	36.28	86	iP	13 48.80	-1.2	KKB	149.31	316	iPKPd	26 33.00	2.9X	NDF	4.75	26	eP	01 40.00	-2.7
	1.0s	50.00nm			5.4mb	GRB1	149.77	338	ePKPc	26 34.70	4.1X				eS	02 34.00	
ASPA	37.75	260	eP	14 00.60	-1.8	VAY	149.92	316	ePKP	26 34.30	3.3X	SVA	4.94	38	iP	01 44.10	-1.4
	1.3s	21.00nm			4.8mb	SKO	150.29	318	ePKPc	26 35.50	3.9X				eS	02 40.40	
Z	21s	0.21um			3.9Msz		1.0s	59.00nm				VUN	5.03	38	eP	01 42.90	-3.9X
		LR				MEM	150.30	346	PKP	26 36.20	5.0X				eS	02 38.40	
WB5	37.87	266	eP	14 01.40	-2.0	TOD	150.49	342	ePKP	26 36.41	4.8X	SGE	5.10	30	eP	01 45.50	-2.4
WRA	37.89	266	P	14 09.00	5.5X	ABH	150.59	343	ePKP	26 36.76	5.0X				eS	02 46.00	
	0.8s	1.90nm			4.0mb X	RUP	150.89	344	ePKP	26 37.64	5.4X	MBU	6.02	34	eP	01 59.00	-1.8
SPA	67.98	180	iPd	17 43.80	-1.6	KBA	151.03	334	ePKP	26 36.50	3.7X				eS	03 06.50	
	1.0s	30.50nm			5.4mb		1.0s	19.60nm				DZM	8.16	268	iPc	02 28.70	-2.1
SSE	73.89	314	P	18 20.80	-0.4	DOU	151.09	347	PKP	26 38.00	5.5X	MNG	18.51	179	P	04 47.70	0.5
NJ2	76.04	313	Pd	18 33.00	-0.5	BCAO	151.15	236	iPKPd	26 38.10	4.4X		0.6s	22.00nm			4.5mb
WHN	78.28	310	eP	18 46.00	0.0		0.9s	25.00nm				KIW	18.76	181	P	04 50.80	0.6
		PP			18 56.50			ic	27 07.50			MTW	19.05	179	P	04 52.80	-0.9
CN2	79.78	326	iPc	18 54.10	0.2	OHR	151.16	317	ePKP	26 37.30	4.3X	TCW	19.12	182	P	04 55.10	0.6
BJI	82.60	319	eP	19 09.00	0.3		1.1s	0.08nm				MRW	19.13	181	P	04 54.70	0.1
GCC	83.60	46	ePc	19 14.40	0.5	LJU	151.33	331	ePKP	26 33.50	0.5	WDW	19.16	181	P	04 54.70	-0.3
PCC	83.61	45	eP	19 15.10	1.1			e	26 37.50			SNZO	19.21	181	P	04 55.00	-0.5
SYF	83.62	49	eP	19 15.00	0.7	VBY	151.40	329	e(PKP)	26 38.60	5.5X				eS	08 52.00	
TIY	83.63	315	eP	19 14.80	0.6	RBL	151.44	332	PKP	26 27.00	-6.2X	BLW	19.26	179	P	04 55.20	-1.0
PRS	83.64	47	ePc	19 14.90	0.7	CEY	151.61	331	e(PKP)	26 35.00	1.5	KHZ	20.36	184	eP	05 07.30	-0.6
SAO	83.83	46	eP	19 16.40	1.3			i	26 39.60		BRS	21.08	251	iPc	05 18.30	2.8	
BRK	83.90	45	ePc	19 15.70	0.3	VOY	151.62	332	e(PKP)	26 34.90	1.3		0.8s	11.00nm			4.3mb
BKS	83.92	45	e(P)	19 16.60	1.1			i	26 37.90			RMQ	24.53	254	eP	05 50.00	0.5
	1.0s	48.00nm			5.6mb	FVI	151.65	334	PKP	26 34.50	1.1	CTA	27.11	269	ePd	06 15.00	1.5
MHC	84.01	46	eP	19 16.70	0.5	TRI	151.93	331	PKP	26 34.00	0.2	ASPA	38.04	259	eP	07 45.70	-3.1X
PRI	84.01	47	eP	19 17.00	0.8	TRI	151.93	331	ePKPc	26 39.90	6.1X		0.9s	12.00nm			4.8mb
LLA	84.08	47	e(P)	19 18.10	1.7	CDF	152.00	342	ePKP	26 39.00	5.0X	Z	17s	0.23um			4.0MszX
FHC	84.46	42	ePc	19 16.50	-1.8		0.8s	13.45nm					LR	23 12.60			
PAS	84.70	50	eP	19 20.00	0.5	HAU	152.63	343	ePKP	26 40.30	5.5X	FORR	42.85	248	iPd	08 27.90	-0.5
CHG	84.71	293	eP	19 20.80	0.9	BSF	152.67	342	ePKP	26 40.10	5.1X		0.4s	32.00nm			5.4mb
	1.1s	15.82nm			5.1mb		0.8s	10.75nm				MTN	42.94	275	eP	08 27.00	-2.3
CHTO	84.71	293	iP	19 20.60	0.7	FLN	153.20	353	ePKP	26 41.30	5.8X	COOL	48.83	248	eP	09 14.00	-1.9
	1.0s	11.25nm			5.0mb		1.0s	18.00nm				KLB	51.68	247	eP	09 36.30	-1.3
MWC	84.82	50	eP	19 17.00	-3.4X	GRR	153.61	354	ePKP	26 42.20	6.1X	NWAO	52.03	245	eP	09 39.00	-1.3
FRI	85.12	47	eP	19 21.70	0.2		1.1s	14.65nm				BAL	52.66	248	eP	09 43.20	-1.9
RVR	85.18	50	eP	19 23.00	1.0	VAI	153.79	338	PKP	26 34.00	-2.4X	MUN	52.96	246	eP	09 46.00	-1.3
SBB	85.22	50	eP	19 23.00	0.8	LPF	153.98	354	ePKP	26 44.50	7.9X	SPA	68.08	180	iPc	11 29.70	-0.4
CMB	85.23	46	ePc	19 22.30	0.1		0.9s	13.10nm					1.0s	15.50nm			5.1mb
PLM	85.23	51	eP	19 23.00	0.5	ARV	154.00	329	PKP	26 45.00	8.1X				i	11 37.00	
WDC	85.24	43	ePc	19 22.30	0.2	ASS	154.45	329	PKP	26 44.00	6.4X	WHN	78.43	310	eP	12 32.00	1.2
ISA	85.27	49	eP	19 23.00	0.6							TIA	79.82	316	eP	12 39.70	1.4
ORV	85.33	44	e(P)	19 22.60	0.0							CN2	79.85	326	eP	12 40.00	1.7
MIN	85.70	43	ePc	19 24.20	-0.4							BJI	82.71	318	eP	12 54.50	1.2
HHC	85.94	317	P	19 27.00	1.3							PRS	83.37	47	ePc	13 00.20	3.4X
CLC	85.96	49	eP	19 26.00	0.1							TIY	83.75	315	eP	13 00.80	2.0
TPC	86.19	51	eP	19 27.00	-0.1							LLA	83.81	47	e(P)	13 03.20	4.1X
GSC	86.25	50	eP	19 28.00	0.6							XAN	84.18	310	eP	13 02.50	1.4
CD2	86.26	305	P	19 28.50	1.1							FRI	84.85	47	ePc	13 06.40	2.2
LZH	88.66	310	P	19 39.50	0.4							CHTO	84.93	292	eP	13 06.00	1.0
PNT	91.79	37	eP	19 54.00	0.9								1.0s	3.75nm			4.5mb
ALO	93.62	54	eP	20 02.00	-0.1							SBB	84.94	50	eP	13 05.00	0.1
	1.0s	2.50nm			4.6mb							CMB	84.96	46	ePc	13 06.70	1.8
LRM	94.25	42	eP	20 04.50	-0.3							WDC	84.98	43	ePc	13 05.80	1.0
INK	97.68	17	eP	20 18.00	-1.6							ISA	84.99	48	eP	13 06.00	0.9
FRB	121.32	28	ePKP	25 37.00	-1.2							ORV	85.06	44	eP	13 07.20	1.9
DAG	124.91	4	iPKPd	25 42.20	-2.6X							MIN	85.44	43	e(P)	13 11.60	4.3X
SUF	134.27	341	ePKP	26 02.90	-0.2							CLC	85.68	49	eP	13 10.00	1.5
	0.7s	6.00nm										GSC	85.98	49	eP	13 13.00	2.9X
NB2	139.52	348	PKP	25 59.70	-13.3X							CD2	86.42	305	eP	13 15.00	2.7X
	1.3s	7.00nm									GTA	93.17	311	eP	13 40.00	-3.9X	
ALT	145.62	307	ePKP	26 23.60	-0.8							ALO	93.34	54	eP	13 53.00	8.2X
MLR	145.63	320	ePKP	26 10.00	-14.3X								1.0s	2.50nm			4.6mb
KRA	145.92	331	ePKP	26 22.90	-1.5							CLL	147.69	339	ePKP	20 14.00	2.8X
KHL	146.29	306	ePKP	26 25.00	-0.5							BRG	147.73	338	e(PKP)	20 13.80	



07d 13h

PRU 148.24 336 ePKP 20 15.00 2.8X  
 KHC 149.31 336 ePKP 20 18.20 4.2X  
 OHR 151.27 317 ePKP 20 10.20 -7.0X  
 BCAA 151.44 236 ePKPd 20 17.10 -1.1  
 0.6s 13.00nm  
 ic 20 23.50  
 ic 20 33.10

S.D. = 1.5 on 40 of 54 obs.

\* MAR 07, 1990 13h 07m 47.93 $\pm$ 1.28s  
 39.141 N  $\pm$  7.6km 20.099 E  $\pm$ 13.2km  
 DEPTH = 10.0km (geophysicist)  
 GREECE-ALBANIA BORDER REGION (392)  
 MD 2.8 (ATH).

IGT 0.43 25 ePg 07 56.50 -0.2  
 KEK 0.62 338 ePb 08 01.00 0.6  
 VLS 1.04 158 ePb 08 07.00 -0.5  
 eSb 08 22.00  
 AGG 1.74 93 ePn 08 19.50 1.1  
 FNA 1.91 30 ePn 08 19.70 -1.2  
 eSn 08 47.10

OHR 2.04 15 e(Pn) 08 27.30 4.6X  
 LIT 2.08 62 ePn 08 23.50 0.2  
 eSn 08 53.90

S.D. = 1.1 on 6 of 7 obs.

\* MAR 07, 1990 13h 31m 59.04 $\pm$ 1.13s  
 20.933 S  $\pm$ 18.0km 178.780 W  $\pm$ 15.4km  
 DEPTH = 577.6  $\pm$ 10.0 km  
 4.9mb ( 8 obs.)

FIJI ISLANDS REGION (181)

SVA 3.83 317 ePc 33 21.60 -0.5  
 SGE 4.56 316 iP 33 28.10 0.4  
 MBU 4.59 329 iPd 33 28.00 0.1  
 NDF 4.76 311 ePd 33 29.00 -0.1  
 DZM 13.80 263 iPc 34 57.00 1.2  
 BRS 26.70 250 iP 36 55.30 0.3  
 CTA 32.72 265 iPd 37 47.30 0.8  
 0.6s 64.67nm 5.4mb  
 i 38 36.70

OIS 38.84 263 eP 38 37.00 0.1  
 ASPA 43.71 257 eP 39 14.80 -0.9  
 0.6s 38.00nm 5.1mb  
 Z 21s 0.14um 3.8Msz  
 iS 45 04.00  
 LR 51 33.00

WB5 43.80 263 iPd 39 16.10 -0.3  
 WRA 43.82 263 Pd 39 16.10 -0.4  
 0.4s 9.80nm 4.7mb  
 FORR 48.42 247 iPc 39 51.30 -0.1  
 0.4s 42.00nm 5.3mb

MTN 48.44 271 iPc 39 51.50 -0.3  
 0.6s 57.00nm 5.3mb  
 WARB 50.00 253 iPd 40 03.10 -0.1  
 0.4s 7.00nm 4.5mb

COOL 54.39 246 eP 40 33.00 -1.6  
 MBL 56.95 258 iPd 40 52.00 -0.5  
 0.4s 9.00nm 4.4mb  
 KLB 57.21 245 eP 40 53.00 -0.3

BAL 58.21 246 eP 41 00.30 -0.6  
 MUN 58.48 245 eP 41 02.70 0.0  
 MRWA 59.01 248 iPc 41 06.20 0.0  
 NANU 60.58 255 eP 41 17.00 0.4

SPA 69.20 180 iPc 42 11.10 1.1  
 0.9s 8.18nm 4.3mb  
 CHTO 89.70 290 iP 44 00.10 2.6

INK 94.88 15 eP 44 20.50 0.3  
 YKA 97.21 25 eP 44 29.50 -1.3  
 0.8s 0.30nm 3.7mb X  
 KSP 147.88 342 iPKPc 50 41.50 4.7X  
 CLL 148.31 346 iPKPc 50 42.30 4.9X  
 1.1s 21.00nm

i 50 47.70  
 PRU 149.14 343 PKP 50 44.50 5.7X  
 KHC 150.18 344 ePKP 50 47.20 6.8X  
 GRF 150.22 347 ePKP 50 46.90 6.5X  
 KBA 152.12 342 e(PKP) 50 50.00 6.5X

S.D. = 0.9 on 25 of 31 obs.

% MAR 07, 1990 13h 58m 14.76 $\pm$ 1.88s  
 17.652 N  $\pm$ 11.5km 100.716 W  $\pm$ 18.0km  
 DEPTH = 10.0km (geophysicist)  
 GUERRERO, MEXICO ( 59)

ACX 1.13 133 iP 58 36.00 0.1

III 1.39 59 iS 58 54.50  
 iP 58 40.50 0.1  
 iS 59 01.00  
 CRX 2.00 29 (P) 58 56.00 6.7X  
 (S) 59 26.00

MRX 2.09 348 iP 58 50.00 -0.2  
 (S) 59 26.00  
 IIJ 2.27 24 eP 58 54.00 0.6  
 (S) 59 31.50

PPM 2.43 54 iP 58 55.00 -0.7  
 (S) 59 32.00  
 OXX 3.85 98 (P) 59 37.00 21.4X  
 (S) 00 18.00

S.D. = 0.7 on 5 of 7 obs.

MAR 07, 1990 14h 51m 58.05 $\pm$ 0.51s  
 42.578 N  $\pm$  4.8km 24.163 E  $\pm$  4.7km  
 DEPTH = 5.0km (geophysicist)  
 BULGARIA (359)  
 ML 2.9 (THE).

PGB 0.03 174 iPg 51 59.00 -0.3  
 PLD 0.62 140 iPg 52 10.00 -0.4  
 VTS 0.71 271 iPg 52 11.00 -1.2

MMB 1.04 198 iPg 52 18.00 -0.2  
 KKB 1.07 229 iPg 52 18.00 -0.7  
 PVL 1.07 53 iPd 52 17.00 -1.7  
 KDZ 1.32 134 iPg 52 22.00 -0.8

SRS 1.52 196 P 52 29.60 3.7X  
 e 52 49.30  
 VAY 1.73 224 iPn 52 29.50 0.6  
 RDO 1.76 144 ePn 52 29.50 0.1  
 eSn 52 53.50

JMB 1.79 93 eP 52 30.00 0.1  
 SOH 1.86 199 ePn 52 32.80 2.0  
 eSn 52 58.70  
 SKO 2.11 254 ePn 52 35.00 0.5  
 eSn 53 05.70

THE 2.14 205 eP 52 38.10 3.2X  
 e 53 06.60  
 ALN 2.19 139 eP 52 37.10 1.5  
 e 53 03.30

OUR 2.25 184 eP 52 39.30 2.9X  
 e 53 08.90  
 PLG 2.27 194 ePn 52 35.00 -1.8  
 OHR 2.91 241 ePn 52 46.50 0.6

GZR 2.99 341 ePd 52 46.00 -1.0  
 MLR 3.18 23 eP 52 52.00 2.2X  
 BZS 3.55 330 eP 52 55.50 0.6  
 VRI 3.77 28 ePc 53 00.00 1.9

S.D. = 1.2 on 18 of 22 obs.

% MAR 07, 1990 15h 31m 23.51 $\pm$ 0.97s  
 60.408 N  $\pm$  5.4km 5.007 E  $\pm$  9.7km  
 DEPTH = 10.0km (geophysicist)  
 SOUTHERN NORWAY (535)  
 MD 1.2 (BER).

ASK 0.12 51 ePg 31 26.57 0.1  
 eSg 31 28.92  
 BER 0.16 98 iPg 31 26.94 -0.3  
 iSg 31 30.30

SUE 0.66 350 ePg 31 36.41 -0.3  
 iSg 31 45.44  
 ODD1 0.95 121 eP 31 41.27 -0.4  
 iS 31 56.09

HYA 0.96 37 iPc 31 41.98 0.3  
 eS 31 55.60  
 KMY 1.21 174 iPc 31 45.86 -0.1  
 iS 32 02.01

BLS1 1.37 137 iPc 31 49.33 0.6  
 iS 32 08.12

S.D. = 0.4 on 7 of 7 obs.

% MAR 07, 1990 15h 42m 23.64 $\pm$ 1.04s  
 39.600 N  $\pm$  9.5km 28.416 E  $\pm$  9.8km  
 DEPTH = 10.0km (geophysicist)  
 TURKEY (366)

DST 0.16 88 iPg 42 27.10 -0.3  
 iSg 42 31.10  
 KCT 0.65 356 iPg 42 37.00 0.4  
 BNT 0.85 333 iPg 42 39.50 -0.4  
 iSg 42 52.50

EDC 0.86 331 ePg 42 38.50 -1.7  
 eSg 42 52.50  
 YLV 1.21 37 iPn 42 46.50 0.2

ALT 1.42 112 ePn 42 49.90 0.3  
 MFT 1.47 324 ePn 42 52.00 1.8  
 KHL 1.54 146 ePn 42 51.00 -0.3  
 S.D. = 1.1 on 8 of 8 obs.

\* MAR 07, 1990 18h 14m 01.90 $\pm$ 0.91s  
 32.093 S  $\pm$ 12.5km 70.135 W  $\pm$ 13.6km  
 DEPTH = 23.3  $\pm$  9.2 km  
 CHILE-ARGENTINA BORDER REGION (127)

ROCH 1.15 220 iPd 14 23.50 0.7  
 iS 14 41.00  
 FCH 1.24 186 iP 14 26.00 1.9  
 iS 14 45.00

RTCV 1.38 81 iPd 14 26.00 0.2  
 S 14 45.00  
 PCH 1.56 192 iP 14 29.00 0.5  
 iS 14 51.00

RTLL 1.61 62 iPc 14 28.80 -0.4  
 eS 14 50.20  
 CFA 1.68 74 iPd 14 29.80 -0.5  
 (S) 14 51.80

TACH 1.70 203 iP 14 30.00 -0.4  
 iS 14 53.70  
 CHCH 1.89 193 eP 14 32.60 -0.6  
 iS 14 57.70

RTRS 2.00 17 iPd 14 35.40 0.6  
 LNV 2.14 210 iPc 14 34.90 -2.0  
 iS 15 00.80

S.D. = 1.3 on 10 of 10 obs.

MAR 07, 1990 18h 22m 03.19 $\pm$ 0.37s  
 17.295 S  $\pm$  8.5km 66.675 E  $\pm$  6.7km  
 DEPTH = 10.0km (geophysicist)  
 5.2mb ( 14 obs.) 5.2Msz ( 12 obs.)

MASCARENE ISLANDS REGION (427)

CENTROID, MOMENT TENSOR (HRV)

Data Used: GDSN

L.P.B.: 15S, 39C

Centroid Location:

Origin Time 18:22:14.0 0.2

Lot 17.03S 0.03 Lon 66.41E 0.03

Dep 15.0 FIX Half-duration 3.5

Moment Tensor: Scale 10 $\times$ 17 Nm

Mrr=-1.60 0.16 Mtt=-7.12 0.21

Mff= 8.71 0.22 Mrt=-1.71 0.54

Mrf=-2.45 0.61 Mtf= 3.18 0.17

Principal Axes:

T Val= 9.97 Plg=13 Azm=102

N -2.00 72 240

P -7.98 11 9

Best Double Couple: Mo=9.0 $\times$ 10 $\times$ 17

NP1: Strike=145 Dip=72 Slip= 179

NP2: 236 89 18

GBA 32.49 20 P 28 42.00 5.8X  
 1.0s 7.20nm 4.6mb  
 NAI 33.41 295 eP 28 45.00 0.4  
 BUL 36.11 259 iPd 29 04.00 -3.7X  
 POO 36.30 12 eP 29 08.50 -0.5  
 iS 34 49.50

HYB 36.42 19 eP 29 09.00 -1.1  
 eS 34 50.00  
 BOM 36.47 10 eP 29 11.90 1.5  
 eS 34 55.90

SLR 36.59 250 eP 29 11.00 -0.6  
 1.0s 30.00nm 5.1mb  
 Z 20s 11.35um 5.6Msz  
 PRY 37.43 248 eP 29 10.00 -8.7X  
 1.1s 20.27nm 4.8mb

KSR 37.84 250 eP 29 07.80 -14.4X  
 0.9s 7.69nm  
 HVD 39.68 243 e(P) 29 55.00 17.5X  
 LWI 40.09 288 iPc 29 42.00 0.9

SUR 43.91 241 iPc 30 17.50 5.3X  
 0.5s 12.68nm 5.0mb  
 Z 22s 6.30um 5.5Msz  
 NDI 46.83 13 iPd 30 38.00 2.9X  
 eS 37 24.00

QUE 47.21 0 eP 30 40.60 2.3  
 CHG 47.90 43 eP 30 43.50 -0.3  
 SHL 49.16 31 eP 30 53.50 -0.1  
 eS 38 00.00  
 BCAA 52.20 290 iPc 31 14.90 -1.9  
 0.9s 17.00nm 5.0mb  
 ic 31 25.30

LSA 52.35 27 eP 31 21.40 3.2X



[illegible]



07d 21h

DEPTH = 33.0km (normol)					SRS					PMS						
OFF COAST OF NORTHERN CHILE (121)					ATH					SKT						
RTRS	3.61	140	iPc	19 52.70	1.1	TIR	2.26	320	ePn	31 02.00	5.0X	PWA	2.55	34 ePd	04 38.50	-0.9
ANT	3.99	23	iPc	19 57.30	0.3	PHP	2.30	334	ePn	31 00.20	2.6	PLRM	2.73	40 eP	04 40.25	-1.6
RTCB	4.99	145	iPc	20 11.50	0.1	SKO	2.35	354	iPn	31 00.90	2.5	PMR	2.73	40 eP	04 40.30	-1.6
RTLL	5.04	142	ePd	20 11.20	-0.9				iPg	31 03.60		KNK	2.85	48 eP	04 42.02	-1.5
ZON	5.10	145	eP	20 12.00	-0.9				eSn	31 28.50		GHO	2.93	39 eP	04 43.22	-1.5
CFA	5.38	142	iPd	20 16.20	-0.6				iSg	31 32.50		CUT	3.11	23 eP	04 45.92	-1.0
RTCV	5.43	146	ePc	20 18.00	0.6	KKB	2.44	23	iPc	31 00.00	0.4	TTA	3.71	337 ePd	04 53.50	-1.7
IHA	5.62	176	eP	20 30.00	9.9X	MMB	2.45	36	eP	31 04.00	4.2X	NCA	3.82	48 eP	04 55.26	-1.4
			eS	21 39.00		ITM	2.45	177	ePn	31 02.00	2.2	KLU	3.92	58 eP	04 56.56	-1.5
ROCH	5.63	170	eP	20 20.60	0.1	LACI	2.55	322	ePn	31 06.10	4.9X	KTH	4.10	12 eP	04 59.51	-1.0
LCCH	6.07	176	iPc	20 26.40	-0.1	SDA	2.95	325	ePn	31 09.20	2.4	TOA	4.13	49 eP	04 59.97	-1.0
FCH	6.11	166	eP	20 28.80	1.4	RZN	3.03	46	eP	31 08.00	-0.1	RND	4.30	25 eP	05 01.93	-1.3
			iS	21 35.50		LCI	3.03	285	P	31 07.00	-1.0	PAX	4.93	43 eP	05 10.53	-1.3
TACH	6.31	171	iP	20 30.00	0.1	VLI	3.05	162	ePn	31 06.50	-1.7	NEA	5.33	18 eP	05 14.87	-2.4
			iS	21 37.00		VTG	3.14	19	iP	31 10.00	0.3	WRH	5.40	22 eP	05 16.21	-2.0
PCH	6.35	168	eP	20 03.10	-27.4X	RDO	3.24	61	ePn	31 11.00	0.1	FBA	5.84	22 iPc	05 22.20	-2.1
LNW	6.56	175	iPc	20 32.40	-0.9	PLD	3.31	41	eP	31 25.00	13.0X	IMA	6.54	357 eP	05 32.20	-1.8
CHCH	6.63	169	eP	20 34.30	-0.1	KDZ	3.42	53	iP	31 12.00	-1.5	INK	12.14	36 eP	06 47.00	-1.8
			iS	21 42.00		PGB	3.42	31	eP	31 13.00	-0.7	38 obs. associated				
LPB	11.44	20	P	22 01.00	19.8X	ALN	3.49	67	eP	31 15.70	1.1	MAR 07, 1990 23h 14m 26.66±0.20s				
Z	18s		0.34um						eS	31 59.80		41.257 N ± 2.3km 19.941 E ± 2.0km				
			LR	25 20.00		BRT	3.72	291	P	31 19.50	1.6	DEPTH = 10.0km (geophysicist)				
ZOBO	11.68	19	iP	22 05.20	20.6X	DIM	3.73	48	eP	31 33.00	15.1X	4.5mb ( 8 obs.)				
	1.0s		6.25nm			APE	3.90	130	ePn	31 19.00	-1.4	ALBANIA (391)				
Z	23s		0.33um			ROI	4.03	271	P	31 22.30	0.0	ML 4.5 (SKO), 4.0 (TTG), 3.7				
			LR	25 20.00					eSn	32 03.80		(THE), 3.6 (ROM), MD 4.3 (ATH).				
ZOBO	11.68	19	P	21 44.30	-0.3	BAI	4.04	293	P	31 21.50	-0.9	Feit (IV) at Kilojke, Krrabe,				
ZST	109.40	45	ePKP	37 54.40	29.4X	TDS	4.21	272	P	31 25.50	0.7	Elboson and Tirone.				
S.D. = 0.8 on 14 of 19 obs.									eSn	32 10.00						
? MAR 07, 1990 21h 25m 04.88±3.19s					CSI	4.25	274	P	31 25.20	-0.1	TIR	0.11	328 iPgd	14 30.50	1.1	
38.413 N ± 32.4km 21.882 E ± 22.0km					CZI	4.40	266	P	31 27.50	0.0	LACI	0.42	335 iPgc	14 35.40	0.2	
DEPTH = 10.0km (geophysicist)									eSn	32 12.40		BERA	0.55	179 iPgd	14 36.70	-1.2
GREECE (364)					MMN	4.48	275	P	31 30.80	2.3	PHP	0.57	41 iPgc	14 36.30	-1.9	
ML 2.5 (THE).					SOI	4.74	253	P	31 32.00	-0.3	OHR	0.66	102 iPgc	14 38.00	-1.9	
									eSn	32 22.00				iSg	14 47.50	
AGG	0.70	30	iPbd	25 20.30	1.5	MGR	4.82	278	Pd	31 33.70	0.2			LO	14 48.60	
			eSb	25 37.60					eSn	32 23.50		PUK	0.79	357 iPgc	14 41.20	-0.7
VLS	1.04	257	eP	25 24.70	0.1	SGO	5.06	283	Pc	31 36.60	-0.2	SDA	0.83	336 iPgc	14 44.20	1.6
ITM	1.23	178	eP	25 23.80	-4.0X				eSn	32 29.50		VLO	0.86	203 iPg	14 44.00	0.9
			eS	25 40.00		HVAR	5.36	313	i(Pn)	31 40.00	-1.0	ULC	0.88	324 iPgc	14 43.80	0.3
LIT	1.75	15	ePn	25 35.00	-0.5	BSS	5.47	284	Pd	31 42.70	0.0			eSg	15 01.50	
			eSn	26 03.60		DUI	5.93	292	P	31 48.50	-0.7	KKS	0.89	23 iPg	14 43.50	-0.2
VLI	1.89	153	eP	25 30.00	-7.5X	BZS	5.98	359	eP	31 50.00	0.2	KBN	0.92	133 iPgc	14 42.20	-1.9
KEK	2.08	309	eP	25 40.30	0.1	SDI	6.41	291	P	31 55.70	-0.2	BCI	1.11	5 iPnd	14 47.40	-0.1
SOH	2.66	25	ePn	25 47.30	-1.3	MLR	6.61	26	eP	32 00.00	1.2	FNA	1.18	113 iPgc	14 47.10	-1.7
			eSn	26 23.70		AZI	6.76	293	P	32 01.00	0.2			eSg	15 01.40	
OHR	2.82	343	e(Pn)	26 02.50	11.6X	ARV	7.68	303	P	32 12.50	-1.2	LSK	1.21	155 ePn	14 47.00	-2.3
S.D. = 1.5 on 5 of 8 obs.					ASS	7.68	300	P	32 12.00	-1.8	TTG	1.28	337 ePg	14 50.70	0.4	
					VOY	8.63	320	e(Pn)	32 25.80	-1.3			eSg	15 13.00		
MAR 07, 1990 22h 30m 18.79±0.32s									eSn	33 59.60		BDV	1.32	321 iPgd	14 52.30	1.2
39.632 N ± 3.5km 21.791 E ± 2.7km					PGD	8.64	303	P	32 26.00	-1.2			eSg	15 15.50		
DEPTH = 7.3 ± 2.2 km					CTI	9.82	314	P	32 42.00	-1.5	SKO	1.33	57 iPnc	14 50.40	-0.8	
GREECE (364)					S.D. = 1.1 on 56 of 62 obs.											
ML 3.5 (ATH), 3.5 (THE).					& MAR 07, 1990 23h 03m 58.77s											
					59.569 N 152.832 W											
KZN	0.67	359	ePg	30 32.00	-0.3	DEPTH = 112.4km										
LIT	0.71	49	iPc	30 33.50	0.4	SOUTHERN ALASKA					( 2 )					
			eS	30 46.10		<AGS-P>										
AGG	0.74	145	ePd	30 32.80	-0.7	AUE	0.35	233	eP	04 14.51	-0.7			iSg	15 08.50	
			eS	30 43.90					eS	04 26.45				i	15 11.00	
LSK	1.05	300	ePn	30 37.90	-1.0	AUL	0.36	239	eP	04 14.69	-0.6	PVY	1.34	1 iPgc	14 51.70	0.3
IGT	1.13	265	ePb	30 40.20	0.0	PDB	0.72	288	eP	04 16.88	-0.9			eSg	15 14.20	
NEO	1.16	106	ePb	30 40.50	-0.2				eS	04 30.66		SRN	1.38	178 ePn	14 53.30	1.5
FNA	1.19	345	ePbd	30 41.50	0.2	CNPM	0.81	92	eP	04 18.02	-0.6	KEK	1.55	184 eP	14 55.50	1.2
			eSb	31 00.80					eS	04 31.93		HCV	1.61	318 ePn	14 57.20	2.1
KBN	1.24	323	ePn	30 42.50	0.4	NNL	0.91	58	eP	04 19.16	-0.4			eSn	15 22.40	
THE	1.34	42	iPc	30 44.20	0.4				eS	04 35.30		IVA	1.61	359 iPnd	14 57.00	1.7
			eS	31 04.50		RDT	1.03	12	P	04 19.82	-1.0			eSn	15 23.00	
SRN	1.40	281	ePn	30 45.10	0.4	NKA	1.42	33	eP	04 26.53	1.4	KZN	1.68	124 eP	14 56.50	0.2
PLG	1.47	59	ePg	30 46.00	0.3	SLKM	1.61	53	eP	04 26.52	-1.0	NKY	1.71	336 ePn	14 58.50	1.8
KEK	1.54	274	ePb	30 48.50	1.9	CKL	1.65	8	eP	04 27.39	-0.7			eSn	15 25.50	
OHR	1.66	333	iPn	30 49.10	0.7				eS	04 49.34		IGT	1.75	170 ePb	14 59.00	1.8
			iSn	31 14.10		SPU	1.66	13	eP	04 27.40	-0.8	LCI	1.77	239 P	14 57.10	-0.4
			Lg	31 17.70		BGL	1.71	7	eP	04 28.29	-0.5			eSn	15 21.70	
SOH	1.69	45	iPc	30 50.10	1.3	CRP	1.74	11	eP	04 28.66	-0.5	BRY	1.94	328 ePn	15 02.90	2.7X
			eS	31 13.50		SEW	1.79	71	eP	04 28.89	-0.7			eSn	15 31.50	
VLS	1.73	213	ePb	30 50.50	1.1	CGLM	1.79	13	eP	04 29.22	-0.6	VAY	1.98	87 iPn	15 00.50	-0.1
KNT	1.75	29	eP	30 50.50	0.9	KDC	1.84	174	iPd	04 28.40	-1.8			i	15 01.60	
			eS	31 16.40		NCG	1.87	10	eP	04 30.23	-0.6			i	15 10.50	
VAY	1.79	19	iPn	30 50.60	0.4				eS	04 53.92				iSn	15 25.20	
OUR	1.82	67	eP	30 51.10	0.4	SVW	2.08	319	ePd	04 32.10	-1.3			iSg	15 28.50	
			eS	31 17.80		SUA	2.16	28	eP	04 34.16	-0.4			LO	15 32.50	
VLO	1.95	296	ePn	30 56.80	4.2X											



[illegible]



08d 00h

KKN 21.12 239 P 16 45.20 1.4  
 GKN 21.40 241 P 16 47.00 0.4  
 CHG 22.45 197 eP 17 02.50 5.5X  
 CHTO 22.45 197 eP 16 58.20 1.2  
 1.2s 7.99nm 4.1mb  
 GBA 36.52 231 Pc 19 03.30 -0.6  
 0.4s 2.10nm 4.3mb  
 SOD 49.22 330 eP 20 47.00 0.7  
 SUF 50.32 324 eP 20 55.30 0.5  
 0.6s 3.70nm 4.5mb  
 HFS 56.81 323 eP 21 42.00 -0.9  
 0.5s 2.90nm 4.6mb  
 NB2 57.54 325 P 21 47.20 -0.8  
 0.7s 2.90nm 4.4mb  
 MBC 59.98 11 eP 22 05.00 0.2  
 CLL 61.21 314 iPd 22 13.80 0.3  
 INK 62.83 21 eP 22 23.00 -1.1  
 KBA 63.17 310 iPc 22 28.20 1.3  
 0.5s 4.40nm 4.9mb  
 WB5 65.78 150 eP 22 42.00 -1.8  
 WRA 65.83 150 Pc 22 42.70 -1.4  
 0.5s 2.80nm 4.7mb  
 LPG 67.86 311 eP 22 57.20 0.0  
 0.8s 6.05nm 4.8mb  
 LPL 67.86 311 eP 22 57.10 0.0  
 0.6s 3.60nm 4.7mb  
 SBF 68.41 310 eP 22 59.60 -0.8  
 0.6s 9.00nm 5.1mb  
 SMF 68.81 314 eP 23 10.80 8.1X  
 0.6s 2.25nm 4.5mb  
 AVF 68.99 314 eP 23 03.00 -0.8  
 ASPA 69.08 152 eP 23 04.00 -0.5  
 0.6s 9.00nm 5.1mb  
 LDF 69.74 317 eP 23 07.70 -0.6  
 MAF 69.77 314 eP 23 08.40 -0.2  
 0.6s 2.70nm 4.6mb  
 TCF 69.92 314 eP 23 09.20 -0.4  
 GRR 70.25 317 eP 23 10.70 -0.7  
 0.5s 2.90nm 4.7mb  
 MFF 71.00 315 eP 23 16.10 0.0  
 YKA 72.29 18 eP 23 25.90 2.4  
 0.5s 0.30nm 3.6mb  
 S.D. = 1.0 on 32 of 37 obs.

? MAR 08, 1990 00h 27m 15.78 ± 4.25s  
 31.574 S ± 11.4km 69.390 W ± 25.0km  
 DEPTH = 128.7 ± 59.6 km

SAN JUAN PROVINCE, ARGENTINA (137)

ZON 0.61 87 iPd 27 35.00 -0.7  
 eS 27 49.00  
 RTCV 0.78 112 iPd 27 37.10 0.1  
 S 27 52.80  
 RTLL 0.82 73 iPd 27 37.00 -0.3  
 iS 27 52.00  
 CFA 0.98 92 iPd 27 38.90 0.2  
 eS 27 55.50  
 RTRS 1.40 358 iPd 27 43.50 0.5  
 FCH 1.91 203 iPd 27 50.80 1.5  
 iS 28 16.50  
 ROCH 1.96 224 iPd 27 49.50 -0.3  
 iS 28 14.50  
 PCH 2.25 205 eP 27 54.00 0.6  
 iS 28 23.50  
 TACH 2.45 212 iPd 27 55.40 -0.4  
 iS 28 25.60  
 CHCH 2.58 204 iPd 27 58.00 0.4  
 iS 28 30.30  
 LNV 2.92 215 iPd 28 00.30 -1.6  
 iS 28 33.00  
 S.D. = 1.0 on 11 of 11 obs.

\* MAR 08, 1990 00h 53m 28.45 ± 1.58s  
 41.155 N ± 11.5km 19.987 E ± 12.6km  
 DEPTH = 10.0km (geophysicist)

ALBANIA (391)

ML 2.5 (SKO).  
 TIR 0.21 335 iPgC 53 33.50 0.5  
 LACI 0.52 337 ePg 53 37.90 -1.1  
 OHR 0.62 94 iPgC 53 40.60 -0.3  
 iSg 53 50.20  
 PHP 0.63 33 iPgC 53 39.80 -1.3  
 KBN 0.82 130 ePg 53 44.30 0.0  
 PUK 0.89 355 ePg 53 45.50 0.0  
 BCI 1.21 3 ePg 53 52.30 1.3  
 SKO 1.36 53 ePn 53 54.40 0.9

VAY 1.96 84 ePn 54 04.80 2.8X  
 S.D. = 1.1 on 8 of 9 obs.

MAR 08, 1990 01h 06m 14.90 ± 0.73s  
 15.630 S ± 7.1km 174.914 W ± 4.5km  
 DEPTH = 309.4 ± 7.9 km  
 4.9mb (22 obs.)

TONGA ISLANDS (173)

MBU 6.26 257 iPc 07 48.10 -0.1  
 SVA 6.81 248 eP 07 55.60 0.8  
 eS 09 17.90  
 SGE 7.14 253 eP 07 59.50 0.6  
 DZM 18.76 247 iPd 10 12.40 -1.3  
 TVO 24.67 99 iP 11 10.70 0.5  
 1.0s 55.00nm 4.9mb  
 PGZ 26.05 195 P 11 22.80 0.4  
 0.8s 44.00nm 4.9mb  
 PMO 26.06 92 iP 11 23.00 0.3  
 1.3s 90.00nm 5.0mb  
 MNG 26.26 197 P 11 23.80 -0.5  
 0.5s 11.00nm 4.5mb  
 VAH 26.30 93 iP 11 24.70 -0.1  
 1.3s 70.00nm 4.9mb  
 TPT 26.33 92 iP 11 25.20 0.1  
 1.3s 75.00nm 4.9mb  
 RUV 26.54 93 iP 11 26.40 -0.6  
 1.3s 60.00nm 4.8mb  
 KHZ 28.48 198 P 11 44.30 0.2  
 0.3s 6.00nm 4.6mb  
 RMO 35.47 246 iPd 12 43.70 -0.7  
 PMG 37.50 275 eP 13 00.50 -1.0  
 CAN 37.74 232 eP 13 03.90 0.6  
 TOO 41.19 230 eP 13 32.00 0.4  
 QIS 43.40 256 iPd 13 48.70 -0.9  
 0.3s 12.00nm 4.6mb  
 ADE 45.68 236 iPd 14 07.80 0.4  
 0.6s 26.67nm 4.7mb  
 WB5 48.35 257 iPd 14 27.10 -1.1  
 WRA 48.37 257 Pd 14 27.00 -1.3  
 0.4s 31.10nm 5.0mb  
 ASPA 48.65 252 iPd 14 30.20 -0.3  
 0.6s 480.00nm 6.0mb X  
 Z 22s 0.08um 3.7mszx  
 iS 21 08.10  
 LR 27 12.90

MTN 52.26 266 iPd 14 56.70 -0.8  
 WARB 55.21 249 iPd 15 18.40 -0.4  
 0.3s 14.00nm 4.9mb  
 MBL 61.80 254 iPd 16 03.50 -0.5  
 0.5s 11.00nm 4.7mb  
 SYP 72.19 45 eP 17 09.00 0.5  
 GCC 72.28 42 ePc 17 09.40 0.7  
 PRS 72.28 43 ePc 17 09.20 0.4  
 PCC 72.31 41 ePc 17 08.80 -0.1  
 BCH 72.48 45 P 17 10.30 0.2  
 SAO 72.48 43 ePc 17 10.50 0.5  
 BRK 72.61 41 eP 17 10.60 0.0  
 BKS 72.63 41 eP 17 10.90 0.1  
 0.9s 36.00nm 5.1mb  
 PRI 72.64 43 ePc 17 13.50 2.5  
 MHC 72.69 42 ePc 17 11.60 0.3  
 LLA 72.73 43 ePc 17 11.50 0.1  
 PAS 73.23 46 eP 17 14.00 -0.3  
 MWC 73.35 46 eP 17 15.00 -0.3  
 BAR 73.51 48 eP 17 16.00 -0.1  
 RVR 73.70 47 eP 17 17.00 -0.1  
 PLM 73.73 48 eP 17 17.00 -0.5  
 FRI 73.75 43 ePc 17 17.10 -0.2  
 SBB 73.76 46 eP 17 17.00 -0.5  
 ISA 73.84 45 eP 17 18.00 0.1  
 CMB 73.91 42 ePc 17 18.00 -0.2  
 WDC 74.07 39 iPd 17 19.00 0.0  
 ORV 74.09 40 ePc 17 18.90 -0.3  
 CLC 74.52 45 eP 17 21.00 -0.8  
 TPC 74.70 47 eP 17 23.00 0.2  
 GSC 74.79 46 eP 17 23.00 -0.4  
 GLA 75.04 49 eP 17 25.00 0.2  
 KVN 75.96 42 P 17 29.50 -0.5  
 CN2 80.33 321 P 17 53.20 0.0  
 PNT 81.00 33 eP 17 56.00 -0.6  
 PV09 81.71 46 P 18 00.80 -0.1  
 NEW 81.72 35 P 17 58.50 -1.9  
 0.8s 10.00nm 4.7mb  
 ALQ 82.07 50 ePc 18 03.10 0.4  
 1.2s 41.02nm 5.1mb

ANMO 82.07 50 P 18 03.60 0.9  
 1.0s 25.75nm 5.0mb  
 FBA 82.90 11 P 18 04.20 -1.8  
 LRM 83.10 39 eP 18 07.90 0.1  
 BW06 83.42 42 P 18 09.00 -0.4  
 0.7s 18.71nm 5.0mb  
 GOL 84.87 47 P 18 17.00 0.3  
 0.7s 8.98nm 4.7mb  
 SES 86.23 35 ePc 18 22.70 -0.1  
 EDM 86.45 32 ePc 18 23.00 -0.8  
 GYA 86.86 298 P 18 28.20 1.7  
 XAN 87.58 306 P 18 30.10 0.4  
 RSSD 87.62 43 P 18 29.50 -0.4  
 KMI 89.81 296 Pc 18 42.50 2.0  
 YKA 90.89 24 eP 18 43.80 -0.6  
 1.0s 2.30nm 4.1mb  
 CHG 91.40 289 ePd 18 49.80 2.1  
 0.9s 12.60nm 4.9mb  
 FVM 95.22 52 P 19 04.10 -0.7  
 1.0s 16.00nm 5.1mb  
 SEG 116.27 79 ePd iff20 36.50 -2.6X  
 MGG 116.36 80 ePd iff20 38.00 -1.6  
 NAI 144.44 245 iPKP 25 18.00 0.8  
 0.8s 14.93nm  
 PRU 144.88 349 ePKP 25 17.50 0.9  
 e 25 24.70  
 MLR 145.45 334 ePKP 25 20.00 2.1X  
 GRF 145.66 353 ePKP 25 19.40 1.5  
 e 25 23.90  
 KHC 145.88 350 PKPc 25 20.00 1.7  
 FLN 146.64 7 ePKP 25 21.50 2.0X  
 0.8s 13.45nm  
 LDF 146.85 6 ePKP 25 21.90 2.1X  
 0.8s 9.40nm  
 GRR 146.97 7 ePKP 25 22.40 2.4X  
 0.7s 13.25nm  
 CDF 147.26 357 ePKP 25 23.50 2.9X  
 LPF 147.30 8 ePKP 25 23.50 3.0X  
 0.9s 19.65nm  
 HAU 147.70 358 ePKP 25 24.60 3.3X  
 0.7s 6.60nm  
 KBA 147.90 349 iPKPd 25 25.70 3.9X  
 0.4s 1.40nm  
 e 40 33.00  
 LOR 148.44 2 ePKP 25 26.90 4.4X  
 0.7s 5.50nm  
 SSF 148.63 2 ePKP 25 27.50 4.7X  
 0.8s 8.05nm  
 LBF 148.73 1 ePKP 25 27.50 4.5X  
 0.7s 7.15nm  
 MFF 148.81 7 ePKP 25 27.50 4.5X  
 AVF 148.90 2 ePKP 25 27.70 4.6X  
 0.7s 2.75nm  
 SMF 149.06 2 ePKP 25 27.70 4.3X  
 BGF 149.11 3 ePKP 25 28.50 5.0X  
 0.7s 6.60nm  
 LSF 149.33 5 ePKP 25 28.90 5.0X  
 TCF 149.34 4 ePKP 25 29.10 5.2X  
 1.0s 9.00nm  
 MAF 149.43 3 ePKP 25 29.40 5.4X  
 0.7s 5.50nm  
 LPL 150.17 358 ePKP 25 32.20 6.8X  
 0.7s 3.85nm  
 LPG 150.19 358 ePKP 25 32.30 6.8X  
 0.8s 8.05nm  
 RJF 150.27 5 ePKP 25 31.30 6.0X  
 LFF 150.55 6 ePKP 25 32.20 6.5X  
 0.7s 5.50nm  
 CAF 150.69 4 ePKP 25 32.70 6.7X  
 LPO 150.85 6 ePKP 25 32.70 6.5X  
 OHR 151.19 335 e(PKP) 25 33.20 6.3X  
 S.D. = 0.8 on 75 of 101 obs.

MAR 08, 1990 01h 37m 15.36 ± 0.25s  
 36.885 N ± 3.5km 3.691 W ± 4.9km  
 DEPTH = 625.4 ± 3.5 km  
 4.1mb (31 obs.)

STRAIT OF GIBRALTAR (385)

AFC 0.39 18 iP 38 27.70 -0.9  
 eS 39 25.30  
 MAL 0.60 255 iPd 38 28.20 -0.4  
 iSg 39 24.20  
 ENIJ 1.18 85 iPd 38 29.00 -0.7  
 EPRU 1.24 274 iPd 38 30.00 0.2  
 eS 39 29.00  
 EBAN 1.28 357 iPd 38 29.50 -0.4







08d 02h

WRA	53.16	188	Pc	03	43.60	-1.4	MAT	8.06	336	iPd	10	35.30	-0.9	1.0s	30.00nm	5.4mb	
	0.5s	40.30nm			5.7mb				eS		12	05.00		63.86	15 eP	19 09.00 -0.6	
OIS	53.41	181	eP	03	45.00	-1.8	SSE	18.29	281	P	12	52.20	0.8	1.0s	9.00nm	4.8mb	
ASPA	56.88	188	iPc	04	10.90	-1.1	Z	16s	0.44um					TOO	66.49	177 eP	19 27.00 0.1
	0.6s	54.00nm			5.8mb	X	N	16s	0.53um					MAIO	67.95	300 eP	19 38.00 1.6
Z	22s	0.21um			4.2Msz	X			sP		13	01.10		YKA	70.28	29 eP	19 49.00 -1.2
		eS		12	21.10		DL2	19.58	305	eP	13	06.00	-0.7		0.8s	4.00nm	4.5mb
		LR		19	03.00		Z	16s	0.60um					SOD	72.46	339 iP	20 04.40 1.2
MBC	60.38	16	eP	04	35.50	-0.2			eS		16	40.00		PNT	73.39	43 eP	20 10.00 1.0
	0.8s	2.00nm			4.3mb		NJ2	20.30	284	Pd	13	14.50	0.2	EDM	75.12	37 eP	20 18.50 -0.5
GBA	60.52	267	P	04	37.00	-0.5		1.0s	100.00nm					SUF	75.30	335 iP	20 20.30 0.5
	0.6s	2.30nm			4.5mb		Z	16s	0.40um						0.8s	10.60nm	4.9mb
MAIO	65.01	298	eP	05	08.00	0.9	E	14s	0.60um					NEW	75.34	43 P	20 19.50 -0.9
YKA	67.41	29	eP	05	20.60	-1.2	OZH	21.45	264	eP	13	26.40	0.3		1.0s	9.25nm	4.7mb
	0.6s	1.70nm			4.2mb		CVP	21.90	243	eP	13	33.00	2.4	ORV	76.47	52 ePc	20 26.50 -0.3
SOD	68.37	338	iP	05	27.00	-0.8	TIA	22.21	295	eP	13	32.20	-1.4	NUR	77.20	333 eP	20 42.30 11.9
DAG	69.61	355	iPc	05	34.10	-1.1	Z	20s	0.50um					MHC	77.37	54 ePc	20 37.00 5.0X
SUF	71.25	334	eP	05	45.00	-0.4	N	13s	0.60um					SES	77.77	39 eP	20 34.00 0.1
	0.4s	2.80nm			4.5mb		E	13s	0.50um					CMB	77.94	53 ePc	20 35.10 0.1
NUR	73.17	332	eP	05	56.70	0.0	PIP	22.50	246	ePc	13	36.00	-0.6	PRS	78.02	55 ePc	20 35.50 0.0
CMB	76.52	53	ePc	06	17.60	1.1	BAG	23.61	242	eP	13	48.00	0.3	PRI	78.62	55 e(P)	20 41.60 2.7
PRS	76.74	55	ePc	06	18.70	1.0	BJI	23.93	304	eP	13	50.00	-0.3	KVI	78.90	54 ePc	20 42.20 2.0
LRM	77.26	43	eP	06	21.90	1.2	Z	18s	0.88um					FRN	79.04	51 P	20 40.70 -0.6
HFS	77.44	336	eP	06	19.50	-1.5	E	16s	0.70um					LRM	79.32	43 eP	20 42.90 0.2
	0.5s	3.30nm			4.6mb		WHN	24.19	280	eP	13	54.50	1.6	FFC	79.94	32 iPd	20 45.60 0.1
FRI	77.53	54	ePc	06	22.90	0.9		1.0s	100.00nm						0.9s	16.00nm	5.0mb
NB2	77.59	337	P	06	20.60	-1.3	N	12s	0.60um					TNP	80.11	52 P	20 47.10 0.0
	0.8s	5.30nm			4.6mb		TIY	26.18	297	Pd	14	12.40	0.6		1.0s	9.25nm	4.7mb
FRB	80.66	13	eP	06	40.00	1.7	E	14s	0.90um					ISA			



LPF 8.90 51 Pn 41 20.60 -0.2  
 Sn 42 53.20  
 LFF 9.00 73 Pn 41 26.00 3.8X  
 Sn 43 00.20  
 GRR 9.20 50 Pn 41 24.40 -0.5  
 Sn 43 00.60  
 FLN 9.61 49 Pn 41 30.60 0.0  
 LDF 9.72 50 Pn 41 31.70 -0.4  
 LSF 9.82 66 Pn 41 32.80 -0.7  
 Sn 43 12.20  
 ECP 9.88 18 eP 41 35.50 1.2  
 eS 43 19.00  
 CAF 9.93 74 Pn 41 34.50 -0.6  
 Sn 43 14.50  
 ECB 9.96 17 eP 41 36.60 1.2  
 TCF 10.28 66 Pn 41 39.00 -0.9  
 Sn 43 21.80  
 MAF 10.51 67 Pn 41 42.00 -1.0  
 Sn 43 28.50  
 BGF 10.78 65 Pn 41 45.90 -0.8  
 Sn 43 34.30  
 DCN 10.80 13 eP 41 56.20 9.3X  
 DLE 10.88 16 eP 41 55.00 7.0X  
 AVF 11.17 65 Pn 41 51.90 -0.2  
 SSF 11.35 63 Pn 41 53.80 -0.6  
 SMF 11.46 66 Pn 41 55.10 -0.9  
 LOR 11.64 63 Pn 41 58.00 -0.4  
 LBF 11.64 64 Pn 41 57.70 -0.7  
 DOU 13.15 51 iP 42 19.10 0.6  
 0.3s 14.40nm 5.6mb X  
 HAU 13.46 62 Pn 42 21.90 -0.8  
 RTLL 90.52 226 eP 52 30.00 17.5X  
 i 52 30.60

S.D. = 1.1 on 29 of 33 obs.

MAR 08, 1990 03h 19m 32.61 ± 0.49s  
 17.793 N ± 5.7km 65.652 W ± 5.5km  
 DEPTH = 21.2 ± 5.2 km  
 4.3mb ( 3 obs.)

PUERTO RICO REGION ( 90)  
 Felt at Humacao, Ceiba, Fajardo  
 and San Juan.

CPD 0.35 314 iP 19 40.00 -0.2  
 LPR 0.55 338 iP 19 43.30 -0.3  
 SJG 0.57 304 iP 19 43.90 0.0  
 PORP 0.97 286 iP 19 51.00 0.3  
 LRS 1.24 294 iP 19 55.00 0.2  
 ANG 3.70 99 eP 20 31.04 1.1  
 eS 21 18.63  
 PAG 4.19 114 eP 20 36.60 -0.3  
 eTT 24 40.00  
 SEG 4.20 109 P 20 27.50 -9.5X  
 SFG 4.53 109 eP 20 42.20 0.5  
 BBL 4.59 119 eP 20 42.00 -0.7  
 S 21 29.00  
 eTT 24 40.00  
 MDN 4.76 121 eP 20 45.02 0.0  
 FDF 5.29 124 eP 20 51.92 -0.5  
 S 21 47.80  
 eTT 27 04.30  
 CRM 5.46 123 eP 20 56.60 1.7  
 eTT 27 07.70  
 BIM 5.48 126 iPc 20 54.44 -0.7  
 eTT 27 07.80  
 MVM 5.59 124 eP 20 56.64 -0.1  
 SLB 5.94 131 eP 21 05.39 3.8X  
 eS 22 03.34  
 SVB 6.18 136 eP 21 03.51 -1.5  
 TCE 8.00 151 eP 21 31.82 1.2  
 TRN 8.21 149 eP 21 33.33 -0.1  
 TBH 8.52 148 eP 21 36.38 -1.4  
 SGS 20.33 322 P 24 19.00 8.8X  
 JSC 21.54 323 P 24 22.00 -0.6  
 BLA 23.30 329 e(P) 24 40.30 0.3  
 1.0s 14.00nm 4.5mb  
 ZOBO 33.93 184 P 26 17.50 0.2  
 LPB 34.19 184 Pc 26 20.00 0.7  
 RSON 39.84 332 P 27 05.60 -0.5  
 0.7s 5.19nm 4.4mb  
 FRB 45.96 358 eP 27 56.00 0.5  
 YKA 55.98 335 eP 29 10.00 -1.5  
 0.7s 1.00nm 4.0mb  
 LIC 60.18 93 (P) 29 41.70 0.0  
 KIC 60.41 93 (P) 29 43.40 0.1  
 MBC 64.54 348 eP 30 10.00 0.1  
 INK 65.46 338 eP 30 17.00 1.2

S.D. = 0.8 on 29 of 32 obs.

MAR 08, 1990 03h 40m 11.54 ± 0.50s  
 38.411 N ± 6.0km 118.866 W ± 3.5km  
 DEPTH = 5.0km (geophysicist)  
 CALIFORNIA-NEVADA BORDER REGION ( 40)  
 ML 3.5 (NEIS).

KVN 0.88 43 iPc 40 29.40 0.4  
 SVP 1.09 129 eP 40 32.30 -0.4  
 CMB 1.25 253 iPc 40 34.20 -1.1  
 iS 40 50.50  
 TNP 1.34 104 eP 40 37.10 0.2  
 MGM 1.45 131 eP 40 38.20 -0.5  
 LCH 1.52 140 eP 40 39.10 -0.5  
 FRI 1.57 205 iPc 40 39.50 -0.5  
 iS 40 59.10  
 ORV 2.35 300 ePd 40 51.70 0.3  
 ARN 2.36 244 eP 40 51.00 -0.6  
 LLA 2.44 223 ePc 40 52.70 0.0  
 MHC 2.44 245 e(P) 40 52.00 -0.8  
 iPbd 40 55.75  
 eS 41 27.95  
 PKEM 2.55 203 e(P) 40 56.00 1.8  
 SAO 2.63 232 eP 40 55.40 0.1  
 e(S) 41 33.85  
 LSM 2.65 128 eP 40 55.50 -0.3  
 PRI 2.68 213 ePd 40 57.90 1.7  
 PRS 2.71 260 eP 40 56.90 0.4  
 e(S) 41 34.65  
 ZSP 2.71 261 e(P) 40 57.00 0.4  
 BRK 2.73 260 eP 40 56.50 -0.3  
 GCC 2.84 242 eP 40 57.00 -1.4  
 PHAM 2.85 206 eP 40 59.50 1.0  
 PRS 2.88 225 ePc 40 58.10 -0.8  
 PCC 2.92 253 eP 41 00.70 1.2

S.D. = 0.9 on 22 of 22 obs.

MAR 08, 1990 03h 59m 35.23 ± 0.83s  
 24.625 S ± 5.9km 70.263 W ± 23.7km  
 DEPTH = 59.2 ± 11.7 km  
 4.5mb ( 2 obs.)

NEAR COAST OF NORTHERN CHILE (122)  
 Felt (III) in the Antofagosto  
 area.

ANT 0.93 351 iPc 59 53.00 0.6  
 iS 00 04.20  
 RTRS 5.57 173 iPc 00 59.00 1.6  
 RTLL 6.86 167 iPc 01 14.90 -0.7  
 ZON 7.03 169 e(P) 01 18.00 0.0  
 CFA 7.18 166 e(P) 01 19.40 -0.6  
 eS 01 30.00  
 RTCV 7.37 168 ePc 01 22.20 -0.4  
 CCH 8.17 29 P 01 44.10 10.2X  
 ARE 8.20 352 eP 01 32.00 -2.4  
 LPB 8.30 15 eP 01 38.00 2.1  
 1.0s 80.00nm 5.5mb X  
 i 02 00.90  
 S 03 27.00  
 ZOBO 8.55 14 Pd 01 38.80 -0.7  
 Z 22s 0.13um 4.3msz  
 i 02 03.50  
 LR 04 35.00  
 ALQ 68.46 329 eP 10 34.00 0.6  
 1.1s 5.38nm 4.4mb  
 eS 10 47.00  
 KIC 70.78 73 (P) 10 47.40 -0.3  
 LKO 71.59 70 P 10 52.38 -0.3  
 LRM 79.90 332 eP 11 56.00 16.7X  
 YKA 93.71 341 eP 12 46.50 0.4  
 0.8s 1.60nm 4.5mb  
 GBA 147.65 104 PKPd 19 16.10 3.7X  
 0.9s 6.50nm

S.D. = 1.3 on 13 of 16 obs.

MAR 08, 1990 05h 13m 38.19 ± 0.44s  
 3.417 N ± 7.8km 126.708 E ± 17.6km  
 DEPTH = 47.0km ( 2 depth phases)  
 4.6mb ( 6 obs.)

TALAUD ISLANDS (263)

MTN 16.74 165 eP 17 30.00 -1.1  
 KNA 19.15 174 eP 18 00.00 -0.7  
 QZH 22.78 341 Pd 18 40.50 2.7  
 WBS 24.34 162 eP 18 53.10 0.1  
 eS 23 08.80

WRA 24.40 162 Pc 18 53.80 0.3  
 0.7s 190.60nm 5.7mb X  
 QIS 26.98 153 eP 19 17.50 -0.1  
 ASPA 27.82 166 iPd 19 29.50 4.2X  
 0.6s 35.00nm 5.2mb  
 eS 24 07.60  
 SSE 28.02 350 eP 19 21.70 -5.2X  
 WHN 29.40 338 eP 19 39.00 -0.4  
 NJ2 29.42 346 eP 19 44.20 4.6X  
 WARB 29.43 180 iPd 19 41.10 1.4  
 0.3s 9.00nm 4.9mb  
 CHG 31.16 301 eP 20 09.30 14.1X  
 CHTO 31.16 301 eP 19 55.90 0.7  
 0.5s 1.28nm 3.9mb  
 pP 20 09.20 52km  
 TIA 33.81 346 eP 20 17.50 -0.5  
 FORR 34.10 178 iPd 20 20.40 -0.1  
 XAN 34.68 334 P 20 23.00 -2.6  
 DL2 35.63 353 eP 20 34.00 0.5  
 TIY 36.55 341 eP 20 44.60 3.2X  
 BJI 37.68 347 eP 20 50.00 -0.8  
 1.0s 18.00nm 4.9mb  
 SNY 38.34 356 eP 20 56.00 -0.3  
 LZH 38.76 330 eP 21 02.50 2.4  
 pP 21 14.00 42km  
 BRS 39.63 142 iPc 21 07.30 0.0  
 ADE 39.81 165 iPc 21 10.00 1.3  
 SHL 40.04 307 eP 21 10.00 -0.9  
 MDJ 41.11 3 eP 21 19.00 -0.1  
 GBA 49.68 285 Pc 22 26.80 -1.0  
 0.8s 2.40nm 4.3mb  
 INK 90.46 21 eP 26 35.00 -0.8  
 MBC 92.26 13 eP 26 49.00 5.0X  
 YKA 99.79 24 eP 27 28.50 9.9X  
 0.4s 0.20nm 4.0mb

S.D. = 1.3 on 22 of 29 obs.

? MAR 08, 1990 05h 17m 43.29 ± 3.49s  
 42.032 N ± 34.2km 24.933 E ± 12.2km  
 DEPTH = 10.0km (geophysicist)  
 BULGARIA (359)  
 ML 2.6 (THE).

SRS 1.36 228 eP 18 08.20 -0.1  
 eS 18 27.20  
 ALN 1.41 143 iPd 18 08.90 -0.1  
 eS 18 28.10  
 SOH 1.69 225 eP 18 12.80 -0.3  
 eS 18 37.30  
 KNT 1.76 241 iPd 18 13.70 -0.3  
 eS 18 40.10  
 OUR 1.84 203 eP 18 15.50 0.3  
 eS 18 41.30  
 VAY 1.91 249 ePn 18 16.50 0.4

S.D. = 0.4 on 6 of 6 obs.

MAR 08, 1990 05h 39m 03.73 ± 0.99s  
 49.198 N ± 8.2km 6.896 E ± 8.9km  
 DEPTH = 10.0km (geophysicist)  
 GERMANY (543)  
 MD 2.4 (UCC).

RUP 0.52 12 ePg 39 13.70 -0.5  
 KTD 0.79 81 ePg 39 19.71 0.6  
 ABH 0.81 32 ePg 39 18.71 -0.7  
 TNS 1.44 44 ePn 39 32.00 2.1X  
 eSn 39 50.50  
 FEL 1.52 150 ePg 39 30.76 -0.3  
 MEM 1.53 338 iPn 39 32.30 1.3  
 DOU 1.75 302 Pn 39 33.70 -0.5  
 i 39 35.60  
 S 39 56.20  
 i 39 57.90

S.D. = 1.0 on 6 of 7 obs.

MAR 08, 1990 06h 24m 46.90 ± 1.39s  
 32.851 S ± 6.3km 71.658 W ± 12.3km  
 DEPTH = 17.4 ± 8.4 km  
 NEAR COAST OF CENTRAL CHILE (135)

IHA 0.17 175 iP 24 52.50 1.0  
 iS 24 57.90  
 ROCH 0.56 103 iPd 24 58.00 0.0  
 iS 25 07.50  
 LCCH 0.63 173 iPd 24 59.00 0.0  
 iS 25 09.30  
 JACH 0.91 80 iP 25 03.00 -1.0



08d 06h

TACH	1.00	143	iS	25	16.00	
			iPd	25	05.40	0.0
			iS	25	20.00	
SAN	1.03	126	iPd	25	05.90	0.0
			iS	25	21.50	
			i	25	22.70	
LNv	1.12	169	iPc	25	06.10	-1.3
			iS	25	22.00	
PCH	1.23	129	iP	25	09.20	-0.1
			iS	25	28.00	
CHCH	1.37	142	iPc	25	11.70	0.5
			iS	25	31.50	
ZON	2.84	64	iPc	25	34.00	1.7
			eS	26	12.00	
RTLL	3.10	62	ePc	25	36.00	0.0
			e	25	36.90	
			eS	26	18.50	
CFA	3.15	68	eP	25	37.00	0.3
			S	26	20.40	
RTRS	3.27	36	ePc	25	37.30	-1.0
			e	25	39.30	
			eS	26	22.20	

S.D. = 0.9 on 13 of 13 obs.

& MAR 08, 1990 06h 25m 17.90s  
 34.130 N 117.720 W  
 DEPTH = 8.0km  
 SOUTHERN CALIFORNIA (43)  
 <PAS-P>. ML 3.5 (PAS). Felt in  
 the Los Angeles area.

PEM	0.13	287	P	25	20.92	0.1
TCC	0.28	241	P	25	23.76	0.1
MWC	0.30	289	iPd	25	23.70	-0.3
VPD	0.32	186	P	25	24.57	0.2
RVR	0.32	115	iPd	25	23.80	-0.6
PAS	0.38	273	iPc	25	25.10	-0.4
SBB	0.56	351	iPd	25	28.50	-0.8
PVPS	0.66	239	P	25	30.34	-0.9
CIS	0.92	218	iPc	25	34.70	-1.0
CIW	0.96	226	P	25	35.34	-1.0
PLM	1.05	137	iPd	25	36.80	-1.3
SCI	1.34	211	iPc	25	41.30	-1.5
TPC	1.39	91	iPd	25	42.90	-0.7
GSC	1.39	33	iPc	25	43.40	-0.3
ABL	1.43	301	eP	25	43.00	-1.4
CLC	1.69	3	iPc	25	47.30	-0.5
BCH	2.21	299	eP	25	54.80	-0.8
BLP	2.26	282	eP	25	54.30	-1.8
GLA	2.64	113	eP	25	59.30	-2.3
TNP	3.96	6	eP	26	20.00	-0.5
CMB	4.45	332	e(P)	26	27.50	0.2
KVN	4.92	357	eP	26	34.00	-0.1

22 obs. associated

MAR 08, 1990 07h 05m 50.66 ± 0.32s  
 41.283 N ± 3.5km 20.001 E ± 3.2km  
 DEPTH = 11.0 ± 2.7 km  
 ALBANIA (391)  
 MD 3.6 (ATH). ML 3.1 (THE). 3.0  
 (TTG).

TIR	0.12	302	iPg	05	54.00	0.2
PHP	0.52	39	iPg	06	00.30	-0.9
BERA	0.58	184	iPg	06	00.30	-2.0
OH	0.63	106	iPg	06	01.20	-2.0
			iSg	06	10.70	
			Lg	06	11.70	
ULC	0.88	321	ePg	06	07.20	-0.3
			eSg	06	23.00	
VLO	0.90	205	ePg	06	08.20	0.4
KBN	0.90	137	iPg	06	05.70	-2.1
FNA	1.15	115	iPbd	06	10.50	-1.7
			eSb	06	28.50	
LSK	1.22	158	ePg	06	07.20	-6.1X
TTG	1.27	334	ePg	06	14.10	0.0
			eSg	06	35.20	
SKO	1.28	57	iPn	06	14.40	0.1
			i	06	17.00	
			i	06	31.50	
			iSg	06	33.50	
			i	06	34.00	
			Lg	06	39.20	
			e	06	40.50	
PVY	1.31	359	iPg	06	14.60	-0.3
			eSg	06	36.00	
BDV	1.33	319	ePg	06	15.70	0.6

SRN	1.40	180	eSg	06	39.00	
KEK	1.58	186	ePn	06	16.50	0.4
IVA	1.59	357	ePn	06	19.50	0.9
			eS	06	20.00	1.2
HCY	1.62	317	ePn	06	20.50	1.3
			eSn	06	45.00	
KZN	1.66	125	ePn	06	20.50	0.6
IGT	1.77	172	ePb	06	22.70	1.3
			eSb	06	46.90	
VAY	1.94	88	iPn	06	24.70	0.9
BRY	1.95	327	ePn	06	26.20	2.1
			eSn	06	55.00	
KNT	2.19	92	ePn	06	28.90	1.4
			eSn	06	57.00	
LIT	2.23	121	ePn	06	28.20	0.1
			eSn	06	57.60	
SOH	2.58	99	ePn	06	34.40	1.4
SRS	2.71	92	ePn	06	35.20	0.2
			eSn	07	09.50	
PLG	2.77	108	ePn	06	36.60	0.8
AGG	2.88	141	ePn	06	38.50	1.2
			eSn	07	14.40	
PAIG	3.11	115	ePn	06	40.80	0.3
ROI	3.13	238	P	06	40.70	-0.1
VLS	3.14	171	ePn	06	41.00	0.1
OUR	3.17	106	ePn	06	42.30	1.0
			eSn	07	20.40	
CSI	3.20	243	P	06	43.60	1.7
HVAR	3.25	307	iPn	06	41.90	-0.6
MGR	3.57	253	P	06	51.00	3.9X
CZI	3.61	236	P	06	46.90	-0.7
SGO	3.63	260	P	06	49.00	1.1
SDI	4.67	277	P	07	02.50	-0.2
			eSn	07	56.50	
ASS	5.74	291	P	07	16.50	-1.4
RBL	6.94	320	P	07	29.50	-5.3X
CTI	7.70	311	P	07	42.50	-3.0X
			eSn	09	05.50	

S.D. = 1.1 on 36 of 40 obs.

MAR 08, 1990 07h 08m 43.33 ± 0.16s  
 11.625 N ± 3.4km 140.998 E ± 3.4km  
 DEPTH = 44.9km ( 3 depth phases)  
 5.4mb ( 40 obs.) 4.6Msz ( 11 obs.)  
 WEST CAROLINE ISLANDS (209)  
 CENTROID, MOMENT TENSOR (HRV)  
 Data Used: GDSN  
 L.P.B.: 11S, 27C  
 Centroid Location:  
 Origin Time 07:08:45.2 ± 0.4  
 Lat 11.46N 0.05 Lon 140.85E 0.08  
 Dep 43.4 4.9 Half-duration 1.7  
 Moment Tensor: Scale 10\*\*16 Nm  
 Mrr= 7.79 0.64 Mtt= -9.41 0.80  
 Mff= 1.62 1.11 Mrt= 2.36 1.13  
 Mrf= 0.15 1.00 Mtf= -4.99 0.72  
 Principal Axes:  
 T Val= 8.16 Plg=79 Azm= 32  
 N 3.43 9 250  
 P -11.59 7 159  
 Best Double Couple: Mo=9.9\*10\*\*16  
 NP1: Strike=239 Dip=39 Slip= 76  
 NP2: 77 52 101

GUMD	4.25	62	eP	09	48.80	1.5
	1.1s	1893.99nm				
		e	13	38.00		
PJG	4.25	62	e(P)	09	49.50	2.2
GUA	4.27	63	eP	09	49.30	1.8
	1.2s	3037.50nm				
		eS	10	48.50		
DAV	15.87	255	eP	12	30.00	4.7X
RAB	19.24	144	e(P)	13	06.00	-1.1
		eS	16	46.00		
CVP	19.50	290	eP	13	11.20	1.3
	1.2s	76.00nm				4.9mb
OCP	19.63	281	eP	13	10.00	-1.2
BAG	20.37	286	eP	13	18.00	-1.2
	1.4s	1000.00nm				6.0mb
		eS	17	14.00		
KAGJ	21.60	336	eP	13	32.30	1.0
PMG	21.77	163	eP	13	32.00	-1.2
	1.0s	140.00nm				5.3mb
PPR	21.96	267	ePc	13	36.50	1.5
	1.0s	110.00nm				5.2mb
KUMJ	22.82	337	eP	13	44.90	1.5

SHNJ	24.15	340	eP	13	56.20	-0.1
TSRJ	24.24	350	eP	13	54.00	-3.2X
CHJJ	24.38	356	P	13	58.10	-0.5
KAKJ	24.48	358	P	13	58.50	-1.0
MAT	24.94	355	eP	13	59.00	-4.9X
	2.1s	200.00nm				5.3mb
Z	20s	1.06um				4.3Msz
		eS	18	16.00		
OZH	25.01	305	eP	14	04.00	-0.7
Z	20s	1.30um				4.4Msz
N	20s	1.30um				
MTMJ	25.02	354	eP	14	04.20	-0.6
KKM	25.10	259	ePc	14	06.00	0.3
	1.1s	100.20nm				5.3mb
NIJJ	25.57	356	P	14	08.70	-1.1
MTN	26.21	202	eP	14	14.00	-1.9
SSE	26.67	320	P	14	20.00	0.0
Z	22s	1.60um				4.5Msz
E	14s	0.70um				
NJ2	28.80	318	Pd	14	39.50	0.2
Z	20s	1.20um				4.5Msz
N	15s	1.20um				
		eS	19	23.00		
WHN	31.05	311	Pd	15	00.00	0.7
Z	24s	1.40um				4.5MszX
N	16s	1.00um				
E	16s	0.90um				
CTA	31.93	171	iPc	15	07.00	-0.2
	1.0s	23.00nm				5.0mb
		i	15	13.10		
		iS	20	19.00		
WB5	31.98	192	eP	15	06.50	-1.1
OIS	32.01	182	eP	15	07.00	-0.8
WRA	32.05	192	Pc	15	06.40	-1.8
	0.9s	17.40nm				4.9mb
DL2	32.18	331	P	15	09.50	0.4
	1.0s	100.00nm				5.6mb
Z	19s	1.50um				4.7Msz
E	16s	2.70um				
TIA	32.61	323	Pc	15	12.50	-0.5
Z	27s	0.90um				4.3MszX
SNY	33.73	336	eP	15	22.60	0.0
N	16s	0.90um				
E	20s	2.30um				
		PP	16	40.00		
MDJ	34.31	345	eP	15	22.00	-5.5X
Z	24s	2.00um				4.8MszX
CN2	34.76	340	Pd	15	31.00	-0.5
Z	18s	2.10um				4.9Msz
N	16s	1.60um				
E	16s	0.50um				
GYA	35.51	299	iPc	15	39.80	1.6
Z	30s	0.90um				4.4MszX
ASPA	35.75	191	iPc	15	42.90	2.8
	0.6s	18.00nm				5.2mb
Z	22s	1.77um				4.8MszX
		eS	20	44.40		
		ScS	25	59.50		
		LR	29	44.50		
BJI	35.81	327	P	15	40.00	-0.4
	1.5s	0.18nm				2.8mb X
Z	28s	1.38um				4.6MszX
N	20s	1.38um				
		eS	21	12.00		
TIY	36.45	320	Pc	15	46.50	0.6
	1.2s	100.00nm				5.6mb
N	14s	0.60um				
XAN	36.78	313	P	15	48.50	-0.2
		eS	21	31.00		
LOE	38.40	283	eP	16	03.00	0.6
KMI	38.56	296	Pc	16	06.00	2.0
Z	22s	1.00um				4.6Msz
		pP	16	17.50		42km
RMQ	38.63	169	eP	16	03.00	-1.2
HHC	38.94	324	eP	16	07.00	0.1



WARB	1.2s	150.00nm	5.7mb	PR	89.25	53	eP	21	36.70	0.4	OR	0.72	54	P	eSg	15	23.20	
IPM	40.09	200 eP	16 17.00 0.6	CMB	89.60	51	ePc	21	38.20	0.2						15	12.84	0.0
	40.15	263 ePd	16 18.20 1.1				ePKKP	49	34.00						S	15	22.27	
NNT	1.1s	54.30nm	5.3mb	PR	89.85	53	eP	21	40.00	0.8	STV	0.97	173	P		15	16.63	-0.5
BRS	40.33	276 iPc	16 19.00 0.5	EDM	89.94	35	ePc	21	38.90	-0.3					S	15	29.00	
	40.43	164 iPc	16 18.30 -0.9	FRI	90.39	52	ePc	21	41.60	0.1	ENR	1.00	169	P		15	16.42	-1.2
		i	16 24.70				ePKKP	49	37.20						S	15	28.65	
BDT	40.99	283 eP	16 24.50 0.6	BCH	90.55	54	P	21	43.20	0.7	ROB	1.05	151	P		15	17.86	-0.5
CHG	41.13	285 ePc	16 26.00 1.0	SUF	90.69	335	eP	21	40.30	-2.1					S	15	30.84	
	1.1s	38.92nm	5.0mb	SY	90.80	55	eP	21	45.00	1.4	PCP	1.19	124	P		15	20.73	-0.1
CHTO	41.13	285 iPc	16 26.10 1.1	KVN	91.07	50	P	21	44.60	-0.3	TOUF	1.20	177	Pn		15	25.42	4.4X
	1.2s	38.19nm	5.0mb	ISA	91.70	53	eP	21	46.00	-1.7					Pg	15	26.36	
LZH	41.42	312 Pc	16 27.00 -0.4	TNP	92.00	51	P	21	49.10	-0.1					Sg	15	43.08	
	1.4s	0.11nm	2.4mb X	SES	1.2s	24.60nm	5.5mb				AUTN	1.23	171	Pn		15	25.45	3.8X
Z	22s	1.54um	4.8Msz		1.1s	82.00nm	6.1mb							Pg	15	26.92		
E	14s	1.10um		PAS	92.34	55	eP	21	51.00	0.4	FIN	1.25	143	P		15	20.94	-0.9
DZM	41.77	143 iPd	16 31.00 0.7	CLC	92.34	53	eP	21	51.00	0.4	SAOF	1.26	167	Pn		15	26.33	4.4X
PPI	42.07	256 ePd	16 31.60 -1.2	NUR	92.36	334	iP	21	49.00	-1.1					Pg	15	27.66	
PSI	42.62	261 ePc	16 36.70 -0.6		1.0s	32.00nm	5.7mb				MVIF	1.31	180	Pn		15	25.47	2.5
	0.9s	72.50nm	5.4mb	MWC	92.41	55	eP	21	51.00	-0.1					Pg	15	26.85	
GTA	45.75	315 iPc	17 02.60 0.3	SB	92.47	54	eP	21	52.00	0.7	AURF	1.33	175	Pg		15	28.26	5.1X
	1.0s	100.00nm	5.7mb	LRM	92.98	42	eP	21	53.00	-0.7					Sg	15	48.74	
Z	20s	0.78um	4.6Msz	RVR	93.02	55	eP	21	54.00	0.3	SBF	1.36	171	Pg		15	28.50	4.9X
BWA	46.33	172 eP	17 07.10 0.3	GSC	93.10	53	eP	21	55.00	0.8					Sg	15	49.70	
ADE	46.39	183 iPd	17 07.90 0.7	PLM	93.61	55	eP	21	56.00	-0.7	IMI	1.40	158	P		15	22.37	-1.8
	1.2s	53.13nm	5.4mb	BAR	93.95	56	eP	21	58.00	-0.1	CALN	1.47	188	Pn		15	26.96	1.7
MRWA	47.24	210 iPd	17 13.60 -0.4	TPC	94.04	54	eP	21	58.00	-0.5					Pg	15	28.54	
	0.6s	13.00nm	5.1mb	GLA	95.33	55	eP	22	05.00	0.6	FRF	1.69	193	Pg		15	30.60	2.3
CAN	47.30	171 eP	17 14.90 0.4	FFC	95.46	31	iPc	22	03.90	-0.6					Sg	15	53.40	
CNB	47.35	171 eP	17 15.00 0.1		1.2s	39.00nm	5.7mb				LRG	1.85	198	Pg		15	33.20	2.7
		e	17 21.00	BW06	96.01	44	P	22	06.00	-1.6	LMR	1.93	194	Pg		15	34.80	3.0X
BAL	48.05	208 eP	17 19.80 -0.5	PV09	97.88	48	P	22	16.00	-0.2	BGF	3.30	296	Pg		15	52.80	1.5
KLB	48.40	207 eP	17 22.00 -1.1	RSON	101.77	32	Pdiff	22	31.30	-1.7								
BFD	48.56	178 eP	17 26.00 1.8		1.0s	8.13nm	5.3mb											
TOO	49.12	175 eP	17 29.00 0.5	KBA	105.24	326	ePKP	27	14.00	11.1X								
		e	17 36.00		1.2s	9.30nm												
MUN	49.43	208 iPd	17 30.80 -0.2	BCAO	120.59	282	iPKPd	27	32.20	-0.7								
LSA	49.58	299 Pc	17 34.30 1.5		0.6s	5.00nm												
GUN	53.91	296 P	18 05.00 -0.2	KIC	141.52	296	(PKP)	28	13.00	0.6								
PKI	54.29	296 P	18 07.20 -0.8	NNA	142.98	95	ePKP	28	13.00	-2.0	GUMO	4.27	61	eP		37	44.80	0.1
KKN	54.42	296 P	18 08.50 -0.4	CEOS	144.34	56	ePKP	28	25.00	7.6X		1.0s	1056.00nm					
DMN	54.56	296 P	18 09.50 -0.5	GUAC	144.51	53	ePKP	28	25.00	7.3X								
GKN	55.01	296 P	18 12.60 -0.5	PAG	144.52	40	ePKP	28	14.00	-3.6X	PJG	4.27	61	eP		37	44.50	-0.2
WMQ	55.81	315 iPc	18 18.60 0.1	LLAV	144.71	53	iPKPc	28	14.20	-3.8X	GUA	4.28	62	eP		37	45.20	0.2
HYB	60.51	283 eP	18 51.50 -0.2	OLLA	144.99	53	ePKP	28	15.60	-2.9X		0.8s	1014.92nm					
	1.2s	107.10nm	5.9mb	GUAN	145.92	52	iPKPc	28	19.30	-0.8					eS	38	43.10	
MSZ	61.11	158 P	18 54.00 -1.2	RTCB	146.14	130	e(PKP)	28	21.80	1.8	SSE	26.76	320	P		42	18.40	2.5X
		epP	19 07.00 46km	RTRS	146.25	128	ePKPc	28	21.30	1.3		0.8s	13.00nm					
NDI	61.58	296 eP	18 57.50 -1.3	RTLL	146.46	130	ePKPc	28	21.00	0.6					i	42	27.50	4.5mb
GBA	61.91	279 Pd	19 00.90 -0.2	CFA	146.50	131	ePKP	28	21.00	0.5	WB5	31.90	192	eP		43	01.90	0.0
	0.9s	8.80nm	4.9mb	ARE	148.14	102	ePKP	28	25.00	1.2	WRA	31.96	192	Pc		43	02.80	0.3
KOD	62.28	276 eP	19 04.00 -0.1	LPB	151.38	103	ePKP	28	30.00	1.1		0.8s	12.40nm					
KSH	63.44	308 eP	19 12.00 0.8		1.0s	80.00nm					ASPA	35.67	191	eP		43	33.90	-0.5
POO	64.90	285 iPd	19 20.40 -0.4			i	28	36.50				0.5s	7.00nm					
	1.0s	72.00nm	5.7mb	ZOBO	151.38	103	iPKP	28	30.00	0.9					4.8mb			
SVW	67.16	28 eP	19 33.80 -0.8								Z	22s	0.58um		4.3MszX			
IMA	69.53	23 eP	19 48.20 -1.2												LR	57	11.80	
	1.4s	23.30nm	5.0mb								BJI	35.90	327	eP		43	27.00	-9.1X
PMR	70.30	28 eP	19 50.20 -3.7X									1.0s	12.00nm					
	1.0s	5.00nm	4.4mb	CCH	153.13	105	PKP	28	40.30	9.1X								
BRW	70.33	18 eP	19 53.10 -0.8								CHTO	41.18	285	e(P)		44	17.70	-2.7
QUE	70.53	298 eP	19 55.00 -1.2									1.0s	2.25nm					
FBA	71.60	25 eP	19 59.70 -2.0								PSI	42.64	261	ePc		44	33.00	0.6
PPN	74.55	112 eP	20 22.00 2.2								GUN	53.98	296 P		46	01.40	0.9	
	1.2s	25.00nm	5.0mb									0.8s	17.00nm					
TVO	74.79	112 eP	20 24.00 2.7								PKI	54.36	296 P		46	03.80	0.5	
	1.2s	60.00nm	5.4mb								KKN	54.49	296 P		46	04.80	0.6	
PMO	75.22	109 eP	20 27.00 3.4X								DMN	54.63	296 P		46	05.50	0.3	
	1.4s	95.00nm	5.6mb								GKN	55.08	296 P		46	08.80	0.4	
MAIO	76.41	305 iPc	20 30.70 0.4								INK	77.68	22 eP		48	30.00	-1.1	
	0.8s	9.88nm	4.8mb	RSP	0.09	129	P	15	01.45	0.1	MBC	81.16	14 eP		48	50.50	0.8	
INK	77.61	22 eP	20 34.00 -2.1								YKA	86.39	27 eP		49	16.10	-0.4	
MBC	81.08	14 eP	20 54.50 -0.2	LSD	0.25	0	P	15	03.81	-0.2		0.9s	6.20nm					
	1.0s	16.00nm	4.9mb															
YKA	86.32	27 eP	21 19.70 -1.9	BNI	0.37	245	Pd	15	04.90	-1.4	PNT	87.37	40 eP		49	22.00	0.5	
	1.1s	26.10nm	5.4mb								SUF	90.79	335	eP		49	37.00	-0.3
TAB	86.56	308 eP	21 25.00 1.5	RRL	0.39	222	P	15	05.04	-1.6		0.6s	5.50nm					
PNT	87.32	40 eP	21 26.00 -0.8								NUR	92.46	334	eP		49	38.00	-7.0X
	1.0s	41.00nm	5.6mb	LPG	0.40	315	Pg	15	06.30	-0.6	LPB	151.32	103	PKPc		56	32.00	8.8X
WDC	87.38	49 iPc	21 27.50 0.3									1.0s	16.00nm					
SOD	88.39	339 iP	21 30.00 -1.5	LPL	0.43	316	Pg	15	06.70	-0.6	ZOBO	151.33	103	iPKPc		56	31.80	8.4X
ORV	88.39	50 eP	21 31.70 -0.4									1.0s	9.50nm					
MHC	88.80	52 eP	21 34.50 0.2	PZZ	0.71	183	P	15	11.50	-1.1								
NEW	89.19	41 P	21 34.20 -1.6	DOI	0.71	175	P	15	11.70	-0.9								
	1.0s	27.50nm	5.5mb															
				ORO	0.71	54	P	15	13.20	0.5								



08d 08h

25.089 S  $\pm$  6.4km 179.945 W  $\pm$  15.3km  
 DEPTH = 519.9  $\pm$  13.0 km  
 4.6mb ( 2 obs.)

SOUTH OF FIJI ISLANDS (171)

SVA 7.10 348 ePd 33 27.80 -0.4  
 eS 34 55.90  
 VUN 7.20 348 iPd 33 28.80 -0.5  
 NDF 7.69 341 ePc 33 33.50 -0.7  
 SGE 7.72 345 eP 33 35.00 0.3  
 MBU 8.17 351 iP 33 40.10 0.9  
 HBZ 12.56 186 P 34 25.60 1.1  
 DZM 12.84 281 iPc 34 28.10 0.5  
 PGZ 15.81 191 P 34 56.60 -0.6  
 MNG 15.95 193 P 34 57.60 -1.1  
 CAW 16.51 193 P 35 03.20 -1.0  
 WDW 16.68 193 P 35 06.10 0.3  
 TCW 16.79 195 P 35 07.40 0.5  
 KHZ 18.10 196 P 35 20.30 0.7  
 RMO 28.18 260 eP 36 52.00 0.7  
 ASPA 41.91 262 iPc 38 49.80 4.3X  
 1.3s 25.00nm 4.6mb  
 ePP 40 14.80  
 iS 44 26.20  
 WB5 42.38 268 eP 38 48.90 -0.4  
 i 38 59.90  
 e 44 30.00  
 WRA 42.39 267 Pd 38 48.60 -0.7  
 0.6s 10.50nm 4.5mb  
 HFS 143.72 348 ePKP 50 16.00 0.3  
 0.4s 4.00nm  
 S.D. = 0.8 on 17 of 18 obs.

MAR 08, 1990 09h 42m 19.83  $\pm$  0.63s  
 36.451 N  $\pm$  8.7km 137.641 E  $\pm$  7.2km  
 DEPTH = 10.0km (geophysicist)  
 4.1mb ( 2 obs.)

HONSHU, JAPAN (227)

MTMJ 0.19 45 iP+ 42 23.20 -0.9  
 MAT 0.47 79 iPc 42 29.00 -0.3  
 iS 42 35.60  
 IIDJ 0.99 167 iPd 42 39.30 0.6  
 CHJJ 1.17 110 iPd 42 41.50 -0.1  
 NIJJ 1.35 54 iP+ 42 44.20 -0.4  
 eS 43 01.10  
 TSRJ 1.62 236 iP+ 42 48.90 0.3  
 S 43 12.10  
 KAKJ 2.06 96 P 42 55.50 0.6  
 WKYJ 2.79 218 P 43 05.30 0.0  
 SHK 4.48 246 eP 43 29.30 0.0  
 BJI 17.23 289 eP 46 27.00 4.9X  
 1.0s 12.00nm 4.0mb  
 WRA 56.17 184 Pd 52 00.00 -2.1  
 0.7s 2.20nm 4.3mb  
 MBC 57.93 16 eP 52 13.00 -1.0  
 COO 68.00 167 eP 53 01.00 -20.3X  
 BWA 71.22 171 eP 53 43.90 3.0X  
 CAN 72.18 170 eP 53 47.00 0.4  
 CNB 72.23 170 iPc 53 45.40 -1.5  
 1.0s 265.00nm 6.3mb X  
 e 00 51.00  
 SBB 80.31 54 eP 54 35.60 2.9  
 MWC 80.44 55 eP 54 38.60 5.1X  
 GSC 80.59 53 eP 54 35.60 1.4  
 RVR 81.03 54 eP 54 42.00 5.6X  
 PLM 81.76 55 eP 54 49.40 9.0X  
 TPC 81.82 54 eP 54 47.00 6.4X  
 S.D. = 1.3 on 15 of 22 obs.

& MAR 08, 1990 09h 47m 45.34s  
 58.391 N 152.960 W

DEPTH = 66.7km  
 5.8mb ( 84 obs.)

KODIAK ISLAND REGION (13)

<AGS-P>. Felt (IV) at Kodiak,  
 Lorsaen Bay and Port Lions. Felt  
 (III) at Clam Gulch, Homer,  
 Pedro Bay and Seldovia.

CENTROID, MOMENT TENSOR (HRV)

Data Used: GDSN

L.P.B.: 14S, 35C

Centroid Location:

Origin Time 09:47:50.5 0.3

Lat 58.30N 0.06 Lon 153.17W 0.07

Dep 59.7 3.0 Half-duration 2.6

Moment Tensor; Scale 10\*\*17 Nm

Mrr=-1.39 0.09 Mtt=-0.30 0.14  
 Mff= 1.69 0.11 Mrt=-1.37 0.12  
 Mrf= 0.65 0.15 Mtr= 2.70 0.15

Principal Axes:

T Val= 3.58 Plg= 3 Azm=126  
 N -0.25 52 220  
 P -3.33 37 33

Best Double Couple: Mo=3.5\*10\*\*17

NP1: Strike=176 Dip=62 Slip=-154

NP2: 73 67 -31

CDD 0.65 327 iP 47 58.57 -1.1  
 KDC 0.69 159 iPc 47 59.30 -0.8  
 AUE 0.99 348 iP 48 03.27 -0.6  
 AUL 1.02 346 iP 48 03.56 -0.7  
 CNPM 1.45 37 iP 48 08.80 -1.1  
 PDB 1.54 336 iP 48 09.92 -1.2  
 BGM 1.55 311 eP 48 10.05 -1.3  
 NNL 1.86 27 iP 48 15.18 -0.4  
 RED 2.04 3 eP 48 16.64 -1.5  
 RDT 2.21 7 iP 48 19.11 -1.4  
 eS 48 44.85

SEW 2.49 45 iP 48 21.75 -2.5  
 NKA 2.52 20 iP 48 24.78 0.1  
 SLKM 2.54 32 iP 48 22.87 -2.2  
 CKL 2.83 6 iP 48 27.94 -1.3  
 SPU 2.84 9 iP 48 27.88 -1.4  
 eS 49 01.98

BGL 2.90 5 iP 48 28.91 -1.2  
 CRP 2.91 8 iP 48 29.21 -1.2  
 CGLM 2.97 9 iP 48 29.77 -1.3  
 SVW 3.04 335 iPc 48 30.30 -1.8  
 NCG 3.05 7 iP 48 30.96 -1.3  
 SUA 3.28 19 iP 48 33.62 -1.9  
 PMS 3.34 30 iPd 48 34.00 -2.3  
 MID 3.59 70 eP 48 37.40 -2.3  
 PWA 3.62 24 iPd 48 37.80 -2.3  
 SKT 3.67 11 iP 48 38.75 -2.2  
 PLRM 3.74 29 iP 48 38.99 -2.9  
 PMR 3.74 29 iPd 48 39.00 -2.9

GLI 3.89 48 eP 48 40.21 -3.7  
 GHO 3.95 29 iP 48 41.94 -2.9  
 SML 4.14 32 iP 48 44.46 -3.0  
 VZW 4.20 48 iP 48 45.03 -3.4  
 KLU 4.71 46 iP 48 52.55 -3.1  
 NCA 4.74 38 eP 48 52.63 -3.3  
 TTA 4.80 343 iPd 48 54.60 -2.2  
 HUR 4.88 18 eP 48 54.77 -3.2  
 TOA 5.03 39 iPd 48 57.30 -2.7  
 SDN 5.14 237 eP 49 00.40 -1.1  
 KTH 5.27 10 eP 48 59.94 -3.5  
 RND 5.42 20 eP 49 02.05 -3.4  
 GLB 5.53 53 iP 49 03.39 -3.6  
 SDG 5.54 38 eP 49 03.26 -3.8  
 TGL 5.67 61 eP 49 05.44 -3.6  
 MCK 5.70 18 eP 49 06.12 -3.3  
 PAX 5.88 36 iP 49 08.40 -3.6  
 DDM 6.41 29 eP 49 16.80 -2.5  
 NEA 6.48 15 eP 49 15.49 -4.7  
 WRH 6.53 19 eP 49 16.45 -4.4  
 HDA 6.69 23 eP 49 18.90 -4.1  
 CCB 6.74 19 eP 49 19.04 -4.7  
 DOT 6.82 36 eP 49 21.13 -3.7  
 YKU 6.94 75 eP 49 24.30 -2.2  
 COL 6.98 18 iPd 49 22.79 -4.3  
 FBA 6.98 18 ePd 49 22.40 -4.7  
 GLM 7.13 19 eP 49 24.36 -4.8  
 IMA 7.71 358 ePd 49 33.30 -4.1

HYT 8.21 66 Pc 49 41.10 -3.1  
 DWY 8.64 43 Pd 49 46.00 -4.0  
 FYU 8.94 20 eP 49 48.71 -5.3  
 SIT 9.53 91 ePd 49 56.20 -5.9  
 BRW 13.06 355 eP 50 43.20 -6.1  
 INK 13.15 33 P 50 45.00 -5.5  
 ADK 15.00 255 eP 51 16.20 1.6  
 YKA 19.15 61 eP 52 03.60 -2.1  
 0.6s 725.30nm 6.1mb

SMY 19.33 267 eP 52 05.20 -2.4  
 PGC 19.91 106 eP 52 14.00 0.3  
 MCW 20.21 106 eP 52 16.00 -0.9  
 GMW 20.98 108 eP 52 26.00 1.3  
 PNT 21.46 100 ePc 52 31.00 1.5  
 1.6s 553.00nm 5.7mb  
 BMW 21.49 111 eP 52 30.80 0.8  
 MBC 21.51 21 ePd 52 27.10 -2.7  
 0.6s 133.00nm 5.5mb

RMW 21.53 107 eP 52 31.00 0.7

LON 22.01 108 ePc 52 36.32 1.2  
 EDM 22.60 86 P 52 41.00 0.7  
 NEW 23.40 100 eP 52 50.40 1.7  
 SES 25.31 90 iPd 53 07.00 0.0  
 1.2s 555.00nm 5.9mb  
 eP 53 22.00 64kmX

FHC 25.43 121 eP 53 12.50 4.4  
 1.0s 160.00nm 5.5mb  
 LBFM 25.96 117 eP 53 15.00 1.8  
 WDC 26.27 119 ePc 53 17.70 1.9  
 eP 53 32.60 62kmX  
 e 53 34.70  
 ePcP 56 40.00  
 eScP 00 18.90  
 MIN 26.88 118 eP 53 23.10 1.5  
 eP 53 37.90 61kmX  
 e 53 40.80

LRM 27.42 99 eP 53 26.70 0.2  
 e 53 41.80 63kmX  
 ORV 27.56 119 e(P) 53 27.70 0.1  
 eP 53 43.00 64kmX  
 e 53 46.80

FFC 27.78 75 iPd 53 28.40 -1.0  
 1.0s 33.00nm 4.9mb  
 BRK 28.59 122 eP 53 38.30 1.5  
 eP 53 52.80 59kmX  
 BKS 28.60 122 e(P) 53 46.50 9.6  
 1.6s 400.00nm 5.8mb  
 Z 20s 3.30um 4.9msz  
 N 20s 2.40um  
 E 20s 2.50um

eLQ 01 32.00  
 eLR 02 38.00  
 CMB 29.30 120 eP 53 44.30 1.0  
 1.2s 62.50nm 5.1mb  
 eP 53 59.00 60kmX  
 MHC 29.31 122 e(P) 53 44.50 1.0  
 eP 53 59.40 61kmX  
 e 54 05.50

ARN 29.35 122 eP 53 45.00 1.3  
 eP 54 00.00 61kmX  
 IMW 29.52 101 eP 53 46.30 0.8  
 KVN 29.55 116 eP 53 46.50 0.7  
 eP 54 01.50 61kmX  
 LLA 30.22 122 eP 53 53.20 1.8  
 eP 54 08.00 60kmX  
 PRS 30.27 123 eP 53 53.40 1.6  
 eP 54 08.20 60kmX  
 e 54 16.00

ePcP 56 49.60  
 FRI 30.47 120 eP 53 54.90 1.4  
 eP 54 09.70 60kmX  
 ePcP 56 50.80  
 PRI 30.74 122 eP 53 58.20 2.1  
 eP 54 13.30 62kmX  
 TNP 30.74 116 eP 53 57.30 1.1  
 1.2s 71.24nm 5.3mb

BW06 31.02 101 eP 53 58.50 -0.2  
 DUG 31.26 108 eP 54 01.00 0.3  
 1.0s 18.25nm 4.8mb X  
 ISA 32.12 120 eP 54 09.00 0.8  
 e 54 24.00 61kmX  
 SYP 32.40 123 eP 54 12.00 1.4  
 e 54 27.00 61kmX

CLC 32.40 119 eP 54 12.00 1.4  
 e 54 26.00 56kmX  
 ABL 32.46 122 eP 54 12.60 1.3  
 eP 54 27.50 60kmX  
 RSSD 32.97 94 eP 54 15.80 0.1  
 GSC 33.19 118 eP 54 19.00 1.5  
 e 54 34.00 60kmX  
 e 56 59.00

SBB 33.23 120 eP 54 19.00 1.2  
 e 54 34.00 60kmX  
 MWC 33.51 121 eP 54 22.00 1.6  
 e 54 37.00 60kmX  
 PAS 33.52 121 eP 54 21.00 0.8  
 e 54 36.00 60kmX  
 RVR 34.01 120 eP 54 25.00 0.5  
 e 54 40.00 60kmX  
 RSON 34.09 76 eP 54 23.70 -1.3  
 0.8s 106.17nm 5.8mb

eP 54 40.00 66kmX  
 TPC 34.53 118 eP 54 30.00 1.0  
 e 54 44.00 55kmX  
 PLM 34.78 120 eP 54 32.00 0.7  
 e 54 47.00 60kmX



GOL	35.42	101	eP	54	37.30	0.5	N	22s	1.30um	ECB	66.22	22	iPd	58	26.00	-1.6				
	0.8s	41.67nm			5.4mb		E	20s	0.80um		0.8s	235.00nm			6.2mb					
			epP	54	52.40	59kmX			S	04	09.00									
BAR	35.43	121	eP	54	38.00	1.3			ScS	06	35.50	LZH	66.35	301	Pc	58	26.00	-3.0		
			e	54	53.00	59kmX	SHK	53.35	278	eP	56	58.00	-1.7				5.7mb			
			e	57	05.00		MRX	53.70	113	(P)	57	03.50	1.2	WMO	66.44	317	iPc	58	27.70	-1.6
GLA	35.97	118	eP	54	42.00	0.8	IIJ	54.39	112	(P)	57	08.00	0.0	Z	23s	1.10um		5.0MszX		
			e	54	57.00	58kmX	SHNJ	54.49	279	P	57	06.40	-1.6			S	07	15.50		
			e	57	06.00		SOD	54.55	0	eP	57	05.00	-3.0			ScS	08	17.50		
FRB	38.36	46	iPd	54	59.60	-1.2	CRX	54.69	112	(P)	57	28.50	18.5	ECP	66.48	22	iPd	58	27.70	-1.6
	1.1s	478.00nm			6.3mb		PPM	55.50	111	(P)	57	10.50	-5.6		0.7s	248.00nm		6.3mb		
ANMO	38.51	107	eP	55	03.43	0.7	DL2	55.63	290	Pd	57	14.50	-1.7	WTS	68.74	13	ePd	58	42.50	-0.9
			eS	00	58.43			1.0s	200.00nm				6.1mb		0.7s	146.00nm		6.0mb		
			eSS	03	51.83		III	55.67	112	(P)	57	15.50	-1.5	BRL	68.93	9	eP	58	44.00	-0.5
ALO	38.51	107	eP	55	03.10	0.4	KUMJ	55.87	278	eP	57	16.40	-1.7	BRN	68.98	9	iPd	58	44.50	-0.3
	1.2s	43.75nm			5.2mb		ACX	56.77	114	(P)	57	24.50	-0.2	UCC	69.60	15	P	58	48.00	-0.7
Z	20s	0.89um			4.6Msz		KAGJ	56.90	277	eP	57	23.40	-2.0	ENN	69.84	14	iPd	58	49.20	-0.9
			epP	55	19.00	63kmX	BJI	57.41	294	eP	57	26.50	-2.4		0.9s	198.00nm		6.0mb		
			ePcP	57	15.00			1.0s	0.11nm				2.9mb X	SNF	69.87	15	Pd	58	49.00	-1.3
KUSJ	40.72	276	eP	55	17.70	-2.9		Z	20s	1.50um			5.1Msz	MEM	70.00	14	iPd	58	50.10	-1.0
ASAJ	41.09	279	eP	55	22.30	-1.4			eS	05	18.00				ec	59	03.70	47kmX		
HOOU	41.97	276	eP	55	28.80	-2.0	OXX	58.12	111	(P)	57	35.00	0.7	CLL	70.06	9	iPd	58	50.00	-1.5
DAG	42.04	14	iPd	55	28.90	-2.2	RGS	58.24	9	iP	57	34.00	-0.4		1.6s	320.00nm		6.0mb		
	0.6s	476.67nm			6.5mb		HHC	58.95	298	Pc	57	37.90	-1.9	DOU	70.32	15	P	58	52.20	-0.9
			isP	01	40.00			1.0s	200.00nm				6.2mb	BRG	70.57	9	iPd	58	53.40	-1.2
KBS	42.64	4	iP	55	35.50	-0.4		Z	38s	1.10um			4.7MszX	MOX	70.59	10	iPd	58	53.50	-1.3
MRRJ	43.10	278	eP	55	37.60	-2.4		N	11s	0.70um					1.3s	449.00nm		6.2mb		
SCH	44.48	56	ePd	55	49.90	-1.2		E	11s	0.50um				TNS	70.68	13	ePd	58	54.10	-1.3
	0.7s	85.00nm			5.7mb				PP	58	00.00			CD2	70.70	298	P	58	53.60	-2.2
FVM	44.53	89	eP	55	50.00	-1.7			iS	05	39.00				0.8s	100.00nm		5.8mb		
			epP	56	07.00	68kmX	SUF	59.22	0	eP	57	38.80	-2.4	KSP	70.77	7	eP	58	52.50	-3.3
CLE	46.60	79	iP	56	07.60	-0.5			0.6s	138.00nm			6.3mb		e	00	27.00	433kmX		
MDJ	47.41	289	Pc	56	11.50	-2.9	BT0	59.87	299	P	57	44.00	-2.1	FLN	70.84	19	eP	58	54.40	-1.8
	Z	25s	2.30um		5.0MszX		N	13s	0.80um						0.9s	115.15nm		5.8mb		
RSNY	47.95	71	eP	56	16.90	-1.7		E	13s	1.20um				ABH	70.91	13	eP	58	55.59	-1.2
	0.9s	46.47nm			5.4mb				sP	58	09.00			HOF	70.95	10	iPd	58	55.70	-1.2
NIJ	47.98	275	iP+	56	17.10	-1.8			S	05	49.00				0.8s	121.00nm		5.9mb		
PWLA	48.04	90	eP	56	18.60	-0.8	TIA	59.96	291	Pd	57	44.60	-2.0	RUP	71.03	14	eP	58	56.30	-1.2
KAKJ	48.14	273	iP+	56	18.30	-1.9		Z	22s	0.60um			4.7Msz	LDF	71.06	19	eP	58	55.60	-2.0
MZX	48.21	116	(P)	56	22.00	1.2	NB2	60.27	9	P	57	45.40	-3.1		0.9s	95.00nm		5.7mb		
WNY	48.39	70	eP	56	20.20	-1.9			0.9s	135.40nm			6.1mb	GRR	71.13	19	eP	58	56.30	-1.7
JNW	48.47	15	iP	56	21.80	-0.5	TIY	61.04	295	eP	57	52.00	-2.0		1.0s	136.00nm		5.8mb		
HBVT	48.81	70	eP	56	23.90	-1.3		N	13s	0.80um				TOD	71.33	12	eP	58	58.32	-0.9
			epP	56	40.60	65kmX			S	06	04.00			LPF	71.44	19	eP	58	58.70	-1.2
RSCP	48.87	87	eP	56	24.70	-1.2			sS	06	40.00			PRU	71.50	8	iPd	58	58.60	-1.6
			epP	56	38.70	53kmX	HFS	61.35	8	eP	57	52.70	-3.1		1.8s	250.00nm		5.8mb		
CHJJ	48.88	274	iP+	56	24.50	-1.4			1.2s	475.20nm			6.5mb		e	59	06.80	26kmX		
MAT	48.92	275	iPc	56	24.50	-1.7		Z	17s	0.32um			4.5MszX	GRF	71.50	11	ePd	58	59.40	-0.9
	0.8s	91.79nm			5.9mb				LR	19	40.00				1.1s	306.00nm		6.1mb		
SCP	49.00	76	iPd	56	25.85	-0.9	NUR	61.42	1	iP	57	53.90	-2.3	Z	21s	0.30um		4.5Msz		
MTMJ	49.10	275	P	56	25.80	-1.9			0.8s	343.30nm			6.5mb	KTD	71.53	13	eP	58	59.46	-1.0
CBM	49.34	64	eP	56	27.50	-1.8	SSE	62.00	284	P	57	58.50	-2.0	KRA	71.76	5	iPd	59	00.30	-1.4
GBTN	49.54	86	eP	56	29.80	-1.2		Z	20s	0.50um			4.7Msz		1.0s	192.00nm		6.0mb		
TKL	49.78	86	eP	56	31.50	-1.3		E	13s	0.30um					i	59	04.10	12kmX		
IIOJ	49.88	274	iP+	56	32.10	-1.6			S	06	18.00			GWF	71.81	13	P	59	01.23	-0.9
CN2	50.05	291	iPc	56	32.40	-2.4			sS	06	48.00			WET	72.20	10	iPd	59	03.60	-0.8
	3.0s	700.00nm			6.2mb				ScS	07	40.00				1.8s	685.00nm		6.3mb		
	Z	18s	1.20um		4.9Msz				eSS	10	20.00			STR	72.21	13	P	59	03.80	-0.6
	N	14s	0.90um				NJ2	62.41	287	Pc	58	01.00	-2.2	KHC	72.27	9	iPd	59	04.30	-0.6
	E	14s	0.70um					1.0s	200.00nm				6.2mb		1.0s	157.00nm		5.9mb		
			epP	56	51.00	74kmX		Z	20s	0.40um			4.6Msz		e	59	31.70	108kmX		
			eS	03	37.00		EKA	64.05	19	Pc	58	12.30	-1.4	CDF	72.32	14	P	59	04.18	-1.1
NAV	50.08	82	eP	56	34.00	-1.1			0.8s	114.00nm			5.9mb	WLS	72.33	14	P	59	04.18	-1.1
BLA	50.35	82	eP	56	36.40	-0.8	DCN	65.20	22	iPd	58	19.40	-1.7	VITF	72.35	15	P	59	04.00	-1.2
	0.7s	81.39nm			5.9mb			0.8s	332.00nm			6.4mb	ECH	72.50	14	P	59	05.22	-1.0	
TBR	50.59	73	eP	56	37.20	-1.7	GTA	65.38	306	iPc	58	20.00	-2.6	GZH	72.53	286	Pd	59	06.00	-0.7
CVL	50.79	79	eP	56	39.60	-0.8			1.2s	100.00nm			5.7mb	LRS	72.60	83	iP	59	06.10	-1.1
PNJ	50.80	74	e(P)	56	39.20	-1.3		Z	22s	0.90um			4.9Msz	HAU	72.60	14	eP	59	05.40	-1.4
GMTN	50.81	74	iP	56	39.20	-1.3		E	12s	0.80um					0.8s	17.45nm		5.0mb		
TSRJ	50.85	276	iP+	56	39.50	-1.4			S	07	00.50			SPC	72.64	5	iPd	59	06.30	-0.9
HRV	50.91	70	eP	56	36.78	-4.6			ScS	08	09.10			BSF	72.83	14	P	59	06.89	-1.4
			eS	03	53.03				eSS	10	20.00			MOF	72.86	14	P	59	07.07	-1.3
			eSS	07	48.50		DLE	65.39	21	iPd	58	20.60	-1.7	PORP	72.90	83	iP	59	08.00	-1.0
CBN	51.18	78	iPc	56	42.60	-0.8	COP	65.67	9	iPc	58	23.30	-0.8	FEL	72.94	13	P	59	07.32	-1.6
	1.0s	78.00nm			5.7mb			0.9s	262.18nm				6.2mb	LOR	72.98	16	eP	59	07.60	-1.4
			e	57	00.00	68kmX	XAN	65.68	296	P	58	22.00	-2.5		0.9s	217.55nm		6.1mb		
AKU	51.69	22	iP	56	47.40	0.6		1.0s	100.00nm				5.7mb	MFF	72.98	19	eP	59	07.50	-1.5
	0.7s	98.63nm			5.9mb				pP	58	40.00		68kmX	FUR	73.02	11	iPd	59	08.60	-0.6
PRM	51.73	86	eP	56	46.00	-1.6			PP	00	50.00				0.8s	257.00nm		6.2mb		
TRO	52.14	4	iPc	56	48.20	-2.0			S	07	00.00			GYA	73.04	293	iPc	59	08.40	-1.4
KEV	52.15	0	P	56	48.00	-2.3	WHN	65.89	289	iPc	58	24.00	-1.8		1.2s	100.00nm		5.6mb		
	1.2s	161.90nm			5.9mb	</														



08d 09h

PMO	73.24	175 iP	59 11.20	0.5	PZ2	76.14	15 P	59 27.03	-0.3	MMB	80.35	3 iPd	59 50.00	-0.2
	1.2s	50.00nm		5.3mb	DOI	76.16	14 P	59 26.20	-1.2	EBAN	80.41	24 iPd	59 51.10	0.5
LBF	73.27	16 eP	59 09.00	-1.8	BOB	76.17	13 P	59 27.20	-0.3	EHOR	80.42	25 iPd	59 51.10	0.5
BBS	73.28	14 P	59 09.73	-1.1	BZS	76.26	4 eP	59 27.00	-0.8	VAY	80.58	3 iPd	59 50.50	-0.9
CPD	73.29	83 iP	59 10.70	-0.5	PCP	76.29	14 P	59 26.93	-1.2		1.0s	0.14nm		2.8mb X
LOMF	73.31	14 P	59 09.79	-1.2	CKI	76.37	14 P	59 27.40	-1.1	BSS	80.66	9 P	59 51.10	-0.7
VKA	73.34	7 ePKPc	59 08.00	-3.1	ECRI	76.40	22 eP	59 28.50	-0.2	OHR	80.72	5 iPc	59 51.10	-1.2
	1.5s	280.00nm		6.0mb	STV	76.43	14 P	59 27.44	-1.5		1.5s	0.63nm		3.3mb X
		e	01 40.00	793kmX	ROB	76.45	14 P	59 27.95	-1.0			i	00 09.30	66kmX
AVF	73.37	17 eP	59 09.60	-1.6	ENR	76.46	14 P	59 27.23	-1.8			e	00 19.50	
ZLA	73.37	13 ePd	59 10.20	-1.1	MLR	76.48	1 eP	59 28.00	-1.2	KNT	80.75	3 iPd	59 52.30	0.0
KMR	73.38	9 iP-	59 10.40	-0.9			e	07 53.00		BRT	80.75	8 P	59 51.70	-0.7
		i	59 43.80	134kmX	GZR	76.52	3 ePc	59 29.00	-0.4	ACU	80.77	21 iPc	59 53.80	1.3
RUV	73.45	174 iP	59 12.60	0.7	EPF	76.53	20 eP	59 27.30	-2.2	SRS	80.81	3 iP	59 52.00	-0.7
	1.2s	115.00nm		5.7mb		1.0s	64.00nm		5.5mb	RDO	80.82	1 eP	59 52.00	-0.6
ZST	73.46	7 iPd	59 10.60	-1.2	FIN	76.57	14 P	59 28.16	-1.5	SGO	80.93	9 Pd	59 52.20	-1.0
	1.0s	144.00nm		5.9mb	CFR	76.79	359 eP	59 28.00	-2.7	ALN	81.07	1 iPd	59 53.10	-0.9
VAH	73.49	175 iP	59 12.80	0.6	SBF	76.82	14 eP	59 30.00	-1.0	FNA	81.08	4 iPd	59 53.20	-0.9
	1.2s	85.00nm		5.6mb	IMI	76.83	14 P	59 30.11	-1.0	SOH	81.10	3 iPc	59 54.00	-0.2
BGF	73.52	17 eP	59 10.50	-1.6	BDI	77.00	12 P	59 31.00	-1.1	GUN	81.10	310 P	59 54.10	-0.8
SMF	73.58	16 eP	59 10.80	-1.7	FRF	77.01	15 eP	59 30.70	-1.3	AAPN	81.16	25 iPc	59 55.50	0.8
BHG	73.61	10 iPd	59 12.00	-0.7		1.1s	156.30nm		5.9mb	GBZT	81.16	358 eP	59 53.00	-1.5
	0.9s	316.00nm		6.2mb	BEQ	77.01	5 iP	59 31.40	-0.6	ASMO	81.20	24 iPd	59 55.50	0.6
LSF	73.61	18 eP	59 11.10	-1.6	LRG	77.07	15 eP	59 31.90	-0.4	EALH	81.20	22 iPc	59 55.60	0.9
TCF	73.68	18 eP	59 11.40	-1.7		1.1s	152.60nm		5.9mb	EPRU	81.24	26 eP	59 56.00	1.0
SAX	73.71	12 ePd	59 12.90	-0.7	FISA	77.15	89 iP	59 31.50	-1.8	AFC	81.34	24 iPd	59 56.10	0.4
PSZ	73.89	5 iP	59 13.90	-0.5	PAG	77.18	80 eP	59 31.00	-2.4	ALOJ	81.36	25 iPd	59 56.60	0.9
SRO	73.92	6 iP	59 14.50	0.1	LMR	77.21	15 eP	59 32.30	-0.8	MGR	81.37	9 Pd	59 54.20	-1.4
		e	08 02.60		DRA	77.27	2 ePc	59 33.00	-0.4	KKN	81.45	310 P	59 55.80	-0.7
SOP	73.94	7 iPd	59 14.90	0.4	SFI	77.27	11 P	59 33.20	-0.2	ORI	81.51	8 P	59 56.70	0.4
OGA	74.27	11 iPd	59 16.00	-0.8	RSM	77.33	11 P	59 33.30	-0.4	GKN	81.52	311 P	59 56.10	-0.7
	1.2s	204.00nm		5.9mb	PII	77.33	12 P	59 32.00	-1.7	PLG	81.55	3 eP	59 55.50	-1.1
BUD	74.28	6 iPd	59 16.20	-0.3	LSA	77.35	307 P	59 35.20	0.5	ATEJ	81.56	25 iPd	59 57.40	0.6
	1.5s	181.70nm		5.8mb			iS	09 19.00		KZN	81.57	4 eP	59 55.50	-1.2
KBA	74.29	10 iPKPd	59 16.00	-0.8	FIR	77.35	12 eP	59 34.00	0.1	PKI	81.60	310 P	59 56.40	-1.0
	1.1s	527.00nm		6.4mb	ETER	77.67	18 eP	59 35.60	-0.1	APHE	81.60	24 iPd	59 58.00	1.0
		i	59 16.60	2kmX	QIZ	77.70	286 P	59 36.60	0.4	OUR	81.60	2 iPd	59 56.00	-0.8
		i	00 01.10		BBL	77.70	80 eP	59 34.00	-2.3	EJIF	81.68	26 iPd	59 58.60	1.4
OSS	74.36	12 ePd	59 16.70	-0.5	ARV	77.80	10 P	59 35.90	-0.5	DMN	81.68	310 P	59 57.20	-0.6
VDL	74.48	13 ePd	59 17.80	-0.2	GUD	77.95	24 iPd	59 37.30	-0.1	CSI	81.78	8 P	59 57.20	-0.6
RJF	74.52	18 eP	59 16.40	-1.6	MORO	78.02	89 iP	59 35.60	-2.5	LIT	81.80	4 iPd	59 57.00	-0.8
	1.2s	154.70nm		5.8mb	EPLA	78.08	25 iPd	59 38.50	0.5	MAIO	81.84	334 eP	59 58.00	-0.2
EMS	74.58	14 ePd	59 18.00	-0.5	TOV	78.15	91 eP	59 39.00	0.2		0.7s	39.71nm		5.5mb
EMON	74.59	25 iPd	59 17.90	-0.5	ASS	78.20	11 P	59 37.70	-0.9			eS	10 00.00	
DIX	74.63	14 ePd	59 19.60	0.7	ETOR	78.22	22 iPd	59 38.60	-0.2	TRN	81.84	83 eP	59 56.13	-2.2
FVI	74.72	10 P	59 18.00	-1.0	PGF	78.31	14 eP	59 38.10	-1.2	ENIJ	81.89	23 eP	59 58.20	-0.2
MMK	74.73	14 ePd	59 19.40	-0.1	HVAR	78.41	8 iP	59 37.60	-2.1	TDS	81.90	8 P	59 57.70	-0.7
LFF	74.75	19 eP	59 18.30	-0.9	PLE	78.45	6 eP	59 40.00	-0.1	ANTO	81.98	356 iPd	59 58.56	-0.3
TMA	74.79	13 ePd	59 18.80	-0.9	LIS	78.64	28 iPd	59 41.10	0.1	PAIG	82.00	3 iPd	59 57.50	-1.4
RBL	74.94	10 P	59 18.90	-1.5	EROO	78.68	20 eP	59 40.60	-0.7	ROI	82.01	8 P	59 58.90	-0.1
CAF	74.98	18 eP	59 19.30	-1.4	MAO	78.69	12 P	59 40.50	-0.8	BBTK	82.01	356 eP	59 58.00	-1.1
VAL	75.01	13 P	59 19.90	-0.8	TOL	78.71	24 iPd	59 40.66	-0.8	KEK	82.07	6 eP	59 58.30	-0.9
LPL	75.10	15 eP	59 21.00	-0.6	PVL	78.75	1 iPd	59 41.00	-0.5	TBH	82.15	83 eP	59 59.73	-0.3
LPG	75.12	15 eP	59 21.30	-0.5	BRY	78.83	6 eP	59 40.90	-1.3	IGT	82.28	5 iPd	59 59.70	-0.6
	1.1s	152.60nm		5.8mb	IYA	78.93	5 eP	59 41.80	-0.9	CZI	82.33	9 P	59 51.80	-8.7
ORX	75.14	14 P	59 21.18	-0.5	NKY	78.94	6 eP	59 41.50	-1.3	TAB	82.56	345 eP	00 02.00	0.0
CTI	75.15	11 Pd	59 20.20	-1.5	AQU	78.98	10 P	59 42.70	-0.2	NKM	82.65	26 iPd	00 03.00	0.7
ORO	75.15	14 P	59 21.50	-0.2	CAR	79.06	88 iPc	59 41.50	-2.3	GRI	82.75	8 P	00 01.78	-1.0
MDI	75.21	12 P	59 20.00	-1.8	GUAC	79.14	88 iP	59 42.70	-1.6		0.1s	82.90nm		6.7mb
LSD	75.21	14 P	59 22.41	0.2	LLAV	79.15	88 iP	59 42.40	-1.9	AGG	82.87	4 iPd	00 02.00	-1.4
VOY	75.37	9 iPd	59 20.80	-2.2	PLAV	79.29	89 iP	59 42.50	-2.7	PMG	82.95	239 eP	59 51.00	-13.0
LJU	75.42	9 ePd	59 21.50	-1.6	VTS	79.33	3 iPd	59 44.00	-1.0	EVR	82.96	4 eP	00 03.70	-0.3
SAL	75.47	12 P	59 22.40	-0.9	TTG	79.34	6 eP	59 43.40	-1.3	LOE	83.11	292 eP	00 03.50	-1.4
EZAM	75.50	27 eP	59 24.00	0.4	AZI	79.34	10 P	59 44.50	-0.3	CHG	83.25	295 eP	00 04.00	-1.7
RSP	75.53	14 P	59 23.75	-0.1	SLB	79.36	81 eP	59 44.47	-0.9		1.1s	28.48nm		5.2mb
BNI	75.55	15 P	59 24.30	0.3	PGB	79.40	2 iPd	59 44.00	-1.2	CHTO	83.25	295 eP	00 03.90	-1.8
ERUA	75.63	25 eP	59 24.50	0.2	RMP	79.45	11 P	59 44.80	-0.6		1.2s	54.51nm		5.4mb
PTJ	75.67	8 iPd	59 23.50	-1.1	BDV	79.46	6 eP	59 44.00	-1.4	ATN	83.32	9 P	00 02.50	-3.3
TRI	75.68	10 ePd	59 22.80	-1.8	RDP	79.50	11 P	59 45.00	-0.8	GIB	83.36	10 P	00 04.50	-1.6
RRL	75.69	15 P	59 25.29	0.3	JMB	79.51	0 iPd	59 44.00	-1.7	SOI	83.46	9 P	00 02.50	-3.9
PPN	75.69	177 iP	59 25.70	0.9	OLLA	79.53	88 iPd	59 44.40	-2.0	MNO	83.48	10 P	00 05.00	-1.8
	1.3s	85.00nm		5.5mb	CEOS	79.56	90 iP	59 44.00	-2.5	VLS	83.64	5 eP	00 06.60	-0.8
CEY	75.71	9 ePd	59 23.50	-1.3	ECHE	79.62	22 iPd	59 46.80	0.4	MCT	83.68	11 P	00 08.90	1.1
PPT	75.73	177 iP	59 25.00	0.0	SDI	79.66	10 P	59 45.50	-1.1	NDI	83.71	317 iPc	00 06.70	-1.2
	1.3s	75.00nm		5.5mb	SVB	79.71	82 eP	59 46.31	-0.9		1.0s	100.00nm		5.8mb
ZAG	75.75	8 iPd	59 24.00	-1.0	DUI	79.76	10 P	59 46.90	-0.3	ATH	83.96	3 eP	00 08.00	-0.9
PAE	75.82	177 iP	59 26.30	0.8	ULC	79.80	6 eP	59 45.60	-1.7	FAI	84.04	11 P	00 11.00	1.6
	1.3s	70.00nm		5.4mb	SKO	79.89	4 iPd	59 46.50	-1.3	IR2	84.19	341 iPd	00 10.00	-0.3
TVO	75.95	176 iP	59 27.20	0.8		1.5s	*****nm		8.2mb X	IR7	84.21	341 iPd	00 10.50	0.1
	1.3s	125.00nm		5.7mb	DIM	79.92	1 iPd	59 48.00	0.1	AVE	84.22	28 iPd	00 10.50	0.2
VBY	76.01	9 iPd	59 25.40	-1.0	KKB	80.05	3 iPd	59 48.00	-0.6			i	00 23.50	44kmX
KMI	76.06	295 eP	59 34.86	7.6	ESEL	80.14	19 iPd	59 49.30	0.2			i	00 39.00	
		iS	09 02.20		GUAN	80.19	87 iPc	59 48.20	-1.7	SMG	84.26	0 eP	00 09.20	-1.2
KMI	76.06	295 Pc	59 25.00	-2.3	EVIA	80.23	23 iPd	59 50.10	0.4	MEU	84.33	10 P	00 10.00	-1.0
FOUF	76.07	15 ePc	59 27.15	0.4	RZN	80.27	2 iPd	59 49.00	-1.0	IR1	84.47	341 iPd	00 12.50	0.7
RIY	76.10	9 iPd	59 25.50	-1.4	EVAL	80.30	27 iPd	59 50.20	0.2	IFR	84.57	27 iPd	00 12.50	0.2
					KDZ	80.31	1 iPd	59 50.00	0.0	BDT	84.57	294 eP	00 01.50	-10.8



08d 10h

IR4	84.61	341	iPd	00	12.50	0.0	SVA	8.84	83	eP	50	51.90	0.0	BAL	48.49	246	eP	57	13.50	-0.9
MSL	84.62	347	ePc	00	16.00	3.7	MBU	9.35	76	iPc	50	58.40	-0.3	PPR	57.61	296	ePc	58	42.00	20.4X
			eS	10	34.00		BRS	17.03	239	iPc+	52	37.40	1.1	VNDA	58.21	182	eP	58	22.30	-2.6
ITM	84.69	4	iPd	00	11.50	-1.2				i	52	46.30		SBA	58.44	181	P	58	27.00	0.4
SLY	85.10	345	iPc	00	13.50	-1.2				i	53	08.30		KGM	68.08	280	eP	59	32.00	1.3
			eS	10	32.00					eS	55	37.00		SPA	70.66	180	iPc	59	46.00	0.2
VLI	85.19	3	eP	00	13.00	-2.1				i	56	05.30			1.0s	124.50nm				5.7mb
KKM	85.33	274	eP	00	16.50	0.2				i (ScP)	00	34.00					i	00	00.10	
NST	85.37	292	eP	00	17.10	0.8	HBZ	19.73	158	eP	53	05.70	0.5	IPM	71.16	282	eP	59	50.80	1.4
TBT	85.51	39	iPc	00	16.90	0.1	RMQ	20.10	246	iPd	53	10.60	1.5	ADK	72.10	9	P	59	53.50	-0.6
QUE	85.67	326	iPc	00	17.10	-0.8				1.0s	402.00nm				0.8s	75.86nm				5.5mb
ARG	85.75	359	eP	00	16.00	-1.9				e	53	22.00		DL2	73.19	323	P	00	01.00	0.2
KSL	85.82	358	eP	00	16.20	-2.1				e	56	55.00			1.0s	100.00nm				5.5mb
KER	86.09	343	eP	00	20.00	0.1	CTA	21.63	264	iPd	53	25.70	1.3	Z	20s	0.60um				4.9Msz
CHIE	86.37	39	iPc	00	21.90	0.8				1.0s	66.00nm			N	12s	0.50um				
TIO	86.51	29	iPd	00	22.40	0.4				e	53	36.00		MDJ	73.31	332	Pc	00	02.00	0.6
			i	00	52.70	117kmX				e	53	53.50		CN2	74.64	329	iPc	00	09.60	0.5
VAM	86.53	2	eP	00	20.20	-1.6				iS	57	18.00		KDC	83.24	20	P	00	55.50	0.4
NPS	86.69	1	eP	00	20.00	-2.6	MNG	21.76	167	Pc	53	25.60	0.1	PCC	85.66	48	eP	01	08.50	0.9
GGC	86.76	37	iPc	00	23.00	-0.1				0.5s	122.00nm			GCC	85.71	48	eP	01	09.10	1.2
DZM	86.94	217	iPc	00	39.70	15.8	KIW	21.88	168	P	53	27.40	0.8	BLP	85.72	51	P	01	09.00	1.0
CFTV	86.97	35	iPd	00	23.50	-0.6	PGZ	21.93	166	Pd	53	26.80	-0.3	NWRM	85.76	47	P	01	09.00	0.9
BHD	87.53	346	iPc	00	28.00	1.3	TCW	22.10	170	P	53	29.60	0.8	PRS	85.83	49	iPc	01	09.90	1.4
			eS	11	03.00		CAW	22.15	168	P	53	29.60	0.4	BRK	85.92	48	eP	01	10.00	1.1
NNT	88.22	291	eP	00	23.00	-7.2	MRW	22.20	169	eP	53	30.10	0.4	BKS	85.94	48	eP	01	10.60	1.6
HRI	88.40	353	eP	00	31.00	0.0	WEL	22.26	169	eP	53	31.20	0.9		1.2s	158.00nm				5.7mb
SHMJ	88.94	353	Pd	00	34.80	1.3				0.6s	2080.00nm			SAO	85.97	49	eP	01	10.00	0.7
BURJ	89.42	353	Pd	00	36.90	1.0	MTW	22.28	167	P	53	29.80	-0.7	SYD	86.01	51	eP	01	10.00	0.3
MDSJ	89.99	352	Pd	00	38.30	-0.2				e	53	45.60		MHC	86.10	48	ePc	01	11.30	1.3
DSI	90.11	353	eP	00	33.00	-5.9	WDW	22.29	168	P	53	31.20	0.7	FHC	86.17	44	eP	01	11.80	1.7
MBH	91.93	353	eP	00	48.00	0.7	BLW	22.48	168	P	53	32.20	-0.2	ARN	86.18	48	P	01	11.30	1.0
SNG	92.42	288	P	00	31.90	-17.8	MOW	22.48	168	P	53	32.70	0.2	BCH	86.23	51	P	01	11.90	1.2
CTA	92.79	235	iPd	00	44.70	-6.5	KHZ	23.17	172	P	53	38.90	-0.2	PRI	86.24	50	eP	01	12.30	1.6
	1.1s	25.32nm				5.6mb	PMG	23.57	292	iPd	53	44.60	1.4	LLA	86.26	49	eP	01	11.90	1.2
			i	00	52.00	23kmX				0.9s	184.87nm			AIA	86.32	160	eP	01	11.00	0.5
			e	01	08.00		QLP	24.05	248	iPd	53	48.70	1.0	TTA	86.55	15	P	01	11.00	-0.6
HYB	93.44	312	eP	00	52.50	-2.0	CMS	24.23	236	eP	53	50.00	0.6		0.9s	27.08nm				5.1mb
POD	94.21	316	eP	00	58.00	0.0				1.0s	96.00nm			ABL	86.72	51	P	01	14.00	0.8
RYD	95.61	342	iP+	01	04.00	-0.5	MSZ	25.16	182	eP	53	59.00	1.2	WDC	87.02	45	iPc	01	15.20	1.0
GBA	97.34	311	Pd	01	10.40	-1.8	TOO	27.46	224	eP	54	19.00	0.1	PAS	87.19	52	eP	01	16.00	0.8
	0.8s	9.20nm				5.4mb				e	57	18.00		ORV	87.24	46	eP	01	16.10	0.8
WRA	98.10	245	Pd	01	14.20	-1.2	QIS	27.85	263	iPd	54	22.30	-0.2	MWC	87.31	52	eP	01	16.00	0.8
	0.7s	2.60nm				4.9mb	BFD	29.23	227	eP	54	36.70	1.9	CMB	87.31	48	iPc	01	16.60	0.9
ZOBO	101.02	103	Pd i f	01	26.70	-2.8	ADE	31.08	234	iPc	54	51.00	-0.1	FRI	87.32	49	iPc	01	16.50	0.8
LKO	107.31	34	PKP	06	18.98	13.5				0.8s	50.75nm			PMR	87.34	19	P	01	14.00	-1.3
BCAO	117.01	10	ePKPd	06	22.20	-1.8	WB5	32.80	263	iPd	55	05.10	-1.1		0.6s	19.70nm				5.2mb
	0.3s	113.00nm								eS	10	10.70		MIN	87.54	46	eP	01	17.00	0.1
			i	07	26.50		WRA	32.82	263	Pc	55	05.50	-0.8	ISA	87.62	51	eP	01	18.00	0.7
			i	08	14.00					0.7s	39.20nm		SBB	87.68	52	eP	01	18.00	0.4	
			i	08	51.90		ASPA	33.07	256	iPd	55	07.90	-0.6	BAR	87.70	54	eP	01	18.00	0.3
LWI	123.99	358	iPKPc	06	36.50	-1.1	Z	19s	0.41um				4.1Msz	RVR	87.72	53	eP	01	18.00	0.3
BUL	141.78	358	iPKPd	07	01.20	-9.6				iS	00	13.00		LBFM	87.82	45	P	01	19.00	0.7
SLR	147.35	358	iPKPc	07	19.50	-0.5				iPcS	01	18.90		PLM	87.84	54	eP	01	19.00	0.4
	1.0s	235.00nm							iScS	05	17.40		CLC	88.33	51	eP	01	21.00	0.3	
SPA	148.22	180	iPKPc	07	16.50	-3.6				LR	09	13.80		GSC	88.70	52	eP	01	23.00	0.5
	1.0s	8.50nm					MTN	37.13	274	iPd	55	43.40	0.6	TPC	88.77	53	eP	01	23.00	0.2
			i	07	44.60					e	00	54.00		GLA	89.27	55	eP	01	26.00	0.8
BFS	148.52	0	iPKPc	07	21.00	-0.9	TBI	38.56	103	iP	55	54.10	-0.6	KVN	89.36	48	P	01	26.40	0.7
	0.8s	149.25nm								1.0s	100.00nm		BMW	89.44	40	P	01	26.60	0.9	
PRY	148.55	359	ePKP	07	12.40	-9.6	KNA	38.69	269	iPd	55	56.20	0.3	TNP	89.57	49	P	01	27.50	0.8
	0.8s	25.00nm								0.5s	50.00nm		IMA	89.73	14	P	01	26.00	-0.7	
			i	07	54.40		FORR	38.72	245	iPd	55	56.30	0.3	GMW	90.23	39	P	01	30.20	1.0
SWZ	148.78	3	iPKPc	07	19.00	-3.3				0.4s	82.00nm		FBA	90.29	17	P	01	27.50	-1.6	
	1.0s	130.00nm					AFR	38.85	94	iP	55	56.10	-1.2		0.8s	34.48nm				5.4mb
SEK	149.94	359	iPKPc	07	23.50	-0.5				1.1s	100.00nm			PGC	90.38	38	eP	01	31.00	1.2
	0.9s	75.63nm					PAE	39.02	94	iP	55	57.40	-1.2		1.1s	136.00nm				5.9mb
POF	150.59	13	iPKPc	07	12.50	-12.2				1.1s	75.00nm			LON	90.43	40	P	01	31.00	0.8
	0.6s	23.33nm					PPT	39.04	94	iP	55	57.80	-1.0	RMW	90.77	39	P	01	32.40	0.6
BLF	150.72	2	iPKPc	07	25.00	-0.2				1.1s	105.00nm			PNT	92.92	38	eP	01	42.00	0.4
SUR	153.65	12	ePKP	07	18.00	-11.4	PPN	39.18	94	iP	55	58.90	-1.1		1.1s	49.00nm				5.6mb
	0.7s	46.58nm								1.1s	60.00nm			NEW	93.95	40	P	01	47.50	1.1
			i	07	47.00		TVO	39.31	95	iP	56	00.10	-1.0	LRM	95.92	44	eP	01	55.80	0.1
CER	154.43	15	ePKP	07	30.00	-0.2				1.1s	65.00nm			IMW	96.22	46	P	01	57.60	0.4
	1.0s	60.00nm					WARB	39.69	252	iPd	56	05.00	0.9	INK	96.76	18	eP	01	58.00	-0.6
	515 obs.	associated								0.4s	24.00nm			KEV	124.76	345	iPKP	07	27.00	-0.2
							PMO	41.11	91	iP	56	15.00	-0.8		0.7s	24.00nm				-0.7
										1.2s	95.00nm			SOD	126.55	343	ePKP	07	30.00	-0.7
	MAR 08, 1990	09h 48m	46.35 ± 0.55s				VAH	41.31	91	iP	56	16.20	-1.2	SUF	129.91	339	ePKP	07	35.80	-1.4
	19.462 S ± 3.7km	169.234 E ± 3.0km								1.2s										



08d 10h																				
RZN	142.65	314	iPKPd	07	59.00	-2.8X	KEK	146.87	314	ePKP	08	11.00	2.3X	LBL	151.79	339	PKP	08	16.18	0.1
BRG	143.06	334	iPKP	07	58.80	-3.2X	TRI	146.91	328	ePKPd	08	08.30	-0.2	FRF	151.87	333	ePKP	08	16.00	-0.3
	0.9s	26.00nm								i	08	10.60		LMR	152.12	332	ePKP	08	16.40	-0.2
			i	08	01.40		VLS	147.02	311	ePKP	08	11.20	2.2X		1.2s	35.70nm				
CLL	143.11	335	i(PKP)	07	58.60	-3.4X	GWf	147.04	338	PKP	08	07.33	-1.4	FAI	152.25	315	PKP	08	25.50	8.5X
VTS	143.24	316	iPKPd	08	01.00	-1.8	DOU	147.07	342	PKPc	08	11.20	2.5X	RJF	152.29	341	ePKP	08	16.90	0.1
MMB	143.36	315	iPKPd	08	01.00	-1.8	HVAR	147.10	322	iPKP	08	09.90	0.9	CAF	152.46	340	ePKP	08	17.70	0.6
CAI	143.38	132	ePKP	07	58.50	-5.1X	ECP	147.17	355	ePKP	08	10.90	2.2X	LFF	152.85	342	ePKP	08	17.90	0.3
PRU	143.47	332	PKPc	08	00.70	-2.0		0.7s	122.00nm				EPF	154.71	341	ePKP	08	20.90	0.6	
	1.6s	50.00nm					OGA	147.36	332	ePKP	08	09.50	0.0		0.9s	16.40nm				
			e	08	40.60					i	08	12.40		LKO	168.94	208	PKP	08	34.86	-0.4
ZST	143.54	328	ePKP	08	01.80	-1.1	CDF	147.64	337	PKP	08	07.75	-2.0X		1.0s	19.50nm				
SRS	143.66	314	iPKPc	08	00.40	-2.9X	CTI	147.69	330	PKP	08	09.20	-0.8	S.D. = 1.0 on 216 of 266 obs.						
KKB	143.66	315	iPKPc	08	01.00	-2.3X	LCI	147.79	316	PKP	08	13.00	2.9X	& MAR 08, 1990 09h 59m 28.47s						
OUR	143.72	313	iPKPc	08	00.90	-2.5X	FEL	147.81	336	PKP	08	08.16	-2.0	58.362 N 152.933 W						
EKA	143.73	353	PKP	08	01.00	-1.9	ECH	147.85	337	PKP	08	09.09	-1.0	DEPTH = 76.5km						
	0.5s	10.30nm					BRT	147.98	318	PKP	08	10.60	0.2	KODIAK ISLAND REGION (13)						
BEO	143.80	321	ePKP	08	01.00	-2.4X	MOF	148.16	337	PKP	08	08.66	-2.0	<AGS-P>						
SOH	143.95	314	iPKPc	08	01.30	-2.6X	VITF	148.27	339	PKP	08	09.15	-1.5	KDC	0.66	159	eP	59	42.89	-0.7
PLG	144.08	313	ePKP	08	01.50	-2.6X	BSF	148.31	337	PKP	08	09.04	-1.9	CDD	0.68	327	eP	59	42.66	-1.2
PAIG	144.10	312	iPKPc	08	01.70	-2.4X	HAU	148.32	338	ePKP	08	10.40	-0.4	AUE	1.03	347	eP	59	47.16	-0.7
KNT	144.11	314	iPKPc	08	02.10	-2.0	BBS	148.34	336	PKP	08	09.04	-1.8	AUL	1.06	346	eP	59	47.40	-0.9
SOP	144.15	328	iPKPc	08	03.80	-0.1	SAL	148.54	331	PKPc	08	15.00	3.9X	CNPM	1.46	36	eP	59	52.42	-1.1
MOX	144.18	336	iPKPc	08	02.50	-1.4	LOMF	148.70	337	PKP	08	09.69	-1.8	PDB	1.57	336	eP	59	53.50	-1.5
	1.2s	92.00nm					MDI	148.78	332	PKP	08	11.00	-0.5	NNL	1.88	26	eP	59	58.58	-0.7
VAY	144.25	315	iPKPc	08	02.30	-2.0	RSM	148.82	327	PKP	08	12.60	1.0	RED	2.07	2	eP	00	00.63	-1.2
	1.0s	0.12nm					ARV	148.85	326	PKP	08	12.20	0.4	RDT	2.24	7	eP	00	02.82	-1.3
NPS	144.29	304	ePKP	08	03.70	-0.9	ROI	149.09	316	PKP	08	17.20	4.9X	SEW	2.50	44	eP	00	05.12	-2.6
HOF	144.34	335	iPKPc	08	03.10	-1.1	SFI	149.13	327	PKP	08	12.70	0.6	NKA	2.54	19	eP	00	08.19	0.0
	1.0s	86.00nm					CSI	149.16	317	PKP	08	17.00	4.6X	SLKM	2.56	32	eP	00	06.43	-2.2
KHC	144.53	332	iPKPc	08	04.00	-0.6	DUI	149.20	321	PKP	08	16.00	3.6X	CKL	2.86	6	eP	00	11.46	-1.4
	1.0s	39.00nm					TDS	149.20	317	PKP	08	13.60	1.2	SPU	2.86	9	eP	00	11.38	-1.4
			e	08	43.00		ASS	149.29	325	PKP	08	11.70	-0.8	BGL	2.92	5	eP	00	12.57	-1.1
SKO	144.69	317	iPKPc	08	05.10	0.1	SGO	149.34	319	PKPc	08	13.30	0.8	CRP	2.94	7	eP	00	13.01	-1.0
	1.1s	253.00nm					AQU	149.36	323	PKP	08	13.10	0.5	CGLM	2.99	9	eP	00	13.45	-1.2
WTS	144.73	341	e(PKP)	08	03.50	-1.2	MGR	149.43	318	PKP	08	11.50	-1.2	SUA	3.30	19	eP	00	17.32	-1.6
	0.7s	22.00nm					BSS	149.52	320	PKP	08	13.90	1.1	PMS	3.36	29	eP	00	17.62	-2.0
WET	144.82	333	iPKPc	08	05.00	-0.1	FIR	149.53	328	ePKP	08	18.00	5.3X	PWA	3.64	24	eP	00	21.88	-1.6
	1.0s	90.00nm					SDI	149.54	322	PKP	08	13.10	0.2	SKT	3.70	10	eP	00	22.39	-2.0
ATH	144.85	309	ePKP	08	04.00	-1.4	CZI	149.57	316	PKP	08	17.60	4.7X	PLRM	3.76	29	eP	00	22.46	-2.8
LIT	144.86	313	iPKPc	08	04.20	-1.2	AZI	149.58	323	PKP	08	18.00	5.2X	GHO	3.97	29	eP	00	25.43	-2.8
GRF	145.09	335	ePKPc	08	05.40	-0.1	FLN	149.61	346	ePKP	08	12.40	-0.3	23 obs. associated						
			ic	08	06.20			0.9s	16.40nm				MAR 08, 1990 10h 15m 14.57±1.02s							
KZN	145.26	314	ePKP	08	05.50	-0.7	ORX	149.64	333	PKP	08	17.12	4.1X	18.468 S ± 5.5km 168.051 E ± 6.7km						
FNA	145.30	315	ePKPd	08	05.40	-0.8	ORO	149.65	333	PKP	08	17.50	4.5X	DEPTH = 17.3 ± 7.1 km						
VAM	145.35	305	ePKP	08	07.00	0.6	BDI	149.66	329	PKP	08	12.00	-1.0	5.2mb ( 8 obs.)						
AGG	145.43	311	iPKPd	08	05.60	-0.8	BOB	149.68	331	PKP	08	12.40	-0.7	VANUATU ISLANDS (186)						
OHR	145.53	316	iPKP	08	06.00	-0.6	LDF	149.69	346	ePKP	08	12.50	-0.3	PVC	0.77	19	iPc	15	30.00	1.0
	1.3s	0.28nm					LOR	149.80	340	ePKP	08	13.00	-0.1				iS	15	40.00	
			i	08	44.00		PII	149.94	328	PKP	08	13.00	-0.3	DZM	3.89	203	iPc	16	14.40	-0.5
PTJ	145.65	326	ePKP	08	05.60	-1.0	GRC	150.02	341	PKP	08	13.50	0.1				iS	16	58.10	
ZAG	145.69	326	iPKP	08	06.80	0.2	GRR	150.05	347	ePKP	08	13.10	-0.3	RMQ	19.52	242	iPc	19	46.30	2.1
TNS	145.71	338	ePKPc	08	07.10	0.5	SSF	150.10	340	ePKP	08	13.50	0.0	CTA	20.64	262	iPc	19	57.00	1.1
			ec	08	45.50		RMP	150.11	323	PKP	08	19.50	5.8X		0.9s	52.94nm				4.9mb
EVR	145.84	312	ePKP	08	08.00	0.8	LSO	150.13	334	PKP	08	19.68	5.7X				iS	24	00.00	
VLI	145.88	307	ePKP	08	06.70	-0.5	RDP	150.14	323	PKP	08	19.50	5.7X	PMG	22.17	291	eP	20	12.50	1.0
DCN	146.07	356	iPKPc	08	07.80	0.8	SOI	150.22	314	PKP	08	13.50	-0.4	MNG	22.98	165	P	20	18.60	-0.7
	0.9s	171.00nm					PCP	150.26	332	PKP	08	18.76	4.9X	TCW	23.29	168	P	20	22.10	-0.2
ENN	146.08	341	e(PKP)	08	07.00	0.0	RSP	150.34	334	PKP	08	18.96	4.9X	CAW	23.35	167	P	20	22.30	-0.6
	1.9s	250.00nm					SMF	150.36	339	ePKP	08	13.60	-0.3	MRW	23.39	167	P	20	22.80	-0.5
			e	08	45.00		AVF	150.39	340	ePKP	08	13.50	-0.4	MTW	23.50	166	P	20	23.60	-0.7
DLE	146.08	355	ePKP	08	07.50	0.5	LPF	150.43	347	ePKP	08	13.90	0.0	CNB	23.58	221	eP	20	27.00	1.7
TOD	146.09	337	ePKP	08	08.46	1.3		1.0s	18.00nm											



CN2	73.22	329 P	c	26	44.50	-1.9
LOE	74.32	295 eP	e	26	53.00	-0.3
BUI	75.63	321 P	P	26	58.00	-2.4
XAN	76.76	313 P	P	27	03.90	-3.1X
KMI	76.91	302 Pc	p	27	08.50	0.2
CHG	77.31	295 ePc	e	27	10.40	0.1
	0.9 s	23.11nm			5.2mb	
CHTO	77.31	295 iPc	i	27	10.60	0.3
	1.0 s	29.50nm			5.3mb	
HHC	78.91	320 eP	e	27	18.30	-0.5
GTA	85.78	314 eP	e	27	54.00	-0.4
SHL	86.00	298 iP	i	27	55.20	-0.6
PRS	86.04	50 e(P)	e	27	56.20	0.6
SAO	86.17	49 eP	e	27	57.20	0.9
WDC	87.12	46 e(P)	e	28	00.70	-0.1
ORV	87.37	47 eP	e	28	01.90	-0.1
CMB	87.49	49 eP	e	28	02.80	0.1
FRI	87.53	50 eP	e	28	02.90	0.1
MIN	87.65	46 eP	e	28	03.20	-0.3
GUN	91.84	299 P	P	28	23.70	0.0
PKI	92.12	298 P	P	28	24.00	-1.0
KKN	92.30	298 P	P	28	25.10	-0.6
DMN	92.39	298 P	P	28	25.60	-0.5
GKN	92.91	298 P	P	28	27.10	-1.3
YKA	100.50	27 ePd	d	28	58.70	-3.3X
	0.6 s	0.50nm			4.2mb	
SUF	128.58	339 iPKP	i	34	19.10	-2.7X
	0.5 s	3.60nm				
NUR	130.59	337 ePKP	e	34	34.00	8.4X
KHC	143.13	332 ePKP	e	34	57.50	8.2X
GRF	143.72	334 ePKP	e	34	46.00	-4.2X
OHR	144.04	316 e(PK)	e	34	46.70	-4.4X
KBA	144.72	330 ePKPc	e	34	49.00	-3.2X
	1.0 s	10.70nm				
TOD	144.74	336 ePKP	e	34	45.86	-6.1X
VBY	144.83	326 e(PK)	e	34	50.00	-2.2X
LJU	144.85	327 ePKP	e	34	49.00	-3.3X
MEM	144.88	340 PKP	P	34	49.30	-2.8X
ABH	144.97	338 ePKP	e	34	49.52	-2.9X
DLE	145.00	354 ePKP	e	34	50.00	-2.2X
DCN	145.00	355 iPKPd	i	34	48.90	-3.3X
	0.6 s	50.00nm				
RBL	145.06	329 PKP	P	34	49.20	-3.5X
CEY	145.11	327 ePKP	e	34	50.00	-2.8X
VOY	145.18	328 ePKP	e	34	49.20	-3.8X
RUP	145.30	338 ePKP	e	34	50.66	-2.3X
FVI	145.34	330 PKPc	e	34	49.90	-3.1X
TRI	145.47	328 PKP	P	34	50.00	-3.3X
SNF	145.50	342 PKP	P	34	50.80	-2.4X
DOU	145.78	341 PKP	P	34	51.70	-2.0
ECP	146.07	354 ePKP	e	34	51.80	-2.3X
	0.5 s	43.00nm				
CTI	146.27	330 PKP	P	34	52.80	-2.0
CDF	146.30	337 ePKP	e	34	53.50	-1.2
	0.5 s	16.05nm				
FEL	146.45	335 ePKP	e	34	53.71	-1.3
BSF	146.96	337 ePKP	e	34	55.10	-0.7
	0.6 s	7.20nm				
HAU	146.98	337 ePKP	e	34	55.40	-0.4
	0.6 s	10.80nm				
BCAO	147.11	249 iPKPc	i	34	57.30	0.3
	0.5 s	22.00nm				
		ic		35	07.30	
		id		35	35.30	
SAL	147.13	330 PKP	P	34	57.00	1.0
ARV	147.40	325 PKP	P	34	57.00	0.4
SFI	147.69	327 PKP	P	34	58.00	1.1
TDS	147.71	317 PKP	P	34	58.00	0.9
VAI	147.73	332 PKP	P	34	57.40	



08d 11h

PMS 3.36 29 eP 00 12.72 -1.2  
 PWA 3.65 24 eP 00 16.68 -1.1  
 SKT 3.71 10 eP 00 17.16 -1.5  
 PLRM 3.77 29 eP 00 17.28 -2.2  
 GLI 3.90 47 eP 00 19.11 -2.2  
 26 obs. associated

MAR 08, 1990 11h 03m 28.37 ± 0.36s  
 34.102 N ± 3.7km 118.247 W ± 2.9km  
 DEPTH = 10.0km (geophysicist)  
 SOUTHERN CALIFORNIA (43)  
 ML 2.8 (NEIS). Felt in the  
 Glendale area.

PAS 0.08 54 P 03 30.90 0.1  
 S 03 32.18  
 SCY 0.17 271 P 03 32.50 0.2  
 MWC 0.20 52 P 03 33.16 0.3  
 PEM 0.32 78 P 03 35.09 0.1  
 PVPS 0.34 202 P 03 35.66 0.3  
 PCF 0.38 97 P 03 36.13 -0.1  
 VPD 0.49 125 P 03 38.59 0.2  
 S 03 46.15  
 CIW 0.68 202 P 03 41.71 -0.2  
 CIS 0.71 191 P 03 42.61 0.3  
 ABL 1.10 313 eP 03 48.90 -0.2  
 PLM 1.38 123 eP 03 53.00 -0.7  
 BLP 1.84 285 eP 03 59.70 -0.5  
 BCH 1.86 306 eP 04 01.00 0.3  
 S.D. = 0.4 on 13 of 13 obs.

? MAR 08, 1990 11h 10m 56.41 ± 5.52s  
 45.602 N ± 9.6km 2.675 E ± 42.6km  
 DEPTH = 10.0km (geophysicist)  
 FRANCE (538)  
 MD 1.4 (STR).

PYM 0.28 57 Pg 11 02.06 -0.2  
 Sg 11 06.14  
 LBL 0.55 132 Pg 11 07.35 -0.1  
 Sg 11 15.18  
 AGO 0.55 35 Pg 11 07.48 -0.2  
 Sg 11 14.92  
 PLDF 0.76 61 Pg 11 11.30 0.0  
 Sg 11 21.52  
 S.D. = 0.2 on 4 of 4 obs.

\* MAR 08, 1990 11h 34m 29.63 ± 3.04s  
 45.216 N ± 24.6km 14.165 E ± 10.2km  
 DEPTH = 10.0km (geophysicist)  
 YUGOSLAVIA (383)  
 MD 2.9 (LJU), 2.3 (TRI). ML 2.2  
 (KBA).

RIY 0.20 51 iPg 34 33.60 -0.4  
 iSg 34 38.30  
 TRI 0.57 330 e(Pg) 34 39.90 -1.2  
 e(Sg) 34 49.10  
 VOY 0.84 347 e(P) 34 45.30 -0.6  
 eSg 34 57.90  
 RBL 1.29 341 P 34 54.00 0.3  
 eSn 35 10.50  
 PTJ 1.43 61 eP 35 19.10 23.4X  
 FVI 1.68 325 P 35 00.50 1.3  
 KBA 1.95 343 ePnd 35 04.40 1.2  
 iPg 35 06.20  
 iSg 35 31.30  
 i 35 33.70  
 CTI 1.95 296 P 35 02.50 -0.7  
 S.D. = 1.2 on 7 of 8 obs.

? MAR 08, 1990 11h 35m 58.65 ± 1.01s  
 22.419 S ± 23.6km 174.189 W ± 13.4km  
 DEPTH = 33.0km (normal)  
 4.6mb (3 obs.)  
 TONGA ISLANDS REGION (174)

SVA 8.12 300 eP 37 57.30 0.1  
 DZM 17.93 267 iPc 40 12.40 5.1X  
 ASPA 47.57 258 iPd 44 34.20 0.9  
 1.1s 11.00nm 4.8mb  
 WB5 47.86 263 eP 44 35.00 -0.6  
 WRA 47.87 263 Pd 44 35.40 -0.3  
 0.9s 6.90nm 4.7mb  
 ALQ 85.88 50 eP 48 37.00 0.2  
 YKA 96.80 24 eP 49 26.60 -0.2  
 0.5s 0.20nm 3.9mb

CLL 150.62 351 iPKPd 55 49.80 7.0X  
 1.8s 29.00nm  
 BRG 150.90 349 iPKP 55 51.00 7.7X  
 1.9s 40.00nm  
 S.D. = 0.7 on 6 of 9 obs.

\* MAR 08, 1990 12h 03m 08.61 ± 0.70s  
 36.726 N ± 11.3km 72.710 E ± 15.6km  
 DEPTH = 33.0km (normal)  
 4.3mb (5 obs.)  
 AFGHANISTAN-USSR BORDER REGION (717)

NDI 8.87 153 eP 05 18.50 1.0  
 MAIO 10.65 272 iPd 05 41.50 -0.5  
 eS 07 41.00  
 HYB 19.92 163 eP 07 39.00 -1.5  
 GBA 23.41 168 Pd 08 16.20 0.7  
 0.8s 5.20nm 4.1mb  
 HFS 43.74 322 eP 11 13.10 1.0  
 0.6s 4.30nm 4.4mb  
 NB2 45.03 323 P 11 23.60 1.0  
 1.0s 4.10nm 4.3mb  
 MBC 67.04 3 eP 14 00.50 0.5  
 0.7s 8.00nm 4.9mb  
 INK 73.45 10 eP 14 39.00 0.0  
 YKA 80.95 3 eP 15 18.50 -2.1  
 0.6s 1.20nm 4.1mb  
 S.D. = 1.3 on 9 of 9 obs.

? MAR 08, 1990 12h 10m 41.20 ± 7.06s  
 42.762 N ± 60.5km 23.776 E ± 15.2km  
 DEPTH = 10.0km (geophysicist)  
 BULGARIA (359)  
 ML 2.6 (THE).

SRS 1.65 185 ePb 11 10.00 -0.3  
 eSb 11 34.20  
 VAY 1.70 212 ePn 11 11.40 0.4  
 KNT 1.73 203 ePb 11 11.10 -0.4  
 eSb 11 36.70  
 SOH 1.96 189 ePn 11 14.50 -0.4  
 eSn 11 42.00  
 OUR 2.43 176 ePn 11 22.40 0.8  
 eS 11 56.10  
 ALN 2.52 137 ePn 11 22.70 -0.1  
 GZR 2.73 345 ePd 11 55.00 29.1X  
 S.D. = 0.7 on 6 of 7 obs.

& MAR 08, 1990 13h 23m 10.17s  
 58.370 N 152.930 W  
 DEPTH = 77.6km  
 2.9mb (1 obs.)  
 KODIAK ISLAND REGION (13)  
 <AGS-P>.

KDC 0.67 159 eP 23 24.75 -0.7  
 eS 23 36.36  
 CDD 0.67 327 eP 23 24.43 -1.2  
 eS 23 35.51  
 AUE 1.02 347 eP 23 28.92 -0.6  
 AUL 1.05 346 eP 23 29.28 -0.7  
 CNPM 1.45 36 eP 23 34.14 -1.1  
 PDB 1.56 336 eP 23 35.36 -1.3  
 eS 23 54.12  
 BGM 1.57 312 eP 23 35.69 -1.1  
 >NNL 1.88 26 eP 23 40.00 -0.9  
 RED 2.06 2 eP 23 42.47 -1.0  
 RDT 2.23 7 eP 23 44.56 -1.2  
 SEW 2.49 44 eP 23 46.96 -2.4  
 NKA 2.53 19 eP 23 50.14 0.3  
 SLKM 2.55 32 eP 23 48.35 -1.8  
 CKL 2.85 6 eP 23 53.34 -1.1  
 SPU 2.86 9 eP 23 53.25 -1.2  
 BGL 2.92 5 eP 23 54.47 -0.8  
 CRP 2.93 7 eP 23 54.81 -0.8  
 CGLM 2.98 9 eP 23 55.17 -1.1  
 SVW 3.07 335 eP 23 56.39 -0.9  
 NCG 3.07 7 eP 23 56.28 -1.1  
 SUA 3.29 19 eP 23 59.20 -1.4  
 PMS 3.35 29 eP 23 59.63 -1.6  
 SKT 3.69 10 eP 24 03.38 -2.6  
 PLRM 3.75 29 eP 24 04.35 -2.5  
 YKA 19.15 61 eP 27 28.60 -1.0  
 0.4s 0.30nm 2.9mb  
 25 obs. associated

& MAR 08, 1990 13h 26m 13.71s

58.443 N 152.728 W  
 DEPTH = 63.9km  
 KODIAK ISLAND REGION (13)  
 <AGS-P>.

AUE 0.98 340 iP 26 31.11 -0.7  
 eS 26 45.12  
 AUL 1.01 339 iP 26 31.43 -0.9  
 CNPM 1.33 35 eP 26 36.34 -0.3  
 eS 26 53.58  
 PDB 1.55 331 iP 26 37.49 -2.0  
 eS 26 56.26  
 >NNL 1.76 24 iP 26 42.65 0.1  
 RED 1.98 359 iP 26 44.66 -1.0  
 RDT 2.14 4 eP 26 46.71 -1.2  
 SLKM 2.43 31 iP 26 50.57 -1.4  
 eS 27 18.74  
 SPU 2.77 7 eP 26 55.40 -1.3  
 CKL 2.77 4 eP 26 55.51 -1.2  
 BGL 2.84 3 eP 26 56.55 -1.1  
 CRP 2.85 6 iP 26 57.03 -0.8  
 CGLM 2.90 7 eP 26 57.29 -1.2  
 NCG 2.98 5 eP 26 58.35 -1.4  
 SUA 3.19 17 eP 27 01.39 -1.3  
 PMS 3.23 28 eP 27 01.60 -1.6  
 SKT 3.60 9 eP 27 06.45 -1.8  
 PLRM 3.64 28 eP 27 06.50 -2.3  
 GHO 3.84 28 eP 27 09.68 -2.1  
 CUT 4.16 16 eP 27 12.38 -3.7  
 KLU 4.59 45 eP 27 20.43 -1.8  
 21 obs. associated

MAR 08, 1990 13h 30m 19.98 ± 0.33s  
 43.459 N ± 2.0km 127.058 W ± 3.3km  
 DEPTH = 10.0km (geophysicist)  
 4.5mb (8 obs.)  
 OFF COAST OF OREGON (30)

GROR 3.08 51 P 31 09.40 -0.3  
 FHC 3.50 138 eP 31 20.40 4.8X  
 NLO 3.68 43 P 31 18.47 0.3  
 PGO 3.86 57 P 31 21.09 0.4  
 TCO 4.01 79 P 31 22.62 -0.3  
 BMW 4.06 41 P 31 22.79 -0.7  
 RVW 4.08 47 P 31 24.03 0.3  
 ONR 4.13 33 P 31 24.50 0.0  
 S 32 14.00  
 VLMM 4.15 58 P 31 25.36 0.5  
 TDH 4.20 62 P 31 25.94 0.4  
 LVP 4.22 50 P 31 26.26 0.5  
 VBEM 4.24 66 P 31 26.22 0.0  
 MTMW 4.30 52 P 31 27.26 0.2  
 FL2 4.32 49 P 31 28.05 0.6  
 VLL 4.34 61 P 31 28.16 0.6  
 LBFM 4.37 117 eP 31 27.00 -1.1  
 SHW 4.39 50 P 31 28.91 0.7  
 CZM 4.39 46 P 31 28.31 0.1  
 ERK 4.40 48 P 31 28.46 0.1  
 HSR 4.40 50 P 31 29.35 0.8  
 JLK 4.41 51 P 31 28.98 0.5  
 VFP 4.42 63 P 31 28.69 -0.1  
 YEL 4.42 50 P 31 29.36 0.5  
 WDC 4.43 129 eP 31 32.70 4.0X  
 ESD 4.44 50 P 31 29.58 0.6  
 CDFW 4.45 52 P 31 29.36 0.3  
 APW 4.47 43 P 31 29.13 -0.1  
 SOSW 4.47 50 P 31 29.86 0.5  
 OBH 4.47 29 P 31 29.17 -0.2  
 CPW 4.48 37 P 31 29.00 -0.4  
 TDL 4.49 48 P 31 30.15 0.4  
 GMD 4.51 75 P 31 29.30 -0.8  
 KOSW 4.58 47 P 31 31.59 0.7  
 GULW 4.61 56 P 31 31.62 0.2  
 CROR 4.62 69 P 31 30.81 -0.7  
 LMW 4.66 45 P 31 32.27 0.2  
 SMW 4.66 33 P 31 31.64 -0.5  
 S 32 27.36  
 ASR 4.73 53 P 31 33.36 0.2  
 VIPM 4.76 75 P 31 32.82 -0.9  
 MEW 4.87 38 P 31 36.01 1.1  
 GHW 4.92 42 P 31 35.87 0.1  
 VGB 4.94 63 eP 31 35.70 -0.4  
 GLK 4.96 49 P 31 36.87 0.6  
 OSD 4.96 27 P 31 36.24 -0.1  
 LON 4.96 47 eP 31 36.50 0.2  
 VTHM 4.97 67 P 31 35.83 -0.6  
 OTR 5.00 21 P 31 37.10 0.3



RVC	5.01	44	P	31	37.23	0.3
HDW	5.05	32	P	31	37.29	-0.2
			S	32	36.60	
WPW	5.07	48	P	31	38.34	0.4
			S	32	39.81	
GMW	5.07	35	P	31	37.25	-0.6
			S	32	35.55	
GL2	5.10	58	P	31	38.32	0.0
FMW	5.15	46	P	31	39.51	0.4
STW	5.26	26	P	31	40.58	0.2
			S	32	41.93	
GSM	5.27	43	P	31	41.06	0.3
BLN	5.37	31	P	31	42.24	0.1
			S	32	45.01	
RMW	5.45	41	P	31	43.20	0.0
NAC	5.49	51	P	31	44.29	0.4
JBO	5.54	66	P	31	43.78	-0.8
BLH	5.62	37	P	31	44.77	-0.8
ORV	5.71	131	eP	31	49.00	2.1
HTW	5.71	39	P	31	46.77	-0.2
			S	32	52.55	
MXC	5.72	55	P	31	46.99	0.0
EBG	5.74	51	P	31	47.75	0.4
BRVW	5.85	56	P	31	48.92	0.0
TBM	5.87	49	P	31	49.71	0.5
JCW	5.94	35	P	31	50.04	0.0
MCW	5.99	28	eP	31	50.60	-0.2
MDW	6.06	56	P	31	51.59	-0.1
RSW	6.06	58	P	31	51.52	-0.3
GBL	6.23	57	P	31	54.08	-0.1
WAH2	6.24	56	P	31	54.35	0.0
SAW	6.84	49	P	32	02.30	-0.6
MHC	7.37	144	eP	32	08.60	-1.8
ARN	7.42	144	eP	32	09.40	-1.5
CMB	7.42	135	eP	32	12.10	1.2
DPW	7.61	52	eP	32	12.60	-1.0
PNT	7.79	39	ePc	32	15.00	-1.1
	0.6s			52.00nm		5.9mb X

KVN	8.06	120	eP	32	20.00	0.0
LLA	8.29	144	e(P)	32	23.20	0.2
NEW	8.43	52	eP	32	24.30	-0.8
FRI	8.56	137	eP	32	21.70	-5.1X
ISA	10.22	137	eP	32	51.00	1.2
CLC	10.55	133	eP	32	56.00	1.7
LRM	10.68	72	ePc	32	54.80	-1.4
SBH	11.31	138	eP	33	03.00	-1.7
GSC	11.36	132	eP	33	07.00	1.6
MWC	11.58	140	eP	33	09.00	0.5
PAS	11.59	140	eP	33	08.00	-0.4
IMW	11.68	82	eP	33	11.00	1.0
RVR	12.09	138	eP	33	13.00	-2.2
TPC	12.68	134	eP	33	23.00	-0.1
BW06	12.81	87	eP	33	25.10	0.0
SES	12.95	52	eP	33	25.00	-1.6
EDM	13.34	38	eP	33	30.50	-1.3
GLA	14.14	133	eP	33	44.00	1.6
RSSD	16.63	80	eP	34	16.00	1.1
GOL	16.65	96	eP	34	14.70	-0.4
ANMO	18.05	111	eP	34	32.00	-0.7
ALO	18.06	111	eP	34	32.50	-0.2
	1.1s			9.49nm		3.8mb
FFC	19.80	47	eP	34	53.00	-0.2
	0.8s			25.00nm		4.6mb
TOA	21.81	336	eP	35	14.90	1.1
PMR	22.39	332	eP	35	19.10	-0.4
	0.9s			15.63nm		4.5mb
RSO	23.70	60	eP	35	33.00	0.5
	1.0s			16.27nm		4.6mb
FBA	24.44	339	eP	35	39.90	0.4
	0.9s			7.92nm		4.3mb
SVW	24.53	326	eP	35	40.20	-0.3
INK	25.14	354	eP	35	46.00	-0.2
TTA	25.72	329	eP	35	51.40	-0.4
	0.9s			13.96nm		4.7mb
IMA	26.96	336	ePc	36	03.00	-0.3
	1.2s			13.70nm		4.5mb
BRW	31.49	342	eP	36	43.80	0.3
MBC	33.05	3	eP	36	57.50	0.4
	0.9s			8.00nm		4.6mb
	S.D. = 0.7			on 108 of 111 abs.		
* MAR 08, 1990 13h 30m 37.33s						
58.410 N 152.892 W						
DEPTH = 85.8km						
KODIAK ISLAND REGION (13)						
<AGS-P>.						

CDD	0.65	323	eP	30	51.33	-1.9
			eS	31	02.51	
AUE	0.98	346	eP	30	55.78	-1.0
			eS	31	09.97	
AUL	1.02	344	eP	30	56.17	-1.0
CNPM	1.41	37	eP	31	01.16	-1.0
PDB	1.54	335	iP	31	02.30	-1.4
			iS	31	21.06	
NNL	1.83	26	iP	31	07.42	-0.2
RED	2.02	2	iP	31	09.47	-0.8
RDT	2.18	6	eP	31	11.52	-1.0
SEW	2.45	45	eP	31	14.01	-2.0
			eS	31	40.41	
NKA	2.49	19	iP	31	17.18	0.7
SLKM	2.51	32	iP	31	15.30	-1.6
			eS	31	43.46	
CKL	2.81	5	iP	31	20.27	-0.8
SPU	2.81	8	iP	31	20.36	-0.7
BGL	2.87	5	eP	31	21.22	-0.8
CRP	2.89	7	eP	31	21.75	-0.5
CGLM	2.94	8	eP	31	22.12	-0.8
NCG	3.03	7	eP	31	23.22	-0.9
SUA	3.25	19	eP	31	26.10	-1.1
PMS	3.30	29	eP	31	26.40	-1.4
PWA	3.59	24	eP	31	30.72	-1.0
SKT	3.65	10	eP	31	31.11	-1.5
PLRM	3.71	29	eP	31	31.30	-2.1
GHO	3.91	29	eP	31	34.34	-2.0
MBC	21.48	21	eP	35	23.50	3.7
	0.5s			2.00nm		3.7mb
	24 obs.			associated		

\* MAR 08, 1990 13h 58m 48.59±1.00s  
 10.676 S ±12.6km 110.255 E ±15.2km  
 DEPTH = 33.0km (narmol)  
 4.3mb ( 2 obs.)

SOUTH OF JAVA (282)

KHKI	5.76	67	eP	00	14.50	0.5
			e(S)	01	16.50	
			e	03	10.00	
NANU	12.85	158	eP	01	51.70	0.0
			eS	04	08.00	
MBL	13.90	140	eP	02	05.30	-0.3
			eS	04	29.00	
WRA	24.96	115	Pd	04	13.60	2.9X
	0.7s			5.10nm		4.2mb
WB5	24.97	114	eP	04	13.90	3.1X
			i	04	25.30	
ASPA	25.97	123	iPd	04	25.90	5.7X
	0.9s			8.00nm		4.3mb
			eS	09	16.60	
CHG	31.35	339	eP	05	07.10	-1.5
POO	46.18	309	eP	07	13.70	1.3
YKA	119.11	22	ePKP	17	47.70	12.4X
	0.6s			0.40nm		
	S.D. = 1.5			on 5 of 9 obs.		

\* MAR 08, 1990 15h 08m 58.76±0.51s  
 46.703 N ± 4.6km 2.350 E ± 4.5km  
 DEPTH = 10.0km (geophysicist)

FRANCE (538)  
 ML 2.8 (LDG).

BGF	0.37	113	Pg	09	06.30	-0.1
			Sg	09	11.20	
TCF	0.43	193	Pg	09	07.30	-0.2
			Sg	09	13.20	
MAF	0.50	163	Pg	09	08.70	-0.3
			Sg	09	15.90	
HYF	0.60	19	Pg	09	10.00	-0.9
			Sg	09	18.00	
AVF	0.70	82	Pg	09	12.50	0.0
			Sg	09	22.20	
LSF	0.73	232	Pg	09	12.50	-0.5
			Sg	09	22.00	
SSF	0.87	65	Pg	09	15.60	0.1
			Sg	09	27.90	
LBF	1.15	75	Pg	09	20.70	0.4
			Sg	09	35.80	
LOR	1.18	61	Pg	09	21.10	0.3
			Sg	09	36.30	
RJF	1.52	203	Pn	09	29.70	3.0X
			Pg	09	31.10	
			Sg	09	46.40	
MFF	1.72	268	Pn	09	29.70	0.8
			Pg	09	31.10	

CAF	1.79	187	Pn	09	53.10	0.5
			Pg	09	30.40	
			Sg	09	32.90	
			Sg	09	55.50	
	S.D. = 0.5		on 11 of 12 obs.			

MAR 08, 1990 15h 19m 39.46±0.41s  
 42.570 N ± 3.8km 13.033 E ± 5.7km  
 DEPTH = 9.3 ± 4.1 km  
 CENTRAL ITALY (381)

AOU	0.35	128	P	19	46.50	-0.1
			eSg	19	52.50	
ASS	0.57	331	P	19	51.00	0.0
			iSg	20	00.20	
AZI	0.65	153	P	19	51.50	-1.0
			eSg	20	02.60	
RMP	0.80	198	P	19	54.90	-0.1
			eSg	20	06.30	
RDP	0.84	196	P	19	55.90	0.0
			eSg	20	08.00	
ARV	0.93	356	P	19	57.40	0.1
			eSg	20	11.40	
SDI	1.04	146	P	20	00.00	0.8
			eSn	20	15.60	
DUI	1.40	130	P	20	05.00	-0.1
MAO	1.40	264	P	20	05.30	0.2
BDI	2.32	311	P	20	18.00	-0.5
VOY	3.52	10	e(Pn)	20	43.00	7.6X
			eSn	21	21.00	
CTI	3.62	345	P	20	36.50	-0.4
KBA	4.51	3	e(Pn)	20	50.00	0.4
			e	20	54.50	
			i	21	42.60	
	S.D. = 0.5		on 12 of 13 obs.			

\* MAR 08, 1990 16h 25m 24.94±0.34s  
 16.415 S ± 8.2km 167.334 E ± 9.2km  
 DEPTH = 10.0km (geophysicist)  
 4.5mb ( 4 abs.) 4.0Msz ( 1 abs.)  
 VANUATU ISLANDS (186)

PVC	1.62	145	iP	25	53.60	0.1
			iS	26	14.50	
DZM	5.69	188	iPd	26	50.00	-1.6
			iS	27	55.00	
BRS	17.35	229	iP	29	31.30	2.4
RMO	19.96	237	eP	30	01.50	1.2
CTA	20.35	256	iPd	30	05.00	0.6
	1.1s		43.04nm			4.7mb
BWA	24.69	220	eP	30	47.10	-0.4
CAN	24.95	218	eP	30	50.80	0.8
WB5	31.49	259	eP	31	48.00	-1.3
WRA	31.51	259	Pc	31	47.70	-1.8
	0.9s		3.50nm			4.3mb
ASPA	32.17	252	iPd	31	54.10	-1.2
	0.8s		33.00nm			5.3mb
Z	19s		0.28um			4.0Msz
			LR	44	02.50	
FORR	38.50	241	eP	32	49.40	0.2
KMI	75.25	302	Pd	37	10.50	0.1
CHTO	75.83	295	eP	37	13.20	-0.4
	0.8s		1.83nm			4.2mb
CDF	144.15	337	ePKP	45	02.30	-0.5
ORI	145.44	319	PKP	45	04.00	-1.1
VAI	145.60	333	PKP	45	03.30	-1.8
TDS	145.74	318	PKP	45	04.50	-1.1
SGO	145.86	320	PKP	45	04.00	-1.8
MGR	145.96	320	PKP	45	04.00	-2.0X
SDI	146.04	323	PKP	45	04.00	-2.1X
BOB	146.15	331	PKP	45	05.50	-0.8
FLN	146.24	345	ePKP	45	04.90	-1.2
	0.6s		14.45nm			
LDF	146.30	345	ePKP	45	05.20	-1.1
	0.6s		12.65nm			
LOR	146.33	340	ePKP	45	05.90	-0.5
	0.7s		11.00nm			
LBF	146.54	339	ePKP	45	06.50	-0.3
	0.6s		2.70nm			
SSF	146.63	340	ePKP	45	06.90	0.1
	0.6s		18.50nm			
GRR	146.67	346	ePKP	45	06.50	-0.3
	0.6s		18.05nm			
LPL	146.74	335	ePKP	45	07.60	0.2
	0.6s		2.70nm			
LPG	146.75	335	ePKP	45	07.80	0.3
	0.6s		4.50nm			



08d 16h

SOI 146.80 316 PKP 45 07.70 0.4  
 SMF 146.88 339 ePKP 45 07.20 -0.1  
 0.7s 4.40nm  
 AVF 146.92 340 ePKP 45 07.10 -0.2  
 0.8s 4.05nm  
 LPF 147.05 346 ePKP 45 07.80 0.4  
 0.6s 21.65nm  
 BNI 147.14 334 PKP 45 08.50 0.6  
 MAF 147.68 340 ePKP 45 09.70 1.1  
 0.7s 5.50nm  
 TCF 147.74 341 ePKP 45 09.70 1.0  
 0.6s 6.75nm  
 LSF 147.98 341 ePKP 45 10.30 1.3  
 0.6s 17.15nm  
 PGF 148.03 329 ePKP 45 10.50 1.1  
 0.7s 11.00nm  
 MFF 148.15 344 ePKP 45 10.70 1.4  
 0.6s 17.15nm  
 FRF 148.35 333 ePKP 45 11.10 1.4  
 0.7s 6.60nm  
 LRG 148.56 333 ePKP 45 11.50 1.5  
 0.8s 9.40nm  
 LMR 148.59 333 ePKP 45 11.30 1.2  
 1.0s 20.00nm  
 RJF 148.83 340 ePKP 45 12.80 2.4X  
 0.7s 6.60nm  
 CAF 148.99 339 ePKP 45 13.40 2.7X  
 0.7s 3.30nm  
 LFF 149.40 341 ePKP 45 14.20 2.9X  
 0.7s 6.60nm  
 LPO 149.49 340 ePKP 45 14.40 2.9X  
 0.6s 5.40nm  
 S.D. = 1.1 on 40 of 46 obs.

? MAR 08, 1990 16h 52m 53.25±0.45s  
 10.836 N ± 8.9km 125.453 E ± 10.0km  
 DEPTH = 33.0km (normal)  
 4.7mb ( 5 obs.)

LEYTE, PHILIPPINE ISLANDS (256)

CHTO 26.80 290 eP 58 32.90 0.4  
 1.3s 3.68nm 3.8mb  
 WB5 31.76 164 eP 59 15.80 -1.0  
 SHL 34.97 299 eP 59 44.50 -0.3  
 ASPA 35.27 167 iPc 59 47.80 0.6  
 0.4s 16.00nm 5.3mb  
 GUN 40.79 300 P 00 34.20 0.4  
 PKI 41.10 300 P 00 35.80 -0.4  
 KKN 41.27 300 P 00 37.60 0.1  
 DMN 41.36 300 P 00 38.20 -0.2  
 FORR 41.52 177 iPc 00 39.50 0.4  
 0.4s 15.00nm 5.1mb  
 GKN 41.87 300 P 00 42.00 -0.4  
 GBA 46.95 279 Pd 01 23.30 0.1  
 0.5s 4.90nm 4.8mb  
 INK 84.06 22 eP 05 22.00 0.4  
 MBC 85.34 13 eP 05 28.00 0.1  
 YKA 93.57 24 eP 06 06.70 -0.3  
 0.8s 0.80nm 4.2mb  
 S.D. = 0.5 on 14 of 14 obs.

\* MAR 08, 1990 17h 39m 29.02±1.24s  
 41.307 N ± 11.8km 20.101 E ± 7.6km  
 DEPTH = 10.0km (geophysicist)

ALBANIA (391)  
 ML 2.5 (SKO).

TIR 0.18 283 iPgc 39 32.50 -0.6  
 PHP 0.46 34 iPgc 39 38.20 -0.1  
 OHR 0.56 110 iPgc 39 39.50 -1.0  
 iSg 39 49.00  
 Lg 39 50.00  
 e 39 50.80  
 PUK 0.75 348 ePg 39 43.90 0.2  
 KKS 0.80 17 ePg 39 40.20 -4.4X  
 SDA 0.84 328 ePg 39 45.80 0.6  
 SKO 1.20 56 ePn 39 50.00 -1.4  
 eSn 40 09.00  
 VAY 1.86 89 ePn 40 03.50 2.3  
 S.D. = 1.5 on 7 of 8 obs.

% MAR 08, 1990 17h 44m 17.36±1.02s  
 46.041 N ± 7.3km 2.932 E ± 8.3km  
 DEPTH = 10.0km (geophysicist)

FRANCE (538)  
 ML 1.6 (LDG).

MAF 0.31 306 Pg 44 24.50 0.6  
 Sg 44 29.60  
 BGF 0.52 353 Pg 44 27.30 -0.6  
 Sg 44 35.30  
 TCF 0.56 296 Pg 44 28.60 -0.1  
 Sg 44 36.20  
 AVF 0.80 21 Pg 44 32.50 -0.5  
 Sg 44 43.50  
 LBF 1.19 37 Pg 44 40.30 0.7  
 CAF 1.27 209 Pg 44 40.80 -0.2  
 Sg 44 56.30

S.D. = 0.7 on 6 of 6 obs.

\* MAR 08, 1990 17h 53m 13.23±0.68s  
 36.706 N ± 10.1km 73.157 E ± 8.5km  
 DEPTH = 10.0km (geophysicist)

4.3mb ( 5 obs.)  
 NORTHWESTERN KASHMIR (720)

KSH 3.53 38 Pn 54 15.00 5.6X  
 QUE 8.31 220 eP 55 18.30 1.4  
 eS 56 54.70  
 NDI 8.70 156 eP 55 26.00 4.0X  
 MAIO 11.01 272 eP 55 52.00 -1.8  
 eS 57 50.00  
 GKN 13.01 129 P 56 20.00 -0.9  
 WMQ 13.17 53 eP 56 23.50 0.5  
 KKN 13.56 128 P 56 26.90 -1.4  
 DMN 13.58 129 P 56 27.80 -0.8  
 PKI 13.80 128 P 56 30.20 -1.3  
 GUN 13.87 126 P 56 30.40 -2.1  
 LSA 16.59 110 eP 57 00.30 0.4  
 POO 18.11 178 eP 57 35.00 6.4X  
 iS 01 17.00

SHL 19.46 120 eP 57 40.00 -3.2X  
 HYB 19.80 165 eP 57 49.00 2.2  
 GTA 21.14 75 eP 58 01.60 0.9  
 GBA 23.32 169 Pd 58 25.90 3.6X  
 0.7s 10.00nm 4.5mb

LZH 24.66 82 P 58 33.00 -2.5X  
 TIY 31.14 76 eP 59 36.20 1.9  
 HFS 43.98 322 eP 01 18.90 -3.0X  
 0.5s 1.40nm 4.0mb

NB2 45.26 323 P 01 32.00 -0.4  
 0.8s 3.30nm 4.3mb  
 MBC 67.04 3 eP 04 07.00 -1.0  
 0.7s 3.00nm 4.6mb

INK 73.41 10 eP 04 46.00 -0.8  
 WB5 80.62 123 eP 05 29.00 1.3  
 WRA 80.64 123 Pc 05 29.70 1.8  
 0.5s 1.20nm 4.2mb

S.D. = 1.5 on 17 of 24 obs.

MAR 08, 1990 18h 57m 01.43±0.24s  
 25.452 N ± 4.5km 96.559 E ± 3.9km  
 DEPTH = 33.0km (normal)  
 4.8mb ( 29 obs.) 5.1Msz ( 6 obs.)

BURMA (296)  
 CENTROID, MOMENT TENSOR (HRV)

Data Used: GDSN  
 L.P.B.: 8S, 15C  
 Centroid Location:  
 Origin Time 18:57: 5.1 0.7  
 Lat 25.11N 0.09 Lon 96.61E 0.11  
 Dep 56.5 8.9 Half-duration 1.5  
 Moment Tensor: Scale 10\*\*16 Nm  
 Mrr= 0.12 0.55 Mtt= 6.53 0.76  
 Mff=-6.64 0.71 Mrt= 2.54 0.81  
 Mrf=-0.44 0.65 Mtf= 3.02 0.68  
 Principal Axes:  
 T Val= 7.92 Plg=17 Azm=349  
 N -0.49 71 143  
 P -7.44 8 256  
 Best Double Couple: Mo=7.7\*10\*\*16  
 NP1: Strike= 32 Dip=73 Slip= 173  
 NP2: 124 84 18

SHL 4.23 273 iP 58 06.00 0.7  
 eS 58 56.00  
 KMI 5.60 92 Pnc 58 25.50 0.6  
 Pg 58 38.00  
 Sn 59 23.00  
 LSA 6.40 313 Pnc 58 37.70 1.4  
 CHG 6.97 161 ePn 58 42.00 -1.8  
 ePg 59 07.50  
 eSg 00 37.50  
 CHTO 6.97 161 iPn 58 41.90 -1.9

CD2 8.36 48 ePg 59 06.30  
 N 10s 16.30um 59 04.20 0.9  
 BDT 8.48 164 ePn 59 02.80 -2.1  
 ePg 59 36.00  
 eSg 01 14.00  
 GYA 9.15 82 P 59 13.00 -1.3  
 Z 10s 6.10um  
 N 10s 11.70um  
 E 10s 4.00um

LOE 9.34 148 ePn 59 17.00 0.2  
 ePg 59 56.00  
 eSg 01 54.00

GUN 9.86 287 P 59 22.80 -1.5  
 PKI 10.21 284 P 59 26.80 -2.3  
 NST 10.29 160 eP 59 28.00 -1.8  
 e 02 34.00

KKN 10.36 285 P 59 28.50 -2.5  
 DMN 10.48 284 P 59 30.20 -2.5  
 GKN 10.96 286 P 59 36.70 -2.5  
 LZH 12.31 29 Pd 59 55.50 -1.9  
 1.5s 39.00nm 5.3mb

N 10s 12.30um  
 E 10s 19.00um  
 NNT 13.14 166 eP 00 07.50  
 e 00 03.40 -5.0X  
 e 02 29.00

XAN 13.72 49 eP 00 11.50 -4.5X  
 N 14s 23.50um  
 E 14s 8.00um

QIZ 13.86 115 eP 00 20.00 2.2  
 N 11s 18.60um  
 GTA 14.19 10 eP 00 23.00 0.9  
 Z 10s 16.60um

N 10s 12.50um  
 GZH 15.49 95 P 00 43.00 3.9X  
 Z 10s 7.90um  
 WHN 16.51 68 ePc 00 50.00 -2.1  
 Z 16s 4.20um

pP 01 03.50  
 NDI 17.52 285 eP 01 02.50 -2.4  
 TIY 18.20 44 Pc 01 12.00 -1.2  
 Z 10s 5.00um

S 04 29.00  
 sS 04 37.50  
 HYB 18.56 248 iPd 01 18.00 0.3  
 0.8s 115.40nm 5.1mb

i 01 26.20  
 eS 04 38.00  
 SNG 18.58 167 eP 01 16.10 -1.9  
 eS 04 50.70  
 e 21 28.80

BTO 18.82 33 eP 01 18.50 -2.3  
 N 11s 14.40um  
 E 11s 19.20um

S 04 45.00  
 SS 05 10.00  
 WMQ 19.70 341 iPc 01 30.60 -0.4  
 Z 15s 9.00um

N 11s 2.50um  
 E 13s 5.90um  
 HHC 19.79 35 P 01 30.40 -1.6  
 Z 10s 8.30um

N 11s 9.20um  
 E 12s 8.80um  
 BSI 19.88 184 ePd 01 35.00 2.1  
 OZH 19.94 87 eP 01 36.00 2.5

N 10s 12.70um  
 NJ2 20.61 66 Pc 01 40.00 -0.4  
 Z 16s 3.80um 4.9MszX  
 E 10s 4.00um

TIA 20.62 54 eP 01 40.40 -0.1  
 Z 15s 3.30um 4.8MszX  
 N 14s 6.40um  
 E 14s 4.80um

eS 05 29.60  
 IPM 21.19 168 ePd 01 47.10 0.6  
 GBA 21.50 240 Pd 01 49.60 0.0  
 0.7s 21.80nm 4.7mb

TSI 21.91 175 eP 01 55.00 1.3  
 BJI 21.93 44 eP 01 54.00 0.3  
 1.5s 52.00nm 4.7mb  
 Z 12s 4.22um 5.1MszX  
 N 10s 2.72um

eS 05 52.00  
 POO 22.14 256 iPd 02 00.00 4.0X



KSH	22.21 314	iS eP	06 00.00 02 02.00	5.3X 5.2MszX	VAI	70.72 312	P	08 16.00 -0.1	N	10s	3.60um			
Z	12s	5.70um			DAG	70.92 347	iPd	08 15.00 -1.9	BDT	8.50 164	eP	03 11.80	-0.6	
N	16s	15.80um			CDF	0.9s	8.40nm	4.8mb	GUN	9.84 287	P	03 31.50	0.1	
		PP	02 22.00		MEM	70.96 315	eP	08 17.90 0.2	PKI	10.19 284	P	03 35.60	-0.5	
SSE	22.39 70	P	02 01.00	2.7	BSF	71.10 318	P	08 26.30 7.9X	KKK	10.34 285	P	03 37.70	-0.4	
Z	20s	2.80um		4.7Msz	PGF	71.44 315	eP	08 20.60 0.0	DMN	10.46 284	P	03 39.00	-0.8	
N	10s	5.20um				0.7s	6.60nm	4.8mb		0.6s	40.00nm		5.8mb X	
		pP	02 06.50	20kmX	HAU	71.67 315	eP	08 22.00 0.1	GKN	10.94 286	P	03 45.20	-1.0	
		sS	06 15.00		LPG	72.18 312	eP	08 24.80 -0.6	LZH	12.30 29	P	04 04.00	-0.5	
PSI	22.74 174	ePd	02 03.60	1.7		0.7s	12.15nm	5.0mb		Z	10s	1.10um		
KOD	23.60 234	eP	02 12.00	1.4	LPL	72.19 312	eP	08 24.90 -0.4		N	11s	1.40um		
		eS	06 32.00			0.7s	12.15nm	5.0mb		E	11s	1.80um		
DL2	25.01 51	eP	02 24.00	0.3	SBF	72.23 311	eP	08 25.50 0.1	XAN	13.72 49	P	04 21.00	-2.2	
Z	15s	2.10um		4.8MszX	BNI	72.38 312	P	08 17.00 -9.3X	GTA	14.17 10	eP	04 36.00	6.8X	
N	12s	2.70um			FRF	72.87 310	eP	08 28.90 -0.2		Z	12s	1.40um		
E	12s	1.13um				0.8s	8.05nm	4.8mb	WHN	16.51 68	eP	04 58.80	-0.5	
QUE	26.57 287	eP	02 39.50	0.9	LMR	73.04 310	eP	08 30.30 0.3	NDI	17.51 285	e(P)	05 10.00	-1.9	
		eS	07 14.40		LOR	73.50 315	eP	08 32.80 0.1	HYB	18.55 248	eP	05 27.50	2.6	
SNY	27.64 47	eP	02 47.70	-0.3	LBF	73.52 315	eP	08 32.90 0.1		1.0s	35.00nm		4.5mb	
Z	13s	3.20um		5.1MszX		0.5s	3.30nm	4.6mb	WMO	19.68 341	eP	05 38.60	0.6	
N	10s	2.00um			SMF	73.73 314	eP	08 34.10 0.1	HMC	19.78 35	eP	05 39.80	0.7	
E	10s	1.30um				0.6s	8.10nm	4.9mb	NJ2	20.61 66	eP	05 48.00	0.4	
		sS	07 46.00		SSF	73.80 315	eP	08 34.70 0.3		N	13s	0.50um		
MAIO	33.42 298	iPd	03 41.00	1.7	AVF	73.99 314	eP	08 35.70 0.2	TIA	20.62 54	eP	05 48.50	0.7	
		eS	09 04.00		MAF	74.70 314	eP	08 40.50 0.9	GBA	21.50 240	Pc	05 56.80	0.0	
MAT	37.12 62 (P)		04 11.00	0.2		0.7s	6.05nm	4.7mb		0.8s	3.10nm		3.8mb	
Z	20s	1.77um		4.9Msz	EKA	74.72 324	Pd	08 40.80 1.3	BJI	21.92 44	eP	06 02.00	1.1	
		eS	10 02.00			0.9s	5.50nm	4.6mb	POO	22.13 256	eP	06 14.40	11.2X	
TAB	44.04 299	eP	05 09.00	1.0	TCF	74.91 314	eP	08 41.70 0.8	SSE	22.39 70	eP	06 08.50	2.9X	
HRI	52.94 294	eP	06 21.00	4.0X		0.6s	6.30nm	4.8mb	MAIO	33.40 298	eP	07 50.00	3.6X	
DSI	53.51 292	e(P)	06 25.00	3.9X	LSF	75.36 314	eP	08 43.90 0.5	WB5	58.17 137	eP	11 02.00	0.1	
MBH	54.26 289	e(P)	06 29.00	2.4		0.6s	3.60nm	4.5mb	WRA	58.20 137	Pc	11 02.30	0.2	
BBTK	54.55 302	eP	06 31.00	2.2	CAF	75.49 313	eP	08 45.30 1.1		0.6s	1.00nm		4.1mb	
WB5	58.15 137	eP	06 54.20	-0.3	LDF	75.54 317	eP	08 45.40 1.1		S.D. = 1.1 on 23 of 30 obs.				
WRA	58.18 137	Pd	06 54.50	-0.2	RJF	75.72 313	eP	08 46.80 1.3		MAR 08, 1990 20h 23m 00.05± 0.81s				
	0.6s	7.90nm		5.0mb		0.9s	13.10nm	4.9mb		47.642 N ± 9.6km 19.697 E ± 6.8km				
VRI	58.43 310	ePd	06 56.50	0.2	GRR	76.07 317	eP	08 47.70 0.4		DEPTH = 10.0km (geophysicist)				
MLR	59.01 309	eP	07 00.00	-0.5		0.7s	8.80nm	4.9mb		HUNGARY (549)				
ASPA	60.76 140	iPd	07 11.60	-0.9	MBC	76.13 8	eP	08 47.00 -0.2		ML 2.5 (BRA), 2.4 (KBA).				
	0.7s	18.00nm		5.3mb		0.9s	5.00nm	4.5mb	PSZ	0.31 26	iPn	23 07.20	0.7	
VAY	62.03 305	eP	07 18.70	-2.3	LPO	76.16 313	eP	08 49.00 1.0	BUD	0.48 251	ePn	23 11.00	1.2	
SPC	62.43 314	eP	07 23.00	-0.7		0.6s	4.50nm	4.6mb	SRO	0.95 281	iPn	23 18.30	0.2	
SKO	62.75 306	eP	07 24.60	-1.1	LFF	76.36 313	eP	08 50.30 1.2		0.9s	0.18nm			
UPP	62.83 326	iP	07 27.00	1.1	INK	79.57 17	eP	09 04.00 -2.2		i		23 22.60		
ZST	64.64 313	eP	07 35.70	-2.3	BUL	80.06 242	eP	09 09.20 -0.7		i		23 28.50		
KSP	64.70 316	eP	07 28.50	-9.8X	TOL	81.67 310	eP	09 20.50 2.6		i(Sg)		23 33.80		
HFS	64.77 327	eP	07 37.70	-1.0	SLR	83.27 238	eP	09 29.00 2.5		i		23 42.90		
	0.5s	4.20nm		4.8mb	BLF	86.62 236	eP	09 43.00 -0.2		i		23 55.40		
Z	18s	1.24um		5.1Msz	BAO	145.49 279	ePKP	16 39.00 0.4	SPC	1.59 13	iPg	23 34.30	5.8X	
		LR	33 34.00			S.D. = 1.4 on 110 of 124 obs.				i		24 16.60		
SOP	65.09 313	eP	07 43.50	2.6		MAR 08, 1990 19h 28m 17.81± 0.94s			ZST	1.83 289	ePn	23 31.80	0.0	
NB2	65.85 328	P	07 44.60	-1.1		49.200 N ± 7.8km 6.841 E ± 8.3km				0.7s	0.02nm			
	0.9s	7.50nm		4.8mb		DEPTH = 10.0km (geophysicist)				i		23 49.50		
PRU	65.95 316	P	07 47.00	0.6		GERMANY (543)				i		24 09.60		
Z	20s	2.00um		5.3Msz		MD 2.5 (UCC).			CEI	1.87 88	eP	23 32.00	-0.3	
N	20s	2.30um				RUP	0.52 16	ePg	SOP	2.12 272	eP	23 31.00	-5.0X	
E	20s	1.10um				ABH	0.82 34	ePg	BMR	2.57 88	ePd	24 03.00	20.6X	
BRG	66.15 317	eP	07 48.60	0.9		KTD	0.82 81	ePg	PTJ	3.10 237	ePn	23 49.40	-0.6	
CLL	66.65 317	eP	08 03.00	12.2X		MEM	1.51 339	Pn		eSn		24 27.60		
KHC	66.74 315	P	07 52.50	0.9		FEL	1.54 149	ePg	ZAG	3.14 236	e(Pn)	23 50.70	0.3	
TDS	67.03 304	P	07 52.50	-1.0		DOU	1.71 302	Pn	KSP	3.90 326	eP	24 09.00	7.7X	
RBL	67.36 312	P	07 54.50	-1.0			S.D. = 0.8 on 6 of 6 obs.		PRU	4.14 306	eP	24 32.00	27.4X	
KBA	67.36 313	ePc	07 54.00	-1.7			MAR 08, 1990 20h 01m 08.68± 0.39s			eSg		24 56.00		
	0.6s	6.30nm		4.9mb			25.471 N ± 5.8km 96.547 E ± 4.5km		VOY	4.30 250	e(P)	24 14.40	7.4X	
		i	07 57.10				DEPTH = 33.0km (normal)		KHC	4.34 292	Pn	24 06.20	-1.4	
TRI	67.40 311	eP	07 49.60	-6.1X			4.1mb ( 3 obs.)			Pg		24 14.80		
MGR	67.49 305	P	07 57.00	0.6			BURMA (296)			Sg		25 04.60		
SGO	67.57 305	P	07 57.50	0.7			SHL	4.22 272	iP		i(Pn)	24 05.00	-2.9X	
MOX	67.65 317	eP	08 05.00	7.8X			KMI	5.62 92	ePn		e	24 25.80		
Z	18s	9.30um		6.1Msz							i(Sn)	24 42.60		
N	18s	1.40um							CMP	4.39 121	ePc	23 41.00	-27.3X	
		0.90um		5.0Msz					VRI	5.14 108	ePc	24 01.00	-17.9X	
FVI	67.85 312	P	07 57.00	-1.5						S.D. = 0.9 on 8 of 17 obs.				
GRF	68.12 316	eP	08 00.00	-0.2						* MAR 08, 1990 20h 24m 06.59± 1.63s				
	18s									16.581 N ± 9.9km 61.896 W ± 23.6km				
SDI	68.36 307	P	07 58.50	-3.4X						DEPTH = 33.0km (normal)				
ARV	68.51 309	P	08 03.50	0.7						LEEWARD ISLANDS (92)				
AZI	68.56 307	P	08 03.50	0.5						SEG	0.41 115	eP	24 17.82	1.9
CTI	68.74 312	P	08 03.50	-0.7							S		24 31.70	
RDP	69.14 307	P	08 09.50	2.8						BPA	0.46 5	eP	24 16.24	-0.5
PGD	69.27 310	P	08 06.50	-1.1							eS		24 32.91	
SAL	69.62 312	P	08 08.00	-1.4										
MDI	70.12 312	P	08 13.00	0.5										
PII	70.14 310	P	08 15.50	2.8										
BOB	70.58 311	P	08 16.50	1.0										



08d 20h

ANG 0.57 6 eP 24 18.78 0.6  
 PAG 0.59 159 eP 24 18.40 -0.1  
                   S 24 34.50  
 DOG 0.61 154 eP 24 18.60 -0.2  
 DEG 0.85 108 eP 24 20.38 -1.7  
                   S 24 36.60  
 S.D. = 1.5 on 6 of 6 obs.

? MAR 08, 1990 20h 41m 55.79±0.52s  
 5.221 N ±11.8km 127.879 E ±14.7km  
 DEPTH = 33.0km (normal)  
 4.8mb ( 8 obs.)  
 PHILIPPINE ISLANDS REGION (248)

WB5 25.75 166 eP 47 25.20 -0.1  
 WRA 25.80 166 Pc 47 26.00 0.2  
                   0.4s 7.40nm 4.6mb  
 QIS 28.09 156 iPc 47 47.30 0.6  
                   1.0s 67.00nm 5.3mb  
 CHTO 31.29 298 eP 48 16.30 1.0  
                   0.6s 1.40nm 4.0mb  
 FORR 35.87 180 eP 48 53.90 -0.7  
                   0.3s 15.00nm 5.4mb  
 BJI 36.23 345 eP 49 00.00 2.4X  
 GUN 45.81 304 P 50 18.00 1.0  
                   0.6s 9.00nm 4.9mb  
 PKI 46.07 304 P 50 19.80 0.7  
 KKN 46.26 304 P 50 19.20 -1.2  
 DZM 46.49 127 iPc 50 22.30 0.2  
 GKN 46.86 304 P 50 25.60 0.5  
 GBA 50.37 283 Pc 50 51.70 -0.5  
                   0.8s 7.30nm 4.7mb  
 INK 88.36 22 eP 54 46.00 0.7  
 MBC 90.26 13 eP 54 55.00 0.9  
 HFS 97.23 333 eP 55 23.50 -2.8  
                   0.4s 1.70nm 4.9mb  
 YKA 97.68 25 eP 55 27.70 -0.6  
                   0.6s 0.50nm 4.2mb  
 S.D. = 1.1 on 15 of 16 obs.

% MAR 08, 1990 21h 59m 24.89±0.74s  
 40.096 N ± 9.2km 15.820 E ± 7.5km  
 DEPTH = 10.0km (geophysicist)  
 SOUTHERN ITALY (390)

MGR 0.21 282 P 59 29.80 0.4  
                   eSg 59 34.00  
 MMN 0.24 147 P 59 29.20 -0.9  
 CSI 0.48 131 P 59 35.20 0.5  
 ORI 0.48 94 P 59 34.50 -0.2  
                   eSg 59 43.50  
 TDS 0.59 137 P 59 38.50 1.7  
                   eSg 59 48.00  
 SGO 0.61 320 P 59 36.80 -0.3  
                   eSg 59 44.50  
 ROI 0.78 132 P 59 39.50 -0.6  
 CZI 0.91 164 P 59 41.70 -0.6  
 S.D. = 1.0 on 8 of 8 obs.

& MAR 08, 1990 22h 11m 09.35s  
 48.273 N 121.757 W  
 DEPTH = 1.9km  
 3.2mb ( 1 obs.)  
 WASHINGTON ( 29)  
 <SEA>. CL 3.6 (SEA). Felt in the  
 Dorrington area.

JCW 0.14 235 Pd 11 12.11 0.0  
 RPW 0.24 43 Pd 11 14.32 0.2  
 CMW 0.28 302 Pd 11 14.83 -0.2  
 HTW 0.47 181 Pd 11 17.94 -0.8  
 BLH 0.47 203 Pd 11 18.42 -0.4  
 MBW 0.52 350 Pd 11 19.09 -0.7  
 OHW 0.52 276 Pd 11 19.08 -0.6  
 PGW 0.72 232 P 11 23.06 -0.7  
 SPW 0.79 205 Pd 11 24.87 -0.3  
 RMW 0.81 182 Pd 11 24.19 -1.4  
 MCW 0.82 300 Pd 11 24.50 -1.3  
 BLN 0.86 252 Pd 11 25.05 -1.5  
                   S 11 36.86  
 NLW 0.97 101 Pc 11 27.17 -1.5  
 GMW 1.00 224 P 11 27.08 -2.0  
 GSM 1.07 181 P 11 28.73 -1.6  
                   S 11 42.55  
 HDW 1.07 235 Pd 11 28.13 -2.2  
 ETW 1.17 124 Pd 11 30.31 -1.7  
 GHW 1.28 196 P 11 31.88 -1.9

STW 1.29 265 P 11 31.90 -2.0  
 TWV 1.28 152 Pd 11 32.70 -1.3  
 RVC 1.34 186 P 11 32.87 -2.0  
 WTV 1.34 115 Pd 11 33.86 -1.0  
 FMW 1.34 178 Pd 11 32.92 -2.1  
 TBM 1.35 144 Pd 11 33.85 -1.3  
 DHW2 1.36 101 Pc 11 34.27 -1.0  
 OSD 1.38 252 P 11 34.20 -1.5  
 SMW 1.43 229 P 11 34.14 -2.3  
 LON 1.52 181 iPd 11 36.00 -1.8  
 OBC 1.57 262 P 11 38.82 0.4  
 WPW 1.58 175 Pd 11 36.97 -1.6  
 EBG 1.58 149 P 11 37.93 -0.6  
 CPW 1.60 216 P 11 36.96 -1.8  
 LMW 1.65 193 Pd 11 38.09 -1.4  
 NAC 1.66 157 P 11 39.37 -0.3  
 SAW 1.68 109 P 11 39.45 -0.5  
 O8H 1.71 237 P 11 39.31 -1.0  
 GLK 1.71 177 Pd 11 39.48 -1.0  
 EPH 1.72 121 P 11 39.48 -1.1  
 APW 1.73 201 P 11 39.12 -1.5  
 OTR 1.74 265 P 11 41.61 0.8  
 VTG 1.78 137 P 11 41.59 0.3  
 KOSW 1.84 189 P 11 41.54 -0.7  
 CZM 1.91 196 P 11 42.16 -1.1  
 BVW 1.94 138 P 11 44.67 1.0  
 YAKW 1.94 154 P 11 43.29 -0.4  
 MXC 1.97 149 P 11 43.18 -0.9  
 ERK 2.01 192 P 11 43.80 -1.0  
 BMW 2.06 210 eP 11 44.20 -1.2  
 SHW 2.11 189 eP 11 45.50 -0.7  
 WAH2 2.12 135 P 11 47.61 1.3  
 CDFW 2.17 185 P 11 46.75 -0.3  
 DPW 2.42 98 eP 11 48.50 -2.1  
 NLO 2.47 208 P 11 51.29 -0.1  
 NEW 3.10 88 iPc 11 58.20 -2.0  
 YKA 14.80 13 eP 14 43.60 2.3  
                   0.9s 0.70nm 3.2mb  
 55 obs. associated

& MAR 09, 1990 00h 25m 39.65s  
 48.273 N 121.772 W  
 DEPTH = 3.6km  
 WASHINGTON ( 29)  
 <SEA>. CL 2.9 (SEA).

JCW 0.13 233 Pd 25 42.18 -0.2  
 RPW 0.25 44 Pd 25 44.34 -0.3  
 CMW 0.28 303 P 25 44.83 -0.4  
                   S 25 49.35  
 BLH 0.47 202 Pd 25 48.50 -0.6  
                   S 25 54.48  
 HTW 0.47 180 Pd 25 47.99 -1.1  
                   S 25 54.18  
 OHW 0.51 276 P 25 49.03 -0.8  
 MBW 0.52 351 Pc 25 49.19 -0.8  
 PGW 0.72 231 P 25 53.19 -0.7  
 SPW 0.79 204 P 25 55.02 -0.4  
 RMW 0.81 182 P 25 54.30 -1.6  
 MCW 0.81 300 P 25 55.03 -0.9  
 BLN 0.85 252 P 25 55.08 -1.4  
 NLW 0.98 101 P 25 57.27 -1.7  
 GMW 1.00 224 Pc 25 57.37 -1.8  
 HDW 1.06 235 P 25 58.41 -1.9  
 GSM 1.07 181 P 25 58.80 -1.7  
 ETW 1.18 124 P 26 00.61 -1.7  
 STW 1.28 265 P 26 02.15 -1.7  
 GHW 1.28 196 P 26 02.45 -1.5  
 TWV 1.29 151 P 26 02.99 -1.2  
 RVC 1.34 186 P 26 03.53 -1.5  
 FMW 1.34 177 P 26 02.69 -2.5  
 WTV 1.35 115 P 26 04.17 -1.0  
 TBM 1.36 144 P 26 04.12 -1.3  
 DHW2 1.37 101 P 26 04.27 -1.4  
 LMW 1.64 193 P 26 08.44 -1.1  
 GLK 1.71 176 P 26 09.79 -0.8  
 APW 1.73 200 P 26 09.41 -1.3  
 VTG 1.79 137 P 26 12.19 0.7  
 ERK 2.01 191 P 26 14.24 -0.6  
 SOSW 2.05 187 P 26 15.08 -0.4  
 31 obs. associated

MAR 09, 1990 00h 43m 12.88±0.51s  
 40.901 N ± 4.6km 24.026 E ± 4.7km  
 DEPTH = 10.0km (geophysicist)  
 AEGEAN SEA (365)  
 MD 3.1 (ATH). ML 2.4 (SKO).

PLG 0.69 220 iPgc 43 26.60 0.1  
 MMB 0.72 342 iPgc 43 26.00 -1.1  
 RZN 0.94 33 iPgc 43 31.00 0.0  
 RDO 1.17 77 iPbc 43 35.20 0.5  
                   eSb 43 52.00  
 VAY 1.18 291 iPg 43 35.00 0.2  
                   iSg 43 50.20  
 KKB 1.20 324 iPgc 43 35.00 -0.2  
 KDZ 1.29 54 ePg 43 36.00 -0.8  
 PLD 1.31 23 iPgc 43 39.00 2.0X  
 PGB 1.65 4 iP 43 42.00 -0.1  
 NEO 1.71 201 ePb 43 42.20 -0.7  
 VTS 1.80 340 iPc 43 45.00 0.7  
 KZN 1.82 252 ePn 43 45.00 0.5  
 SKO 2.22 300 ePn 43 55.00 4.7X  
                   eSn 44 23.00  
 PRK 2.39 133 ePg 43 59.30 6.7X  
 OHR 2.45 276 ePn 43 58.00 4.4X  
 MLR 4.80 16 eP 44 28.00 1.0  
 BZS 5.03 340 ePc 44 30.00 -0.1  
 S.D. = 0.7 on 13 of 17 obs.

% MAR 09, 1990 01h 09m 51.54±0.73s  
 37.083 N ± 7.3km 4.257 W ± 6.9km  
 DEPTH = 10.0km (geophysicist)  
 SPAIN (377)  
 mbLg 3.1 (MDD).

MAL 0.38 199 iPgc 09 59.30 0.1  
                   iSg 10 05.00  
 AFC 0.59 73 iPg 10 06.10 2.4  
                   eSg 10 16.00  
 EPRU 0.79 262 iPgc 10 07.60 0.7  
                   eSg 10 18.00  
 EHOR 1.08 313 iPg 10 13.20 1.4  
                   eSg 10 27.60  
 EBAN 1.14 19 iPg 10 13.00 0.1  
                   eSg 10 28.00  
 EJIF 1.16 237 iPgc 10 12.70 -0.5  
                   eSg 10 25.50  
 ENIJ 1.64 93 ePn 10 18.80 -1.7  
 EVAL 2.05 285 ePg 10 30.20 3.8X  
                   eSg 10 54.60  
 EVIA 2.08 41 ePn 10 27.00 0.0  
                   eSn 10 50.00  
 TOL 2.80 3 ePg 10 40.00 2.8X  
                   eSg 11 25.00  
 EPLA 3.30 335 ePn 10 43.20 -1.2  
 GUD 3.56 1 iPnd 10 46.80 -1.2  
 S.D. = 1.4 on 10 of 12 obs.

% MAR 09, 1990 01h 58m 18.70±0.68s  
 37.149 N ± 7.1km 4.499 W ± 5.9km  
 DEPTH = 10.0km (geophysicist)  
 SPAIN (377)  
 mbLg 2.9 (MDD).

MAL 0.43 171 ePg 58 26.30 -1.1  
                   iSg 58 32.50  
 EPRU 0.61 253 ePg 58 32.80 1.7  
                   eSg 58 42.80  
 AFC 0.77 82 ePg 58 34.10 0.3  
                   eSg 58 44.00  
 EHOR 0.90 319 ePg 58 35.60 -0.2  
                   eSg 58 46.60  
 EJIF 1.04 228 ePg 58 40.00 1.6X  
                   eSg 58 56.00  
 EBAN 1.16 29 iPg 58 39.80 -0.6  
                   eSg 58 54.00  
 ENIJ 1.83 95 ePn 58 51.20 0.7  
 EVAL 1.84 284 ePn 58 49.50 -1.1  
 EVIA 2.17 46 ePn 58 55.80 0.4  
                   eSn 59 19.40  
 S.D. = 1.1 on 8 of 9 obs.

& MAR 09, 1990 04h 26m 27.83s  
 47.662 N 124.237 W  
 DEPTH = 25.7km  
 NEAR COAST OF WASHINGTON ( 27)  
 <SEA>. CL 2.8 (SEA).  
 OOW 0.08 23 Pd 26 31.90 -0.7  
 OFK 0.30 344 Pc 26 34.32 -0.6  
 OBC 0.39 16 Pc 26 35.56 -0.8  
                   S 26 41.92  
 OSD 0.39 66 Pd 26 35.80 -0.8  
                   S 26 41.73



09d 04h

OBH 0.42 143 Pc 26 36.50 -0.3  
 OTR 0.43 350 Pc 26 36.46 -0.5  
 STW 0.62 38 Pc 26 38.96 -1.1  
 OSP 0.67 339 Pc 26 39.61 -1.2  
 SMW 0.70 119 Pc 26 40.36 -1.0  
 HDW 0.80 91 P 26 42.04 -1.1  
 ONR 0.85 158 Pc 26 42.81 -1.0  
 BLN 0.92 67 P 26 44.08 -0.9  
 GMW 0.99 96 P 26 44.59 -1.4  
 CPW 1.02 132 P 26 44.73 -1.7  
 PGW 1.12 81 P 26 47.80 0.0  
 BMW 1.37 149 P 26 49.83 -1.7  
 MCW 1.39 42 P 26 50.03 -1.6  
 APW 1.48 132 P 26 51.66 -1.4  
 CMW 1.61 61 P 26 54.61 -0.4  
 JCW 1.64 70 P 26 54.02 -1.3  
 LMW 1.66 126 P 26 54.56 -1.1  
 NLO 1.66 161 P 26 54.43 -1.3  
 RVC 1.70 114 P 26 54.94 -1.4  
 CZM 1.71 135 P 26 55.12 -1.2  
 RVW 1.83 145 P 26 56.78 -1.3  
 KOSW 1.84 130 P 26 57.45 -0.9  
 ERK 1.88 136 P 26 57.39 -1.5  
 FMW 1.89 112 P 26 57.50 -1.7  
 MBW 1.92 53 P 26 58.71 -0.9  
 RPW 1.99 66 P 26 59.37 -1.1  
 WPW 2.07 117 P 27 00.63 -1.1  
 KMOR 2.09 165 P 26 59.84 -2.1

32 obs. associated

MAR 09, 1990 04h 58m 10.84 ± 0.36s

44.120 N ± 4.8km 10.112 E ± 2.7km

DEPTH = 5.0km (geophysicist)

NORTHERN ITALY (545)

MD 2.9 (FIR). Felt at Fivizzano.

BDI 0.35 99 P 58 17.60 -0.4  
 MME 0.43 80 P 58 18.80 -0.7  
 PII 0.50 143 P 58 21.20 0.4  
 BOB 0.80 324 P 58 28.50 1.5  
 FIR 0.89 112 P 58 29.00 0.6  
 PGD 1.19 101 P 58 34.50 0.9  
 PCP 1.20 291 P 58 33.30 -0.4  
 SFI 1.27 98 P 58 49.30  
 CKI 1.35 284 P 58 36.90 0.6  
 FIN 1.37 274 P 58 36.58 -0.1  
 SAL 1.52 11 P 58 39.50 0.9  
 IMI 1.62 263 P 58 39.25 -0.9  
 ROB 1.62 277 P 58 40.78 0.6  
 MDI 1.68 350 P 58 42.20 1.2  
 VAI 1.99 332 P 58 46.50 1.1  
 STV 2.01 275 P 58 45.91 0.0  
 ORO 2.14 316 P 58 51.50 3.8X  
 ARV 2.14 106 P 58 47.50 -0.2  
 ORX 2.14 316 P 58 46.94 -0.9  
 PZZ 2.20 281 P 58 48.07 -0.6  
 CTI 2.21 29 P 58 48.20 -0.7  
 RSP 2.28 298 P 58 50.42 0.5  
 LSD 2.49 303 P 58 51.14 -1.9  
 TRI 3.04 57 P 59 00.00 -0.5  
 FVI 3.11 36 P 59 00.50 -0.9  
 RBL 3.37 45 P 59 04.50 -0.7  
 KBA 3.73 36 P 59 52.70 42.2X

0.7s 2.60nm

S.D. = 0.9 on 25 of 27 obs.

MAR 09, 1990 05h 12m 25.66 ± 0.71s

21.394 S ± 22.0km 174.390 E ± 10.9km

DEPTH = 29.3km (3 depth phases)

4.4mb (4 obs.)

VANUATU ISLANDS REGION (185)

SVA 5.03 50 iPc 13 40.00 -1.1  
 SGE 5.04 42 eP 13 42.00 0.6

DZM 7.42 263 iPc 14 51.00  
 ASPA 37.38 259 eP 14 13.00 -1.8  
 Z 22s 21.00nm 15 37.10  
 0.9s 0.49um 19 33.40 -4.5X  
 0.49um 4.3mszX  
 LR 19 41.80 28km  
 WB5 37.42 265 eP 34 06.30  
 WRA 37.43 265 P 19 42.20 4.0X  
 0.5s 2.30nm 19 38.00 -0.3  
 WHN 77.40 310 eP 24 29.00 9.2X  
 DL2 77.69 321 eP 24 21.50 0.3  
 CN2 78.87 326 Pc 24 27.60 0.0  
 BJI 81.69 319 eP 24 44.00 1.3  
 1.0s \*\*\*\*\*nm 7.9mb X  
 TIY 82.73 315 eP 24 49.00 0.8  
 CHG 83.94 293 eP 24 54.20 -0.5  
 CHTO 83.94 293 eP 24 54.70 0.0  
 1.0s 3.00nm 4.4mb  
 pP 25 03.30 27km  
 HHC 85.03 317 eP 25 01.20 1.3  
 SBB 85.13 50 eP 25 01.00 0.5  
 ISA 85.16 49 eP 25 01.00 0.4  
 CLC 85.85 49 eP 25 03.00 -1.0  
 BTO 85.88 317 eP 25 03.00 -1.1  
 TPC 86.12 51 eP 25 04.00 -1.4  
 GLA 86.52 53 eP 25 06.00 -1.3  
 LZH 87.78 310 P 25 13.00 -0.5  
 pP 25 23.50 33km  
 i 26 07.50  
 FBA 90.80 15 eP 25 25.90 -1.0  
 1.2s 1.80nm 4.3mb  
 MLR 144.72 320 ePKP 31 58.00 -3.4X  
 CLL 146.79 339 iPKPc 32 03.60 -0.9  
 0.9s 19.00nm  
 BRG 146.82 337 iPKPc 32 04.40 -0.1  
 1.0s 18.00nm  
 PRU 147.32 336 PKPc 32 05.40 0.0  
 1.0s 17.40nm  
 SRO 147.36 330 ePKP 32 15.30  
 ZST 147.64 331 ePKP 32 07.70 2.2X  
 KHC 148.38 336 PKP 32 08.70 0.1  
 1.2s 10.00nm  
 GRF 148.77 339 ePKP 32 09.50 1.8  
 e 32 19.00  
 VAY 149.01 316 ePKP 32 08.40 0.1  
 SKO 149.38 318 ePKPd 32 10.50 1.6  
 KBA 150.13 334 ePKPc 32 11.00 0.9  
 1.0s 8.90nm  
 LJU 150.42 331 ePKP 32 12.60 2.3X  
 VBY 150.48 329 e(PKP) 32 13.50 3.1X  
 CEY 150.69 331 e(PKP) 32 13.50 2.7X  
 VOY 150.71 332 ePKP 32 12.80 1.9X  
 CDF 151.13 342 ePKP 32 14.40 3.0X  
 0.7s 4.40nm  
 HAU 151.76 343 ePKP 32 15.70 3.4X  
 0.6s 4.50nm  
 BSF 151.79 342 ePKP 32 15.80 3.3X  
 GRR 152.80 353 ePKP 32 17.30 3.6X  
 S.D. = 1.0 on 28 of 41 obs.

MAR 09, 1990 05h 27m 44.40 ± 4.11s

22.547 S ± 38.4km 179.937 W ± 67.5km

DEPTH = 582.6 ± 21.0 km

4.8mb (6 obs.)

SOUTH OF FIJI ISLANDS (171)

SGE 5.33 337 eP 29 19.50 -0.1  
 DZM 12.62 270 iPc 30 35.00 5.6X  
 CAN 29.89 238 iPd 33 08.20 0.6  
 CTA 31.55 268 iPd 33 28.10 6.3X  
 0.6s 36.67nm 5.2mb  
 ASPA 42.33 259 iPd 34 50.40 0.5  
 0.7s 23.00nm 4.8mb  
 WB5 42.56 265 eP 34 51.80 0.1  
 WRA 42.57 265 Pc 34 51.90 0.1  
 0.7s 9.10nm 4.4mb  
 FORR 46.81 248 iPd 35 24.00 -0.3  
 0.4s 38.00nm 5.3mb  
 WARB 48.52 254 iPd 35 37.10 -0.2  
 0.3s 9.00nm 4.8mb  
 KNA 48.74 268 iPd 35 39.30 0.3  
 MBL 55.58 259 iPd 36 26.40 -1.6  
 MAT 70.82 325 eP 38 38.00 33.4X  
 CHTO 89.26 291 e(P) 39 40.90 0.5

0.7s 2.06nm 4.2mb

S.D. = 0.8 on 10 of 13 obs.

MAR 09, 1990 05h 36m 13.62 ± 1.42s

32.725 S ± 6.3km 71.603 W ± 12.0km

DEPTH = 10.0km (geophysicist)

NEAR COAST OF CENTRAL CHILE (135)

ROCH 0.56 116 iP 36 26.00 0.9  
 IS 36 37.00  
 LCCH 0.75 178 iPd 36 28.90 0.6  
 IS 36 41.90  
 JACH 0.85 87 iPc 36 29.50 -0.6  
 IS 36 43.50  
 SAN 1.07 133 eP 36 34.40 0.6  
 IS 36 52.20  
 TACH 1.08 149 iP 36 34.00 0.0  
 IS 36 51.60  
 LNV 1.24 173 ePd 36 35.00 -1.6  
 i 36 37.00  
 IS 36 53.50  
 FCH 1.26 119 iP 36 36.50 -0.7  
 IS 36 57.00  
 PCH 1.28 135 eP 36 37.50 0.1  
 IS 36 58.10  
 CHCH 1.44 147 iP 36 40.60 0.8  
 IS 37 02.90  
 i 37 04.50  
 RTLL 3.00 63 ePc 37 01.50 -0.7  
 CFA 3.06 70 eP 37 02.80 -0.2  
 S 37 46.00  
 RTRS 3.14 36 ePd 37 04.70 0.7  
 S.D. = 0.9 on 12 of 12 obs.

MAR 09, 1990 07h 08m 00.82 ± 0.60s

40.390 N ± 6.2km 22.050 E ± 5.1km

DEPTH = 10.0km (geophysicist)

GREECE (364)

MD 3.3 (ATH). ML 2.5 (THE).

KZN 0.23 249 iPg 08 04.50 -1.3  
 LIT 0.44 130 iPg 08 08.00 -1.9  
 eSg 08 14.50  
 FNA 0.65 308 iPg 08 13.40 -0.4  
 eSg 08 24.60  
 THE 0.74 71 ePg 08 15.60 0.3  
 eSg 08 25.80  
 KNT 1.00 40 ePg 08 20.10 0.3  
 eSg 08 34.60  
 SOH 1.08 66 ePg 08 22.00 0.8  
 eSg 08 35.50  
 PAIG 1.33 110 ePb 08 25.00 -0.4  
 SRS 1.38 58 ePb 08 25.30 -0.8  
 eSb 08 45.90  
 AGG 1.38 171 ePb 08 25.90 -0.3  
 eSb 08 44.50  
 NEO 1.41 140 ePb 08 28.00 1.5  
 EVR 1.48 187 ePb 08 28.60 1.0  
 eSb 08 49.00  
 IGT 1.57 238 ePb 08 30.10 1.3  
 S.D. = 1.1 on 12 of 12 obs.

MAR 09, 1990 07h 09m 09.22 ± 0.79s

40.463 N ± 7.2km 23.611 E ± 10.8km

DEPTH = 10.0km (geophysicist)

GREECE (364)

ML 1.8 (THE).

OUR 0.31 114 ePg 09 15.50 -0.2  
 eSg 09 19.90  
 SOH 0.41 331 ePg 09 17.00 -0.6  
 eSg 09 21.90  
 PAIG 0.54 174 ePg 09 20.20 0.1  
 eSg 09 27.00  
 SRS 0.65 359 ePg 09 22.70 0.4  
 eSg 09 30.40  
 KNT 0.88 322 ePg 09 26.40 0.2  
 eSg 09 37.90  
 S.D. = 0.6 on 5 of 5 obs.

MAR 09, 1990 07h 31m 59.76 ± 0.79s

36.796 N ± 8.8km 26.687 E ± 6.2km

DEPTH = 10.0km (geophysicist)

DODECANESE ISLANDS (369)

MD 3.5 (ATH).

ARG 1.30 116 iPbd 32 23.60 -0.1



09d 07h

KAP 1.30 162 eSb 32 42.50  
 ePb 32 24.00 0.1  
 eSb 32 44.50  
 CIN 1.38 54 iPc 32 25.00 0.1  
 NPS 1.76 210 ePb 32 30.70 0.2  
 eSb 32 54.50  
 VAM 2.45 236 ePn 32 40.00 -0.3  
 eSn 33 12.00  
 VLI 3.01 270 ePb 32 48.50 0.1  
 ITM 3.83 277 ePn 32 56.70 -3.4X  
 S.D. = 0.3 on 6 of 7 obs.

MAR 09, 1990 07h 33m 09.47 ± 0.52s  
 16.081 N ± 4.3km 61.533 W ± 5.5km  
 DEPTH = 10.0km (geophysicist)  
 LEEWARD ISLANDS (92)  
 ML 2.3 (FDF).

DOG 0.09 239 iPc 33 12.08 -0.1  
 PAG 0.15 250 ePd 33 13.55 0.6  
 S 33 15.80  
 SEG 0.32 5 iPd 33 16.97 0.8  
 S 33 21.50  
 SFG 0.37 62 eP 33 17.70 0.7  
 DEG 0.51 63 eP 33 19.20 -0.6  
 S 33 26.70  
 BBL 0.56 174 eP 33 20.61 -0.2  
 S 33 29.10  
 MDN 0.77 170 eP 33 24.43 -0.1  
 eS 33 37.65  
 BPA 1.01 342 eP 33 28.07 -0.5  
 eS 33 41.34  
 ANG 1.11 345 eP 33 29.57 -0.6  
 eS 33 44.04  
 S.D. = 0.7 on 9 of 9 obs.

\* MAR 09, 1990 08h 11m 01.48 ± 1.03s  
 1.683 S ± 10.8km 78.390 W ± 14.8km  
 DEPTH = 154.8 ± 7.6 km  
 3.9mb (2 obs.)  
 ECUADOR (107)

TUNG 0.27 348 eP 11 18.50 -6.0X  
 VC1 1.04 359 iP+ 11 27.00 -0.9  
 QUR 1.51 355 iPd 11 32.80 0.5  
 S 12 05.50  
 GGP 1.51 352 iP+ 11 32.00 -0.5  
 CAYA 1.80 13 P 11 36.50 1.0  
 COTA 2.01 2 P 11 38.50 0.6  
 PURC 4.47 27 eP 12 12.67 3.5X  
 SILC 4.80 25 eP 12 15.69 2.1  
 ANCC 5.38 16 eP 12 19.98 -1.0  
 DIAC 5.41 24 eP 12 21.93 0.5  
 HOQC 5.41 19 eP 12 21.22 -0.3  
 CLMC 5.82 18 eP 12 25.90 -1.0  
 HOBC 6.41 21 eP 12 33.63 -1.2  
 ZOBO 17.67 146 eP 15 00.10 -0.1  
 LPB 17.90 146 ePd 15 10.00 7.4X  
 CCH 19.71 143 (P) 15 43.00 21.5X  
 ALO 44.93 327 ePd 19 03.00 0.2  
 0.9s 7.98nm 4.3mb  
 PNT 61.97 331 eP 21 08.00 0.9  
 YKA 69.60 343 eP 21 53.70 -1.7  
 0.5s 0.40nm 3.5mb  
 KIC 73.95 83 (P) 22 22.00 -0.1  
 MBC 81.24 351 eP 23 02.00 1.1  
 S.D. = 1.1 on 17 of 21 obs.

\* MAR 09, 1990 08h 13m 20.81 ± 2.06s  
 32.378 N ± 13.2km 140.831 E ± 12.1km  
 DEPTH = 75.3 ± 16.0 km  
 4.6mb (8 obs.)  
 SOUTH OF HONSHU, JAPAN (211)

KAKJ 3.86 352 P 14 17.50 -1.4  
 IIDJ 3.93 323 P 14 20.70 0.6  
 CHJJ 3.96 338 P 14 19.90 -0.6  
 S 15 02.30  
 MAT 4.68 333 iPc 14 29.40 -1.2  
 eS 15 23.00  
 WKYJ 4.76 294 P 14 31.70 0.1  
 MTMJ 4.88 330 P 14 34.00 0.5  
 NIJJ 5.08 343 eP 14 35.20 -0.9  
 TSJ 5.11 309 P 14 36.50 -0.1  
 TKSJ 5.91 288 P 14 47.80 0.2  
 YONJ 6.74 297 P 15 00.10 0.9  
 SHNJ 8.33 285 P 15 21.40 0.4

KUMJ 8.46 274 P 15 23.90 1.1  
 CN2 16.60 318 eP 17 11.50 1.4  
 SNY 16.66 309 eP 17 11.00 0.2  
 XAN 26.70 282 P 18 51.00 -3.7X  
 CHTO 39.87 261 eP 20 47.60 -1.2  
 0.5s 2.17nm 4.3mb  
 WRA 52.39 188 Pc 22 27.00 -0.6  
 0.5s 3.60nm 4.7mb  
 FBA 53.32 30 iP 22 35.10 1.2  
 0.5s 2.70nm 4.5mb  
 GBA 60.46 268 Pc 23 23.10 -2.1  
 0.4s 4.10nm 4.9mb  
 MBC 61.12 16 eP 23 28.50 -0.4  
 0.6s 3.00nm 4.6mb  
 DAG 70.37 355 iPd 24 27.20 -0.7  
 0.6s 6.67nm 4.7mb  
 LRM 77.83 43 eP 25 13.00 1.2  
 FFC 77.89 32 iPc 25 11.90 0.3  
 0.7s 9.00nm 4.8mb  
 KVN 78.00 51 iP 25 14.20 1.4  
 NB2 78.29 337 P 25 13.40 -0.4  
 0.8s 3.20nm 4.3mb  
 S.D. = 1.0 on 24 of 25 obs.

\* MAR 09, 1990 09h 47m 58.07 ± 1.00s  
 24.717 S ± 7.6km 179.571 W ± 15.2km  
 DEPTH = 511.2 ± 12.1 km  
 4.7mb (7 obs.)  
 SOUTH OF FIJI ISLANDS (171)

SVA 6.82 344 ePc 49 43.20 -0.6  
 DZM 13.11 279 iPc 50 49.90 0.7  
 IS 53 17.60  
 PGZ 16.23 191 eP 51 20.80 0.4  
 CAW 16.95 194 eP 51 27.50 0.1  
 WDW 17.12 194 eP 51 28.80 -0.2  
 MRW 17.15 195 eP 51 29.80 0.5  
 TCW 17.23 196 eP 51 30.00 -0.2  
 KHZ 18.55 196 P 51 43.00 0.1  
 CTA 31.88 271 iPc 53 43.00 0.8  
 0.6s 46.67nm 5.2mb  
 ASPA 42.30 261 iPc 55 08.20 0.4  
 0.4s 14.00nm 4.8mb  
 IS 00 50.50  
 WRA 42.75 267 Pd 55 10.50 -0.9  
 0.5s 15.50nm 4.8mb  
 FORR 46.36 250 eP 55 38.60 -0.7  
 0.4s 37.00nm 5.3mb  
 WARB 48.30 256 iPd 55 53.60 -0.5  
 0.3s 5.00nm 4.4mb  
 MBL 55.53 261 eP 56 45.30 -1.3  
 MAT 72.79 325 eP 58 37.00 1.5  
 0.9s 11.76nm 4.4mb  
 CHTO 90.33 290 e(P) 00 06.00 0.7  
 0.9s 5.97nm 4.5mb  
 BAO 118.04 125 ePd 02 23.50 13.8X  
 NB2 142.95 351 PKP 06 33.20 -0.8  
 0.8s 3.80nm  
 S.D. = 0.8 on 17 of 18 obs.

\* MAR 09, 1990 10h 10m 09.87 ± 1.08s  
 44.449 N ± 11.4km 7.274 E ± 9.3km  
 DEPTH = 10.0km (geophysicist)  
 NORTHERN ITALY (545)  
 ML 1.7 (GEN).

PZZ 0.14 294 P 10 13.23 0.0  
 S 10 15.48  
 STV 0.21 170 P 10 14.56 0.1  
 S 10 17.43  
 ENR 0.25 155 P 10 15.07 -0.1  
 S 10 18.56  
 ROB 0.45 110 P 10 19.18 0.0  
 S 10 25.94  
 IMI 0.70 140 P 10 23.69 0.0  
 S.D. = 0.1 on 5 of 5 obs.

MAR 09, 1990 10h 59m 32.03 ± 0.74s  
 36.091 N ± 10.9km 30.214 E ± 7.3km  
 DEPTH = 33.0km (normal)  
 TURKEY (366)  
 MD 3.7 (ATH).

ARG 1.69 275 ePn 00 00.00 0.3  
 KAP 2.53 259 ePn 00 13.50 1.8  
 CSS 2.78 113 eP 00 17.50 2.3  
 SMG 3.15 302 ePn 00 19.50 -0.9

NPS 3.84 259 ePn 00 30.50 0.3  
 BBTK 4.25 27 eP 00 36.00 -0.2  
 eS 01 26.00  
 VLI 5.90 278 ePn 00 58.50 -1.0  
 DSI 6.23 135 eP 01 04.00 0.0  
 eS 02 14.00  
 PRNI 6.99 144 eP 01 14.00 -0.8  
 MBH 7.42 147 e(P) 01 19.00 -1.8  
 S.D. = 1.4 on 10 of 10 obs.

% MAR 09, 1990 11h 21m 00.57 ± 1.80s  
 48.261 N ± 6.0km 8.162 E ± 14.3km  
 DEPTH = 10.0km (geophysicist)  
 GERMANY (543)  
 MD 1.4 (STR).

FEL 0.40 195 Pg 21 08.34 -0.4  
 WLS 0.56 286 Pg 21 12.06 0.1  
 CDF 0.61 285 Pg 21 12.07 -0.9  
 ECH 0.67 266 Pg 21 14.17 0.2  
 GWF 0.80 334 Pg 21 16.41 0.3  
 Sg 21 28.32  
 MOF 0.80 240 Pg 21 16.46 0.2  
 BSF 1.01 245 Pg 21 19.84 0.0  
 Sg 21 33.44  
 LOMF 1.28 225 Pg 21 24.91 0.5  
 S.D. = 0.5 on 8 of 8 obs.

MAR 09, 1990 11h 34m 00.06 ± 1.21s  
 32.976 S ± 8.6km 70.231 W ± 9.4km  
 DEPTH = 98.2 ± 17.2 km  
 CHILE-ARGENTINA BORDER REGION (127)

FCH 0.35 188 iPd 34 15.50 0.2  
 IS 34 28.90  
 JACH 0.42 314 iPd 34 15.00 -0.5  
 IS 34 28.00  
 ROCH 0.66 270 iPc 34 17.60 0.2  
 IS 34 31.50  
 PCH 0.69 200 iPd 34 18.00 0.5  
 IS 34 32.00  
 TACH 0.90 221 iPc 34 19.50 0.0  
 IS 34 34.90  
 CHCH 1.02 200 iP 34 21.40 0.5  
 IS 34 37.70  
 LCCH 1.23 246 iPd 34 23.00 -0.2  
 IS 34 40.60  
 LNV 1.39 225 iPd 34 24.50 -0.7  
 IS 34 43.50  
 RTCV 1.81 53 e(P) 34 30.50 -0.2  
 eS 34 55.20  
 CFA 2.17 52 iPd 34 35.10 -0.3  
 eS 35 01.50  
 RTLL 2.22 43 iPd 34 35.60 -0.4  
 eS 35 03.00  
 RTRS 2.87 13 iPd 34 45.80 1.0  
 S.D. = 0.6 on 12 of 12 obs.

\* MAR 09, 1990 12h 34m 03.36s  
 60.307 N 152.286 W  
 DEPTH = 84.9km  
 5.0mb (47 obs.)  
 SOUTHERN ALASKA (2)  
 <AGS-P>. Felt (IV) at Anchorage,  
 Fort Richardson, Homer, Kosilof,  
 Kenai, Ninilchik, Palmer,  
 Seward, Soldotna, Sterling and  
 Wasilla. Felt (III) at Anchor  
 Point, Chugiak, Iliamna, Kodiak,  
 Moose Pass, Willow and Elmendorf  
 Air Force Base.  
 CENTROID, MOMENT TENSOR (HRV)  
 Data Used: GDSN  
 L.P.B.: 13S, 27C  
 Centroid Location:  
 Origin Time 12:34: 4.6 0.9  
 Lat 60.54N 0.08 Lon 152.34W 0.17  
 Dep 110.2 3.9 Half-duration 1.8  
 Moment Tensor; Scale 10\*\*16 Nm  
 Mrr= 4.80 0.48 Mtt=-9.56 0.83  
 Mff= 4.76 0.71 Mrt=-1.90 0.58  
 Mrf= 5.69 0.49 Mtf= 1.34 0.78  
 Principal Axes:  
 T Vol= 10.47 Plg=45 Azm=269  
 N -0.34 43 109  
 P -10.14 11 9  
 Best Double Couple: Mo=1.0\*10\*\*17



TSRJ	51.02	275	eP	43	11.50	94kmX
SNY	52.11	290	iPc	42	53.40	-4.8
	Z	20s		43	02.10	-4.3
	N	20s	0.50um			4.5Msz
			0.50um			
SOD	52.62	1	eS	50	14.00	
BJI	56.94	294	iP	43	04.70	-5.2
	1.5s		eP	43	36.00	-5.6
			0.10nm			2.7mb X
			eS	51	20.00	
SUF	57.29	1	eP	43	38.50	-5.2
	0.5s		7.20nm			5.0mb
NB2	58.31	9	P	43	45.00	-6.0
	0.7s		7.20nm			4.9mb
HHC	58.36	298	P	43	46.50	-5.2
	1.4s		200.00nm			6.0mb X
BTO	59.24	299	P	43	53.00	-4.8
	N	12s	0.40um			
	E	12s	0.30um			
			eS	51	50.00	
NUR	59.49	2	iP	43	53.70	-5.4
	1.0s		26.00nm			5.3mb
TIA	59.61	290	Pd	43	54.80	-5.4
TIY	60.53	295	eP	44	01.40	-5.2
	N	15s	0.60um			
			S	52	10.00	
SSE	61.86	284	P	44	10.50	-5.0
			S	52	26.00	
NJ2	62.20	286	iPd	44	12.80	-4.9
	Z	20s	0.30um			4.5Msz
GTA	64.54	305	iPc	44	28.30	-4.9
	1.2s		100.00nm			5.6mb
XAN	65.16	295	P	44	31.50	-5.7
WMQ	65.29	316	iPc	44	33.50	-4.4
			S	53	09.50	
WHN	65.59	289	Pc	44	33.00	-6.8
	1.5s		100.00nm			5.5mb
LZH	65.68	300	iPc	44	35.00	-5.6
	1.4s		0.21nm			2.9mb X
			pP	44	58.00	90kmX
			sP	45	13.00	
MEM	68.06	15	eP	45	15.30	20.2
CLL	68.11	10	eP	44	50.00	-5.5
			e	45	19.00	116kmX
			i	52	53.00	
DOU	68.38	16	P	44	52.90	-4.2
BRG	68.62	9	i(P)	44	54.60	-4.0
	1.5s		30.00nm			5.0mb
			i	45	21.40	106kmX
MOX	68.64	11	iPc	44	55.00	-3.8
	0.8s		29.00nm			5.2mb
KSP	68.82	8	eP	44	55.50	-4.4
	1.1s		39.00nm			5.2mb
			e	45	22.50	107kmX
FLN	68.91	20	eP	44	55.40	-5.0
	0.4s		4.00nm			4.7mb
LDF	69.13	19	eP	44	56.60	-5.2
	0.4s		4.00nm			4.7mb
GRR	69.21	20	eP	44	57.30	-4.9
	0.4s		4.60nm			4.7mb
LPF	69.52	20	eP	44	59.60	-4.5
	0.6s		10.80nm			4.9mb
PRU	69.55	9	P	45	00.00	-4.3
			e	45	28.50	114kmX
GRF	69.55	11	eP	45	00.00	-4.3
			e	45	27.00	107kmX
KRA	69.81	5	eP	44	58.60	-7.3
CD2	70.12	298	P	45	03.00	-5.1
	1.0s		100.00nm			5.7mb
KHC	70.32	10	iPd	45	05.70	-3.4
	1.0s		7.00nm			4.5mb
			e	45	17.00	37kmX
CDF	70.37	14	eP	45	04.90	-4.6
HAU	70.66	15	eP	45	06.30	-4.8
	0.5s		5.10nm			4.7mb
BSF	70.88	15	eP	45	07.70	-4.9
GRC	70.90	17	P	45	07.84	-4.7
LOR	71.04	17	eP	45	08.70	-4.7</



BGF	71.58	18 eP	45 37.20	102kmX	1.0s	45.00nm	5.9mb	GTA	45.57	315 eP	23 34.00	-0.1		
	0.5s	8.75nm	45 11.70	-5.0	96.33	312 Pd	47 17.70	-5.8	WMO	55.64	316 P	24 50.20	-0.2	
SMF	71.64	17 eP	45 11.90	-5.2	0.6s	2.30nm	4.9mb	HYB	60.19	284 ePc	25 22.00	-0.6		
	0.5s	5.10nm	45 11.90	-5.2	145.44	359 iPKPc	53 28.00	-4.6	KSH	63.23	308 eP	25 44.50	1.7	
LSF	71.68	19 eP	45 12.40	-4.8	0.9s	42.02nm		MAIO	76.18	305 iPc	27 02.70	0.8		
TCF	71.75	18 eP	45 12.70	-5.0	KSR	145.57	1 iPKPc	53 28.20	-4.7	MBC	81.26	14 eP	27 29.00	0.4
	0.5s	4.00nm	45 12.70	-5.0			54 00.90			1.0s	6.00nm	4.5mb		
MAF	71.87	18 eP	45 13.40	-5.0	BFS	146.60	2 iPKPc	53 30.50	-4.0	YKA	86.57	27 eP	27 54.20	-1.5
	0.3s	1.30nm	45 13.40	-5.0		1.0s	160.00nm			0.9s	7.00nm	4.8mb		
SRO	71.97	7 e(P)	45 17.10	-1.8			53 56.00		KEV	87.18	341 eP	28 02.00	3.5X	
		e	45 43.00	101kmX	PRY	146.63	0 iPKPd	53 31.20	-3.3	PNT	87.62	40 eP	28 01.00	-0.1
SOP	71.99	8 eP	45 16.90	-2.1		0.8s	9.38nm		WDC	87.71	49 eP	28 02.00	0.3	
AGO	72.12	18 P	45 14.96	-4.9	SWZ	146.84	4 iPKPc	53 29.60	-5.3	LBFM	88.01	48 P	28 03.90	0.5
PLDF	72.27	17 P	45 16.66	-4.2		0.3s	64.94nm		SOD	88.36	339 eP	28 03.00	-1.2	
KBA	72.33	10 iPd	45 17.40	-4.0	SEK	148.02	0 iPKPc	53 35.60	-1.1	MIN	88.46	49 eP	28 04.90	-0.6
	1.1s	60.50nm	45 17.40	-4.0		0.7s	20.55nm		ORV	88.73	50 eP	28 06.40	-0.2	
		i	45 46.30	114kmX	SPA	150.14	180 iPKPc	53 40.60	1.8	ARN	89.23	52 P	28 09.60	0.6
PYM	72.39	18 P	45 16.90	-4.7		1.0s	70.00nm		PRS	89.60	53 eP	28 12.50	1.8	
GYA	72.62	293 P	45 18.60	-4.6			54 04.10		CMB	89.94	51 eP	28 12.50	0.1	
FVI	72.76	11 P	45 16.50	-7.1		238 obs. associated			SUF	90.64	335 eP	28 13.10	-1.9	
LFF	72.82	20 eP	45 19.60	-4.4						0.6s	11.20nm	5.4mb		
CAF	73.05	19 eP	45 20.70	-4.7					KVN	91.40	50 P	28 19.80	0.5	
	0.5s	2.90nm	45 20.70	-4.7					NUR	92.30	334 eP	28 32.90	10.3X	
VAI	73.06	14 P	45 21.70	-3.6					TNP	92.34	51 P	28 23.80	0.2	
LPO	73.14	19 eP	45 21.20	-4.7						0.7s	2.31nm	4.7mb		
	0.5s	5.85nm	45 21.20	-4.7					LRM	93.30	42 eP	28 28.10	0.2	
LPL	73.15	15 eP	45 22.50	-3.7					GLA	95.67	55 P	28 39.00	0.2	
LPG	73.17	15 eP	45 22.80	-3.6					AYN	97.00	301 iP+	28 47.73	2.9X	
CTI	73.20	12 P	45 18.00	-8.3					LPB	151.69	103 PKP	35 10.00	8.0X	
BNI	73.60	15 P	45 26.00	-2.7					ZOBO	151.70	103 iPKP	35 09.70	7.4X	
VRI	74.18	1 ePc	45 44.00	12.2						1.0s	17.50nm			
BOB	74.22	13 P	45 29.00	-3.2						S.D. = 0.9 on 43 of 48 obs.				
MLR	74.55	1 eP	45 32.00	-2.2										
		e	18 10.00						%	MAR 09, 1990 13h 59m 14.50±1.05s				
EPF	74.61	20 eP	45 29.40	-5.0						39.841 N ±14.1km 106.287 E ±9.7km				
	0.6s	3.60nm	45 29.40	-5.0						DEPTH = 33.0km (normal)				
CMP	74.76	2 ePc	45 47.00	11.7						NORTHERN CHINA	(323)			
BDI	75.05	13 P	45 33.50	-3.5						ML 3.6 (BJI).				
PGD	75.35	12 P	45 35.50	-3.3					BTO	2.95	74 Pn	00 01.00	0.7	
KMI	75.55	295 eP	45 34.50	-5.8							Pg	00 04.00		
ARV	75.85	11 P	45 39.50	-2.0							Pg	00 40.60		
ASS	76.24	11 P	45 40.50	-3.2					HHC	4.16	74 ePn	00 17.00	-0.3	
TOL	76.81	25 eP	45 44.50	-2.4							Pg	00 24.20		
AZI	77.39	11 P	45 47.00	-3.0							Pg	01 17.00		
VTS	77.39	3 eP	45 46.00	-4.2							Pg	00 27.50		
SDI	77.71	11 P	45 46.50	-5.3					LZH	4.22	208 ePn	00 19.50	1.3	
DUI	77.81	10 P	45 50.00	-2.4							Pg	00 27.50		
SKO	77.95	5 eP	45 50.00	-3.1							Pg	01 22.00		
		i	46 19.00	113kmX							Pg	00 45.60		
RZN	78.33	2 iP	45 52.00	-3.4					GTA	5.02	267 Pn	00 29.00	-0.6	
MMB	78.41	3 ePd	45 53.00	-2.7							Pg	00 48.70		
VAY	78.64	4 eP	45 53.00	-3.1					TIY	5.25	112 Pgc	00 44.00	11.2X	
OHR	78.78	5 iP	45 54.00	-3.7					XAN	6.16	159 ePn	00 44.60	-1.1	
	1.5s	0.09nm	45 54.00	-3.7							Pg	01 02.50		
		i	46 23.80	117kmX							Sn	01 48.00		
		i	46 40.40							S.D. = 1.4 on 5 of 6 obs.				
SGO	78.98	10 P	45 55.50	-3.2										
AAPN	79.27	25 eP	46 01.00	0.5					*	MAR 09, 1990 14h 27m 30.47±1.03s				
MGR	79.41	9 P	45 57.00	-4.1						5.890 S ±8.9km 153.483 E ±9.4km				
ALOJ	79.47	25 iPd	45 59.50	-2.1						DEPTH = 67.8 ±10.2 km				
ATEJ	79.67	25 iPc	46 00.00	-2.7						4.8mb ( 5 obs.)				
APHE	79.71	25 iPc	46 00.00	-2.9						NEW IRELAND REGION	(190)			
MAL	79.77	26 iPc	46 01.00	-2.0										
		i	46 30.50	115kmX					RAB	2.14	322 e(P)	28 04.50	-0.1	
SHL	79.85	304 iP	45 58.50	-5.4							iS	28 43.00		
TDS	79.95	9 P	46 01.00	-3.0					PMG	7.18	240 eP	29 15.00	-0.1	
GUN	80.13	310 P	46 02.20	-3.4					HNR	7.31	119 eP	29 17.00	0.1	
MAIO	80.25	334 eP	46 02.00	-3.7					DZM	20.39	143 iPc	31 59.60	-4.8X	
		eS	56 08.00						WB5	23.21	231 eP	32 33.00	0.6	
KKN	80.47	311 P	46 03.80	-3.4					WRA	23.27	231 Pc	32 33.50	0.6	
GKN	80.52	311 P	46 03.90	-3.5						0.7s	7.70nm	4.2mb		
PKI	80.61	310 P	46 04.20	-3.9					ASPA	25.84	225 eP	32 56.10	-1.3	
DMN	80.69	311 P	46 05.10	-3.3						1.2s	13.00nm	4.3mb		
NKM	80.78	27 eP	46 24.00	15.6						Z	20s	0.22um	3.7msz	
AVE	82.37	29 eP	46 07.00	-9.7							LR	35 46.70		
		i	46 36.00	112kmX								22 12.00	-0.7	
IFR	82.69	27 iPc	46 16.00	-2.6								5.1mb		
		i	46 44.00	108kmX								4.1msz		
CHG	82.75	295 iPc	46 13.90	-5.0								4.2mszX		
	0.9s	12.40nm	46 13.90	-5.0										
CHTO	82.75	295 eP	46 13.40	-5.5										
	1.1s	16.49nm	46 13.40	-5.5										
TIO	84.67	30 iP	46 35.00	6.4										
		i	46 48.00	44kmX										
CTA	94.16	236 iPc	47 09.00	-4.3										
		i	47 09.00	-4.3										
		i	47 09.00	-4.3										
		i	47 09.00	-4.3										
		i	47 09.00	-4.3										
		i	47 09.00	-4.3										
		i	47 09.00	-4.3										
		i	47 09.00	-4.3										
		i	47 09.00	-4.3										
		i	47 09.00	-4.3										
		i	47 09.00	-4.3										
		i	47 09.00	-4.3										
		i	47 09.00	-4.3										
		i	47 09.00	-4.3										
		i	47 09.00	-4.3										
		i	47 09.00	-4.3										
		i	47 09.00	-4.3										
		i	47 09.00	-4.3										
		i	47 09.00	-4.3										
		i	47 09.00	-4.3										
		i	47 09.00	-4.3										
		i	47 09.00	-4.3										
		i	47 09.00	-4.3										
		i	47 09.00	-4.3										
		i	47 09.00	-4.3										
		i	47 09.00	-4.3										
		i	47 09.00	-4.3										
		i	47 09.00	-4.3										
		i	47 09.00	-4.3										
		i	47 09.00	-4.3										
		i	47 09.00	-4.3										
		i	47 09.00	-4.3										
		i	47 09.00	-4.3										
		i	47 09.00	-4.3										
		i	47 09.00	-4.3										
		i	47 09.00	-4.3										
		i	47 09.00	-4.3										
		i	47 09.00	-4.3										
		i	47 09.00	-4.3										
		i	47 09.00	-4.3										
		i	47 09.00	-4.3										
		i	47 09.00	-4.3										
		i	47 09.00	-4.3										
		i	47 09.00	-4.3										
		i	47 09.00	-4.3										
		i	47 09.00	-4.3										



MAR 09, 1990 15h 12m 33.97±0.45s  
39.213 N ± 4.0km 22.220 E ± 4.8km  
DEPTH = 10.0km (geophysicist)  
GREECE (364)  
MD 3.1 (ATH). ML 2.8 (THE).

AGG	0.21	156	ePg	12	38.00	-0.5
			eSg	12	41.80	
EVR	0.44	227	ePg	12	42.10	-0.8
			eSg	12	49.00	
NEO	0.78	83	ePg	12	49.50	0.2
			eSg	13	04.00	
LIT	0.91	13	ePg	12	51.00	-0.4
			eSg	13	06.00	
KZN	1.15	343	ePb	12	55.10	-0.4
PAIG	1.34	57	ePb	12	58.30	-0.3
			eSb	13	16.40	
PLG	1.50	39	ePb	13	00.00	-0.9
IGT	1.50	283	ePb	13	01.30	0.4
VLS	1.64	231	ePg	13	06.70	3.7X
FNA	1.70	338	ePb	13	04.40	0.6
			eSb	13	26.20	
OUR	1.76	50	ePb	13	04.60	-0.1
			eSb	13	30.10	
SOH	1.83	28	ePb	13	06.60	0.9
			eSb	13	29.10	
KEK	1.94	286	ePg	13	12.00	4.7X
KNT	2.02	15	ePn	13	08.50	0.1
			eSn	13	35.00	
ITM	2.04	187	ePg	13	14.00	5.2X
VAY	2.12	7	ePn	13	12.30	2.4X
OHR	2.19	331	ePn	13	06.00	-4.9X
VLI	2.55	167	ePn	13	17.20	1.1
SKO	2.82	348	ePn	13	31.50	11.6X

S.D. = 0.7 on 13 of 19 obs.

MAR 09, 1990 16h 01m 33.03±1.02s  
4.269 S ± 8.1km 139.962 E ± 10.8km  
DEPTH = 71.8 ± 13.3 km  
4.6mb ( 2 obs.)

WEST IRIAN (201)

JAY	1.89	23	iPc	02	04.00	0.1
MNDI	4.13	117	eP	02	39.00	3.7X
PMG	8.78	126	eP	03	39.00	-0.6
MTN	12.20	225	iPc	04	25.80	0.0
			eS	06	35.00	
KNA	15.85	223	eP	05	13.60	0.3
			eS	08	00.00	
QIS	16.19	181	eP	05	16.00	-1.6
			i	05	21.40	
			eS	08	08.00	
WB5	16.45	199	eP	05	20.20	-0.6
WRA	16.52	199	Pd	05	21.80	0.1
			0.5s	11.50nm	4.3mb	
CTA	16.88	159	eP	05	28.00	1.8
ASPA	20.15	196	iPd	06	04.70	0.6
			1.0s	78.00nm	5.0mb	
			eS	09	41.10	
PCI	20.38	279	ePc	06	12.50	6.1X
WARB	25.25	209	eP	06	54.30	0.2
KIC	144.80	275	(PKP)	21	04.00	-0.4
TIC	145.07	275	(PKP)	21	04.80	-0.1

S.D. = 1.0 on 12 of 14 obs.

MAR 09, 1990 16h 53m 16.18±4.31s  
21.790 S ± 72.7km 178.153 W ± 36.3km  
DEPTH = 549.6 ± 35.2 km  
4.2mb ( 4 obs.)

FIJI ISLANDS REGION (181)

SGE	5.58	318	eP	54	52.50	0.7
MBU	5.63	328	iPd	55	42.30	50.1X
			eS	56	07.20	
DZM	14.30	266	iPc	56	19.00	0.6
WB5	44.28	263	eP	00	36.80	-2.2
PLM	80.11	48	eP	04	30.00	-0.5
RVR	80.12	47	eP	04	40.00	9.7X
SBB	80.21	47	eP	04	30.00	-0.8
ISA	80.34	45	eP	04	31.00	-0.5
CMB	80.50	43	eP	04	32.10	-0.2
WDC	80.75	40	eP	04	33.20	-0.2
CLC	81.01	46	eP	04	35.00	0.1
TPC	81.09	48	eP	04	35.00	-0.4
GSC	81.25	47	eP	04	36.00	-0.2
GLA	81.37	49	eP	04	38.00	1.2

KVN	82.55	43	eP	04	42.60	-0.2
PNT	87.80	34	iPc	05	06.60	-1.2
			0.8s	18.00nm	4.9mb	
ALQ	88.32	51	eP	05	10.00	-0.7
			1.0s	5.00nm	4.3mb	
HYT	88.64	19	P	05	13.00	1.4
CHTO	90.55	290	eP	05	18.90	-2.1
			0.7s	1.75nm	4.2mb	
SES	92.99	36	eP	05	30.00	-1.7
YKA	97.74	25	eP	05	49.20	-3.6X
			0.8s	0.90nm	4.2mb	
NB2	140.24	353	PKP	11	33.50	-10.1X
			1.2s	7.70nm		
EKA	146.30	5	PKP	11	53.00	-1.0
			0.9s	12.90nm		
DCN	147.73	10	ePKP	11	57.00	0.7
			0.6s	45.00nm		
			e	13	37.00	
DLE	147.91	9	ePKP	11	57.60	1.0
			e	13	39.00	
KSP	148.87	342	iPKPc	12	00.30	2.1
			e	14	04.50	
CLL	149.28	346	iPKPc	12	01.00	2.2
			1.0s	47.00nm		
			e	14	13.00	
BRG	149.46	345	iPKP	12	01.20	2.1
			0.9s	10.00nm		
PRU	150.13	343	PKPd	12	02.50	2.4X
			1.0s	14.50nm		
MOX	150.20	347	e(PKP)	12	04.00	3.8X
KHC	151.16	344	iPKP	12	06.50	4.7X
			1.0s	7.00nm		
GRF	151.18	347	ePKP	12	05.60	3.8X
			e	12	14.00	
KBA	153.11	342	ePKP	12	09.20	4.4X

S.D. = 1.3 on 24 of 33 obs.

MAR 09, 1990 17h 03m 21.09±0.19s  
63.739 N ± 3.0km 152.495 W ± 3.4km  
DEPTH = 15.0km (geophysicist)  
4.8mb ( 19 obs.)  
CENTRAL ALASKA ( 1)  
ML 5.3 (PMR). Felt (IV) at Lake  
Minchumina and (III) at Monley  
Hot Springs, McGrath and Nenana.

TTA	1.78	244	iPc	03	50.80	-0.8
FBA	2.36	58	iPc	03	59.50	-0.3
IMA	2.39	348	iPd	04	02.00	1.6
PWA	2.42	149	iPd	04	00.30	-0.3
PMR	2.66	143	iPd	04	04.00	0.0
PMS	2.85	150	iPd	04	06.70	-0.1
SVW	3.01	210	iPc	04	07.70	-1.4
TOA	3.32	117	eP	04	14.50	0.9
MID	5.23	143	eP	04	40.00	-0.5
DWY	5.78	81	P	04	46.40	-1.8
KDC	6.01	180	eP	04	50.10	-1.4
BRW	7.77	350	eP	05	15.10	-1.1
SDN	9.34	209	eP	05	39.80	1.8
SIT	10.79	120	iPc	05	55.60	-2.2
MBC	16.52	27	eP	07	13.00	-0.2
			0.7s	22.00nm	4.4mb	
YKA	17.02	77	eP	07	20.90	1.3
			0.7s	18.00nm	4.3mb	
ADK	17.38	238	e(P)	07	30.00	5.8X
EDM	22.62	99	P	08	23.40	1.3
PNT	22.83	114	iP	08	25.00	0.9
			0.7s	39.00nm	5.0mb	
LON	24.03	120	eP	08	37.50	1.6
NEW	24.68	112	eP	08	42.50	0.4
			0.9s	20.29nm	4.8mb	
SES	25.64	102	eP	08	52.00	0.7
			0.9s	41.00nm	5.1mb	
FFC	26.67	86	iPc	09	00.70	0.0
			0.6s	8.00nm	4.6mb	
LRM	28.56	110	eP	09	18.60	0.4
LBFM	28.64	127	eP	09	19.00	0.1
WDC	29.09	129	eP	09	23.40	0.7
IMW	30.74	110	eP	09	38.00	0.2
KVN	32.03	124	eP	09	49.00	0.0
CMB	32.11	128	e(P)	09	49.60	0.1
MHC	32.30	130	eP	09	51.70	0.5
ARN	32.33	130	eP	09	51.70	0.3
TNP	33.21	124	eP	09	59.30	0.0
			0.7s	10.37nm	4.9mb	
PRJ	33.71	130	eP	10	04.80	1.3
FRB	34.61	51	ePc	10	10.10	-0.7

ISA	34.91	127	eP	10	14.00	0.2
CLC	35.08	126	eP	10	15.00	-0.3
			e	10	27.00	
GSC	35.83	125	eP	10	22.00	0.4
			e	10	34.00	
SBB	36.01	127	eP	10	23.00	-0.2
GOL	36.55	108	eP	10	27.60	-0.3
			0.7s	10.92nm	4.8mb	
RVR	36.80	127	eP	10	29.00	-0.7
DAG	36.80	16	iPd	10	29.80	0.5
			0.7s	12.33nm	4.8mb	
TPC	37.18	125	eP	10	33.00	0.1
			e	10	45.00	
PLM	37.56	127	eP	10	36.00	-0.3
BAR	38.24	127	eP	10	42.00	0.2
GLA	38.57	125	eP	10	45.00	0.4
ANMO	40.15	113	eP	10	59.00	1.1
			0.8s	5.60nm	4.3mb	
ALO	40.15	113	eP	10	59.00	1.1
			1.0s	8.75nm	4.4mb	
SCH	41.45	61	eP	11	08.00	-0.1
WNY	46.59	75	eP	11	48.40	-1.3
KEV	46.78	0	eP	11	59.00	8.2X
CBM	46.99	69	eP	11	50.50	-2.3
CN2	48.53	287	Pc	12	05.00	0.1
MAT	48.88	271	eP	12	08.00	0.3
SOD	49.18	0	iP	12	10.20	0.7
SNY	50.93	287	eP	12	23.20	-0.1
PRM	51.31	90	eP	12	25.50	-0.8
JSC	51.64	89	eP	12	27.50	-1.2
			e	12	35.70	
SUF	53.85	1	eP	12	45.80	1.0
			0.6s	5.00nm	4.7mb	
NB2	54.93	10	P	12	52.00	-0.9
			0.7s	7.50nm	4.8mb	



09d 17h

TOL	73.72	25	eP	15 04.00	8.3X
SDI	74.34	11	P	14 50.50	-8.7X
LSA	74.36	306	eP	15 03.70	3.6X
SKO	74.52	5	eP	14 59.50	-0.7
VAY	75.21	4	eP	15 04.40	0.2
MGR	76.03	9	P	15 08.90	0.0
MAIO	77.11	334	eP	15 24.00	8.9X
GUN	77.84	310	P	15 21.20	1.6
KKN	78.16	310	P	15 21.80	0.6
GKN	78.18	311	P	15 21.80	0.6
CHG	81.20	295	eP	15 46.00	8.6X
HYB	90.03	312	eP	16 28.50	7.3X

S.D. = 0.9 on 93 of 167 obs.

MAR 09, 1990 17h 10m 27.76 ± 0.81s  
 63.688 N ± 7.8km 152.531 W ± 8.3km  
 DEPTH = 15.0km (geophysicist)  
 CENTRAL ALASKA (1)  
 ML 4.0 (PMR).

TTA	1.75	246	eP	10 57.70	0.0
PWA	2.38	148	eP	11 07.00	0.2
FBA	2.40	57	iP	11 05.90	-1.1
IMA	2.44	349	eP	11 09.10	1.4
PMR	2.63	142	eP	11 10.40	0.1
PMS	2.81	149	eP	11 13.70	0.7
SVW	2.96	210	eP	11 14.00	-1.1
TOA	3.32	116	eP	11 22.20	2.1
DWY	5.80	81	P	11 53.40	-1.8
KDC	5.96	180	e(P)	11 57.00	-0.4

S.D. = 1.3 on 10 of 10 obs.

MAR 09, 1990 19h 01m 44.74 ± 0.33s  
 40.569 N ± 2.8km 23.456 E ± 3.3km  
 DEPTH = 5.0km (geophysicist)  
 GREECE (364)  
 ML 2.8 (THE), 2.5 (SKO), MD 3.1 (ATH).

PLG	0.20	182	iPgc	01 49.00	0.2
SOH	0.26	343	ePg	01 50.10	0.0
			eSg	01 53.50	
THE	0.38	280	ePg	01 52.10	-0.3
			eSg	01 57.50	
OUR	0.46	120	ePg	01 53.50	-0.6
SRS	0.56	11	iPgc	01 55.20	-0.7
			eSg	02 03.70	
PAIG	0.66	165	iPgc	01 56.80	-1.2
			eSg	02 06.10	
KNT	0.73	325	iPgc	01 58.50	-0.8
			eSg	02 09.00	
LIT	0.87	238	ePg	02 02.10	0.1
			eSg	02 15.10	
VAY	1.01	319	iPg	02 03.80	-0.5
			iSg	02 17.30	
MMB	1.04	11	iPg	02 04.00	-0.9
NEO	1.27	188	ePb	02 08.50	-0.3
KZN	1.31	259	ePb	02 10.20	0.7
KKB	1.33	348	iPc	02 09.00	-0.7
RZN	1.47	40	iPc	02 12.00	-0.1
FNA	1.60	278	ePbd	02 14.40	0.6
			eSb	02 35.70	
RDO	1.68	69	ePb	02 16.00	1.1
			eSb	02 40.00	
AGG	1.77	210	ePb	02 17.10	0.8
			eSb	02 40.00	
PLD	1.80	31	iP	02 20.00	3.4X
KDZ	1.83	53	iPc	02 18.00	0.8
ALN	2.00	80	ePn	02 18.90	-0.6
VTS	2.03	355	iP	02 21.00	0.9
PGB	2.05	15	iPc	02 22.00	1.7
SKO	2.07	313	ePn	02 20.00	-0.5
EVR	2.08	218	ePg	02 25.00	4.2X
DIM	2.15	46	iP	02 26.00	4.2X

S.D. = 0.8 on 22 of 25 obs.

MAR 09, 1990 19h 23m 50.58 ± 0.76s  
 40.506 N ± 8.0km 23.410 E ± 7.3km  
 DEPTH = 10.0km (geophysicist)  
 GREECE (364)  
 ML 1.6 (THE).

THE	0.36	291	ePg	23 59.10	1.1
OUR	0.47	111	ePg	23 59.90	-0.2
			eSg	24 06.10	
PAIG	0.61	160	ePg	24 03.20	0.3
SRS	0.63	13	ePg	24 03.70	0.5

KNT	0.76	329	ePg	24 04.70	-0.8
			eSg	24 15.50	
FNA	1.57	281	ePb	24 17.70	-0.9

S.D. = 1.0 on 6 of 6 obs.

\* MAR 09, 1990 19h 28m 36.00 ± 0.92s  
 63.725 N ± 9.7km 152.503 W ± 9.4km  
 DEPTH = 15.0km (geophysicist)  
 CENTRAL ALASKA (1)  
 ML 3.4 (PMR).

TTA	1.77	245	eP	29 06.20	-0.2
FBA	2.37	58	eP	29 14.10	-0.7
IMA	2.41	349	eP	29 16.80	1.3
PMR	2.65	142	eP	29 19.20	0.4
PMS	2.84	150	eP	29 21.80	0.2
SVW	3.00	210	eP	29 22.80	-1.0
TOA	3.32	116	eP	29 30.70	2.2
DWY	5.78	81	P	30 01.00	-2.2

S.D. = 1.6 on 8 of 8 obs.

MAR 09, 1990 20h 58m 00.94 ± 1.23s  
 39.088 N ± 5.0km 10.746 W ± 12.4km  
 DEPTH = 10.0km (geophysicist)  
 NORTH ATLANTIC OCEAN (402)  
 mblg 3.8 (MDD).

LIS	1.30	106	iPd	58 27.00	2.0
			iS	58 41.40	
EZAM	3.43	26	iPnc	58 56.50	1.0
			eSn	59 32.00	
EVAL	3.49	114	iPnd	58 56.80	0.5
			eSn	59 32.60	
EPLA	3.74	73	ePn	59 00.00	0.0
			eSn	59 37.50	
STS	4.14	23	ePn	59 06.00	0.4
			eSn	59 49.20	
ERUA	4.29	39	ePn	59 08.00	0.3
			eSn	59 52.00	
EHOR	4.50	105	iPnc	59 10.50	-0.2
			eSn	59 56.50	
EPRU	4.84	114	ePn	59 16.00	0.4
			eSn	00 07.00	
EMON	5.05	30	iPn	59 18.20	-0.3
			eSn	00 10.50	
TOL	5.24	79	ePn	59 12.00	-9.3X
			eSn	00 14.50	
			eS	00 27.00	
			iSg	00 39.50	
GUD	5.30	71	ePn	59 21.50	-0.8
			eSn	00 16.00	
EBAN	5.53	97	ePn	59 24.00	-1.3
			eSn	00 20.50	
AVE	6.37	154	ePn	59 37.50	0.3
			iSn	00 43.00	
ETOR	6.90	73	ePn	59 43.70	-1.0
			eSn	00 54.00	
IFR	7.17	139	iPn	59 48.00	-0.6
			iSn	01 01.00	
TIO	8.63	160	iPn	00 08.50	-0.4
			iSn	01 36.00	
DOU	15.48	40	iP	01 40.10	-0.6
			e	01 47.70	

S.D. = 0.9 on 16 of 17 obs.

MAR 09, 1990 21h 27m 56.94 ± 0.39s  
 37.903 N ± 3.5km 23.094 E ± 3.8km  
 DEPTH = 5.4 ± 2.6 km  
 SOUTHERN GREECE (368)  
 ML 3.1 (THE), MD 3.5 (ATH). Felt  
 at Corinth and Loutrakion.

ITM	1.18	232	ePb	28 18.00	-1.3
VLI	1.19	186	ePg	28 19.00	-0.5
AGG	1.27	332	ePbd	28 21.80	0.9
			eSb	28 43.60	
NEO	1.41	4	ePb	28 23.00	-0.2
EVR	1.43	315	ePn	28 24.10	0.5
			eSn	28 45.00	
VLS	2.00	279	ePn	28 32.80	1.1
PAIG	2.07	13	ePn	28 32.80	0.1
APE	2.11	113	ePb	28 35.00	1.7
LIT	2.24	348	ePn	28 35.50	0.2
			eSn	29 09.00	
PLG	2.48	6	ePn	28 38.00	-0.7
OUR	2.52	16	ePnd	28 38.90	-0.3

KZN	2.61	337	ePn	28 41.10	0.6
VAM	2.65	160	ePn	28 40.00	-0.9
THE	2.73	358	ePn	28 42.20	0.1
PRK	2.83	61	ePg	28 52.90	9.3X
SOH	2.92	4	ePn	28 45.30	0.4
SMG	2.97	93	ePn	28 45.50	0.0
KEK	3.15	306	ePb	28 53.50	5.5X
FNA	3.17	336	ePn	28 49.20	0.8
			eSn	29 31.30	
SRS	3.23	7	ePn	28 48.80	-0.5
			eSn	29 29.40	
KNT	3.26	357	ePn	28 49.50	-0.1
			eSn	29 32.00	
NPS	3.32	142	ePb	28 52.50	1.9
VAY	3.44	353	ePn	28 52.00	-0.2
OHR	3.66	332	ePn	28 57.00	1.6
RDO	3.75	29	ePn	28 57.00	0.4
KKB	3.96	360	eP	28 59.00	-0.6
RZN	3.98	18	iP	29 00.00	-0.1
KDZ	4.15	25	eP	29 01.00	-1.2
SKO	4.26	343	ePn	29 05.50	1.7
			i	29 17.80	

VTS	4.68	1	iP	29 10.00	0.0
TDS	5.56	290	P	29 22.00	-0.4
PVL	5.57	17	eP	29 20.00	-2.5
ORI	5.61	295	P	29 22.60	-0.4
			eSn	30 23.90	
CZI	5.61	286	P	29 21.90	-1.1
CSI	5.63	291	P	29 23.60	0.2
MMN	5.89	292	P	29 28.40	1.6
MGR	6.28	293	P	29 32.10	-0.4
			eSn	30 39.50	
SGO	6.60	296	P	29 36.90	-0.1
SDI	8.09	301	P	29 57.00	-0.9

S.D. = 1.0 on 37 of 39 obs.

\* MAR 09, 1990 21h 41m 31.68 ± 0.91s  
 12.082 N ± 8.5km 144.796 E ± 14.2km  
 DEPTH = 27.1km (3 depth phases)  
 4.8mb (4 obs.) 4.7Msz (5 obs.)  
 SOUTH OF MARIANA ISLANDS (210)

GUA	1.45	4	iPc+	41 56.90	0.6
			eS	42 11.30	
GUMO	1.50	3	ePc	41 56.80	-0.2
PJG	1.50	3	eP	41 56.80	-0.2
DAV	19.59	257	eP	45 52.00	-8.9X
PMG	21.48	174	eP	46 20.00	-0.4
BAG	23.86	283	eP	46 43.00	-1.0
CHJJ	24.43	349	P	46 50.60	1.3
MAT	25.07	347	(P)	46 54.00	-1.4
	0.9s	24.37nm		4.8mb	
Z	18s	2.41um		4.7Msz	
			eS	51 16.00	
MTMJ	25.20	347	P	46 55.90	-0.8
NIIJ	25.58	349	P	47 00.90	0.7
SSE	28.87	315	eP	47 30.70	0.5
Z	20s	0.90um		4.4Msz	
E	13s	0.60um			
		pP	47 38.00	25km	
		eSS	53 44.00		
TIA	34.62	319	eP	48 25.00	4.3X
N	20s	1.80um			
E	20s	1.80um			
		eS	53 52.00		
CN2	35.74	336	eP	48 36.00	5.9X
BJI	37.59	323	eP	48 44.00	-1.7
Z	1.5s	26.00nm		4.8mb	
Z	32s	1.51um		4.6MszX	
N	20s	1.50um			
		eScP	54 53.00		
TIY	38.56	317	eP	48 54.00	-0.1
N	15s	0.70um			
GVA	38.57	297	P	49 00.00	5.7X
Z	22s	1.00um		4.6Msz	
N	18s	0.80um			
E	18s	0.90um			
		S	54 54.00		
XAN	39.28	310	P	48 58.30	-1.8
DZM	40.04	148	iPc	49 21.80	15.3X
HHC	40.87	321	P	49 14.40	1.2
Z	20s	1.80um		4.9Msz	
N	15s	0.60um			
E	15s	0.60um			
		S	55 20.00		
BTO	41.71	319	eP	49 20.00	0.0
N	17s	1.20um			



E 17s	1.10um	49 27.00	KUSJ	3.93 232 P	00 20.90	-5.3X	S.D. = 0.0 on 4 of 6 obs.
KMI 41.74 294 eP	49 25.00	4.4X	ASAJ	4.71 254 eP	00 05.80		
CD2 42.23 303 P	49 30.60	6.2X	HO0J	5.19 233 eP	00 42.20	5.0X	* MAR 09, 1990 23h 19m 51.59±0.86s
	S	55 46.30			00 40.50	-3.6X	36.717 N ± 7.9km 25.666 E ±10.2km
SNG 43.79 268 eP	49 47.60	10.4X	MRRJ	6.49 243 P	01 01.60	-0.8X	DEPTH = 10.0km (geophysicist)
LZH 43.92 310 Pc	49 37.50	-0.7			02 17.20		DODECANESE ISLANDS (369)
	1.4s	22.00nm	4.8mb	GUN	52.17 273 P	08 36.80	0.1
Z 20s	1.20um	4.8MsZ	KKN	52.66 273 P	08 40.50	0.2	APE 0.37 343 iPgd 19 59.00 -0.2
	pP	49 45.00	25km	PKI	52.71 273 P	08 40.20	-0.5
CHG 44.60 285 eP	49 53.50	9.7X	DMN	52.90 273 P	08 42.00	0.0	SMG 1.36 43 ePg 20 17.50 0.9
CHTO 44.60 285 eP	49 44.00	0.2	GKN	52.98 274 P	08 42.80	0.2	NPS 1.45 182 ePg 20 18.00 0.1
	1.0s	3.25nm	4.2mb	YKA	53.55 35 eP	08 46.00	0.0
	pP	49 53.30	31km		0.8s	0.50nm	3.6mb
GTA 48.13 313 eP	50 11.00	-0.5	NB2	68.31 339 P	10 26.20	0.0	KAP 1.69 133 ePb 20 20.00 -1.2
	E 20s	1.40um			0.8s	2.90nm	4.4mb
SHL 51.54 293 eP	50 39.00	1.1		S.D. = 0.3 on 7 of 11 obs.			VAM 1.77 223 ePn 20 24.00 1.6
LSA 52.63 298 eP	50 47.50	1.1					ATH 2.00 309 ePb 20 29.30 3.6X
GUN 57.06 295 P	51 18.40	-0.2		* MAR 09, 1990 22h 14m 50.61±1.36s			VLI 2.19 271 ePn 20 27.30 -1.3
WMO 58.13 314 eP	51 26.20	0.8		10.350 N ± 9.5km 62.452 W ± 9.7km			S.D. = 1.5 on 6 of 7 obs.
HYB 64.02 284 eP	52 07.00	1.3		DEPTH = 18.9 ± 7.3 km			* MAR 10, 1990 01h 30m 49.73±0.78s
MAIO 79.20 305 eP	53 40.00	3.7X		4.3mb ( 3 obs.)			32.235 S ±12.2km 69.749 W ±13.5km
	eS	03 36.00		NEAR COAST OF VENEZUELA ( 97)			DEPTH = 28.1 ± 9.3 km
KVN 87.92 51 eP	54 29.60	8.8X					MENDOZA PROVINCE, ARGENTINA (139)
ARE 144.60 101 e(PKP)	01 21.00	12.3X	TCE	0.77 63 iP	15 03.55	-1.6	JACH 0.84 238 iP 31 08.00 2.3
KIC 144.60 300 (PKP)	01 12.60	4.1X			15 19.15		iS 31 23.50
TIC 144.69 300 (PKP)	01 11.70	3.1X	TPP	0.99 92 eP	15 08.92	0.1	RTCV 1.09 70 iPc 31 09.10 -0.2
LIC 144.91 300 (PKP)	01 11.60	2.6X			15 11.83		ZON 1.14 53 iPd 31 10.20 0.3
ZOBO 147.83 101 PKP	01 27.50	13.1X	TRN	1.07 74 iP	15 08.56	-1.8	eS 31 26.00
	Z 25s	0.15um	4.7MsZ		15 12.95		FCH 1.18 203 iPd 31 12.00 1.3
	LR	50 50.00			15 15.42	0.7	iS 31 30.60
LPB 147.84 102 PKPc	01 32.00	17.8X	TBH	1.37 84 eP	15 38.76		RTLL 1.42 51 iPc 31 13.30 -0.5
	LR	51 05.00			15 21.77	1.1	iS 31 32.70
	S.D. = 1.0 on 23 of 40 obs.		PIG	1.78 63 eP	15 46.25		CFA 1.43 64 iPc 31 13.00 -1.0
					15 22.11	0.5	S 31 32.00
* MAR 09, 1990 21h 42m 56.54±0.83s			TPR	1.84 63 eP	15 46.97		SAN 1.44 212 iP 31 13.50 -0.6
7.593 S ± 8.6km 129.345 E ±13.9km			BOT	1.89 64 eP	15 23.18	0.9	iS 34 34.60
DEPTH = 33.0km (normal)					15 49.84		PCH 1.52 205 iPc 31 15.60 0.2
4.7mb ( 2 obs.)			GRW	1.96 23 eP	15 23.87	0.5	iS 31 37.50
BANDA SEA (280)					15 52.75		TACH 1.73 215 iP 31 17.00 -1.4
AAI 4.05 343 ePc	43 58.00	0.3	SVB	3.13 22 eP	15 40.70	0.7	iS 31 30.20
MTN 5.51 162 eP	44 26.00	7.6X			16 23.18		CHCH 1.86 204 iPc 31 19.60 -0.6
KNA 8.13 184 eP	44 59.00	3.8X	SVV	3.19 22 eP	15 41.72	0.9	iS 31 44.00
	0.3s	30.00nm	6.0mb X	SSV	3.21 22 eP	15 42.07	0.9
	eS	46 26.00			16 25.17		LCCH 1.97 231 iPc 31 20.30 -1.5
WB5 13.15 159 eP	46 03.30	-0.3			16 25.17		iS 31 44.00
	eS	48 24.00	SLB	3.72 22 eP	15 49.63	1.2	RTRS 2.07 7 iPd 31 22.50 -0.8
WRA 13.20 159 Pd	46 04.20	-0.1			16 32.49		LNV 2.21 219 iPd 31 22.40 -2.8
	0.6s	13.80nm	5.1mb X	8IM	4.36 18 eP	15 57.72	0.3
QIS 16.27 143 eP	46 45.00	0.7			16 46.00		
	eS	49 41.00	MVM	4.45 20 eP	15 59.01	0.3	S.D. = 1.5 on 13 of 13 obs.
MBL 16.32 213 eP	46 44.30	-0.6	FDF	4.54 16 eP	15 59.81	-0.2	& MAR 10, 1990 01h 53m 44.29s
	eS	49 25.00			0.2s	0.75nm	62.591 N 151.265 W
ASPA 16.57 165 eP	46 49.30	1.2			S	16 49.30	DEPTH = 87.1km
	0.5s	28.00nm	4.6mb	CRM	4.63 19 eP	16 01.00	-0.3
	eS	49 44.00		MDN	5.04 12 eP	16 06.38	-0.7
WARB 18.67 188 eP	47 14.40	0.2	BBL	5.23 10 eP	16 07.00	-2.8	
	eS	49 34.00			S	17 08.00	
NANU 19.96 220 iPd	47 25.30	-3.6X	PAG	5.70 8 eP	16 17.00	0.6	CUT 0.50 112 iP 53 58.89 0.0
	0.3s	13.00nm	4.7mb		S	17 20.00	SKT 0.63 192 iP 54 00.09 0.0
CTA 20.56 129 eP	47 34.00	-1.2	DEG	6.08 13 eP	16 21.00	-0.8	iS 54 12.04
MEKA 21.53 207 eP	47 42.10	-2.9X	SEG	6.09 9 eP	16 22.50	0.7	HUR 0.84 62 iP 54 02.10 -0.2
	S.D. = 0.9 on 8 of 12 obs.		ALO	46.91 309 ePc	23 22.20	0.1	eS 54 15.26
					0.8s	3.54nm	4.5mb
MAR 09, 1990 21h 49m 31.88±0.75s			ANMO	46.91 309 eP	23 22.90	0.8	KTH 0.98 9 eP 54 04.04 0.2
40.591 N ± 6.7km 23.426 E ± 7.5km			SES	56.38 325 eP	24 32.00	-1.0	iS 54 18.22
DEPTH = 5.0km (geophysicist)			YKA	64.00 336 eP	25 21.50	-3.4X	PWA 1.15 145 eP 54 05.48 -0.3
GREECE (364)					0.5s	1.00nm	4.2mb
MD 2.5 (ATH).			NB2	73.11 29 P	26 22.60	1.1	SUA 1.16 168 iP 54 05.76 -0.3
					0.7s	2.20nm	4.3mb
PLG 0.22 176 iPgc	49 35.50	-0.8		S.D. = 1.1 on 25 of 26 obs.			NCG 1.26 200 iP 54 07.82 -0.4
VAY 0.98 319 ePn	49 50.30	-0.6					GHO 1.37 126 eP 54 08.50 -0.2
MMB 1.02 13 iPgd	49 50.00	-1.7		* MAR 09, 1990 22h 53m 48.44±2.62s			eS 54 28.82
KZN 1.29 258 ePb	49 57.20	0.8		41.169 N ±21.9km 20.016 E ±14.6km			RND 1.37 52 iP 54 08.44 -4.0
RZN 1.47 41 iP	49 59.00	-0.2		DEPTH = 10.0km (geophysicist)			CRP 1.39 198 eP 54 05.14 -0.6
RDO 1.69 70 ePn	50 03.00	0.8					PLRM 1.42 134 eP 54 08.58 -0.3
KDZ 1.84 54 eP	50 05.00	0.6		ALBANIA (391)			BGL 1.43 202 eP 54 09.86 0.3
	Sg	50 29.00		ML 2.6 (SKO).			SPU 1.46 195 iP 54 09.60 -0.3
VTS 2.01 355 eP	50 08.00	1.1					iS 54 29.10
	S.D. = 1.2 on 8 of 8 obs.		TIR	0.21 328 iPgc	53 53.00	0.0	CKL 1.49 200 eP 54 10.20 -0.1
			LACI	0.52 334 iPgc	53 59.00	0.0	MCK 1.56 42 eP 54 10.92 -0.2
? MAR 09, 1990 21h 59m 26.73±2.94s			OHR	0.59 95 iPgc	54 00.50	0.0	PMS 1.57 148 eP 54 10.83 -0.5
45.620 N ±65.9km 148.916 E ±39.0km					iSg	54 09.90	eS 54 31.49
DEPTH = 33.0km (normal)			PHP	0.61 31 iPgc	54 00.70	0.0	SML 1.58 118 eP 54 10.89 -0.5
4.0mb ( 2 obs.)			SKO	1.34 53 iPn	54 17.00	3.9X	eS 54 32.71
KURIL ISLANDS (221)					iSn	54 33.00	KNK 1.78 130 iP 54 13.03 -0.9
			VAY	1.93 85 ePn	54 24.70	3.1X	NKA 1.85 180 eP 54 17.09 2.1



10d 01h

NCA	2.16	104	iP	54	18.20	-0.9	SML	2.46	50	iP	11	40.01	-2.0				eP	19	51.00	103kmX
TTA	2.21	281	iP	54	19.48	-0.4	KDC	2.56	182	iPd	11	40.50	-2.8	HBVT	47.87	72	eP	19	29.50	-4.5
NEA	2.22	25	eP	54	19.28	-0.6	GLI	2.64	75	iP	11	40.69	-3.8				eP	19	54.00	103kmX
WRH	2.36	36	iP	54	20.89	-1.0	VZW	2.94	72	iP	11	45.25	-3.3	CBM	48.24	66	eP	19	32.40	-4.4
			eS	54	47.39		HUR	2.98	24	eP	11	47.33	-1.8				eP	19	57.00	104kmX
TOA	2.42	99	iP	54	22.06	-0.7	MID	3.14	104	eP	11	48.50	-2.8	MAT	49.10	274	iPc	19	38.90	-4.7
SVW	2.55	236	eP	54	23.97	-0.4	NCA	3.16	55	iP	11	49.32	-2.3		0.9s		42.02nm			5.4mb
CCB	2.58	35	iP	54	23.68	-1.1	TTA	3.18	328	iPd	11	49.50	-2.4	TKL	49.34	88	eP	19	41.70	-3.7
GLI	2.62	129	eP	54	23.60	-1.8	KTH	3.33	11	iP	11	51.68	-2.4				eP	20	05.00	97kmX
SDG	2.65	89	eP	54	25.70	-0.1	KLU	3.35	66	iP	11	51.34	-3.0	NAV	49.52	84	eP	19	41.70	-5.1
HDA	2.66	45	eP	54	24.79	-1.1	TOA	3.48	56	iPc	11	54.10	-2.0				eP	20	07.00	106kmX
PAX	2.69	79	eP	54	25.81	-0.6	RND	3.53	26	eP	11	54.29	-2.4	CN2	49.69	290	Pc	19	42.00	-6.0
DDM	2.73	61	eP	54	26.60	-0.3	MCK	3.80	23	eP	11	58.07	-2.4	BLA	49.78	84	eP	19	45.00	-3.8
KLU	2.75	111	eP	54	25.01	-2.2	SDG	3.95	53	eP	12	00.14	-2.5		0.8s		27.52nm			5.3mb
FBA	2.78	32	iP	54	26.77	-0.8	PAX	4.23	48	iP	12	04.25	-2.3				eP	20	09.00	100kmX
GLM	2.96	34	eP	54	29.08	-1.0	GLB	4.32	71	iP	12	04.10	-3.7	PNJ	49.98	76	e(P)	20	07.90	17.7
PDB	3.15	208	eP	54	32.40	-0.2	NEA	4.55	18	eP	12	06.84	-4.1	CVL	50.15	81	eP	19	48.50	-3.0
IMA	3.65	344	eP	54	39.15	-0.5	WRH	4.63	23	eP	12	08.33	-3.7				eP	20	12.00	97kmX
INK	9.32	44	eP	55	57.00	-0.7	DDM	4.64	38	iP	12	11.22	-1.0	KEV	50.24	0	eP	19	46.00	-5.7
39 obs. associated							TGL	4.71	80	eP	12	08.59	-4.7	JSC	51.68	87	eP	20	00.00	-3.2
• MAR 10, 1990 02h 04m 13.39 ± 0.69s							HDA	4.82	29	eP	12	11.35	-3.4	SNY	52.09	290	Pc	20	01.60	-4.6
22.671 S ± 6.6km 68.267 W ± 19.9km							CCB	4.84	24	eP	12	11.13	-3.8	SOD	52.63	1	iP	20	04.40	-5.5
DEPTH = 123.2 ± 18.5 km							DMW	4.87	36	eP	12	13.30	-2.1	BJI	56.93	294	eP	20	35.00	-6.4
4.8mb ( 2 obs.)							FBA	5.07	22	iPd	12	14.30	-3.9	SUF	57.30	1	eP	20	38.30	-5.4
NORTHERN CHILE (123)							DOT	5.14	46	eP	12	16.92	-2.3		0.6s		7.40nm			5.0mb
ANT	2.23	242	iP	04	50.20	-0.2	GLM	5.23	24	eP	12	16.63	-3.8	NB2	58.33	9	P	20	44.80	-6.2
			iS	05	17.00		TMW	5.36	52	eP	12	19.58	-2.7		0.7s		4.90nm			4.7mb
CCH	5.63	21	P	05	37.00	0.7	IMA	5.83	355	iPd	12	25.00	-3.8	HHC	58.35	298	P	20	47.00	-4.5
LPB	6.11	2	Pd	05	42.50	-0.5	BCPM	6.35	88	iP	12	32.35	-3.6	BTO	59.23	299	P	20	53.00	-4.6
	0.9s		53.78nm			4.8mb	YKU	6.38	91	eP	12	33.30	-2.9	NUR	59.50	2	iP	20	53.60	-5.4
ARE	6.88	333	eP	05	47.00	-6.5X	SDN	6.61	225	eP	12	35.50	-4.0		0.6s		17.00nm			5.4mb
			eS	07	00.00		HON	6.82	91	eP	12	37.65	-4.8	TIY	60.52	295	Pd	21	01.20	-5.2
RTRS	7.55	188	ePc	06	03.40	1.3	FYU	7.04	24	eP	12	41.39	-4.0	EKA	62.14	19	Pc	21	11.90	-5.1
RTLL	8.63	181	ePc	06	16.00	-0.8	DWY	7.11	52	Pc	12	42.70	-3.6		0.9s		13.80nm			5.0mb
CFA	8.90	180	ePc	06	20.00	-0.5	HYT	7.32	79	P	12	45.70	-3.7	DCN	63.30	23	eP	21	18.20	-6.4
RTCV	9.16	181	e(P)	06	24.00	0.1	SIT	9.42	103	iPd	13	13.50	-4.5	GTA	64.53	305	Pc	21	27.60	-5.5
BAO	20.38	73	eP	08	42.00	-0.5	BRW	11.20	353	eP	13	35.40	-6.4	XAN	65.15	295	P	21	31.00	-6.0
KIC	68.46	73	Pd	15	05.00	0.5	INK	11.40	37	P	13	39.00	-5.5	WMO	65.28	316	iPc	21	33.50	-4.2
LKO	69.20	70	P	15	09.06	0.0	ADK	15.91	249	eP	14	41.00	-2.0	WHN	65.57	289	P	21	34.50	-5.1
	0.7s		11.50nm			4.8mb	MBC	19.61	23	ePd	15	21.50	-5.3	LZH	65.67	300	eP	21	36.00	-4.4
S.D. = 0.8 on 10 of 11 abs.							1.0s			212.00nm			5.4mb	BRG	68.63	9	e(P)	21	54.00	-4.6
& MAR 10, 1990 02h 11m 03.12s							PNT	21.57	106	eP	16	06.00	19.0				e	22	23.00	
60.298 N 152.322 W							0.8s			25.00nm				MOX	68.65	11	eP	21	55.00	-3.8
DEPTH = 83.7km							EDM	22.23	91	iPd	15	52.20	-1.2	KSP	68.83	8	ePd	21	55.00	-4.8
4.9mb ( 39 obs.)							0.8s			113.00nm			5.3mb				e	22	22.70	
SOUTHERN ALASKA ( 2)							NEW	23.50	105	eP	16	06.00	0.2	FLN	68.92	20	eP	21	55.10	-5.3
<AGS-P>. Felt (IV) at Homer and							1.0s			31.25nm			4.7mb		0.8s		13.45nm			4.9mb
Ninilchik. Also felt at							SES	25.07	95	eP	16	20.00	-0.8	LDF	69.14	19	eP	21	56.40	-5.4
Anchorage, Palmer, Seward and							0.5s			24.00nm			4.9mb		0.5s		4.35nm			4.6mb
Wasilla.							WDC	26.99	124	eP	16	41.40	2.9	GRR	69.22	20	eP	21	57.20	-5.0
							FFC	27.04	79	eP	16	37.00	-1.8		0.7s		14.35nm			5.0mb
							0.9s			9.00nm			4.3mb	LPF	69.53	20	eP	21	59.50	-4.6
							FFC	27.04	79	eP	16	59.00	20.2		0.7s		11.00nm			4.9mb
							0.7s			14.00nm				PRU	69.56	9	eP	22	02.00	-2.3
RED	0.25	299	iP	11	15.33	-0.6	LRM	27.48	104	eP	16	52.20	9.0	CD2	70.11	297	P	22	02.80	-5.2
RDT	0.28	351	iP	11	15.38	-0.6								KHC	70.33	10	P	22	04.40	-4.7
			iS	11	25.57		KVN	30.15	119	eP	17	04.50	-2.5				e	22	28.30	
NNL	0.57	116	iP	11	18.76	0.7								HAU	70.67	15	eP	22	06.20	-4.9
NKA	0.70	50	iP	11	20.45	1.2	FRI	31.20	124	eP	17	14.20	-1.8		0.6s		5.40nm			4.6mb
SPU	0.90	8	iP	11	20.67	-0.8	TNP	31.33	119	eP	17	15.60	-1.9	BSF	70.90	15	eP	22	07.60	-5.0
			eS	11	34.71		0.9s			9.90nm			4.6mb	LOR	71.05	17	eP	22	08.70	-4.7
BRLK	0.90	126	eP	11	20.68	-0.8									0.7s		11.00nm			4.9mb
			eS	11	34.63		RSSD	32.83	97	eP	17	28.00	-2.5	MFF	71.07	20	eP	22	08.70	-4.8
XLV	0.90	160	iP	11	20.64	-0.8									0.8s		13.45nm			4.9mb
CKL	0.90	360	iP	11	20.77	-0.9	RSON	33.37	80	eP	17	31.00	-3.9	SSF	71.20	17	eP	22	09.70	-4.6
CNPM	0.95	144	iP	11	21.39	-0.7	0.9s			76.67nm			5.6mb		0.7s		14.35nm			5.0mb
BGL	0.97	358	iP	11	21.66	-0.8								LBF	71.35	17	eP	22	10.00	-5.2
CRP	0.98	5	iP	11	21.86	-0.7	SBB	33.95	123	eP	17	38.00	-2.1		0.7s		6.60nm			4.6mb
CGLM	1.02	9	iP	11	22.29	-0.8	RVR	34.74	123	eP	18	05.00	18.2	AVF	71.44	17	eP	22	10.60	-5.1
			iS	11	37.31		PLM	35.51	123	eP	17	56.00								



GVA	72.60	293 P	22 18.00 -5.0		iS	36 40.00	Z	21s	0.10um	4.6Msz
RJF	72.61	19 eP	22 44.20 102kmX	CNB	22.90 229 iS	40 24.00	OHR	148.04 314 ePKP	51 16.30	
FVI	72.78	11 P	22 17.50 -5.2		1.0s 205.00nm	36 23.00	PTJ	148.26 325 ePKP	50 57.90	-1.5
LFF	72.83	20 eP	22 19.50 -4.4	MSZ	22.92 185 eP	36 25.00	TOD	148.71 337 ePKP	51 03.54	3.6X
	0.7s	5.50nm	4.6mb	CAN	23.16 230 eP	36 25.00	KBA	148.76 329 ePKP	51 03.00	2.7X
RBL	73.00	10 P	22 17.00 -8.0	CMS	24.06 241 eP	36 33.00		1.1s	11.60nm	
CAF	73.06	19 eP	22 20.60 -4.8		1.0s 100.00nm	36 33.00		i	51 06.80	
VAI	73.07	14 P	22 20.60 -5.3	PMG	25.63 295 eP	36 46.50		i	51 09.70	
LPO	73.16	19 eP	22 21.10 -4.7	TOO	26.73 228 eP	36 57.80	MEM	148.79 341 PKP	51 04.00	4.1X
	0.5s	5.75nm	4.7mb	ASPA	33.79 260 eP	37 58.50	VBY	148.89 325 e(PKP)	51 05.00	4.7X
CTI	73.21	12 P	22 21.00 -5.3		1.0s 25.00nm	37 58.50	LJU	148.90 327 ePKP	51 04.00	3.7X
BOB	74.24	13 P	22 28.50 -3.7	Z	22s 0.70um	4.3Msz	ABH	148.92 339 ePKP	51 04.25	4.0X
PGD	75.37	12 P	22 35.00 -3.8		LR	50 01.10	RBL	149.11 328 PKP	51 04.50	3.8X
ASS	76.26	11 P	22 38.00 -5.7	WRA	33.83 266 Pd	37 57.70	CEY	149.17 326 e(PKP)	51 05.60	4.8X
LSA	76.47	307 P	22 42.50 -3.1		0.5s 9.60nm	5.0mb	RUP	149.24 339 ePKP	51 05.06	4.3X
MGR	79.43	9 P	22 56.00 -5.0	WARB	40.20 255 eP	38 53.30	FVI	149.38 329 PKP	51 07.10	6.1X
GUN	80.12	310 P	23 01.60 -3.8		0.3s 6.00nm	4.9mb	TRI	149.52 327 ePKP	51 07.30	4.1X
MAIO	80.25	334 eP	23 03.00 -2.6	M8L	47.01 261 iPd	39 48.10	DOU	149.66 342 PKP	51 06.00	4.7X
KKN	80.46	311 P	23 03.20 -3.8		0.5s 10.00nm	5.0mb	OGA	149.99 331 ePKP	51 07.50	5.3X
	0.6s	18.00nm	5.1mb	VNDA	55.93 182 (P)	40 54.30	CDF	150.26 337 ePKP	51 06.90	4.5X
GKN	80.51	311 P	23 03.40 -3.8	SBA	56.14 181 e(P)	40 56.70		0.7s	6.60nm	
PKI	80.61	310 P	23 03.80 -4.2	MAT	65.57 332 eP	42 00.00	CTI	150.31 330 PKP	51 08.00	5.4X
	0.9s	34.00nm	5.2mb	SPA	68.34 180 iPd	42 18.70	FEL	150.43 336 ePKP	51 08.37	5.7X
DMN	80.69	311 P	23 04.50 -3.8		1.0s 53.00nm	5.5mb	BSF	150.92 337 ePKP	51 08.40	5.0X
	0.7s	34.00nm	5.4mb		i	42 33.10		0.7s	7.70nm	
CHG	82.73	295 eP	23 13.50 -5.3	MDJ	75.94 331 eP	43 03.50	HAU	150.93 338 ePKP	51 08.30	5.0X
CHTO	82.73	295 eP	23 13.50 -5.2		sP	43 26.00		0.7s	11.00nm	
	0.9s	8.10nm	4.6mb	TIA	76.66 318 Pd	43 07.70	MDI	151.41 331 PKP	51 11.50	7.5X
CTA	94.14	236 iPc	24 08.90 -4.2	CN2	77.27 328 Pc	43 10.80	ARV	151.46 325 PKP	51 10.50	6.2X
	0.9s	21.01nm	5.6mb	Z	20s 0.40um	4.7Msz	SFI	151.75 326 PKP	51 12.50	7.9X
SLR	145.45	359 iPKPc	30 27.30 -5.2	LOE	77.82 294 eP	43 26.00	VAI	151.75 332 PKPc	51 10.60	6.1X
PRY	146.64	0 iPKPc	30 30.70 -3.8	GYA	78.28 305 P	43 17.80	PGD	151.84 326 PKP	51 11.50	6.5X
	0.7s	7.50nm		BJI	79.68 321 eP	43 24.00	SGO	151.89 317 PKP	51 12.50	7.6X
SWZ	146.85	4 iPKPc	30 29.00 -5.8	TIY	80.53 317 Pd	43 29.70	ASS	151.90 324 PKP	51 12.50	7.5X
	0.2s	125.00nm		KMI	80.65 302 eP	43 30.50	BDI	152.28 328 PKP	51 11.50	6.0X
SEK	148.03	0 iPKPd	30 35.00 -1.7	XAN	80.73 312 Pc	43 30.00	ORO	152.28 333 PKP	51 14.50	9.0X
	0.4s	25.42nm		CHG	80.82 294 iPc	43 32.00	BOB	152.30 330 PKP	51 13.50	8.0X
BLF	148.80	3 iPKPc	30 37.20 -0.7		1.0s 12.50nm	4.8mb	LOR	152.40 340 ePKP	51 11.80	6.3X
SPA	150.13	180 iPKPd	30 40.00 1.3	CHTO	80.82 294 iP	43 32.00		0.7s	6.05nm	
	1.0s	30.50nm			1.1s 14.13nm	4.8mb	LPL	152.88 335 ePKP	51 13.40	6.9X
		i	31 04.30		pP	43 46.00		0.7s	3.85nm	
	171 obs. associated				sP	43 50.10	LPG	152.89 334 ePKP	51 13.30	6.7X
					eP	43 41.30		0.6s	3.60nm	
MAR 10, 1990 03h 31m 20.85±0.35s				CD2	82.75 307 eP	43 41.30	BNI	153.28 334 PKP	51 16.00	9.0X
21.797 S ± 6.0km 170.542 E ± 7.2km				HHC	82.95 319 eP	43 42.00		S.D. = 1.1 on 54 of 99 obs.		
DEPTH = 51.4km ( 4 depth phases)				LZH	85.34 312 eP	43 54.00				
5.1mb ( 11 obs.)					1.2s *****nm	8.2mb X				
LOYALTY ISLANDS REGION (189)					pP	44 13.00		MAR 10, 1990 04h 09m 39.21±0.33s		
CENTROID, MOMENT TENSOR (HRV)				SBB	88.16 51 eP	44 09.00		43.016 N ± 4.0km	17.306 E ± 3.9km	
Data Used: GDSN				RVR	88.16 52 eP	44 25.00		DEPTH = 13.5 ± 3.0 km		
L.P.8.: 13S, 25C				TPC	89.19 53 eP	44 34.00		YUGOSLAVIA (383)		
Centroid Location:				GTA	89.76 313 eP	44 13.80		ML 3.0 (TTG), 2.9 (KBA).		
Origin Time 03:31:26.2 0.7				KVN	90.02 48 eP	44 17.80				
Lat 21.84S 0.08 Lon 169.86E 0.07				YKA	102.37 27 ePdiff	45 32.20	HVAR	0.65 285 iPg	09 51.40	-0.4
Dep 53.9 5.0 Half-duration 1.6					0.7s 0.50nm	50 11.00	BRY	iSg	10 01.90	
Moment Tensor: Scale 10**16 Nm				ZOBO	111.19 118 (PKP)	50 11.00		ePg	09 54.50	-2.0
Mrr=-3.21 0.44 Mtt= 3.01 0.91					Z 22s 0.08um	4.3Msz	HCY	eSg	10 08.00	
Mff= 0.20 0.73 Mrt= 3.64 0.76				SPC	143.92 326 ePKP	50 58.80		ePg	09 57.20	-1.4
Mrf=-1.79 0.72 Mtf= 8.78 0.57				KDZ	144.67 312 ePKP	50 52.00	NKY	eSg	10 11.90	
Principal Axes:				KSP	144.71 332 iPKPd	50 51.80		ePg	10 01.50	-0.9
T Val= 10.70 Plg= 7 Azm=321					1.1s 29.00nm	51 11.50	BDV	ePg	10 19.10	
N -1.17 59 63					i	51 19.30		eSg	10 02.50	-1.0
P -9.53 30 227				PLD	144.97 313 ePKP	50 53.00	TTG	ePg	10 21.50	
Best Double Couple:Mo=1.0*10**17				RZN	145.14 313 ePKP	50 53.00		eSg	10 07.00	0.5
NP1:Strike= 8 Dip=64 Slip=-162				BRG	145.69 333 iPKP	50 55.10	PLE	ePg	10 07.50	0.8
NP2: 270 74 -27					0.8s 60.00nm	51 10.00		eSg	10 29.10	
					i	51 10.00	BLY	ePn	10 11.00	1.9
DZM 3.81 265 iPd	32 17.40	-1.2		CLL	145.74 335 iPKP	50 54.60	ULC	eSn	10 34.00	
PVC 4.55 332 iP	32 30.80	1.9			1.0s 28.00nm	50 54.60		ePn	10 10.50	0.7
NDF 7.65 59 ePc	33 19.50	7.2X			i	51 10.40	IVA	ePn	10 36.00	
SGE 8.12 60 eP	33 27.50	8.6X			i	51 10.40		eSn	10 13.20	1.5
HNR 15.96 319 eP	35 05.00	1.4		VTS	145.76 315 ePKP	50 56.00		eSn	10 39.00	
BRS 17.09 247 iPd	35 19.20	1.5		SRO	145.79 326 ePKP	50 56.60	BAI	P	10 13.00	1.2
	0.5s 22.00nm	4.5mb		MMB	145.85 313 ePKP	50 55.00	PVY	ePn	10 14.20	1.0
	i	35 37.70		PRU	146.10 332 ePKP	50 55.50		eSn	10 42.00	
	e	35 42.00			0.9s 7.00nm	51 11.50	BRT	P	10 15.10	0.1
	e	38 16.00			i	51 11.50		eSn	10 41.60	
COO 18.86 239 iPc	35 40.90	1.2		ZST	146.16 328 i(PKP)	50 57.20	SGO	P	10 25.60	0.2
PGZ 19.38 167 eP	35 44.40	-0.9		VAY	146.75 313 ePKP	50 57.60		ePn	10 37.10	11.5X
TCW 19.61 172 P	35 49.60	1.8		SOP	146.77 327 ePKP	50 59.00	VBY	ePn	11 13.40	
MTW 19.75 169 eP	35 49.10	-0.2		MOX	146.80 335 ePKP	50 59.00		eSn	10 25.40	-0.5
RMO 20.42 252 iPd	35 56.90	0.6		KHC	147.15 332 ePKP	51 00.00	SDI	P	10 25.40	-0.5
	1.1s 402.00nm	5.7mb			1.0s 14.00nm	51 12.00	BEO	eP	11 12.50	46.7X
	e	36 09.00	53km		e	51 12.00	ZAG	i(Pn)	10 26.20	-0.3
CTA 22.74 270 eP	36 20.00	0.3		SKO	147.21 315 ePKP	50 59.50		iSn	11 04.00	
	i	36 24.00	14kmX	GRF	147.71 335 ePKP	51 01.80	ORI	P	10 27.00	-0.5
							PTJ	ePn	10 27.90	0.1



10d 04h

MGR 3.16 205 P 10 30.00 0.5  
 ARV 3.22 280 P 10 30.20 -0.2  
 SKO 3.23 107 e(Pn) 10 39.50 9.0X  
 ASS 3.41 272 P 10 33.80 0.8  
 CEY 3.42 324 eP 10 46.00 12.9X  
 eSn 11 05.00  
 LJU 3.62 328 eP 10 44.50 8.5X  
 e(Sn) 11 36.00  
 TRI 3.70 318 P 10 37.50 0.3  
 VOY 3.88 322 ePn 10 39.90 0.1  
 eSn 11 29.50  
 RBL 4.34 323 P 10 46.50 0.2  
 FVI 4.81 320 P 10 53.10 0.2  
 KBA 4.94 327 ePn 10 53.50 -1.4  
 iSn 11 48.40  
 iSg 12 13.60  
 i 12 18.10  
 CTI 5.05 309 P 10 55.20 -1.2  
 eSn 11 50.30

S.D. = 1.0 on 27 of 32 obs.

% MAR 10, 1990 04h 39m 37.72 ± 3.70s  
 44.065 N ± 15.8km 7.031 E ± 22.1km  
 DEPTH = 10.0km (geophysicist)  
 NORTHERN ITALY (545)  
 ML 1.9 (GEN).

STV 0.28 50 P 39 43.69 0.1  
 S 39 47.07  
 ENR 0.32 60 P 39 44.51 0.0  
 S 39 48.51  
 PZZ 0.44 7 P 39 46.77 0.0  
 S 39 52.41  
 IMI 0.64 104 P 39 50.66 0.1  
 S 39 59.17  
 ROB 0.65 69 P 39 50.46 -0.2  
 S 39 59.07

S.D. = 0.2 on 5 of 5 obs.

MAR 10, 1990 05h 34m 24.62 ± 0.62s  
 37.994 N ± 5.6km 21.590 E ± 7.4km  
 DEPTH = 5.0km (geophysicist)  
 SOUTHERN GREECE (368)  
 ML 3.1 (ATH).

VLS 0.81 283 ePg 34 39.60 -1.2  
 eSg 34 53.00  
 ITM 0.86 162 ePg 34 40.50 -1.1  
 EVR 0.94 10 ePb 34 42.00 -1.0  
 VLI 1.67 139 ePn 34 55.30 0.7  
 ATH 1.68 90 ePg 34 55.50 0.7  
 NEO 1.83 44 ePb 34 55.50 -1.5  
 KEK 2.21 321 ePg 35 07.00 4.5X  
 SRN 2.25 327 ePn 35 03.60 0.5  
 LSK 2.29 341 ePn 35 07.30 3.6X  
 KZN 2.31 3 ePn 35 04.00 -0.1  
 TPE 2.61 332 ePn 35 09.00 0.9  
 KBN 2.69 347 ePn 35 10.50 1.2  
 PLG 2.78 31 ePn 35 11.00 0.3  
 BERA 2.99 335 ePn 35 20.50 7.0X  
 OHR 3.17 349 ePn 35 17.50 1.3  
 VAM 3.33 140 ePn 35 19.00 0.6  
 VAY 3.41 13 ePn 35 18.00 -1.5  
 SKO 3.98 358 ePn 35 35.00 7.5X

S.D. = 1.1 on 14 of 18 obs.

MAR 10, 1990 05h 45m 22.38 ± 1.12s  
 43.428 N ± 7.3km 5.464 E ± 7.5km  
 DEPTH = 11.2 ± 4.6 km  
 NEAR SOUTH COAST OF FRANCE (379)

BERF 0.20 125 Pg 45 27.45 0.5  
 PUYF 0.20 59 Pg 45 26.11 -0.8  
 TREF 0.20 344 Pg 45 26.25 -0.7  
 PRAF 0.43 331 Pg 45 31.55 0.3  
 VILF 0.46 23 Pg 45 31.71 -0.2  
 TAVF 0.47 66 Pg 45 31.77 -0.3  
 GANF 0.65 29 Pg 45 35.94 0.6  
 MVIF 1.31 68 Pg 45 46.72 0.1  
 Sg 46 05.01  
 REVF 1.42 77 Pn 45 48.41 0.3  
 Sg 46 08.89  
 AURF 1.43 71 Pn 45 48.52 0.2  
 AUTN 1.53 68 Pn 45 50.21 0.3  
 Sg 46 11.90  
 SAOF 1.62 69 Pn 45 51.12 0.2

PGF 2.74 108 Pn 46 05.79 -1.3  
 S.D. = 0.7 on 13 of 13 obs.

MAR 10, 1990 06h 33m 27.82 ± 0.40s  
 30.522 N ± 6.5km 97.333 E ± 4.8km  
 DEPTH = 33.0km (normol)  
 4.3mb ( 5 obs.)

TIBET (306)

LSA 5.42 263 Pn 34 54.50 5.6X  
 CD2 5.55 84 Pn 34 49.20 -1.0  
 Pg 35 01.80  
 Sg 36 16.40

KMI 7.20 137 ePn 35 11.50 -2.1  
 Pg 35 40.00

LZH 7.78 43 eP 35 22.00 0.3  
 Z 15s 1.30um  
 E 10s 3.12um

GTA 9.10 12 eP 35 45.00 5.0X  
 Z 10s 1.00um  
 E 10s 2.00um

GYA 9.15 114 iPd 35 41.00 0.3  
 N 10s 3.10um  
 E 10s 1.40um

S 37 12.60  
 GUN 10.34 258 P 35 58.20 0.9  
 XAN 10.42 67 P 35 54.00 -4.0X

N 10s 0.80um  
 PKI 10.84 257 P 36 04.50 0.4  
 KKN 10.88 259 P 36 04.30 -0.3

DMN 11.08 258 P 36 06.30 -1.0  
 0.4s 15.00nm 5.5mb X

GKN 11.37 260 P 36 10.00 -1.1  
 CHG 11.75 172 eP 36 18.10 2.0

CHTO 11.75 172 eP 36 18.00 1.9  
 1.0s 3.75nm 4.5mb

BTO 14.40 42 eP 36 50.00 -1.2  
 N 10s 1.10um  
 E 10s 1.90um

TIY 14.41 56 eP 36 51.70 0.3  
 N 11s 1.40um  
 E 11s 0.70um

WHN 14.67 86 eP 36 55.00 0.3  
 sP 37 06.00

WMQ 15.32 333 eP 37 08.00 4.7X  
 HHC 15.47 44 eP 37 07.00 1.8

Z 10s 1.10um  
 N 11s 0.60um  
 E 10s 0.70um

QIZ 16.11 132 eP 37 17.00 3.6X  
 BJI 18.05 53 eP 37 38.00 0.4

SSE 20.49 82 eP 38 02.00 -3.6X  
 HYB 21.51 237 eP 38 20.00 3.9X

SNY 23.91 55 eP 38 39.00 0.4  
 GBA 24.90 232 Pc 38 52.80 3.6X

0.7s 2.70nm 3.9mb  
 CN2 25.89 51 Pc 38 58.00 -0.3

WB5 61.48 140 eP 43 42.20 -1.5  
 WRA 61.51 140 Pc 43 43.00 -1.0

0.8s 2.50nm 4.4mb  
 NB2 61.97 327 P 43 46.60 -0.1

0.8s 4.60nm 4.7mb  
 MBC 71.03 9 eP 44 47.50 3.6X

INK 74.54 17 eP 45 05.00 0.4  
 YKA 83.83 14 eP 45 55.30 0.4

0.8s 1.10nm 4.1mb  
 S.D. = 1.1 on 23 of 32 obs.

? MAR 10, 1990 09h 02m 35.76 ± 2.98s  
 35.241 N ± 27.3km 27.025 E ± 15.5km  
 DEPTH = 5.0km (geophysicist)

DODECANESE ISLANDS (369)  
 MD 3.1 (ATH).

KAP 0.33 22 iPe 02 41.80 -0.7  
 NPS 1.16 271 ePb 02 57.50 -0.3

eSb 03 14.00  
 ARG 1.32 42 ePg 03 01.00 0.3

APE 2.19 327 ePn 03 14.00 0.6  
 VAM 2.32 275 ePb 03 17.50 2.3X

S.D. = 1.0 on 4 of 5 obs.

& MAR 10, 1990 10h 11m 31.07s  
 48.280 N 121.761 W  
 DEPTH = 1.5km

WASHINGTON (29)  
 <SEA>. CL 2.7 (SEA).

JCW 0.14 233 Pd 11 33.91 0.0  
 RPW 0.24 44 Pd 11 36.00 0.2  
 CMW 0.28 301 Pd 11 36.52 -0.1  
 HTW 0.48 181 Pd 11 39.75 -0.8  
 BLH 0.48 202 Pd 11 40.21 -0.4  
 MBW 0.51 350 P 11 40.88 -0.4  
 OHW 0.52 275 P 11 40.84 -0.5  
 PGW 0.73 231 P 11 45.04 -0.5  
 SPW 0.80 204 P 11 46.75 -0.2  
 MCW 0.82 300 P 11 46.94 -0.4  
 RMW 0.82 182 Pd 11 46.04 -1.4  
 BLN 0.86 252 Pc 11 46.93 -1.3  
 NLW 0.97 101 P 11 49.04 -1.4  
 GMW 1.01 224 P 11 49.13 -1.8  
 HDW 1.07 234 P 11 50.19 -1.9  
 GSM 1.08 181 P 11 50.59 -1.6  
 ETW 1.18 125 P 11 52.07 -1.8  
 TWW 1.29 152 P 11 54.59 -1.3  
 RVC 1.35 186 P 11 54.99 -1.8  
 WTV 1.35 115 P 11 55.70 -1.1  
 FMW 1.35 177 P 11 54.72 -2.2  
 TBM 1.36 144 P 11 55.68 -1.4  
 DHW2 1.37 102 P 11 56.17 -1.0  
 OSD 1.38 251 P 11 56.73 -0.7  
 WPW 1.59 175 P 11 58.92 -1.6  
 EBG 1.59 149 P 11 59.96 -0.5  
 CPW 1.60 216 P 11 59.46 -1.2  
 LMW 1.65 193 P 12 00.16 -1.2  
 NAC 1.67 157 P 12 01.39 -0.2  
 SAW 1.69 109 P 12 01.82 0.0  
 GLK 1.72 176 P 12 01.42 -1.0  
 APW 1.74 201 P 12 01.16 -1.3  
 KOSW 1.84 189 P 12 03.48 -0.6  
 ERK 2.01 192 P 12 05.94 -0.7  
 YEL 2.09 188 P 12 07.98 0.2

35 obs. associated

MAR 10, 1990 10h 15m 03.90 ± 0.11s  
 50.907 N ± 2.7km 157.244 E ± 2.1km  
 DEPTH = 50.6km ( 48 depth phases)  
 5.7mb ( 86 obs.)

KURIL ISLANDS (221)

Felt on Shumshu and Poromushir.

FAULT PLANE SOLUTION: P-Waves

NP1:Strike=45 Dip=67 Slip=90

NP2: 225 23 90

Principal Axes:

T P1g=68 Azm=315

P 22 135

Comment: The focal mechanism is

poorly controlled and

corresponds to reverse

faulting. The preferred fault

plane is NP2.

MOMENT TENSOR SOLUTION

Dep 53 No. of sto: 9

Moment Tensor: Scale 10\*\*17 Nm

Mrr=2.11 Mtt=-0.88

Mff=-1.23 Mrt=0.24

Mrf=0.06 Mtf=-1.03

Principal axes:

T Val=2.13 P1g=85 Azm=5

N -0.02 4 221

P -2.12 3 130

Best Double Couple:Mo=2.1\*10\*\*17

NP1:Strike=216 Dip=42 Slip=84

NP2: 44 48 95

CENTROID, MOMENT TENSOR (HRV)

Data Used: GDSN

L.P.B.: 14S, 32C

Centroid Location:

Origin Time 10:15: 8.5 0.5

Lot 50.67N 0.05 Lon 157.60E 0.06

Dep 48.1 3.2 Half-duration 2.1

Moment Tensor: Scale 10\*\*17 Nm

Mrr=1.47 0.05 Mtt=-0.12 0.07

Mff=-1.35 0.06 Mrt=0.36 0.09

Mrf=0.04 0.10 Mtf=-1.23 0.08

Principal Axes:

T Val=1.57 P1g=73 Azm=21

N 0.55 17 213

P -2.12 4 122

Best Double Couple:Mo=1.8\*10\*\*17

NP1:Strike=195 Dip=44 Slip=65

NP2: 48 51 112

SMY 10.60 74 eP 17 33.20 -2.5



ADK	16.28 1.0s	76 P 280.00nm	18 49.00 -1.3 5.3mb	YKA	45.97 0.7s	40 eP 54.00nm	23 23.10 -0.1 5.6mb	CLC	60.37 60.84	69 iP+ e	25 10.00 0.0 25 23.00 46km
MDJ	19.55 Z 35s N 14s	262 Pc 3.30um 1.30um	19 27.00 -2.3	WMO	46.04 Z 23s	290 eP 1.90um	23 24.50 0.4 5.0MsZ	DAU	61.01	61 P+ e	25 14.20 0.7 25 28.00 51km
MAT	19.80 0.8s	231 iPd 343.28nm eS	19 31.50 -1.3 5.7mb	KMI	48.69 Z 20s	259 Pc 1.10um	23 45.00 -0.3 4.8MsZ	PAS	61.18 61.19	70 eP e	25 15.00 -0.5 25 29.00 51km
CN2	22.55 1.0s Z 20s N 16s E 16s	264 Pd 100.00nm 2.70um 0.70um 1.50um	19 58.50 -2.0 5.2mb 4.7MsZ	KBS	48.80	352 iP	23 45.70 0.6	GSC	61.19	69 iP+ e	25 15.00 -0.7 25 29.00 51km
SHK	24.19 0.8s	237 iPc 113.43nm pP	20 05.00 23kmX 20 17.70 1.2 5.4mb	QIZ	48.98	247 Pc	23 49.00 1.8	MWC	61.20	70 eP e	25 15.00 -0.8 25 29.00 51km
SNY	24.76 Z 22s N 15s	262 Pc 2.10um 1.30um	20 20.00 -1.8 4.6MsZ	RMW	50.50	60 P	23 59.00 0.4	MSU	61.64	63 P	25 19.50 0.6
TTA	27.53	46 iPc i	20 47.30 -0.1 21 01.00 56km	PNT	50.60 0.8s	57 iPc 72.00nm	23 59.00 -0.3 5.8mb	RVR	61.76	70 eP e	25 18.00 -1.4 25 33.00 55km
IMA	28.85 1.0s	40 iPc 100.00nm	20 59.00 -0.3 5.4mb	EDM	51.51 0.6s	50 iPc 88.00nm	24 06.10 -0.1 6.0mb	RSSD	62.10 1.1s	54 iPd 175.78nm	25 21.60 -0.3 6.1mb
BRW	29.01	29 iPc	21 00.50 0.0	NEW	52.55	57 eP pP	24 13.60 -0.5 24 27.60 52km	RSON	62.11 1.5s	43 ePd 135.94nm	25 20.30 -1.2 5.9mb
KDC	29.50	57 eP e	21 03.30 -1.7 21 16.80 53km	DAG	52.57 0.8s	359 iPc 87.31nm	24 12.90 -0.9 5.8mb	NDI	62.23 0.8s	282 iPc 41.04nm	25 20.80 -1.8 5.6mb
BJI	30.41 Z 24s N 14s	265 eP 1.91um 0.86um ePcP	21 10.50 -2.7 4.7MsZ	LSA	52.79	273 P	24 17.60 1.0	TPC	62.47	69 eP e	25 23.00 -1.2 25 37.00 50km
PMR	30.76	49 e(P)	21 15.00 -1.1	LBFM	54.19	66 P	24 26.70 0.2	PLM	62.52	70 eP e	25 23.00 -1.6 25 38.00 55km
FBA	31.22	42 iPc	21 20.10 -0.1	WDC	54.30	68 iPc	24 27.70 0.7	NUR	62.57	336 iP 0.6s	25 22.00 -2.4 5.1mb
TIA	32.13	258 Pd	21 27.70 -0.7	KEV	54.32	341 eP	24 25.00 -1.8	BAR	63.10	71 eP e	25 28.00 -0.3 25 43.00 55km
HHC	32.87 Z 15s N 20s E 18s	270 eP 1.00um 1.60um 2.00um	21 34.00 -1.0 4.6MsZ	SES	54.37 0.7s	52 iPc 54.00nm	24 27.00 -0.5 5.7mb	PV09	63.36	61 iP pP	25 20.30 0.0 25 44.10 49km
SSE	33.19 Z 20s	247 Pc 0.60um	21 37.00 -0.6 4.3MsZ	LOE	55.08	254 iPc	24 33.00 0.0	AKU	63.69 1.0s	358 iPc 108.00nm	25 33.20 1.6 5.9mb
NJ2	33.88 Z 22s	251 Pd 0.60um	21 43.40 -0.2 4.3MsZ	ORV	55.57	68 ePc pP	24 35.60 -0.7 24 50.00 53km	SNG	63.79 0.9s	247 eP 186.55nm	25 34.80 1.9 6.1mb
BTO	33.99 N 16s E 16s	271 eP 0.70um 1.90um	21 44.00 -0.7	CHG	55.64 0.9s	292 P 219.54nm	24 36.80 -0.2 6.2mb	GLA	63.94	69 iP+ e	25 34.00 0.2 25 48.00 50km
TIY	34.14 1.2s	265 eP 100.00nm	21 45.50 -0.4 5.6mb	CHTO	55.72	257 iPc	24 38.30 0.8	GOL	64.55	58 iPc	25 38.50 0.4
INK	36.68 0.8s	36 iPc 73.00nm pP	22 07.20 0.2 5.7mb 48km	FFC	55.82 0.8s	44 iPc 74.00nm	24 37.60 -0.3 5.8mb	UPP	64.86	339 iP	25 27.60 -11.7X
WHN	37.67 0.5s	254 Pc 100.00nm PcP	22 15.00 -0.7 6.0mb 24 30.00	KKM	56.22 1.0s	232 ePc 66.50nm	24 41.50 0.2 5.6mb	NB2	65.13	343 P	25 39.40 -1.7
SIT	38.64	54 e(P) e	22 25.60 2.0 22 38.90 50km	BKS	56.24 1.0s	70 iPc 139.00nm	24 55.40 14.3X	REY	65.29	360 iP	25 43.50 1.5
XAN	38.66	263 Pc	22 23.10 -1.0	SOD	56.34	339 iP	24 39.50 -2.0	IPM	65.65	245 ePc	25 47.00 2.0
OZH	39.33 0.7s	243 Pc 100.00nm	22 30.00 0.3 5.8mb	LRM	56.57	57 ePc	24 43.40 -0.3	KGM	66.44 67.22	242 ePd 300 eP	25 51.50 1.4 26 03.00 8.1X
MBC	39.74 0.5s	22 eP 42.00nm	22 34.00 1.5 5.5mb	BDT	56.87 0.5s	256 eP 47.80nm	24 45.50 -0.3 5.8mb	MAIO	67.22	300 eP eS	26 08.00 0.1 34 48.00
LZH	40.56 1.2s Z 18s N 17s E 17s	270 Pc 52.00nm 2.10um 1.20um 1.20um	22 40.50 0.5 5.2mb 5.0MsZ	MHC	56.94	70 ePc epP	24 46.30 0.0 25 00.20 50km	QUE	67.39	290 eP 62 iPc	25 55.20 -1.0 25 56.30 0.1
GTA	41.11 Z 20s N 12s	277 Pc 1.10um 0.50um	22 56.00 61kmX 22 44.00 -0.3 4.7MsZ	ARN	57.00	70 P pP	24 46.00 -0.6 25 00.00 51km	ANMO	67.40 1.0s	62 iPc 4.00nm	26 10.30 49km 25 56.10 -0.1
CVP	43.47 1.0s	233 ePd 66.00nm	23 04.00 0.4 5.3mb	CMB	57.23	69 eP epP	24 48.30 0.1 25 02.50 52km	ALQ	67.40 0.8s	62 iPc 35.82nm	26 10.90 53km 25 56.10 -0.1
GZH	43.79	247 Pd	23 07.20 1.0	GUN	57.35	275 P	24 48.80 -0.8	MTN	67.45	208 iPd	25 55.90 -0.4
HKC	43.91	246 eP	23 07.80 0.6	NST	57.39	254 iPc	24 51.20 1.8	SCH	68.42	26 ePc	26 01.80 -0.2
CD2	43.99 1.2s Z 20s	264 P 100.00nm 0.70um	23 07.40 -0.5 5.4mb 4.6MsZ	SAO	57.45	70 e(P) epP	24 49.30 -0.4 25 13.60 98kmX	HYB	69.59 0.8s	273 iPc 130.80nm	26 09.50 -0.2 5.9mb
SZP	44.30	235 iPc	23 10.50 0.2	KKN	57.82	276 P	24 52.40 -0.2	TRT	69.90 1.1s	228 iPc 188.00nm	26 11.10 -0.4 5.9mb
GYA	45.30 1.2s	257 P 200.00nm PcP ScP	23 18.20 -0.3 5.9mb 24 58.00 28 49.00	KVN	57.89	66 iPd i	24 53.10 0.1 25 07.30 52km	CTA	71.34 1.0s	191 iPc 90.00nm	26 18.90 -1.2 5.7mb
				PKI	57.89	275 P	24 52.80 -0.5	POO	71.72 1.0s	277 iPc 196.00nm	26 22.50 -0.1 6.0mb
				JNW	57.94	355 eP	24 53.20 0.6	TAB	72.73	309 eP	26 29.00 0.5
				DMN	58.05	275 P	24 54.20 -0.1	QIS	72.83	197 iPc	26 27.40 -1.5
				GKN	58.07	276 P	24 54.10 -0.2	EKA	72.88 0.5s	348 Pc 49.70nm	26 28.80 0.0 5.7mb
				PTI	58.56	60 P	24 59.00 1.4	KRA	73.03 0.5s	333 eP 36.00nm	26 28.30 -1.5 5.6mb
				IMW	58.65	58 P	24 59.20 0.8	Z	18s	1.40um	5.3MsZ
				TNP	59.05 1.0s	67 iPd 102.50nm	25 01.20 0.1 5.9mb	DZM	73.11	171 iPc	26 31.90 12kmX
				BCH	59.33	71 eP pP	25 17.10 14.2X 25 33.00 42km	GBA	73.15	271 Pc	26 30.40 -0.6
				SYN	59.84	71 eP e	25 21.00 14.5X 25 27.00 -0.2	WB5	73.30	202 iPc	26 31.00 -0.7
				ISA	59.96	69 eP e	25 33.00 42km 25 21.00 51km	KSP	73.33	335 eP i	26 30.50 -1.1 26 45.20 50km
				NNT	60.02	252 iPc	25 08.00 0.3	WRA	73.37	202 Pc	26 31.00 -1.1
				DUG	60.13	62 P	25 09.00 0.6	FVM	73.48 0.7s	50 iPc 41.90nm	26 32.00 -0.7 5.5mb
				BW06	60.9s	41.35nm	5.6mb		1.0s	132.00nm	5.8mb
				FRB	60.15 0.9s	58 iPc 171.61nm	25 09.00 0.3 6.2mb				
				SUF	60.20 0.9s	22 ePc 133.00nm	25 06.60 -1.8 6.1mb				
					60.32	336 iP	25 07.40 -1.8				
					0.5s	6.80nm	5.0mb				



5.8x



PPT	1.0s	48.00nm	27	23.30	0.8	BUL	129.52	288 iPKPc	34	06.30	-2.5X	ASPA	19.20	189 eP	23	50.40	1.9
	82.55	130 iP	27	23.30	0.8	ZOBO	130.00	63 iPKPc	34	10.10	-0.2		0.7s	82.00nm			5.1mb
	0.6s	30.00nm					1.0s	20.75nm				Z	15s	2.18um			3.8Msz
ATH	82.55	325 ePd	27	21.80	-0.6		Z	24s	0.15um		4.6MszX			eS	27	18.70	
LPO	82.55	343 eP	27	22.70	0.4			LR	19	00.00				LR	31	24.90	
PPN	82.58	129 iP	27	23.50	0.8	LPB	130.22	63 PKP	34	11.70	1.2	WARB	23.72	204 eP	24	33.00	-1.4
	0.6s	15.00nm					1.0s	60.00nm						LR	25	12.50	3.0X
RMP	82.61	334 P	27	23.00	0.3			LR	29	15.00		FORR	27.47	197 eP	25	12.50	7.9X
PAE	82.62	130 iP	27	23.60	0.7	CCH	132.00	62 PKP	34	14.90	1.1	RKG	34.81	210 eP	26	22.20	1.8
	0.6s	15.00nm				SLR	133.90	283 ePKP	34	04.50	-12.4X	CHG	44.35	303 eP	27	35.40	-0.8
RDP	82.66	334 P	27	23.50	0.5		0.9s	35.29nm				XAN	46.86	327 eP	27	52.50	1.4
LRG	82.67	339 eP	27	22.90	0.0			i	34	16.80		CD2	47.67	320 eP	28	01.20	-1.0
	0.6s	77.50nm				KSR	134.84	284 iPKPd	34	20.00	1.2	BJI	48.50	338 eP	28	05.00	-0.7
APE	82.67	323 eP	27	21.00	-2.1		0.7s	5.00nm				CN2	49.37	349 P	28	12.00	-0.7
LMR	82.75	339 eP	27	22.90	-0.4	PRY	135.26	283 ePKP	34	12.50	-7.0X	MDJ	49.50	353 eP	28	13.00	-0.7
MDSJ	82.77	313 Pc	27	24.60	0.8	SEK	136.16	281 ePKP	34	10.00	-11.2X	HYB	61.94	292 eP	29	44.00	0.2
IIJ	82.80	68 (P)	27	26.00	1.4		0.4s	12.71nm				ZOBO	147.42	130 ePKP	39	05.00	-0.6
TVO	82.89	129 iP	27	25.40	1.1	BLF	137.60	282 iPKPc	34	12.50	-11.4X		S.D. = 1.3	on 17 of 20 obs.			
	0.6s	20.00nm					1.0s	30.00nm									
PGF	82.90	337 eP	27	23.40	-0.9			i	34	26.00							
	0.7s	77.15nm				BAO	139.38	39 e(PKP)	34	15.00	-12.4X						
BSS	82.95	332 P	27	24.50	0.1	SPA	140.72	180 iPKPc	34	20.00	-8.3X						
SGO	83.02	332 P	27	22.90	-1.8		0.9s	27.73nm									
CRX	83.08	68 (P)	27	28.00	2.2	CER	144.80	283 iPKPc	34	34.50	-1.8	WB5	0.55	107 iPc	01	22.50	0.0
MKRJ	83.12	313 Pd	27	26.10	0.5		0.4s	47.73nm				ASPA	3.93	179 iPd	02	14.70	1.5
ORI	83.13	331 P	27	26.60	1.3	TUH	144.84	284 iPKPc	34	33.50	-2.8X		0.4s	32.00nm			
RYD	83.17	301 iP+	27	25.40	-0.5		0.9s	403.36nm						eS	02	59.90	
MGR	83.33	331 P	27	26.10	-0.3		S.D. = 0.9	on 396 of 415 obs.				QIS	5.51	100 eP	02	35.00	-0.5
KAP	83.36	321 eP	27	25.60	-1.0									eS	03	36.00	
MMN	83.43	331 P	27	26.60	-0.2									e	04	52.00	
CSI	83.44	331 P	27	28.30	1.3							KNA	6.22	309 eP	02	45.70	0.2
VLS	83.48	327 ePd	27	26.80	-0.4									eS	03	53.00	
TDS	83.53	331 P	27	27.70	0.3							MTN	7.30	339 eP	03	01.00	0.3
ROI	83.54	330 P	27	27.50	0.0									eS	04	20.00	
QASM	83.71	304 iP+	27	28.40	-0.2									e	05	06.00	
ITM	83.90	326 ePd	27	28.60	-0.8							WARB	9.22	224 eP	03	26.10	-1.4
VLI	83.95	325 ePd	27	28.00	-1.6								0.2s	3.00nm			5.3mb
PPM	83.96	67 eP	27	31.00	0.4									eS	05	05.00	
CZI	84.00	331 P	27	28.80	-0.9							CTA	11.71	94 e(P)	04	10.50	8.8X
III	84.01	68 (P)	27	30.50	0.1								S.D. = 1.2	on 6 of 7 obs.			
NPS	84.22	322 eP	27	31.00	0.0												
EPF	84.30	343 eP	27	31.00	-0.3												
	0.6s	35.25nm															
BTH	84.31	344 (P)	27	32.20	0.9												
		(pP)	27	59.00	102kmX												
ETER	84.52	341 eP	27	34.00	1.6												
VAM	84.64	323 eP	27	32.00	-1.1												
SOI	85.07	330 P	27	35.00	-0.1												
EMON	85.08	349 iP	27	36.50	1.3												
ATN	85.17	331 P	27	34.50	-1.2												
AYN	85.20	311 iP+	27	36.60	0.7												
ECRI	85.21	345 eP	27	36.80	0.9												
HQL	85.31	312 iP+	27	37.00	0.5												
FORR	85.38	205 iPc	27	37.00	0.5												
	0.5s	36.00nm															
STS	85.77	350 eP	27	40.00	1.4												
BADA	85.96	312 iP+	27	40.00	0.3												
CAN	86.16	187 eP	27	40.30	-0.1												
MEU	86.31	331 P	27	41.60	0.1												
EBR	86.41	343 eP	27	42.00	0.2												
EROO	86.43	343 eP	27	42.00	0.1												
ETOR	86.87	344 eP	27	44.50	0.3												
ESEL	86.95	340 eP	27	45.00	0.6												
ADE	87.05	195 ePc	27	45.00	0.3												
	0.9s	38.66nm															
GUD	87.39	346 eP	27	49.70	3.0X												
MRWA	87.69	215 iPc	27	48.00	0.1												
	0.6s	47.00nm															
KMSA	87.81	300 iP+	27	48.50	-0.5												
ECHE	87.88	343 eP	27	49.50	0.5												
TOL	88.12	346 iPc	27	50.80	0.7												
	1.3s	128.85nm															
EPLA	88.23	347 eP	27	50.50	-0.2												
TOO	88.71	189 eP	27	54.00	1.4												
EALH	89.64	343 eP	27	57.00	-0.4												
NWAO	90.62	213 iPd	28	01.90	0.3												
AAPN	90.64	345 iPc	28	02.00	-0.2												
ALQJ	90.84	345 iPd	28	03.00	-0.1												
APHH	90.92	345 iPc	28	03.40	-0.1												
LKO	117.98	341 PKPc	33	46.36	-0.3												
	0.9s	17.50nm															
TIC	120.67	339 PKPc	33	51.86	0.1												
KIC	120.88	339 PKPc	33	52.02	-0.1												
	0.8s	19.50nm															
LIC	121.08	339 PKPc	33	52.46	0.0												
	0.8s	19.00nm															
ARE	128.22	67 ePKP	34	07.00	0.4												

ZOBO	1.0s	20.75nm															
	1.0s	20.75nm															
	1.0s	20.75nm															
	1.0s	20.75nm															
	1.0s	20.75nm															
	1.0s	20.75nm															
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	1.0s	20.75nm															
	1.0s	20.75nm															
	1.0s	20.75nm															
	1.0s	20.75nm															
	1.0s	20.75nm															
	1.0s	20.75nm															



10d 14h

&amp; MAR 10, 1990 14h 49m 27.81s

60.626 N 152.751 W

DEPTH = 137.4km

SOUTHERN ALASKA

&lt;AGS-P&gt;.

( 2 )

RDT	0.18	107	iP	49	46.18	1.0
RED	0.21	183	iP	49	46.06	0.8
CKL	0.61	19	iP	49	47.86	-0.9
			eS	50	03.65	
SPU	0.65	31	iP	49	47.94	-1.0
			eS	50	04.47	
BGL	0.66	15	iP	49	48.27	-0.8
CRP	0.71	24	iP	49	48.72	-0.7
NKA	0.75	80	eP	49	51.02	1.5
CGLM	0.77	28	iP	49	49.08	-0.8
NCG	0.83	20	eP	49	49.44	-0.9
NNL	0.93	128	eP	49	52.23	1.2
PDB	1.11	221	iP	49	51.72	-0.9
			iS	50	09.60	
SLKM	1.26	94	iP	49	54.03	-0.2
SUA	1.29	48	eP	49	54.39	-0.2
			eS	50	14.35	
CNPM	1.34	145	eP	49	55.40	0.3
			eS	50	16.15	
SKT	1.48	23	iP	49	55.70	-0.9
PMS	1.68	67	eP	49	58.58	-0.2
			eS	50	22.36	
SEW	1.72	106	eP	49	58.99	-0.3
PWA	1.73	52	eP	49	58.75	-0.6
CDD	1.76	195	eP	49	59.42	-0.4
PLRM	2.01	60	eP	50	01.29	-1.4
CUT	2.14	33	eP	50	03.36	-1.0
GHO	2.18	57	iP	50	03.65	-1.3
SML	2.44	59	eP	50	06.93	-1.2
NCA	3.17	62	eP	50	16.74	-0.8
RND	3.34	32	eP	50	18.03	-1.8
KLU	3.43	72	eP	50	19.59	-1.4
TOA	3.50	62	eP	50	21.68	-0.2
PAX	4.18	53	eP	50	30.00	-1.0
GLB	4.42	75	eP	50	33.69	-0.5

29 obs. associated

&amp; MAR 10, 1990 16h 00m 00.08s

37.113 N 116.055 W

DEPTH = 0.0km

5.0mb ( 44 obs.)

SOUTHERN NEVADA

( 41 )

&lt;DOE&gt;. ML 5.1 (BRK). 37' 06'

45.02" N., 116' 03' 18.64" W.,

Surface Elev. 1273 m., Depth of

Burial 500 m., Shot Time

160000.83, "METROPOLIS," Nevada

Test Site (Dept. of Energy).

GLR	0.09	19	iPc	00	02.40	0.5
BGB	0.16	242	iPc	00	03.80	0.6
TMBR	0.28	254	iP	00	06.00	0.4
LSM	0.41	205	iP	00	08.00	-0.3
TNP	1.34	317	iPc	00	25.80	-0.1
CLC	1.79	224	iPc	00	31.90	-0.7
GSC	1.91	199	iPc	00	33.50	-0.7
ISA	2.43	234	iPc	00	41.20	-0.6
KVN	2.52	321	iPc	00	42.50	-0.7
SBB	2.81	211	iPc	00	46.20	-1.1
TPC	3.00	180	iPc	00	48.90	-1.0
RVR	3.29	199	ePc	00	53.50	-0.5
MSU	3.38	64	ePc	00	54.70	-0.7
ABL	3.42	230	eP	00	54.70	-1.3
PKEM	3.43	253	eP	00	56.50	0.6
CMB	3.56	286	iPc	00	57.00	-0.8
BCH	3.79	241	eP	01	00.40	-0.7
PLM	3.81	190	iPc	01	00.90	-0.6
PRI	3.83	257	iPc	01	02.00	0.2
DUG	3.99	39	eP	01	02.70	-1.3
GLA	4.17	166	ePc	01	05.10	-1.4
SAO	4.33	267	eP	01	08.00	-0.7
			eS	02	19.65	
ARN	4.38	275	eP	01	08.80	-0.6
MHC	4.46	275	iPc	01	10.30	-0.4
			e	01	19.05	
			eS	02	23.15	
ORV	4.93	301	eP	01	16.00	-1.2
BKS	4.97	281	iPc	01	17.90	0.1
BKS	4.97	281	e(P)	01	17.95	0.1
			e	01	27.87	
WDC	6.13	306	ePc	01	32.80	-1.4

BW06	7.54	39	eP	01	54.40	0.2
IMW	7.82	28	ePc	01	58.70	0.6
ANMO	8.07	103	eP	02	00.10	-1.5
ALQ	8.07	103	eP	01	59.30	-2.3
GOL	8.78	70	eP	02	11.20	-0.3
GLD	8.90	69	eP	02	13.30	0.2
LRM	9.11	16	eP	02	17.10	1.1
VGB	9.11	339	eP	02	17.50	1.6
SHW	10.18	335	eP	02	33.50	2.8
DPW	10.87	352	eP	02	40.50	0.5
NEW	11.17	356	eP	02	45.20	1.1
RSSD	11.50	49	eP	02	46.00	-2.8
PNT	12.47	349	P	03	03.00	1.3
SES	13.76	14	eP	03	19.00	0.2
	1.1s	70.00nm			5.5mb	
MZX	16.16	146	(P)	03	55.50	5.3
EDM	16.22	6	P	03	50.00	-0.9
OLY	19.87	87	eP	04	34.30	-1.4
POW	19.97	85	eP	04	35.30	-1.5
FFC	20.09	24	iPc	04	35.70	-2.2
	0.8s	58.00nm			5.0mb	
FVM	20.33	80	eP	04	39.50	-1.0
RSON	21.04	42	eP	04	45.40	-2.4
	0.7s	346.02nm			5.8mb	
IIJ	22.43	136	(P)	05	05.00	2.4
CRX	22.73	136	(P)	05	00.00	-5.3
PPM	23.59	135	(P)	05	16.00	2.1
ACX	24.73	140	(P)	05	29.50	5.1
YKA	25.42	2	eP	05	28.20	-2.5
	0.8s	11.30nm			4.6mb	
TKL	25.97	83	eP	05	35.20	-0.8
OXX	26.25	134	(P)	05	40.50	1.5
BLA	28.30	79	P	05	56.40	-1.0
	0.8s	17.11nm			4.9mb	
JSC	28.31	85	eP	05	56.00	-1.4
TOA	31.19	333	eP	06	23.50	0.6
PMR	32.01	330	eP	06	30.30	0.3
	1.3s	42.50nm			5.2mb	
INK	32.73	348	eP	06	35.00	-1.2
FBA	33.55	336	eP	06	42.60	-0.8
SWV	34.46	327	eP	06	50.70	-0.7
TTA	35.45	330	P	06	59.30	-0.6
	0.9s	16.67nm			4.9mb	
IMA	36.21	335	ePc	07	05.90	-0.4
	1.3s	35.40nm			5.0mb	
FRB	38.90	31	eP	07	28.00	-0.7
MBC	39.25	359	eP	07	31.00	-0.5
	1.0s	35.00nm			4.9mb	
BRW	40.17	341	eP	07	38.10	-1.0
DAG	55.85	16	iPd	09	27.90	-13.3
	0.6s	10.67nm				
NNA	61.18	135	eP	10	17.00	-2.0
ARE	67.83	133	iPd	11	02.80	0.1
ZOBO	69.69	131	Pc	11	12.30	-2.2
	0.9s	19.46nm			5.3mb	
LPB	69.90	131	eP	11	12.00	-3.6
	0.4s	33.90nm			5.8mb	
KEV	70.07	13	eP	11	13.00	-2.4
CCH	71.75	130	(P)	11	25.00	-1.7
SOD	72.06	14	iP	11	25.30	-2.2
NB2	73.19	24	P	11	32.30	-2.0
	0.9s	11.70nm			5.0mb	
SUF	75.99	17	eP	11	48.10	-2.2
	1.1s	26.00nm			5.3mb	
FLN	77.17	38	eP	11	56.60	-0.5
	1.6s	41.65nm			5.3mb	
GRR	77.23	38	eP	11	56.80	-0.7
	1.2s	17.85nm			5.1mb	
LPF	77.38	39	eP	11	57.80	-0.5
	1.0s	12.00nm			5.0mb	
LDF	77.46	38	eP	11	58.00	-0.7
	1.2s	41.65nm			5.4mb	
NUR	77.53	19	eP	12	00.10	1.2
DOU	78.63	34	P	12	04.80	-0.4
MFF	78.80	39	eP	12	05.40	-0.7
	1.0s	12.00nm			4.9mb	
MEM	78.89	33	P	12	05.20	-1.3
CHJJ	79.35	307	P	12	07.80	-1.6
MAT	79.54	308	eP	12	09.00	-1.4
	0.9s	20.17nm			5.1mb	
MTMJ	79.77	308	P	12	10.20	-1.5
LSF	79.88	39	eP	12	11.10	-1.0
	1.2s	14.90nm			4.8mb	
TCF	80.19	38	eP	12	12.80	-0.9
	1.2s	14.90nm			4.8mb	
SSF	80.28	37	iPc	12	13.50	-0.7
	1.2s	17.85nm			4.9mb	

LOR	80.30	37	iPc	12	13.70	-0.6
	1.2s	38.70nm			5.2mb	
BGF	80.32	38	iPc	12	13.30	-1.1
	1.0s	22.00nm			5.1mb	
LFF	80.39	40	eP	12	14.20	-0.5
	1.0s	14.00nm			4.9mb	
IIDJ	80.39	307	P	12	13.90	-1.1
AVF	80.40	37	eP	12	13.60	-1.2
	1.2s	11.90nm			4.7mb	
MAF	80.41	38	eP	12	14.40	-0.5
	1.0s	8.00nm			4.6mb	
RJF	80.53	39	eP	12	14.80	-0.7
	1.8s	6.70nm			4.3mb	
LBF	80.56	37	eP	12	14.70	-1.0
	1.2s	20.85nm			5.0mb	
SMF	80.74	37	eP	12	15.40	-1.2
	1.0s	12.00nm			4.9mb	
LPO	80.79	40	eP	12	16.30	-0.6
	1.2s	11.90nm			4.8mb	
HAU	80.94	35	eP	12	16.90	-0.8
	1.0s	16.00nm			5.0mb	
CDF	81.06	34	eP	12	17.60	-0.8
	1.0s	8.00nm			4.7mb	
CAF	81.07	39	eP	12	17.60	-0.8
	1.2s	23.80nm			5.1mb	
MOX	81.24	31	eP	12	14.00	-5.2
	1.3s	29.00nm			5.2mb	
BSF	81.27	35	eP	12	18.60	-0.9
	1.0s	20.00nm			5.1mb	
CLL	81.28	30	iP	12	18.30	-1.0
	1.3s	17.00nm			4.9mb	
GRF	81.81	31	eP	12	22.40	0.2
BRG	82.00	29	iP	12	22.10	-1.0
	1.0s	20.00nm			5.2mb	
BAO	82.71	116	e(P)	12	27.00	-0.4
KSP	82.92	28	eP	12	27.20	-0.7
PRU	82.93	30	eP	12	27.00	-0.9
LPL	82.94	37	eP	12	28.40	0.0
	1.2s	11.90nm			5.0mb	
LPG	82.97	37	eP	12	28.60	0.0
	1.2s	11.90nm			5.0mb	
LSD	83.19	36	P	12	29.95	0.2
KHC	83.22	31	Pc	12	30.30	0.8
BNI	83.26	37	P	12	30.00	0.1
RRL	83.41	37	P	12	30.97	0.1
ORX	83.45	36	P	12	27.38	-3



SLR 147.70 80 iPKPc 19 47.20 1.4  
1.2s 93.75nm  
SEK 148.36 85 iPKPd 19 50.00 3.2  
1.0s 20.00nm  
152 obs. associated

MAR 10, 1990 16h 59m 52.87±0.62s  
42.314 N ± 6.1km 23.836 E ± 4.8km  
DEPTH = 10.0km (geophysicist)

BULGARIA (359)

PGB 0.34 46 iPg 00 00.00 0.1  
VTS 0.54 301 iPg 00 04.00 0.2  
PLD 0.68 108 ePg 00 06.00 -0.3  
KKB 0.72 232 iPg 00 06.00 -1.0  
MMB 0.73 186 iPg 00 08.00 0.8  
RZN 0.91 133 iPg 00 10.00 -0.4  
KDZ 1.35 119 iPg 00 18.00 0.2  
VAY 1.37 224 ePn 00 18.40 0.4  
SKO 1.81 260 ePn 00 35.50 11.1X  
S.D. = 0.6 on 8 of 9 obs.

? MAR 10, 1990 17h 05m 11.10±0.84s  
28.343 N ±15.0km 56.441 E ± 8.6km  
DEPTH = 33.0km (normal)  
4.3mb ( 6 obs.)  
SOUTHERN IRAN (353)

MAIO 8.34 17 eP 07 15.00 2.2  
eS 09 39.00  
RYD 9.51 250 eP 07 31.50 2.6  
QASM 11.71 262 eP 07 58.00 -0.9  
GKN 24.84 84 P 10 32.70 0.6  
GUN 25.94 84 P 10 41.80 -0.8  
PGD 38.82 306 P 12 36.50 1.7  
BOB 40.56 307 P 12 49.00 -0.1  
SBF 41.90 305 eP 12 59.10 -0.9  
0.7s 9.90nm 4.7mb  
LPG 42.54 308 eP 13 05.00 -0.6  
0.8s 5.35nm 4.3mb  
LPL 42.56 308 eP 13 05.00 -0.6  
0.9s 4.10nm 4.2mb  
BGF 45.35 309 eP 13 27.70 -0.2  
TCF 45.77 308 eP 13 31.10 -0.1  
CAF 45.80 306 eP 13 31.00 -0.5  
0.8s 3.35nm 4.3mb  
RJF 46.21 307 eP 13 34.20 -0.5  
LFF 46.74 306 eP 13 38.40 -0.5  
0.9s 11.45nm 4.9mb  
MBC 75.63 359 eP 16 53.00 -1.0  
YKA 89.20 356 eP 18 04.10 -0.4  
0.6s 0.70nm 4.2mb  
S.D. = 1.2 on 17 of 17 obs.

& MAR 10, 1990 17h 26m 30.30s  
37.113 N 116.055 W  
DEPTH = 0.0km (geophysicist)  
4.0mb ( 3 obs.)  
SOUTHERN NEVADA (41)

<SPEC>. Collapse. Held to  
"METROPOLIS" location.

LSM 0.41 205 eP 26 37.30 -1.2  
TNP 1.34 317 eP 26 56.00 -0.1  
KVN 2.52 321 eP 27 13.50 0.1  
MSU 3.38 64 e(P) 27 36.00 10.4  
ABL 3.42 230 eP 27 36.00 9.8  
PKEM 3.43 253 eP 27 34.00 7.9  
CMB 3.56 286 eP 27 28.30 0.3  
BCH 3.79 241 eP 27 32.00 0.7  
PLM 3.81 190 eP 27 32.00 0.3  
GLA 4.17 166 eP 27 49.50 12.8  
ARN 4.38 275 eP 27 50.50 10.8  
PV09 5.65 74 eP 28 10.30 12.3  
ALO 8.07 103 eP 28 31.50 -0.3  
LRM 9.11 16 eP 28 55.90 9.6  
EDM 16.22 6 eP 30 27.50 6.4  
FFC 20.09 24 eP 31 09.00 0.9  
1.3s 25.00nm 4.4mb  
RSON 21.04 42 eP 31 18.10 0.0  
0.8s 7.61nm 4.1mb  
YKA 25.42 2 eP 32 00.60 -0.3  
1.1s 1.10nm 3.5mb  
18 obs. associated

\* MAR 10, 1990 17h 39m 06.29±0.81s  
44.526 N ±14.8km 150.023 E ±10.5km

DEPTH = 33.0km (normal)  
4.2mb ( 5 obs.)

KURIL ISLANDS REGION (222)

KUSJ 4.10 251 P 40 07.20 -1.0X  
S 40 52.90  
ASAJ 5.31 268 eP 40 28.20 2.8X  
HOOJ 5.35 249 P 40 26.20 0.3X  
eS 41 27.30  
MRRJ 6.84 255 eP 40 46.00 -0.9X  
MAT 12.01 232 (P) 41 55.00 -3.0X  
MDJ 14.57 278 eP 42 32.20 0.4  
CN2 17.64 276 Pc 43 10.40 -0.5  
SNY 19.45 271 Pd 43 32.00 -0.8  
BJI 25.33 272 eP 44 32.00 0.6  
NJ2 27.28 254 P 44 53.70 4.2X  
HHC 28.33 276 eP 45 00.60 1.5  
BTO 29.52 277 eP 45 14.00 4.2X  
LZH 35.81 273 eP 46 04.50 -0.1  
GTA 37.20 280 Pc 46 16.80 0.6  
INK 44.68 31 eP 47 18.00 0.8  
MBC 47.42 19 eP 47 39.50 0.7  
0.5s 1.00nm 4.1mb  
CHTO 49.48 256 eP 47 55.00 -0.5  
0.6s 0.84nm 3.9mb  
GUN 53.03 275 P 48 22.60 -0.1  
KKN 53.52 275 P 48 26.60 0.5  
PKI 53.56 275 P 48 26.20 -0.4  
DMN 53.76 275 P 48 28.00 0.1  
GKN 53.86 275 P 48 28.60 0.1  
SUF 64.12 335 eP 49 36.80 -2.2  
WRA 65.74 196 Pd 49 49.50 -0.4  
0.7s 1.50nm 4.2mb  
NB2 69.60 340 P 50 12.40 -1.4  
0.5s 1.70nm 4.4mb  
CLL 77.55 334 iP 51 00.20 0.1  
KBA 81.11 332 iPd 51 20.50 0.9  
0.7s 2.80nm 4.4mb  
S.D. = 0.9 on 20 of 27 obs.

MAR 10, 1990 17h 53m 04.36±0.90s  
18.941 N ±11.7km 64.836 W ± 5.1km  
DEPTH = 10.0km (geophysicist)  
3.4mb ( 1 obs.)

VIRGIN ISLANDS (91)  
ML 4.B (FDF).

LPR 1.16 237 iP 53 26.70 0.5  
CPD 1.36 229 iP 53 30.00 0.6  
SJJ 1.50 237 iP 53 31.10 -0.2  
S 53 52.50  
PORP 1.92 243 iP 53 37.20 -0.3  
LRS 2.01 252 iP 53 37.80 -1.0  
SEG 4.06 128 eP 54 06.80 -1.0  
PAG 4.18 133 eP 54 09.90 0.3  
S 55 02.00  
MGG 4.51 131 eP 54 14.00 -0.2  
BBL 4.67 136 eP 54 17.50 0.8  
YKA 55.28 334 eP 02 40.40 0.4  
0.5s 0.20nm 3.4mb  
S.D. = 0.7 on 10 of 10 obs.

? MAR 10, 1990 18h 04m 24.76±13.89s  
19.521 N ±9.4km 65.912 W ±52.3km  
DEPTH = 10.0km (geophysicist)

PUERTO RICO REGION (90)

LPR 1.21 178 iP 04 47.30 0.0  
SJJ 1.42 189 iP 04 50.80 0.2  
S 05 04.80  
CPD 1.47 180 iP 04 51.30 -0.1  
LRS 1.51 216 iP 04 52.00 0.1  
PORP 1.61 205 iP 04 53.10 -0.3  
S.D. = 0.2 on 5 of 5 obs.

\* MAR 10, 1990 18h 16m 28.10±1.74s  
39.008 N ±10.6km 14.464 E ±15.0km  
DEPTH = 10.0km (geophysicist)

TYRRHENIAN SEA (389)

GIB 1.07 199 P 16 54.50 6.1X  
ATN 1.15 137 P 16 51.50 1.8  
eSn 17 18.30  
CZI 1.32 80 P 16 52.90 0.5  
eS 17 15.40  
MGR 1.41 36 P 16 57.00 3.2X  
MMN 1.47 53 P 16 56.20 1.5

SOI 1.56 126 Pd 16 53.60 -2.3  
eSn 17 19.60  
TDS 1.59 65 Pd 16 56.20 -0.2  
eSn 17 25.80  
CSI 1.61 61 P 16 57.10 0.4  
eS 17 30.20  
SGO 1.68 23 P 17 01.00 3.4X  
ROI 1.73 70 P 16 57.30 -1.1  
eS 17 22.20  
ORI 1.86 55 Pc 16 59.20 -1.1  
eSn 17 30.70  
DUI 2.65 360 P 17 11.50 -0.2  
SDI 2.74 350 P 17 13.00 0.0  
S.D. = 1.4 on 10 of 13 obs.

& MAR 10, 1990 18h 40m 42.40s  
32.740 N 115.490 W  
DEPTH = 12.0km  
CALIFORNIA-MEXICO BORDER REGION (45)  
<PAS-P>. ML 3.2 (PAS).

GLA 0.64 61 iPc 40 54.20 -0.8  
HAY 0.97 353 iPc 41 00.00 -0.7  
BAR 1.00 267 iPc 41 00.00 -1.2  
PLM 1.30 298 iPc 41 04.40 -2.1  
CPE 1.36 276 iPc 41 05.30 -1.9  
TPC 1.44 341 iPd 41 06.10 -2.2  
6 obs. associated

\* MAR 10, 1990 18h 50m 45.38±1.96s  
6.906 N ±14.3km 72.925 W ±17.4km  
DEPTH = 149.8 ± 23.1 km  
4.6mb ( 7 obs.)  
NORTHERN COLOMBIA (99)

BOG 2.54 207 iPc 51 29.00 1.3  
iS 52 00.00  
UPA 6.86 288 iPc 52 22.70 -2.0  
0.7s 47.95nm 5.0mb  
PSO 7.17 218 eP 52 29.50 0.2  
TCE 11.67 70 eP 53 39.44 11.1X  
TRN 11.98 71 eP 53 41.86 9.4X  
ZOBO 23.51 168 eP 55 43.00 -0.6  
e 56 16.00  
RTRS 37.01 175 iPc 57 51.80 9.7X  
ZON 38.45 174 eP 58 05.00 10.7X  
CFA 38.56 174 e(P) 58 09.20 14.1X  
ALQ 41.58 317 eP 58 21.00 0.8  
1.0s 2.00nm 3.7mb  
RSON 47.10 342 iPd 59 03.40 -0.5  
0.5s 12.70nm 4.8mb  
SCH 48.03 5 eP 59 13.00 2.0  
BW06 48.13 324 eP 59 12.70 0.4  
1.0s 5.00nm 4.2mb  
SES 53.72 331 eP 59 54.00 0.0  
FRB 56.82 2 eP 00 15.00 -1.0  
YKA 63.25 340 eP 00 58.90 -0.9  
0.6s 8.60nm 4.9mb  
TIC 67.38 86 P 01 26.30 -0.8  
LIC 67.40 86 Pd 01 26.60 -0.6  
KIC 67.67 86 Pd 01 28.40 -0.5  
INK 73.02 340 eP 02 01.00 0.9  
MBC 73.76 350 ePc 02 05.30 1.0  
0.9s 14.00nm 4.7mb  
DAG 75.51 11 iPd 02 14.60 0.3  
0.6s 4.67nm 4.4mb  
WRA 150.54 241 PKPc 10 20.30 4.3X  
0.5s 2.10nm  
WB5 150.55 241 ePKP 10 20.20 4.2X  
e 11 03.50  
CHTO 153.22 17 ePKP 10 27.90 8.0X  
0.7s 1.59nm  
S.D. = 1.1 on 17 of 25 obs.

MAR 10, 1990 19h 06m 54.72±0.29s  
45.037 N ± 2.3km 6.791 E ± 3.4km  
DEPTH = 10.0km (geophysicist)  
FRANCE (538)  
ML 3.0 (GEN), 2.7 (LDG), MD 2.6 (STR).

BNI 0.08 281 Pc 06 56.50 -0.9  
eSg 06 59.50  
RRL 0.12 182 P 06 57.72 -0.2  
S 07 00.02  
RSP 0.35 71 P 07 02.72 0.7  
S 07 08.15



10d 19h

LPG	0.46	357	Pg	07 04.20	0.0	<AGS-P>										1.1s	14.00nm	4.8mb			
			Sg	07 10.60												WRA	51.46	87 Pc	04 38.30	-0.7	
LPL	0.48	355	Pg	07 04.60	0.0	PCA	2.46	30	eP	13 40.80	-5.2						1.4s	25.60nm	5.0mb		
			Sg	07 11.20					eS	14 08.79						WB5	51.52	87 eP	04 39.00	-0.4	
LSD	0.49	31	P	07 04.84	0.0	TGL	2.77	359	eP	13 44.99	-5.6					SPA	52.91	180 eP	04 51.60	2.0	
			S	07 11.71					eS	14 15.11							1.6s	52.78nm	5.2mb		
FOUF	0.51	181	iPgc	07 04.05	-1.0	GLB	3.51	351	eP	13 54.95	-5.9					Z	20s	4.05um	5.5msz		
			i(Sg)	07 11.00		KLU	3.87	336	eP	14 00.10	-6.0						54.40	0 ePc	05 00.00	-0.7	
PZZ	0.58	157	P	07 05.58	-0.9	HYT	3.89	41	P	14 02.40	-3.9					QIS	55.34	91 eP	05 07.00	-0.7	
			S	07 13.38		SEW	4.08	304	eP	14 02.31	-6.6					POO	55.66	355 eP	05 03.50	-6.4X	
DOI	0.62	149	P	07 06.50	-0.8	SIT	4.08	100	eP	14 00.93	-8.0					CHG	59.11	23 eP	05 34.00	-0.2	
			eSg	07 16.50		KNK	4.50	322	eP	14 09.29	-5.7					CTA	60.88	94 iPc	05 46.00	-0.6	
STV	0.88	154	P	07 11.10	-0.6	CNPM	4.71	293	eP	14 12.42	-5.5					PKI	64.86	7 P	06 12.40	-0.6	
			S	07 23.07		PMS	4.77	316	eP	14 14.12	-4.8						1.2s	34.00nm	5.4mb		
ENR	0.93	151	P	07 11.89	-0.6	NNL	4.90	298	eP	14 15.69	-4.9					DMN	64.86	7 P	06 12.80	-0.2	
			S	07 24.43		RED	5.72	299	eP	14 26.11	-6.2					KKN	65.06	7 P	06 13.90	-0.3	
ORO	1.02	55	P	07 10.50	-3.7X	CDD	5.82	284	eP	14 28.61	-5.0					GKN	65.21	6 P	06 14.70	-0.4	
ORX	1.03	54	P	07 14.76	0.5	YKA	14.59	60	eP	16 35.30	2.1						1.2s	65.00nm	5.7mb		
			S	07 27.84					0.5s	0.50nm	3.4mb					GUN	65.24	7 P	06 15.50	0.0	
ROB	1.07	134	P	07 14.83	-0.1	FFC	22.54	81	eP	18 06.00	-0.2					KMI	66.21	24 Pd	06 22.00	0.3	
			S	07 29.22					0.9s	10.00nm	4.3mb					Z	20s	0.70um	4.9msz		
TOUF	1.07	162	Pg	07 14.76	-0.3	15 obs. associated													eS	15 08.00	
AUTN	1.14	156	Pg	07 15.95	-0.2											LSA	67.72	12 eP	06 31.80	0.4	
MVIF	1.17	167	Pg	07 16.56	-0.1											GYA	68.80	27 P	06 38.80	1.0	
			Sg	07 35.62		? MAR 10, 1990 23h 30m 38.27±5.01s										CD2	71.91	23 eP	06 56.60	0.0	
SAOF	1.18	152	Pn	07 16.15	-0.7	38.658 N ±16.4km 15.559 E ±19.7km										MAIO	75.24	344 eP	07 17.00	1.1	
CKI	1.23	119	P	07 16.60	-0.9	DEPTH = 126.8 ± 53.2 km										WHN	75.46	32 Pc	07 23.00	5.9X	
SBF	1.26	158	Pg	07 18.50	0.3	SICILY (398)										KSH	76.39	358 eP	07 24.00	1.7	
			Sg	07 36.50		ATN	0.50	189	P	30 57.00	-0.2					XAN	76.49	26 iPc	07 23.20	0.2	
CALN	1.29	177	Pg	07 20.57	1.9				eSn	31 14.00						LZH	76.76	21 eP	07 25.50	0.9	
			Sg	07 40.40		SOI	0.70	146	Pc	30 58.80	0.3						2.0s	23.00nm	4.9mb		
FIN	1.31	129	P	07 18.69	-0.2				eSn	31 16.80						Z	30s	0.90um	4.9mszX		
			S	07 35.07		CZI	0.72	38	P	30 58.70	0.0					NJ2	78.72	34 Pc	07 40.80	5.6X	
PCP	1.34	111	P	07 20.10	0.6				eS	31 13.20						GTA	78.85	17 eP	07 36.00	0.0	
			S	07 38.30		TDS	1.17	31	P	31 03.00	0.1					SSE	78.99	37 P	07 40.70	4.0X	
REVF	1.36	162	Pg	07 20.72	1.0	ROI	1.20	40	P	31 02.70	-0.6						1.2s	18.00nm	5.0mb		
			Sg	07 41.85		CSI	1.25	27	P	31 04.40	0.6					Z	20s	0.37um	4.7msz		
IMI	1.37	145	P	07 19.82	-0.1	MMN	1.28	15	P	31 04.00	0.1					TIY	81.03	27 Pc	07 47.80	0.2	
			S	07 37.22		MGR	1.48	360	P	31 06.00	-0.2					Z	28s	0.60um	4.8mszX		
FRF	1.48	184	Pg	07 22.00	0.6	ORI	1.56	26	P	31 07.00	-0.3					WMO	81.18	7 P	07 48.20	0.0	
			Sg	07 41.30		SGO	1.91	354	P	31 11.50	0.2					BTO	82.80	24 eP	07 57.00	0.2	
LRG	1.61	191	Pg	07 24.80	1.5	S.D. = 0.4 on 10 of 10 obs.										HHC	83.53	25 eP	08 01.40	0.8	
			Sg	07 46.80		MAR 11, 1990 00h 55m 31.29±0.39s										KIC	88.25	279 P	08 25.90	1.6	
LMR	1.71	187	Pg	07 26.00	1.2	37.278 S ± 9.7km 78.241 E ± 7.0km										LIC	88.40	279 P	08 26.60	1.6	
SMF	2.61	309	Pn	07 38.20	0.5	DEPTH = 10.0km (geophysicist)										Z	22s	0.50um	4.9msz		
			Pg	07 43.50		5.1mb (16 obs.) 4.9msz (5 obs.)										TIC	88.64	279 P	08 27.60	1.4	
			Sg	08 15.80		MID-INDIAN RISE (429)										RTRS	106.40	209 ePKPc	14 14.90	17.1X	
LBF	2.76	316	Pn	07 40.00	0.1	CENTROID, MOMENT TENSOR (HRV)										MBC	140.13	6 ePKP	15 07.00	6.4X	
			Pg	07 46.10		Data Used: GDSN										INK	144.29	20 ePKP	15 06.00	-2.0	
			Sg	08 21.80		L.P.B.: 11S, 23C										YKA	153.54	13 ePKP	15 26.60	4.0X	
HAU	2.99	354	Pg	07 50.80	7.8X	Centroid Location:											0.9s	5.00nm			
			Sg	08 31.00		Origin Time 00:55:39.6 0.9										KVN	167.02	77 ePKP	15 55.80	17.6X	
LOR	3.02	319	Pn	07 42.50	-1.0	Lot 37.30S 0.10 Lon 78.47E 0.09										TNP	167.72	82 e(PKP)	15 54.00	15.3X	
			Sg	08 29.40		Dep 15.0 FIX Half-duration 1.7										ALQ	175.54	120 ePKP	15 49.00	6.7X	
BGF	3.15	300	Pn	07 45.00	-0.3	Moment Tensor: Scale 10**16 Nm										ANMO	175.54	120 ePKP	15 49.70	7.4X	
			Sg	08 34.20		Mrr=-1.11 0.40 Mtt=-8.29 0.50										GOL	176.27	48 ePKP	15 59.00	16.6X	
S.D. = 0.8 on 31 of 33 obs.						Mff=9.40 0.46 Mrt=-1.23 1.52										S.D. = 1.0 on 37 of 51 obs.					
						Mrf=2.29 1.62 Mtf=0.81 0.54										MAR 11, 1990 01h 51m 09.93±0.88s					
* MAR 10, 1990 20h 05m 17.46±1.09s						Principal Axes:										31.267 S ±20.4km 68.578 W ±32.5km					
36.750 N ±13.6km 73.308 E ±10.1km						T Val=9.89 Plg=12 Azm=272										DEPTH = 100.0km (geophysicist)					
DEPTH = 10.0km (geophysicist)						N -1.32 74 135										SAN JUAN PROVINCE, ARGENTINA (137)					
3.8mb (2 obs.)						P -8.58 11 4															
NORTHWESTERN KASHMIR (720)						Best Double Couple: Mo=9.2*10**16															
						NP1: Strike=48 Dip=74 Slip=1															
						NP2: 318 89 164															
QUE	8.43	221	eP	07 22.60	-0.1	SEK	43.04	267	iPd	03 33.00	0.0					RTLL	0.11	124 iPc	51 24.00	-0.4	
NDI	8.69	157	eP	07 31.00	4.9X				1.3s	38.46nm	5.0mb					RTCB	0.29	221 iPd	51 25.00	0.2	
			eS	09 08.50													S	51 36.00			
MAIO	11.13	272	eP	07 55.00	-4.7X	SLR	43.67	270	iPc	03 37.20	-1.0					CFA	0.45	140 iPc	51 26.00	0.4	
GKN	12.94	129	P	08 25.40	1.1				1.5s	83.33nm	5.3mb						S	51 38.00			
KKN	13.49	128	P	08 31.40	-0.2	PRY	43.77	268	iPd	03 37.70	-1.3					RTCV	0.59	177 iPc	51 26.50	-0.2	
DMN	13.51	129	P	08 32.40	0.5				0.8s	6.25nm	4.5mb						S	51 39.00			
PKI	13.73	128	P	08 34.40	-0.5	BLF	43.85	265	iPd	03 40.10	0.5					RTRS	1.33	325 iPc	51 34.50	0.1	
GUN	13.80	126	P	08 34.80	-0.9	BFS	44.34	268	iPd	03 41.00	-2.5					S.D. = 0.5 on 5 of 5 obs.					
HYB	19.81	165	eP	09 57.50	6.4X	KSR	44.72	269	iPd	03 45.90	-0.8					? MAR 11, 1990 02h 34m 15.03±0.96s					
GBA	23.34	170	Pc	10 29.90	3.1X				0.4s	20.34nm	5.3mb					38.083 N ± 7.6km 26.937 E ± 9.8km					
			0.7s	1.60nm	3.7mb				0.9s	11.54nm	4.8mb					DEPTH = 5.0km (geophysicist)					
MBC	66.99	3	eP	16 12.00	0.0	SWZ	45.37	267	iPc	03 48.00	-3.8X					AEGEAN SEA (365)					
YKA	80.89	4	eP	17 34.50	1.8X				0.7s	27.40nm	5.3mb					MD 3.2 (ATH).					
			0.6s	0.70nm	3.9mb	BUL	46.22	277	iPd	03 55.00	-3.5X					SMG	0.38	192 iPgc	34 22.50	-0.2	
S.D. = 0.8 on 7 of 12 obs.									1.0s	30.00nm	5.3mb						eSg	34 26.50			
& MAR 10, 1990 23h 13m 05.18s						ASPA	49.21	90	iPc	04 21.10	-0.7					CIN	1.03	118 iPgc	34 35.00	0.1	
57.993 N									1.3s	31.00nm	5.2mb						iSg	34 50.00			
DEPTH = 10.0km (geophysicist)						Z	21s	2.04um	5.1msz							PRK	1.27	336 ePb	34 39.00	-0.1	
3.8mb (2 obs.)									LR	22 11.00						APE	1.51	228 ePg	34 43.00	0.2	
GULF OF ALASKA (15)						GBA	50.61	359	Pd	04 31.70	-0.7					S.D. = 0.3 on 4 of 4 obs.					



? MAR 11, 1990 02h 58m 06.62±4.35s  
1.629 N ±49.2km 126.694 E ±48.2km  
DEPTH = 149.5 ±22.5 km  
4.2mb ( 3 obs.)

MOLUCCA PASSAGE (266)

MNI 1.86 264 ePd 58 40.50 0.0  
eS 59 09.00  
WB5 22.66 161 eP 02 56.00 0.0  
i 03 02.90  
WRA 22.71 161 Pd 02 56.70 0.2  
0.5s 5.20nm 4.2mb  
OIS 25.42 151 eP 03 22.00 -0.1  
ASPA 26.10 165 eP 03 28.40 0.0  
0.4s 5.00nm 4.5mb  
FORR 32.33 178 eP 04 23.40 -0.1  
GBA 50.14 286 Pd 06 49.00 0.0  
0.5s 1.50nm 4.0mb  
S.D. = 0.2 on 7 of 7 obs.

MAR 11, 1990 03h 15m 30.18±0.40s  
27.971 S ±6.0km 66.483 W ±10.2km  
DEPTH = 172.2km ( 5 depth phases)  
4.2mb ( 4 obs.)

CATAMARCA PROVINCE, ARGENTINA (130)

RTRS 3.41 229 iPc 16 25.00 1.8  
RTLL 3.77 207 iPc 16 29.50 0.8  
CFA 3.93 202 iPc 16 31.80 1.0  
RTCB 4.04 209 eP 16 34.00 1.7  
ZON 4.04 208 iPd 16 32.00 -0.3  
RTCV 4.27 204 ePd 16 35.80 0.6  
MDZ 5.31 202 eP 16 51.10 2.3  
eS 17 41.00  
FCH 6.27 211 iPd 17 02.50 0.8  
iS 18 14.00  
ROCH 6.33 217 iPc 17 01.00 -1.5  
iS 18 12.00  
SAN 6.54 212 iPc 17 04.50 -0.6  
i 18 16.50  
PCH 6.61 211 iP 17 06.00 -0.1  
iS 18 21.00  
IHA 6.72 220 eP 17 05.00 -2.4  
iS 17 20.50  
TACH 6.84 213 iPc 17 07.40 -1.6  
i 18 23.00  
CHCH 6.94 210 iPc 17 09.90 -0.5  
i 17 26.50  
iS 18 07.50  
LCCH 7.02 217 iPd 17 10.00 -1.4  
LNV 7.31 214 iPc 17 12.40 -2.9  
ITB1 11.34 76 e(P) 18 18.10 9.8X  
ITB7 11.38 78 eP 18 18.80 10.0X  
ITB 11.45 77 e(P) 18 19.20 9.5X  
LPB 11.48 352 iPc 18 10.10 -0.4  
i 18 21.00  
S 20 14.00  
LR 21 35.00  
ZOBO 11.74 352 iP 18 12.60 -1.5  
Z 24s 0.18um

18 23.00  
S 20 18.00  
LR 21 10.00  
ARE 12.35 337 eP 18 21.00 -0.7  
BAO 21.07 58 eP 20 06.50 4.4X  
CAI 35.04 58 eP 22 08.00 -0.3  
SPA 62.19 180 iPd 25 37.60 2.3  
1.0s 76.00nm 5.5mb X  
i 26 16.00 162km  
LIC 68.29 70 P 26 14.50 -0.3  
TIC 68.52 70 P 26 16.20 0.0  
KIC 68.60 70 P 26 16.50 -0.2  
FVM 69.34 340 eP 26 30.20 9.5X  
epP 27 11.80 174km  
LKO 69.66 67 P 26 22.74 -0.5  
ALO 73.09 327 eP 26 44.00 0.6  
0.8s 3.36nm 4.1mb  
epP 27 31.00 197kmX  
ANMO 73.09 327 eP 26 45.00 1.6  
GOL 76.45 330 eP 27 13.90 11.4X  
RSSD 79.55 333 eP 27 20.90 1.6  
BFS 80.51 115 eP 27 24.00 -0.8  
BW06 80.79 329 eP 27 27.10 1.2  
0.7s 3.80nm 4.2mb  
TNP 81.07 322 e(P) 27 38.20 10.8X  
RSON 82.09 343 eP 27 32.60 0.4

KVN 82.25 322 ePc 28 15.80 175km  
e 27 44.90 11.4X  
LRM 84.47 330 eP 28 27.80 174km  
e 27 46.40 1.8  
e 28 30.20 177km  
BUL 85.07 110 iPc 27 47.30 -0.9  
1.0s 44.50nm 5.2mb  
EDM 90.52 334 ePd 28 13.60 0.4  
YKA 97.99 340 eP 28 45.20 -1.9  
0.7s 0.70nm 4.3mb  
ASPA 125.03 203 iPKPc 34 12.30 0.4  
0.5s 24.00nm  
WRA 128.28 205 PKPd 34 19.20 1.0  
0.5s 10.40nm  
WB5 128.33 205 iPKPd 34 19.20 0.9  
e 35 05.50  
GBA 143.52 106 PKPc 34 44.30 -2.1  
0.6s 5.90nm  
HYB 146.18 101 iPKPd 34 54.50 3.5X  
1.0s 50.00nm  
e 35 38.00  
NDI 148.11 80 iPKPd 34 59.00 5.3X  
0.5s 38.73nm  
CHG 163.83 121 ePKP 35 29.80 16.0X  
S.D. = 1.4 on 39 of 50 obs.

\* MAR 11, 1990 03h 29m 55.90±3.53s  
31.739 S ±11.1km 70.352 W ±14.5km  
DEPTH = 133.2 ±58.4 km  
CHILE-ARGENTINA BORDER REGION (127)

ROCH 1.35 204 iP 30 22.50 -0.7  
iS 30 42.00  
RTCV 1.55 95 ePc 30 25.20 0.0  
FCH 1.58 178 iPd 30 26.70 0.8  
iS 30 49.00  
RTLL 1.66 76 iPc 30 25.50 -0.9  
iS 30 47.20  
SAN 1.73 189 eP 30 27.30 0.1  
iS 30 50.30  
RTRS 1.74 26 iPd 30 28.00 0.7  
CFA 1.81 86 iPc 30 23.00 -5.2X  
S 30 51.00  
PCH 1.88 184 iPc 30 30.00 0.9  
iS 30 54.50  
TACH 1.97 194 iP 30 29.70 -0.4  
iS 30 55.50  
LCCH 2.01 210 iPd 30 30.60 0.0  
iS 30 53.50  
CHCH 2.20 187 iPc 30 33.50 0.5  
iS 31 01.50  
i 31 02.90  
LNV 2.38 202 iPc 30 34.40 -0.8  
iS 31 03.50  
S.D. = 0.8 on 11 of 12 obs.

\* MAR 11, 1990 03h 47m 30.35±1.46s  
6.779 S ±8.5km 130.440 E ±15.5km  
DEPTH = 79.8 ±12.8 km  
4.7mb ( 6 obs.)

BANDA SEA (280)

AAI 3.80 324 ePc 48 29.50 1.8  
MTN 6.07 174 iP 48 59.10 -0.3  
eS 50 04.00  
KNA 9.06 190 iPd 49 39.70 -0.9  
0.3s 102.00nm 6.1mb X  
eS 51 14.00  
WB5 13.57 164 eP 50 36.10 -4.7X  
eS 53 00.00  
e 57 41.00  
WRA 13.62 164 Pd 50 36.80 -4.7X  
0.5s 14.70nm 4.7mb X  
OIS 16.33 148 eP 51 12.00 -4.1X  
eS 53 59.00  
PMG 16.75 100 eP 51 28.50 7.0X  
ASPA 17.12 169 iPd 51 23.50 -2.5  
0.5s 72.00nm 5.2mb  
Z 22s 0.14um 4.7msz  
eS 54 21.20  
LR 58 21.00  
MBL 17.60 215 eP 51 32.20 0.3  
eS 54 35.00  
WARB 19.63 190 iPc 51 57.60 2.3  
0.3s 5.00nm 4.4mb  
eS 55 25.00  
CTA 20.26 132 iPc 52 02.40 0.5

1.0s 13.00nm 4.2mb  
MRWA 26.15 210 eP 53 02.00 3.1X  
BAL 26.98 207 eP 53 10.00 3.5X  
NWA0 28.77 204 eP 53 24.00 1.4  
BRS 29.49 137 eP 53 16.00 -13.3X  
BDT 39.18 308 eP 54 53.00 0.7  
CHG 40.14 310 eP 55 01.00 0.7  
XAN 45.42 335 P 55 42.00 -1.0  
SHL 49.38 312 iP 56 14.00 -0.2  
GTA 53.99 331 eP 56 46.20 -2.4  
GUN 55.14 311 P 56 57.00 -0.4  
PKI 55.32 310 P 56 58.00 -0.7  
0.6s 12.00nm 5.1mb  
KKK 55.53 310 P 56 59.80 -0.3  
0.6s 21.00nm 5.3mb  
DMN 55.57 310 P 57 00.20 -0.2  
GKN 56.12 310 P 57 03.90 -0.4  
GBA 56.38 291 Pc 57 04.30 -1.8  
0.6s 2.00nm 4.4mb  
HYB 56.61 296 eP 57 07.00 -0.8  
WMO 63.45 327 iPd 57 54.40 0.3  
LPG 118.09 318 ePKP 06 10.70 0.5  
0.4s 1.15nm  
LPL 118.09 318 ePKP 06 10.60 0.5  
0.4s 1.70nm  
BGF 120.19 321 ePKP 06 14.60 0.8  
0.4s 1.70nm  
TCF 120.71 321 ePKP 06 15.60 0.8  
MFF 122.03 322 ePKP 06 18.00 0.7  
0.4s 3.45nm  
LKO 136.41 277 PKP 06 46.38 0.6  
LPB 150.46 142 PKPc 07 18.00 7.9X  
ZOBO 150.64 141 ePKP 07 17.00 6.4X  
1.0s 6.25nm  
S.D. = 1.2 on 27 of 36 obs.

MAR 11, 1990 04h 19m 18.46±0.58s  
46.194 N ±4.9km 1.630 E ±5.3km  
DEPTH = 10.0km (geophysicist)

FRANCE (538)

ML 2.8 (LDG). MD 2.7 (STR).

TCF 0.41 77 Pg 19 27.10 0.2  
Sg 19 34.50  
MAF 0.65 87 Pg 19 31.50 0.0  
Sg 19 42.30  
RJF 0.89 185 Pg 19 34.90 -0.7  
Sg 19 47.60  
BGF 0.92 66 Pg 19 35.70 -0.3  
Sg 19 48.60  
AGO 1.05 97 Pg 19 38.54 0.2  
Sg 19 54.15  
PYM 1.06 114 Pg 19 39.43 1.0  
Sg 19 55.89  
CAF 1.30 166 Pg 19 43.40 0.8  
Sg 20 01.80  
AVF 1.33 63 Pg 19 43.10 0.1  
Sg 19 59.40  
LFF 1.40 207 Pg 19 43.00 -1.0  
Sg 20 01.80  
PLDF 1.40 98 Pg 19 44.20 0.0  
Sg 20 05.47  
GRC 1.48 41 Pg 19 43.36 -1.8  
LBL 1.49 130 Pn 19 44.73 -0.4  
Pg 19 47.19  
LPO 1.54 192 Pg 19 46.50 0.5  
Sg 20 06.90  
SSF 1.56 55 Pn 19 44.10 -2.1  
Pg 19 46.20  
Sg 20 06.50  
SMF 1.60 73 Pn 19 49.00  
Pg 20 09.40  
LBF 1.80 63 Pg 19 51.40 1.6  
Sg 20 14.30  
LOR 1.87 54 Pg 19 51.70 0.9  
Sg 20 15.80  
GRR 2.77 323 Pg 20 03.20 -0.5  
Sg 20 36.80  
FLN 2.94 332 Pg 20 08.00 1.9  
Sg 20 41.20  
S.D. = 1.1 on 19 of 19 obs.

? MAR 11, 1990 05h 01m 36.79±2.27s  
31.508 S ±28.6km 69.156 W ±38.7km  
DEPTH = 110.0km (geophysicist)  
SAN JUAN PROVINCE, ARGENTINA (137)



11d 05h

RTCB 0.30 86 eP 01 53.00 -0.2  
 S 02 02.00  
 RTLL 0.61 73 iPd 01 54.70 0.0  
 iS 02 08.60  
 RTCV 0.63 124 ePd 01 55.00 0.1  
 e 02 09.00  
 CFA 0.79 97 iPd 01 56.30 0.1  
 S 02 12.00  
 RTRS 1.36 349 iPd 02 02.30 0.1  
 S.D. = 0.1 on 5 of 5 obs.

\* MAR 11, 1990 05h 03m 24.94 ± 0.71s  
 34.150 N ± 12.7km 135.330 E ± 9.5km  
 DEPTH = 33.0km (normal)  
 4.6mb (4 obs.)  
 NEAR S. COAST OF SOUTHERN HONSHU(233)

SHK 2.23 281 iP 04 00.00 -0.3  
 0.7s 630.14nm  
 MAT 3.35 44 iPc 04 16.40 0.1  
 eS 05 00.00  
 TIY 18.87 287 eP 07 47.00 2.1  
 HHC 19.97 296 eP 07 55.00 -2.4  
 BTO 21.08 295 P 08 10.40 1.6  
 XAN 21.85 277 P 08 18.50 1.9  
 CD2 26.76 272 eP 09 02.60 -1.0  
 GTA 28.80 291 eP 09 20.00 -2.1  
 GUN 42.50 275 P 11 00.00 -19.3X  
 WB5 53.74 181 eP 12 45.80 -0.3  
 WRA 53.80 181 Pd 12 46.50 -0.1  
 1.0s 9.20nm 4.8mb  
 ASPA 57.51 182 eP 13 13.30 -0.1  
 1.4s 11.00nm 4.7mb  
 INK 59.17 26 eP 13 24.00 -0.5  
 MBC 60.65 15 eP 13 34.00 -0.6  
 0.8s 3.00nm 4.5mb  
 YKA 68.73 28 eP 14 26.50 -0.6  
 1.0s 1.00nm 3.8mb  
 KVN 80.42 49 iP 15 37.00 2.0  
 S.D. = 1.5 on 15 of 16 obs.

MAR 11, 1990 05h 57m 48.28 ± 0.38s  
 38.880 N ± 3.1km 24.064 E ± 4.7km  
 DEPTH = 22.3 ± 3.2 km  
 AEGEAN SEA (365)  
 ML 3.9 (ATH). MD 3.5 (THE).

NEO 0.78 303 ePn 58 02.70 -0.4  
 ATH 0.95 197 ePn 58 07.00 1.1  
 eSn 58 20.20  
 PAIG 1.09 344 iPd 58 07.80 -0.3  
 AGG 1.36 277 ePc 58 12.20 0.2  
 eS 58 30.40  
 OUR 1.45 358 ePc 58 12.90 -0.4  
 PLG 1.57 342 ePn 58 14.70 -0.3  
 LIT 1.72 316 iPd 58 17.20 -0.1  
 eS 58 41.20  
 PRK 1.76 77 ePb 58 21.50 3.8X  
 EVR 1.76 272 ePb 58 23.00 5.1X  
 THE 1.94 335 ePd 58 21.10 0.7  
 iS 58 47.20  
 SOH 2.01 344 iPc 58 21.50 0.0  
 APE 2.15 147 ePn 58 22.50 -1.0  
 SRS 2.26 351 iPd 58 24.60 -0.4  
 KZN 2.27 310 ePn 58 25.50 0.2  
 VLI 2.34 203 ePn 58 25.70 -0.3  
 ITM 2.39 225 ePb 58 31.00 4.1X  
 KNT 2.45 339 ePc 58 28.00 0.3  
 iS 58 58.40  
 SMG 2.48 117 ePb 58 36.00 8.0X  
 ALN 2.53 36 ePc 58 28.60 -0.2  
 RDO 2.53 26 ePn 58 29.10 0.3  
 VAY 2.69 335 ePn 58 31.60 0.5  
 MMB 2.72 355 iPd 58 31.00 -0.5  
 RZN 2.85 10 eP 58 33.00 -0.5  
 KDZ 2.95 20 iP 58 35.00 0.2  
 KKB 3.08 346 iPc 58 36.00 -0.6  
 PLD 3.26 8 eP 58 40.00 0.9  
 OHR 3.35 313 ePn 58 45.50 4.9X  
 DIM 3.36 19 eP 58 41.00 0.5  
 PGB 3.67 1 eP 58 41.00 -4.0X  
 SKO 3.68 328 ePn 58 51.00 5.8X  
 VTS 3.76 350 iP 58 46.00 -0.5  
 KAP 4.15 142 ePn 58 48.20 -3.6X  
 PVL 4.44 12 eP 58 56.00 0.2  
 MLR 6.75 11 eP 59 30.00 1.3  
 S.D. = 0.6 on 26 of 34 obs.

MAR 11, 1990 06h 01m 07.69s  
 60.046 N 152.864 W  
 DEPTH = 109.6km  
 SOUTHERN ALASKA (2)  
 <AGS-P>.

RED 0.38 7 iP 01 23.35 -0.8  
 eS 01 35.62  
 RDT 0.58 23 iP 01 24.60 -0.8  
 iS 01 37.50  
 PDB 0.72 249 iP 01 25.54 -0.9  
 iS 01 39.27  
 AUL 0.73 204 eP 01 25.80 -0.7  
 eS 01 39.90  
 AUE 0.74 201 iP 01 25.72 -0.8  
 NNL 0.79 90 iP 01 27.20 0.2  
 XLV 0.83 135 iP 01 26.42 -1.0  
 eS 01 41.60  
 CNPM 0.97 122 iP 01 28.19 -0.7  
 eS 01 43.70  
 NKA 1.07 48 eP 01 31.00 1.2  
 CKL 1.18 12 eP 01 30.46 -0.8  
 iS 01 49.18  
 CDD 1.19 200 iP 01 29.94 -1.3  
 SPU 1.21 19 iP 01 30.73 -0.7  
 iS 01 48.97  
 BGL 1.24 11 iP 01 31.55 -0.4  
 CRP 1.27 16 eP 01 31.84 -0.5  
 CGLM 1.33 18 iP 01 32.39 -0.6  
 SLKM 1.40 69 eP 01 32.96 -0.7  
 NCG 1.41 14 eP 01 33.69 -0.2  
 SEW 1.71 87 eP 01 36.16 -1.3  
 SVW 1.73 309 iP 01 36.30 -1.4  
 SUA 1.76 35 iP 01 37.70 -0.5  
 eS 02 01.07  
 PMS 2.02 52 eP 01 40.57 -0.9  
 eS 02 04.60  
 SKT 2.05 18 eP 01 40.92 -0.9  
 PWA 2.17 41 eP 01 43.20 -0.2  
 PLRM 2.40 48 eP 01 44.64 -1.7  
 GHO 2.59 46 eP 01 47.43 -1.5  
 CUT 2.68 27 eP 01 49.59 -0.5  
 RND 3.87 28 eP 02 04.74 -1.6  
 WRH 4.97 25 eP 02 18.74 -2.5  
 28 obs. associated

MAR 11, 1990 06h 05m 12.35 ± 9.24s  
 31.361 S ± 15.2km 67.880 W ± 90.8km  
 DEPTH = 116.9 ± 35.1 km  
 SAN JUAN PROVINCE, ARGENTINA (137)

RTLL 0.51 273 iPc 05 29.40 -0.9  
 ZON 0.71 255 iPd 05 31.50 -0.3  
 RTCV 0.75 228 ePd 05 32.00 -0.1  
 RTCB 0.80 261 eP 05 33.50 0.9  
 RTRS 1.81 311 iPd 05 44.00 0.4  
 FCH 2.83 226 eP 05 58.50 1.2  
 SAN 3.14 228 eP 06 01.90 0.7  
 iS 06 43.50  
 PCH 3.17 224 iPd 06 02.50 0.9  
 i 06 33.60  
 i 06 45.20  
 TACH 3.45 228 iPd 06 05.00 -0.3  
 iS 06 49.40  
 CHCH 3.47 222 eP 06 06.00 0.4  
 iS 06 52.30  
 LCCH 3.77 235 iPc 06 08.60 -0.9  
 iS 06 54.50  
 LNV 3.94 228 iPc 06 10.00 -1.9  
 iS 06 58.40

S.D. = 1.1 on 12 of 12 obs.

MAR 11, 1990 06h 08m 50.89 ± 0.78s  
 36.149 N ± 9.5km 27.226 E ± 6.6km  
 DEPTH = 10.0km (geophysicist)  
 DODECANESE ISLANDS (369)  
 MD 3.6 (ATH).

KAP 0.60 184 ePb 09 03.00 0.0  
 eSb 09 13.20  
 ARG 0.73 84 ePb 09 05.00 -0.2  
 NPS 1.58 237 ePb 09 19.00 -0.1  
 APE 1.64 304 ePb 09 20.00 0.0  
 KSL 1.91 90 ePn 09 24.00 0.3  
 S.D. = 0.3 on 5 of 5 obs.

? MAR 11, 1990 07h 08m 31.37 ± 4.10s  
 31.298 S ± 20.3km 68.562 W ± 30.2km  
 DEPTH = 83.3 ± 41.2 km  
 SAN JUAN PROVINCE, ARGENTINA (137)

RTLL 0.09 112 iPc 08 43.70 0.0  
 iS 08 54.20  
 RTCB 0.28 227 iPd 08 44.20 0.0  
 CFA 0.41 138 iPc 08 45.00 0.0  
 S 08 57.00  
 RTCV 0.56 178 ePc 08 46.20 0.0  
 RTRS 1.36 325 iPc 08 55.40 0.0  
 S.D. = 0.0 on 5 of 5 obs.

MAR 11, 1990 07h 56m 19.99 ± 0.48s  
 11.266 N ± 10.7km 85.632 W ± 6.9km  
 DEPTH = 37.6km (6 depth phases)  
 4.5mb (14 obs.) 4.5msz (1 obs.)  
 NICARAGUA (75)

CMG2 5.27 310 ePc 57 40.50 1.9  
 SLP 5.70 308 ePc 57 46.50 1.9  
 REC 5.72 304 ePc 57 44.50 -0.4  
 MMG 5.90 304 ePc 57 47.50 -0.1  
 ITG 6.06 304 ePc 57 49.00 -1.0  
 S 58 57.00  
 UPA 6.42 110 eP 58 11.00 16.4X  
 SOG 6.77 302 eP 57 59.00 -0.9  
 SBG 7.34 302 ePd 58 08.00 0.1  
 OXX 12.21 300 (P) 59 14.00 -0.5  
 IIT 14.46 304 (P) 59 44.00 -0.3  
 PPM 14.74 303 (P) 59 48.00 -0.3  
 ACX 14.88 294 (P) 59 50.00 0.4  
 III 15.12 299 (P) 59 52.50 -0.5  
 CRX 15.77 303 (P) 59 53.00 -8.5X  
 IJJ 15.98 304 (P) 00 05.00 0.7  
 PRM 22.91 7 eP 01 37.10 15.5X  
 eP 01 47.30 39km  
 RSCP 24.23 0 iP 01 38.20 3.7X  
 0.5s 49.73nm 5.3mb  
 OLY 24.70 349 iP 01 50.40 11.4X  
 e 02 00.50 37km  
 BLA 26.26 9 eP 01 59.50 5.9X  
 1.1s 15.19nm 4.5mb  
 pP 02 07.90 30km  
 FVM 26.95 352 eP 02 02.30 2.4  
 0.9s 4.24nm 4.1mb  
 ALO 30.24 325 eP 02 29.00 -0.8  
 0.9s 10.08nm 4.6mb  
 e 02 40.80 44km  
 e 05 29.00  
 ANMO 30.24 325 eP 02 30.10 0.3  
 pP 02 41.00 40km  
 ZOBO 32.38 147 P 02 49.20 0.0  
 Z 19s 0.85um 4.5msz  
 S 08 04.00  
 LR 13 40.00  
 GOL 33.29 332 iP 02 56.70 0.1  
 0.9s 11.36nm 4.8mb  
 PcP 05 38.50  
 GLA 34.45 314 eP 03 06.00 -0.4  
 RSNY 34.51 14 eP 03 10.90 4.1X  
 1.3s 8.45nm 4.5mb  
 TPC 35.88 314 eP 03 19.00 0.4  
 PLM 36.07 313 eP 03 21.00 0.7  
 RSSD 36.39 337 eP 03 23.50 0.6  
 PcP 05 46.30  
 RVR 36.76 313 eP 03 27.00 1.1  
 SBB 37.43 314 eP 03 32.00 0.3  
 BW06 37.67 331 iP 03 32.90 -0.8  
 0.9s 4.24nm 4.3mb  
 PcP 05 50.10  
 CLC 37.86 315 eP 03 36.00 0.8  
 KVN 39.98 319 eP 03 53.70 0.7  
 pP 04 04.10 36km  
 PcP 05 58.50  
 RSON 40.03 352 eP 03 52.80 -0.2  
 0.9s 4.65nm 4.3mb  
 LRM 41.33 331 eP 04 04.20 0.2  
 e 06 03.20  
 SES 44.25 337 eP 04 27.00 -0.6  
 FFC 45.24 347 eP 04 35.00 -0.4  
 0.6s 5.00nm 4.6mb  
 BAO 45.86 125 eP 04 41.00 0.1  
 SCH 45.92 15 eP 04 42.00 1.2  
 PNT 47.23 330 ePc 04 51.00 -0.2  
 0.9s 14.00nm 5.0mb



EDM 47.37 338 ePc 04 51.00 -1.3  
 FRB 53.78 9 eP 05 40.00 -0.7  
 YKA 55.22 344 eP 05 49.20 -2.2  
 0.7s 3.50nm 4.5mb  
 INK 64.86 342 eP 06 56.50 -0.7  
 MBC 67.43 352 eP 07 13.00 -0.5  
 0.6s 3.00nm 4.5mb  
 FBA 68.22 336 eP 07 16.60 -2.1  
 0.6s 0.60nm 3.8mb  
 LKO 78.51 82 P 08 20.14 0.5  
 0.7s 13.00nm 5.1mb  
 TIC 79.56 85 P 08 25.60 0.2  
 LIC 79.62 86 P 08 26.30 0.6  
 KIC 79.88 85 P 08 27.70 0.6  
 GUN 140.20 12 PKP 15 43.40 -4.3X  
 WB5 140.61 252 ePKP 15 45.70 -2.5  
 WRA 140.63 252 PKP 15 41.00 -7.3X  
 0.7s 1.00nm  
 CHG 149.77 351 ePKP 16 08.00 4.5X  
 NWA0 149.91 221 ePKP 16 06.00 2.7  
 GBA 150.12 35 PKPc 16 02.90 -1.1  
 0.9s 3.50nm  
 LOE 150.60 346 e(PKP) 16 15.00 10.3X  
 MUN 151.18 221 iPKPd 16 09.80 4.5X  
 BDT 151.30 351 ePKP 16 11.50 5.7X  
 0.7s 30.10nm  
 BAL 151.72 224 ePKP 16 11.00 4.9X  
 S.D. = 1.1 on 47 of 61 obs.

& MAR 11, 1990 08h 01m 20.97s  
 60.255 N 152.541 W  
 DEPTH = 100.6km  
 SOUTHERN ALASKA (2)  
 <AGS-P>.

RED 0.20 325 iP 01 34.77 0.8  
 RDT 0.33 12 iP 01 35.35 -0.7  
 >NNL 0.66 108 iP 01 38.33 0.0  
 NKA 0.81 52 iP 01 40.77 1.1  
 XLV 0.90 152 eP 01 39.35 -1.3  
 CKL 0.95 6 iP 01 40.56 -0.8  
 0.5s 01 56.83  
 PDB 0.95 241 iP 01 40.28 -0.9  
 0.5s 01 55.20  
 SPU 0.96 14 iP 01 40.59 -0.8  
 0.5s 01 55.98  
 CNPM 0.98 137 iP 01 40.74 -0.8  
 0.5s 01 56.43  
 AUL 0.99 208 eP 01 40.97 -0.6  
 AUE 0.99 205 eP 01 40.69 -0.9  
 BGL 1.01 4 iP 01 41.43 -0.6  
 CRP 1.03 10 iP 01 41.69 -0.6  
 CGLM 1.09 14 iP 01 42.12 -0.7  
 0.5s 01 58.71  
 NCG 1.17 9 eP 01 43.25 -0.5  
 SLKM 1.18 77 eP 01 42.84 -1.0  
 CDD 1.44 203 iP 01 45.64 -1.3  
 SUA 1.50 35 eP 01 47.27 -0.5  
 0.5s 02 06.35  
 SEW 1.55 94 eP 01 46.52 -1.7  
 SVW 1.74 301 iP 01 49.14 -1.6  
 PMS 1.77 55 eP 01 50.34 -0.8  
 0.5s 02 13.06  
 SKT 1.80 15 eP 01 50.61 -0.9  
 PWA 1.91 42 eP 01 52.51 -0.3  
 PLRM 2.14 50 eP 01 54.17 -1.7  
 GH0 2.33 48 eP 01 56.71 -1.8  
 CUT 2.42 26 eP 01 58.92 -0.7  
 SML 2.57 51 eP 02 00.12 -1.6  
 VZW 3.06 72 eP 02 05.75 -2.6  
 NCA 3.28 55 eP 02 09.21 -2.1  
 KLU 3.47 66 eP 02 11.29 -2.7  
 30 obs. associated

\* MAR 11, 1990 08h 28m 27.31±2.44s  
 36.578 N ±21.7km 2.585 E ±10.4km  
 DEPTH = 33.0km (normol)  
 4.6mb (1 obs.)  
 ALGERIA (396)  
 ML 3.9 (LDG). mbLg 3.9 (MDD).

ACU 3.06 310 ePn 29 14.00 -0.6  
 eSn 29 46.00  
 ESEL 3.19 4 iPnd 29 16.00 -0.3  
 eSn 29 49.00  
 ENIJ 3.87 277 ePn 29 27.00 1.0  
 eSn 30 09.00

ECHE 4.11 318 ePn 29 29.50 0.1  
 eSn 30 12.00  
 EROO 4.57 339 ePn 29 35.00 -0.9  
 eSn 30 22.50  
 EBAN 5.32 289 ePn 29 46.00 -0.5  
 eSn 30 43.00  
 TOL 6.18 304 ePn 30 02.00 3.4X  
 e(Sn) 31 17.00  
 GUD 6.66 310 ePn 30 05.00 -0.5  
 eSn 31 15.00  
 EPF 6.67 346 Pn 30 06.10 0.5  
 Sn 31 13.80  
 LMR 7.39 23 Pn 30 14.90 -0.6  
 Sn 31 29.00  
 LRG 7.45 22 Pn 30 16.10 -0.3  
 Sn 31 31.60  
 FRF 7.64 23 Pn 30 17.70 -1.3  
 Sn 31 36.40  
 PGF 7.75 38 Pn 30 19.60 -1.1  
 Sn 31 39.20  
 LPO 8.17 353 Pn 30 26.50 0.1  
 SBF 8.17 26 Pn 30 26.80 0.3  
 Sn 31 49.20  
 CAF 8.35 357 Pn 30 29.60 0.6  
 LFF 8.47 351 Pn 30 28.10 -2.5  
 RJF 8.75 355 Pn 30 35.80 1.2  
 LPG 9.45 18 Pn 30 46.00 1.6  
 MAF 9.63 360 Pn 30 47.00 0.3  
 DOU 13.59 6 iPc 31 42.90 2.9  
 0.4s 3.60nm 4.6mb  
 S.D. = 1.2 on 20 of 21 obs.

& MAR 11, 1990 08h 30m 41.52s  
 61.234 N 149.653 W  
 DEPTH = 34.8km  
 SOUTHERN ALASKA (2)  
 <AGS-P>. ML 3.3 (PMR).

PMS 0.05 76 iPd 30 47.40 0.0  
 PWA 0.43 346 iPd 30 50.70 -0.4  
 PLRM 0.44 35 iP 30 50.23 -1.0  
 0.5s 30 57.25  
 PMR 0.44 35 iPc 30 50.30 -0.9  
 SUA 0.57 294 iP 30 52.54 -0.7  
 GH0 0.64 33 iP 30 53.34 -0.9  
 0.5s 31 02.91  
 SLKM 0.78 201 iP 30 55.22 -0.9  
 SML 0.86 47 iP 30 56.21 -1.0  
 0.5s 31 08.77  
 NKA 0.92 238 iP 30 59.08 1.1  
 SEW 1.14 175 eP 31 00.02 -1.2  
 CGLM 1.14 275 iP 31 01.05 -0.3  
 SPU 1.16 268 iP 31 00.98 -0.7  
 0.5s 31 18.08  
 SKT 1.17 311 iP 31 01.32 -0.4  
 eS 31 17.52  
 CRP 1.21 273 eP 31 02.19 -0.2  
 CUT 1.21 346 eP 31 01.84 -0.4  
 NCG 1.22 279 iP 31 02.43 -0.1  
 0.5s 31 19.83  
 GLI 1.29 105 iP 31 02.25 -1.3  
 0.5s 31 19.57  
 CKL 1.30 270 iP 31 03.22 -0.5  
 BGL 1.32 272 iP 31 03.74 -0.3  
 >NNL 1.44 215 iP 31 06.18 0.5  
 RDT 1.50 245 iP 31 06.07 -0.5  
 VZW 1.51 95 eP 31 05.96 -0.8  
 NCA 1.55 59 iP 31 06.78 -0.5  
 RED 1.73 243 iP 31 09.55 -0.3  
 0.5s 31 32.70  
 HUR 1.75 0 eP 31 10.75 0.7  
 KLU 1.82 80 iP 31 10.17 -0.9  
 0.5s 31 33.30  
 TOA 1.88 61 iPc 31 12.60 0.7  
 CNPM 1.89 205 eP 31 11.13 -0.9  
 XLV 2.06 211 eP 31 15.97 1.5  
 RND 2.21 9 eP 31 17.34 0.6  
 KTH 2.40 346 eP 31 19.37 0.0  
 MCK 2.53 7 eP 31 22.54 1.4  
 PAX 2.63 47 eP 31 23.18 0.6  
 PDB 2.67 239 eP 31 22.17 -1.0  
 GLB 2.82 83 eP 31 23.92 -1.4  
 SVW 2.89 270 iPc 31 25.50 -0.8  
 CDD 3.06 223 eP 31 27.85 -0.8  
 DDM 3.11 33 eP 31 32.22 2.8  
 WRH 3.33 12 eP 31 33.07 0.6  
 TGL 3.36 95 eP 31 31.26 -1.7

HDA 3.42 20 eP 31 34.71 1.0  
 TTA 3.44 302 iP 31 32.90 -1.2  
 CCB 3.53 13 eP 31 35.44 0.2  
 FBA 3.78 12 eP 31 39.20 0.4  
 KDC 3.78 204 e(P) 31 42.20 3.3  
 IMA 5.17 341 eP 31 57.90 -0.8  
 46 obs. associated

\* MAR 11, 1990 08h 35m 48.65±1.29s  
 13.194 N ±10.1km 143.617 E ±22.4km  
 DEPTH = 126.1 ±11.6 km  
 4.4mb (5 obs.)

SOUTH OF MARIANA ISLANDS (210)

GUMO 1.28 72 eP 36 14.20 -0.1  
 PJG 1.28 72 eP 36 14.40 0.1  
 GUA 1.31 75 eP 36 14.40 -0.3  
 eS 36 30.80  
 MAT 23.75 349 eP 40 51.00 0.5  
 WB5 34.10 196 eP 42 23.00 -0.3  
 WRA 34.17 196 Pc 42 23.90 0.0  
 0.6s 5.40nm 4.5mb  
 ASPA 37.85 195 iPd 42 54.90 0.1  
 0.7s 8.00nm 4.7mb  
 BRS 41.31 168 eP 43 23.00 -0.4  
 WARB 42.48 203 eP 43 34.80 1.8  
 MBC 78.95 14 eP 47 40.00 0.8  
 0.5s 2.00nm 4.1mb  
 YKA 83.77 27 eP 48 04.40 -0.2  
 0.6s 1.70nm 4.1mb  
 PNT 84.47 41 eP 48 09.00 0.6  
 NEW 86.33 41 eP 48 18.10 0.4  
 0.9s 10.96nm 4.8mb  
 KVN 88.11 50 iP 48 27.10 0.4  
 KIC 143.05 300 (PKP) 55 08.20 -2.0  
 LIC 143.36 300 (PKP) 55 09.20 -1.5  
 S.D. = 1.0 on 16 of 16 obs.

MAR 11, 1990 09h 05m 21.28±0.18s  
 44.998 N ±1.6km 7.367 E ±2.1km  
 DEPTH = 10.0km (geophysicist)  
 NORTHERN ITALY (545)  
 ML 3.1 (GEN). 3.0 (LDG). MD 3.1 (STR).

RSP 0.17 333 Pg 05 26.35 1.1  
 RRL 0.42 260 Pc 05 29.92 0.0  
 S 05 34.99  
 LSD 0.48 342 Pg 05 31.53 0.4  
 S 05 37.34  
 BNI 0.49 277 Pc 05 31.70 0.4  
 iSg 05 37.50  
 DOI 0.50 190 P 05 31.50 0.0  
 eSg 05 38.00  
 PZZ 0.53 201 P 05 31.67 -0.3  
 S 05 37.34  
 FOUF 0.63 222 iPg 05 33.85 0.0  
 LPG 0.66 319 Pg 05 34.50 -0.2  
 Sg 05 43.20  
 LPL 0.69 319 Pg 05 34.80 -0.2  
 STV 0.75 182 Pc 05 35.19 -0.9  
 S 05 44.20  
 ORO 0.76 34 P 05 36.50 0.3  
 ORX 0.77 34 P 05 35.77 -0.6  
 S 05 45.25  
 ENR 0.77 177 Pc 05 35.60 -0.8  
 S 05 44.61  
 ROB 0.79 153 P 05 37.23 0.5  
 S 05 47.56  
 CKI 0.87 131 Pc 05 39.50 1.5  
 eSg 05 52.50  
 PCP 0.96 118 P 05 40.90 1.4  
 S 05 53.46  
 TOUF 0.99 185 Pg 05 39.99 -0.2  
 FIN 0.99 142 Pc 05 41.07 1.0  
 S 05 53.71  
 AUTN 1.00 178 Pg 05 39.41 -1.0  
 SAOF 1.02 172 Pg 05 39.75 -0.9  
 DIX 1.08 2 ePc 05 41.90 0.1  
 AURF 1.11 181 Pg 05 41.44 -0.8  
 MVIF 1.11 188 Pg 05 41.70 -0.6  
 EMS 1.11 344 eP 05 42.80 0.5  
 MMK 1.13 22 ePc 05 41.90 -0.8  
 SBF 1.14 178 Pg 05 50.30 7.7X  
 Sg 06 09.40  
 IMI 1.15 161 P 05 42.78 -0.1  
 S 05 56.28



[illegible]



KKN 71.31 301 P 17 23.20 0.4  
BAO 151.98 138 e(PKP)25 56.00 4.7X  
S.D. = 0.9 on 26 of 32 obs.

\* MAR 11, 1990 16h 47m 39.91±1.33s  
30.405 S ±11.9km 69.509 W ±14.2km  
DEPTH = 33.0km (normal)

CHILE-ARGENTINA BORDER REGION (127)

RTRS 0.24 10 ePc 47 47.10 0.2  
ZON 1.34 148 eP 48 03.00 0.4  
CFA 1.62 138 iPc 48 05.00 -1.6  
eS 48 48.40  
RTCV 1.67 150 ePd 48 08.10 0.7  
ROCH 2.86 206 iP 48 25.00 0.5  
FCH 2.99 193 iPd 48 28.90 2.5  
PCH 3.32 195 iPc 48 31.50 0.7  
TACH 3.46 200 eP 48 31.50 -1.3  
CHCH 3.65 195 eP 48 35.50 0.0  
LNV 3.89 204 iPc 48 36.50 -2.3  
i 48 53.30

S.D. = 1.6 on 10 of 10 obs.

MAR 11, 1990 17h 12m 03.30±0.93s  
36.549 N ±9.4km 21.199 E ±4.6km  
DEPTH = 33.0km (normal)

4.0mb (1 obs.)

SOUTHERN GREECE (368)

ML 3.9 (ATH).

ITM 0.86 43 ePb 12 17.30 -1.7  
VLI 1.41 83 ePg 12 28.40 1.6  
VLS 1.70 344 ePn 12 33.00 2.0  
EVR 2.41 11 ePb 12 44.50 3.1X  
ATH 2.46 54 ePn 12 43.50 1.5  
AGG 2.63 20 iPd 12 46.70 2.4  
VAM 2.69 114 ePn 12 43.00 -2.1  
NEO 3.18 30 ePn 12 53.00 0.8  
KEK 3.35 341 ePn 12 54.50 0.0  
LIT 3.69 16 eP 12 59.00 -0.4  
KZN 3.78 7 ePn 13 01.50 0.8  
PAIG 3.90 29 iPc 13 02.20 -0.1  
SOI 4.37 292 P 13 09.80 0.7  
LCI 4.56 327 Pc 13 10.80 -0.9  
OHR 4.57 356 ePn 13 11.80 -0.1  
SOH 4.59 21 eP 13 12.80 0.6  
KNT 4.79 16 eP 13 15.80 0.8  
CZI 4.81 305 P 13 15.80 0.5  
eSn 14 10.50

ATN 4.84 291 P 13 16.60 0.8  
eSn 14 12.80

VAY 4.88 12 ePn 13 16.00 -0.3

SRS 4.93 22 eP 13 15.80 -1.2

TDS 4.93 310 P 13 17.70 0.7

ORI 5.12 315 P 13 20.20 0.4  
eSn 14 17.00

MMN 5.29 311 P 13 24.40 2.4

BRT 5.33 325 P 13 21.90 -0.8  
eSn 14 22.20

MNO 5.37 287 P 13 24.10 0.7

SKO 5.42 2 ePn 13 22.00 -1.9

BAI 5.68 325 P 13 25.50 -2.0

MGR 5.70 311 P 13 28.10 0.2  
eSn 14 30.80

SGO 6.11 313 P 13 34.60 1.0  
eSn 14 40.00

DUI 7.31 316 P 13 50.50 -0.1

SDI 7.71 314 P 13 55.30 -0.8

AZI 8.11 314 P 14 00.50 -1.1

ASS 9.25 317 P 14 16.00 -1.4

ARV 9.39 320 P 14 19.00 -0.4

PTJ 10.14 339 eP 14 38.40 8.7X

CEY 10.50 333 eP 14 42.50 7.9X  
e(S) 16 32.00

VOY 10.95 332 e(P) 14 39.30 -1.4  
eS 16 35.00

CTI 11.89 326 P 14 50.50 -3.0X

KBA 12.03 333 eP 14 53.50 -2.0  
e 15 02.50

KHC 13.75 339 eP 15 24.10 6.0X

NUR 24.08 4 eP 17 35.00 18.7X

NB2 25.32 349 P 17 29.40 1.1  
0.8s 3.10nm 4.0mb

SUF 26.38 5 eP 17 37.50 -0.5

S.D. = 1.3 on 38 of 44 obs.

? MAR 11, 1990 17h 23m 46.58±0.94s  
38.042 N ±8.2km 22.748 E ±8.5km  
DEPTH = 10.0km (geophysicist)

GREECE (364)

ML 2.6 (ATH).

ATH 0.77 95 ePg 24 01.60 0.0  
ITM 1.08 217 ePg 24 07.00 0.1  
EVR 1.14 320 ePb 24 08.00 0.0  
VLI 1.33 173 ePb 24 11.00 -0.1  
S.D. = 0.2 on 4 of 4 obs.

& MAR 11, 1990 17h 47m 29.20s

36.288 N 120.418 W

DEPTH = 8.0km

CENTRAL CALIFORNIA (39)

<BRK>. ML 2.6 (BRK).

PRI 0.25 234 iPd 47 34.10 -0.3  
i 47 37.20

PKEM 0.34 132 eP 47 36.00 -0.1

LLA 0.54 308 eP 47 39.00 -1.0

PRS 0.77 274 eP 47 42.80 -1.6

FRI 0.90 39 eP 47 43.80 -2.9  
iS 47 55.90

SAO 0.95 300 eP 47 46.00 -1.6

BCH 1.13 166 eP 47 48.60 -2.1

ARN 1.39 320 eP 47 53.00 -1.8

MHC 1.44 317 eP 47 53.00 -2.7

ABL 1.73 145 eP 47 56.50 -3.5

CMB 1.74 1 eP 47 57.80 -2.2

KVN 3.32 33 eP 48 24.50 1.9

12 obs. associated

\* MAR 11, 1990 17h 53m 44.21±1.98s

45.473 N ±8.9km 3.693 E ±15.1km

DEPTH = 10.0km (geophysicist)

FRANCE (538)

ML 2.3 (LDG).

LBL 0.40 233 Pg 53 51.67 -0.6  
Sg 53 56.88

PLDF 0.50 354 Pg 53 53.94 -0.4  
Sg 54 00.46

PYM 0.55 300 Pg 53 54.96 -0.6  
Sg 54 02.39

AGO 0.70 326 ePg 53 57.64 -0.4  
Sg 54 06.29

MAF 1.09 314 Pg 54 04.80 0.2  
Sg 54 18.80

SMF 1.18 5 Pg 54 06.90 0.7  
Sg 54 21.60

BGF 1.23 332 Pn 54 06.00 -1.2  
Pg 54 07.10

CAF 1.27 245 Pg 54 07.90 0.0  
Sg 54 24.10

TCF 1.32 309 Pg 54 09.00 0.4  
Sg 54 25.70

AVF 1.34 350 Pn 54 08.60 -0.3  
Pg 54 09.90

LSF 1.70 298 Pg 54 16.10 2.0  
Sg 54 37.10

S.D. = 1.0 on 11 of 11 obs.

MAR 11, 1990 17h 54m 06.96±0.33s

41.854 N ±3.1km 23.272 E ±3.4km

DEPTH = 10.0km (geophysicist)

GREECE-BULGARIA BORDER REGION (363)

MD 3.9 (THE). ML 3.5 (SKO).

KKB 0.14 275 iPg 54 10.00 -0.3  
iPg 54 16.00 0.2

MMB 0.43 128 iPg 54 21.00 -0.6  
iPg 54 21.00 -0.6

VTS 0.74 356 iPg 54 21.00 -0.6  
iPg 54 21.00 -0.6

KNT 0.75 202 iPc 54 21.00 -0.6  
iPg 54 21.00 -0.6

VAY 0.75 225 iPg 54 21.00 -0.6  
iPg 54 21.00 -0.6

SRS 0.77 162 ePc 54 21.60 -0.5  
eS 54 32.20

PGB 0.96 43 iPg 54 24.00 -1.3  
ePc 54 26.40 -0.1

SOH 1.03 177 ePc 54 26.40 -0.1  
iS 54 40.40

RZN 1.09 98 iPg 54 27.00 -0.6  
iPd 54 27.00 -0.5

PLD 1.10 76 iPd 54 27.00 -0.5  
iPc 54 30.40 0.4

THE 1.24 191 iPc 54 30.40 0.4  
eS 54 46.90

SKO 1.37 276 ePn 54 32.00 -0.1

PLG 1.48 175 ePb 54 34.00 0.3

OUR 1.61 160 eP 54 35.60 0.1  
iS 54 59.20

KDZ 1.62 97 iP 54 35.00 -0.6

DIM 1.70 83 iP 54 37.00 0.2

RDO 1.84 112 ePb 54 38.70 -0.2

LIT 1.85 199 eP 54 39.10 0.1  
iS 55 03.40

PAIG 1.95 171 eP 54 40.30 -0.1

OHR 2.00 249 iPn 54 42.10 0.9  
iSn 55 08.70

Lg 55 15.00

PVL 2.04 48 iPc 54 43.00 1.2

ALN 2.30 114 eP 54 46.50 1.1

JMB 2.54 75 iPd 54 48.00 -0.8

AGG 2.92 195 eP 54 54.40 0.1

PRK 3.47 138 ePn 55 02.50 0.5

BZS 3.95 343 ePc 55 07.50 -1.3

PSN 4.05 62 eP 55 09.00 -1.3

MLR 4.12 27 eP 55 13.00 1.6

VRI 4.73 31 ePd 55 22.50 2.5

S.D. = 0.9 on 29 of 29 obs.

% MAR 11, 1990 17h 55m 37.21±1.03s

45.539 N ±8.6km 3.523 E ±7.4km

DEPTH = 10.0km (geophysicist)

FRANCE (538)

ML 2.5 (LDG).

MAF 0.96 316 Pg 55 55.50 0.1  
Sg 56 09.50

BGF 1.12 335 Pn 55 56.90 -1.4  
Pg 55 57.90

SMF 1.13 11 Pg 56 14.20  
Sg 56 16.20

TCF 1.18 310 Pg 56 16.20 -0.6  
Sg 56 17.00

CAF 1.20 240 Pg 56 17.00 -1.0  
Sg 56 18.00

AVF 1.26 355 Pn 56 18.00 -0.8  
Pg 56 19.00

LBF 1.48 12 Pg 56 19.00 -0.3  
Sg 56 20.00

LSF 1.56 298 Pg 56 20.00 1.7  
Sg 56 21.00

LOR 1.75 8 Pg 56 21.00 1.6  
Sg 56 22.00

LPG 2.27 90 Pg 56 22.00 0.2  
Sg 56 23.00

S.D. = 1.2 on 10 of 10 obs.

MAR 11, 1990 17h 59m 18.23±0.66s

45.525 N ±5.3km 3.498 E ±5.5km

DEPTH = 10.0km (geophysicist)

FRANCE (538)

ML 3.0 (LDG). MD 2.8 (STR).

LBL 0.34 211 Pg 59 23.99 -1.3  
Sg 59 29.19

PYM 0.41 303 Pg 59 27.30 0.6  
Sg 59 34.51

PLDF 0.45 11 Pg 59 26.24 -1.2  
Sg 59 32.99

AGO 0.59 334 Pg 59 29.98 -0.1  
Sg 59 39.08

MAF 0.95 317 Pg 59 37.00 0.6  
Sg 59 51.00

BGF 1.13 337 Pn 59 38.20 -1.2  
Pg 59 39.30

SMF 1.15 12 Pn 59 38.30 -1.4  
Pg 59 38.90

CAF 1.18 240 Pn 59 39.00 -1.2  
Pg 59 40.00

TCF 1.18 311 Pn 59 39.80 -0.5  
Pg 59 40.90

AVF 1.27 355 Pn 59 41.00 -0.8  
Pg 59 42.20

RJF 1.41 262 Pg 59 44.90 0.9  
Sg 00 04.20



	0.6 s	35.00 nm	5.3 mb
MEKA	45.71 252 eP	29 05.00	-4.9 X
KLB	46.29 246 eP	29 13.00	-1.4
NWAO	46.77 244 eP	29 18.00	-0.2
Z	20 s	5.10 um	5.5 Msz
		i	38 km
BAL	47.18 247 eP	29 28.90	-1.6
MUN	47.61 245 eP	29 21.00	-3.9 X
DAV	50.09 299 eP	29 43.50	-0.7
VNDA	57.12 182 eP	30 33.00	-2.2
SBA	57.37 180 e(P)	30 36.90	-0.1
BAG	59.44 305 eP	30 50.00	-2.4
MAT	63.45 333 eP	31 17.00	-1.9
QIZ	69.38 301 eP	32 00.00	3.0 X
		eS	41 02.00
SPA	69.60 180 eP	31 57.00	-0.8
	1.1 s	49.40 nm	5.5 mb
		i	40 km
SNG	71.86 285 eP	32 07.90	-4.2 X
WHN	72.50 313 Pc	32 15.50	-0.1
		pP	32 27.50 40 km
DL2	73.46 324 eP	32 20.00	-1.0

	Z	14 s	2.70 $\mu$ m	5.7 Ms z x		
	N	11 s	4.30 $\mu$ m			
MDJ			eS	41	50.00	
			eP	32	22.00	-0.8
			iS	41	56.00	
			ScS	42	23.50	
CN2			Pc	32	29.00	-1.1

	6.0 s	600.00 nm		5.7 mb X
		sP	32	48.00
		eS	42	10.00
LOE	75.31	295 eP	32	32.80 0.7
GVA	75.77	306 P	32	35.00 0.3
NST	75.90	293 eP	32	37.00 1.5
BJI	77.33	322 eP	32	42.00 -1.0
	1.5 s	26.00 nm		5.0 mb
		eS	42	36.00
TIY	78.13	318 eP	32	47.70 0.2

KMI	78.14	303	Pd	32	48.50	0.4
	2.0s		0.20nm			2.8mb X
Z	15s		3.50um			5.8Msz X
N	16s		2.20um			
E	16s		0.70um			
			PcP	32	53.50	

XAN		78.27	313	P	32	47.40	-1.0
CHG		78.31	295	ePd	32	49.70	0.8
		1.0s		27.50nm			5.2mb
CD2		80.25	308	eP	32	59.60	0.4
	Z	18s		1.60um			5.4MsZ
	N	13s		3.00um			
HHC		80.57	320	P	33	00.00	0.0
BTO		81.36	319	P	33	05.00	0.1
				pP	33	20.00	52kmX
LZH		82.87	313	eP	33	14.00	1.1

Z	61.0s	0.49nm	2.8mb	X
N	20s	1.70um	5.4Ms	z
E	14s	1.50um		
	15s	1.20um		
SHL	87.10	299	iP	0.2
			eS	
			44	04.00

GCC	87.13	49	ePc	33	34.00	0.1
PRS	87.25	50	ePc	33	35.00	0.5
			eP	33	46.00	35km
GTA	87.31	314	P	33	35.40	0.5
Z	15s		2.00um			5.6MsZx
N	15s		2.50um			
			S	44	10.00	
BRK	87.35	48	ePc	33	35.10	0.2
			eP	33	46.20	35km
BKS	87.37	48	iPc	33	35.50	0.5
	1.2s	125.00nm				6.0mb
			eP	33	46.70	36km
SAO	87.40	49	e(P)	33	35.20	0.0
MHC	87.53	49	iPc	33	36.50	0.5
			eP	33	47.40	34km
FHC	87.60	45	ePc	33	36.90	0.7
BCH	87.65	51	eP	33	36.00	-0.6
			pP	33	48.00	39km

PRI	87.67	50	ePc	33	37.80	1.1
			ePp	33	48.90	35 km
WDC	88.45	45	iPc	33	41.10	0.9
			iPp	33	51.50	32 km
PAS	88.60	53	eP	33	40.00	-1.1
			e	33	53.00	43 km
ORV	88.67	47	ePc	33	41.20	-0.1
			ePp	33	52.20	36 km



NWC	88.72	53	eP	33 42.00	0.1							LOMF	149.27	335	PKP	40 31.34	-1.0
			e	33 53.00	35km							TDS	149.28	315	PKP	40 32.50	0.0
CM8	88.74	48	eP	33 41.40	-0.3	WET	145.31	331	iPKPc	40 26.00	0.1	TMA	149.38	331	ePKPc	40 32.90	0.2
			pP	33 54.20	42km							DUI	149.40	319	PKP	40 36.50	3.7X
FRI	88.74	50	iPc	33 41.60	0.0	WTS	145.41	340	ePKPc	40 26.00	0.2	SFI	149.48	325	PKP	40 33.93	1.3
			eP	33 52.60	35km								1.3s	950.70nm			
ISA	89.04	51	eP	33 44.00	0.8	PVY	145.44	317	ePKP	40 26.50	0.1	SGO	149.48	317	PKP	40 32.50	-0.3
			e	33 55.00	35km	PHP	145.57	315	iPKPc	40 25.60	-0.9	MGR	149.55	316	PKP	40 32.00	-0.9
SBB	89.09	52	eP	33 44.00	0.5	OHR	145.59	314	iPKP	40 25.80	-0.9	PGD	149.58	325	PKP	40 33.50	0.4
			e	33 55.00	35km							ASS	149.59	323	PKP	40 31.50	-1.5
BAR	89.10	55	eP	33 43.00	-0.5							VAI	149.61	331	PKP	40 31.50	-1.2
RVR	89.13	53	eP	33 44.00	0.4	GRF	145.62	333	ePKP	40 27.00	0.6	CZI	149.64	314	PKP	40 37.20	4.2X
			e	33 55.00	35km	Z	20s		0.50um		5.3msz	GRI	149.64	313	PKP	40 33.95	0.8
PLM	89.24	54	e(P)	33 44.00	-0.4								0.1s	12.20nm			
			pP	33 56.00	39km							BSS	149.68	318	PKP	40 33.54	0.5
LSA	89.38	302	eP	33 46.00	0.6	KBN	145.80	313	iPKPc	40 27.10	0.2	SDI	149.76	320	PKP	40 32.00	-1.2
CLC	89.75	51	eP	33 46.00	-0.5	PTJ	145.97	324	ePKP	40 27.10	-0.1	AZI	149.82	321	PKP	40 33.00	-0.2
TPC	90.18	54	eP	33 49.00	0.5	TTG	145.98	317	ePKP	40 27.30	0.2	MMK	149.82	332	ePKPc	40 34.20	0.7
			e	34 01.00	39km	SDA	146.03	316	iPKPd	40 28.00	0.8	FIR	149.89	326	ePKP	40 33.00	-0.2
GLA	90.67	55	eP	33 51.00	0.2	LACI	146.08	315	ePKP	40 27.60	0.3	MME	149.89	327	PKP	40 33.86	0.2
			e	34 03.00	39km	TIR	146.11	315	ePKP	40 27.70	0.3	BDI	150.04	327	PKP	40 31.50	-2.1
KVN	90.79	48	eP	33 50.40	-1.0	LSK	146.15	313	ePKP	40 27.60	-0.1	DIX	150.04	333	ePKPc	40 34.80	1.0
			e	34 02.00	37km	BRY	146.19	318	ePKP	40 28.00	0.3	BOB	150.11	329	PKP	40 37.80	4.1X
TNP	91.00	50	eP	33 52.10	-0.3	ULC	146.22	316	ePKP	40 28.00	0.4	ORX	150.14	332	PKP	40 38.18	4.4X
			pP	34 04.00	38km	HCY	146.45	318	ePKP	40 28.50	0.6	ORO	150.15	332	PKP	40 39.00	5.2X
IMA	91.00	15	eP	33 51.40	-0.3	KBA	146.55	328	iPKPc	40 26.60	-1.6	SOI	150.24	312	PKP	40 34.50	0.5
FBA	91.59	17	eP	33 52.90	-1.4		1.0s		25.90nm			EMS	150.26	333	ePKPc	40 36.60	2.6
			e	34 04.90	39km							PII	150.31	326	PKP	40 33.00	-0.9
KKN	93.41	298	P	34 03.20	-0.5							GMB	150.33	312	PKP	40 40.31	6.0X
	0.8s		36.00nm		5.9mb	VBV	146.60	324	ePKP	40 29.00	0.9		0.7s	62.90nm			
GBA	95.38	282	Pd	34 13.90	1.2	LJU	146.64	326	ePKP	40 28.00	-0.1	RMP	150.36	321	PKP	40 37.80	3.7X
	0.9s		9.00nm		5.2mb	TOD	146.67	335	ePKP	40 28.90	0.8	RDP	150.38	321	PKP	40 36.90	2.7
HYB	95.64	286	eP	34 14.50	0.6	ENN	146.75	339	iPKPc	40 30.00	1.9	FLN	150.40	345	ePKP	40 34.60	0.7
WMO	97.39	314	P	34 21.20	-0.2		0.8s		36.00nm				1.1s	22.00nm			
INK	98.07	19	eP	34 22.00	-1.8							LOR	150.45	338	ePKP	40 34.90	0.8
			pP	34 34.00	39km	MEM	146.85	339	PKPc	40 30.30	2.0	LDF	150.47	344	ePKP	40 34.50	0.5
FRB	122.74	26	ePKP	39 41.00	-2.3	RBL	146.88	327	PKP	40 28.40	-0.2	ATN	150.61	313	PKP	40 34.50	-0.1
BUL	123.45	227	ePKP	39 43.00	-3.2X	CEY	146.90	325	ePKP	40 29.00	0.4	LSD	150.64	332	PKP	40 40.54	5.8X
DAG	123.61	2	iPKPc	39 42.50	-2.2	ABH	146.92	337	ePKP	40 29.63	1.1	L8F	150.65	338	ePKP	40 35.10	0.7
	0.6s		10.67nm			VOY	146.99	326	ePKP	40 27.20	-1.6	GRC	150.69	339	PKP	40 36.40	2.0
TAB	127.21	303	ePKP	39 54.00	0.9	DLE	147.05	354	ePKP	40 30.60	2.1	PCP	150.71	329	PKP	40 40.23	5.6X
BAO	129.45	133	ePKP	39 57.40	-0.5	DCN	147.06	355	iPKPc	40 42.40	13.9X	SSF	150.75	338	ePKP	40 35.30	0.8
SUF	130.54	338	ePKP	39 57.80	-0.6		0.9s		163.00nm				1.5s	20.90nm			
	0.6s		3.40nm			FVI	147.17	328	PKP	40 30.44	1.5	RSP	150.84	332	PKP	40 39.93	5.1X
NUR	132.53	336	iPKP	40 02.00	-0.2		0.9s		14.90nm			GRR	150.84	345	ePKP	40 35.20	0.6
			e	40 14.00		RIY	147.18	325	ePKP	40 30.20	1.2	MAO	150.86	324	PKP	40 36.00	1.2
NB2	136.42	344	PKP	40 09.50	-0.2	KTD	147.18	336	ePKP	40 30.29	1.4	CKI	150.92	330	PKP	40 34.45	-0.4
	0.9s		7.20nm			RUP	147.25	337	ePKP	40 30.13	1.1		0.8s	44.90nm			
MLR	140.28	318	ePKP	40 17.00	-0.4	TRI	147.27	326	ePKP	40 28.90	-0.2	FIN	151.12	329	PKP	40 39.93	4.8X
			e	58 48.00		SNF	147.49	341	PKPc	40 32.40	3.1X	BNI	151.17	332	PKP	40 35.50	0.1
KRA	141.29	327	ePKP	40 28.80	9.9X							ROB	151.21	330	PKP	40 40.44	5.1X
	0.8s		52.00nm			GWf	147.64	336	PKP	40 30.23	0.6	LPF	151.22	345	ePKP	40 36.10	1.0
E	22s		4.20um			DOU	147.76	340	PKPc	40 33.00	3.2X		1.1s	17.10nm			
				58 40.80								RRL	151.23	332	PKP	40 41.57	6.0X
			i	58 55.80		OGA	147.82	330	ePKP	40 30.50	0.2	MNO	151.25	313	PKP	40 42.50	6.7X
SPC	141.66	326	ePKP	40 19.70	-0.2	LCI	147.87	315	PKP	40 34.00	3.8X	PZZ	151.41	331	PKP	40 41.36	5.6X
KSP	142.55	331	ePKP	40 17.70	-3.4X	ECB	147.99	354	ePKP	40 33.20	3.2X	BGF	151.41	339	ePKP	40 36.30	0.8
BZS	142.89	320	ePKP	40 18.00	-3.8X		1.1s		114.00nm			ENR	151.48	330	PKP	40 40.23	4.4X
			e	58 57.50								IMI	151.49	329	PKP	40 41.05	5.2X
CAI	143.35	135	e(PKP)	40 09.20	-14.3X	BRT	148.09	316	PKP	40 31.00	0.4	STV	151.51	330	PKP	40 40.85	5.0X
SRO	143.52	325	iPKP	40 20.20	-2.6	CTI	148.11	328	PKP	40 31.26	0.6	PLDF	151.64	337	PKP	40 36.49	0.5
BRG	143.57	332	iPKP	40 20.10	-2.7		1.7s		182.40nm			SBF	151.74	330	ePKP	40 36.70	0.5
	1.7s		46.00nm			ECP	148.13	354	iPKPc	40 33.70	3.5X	AGO	151.75	338	PKP	40 36.40	0.3
			i	40 26.70			1.2s		276.00nm			MAF	151.80	339	ePKP	40 37.10	1.0
CLL	143.65	334	iPKPc	40 19.40	-3.5X							TCF	151.86	339	ePKP	40 36.90	0.7
	2.4s		100.00nm			BAI	148.18	317	PKP	40 34.00	3.3X		1.1s	9.75nm			
ZST	143.91	327	ePKP	40 21.60	-1.9	WLS	148.20	336	PKP	40 30.69	0.1	PGF	151.93	326	ePKP	40 37.10	0.6
PRU	143.95	331	ePKP	40 21.00	-2.5	CDF	148.23	336	PKP	40 30.87	0.2		1.2s	23.80nm			
	1.5s		11.20nm			SLE	148.26	334	ePKPc	40 35.70	5.0X	PYM	152.05	338	PKP	40 37.57	1.0
N	15s		1.80um			SAX	148.29	332	ePKPc	40 34.30	3.2X	LSF	152.12	340	ePKP	40 37.20	0.6
E	16s		1.50um			OSS	148.36	331	ePKPc	40 31.10	0.0		1.1s	9.75nm			
BEQ	144.00	320	e(PKP)	40 20.50	-3.2X	FEL	148.37	334	ePKP	40 30.07	-0.9	MFF	152.31	343	ePKP	40 37.60	0.8
VKA	144.27	327	ePKPd	40 21.00	-3.1X	ECH	148.44	335	PKP	40 30.98	0.0	MFF	152.34	330	ePKP	40 37.60	0.6
	1.3s		38.20nm			ZLA	148.52	333	ePKPc	40 34.30	3.1X	L8L	152.41	337	PKP	40 38.19	1.2
SOP	144.52	326	iPKPc	40 24.80	0.3	LLS	148.74	332	ePKPc	40 35.10	3.4X	LRG	152.56	331	ePKP	40 38.30	1.1
EKA	144.64	351	PKP	40 24.00	-0.5	MOF	148.74	335	PKP	40 31.64	0.1	LMR	152.58	330	ePKP	40 37.90	0.6
	0.9s		11.80nm			FG2	148.88	319	PKP	40 24.78	-7.0X	CAF	153.10	338	ePKP	40 39.30	1.3
MDX	144.73	334	iPKPc	40 24.00	-0.8	VITF	148.88	337	PKP	40 31.80	0.2		1.1s	8.55nm			
	1.6s		93.00nm			BSF	148.89	335	PKP	40 31.94	0.1	LFF	153.54	340	ePKP	40 39.70	1.1
WIT	144.75	341	ePKP	40 25.00	0.3	BBS	148.90	334	PKP	40 31.83	0.1		1.2s	14.90nm			
			e	40 35.00		HAU	148.92	336	ePKP	40 31.90	0.2	LPO	153.62	339	ePKP	40 39.90	1.2
SKO	144.77	315	ePKP	40 23.00	-2.2	SAL	148.97	329	PKP	40 31.50	-0.3		1.2s	17.85nm			
	1.1s		253.00nm			ORI	149.00	315	PKP	40 35.90	3.8X	EPF	155.36	338	ePKP	40 42.30	1.1
			i	40 23.70		RSM	149.15	325	PKP	40 33.31	1.2		1.5s	36.55nm			
		</															



TIC	164.72	206	PKP	40	53.20	1.0
IFR	165.77	337	iPKPc	40	54.00	1.3
			e	41	52.50	
AVE	166.70	344	ePKP	40	54.50	1.3
LKO	167.55	210	PKP	40	54.06	-0.4
	1.7s	103.50nm				
TIO	168.87	339	ePKP	40	56.50	1.5
S.D.	= 1.1	on 218	of 266 obs.			
MAR	11,	1990	22h 46m	34.68±0.25s		
	33.493 N ± 5.3km	138.654 E ± 4.8km				
	DEPTH = 24.4km ( 20 depth phases)					
	5.3mb ( 44 obs.)	4.6MsZ ( 2 obs.)				
SOUTH OF HONSHU, JAPAN	(211)					
CENTROID, MOMENT TENSOR	(HRV)					
Dato Used:	GDSN					
L.P.B.:	11S, 20C					
Centroid Location:						
Origin Time	22:46:36.8	0.5				
Lat	33.45N	0.06 Lon	138.04E	0.06		
Dep	52.1	5.8 Half-duration	2.0			
Moment Tensor;	Scale 10**17 Nm					
Mrr=-0.40	0.08	Mtt=-1.76	0.10			
Mrf= -2.16	0.12	Mrt= -0.16	0.16			
Mrf= -0.01	0.13	Mtf= -0.10	0.10			
Principal Axes:						
T Val=	2.17	P lg=	0 Azm=269			
N	-0.38	83	0			
P	-1.78	7	179			
Best Double Couple:Mo=2.0*10**17						
NP1:Strike=314 Dip=85 Slip=-175						
NP2:	223	85	-5			
MAT	3.06	353	iPd	47	22.80	0.2
			eS	48	01.00	
SHK	5.07	283	eP	47	49.50	-1.6
MDJ	13.14	330	iPd	49	45.50	3.2X
	1.5s	400.00nm				6.3mb X
Z	16s	3.60um				
E	14s	6.40um				
		eSP	49	55.50		
SNY	14.54	309	iPc	50	04.00	3.3X
	1.2s	200.00nm				5.5mb X
Z	14s	3.90um				4.3MsZ X
N	11s	1.60um				
E	14s	2.80um				
		eS	52	49.00		
CN2	14.56	319	Pc	50	00.50	-0.4
Z	10s	4.00um				
N	13s	4.50um				
E	13s	5.60um				
		sP	50	10.00		
SSE	14.97	266	P	50	05.50	-0.8
	1.2s	59.00nm				4.8mb
NJ2	16.72	270	Pd	50	32.50	3.7X
Z	20s	1.20um				
N	13s	3.30um				
E	12s	1.10um				
		sP	50	40.00		
TIA	17.88	285	eP	50	44.00	0.7
Z	18s	2.70um				
N	17s	5.40um				
E	17s	2.20um				
BJI	19.13	296	eP	50	58.00	-0.6
Z	18s	2.35um				
N	11s	1.46um				
E	13s	1.70um				
		eS	54	30.00		
QZH	19.45	249	eP	51	01.50	-0.9
E	14s	0.90um				
		pP	51	06.00	17km	
PJG	20.61	163	eP	51	17.00	2.2
GUA	20.67	163	eP	51	16.30	0.9
	0.6s	117.33nm				5.5mb
WHN	20.81	268	iPc	51	18.00	1.3
	1.5s	700.00nm				5.8mb
Z	16s	2.10um				4.6MsZ X
E	11s	1.50um				
		sP	51	31.50		
TIY	21.70	289	Pd	51	25.10	-0.7
N	16s	6.80um				
		sP	51	39.90		
PIP	22.11	231	eP	51	28.50	-1.4
HHC	22.74	297	eP	51	33.00	-3.2X
Z	14					



					PRY 121.13 257 ePKP 05 30.50 3.1X					DEPTH = 5.0km (geophysicist)				
					NNA 141.17 65 ePKP 06 07.00 1.5					SWEDEN (536)				
					ARE 148.00 65 ePKP 06 22.00 4.7X					MD 2.1 (BER).				
					LPB 150.58 62 PKPd 06 28.00 6.6X									
					1.1s 88.61nm LR 00 20.00					KTK1 1.51 31 eP 33 40.30 0.5				
					CAI 152.88 351 ePKP 06 34.50 10.2X					TRO 2.06 339 iP 33 46.70 -1.0				
					S.D. = 1.3 on 156 of 193 obs.					LOF 2.87 281 iP 34 00.40 1.1				
					? MAR 11, 1990 22h 59m 03.28±7.85s					NSS 4.90 233 eP 34 27.52 -0.5				
					32.437 S ±53.4km 71.647 W ±31.7km					S.D. = 1.7 on 4 of 4 obs.				
					DEPTH = 10.0km (geophysicist)					? MAR 12, 1990 00h 08m 50.75±1.97s				
					NEAR COAST OF CENTRAL CHILE (135)					18.581 N ±12.3km 101.764 W ±18.3km				
					ROCH 0.76 135 iP 59 18.30 0.1					DEPTH = 33.0km (normal)				
					LCCH 1.04 176 iPd 59 22.70 -0.2					GUERRERO, MEXICO (59)				
					TACH 1.35 154 iPc 59 27.50 -0.6					MRX 1.24 26 eP 09 11.00 -0.8				
					FCH 1.45 128 iPd 59 29.50 -0.3					CRX 2.14 67 eP 09 28.46 3.4X				
					PCH 1.52 141 iP 59 30.90 0.3					III 2.19 95 eP 09 26.00 0.3				
					LNV 1.53 173 iP 59 30.80 0.2					(S) 10 06.71				
					CHCH 1.71 151 iP 59 33.80 0.5					IIJ 2.24 59 (P) 09 26.50 -0.2				
					S.D. = 0.5 on 7 of 7 obs.					(S) 10 15.13				
					MAR 11, 1990 23h 03m 40.32±1.38s					ACX 2.49 133 (P) 09 30.00 0.1				
					32.557 S ±6.2km 71.617 W ±12.7km					IIC 2.65 63 (P) 09 38.72 6.4X				
					DEPTH = 7.4 ±4.5 km					PPM 3.01 80 iP 09 39.00 1.3				
					NEAR COAST OF CENTRAL CHILE (135)					(S) 10 37.24				
					ROCH 0.66 129 iPd 03 54.00 0.4					IIT 3.30 82 (P) 09 47.50 5.9X				
					LCCH 0.92 178 iPd 03 58.50 0.4					AGX 3.32 351 (P) 09 42.00 0.4				
					TACH 1.23 153 iPc 04 03.00 -0.5					OXX 5.03 106 eP 10 05.00 -1.1				
					FCH 1.35 125 iPd 04 05.00 -0.8					S.D. = 1.0 on 7 of 10 obs.				
					LNV 1.41 173 iP 04 06.00 -0.3					? MAR 12, 1990 00h 15m 32.97±4.46s				
					PCH 1.41 139 eP 04 06.50 0.1					18.071 N ±24.8km 102.685 W ±34.6km				
					CHCH 1.59 150 iPc 04 09.40 0.4					DEPTH = 33.0km (normal)				
					RTCV 2.70 76 eP 04 25.80 0.8					MICHOACAN, MEXICO (57)				
					RTLL 2.94 66 ePc 04 28.00 -0.4					MRX 2.15 41 iP 16 04.50 -2.7				
					RTRS 3.01 38 e(P) 04 29.30 0.1					ACX 2.95 113 eP 16 18.12 -0.5				
					CFA 3.02 73 eS 05 09.10					III 3.07 84 eP 16 19.84 -0.7				
					S.D. = 0.6 on 11 of 11 obs.					CRX 3.14 65 (P) 16 22.66 1.0				
					* MAR 11, 1990 23h 16m 46.97±1.46s					IIJ 3.25 59 iP 16 20.50 -2.8X				
					32.594 S ±6.6km 71.576 W ±13.8km					(S) 17 08.90				
					DEPTH = 10.0km (geophysicist)					UNM 3.55 69 (P) 16 28.50 1.1				
					NEAR COAST OF CENTRAL CHILE (135)					IIC 3.66 62 (P) 16 32.82 3.9X				
					ROCH 0.61 128 iPc 17 00.10 0.7					(S) 17 23.52				
					LCCH 0.88 180 iPd 17 04.40 0.6					AGX 3.81 5 (P) 16 31.50 0.9				
					TACH 1.18 153 iP 17 07.50 -1.6					PPM 3.98 75 eP 16 34.57 0.9				
					FCH 1.30 124 iP 17 10.90 -0.4					IIT 4.26 76 (P) 16 53.40 16.0X				
					PCH 1.36 139 iPc 17 12.50 0.5					OXX 5.77 99 (P) 17 03.50 4.7X				
					LNV 1.36 174 iP 17 12.10 0.1					S.D. = 1.7 on 7 of 11 obs.				
					CHCH 1.54 150 iPc 17 08.20 -6.4X					MAR 12, 1990 00h 31m 39.07±0.73s				
					RTCB 2.60 66 eP 17 30.00 0.1					12.533 S ±9.8km 75.799 W ±8.3km				
					RTCV 2.68 75 eP 17 32.10 1.2					DEPTH = 33.0km (normal)				
					RTLL 2.93 65 ePc 17 33.90 -0.5					3.6mb (1 obs.)				
					CFA 3.00 72 eP 17 35.20 -0.2					PERU (116)				
					RTRS 3.02 37 ePc 17 35.30 -0.4					PT02 0.74 237 iPd 31 53.70 0.6				
					S.D. = 0.8 on 11 of 12 obs.					PT08 0.93 308 iPd 31 57.30 1.2				
					? MAR 11, 1990 23h 33m 12.04±1.86s					NNA 1.15 298 iPd 31 58.50 -0.5				
					67.733 N ±17.1km 21.080 E ±18.2km					eS 32 13.00				
										PT10 1.23 292 eP 31 59.00 -1.1				
										PT06 1.39 202 iP 32 02.00 -0.3				
										ARE 5.71 134 eP 33 05.00 0.8				
										iS 34 23.00				
										ZOBO 8.31 117 P 33 40.00 -0.8				
										YKA 80.66 343 eP 43 50.00 0.2				
										0.6s 0.40nm 3.6mb				
										S.D. = 1.0 on 8 of 8 obs.				
										MAR 12, 1990 02h 15m 29.05±0.69s				
										60.328 N ±7.4km 150.329 W ±7.1km				
										DEPTH = 74.0 ±15.8 km				
										2.9mb (1 obs.)				
										KENAI PENINSULA, ALASKA (14)				
										PMS 0.99 22 iPd 15 47.40 -0.6				
										PWA 1.35 9 ePd 15 52.40 -0.1				



12d 02h

PMR 1.40 24 ePd 15 53.00 -0.1  
 TOA 2.69 47 ePd 16 11.80 0.9  
 SVW 2.72 289 ePc 16 10.90 -0.4  
 KDC 2.82 204 eP 16 12.90 0.2  
 TTA 3.76 316 eP 16 26.20 0.2  
 FBA 4.74 13 eP 16 39.80 0.3  
 IMA 5.96 347 eP 16 56.90 0.2  
 INK 10.79 35 eP 18 11.00 8.4X  
 YKA 17.10 67 eP 19 23.60 -0.6

0.6s 0.50nm 2.9mb  
 S.D. = 0.6 on 10 of 11 obs.

\* MAR 12, 1990 03h 04m 14.01 ± 0.62s  
 8.061 S ± 8.4km 150.686 E ± 9.2km  
 DEPTH = 33.0km (normol)  
 4.8mb (4 obs.) 4.6Msz (1 obs.)  
 EAST PAPUA NEW GUINEA REGION (207)  
 ML 4.9 (PMG).

PMG 3.74 249 eP 05 12.00 1.2  
 LAT 3.91 291 eP 05 06.50 -6.8X  
 HNR 9.26 99 eP 06 27.00 -1.3  
 CTA 12.70 199 iPc 07 17.60 2.4  
 1.4s 51.16nm 5.4mb

OIS 16.41 220 eP 08 07.00 3.5X  
 RMO 18.42 185 eP 08 29.00 0.4  
 BRS 19.33 174 eP 08 38.50 -1.1  
 WB5 19.69 232 eP 08 40.80 -2.9  
 WRA 19.75 232 Pd 08 43.00 -1.2  
 0.9s 9.80nm 4.1mb

MTN 19.81 254 eP 08 44.00 -0.8  
 DZM 20.60 134 iPd 08 47.20 1.6  
 ASPA 22.35 224 iPd 09 10.70 -0.1  
 1.1s 13.00nm 4.3mb  
 Z 17s 0.76um 4.2MszX

KNA 22.75 248 eP 09 14.50 -0.2  
 WARB 29.10 229 eP 09 57.80 -16.3X  
 OIZ 48.43 304 eP 12 56.80 1.3  
 WHN 51.85 319 Pc 13 23.00 1.6  
 BJI 57.51 329 eP 14 01.50 -1.0  
 XAN 57.61 319 eP 14 03.10 -0.3  
 TIY 57.87 325 eP 14 05.00 -0.2  
 Z 18s 0.40um 4.6Msz

CD2 59.33 313 eP 14 15.10 -0.4  
 LZH 62.16 318 eP 14 35.50 0.7  
 2.5s 60.00nm 5.3mb  
 GTA 66.67 319 eP 15 04.00 0.0  
 S.D. = 1.4 on 19 of 22 obs.

& MAR 12, 1990 05h 06m 23.51s  
 18.857 N 155.240 W  
 DEPTH = 12.0km  
 HAWAII (613)  
 <HVO-P>. MD 4.0 (HVO).

PPL 0.37 325 iPc 06 30.56 -0.6  
 HTC 0.41 338 iPc 06 31.23 -0.7  
 SPT 0.42 287 ePc 06 31.62 -0.6  
 KAE 0.44 13 ePc 06 31.74 -0.8  
 HLP 0.45 351 ePc 06 31.90 -0.8  
 WOH 0.46 328 ePc 06 32.00 -1.1  
 KNH 0.48 354 ePc 06 32.20 -1.1  
 DES 0.50 344 iPc 06 32.30 -1.4  
 WHA 0.51 21 ePd 06 32.73 -1.1  
 MKA 0.51 8 ePc 06 32.47 -1.5  
 AHA 0.51 357 ePc 06 32.57 -1.4  
 PUH 0.52 2 ePc 06 32.48 -1.6  
 KHU 0.53 317 ePc 06 32.91 -1.4  
 OUT 0.53 356 ePc 06 32.72 -1.6  
 RIM 0.54 356 ePc 06 32.86 -1.6  
 CPK 0.54 351 ePc 06 32.82 -1.7  
 ESR 0.55 0 ePc 06 32.96 -1.7  
 AIN 0.56 338 iPc 06 33.52 -1.3  
 NPH 0.56 356 ePc 06 33.15 -1.6  
 UWE 0.57 355 iPd 06 33.40 -1.5

iS 06 40.50  
 KFH 0.59 343 iPc 06 33.92 -1.4  
 MLX 0.61 351 ePc 06 34.12 -1.6  
 HUL 0.61 24 ePc 06 34.17 -1.5  
 TRH 0.63 332 ePc 06 34.41 -1.8  
 DAH 0.64 321 ePc 06 34.36 -2.0  
 MLH 0.65 348 iPc 06 34.80 -1.7  
 eS 06 42.75  
 MVH 0.67 15 ePd 06 34.82 -1.8  
 PKL 0.67 27 iPc 06 34.89 -1.7  
 POH 0.70 31 ePc 06 35.56 -1.6  
 PLL 0.70 343 iPc 06 35.43 -2.1  
 MWH 0.71 332 ePc 06 35.64 -1.8  
 KUH 0.72 304 ePc 06 35.67 -1.9  
 KPO 0.74 30 iPc 06 36.03 -1.8  
 HBH 0.74 26 ePc 06 35.95 -1.9  
 WOB 0.75 334 iPc 06 36.13 -2.2  
 HMH 0.78 343 iPc 06 36.70 -2.0  
 KIH 0.82 323 iPc 06 37.29 -2.0  
 NGH 0.86 13 ePc 06 37.88 -2.0  
 HIL 0.87 9 iPc 06 38.96 -1.1  
 KKK 1.03 355 ePc 06 40.38 -2.6  
 WKH 1.07 338 iPc 06 40.60 -3.0  
 41 obs. associated

? MAR 12, 1990 05h 23m 27.54 ± 7.03s  
 7.032 S ± 78.7km 151.032 E ± 30.5km  
 DEPTH = 33.0km (normol)  
 3.9mb (2 obs.)  
 NEW BRITAIN REGION (192)  
 ML 4.5 (PMG).

PMG 4.51 238 eP 24 35.00 -0.3  
 OIS 17.42 218 eP 27 30.00 0.3  
 BRS 20.32 176 eP 28 03.50 -0.2  
 WB5 20.61 230 eP 28 05.00 -1.7  
 WRA 20.66 230 P 28 09.00 1.7  
 0.7s 2.10nm 3.6mb  
 ASPA 23.33 223 eP 28 34.10 0.2  
 0.7s 6.00nm 4.2mb  
 S.D. = 1.4 on 6 of 6 obs.

? MAR 12, 1990 05h 48m 48.40 ± 2.12s  
 38.364 N ± 8.6km 23.734 E ± 31.0km  
 DEPTH = 10.0km (geophysicist)  
 GREECE (364)  
 MD 2.6 (ATH).

ATH 0.39 182 ePg 48 57.00 0.6  
 NEO 1.02 337 ePg 49 07.80 0.1  
 VLI 1.76 201 ePg 49 18.00 -1.1  
 ITM 1.86 231 ePg 49 21.00 0.5  
 S.D. = 1.3 on 4 of 4 obs.

MAR 12, 1990 06h 30m 38.24 ± 0.36s  
 14.020 N ± 4.7km 145.036 E ± 7.6km  
 DEPTH = 31.9km (2 depth phases)  
 4.9mb (5 obs.)  
 MARIANA ISLANDS (216)  
 Felt (IV) at Tomuning ond (III)  
 at Agono, Guam.

PJG 0.46 201 iP 30 47.60 -0.6  
 GUMO 0.46 201 iP 30 47.70 -0.5  
 GUA 0.49 194 iPc 30 48.30 -0.4  
 MAT 23.25 346 (P) 35 42.00 -1.7  
 1.2s 62.50nm 5.0mb  
 BAG 23.71 279 eP 35 49.50 0.9  
 WHN 32.66 305 eP 37 11.50 1.8  
 CTA 33.92 178 eP 37 21.00 0.3  
 OIS 34.77 189 eP 37 27.00 -1.0  
 WB5 35.28 198 eP 37 31.50 -0.9  
 WRA 35.35 198 Pd 37 32.20 -0.8  
 0.9s 9.90nm 4.7mb  
 BJI 36.21 321 eP 37 39.00 -1.0  
 TIY 37.33 315 eP 37 49.70 0.0  
 S 43 30.00  
 GYA 37.92 295 P 37 55.60 0.8  
 XAN 38.26 308 P 37 56.60 -0.8  
 ASPA 39.01 196 iPc 38 03.60 -0.1  
 0.7s 9.00nm 4.6mb  
 BTO 40.42 318 eP 38 16.00 0.6  
 CD2 41.41 301 eP 38 22.80 -0.8

DZM 41.56 149 iPc 38 27.00 2.2  
 BRS 41.84 170 eP 38 27.50 0.5  
 LZH 42.88 308 P 38 36.50 0.8  
 1.5s 45.00nm 5.0mb  
 WARB 43.79 204 iPd 38 43.40 0.5  
 NNT 44.06 274 eP 38 47.00 1.7  
 CHG 44.38 283 eP 38 48.40 0.5  
 GTA 47.01 311 eP 39 08.30 -0.4  
 LSA 51.95 297 P 39 47.80 0.6  
 WMO 56.96 313 iPd 40 23.00 -0.2  
 HYB 63.81 283 eP 41 09.50 -0.7  
 NDI 64.09 295 iPc 41 11.00 -0.9  
 KSH 65.10 307 eP 41 18.70 0.3  
 GBA 65.42 279 Pd 41 19.20 -1.4  
 0.7s 8.60nm 5.0mb  
 POO 68.10 285 iP 41 37.80 0.2  
 INK 73.91 22 eP 42 09.00 -2.6  
 MAIO 78.30 305 iPc 42 38.00 0.8  
 WDC 82.84 50 eP 42 54.30 -6.8X  
 e 43 05.60 37km  
 CMB 85.04 52 eP 43 11.80 -0.5  
 FRI 85.81 53 ePc 43 17.00 0.9  
 KVN 86.52 51 eP 43 20.20 0.4  
 pP 43 28.90 27km  
 TNP 87.44 52 eP 43 24.30 -0.1  
 LRM 88.57 43 eP 43 30.20 0.6  
 ZOBO 147.93 98 PKP 50 21.50 1.1  
 LPB 147.96 99 ePKP 50 26.00 5.8X  
 S.D. = 1.0 on 39 of 41 obs.

MAR 12, 1990 06h 39m 14.74 ± 1.27s  
 31.994 S ± 8.9km 71.119 W ± 13.4km  
 DEPTH = 33.0km (normol)  
 NEAR COAST OF CENTRAL CHILE (135)

ROCH 0.98 175 iPd 39 32.50 0.1  
 FCH 1.50 152 eP 39 47.50 0.0  
 LCCH 1.52 194 iP 39 40.00 0.5  
 TACH 1.66 175 iP 39 41.50 -0.5  
 PCH 1.70 163 iP 39 42.50 -0.1  
 LNV 1.97 187 iPc 39 46.60 0.2  
 CHCH 1.97 169 iP 39 46.00 -0.5  
 RTCV 2.20 87 e(P) 39 51.00 1.3  
 RTRS 2.31 38 iPd 39 51.10 -0.1  
 RTLL 2.35 74 ePc 39 51.30 -0.7  
 CFA 2.48 82 eP 39 53.50 -0.3  
 S 40 14.00  
 S.D. = 0.6 on 11 of 11 obs.

MAR 12, 1990 06h 43m 46.52 ± 0.52s  
 6.450 S ± 8.9km 104.529 E ± 10.3km  
 DEPTH = 33.0km (normol)  
 4.9mb (7 obs.) 4.5Msz (1 obs.)  
 SUNDA STRAIT (276)

PPI 7.24 325 eP 45 33.50 0.7  
 KGM 8.50 352 ePd 45 52.80 2.5  
 PSI 10.67 328 ePc 46 18.50 -1.7  
 KKM 17.03 43 eP 47 46.00 2.0  
 NANU 19.21 148 eP 48 11.00 0.3  
 MBL 20.82 136 eP 48 27.00 -0.8  
 LOE 23.86 353 eP 48 50.00 -8.0X  
 BDT 24.17 347 eP 48 57.60 -3.3X  
 0.8s 46.70nm 5.1mb  
 KNA 25.49 113 eP 49 13.00 -0.6  
 CHG 25.70 348 ePd 49 13.50 -2.1  
 1.0s 25.00nm 4.8mb  
 OIZ 25.85 12 eP 49 18.60 1.6  
 MTN 26.97 106 eP 49 26.00 -1.3  
 WRA 31.90 118 Pc 50 11.10 -0.3  
 0.8s 15.30nm 4.9mb  
 WB5 31.90 118 eP 50 11.00 -0.4  
 GYA 32.78 4 P 50 19.20 0.2  
 ASPA 33.01 124 eP 50 21.10 0.1  
 0.9s 7.00nm 4.6mb



GBA 33.48 307 Pc 50 25.50 0.4  
0.6s 4.10nm 4.5mb  
OIS 36.77 116 iPc 50 54.20 1.0  
CD2 37.15 359 eP 50 54.00 -2.3  
LSA 38.17 341 eP 51 05.20 -0.2  
POD 39.14 310 eP 51 15.50 2.4  
PMG 42.30 97 eP 51 39.50 0.4  
CTA 42.67 113 iP 51 43.50 1.3  
NDI 43.74 324 iPc 51 50.50 -0.1  
0.6s 113.33nm 5.8mb  
eS 58 16.00  
TIY 44.55 9 Pc 51 57.20 0.0  
Z 22s 0.60um 4.5msz  
GTA 45.84 355 eP 52 06.60 -0.8  
BJI 47.49 12 eP 52 20.00 -0.3  
BRS 50.25 120 iPd 52 43.00 1.1  
i 52 50.50  
WMQ 52.30 345 iPd 52 57.00 -0.3  
CN2 53.48 19 iPc 53 04.50 -1.3  
1.0s 40.00nm 5.4mb  
MDJ 55.61 22 eP 53 19.70 -1.7  
MAIO 59.90 319 eP 53 51.00 -0.8  
MLR 86.62 316 eP 56 30.00 1.8  
OHR 89.49 311 eP 56 42.30 0.4  
YKA 117.18 19 ePKP 02 28.00 -1.6  
0.7s 0.40nm  
BAO 145.04 231 ePKP 03 23.50 0.2  
ZOBO 156.28 198 ePKP 03 46.00 5.3X  
S.D. = 1.3 on 34 of 37 obs.

& MAR 12, 1990 06h 54m 47.64s  
18.972 N 155.212 W  
DEPTH = 17.5km  
HAWAII (613)  
<HVO-P>. MD 4.4 (HVO).

PPL 0.30 308 ePc 54 53.48 -0.8  
PWH 0.31 358 eP 54 53.67 -0.7  
HTC 0.32 326 ePc 54 53.91 -0.7  
KAE 0.32 13 ePc 54 54.04 -0.6  
HLP 0.34 344 iPc 54 54.31 -0.6  
KNH 0.37 348 ePc 54 54.58 -0.9  
WHA 0.39 23 ePc 54 54.90 -0.8  
WOH 0.39 315 iPc 54 54.87 -0.9  
MKA 0.40 7 ePd 54 54.73 -1.2  
DES 0.40 335 iPc 54 54.78 -1.2  
AHA 0.40 353 ePc 54 54.81 -1.2  
eS 55 00.28  
PUH 0.40 359 ePc 54 54.75 -1.3  
eS 55 00.33  
OUT 0.42 351 ePd 54 55.12 -1.2  
RIM 0.43 352 ePd 54 55.27 -1.2  
SPT 0.43 271 eP 54 55.45 -1.0  
CPK 0.43 345 ePc 54 55.21 -1.4  
ESR 0.44 357 ePc 54 55.28 -1.4  
NPH 0.45 351 ePc 54 55.59 -1.2  
UWE 0.46 350 eP 54 55.60 -1.3  
AIN 0.46 330 iPc 54 56.14 -1.0  
KHU 0.47 306 iPc 54 55.88 -1.4  
KFH 0.49 336 ePc 54 56.43 -1.1  
MLX 0.50 346 ePd 54 56.43 -1.3  
TRH 0.54 324 ePc 54 57.19 -1.4  
MLH 0.55 342 ePc 54 57.17 -1.4  
MVH 0.55 15 ePc 54 57.14 -1.3  
PKL 0.56 30 ePc 54 56.88 -1.7  
DAH 0.58 312 eP 54 57.29 -1.9  
POH 0.59 35 eP 54 57.84 -1.3  
PLL 0.61 337 iPc 54 57.93 -1.7  
SWH 0.61 322 eP 54 58.54 -1.2  
HBH 0.63 28 eP 54 58.31 -1.5  
KPO 0.63 34 ePc 54 58.01 -1.8  
MWH 0.63 325 eP 54 58.34 -1.6  
WOB 0.66 328 eP 54 58.92 -1.8  
HMH 0.68 338 iPc 54 59.18 -1.7  
KIH 0.75 316 eP 55 00.19 -1.8  
NGH 0.75 13 eP 55 00.28 -1.5  
HIL 0.75 9 iPc 55 01.46 -0.4  
KKU 0.92 352 ePc 55 02.91 -2.0  
40 obs. associated

\* MAR 12, 1990 07h 32m 08.77±0.82s  
1.040 S ± 0.9km 78.019 W ± 0.3km  
DEPTH = 10.0km (geophysicist)  
4.1mb (2 obs.)  
ECUADOR (107)  
Felt (IV) at Amboto.

VC1 0.55 316 eP 32 23.00 2.7  
OUR 1.00 329 iP+ 32 26.40 -1.6  
GGP 1.03 326 iP+ 32 26.70 -2.0  
CAYA 1.11 2 iP+ 32 30.80 0.8  
eS 32 48.00  
COTA 1.40 347 eP 32 35.00 0.2  
eS 32 59.00  
NNA 10.94 174 iPd 34 48.00 -0.5  
0.9s 12.60nm 5.3mb X  
eS 36 42.00  
PT02 11.93 173 iP 35 02.50 0.5  
ZOBO 18.00 148 P 36 07.00 -14.5X  
Z 20s 0.32um  
LPB 18.24 148 Pc 45 14.00  
LR 36 16.00 -8.2X  
ALQ 44.60 326 eP 40 23.00 -0.3  
1.0s 4.50nm 4.3mb  
YKA 69.10 343 eP 43 17.20 0.4  
0.9s 0.80nm 3.9mb  
INK 78.82 342 eP 44 13.00 -0.2  
MBC 80.67 351 eP 44 23.00 0.1  
S.D. = 1.4 on 11 of 13 obs.

\* MAR 12, 1990 07h 47m 23.79±1.30s  
31.141 S ± 14.6km 68.594 W ± 24.3km  
DEPTH = 33.0km (normal)  
SAN JUAN PROVINCE, ARGENTINA (137)

RTLL 0.22 150 iPc 47 31.00 0.4  
ZON 0.41 190 iPd 47 34.30 1.2  
eS 47 46.00  
CFA 0.55 147 iPc 47 35.50 0.3  
eS 47 47.50  
RTCV 0.72 176 ePd 47 35.80 -1.7  
RTRS 1.22 322 iPd 47 44.50 -0.1  
S.D. = 1.5 on 5 of 5 obs.

\* MAR 12, 1990 07h 59m 29.61±0.74s  
37.030 N ± 9.5km 113.593 E ± 8.9km  
DEPTH = 33.0km (normal)  
3.7mb (1 obs.)  
NORTHEASTERN CHINA (658)  
ML 3.8 (BJI).

TIY 1.15 307 iPg 59 49.90 0.4  
Sg 00 04.30  
TIA 2.96 105 Pnd 00 16.20 0.9  
Pg 00 21.70  
Sg 01 00.60  
BJI 3.62 33 Pg 00 25.00 0.3  
Sn 01 04.50  
Sg 01 19.00  
XAN 4.84 233 Pn 00 42.50 0.5  
Pg 00 52.80  
WHN 6.50 174 iPnc 01 07.20 1.8  
NJ2 6.60 137 ePn 01 04.00 -2.8  
GTA 11.10 287 eP 02 07.80 -1.4  
INK 63.84 22 eP 10 01.00 0.5  
YKA 73.54 21 eP 11 00.40 -0.2  
0.9s 0.80nm 3.7mb  
S.D. = 1.5 on 9 of 9 obs.

MAR 12, 1990 08h 08m 55.30±0.65s  
61.239 N ± 7.6km 150.953 W ± 6.4km  
DEPTH = 65.5 ± 13.8 km  
SOUTHERN ALASKA (2)

PWA 0.66 51 iPc 09 09.80 0.2  
PMS 0.67 89 iPc 09 10.20 0.4  
PMR 0.95 67 iPc 09 12.90 -0.2  
SVW 2.27 269 iPc 09 31.90 0.7  
TTA 2.92 308 iPc 09 40.60 0.2  
KDC 3.59 193 eP 09 48.90 -0.8  
FBA 3.95 20 ePc 09 54.00 -0.7  
IMA 5.00 347 eP 10 09.20 -0.4  
YKA 17.05 70 eP 12 51.00 0.6  
0.3s 0.10nm 2.5mb  
S.D. = 0.7 on 9 of 9 obs.

& MAR 12, 1990 08h 15m 02.70s  
45.655 N 111.962 W  
DEPTH = 5.6km  
2.6mb (1 obs.)  
MONTANA (456)  
<BUT>. ML 3.5 (BUT). Felt (V) at  
Harrison and (IV) at Pony.

LCCM 0.19 18 iPc 15 06.80 0.1  
LRM 0.38 296 iPd 15 10.30 -0.1  
BGMT 0.43 187 iPc 15 10.80 -0.5  
BUT 0.55 311 iPd 15 13.50 -0.3  
iS 15 21.10  
MEMT 0.70 94 iPc 15 15.90 -0.8  
SXM 0.72 47 iPc 15 16.60 -0.6  
MCMT 1.04 217 iPc 15 22.20 -0.7  
HRY 1.06 5 eP 15 22.40 -0.8  
LTMT 1.13 185 ePd 15 24.00 -0.6  
IMW 1.90 157 eP 15 36.00 -0.3  
PTI 2.80 186 eP 15 50.00 0.9  
EBI 3.12 294 iPnd 15 52.50 -1.0  
BW06 3.36 148 eP 15 59.50 2.5  
NEW 4.39 308 eP 16 10.00 -1.5  
SES 4.78 7 P 16 18.00 0.9  
RSSD 5.84 102 eP 16 36.00 3.9  
EDM 7.63 354 P 16 56.00 -1.1  
YKA 16.94 356 eP 18 59.70 -2.0  
0.6s 0.30nm 2.6mb  
18 obs. associated

\* MAR 12, 1990 08h 25m 26.41±1.03s  
58.483 N ± 9.0km 152.866 W ± 11.4km  
DEPTH = 78.5 ± 15.2 km  
3.6mb (1 obs.)  
KODIAK ISLAND REGION (13)

KDC 0.76 165 iPc 25 42.60 -0.2  
SVW 2.98 333 iPc 26 12.70 0.3  
PMS 3.23 30 iPc 26 16.30 0.4  
PWA 3.51 24 eP 26 20.60 0.9  
PMR 3.64 29 iPc 26 21.30 -0.2  
TTA 4.72 342 eP 26 36.90 0.2  
TOA 4.93 40 eP 26 39.70 0.1  
FBA 6.87 18 ePc 27 05.20 -1.3  
IMA 7.62 358 eP 27 16.70 -0.3  
INK 13.05 33 eP 28 29.00 -0.6  
YKA 19.07 62 eP 29 45.50 0.6  
0.4s 1.40nm 3.6mb  
S.D. = 0.7 on 11 of 11 obs.

\* MAR 12, 1990 08h 45m 31.46±3.04s  
33.900 N ± 13.5km 140.876 E ± 19.5km  
DEPTH = 78.9 ± 27.0 km  
4.6mb (7 obs.)  
SOUTH OF HONSHU, JAPAN (211)

MAT 3.42 321 iPd 46 23.40 -0.2  
iS 47 00.50  
LZH 30.30 285 eP 51 40.00 2.5  
1.0s 16.00nm 4.7mb  
WB5 53.84 188 eP 54 48.20 -0.2  
WRA 53.90 188 Pc 54 48.80 -0.1  
0.5s 3.10nm 4.6mb  
INK 57.38 26 ePd 55 12.90 -0.5  
ASPA 57.63 188 eP 55 15.70 0.1  
0.6s 7.00nm 5.0mb  
MBC 59.65 16 eP 55 28.50 -0.6  
GBA 60.57 267 Pc 55 34.10 -2.1  
0.4s 2.20nm 4.6mb  
YKA 66.74 29 eP 56 14.50 -1.4  
0.9s 1.20nm 3.8mb  
FFC 76.58 32 eP 57 15.00 0.4  
1.0s 12.00nm 4.8mb  
LRM 76.71 43 eP 57 17.20 1.4  
NB2 76.90 337 P 57 15.90 -0.5  
0.8s 3.80nm 4.4mb  
KVN 77.03 52 e(P) 57 18.90 1.2  
S.D. = 1.4 on 13 of 13 obs.

\* MAR 12, 1990 10h 01m 03.09±0.84s  
10.263 S ± 11.8km 161.270 E ± 13.6km  
DEPTH = 10.0km (geophysicist)  
4.7mb (5 obs.) 4.4msz (1 obs.)  
SOLOMON ISLANDS (193)

HNR 1.54 302 eP 01 29.00 -1.7  
eS 02 05.00  
DZM 12.75 158 iPc 04 05.60 -1.7  
iS 06 17.20  
CTA 17.46 234 iPc 05 12.00 3.5X  
1.2s 156.25nm 5.0mb  
BRS 18.83 204 iP 05 26.50 1.2  
i 05 30.50  
RMO 20.01 215 eP 05 40.00 1.0  
WB5 27.64 247 eP 06 53.60 0.4



12d 10h

WRA 27.68 246 P 06 55.00 1.5  
0.8s 8.00nm 4.5mb  
ASPA 29.30 239 eP 07 06.70 -1.4  
1.1s 7.00nm 4.4mb  
Z 20s 1.00um 4.4Msz  
SPA 79.81 180 iPc 13 11.80 -1.2  
0.8s 13.33nm 5.0mb  
FBA 84.00 19 eP 13 35.90 1.2  
KVN 89.21 50 eP 14 02.50 1.5  
e 14 12.90  
YKA 96.31 28 eP 14 32.00 -0.8  
0.6s 1.20nm 4.6mb  
S.D. = 1.5 on 11 of 12 obs.

\* MAR 12, 1990 10h 10m 10.06±1.30s  
37.704 N ±10.7km 20.726 E ±9.8km  
DEPTH = 5.0km (geophysicist)  
IONIAN SEA (399)  
ML 3.4 (ATH).

VLS 0.48 347 ePg 10 20.20 0.4  
ITM 1.09 118 ePb 10 30.00 -1.0  
EVR 1.48 35 ePb 10 35.50 -2.0  
VLI 2.02 118 ePg 10 50.80 5.6X  
KEK 2.13 340 ePg 10 51.70 4.9X  
SRN 2.25 346 ePn 10 52.50 4.1X  
ATH 2.38 83 ePb 10 53.00 2.6  
LSK 2.44 358 ePn 10 51.60 0.3  
NEO 2.53 50 ePn 10 52.00 -0.5  
KZN 2.72 17 ePn 10 55.20 -0.1  
KBN 2.92 1 ePn 10 58.20 0.3  
BERA 3.05 349 ePn 11 04.40 4.5X  
OHR 3.40 1 ePn 11 04.70 -0.2  
VAY 3.88 21 ePn 11 12.00 0.3  
CZI 3.91 294 P 11 12.00 0.0  
SKO 4.30 7 ePn 11 23.50 5.9X  
S.D. = 1.2 on 11 of 16 obs.

% MAR 12, 1990 11h 09m 10.97±0.66s  
42.196 N ±5.0km 13.260 E ±8.0km  
DEPTH = 10.0km (geophysicist)  
CENTRAL ITALY (381)

AQU 0.19 34 P 09 15.00 -0.2  
eSg 09 19.00  
AZI 0.25 148 P 09 16.40 0.2  
eSg 09 20.00  
RDP 0.60 223 P 09 23.00 -0.1  
eSg 09 32.50  
SDI 0.64 140 P 09 23.70 -0.2  
eSg 09 32.80  
ASS 0.98 333 P 09 29.20 -0.4  
eSg 09 43.50  
ARV 1.32 350 P 09 36.00 0.6  
eSg 09 53.50  
S.D. = 0.5 on 6 of 6 obs.

& MAR 12, 1990 11h 26m 10.90s  
34.130 N 117.700 W  
DEPTH = 5.0km  
SOUTHERN CALIFORNIA (43)  
<PAS-P>. ML 3.1 (PAS).

PCF 0.11 225 iPd 26 13.28 0.1  
S 26 15.56  
PEM 0.15 285 iPc 26 14.12 0.2  
RVR 0.30 117 iPc 26 16.70 -0.3  
MWC 0.31 288 iPc 26 17.10 -0.1  
VPD 0.32 189 iPd 26 17.68 0.4  
PAS 0.39 273 iPc 26 18.50 -0.3  
SBB 0.57 350 iPd 26 21.70 -0.5  
CIS 0.93 219 eP 26 28.10 -1.0  
PLM 1.04 138 eP 26 29.90 -1.3  
TPC 1.37 91 iPc 26 36.20 -0.5  
ABL 1.45 300 eP 26 36.50 -1.5  
CLC 1.68 3 iPd 26 40.80 -0.4  
BCH 2.23 299 eP 26 48.60 -0.6  
BLP 2.28 282 eP 26 48.20 -1.5  
GLA 2.63 113 eP 26 53.00 -1.8  
TNP 3.96 6 eP 27 14.00 0.1  
KVN 4.92 356 eP 27 27.00 -0.5  
17 obs. associated

MAR 12, 1990 11h 29m 35.32±0.57s  
34.134 N ±5.0km 117.663 W ±4.8km  
DEPTH = 5.0km (geophysicist)

SOUTHERN CALIFORNIA (43)  
ML 2.9 (NEIS).

PCF 0.13 233 iPd 29 38.40 0.3  
S 29 40.20  
PEM 0.17 281 iPc 29 39.25 0.3  
VPD 0.33 195 iPd 29 42.83 0.9  
MWC 0.34 285 iPc 29 42.28 0.1  
S 29 47.03  
CIS 0.95 221 eP 29 53.32 -0.6  
PLM 1.03 139 eP 29 55.00 -0.3  
ABL 1.47 300 eP 30 02.00 -0.7  
BCH 2.25 298 eP 30 14.20 0.3  
BLP 2.30 281 eP 30 13.80 -0.7  
GLA 2.60 114 eP 30 18.50 -0.3  
TNP 3.96 5 eP 30 39.00 0.8  
S.D. = 0.7 on 11 of 11 obs.

% MAR 12, 1990 12h 05m 11.67±1.75s  
35.231 N ±16.7km 27.137 E ±9.3km  
DEPTH = 10.0km (geophysicist)  
DODECANESE ISLANDS (369)  
MD 3.4 (ATH).

KAP 0.32 6 iPg 05 17.20 -1.1  
NPS 1.25 272 ePb 05 34.50 -0.4  
ARG 1.27 39 ePn 05 36.20 1.0  
KSL 2.18 65 ePn 05 48.00 -0.5  
APE 2.25 325 ePn 05 50.50 1.0  
VAM 2.41 275 ePb 05 44.60 -7.1X  
S.D. = 1.3 on 5 of 6 obs.

MAR 12, 1990 12h 08m 41.70±0.48s  
46.187 N ±5.6km 12.425 E ±3.9km  
DEPTH = 10.0km (geophysicist)  
NORTHERN ITALY (545)  
MD 3.1 (LJU), 2.6 (TRI). ML 2.5  
(KBA).

FVI 0.48 31 P 08 50.40 -0.9  
eSg 08 57.00  
CTI 0.56 256 P 08 53.00 -0.1  
eSg 09 01.50  
RBL 0.83 72 P 08 56.30 -1.5  
eSg 09 08.20  
SCE 0.98 330 iPg 09 01.30 0.8  
VOY 1.03 98 ePg 09 01.00 -0.3  
eSg 09 14.80  
TRI 1.05 117 iPg 09 02.10 0.6  
iSg 09 15.70  
KBA 1.09 35 iPg 09 02.40 0.0  
iSg 09 16.80  
OGA 1.18 306 ePg 09 05.10 1.2  
SAL 1.45 247 P 09 07.50 -0.4  
eSn 09 27.50  
CEY 1.47 107 eP 09 08.90 0.7  
eSg 09 29.00  
LJU 1.47 95 ePn 09 09.40 1.1  
eSg 09 29.00  
RIY 1.61 121 ePn 09 10.30 0.1  
iSg 09 32.20  
MDI 1.94 259 P 09 13.50 -1.4  
eSn 09 37.20  
KHC 3.05 14 ePg 09 31.00 0.2  
eSg 10 16.20  
S.D. = 0.9 on 14 of 14 obs.

\* MAR 12, 1990 12h 59m 50.65±0.64s  
47.895 S ±8.7km 165.318 E ±11.3km  
DEPTH = 19.3km (2 depth phases)  
5.4mb (7 obs.) 5.0Msz (2 obs.)  
OFF W. COAST OF S. ISLAND, N.Z. (161)  
CENTROID, MOMENT TENSOR (HRV)  
Data Used: GDSN  
L.P.B.: 135, 31C  
Centroid Location:  
Origin Time 12:59:57.3 0.6  
Lot 47.56S 0.07 Lon 164.59E 0.07  
Dep 15.0 FIX Half-duration 2.0  
Moment Tensor; Scale 10<sup>17</sup> Nm  
Mrr=-0.46 0.10 Mtt= 1.52 0.13  
Mff=-1.06 0.07 Mrt= 0.00 0.00  
Mrf= 0.00 0.00 Mtt= 0.97 0.10  
Principal Axes:  
T Vol= 1.84 Plg= 0 Azm=162  
N -0.46 90 180  
P -1.38 0 72

Best Double Couple: Mo=1.6\*10<sup>17</sup>  
NP1: Strike=207 Dip=90 Slip=-180  
NP2: 297 90 0

MSZ 3.69 30 P 00 46.00 -2.0  
CBZ 5.27 154 iPd 01 07.60 -2.7  
iSd 02 04.80  
MCO 7.72 209 iPd 01 42.60 -2.1  
iS 01 48.10  
CNB 17.29 311 eP 03 54.00 1.5  
eTT 19 02.00  
CAN 17.47 310 eP 03 55.00 0.3  
i 04 10.50  
eTT 19 02.00  
TOO 17.80 298 eP 03 54.00 -4.8X  
eTT 17 48.00  
BWA 18.46 311 eP 04 04.80 -2.2  
eTT 19 14.00  
BFD 19.84 294 eP 04 25.00 2.0  
BRS 22.69 330 iPc 04 54.50 2.3  
i 05 30.00 186kmX  
eS 08 59.00  
eTT 24 31.00  
ADE 23.63 293 eP 05 02.40 1.1  
1.6s 320.00nm 5.6mb  
RMO 25.01 323 eP 05 15.00 0.4  
DZM 25.78 2 iPc 05 22.10 0.1  
VNDA 29.76 182 e(P) 06 02.80 5.3X  
SBA 30.07 179 e(P) 06 03.20 2.3  
CTA 31.75 324 iPc 06 15.90 0.3  
0.9s 13.45nm 4.9mb  
eS 11 21.00  
OIS 34.27 314 eP 06 36.00 -1.5  
ASPA 34.73 303 iPc 06 40.20 -1.3  
1.3s 68.00nm 5.4mb  
Z 19s 6.76um 5.4Msz  
iS 12 08.60  
LR 19 27.60  
WARB 37.18 292 eP 07 02.00 -0.2  
WRA 37.48 307 Pd 07 03.70 -1.0  
1.0s 12.10nm 4.7mb  
WB5 37.51 307 eP 07 03.70 -1.3  
i 07 10.10 22km  
COOL 37.56 281 eP 07 04.50 -0.8  
NWA0 38.90 275 eP 07 16.00 -0.5  
Z 20s 0.90um 4.6Msz  
KLB 39.36 277 eP 07 20.00 -0.4  
MUN 40.16 275 eP 07 27.00 0.0  
MRWA 42.04 278 eP 07 42.30 -0.1  
SPA 42.30 180 iPc 07 46.90 2.5  
1.2s 108.45nm 5.5mb  
MTN 45.06 309 eP 08 07.00 0.0  
i 08 12.10 17km  
TVO 47.58 67 eP 08 32.00 5.0X  
0.9s 60.00nm 5.6mb  
PMO 50.54 66 eP 08 59.00 9.3X  
0.9s 30.00nm 5.3mb  
GUA 63.81 338 eP 10 27.80 4.1X  
CHG 88.95 300 eP 12 50.00 4.9X  
IMA 117.91 18 ePKP 18 42.20 5.9X  
FBA 118.22 21 ePKP 18 42.10 5.4X  
SES 121.37 48 ePKP 18 45.00 1.7  
EDM 122.01 45 ePKP 18 48.00 3.6X  
INK 124.47 23 ePKP 18 52.00 3.4X  
MAIO 125.75 287 ePKP 18 53.00 0.7  
MBC 132.64 18 ePKP 19 10.00 6.0X  
BBTK 145.33 274 ePKP 19 28.50 0.2  
FRB 147.03 41 ePKP 19 32.00 1.9  
SCH 147.40 58 ePKP 19 37.00 5.9X  
TLB 150.55 280 ePKP 19 49.00 12.8X  
CFR 150.69 281 ePKP 19 42.00 5.6X  
DAG 150.97 2 ePKP 19 41.50 5.5X  
0.9s 10.92nm  
SOD 151.36 328 ePKP 19 44.00 7.2X  
CLI 151.72 283 ePKPc 19 49.00 11.0X  
VRI 151.86 281 ePKPc 19 46.50 8.3X  
MLR 152.25 280 ePKP 19 47.00 8.0X  
e 46 46.00  
CMP 152.78 279 ePKPc 19 48.00 8.4X  
VAY 152.87 270 ePKP 19 48.00 -1.8  
SUF 153.01 318 ePKP 19 47.00 7.7X  
SKO 153.92 270 ePKP 19 53.50 12.3X  
OHR 153.97 268 ePKP 19 52.00 10.6X  
NUR 154.20 314 ePKP 19 55.00 14.0X  
S.D. = 1.6 on 30 of 54 obs.

MAR 12, 1990 13h 28m 28.24±0.52s



19.399 N $\pm$ 7.5km 67.100 W $\pm$ 7.1km			FORR	27.55 181 eP	38 31.00 -11.3X	SHL	45.80 311 iP	41 17.10 -0.2
DEPTH = 33.0km (normol)			QLP	27.58 149 eP	38 42.00 -0.6		eS	48 00.00
3.8mb ( 2 obs.)				e	40 01.00	HHC	46.55 342 P	41 22.20 -0.8
MONA PASSAGE ( 89)			COOL	28.52 194 eP	38 49.00 -2.1	Z 25s	1.10um	4.7MsZx
LRS	1.13 168 iP	28 46.90 -0.9	IPM	0.5s 8.00nm	4.7mb	46.84 357 eP		41 23.50 -1.6
SJG	1.56 145 iP	28 54.30 0.2		28.83 285 ePc	38 55.90 1.8	Z 20s	1.70um	5.0MsZ
LPR	1.59 133 iP	28 55.20 0.7	QIZ	1.1s 75.20nm	5.3mb	N 14s	0.70um	
MAVI	2.66 267 P	29 09.50 -0.2	E 12s	1.10um	38 54.00 -0.6	E 14s	0.50um	
	S	29 45.00		S	43 45.00	pP		41 31.00 25km
DR08	2.80 261 P	29 12.20 0.5	BAL	29.61 202 eP	39 00.40 -0.5	MDJ	47.56 1 P	41 30.10 -0.6
SDD	2.82 251 P	29 12.00 0.0	SNG	29.98 290 eP	39 05.20 0.8	Z 20s	1.90um	5.1MsZ
	S	29 50.00	RMQ	30.05 142 iPd	39 04.00 -0.9		esP	41 44.00
RSON	37.79 332 P	35 43.80 0.8	GZH	30.15 331 eP	39 06.00 0.3	LSA	48.66 315 P	41 41.40 1.3
ALQ	38.02 302 eP	35 45.00 -0.4	KLB	30.15 199 eP	39 04.40 -1.3	GTA	50.07 331 iPc	41 49.50 -0.9
	1.0s 1.75nm	3.9mb		0.5s 15.00nm	5.1mb	GUN	51.59 310 P	42 01.80 -0.7
ANMO	38.02 302 P	35 46.30 0.9	PSI	30.46 281 ePc	39 08.90 0.3	KKN	52.00 309 P	42 04.40 -0.9
NEW	49.39 318 P	37 17.10 0.3		1.1s 79.00nm	5.5mb	DMN	52.04 309 P	42 05.00 -0.8
YKA	53.95 335 eP	37 49.70 -1.0	MUN	31.03 201 eP	39 12.00 -1.4	KOD	52.85 285 eP	42 11.00 -1.0
	0.7s 0.60nm	3.7mb	HNR	31.53 103 eP	39 05.00 -13.0X	GBA	53.64 289 P	42 15.80 -1.6
INK	63.46 338 eP	38 56.00 -0.8	NWAO	31.55 199 eP	39 17.00 -1.0		1.0s 15.20nm	4.9mb
S.D. = 0.7 on 12 of 12 obs.				0.4s 10.00nm	5.0mb	HYB	53.64 294 iPc	42 16.50 -0.9
MAR 12, 1990 13h 32m 55.50 $\pm$ 0.18s			Z 20s	2.60um	4.9MsZ		1.4s 162.50nm	5.8mb
3.158 S $\pm$ 3.7km 128.838 E $\pm$ 5.1km			N 20s	2.00um		POO	58.25 294 eP	42 25.00 28km
DEPTH = 26.2km ( 7 depth phases)			E 20s	1.00um		NDI	58.76 306 iPc	42 50.60 0.1
5.2mb ( 27 obs.) 5.0MsZ ( 11 obs.)				eS	44 56.00		0.6s 17.33nm	-2.6
CERAM (272)			CMS	32.41 152 eP	39 25.00 -0.5	WMO	59.57 326 iPc	42 58.50 -0.9
CENTROID, MOMENT TENSOR (HRV)			NNT	32.87 299 eP	39 22.40 -7.3X	Z 23s	1.10um	4.9MsZx
Data Used: GDSN				e	41 30.80		S	51 06.50
L.P.B.: 9S, 17C			ADE	32.95 165 eP	39 28.40 -1.9	KSH	64.40 317 P	43 32.00 0.1
Centroid Location:				1.1s 136.71nm	5.8mb	QUE	67.67 304 eP	43 52.40 -0.7
Origin Time 13:33: 3.6 0.6			BRS	33.23 139 iP	39 23.00 -9.8X	MAIO	75.39 309 iPc	44 38.70 -0.4
Lot 3.38S 0.05 Lon 128.84E 0.11				i	39 31.00 27km		0.7s 10.80nm	5.0mb
Dep 71.7 7.7 Half-duration 2.0			LOE	33.66 308 eP	39 36.50 -0.1	VNDA	76.37 173 P	44 42.40 -1.3
Moment Tensor: Scale 10**17 Nm				e	41 38.50	PAE	81.03 107 eP	45 13.00 2.8X
Mrr= 1.11 0.15 Mtt=-1.81 0.22			NST	34.01 304 eP	39 41.00 1.4		0.8s 20.00nm	5.2mb
Mff= 0.70 0.32 Mrt=-0.72 0.22			COO	34.91 144 eP	39 48.00 0.7	DHR	81.28 297 eP+	45 11.50 0.1
Mrf= 0.47 0.20 Mtf= 0.57 0.19			BDT	35.75 306 eP	39 54.80 0.4	TVO	81.34 107 eP	45 15.00 3.1X
Principal Axes:				0.9s 33.30nm	5.3mb	PMO	82.69 105 iP	45 21.20 2.4
T Vol= 1.45 Plg=61 Azm=256			BFD	36.12 161 eP	40 00.00 2.6		0.8s 15.00nm	5.1mb
N 0.68 25 110			WHN	36.26 339 eP	39 58.80 0.3	VAH	82.94 105 iP	45 22.20 2.1
P -2.13 14 14			Z 28s	0.90um	4.4MsZx		0.8s 15.00nm	5.2mb
Best Double Couple: Mo=1.8*10**17				pP	40 04.20 18km	TPT	82.96 105 iP	45 22.60 2.4
NP1: Strike= 74 Dip=38 Slip= 47				S	45 38.00		0.8s 15.00nm	5.2mb
NP2: 303 63 118			NJ2	36.28 346 eP	39 57.50 -1.2	RUV	83.18 105 iP	45 23.80 2.5
AAI	0.83 231 ePd	33 16.90 5.7X		Z 22s	0.60um		0.8s 20.00nm	5.3mb
	eS	33 26.50	GYA	36.42 325 iPc	40 00.60 0.4	KMSA	85.79 291 eP+	45 34.50 0.0
MTN	9.89 167 eP	35 20.00 0.9		Z 20s	1.10um	SVW	85.80 28 ePc	45 34.60 0.9
	e	35 22.00		S	45 40.00	TAB	86.04 308 eP	45 36.00 0.5
DAV	10.69 342 eP	35 35.20 5.2X	CHG	36.64 308 iPc	40 03.00 1.0	TTA	86.08 26 ePc	45 35.40 0.3
JAY	11.87 87 ePd	35 45.50 -0.7		1.0s 84.50nm	5.6mb	KDC	86.62 32 eP	45 38.20 0.5
KNA	12.51 180 eP	35 56.00 1.2		e	42 03.90	SPA	86.86 180 iPc	45 38.60 -0.4
	0.8s 422.00nm	6.7mb X	CAN	37.06 152 iPc	40 05.70 0.3		1.0s 31.00nm	5.5mb
	eS	38 24.00		e	41 24.70 406kmX	BHD	87.08 303 ePd	45 43.00 2.5
TSM	13.02 304 eP	36 02.50 1.0	CNB	37.23 152 eP	40 07.00 0.2	IMA	87.80 23 eP	45 42.60 -0.9
KKM	15.57 306 ePc	36 41.00 5.9X	TOO	37.50 158 eP	40 08.00 -1.0		1.0s 8.80nm	5.0mb
	i	38 48.00	KMI	37.84 319 P	40 13.50 1.3	BRW	88.01 18 eP	45 44.20 0.0
WB5	17.48 162 eP	36 57.80 -1.4		1.5s 0.30nm	2.9mb X	MSL	88.38 306 ePd	45 51.50 4.8X
	eS	40 27.00	Z 20s	1.60um	4.8MsZ		e	46 00.00 27km
PGP	18.31 335 ePc	37 10.50 1.0		pP	40 23.00 32km	PMR	88.96 28 eP	45 48.00 -0.9
PMG	19.23 110 eP	37 21.50 0.8		S	46 00.00	FBA	90.02 25 eP	45 50.80 -3.1X
QCP	19.28 337 eP	37 24.00 2.7		sS	46 21.00	NAI	91.96 269 eP	45 51.50 -12.7X
MBL	19.92 205 iPc	37 27.40 -1.0	MAT	40.45 12 eP	40 31.00 -2.6	INK	95.75 22 eP	46 19.00 -1.2
	0.4s 27.00nm	4.9mb		1.2s 42.19nm	5.0mb	MBC	98.16 13 eP	46 30.50 -0.4
QIS	20.23 150 iPc	37 30.00 -1.6		eS	47 10.00		1.0s 12.00nm	5.4mb
	e	37 37.00 26km	DZM	41.04 120 iPc	40 38.00 -0.8	BSF	113.42 322 ePKP	51 33.10 0.0
	e	41 15.00	CD2	41.47 327 eP	40 41.60 -0.4		0.6s 3.60nm	
ASPA	20.97 167 iPc	37 38.50 -0.7		Z 23s	1.00um	HAU	113.62 322 ePKP	51 33.50 0.1
	0.9s 634.00nm	6.0mb		S	46 54.00		0.6s 3.60nm	
	Z 18s 9.25um	5.2MsZ	XAN	41.49 335 P	40 41.00 -1.2	FFC	114.24 30 ePKP	51 34.00 -0.3
	iS	41 26.20	DL2	42.38 352 eP	40 50.00 0.7		1.0s 11.00nm	
	LR	46 03.80	TIY	43.42 341 Pd	40 57.20 -0.7	LPG	114.33 319 ePKP	51 35.40 0.2
	iScS	49 00.80		E 14s 0.50um			0.6s 4.50nm	
BAG	21.09 337 eP	37 38.00 -2.6		S	47 23.50	LPL	114.33 319 ePKP	51 35.40 0.3
	eS	41 34.00		sS	47 38.00		0.6s 3.60nm	
WARB	22.99 185 eP	38 00.60 1.2	BJI	44.53 346 eP	41 05.50 -1.3	SBF	114.46 317 ePKP	51 35.10 -0.1
	0.4s 11.00nm	4.7mb		1.8s 0.10nm	2.4mb X		0.8s 6.70nm	
NANU	23.21 213 iPd	38 03.10 1.7	Z 20s	0.90um	4.7MsZ	LBF	115.51 322 ePKP	51 37.40 0.3
	0.4s 7.00nm	4.5mb	SNY	45.03 354 eP	41 05.80 -4.9X		0.8s 4.05nm	
CTA	23.91 136 iPc	38 08.90 0.5	Z 20s	2.10um	5.1MsZ	SSF	115.77 322 ePKP	51 38.00 0.5
	1.6s 316.67nm	5.6mb	N 20s	2.10um			0.6s 5.40nm	
	i	38 31.00 102kmX	E 22s	1.20um		AVF	115.98 322 ePKP	51 38.10 0.2
	iS	42 21.00	LZH	45.49 331 iPc	41 15.00 0.2		0.8s 2.70nm	
MEKA	25.33 202 eP	38 22.00 0.1		2.0s 0.23nm	2.8mb X	BGF	116.39 321 ePKP	51 39.30 0.6
KGM	26.02 281 ePd	38 30.30 1.8	Z 16s	1.70um	5.1MsZx		0.6s 8.10nm	



12d 13h

MAF	116.71	321	ePKP	51	39.80	0.5
	0.6s		1.80nm			
TCF	116.91	321	ePKP	51	40.10	0.4
	0.6s		3.60nm			
LDF	117.24	325	ePKP	51	40.40	0.2
	0.6s		2.70nm			
CAF	117.59	320	ePKP	51	41.90	0.8
	0.8s		6.70nm			
GRR	117.77	325	ePKP	51	41.70	0.5
	0.6s		2.70nm			
LPF	118.05	324	ePKP	51	42.40	0.6
	0.6s		2.70nm			
MFF	118.21	323	ePKP	51	42.40	0.3
	0.6s		6.30nm			
LPO	118.26	320	ePKP	51	43.30	1.0
	0.8s		8.05nm			
EPF	119.54	319	ePKP	51	45.30	0.4
	0.6s		2.70nm			
ALQ	119.88	51	ePKP	51	46.00	0.0
	Z 18s		0.52um		5.2MsZ	
KIC	133.64	276	PKP	52	12.80	0.2
TIC	133.91	276	PKP	52	13.20	0.1
LIC	133.93	276	PKP	52	13.30	0.1
LKO	134.30	280	PKP	52	12.60	-1.3
NNA	150.37	121	iPKP	52	47.00	5.2X
	1.0s		35.00nm			
UPA	151.21	77	ePKPc	52	48.00	5.0X
	0.9s		67.23nm			
ARE	152.01	135	ePKP	52	53.00	8.5X
LPB	154.25	140	ePKP	52	52.00	4.2X
	Z 22s		0.37um		5.2MsZ	
			LR	48	30.00	
ZOBO	154.43	140	PKP	52	49.00	0.8
	1.2s		16.22nm			
	Z 24s		0.25um		5.0MsZ	
			LR	48	22.00	
S.D. = 1.1 on 113 of 130 obs.						

\* MAR 12, 1990 13h 55m 37.85 $\pm$ 1.18s  
 39.470 N  $\pm$  9.3km 19.965 E  $\pm$  13.9km  
 DEPTH = 33.0km (normol)  
 GREECE-ALBANIA BORDER REGION (392)  
 MD 3.0 (ATH).

KEK	0.27	332	iPbd	55	45.60	0.3
VLS	1.38	159	ePn	56	01.00	0.0
EVR	1.54	110	ePn	56	03.00	-0.3
KZN	1.62	58	ePn	56	05.50	0.9
OHR	1.76	21	iPn	56	10.30	3.8X
VAY	2.72	46	ePn	56	15.60	-4.5X
SKO	2.74	24	ePn	56	19.50	-0.9
S.D. = 1.0 on 5 of 7 obs.						

? MAR 12, 1990 14h 00m 07.34 $\pm$ 2.21s  
 3.645 S  $\pm$  29.6km 128.464 E  $\pm$  65.1km  
 DEPTH = 98.6  $\pm$  28.9 km  
 3.9mb ( 2 obs.)

CERAM						(272)
AAI	0.27	261	ePc	00	21.50	-0.3
			eS	00	29.00	
MTN	9.52	164	eP	02	24.00	0.7
WB5	17.13	161	eP	04	01.50	-0.6
WRA	17.18	161	P	04	03.00	0.2

MAR 12, 1990 14h 41m 19.48 $\pm$ 0.14s  
 51.484 N  $\pm$  3.5km 175.032 W  $\pm$  2.3km  
 DEPTH = 13.8km (geophysicist)  
 6.0mb ( 61 obs.) 6.2MsZ ( 45 obs.)  
 ANDREANOF ISLANDS, ALEUTIAN IS. ( 7)  
 ML 5.7 (PMR). Ms 6.5 (BRK), 5.9  
 (PAS). Felt (IV) on Adak and  
 Atka. Depth from broadband  
 displacement seismograms.  
 FAULT PLANE SOLUTION: P-Waves  
 NP1:Strike=52 Dip=74 Slip= 90  
 NP2: 232 16 90  
 Principal Axes:  
 T P1g=61 Azm=322

P 29 142  
 Comment: The focal mechanism is  
 poorly controlled and  
 corresponds to reverse  
 faulting. The preferred fault  
 plane is NP2.

## RADIATED ENERGY

No. of sta: 8 Focal mech. C  
 Energy 2.9 $\pm$ 0.9 $\times$ 10<sup>13</sup> Nm

## MOMENT TENSOR SOLUTION

Dep 30 Na. of sta: 24  
 Moment Tensor; Scale 10<sup>18</sup> Nm

Mrr= 1.81 Mtt=-2.23  
 Mff= 0.41 Mrt= 2.45  
 Mrf= 1.45 Mtf=-0.11

Principal axes:  
 T Vol= 3.50 P1g=58 Azm=313  
 N 0.03 16 70  
 P -3.53 27 168

Best Double Couple: Mo=3.5 $\times$ 10<sup>18</sup>  
 NP1:Strike=291 Dip=23 Slip= 134  
 NP2: 65 74 74

CENTROID, MOMENT TENSOR (HRV)  
 Data Used: GDSN  
 L.P.B.: 18S, 51C M.W.: 10S, 17C

Centroid Location:  
 Origin Time 14:41:26.6 0.2  
 Lat 51.70N 0.02 Lon 174.90W 0.03  
 Dep 19.4 1.0 Half-duration 5.8

Moment Tensor; Scale 10<sup>18</sup> Nm  
 Mrr= 2.38 0.03 Mtt=-1.69 0.05  
 Mff=-0.69 0.03 Mrt= 2.61 0.17  
 Mrf= 1.19 0.11 Mtf=-1.21 0.04

Principal Axes:  
 T Vol= 3.73 P1g=65 Azm=342  
 N 0.07 5 242  
 P -3.80 25 149

Best Double Couple: Mo=3.8 $\times$ 10<sup>18</sup>  
 NP1:Strike=229 Dip=21 Slip= 76  
 NP2: 63 70 95

ADK	1.10	292	iPd	41	42.70	2.9
SMY	6.81	285	eP	43	03.00	1.7
	Z 20s		245.00um			
SDN	9.50	60	eP	43	38.00	-0.7
	Z 18s		138.00um			
SVW	14.40	40	eP	44	46.60	2.0
KDC	14.44	55	eP	44	42.00	-3.1X
TTA	15.34	34	eP	44	59.30	2.4
PET	16.16	286	iPc	45	11.00	3.6X
			eS	48	22.00	
ILT	16.57	355	iPc	45	16.00	3.5X
			iS	48	35.00	
PMR	17.38	44	eP	45	21.90	-0.8
	Z 19s		137.00um			
IMA	18.18	28	ePc	45	34.70	1.9
COL	19.44	36	ePc	45	46.77	-1.3
FBA	19.44	36	eP	45	45.00	-3.1X
BRW	21.54	16	ePc	46	10.30	0.5
DWY	22.41	42	P	46	18.20	-0.4
SIT	23.59	61	eP	46	29.70	-0.4
	Z 20s		50.00um		6.0MsZ	
INK	26.03	34	ePc	46	52.00	-1.4
	0.8s		125.00nm		5.6mb	
YSS	27.65	278	iPc	47	09.00	0.7
KUSJ	28.26	269	P	47	12.20	-1.7
ASAJ	29.03	272	eP	47	21.00	0.1
HOQJ	29.53	269	eP	47	24.90	-0.4
MRRJ	30.89	270	eP	47	38.60	1.3
TIK	31.71	330	eP	47	44.00	-0.3
MBC	32.64	21	ePc	47	52.40	0.1
	1.0s		123.00nm		5.8mb	
PGC	32.67	74	eP	47	56.00	3.1X
MCW	33.03	74	eP	47	57.00	0.9
GMW	33.55	76	eP	48	00.50	-0.1
LON	34.51	76	ePc	48	11.25	2.3
KAKJ	35.13	262	P	48	12.80	-1.5
NIJ	35.20	264	P	48	14.50	-0.4
VGB	35.73	78	eP	48	19.20	-0.2
CHJJ	35.96	263	P	48	21.30	-0.1
MAJO	36.14	264	iPc	48	23.91	1.0
			ePd	48	27.22	11kmX
			ePd	48	29.87	
			ePP	49	41.99	
MAT	36.14	264	iPc	48	22.30	-0.6
	Z 20s		32.27um		6.1MsZ	
			eS	54	00.00	

FHC	36.25	87	e(P)	48	25.50	1.7
	1.2s		210.53nm			5.9mb
MTMJ	36.36	265	eP	48	24.10	-0.8
NEW	36.63	72	iPd	48	27.00	0.1
EDM	36.69	62	iPc	48	27.20	-0.2
	0.6s		541.00nm			6.5mb
MDJ	36.87	282	eP	48	27.50	-1.4
E	20s		47.30um			
			eSP	48	43.00	
			ePP	49	56.00	
			S	54	16.00	
IIDJ	37.00	263	eP	48	32.10	1.9
LBFM	37.25	84	eP	48	32.50	0.1
WDC	37.28	86	e(P)	48	29.70	-2.7
			iScP	54	37.70	
			e	54	44.40	
			eS	54	54.00	
MIN	38.00	86	eP	48	38.10	-0.6
			eScP	54	40.00	
TSRJ	38.16	265	P	48	40.20	0.3
ORV	38.53	87	e(P)	48	43.60	0.7
			iScP	54	42.00	
			eS	54	58.70	
BRK	39.06	89	e(P)	48	47.80	0.4
Z	20s		3.70um			5.2MsZ
			eScP	54	44.50	
			eS	54	56.00	
			eLR	57	51.00	
			e	59	50.00	
BKS	39.08	89	iPd	48	48.80	1.3
	0.8s		29.00nm			5.0mb
Z	20s		36.00um			6.2MsZ
N	20s		21.00um			
E	20s		43.00um			
			eS	54	50.00	
			eSS	57	43.20	
			eLQ	58	47.20	
			eLR	59	14.80	
SES	39.18	66	eP	48	47.00	-1.3
	0.6s		125.00nm			5.8mb
PCC	39.22	90	ePc	48	48.80	0.1
WKYJ	39.27	264	eP	48	49.40	0.2
MHC	39.78	89	ePc	48	51.30	-2.2
Z	20s		21.00um			6.0MsZ
N	20s		8.00um			
E	20s		26.00um			
			ePP	51	19.00	
			iScP	54	47.50	
			eS	55	02.00	
			eLQ	58	05.00	
			eLR	59	45.00	
CN2	39.83	283	iPc	48	52.40	-1.3
	5.0s		5500.00nm			6.5mb X
Z	20s		65.40um			6.5MsZ
N	18s		38.70um			
E	18s		35.70um			
			pP	49	01.00	29kmX
			PP	50	26.00	
			eS	54	50.00	
ARN	39.84	89	eP	48	53.50	-0.4
YONJ	39.96	267	eP	48	54.70	-0.2
CMB	40.14	88	ePc	48	58.74	2.4
	1.4s		130.46nm			5.4mb
			eS	55	05.36	
			eSS	58	04.35	
SAO	40.26	90	e(P)	48	56.50	-0.8
	20s		18.00um			5.9MsZ
Z	20s		5.00um			
N	20s		16.00um			
E	20s					
			eS	55	10.00	
			eLQ	58	14.00	
			eLR	00	16.00	
TKSJ	40.38	265	P	48	58.40	0.1
HIA	40.42	293	ePc	48	58.09	-0.4
			ePP	49	01.23	11kmX
			iPP	50	34.76	
			eS	55	14.38	
			eSS	58	06.48	
PRS	40.58	90	ePc	48	59.50	-0.4
			eScP	54	50.20	
LRM	40.61	73	eP	48	59.70	-0.7
LLA	40.67	90	e(P)	49	01.50	0.8
			eScP	54	49.40	
KVN	40.95	85	iPc	49	02.40	-0.8
PRI	41.14	90	e(P)	49	04.50	-0.2
			eScP	54	53.20	
FRI	41.20	88	ePc	49	05.70	0.7



				iScP	54	52.60		ALQ	50.76	81	eP	50	19.80	-1.3	WMQ	61.24	305	iPc	51	35.01	-1.2		
				eS	55	09.70			1.2s	93.75nm				5.6mb		6.0s	3700.00nm			6.7mb X			
SNY		42.08	282	iPc	49	12.00	-0.1		Z	18s	17.18um			6.1Msz		Z	18s	42.90um			6.6Msz		
	Z	18s		28.80um												N	16s	15.40um					
	N	18s		17.00um				BTO	50.99	289	P	50	23.00	0.4		E	16s	11.10um					
	E	18s		17.50um					N	16s	22.40um							esPd	51	41.47			
				pP	49	21.00	30kmX		E	16s	21.00um							PcP	52	20.00			
				sP	49	28.00												eHPP	53	50.26			
				PP	50	54.00												ePP	53	51.25			
				S	55	26.00												eS	59	55.53			
TNP		42.08	85	eP	49	12.40	-0.1	DAG	51.13	7	iPc	50	21.50	-1.6				eSS	03	54.31			
FFC		42.15	56	iPc	49	12.00	-0.6		1.2s	437.50nm				6.3mb		CD2	61.25	284	eP	51	35.20	-1.1	
		0.6s		88.00nm			5.7mb		Z	20s	35.46um			6.4Msz			5.0s	4000.00nm			6.8mb X		
SYP		42.61	91	eP	49	29.00	12.2X		N	20s	24.11um					Z	18s	11.00um			6.1Msz		
ISA		42.81	89	eP	49	25.00	6.6X		E	19s	15.28um					N	15s	11.80um					
CLC		43.26	88	eP	49	22.00	0.0											PcP	52	17.00			
				e	54	59.00		NJ2	51.16	275	iPc	50	23.50	-0.4				PP	53	54.00			
									6.0s	4400.00nm				6.6mb X				eP	51	41.00	-2.5		
DUG		43.54	80	eP	49	24.00	-0.3		Z	22s	10.40um			5.8Msz		BAG	61.41	260	eP+	51	34.00	-3.7X	
		1.0s		27.50nm			5.0mb X		N	16s	8.60um							eS	59	36.00			
SBB		43.85	90	eP	49	26.00	-0.8		E	17s	10.00um					PWLA	61.80	69	eP	51	37.50	-2.5	
PAS		43.98	90	ePd	49	32.73	5.0X									AKU	61.82	11	iPc	51	39.70	0.0	
				epPc	49	37.03	14kmX	TIY	51.38	284	iPc	50	25.50	-0.1			1.4s	381.40nm			6.4mb		
				ePP	51	10.00			5.0s	7200.00nm				6.9mb X		RSNY	62.35	53	eP	51	41.00	-2.5	
				ePcS	55	03.00			E	19s	21.90um						1.0s	122.92nm			6.0mb		
				eS	56	01.68										Z	22s	31.75um			6.4Msz		
				eLg	59	18.00		FRB	51.68	33	eP	50	25.00	-2.4			62.46	259	eP	51	54.00	9.5X	
				eSS	59	20.32			0.6s	111.00nm				6.0mb		GYA	62.65	279	iPc	51	46.00	0.2	
				eScS	59	25.00		ANP	54.31	266	eP	50	40.00	-7.5X			5.0s	5100.00nm			7.0mb X		
				eLR	01	00.00		WHN	55.00	277	eP	50	51.00	-1.4			Z	22s	9.70um			5.9Msz	
									5.0s	7500.00nm				7.0mb X		N	20s	14.60um					
MWC		44.01	90	eP	49	28.00	-0.2		E	20s	12.90um			5.8MszX		E	20s	20.40um					
BW06		44.01	75	iPc	49	27.80	-0.4											sP	52	00.00			
RVR		44.58	90	eP	49	31.00	-1.6											PcP	52	19.00			
DL2		45.01	280	eP	49	35.00	-0.9											S	00	12.00			
		5.0s		2000.00nm			6.3mb X	XAN	55.94	283	Pc	50	58.00	-1.3		RSCP	62.79	66	ePd	51	50.00	3.4X	
	N	12s		2.70um					5.0s	3600.00nm				6.7mb X		Z	22s	28.57um			6.4Msz		
	E	19s		22.00um					N	17s	4.60um						62.80	52	eP	51	44.60	-1.9	
				pP	49	45.00	34kmX		E	15s	14.40um						REY	62.83	13	iP	51	47.30	1.0
				eS	56	11.00											HBVT	63.21	52	eP	51	47.20	-2.0
				sS	56	20.00											SCP	63.34	57	ePc	51	49.90	-0.2
PLM		45.33	90	eP	49	38.00	-0.8											epPd	51	53.37	11kmX		
TPC		45.34	89	eP	49	38.00	-0.8											eP	51	53.00	2.2		
BAR		45.89	91	eP	49	44.00	0.9	OZH	56.31	269	P	51	01.00	-0.9		PGP	63.41	258	eP	51	53.00	6.0mb	
GLA		46.80	89	eP	49	51.00	0.7		Z	22s	8.80um			5.8Msz			1.2s	147.00nm			6.0mb		
IRK		47.31	304	iPc	49	53.00	-1.0		N	19s	12.00um					CBM	63.66	47	eP	51	50.00	-2.1	
				eS	56	45.00										NSS	64.20	357	eP	51	54.85	-0.5	
BJI		47.65	284	iPc	49	56.69	-0.1	JNW	57.42	5	eP	51	10.00	0.7		HNR	64.41	208	eP	51	59.00	1.8	
	Z	20s		49.70um			6.5Msz	LZH	57.60	289	iPc	51	10.72	-0.5		BLA	64.55	62	iPc	51	58.00	-0.1	
	N	19s		31.60um					Z	20s	61.50um			6.7Msz		MRX	64.82	90	(P)	51	55.00	-4.9X	
	E	19s		16.60um					N	21s	45.60um					SUF	64.92	349	eP	51	58.30	-1.7	
				epPd	50	00.67	13kmX		E	20s	44.40um						1.1s	253.20nm			6.3mb		
				esP	50	02.82										PNJ	65.19	55	iP	52	00.90	-1.2	
				ePP	51	52.90										HRV	65.32	52	ePc	52	01.78	-1.1	
				eS	56	53.76												epPd	52	05.75	13kmX		
GOL		48.38	75	eP	50	02.20	-0.7											esPd	52	09.39			
GLD		48.44	75	eP	50	03.00	-0.3	GTA	57.70	294	iPc	51	10.00	-1.9				iS	00	44.30			
	Z	18s		41.40um			6.5Msz		6.0s	3300.00nm				6.5mb X				eSKS	01	43.89			
RSON		48.44	57	iPd	50	01.60	-1.3		Z	20s	37.30um			6.5Msz		CBN	65.48	59	eP	52	03.00	-1.0	
		1.0s		157.30nm			6.0mb		E	16s	34.60um							e	52	12.00			
	Z	20s		20.34um			6.1Msz											e	52	19.00			
TIA		49.48	280	Pc	50	10.00	-1.1											iS	00	44.30			
	Z	20s		19.50um			6.1Msz									DAV	65.69	250	eP+	52	05.60	0.0	
	N	20s		17.20um				KEV	58.01	351	iP	51	12.00	-1.4		IIJ	65.71	89	(P)	52	05.50	-0.8	
	E	18s		11.50um					1.0s	184.00nm				6.1mb		RGS	65.76	357	iP	52	06.10	0.7	
				PP	52	07.00			Z	20s	14.30um			6.1Msz		CRX	65.98	89	(P)	52	06.00	-1.9	
				S	57	20.00										KMI	66.04	281	iPc	52	07.12	-0.9	
GUMO		49.67	235	eP	50	11.00	-1.6											5.0s	4.90nm			3.9mb X	
	Z	19s		7.46um			5.7Msz									Z	20s	15.80um				6.2Msz	
				eS	57	17.00										N	15s	7.60um					
																E	15s	5.90um					
GUA		49.68	235	eP	50	11.00	-1.8	FVM	58.35	68	ePc	51	13.60	-2.7				epP	52	11.26	13kmX		
KBS		49.79	358	iPc	50	12.80	-0.1	SCH	58.46	40	eP	51	15.60	-1.3				esP	52	15.07			
HHC		49.91	288	eP	50	14.40	-0.1		1.5s	372.00nm				6.2mb				eHPP	54	33.50			
	Z	18s		32.00um			6.4Msz	TRO	58.77	354	eP	51	17.14	-1.6				ePP	54	34.32			
	N	18s		26.70um				MZX	58.97	91	(P)	51	20.00	-0.7				eS	00	56.59			
	E	18s		16.50um				KTK1	59.07	352	eP	51	19.74	-1.1				sS	01	14.00			
SSE		50.35	272	iPc	50	17.00	-0.8	CVP	59.66	260	eP	51	24.00	-1.5									
	Z	20s		11.20um			5.9Msz		1.0s	119.00nm				6.0mb		OIZ	66.12	271	Pc	52	08.00	-0.4	
	N	17s		7.60um												E	17s	14.80um					
	E	16s		3.20um														pP	52	18.00	32kmX		
				sP	50	35.00												PP	54	34.00			
				PP	52	16.00												eP	52	07.00	-1.7		
				S	57	31.00												ePP	52	07.57	-1.1		
ANMO		50.76	81	iPc	50	21.94	0.9	CLE	60.90	59	iP	51	32.40	-1.4		MOL	66.27	359	eP	52	10.00	-3.5X	
	Z	18s		18.04um			6.1Msz	GZH	60.94	271	eP	51	32.60	-1.6		PPM	66.90	88	eP	52	14.00	0.1	
				esP	50	28.07			N	18s	6.90um					PUL	67.23	346	e				



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12d 14h

KOD 92.71 290 eP 54 32.00 -0.7  
 WARB 92.72 230 eP 54 31.30 -0.7  
 KFNJ 92.72 334 Pd 54 32.70 0.5  
 MDSJ 92.78 334 Pc 54 33.20 0.6  
 CAR 92.85 69 iP 54 34.00 0.9  
 iS 05 05.00  
 GUAC 92.90 70 eP 54 36.00 2.6  
 LLAV 92.95 69 eP 54 34.00 0.4  
 NKM 92.96 8 iPd 54 33.00 -0.2  
 i 54 35.00  
 BRF 92.99 320 (P) 54 32.90 -0.6  
 BEE 93.07 320 iP 54 33.20 -0.7  
 DSI 93.08 334 eP 54 34.00 0.2  
 BOG 93.22 79 eP 54 36.00 0.9  
 eS 05 07.00  
 OLLA 93.31 70 eP 54 36.00 0.7  
 TAF 93.83 6 iPd 54 36.00 -1.4  
 GUAN 94.04 69 eP 54 38.00 -0.6  
 AVE 94.88 10 eP 54 42.50 0.4  
 i 54 53.00  
 IFR 94.90 8 iP 54 43.00 0.5  
 i 54 44.50  
 MBH 94.92 334 eP 54 42.00 -0.3  
 HLW 95.75 337 iP+ 54 47.50 1.3  
 eS 05 24.25  
 TIO 97.24 11 iPd 54 44.50 -8.6X  
 i 58 50.00  
 ZOBO 113.08 87 ePd i f f 56 10.00 5.6X  
 1.5s 23.12nm  
 Z 22s 3.69um 5.9Msz  
 LR 36 22.00  
 LPB 113.29 87 PKP 00 15.20 16.4X  
 Z 20s 6.38um 6.2Msz  
 e 01 02.00  
 LR 36 40.00  
 LKO 118.54 12 PKP 00 06.62 -1.9  
 TIC 121.47 12 PKP 00 12.54 -1.5  
 KIC 121.78 11 PKP 00 13.06 -1.6  
 LIC 121.88 12 PKP 00 13.24 -1.6  
 Z 19s 9.00um 6.4Msz  
 KOGH 122.48 6 ePKP 00 18.00 2.0  
 SHGH 122.65 6 ePKP 00 17.00 0.7  
 LEGH 122.92 6 ePKP 00 16.00 -0.8  
 WEGH 122.97 6 ePKP 00 18.00 1.1  
 NAI 123.25 321 iPKPd 00 19.00 1.3  
 BAO 124.88 70 ePKP 00 12.50 -8.2X  
 LWI 127.00 330 iPKPc 00 26.40 1.4  
 VNDA 129.54 186 ePKP 00 10.00 -17.7X  
 SBA 129.56 185 ePKP 00 29.70 1.9  
 NPA 134.50 310 ePKP 00 41.60 2.7X  
 e 03 17.00  
 e 04 10.40  
 SPA 141.30 180 ePKP 00 42.60 -7.6X  
 0.9s 12.73nm  
 AIA 143.24 139 ePKP 00 53.40 0.0  
 BUL 143.64 321 iPKPd 00 48.00 -7.6X  
 MAW 148.01 218 ePKP 01 04.00 2.8  
 0.9s 106.00nm  
 SLR 148.75 317 iPKPc+01 05.00 1.1  
 1.0s 580.00nm  
 Z 20s 3.55um 6.2Msz  
 WIN 149.64 337 iPKPc 01 06.50 1.1  
 0.9s 214.29nm  
 PRY 150.14 317 ePKP 01 05.50 -0.5  
 0.9s 192.31nm  
 i 01 11.00  
 SWZ 151.26 320 iPKPd 01 05.60 -2.1  
 0.6s 60.00nm  
 SEK 151.29 315 iPKPd 01 09.00 1.3  
 0.9s 12.60nm  
 i 17 15.00  
 BLF 152.59 317 iPKPc 01 11.50 1.9  
 1.0s 600.00nm  
 i 01 30.00  
 KIM 152.87 319 iPKPd 01 11.50 1.6  
 0.9s 327.73nm  
 i 01 18.00  
 CER 159.10 325 ePKP 01 20.00 2.4  
 0.7s 50.00nm  
 i 01 50.00  
 S.D. = 1.1 on 487 of 525 obs.

5.0mb ( 26 obs.)  
 ANDREANOF ISLANDS, ALEUTIAN IS. ( 7 )  
 ML 5.0 (PMR).

ADK 1.16 295 eP 47 38.10 -1.9  
 SDN 9.52 60 eP 49 38.20 0.1  
 KDC 14.47 55 eP 50 50.90 6.3X  
 PMS 17.09 45 eP 51 20.00 1.7  
 BRW 21.61 16 eP 52 10.60 1.0  
 MAT 36.16 264 eP 54 22.00 -0.1  
 NEW 36.63 72 eP 54 26.00 0.0  
 EDM 36.70 62 iPc 54 27.50 0.9  
 0.6s 52.00nm 5.5mb  
 LBFM 37.23 84 eP 54 33.00 1.6  
 SNY 42.12 282 iPd 55 12.00 0.4  
 BJI 47.69 285 eP 55 56.00 -0.3  
 1.3s 96.00nm 5.7mb  
 GOL 48.38 75 eP 56 01.50 -0.5  
 RSON 48.47 57 eP 56 01.90 -0.3  
 SSE 50.39 272 Pc 56 19.00 1.9  
 1.0s 50.00nm 5.4mb  
 ANMO 50.74 81 e(P) 56 19.50 -0.5  
 BTO 51.04 289 eP 56 22.80 0.7  
 TIY 51.43 285 iPd 56 25.40 0.3  
 1.0s 100.00nm 5.7mb  
 GYA 62.69 279 P 57 45.00 -0.2  
 WNY 62.83 52 eP 57 44.50 -1.3  
 HBVT 63.24 52 eP 57 46.50 -2.0  
 CBM 63.70 47 eP 57 49.50 -2.0  
 BLA 64.56 62 eP 57 56.50 -0.8  
 CVL 65.08 60 eP 58 00.50 0.0  
 KMI 66.08 281 Pc 58 06.50 -0.9  
 JSC 66.22 65 eP 58 06.00 -1.9  
 NB2 67.80 357 P 58 15.80 -1.8  
 1.0s 15.20nm 5.1mb  
 EKA 73.42 5 P 58 52.00 0.5  
 1.0s 16.30nm 5.0mb  
 BRG 77.82 354 e(P) 59 15.90 -0.7  
 1.0s 16.00nm 5.0mb  
 MOX 78.18 356 eP 59 18.00 -0.5  
 ENN 78.21 359 eP 59 19.00 0.4  
 0.9s 21.00nm 5.2mb  
 MEM 78.37 359 P 59 20.30 0.8  
 DOU 78.88 0 Pc 59 22.90 0.5  
 GRF 79.15 356 eP 59 24.00 0.1  
 FLN 80.11 4 eP 59 28.70 -0.3  
 1.0s 24.00nm 5.1mb  
 GRR 80.47 4 eP 59 30.90 0.0  
 0.8s 16.10nm 5.1mb  
 LPF 80.81 4 eP 59 32.70 -0.1  
 0.7s 6.60nm 4.8mb  
 HAU 80.97 359 eP 59 33.50 -0.1  
 0.8s 8.05nm 4.8mb  
 BSF 81.14 359 eP 59 34.40 -0.2  
 0.8s 5.35nm 4.6mb  
 KBA 81.64 354 iPc 59 37.60 0.2  
 1.0s 17.00nm 5.1mb  
 e 03 50.50  
 LOR 81.71 1 eP 59 37.50 0.0  
 0.8s 9.40nm 4.9mb  
 SSF 81.91 1 eP 59 38.60 0.1  
 0.8s 12.10nm 5.0mb  
 LBF 81.99 1 eP 59 39.50 0.5  
 1.0s 6.00nm 4.6mb  
 AVF 82.18 1 eP 59 40.10 0.2  
 0.8s 9.40nm 4.9mb  
 QUE 82.25 310 eP 59 41.70 0.8  
 MFF 82.28 4 eP 59 40.70 0.3  
 0.8s 13.45nm 5.1mb  
 SMF 82.33 1 eP 59 40.80 0.1  
 0.8s 12.10nm 5.1mb  
 TCF 82.66 2 eP 59 43.30 0.8  
 1.0s 8.00nm 4.8mb  
 LSF 82.69 2 eP 59 42.80 0.2  
 1.0s 22.00nm 5.3mb  
 IPM 82.69 268 ePd 59 44.30 1.2  
 LFF 83.97 3 eP 59 50.10 0.9  
 1.0s 20.00nm 5.3mb  
 CAF 84.02 2 eP 59 50.20 0.7  
 1.0s 8.00nm 4.9mb  
 LPO 84.24 3 eP 59 51.00 0.4  
 0.8s 8.05nm 5.0mb  
 HYB 86.42 293 eP 00 01.00 -0.9  
 POO 88.18 298 iP 00 12.00 1.6  
 GBA 90.10 292 Pc 00 17.80 -1.6  
 0.6s 3.20nm 4.7mb  
 SLR 148.83 316 iPKPc 07 06.20 3.1X

1.0s 50.00nm  
 WIN 149.73 337 iPKPd 07 11.20 6.6X  
 0.9s 29.41nm  
 i 07 24.00  
 PRY 150.23 317 ePKP 07 09.50 4.3X  
 0.8s 18.75nm  
 e 07 21.20  
 BFS 150.49 318 iPKPc 07 07.00 1.4X  
 BLF 152.68 316 iPKPc 07 19.00 10.2X  
 1.0s 70.00nm  
 i 07 31.00  
 KIM 152.96 319 iPKPc 07 28.00 18.9X  
 1.2s 39.06nm  
 CER 159.18 324 ePKP 07 14.50 -2.3X  
 1.0s 20.00nm  
 S.D. = 1.0 on 54 of 62 obs.

\* MAR 12, 1990 14h 55m 31.59±0.84s  
 51.247 N ±18.3km 174.799 W ±6.5km  
 DEPTH = 15.0km (geophysicist)  
 4.9mb ( 6 obs.)  
 ANDREANOF ISLANDS, ALEUTIAN IS. ( 7 )

ADK 1.34 299 iPd 55 56.70 1.1  
 SDN 9.49 59 eP 57 51.70 1.2  
 KDC 14.46 55 eP 58 57.70 0.4  
 SVW 14.49 40 eP 59 03.10 5.4X  
 TTA 15.45 34 eP 59 16.40 6.1X  
 PMS 17.11 44 eP 59 31.30 -0.1  
 TOA 18.94 44 eP 59 54.20 0.2  
 FBA 19.55 35 eP 00 00.70 -0.5  
 INK 26.15 34 eP 01 06.00 -0.3  
 MBC 32.81 21 eP 02 06.00 0.3  
 EDM 36.67 62 iPc 02 40.60 1.5  
 0.5s 17.00nm 5.1mb  
 CN2 40.03 283 Pc 03 06.40 -0.8  
 FFC 42.16 56 eP 03 25.00 0.4  
 0.6s 11.00nm 4.8mb  
 SNY 42.27 282 iPd 03 26.80 1.2  
 BJI 47.85 285 eP 04 10.00 -0.3  
 TIY 51.58 285 eP 04 39.00 0.0  
 CD2 61.45 285 eP 05 49.00 -0.6  
 WMO 61.50 305 eP 05 49.00 -0.8  
 WNY 62.83 52 eP 05 57.90 -0.7  
 HBVT 63.24 52 eP 06 00.20 -1.1  
 CBM 63.72 47 eP 06 03.40 -1.0  
 NB2 67.96 357 P 06 29.60 -1.8  
 0.8s 4.00nm 4.6mb  
 GUN 74.21 295 P 07 10.20 0.4  
 0.6s 29.00nm 5.5mb  
 KKN 74.65 295 P 07 12.80 0.6  
 0.6s 16.00nm 5.2mb  
 DMN 74.88 295 P 07 14.00 0.4  
 KBA 81.81 354 eP 07 51.00 0.0  
 1.0s 6.70nm 4.7mb  
 QUE 82.44 310 eP 07 55.20 0.6  
 ZOBO 112.94 88 ePd i f f 10 32.00 16.3X  
 SLR 149.03 317 iPKPc 15 20.00 3.8X  
 WIN 149.91 338 ePKP 15 25.00 7.3X  
 SWZ 151.54 320 ePKP 15 24.00 4.0X  
 SEK 151.56 315 ePKP 15 21.90 1.9X  
 0.7s 10.27nm  
 S.D. = 0.8 on 25 of 32 obs.

MAR 12, 1990 15h 06m 29.70±0.29s  
 51.479 N ±7.1km 174.984 W ±3.4km  
 DEPTH = 15.0km (geophysicist)  
 5.1mb ( 48 obs.)  
 ANDREANOF ISLANDS, ALEUTIAN IS. ( 7 )  
 ML 5.1 (PMR).  
 CENTROID, MOMENT TENSOR (HRV)  
 Data Used: GDSN  
 L.P.B.: 12S, 24C  
 Centroid Location:  
 Origin Time 15:06:31.3 1.5  
 Lat 51.50N FIX: Lon 174.94W FIX  
 Dep 15.0 FIX Half-duration 2.3  
 Moment Tensor: Scale 10\*\*17 Nm  
 Mrr= 1.07 0.26 Mtt=-1.60 0.27  
 Mff= 0.53 0.27 Mrt= 3.44 0.84  
 Mrf= 1.52 0.74 Mtf=-0.32 0.31  
 Principal Axes:  
 T Vol= 3.80 P1g=54 Azm=327  
 N 0.43 8 68  
 P -4.23 35 163  
 Best Double Couple: Mo=4.0\*10\*\*17  
 NP1: Strike=288 Dip=12 Slip= 131



NP2:						66	81	82	NUR	67.25 350 eP	17 23.70 -1.3	SBF	85.02 358 eP	19 07.00 1.6	
ADK	1.13	292	iPc	06 52.40	2.0				NB2	67.72 357 P	17 26.30 -1.7		0.8s 8.05nm	5.0mb	
SMY	6.84	285	e(P)	08 11.50	-0.3				UPP	0.9s 15.30nm	5.2mb	LMR	85.56 359 eP	19 08.70 0.6	
SDN	9.47	60	eP	08 48.00	-0.4				LSA	68.55 353 iP	17 31.40 -1.7		0.8s 8.05nm	5.0mb	
SVW	14.38	40	eP	09 57.80	3.3X				LOE	69.64 292 eP	17 41.20 0.4	SKO	85.84 348 iP	19 11.20 1.7	
KDC	14.42	55	eP	09 54.00	-0.9				CHG	72.43 276 eP	17 56.00 -1.2		i	21 21.30	
TTA	15.32	34	ePc	10 13.70	6.9X				EKA	73.10 279 eP	18 02.10 0.9	VAY	86.32 347 eP	19 12.30 0.4	
PMS	17.03	45	eP	10 28.20	-0.3					73.34 5 Pc	18 00.70 -1.3	HYB	86.39 293 eP	19 12.50 -0.1	
PMR	17.36	44	eP	10 32.00	-0.5				GUN	0.8s 13.10nm	5.0mb	OHR	86.77 348 eP	19 14.20 0.0	
IMA	18.17	28	eP	10 45.20	2.4					74.01 295 P	18 06.20 -0.6		1.4s 0.08nm	2.7mb X	
FBA	19.43	36	eP	10 55.80	-2.1				BDT	74.25 278 eP	18 07.00 -0.8	ASPA	87.22 226 eP	19 16.80 0.4	
BRW	21.54	16	eP	11 19.50	-0.3				KKN	74.44 295 P	18 08.40 -0.7		1.1s 6.00nm	4.8mb	
INK	26.02	34	eP	12 02.50	-0.8				DMN	74.68 295 P	18 09.60 -0.9	POO	88.15 298 eP	19 22.80 1.7	
MBC	32.63	21	eP	13 03.00	0.7				DCN	75.04 8 eP	18 12.40 0.6	GBA	90.07 292 P	19 30.00 -0.2	
	0.5s	4.00nm		4.6mb						0.8s 40.00nm	5.5mb		0.6s 7.10nm	5.1mb	
LON	34.48	76	eP	13 19.00	0.2				WTS	76.89 359 eP	18 23.00 0.7	BUL	143.67 321 iPKPc	25 59.50 -6.2X	
MAT	36.17	264	eP	13 33.00	-0.1				CLL	0.7s 14.00nm	5.1mb	SLR	148.78 317 iPKPc	26 16.50 2.5X	
	1.2s	81.25nm		5.5mb						77.36 355 iPd	18 24.80 -0.1		0.9s 33.61nm		
NEW	36.60	72	eP	13 36.00	-0.7					1.0s 14.00nm	5.0mb	WIN	i	28 36.50	
	0.9s	27.41nm		5.1mb					KSP	i	20 36.90		149.65 337 ePKP	26 20.00 4.6X	
EDM	36.66	62	iPc	13 36.60	-0.6					77.61 353 eP	18 26.50 0.2	PRY	150.17 317 ePKP	26 16.80 0.8	
	0.5s	56.00nm		5.6mb					BRG	e	20 45.00		0.7s 7.50nm		
MDJ	36.90	282	eP	13 38.00	-1.2					77.74 354 iP	18 27.60 0.6	BFS	150.43 318 iPKPc	26 19.00 2.6X	
LBFM	37.22	84	eP	13 44.00	1.8					0.8s 16.00nm	5.1mb		0.5s 56.34nm		
WDC	37.25	86	ePc	13 51.00	8.8X				MOX	i	20 46.00		i	28 37.50	
MIN	37.97	86	ePc	13 54.60	6.2X					78.10 356 eP	18 30.00 1.0	SWZ	151.28 320 iPKPd	26 20.50 2.8X	
SES	39.16	66	eP	13 59.00	0.9				ENN	e	20 39.00		0.4s 38.14nm		
MHC	39.75	89	eP	14 05.50	2.2					78.13 359 eP	18 29.00 -0.1		i	28 39.80	
CN2	39.86	283	P	14 02.80	-1.2				MEM	1.0s 38.00nm	5.4mb	SEK	151.31 315 iPKPc	26 24.30 6.6X	
	1.0s	50.00nm		5.2mb					PRU	78.29 359 P	18 31.70 1.7		0.6s 16.67nm		
		PP	14 11.20						DOU	78.59 354 eP	18 32.50 0.8	BLF	i	28 45.00	
CMB	40.11	88	ePc	14 08.80	2.7				GRF	78.80 0 Pc	18 33.80 1.0		0.6s 25.00nm	26 27.00 7.4X	
LRM	40.58	73	eP	14 11.20	1.0				MTN	79.07 356 eP	18 36.10 1.7		i	26 46.00	
KVN	40.92	85	eP	14 14.00	1.1				KHC	79.22 233 eP	18 33.00 -2.5	KIM	152.62 317 ePKP-	26 30.00 10.0X	
TNP	42.05	85	eP	14 23.00	0.7					79.50 354 iP	18 37.70 0.9		0.9s 25.21nm		
	0.8s	6.37nm		4.4mb						1.0s 7.00nm	4.6mb		i	26 40.00	
SNY	42.11	282	iPd	14 22.60	0.2				FLN	e	18 46.50		CER	159.12 325 ePKP	26 12.50 -15.2X
	1.0s	200.00nm		5.8mb						80.03 4 eP	18 39.50 0.0		S.D. = 1.1 on 118 of 138 obs.		
FFC	42.13	56	eP	14 22.00	-0.4				LDF	1.0s 24.00nm	5.1mb		* MAR 12, 1990 15h 08m 48.32±1.04s		
	0.6s	20.00nm		5.0mb						80.21 3 eP	18 40.10 -0.4		51.336 N ±24.0km 174.822 W ± 8.7km		
IMW	42.52	74	eP	14 26.00	-0.2				GRR	0.8s 14.80nm	5.0mb		DEPTH = 15.0km (geophysicist)		
CLC	43.23	88	eP	14 40.00	8.2X					80.39 4 eP	18 41.70 0.3		4.9mb ( 24 obs.)		
SBB	43.82	90	eP	14 37.00	0.5				MAIO	0.9s 22.95nm	5.2mb		ANDREANOF ISLANDS, ALEUTIAN IS. ( 7 )		
MWC	43.98	90	eP	14 42.00	4.0X				CDP	80.42 318 eP	18 42.00 0.1		INK	26.08 34 eP	14 22.00 -0.5
BW06	43.99	75	eP	14 37.00	-1.0				LPF	80.47 358 eP	18 42.20 0.2	EDM	36.64 62 iPc	15 56.40 0.8	
RVR	44.55	90	eP	14 57.00	14.6X				HAU	80.73 4 eP	18 43.30 0.1		0.6s 47.00nm	5.5mb	
DL2	45.04	280	eP	14 46.00	-0.2					1.0s 12.00nm	4.9mb	FFC	42.12 56 iPc	16 41.80 0.8	
	1.0s	100.00nm		5.7mb					SNG	80.89 359 eP	18 44.50 0.4		0.6s 12.00nm	4.8mb	
TPC	45.31	89	eP	14 51.00	2.5				BSF	0.8s 10.75nm	4.9mb	SNY	42.23 282 iPd	16 42.80 0.8	
BAR	45.86	91	eP	15 10.00	17.1X					80.94 270 eP	18 46.10 1.2		1.1s 100.00nm	5.5mb	
GLA	46.77	89	eP	14 59.00	-1.1				KBA	81.06 359 eP	18 45.20 0.1	DL2	45.16 280 eP	17 05.70 -0.1	
BJI	47.68	284	eP	15 06.50	-0.5					0.7s 4.40nm	4.6mb		1.0s 100.00nm	5.7mb	
	1.0s	48.00nm		5.5mb						81.56 354 ePc	18 47.60 -0.3	BJI	47.81 285 eP	17 26.50 -0.2	
GOL	48.35	75	eP	15 12.00	-0.7				LOR	0.7s 11.70nm	5.0mb	BTO	51.16 289 eP	17 53.00 0.4	
	0.8s	26.79nm		5.4mb					SSF	e	18 49.50	TIY	51.54 285 eP	17 55.10 -0.4	
RSON	48.42	57	eP	15 11.80	-0.9					81.63 1 eP	18 48.40 0.4	WMQ	61.43 305 eP	19 04.80 -1.3	
	0.8s	60.10nm		5.7mb						0.8s 6.70nm	4.7mb	WNY	62.78 52 eP	19 14.00 -1.0	
TIA	49.51	280	eP	15 21.40	0.1					81.83 1 eP	18 49.70 0.7	HBVT	63.20 52 eP	19 16.70 -1.0	
KBS	49.80	358	eP	15 22.50	-0.5				CMP	1.0s 15.00nm	5.0mb	CBM	63.67 47 eP	19 19.30 -1.5	
HHC	49.94	288	P	15 24.20	-0.5				AVF	81.91 1 eP	18 49.80 0.3	NB2	67.87 357 P	19 46.20 -1.4	
SSE	50.38	272	Pc	15 28.30	0.3					0.8s 5.35nm	4.7mb		0.9s 10.80nm	5.0mb	
	1.2s	83.00nm		5.6mb					QUE	82.09 346 ePc	18 54.00 3.5X	UPP	68.71 353 iP	19 50.90 -1.7	
ANMO	50.73	81	eP	15 30.00	-0.9					82.10 1 eP	18 51.00 0.6	EKA	73.47 5 P	20 20.00 -1.4	
DAG	51.13	7	iPd	15 32.10	-1.0					1.0s 14.00nm	5.0mb	UCC	78.24 1 P	20 50.00 1.7	
	0.7s	9.59nm		4.8mb					SMF	82.20 4 eP	18 51.40 0.5	DOU	78.95 0 P	20 52.20 0.0	
NJ2	51.19	275	eP	15 34.00	-0.1					0.9s 14.75nm	5.1mb	GRF	79.22 356 ePc	20 54.30 0.5	
TIY	51.41	284	eP	15 35.50	-0.3					82.20 310 eP	18 51.60 0.1	FLN	80.16 4 eP	20 58.70 -0.1	
	1.0s	100.00nm		5.7mb						eSS	29 09.50		1.0s 12.00nm	4.8mb	
FRB	51.67	33	eP	15 36.00	-1.3				TCF	82.25 1 eP	18 51.60 0.4	LDF	80.35 4 eP	20 59.80 0.0	
WHN	55.03	277	ePd	16 02.70	0.0					1.0s 15.00nm	5.0mb		0.8s 10.75nm	4.9mb	
GTA	57.73	294	eP	16 20.00	-2.1				LSF	82.58 2 eP	18 53.40 0.4	GRR	80.52 4 eP	21 00.90 0.1	
FVM	58.33	68	eP	16 24.00	-2.1					0.9s 9.85nm	4.9mb		0.6s 8.10nm	4.9mb	
SCH	58.45	40	eP	16 26.00	-0.8				MAF	82.61 2 eP	18 53.80 0.7	LPF	80.87 4 eP	21 03.00 0.4	
SOD	60.36	351	eP	16 40.00	0.2					0.9s 22.95nm	5.3mb		0.8s 8.05nm	4.8mb	
WMQ	61.27	305	iPd	16 45.00	-1.4				IPM	82.66 2 eP	18 54.10 0.7	HAU	81.03 359 eP	21 03.70 0.2	
CD2	61.28	284	eP	16 45.40	-1.1				WB5	0.6s 3.60nm	4.7mb		1.0s 12.00nm	4.9mb	
GYA	62.68	279	iPc	16 56.00	-0.1				WRA	82.69 268 ePd	18 55.30 1.3	KBA	81.72 354 ePc	21 07.50 0.2	
WNY	62.77	52	eP	16 53.80	-2.6					83.72 227 e(P)	18 55.50 -3.5X		1.0s 11.60nm	4.9mb	
HBVT	63.19	52	eP	16 56.50	-2.5				LFF	83.79 227 P	18 59.00 -0.4	LOR	81.77 1 eP	21 07.70 0.3	
CBM	63.64	47	eP	16 59.00	-3.0X					0.6s 1.60nm	4.4mb		0.8s 8.05nm	4.8mb	
BLA	64.52	62	eP	17 06.60	-1.3				CAF	83.89 3 eP	19 00.80 1.1	SSF	81.97 1 eP	21 09.00 0.6	
	0.9s	20.66nm		5.3mb						1.2s 35.70nm	5.5mb		0.6s 4.50nm	4.7mb	
SUF	64.93	349	eP	1											



12d 15h

AVF	0.8s	4.05nm	4.5mb		
	82.24	1 eP	21 10.20	0.4	
MFF	0.8s	6.05nm	4.7mb		
	82.34	4 eP	21 10.80	0.5	
QUE	1.0s	16.00nm	5.1mb		
SMF	82.37	310 eP	21 11.50	0.5	
	82.39	1 eP	21 11.00	0.4	
TCF	1.0s	16.00nm	5.1mb		
	82.72	2 eP	21 12.60	0.2	
LSF	0.8s	2.70nm	4.4mb		
	82.74	3 eP	21 12.80	0.4	
RJF	0.8s	12.10nm	5.1mb		
	83.69	3 eP	21 17.80	0.5	
LFF	1.0s	12.00nm	5.1mb		
	84.03	3 eP	21 19.80	0.8	
CAF	1.2s	29.75nm	5.4mb		
	84.08	2 eP	21 20.10	0.8	
LPO	0.8s	6.05nm	4.9mb		
	84.30	3 eP	21 21.00	0.6	
EPF	1.0s	16.00nm	5.2mb		
	85.92	4 eP	21 28.70	0.1	
HYB	1.0s	8.00nm	4.9mb		
	86.54	294 eP	21 31.00	-1.0	
OHR		86.93 348 e(P)	21 33.00	-0.6	
S.D. = 0.8 on 40 of 40 obs.					

\* MAR 12, 1990 15h 26m 51.81±2.03s  
3.258 S ±16.4km 128.887 E ±20.1km  
DEPTH = 75.3 ±15.3 km  
4.7mb ( 3 obs.)

CERAM (272)

AAI	0.81	238 ePc	27 08.00	-0.6
		eS	27 21.50	
PCI	9.34	284 iPc	29 06.50	0.5
MTN	9.78	167 eP	29 13.00	1.0
		e	30 59.00	
WB5	17.37	162 eP	30 50.80	0.0
WRA	17.42	163 Pc	30 51.00	-0.5
	0.7s	5.50nm	3.9mb	
MBL	19.86	206 eP	31 19.20	-0.3
QIS	20.12	150 iPc	31 21.90	-0.3
ASPA	20.86	167 iPd	31 30.10	0.3
	0.7s	31.00nm	4.7mb	
Z	20s	5.06um	4.9msz	
		iS	35 19.50	
		LR	37 50.90	
CHG	36.74	308 eP	33 55.00	1.1
GUN	51.70	310 P	35 53.80	-0.2
	0.6s	11.00nm	5.1mb	
KKN	52.10	309 P	35 56.30	-0.6
DMN	52.15	309 P	35 56.80	-0.5
S.D. = 0.7 on 12 of 12 obs.				

\* MAR 12, 1990 16h 08m 39.64±0.54s  
51.104 N ±13.7km 177.903 W ±6.4km  
DEPTH = 33.0km (normol)  
4.7mb ( 5 obs.)  
ANDREANOF ISLANDS, ALEUTIAN IS. ( 7 )  
ML 4.1 (PMR).

ADK	1.09	44 iPc	09 00.70	2.1
SMY	5.21	291 eP	09 58.50	1.3
SDN	11.26	61 eP	11 22.20	1.1
SVW	15.88	42 ePc	12 26.30	4.3X
KDC	16.15	56 eP	12 25.00	-0.4
TTA	16.69	36 eP	12 55.30	2.9
PMS	18.60	46 eP	12 55.60	-0.4
IMA	19.40	30 eP	13 04.60	-0.9
TOA	20.41	45 eP	13 16.60	0.4
FBA	20.82	37 eP	13 20.00	-0.3
INK	27.36	34 eP	14 21.00	-2.2
MBC	33.65	22 ePc	15 17.50	-1.3
	0.5s	3.00nm	4.5mb	
NEW	38.45	70 eP	16 01.00	1.2
KVN	42.78	82 eP	16 37.00	1.3
BW06	45.85	73 eP	17 01.00	0.6
HHC	48.31	287 eP	17 19.40	-0.2
RSSD	48.34	68 eP	17 19.00	-1.0
BTO	49.39	287 eP	17 28.50	0.6
TIY	49.72	283 eP	17 30.30	-0.1
RSON	50.15	55 eP	17 31.30	-2.2
GOL	50.22	73 eP	17 35.50	1.0
XAN	54.27	282 P	18 03.50	-1.1
FVM	60.16	66 eP	18 44.50	-1.7
RSCP	64.59	64 eP	19 14.50	-1.3
PRM	67.51	63 eP	19 34.50	0.1

JSC	67.99	63 eP	19 37.50	0.1
LSA	68.06	290 iP	19 40.00	1.5
GUN	72.48	293 P	20 05.00	-0.2
KKN	72.92	293 P	20 07.80	0.2
	0.6s	32.00nm	5.5mb	
DMN	73.16	293 P	20 09.60	0.5
KBA	81.72	352 eP	20 55.00	-1.0
	0.6s	2.70nm	4.4mb	
HYB	84.84	291 eP	21 12.00	-0.2
ASPA	85.67	223 eP	21 17.70	1.6
	0.8s	3.00nm	4.6mb	
GBA	88.49	290 Pc	21 28.70	-1.3
	0.5s	4.50nm	5.0mb	
TIC	122.16	8 PKP	27 32.00	-0.6
KIC	122.46	8 PKP	27 32.40	-0.7
LIC	122.57	8 PKP	27 33.00	-0.3
SLR	147.72	312 iPKPc	28 22.00	2.5X
KSR	148.48	314 iPKPc	28 24.40	3.7X
PRY	149.12	312 iPKPc	28 25.20	3.5X
WIN	149.21	332 ePKP	28 27.00	5.0X
BFS	149.41	313 iPKPc	28 23.00	0.9
	0.5s	2.17nm		
SEK	150.22	310 iPKPc	28 28.50	5.2X
	0.4s	21.19nm		
SWZ	150.32	315 iPKPc	28 25.00	1.5X
	0.6s	23.33nm		
BLF	151.56	311 iPKPc	28 32.00	6.7X
KIM	151.91	314 ePKP	28 32.00	6.2X
S.D. = 1.2 on 37 of 46 obs.				

? MAR 12, 1990 16h 37m 15.19±7.61s  
43.489 N ±53.5km 6.918 E ±34.4km  
DEPTH = 10.0km (geophysicist)  
NEAR SOUTH COAST OF FRANCE (379)

DOI	1.04	13 P	37 35.50	0.6
		eSn	37 57.50	
FOUF	1.04	355 e(Pn)	37 33.85	-1.0
		i	37 34.55	
		e(Sn)	37 54.25	
CKI	1.36	46 P	37 43.00	2.9X
		eSn	38 07.00	
BNI	1.57	354 P	37 44.00	0.7
		eSn	38 09.00	
BOB	2.23	54 P	37 52.50	-0.2
S.D. = 1.4 on 4 of 5 obs.				

\* MAR 12, 1990 16h 48m 01.44s  
36.413 N 92.300 W  
DEPTH = 0.2km  
MISSOURI-ARKANSAS BORDER REGION (484)  
<TEIC>. CL 2.8 (TEIC). Felt (IV)  
at Clorkridge, Henderson,  
Lakeview and Mountain Home,  
Arkansas. Also felt (IV) at  
Howards Ridge, Missouri. Felt  
(III) at Gomoliel and Midway,  
Arkansas.

POW	0.94	106 iP	48 18.40	-1.7
OLY	1.13	143 iP	48 21.90	-1.6
FVM	2.17	43 eP	48 39.00	-0.3
GRT	2.33	93 e(P)	48 40.40	-1.2
PWLA	3.73	111 eP	49 00.00	-1.6
5 obs. associated				

\* MAR 12, 1990 17h 05m 40.13±2.34s  
40.505 N ±10.0km 26.676 E ±26.4km  
DEPTH = 10.0km (geophysicist)

TURKEY (366)  
MD 3.0 (ATH).

RDO	1.08	307 ePb	05 58.90	-1.4
PRK	1.30	194 ePb	06 03.50	-0.6
KDZ	1.49	321 iPc	06 07.00	0.1
		iSg	06 27.00	
DIM	1.77	331 eP	06 20.00	9.1X
RZN	1.89	309 iPc	06 12.00	-1.0
PLG	2.47	268 ePb	06 23.00	1.9
MMB	2.48	297 iPd	06 24.00	2.8X
		eSg	26 55.00	
PVL	2.89	340 eP	06 28.00	1.0
KKB	3.03	298 iP	06 33.00	3.9X
		S	07 04.00	
VTS	3.33	310 iP	06 42.00	8.5X
S.D. = 1.6 on 6 of 10 obs.				

\* MAR 12, 1990 18h 17m 51.85±1.37s  
41.825 N ±9.9km 22.782 E ±12.8km  
DEPTH = 10.0km (geophysicist)  
YUGOSLAVIA (383)

ML 2.0 (SKO).

KKB	0.23	80 iPgc	17 56.00	-0.8
		Sg	17 59.00	
VAY	0.53	198 ePg	18 02.40	-0.1
		iSg	18 09.70	
VTS	0.83	22 iPg	18 08.00	0.0
		iSg	18 19.00	
RZN	1.45	95 iP	18 18.00	-0.3
		S	18 36.00	
KDZ	1.98	94 eP	18 27.00	1.2
		iS	18 51.00	
S.D. = 1.1 on 5 of 5 obs.				

? MAR 12, 1990 18h 46m 18.99±8.98s  
43.706 N ±68.5km 8.324 E ±35.5km  
DEPTH = 33.0km (normol)

CORSICA (380)  
ML 2.3 (GEN).

IMI	0.38	303 P	46 26.56	-1.3
		S	46 31.38	
FIN	0.51	351 P	46 29.43	-0.4
		S	46 34.76	
ROB	0.67	331 P	46 31.89	-0.2
		S	46 39.07	
ENR	0.83	309 P	46 34.87	0.5
		S	46 44.71	
PCP	0.85	11 P	46 35.07	0.5
		S	46 45.33	
STV	0.90	307 P	46 36.00	0.6
		S	46 46.56	
PZZ	1.19	313 P	46 41.12	1.6
		S	46 55.58	
S.D. = 1.1 on 7 of 7 obs.				

\* MAR 12, 1990 20h 19m 41.19±0.95s  
3.282 S ±11.9km 139.831 E ±21.3km  
DEPTH = 33.0km (normol)  
4.0mb ( 2 obs.)

WEST IRIAN (201)

MTN	12.82	222 iPc	22 43.10	-0.8
		eS	24 59.00	
KNA	16.50	221 eP	23 32.50	0.7
QIS	17.17	181 eP	23 40.00	-0.4
		eS	26 44.00	
WB5	17.34	197 eP	23 42.60	0.2
		eS	26 48.20	
WRA	17.41	198 P	23 47.00	3.7X
	0.4s	2.30nm	3.7mb	
ASPA	21.06	195 eP	24 25.40	0.4
	0.5s	6.00nm	4.2mb	
		eS	28 13.30	
KIC	144.57	276 PKP	39 16.80	-0.3
TIC	144.83	277 PKP	39 17.60	0.0
LIC	144.86	276 PKP	39 17.80	0.2
S.D. = 0.6 on 8 of 9 obs.				

\* MAR 12, 1990 20h 58m 03.14±2.08s  
6.895 S ±14.0km 152.449 E ±33.0km  
DEPTH = 33.0km (normol)  
4.3mb ( 2 obs.)

NEW BRITAIN REGION (192)

RAB	2.70	354 iPc	58 45.00	-0.2
		iS	59 16.00	
PMG	5.81	244 eP	59 29.00	-0.3
QIS	18.42	221 eP	02 17.00	-0.8
WB5	21.78	232 eP	02 54.70	0.4
MTN	21.81	253 eP	02 55.00	0.5
		e	03 04.00	
WRA	21.84	232 Pd	02 54.60	-0.2
	0.8s	5.90nm	4.1mb	
ASPA	24.40	225 eP	03 20.40	0.5
	0.8s	13.00nm	4.5mb	
KNA	24.81	247 eP	03 36.50	12.7X
UPA	128.51	84 ePd	09.50	15.3X
	0.5s	36.62nm		



DEPTH = 94.1km CENTRAL ALASKA <AGS-P>.					( 1 )	CN2 39.92 283 eP 25 46.50 -1.0 FFC 42.10 56 iPd 26 05.90 0.6 0.6s 8.00nm 4.6mb					Sg 09 08.70 BTO 3.03 288 ePg 08 48.30 3.7X Sg 09 26.50 TIA 4.39 142 ePn 09 04.20 0.4 Pg 09 18.00 Sg 10 12.20 XAN 6.91 216 Pn 09 37.70 -1.7 Pg 09 54.80 LZH 8.68 248 eP 10 30.00 25.7X WMO 19.87 290 eP 12 31.00 1.2 S.D. = 1.5 on 6 of 8 obs.				
HUR	0.22	186	iP	34 25.86	1.3	34 25.86				SNY 42.16 282 iPd 26 06.60 0.8 BW06 43.95 75 eP 26 20.50 -0.3 BJI 47.73 285 eP 26 50.50 0.0 GOL 48.32 75 eP 26 55.50 0.0 RSON 48.40 57 eP 26 54.70 -0.9 TIY 51.46 285 eP 27 19.30 0.0 XAN 56.03 284 P 27 51.70 -1.3 WMO 61.32 305 P 28 28.50 -1.3 CD2 61.33 284 eP 28 29.20 -0.7 NB2 67.75 357 P 29 09.60 -1.6 0.8s 3.70nm 4.6mb SHL 72.35 289 iP 29 39.40 -0.5 EKA 73.36 5 P 29 45.00 -0.1 1.5s 27.50nm 5.1mb GUN 74.06 295 P 29 50.20 0.1 0.4s 19.00nm 5.5mb KKN 74.50 295 P 29 52.40 -0.1 0.6s 16.00nm 5.2mb DMN 74.73 295 P 29 54.00 0.1 KHC 79.53 354 eP 30 20.50 0.5 KBA 81.59 354 eP 30 31.00 -0.1 1.1s 5.80nm 4.5mb QUE 82.26 310 eP 30 35.30 0.5 HYB 86.44 294 eP 30 55.50 -0.4 POO 88.20 298 eP 31 06.50 2.0 KSR 149.53 319 ePKP 38 02.60 4.4X WIN 149.70 338 ePKP 38 07.00 8.4X PRY 150.22 317 e(PKP) 38 03.20 4.0X BFS 150.49 318 ePKP 38 01.00 1.4X KIM 152.95 319 ePKP 38 20.00 16.9X S.D. = 0.9 on 29 of 35 obs.	* MAR 12, 1990 23h 16m 09.80±0.96s 51.463 N ±24.9km 174.825 W ±6.5km DEPTH = 15.0km (geophysicist) 4.7mb ( 3 obs.) ANDREANOF ISLANDS, ALEUTIAN IS. ( 7 )				
MCK	0.62	28	iP	34 28.70	-0.2	34 28.70				ADK 1.23 291 iPd 16 33.50 1.3 INK 25.98 34 eP 21 43.00 0.0 YKA 33.36 47 eP 22 47.90 -1.0 0.6s 0.30nm 3.4mb X NEW 36.51 72 eP 23 32.00 16.0X EDM 36.58 62 iPc 23 17.80 1.2 FFC 42.06 56 eP 24 03.00 1.1 0.6s 7.00nm 4.6mb BW06 43.89 75 eP 24 17.50 0.1 BJI 47.78 285 eP 24 47.50 -0.4 GOL 48.26 76 eP 24 52.50 0.4 RSON 48.35 57 eP 24 51.90 -0.4 NB2 67.75 357 P 27 07.00 -1.2 0.8s 2.30nm 4.4mb GUN 74.11 295 P 27 47.40 0.0 0.6s 19.00nm 5.3mb KKN 74.54 295 P 27 49.40 -0.4 DMN 74.78 295 P 27 51.20 0.0 HYB 86.49 294 eP 28 52.50 -0.7 S.D. = 0.9 on 14 of 15 obs.	MAR 12, 1990 23h 18m 14.34±0.26s 13.231 S ±7.1km 167.044 E ±8.1km DEPTH = 163.1km ( 15 depth phases) 5.1mb ( 23 obs.) VANUATU ISLANDS (186) CENTROID, MOMENT TENSOR (HRV) Data Used: GDSN L.P.B.: 10S, 20C Centroid Location: Origin Time 23:18:20.5 1.1 Lat 13.73S 0.11 Lon 166.57E 0.11 Dep 168.3 2.9 Half-duration 1.6 Moment Tensor: Scale 10**16 Nm Mrr=8.31 0.66 Mtt=-3.06 1.09 Mff=-5.26 1.01 Mrt=1.13 0.80 Mrf=-2.98 0.77 Mtf=2.22 1.08 Principal Axes: T Val=8.98 Plg=78 Azm=74 N -1.71 3 330 P -7.26 11 240 Best Double Couple: Mo=8.1*10**16 NP1:Strike=326 Dip=34 Slip=85 NP2: 152 56 93				
KTH	0.70	302	iP	34 29.46	-0.3	34 29.46				CD2 2.69 20 iPd 40 52.60 2.7 Z 10s 0.90um Pg 40 55.80 Sg 41 28.80 KMI 3.23 179 Pnc 40 58.50 0.8 Z 10s 2.80um Pg 41 00.00 Sn 41 40.50 GYA 4.01 117 Pn 41 09.20 0.6 Pg 41 20.20 Sn 41 54.00 Sg 42 12.40 LZH 7.75 7 Pn 42 05.00 3.5X XAN 7.77 42 Pn 41 59.50 -2.0 Pg 42 28.50 Sg 44 00.50 CHG 10.11 201 ePd 42 35.90 2.0 0.9s 10.29nm 5.1mb X WHN 10.39 75 eP 42 36.00 -1.6 GUN 14.85 272 P 43 36.80 -0.7 KKN 15.39 272 P 43 44.00 -0.4 DMN 15.56 271 P 43 46.00 -0.7 BJI 16.10 40 eP 43 55.00 1.8 WB5 56.90 144 eP 49 50.30 -1.9 WRA 56.94 144 P 49 52.00 -0.5 0.6s 1.60nm 4.2mb INK 75.13 19 eP 51 48.00 -0.1 YKA 84.65 16 eP 52 36.30 -2.8X 1.1s 0.80nm 3.8mb S.D. = 1.6 on 13 of 15 obs.	* MAR 12, 1990 22h 50m 18.90±0.84s 39.502 N ±8.5km 20.975 E ±7.8km DEPTH = 5.0km (geophysicist) GREECE-ALBANIA BORDER REGION (392) MD 2.5 (ATH).				
CUT	0.85	202	eP	34 30.69	-0.4	34 30.69				EVN 0.87 132 eP 50 35.50 -0.7 KEK 0.93 283 ePb 50 37.00 -0.2 KZN 1.01 37 ePg 50 38.00 -0.5 VLS 1.36 193 ePg 50 44.80 0.4 OHR 1.61 355 ePn 50 43.50 -4.6X PLG 2.09 65 ePb 50 56.00 0.9 S.D. = 1.0 on 5 of 6 obs.	MAR 12, 1990 22h 06m 01.65±1.08s 39.738 N ±11.7km 20.540 E ±8.8km DEPTH = 10.0km (geophysicist) GREECE-ALBANIA BORDER REGION (392) MD 2.5 (ATH).				
NEA	1.41	9	iP	34 37.01	-0.7	34 37.01				KEK 0.57 268 ePb 06 13.70 0.4 KZN 1.10 59 ePb 06 23.50 1.1 EVR 1.28 129 ePb 06 25.00 -0.5 OHR 1.39 8 e(Pn) 06 26.00 -1.0 S.D. = 1.7 on 4 of 4 obs.	* MAR 12, 1990 22h 18m 12.75±0.64s 51.452 N ±17.7km 174.910 W ±5.1km DEPTH = 15.0km (geophysicist) 4.9mb ( 8 obs.) ANDREANOF ISLANDS, ALEUTIAN IS. ( 7 )				
WRH	1.45	27	iP	34 37.56	-0.6	34 37.56				ADK 1.19 292 iPd 18 36.30 1.9 TTA 15.32 34 eP 21 55.00 5.2X INK 26.02 34 eP 23 45.50 -0.8 MBC 32.64 21 eP 24 45.50 0.1 PNT 34.62 71 eP 25 04.00 1.1 0.6s 6.00nm 4.7mb NEW 36.56 72 eP 25 20.00 0.6 EDM 36.64 62 iPc 25 20.90 0.9 0.7s 36.00nm 5.3mb SES 39.13 66 eP 25 41.00 0.1	MAR 12, 1990 23h 07m 55.58±0.94s 39.741 N ±11.2km 113.817 E ±9.4km DEPTH = 10.0km (geophysicist) NORTHEASTERN CHINA (658) ML 3.7 (BJI).				
GHO	1.46	168	iP	34 38.35	-0.1	34 38.35				BJI 1.84 80 Pn 08 27.00 -0.4 Pg 08 28.50 Sg 08 52.50 HHC 2.05 303 Pn 08 30.00 -0.6 Pg 08 31.60 Sg 08 59.20 TIY 2.30 209 iPnd 08 35.20 1.1 iPa 08 37.60	MAR 12, 1990 23h 16m 09.80±0.96s 51.463 N ±24.9km 174.825 W ±6.5km DEPTH = 15.0km (geophysicist) 4.7mb ( 3 obs.) ANDREANOF ISLANDS, ALEUTIAN IS. ( 7 )				
SML	1.51	157	iP	34 38.76	-0.2	34 38.76				BNR 7.92 298 eP 20 08.00 0.4 DZM 8.81 184 iP 20 21.90 2.3 iS 22 00.20 SVA 12.02 115 eP 21 13.80 12.3X BRS 19.40 221 iPc 22 30.50 0.3 0.9s 9.00nm 4.2mb iS 26 04.00 PMG 19.87 279 eP 22 29.00 -5.9X CTA 21.04 248 iPd 22 47.70 1.0 0.8s 41.04nm 4.9mb i 23 17.20 159km iS 26 32.00 RMO 21.64 230 iPd 22 54.50 1.9 CMS 26.65 224 eP 23 40.00 0.2 e 24 14.00 165km BWA 27.03 216 eP 23 42.00 -1.2 OIS 27.22 251 eP 23 44.00 -1.0 e 24 17.00 159km CAN 27.37 213 eP 23 47.10 0.8 TOO 30.94 215 eP 24 19.00 1.1 MSZ 31.34 179 P 24 23.00 1.7 WB5 31.97 254 eP 24 25.10 -2.0 i 25 00.50 168km WRA 32.01 254 Pd 24 26.30 -1.1	MAR 12, 1990 22h 50m 18.90±0.84s 39.502 N ±8.5km 20.975 E ±7.8km DEPTH = 5.0km (geophysicist) GREECE-ALBANIA BORDER REGION (392) MD 2.5 (ATH).				
SKT	1.51	217	iP	34 38.23	-0.8	34 38.23				ADK 1.19 292 iPd 18 36.30 1.9 TTA 15.32 34 eP 21 55.00 5.2X INK 26.02 34 eP 23 45.50 -0.8 MBC 32.64 21 eP 24 45.50 0.1 PNT 34.62 71 eP 25 04.00 1.1 0.6s 6.00nm 4.7mb NEW 36.56 72 eP 25 20.00 0.6 EDM 36.64 62 iPc 25 20.90 0.9 0.7s 36.00nm 5.3mb SES 39.13 66 eP 25 41.00 0.1	MAR 12, 1990 23h 07m 55.58±0.94s 39.741 N ±11.2km 113.817 E ±9.4km DEPTH = 10.0km (geophysicist) NORTHEASTERN CHINA (658) ML 3.7 (BJI).				
PWA	1.55	185	iP	34 39.63	0.1	34 39.63				BJI 1.84 80 Pn 08 27.00 -0.4 Pg 08 28.50 Sg 08 52.50 HHC 2.05 303 Pn 08 30.00 -0.6 Pg 08 31.60 Sg 08 59.20 TIY 2.30 209 iPnd 08 35.20 1.1 iPa 08 37.60	MAR 12, 1990 23h 16m 09.80±0.96s 51.463 N ±24.9km 174.825 W ±6.5km DEPTH = 15.0km (geophysicist) 4.7mb ( 3 obs.) ANDREANOF ISLANDS, ALEUTIAN IS. ( 7 )				
PLRM	1.62	172	eP	34 40.03	-0.3	34 40.03				BNR 7.92 298 eP 20 08.00 0.4 DZM 8.81 184 iP 20 21.90 2.3 iS 22 00.20 SVA 12.02 115 eP 21 13.80 12.3X BRS 19.40 221 iPc 22 30.50 0.3 0.9s 9.00nm 4.2mb iS 26 04.00 PMG 19.87 279 eP 22 29.00 -5.9X CTA 21.04 248 iPd 22 47.70 1.0 0.8s 41.04nm 4.9mb i 23 17.20 159km iS 26 32.00 RMO 21.64 230 iPd 22 54.50 1.9 CMS 26.65 224 eP 23 40.00 0.2 e 24 14.00 165km BWA 27.03 216 eP 23 42.00 -1.2 OIS 27.22 251 eP 23 44.00 -1.0 e 24 17.00 159km CAN 27.37 213 eP 23 47.10 0.8 TOO 30.94 215 eP 24 19.00 1.1 MSZ 31.34 179 P 24 23.00 1.7 WB5 31.97 254 eP 24 25.10 -2.0 i 25 00.50 168km WRA 32.01 254 Pd 24 26.30 -1.1	MAR 12, 1990 22h 50m 18.90±0.84s 39.502 N ±8.5km 20.975 E ±7.8km DEPTH = 5.0km (geophysicist) GREECE-ALBANIA BORDER REGION (392) MD 2.5 (ATH).				
CCB	1.66	28	eP	34 40.14	-0.8	34 40.14				ADK 1.19 292 iPd 18 36.30 1.9 TTA 15.32 34 eP 21 55.00 5.2X INK 26.02 34 eP 23 45.50 -0.8 MBC 32.64 21 eP 24 45.50 0.1 PNT 34.62 71 eP 25 04.00 1.1 0.6s 6.00nm 4.7mb NEW 36.56 72 eP 25 20.00 0.6 EDM 36.64 62 iPc 25 20.90 0.9 0.7s 36.00nm 5.3mb SES 39.13 66 eP 25 41.00 0.1	MAR 12, 1990 23h 07m 55.58±0.94s 39.741 N ±11.2km 113.817 E ±9.4km DEPTH = 10.0km (geophysicist) NORTHEASTERN CHINA (658) ML 3.7 (BJI).				
HDA	1.69	43	eP	34 40.73	-0.6	34 40.73				BJI 1.84 80 Pn 08 27.00 -0.4 Pg 08 28.50 Sg 08 52.50 HHC 2.05 303 Pn 08 30.00 -0.6 Pg 08 31.60 Sg 08 59.20 TIY 2.30 209 iPnd 08 35.20 1.1 iPa 08 37.60	MAR 12, 1990 23h 16m 09.80±0.96s 51.463 N ±24.9km 174.825 W ±6.5km DEPTH = 15.0km (geophysicist) 4.7mb ( 3 obs.) ANDREANOF ISLANDS, ALEUTIAN IS. ( 7 )				
NCA	1.75	132	eP	34 42.39	0.2	34 42.39				BNR 7.92 298 eP 20 08.00 0.4 DZM 8.81 184 iP 20 21.90 2.3 iS 22 00.20 SVA 12.02 115 eP 21 13.80 12.3X BRS 19.40 221 iPc 22 30.50 0.3 0.9s 9.00nm 4.2mb iS 26 04.00 PMG 19.87 279 eP 22 29.00 -5.9X CTA 21.04 248 iPd 22 47.70 1.0 0.8s 41.04nm 4.9mb i 23 17.20 159km iS 26 32.00 RMO 21.64 230 iPd 22 54.50 1.9 CMS 26.65 224 eP 23 40.00 0.2 e 24 14.00 165km BWA 27.03 216 eP 23 42.00 -1.2 OIS 27.22 251 eP 23 44.00 -1.0 e 24 17.00 159km CAN 27.37 213 eP 23 47.10 0.8 TOO 30.94 215 eP 24 19.00 1.1 MSZ 31.34 179 P 24 23.00 1.7 WB5 31.97 254 eP 24 25.10 -2.0 i 25 00.50 168km WRA 32.01 254 Pd 24 26.30 -1.1	MAR 12, 1990 22h 50m 18.90±0.84s 39.502 N ±8.5km 20.975 E ±7.8km DEPTH = 5.0km (geophysicist) GREECE-ALBANIA BORDER REGION (392) MD 2.5 (ATH).				
DDM	1.78	69	eP	34 42.12	-0.4	34 42.12				ADK 1.19 292 iPd 18 36.30 1.9 TTA 15.32 34 eP 21 55.00 5.2X INK 26.02 34 eP 23 45.50 -0.8 MBC 32.64 21 eP 24 45.50 0.1 PNT 34.62 71 eP 25 04.00 1.1 0.6s 6.00nm 4.7mb NEW 36.56 72 eP 25 20.00 0.6 EDM 36.64 62 iPc 25 20.90 0.9 0.7s 36.00nm 5.3mb SES 39.13 66 eP 25 41.00 0.1	MAR 12, 1990 23h 07m 55.58±0.94s 39.741 N ±11.2km 113.817 E ±9.4km DEPTH = 10.0km (geophysicist) NORTHEASTERN CHINA (658) ML 3.7 (BJI).				
SUA	1.82	198	iP	34 43.51	0.4	34 43.51				BJI 1.84 80 Pn 08 27.00 -0.4 Pg 08 28.50 Sg 08 52.50 HHC 2.05 303 Pn 08 30.00 -0.6 Pg 08 31.60 Sg 08 59.20 TIY 2.30 209 iPnd 08 35.20 1.1 iPa 08 37.60	MAR 12, 1990 23h 16m 09.80±0.96s 51.463 N ±24.9km 174.825 W ±6.5km DEPTH = 15.0km (geophysicist) 4.7mb ( 3 obs.) ANDREANOF ISLANDS, ALEUTIAN IS. ( 7 )				
KNK	1.86	163	iP	34 43.39	-0.2	34 43.39				BNR 7.92 298 eP 20 08.00 0.4 DZM 8.81 184 iP 20 21.90 2.3 iS 22 00.20 SVA 12.02 115 eP 21 13.80 12.3X BRS 19.40 221 iPc 22 30.50 0.3 0.9s 9.00nm 4.2mb iS 26 04.00 PMG 19.87 279 eP 22 29.00 -5.9X CTA 21.04 248 iPd 22 47.70 1.0 0.8s 41.04nm 4.9mb i 23 17.20 159km iS 26 32.00 RMO 21.64 230 iPd 22 54.50 1.9 CMS 26.65 224 eP 23 40.00 0.2 e 24 14.00 165km BWA 27.03 216 eP 23 42.00 -1.2 OIS 27.22 251 eP 23 44.00 -1.0 e 24 17.00 159km CAN 27.37 213 eP 23 47.10 0.8 TOO 30.94 215 eP 24 19.00 1.1 MSZ 31.34 179 P 24 23.00 1.7 WB5 31.97 254 eP 24 25.10 -2.0 i 25 00.50 168km WRA 32.01 254 Pd 24 26.30 -1.1	MAR 12, 1990 22h 50m 18.90±0.84s 39.502 N ±8.5km 20.975 E ±7.8km DEPTH = 5.0km (geophysicist) GREECE-ALBANIA BORDER REGION (392) MD 2.5 (ATH).				
PAX	1.89	95	eP	34 44.75	0.7	34 44.75				ADK 1.19 292 iPd 18 36.30 1.9 TTA 15.32 34 eP 21 55.00 5.2X INK 26.02 34 eP 23 45.50 -0.8 MBC 32.64 21 eP 24 45.50 0.1 PNT 34.62 71 eP 25 04.00 1.1 0.6s 6.00nm 4.7mb NEW 36.56 72 eP 25 20.00 0.6 EDM 36.64 62 iPc 25 20.90 0.9 0.7s 36.00nm 5.3mb SES 39.13 66 eP 25 41.00 0.1	MAR 12, 1990 23h 07m 55.58±0.94s 39.741 N ±11.2km 113.817 E ±9.4km DEPTH = 10.0km (geophysicist) NORTHEASTERN CHINA (658) ML 3.7 (BJI).				
TOA	1.92	123	iP	34 44.87	0.5	34 44.87				BJI 1.84 80 Pn 08 27.00 -0.4 Pg 08 28.50 Sg 08 52.50 HHC 2.05 303 Pn 08 30					



12d 23h

ASPA	0.5s	3.60nm	4.4mb		MBC	0.8s	1.40nm	4.4mb	BGF	144.21	341	ePKP	37	31.50	-0.9								
	33.03	247	eP	24	34.90	-1.4				0.8s	17.45nm												
Z	0.4s	14.00nm	5.0mb		DAG	116.39	1	iPKPd	36	38.30	-1.0	RRL	144.22	336	PKP	37	31.84	-0.9					
	19s	0.56um	4.3msz			0.5s	6.34nm					SOI	144.27	319	PKP	37	31.60	-1.1					
		iPP	25	11.60		SUF	123.37	340	ePKP	36	52.80	-0.1	ROB	144.28	334	PKP	37	30.72	-1.9				
		iPcP	27	15.00			0.6s	12.30nm				PZZ	144.43	335	PKP	37	30.61	-2.4					
		iS	29	30.10		NUR	125.40	338	iPKP	36	57.30	0.4	ENR	144.52	334	PKP	37	30.82	-2.3				
		iPcS	30	59.80			0.9s	30.40nm				STV	144.55	335	PKP	37	30.51	-2.6					
		LR	37	38.70		NB2	129.13	345	PKP	37	04.70	0.5	AGO	144.57	341	PKP	37	32.79	-0.2				
FORR	39.88	237	iPc	25	24.00	-9.7X		0.8s	8.60nm			IMI	144.58	334	PKP	37	31.74	-1.4					
	0.3s	34.00nm	5.5mb			BAO	135.02	129	ePKP	37	16.00	-0.8	ATN	144.59	320	PKP	37	32.00	-1.3				
WARB	39.99	245	iPc	25	35.40	0.7		BRG	136.57	335	iPKP	37	20.00	1.4	MAF	144.60	341	ePKP	37	33.00	0.0		
	0.4s	9.00nm	4.8mb				1.4s	14.00nm					1.1s	35.40nm									
MBL	45.65	253	eP	26	21.20	0.7		CLL	136.60	336	iPKPd	37	29.40	10.8X	TCF	144.65	342	ePKP	37	33.20	0.1		
	0.4s	11.00nm	4.8mb				1.5s	17.00nm					1.0s	34.00nm									
COOL	45.67	240	eP	26	20.00	-0.6		ZST	137.13	330	e(PKP)	37	20.10	0.4	SBF	144.81	334	ePKP	37	33.20	-0.4		
	0.4s	6.00nm	4.5mb					MOX	137.66	337	ePKP	37	22.00	1.3		1.0s	84.00nm						
KLB	48.65	239	eP	26	42.00	-1.8		KHC	138.05	334	PKP	37	22.50	1.0	PYM	144.88	340	PKP	37	34.08	0.5		
NWAO	49.34	238	eP	26	48.40	-0.6		WTS	138.19	342	ePKP	37	27.00	5.5X	LSF	144.89	342	ePKP	37	33.90	0.4		
MRWA	49.79	243	eP	26	52.00	-0.5			0.8s	14.00nm			1.2s	90.75nm									
MUN	50.02	239	eP	26	54.00	-0.2		GRF	138.58	336	ePKP	37	23.60	1.2	MFF	145.03	345	ePKP	37	34.10	0.4		
MAT	56.48	332	eP	27	41.00	-0.6		OHR	139.53	320	e(PKP)	37	16.00	-8.4X		1.0s	88.00nm						
	1.0s	40.00nm	5.2mb			ENN	139.53	342	ePKP	37	25.00	1.0	PGF	145.15	331	ePKP	37	34.40	0.2				
SSE	62.30	316	Pd	28	21.30	-0.1			1.0s	14.00nm			1.1s	68.35nm									
	0.8s	48.00nm	5.5mb			MEM	139.65	341	PKP	37	25.30	1.1	MNO	145.21	320	PKP	37	34.50	-0.1				
		pP	28	58.80	158km		KBA	139.70	332	ePKP	37	20.00	-4.7X	LBL	145.25	340	PKP	37	35.65	1.5			
VNDA	64.34	181	eP	28	22.40	-11.8X			1.0s	3.60nm			FRF	145.39	335	ePKP	37	35.00	0.6				
NJ2	64.46	315	Pd	28	36.00	0.5				e	37	26.00		1.2s	65.45nm								
	1.0s	100.00nm	5.7mb							e	40	01.70		LRG	145.60	335	ePKP	37	36.20	1.4			
		pP	29	14.00	160km					i	40	28.00		1.4s	69.70nm								
SBA	64.63	180	P	28	37.20	1.3		LJU	139.90	330	e(PKP)	37	25.50	0.6	LMR	145.63	334	ePKP	37	35.80	1.0		
WHN	66.78	312	Pd	28	51.00	0.6		VBY	139.92	329	e(PKP)	37	25.00	0.1	1.3s	111.90nm							
MDJ	66.86	332	Pd	28	51.50	0.8		RBL	140.07	331	PKP	37	21.50	-3.7X	RJF	145.75	342	ePKP	37	36.60	1.6		
DL2	66.98	323	P	28	52.40	0.9		CEY	140.17	330	e(PKP)	37	26.00	0.6	1.2s	53.55nm							
	0.8s	100.00nm	5.7mb				VOY	140.21	331	e(PKP)	37	25.00	-0.5	CAF	145.91	341	ePKP	37	37.30	2.0			
IPM	67.88	281	ePc	28	58.90	1.3		FVI	140.32	332	PKP	37	21.50	-4.0X	1.2s	23.80nm							
	1.1s	50.10nm	5.2mb			CTI	141.24	332	PKP	37	26.00	-1.4	LFF	146.31	342	ePKP	37	37.50	1.6				
GYA	70.69	304	P	29	15.20	0.5		BSF	141.78	338	ePKP	37	28.30	0.0	1.2s	41.65nm							
BJI	70.97	321	eP	29	16.50	0.6			1.0s	8.00nm			LPO	146.41	342	ePKP	37	37.60	1.5				
	1.1s	42.00nm	5.2mb			SAL	142.09	333	PKP	37	26.50	-2.2	1.2s	35.70nm									
TIY	72.02	317	Pc	29	23.40	1.1		MDI	142.31	334	PKP	37	30.00	0.9	CAI	148.98	128	ePKP	37	42.30	1.2		
	1.0s	100.00nm	5.5mb			ARV	142.51	329	PKP	37	26.00	-3.6X	ECRI	149.36	345	e(PKP)	37	47.50	6.6X				
XAN	72.52	312	P	29	25.70	0.4		VAI	142.63	335	PKP	37	24.70	-4.9X	EMON	149.51	352	e(PKP)	37	47.30	6.2X		
KMI	73.34	301	Pc	29	31.50	1.0		ORI	142.83	321	PKP	37	28.00	-2.2	EBR	150.10	339	ePKP	37	48.50	6.6X		
	1.3s	0.10nm	2.4mb X			PGD	142.84	330	PKP	37	27.50	-2.8	ESEL	150.10	335	e(PKP)	37	49.00	7.0X				
		pP	30	11.50	164km		ASS	142.96	328	PKP	37	27.00	-3.4X	EROO	150.12	339	e(PKP)	37	48.00	6.0X			
CHG	74.27	294	iPc	29	36.50	0.8		FLN	143.10	346	ePKP	37	27.90	-2.5	STS	150.21	353	e(PKP)	37	49.00	6.9X		
	1.1s	31.65nm	5.0mb			TDS	143.15	321	PKP	37	28.50	-2.3	ERUA	150.51	351	e(PKP)	37	50.00	7.4X				
CHTO	74.27	294	ePc	29	36.30	0.6			0.8s	5.35nm			ETOR	150.90	343	e(PKP)	37	50.00	6.7X				
		eP	30	16.50	165km		LDF	143.17	346	ePKP	37	28.00	-2.5	GUD	151.62	346	ePKP	37	45.20	0.7			
CD2	74.93	307	eP	29	40.00	0.7			0.8s	4.05nm			ECHE	151.69	340	e(PKP)	37	47.00	2.5				
BTO	75.16	319	P	29	41.50	1.0		SGO	143.20	323	PKP	37	28.50	-2.3	TOL	152.32	345	ePKP	37	47.00	1.7		
SPA	76.86	180	iPc	29	51.00	1.4		BOB	143.22	333	PKP	37	26.00	-4.8X	EVIA	153.05	342	e(PKP)	37	48.20	1.7		
	0.8s	60.83nm	5.4mb			BDI	143.24	331	PKP	37	27.50	-3.4X	KIC	169.41	231	PKP	38	04.00	0.2				
		i	30	31.20	164km		LOR	143.26	341	ePKP	37	29.40	-1.3	LIC	169.54	229	PKP	38	04.20	0.4			
LZH	77.16	312	Pc	29	53.00	1.2			0.8s	4.05nm			TIC	169.81	231	PKP	38	04.60	0.6				
	1.5s	94.00nm	5.3mb			SDI	143.30	326	PKP	37	27.50	-3.5X	S.D. = 1.4 on 137 of 167 obs.										
TTA	81.15	16	ePc	30	14.00	1.4		AZI	143.31	326	PKP	37	28.00	-2.9	MAR 12, 1990 23h 39m 08.19± 6.40s								
GTA	81.48	314	iPc	30	16.30	1.4		MGR	143.32	322	PKP	37	26.70	-4.3X	30.959 S ±20.4km 67.849 W ±59.4km								
PMR	82.17	20	eP	30	18.60	0.8		LBF	143.47	340	ePKP	37	29.40	-1.7	DEPTH = 33.0km (normal)								
	1.5s	69.40nm	5.2mb						0.9s	4.90nm			SAN JUAN PROVINCE, ARGENTINA (137)										
IMA	84.27	15	ePc	30	30.10	1.5		GRC	143.48	342	PKP	37	35.12	4.1X	RTLL	0.65	235	iPc	39	22.00	1.1		
	1.7s	55.60nm	5.1mb			PII	143.53	331	PKP	37	28.20	-3.0X			eS	39	33.40						
ORV	84.54	47	e(P)	30	31.50	1.2		GRR	143.53	346	ePKP	37	29.00	-2.1	CFA	0.73	207	iPd	39	23.10	1.1		
		e	31	13.00	166km				0.8s	5.35nm					eS	39	30.00						
LSA	84.58	302	P	30	33.40	2.1		CZI	143.54	321	PKP	37	28.50	-2.9	RTCB	0.97	237	eP	39	25.00	-0.6		
CMB	84.79	49	e(P)	30	32.80	1.1		SSF	143.56	341	ePKP	37	29.80	-1.4			S	39	37.00				
		e	31	13.90	164km			LSD	143.62	336	PKP	37	30.20	-1.5	RTCV	1.07	213	e(P)	39	25.50	-1.5		
FBA	85.00	18	ePc	30	32.20	0.1		LPL	143.74	336	ePKP	37	30.70	-1.2			eS	39	39.20				
		e	31	12.20	159km				0.8s	7.40nm			RTRS	1.60	299	ePc	39	34.40	0.0				
KVN	86.82	49	eP	30	43.00	1.2		LPG	143.75	336	ePKP	37	30.80	-1.2	S.D. = 1.6 on 5 of 5 obs.								
		pP	31	24.30	164km				0.8s	9.40nm			MAR 12, 1990 23h 58m 19.81± 0.97s										
LON	87.06	41	eP	31	11.40	28.8X		PCP	143.79	334	PKP	37	29.49	-2.3	5.212 S ± 7.1km 151.781 E ± 8.6km								
BRW	87.81	11	eP	30	47.50	1.9		SMF	143.81	340	ePKP	37	30.10	-1.6	DEPTH = 101.9 ± 9.0 km								
GUN	88.48	299	P	30	50.80	0.6			1.2s	17.85nm			4.7mb (10 obs.)										
KKN	88.96	299	P	30	52.80	0.5		RMP	143.83	327	PKP	37	29.50	-2.4	NEW BRITAIN REGION (192)								
DMN	89.06	299	P	30	53.40	0.6		RSP	143.84	336	PKP	37	30.00	-1.9	RAB	1.09	21	iP	58	41.00	-0.6		
NEW	90.57	40	eP	30	59.40	0.3		AVF	143.84	341	ePKP	37	30.10	-1.6			PMG	6.20	227	eP	59	51.50	1.1
		pP	31	41.20	165km				1.2s	16.35nm				CTA	15.73	199	iPc	02	00.80	3.8X			



GUMO	19.90 340 eP	02 46.00 0.3	DL2	24.83 312 eP	08 13.00 -0.7	FORR	0.9s 6.20nm	4.6mb
PJG	1.1s 433.45nm	5.7mb	Z 18s	0.90um	4.3MsZ	56.85 197 eP	12 25.60 -11.3X	
MTN	19.90 340 eP	02 46.30 0.6	N 13s	1.20um		0.4s 40.00nm		
DZM	21.75 248 eP	03 04.00 -0.3		S	12 30.00	57.76 31 eP	12 41.70 -1.3	
BRS	21.96 141 iPd	03 06.10 -0.4	SNY	25.24 320 iPd	08 17.40 -0.1	0.8s 13.70nm	5.0mb	
WB5	22.08 178 iP	03 07.50 -0.1	1.2s	200.00nm	5.6mb	BWA	58.13 177 eP	12 46.00 0.1
	22.36 228 eP	03 10.10 -0.2	Z 16s	1.40um	4.6MsZ	FBA	58.91 27 P	12 49.50 -1.5
	i	03 12.00	N 14s	1.90um		CAN	59.06 176 eP	12 52.00 -0.4
WRA	22.41 228 Pc	03 15.20 4.3X		S	12 43.00	TOA	59.22 31 eP	12 52.80 -0.5
	0.5s 7.00nm	4.2mb		sS	12 48.00	KSH	59.43 303 P	12 57.00 1.8
ASPA	25.17 221 eP	03 37.30 -0.1	CN2	25.51 326 Pd	08 20.80 0.7	MRWA	59.78 209 iPd	12 56.50 -0.9
	0.9s 12.00nm	4.3mb	1.0s	100.00nm	5.4mb	NDI	60.25 290 eP	13 01.00 0.2
	eS	07 56.70	Z 16s	2.40um	4.8MsZ	eS	21 18.00	
WARB	31.82 226 eP	04 39.00 2.0	N 14s	2.00um		BAL	60.66 208 eP	13 02.30 -1.1
MBL	34.80 240 eP	05 01.00 -1.8	E 14s	1.00um		KLB	61.08 207 eP	13 05.00 -1.2
PPR	36.14 294 iPd	05 14.00 -0.1		sP	08 33.00	HYB	62.06 278 eP	13 13.00 -0.2
GUN	71.47 302 P	09 31.00 -1.0		eS	12 47.00	MUN	62.06 208 eP	13 11.60 -1.3
	0.6s 22.00nm	5.2mb	WHN	28.01 290 Pc	08 44.00 0.9	NWAO	62.46 206 eP	13 14.00 -1.5
KKN	71.94 301 P	09 33.60 -1.1	Z 20s	1.20um	4.5MsZ	RKG	63.55 206 iPd	13 25.30 2.6
	0.6s 14.00nm	5.0mb	N 12s	1.30um		GBA	64.32 274 Pd	13 26.30 -1.8
DMN	72.04 301 P	09 34.20 -1.1		pP	08 56.00 47kmX	0.6s 7.20nm	5.0mb	
	0.8s 28.00nm	5.1mb		S	13 30.00	INK	64.84 24 eP	13 29.50 -1.2
GBA	76.10 285 Pc	10 01.30 2.8	BJI	29.10 310 eP	08 51.00 -1.8	KOD	65.49 271 eP	13 35.20 -0.9
	0.2s 0.40nm	3.9mb	1.3s	38.00nm	5.0mb	POO	65.95 280 eP	13 49.80 11.1X
FBA	82.64 22 eP	10 32.00 -0.8	TIY	31.01 304 eP	09 09.40 -0.5	MBC	68.26 15 ePc	13 52.30 0.0
WDC	90.08 49 eP	11 10.20 0.6	N 18s	2.70um		1.0s 13.00nm	5.0mb	
PRS	90.52 54 eP	11 11.00 -0.8		pP	09 19.00 34km	QUE	68.56 294 eP	13 55.00 -0.2
ORV	90.75 51 e(P)	11 12.90 0.1		S	14 17.50	MAIO	72.82 303 eP	14 22.00 1.2
MIN	90.76 50 e(P)	11 14.20 1.2	HHC	32.66 309 P	09 23.60 -0.8	GMW	74.14 45 P	14 29.00 0.9
CMB	91.47 52 ePc	11 17.80 1.6	Z 24s	2.00um	4.7MsZ	pP	14 38.00 29km	
FRI	91.91 53 eP	11 18.90 0.8	XAN	33.00 296 P	09 26.30 -1.1	BMW	74.19 46 P	14 28.90 0.4
KVN	93.34 51 eP	11 25.30 0.4	N 15s	0.80um		pP	14 38.40 31km	
YKA	96.26 28 eP	11 36.50 -1.0		S	14 45.50	RMW	74.80 45 P	14 32.80 0.8
	0.6s 1.00nm	4.5mb	BTO	33.68 308 eP	09 32.50 -0.8	pP	14 41.40 28km	
SES	98.57 40 ePc	11 47.20 -1.1	N 14s	1.00um		LON	75.03 45 P	14 32.40 -0.9
IFR	144.58 326 iPKPd	17 45.00 -1.7	E 14s	0.60um		PNT	75.56 42 eP	14 37.00 0.7
AVE	146.00 328 iPKPd	17 49.80 0.9	GYA	34.73 282 iPd	09 43.20 0.7	0.8s 16.00nm	5.1mb	
TIO	147.71 325 iPKPd	17 55.00 3.1X	N 13s	0.70um		WDC	76.59 51 e(P)	14 42.40 0.2
	S.D. = 1.1 on 30 of 33 obs.		E 13s	0.60um		ePcP	14 45.90	
				S	15 11.00	epP	14 53.00 34km	
MAR 13, 1990 00h 02m 52.75 ± 0.16s			LZH	37.41 299 eP	10 05.00 -0.1	KEV	76.78 342 eP	14 43.00 0.3
23.942 N ± 3.5km 145.035 E ± 3.7km			1.5s	70.00nm	5.3mb	LBFM	76.78 51 P	14 44.40 0.8
DEPTH = 30.3km (26 depth phases)			Z 26s	0.90um	4.5MsZ	MIN	77.34 51 eP	14 46.10 -0.4
5.2mb (27 obs.) 4.5MsZ (6 obs.)				eS	15 50.00	NEW	77.48 43 P	14 46.60 -0.4
NORTH PACIFIC OCEAN (611)			KMI	38.38 281 Pd	10 14.50 1.0	0.8s 27.60nm	5.3mb	
CENTROID, MOMENT TENSOR (HRV)			1.5s	0.10nm	2.4mb X	pP	14 55.40 28km	
Data Used: GDSN			Z 20s	0.90um	4.6MsZ	ORV	77.69 52 ePc	14 48.00 -0.3
L.P.B. 11S, 22C				pP	10 23.50 30km	epP	14 56.80 28km	
Centroid Location:				S	16 08.00	EDM	77.78 37 ePc	14 48.20 -0.4
Origin Time 00:02:54.1 1.1			MTN	39.01 202 eP	10 18.00 -0.4	0.6s 20.00nm	5.3mb	
Lot 24.02N 0.08 Lon 144.68E 0.10			GTA	41.02 303 Pd	10 35.00 -0.1	SOD	78.25 340 iP	14 51.60 0.8
Dep 15.0 FLX Half-duration 1.5			Z 18s	0.90um	4.7MsZ	MHC	78.38 54 ePc	14 52.50 0.2
Moment Tensor; Scale 10**16 Nm			NST	42.89 267 eP	10 52.10 1.7	PRS	78.95 55 ePc	14 55.50 0.2
Mrr=1.60 0.38 Mtt=-0.25 0.55			CHG	43.08 272 eP	10 50.30 -1.7	epP	15 05.20 31km	
Mff=-1.85 0.52 Mrt=0.24 1.78			1.0s	18.75nm	4.8mb	DAG	79.03 356 iPc	14 54.60 -0.3
Mrf=1.54 1.81 Mtf=-7.09 0.42			BDT	43.46 270 eP	10 54.70 -0.3	0.8s 5.22nm	4.6mb	
Principal Axes:			0.9s	60.50nm	5.4mb	CMB	79.05 53 ePc	14 56.20 0.3
T Vol= 6.51 Plg=10 Azm=222			CTA	43.78 178 iPc	10 57.00 -0.5	epP	15 05.90 31km	
N 1.64 78 3			1.0s	7.50nm	4.4mb	LLA	79.16 55 eP	14 56.00 -0.5
P -8.15 8 130				i	11 06.50 32km	FRI	79.94 54 ePc	15 00.90 0.3
Best Double Couple: Mo=7.3*10**16			QIS	44.55 187 eP	11 02.40 -1.3	ePcP	15 04.10	
NP1:Strike=266 Dip=78 Slip=179			WB5	44.78 194 eP	11 04.80 -0.8	epP	15 10.50 31km	
NP2: 356 89 12				i	11 15.20 36km	esP	15 16.10	
			WRA	44.85 194 Pc	11 05.10 -1.1	SES	80.26 39 ePc	15 02.20 0.1
GUMO	10.30 181 eP	05 23.30 1.7	0.5s	14.10nm	5.1mb	pP	15 11.00 28km	
PJG	10.30 181 eP	05 22.50 0.9	IPM	46.53 253 ePd	11 21.60 2.0	KVN	80.33 52 P	15 03.30 0.4
GUA	10.35 181 eP	05 23.50 1.2	LSA	48.08 289 P	11 34.00 1.8	pP	15 12.30 29km	
	1.0s 192.00nm	6.3mb X	ASPA	48.54 194 iPd	11 34.80 -0.4	SUF	81.11 336 eP	15 06.20 -0.1
	e(S)	07 16.00	0.5s	19.00nm	5.4mb	0.6s 29.80nm	5.5mb	
	e	07 22.20	Z 26s	1.26um	4.8MsZ	ISA	81.37 55 eP	15 17.00 8.7X
MAT	13.87 336 eP	06 05.00 -4.4X		iS	18 33.00	LRM	81.38 44 ePc	15 08.00 -0.4
	eS	08 32.00		LR	29 23.40	e	15 18.30 33km	
SSE	22.29 294 P	07 48.00 -1.1	DZM	50.25 154 iPc	11 47.00 -1.5	CLC	81.97 54 eP	15 11.00 -0.4
	0.8s 24.00nm	4.7mb	WMQ	50.52 308 iPd	11 50.70 0.4	TAB	82.04 308 eP	15 15.00 3.2X
Z 20s 1.40um		4.4MsZ	Z 24s	1.50um	4.9MsZ	SBB	82.25 56 eP	15 22.00 9.1X
N 10s 1.20um				S	19 03.50	NUR	83.01 335 iP	15 16.40 0.2
						0.8s 32.30nm	5.5mb	
PIP	23.43 261 ePd	08 02.50 2.2	SDN	50.58 37 ePc	11 49.20 -1.3	i	15 25.80 30km	
OZH	24.08 278 eP	08 07.50 0.9	MBL	51.10 211 eP	11 54.00 -0.8			
	eS	12 18.00	BRS	51.58 171 iPc	11 58.50 0.1	FFC	83.03 33 iPc	15 16.80 0.4
MDJ	24.17 332 Pd	08 08.80 1.5		i	12 07.50 30km	0.8s 19.00nm	5.3mb	
Z 20s 1.90um		4.6MsZ	WARB	52.91 201 eP	12 08.00 -0.4	IMW	83.19 45 P	15 18.70 0.8
	epP	08 18.00 33km	GUN	52.91 288 P	12 09.40 0.5	pP	15 28.30 30km	
	S	12 20.00	KKN	53.46 288 P	12 12.80 0.0	PLM	83.52 57 eP	15 29.00 9.4X
			DMN	53.64 288 P	12 14.20 0.0	DUG	83.58 49 P	15 20.00 0.3
NJ2	24.44 295 Pc	08 09.80 -0.2	SVW	54.60 31 ePc	12 20.70 0.2	pP	15 29.50 30km	
N 11s 0.70um			TTA	54.92 29 eP	12 22.70 -0.2	SLY	83.67 306 ePd	15 19.00 -1.0
	S	12 31.00	IMA	56.79 25 eP	12 35.90 -0.4	TPC	83.83 56 eP	15 21.00 0.0



BAR	83.94	57	eP	15 30.00	28km	0.7s	39.04nm	5.3mb	N 14s	2.80um		
DAU	84.55	48	P	15 21.00	-0.6	29.53	110 P	39 07.30	E 12s	1.50um		
BW06	84.60	45	P	15 25.40	0.6	1.3s	245.28nm	5.8mb				
	1.0s		4.50nm	15 25.30	0.4	29.93	318 iP	39 07.20				
MSU	84.76	50	P	15 26.40	0.6	0.5s	28.10nm	5.3mb	CD2	45.43	219 P	41 13.50 18km
MSL	85.05	308	ePd	15 32.50	5.5X	29.94	194 Pd	39 07.70				41 18.40 0.1
			i	15 41.50	28km	1.0s	100.00nm	-0.2				5.2MsZ
GLA	85.19	56	eP	15 29.00	1.2		pP	39 13.00	EDM	45.52	52 iPd	41 19.10 0.3
			e	15 38.00	28km		eS	44 00.00				5.5mb
RSSD	87.45	42	P	15 40.00	1.1	TRO	31.51	323 iP	FFC	46.50	42 iPd	41 26.30 -0.1
NB2	87.47	339	P	15 38.30	-0.2	SOD	32.03	316 iP				5.7mb
	0.9s		22.90nm			SNY	32.04	196 eP	PGC	47.32	62 eP	41 29.00 -3.9X
FRB	88.72	14	eP	15 44.00	-0.3		1.5s	100.00nm	PNT	47.66	59 eP	41 36.00 0.3
GOL	88.85	47	P	15 47.50	1.7	Z 13s		1.00um	EKA	48.47	329 Pc	41 41.70 -0.2
	1.3s		36.46nm			N 10s		1.10um				5.2mb
RSON	89.36	33	P	15 46.40	-1.2	E 11s		2.60um	SES	48.68	51 ePd	41 43.10 -0.5
	1.2s		49.20nm				pP	39 32.60	KRA	49.20	309 iPd	41 48.50 0.9
			pP	15 56.70	32km	HHC	34.42	212 Pd				6.0mb
ANMO	90.49	51	P	15 54.10	0.7	Z 16s		6.50um	Z 18s		1.40um	41 51.00 8km
ALQ	90.49	51	eP	15 53.80	0.3	N 11s		3.10um				41 56.90
	1.1s		18.99nm			E 10s		1.60um	LSA	49.20	233 P	41 58.40 2.0
KSP	92.92	330	eP	16 04.30	0.2		eS	45 20.00	OZH	49.23	200 eP	41 46.00 -2.0
			e	16 13.30	28km	BJI	34.57	206 Pd				
			e	19 48.00		Z 14s		0.12nm				
BRG	93.95	331	i(P)	16 17.30	8.5X	N 12s		5.60um	NEW	49.25	57 P	41 48.20 0.2
CLL	94.04	332	e(P)	16 10.00	0.8			2.90um				5.0mb
ZST	94.38	328	eP	16 09.50	-1.4		epP	39 54.50	KSP	49.25	313 iPd	41 48.30 0.3
			e	19 57.80		BTO	34.91	214 eP				5.7mb
KHC	95.37	330	P	16 18.60	3.1X	N 12s		4.20um	GYA	49.29	214 eP	41 48.80 0.2
VAY	96.00	320	eP	16 18.30	-0.1	E 10s		1.40um				5.2MsZ
OHK	97.16	321	eP	16 21.50	-2.3		eS	45 27.50				
KIC	137.85	312	(PKP)	22 18.60	1.7	DL2	35.11	198 eP				
ARE	145.00	85	ePKP	22 30.00	0.2		0.8s	100.00nm				
ZOBO	148.00	82	PKP	22 39.00	4.0X	Z 10s		2.60um				
	1.2s		128.38nm			N 10s		1.70um				
LPB	148.11	83	PKP	22 36.80	1.8	E 10s		1.40um				
	1.2s		140.63nm				S	45 20.00	LON	49.49	62 P	41 50.60 0.6
RTRS	148.74	109	ePKPd	22 40.30	5.2X	SUF	36.20	312 eP	BRG	49.71	315 iPd	41 52.10 0.6
RTCB	149.21	1										



	1.0s	26.30nm	5.1mb	LOR	55.11 321 eP	42 31.50	-0.5		0.9s	0.05nm	2.6mb	X
RSON	51.71 37 P	42 10.00 710kmX			1.0s 93.75nm	5.8mb		PLG	57.52 303 eP	42 49.00	-0.3	
	0.7s 77.85nm	42 05.60 -1.1		LPF	55.22 325 eP	42 32.40	-0.3	IMI	57.59 317 P	42 48.63	-1.2	
BUD	51.83 309 e(P)	42 09.00 1.4		GRC	55.23 322 P	42 33.08	0.3	KVN	57.65 62 P	42 51.00	0.5	
ECB	51.88 331 eP	42 08.40 0.5		TMA	55.28 317 ePd	42 33.90	0.5	BRK	57.69 66 e(P)	42 51.00	0.6	
SNF	51.91 322 Pc	42 09.10 0.9		LBF	55.37 321 eP	42 33.10	-0.8	BKS	57.69 66 iPc	42 51.40	0.9	
	e	43 20.10 338kmX		SSF	55.38 321 eP	42 33.40	-0.5		0.9s 57.00nm	5.6mb		
ABH	51.92 319 eP	42 08.73 0.4		DIM	55.42 301 iP	42 34.00	-0.2	Z	20s 5.00um	5.6MsZ		
TOD	51.95 318 eP	42 08.93 0.4		SAL	55.43 315 P	42 34.00	-0.2	N	20s 5.00um			
MLR	52.08 303 eP	42 11.00 1.2		MDI	55.43 316 P	42 33.50	-0.7	E	20s 1.80um			
GUN	52.17 238 P	42 10.30 -0.6		VTS	55.48 304 iPd	42 34.00	-0.8		eLO	04 10.00		
SOP	52.18 311 iPd	42 13.50 3.2X		MMK	55.51 318 ePd	42 35.60	0.4		eLR	04 17.20		
RUP	52.19 320 eP	42 10.58 0.2		MIN	55.53 64 ePd	42 35.10	-0.2	CAF	57.70 322 eP	42 50.80	0.3	
DOU	52.26 322 Pc	42 11.30 0.4		VAI	55.53 317 P	42 34.50	-0.5	SBF	57.72 317 eP	42 49.80	-0.9	
ISR	52.27 302 ePc	42 12.00 0.9		PLD	55.57 302 iPd	42 36.00	0.7		1.0s 44.00nm	5.4mb		
KTD	52.36 319 eP	42 11.98 0.3		DIX	55.59 318 ePd	42 36.10	0.3	DUG	57.88 57 P	42 52.70	0.7	
KKN	52.43 238 P	42 12.20 -0.5		GBZT	55.63 298 eP	42 35.00	-0.7	PRK	57.89 300 eP	42 51.70	-0.1	
CMP	52.51 303 iPd	42 14.00 1.1		BBTK	55.66 294 iPd	42 37.00	0.9	LFf	57.92 323 eP	42 52.10	0.1	
DMN	52.65 239 P	42 14.00 -0.4		AVF	55.67 321 eP	42 35.30	-0.6		1.1s 73.25nm	5.6mb		
LRM	52.65 54 iPd	42 14.50 0.3		EMS	55.70 318 ePd	42 36.40	0.0	AQU	57.94 312 P	42 52.60	0.3	
GWf	52.77 319 P	42 15.22 0.4		SMF	55.72 321 eP	42 35.60	-0.8	KZN	57.99 304 eP	42 51.70	-0.9	
FUR	52.83 316 iPd	42 15.90 0.7			1.1s 59.85nm	5.5mb		CMB	58.02 64 ePd	42 53.00	0.1	
	1.0s 69.00nm	5.5mb		KDZ	55.83 301 iPd	42 38.00	0.8	DAU	58.05 55 eP	42 54.20	0.8	
BHG	52.93 314 iPd	42 16.70 0.8		ORX	55.91 317 P	42 37.66	-0.2	LPO	58.09 323 eP	42 53.40	0.2	
	1.1s 68.00nm	5.5mb		ORO	55.92 317 P	42 37.50	-0.4		1.0s 84.00nm	5.7mb		
BZS	53.00 306 eP	42 17.00 0.6		RZN	55.96 302 iPd	42 39.00	0.6	CHG	58.11 221 eP	42 52.00	-1.6	
STR	53.12 319 P	42 18.37 1.1		BGF	55.98 322 eP	42 37.80	-0.4	FRF	58.17 318 eP	42 52.90	-0.8	
PSN	53.23 300 iPd	42 19.00 0.9			1.2s 84.80nm	5.6mb			1.1s 80.60nm	5.7mb		
WLS	53.37 319 P	42 19.63 0.5		MSL	56.06 284 ePc	42 43.50	4.6X	AZI	58.28 312 P	42 55.50	1.0	
CDF	53.38 319 P	42 19.73 0.4		QIZ	56.10 209 eP	42 38.00	-1.3	LRG	58.32 318 eP	42 54.50	-0.3	
KBA	53.44 314 iPd	42 20.80 0.9			N 15s 3.30um				1.0s 40.00nm	5.4mb		
	0.8s 86.00nm	5.8mb		SLY	56.13 281 ePc	42 38.50	-0.9	MHC	58.35 66 eP	42 55.60	0.3	
	i	42 26.20 18km		RSSD	56.16 48 P	42 37.50	-2.3	ARN	58.37 65 P	42 55.30	0.0	
ECH	53.59 319 P	42 21.15 0.4		KKB	56.19 303 iPd	42 40.00	0.2	DUI	58.37 311 P	42 55.50	0.2	
TAB	53.59 281 eP	42 22.00 0.9		BW06	56.20 53 P	42 40.00	-0.2	LMR	58.41 318 eP	42 54.70	-0.8	
NDI	53.65 247 iPd	42 20.80 -0.6			0.8s 10.00nm	4.9mb			1.0s 72.00nm	5.7mb		
	0.7s 75.34nm	5.8mb		LSD	56.24 318 P	42 40.84	0.4	SDI	58.47 311 P	42 55.50	-0.5	
	eS	05 37.00		LPL	56.27 318 eP	42 40.80	0.2	BRT	58.51 308 P	42 55.50	-0.7	
	eS	07 15.00			1.0s 45.00nm	5.5mb		BHD	58.63 281 ePc	42 58.50	1.5	
FEL	53.75 318 eP	42 21.84 -0.3		RDO	56.27 301 eP	42 40.00	-0.4	RDP	58.66 312 P	42 56.00	-1.3	
SLE	53.77 318 ePd	42 22.10 0.0		LPG	56.28 318 eP	42 41.00	0.2	PGF	58.67 316 eP	42 56.90	-0.6	
VITF	53.81 320 P	42 22.71 0.4			1.0s 46.00nm	5.5mb			0.9s 39.30nm	5.5mb		
MOF	53.95 319 P	42 23.56 0.1		MMB	56.30 303 iPd	42 41.00	0.4	TNP	58.79 61 P	42 58.50	0.0	
HAU	53.95 319 eP	42 23.20 -0.2		ORV	56.30 65 e(P)	42 39.70	-0.9		0.8s 17.16nm	5.2mb		
	0.8s 32.25nm	5.4mb		TCF	56.36 322 eP	42 40.60	-0.4	LCI	58.86 307 P	42 57.50	-1.1	
KAS	53.96 294 iPc	42 25.30 1.7			1.2s 65.45nm	5.5mb		SAO	58.94 66 ePd	42 59.40	0.1	
RBL	54.00 313 P	42 23.60 -0.3		MAF	56.36 322 eP	42 40.60	-0.4	LOE	58.98 218 eP	42 58.00	-1.6	
PTJ	54.01 311 iPd	42 24.30 0.4			1.2s 56.55nm	5.5mb		CBM	58.99 18 P	42 59.00	-0.5	
FVI	54.02 314 P	42 23.90 0.0		AGO	56.42 321 P	42 41.46	0.0	KEK	59.02 305 eP	42 59.20	-0.5	
BSF	54.03 319 P	42 24.07 0.0		BOB	56.45 316 P	42 41.60	-0.2	BSS	59.13 310 P	42 59.30	-1.2	
ZLA	54.06 318 ePd	42 24.20 -0.1		MFF	56.46 324 eP	42 41.40	-0.3	FRI	59.18 64 ePd	43 01.10	0.2	
ZAG	54.08 311 iPd	42 25.50 1.2			1.2s 59.50nm	5.5mb		LLA	59.22 65 ePd	43 01.80	0.6	
SAX	54.09 317 ePd	42 25.00 0.2		SKO	56.49 305 iP	42 41.20	-0.7	SGO	59.24 310 P	43 00.30	-0.9	
OGA	54.12 315 iPd	42 25.50 0.6			1.4s 56.00nm	5.4mb		EVR	59.30 303 eP	43 01.00	-0.8	
	1.0s 38.00nm	5.4mb			i	43 37.20 252kmX		PRS	59.37 66 eP	43 02.60	0.3	
LJU	54.18 312 eP	42 25.50 0.4		HVAR	56.49 310 iPd	42 40.70	-1.2	ORI	59.46 308 P	43 02.80	0.0	
BBS	54.25 318 P	42 25.74 0.1		LSF	56.51 323 eP	42 41.50	-0.6	MGR	59.59 309 P	43 02.50	-1.2	
VOY	54.33 313 eP	42 25.20 -1.1			1.0s 48.00nm	5.5mb		MMN	59.73 309 P	43 03.80	-0.8	
PVL	54.37 302 iPd	42 27.00 0.5		RSP	56.52 318 P	42 41.66	-0.6	ATH	59.73 301 eP	43 04.20	-0.4	
FLN	54.42 325 eP	42 26.00 -0.8		RSM	56.64 313 P	42 42.70	-0.2	PRI	59.74 65 ePd	43 06.00	1.1	
	1.0s 40.00nm	5.4mb		BNI	56.72 318 P	42 43.90	0.1	CSI	59.77 308 P	43 05.20	0.2	
OSS	54.47 316 ePd	42 28.10 0.6		PYM	56.73 321 P	42 44.06	0.3	EPF	59.84 323 eP	43 05.10	-0.4	
FHC	54.48 66 eP	42 28.20 0.8		MME	56.75 315 P	42 44.70	0.6		1.0s 62.50nm	5.7mb		
LOMF	54.49 319 P	42 27.39 -0.1		SFI	56.77 314 P	42 44.50	0.6	TDS	59.87 308 P	43 05.20	-0.4	
CEY	54.49 312 e(P)	42 27.00 -0.5		RRL	56.83 318 P	42 45.04	0.4	ROI	59.90 308 P	43 06.60	0.7	
LBFM	54.52 64 P	42 28.70 0.8		VAY	56.83 304 iP	42 43.60	-0.8	GOL	60.09 51 P	43 07.40	-0.1	
LDF	54.52 325 eP	42 26.70 -0.9		PGD	56.84 314 P	42 45.50	0.8		0.8s 26.79nm	5.4mb		
	1.0s 36.00nm	5.4mb		KER	56.84 279 ePd	42 45.00	0.3	APE	60.13 300 eP	43 06.00	-1.5	
LLS	54.53 317 ePd	42 28.20 0.3		PCP	56.85 317 P	42 44.01	-0.6	ARG	60.28 297 eP	43 07.70	-0.7	
IR2	54.53 276 eP	42 29.00 1.0		BDI	56.90 315 P	42 44.50	-0.4	VLS	60.29 304 eP	43 07.50	-1.0	
VBY	54.54 311 eP	42 28.00 0.3		ARV	56.95 313 P	42 44.80	-0.4	CZI	60.34 308 P	43 08.00	-0.8	
IR7	54.58 276 eP	42 29.00 0.7		CKI	57.01 317 P	42 45.00	-0.7	RSNY	60.69 24 P	43 10.10	-1.1	
TRI	54.66 313 ePd	42 28.10 -0.5		FIR	57.03 314 eP	42 46.50	0.7		1.3s 50.68nm	5.5mb		
JMB	54.77 301 iPd	42 30.00 0.5		DOI	57.14 318 P	42 44.00	-2.7	ECRI	60.74 325 iPd	43 12.20	0.6	
CTI	54.78 315 P	42 29.40 -0.3		PZZ	57.17 318 P	42 46.27	-0.7	ISA	60.76 63 eP	43 15.00	3.2X	
VDL	54.80 316 ePd	42 30.60 0.6		LBL	57.19 321 P	42 47.19	0.3	BCH	60.79 65 P	43 12.90	0.8	
IMW	54.82 54 P	42 30.90 0.6		ROB	57.22 317 P	42 45.55	-1.7	CLC	60.84 63 eP	43 13.00	0.7	
IR1	54.82 276 iPd	42 31.00 0.8		FIN	57.24 317 P	42 45.76	-1.5	ITM	60.92 303 iPd	43 11.10	-1.7	
GRR	54.85 325 eP	42 29.20 -0.8		PII	57.24 315 P	42 46.50	-0.7	NST	60.96 219 eP	43 14.00	0.8	
	1.2s 35.70nm	5.3mb		ENR	57.37 317 P	42 46.07	-2.3	HBVT	61.04 23 P	43 12.60	-0.9	
RIY	54.88 312 eP	42 30.10 -0.1		STV	57.38 317 P	42 46.17	-2.2	VLI	61.11 302 eP	43 11.20	-2.9	
QUE	55.05 258 iPd	42 32.10 0.1		ASS	57.41 313 P	42 49.00	0.4	ABL	61.34 64 P	43 16.20	0.3	
	1.2s 139.06nm	5.9mb		RJF	57.43 323 eP	42 48.40	-0.2	SOI	61.45 308 P	43 14.20	-2.1	
	eS	50 13.60			1.0s 48.00nm	5.5mb		ATN	61.50 309 P	43 14.00	-2.7	
WDC	55.07 65 ePd	42 31.70 0.0		OHR	57.45 305 ePd	42 48.00	-0.9	NPS	61.82 299 eP	43 16.00	-3.0X	
								SBB	61.85 63 eP	43 19.00	-0.2	



MAIO	148.39	22	ePKP	02	35.00	
CHG	152.79	297	ePKP	02	20.00	7.2X
				02	29.00	9.3X
S.D. = 1.1 on 22 of 34 obs.						
MAR 13, 1990 01h 04m 50.41± 0.32s						
16.611 S ±10.5km 172.530 W ± 6.1km						
DEPTH = 29.9km ( 2 depth phases)						
5.2mb ( 12 obs.) 5.2Msz ( 5 obs.)						
SAMOA ISLANDS REGION (169)						
CENTROID, MOMENT TENSOR (HRV)						
Data Used: GDSN						
L.P.B.: 14S, 25C						
Centroid Location:						
Origin Time 01:04:52.3 0.9						
Lat 16.72S FIX; Lon 172.39W FIX						
Dep 31.9 8.0 Half-duration 1.7						
Moment Tensor; Scale 10**17 Nm						
Mrr= 0.70 0.12 Mtt= 0.13 0.19						
Mff=-0.84 0.12 Mrt= 0.35 0.18						
Mrf= 1.18 0.32 Mtf=-0.11 0.12						
Principal Axes:						
T Vol= 1.40 Plg=60 Azm=294						
N 0.12 6 193						
P -1.52 29 100						
Best Double Couple:Mo=1.5*10**17						
NP1:Strike=174 Dip=17 Slip= 70						
NP2: 15 74 96						
SVA	8.73	259	eP	07	03.60	5.8X
RAR	12.91	113	P	07	51.00	-3.6X
DZM	20.56	251	iPc	09	29.60	0.1
TVO	22.27	96	eP	09	48.00	1.3
	1.5s	125.00nm				5.1mb
TBI	22.68	111	eP	09	51.00	0.3
	1.3s	180.00nm				5.4mb
PMO	23.75	90	iP	10	01.00	-0.2
	1.5s	105.00nm				5.1mb
VAH	23.98	90	iP	10	02.50	-0.9
	1.5s	80.00nm				5.0mb
TPT	24.02	90	iP	10	03.40	-0.4
	1.5s	125.00nm				5.2mb
RUV	24.22	90	iP	10	05.10	-0.6
	1.5s	105.00nm				5.2mb
CAN	38.98	234	eP	12	13.00	-2.9
WB5	50.37	258	eP	13	43.00	-4.2X
ASPA	50.55	253	iPd	13	44.40	-4.1X
	1.0s	33.00nm				5.3mb
Z	17s	1.98um				5.2MszX
			LR	34	34.30	
VNDA	62.26	186	e(P)	15	11.00	-0.5
PCI	68.33	276	ePc	15	51.50	0.0
PRS	71.46	42	ePd	16	11.20	1.0
SAO	71.68	41	eP	16	14.80	3.3X
BRK	71.86	40	eP	16	16.00	3.4X
RVR	72.72	46	eP	16	29.00	11.3X
SBB	72.81	45	eP	16	26.00	7.6X
FRI	72.92	42	eP	16	18.70	-0.1
CMB	73.12	41	eP	16	19.90	-0.2
WDC	73.42	37	ePd	16	22.50	0.8
SPA	73.49	180	eP	16	24.90	2.9X
	1.0s	16.50nm				5.0mb
CLC	73.61	44	eP	16	23.00	0.0
TPC	73.70	46	eP	16	23.00	-0.5
MIN	73.82	38	eP	16	23.60	-0.6
GLA	73.98	48	eP	16	33.00	7.9X
TNP	75.16	42	P	16	31.80	-0.3
	1.3s	38.27nm				5.2mb
KVN	75.17	41	P	16	32.10	0.0
BMW	76.89	33	P	16	41.80	0.3
RMW	78.28	32	P	16	48.60	-0.5
PMR	80.14	11	eP	16	56.60	-2.2
	1.3s	7.10nm				4.5mb
Z	20s	1.50um				5.3Msz
TTA	80.33	8	eP	17	00.30	0.4
PNT	80.59	32	eP	17	01.00	-0.5
ALO	80.94	50	eP	17	04.50	0.6
	1.2s	8.98nm				4.7mb
Z	18s	0.69um				5.0Msz
IMW	82.33	40	P	17	11.00	-0.1
LRM	82.45	38	eP	17	21.50	9.9X
CN2	82.55	320	eP	17	15.00	3.2X
	Z 20s	1.50um				5.4Msz
	N 16s	0.40um				
	E 16s	0.70um				
			pP	17	23.00	25km
SNY	82.73	317	eP	17	10.60	-2.1



FBA	83.43	10	eP	17	14.70	-1.2	CTI	150.44	354	PKP	24	39.50	4.2X	& MAR 13, 1990 03h 18m 02.90s						
IMA	83.64	8	eP	17	16.90	-0.2	VBY	150.46	349	e(PKP)	24	41.00	5.9X	36.828 N 121.428 W						
SES	85.72	34	ePd	17	27.40	-0.4	TRI	150.52	351	ePKP	24	39.90	4.7X	DEPTH = 9.0km						
EDM	86.08	31	eP	17	29.00	-0.5	VAI	150.81	358	PKP	24	40.00	4.4X	CENTRAL CALIFORNIA (39)						
BJI	86.90	313	eP	17	33.00	-0.7	MDI	150.86	357	PKP	24	43.50	7.8X	<BRK>. ML 3.3 (BRK).						
2.0s 83.00nm 5.6mb							SAL	150.98	356	PKP	24	48.50	12.6X							
Z 24s 1.27um 5.2MszX							BNI	151.64	1	PKP	24	43.00	5.9X	SAO	0.06	192	iPd	18	04.90	-0.2
TIY	88.67	310	Pc	17	42.50	0.1	SKO	152.02	337	ePKP	24	39.00	1.4			iS	18	06.75		
SNG	89.03	278	eP	17	44.90	0.5	VAY	152.14	335	ePKP	24	41.00	3.2X	LLA	0.44	118	iPc	18	11.50	-0.4
INK	89.24	14	eP	17	43.50	-0.8	PGD	152.59	353	PKP	24	49.00	10.4X	GCC	0.50	294	iPd	18	12.30	-0.7
GYA	89.35	298	iPd	17	47.00	1.1	FIR	152.73	354	ePKP	24	49.00	10.5X	PRS	0.50	175	iPd	18	12.50	-0.5
S 28 24.00							ARV	152.80	351	PKP	24	45.00	6.3X	ARN	0.53	351	iPc	18	13.20	-0.4
PSI	89.37	273	ePd	17	46.00	-0.1	OHR	153.01	337	ePKP	24	46.00	6.9X	MHC	0.54	342	iPd	18	13.60	-0.2
e 19 40.00 510kmX							1.6s 0.06nm													
XAN	90.01	306	P	17	49.00	0.2	SGO	155.19	346	PKP	24	56.00	14.1X			iS	18	23.30		
HHC	90.46	313	eP	17	51.80	1.1	MGR	155.53	345	PKP	25	00.00	17.5X	PRI	0.92	138	eP	18	21.00	0.3
KMI	92.30	295	Pc	18	00.00	0.3	SOI	157.33	342	PKP	25	06.50	21.7X	PCC	1.02	312	eP	18	21.20	-1.0
Z 20s 0.70um 5.1Msz							S.D. = 1.1 on 52 of 113 obs.							BKS	1.23	329	ePc	18	24.50	-1.3
pP 18 11.00 35km														eS 18 44.45						
CHG	93.88	288	eP	18	07.50	0.7	MAR 13, 1990 01h 29m 11.50 ± 0.33s							BRK	1.24	328	eP	18	24.50	-1.4
MAIO	130.09	304	ePKP	24	08.00	8.4X	9.822 N ± 5.3km 124.996 E ± 7.1km							ZSP	1.30	330	ePc	18	25.50	-1.5
CLL	145.10	354	ePKP	24	32.00	5.6X	DEPTH = 28.5km ( 4 depth phases)							PKEM	1.31	125	e(P)	18	25.00	-2.2
KSP	145.12	350	ePKP	24	30.00	3.5X	4.9mb ( 13 obs.) 4.6Msz ( 3 obs.)							FRI	1.39	83	iPc	18	26.70	-1.7
KRA	145.15	346	ePKP	24	26.00	-0.5	MINDANAO, PHILIPPINE ISLANDS (259)							iS 18 44.50						
e 24 33.50							DAV	2.78	168	eP	29	58.80	3.8X	CMB	1.46	34	eP	18	28.10	-1.4
BRG	145.43	353	ePKP	24	25.80	-1.2	PGP	5.39	313	eP	30	33.00	0.9	BCH	1.97	146	eP	18	34.80	-2.1
1.9s 46.00nm							0.8s 26.00nm 4.8mb							NWRM	2.00	325	eP	18	35.00	-2.1
e 24 42.70							OCP	6.13	322	eP	31	02.00	19.5X	BLP	2.41	159	eP	18	41.40	-1.7
MOX	145.89	355	ePKP	24	28.00	0.2	PPR	6.18	270	ePc	30	42.00	-1.2	ABL	2.67	137	eP	18	44.30	-2.7
e 24 33.00							BAG	7.83	327	eP	31	07.90	1.2	ORV	2.72	359	ePc	18	46.70	-0.9
e 24 42.00							SSE	21.46	351	Pc	34	00.00	0.2	KVN	3.44	49	eP	18	56.50	-1.5
MEM	146.07	2	PKP	24	36.80	8.8X	1.0s 19.00nm 4.5mb							TNP	3.58	68	eP	18	58.00	-1.9
SNF	146.09	4	ePKP	24	45.60	17.5X	Z 18s 0.60um 4.0Msz							21 obs. associated						
PRU	146.22	352	ePKP	24	26.50	-1.9	NJ2	22.84	346	Pd	34	14.00	0.5	& MAR 13, 1990 04h 27m 03.98s						
e 24 38.00							WHN	22.88	336	eP	34	14.00	0.1	60.321 N 152.274 W						
VRI	146.69	335	ePKPd	24	30.50	1.2	IPM	24.34	259	ePd	34	29.10	0.9	DEPTH = 85.5km						
ABH	146.81	360	ePKP	24	45.23	15.9X	0.8s 31.80nm 4.9mb							SOUTHERN ALASKA (2)						
GRF	146.86	356	ePKP	24	31.00	1.6	PSI	26.85	256	ePd	34	52.00	0.2	<AGS-P>.						
Z 22s 0.40um 5.2Msz							e 36 30.00							RDT	0.26	346	iP	27	16.28	-0.7
KHC	147.19	353	iPKPd	24	32.30	2.3	XAN	28.26	331	P	35	03.00	-1.4			iS	27	16.22		
FLN	147.28	10	ePKP	24	33.10	3.0X	CD2	28.82	320	eP	35	08.00	-0.7	RED	0.27	292	eP	27	16.41	-0.6
1.0s 8.00nm							TIY	29.99	340	eP	35	19.00	-1.0			eS	27	16.27		
MLR	147.31	336	ePKP	24	32.00	1.6	N 20s 1.00um							NNL	0.56	119	iP	27	19.68	0.7
LDF	147.50	9	ePKP	24	35.00	4.5X	WB5	30.92	163	eP	35	27.90	-0.4	NKA	0.66	50	iP	27	21.15	1.2
1.0s 14.00nm							i 35 36.20 29km							SPU	0.87	7	iP	27	21.36	-0.8
ZST	147.52	348	ePKP	24	33.80	3.3X	WRA	30.98	163	Pd	35	28.50	-0.3			eS	27	21.36		
GRR	147.58	10	ePKP	24	34.30	3.7X	0.6s 2.90nm 4.3mb							CKL	0.88	358	eP	27	21.59	-0.8
1.0s 20.00nm							BJI	31.10	347	eP	35	29.00	-0.6	XLV	0.91	162	eP	27	22.01	-0.6
VKA	147.61	349	ePKP	24	41.50	10.8X	1.5s 39.00nm 5.0mb									eS	27	22.51		
SRO	147.63	346	ePKP	24	33.30	2.6X	SNY	31.90	358	eP	35	32.20	-4.4X	CRP	0.95	3	iP	27	22.56	-0.7
e 24 41.20							HHC	33.11	341	Pd	35	47.60	0.2			eS	27	22.56		
CMP	147.85	336	ePKPd	24	45.00	13.8X	OIS	33.43	155	eP	35	49.00	-1.2	CNPM	0.95	146	eP	27	22.51	-0.6
LPF	147.89	11	ePKP	24	36.30	5.2X	i 35 57.90 31km							CGLM	1.00	7	iP	27	22.94	-0.8
1.2s 29.75nm							ASPA	34.40	165	iPd	35	59.40	0.8			eS	27	23.77		
BBTK	148.08	322	ePKP	24	35.00	3.2X	0.8s 10.00nm 4.8mb							SLKM	1.04	79	eP	27	23.27	-0.8
SOP	148.12	348	ePKP	24	33.80	2.3	MDJ	34.89	6	eP	36	01.70	-0.9	NCG	1.09	3	iP	27	23.86	-1.0
HAU	148.68	1	ePKP	24	38.60	6.2X	CTA	36.35	145	eP	36	15.50	0.3	PDB	1.10	242	iP	27	23.57	-1.3
0.8s 8.05nm							e 36 23.50 27km									iS	27	23.90		
BZS	148.75	341	ePKP	24	35.50	3.0X	GTA	37.05	327	eP	36	22.00	1.0	AUL	1.11	212	eP	27	24.71	-0.2
FEL	148.82	359	ePKP	24	39.61	6.8X	Z 21s 1.10um 4.6Msz							SUA	1.37	32	iP	27	27.75	-0.6
BSF	148.86	1	ePKP	24	39.00	6.2X	FORR	40.55	176	iPc	36	40.10	-9.9X			iS	27	27.75		
1.0s 8.00nm							GUN	40.92	302	P	36	53.90	0.2	SEW	1.43	98	iP	27	27.77	-1.2
KBA	149.23	352	ePKP	24	44.00	10.5X	0.8s 20.00nm 4.9mb									eS	27	27.77		
LOR	149.28	5	ePKP	24	40.40	7.0X	KKN	41.39	301	P	36	57.20	-0.2	CDD	1.56	207	eP	27	29.73	-1.0
1.0s 10.00nm							HYB	45.67	285	eP	37	31.50	-0.4	PMS	1.62	54	eP	27	30.81	-0.8
SSF	149.46	5	ePKP	24	40.70	7.1X	GBA	46.67	279	P	37	40.00	0.2	SKT	1.70	12	eP	27	31.21	-1.4
1.0s 8.00nm							0.4s 1.40nm 4.3mb													
LBF	149.58	5	ePKP	24	41.20	7.4X	WMQ	46.81	323	P	37	41.40	0.7	PWA	1.77	40	eP	27	32.70	-0.8
1.0s 6.00nm							Z 21s 1.30um 4.9Msz													
AVF	149.71	6	ePKP	24	41.00	7.0X	CAN	50.31	154	eP	38	09.20	1.4	SVW	1.83	297	eP	27	32.05	-2.2
0.8s 4.05nm							i 38 17.60 28km							PLRM	1.99	49	eP	27	34.76	-1.7
FVI	149.78	353	PKP	24	38.00	4.0X	MAIO	64.53	305	eP	39	48.00	-0.5	GHO	2.19	47	eP	27	37.52	-1.7
RBL	149.83	352	PKP	24	38.00	3.7X	KEV	83.62	340	eP	41	40.00	1.8	CUT	2.30	24	eP	27	39.76	-0.9
BGF	149.89	6	ePKP	24	41.50	7.2X	SOD	84.22	337	iP	41	41.80	0.5	SML	2.43	50	eP	27	40.75	-1.7
0.8s 8.05nm							INK	85.16	21	ePc	41	46.20	0.2	VZW	2.91	73	eP	27	46.89	-2.2
SMF	149.90	5	ePKP	24	41.20	6.9X	SUF	85.38	333	eP	41	46.30	-0.9	KLU	3.32	67	eP	27	52.02	-2.7
1.2s 11.90nm							0.8s 30.70nm 5.6mb							TOA	3.45	56	eP	27	54.51	-2.1
PTJ	149.95	348	ePKP	24	39.00	4.5X	0.4s 1.40nm 4.3mb							PAX	4.19	48	eP	28	05.20	-1.8
ZAG	150.02	348	ePKP	24	38.00	3.5X	MBC	86.42	12	eP	41	52.50	0.3	29 obs. associated						
LSF	150.04	8	ePKP	24	41.70	7.2X	1.0s 6.00nm 4.8mb													
1.0s 11.00nm							NUR	86.58	331	iP	41	52.70	-0.4							
LJU	150.07	350	e(PKP)	24	35.00	0.4	0.7s 18.70nm 5.4mb													
VOY	150.18	351	e(PKP)	24	42.00	7.2X	NB2	92.60	334	P	42	20.00	-1.6							
MAF	150.20	7	ePKP	24	42.40	7.6X	0.8s 5.40nm 5.0mb													
1.0s 7.00nm							S.D. = 0.9 on 34 of 38 obs.													
CEY	150.38	350	e(PKP)	24	41.00	5.9X								* MAR 13, 1990 04h 57m 21.01 ± 0.52s						
														15.579 N ± 16.2km 92.406 W ± 7.8km						
														DEPTH = 180.4 ± 9.3 km						
														4.0mb ( 1 obs.)						



13d 04h

## MEXICO-GUATEMALA BORDER REGION (62)

TPX	0.68	168	iP	57	45.25	-1.7
			iS	58	04.59	
SCX	1.17	349	iP	57	50.09	-0.2
			iS	58	10.12	
ITG	1.80	123	iPd	57	57.20	0.6
			S	58	31.00	
BVA	1.93	118	iPd	57	58.00	-0.1
			S	58	32.00	
MMG	1.96	122	iPc	57	59.25	0.9
GCG	2.06	118	ePc	57	59.30	0.0
REC	2.14	122	iPd	58	01.25	1.0
SLP	2.21	112	iPd	58	00.80	-0.2
CMG2	2.69	110	iPd	58	06.70	0.1
MYT	2.73	124	iP	58	03.00	-4.0X
PSM	2.77	294	iP	58	05.50	-1.9
			iS	58	38.62	
OZG	3.07	107	iPc	58	11.10	-0.1
OXX	4.41	290	(P)	58	41.50	13.3X
IIT	6.59	302	iP	58	57.50	0.6
PPM	6.88	301	iP	59	01.50	0.6
ACX	7.27	281	iP	59	04.50	-1.2
III	7.31	293	iP	59	06.50	0.2
UNM	7.47	301	(P)	59	09.00	0.5
CRX	7.91	300	(P)	59	06.50	-8.0X
IIJ	8.12	302	iP	59	19.00	1.7
MRX	9.33	297	iP	59	34.00	1.3
RSCP	20.85	16	eP	01	50.00	0.0
KVN	32.47	321	eP	03	37.70	1.2
			e	04	15.90	
YKA	49.41	347	eP	05	52.20	-1.8
	0.5s	2.40nm			4.0mb	
INK	58.82	343	ePc	07	01.20	-1.1
	S.D. = 1.1	on 22 of 25 obs.				

\* MAR 13, 1990 06h 09m 45.04±0.62s  
25.009 S ± 5.2km 69.068 W ± 17.6km  
DEPTH = 33.0km (normal)  
NORTHERN CHILE (123)

ANT	1.79	316	iP	10	14.20	0.1
			iS	10	31.20	
RTRS	5.15	184	ePc	11	03.30	1.4
RTLL	6.32	175	iPc	11	17.70	-0.7
CFA	6.61	174	ePc	11	22.00	-0.5
			S	11	52.00	
RTCV	6.84	176	e(P)	11	25.50	-0.2
CCH	8.06	20	P	11	44.00	0.9
FCH	8.36	187	eP	11	52.50	5.3X
LPB	8.48	6	eP	11	50.00	1.0
ZOBO	8.74	6	P	11	51.00	-1.7
ARE	8.80	345	eP	11	53.00	-0.3
LNV	9.15	192	eP	12	02.00	4.3X
	S.D. = 1.1	on 9 of 11 obs.				

? MAR 13, 1990 06h 16m 21.02±1.20s  
35.330 N ± 32.0km 25.146 E ± 8.9km  
DEPTH = 10.0km (geophysicist)  
CRETE (370)  
MD 3.6 (ATH).

NPS	0.39	100	iPbc	16	28.30	-0.7
VAM	0.78	276	ePb	16	36.50	0.3
KAP	1.67	82	ePb	16	51.30	0.9
VLI	2.26	308	ePn	16	58.50	-0.5
	S.D. = 1.3	on 4 of 4 obs.				

\* MAR 13, 1990 08h 15m 10.90±0.61s  
19.793 N ± 15.6km 71.316 W ± 9.2km  
DEPTH = 33.0km (normal)  
4.3mb (3 obs.)  
DOMINICAN REPUBLIC REGION (88)  
MD 4.3 (SDD). Felt at Mao, Monte Cristi and Villa Vasquez.

MAVI	1.43	112	P	15	35.50	0.7
			S	15	58.00	
DR08	1.47	124	P	15	35.00	-0.3
			S	15	57.00	
SACA	1.74	117	P	15	39.50	0.2
			S	16	04.00	
LRS	4.48	109	P	16	18.00	-0.4
PORP	4.75	111	P	16	22.10	0.0
STH	5.48	253	eP	16	31.50	-0.9
			eS	17	45.60	
UPA	13.37	218	eP	18	25.80	4.9X

ANMO	34.46	303	P	21	59.70	1.7
RSON	35.69	336	P	22	07.50	-0.5
	0.7s	3.03nm			4.3mb	
LPB	36.24	175	eP	22	21.00	7.6X
KVN	44.50	306	P	23	22.80	1.5
NEW	46.44	319	P	23	36.80	0.4
	0.8s	4.95nm			4.5mb	
YKA	51.95	336	eP	24	16.30	-2.3
	0.9s	1.00nm			3.8mb	
	S.D. = 1.2	on 11 of 13 obs.				

MAR 13, 1990 08h 44m 42.36±1.43s  
19.928 N ± 40.3km 71.313 W ± 31.9km  
DEPTH = 33.0km (normal)  
3.9mb (2 obs.)

DOMINICAN REPUBLIC REGION (88)  
MD 4.5 (SDD). Felt at Mao, Monte Cristi and Villa Vasquez.

MAVI	1.49	117	P	45	08.00	1.0
			S	45	28.00	
DR08	1.55	128	P	45	07.30	-0.6
SACA	1.81	121	P	45	12.00	0.3
			S	45	36.00	
LRS	4.53	110	P	45	51.00	0.6
PORP	4.80	112	P	45	53.00	-1.2
NEW	46.35	319	P	53	07.50	0.4
	1.0s	3.75nm			4.3mb	
YKA	51.83	336	eP	53	48.70	-0.4
	0.6s	0.40nm			3.6mb	
	S.D. = 1.0	on 7 of 7 obs.				

MAR 13, 1990 09h 20m 49.25±0.69s  
35.005 N ± 7.2km 3.779 W ± 6.5km  
DEPTH = 10.0km (geophysicist)  
STRAIT OF GIBRALTAR (385)  
mbLg 2.8 (MDD).

EMEL	0.74	66	iP	21	03.60	-0.1
			eS	21	13.00	
TAF	1.14	99	iPg	21	12.00	1.4
			eSn	21	27.00	
			iSg	21	29.00	
NKM	1.41	289	iPg	21	15.00	0.1
			iSg	21	36.00	
IFR	1.86	217	iPn	21	22.00	0.4
			iSn	21	43.50	
EJIF	1.99	317	ePn	21	23.70	0.4
			eSn	21	49.00	
AFC	2.25	5	ePn	21	26.50	-0.8
EPRU	2.28	329	ePn	21	28.00	0.4
			eSn	21	54.00	
ENIJ	2.34	32	ePn	21	26.50	-1.8
			eSn	21	53.00	
EHOR	3.05	338	ePn	21	39.70	1.4
			eSn	22	14.20	
AVE	3.46	242	iPn	21	51.00	6.8X
			iSn	22	23.00	
TIO	5.01	217	iPn	22	05.00	-1.4
			iSn	23	02.00	
	S.D. = 1.2	on 10 of 11 obs.				

MAR 13, 1990 09h 23m 12.41±0.26s  
7.448 N ± 4.7km 126.483 E ± 7.1km  
DEPTH = 171.3km (2 depth phases)  
4.9mb (17 obs.)

MINDANAO, PHILIPPINE ISLANDS (259)

DAV	0.97	248	iPd-	23	36.00	-3.3X
CVP	11.16	336	eP	25	55.00	6.8X
GUMO	19.07	70	eP	27	27.00	2.8
PJG	19.07	70	eP	27	27.00	2.8
MTN	20.68	167	eP	27	41.00	0.5
KNA	23.16	174	eP	28	05.00	0.3
SSE	24.04	349	eP	28	12.30	-0.8
	1.5s	49.00nm			4.9mb	
NJ2	25.49	345	Pd	28	26.40	-0.1
WHN	25.64	335	P	28	28.50	0.7
LOE	26.09	295	eP	28	32.00	-0.1
PMG	26.54	129	eP	28	35.00	-1.2
GYA	26.70	317	iPc	28	38.60	0.9
WB5	28.24	164	eP	28	50.00	-1.6
WRA	28.30	164	Pc	28	50.90	-1.1
	0.5s	2.20nm			4.1mb	
KMI	28.69	311	Pc	28	56.50	0.7
	2.0s	0.10nm			2.2mb X	
CHG	29.05	296	eP	28	58.90	0.1

TIA	29.88	345	P	29	04.30	-1.6
OIS	30.67	155	eP	29	12.00	-1.1
			e	29	47.60	171km
MAT	30.87	19	eP	29	12.00	-2.7
XAN	31.04	331	iPc	29	15.00	-1.1
CD2	31.57	321	iPc	29	20.80	-0.1
	1.0s	100.00nm			5.5mb	
DL2	31.62	353	eP	29	20.50	-0.6
	0.9s	100.00nm			5.6mb	
ASPA	31.76	167	eP	29	21.00	-1.5
	0.6s	4.00nm			4.3mb	
			iPP	29	50.00	
			eS	34	12.70	
TIY	32.71	339	eP	29	29.90	-0.8
N	13s	1.00um				
WARB	33.43	180	eP	29	37.00	0.1
CTA	33.57	145	iPc	29	38.00	-0.2
			i	30	14.50	172km
BJI	33.74	346	eP	29	38.50	-0.9
	1.0s	54.00nm			5.2mb	
LZH	35.23	327	iPc	29	53.50	1.2
	2.0s	0.12nm			2.2mb X	
HHC	35.82	341	Pc	29	57.00	-0.2
	1.0s	100.00nm			5.5mb	
BTO	36.14	339	eP	30	00.00	0.2
CN2	36.22	359	eP	29	58.60	-1.8
MDJ	37.12	4	Pc	30	08.00	0.1
MRWA	37.83	195	eP	30	14.70	0.7
	0.5s	9.00nm			4.7mb	
FORR	38.11	178	eP	30	05.00	-11.3X
COOL	38.45	187	eP	30	19.00	-0.2
BAL	38.98	193	eP	30	24.00	0.4
KLB	39.70	192	eP	30	30.00	0.5
GTA	39.83	327	iPc	30	31.60	1.0
	1.0s	100.00nm			5.4mb	
MUN	40.41	194	eP	30	34.00	-1.3
NWAO	41.10	192	eP	30	42.00	1.0
BRS	42.98	145	iP	30	56.00	-0.4
			e	31	07.50	41kmX
HYB	47.73	287	iPc	31	34.20	0.1
	0.6s	33.30nm			5.1mb	
KOD	48.48	277	eP	31	41.00	0.7
GBA	48.54	282	Pc	31	39.10	-1.3
	0.7s	22.10nm			4.9mb	
DZM	48.93	128	iPc	31	43.00	-0.4
WMO	49.58	323	P	31	48.70	0.6
NDI	50.95	301	iPc	31	57.20	-1.4
	0.5s	161.97nm			5.9mb X	
POO	52.29	288	iPc	32	07.80	-0.9
QUE	60.01	301	iPc	33	03.50	-0.2
MAIO	67.10	306	iPc	33	50.20	0.4
			eS	42	12.00	
BHD	79.37	302	ePd	35	03.50	2.6
MSL	80.27	306	ePd	35	06.50	0.8
INK	86.82	22	eP	35	38.00	-0.2
SOD	86.96	338	iP	35	38.70	-0.2
PRNI	87.56	300	ePc	35	44.00	1.4
MBH	87.74	300	eP	35	45.00	1.7
SUF	88.15	333	eP	35	44.40	-0.3
	0.5s	4.70nm			4.7mb	
MBC	88.40	13	eP	35	46.50	0.8
	0.7s	5.00nm			4.6mb	
NUR	89.35	331	eP	35	49.00	-1.4
VRI	91.45	316	ePd	36	02.00	1.6
DAG	93.58	352	iPc	36	08.60	-1.0
	0.7s	6.85nm			4.9mb	
HFS	94.63	332	eP	36	13.70	-1.0
	0.4s	1.90nm			4.7mb	
NB2	95.37	334	P	36	17.20	-1.0
	0.8s	2.70nm			4.6mb	
VAY	95.45	313	iP	36	18.30	-0.5
YKA	96.23	24	eP	36	21.00	-1.0
	0.9s	1.70nm			4.4mb	
KIC	129.45	285	(PKP)	42	04.40	1.1
	0.6s	7.00nm				
TIC	129.64	285	(PKP)	42	04.80	1.1
	0.6s	6.00nm				
LIC	129.76	284	(PKP)	42	05.00	1.1
	0.6s	7.50nm				
ZOBO	163.24	123	PKP	42	59.00	2.3
S.D. = 1.2 on 66 of 69 obs.						



YUNNAN PROVINCE, CHINA  
ML 4.5 (BJI).

(318)

KMI	3.26	85	Pnc	46	56.50	-0.3
Z	10s		2.90um			
			Pg	47	05.00	
			Sg	47	46.00	
CHG	6.04	182	ePn	47	37.00	1.0
			ePg	47	58.20	
			iSg	48	18.50	
GYA	6.95	75	Pn	47	47.80	-1.2
			Sn	49	03.80	
			Sg	49	41.00	
CD2	7.26	33	ePn	47	53.30	0.1
			Pg	48	18.20	
BDT	7.60	181	eP	47	57.20	-0.7
	0.9s	151.40nm				6.2mb X
LOE	7.81	162	ePn	48	10.00	9.1X
			ePg	48	32.00	
			eSg	50	12.00	
GUN	12.28	287	P	49	02.00	-0.7
XAN	12.47	41	eP	49	10.70	5.8X
KKN	12.78	286	P	49	09.80	0.5
	0.8s	30.00nm				5.6mb X
DMN	12.91	285	P	49	10.60	-0.4
WHN	14.58	64	P	49	34.80	2.0
	N 12s		1.50um			
	E 12s		0.70um			
			pP	49	39.00	
BJI	20.79	39	eP	50	48.00	-0.3
WMQ	21.10	336	P	50	52.60	1.1
SNY	26.35	44	eP	51	41.30	-1.1
WB5	56.15	139	eP	55	46.80	0.0
WRA	56.18	139	Pd	55	47.10	0.1
	1.0s	5.20nm				4.5mb
NB2	67.59	328	P	57	02.80	-0.4
	0.7s	2.30nm				4.5mb
	S.D. = 0.9	on 15 of 17 obs.				

\* MAR 13, 1990 10h 26m 07.56±0.92s  
28.409 S ± 6.8km 71.449 W ± 15.9km  
DEPTH = 33.0km (normal)  
3.6mb (1 obs.)

## NEAR COAST OF CENTRAL CHILE

(135)

RTS	2.47	136	iPd	26	47.10	0.8
RTCB	3.83	144	iPd	27	06.00	0.2
RTLL	3.89	139	iPc	27	06.40	-0.2
			iS	27	49.30	
ZON	3.94	143	eP	27	08.00	0.7
CFA	4.23	140	iP	27	11.00	-0.4
			eS	27	55.00	
RTCV	4.27	144	ePc	27	11.90	0.0
JACH	4.32	170	eP	27	17.00	4.2X
ROCH	4.56	175	iP	27	18.50	2.2
			iS	28	14.50	
IHA	4.60	182	eP	27	23.00	6.4X
			iS	28	22.20	
ANT	4.78	11	iP	27	12.50	-6.5X
			iS	28	33.20	
FCH	5.00	169	eP	27	23.50	0.9
			iS	28	22.50	
LCCH	5.05	181	eP	27	20.50	-2.5
			i	28	16.50	
SAN	5.07	173	eP	27	23.70	0.3
			iS	28	17.50	
TACH	5.25	175	iPc	27	24.30	-1.5
			iS	28	21.00	
PCH	5.26	171	iP	27	27.90	1.9
			iS	28	32.50	
LNV	5.53	180	eP	27	28.00	-1.7
			iS	28	33.50	
CHCH	5.55	173	eP	27	30.00	0.0
			iS	28	27.50	
ARE	11.89	360	eP	29	01.00	2.9
ZOBO	12.47	15	P	29	04.00	-2.1
Z	22s		0.20um			
			LR	33	42.00	
BAO	25.13	65	eP	31	30.00	-1.3
YKA	96.94	341	eP	39	36.00	-0.2
	0.5s	0.10nm				3.6mb
WRA	125.85	210	PKPd	45	20.90	12.7X
	0.6s	1.10nm				
	S.D. = 1.6	on 18 of 22 obs.				

\* MAR 13, 1990 10h 42m 55.33±0.79s  
43.087 N ± 13.0km 0.606 W ± 5.9km

## DEPTH = 10.0km (geophysicist)

## PYRENEES

(378)

## MD 1.0 (STR).

ESCF	0.02	110	Pg	42	57.00	-0.3
ATE	0.07	269	Pg	42	57.35	-0.4
			Sg	42	58.78	
OGE	0.13	50	Pg	42	58.76	0.3
			Sg	43	02.64	
ISSF	0.15	247	Pg	42	59.28	0.3
MADF	0.17	291	Pg	42	59.13	0.0
			Sg	43	02.16	
	S.D. = 0.5	on 5 of 5 obs.				

MAR 13, 1990 12h 04m 52.43±0.38s  
39.997 N ± 4.2km 22.488 E ± 3.4km

## DEPTH = 10.0km (geophysicist)

## GREECE

(364)

## ML 4.0 (ATH), 4.0 (SKO).

KZN	0.63	300	iPbd	05	04.00	-1.2
PLG	0.82	63	iPgc	05	09.00	0.6
NEO	0.89	140	ePb	05	09.40	-0.2
EVR	1.20	206	ePb	05	11.00	-3.9X
VAY	1.32	3	iPnc	05	16.70	-0.1
			i	05	24.60	
			iSn	05	35.00	
KBN	1.42	297	iPnd	05	18.80	0.5
LSK	1.46	277	iPnd	05	18.60	-0.3
OHR	1.70	311	ePnd	05	22.60	0.2
			iSn	05	44.50	
			Lg	06	01.40	
MMB	1.85	30	iPc	05	25.00	0.6
			iSg	05	49.00	
SRN	1.92	267	iPnd	05	27.40	2.0
BERA	2.06	291	ePn	05	29.50	2.0
KEK	2.09	263	ePn	05	29.00	1.1
SKO	2.13	338	iPn	05	28.20	-0.3
			iPg	05	35.20	
			i	05	56.00	
			iSn	06	01.20	
			iSb	06	10.00	
			iSg	06	13.50	
			Lg	06	30.60	
ATH	2.24	154	ePb	05	30.60	0.5
PHP	2.29	318	iPnd	05	30.10	-0.8
VLO	2.34	283	ePn	05	32.50	1.0
VLS	2.34	220	ePg	05	33.80	2.2
RZN	2.39	44	iPc	05	33.00	0.6
TIR	2.41	305	ePn	05	34.00	1.5
RDO	2.59	63	iPnc	05	34.50	-0.6
VTS	2.65	12	iPd	05	37.00	1.0
			iS	06	08.00	
LACI	2.67	309	iPnd	05	38.50	2.3
PLD	2.69	38	iPc	05	38.00	1.5
			Sg	06	20.00	
KDZ	2.77	52	iP	05	37.00	-0.7
			iS	06	10.00	
PUK	2.83	317	ePn	05	39.50	1.0
ITM	2.85	189	ePb	05	40.00	1.2
PRK	3.02	103	ePn	05	41.40	0.3
SDA	3.03	313	ePn	05	44.30	3.0X
DIM	3.08	47	iP	05	52.00	10.0X
ULC	3.14	310	ePn	05	45.40	2.5
			eSn	06	23.00	
PVY	3.21	325	ePn	05	44.50	0.5
			eSn	06	22.70	
VLI	3.29	174	ePn	05	44.00	-1.1
TTG	3.44	316	ePn	05	48.30	1.2
			eSn	06	29.50	
IVA	3.47	327	ePn	05	48.00	0.4
			eSn	06	29.00	
LCI	3.49	277	P	05	45.50	-2.3
BDV	3.59	311	ePn	05	51.30	2.1
			eSn	06	31.20	
APE	3.77	140	ePn	05	51.00	-1.0
PVL	3.86	33	eP	05	52.00	-1.1
HCV	3.88	310	ePn	05	55.00	1.6
			eSn	06	40.00	
PLE	4.06	326	ePn	05	56.00	0.1
			eSn	06	42.00	
SMG	4.09	123	ePn	05	56.00	-0.3
BRT	4.13	284	P	05	49.50	-7.4X
BRY	4.15	316	ePn	05	57.20	-0.1
			eSn	06	46.40	
BAI	4.43	286	P	05	59.00	-2.1

ROI	4.58	267	P	06	09.90	6.5X
ORI	4.64	273	P	06	06.00	1.8
TDS	4.75	268	P	06	06.50	0.7
CSI	4.77	269	P	06	07.20	1.0
VAM	4.78	163	ePn	06	00.00	-6.2X
CZI	4.97	263	P	06	08.60	-0.2
			eSn	07	06.50	
MMN	5.00	271	P	06	10.00	0.8
BEO	5.05	343	eP	06	25.50	15.6X
BUC	5.16	30	ePd	06	46.00	34.5X
MGR	5.32	274	P	06	13.50	-0.4
NPS	5.34	151	ePn	06	17.00	2.9X
SOI	5.37	251	P	06	13.50	-0.9
			eSn	07	10.50	
GZR	5.40	2	ePd	06	19.00	4.0X
SGO	5.52	278	P	06	15.50	-1.1
HVAR	5.53	307	iPn	06	13.90	-2.9
MTUR	5.56	19	eP	06	19.00	1.7
PSN	5.62	47	eP	06	17.00	-1.1
BZS	5.65	354	eP	06	17.50	-1.0
ATN	5.77	254	P	06	16.50	-3.6X
ISR	5.95	29	eP	06	24.50	1.9
TLB	6.16	40	eP	06	30.00	4.4X
BLY	6.16	322	eP	06	30.70	5.1X
DUI	6.31	288	P	06	27.00	-0.9
VRI	6.64	27	ePd	06	33.00	0.6
SDI	6.79	287	P	06	33.50	-1.2
AZI	7.13	289	P	06	38.50	-0.8
PIJ	7.60	323	eP	06	43.00	-2.9
RDP	7.61	287	P	06	47.00	0.9
VBY	7.65	318	ePn	06	49.00	2.4
ARV	7.95	299	P	06	48.00	-2.8
ASS	7.99	296	P	06	50.00	-1.3
CEY	8.24	317	e(Pn)	06	57.00	2.1
			e(Sn)	08	27.00	
TRI	8.58	315	e(P)	06	56.60	-2.9
			e	08	31.30	
VOY	8.71	317	ePn	06	59.20	-2.3
			eSn	08	36.00	
ZST	9.06	337	eP	07	11.10	5.0X
RBL	9.15	318	P	07	01.50	-6.0X
CTI	9.97	311	P	07	09.50	-9.4X
SAL	10.42	306	P	07	16.50	-8.4X
KHC	11.12	328	eP	07	32.50	-1.9
LPG	12.80	301	eP	08	05.80	8.4X
	0.8s	6.05nm				4.9mb X
LPL	12.82	301	eP	08	05.20	7.6X
	0.6s	3.60nm				4.8mb X
CLL	13.10	333	e(P)	08	08.00	7.0X
AVF	15.46	302	eP	08	35.20	3.2X
	1.0s	13.00nm				4.2mb
SLL	21.28	347	eP	09	37.60	-3.4X
	1.6s	72.90nm				4.8mb
NB2	22.19	345	P	09	48.70	-1.4
	0.7s	3.00nm				3.



13d 13h

MSZ	3.60	27	P	31	36.00	0.9
TMP	4.75	42	P	31	49.00	-2.5
CBZ	5.17	155	iPc	31	57.10	-0.2
			iSc	32	48.20	
MCO	7.82	210	iPc	32	33.70	-1.0
CNB	17.46	310	eP	34	44.00	1.0
			eTT	49	48.00	
CAN	17.65	309	eP	34	45.20	0.0
			eTT	49	46.00	
TOO	18.00	298	e(P)	34	50.00	0.4
			eTT	48	57.00	
COO	20.27	324	eP	35	13.00	-2.8
BRS	22.82	329	iPd-	35	45.00	3.6X
			eS	39	54.00	
			eTT	55	42.00	
ADE	23.84	293	iPc	35	53.10	1.8
	1.2s		84.38nm			5.1mb
RMO	25.16	322	iPd	36	04.50	0.5
DZM	25.78	2	iPc	36	11.80	1.8
VNDA	29.76	182	e(P)	36	49.20	3.8X
OIS	34.44	313	eP	37	25.00	-1.9
ASPA	34.93	303	iPc	37	30.20	-0.9
	1.0s		59.00nm			5.5mb
Z	18s		7.02um			5.4msz
			i	42	59.50	
			i	43	59.40	
			LR	50	17.30	
WRA	37.66	307	Pc	37	52.30	-1.8
	0.7s		6.00nm			4.6mb
WB5	37.70	307	eP	37	53.20	-1.2
			i	37	59.90	
NWAO	39.12	274	eP	38	06.00	-0.3
Z	20s		1.20um			4.7msz
N	20s		0.50um			
E	20s		0.60um			
KLB	39.59	277	eP	38	10.00	-0.1
MUN	40.39	275	eP	38	16.00	-0.7
MRWA	42.27	278	eP	38	33.80	1.6
MTN	45.24	309	eP	38	58.00	1.7
GUMO	63.96	337	e(P)	41	31.00	18.5X
PJG	63.96	337	e(P)	41	31.00	18.5X
CHG	89.15	300	eP	43	39.00	5.2X
KMI	91.98	306	eP	43	53.50	6.4X
Z	26s		0.70um			5.0mszX
			sP	44	07.00	
			eS	54	52.00	
SES	121.21	48	ePKP	49	35.00	4.4X
EDM	121.86	44	ePKP	49	35.50	3.8X
INK	124.39	23	ePKP	49	38.00	1.9
MAIO	125.97	287	ePKP	49	49.00	8.7X
MBC	132.58	18	ePKP	49	53.50	1.9
KAS	145.61	277	ePKP	50	20.00	3.7X
FRB	146.89	41	ePKP	50	22.00	4.5X
SCH	147.21	58	ePKP	50	23.00	4.6X
KEV	150.38	332	ePKP	50	29.00	6.1X
CFR	150.91	281	ePKP	50	17.00	-7.4X
SOD	151.49	328	ePKP	50	34.00	9.4X
VAY	153.10	270	ePKP	50	35.00	7.3X
SUF	153.17	318	iPKP	50	37.20	10.1X
	0.5s		2.70nm			
SKO	154.15	270	ePKP	50	45.20	16.0X
OHR	154.20	268	ePKP	50	37.80	8.5X
NUR	154.37	314	iPKP	50	45.60	16.8X
	1.0s		24.00nm			
VAI	164.07	271	PKP	50	48.00	7.8X
						S.D. = 1.6 on 22 of 43 obs.
? MAR 13, 1990 14h 21m 11.41 ± 0.79s						
15.280 N ± 11.5km 61.446 W ± 31.4km						
DEPTH = 151.8 ± 7.4 km						
3.1mb ( 1 obs.)						
LEEWARD ISLANDS ( 92)						
MDN	0.06	51	eP	21	32.51	-0.4
DPMT	0.06	109	eP	21	32.44	-0.5
DGBT	0.12	110	eP	21	32.41	-0.6
BBL	0.24	353	ePd	21	32.86	-0.4
			S	21	42.90	
FDF	0.61	152	iPd	21	34.44	0.6
	0.1s		2.30nm			
			S	21	50.50	
MGG	0.65	11	eP	21	33.84	-0.1
			S	21	48.50	
CRM	0.73	136	iPd	21	34.27	-0.3
			S	21	50.10	
DOG	0.77	348	eP	21	35.38	0.6
PAG	0.78	343	eP	21	35.30	0.3

BIM	0.84	154	iPd	21	36.00	0.6
			S	21	53.70	
SFG	1.00	14	eP	21	36.53	0.0
SEG	1.12	357	eP	21	37.92	0.3
			S	21	55.80	
YKA	59.96	335	eP	31	03.40	-0.2
	0.4s		0.10nm			3.1mb
	S.D. = 0.5		on 13 of 13 obs.			
* MAR 13, 1990 14h 34m 12.39 ± 3.56s						
15.879 N ± 11.8km 61.296 W ± 19.1km						
DEPTH = 54.4 ± 35.1 km						
LEEWARD ISLANDS ( 92)						
MGG	0.04	333	iPd	34	21.43	-0.2
			S	34	30.30	
DOG	0.34	296	eP	34	22.62	0.2
SFG	0.38	14	eP	34	23.02	0.3
			S	34	33.30	
BBL	0.40	206	ePd	34	22.90	0.0
			S	34	33.10	
PAG	0.40	292	eP	34	23.10	0.1
			S	34	34.00	
SEG	0.56	339	eP	34	24.40	-0.3
			S	34	36.20	
	S.D. = 0.3		on 6 of 6 obs.			
MAR 13, 1990 14h 58m 21.80 ± 0.38s						
43.201 N ± 4.4km 0.116 W ± 3.8km						
DEPTH = 10.0km (geophysicist)						
PYRENEES (378)						
mbLg 3.2 (MDD). Felt (IV) at						
Argeles Gazost and Lourdes; (II)						
at Pou, France.						
BTH	0.10	221	(P)	58	24.90	0.3
			i(Pg)	58	30.60	
			i(Sg)	58	33.00	
			i	58	35.30	
OGE	0.26	263	Pg	58	28.18	0.8
ESCF	0.36	250	Pg	58	28.70	-0.5
EPF	0.37	117	Pg	58	27.80	-1.7
			Sg	58	31.90	
ATE	0.44	255	Pg	58	30.65	-0.2
			Sg	58	37.48	
LHE	0.47	232	Pg	58	29.87	-1.5
MADF	0.52	264	Pg	58	32.44	0.1
ISSF	0.53	251	Pg	58	31.78	-0.7
			Sg	58	39.56	
ELYF	0.64	268	Pg	58	34.66	0.0
BOH	0.66	262	Pg	58	35.25	0.2
			Sg	58	45.30	
LPO	1.76	32	Pn	58	52.30	-0.1
			Pg	58	56.60	
			Sg	59	20.40	
LFF	1.84	19	Pn	58	54.60	0.9
			Pg	58	58.70	
			Sg	59	22.50	
ECRI	1.86	252	iPn	58	55.20	1.2
			eSn	59	18.30	
CAF	2.33	42	Pn	59	00.10	-0.7
			Pg	59	07.40	
			Sg	59	37.00	
ETER	2.37	111	ePn	59	05.20	3.9X
			eSn	59	35.50	
EROQ	2.41	170	ePn	59	03.90	2.0
			eSn	59	32.20	
RJF	2.41	29	Pn	59	01.20	-0.7
			Pg	59	08.70	
			Sg	59	40.20	
EBR	2.42	169	eP	59	04.00	2.0
			eS	59	32.00	
			eSg	59	35.00	
ETOR	2.78	212	ePn	59	06.00	-1.3
			eSn	59	38.20	
LSF	3.27	20	Pn	59	14.20	0.1
			Pg	59	24.80	
			Sg	00	08.00	
MFF	3.40	360	Pn	59	16.50	0.6
			Pg	59	27.30	
			Sg	00	12.20	
TCF	3.50	27	Pn	59	17.40	0.0
			Pg	59	29.10	
			Sg	00	15.80	
GUD	3.95	231	ePn	59	23.20	-0.7
			eSn	00	07.80	

AVF	4.35	33	Pn	59	29.40	0.0
			Pg	59	44.80	
			Sg	00	41.70	
SMF	4.44	38	Pn	59	30.80	0.0
			Sg	00	44.80	
SSF	4.63	32	Pg	59	50.20	16.8X
			Sg	00	48.60	
S.D. = 1.0 on 24 of 26 obs.						
MAR 13, 1990 15h 05m 38.81± 0.41s						
44.510 N ± 7.8km 150.058 E ± 6.5km						
DEPTH = 33.0km (normal)						
4.8mb ( 22 obs.)						
KURIL ISLANDS REGION						(222)
MAT	12.02	233	eP	08	31.00	0.3
			eS	09	07.00	
MDJ	14.59	278	eP	09	04.50	-0.1
CN2	17.66	276	eP	09	42.50	-1.2
			esP	09	54.50	
SNY	19.47	271	eP	10	04.30	-1.3
BJI	25.35	272	eP	11	04.50	0.3
	1.0s		18.00nm			4.6mb
NJ2	27.30	254	Pd	11	25.00	2.8
HHC	28.36	276	P	11	32.40	0.6
TIY	28.96	270	eP	11	37.60	0.4
BTO	29.54	277	eP	11	47.00	4.5X
XAN	33.20	266	P	12	14.00	-0.6
GTA	37.23	280	iPc	12	49.20	0.2
CD2	38.56	265	eP	13	00.00	-0.1
GYA	39.13	257	P	13	04.60	-0.5
FBA	39.24	37	e(P)	13	06.20	0.8
KMI	42.72	259	eP	13	35.00	0.3
WMQ	43.76	292	iPc	13	42.70	0.0
INK	44.68	31	eP	13	49.50	-0.3
MBC	47.42	19	eP	14	11.50	0.1
	0.5s		2.00nm			4.4mb
CHG	49.50	256	eP	14	28.30	0.1
GUN	53.05	275	P	14	54.80	-0.6
KSH	53.55	292	eP	14	58.80	0.2
KKN	53.55	275	P	14	58.60	-0.3
	0.8s		17.00nm			5.1mb
DMN	53.78	275	P	15	00.20	-0.4
PNT	58.29	50	eP	15	40.00	7.6X
EDM	59.41	44	eP	15	39.00	-1.2
FFC	63.83	38	eP	16	09.00	-0.8
	0.7s		6.00nm			4.8mb
WB5	65.66	196	eP	16	21.20	-0.7
WRA	65.73	196	Pd	16	22.00	-0.3
	0.7s		1.30nm			4.1mb
POO	67.51	274	eP	16	33.00	-0.9
FRB	67.85	17	eP	16	34.00	-1.3
GBA	68.22	268	Pd	16	37.20	-1.1
ASPA	69.44	196	eP	16	45.90	0.3
	1.9s		16.00nm			4.8mb
NB2	69.63	340	P	16	44.60	-1.8
	0.6s		2.60nm			4.5mb
HFS	69.78	338	eP	16	45.00	-2.3
	0.4s		3.70nm			4.8mb
KSP	76.91	332	ePd	17	29.00	-0.1
CLL	77.58	334	iP	17	32.60	-0.1
	0.8s		13.00nm			5.0mb
PRU	78.22	332	eP	17	36.50	0.2
KHC	79.28	333	eP	17	42.50	0.3
GRF	79.55	334	e(P)	17	44.00	0.4
KBA	81.14	332	ePc	17	52.50	0.2
	0.8s		7.70nm			4.8mb
VAY	82.44	323	eP	17	59.30	0.4
OHR	83.37	324	eP	18	03.50	-0.3
LOR	83.88	338	eP	18	06.40	0.2
	0.8s		2.70nm			4.5mb
LBF	84.10	337	eP	18	07.70	0.3
	0.8s		3.35nm			4.6mb
SMF	84.45	337	eP	18	10.20	1.1
	0.8s		8.05nm			5.0mb
LPL	84.65	335	eP	18	11.00	0.6
	0.8s		5.35nm			4.8mb
LPG	84.66	335	eP	18	11.30	0.8
	0.8s		5.35nm			4.8mb
MAF	85.19	338	eP	18	13.70	0.9
	0.8s		9.40nm			5.0mb
TCF	85.22	338	eP	18	13.80	0.8
	0.8s		4.05nm			4.7mb
LSF	85.44	339	eP	18	14.80	0.7
	0.9s		9.00nm			5.0mb
MFF	85.53	340	eP	18	15.30	0.8
	0.8s		10.75nm			5.1mb



CAF 86.52 338 eP 18 20.80 1.3  
1.0s 9.00nm 5.0mb  
LRG 86.62 334 eP 18 20.60 0.7  
0.6s 5.40nm 5.0mb  
LMR 86.69 334 eP 18 20.70 0.4  
0.8s 16.10nm 5.3mb  
S.D. = 0.9 on 52 of 54 obs.

\* MAR 13, 1990 15h 18m 49.02±1.19s  
1.398 S ± 7.0km 78.471 W ± 25.5km  
DEPTH = 33.0km (normal)

ECUADOR (107)  
Felt (IV) at Teno.

VC1 0.76 5 iPd 19 02.50 -1.2  
QUR 1.22 357 iPd 19 10.50 0.3  
iS 19 25.00  
GGP 1.22 354 iPd 19 11.00 0.6  
iS 19 25.70  
CAYA 1.55 18 eP 19 10.50 -4.6X  
iS 19 25.30  
COTA 1.73 4 eP 19 17.10 -0.6  
CUMC 2.42 14 eP 19 26.85 -0.8  
PURC 4.26 30 eP 19 51.60 -2.1  
SILC 4.58 28 eP 20 02.60 4.4X  
ANCC 5.14 18 eP 20 06.20 0.4  
HOQC 5.17 21 eP 20 08.40 1.9  
DIAC 5.18 26 eP 20 11.30 4.8X  
CLMC 5.58 20 eP 20 13.40 1.3  
BUGC 5.70 23 eP 20 06.30 -7.5X  
NNA 10.64 171 eP 21 22.00 -0.4  
eS 23 12.00  
ZOBO 17.95 146 P 22 59.00 0.5  
S.D. = 1.3 on 11 of 15 obs.

\* MAR 13, 1990 15h 30m 06.06±1.42s  
47.000 N ± 12.7km 144.741 E ± 7.1km  
DEPTH = 373.4 ± 17.9 km  
4.7mb (15 obs.)

SEA OF OKHOTSK (663)

MDJ 10.84 263 Pc 32 36.50 1.6  
MAT 11.53 207 iPc 32 42.10 -1.0  
0.6s 84.00nm 5.3mb  
CN2 13.93 264 Pd 33 08.20 -2.1  
0.7s 100.00nm 5.4mb  
SNY 15.97 259 eP 33 31.20 -0.7  
0.8s 28.00nm 4.7mb  
BJI 21.77 262 eP 34 29.50 0.2  
1.0s 36.00nm 4.7mb  
HHC 24.55 268 P 34 56.20 1.1  
TIY 25.46 260 Pc 35 04.20 0.9  
GTA 33.24 273 eP 36 11.80 0.6  
CD2 35.24 258 eP 36 28.20 0.2  
GYA 36.29 249 P 36 36.80 -0.1  
WMO 39.42 287 P 37 03.60 1.1  
FBA 39.53 38 ePc 37 04.00 1.0  
INK 44.49 32 iPc 37 42.70 -0.1  
0.5s 25.00nm 4.7mb  
MBC 46.29 19 eP 37 57.00 0.2  
CHG 46.71 249 eP 38 00.90 0.2  
GUN 49.25 269 P 38 20.40 -0.1  
0.4s 12.00nm 4.6mb  
KKN 49.74 269 P 38 24.00 0.0  
0.4s 7.00nm 4.3mb  
PKI 49.79 269 P 38 24.20 -0.3  
0.4s 7.00nm 4.3mb  
YKA 54.06 34 eP 38 53.80 -1.1  
0.6s 7.50nm 4.2mb  
SOD 56.81 336 iP 39 13.80 -0.5  
SUF 60.26 332 iP 39 37.10 -0.7  
0.5s 8.40nm 4.5mb  
NUR 62.37 331 iP 39 50.80 -0.9  
0.5s 14.00nm 4.8mb  
WDC 63.41 58 ePc 39 59.70 0.9  
FFC 64.09 36 iPc 40 03.60 0.7  
1.0s 37.00nm 5.0mb  
MIN 64.10 58 ePc 40 03.70 0.3  
ORV 64.68 59 ePc 40 07.00 0.1  
LRM 65.48 49 iPc 40 13.20 0.9  
NB2 65.95 337 P 40 14.20 -0.5  
0.5s 4.60nm 4.5mb  
HFS 66.03 336 eP 40 14.00 -1.2  
0.4s 11.00nm 4.9mb  
CMB 66.33 59 ePc 40 18.30 0.8  
FRB 66.51 15 eP 40 17.00 -1.1  
SAO 66.55 61 ePc 40 17.10 -1.7

KBA 77.12 328 iPc 41 21.70 1.3  
0.5s 6.10nm 4.6mb  
S.D. = 1.0 on 33 of 33 obs.

? MAR 13, 1990 16h 09m 11.80±1.93s  
30.168 S ± 49.9km 178.506 W ± 18.5km  
DEPTH = 200.0 ± 17.7 km  
4.3mb (2 obs.)

KERMADEC ISLANDS (178)

RAO 1.05 29 P 09 42.30 0.2  
S 10 02.00  
DZM 15.73 297 iPc 12 44.10 -0.1  
ASPA 42.69 267 eP 16 50.90 0.3  
0.5s 15.00nm 4.8mb  
WRA 43.65 272 Pc 16 58.70 0.3  
0.6s 2.10nm 3.8mb  
WB5 43.65 272 eP 16 58.00 -0.4  
NB2 148.46 351 PKP 28 31.20 -0.3  
1.0s 4.80nm  
S.D. = 0.5 on 6 of 6 obs.

? MAR 13, 1990 16h 15m 10.11±0.98s  
40.158 N ± 11.8km 22.353 E ± 8.8km  
DEPTH = 33.0km (normal)

GREECE (364)

KZN 0.47 289 eP 15 20.50 0.1  
PLG 0.86 75 eP 15 25.70 -0.2  
NEO 1.08 141 eP 15 29.40 0.4  
EVR 1.31 199 eP 15 32.00 -0.3  
OHR 1.52 309 ePn 15 42.30 7.0X  
S.D. = 0.5 on 4 of 5 obs.

\* MAR 13, 1990 17h 41m 53.92s  
61.746 N 151.088 W  
DEPTH = 74.2km  
SOUTHERN ALASKA (2)  
<AGS-P>.

SKT 0.31 319 iP 42 05.11 -0.7  
eS 42 14.16  
SUA 0.33 150 iP 42 06.09 0.0  
eS 42 15.85  
PWA 0.58 99 iPc 42 07.80 -0.3  
NCG 0.62 237 iP 42 07.89 -0.7  
eS 42 19.31  
CGLM 0.62 225 iP 42 08.03 -0.6  
eS 42 19.41  
CRP 0.70 227 iP 42 08.97 -0.6  
eS 42 20.75  
SPU 0.73 220 iP 42 09.05 -0.7  
eS 42 21.51  
CUT 0.77 30 iP 42 09.40 -0.6  
eS 42 21.27  
PMS 0.89 124 iPc 42 10.90 -0.7  
PLRM 0.95 99 iP 42 11.21 -1.0  
PMR 0.95 99 iPc 42 10.30 -1.9  
1.4s 157.00nm  
NKA 1.01 184 iP 42 14.46 1.5  
GHO 1.03 88 iP 42 12.46 -0.9  
eS 42 27.92  
SML 1.31 86 iP 42 15.76 -1.2  
eS 42 33.05  
SLKM 1.31 161 eP 42 16.15 -0.8  
RDT 1.34 209 iP 42 16.67 -0.7  
eS 42 35.46  
HUR 1.41 28 eP 42 16.94 -1.3  
eS 42 35.80  
RED 1.56 212 iP 42 19.66 -0.7  
NNL 1.71 184 eP 42 22.49 0.2  
KTH 1.82 2 iP 42 22.47 -1.3  
SEW 1.83 153 eP 42 23.29 -0.6  
RND 1.96 31 iP 42 23.95 -1.8  
NCA 2.04 81 iP 42 25.45 -1.3  
GLI 2.11 113 iP 42 25.22 -2.6  
MCK 2.23 25 eP 42 28.07 -1.3  
SVW 2.27 256 iPc 42 28.30 -1.7  
VZW 2.29 106 eP 42 27.81 -2.4  
TOA 2.35 79 iPc 42 30.20 -1.0  
KLU 2.48 94 iP 42 30.68 -2.3  
PDB 2.49 219 iP 42 31.61 -1.3  
TTA 2.59 300 iPc 42 32.40 -2.0  
AUL 2.64 207 eP 42 34.43 -0.6  
AUE 2.65 206 eP 42 34.16 -1.0  
PAX 2.89 62 eP 42 37.59 -1.1  
NEA 2.99 17 eP 42 37.06 -2.8

WRH 3.06 25 eP 42 38.44 -2.4  
CDD 3.10 205 eP 42 40.27 -1.2  
DDM 3.16 47 eP 42 42.30 -0.1  
HDA 3.27 33 eP 42 41.46 -2.3  
CCB 3.27 26 iP 42 41.21 -2.6  
GLB 3.49 92 eP 42 44.37 -2.6  
FBA 3.50 24 ePd 42 44.10 -2.9  
GLM 3.66 25 eP 42 46.72 -2.6  
TGL 4.11 100 eP 42 52.77 -3.0  
IMA 4.49 346 eP 42 58.50 -2.6  
45 obs. associated

? MAR 13, 1990 18h 09m 21.85±1.01s  
41.759 N ± 12.6km 13.325 E ± 5.8km  
DEPTH = 10.0km (geophysicist)

SOUTHERN ITALY (390)

AZI 0.24 20 P 09 27.00 0.0  
iSg 09 31.00  
SDI 0.37 98 P 09 29.50 0.0  
eSg 09 35.80  
RDP 0.45 270 P 09 31.00 -0.1  
eSg 09 39.50  
RMP 0.47 277 P 09 31.50 0.1  
eSg 09 39.50  
S.D. = 0.2 on 4 of 4 obs.

? MAR 13, 1990 18h 20m 21.14±4.31s  
30.936 S ± 17.1km 68.070 W ± 43.4km  
DEPTH = 33.0km (normal)

SAN JUAN PROVINCE, ARGENTINA (137)

RTLL 0.52 221 iPc 20 33.00 0.9  
CFA 0.68 192 iPd 20 34.50 0.1  
ZON 0.80 220 iPd 20 35.00 -1.0  
eS 20 46.00  
RTCV 1.00 203 ePd 20 36.10 -2.9X  
RTRS 1.42 302 iPc 20 44.90 0.1  
S.D. = 1.4 on 4 of 5 obs.

\* MAR 13, 1990 19h 00m 16.70±0.86s  
10.758 N ± 6.3km 61.998 W ± 12.9km  
DEPTH = 84.0 ± 8.4 km  
3.4mb (1 obs.)

TRINIDAD (98)

MD 3.8 (TRN). Felt on Trinidad.

TCE 0.25 104 eP 00 28.79 -0.5  
eS 00 35.22  
TRN 0.60 101 eP 00 31.32 -0.5  
eS 00 39.17  
TPP 0.69 129 eP 00 33.92 1.1  
eS 00 46.34  
TBH 0.96 106 eP 00 36.18 0.5  
eS 00 51.20  
PIG 1.20 70 eP 00 38.51 -0.2  
eS 00 54.76  
TPR 1.27 70 eP 00 39.14 -0.5  
eS 00 54.96  
BOT 1.32 72 eP 00 39.99 -0.2  
eS 00 55.38  
GRW 1.43 13 iP 00 41.40 -0.4  
eS 01 00.53  
SVB 2.60 16 eP 00 57.38 -0.1  
eS 01 28.09  
SVV 2.66 17 eP 00 58.15 -0.1  
eS 01 28.64  
SSV 2.67 17 eP 00 58.60 0.1  
eS 01 29.92  
SLB 3.19 17 eP 01 05.34 -0.3  
eS 01 42.52  
BIM 3.84 14 eP 01 14.34 -0.4  
MVM 3.92 16 eP 01 16.24 0.4  
FDF 4.04 12 eP 01 17.00 -0.5  
0.1s 0.60nm  
S 01 58.90  
CRM 4.11 15 eP 01 19.89 1.5  
BBL 4.76 6 eP 01 28.00 0.4  
MGG 5.17 7 eP 01 33.00 -0.2  
PAG 5.25 3 eP 01 34.30 -0.1  
S 12 30.00  
SEG 5.63 5 eP 01 40.50 0.9  
YKA 63.81 336 eP 10 40.40 -1.6  
0.4s 0.20nm 3.4mb  
MBC 72.13 348 eP 11 34.50 1.0  
S.D. = 0.7 on 22 of 22 obs.



13d 19h

\* MAR 13, 1990 19h 12m 53.09±0.84s  
 40.063 N ± 7.3km 22.369 E ± 7.8km  
 DEPTH = 10.0km (geophysicist)  
 GREECE (364)  
 MD 2.7 (ATH).

KZN 0.52 298 eP 13 03.50 -0.1  
 PLG 0.88 69 eP 13 09.00 -1.0  
 NEO 1.00 139 eP 13 13.00 0.9  
 EVR 1.22 201 eP 13 15.50 -0.4  
 VAY 1.27 7 ePn 13 17.30 0.7  
 S.D. = 1.1 on 5 of 5 obs.

MAR 13, 1990 19h 40m 33.68±0.12s  
 3.429 S ± 2.2km 76.913 W ± 2.6km  
 DEPTH = 112.1km (geophysicist)  
 5.7mb (64 obs.)

NORTHERN PERU (111)

Felt (111) at Teno, Ecuador.  
 Depth from broadband  
 displacement seismograms.

FAULT PLANE SOLUTION: P-Waves

NP1: Strike=145 Dip=84 Slip=-74

NP2: 255 17 -159

Principal Axes:

T Plg=37 Azm=221

P 49 72

Comment: The focal mechanism is  
 moderately well controlled and  
 corresponds to normal faulting  
 with a moderate strike-slip  
 component. The preferred fault  
 plane is not determined.

RADIATED ENERGY

No. of sta: 4 Focal mech. F

Energy 1.4±0.6×10<sup>12</sup> Nm

MOMENT TENSOR SOLUTION

Dep 91 No. of sta: 10

Moment Tensor: Scale 10<sup>16</sup> Nm

Mrr=-1.46 Mtt=1.15

Mff=0.32 Mrt=-3.83

Mrf=5.79 Mtf=-0.93

Principal axes:

T Vol=7.12 Plg=39 Azm=231

N 0.02 6 325

P -7.14 51 62

Best Double Couple: Mo=7.1×10<sup>16</sup>

NP1: Strike=281 Dip=8 Slip=-135

NP2: 146 84 -84

CENTROID, MOMENT TENSOR (HRV)

Data Used: GDSN

L.P.B.: 13S, 28C

Centroid Location:

Origin Time 19:40:39.1 0.4

Lat 3.46S 0.04 Lon 76.91W 0.06

Dep 117.5 2.0 Half-duration 2.4

Moment Tensor: Scale 10<sup>17</sup> Nm

Mrr=-2.67 0.10 Mtt=-0.26 0.14

Mff=2.93 0.19 Mrt=-0.54 0.08

Mrf=0.13 0.10 Mtf=-0.95 0.16

Principal Axes:

T Vol=3.20 Plg=3 Azm=254

N -0.42 12 164

P -2.79 78 357

Best Double Couple: Mo=3.0×10<sup>17</sup>

NP1: Strike=357 Dip=44 Slip=-72

NP2: 153 49 -106

VC1 3.14 332 iP+ 41 23.50 0.6  
 QUR 3.62 333 iP+ 41 30.30 1.1  
 GGP 3.64 332 iP+ 41 30.90 1.1  
 CAYA 3.65 343 iP+ 41 30.20 0.5  
 COTA 4.00 339 P 41 36.00 1.4  
 CUMC 4.46 348 iPc 41 42.30 1.4  
 PSO 4.61 355 eP 41 43.50 0.8  
 PURC 5.74 6 iPc 41 58.85 0.5  
 SILC 6.10 5 iPc 42 04.50 1.2  
 DIAC 6.71 6 eP 42 13.00 1.6  
 HOQC 6.86 2 eP 42 13.90 0.4  
 ANCC 6.90 0 iPc 42 14.45 0.6  
 CLMC 7.27 3 iPc 42 19.35 0.3  
 BUGC 7.30 5 iPc 42 20.40 1.0  
 HOBC 7.77 6 iPc 42 25.70 -0.1  
 PT08 8.48 178 iPc 42 36.40 0.7  
 BOG 8.49 20 iPc 42 36.00 0.2  
 IS 44 18.00

PT06 10.35 177 iP 42 59.00 -1.5  
 eS 44 32.60  
 BMG 11.11 20 eP 43 11.20 0.5  
 UPA 12.60 348 iPd 43 31.10 1.0  
 1.0s 280.00nm 5.8mb  
 TOV 14.92 28 eP 43 58.30 -1.9  
 ZOBO 15.41 146 P 44 02.00 -4.9X  
 S 47 00.00  
 LPB 15.64 147 P 44 09.00 -0.6  
 1.0s 256.00nm 5.4mb  
 S 47 14.00  
 CAR 17.04 36 iP 44 28.00 1.3  
 iS 47 36.00  
 CCH 17.43 143 P 44 30.00 -1.7  
 TCE 20.61 47 eP 45 08.88 2.9  
 TRN 20.83 48 eP 45 09.80 1.6  
 eS 48 57.02  
 TBH 20.97 49 eP 45 11.34 1.7  
 ANT 21.11 163 eP 45 12.50 1.5  
 SVB 22.74 43 eP 45 24.79 -2.2  
 SLB 23.28 42 eP 45 29.45 -2.9X  
 BBL 24.25 39 eP 45 39.00 -2.7  
 MGG 24.65 38 eP 45 44.00 -1.4  
 SEG 24.90 37 eP 45 45.80 -2.0  
 SFG 24.98 38 eP 45 46.00 -2.5  
 RTRS 27.52 166 ePd 46 13.30 1.7  
 OXX 28.25 317 (P) 46 20.50 1.9  
 RTLL 28.87 165 iPc 46 24.00 0.1  
 RTCB 28.94 166 iPd 46 25.00 0.5  
 CFA 29.19 165 iPc 46 27.00 0.2  
 ROCH 29.90 170 ePd 46 38.80 5.5X  
 FCH 30.38 169 ePd 46 39.00 1.4  
 TACH 30.58 170 ePd 46 39.50 0.5  
 LNV 30.80 171 iPc 46 41.60 0.8  
 CHCH 30.91 170 eP 46 43.00 1.2  
 PPM 30.92 317 (P) 46 45.00 2.3  
 BAO 30.94 115 eP 46 42.00 -0.4  
 BDF 31.03 115 eP 46 42.89 -0.3  
 e 46 59.77 71kmX  
 esP 47 20.63  
 III 31.04 315 (P) 46 44.50 1.2  
 CRX 31.88 316 (P) 46 53.00 2.2  
 IIJ 32.14 317 (P) 46 55.50 2.2  
 MRX 33.13 315 (P) 47 03.50 2.2  
 HBF 36.31 355 P 47 28.80 0.6  
 PRM 37.66 353 P 47 39.40 -0.2  
 JSC 37.73 354 P 47 40.00 -0.1  
 LHS 37.88 355 P 47 42.00 0.6  
 TKL 39.41 351 P 47 53.50 -0.6  
 GBTN 39.49 351 P 47 54.20 -0.6  
 PWLA 39.62 346 P 47 54.20 -1.6  
 RSCP 39.67 349 P 47 55.20 -1.1  
 BLA 40.56 356 P 48 05.00 1.4  
 0.7s 180.56nm 6.0mb  
 OLY 41.06 342 P 48 06.00 -1.7  
 NA2 41.35 359 P 48 10.60 0.6  
 CBN 41.43 359 iPc 48 11.20 0.6  
 1.1s 150.00nm 5.7mb  
 e 48 55.00 205kmX  
 e 50 06.00  
 FVM 43.07 344 P 48 24.20 0.2  
 1.0s 58.00nm 5.3mb  
 SCP 44.02 359 iPd 48 31.32 -0.4  
 GMTN 44.17 3 iP 48 31.40 -1.5  
 PNJ 44.19 3 iP 48 40.10 7.0X  
 CLE 44.90 355 iP 48 37.90 -0.8  
 HRV 45.98 6 iPd 48 47.45 0.3  
 eS 55 25.92  
 esS 56 12.27  
 esS 59 19.86  
 esS 59 20.98  
 DLA 46.26 355 P 48 47.85 -1.6  
 LDN 46.41 356 P 48 49.00 -1.6  
 ELF 46.58 356 P 48 50.20 -1.7  
 ALQ 47.19 326 iPd 48 57.30 0.1  
 1.0s 211.25nm 5.9mb  
 epP 49 24.00 114kmX  
 ANMO 47.19 326 iPd 48 57.60 0.4  
 e 49 25.74 122kmX  
 eS 55 42.54  
 esS 56 31.79  
 esS 59 30.57  
 WNY 47.68 3 P 49 00.50 -0.1  
 HBVT 47.70 4 P 49 01.20 0.5  
 pP 49 34.50 147kmX  
 BNH 48.07 5 P 49 04.20 0.6  
 EMM 48.69 9 P 49 08.60 0.3

MIM 48.96 7 P 49 10.80 0.4  
 GLD 50.23 332 P 49 21.20 0.7  
 GOL 50.26 331 P 49 20.40 -0.4  
 CBM 50.74 8 P 49 24.20 0.2  
 GLA 51.01 318 eP 49 26.00 -0.3  
 e 49 54.00 119kmX  
 e 51 12.00  
 BAR 52.03 317 eP 49 33.00 -1.0  
 e 50 02.00 123kmX  
 e 51 16.00  
 e 51 46.00  
 PFO 52.43 318 iP 49 36.97 -0.2  
 PLM 52.55 317 eP 49 38.00 -0.1  
 MSU 52.94 325 P 49 41.00 0.1  
 RSSD 53.23 336 P 49 43.20 0.3  
 RVR 53.28 318 eP 49 43.00 -0.1  
 e 50 12.00 123kmX  
 DAU 53.77 328 P 49 46.80 -0.3  
 MWC 53.87 318 eP 49 47.00 -0.8  
 e 50 16.00 122kmX  
 e 50 52.00  
 PAS 53.90 317 iPd 49 47.77 0.0  
 e 50 17.00 124kmX  
 SBB 53.99 318 eP 49 48.00 -0.5  
 e 50 16.00 118kmX  
 DUG 54.47 326 P 49 52.00 0.0  
 0.6s 42.76nm 5.6mb  
 CLC 54.51 319 eP 49 52.00 -0.2  
 e 50 20.00 117kmX  
 e 50 54.00  
 BW06 54.64 331 P 49 51.70 -1.6  
 ISA 54.99 319 eP 49 56.00 0.3  
 e 50 17.00 84kmX  
 SYP 55.35 317 eP 49 58.00 -0.4  
 e 50 21.00 93kmX  
 RSON 55.96 347 P 49 59.30 -3.1X  
 pP 50 34.90 153kmX  
 FRI 56.57 319 eP 50 05.80 -1.2  
 PRI 56.72 318 eP 50 07.70 -0.5  
 LLA 57.17 318 iPd 50 10.40 -0.8  
 epP 50 39.00 119kmX  
 PRS 57.30 318 ePd 50 11.60 -0.5  
 SAO 57.59 318 e(P) 50 13.30 -0.8  
 CMB 57.62 320 iPd 50 13.42 -0.9  
 epP 50 41.56 116kmX  
 e 51 42.10  
 MHC 58.04 319 ePd 50 17.50 0.1  
 GCC 58.10 318 ePd 50 17.30 -0.4  
 LRM 58.29 331 iPd 50 18.50 -0.7  
 PCC 58.62 318 eP 50 20.80 -0.5  
 SCH 58.65 7 ePd 50 20.20 -1.0  
 0.8s 365.00nm 6.5mb  
 BKS 58.73 319 iPd 50 21.40 -0.7  
 0.6s 95.00nm 6.0mb  
 BRK 58.74 319 ePd 50 21.80 -0.3  
 ORV 59.21 321 iPd 50 25.50 0.1  
 e 50 50.80  
 epP 50 54.00 117kmX  
 e 51 01.30  
 RKT 59.38 245 eP 50 27.00 0.2  
 1.0s 60.00nm 5.6mb  
 MIN 59.73 322 ePd 50 27.80 -1.3  
 WDC 60.45 321 ePd 50 31.10 -2.7  
 SES 61.10 336 iPd 50 37.50 -0.7  
 0.7s 183.00nm 6.2mb  
 pP 51 07.00 121kmX  
 FHC 61.48 321 iPd 50 40.90 0.0  
 FFC 61.57 344 iPd 50 39.40 -1.7  
 1.2s 246.00nm 6.1mb  
 MBO 61.99 72 iP 50 44.50 -0.1  
 NEW 62.28 331 P 50 44.80 -1.2  
 pP 51 21.00 152kmX  
 AIA 62.36 174 eP 50 42.00 -4.2X  
 DPW 62.54 330 P 50 47.50 -0.3  
 LON 63.70 327 P 50 55.00 -0.4  
 pP 51 30.50 148kmX  
 EDM 64.19 337 iPd 50 56.90 -1.6  
 BMW 64.31 326 P 50 59.20 -0.2  
 CHIE 64.60 57 iPd 51 00.80 -0.8  
 e 51 33.10 133kmX  
 TBT 64.95 56 iPc 51 02.90 -0.9  
 e 51 35.00 132kmX  
 PGC 65.74 328 eP 51 09.00 0.6  
 1.0s 100.00nm 5.7mb  
 CTFE 66.26 57 eP 51 12.50 0.3  
 GGC 66.68 58 eP 51 14.70 -0.2  
 FRB 67.29 4 ePd 51 16.10 -1.9



CFTV	1.1s	192.00nm	5.9mb	MBC	83.19	351 ePd	52 48.50	0.4	RSP	88.29	45 P	53 14.43	0.4	
	68.07	58 ePc	51 22.70	-1.0		0.9s	182.00nm	6.0mb	ENR	88.31	46 P	53 13.30	-0.7	
PMO	70.76	255 eP	51 41.00	0.8	GRR	83.33	41 iPd	52 49.60	0.3	DIX	88.51	44 ePd	53 15.60	0.4
	0.8s	20.00nm	5.0mb		MFF	83.42	43 iPd	52 50.20	0.4	MOF	88.52	42 P	53 13.58	-1.4
YKA	71.69	343 eP	51 43.20	-1.7	TOA	83.46	334 iPd	52 50.40	0.6	ECH	88.58	42 P	53 14.56	-0.6
	0.7s	41.70nm	5.4mb		ESK	83.61	34 eP	52 49.80	-0.8	IMI	88.61	46 P	53 14.53	-0.9
LKO	72.21	79 Pd	51 48.12	-0.8			eSKS	03 05.59		ROB	88.63	46 P	53 14.84	-0.7
	1.0s	80.00nm	5.5mb		EKA	83.64	34 Pc	52 51.00	0.3	CDF	88.68	42 P	53 15.06	-0.7
LIC	72.41	82 Pd	51 49.32	-0.8		1.1s	109.40nm	5.7mb	RUP	88.69	40 eP	53 15.94	0.3	
	1.1s	119.50nm	5.6mb		FLN	83.66	40 iPd	52 51.40	0.4	BBS	88.73	42 P	53 15.16	-0.8
TIC	72.46	82 Pd	51 49.60	-0.8		0.8s	136.40nm	5.9mb	WLS	88.73	42 P	53 14.92	-1.0	
	1.2s	167.00nm	5.7mb		LFF	83.70	44 iPd	52 51.50	0.2	WTS	88.81	38 iPd	53 16.80	0.7
AFR	72.64	253 eP	51 53.00	1.7	LDF	83.86	41 iPd	52 52.10	0.1		1.0s	172.00nm	6.1mb	
	0.8s	35.00nm	5.2mb		LPO	83.96	45 iPd	52 52.80	0.2			i	53 22.10	17kmX
KIC	72.71	82 Pd	51 51.22	-0.6	RJF	84.31	44 iPd	52 54.40	0.1			e	53 46.50	
	1.1s	182.50nm	5.8mb		ESEL	84.36	50 eP	52 55.50	0.8			e	53 54.00	
		S	01 07.00		LSF	84.49	43 iPd	52 55.40	0.2	WIT	88.82	37 eP	53 18.00	1.9
TIO	74.46	57 iPd	52 02.60	0.7	CAF	84.62	44 iPd	52 56.20	0.3			e	53 48.00	114kmX
		i	52 38.50	145kmX	PMR	84.63	333 P	52 55.40	-0.1			e	53 55.00	
AVE	74.91	54 iP	52 05.50	1.2		1.4s	170.45nm	5.8mb	ORO	88.85	44 P	53 16.50	-0.1	
		i	52 37.00	125kmX	ETER	84.74	47 eP	52 57.40	0.9	ORX	88.85	44 P	53 15.35	-1.3
EVAL	76.53	50 eP	52 13.40	0.1	TCF	84.96	43 iPd	52 57.50	-0.1	FIN	88.87	46 P	53 15.66	-1.0
WIGH	76.70	84 eP	52 15.00	0.3		1.2s	87.75nm	5.5mb	MMK	88.89	44 ePd	53 17.30	0.3	
IFR	76.82	55 iPd	52 16.30	1.0	COL	85.08	336 iPd	52 57.89	0.1	CKI	88.94	46 P	53 16.00	-0.9
WEGH	77.01	83 eP	52 16.00	-0.4			epPc	53 27.02	112kmX	GWf	88.97	41 P	53 15.59	-1.4
KUK	77.02	83 eP	52 16.70	0.2	FBA	85.08	336 ePd	52 57.30	-0.5	ABH	89.02	40 eP	53 17.37	0.1
		e	01 54.30		MAF	85.19	43 iPd	52 58.90	0.1	FEL	89.11	42 eP	53 17.37	-0.5
NKM	77.04	53 iP	52 17.50	1.3	KDC	85.23	329 eP	52 58.50	-0.1	PCP	89.14	45 P	53 17.19	-0.8
EJIF	77.23	52 eP	52 18.60	1.4	PYM	85.42	44 P	52 59.88	-0.1	SDN	89.14	325 eP	53 18.70	1.1
SHGH	77.32	83 eP	52 18.50	0.4	BGF	85.44	43 iPd	53 00.10	0.1	PGF	89.28	47 iPd	53 18.20	-0.5
TEGH	77.34	83 eP	52 18.50	0.3	LBL	85.50	44 P	53 00.02	-0.2		1.2s	53.55nm	5.5mb	
ERUA	77.54	45 eP	52 19.00	0.2	AGO	85.55	43 P	53 00.04	-0.5	KTD	89.31	41 eP	53 18.20	-0.4
EPRU	77.54	51 eP	52 20.50	1.5	GRC	85.72	42 P	53 00.60	-0.7	ZLA	89.32	43 ePd	53 18.70	0.0
EPLA	77.68	48 eP	52 19.80	0.1	AVF	85.82	43 iPd	53 01.40	-0.4	SLE	89.42	42 ePd	53 18.90	-0.3
EMON	77.70	44 eP	52 20.00	0.3		1.2s	65.45nm	5.5mb	VAI	89.43	44 P	53 18.00	-1.1	
EHOR	77.74	50 eP	52 20.00	0.0	PLDF	85.88	44 P	53 01.57	-0.7	TNS	89.64	40 ePd	53 20.30	0.2
MAL	78.13	52 iPd	52 23.40	1.3	SSF	85.97	43 iPd	53 02.20	-0.4	LLS	89.68	43 ePd	53 20.60	0.0
		iS	02 10.00			1.3s	75.80nm	5.5mb	BOB	89.80	45 P	53 20.80	-0.3	
ALOJ	78.45	51 iPd	52 25.00	0.9	SMF	86.13	43 iPd	53 03.20	-0.2	SAX	89.95	43 ePd	53 22.00	0.1
ATEJ	78.48	51 iPd	52 25.00	0.7		1.4s	139.40nm	5.8mb	MDI	90.07	44 P	53 21.00	-1.1	
AAPN	78.49	51 iPd	52 25.00	0.7	LOR	86.24	42 iPd	53 03.70	-0.2	OSS	90.45	43 ePd	53 24.00	-0.1
REY	78.60	22 iP	52 25.70	1.6		1.3s	63.20nm	5.4mb	PII	90.49	46 P	53 24.00	-0.1	
	0.9s	0.90nm	3.6mb X		LBF	86.28	43 iPd	53 03.60	-0.6	BDI	90.57	46 P	53 23.50	-1.1
ACHM	78.67	51 iPd	52 26.20	1.0		1.3s	37.90nm	5.2mb	SAL	90.63	45 P	53 24.50	-0.2	
APHE	78.74	51 iPd	52 26.50	0.8	SPA	86.59	180 iPd	53 06.80	1.3	OGA	91.06	43 iPd	53 27.20	0.2
ASMO	78.79	51 iPd	52 26.50	0.6		1.5s	292.05nm	6.1mb	FUR	91.32	42 iPc	53 28.70	0.8	
AFC	78.92	51 eP	52 27.00	0.3			e	53 37.50	118kmX	PGD	91.37	46 P	53 27.50	-0.9
EBAN	78.94	50 eP	52 26.90	0.3	SNF	87.03	39 P	53 08.00	0.4	GRF	91.38	40 eP	53 28.60	0.5
TOL	79.14	48 iPd	52 28.26	0.6			e	53 38.20	116kmX		1.5s	96.00nm	5.8mb	
	1.3s	461.54nm	6.1mb		UCC	87.12	39 iP-	53 08.00	0.0	Z	23s	0.10um	4.2MsZ X	
		esP	53 06.50		DOU	87.16	40 P	53 08.50	0.2			epP	53 58.50	114kmX
GUD	79.25	48 eP	52 28.60	0.2			e	53 46.80	151kmX			esP	54 07.00	
TAF	79.29	54 iP	52 30.00	1.3			SKS	03 39.00		CTI	91.44	44 P	53 28.50	-0.1
ENIJ	79.90	52 eP	52 31.20	-0.6	LRG	87.45	46 iPd	53 10.20	0.4	SFI	91.46	46 P	53 27.50	-1.0
EVIA	80.03	50 eP	52 33.70	1.2		1.0s	22.00nm	5.1mb	MOX	91.69	40 iPc	53 30.50	1.0	
EALH	80.70	51 eP	52 35.00	-0.9	SVW	87.54	332 ePd	53 09.20	-0.7		1.5s	65.00nm	5.7mb	
ECB	80.73	36 iPc	52 35.80	0.1	LMR	87.55	47 iPd	53 10.10	-0.2	HOF	91.84	40 eP	53 30.40	0.2
	0.9s	163.00nm	5.8mb			1.2s	59.50nm	5.5mb	RMP	91.97	48 P	53 31.50	0.5	
DCN	80.75	35 iPd	52 35.60	-0.2	FRF	87.67	46 iPd	53 10.60	-0.3	RDP	91.98	48 P	53 31.50	0.4
	0.6s	118.00nm	5.9mb			1.2s	62.50nm	5.5mb	ASS	92.00	47 P	53 30.80	-0.4	
AKU	80.79	21 iP	52 37.20	1.4	IMA	87.77	337 ePd	53 11.10	0.0	NB2	92.06	29 P	53 31.20	0.1
	1.2s	112.50nm	5.5mb			1.4s	215.10nm	6.0mb		1.2s	57.40nm	5.7mb		
ETOR	80.84	48 eP	52 37.20	0.5	VITF	87.80	42 P	53 10.38	-0.9	ARV	92.23	47 P	53 31.50	-0.7
ECRI	80.90	46 eP	52 37.50	0.5	BNI	87.87	45 P	53 12.00	0.0	FVI	92.25	44 P	53 32.00	-0.1
ECP	80.91	36 iPc	52 36.80	0.1	RRL	87.93	45 P	53 12.48	0.1	BHG	92.37	43 eP	53 33.00	0.3
	0.8s	213.00nm	6.0mb		LPL	87.97	44 iPd	53 13.00	0.4		1.4s	83.00nm	5.8mb	
DLE	81.15	35 eP	52 37.80	-0.1		1.1s	29.30nm	5.2mb	WET	92.43	41 eP	53 33.50	0.5	
BST	81.24	40 P	52 39.18	0.7	LPG	87.98	44 iPd	53 13.20	0.5		1.7s	187.00nm	6.1mb	
ECHE	81.39	49 eP	52 40.80	1.2		1.0s	34.00nm	5.3mb	AZI	92.53	48 P	53 34.50	1.0	
INK	81.42	342 ePd	52 38.80	-0.3	HAU	88.01	42 iPd	53 12.20	-0.3	CLL	92.60	39 iPd	53 34.40	0.8
	1.2s	459.00nm	6.2mb			0.9s	19.65nm	5.1mb		1.7s	80.00nm	5.7mb		
ACU	81.61	50 eP	52 41.00	0.3	TTA	88.08	333 ePd	53 12.20	-0.3			iPp	54 04.20	113kmX
BOH	82.09	46 P	52 43.05	-0.2	ENN	88.10	39 iPd	53 13.00	0.3	KBA	92.66	43 ePd	53 33.80	-0.5
ELYF	82.12	46 P	52 42.98	-0.3		1.0s	130.00nm	5.9mb		1.5s	58.80nm	5.7mb		
ISSF	82.23	46 P	52 43.96	0.0			i	53 18.80	18kmX			i	54 04.20	116kmX
MADF	82.23	46 P	52 43.55	-0.3			e	53 42.50		RBL	92.79	44 P	53 35.00	0.2
ATE	82.31	46 P	52 43.61	-0.6	PZZ	88.11	45 P	53 13.40	0.2	SDI	92.80	49 P	53 35.00	0.1</



PCC	0.31	204	iS	09	18.50	
			iPd	09	17.70	-0.2
			iS	09	22.20	
MHC	0.64	133	ePc	09	23.90	-0.6
			eS	09	34.10	
			iSg	09	35.70	
ARN	0.70	128	eP	09	24.50	-1.2
GCC	0.77	166	ePc	09	26.00	-0.9
NWRM	0.85	322	eP	09	26.90	-1.4
SAO	1.19	148	eP	09	32.40	-1.7
CMB	1.48	80	ePc	09	37.00	-1.7
			eS	09	56.00	
KVN	3.48	67	eP	10	13.00	5.6
	11 obs. associated					
<hr/>						
?	MAR	13, 1990	22h	06m	27.22±	1.28s
		50.326 N ±	23.9km		18.852 E ±	10.2km
		DEPTH =	10.0km	(geophysicist)		
	POLAND					(548)
		ML 2.6 (KRA).				
KRA	0.75	111	ePg	06	41.80	-0.1
			iSg	06	52.10	
SPC	1.45	141	ePn	06	53.80	0.1
			i(Sg)	07	14.10	
KSP	1.71	289	ePn	06	57.30	0.1
	0.3s	37.00nm				
			iPg	06	59.30	
			iS	07	22.00	
PRU	2.79	265	Pg	07	19.00	6.2X
			Sg	07	55.00	
BRG	3.17	282	ePg	07	25.00	6.9X
			eSg	08	10.00	
KHC	3.62	253	ePn	07	24.50	-0.1
			ePg	07	32.40	
			Sg	08	16.20	
	S.D. = 0.2		on	4 of	6 obs.	
<hr/>						
*	MAR	13, 1990	22h	10m	41.81±	3.23s
		19.293 N ±	37.7km		65.107 W ±	6.1km
		DEPTH =	33.0km	(normal)		
	PUERTO RICO REGION					(90)
LPR	1.22	212	iP	11	02.60	0.0
CPD	1.46	217	iP	11	06.40	0.2
SJG	1.54	220	iP	11	07.20	0.0
PORP	1.90	230	iP	11	12.60	0.0
LRS	1.92	239	iP	11	12.80	-0.1
ANG	3.77	124	eP	11	39.42	0.4
			eS	12	25.47	
BPA	3.81	125	eP	11	39.89	0.2
			eS	12	25.87	
SEG	4.48	129	eP	11	48.50	-0.6
BBL	5.10	137	eP	11	49.00	-9.1X
	S.D. = 0.4		on	8 of	9 obs.	
<hr/>						
	MAR	13, 1990	22h	57m	14.95±	0.67s
		39.427 N ±	5.4km		23.394 E ±	7.6km
		DEPTH =	10.0km	(geophysicist)		
	AEGEAN SEA					(365)
		ML 3.2 (ATH).				
NEO	0.18	228	ePg	57	18.00	-1.0
PLG	0.95	2	ePg	57	32.50	-0.5
EVR	1.33	248	ePn	57	37.50	-2.1
ATH	1.47	170	ePb	57	42.80	1.3
KZN	1.53	306	ePb	57	39.00	-3.4X
VAY	1.99	342	ePn	57	47.50	-1.5
MMB	2.17	7	iP	57	51.00	-0.7
			iSg	58	15.00	
LSK	2.27	289	ePn	57	54.50	1.3
KBN	2.31	302	ePn	57	52.20	-1.5
RDO	2.37	43	ePn			



3.994 S  $\pm$  4.7km 39.925 E  $\pm$  3.8km  
 DEPTH = 10.0km (geophysicist)  
 5.3mb ( 60 obs.) 5.2msz ( 12 obs.)  
 KENYA (570)

Felt by many people in the  
 epicentral area.

CENTROID, MOMENT TENSOR (HRV)

Data Used: GDSN

L.P.B.: 12S, 26C

Centroid Location:

Origin Time 23:05:36.8 0.8

Lat 3.87S 0.05 Lon 40.48E 0.06

Dep 15.0 FIX Half-duration 2.2

Moment Tensor: Scale 10\*\*17 Nm

Mrr=-1.77 0.06 Mtt=-0.26 0.08

Mff= 2.04 0.07 Mrt= 0.56 0.22

Mrf= 0.38 0.27 Mtf=-0.71 0.06

Principal Axes:

T Val= 2.25 Plg= 3 Azm=255

N -0.20 22 346

P -2.04 68 157

Best Double Couple: Mo=2.2\*10\*\*17

NP1:Strike=323 Dip=46 Slip=-121

NP2: 185 52 -62

NAI 4.13 311 iPc 06 34.60 0.5  
 0.8s 14.18nm

NPA 11.04 183 eP 08 05.50 -5.1X  
 iS 10 02.40

LWI 11.24 279 iPc 08 09.00 -4.5X  
 iS 10 13.00

AAE 12.99 355 eP 08 35.50 -1.6  
 ARO 15.69 11 iP+ 09 12.00 -0.4

BUL 19.47 214 iP 09 54.00 -5.7X  
 iSn 13 20.10

SLR 24.33 206 iPd 10 48.00 -0.7  
 1.0s 50.00nm 5.1mb  
 Z 18s 21.99um 5.7msz

KSR 25.08 209 iPc 16 14.00  
 i 10 55.70 -0.2  
 i 10 40.70

PRY 25.73 206 iPd 10 58.20 -3.8X  
 0.8s 21.88nm 4.9mb

BFS 26.01 208 eP 11 01.00 -3.6X  
 1.4s 106.98nm 5.3mb

SEK 26.88 205 iPd 11 11.80 -0.8  
 1.0s 140.00nm 5.6mb

AGAL 28.12 346 iPd 11 26.50 2.8X  
 S 16 08.00

AGMR 28.30 346 iPc 11 26.50 1.2  
 MBH 33.92 352 eP 12 15.00 0.2

PRNI 34.47 352 eP 12 21.00 1.4  
 BHD 37.30 6 ePc 12 46.00 2.5  
 ePP 14 17.00  
 eS 18 40.00  
 iLR 28 43.00

KER 38.74 10 ePd 12 56.50 0.7  
 SLY 39.73 7 iPc 13 04.50 0.7  
 eS 19 02.00  
 eLR 28 06.50

KOD 39.97 69 eP 13 07.10 0.6  
 POU 40.22 55 iPc 13 09.40 1.2

MSL 40.28 4 ePc 13 09.50 1.1  
 e 14 42.00

IR1 40.48 14 eP 13 12.50 2.2  
 IR7 40.74 13 eP 13 14.00 1.7

IR2 40.77 14 eP 13 14.00 1.4  
 SHGH 41.11 284 eP 13 15.50 0.0

GBA 41.13 64 Pd 13 14.60 -1.0  
 1.7s 67.40nm 5.1mb

WEGH 41.31 283 eP 13 18.50 1.3  
 KUK 41.49 284 eP 13 20.00 1.4

WIGH 41.55 283 eP 13 21.00 1.9  
 TAB 42.27 8 eP 13 27.00 2.1

QUE 42.71 35 eP 13 30.00 1.4  
 HYB 43.66 60 iPc 13 36.00 -0.4  
 1.4s 125.00nm 5.5mb

MAID 44.06 23 iPd- 13 40.00 0.6  
 eS 20 18.00

BBTK 44.12 352 iPd 13 40.50 0.7  
 KIC 45.77 283 P 13 53.84 0.5  
 1.4s 49.00nm 5.3mb

LIC 46.02 283 P 13 55.84 0.6  
 1.4s 69.00nm 5.4mb

TIC 46.10 283 P 13 56.66 0.7

LKO 1.3s 94.50nm 5.6mb  
 47.30 287 P 14 05.68 0.2

SOI 1.4s 100.00nm 5.7mb  
 47.35 334 P 14 05.50 0.1

VAY 47.80 342 eP 14 08.50 -0.5  
 PLD 47.92 345 eP 14 10.00 0.1

OHR 48.17 341 eP 14 11.50 -0.5  
 1.8s 0.12nm 2.7mb X

GIB 48.19 332 P 14 11.00 -1.2  
 NDI 48.37 45 iPd 14 13.50 -0.1

TDS 48.56 336 P 14 15.00 0.1  
 SKO 48.74 342 iP 14 16.00 -0.3

Z 16s 1.23um 5.0msz X  
 N 16s 1.37um  
 E 16s 1.23um

i 14 30.00  
 i 14 54.00  
 iPP 16 12.50  
 eS 21 22.00  
 eSS 25 10.00

VTS 48.78 344 eP 14 17.00 0.2  
 PVL 48.81 346 iP 14 17.00 0.3

ORI 48.86 336 P 14 18.00 0.8  
 MGR 49.29 335 P 14 20.00 -0.5

TLB 49.53 349 eP 14 23.00 0.8  
 SGO 49.75 335 P 14 23.80 -0.1

ISR 50.35 348 eP 14 31.00 2.4  
 CMP 50.81 346 ePc 14 31.00 -1.1

MLR 50.82 347 eP 14 34.00 1.7  
 VRI 51.02 348 ePc 14 35.00 1.4

DUI 51.02 336 P 14 34.00 0.2  
 SDI 51.32 335 P 14 36.00 -0.1

CLI 51.56 349 ePd 14 39.00 1.3  
 AZI 51.72 335 P 14 37.50 -1.4

RDP 51.84 334 P 14 40.50 0.5  
 RMP 51.89 334 P 14 37.50 -2.8

BZS 52.02 344 eP 14 42.00 0.8  
 ASS 52.93 335 P 14 47.00 -1.2

ARV 53.17 336 P 14 49.50 -0.4  
 BMR 53.44 346 ePc 14 54.00 2.3

DMN 53.69 51 P 14 52.80 -1.5  
 PKI 53.91 52 P 14 53.80 -2.1

KKN 53.91 51 P 14 54.20 -1.6  
 VBY 53.96 339 e(P) 14 58.40 2.8X

ZAG 53.97 339 eP 14 57.10 1.5  
 PGD 53.98 335 P 14 54.00 -2.0

PTJ 54.05 339 eP 14 55.30 -1.1  
 PGF 54.14 332 eP 14 56.40 -0.7

1.0s 8.00nm 4.7mb  
 PII 54.37 334 P 14 58.00 -0.6

GUN 54.44 51 P 14 58.20 -1.7  
 CEY 54.46 338 e(P) 14 59.40 0.1

KSH 54.51 34 P 15 00.00 0.1  
 E 16s 1.80um

PSZ 54.60 344 iP 15 00.80 0.4  
 BDI 54.61 334 P 14 58.50 -2.0

TRI 54.69 338 eP 15 00.90 0.0  
 VOY 54.91 338 eP 15 01.20 -1.5

SRO 54.97 342 eP 15 04.00 1.0  
 RBL 55.38 338 P 15 05.50 -0.6

SOP 55.40 341 ePd 15 06.00 -0.1  
 TAF 55.43 318 iPc 15 08.00 1.4

SPC 55.66 344 eP 15 07.80 -0.4  
 BOB 55.67 334 P 15 07.50 -0.7

ZST 55.68 342 eP 15 08.10 0.0  
 CTI 55.79 336 P 15 08.50 -0.6

FVI 55.80 338 P 15 09.00 0.0  
 SBF 55.88 332 eP 15 08.80 -0.9

0.8s 5.35nm 4.6mb  
 SAL 55.89 335 P 15 08.50 -1.1

LMR 55.92 331 eP 15 09.40 -0.5  
 1.0s 22.00nm 5.1mb

CKI 55.93 333 P 15 08.50 -1.4  
 VKA 55.99 341 ePd 15 09.50 -0.9

4.0s 597.00nm 6.0mb X  
 KBA 56.00 338 ePd 15 09.50 -1.1

1.2s 12.90nm 4.8mb  
 FRF 56.03 331 eP 15 10.10 -0.6

1.2s 20.85nm 5.0mb  
 LRG 56.09 331 eP 15 10.80 -0.3

1.0s 16.00nm 5.0mb  
 MDI 56.36 335 P 15 11.00 -2.0

KRA 56.54 345 iPc 15 13.90 -0.3  
 1.4s 123.00nm 5.7mb

Z 18s 1.30um 5.1msz  
 e 15 19.20

KMR 56.54 340 iP+ 15 13.30 -1.1

IFR 56.58 315 iPc 15 16.50 1.4

OGA 56.71 337 eP 15 15.50 -0.3  
 TIO 56.82 311 iP 15 18.00 1.2

VAI 56.84 334 P 15 14.00 -2.4  
 BNI 57.14 332 P 15 19.00 0.2

LPG 57.44 333 eP 15 19.90 -1.3  
 0.7s 6.05nm 4.7mb

LPL 57.47 333 eP 15 20.00 -1.2  
 0.8s 6.70nm 4.7mb

APHE 57.51 319 iPc 15 22.50 0.9  
 KHC 57.65 340 iPd 15 21.40 -0.8

1.1s 46.00nm 5.4mb  
 Z 18s 1.80um 5.2msz

N 17s 1.40um  
 E 16s 1.00um

ACHM 57.69 319 iPc 15 23.50 0.8  
 ATEJ 57.70 319 iPd 15 24.00 1.1

ASMO 57.78 319 iPc 15 24.00 0.6  
 ALOJ 57.87 319 iPc 15 25.00 0.9

WET 57.91 339 eP 15 23.00 -1.0  
 1.5s 98.00nm 5.6mb

AAPN 57.99 319 iPc 15 25.40 0.5  
 PRU 58.07 341 Pd 15 24.00 -1.1

1.5s 33.50nm 5.2mb  
 Z 16s 1.00um 5.0msz X

N 18s 0.50um  
 E 16s 1.00um

e 15 30.00  
 KSP 58.27 343 ePd 15 26.00 -0.5

1.5s 59.00nm 5.4mb  
 e 16 18.00

FEL 58.74 335 eP 15 28.90 -1.1  
 EPF 58.89 327 eP 15 31.20 0.2

1.3s 21.65nm 5.1mb  
 GRF 58.96 339 iPd 15 30.80 -0.5

1.7s 165.00nm 5.9mb  
 Z 18s 0.90um 4.9msz

e 15 36.40  
 e 15 52.20

e 16 03.20  
 BRG 59.02 341 iPc 15 31.10 -0.6

1.5s 66.00nm 5.5mb  
 BSF 59.22 335 eP 15 32.60 -0.7

1.2s 17.85nm 5.1mb  
 HOF 59.24 339 eP 15 32.30 -1.0

1.0s 24.00nm 5.3mb  
 CAF 59.28 330 eP 15 34.30 0.6

1.3s 27.10nm 5.2mb  
 TOL 59.45 322 iPc 15 25.00 -9.9X

1.4s 116.28nm 5.8mb  
 CDF 59.47 335 eP 15 34.30 -0.7

1.2s 14.90nm 5.0mb  
 HAU 59.54 334 eP 15 34.80 -0.6

1.2s 17.85nm 5.1mb  
 MOX 59.61 340 iP 15 36.00 0.2

1.5s 93.00nm 5.7mb  
 Z 16s 1.00um 5.0msz X

E 15s 1.70um  
 SMF 59.65 332 eP 15 35.90 -0.2

1.1s 14.65nm 5.0mb  
 CLL 59.71 341 iPd 15 35.90 -0.5

1.6s 85.00nm 5.6mb  
 e 16 18.00

TOD 59.80 337 eP 15 36.63 -0.5  
 RJF 59.82 330 eP 15 37.90 0.6

1.2s 35.70nm 5.4mb  
 LBF 59.83 332 eP 15 36.90 -0.6

1.0s 10.00nm 4.9mb  
 MAF 59.95 331 eP 15 38.60 0.4

1.3s 34.30nm 5.3mb  
 LFF 59.97 329 eP 15 38.80 0.5

1.3s 28.90nm 5.2mb  
 AVF 59.98 332 eP 15 38.20 -0.2

1.0s 12.00nm 5.0mb  
 BGF 60.06 331 eP 15 39.20 0.3

1.2s 32.75nm 5.3mb  
 LOR 60.10 332 eP 15 39.00 -0.2

1.0s 18.00nm 5.2mb  
 SSF 60.11 332 eP 15 38.90 -0.4

1.0s 4.00nm 4.5mb  
 TCF 60.17 331 eP 15 40.40 0.7

1.2s 41.65nm 5.4mb  
 TNS 60.43 337 ePc 15 41.60 0.1

60.48 330 eP 15 42.30 0.5  
 1.2s 20.85nm 5.1mb

ABH 60.51 337 eP 15 41.39 -0.6  
 RUP 60.56 336 eP 15 42.23 -0.2



13d 23h

MFF	61.56	330 eP	15 49.20	0.1		1.4s	38.00nm	5.6mb	VLS	3.97	256 ePn	56 03.00	0.8		
	1.2s	26.80nm	5.3mb		WB5	92.83	110 eP	18 45.00	0.9	NPS	3.98	178 ePn	56 01.50	-0.8	
IPM	61.63	83 ePc	15 51.10	0.9	ZOBO	106.12	252 ePdiff	19 48.00	3.1X	OHR	4.04	299 iPn	56 04.00	0.8	
	1.2s	83.50nm	5.8mb			Z	22s	1.16um	5.4Msz			iSn	56 48.50		
NNT	61.65	73 eP	15 50.70	0.4			LR	35 36.00				Lg	57 19.60		
MEM	61.70	336 Pc	15 50.80	0.8	INK	115.64	357 ePKP	24 13.00	-0.1	SKO	4.11	313 iPnd	56 04.80	0.7	
ENN	61.85	336 eP	15 51.00	0.0	YKA	118.65	347 ePKP	24 18.30	-0.7		0.5s	170.00nm			
	0.9s	41.00nm	5.6mb				0.4s	0.30nm				iPb	56 11.60		
DOU	61.88	335 P	15 52.80	1.5	FVM	123.56	314 PKP	24 30.00	0.8			i	56 26.70		
SNF	62.33	335 Pc	15 54.90	0.7	EDM	126.23	340 ePKP	24 34.00	0.0			i	56 49.40		
CHG	62.34	66 eP	15 54.20	-0.7	SES	127.69	337 ePKP	24 37.00	0.2			iSn	56 49.50		
WTS	62.47	338 eP	15 56.00	0.9	RSSD	128.98	327 PKP	24 40.00	0.3			i	56 53.40		
	1.0s	59.00nm	5.7mb		GOL	132.59	323 PKP	24 47.60	0.8			iSb	57 01.50		
NST	62.68	70 eP	15 58.80	1.7	BW06	132.81	329 PKP	24 46.70	-0.4			eSg	57 07.20		
LDF	62.92	331 eP	15 57.90	-0.3	ALO	136.22	319 ePKP	24 53.00	-0.7			i	57 12.50		
	1.4s	56.65nm	5.6mb			Z	22s	0.83um	5.4Msz			Lg	57 17.10		
WIT	63.17	338 eP	16 01.00	1.3	KVN	139.80	333 PKP	24 53.70	-6.5X	SRN	4.28	280 ePn	56 09.00	2.4	
WMO	64.05	37 iPd	16 05.50	-0.3	MIN	140.16	338 ePKPc	24 56.50	-4.3X	KEK	4.42	278 ePn	56 10.50	1.9	
	Z	24s	1.20um	5.0MszX	WDC	140.30	339 e(PKP)	25 12.60	11.8X	BERA	4.49	291 ePn	56 12.00	2.5	
			S	24 45.50	CMB	141.64	335 ePKPc	24 58.40	-5.0X	KSL	4.51	133 ePb	56 16.00	6.1X	
LOE	64.57	69 eP	16 08.50	-1.0	FRI	142.21	333 ePKPc	25 00.10	-4.2X	PHP	4.55	304 iPnc	56 11.70	1.3	
NUR	65.41	352 iP	16 13.30	-0.9	MHC	142.76	335 ePKPc	25 04.50	-0.9	VLO	4.76	287 ePn	56 15.00	2.4	
	0.8s	35.20nm	5.6mb		LLA	143.07	334 ePKPc	25 03.50	-2.3	TIR	4.78	298 ePn	56 16.20	2.6	
HFS	67.17	346 eP	16 24.20	-1.3	SBB	143.14	329 ePKP	25 03.00	-3.1X	PSN	4.88	24 eP	56 14.00	-1.0	
	0.6s	1.80nm	4.4mb		PR1	143.34	333 ePKPc	25 05.00	-1.4	LACI	5.01	300 ePn	56 19.10	2.2	
	Z	18s	0.78um	5.0Msz	PRS	143.50	334 ePKPc	25 04.80	-1.8	BUC1	5.11	4 eP	57 00.00	41.7X	
			LR	47 10.00	PLM	143.63	326 ePKP	25 11.00	3.9X	BCI	5.15	309 ePn	56 21.60	2.7	
SUF	67.35	353 iP	16 25.90	-0.7	BAR	144.03	325 ePKP	25 08.00	0.4	BUC	5.18	5 eP	56 44.00	24.7X	
	0.8s	47.20nm	5.7mb			S.D. = 1.0	on 194 of 210 obs.		SDA	5.32	303 ePn	56 24.60	3.2X		
KMI	67.42	61 Pd	16 27.00	-1.0					DRA	5.50	351 ePd	56 23.00	-0.9		
	2.5s	0.10nm	2.6mb X		? MAR 13, 1990	23h 32m 00	61 ± 0.96s		BBTK	5.66	82 ePn	56 26.00	-0.3		
	Z	20s	1.90um	5.3Msz		67.994 N ± 10.8km	20.567 E ± 10.2km				i	56 50.00			
	E	19s	1.50um		DEPTH = 10.0km (geophysicist)										
			S	25 22.00	SWEDEN			(536)	TLB	5.67	19 eP	57 22.50	56.3X		
NB2	68.57	345 P	16 33.10	-1.2		MD 2.1 (BER).			ISR	5.94	7 eP	56 31.00	0.9		
	1.4s	47.10nm	5.5mb						MLR	6.25	3 iPd	56 35.00	0.5		
EKA	68.93	335 P	16 38.00	1.4	KTk1	1.42	43 eP	32 34.00	-0.4	GZR	6.46	343 ePd	56 36.50	-0.9	
	2.2s	172.60nm	5.9mb				eS	32 55.82		BRT	6.55	287 P	56 39.00	0.3	
GTA	69.88	46 Pd	16 42.00	-0.9	TRO	1.75	341 iP	32 39.65	0.5	KAS	6.68	69 eP	56 44.00	3.4X	
	1.4s	100.00nm	5.8mb				eS	33 02.63		VRI	6.68	8 ePd	56 40.50	0.0	
	Z	22s	0.70um	4.9Msz	LOF	2.64	276 eP	32 51.62	-0.3	BEO	6.71	328 ePn	56 55.00	14.2X	
CD2	69.96	55 eP	16 41.40	-2.0			eS	33 21.92				e	58 33.00		
GYA	71.18	60 P	16 51.00	-0.1	KJN	4.89	140 eP	33 24.00	0.2	DEV	6.90	345 eP	56 42.00	-1.5	
	Z	32s	1.00um	4.9MszX		S.D. = 0.8	on 4 of 4 obs.		ROI	6.91	276 P	56 43.50	-0.2		
	N	20s	1.40um						BZS	6.98	337 ePc	56 43.50	-1.1		
	E	20s	1.00um			MAR 13, 1990	23h 55m 00.84 ± 0.33s		ORI	7.01	280 P	56 45.50	0.3		
			S	26 08.00		39.247 N ± 2.8km	25.478 E ± 2.9km		TDS	7.09	276 P	56 45.50	-0.7		
LZH	71.66	50 eP	16 54.00	0.2		DEPTH = 18.0 ± 3.2 km			CSI	7.12	277 P	56 46.60	-0.2		
	2.5s	0.10nm	2.5mb X			4.2mb (14 obs.)			CZI	7.25	273 P	56 48.30	-0.2		
	Z	32s	2.50um	5.3MszX					MMN	7.36	278 P	56 50.80	0.8		
SOD	71.83	355 iP	16 54.10	0.2		AEGEAN SEA		(365)			eSn	58 04.00			
XAN	75.03	53 P	17 12.50	-0.9		ML 4.1 (ATH).			CLI	7.42	10 ePd	56 51.00	0.2		
BTO	77.66	47 P	17 29.00	0.9	PRK	0.62	90 iPnd	55 13.80	1.0	SOI	7.47	264 P	56 50.00	-1.5	
WHN	78.69	58 Pc	17 35.50	1.7	NEO	1.75	273 iPnd	55 30.10	-0.5	MGR	7.70	280 Pd	56 54.00	-0.8	
	Z	28s	1.20um	5.1MszX	SMG	1.87	145 ePn	55 33.00	0.7	HVAR	7.86	303 iPn	56 55.80	-1.2	
	E	18s	1.00um		ATH	1.88	228 iPnc	55 31.80	-0.6	ATN	7.91	265 P	56 55.50	-2.2	
			pP	17 42.00	21kmX	RDO	1.90	1 iPnc	55 32.60	-0.1	SGO	7.93	283 P	56 57.50	-0.4
			S	27 32.00		PLG	1.93	306 iPn	55 33.50	0.3	BMR	8.54	351 ePc	57 17.00	10.5X
TIY	78.72	50 eP	17 34.30	0.4	APE	2.17	179 ePn	55 36.00	-0.8	DUI	8.74	290 P	57 08.00	-1.4	
HHC	78.85	47 Pc	17 36.60	1.9	KDZ	2.40	359 iPc	55 40.00	0.1	GIB	9.05	266 P	57 13.50	-0.2	
TIA	82.06	53 eP	17 52.30	0.6			iS	56 08.00		SDI	9.22	289 P	57 14.50	-1.5	
BJ1	82.09	49 eP	17 53.00	1.4	RZN	2.51	347 iPc	55 42.00	0.4	AZI	9.56	290 P	57 19.50	-1.0	
	1.5s	66.00nm	5.5mb		CIN	2.63	128 ePn	55 44.00	0.9	PTJ	9.67	317 eP	57 22.20	0.1	
	Z	36s	1.25um	5.0MszX	MMB	2.69	331 iPc	55 44.00	-0.1	VBY	9.81	313 eP	57 24.30	0.3	
NJ2	82.75	57 Pc	17 56.50	1.2	DIM	2.80	1 iP	55 46.00	0.4	RDP	10.04	289 P	57 27.50	0.3	
	Z	20s	0.40um	4.8Msz	EVR	2.87	265 iPnd	55 47.00	0.3	ARV	10.33	298 P	57 28.50	-2.7	
SSE	84.58	58 P	18 05.00	0.4	PLD	2.92	349 eP	55 48.00	0.8	ASS	10.39	296 P	57 31.50	-0.6	
	1.3s	33.00nm	5.4mb		VAY	3.04	314 iPn	55 49.00	0.1	CEY	10.42	312 eP	57 32.00	-0.4	
	Z	20s	0.90um	5.2Msz			i	55 54.70				e(S)	59 35.00		
	N	16s	0.50um				i	55 59.30		LJU	10.54	314 eP	57 33.00	-1.0	
			eSKS	28 26.00			i	56 28.40				e(S)	00 34.00		
			eS	28 36.00			iSg	56 35.50		VOY	10.89	312 eP	57 37.60	-1.3	
BAO	86.93	255 eP	18 17.50	0.8			Lg	56 45.00		RBL	11.31	313 P	57 43.00	-1.6	
KNA	87.82	106 eP	18 21.00	0.2	KZN	3.05	292 iPnd	55 49.50	0.4	KBA	11.81	315 eP	57 50.50	-1.0	
SNY	87.91	48 eP	18 19.60	-1.1	VLI	3.23	219 iPnc	55 50.60	-1.0		1.2s	11.40nm	5.0mb		
CN2	89.50	46 Pc	18 28.40	0.1	ITU	3.29	54 ePn	55 53.00	0.5	FVI	11.85	312 P	57 50.50	-1.2	
	Z	20s	1.50um	5.4Msz			iSg	56 18.00		CTI	12.23	308 P	57 53.50	-3.6X	
	N	12s	0.10um		GBZT	3.41	62 ePn	55 54.50	0.2	KHC	13.04	323 P	58 12.50	4.7X	
	E	12s	0.80um		ITM	3.48	235 iPnd	55 55.00	-0.2	BOB	13.13	300 P	58 20.50	11.5X	
			epP	18 39.00	33kmX	ARG	3.68	144 ePn	55 59.00	0.9	VAI	13.97	304 P	58 29.00	9.1X
ASPA	92.05	114 iPc	18 41												



[illegible]



14d 01h

SASA 0.36 37 ePd 43 46.67 -0.5  
eS 43 55.33  
PVV 0.61 302 iPd 43 48.96 -0.5  
eS 43 59.10  
DRRA 0.82 262 eP 43 51.11 -0.7  
eS 44 03.10  
IVF 1.14 42 eP 43 55.23 -0.6  
eS 44 09.84  
SNKA 1.24 243 eP 43 56.90 -0.2  
5 obs. associated

MAR 14, 1990 02h 15m 12.96 ± 0.63s  
45.860 N ± 6.7km 14.669 E ± 5.5km  
DEPTH = 10.0km (geophysicist)  
YUGOSLAVIA (383)  
MD 3.2 (LJU), 2.7 (TRI), ML 2.7  
(KBA). Felt (V) in the Videm-  
Dobro Polje area.

LJU 0.21 333 iPg 15 17.00 -0.5  
i 15 18.70  
e(Sg) 15 20.80  
CEY 0.21 234 iPg 15 16.80 -0.7  
iSg 15 19.80  
VBY 0.54 131 ePg 15 23.00 -1.0  
i(Sg) 15 29.70  
i 15 32.00  
RIY 0.55 201 ePg 15 22.80 -1.4  
iSg 15 31.50  
VOY 0.57 288 iPg 15 23.30 -1.2  
eSg 15 32.30  
TRI 0.65 257 iPg 15 24.50 -1.4  
iSg 15 34.40  
PTJ 0.90 87 iPg 15 30.00 -0.3  
eSg 15 43.60  
ZAG 0.92 92 ePg 15 30.50 0.0  
iSg 15 42.80  
RBL 0.96 308 P 15 35.50 -0.8  
iSg 15 44.00  
FVI 1.50 300 P 15 41.50 1.6  
KBA 1.52 324 iPd 15 40.90 0.5  
iPg 15 42.50  
iSn 16 01.80  
iSg 16 03.40  
CTI 2.11 276 P 15 50.50 1.6  
ARV 2.66 208 P 15 59.50 2.8  
ZST 2.87 35 e(P) 16 48.50 48.9X  
PGD 2.89 228 P 16 03.50 3.5X  
eSn 16 36.50  
HVAR 2.97 154 e(Pn) 16 01.90 0.9  
ASS 3.14 208 P 16 06.50 3.1X  
KHC 3.35 348 ePg 16 13.00 6.5X  
Sg 17 01.40

S.D. = 1.4 on 14 of 18 obs.

MAR 14, 1990 02h 31m 46.58 ± 0.23s  
49.650 N ± 5.2km 155.945 E ± 4.0km  
DEPTH = 49.1km (3 depth phases)  
5.0mb (46 obs.)

KURIL ISLANDS (221)  
KUSJ 10.15 234 eP 34 10.20 -2.2  
eS 35 56.90  
ASAJ 10.65 244 P 34 22.70 3.5X  
HOJ 11.40 235 eP 34 29.20 -0.2  
eS 36 31.40  
MRRJ 12.60 241 eP 34 44.60 -0.7  
CHJJ 18.36 229 eP 35 59.70 0.6  
MTMJ 18.53 232 P 36 01.30 0.0  
MDJ 18.58 264 eP 36 04.50 2.8  
IIDJ 19.34 230 eP 36 10.80 0.1  
CN2 21.61 266 Pc 36 31.50 -2.5  
TTA 29.01 45 ePc 37 43.80 0.2  
IMA 30.35 38 ePc 37 55.30 -0.3  
0.9s 14.60nm 4.7mb  
KDC 30.89 55 eP 37 59.40 -0.8  
PMR 32.22 47 ePc 38 10.70 -1.0  
FBA 32.72 41 ePc 38 16.50 0.4  
TOA 33.57 46 ePc 38 24.30 0.6  
INK 38.19 35 ePc 39 03.30 0.8  
MBC 41.22 21 ePc 39 27.70 0.2  
0.7s 10.00nm 4.7mb  
YKA 47.47 39 eP 40 17.80 -0.1  
0.7s 7.40nm 4.8mb  
EDM 52.96 49 eP 41 00.00 0.1  
0.7s 25.00nm 5.3mb  
CHG 54.63 257 iPc 41 13.20 0.7

0.9s 21.01nm 5.2mb  
WDC 55.57 66 e(P) 41 18.60 -0.5  
SES 55.80 51 eP 41 20.00 -0.8  
MIN 56.27 66 eP 41 24.40 0.1  
GUN 56.63 275 P 41 26.20 -1.2  
ORV 56.83 66 eP 41 28.10 -0.1  
KKN 57.10 275 P 41 29.80 -0.7  
0.6s 10.00nm 5.0mb  
PKI 57.17 275 P 41 29.80 -1.3  
FFC 57.31 42 eP 41 31.00 -0.4  
0.9s 25.00nm 5.3mb  
DMN 57.34 275 P 41 31.80 -0.4  
0.7s 23.00nm 5.3mb  
LRM 57.96 56 eP 41 36.80 0.4  
CMB 58.48 67 e(P) 41 39.50 -0.3  
KVN 59.17 65 P 41 45.00 0.2  
TNP 60.33 65 P 41 52.00 -0.8  
0.8s 5.88nm 4.8mb  
SUF 61.13 336 eP 41 55.80 -1.8  
0.7s 4.50nm 4.7mb  
BW06 61.53 57 P 42 00.70 -0.2  
0.8s 12.32nm 5.1mb  
pP 42 14.20 48km  
FRB 61.68 21 eP 41 59.00 -2.3  
NUR 63.38 335 eP 42 08.00 -4.5X  
RSSD 63.53 52 P 42 13.90 -0.2  
pP 42 28.00 50km  
RSON 63.61 42 P 42 12.90 -1.3  
GOL 65.94 57 P 42 30.00 0.2  
0.8s 5.95nm 4.7mb  
GLD 65.98 57 P 42 30.80 0.8  
0.9s 21.05nm 5.2mb  
NB2 66.07 342 P 42 28.70 -1.4  
0.7s 3.30nm 4.5mb  
HFS 66.38 340 eP 42 29.80 -2.1  
1.0s 15.60nm 5.0mb  
ANMO 68.73 61 P 42 48.10 0.7  
0.8s 2.80nm 4.3mb  
pP 43 02.00 49km  
ALO 68.74 61 eP 42 47.90 0.5  
0.9s 4.83nm 4.5mb  
SCH 69.92 25 eP 42 54.00 0.0  
WB5 71.82 201 eP 43 06.00 0.1  
WRA 71.89 201 Pd 43 06.90 0.6  
1.1s 13.10nm 4.8mb  
KOD 74.82 268 eP 43 24.60 0.7  
FVM 74.94 49 P 43 23.80 -0.2  
0.7s 13.61nm 5.0mb  
PRU 75.37 335 eP 43 26.00 -0.2  
ASPA 75.58 201 iPd 43 28.80 1.1  
0.7s 13.00nm 5.0mb  
KHC 76.41 336 P 43 33.10 0.9  
GRF 76.51 337 eP 43 34.00 1.3  
KBA 78.36 335 eP 43 43.00 -0.1  
0.7s 16.00nm 5.1mb  
RBL 78.88 335 P 43 45.00 -0.8  
CTI 79.76 336 P 43 50.00 -0.7  
FLN 79.89 344 eP 43 51.00 -0.1  
0.8s 14.80nm 5.0mb  
LDF 79.99 344 eP 43 51.40 -0.3  
0.8s 14.80nm 5.0mb  
BLA 80.20 42 P 43 53.30 0.2  
0.6s 4.55nm 4.6mb  
GRR 80.31 345 eP 43 53.50 0.1  
0.8s 29.55nm 5.3mb  
LOR 80.49 341 eP 43 54.10 -0.3  
0.8s 4.05nm 4.4mb  
VAY 80.58 326 eP 43 54.80 -0.1  
GRC 80.62 342 P 43 55.11 0.1  
VAI 80.68 337 P 43 55.00 -0.3  
LPF 80.69 345 eP 43 55.80 0.4  
0.8s 16.10nm 5.0mb  
LBF 80.73 341 eP 43 55.50 -0.2  
8.0s 2.70nm 3.2mb X  
SSF 80.76 341 eP 43 55.80 0.0  
0.8s 6.05nm 4.6mb  
AVF 81.05 341 eP 43 57.50 0.2  
0.8s 8.75nm 4.7mb  
SMF 81.08 341 eP 43 57.60 0.1  
0.8s 12.10nm 4.9mb  
ORX 81.09 338 P 43 57.32 -0.4  
8GF 81.37 342 eP 43 59.20 0.2  
0.8s 5.35nm 4.6mb  
LPL 81.50 339 eP 44 00.80 0.8  
0.6s 12.65nm 5.1mb  
LPG 81.52 339 eP 44 01.00 0.8  
0.6s 14.45nm 5.1mb

BOB 81.53 337 P 44 00.80 0.8  
SFI 81.67 335 P 44 01.50 1.0  
RSP 81.72 338 P 44 00.40 -0.6  
PGD 81.75 335 P 44 02.00 0.8  
MAF 81.75 342 eP 44 01.70 0.7  
0.8s 18.80nm 5.1mb  
ARV 81.75 334 P 44 01.50 0.4  
TCF 81.76 342 eP 44 01.50 0.4  
1.0s 18.00nm 5.0mb  
PLDF 81.77 341 P 44 01.52 0.3  
AGO 81.80 341 P 44 01.67 0.4  
SHBJ 81.80 311 Pc 44 02.90 1.3  
BDI 81.88 336 P 44 01.00 -0.8  
MFF 81.91 344 eP 44 02.40 0.6  
0.6s 9.00nm 5.0mb  
LSF 81.93 342 eP 44 02.30 0.3  
0.6s 9.90nm 5.0mb  
BNI 81.95 339 P 44 03.00 0.8  
FIR 81.97 335 eP 44 02.00 -0.1  
PCP 81.97 337 P 44 02.04 -0.2  
RRL 82.05 338 P 44 03.68 0.8  
PYM 82.11 341 P 44 03.12 0.1  
CKI 82.15 337 P 44 02.50 -0.6  
PII 82.22 335 P 44 03.00 -0.4  
ASS 82.23 334 P 44 04.50 0.9  
DOI 82.33 338 P 44 02.50 -1.7  
PZZ 82.37 338 P 44 03.27 -1.1  
FIN 82.37 337 P 44 03.58 -0.7  
ROB 82.37 337 P 44 03.89 -0.5  
ENR 82.55 338 P 44 03.79 -1.5  
LBL 82.55 341 P 44 05.63 0.5  
STV 82.56 338 P 44 03.79 -1.5  
BURJ 82.71 312 Pd 44 07.10 0.7  
IMI 82.73 337 P 44 05.84 -0.4  
RJF 82.84 342 eP 44 07.60 0.9  
0.6s 7.20nm 4.9mb  
SBF 82.89 338 eP 44 07.00 0.0  
0.6s 5.40nm 4.8mb  
AZI 82.99 333 P 44 14.00 6.6X  
MDSJ 82.99 312 Pc 44 08.70 0.9  
KFNJ 83.08 312 Pc 44 09.00 0.9  
CAF 83.09 342 eP 44 09.00 1.0  
0.9s 18.00nm 5.1mb  
SDI 83.14 332 P 44 08.00 -0.3  
LFF 83.35 343 eP 44 10.10 0.8  
0.8s 18.80nm 5.2mb  
MKRJ 83.36 312 Pd 44 10.50 0.9  
RDP 83.42 333 P 44 11.50 1.7  
LPO 83.50 342 eP 44 10.90 0.8  
0.8s 18.80nm 5.2mb  
LRG 83.53 338 eP 44 10.90 0.7  
0.8s 13.45nm 5.0mb  
LMR 83.61 338 eP 44 10.90 0.3  
1.0s 36.00nm 5.4mb  
PGF 83.72 336 eP 44 11.20 -0.2  
0.6s 7.20nm 4.9mb  
SGO 83.72 331 P 44 11.00 -0.2  
ORI 83.81 330 P 44 12.50 0.8  
MGR 84.03 331 P 44 12.50 -0.3  
PRNI 84.66 312 ePc 44 16.50 0.3  
MBH 85.19 312 eP 44 19.00 0.2  
EPF 85.26 342 eP 44 19.50 0.5  
0.6s 6.30nm 4.9mb

S.D. = 0.9 on 121 of 124 obs.

MAR 14, 1990 02h 32m 48.90 ± 0.86s  
38.976 N ± 7.0km 20.661 E ± 8.9km  
DEPTH = 10.0km (geophysicist)

GREECE (364)  
MD 3.0 (ATH).

VLS 0.80 184 ePg 33 05.00 0.6  
EVR 0.90 93 ePg 33 05.00 -1.2  
KEK 0.99 318 ePg 33 06.00 -1.7  
SRN 1.04 331 ePg 33 09.20 0.7  
LSK 1.17 358 ePg 33 10.00 -0.9  
KZN 1.58 32 ePb 33 17.00 -0.1  
KBN 1.65 4 ePn 33 18.70 0.7  
BERA 1.81 343 ePn 33 24.60 4.3X  
OHR 2.14 3 iPn 33 26.20 1.1  
VAY 2.76 31 ePn 33 34.70 0.7  
SKO 3.05 11 ePn 33 45.00 7.0X

S.D. = 1.2 on 9 of 11 obs.

MAR 14, 1990 03h 33m 17.34 ± 0.25s  
10.212 N ± 4.2km 59.800 W ± 3.3km  
DEPTH = 47.3km (19 depth phases)



5.1mb ( 41 obs.) 4.8Msz ( 5 obs.)	CBN	32.03 333 eP	39 42.00 0.4	APHE	56.97 52 iPc	43 01.80 1.0
NORTH ATLANTIC OCEAN (402)	NA2	32.13 333 P	39 43.50 1.0	ASMO	57.02 52 iPd	43 02.00 0.9
MD 5.2 (TRN). Felt (III) on	CVL	32.34 332 P	39 45.00 0.7	PLM	57.02 303 eP	43 01.00 -0.2
Trinidad.	BLA	32.69 329 eP	39 48.60 1.1	LRM	57.08 319 eP	43 01.90 0.4
CENTROID, MOMENT TENSOR (HRV)		1.0s 100.00nm	5.6mb	TOL	57.40 49 eP	43 04.00 0.4
Data Used: GDSN		e	02 56.70	RVR	57.55 304 eP	43 04.00 -0.7
L.P.B.: 9S, 20C		e	05 27.90	SES	58.01 324 ePc	43 08.30 0.6
Centroid Location:	NAV	32.96 328 P	39 51.20 1.4		0.9s 57.00nm	5.7mb
Origin Time 03:33:21.3 1.0	TBR	33.33 340 P	39 54.60 1.6		pP	43 22.00 50km
Lat 9.99N 0.10 Lon 59.25W 0.08	TKL	33.42 323 P	39 53.90 0.2	SBB	58.04 305 eP	43 08.00 -0.2
Dep 30.4 8.3 Half-duration 1.7	GBTN	33.68 323 P	39 56.50 0.5	MWC	58.15 304 eP	43 10.00 0.9
Moment Tensor; Scale 10**16 Nm	RSCP	34.47 321 eP	40 03.20 0.3	PAS	58.23 304 eP	43 10.00 0.5
Mrr=-0.56 0.53 Mtt= 6.63 0.83		1.0s 135.57nm	5.8mb	TNP	58.23 309 P	43 09.20 -0.5
Mff=-6.07 0.87 Mrt= 7.39 2.29		epP	40 16.50 51km	ISA	58.74 306 eP	43 13.00 -0.1
Mrf=-0.52 1.70 Mtf= 9.27 0.61	PWLA	35.66 318 P	40 13.30 0.3	KUK	58.89 89 eP	43 13.00 -1.4
Principal Axes:	HBVT	35.91 344 P	40 16.90 1.9	WEGH	59.02 90 eP	43 14.00 -1.3
T Vol= 14.30 Plg=24 Azm=336	WNY	36.16 343 P	40 18.60 1.5	KVN	59.12 309 P	43 15.00 0.0
N -1.85 57 110	OXX	36.48 285 (P)	40 20.00 -0.3	LEGH	59.16 89 eP	43 14.50 -1.7
P -12.45 21 236	RSNY	36.50 342 eP	40 21.80 1.8	SHGH	59.25 89 eP	43 15.00 -1.9
Best Double Couple: Mo=1.3*10**17		0.8s 34.19nm	5.3mb	BCH	59.95 305 P	43 22.70 1.2
NP1:Strike= 16 Dip=57 Slip= 178	Z 20s	4.52um	5.2Msz	FRI	59.95 307 ePc	43 20.40 -0.9
NP2: 107 88 33		epP	40 34.80 49km		epP	43 33.50 47km
		e	05 11.70	EDM	60.50 326 iPc	43 24.50 -0.4
TBH 1.28 282 iP 33 39.87 0.8	CLE	36.56 332 iP	40 22.50 2.0		0.7s 61.00nm	5.8mb
	CBM	37.27 351 P	40 28.90 2.5	PRI	60.57 306 ePc	43 26.60 0.9
BOT 1.31 317 P 33 41.00 1.5	OLY	38.24 316 P	40 34.80 0.1	CMB	60.67 308 ePc	43 26.50 0.2
TPR 1.36 315 P 33 41.00 0.7	PPM	38.51 288 (P)	40 38.00 0.2		iP	43 39.80 47km
PIG 1.39 313 iP 33 42.04 1.4	FVM	38.99 320 P	40 41.50 0.6	LLA	60.87 306 ePc	43 27.40 -0.2
TPP 1.63 274 iP 33 44.64 0.6	III	39.22 287 (P)	40 55.00 11.7X		epP	43 40.70 47km
	IIJ	39.63 289 (P)	40 48.00 0.9	NEW	60.91 320 P	43 27.30 -0.4
TRN 1.64 286 iP 33 43.80 -0.3	CHI	39.91 327 iPd	40 50.40 1.9		1.0s 36.25nm	5.5mb
	MRX	40.99 288 (P)	40 50.00 0.4	PRS	61.16 306 ePc	43 29.80 0.2
TCE 1.98 284 iP 33 48.50 -0.5	SCH	44.83 354 eP	41 31.00 2.5	SAO	61.29 306 eP	43 30.30 -0.2
GRW 2.66 317 eP 33 58.43 -0.4		0.7s 116.00nm	5.8mb	EPF	61.37 46 eP	43 31.60 0.6
SVB 3.36 335 eP 34 07.80 -0.8	ALO	49.04 308 iPc	42 02.00 -0.1		1.0s 10.00nm	4.9mb
SSV 3.38 336 eP 34 08.11 -0.9		0.8s 45.15nm	5.6mb	ARN	61.45 307 P	43 32.80 1.2
SVV 3.38 336 eP 34 08.08 -0.9	Z 18s	0.65um	4.7Msz	MHC	61.54 307 ePc	43 33.00 0.7
SOA 3.41 337 eP 34 08.50 -0.8		e	42 15.00 48km		epP	43 46.10 46km
SLB 3.79 341 eP 34 13.71 -1.2	ANMO	49.05 308 iP	42 02.70 0.7	GCC	61.77 307 ePc	43 34.00 0.3
MVM 4.45 346 eP 34 22.59 -1.5		1.0s 47.50nm	5.5mb	ORV	61.80 309 ePc	43 34.10 0.2
BIM 4.46 344 eP 34 23.07 -1.1		epP	42 15.00 45km	MIN	62.03 310 ePc	43 35.30 -0.3
		e	02 31.80		iP	43 48.40 46km
CRM 4.64 347 eP 34 25.38 -1.4		e	05 09.30	BKS	62.09 307 eP	43 37.50 1.7
	RSON	49.15 332 iP	42 01.90 -0.5		0.7s 22.00nm	5.4mb
FDF 4.68 344 eP 34 26.47 -0.9		1.0s 94.90nm	5.8mb		epP	43 48.20 35kmX
		epP	42 15.00 48km	BRK	62.10 307 e(P)	43 36.20 0.3
		e	02 23.90	LFF	62.11 44 eP	43 35.20 -0.6
DGBT 5.21 344 eP 34 34.68 -0.2		e	05 02.90	PCC	62.14 307 ePc	43 37.30 1.1
		e	42 07.30 -1.6	LPO	62.35 45 eP	43 37.30 -0.2
DPMT 5.25 343 eP 34 34.98 -0.4	GOL	49.93 314 ePc	42 07.30 -1.6		0.8s 5.35nm	4.7mb
		0.8s 46.13nm	5.6mb	LBFM	62.43 311 P	43 38.60 0.3
	Z 20s	2.25um	5.2Msz	WDC	62.77 310 ePc	43 38.10 -2.2
MDN 5.31 343 eP 34 35.20 -1.0		epP	42 21.20 52km	CAF	63.02 45 eP	43 41.60 -0.3
BBL 5.53 343 eP 34 37.76 -1.5		i	02 27.70		1.0s 11.00nm	4.9mb
DOG 6.05 343 eP 34 45.52 -1.1		e	05 04.10	TCF	63.43 43 eP	43 44.20 -0.4
PAG 6.07 343 eP 34 45.79 -1.1	RSSD	50.94 320 ePd	42 16.20 -0.2	MAF	63.66 43 eP	43 45.40 -0.7
		epP	42 29.50 49km		1.0s 7.00nm	4.7mb
SFG 6.16 347 eP 34 46.67 -1.4		e	02 23.50	FHC	63.89 310 ePc	43 48.50 0.8
SEG 6.37 345 eP 34 49.62 -1.5		e	05 01.30		epP	44 02.20 48km
CAR 7.02 273 eP 34 56.00 -4.3X	AVE	53.17 56 iP	42 34.50 1.4	AVF	64.31 43 eP	43 49.70 -0.6
BPA 7.08 344 eP 34 59.08 -2.0	LKO	53.36 86 P	42 32.84 -1.9		0.8s 4.70nm	4.6mb
		0.7s 16.50nm	5.2mb	SSF	64.48 43 eP	43 50.60 -0.8
ANG 7.18 344 eP 34 59.80 -2.6	FRB	53.81 355 ePc	42 37.90 0.7		0.8s 2.70nm	4.3mb
CPD 9.78 323 eP 35 35.80 -2.6		0.7s 53.00nm	5.7mb	SMF	64.61 43 eP	43 51.60 -0.7
SJG 9.98 323 eP 35 39.00 -2.1	BW06	54.03 316 P	42 38.80 -0.7		1.0s 8.00nm	4.7mb
PORP 10.23 320 iP 35 42.20 -2.3		1.0s 40.00nm	5.4mb	LOR	64.76 42 eP	43 52.60 -0.6
LRS 10.54 320 iP 35 46.50 -2.3	TIC	54.25 89 P	42 39.60 -1.7		0.8s 2.70nm	4.3mb
BMG 13.49 258 eP 36 22.00 -6.3X		0.9s 5.50nm	4.6mb	LBF	64.78 43 eP	43 52.30 -1.1
BOG 15.19 250 eP 36 46.00 -4.8X	LIC	54.30 90 P	42 40.18 -1.5		0.8s 2.70nm	4.3mb
		0.5s 8.00nm	5.0mb	LMR	65.86 47 eP	43 59.90 -0.4
UPA 19.50 268 iPd 37 42.40 -1.2	DAU	54.40 313 P	42 42.80 0.4		0.8s 10.75nm	4.9mb
	MSU	54.50 310 P	42 43.50 0.4	BNI	66.25 45 P	44 02.00 -1.0
PSO 19.59 244 eP 37 43.00 -2.1	KIC	54.57 89 Pd	42 42.14 -1.5	LPL	66.37 45 eP	44 02.80 -1.0
ZOBO 27.57 197 Pc 39 00.50 -2.3		0.8s 8.50nm	4.8mb		1.0s 4.00nm	4.4mb
	IFR	55.09 56 eP	42 32.00 -15.4X	LPG	66.38 45 eP	44 03.10 -0.9
		i	42 48.50 63kmX		0.8s 3.35nm	4.4mb
Z 22s	NKM	55.27 54 eP	42 51.50 3.1X	DOI	66.56 46 P	44 02.50 -2.4
		i	42 58.00 21kmX	BSF	66.82 42 eP	44 05.30 -1.2
NNA 27.81 218 eP 39 02.50 -1.8	GLA	55.29 303 eP	42 48.00 -0.6	MEM	66.87 39 P	44 20.90 14.3X
CCH 28.12 193 P 39 06.80 -0.7	DUG	55.47 312 P	42 50.00 0.0	CDF	67.24 42 eP	44 08.50 -0.7
BAO 28.22 155 ePc 39 06.50 -1.6		1.0s 87.50nm	5.7mb	FEL	67.64 42 eP	44 23.94 12.2X
ARE 28.92 204 eP 39 14.00 -0.6	FFC	55.48 332 iPc	42 49.40 -0.2	ABH	67.69 40 eP	44 24.82 12.9X
H8F 29.51 323 P 39 20.00 0.6		0.8s 71.00nm	5.7mb	VAI	67.83 45 P	44 13.00 0.2
SGS 29.77 323 P 39 22.60 0.8	AL0J	56.68 52 iP	43 00.00 1.3	BOB	68.16 46 P	44 15.50 0.5
JSC 30.98 324 P 39 32.80 0.4	ATEJ	56.71 52 iPc	43 02.00 3.1X	PII	68.80 47 P	44 18.50 -0.3
PRM 31.49 322 eP 39 37.30 0.3	AAPN	56.71 52 iP	43 01.40 2.5	BDI	68.89 47 P	44 16.50 -3.0X
	BAR	56.75 302 eP	42 59.00 -0.1	PGD	69.68 47 P	44 22.00 -2.4
	ACHM	56.89 52 iP	43 01.00 0.8			



14d	03h				
CTI	69.85	45 P	44 25.00	-0.4	
GRF	70.01	41 e(P)	44 27.00	0.8	
Z	21s	0.20um		4.3msz	
RDP	70.24	49 P	44 28.50	0.7	
ASS	70.29	48 P	44 28.50	0.4	
ARV	70.53	47 P	44 31.50	2.0	
FVI	70.68	44 P	44 30.50	0.3	
SDI	71.06	49 P	44 33.50	0.8	
KBA	71.12	44 eP	44 31.50	-1.6	
	1.3s	22.40nm		5.0mb	
		i	44 47.10	56km	
RBL	71.21	44 P	44 33.80	0.2	
CLL	71.35	39 eP	44 35.00	0.8	
		i	44 47.20	41km	
VOY	71.40	45 eP	44 36.00	1.2	
KHC	71.47	42 P	44 37.00	1.9	
		e	44 48.50	38km	
LJU	71.85	45 eP	44 37.50	0.2	
BRG	71.89	40 eP	44 40.10	2.6	
	1.5s	15.00nm		4.7mb	
NB2	71.96	29 P	44 38.00	0.3	
	0.9s	13.40nm		4.9mb	
SGO	72.13	51 P	44 40.50	1.4	
PRU	72.18	41 eP	44 48.00	8.8X	
		e	44 53.00	16kmX	
MGR	72.31	51 P	44 41.50	1.3	
HFS	73.00	30 eP	44 44.00	0.2	
	0.5s	3.10nm		4.5mb	
MBC	73.12	348 eP	44 45.50	1.2	
	0.9s	41.00nm		5.4mb	
KSP	73.37	40 eP	44 47.00	0.9	
		e	44 59.00	40km	
ZST	73.73	43 eP	44 52.40	4.1X	
SRO	74.53	43 eP	45 06.60	13.7X	
INK	74.57	338 eP	44 53.00	0.3	
BZS	76.79	45 eP	45 07.50	1.7	
TOA	79.35	331 eP	45 21.50	1.9	
MLR	79.83	45 eP	45 24.00	1.4	
		e	56 51.00		
FBA	79.98	334 ePc	45 24.30	1.5	
PMR	80.78	331 eP	45 28.50	1.4	
	1.4s	40.70nm		5.2mb	
IMA	82.32	336 ePc	45 37.50	2.2	
	0.8s	22.30nm		5.2mb	
KDC	82.88	327 eP	45 40.10	2.0	
TTA	83.81	333 ePc	45 44.40	1.5	
SVW	83.95	331 ePc	45 45.20	1.6	
CER	86.59	125 e(P)	46 06.00	8.8X	
BLF	91.43	119 eP	46 32.00	11.7X	
BFS	91.54	117 eP	46 18.00	-2.9	
SEK	92.53	118 eP	46 27.50	2.1	
S.D. = 1.2 on 177 of 193 obs.					
<hr/>					
MAR 14, 1990 03h 44m 49.62± 0.15s					
4.575 N ± 3.1km 122.620 E ± 3.9km					
DEPTH = 639.4km ( 8 depth phases)					
5.6mb ( 64 obs.)					
<hr/>					
CELEBES SEA				(262)	
CENTROID, MOMENT TENSOR				(HRV)	
Data Used: GDSN					
L.P.B.: 9S, 20C					
Centroid Location:					
Origin Time 03:44:50.9 0.5					
Lat 4.30N 0.05 Lon 122.25E 0.07					
Dep 615.9 4.4 Half-duration 2.8					
Moment Tensor; Scale 10**17 Nm					
Mrr= 0.11 0.15 Mtt=-0.14 0.18					
Mff= 0.03 0.23 Mrt= 0.33 0.19					
Mrf=-4.39 0.22 Mtf= 0.30 0					

MEKA	31.26	187	iPd	50	20.90	-0.7
	0.3s		127.00nm			6.0mb
CD2	31.65	328	iPd	50	24.00	-1.0
	1.2s		200.00nm			5.6mb
			iS	54	50.00	
WKYJ	31.86	21	eP	50	25.40	-1.3
TIA	31.89	352	Pc	50	26.00	-0.8
			S	54	55.00	
			ScP	55	43.50	
			ScS	59	43.50	
XAN	31.96	338	P	50	22.30	-5.3X
	1.0s		200.00nm			5.7mb
			S	54	55.50	
YONJ	32.07	17	eP	50	27.60	-0.8
TSRJ	33.19	20	P	50	37.30	-0.4
CTA	33.77	137	iPc+	50	43.00	0.3
	1.0s		563.00nm			6.2mb
			i	50	48.00	17kmX
			i	51	01.00	
			e	51	06.00	
			iS	55	25.00	
			iScP	55	50.30	
			iSS	58	36.00	
			iScS	59	56.00	
MRWA	34.20	190	iPd	50	45.90	-0.2
	0.3s		49.00nm			5.7mb
TIY	34.27	346	Pd	50	46.50	-0.3
	0.8s		100.00nm			5.5mb
			S	55	30.00	
			ScS	59	57.00	
COOL	35.29	182	iPd	50	54.00	-1.1
	0.6s		46.00nm			5.2mb
BAL	35.44	189	iPd	50	55.30	-1.0
FORR	35.61	172	iPd	50	57.20	-0.5
	0.5s		414.00nm			6.2mb
BJI	35.78	352	eP	50	59.00	0.0
	1.0s		0.90nm			3.3mb X
			eS	55	48.00	
			eScP	55	58.00	
			eScS	00	05.00	
LZH	35.81	334	P	51	01.00	1.5
	1.5s		0.49nm			2.8mb X
			S	55	56.00	
			SS	59	06.00	
KLB	36.26	187	iPd	51	02.80	-0.3
	0.3s		24.00nm			5.2mb
MUN	36.86	189	iPd	51	07.60	-0.3
	0.9s		161.00nm			5.6mb
SNY	37.10	1	iPd	51	09.20	-0.6
			iS	56	11.00	
			ScS	00	13.00	
QLP	37.38	147	iPc	51	12.70	0.4
HHC	37.46	346	P	51	13.00	0.1
BTO	37.61	344	P	51	14.00	-0.2
			S	56	18.50	
NWAO	37.64	187	iPd	51	14.00	-0.3
	0.9s		200.00nm			5.7mb
RKG	38.80	187	iPd	51	28.20	4.5X
	0.5s		138.00nm			5.7mb
LSA	38.85	314	iP	51	26.00	1.3
			iS	56	42.00	
CN2	39.14	3	Pc	51	25.00	-1.3
			eP	52	06.00	192kmX
			PcP	53	19.40	
			ScP	56	10.00	
			eS	56	38.00	
HNR	39.72	111	eP	51	30.00	-1.3
RMQ	39.92	142	iPc	51	32.60	-0.2
	0.7s		152.00nm			5.6mb
			e	56	15.00	
MDJ	40.35	8	iPc	51	35.60	-0.3
			iS	56	54.00	
GTA	40.36	332	iPd	51	37.00	0.8
	1.0s		200.00nm			5.5mb
			PcP	53	24.40	
			ScP	56	15.00	
			S	57	01.60	
			PcS	57	14.80	
			ScS	00	29.70	
MRRJ	41.11	21	P	51	41.80	-0.1
HO0J	41.90	23	P	51		



DMN	42.42	307 Pd	51	52.90	0.0		1.0s	540.00nm	6.1mb	MOX	99.58	323 iPc	57	28.50	1.2		
KUSJ	43.07	24 P	51	57.00	-0.3	VNDA	84.80	172 iPc	56	20.00	1.1	1.2s	25.00nm	5.5mb			
ASAJ	43.15	21 P	51	57.70	-0.2	BURJ	84.89	302 Pd	56	21.80	1.4	e	59	45.00	636km		
COO	44.78	143 iPc	52	12.00	1.3	KFNJ	85.02	301 Pc	56	22.30	1.5	e	01	46.00			
HYB	44.98	290 iPd	52	11.90	-0.5	MKRJ	85.06	301 P	56	22.70	1.5	KBA	99.62	319 eP	57	26.00	-1.8
	1.0s	675.00nm			6.1mb	PMR	85.17	29 eP	56	21.20	0.2	1.3s	17.20nm	5.3mb			
KOD	45.09	280 iPd	52	13.00	-0.7			pP	58	39.20	658kmX	e	07	08.00			
	0.9s	462.18nm			5.9mb	DSI	85.28	301 eP	56	19.00	-3.1X	RBL	99.66	318 P	57	27.00	-0.8
GBA	45.44	285 Pd	52	14.80	-1.1	PRNI	85.67	300 iPd	56	25.00	0.9	MGR	99.99	312 P	57	27.00	-2.3
	1.0s	567.00nm			6.0mb	HOL	85.67	299 iPd	56	25.80	1.7	SGO	100.06	312 Pd iff	57	29.50	-0.1
BFD	45.50	158 iPc	52	16.10	0.1	FBA	85.71	25 ePc	56	23.60	0.0	GRF	100.13	322 e(Pd iff)	57	31.00	1.2
	0.8s	201.00nm			5.6mb	MBH	85.80	299 ePd	56	25.00	0.4	YKA	100.39	23 ePd iff	57	30.30	-0.2
	e		57	53.00		NAI	85.93	268 iPd	56	27.60	1.7	1.0s	3.70nm	4.8mb			
BWA	45.79	150 iP	52	20.30	2.0		1.0s	62.00nm	5.3mb	SDI	100.84	314 Pd iff	57	32.50	-0.7		
	iScP		56	38.20		TOA	86.56	28 ePc	56	29.00	1.3	CTI	101.05	318 Pd iff	57	30.00	-4.0X
CAN	46.79	150 iPc	52	26.10	0.2	BBTK	86.99	310 eP	56	30.00	-0.3	PGD	101.68	316 Pd iff	57	38.00	1.0
	iScP		53	46.80		KEV	87.69	340 eP	56	33.00	0.2	CER	103.63	237 ePd iff	57	29.50	-16.2X
	iScP		56	41.90		SOD	88.12	337 iP	56	34.20	-0.6	0.6s	7.14nm				
	e		58	31.00		SUF	88.94	333 iP	56	38.30	-0.3	i	00	12.50			
CNB	46.97	150 iPd	52	28.00	0.7		0.5s	30.60nm	5.4mb	WDC	105.52	46 ePKP	02	02.40	-0.9		
	0.2s	86.00nm			5.9mb	AFR	89.08	108 eP	56	45.00	4.9X	e	02	25.30			
	e		56	43.00			0.8s	50.00nm	5.4mb	LBF	105.63	321 ePKP	02	26.80	23.4X		
TOO	47.02	155 iPc	52	28.70	1.0	NUR	89.97	331 iP	56	43.00	-0.4	1.4s	19.60nm				
	e		59	54.00			0.5s	19.60nm	5.3mb	MIN	106.27	46 e(Pd iff)	57	59.80	2.4		
NDI	49.25	304 iPd	52	42.80	-1.5	PMO	90.67	105 eP	56	52.00	4.6X	ORV	106.63	47 e(PKP)	02	04.20	-1.3
	0.7s	171.23nm			5.6mb		0.8s	25.00nm	5.2mb		e	02	31.70				
	eS		59	02.00		VRI	90.85	316 ePd	56	48.50	0.7	CMB	107.98	48 ePd iff	58	05.80	0.9
POO	49.58	290 iPd	52	45.50	-1.4	INK	90.87	21 eP	56	47.50	0.1	LLA	108.06	49 ePKP	02	10.50	2.2
	1.0s	280.00nm			5.6mb	MBC	92.01	12 eP	56	53.50	0.9	FRI	108.86	49 e(PKP)	02	10.90	1.2
	iS		59	08.00			1.0s	29.00nm	5.3mb	FFC	110.32	26 ePKP	02	12.00	0.1		
WMO	49.74	327 iPd	52	47.80	0.0	KDZ	92.36	312 eP	56	55.00	0.1		0.7s	6.00nm			
	PcP		53	56.70		RZN	92.88	312 iPd	57	00.00	2.5	IFR	117.79	312 ePKP	02	29.00	1.8
	ScP		56	55.00		VTs	93.84	313 iPd	57	01.00	-0.8	SCH	120.31	6 ePKP	02	32.00	1.0
	S		59	13.50		VAY	94.53	312 iPd	57	03.50	-1.2	TIO	120.58	310 ePKP	02	31.00	-1.5
	ScS		01	30.00		SPC	94.61	320 iP	57	06.00	0.8	LEGH	121.98	280 ePKP	02	36.00	0.6
DZM	50.39	124 iPc	52	53.00	0.1	KRA	94.62	321 eP	57	05.40	0.5	KIC	126.34	281 PKP	02	44.10	0.2
BOM	50.61	291 iP	52	52.60	-1.7		0.9s	54.00nm	5.7mb		e	08	31.50nm				
	eS		59	19.50		SKO	95.24	313 iP	57	06.70	-1.2	LKO	126.52	285 PKP	02	44.34	0.1
KSH	54.55	316 Pc	53	23.00	0.8		i	59	20.50	619kmX	TIC	126.56	282 PKP	02	44.50	0.2	
	sP		56	22.00			i	01	04.00		LIC	126.64	281 PKP	02	44.62	0.2	
	S		00	22.00			iS	06	44.00		LVN	147.99	158 iPKPd	03	28.00	5.6X	
	ScS		02	08.00		BUL	95.31	250 iPc	57	04.80	-4.0X	CHCH	148.29	159 iPKPc	03	28.30	5.3X
QUE	58.24	303 iPd	53	47.00	-0.6		i	59	21.90	639km	LCCH	148.35	157 ePKP	03	29.00	6.0X	
MSZ	63.59	146 P	54	23.00	1.3	HFS	95.35	332 eP	57	06.60	-1.4	TACH	148.43	158 ePKPc	03	28.70	5.6X
SMY	63.87	32 eP	54	23.70	0.4		1.1s	30.10nm	5.4mb	PCH	148.62	159 ePKPc	03	29.30	5.8X		
MAIO	65.75	308 iPd-	54	35.80	0.3	SLR	95.87	245 iPc	57	10.50	-0.7	SAN	148.72	158 ePKP	03	29.00	5.4X
	0.8s	65.89nm			5.1mb		1.0s	30.00nm	5.5mb	FCH	148.96	159 ePKP	03	31.20	6.8X		
	i		56	35.00	594kmX		i	01	09.50		ROCH	149.01	157 iPKPd	03	30.70	6.4X	
	eS		02	36.00		OHR	95.88	312 eP	57	09.00	-1.9	CFA	151.24	160 ePKP	03	29.00	1.6
WEL	65.86	139 Pc	54	33.50	-2.4		1.1s	0.06nm	2.7mb X	RTL	151.42	160 ePKPd	03	35.30	7.6X		
	1.0s	*****nm			7.9mb X		eS	06	26.20		RTRS	152.10	157 ePKPd	03	31.00	2.4	
ADK	68.62	35 eP	54	52.70	0.3	SRO	96.17	319 eP	57	12.10	0.1		e	03	38.10		
	0.9s	75.00nm			5.1mb		e	59	29.60	641km	ZOBO	164.31	139 PKPc	03	46.00	2.2	
IR2	72.51	306 iPd	55	16.00	0.5	NB2	96.19	333 P	57	10.90	-1.0	1.0s	20.50nm				
IR1	72.65	306 iPd	55	16.50	0.2		0.8s	12.40nm	5.2mb	CCH	164.65	147 (PKP)	03	48.00	4.3X		
IR7	72.75	306 iPd	55	17.00	0.1	SEK	96.54	242 iPc	57	13.80	-0.4	e	04	45.00			
RYD	75.40	294 iPd	55	31.20	-0.5		1.3s	28.85nm	5.4mb		S.D. = 1.1 on 200 of 228 obs.						
KER	75.47	304 eP	55	32.00	-0.1	PRY	96.63	244 iPd	57	10.70	-4.0X	% MAR	14, 1990	03h 48m	38.42±0.96s		
SLY	76.88	305 ePc	55	39.00	-0.4		1.0s	10.00nm	5.0mb		39.882 N ±10.5km	142.223 E ±20.8km					
KMSA	77.30	290 iPd	55	41.30	-0.7	KSP	96.68	322 iPd	57	14.80	0.5	DEPTH =	33.0km (normal)				
OASM	78.21	296 iPd	55	47.00	0.3		1.0s	25.00nm	5.4mb		NEAR EAST COAST OF HONSHU, JAPAN(228)						
OBO	78.64	281 iPd	55	50.75	1.7		eC	59	32.00	639km							
ATA	78.74	281 iPd	55	50.97	1.4	ZST	96.87	320 eP	57	14.70	-0.4	HO0J	2.62	17 P	49	20.60	1.3
SDN	78.80	35 eP	55	49.90	0.8		e	01	15.60		S	49	51.80				
MSL	78.83	306 iPc	55	50.50	0.8	KSR	97.12	245 iPd	57	16.20	-0.8	MRRJ	2.68	341 P	49	19.30	-0.9
	eS		04	55.00			1.2s	20.00nm	5.3mb		S	49	48.90				
	ePS		05	05.00		BFS	97.25	244 eP	57	13.00	-4.5X	NIUJ	3.65	225 P	49	34.00	0.0
TDD	79.02	281 iPd	55	52.91	1.8	BLF	97.82	241 eP	57	20.00	-0.1	KUSJ	3.72	29 P	49	34.40	-0.4
ARO	79.09	281 iPd	55	53.12	1.6	PRU	98.00	322 Pd	57	20.80	0.5	S	50	14.70			
SGH	79.30	281 iPd	55	54.29	1.6		1.0s	14.50nm	5.3mb	KAKJ	4.01	204 P	49	37.90	-1.2		
DAF	79.40	281 iPd	55	54.83	1.8	BRG	98.10	323 iP	57	21.30	0.6	ASAJ	4.24	4 P	49	42.20	-0.1
GBR	79.49	280 iPd	55	55.09	1.5		1.0s	38.00nm	5.7mb	CHJJ	4.60	215 P	49	46.60	-0.9		
KSU	79.49	281 iPd	55	55.41	1.9	CLL	98.53	323 iP	57	23.10	0.5	MTMJ	4.79	228 P	49	50.50	0.3
HLD	79.50	281 iPd	55	55.49	2.0		i	01	32.50		IIDJ	5.57	219 P	50	03.00	1.8	
TTA	82.02	27 ePc	56	07.20	1.6	VBY	98.79	317 e(P)	57	24.50	0.6		S.D. = 1.2 on 9 of 9 obs.				
	1.0s	160.00nm			5.5mb	KHC	98.85	321 Pd	57	24.50	0.4	* MAR	14, 1990	04h 11m	39.03±2.49s		
SVW	82.03	29 ePc	56	07.50	1.9		1.0s	5.00nm	4.8mb		33.119 S ±6.8km	72.038 W ±19.6km					
	1.0s	52.50nm			5.0mb	LJU	99.13	318 e(P)	57	26.00	0.6	DEPTH =	10.0km (geophysicist)				
BRW	82.68	19 eP	56	10.80	2.1		S	07	04.00		OFF COAST OF CENTRAL CHILE	(134)					
IMA	83.28	24 ePc	56	13.40	1.4	TDS	99.52	311 P	57	25.50	-1.7	IHA	0.35	74 iPc	11	47.00	0.8
	1.4s	125.00nm			5.3mb	VOY	99.56	318 eP	57	26.60	-0.8	i(S)	11	58.10			
SHBJ	83.39	302 Pc	56	14.90	1.8						LCCH	0.53	132 iPd	11	50.60	0.9	
KDC	83.42	33 eP	56	13.50	1.0												
WAJH	84.47	296 iPd	56	19.30	1.0												
HLBJ	84.48	302 Pc	56	19.70	1.3												
MDSJ	84.54	301 Pd	56	20.40	1.7												
NPA	84.79	254 iP	56	21.00	1.0												



14d 04h

ROCH	0.88	81	iS	12 00.00	
			iPd	11 55.00	-1.0
			iS	12 07.50	
LNK	0.99	148	iPc	11 57.60	-0.1
			iS	12 12.50	
TACH	1.06	120	iPd	11 59.00	-0.1
SAN	1.20	106	iPd	12 01.10	-0.3
			iS	12 19.40	
JACH	1.29	71	iPc	12 01.50	-1.5
			iS	12 20.00	
PCH	1.37	112	iPd	12 04.00	-0.2
			iS	12 24.50	
CHCH	1.41	125	eP	12 04.50	-0.3
			iS	12 25.00	
FCH	1.48	99	iPd	12 05.60	-0.4
			iS	12 28.00	
RTCV	3.21	68	e(P)	12 33.30	2.7X
			(S)	13 15.00	
RTLL	3.51	60	e(P)	12 36.20	1.4
CFA	3.55	66	eP	12 37.00	1.6
			eS	13 29.00	
RTRS	3.67	37	ePc	12 36.20	-0.8
S.D. = 1.0 on 13 of 14 obs.					

\* MAR 14, 1990 04h 34m 20.10±2.95s  
 10.273 N ±18.8km 59.700 W ±20.7km  
 DEPTH = 12.9 ± 4.0 km  
 3.7mb ( 1 obs.)

NORTH ATLANTIC OCEAN (402)  
 MD 3.9 (TRN).

BOT	1.34	312	eP	34 46.37	1.9
			eS	35 05.52	
TBH	1.36	279	eP	34 45.22	0.4
			eS	35 02.73	
TPR	1.39	311	eP	34 46.68	1.4
			eS	35 05.72	
TRN	1.72	283	eP	34 48.90	-1.0
			eS	35 10.81	
TPP	1.72	272	eP	34 49.71	-0.3
TCE	2.06	282	eP	34 53.77	-1.2
			eS	35 18.39	
SVB	3.35	333	eP	35 12.64	-0.6
			eS	35 51.45	
SLB	3.77	340	eP	35 19.38	0.1
			eS	36 04.20	
MVM	4.41	345	eP	35 28.40	0.0
BIM	4.43	343	eP	35 29.06	0.5
			S	36 18.10	
CRM	4.61	345	eP	35 30.84	-0.3
FDF	4.65	342	eP	35 32.15	0.3
	0.1s		0.80nm		
			S	36 24.30	
BBL	5.50	342	eP	35 43.00	-0.8
PAG	6.04	342	eP	35 51.00	-0.4
			S	36 58.00	
SEG	6.34	344	eP	35 54.50	-1.1
YKA	65.19	335	eP	45 04.00	0.9
	0.7s		0.40nm		
			3.7mb		
S.D. = 1.0 on 16 of 16 obs.					

MAR 14, 1990 05h 31m 24.40±0.82s  
 40.000 N ± 7.2km 23.466 E ±11.2km  
 DEPTH = 10.0km (geophysicist)  
 GREECE (364)  
 MD 3.4 (ATH).

PLG	0.37	358	ePb	31 31.00	-1.1
NEO	0.72	195	ePn	31 37.70	-0.9
KZN	1.33	284	ePb	31 49.00	-0.1
MMB	1.60	7	iPc	31 53.00	0.2
			iSg	32 15.00	
EVR	1.68	230	ePn	31 52.50	-1.5
RZN	1.93	29	iP	31 58.00	0.2
			Sg	32 20.00	
RDO	1.95	53	ePn	31 57.00	-0.8
PLD	2.30	24	iP	32 07.00	4.1X
			Sg	32 40.00	
OHR	2.32	299	eP	32 07.80	4.6X
VTS	2.60	356	iP	32 09.00	1.7
			eSg	32 41.00	
ITM	3.06	204	ePb	32 16.00	2.2
S.D. = 1.5 on 9 of 11 obs.					

MAR 14, 1990 05h 36m 13.76±0.39s  
 45.883 N ± 3.7km 14.687 E ± 3.4km  
 DEPTH = 5.0km (geophysicist)

4.0mb ( 1 obs.)  
 YUGOSLAVIA (383)  
 MD 3.7 (LJU), 3.2 (TRI), ML 3.4  
 (KBA), 3.2 (VKA). Feit (VI) in  
 the Videm-Dobro Polje area.

LJU	0.19	326	iPgd	36 18.00	0.3
			iSg	36 22.00	
CEY	0.23	232	iPg	36 17.90	-0.6
			iSg	36 20.90	
VBY	0.55	133	iPgc	36 24.10	-0.7
			iSg	36 30.00	
VOY	0.57	285	iPgc	36 24.30	-0.9
			eSg	36 33.50	
RIY	0.58	201	iPgd	36 23.10	-2.3
			iSg	36 32.40	
TRI	0.67	255	iPgd	36 25.70	-1.4
			iSg	36 35.60	
PTJ	0.89	88	iPgc	36 31.20	-0.1
			eSn	36 47.40	
ZAG	0.91	94	iPg	36 30.70	-0.9
RBL	0.96	306	P	36 31.50	-1.0
			iSg	36 45.50	
FVI	1.50	299	P	36 42.00	0.7
			eSg	37 01.50	
KBA	1.51	323	iPnd	36 42.00	0.3
			iPgd	36 43.70	
			iSg	37 04.90	
CTI	2.12	276	P	36 51.00	0.5
			eSn	37 15.00	
SOP	2.21	35	ePn	36 52.30	0.7
VKA	2.63	24	ePn	36 57.70	0.1
			iSn	37 29.60	
			iSg	37 39.20	
ARV	2.69	208	P	36 58.50	0.0
OGA	2.72	293	ePn	37 02.30	3.2X
SFI	2.81	227	P	37 02.00	1.8
ZST	2.84	35	ePn	37 09.30	8.7X
			i(Sn)	37 48.40	
PGD	2.91	227	P	37 01.50	-0.3
SAL	2.93	266	P	37 03.50	1.7
HVAR	2.98	154	iPn	37 03.10	0.5
			iSn	37 39.10	
SRO	3.15	51	iPn	37 15.10	10.2X
			e	37 37.40	
			i	38 04.10	
ASS	3.16	208	P	37 07.00	1.8
KHC	3.34	347	Pn	37 07.10	-0.6
			Pg	37 17.00	
			Sg	38 02.50	
BDI	3.43	239	P	37 08.50	-0.5
MDI	3.48	270	P	37 10.50	0.9
BOB	3.86	255	P	37 14.50	-0.7
PRU	4.11	359	ePg	37 30.50	12.0X
			eSg	38 29.50	
SDI	4.22	189	P	37 21.50	1.2
GRF	4.47	330	e(Pn)	37 30.00	6.3X
			ePg	37 39.20	
			e(Sn)	38 20.00	
			eSg	38 38.20	
CKI	4.76	254	P	37 28.00	0.1
BRG	5.02	355	ePg	37 50.00	18.5X
			e	38 54.00	
			e	38 57.00	
			e	39 06.00	
MOX	5.19	338	ePn	37 45.00	11.1X
			eSg	39 02.00	
SBF	5.54	251	Pn	37 38.20	-0.7
			Sn	38 36.60	
LPG	5.57	269	Pn	37 40.60	1.0
LPL	5.58	269	Pn	37 40.80	1.1
BSF	5.75	293	Pn	37 41.00	-1.0
HAU	6.09	293	Pn	37 45.60	-1.0
YKA	64.64	337	eP	46 59.90	5.8X
	0.5s		0.50nm		
			4.0mb		
S.D. = 1.0 on 31 of 39 obs.					
MAR 14, 1990 05h 50m 26.90±1.26s 44.584 N ± 7.6km 6.774 E ±13.2km DEPTH = 10.0km (geophysicist) FRANCE (538) ML 1.8 (GEN).					
FOUF	0.06	174	iPgd	50 29.25	0.2
			iSg	50 30.70	
PZZ	0.25	109	P	50 32.66	0.4
			S	50 36.55	

RRL	0.34	1 P	50 33.89	-0.1
		S	50 38.71	
STV	0.52	131 P	50 37.27	-0.2
		S	50 44.66	
ENR	0.59	127 P	50 38.50	-0.3
		S	50 46.81	

S.D. = 0.4 on 5 of 5 obs.

& MAR 14, 1990 07h 55m 32.10s  
 57.398 N 142.906 W  
 DEPTH = 10.0km (geophysicist)  
 3.2mb ( 1 obs.)  
 GULF OF ALASKA (15)  
 <AGS-P>.

MID	2.72	320 eP	56 11.68	-4.9
PCA	3.04	26 eP	56 15.94	-5.2
TGL	3.37	1 iP	56 20.14	-5.8
		eS	56 55.06	
GLB	4.08	354 eP	56 29.92	-6.0
GLI	4.10	330 eP	56 29.92	-6.3
		eS	57 13.29	
VZW	4.12	335 eP	56 30.36	-6.1
SIT	4.14	92 eP	56 30.05	-6.5
		eS	57 13.29	
SEW	4.36	311 eP	56 34.03	-5.7
KLU	4.39	341 eP	56 34.15	-6.2
HYT	4.42	37 P	56 35.80	-5.1
CNPM	4.87	299 eP	56 42.76	-4.3
SLKM	4.91	313 eP	56 42.03	-5.6
TOA	5.00	342 eP	56 43.41	-5.6
NCA	5.02	338 eP	56 43.16	-6.1
XLV	5.07	298 eP	56 45.82	-4.1
NNL	5.11	305 eP	56 47.06	-3.5
PMS	5.15	321 eP	56 44.99	-6.0
PLRM	5.27	326 eP	56 47.05	-5.6
GHO	5.35	328 eP	56 48.51	-5.4
PWA	5.55	323 eP	56 48.86	-7.8
PAX	5.74	348 eP	56 54.12	-5.3
RDT	5.85	307 eP	56 55.80	-5.2
CDD	5.89	290 eP	56 58.45	-3.0
SPU	6.03	313 eP	56 57.59	-5.9
CGLM	6.08	314 eP	56 59.24	-5.0
CRP	6.12	313 eP	56 59.63	-5.2
NCG	6.20	314 eP	57 00.44	-5.5
PDB	6.37	297 eP	57 03.62	-4.6
INK	11.74	17 eP	58 16.00	-6.4
YKA	14.99	58 eP	59 08.70	3.3
0.5s 0.50nm 3.2mb 30 obs. associated				

? MAR 14, 1990 08h 01m 32.05±10.72s  
 30.160 S ±64.7km 68.013 W ±80.4km  
 DEPTH = 33.0km (normal)  
 SAN JUAN PROVINCE, ARGENTINA (137)

RTLL	1.23	199 ePd	01 51.90	-1.2
		iS	02 09.10	
RTRS	1.25	269 iPc	01 53.30	0.0
CFA	1.46	188 e(P)	01 56.70	0.4
		eS	02 15.50	
RTCB	1.49	207 eP	01 57.50	0.7
		S	02 17.00	
RTCV	1.75	195 ePd	02 00.80	0.1
		(S)	02 22.00	
S.D. = 1.0 on 5 of 5 obs.				

% MAR 14, 1990 08h 04m 37.37±1.65s  
 16.847 N ±16.8km 99.554 W ± 9.4km  
 DEPTH = 10.0km (geophysicist)  
 NEAR COAST OF GUERRERO, MEXICO ( 58)

ACX	0.29	274 iP	04 43.50	0.0
		iS	04 50.00	
III	1.52	3 eP	05 03.00	-1.8
		iS	05 23.50	
PPM	2.38	22 eP	05 17.00	-0.5
		iS	05 53.50	
IIIT	2.47	29 eP	05 19.50	1.0
OXX	2.72	85 eP	05 22.00	-0.1
		iS	05 56.00	
IIJ	2.88	357 eP	05 26.00	1.4
MRX	3.24	332 (P)	05 36.50	7.3X
S.D. = 1.5 on 6 of 7 obs.				

MAR 14, 1990 08h 15m 39.55±0.73s  
 40.004 N ± 6.3km 23.548 E ± 9.1km



DEPTH = 10.0km (geophysicist)  
GREECE (364)  
ML 3.3 (ATH).

PLG	0.38	348	iPbc	15	47.00	-0.3
NEO	0.74	200	ePn	15	53.50	-0.6
KZN	1.40	283	ePb	16	03.60	-1.5
VAY	1.51	331	iPn	16	07.60	1.0
MMB	1.59	5	iPc	16	08.00	0.2
			iSg	16	31.00	
EVR	1.73	232	ePn	16	08.30	-1.6
KKB	1.89	349	iPc	16	13.00	0.8
RDO	1.90	52	ePn	16	12.00	-0.2
RZN	1.90	27	iPd	16	12.00	-0.5
			Sg	16	45.00	
ATH	2.03	176	ePb	16	18.50	4.3X
KDZ	2.17	40	iP	16	15.00	-1.2
			iSg	16	49.00	
OHR	2.37	299	ePn	16	23.20	4.1X
	0.8s		0.04nm			
			e	16	32.00	
			e	16	47.10	
			i	17	03.20	
SKO	2.53	322	ePn	16	22.00	0.6
VTS	2.60	354	iP	16	34.00	11.6X
			iS	16	56.00	
ITM	3.09	205	ePb	16	32.00	2.7
MLR	5.76	17	eP	17	08.00	0.8

S.D. = 1.3 on 13 of 16 obs.

& MAR 14, 1990 08h 27m 34.38s  
60.153 N 150.211 W  
DEPTH = 53.2km  
2.8mb ( 1 obs.)

KENAI PENINSULA, ALASKA (14)  
<AGS-P>.

SLKM	0.36	359	iP	27	44.36	-0.1
SEW	0.38	97	eP	27	43.74	-0.9
			eS	27	51.80	
BRLK	0.52	221	eP	27	45.58	-0.6
			eS	27	54.27	
NNL	0.56	259	eP	27	47.11	0.5
NKA	0.78	320	iP	27	50.60	1.2
CNPM	0.81	220	eP	27	49.14	-0.8
			eS	28	00.44	
XLV	1.04	228	iP	27	51.99	-0.9
			iS	28	05.38	
PMS	1.14	16	iP	27	53.66	-0.7
			eS	28	08.59	
RDT	1.17	292	iP	27	54.11	-0.7
			eS	28	09.86	
SUA	1.34	349	iP	27	56.65	-0.6
SPU	1.37	319	iP	27	56.81	-0.8
CGLM	1.46	323	eP	27	58.20	-0.6
			eS	28	18.06	
CRP	1.47	320	eP	27	58.54	-0.5
			eS	28	17.47	
PWA	1.51	6	eP	27	58.81	-0.6
PLRM	1.54	20	iP	27	58.75	-1.1
NCG	1.58	324	eP	27	59.91	-0.6
			eS	28	20.81	
GLI	1.71	63	iP	27	59.59	-2.6
GHO	1.74	21	eP	28	01.86	-0.9
AUE	1.79	245	eP	28	02.66	-0.7
AUL	1.81	246	eP	28	03.19	-0.4
SML	1.90	28	eP	28	03.92	-1.0
VZW	2.02	62	iP	28	04.28	-2.4
PDB	2.04	261	eP	28	05.55	-1.3
			eS	28	30.87	
CDD	2.14	236	eP	28	07.40	-0.9
			eS	28	33.95	
NCA	2.47	40	eP	28	11.41	-1.6
KLU	2.50	56	iP	28	11.50	-1.9
			eS	28	39.51	
BGM	2.65	255	eP	28	13.58	-2.0
KDC	2.69	207	eP	28	13.58	-2.4
			eS	28	42.24	
TOA	2.77	43	eP	28	16.57	-0.7
			eS	28	48.46	
SVW	2.83	292	eP	28	16.00	-2.2
HUR	2.85	5	eP	28	18.62	0.2
RND	3.33	11	eP	28	24.63	-0.6
GLB	3.39	65	eP	28	23.08	-3.1
KTH	3.43	355	eP	28	26.64	0.0
PAX	3.62	37	eP	28	27.72	-1.7
MCK	3.64	9	eP	28	29.14	-0.5

TGL	3.71	77	eP	28	26.64	-4.0
DDM	4.18	27	eP	28	36.92	-0.4
WRH	4.45	12	eP	28	38.74	-2.1
NEA	4.47	6	eP	28	39.54	-1.7
HDA	4.53	18	eP	28	41.00	-1.1
CCB	4.65	13	eP	28	41.74	-1.9
FBA	4.89	12	eP	28	45.17	-2.1
PCA	4.98	86	eP	28	44.22	-4.3
GLM	5.02	14	eP	28	47.26	-1.9
YKA	17.11	67	eP	31	26.80	-4.2
	0.7s		0.60nm			2.8mb
	46 obs.		associated			

MAR 14, 1990 09h 04m 07.76±0.47s  
43.875 N ±3.9km 7.753 E ±2.9km  
DEPTH = 10.0km (geophysicist)  
NEAR SOUTH COAST OF FRANCE (379)  
ML 2.6 (GEN). MD 2.2 (STR).

IMI	0.10	70	P	04	11.67	1.1
			S	04	13.92	
SAOF	0.18	308	Pg	04	11.99	0.1
			Sg	04	14.33	
AUTN	0.26	297	Pg	04	13.58	0.1
			Sg	04	17.37	
AURF	0.31	273	Pg	04	14.51	0.3
REVF	0.31	244	Pg	04	15.03	0.8
TOUF	0.39	291	Pg	04	15.83	0.0
ENR	0.43	326	P	04	16.38	-0.1
			S	04	21.41	
ROB	0.43	11	P	04	16.79	0.3
			S	04	22.43	
MVIF	0.43	273	Pg	04	16.83	0.2
			Sg	04	22.72	
FIN	0.47	44	P	04	17.61	0.3
			S	04	23.97	
STV	0.48	320	P	04	17.31	-0.3
			S	04	22.95	
CALN	0.64	259	Pg	04	20.86	0.2
CKI	0.67	34	P	04	21.00	0.0
			eSg	04	30.40	
DOI	0.73	330	P	04	21.80	-0.3
			eSg	04	30.80	
PZZ	0.79	324	P	04	22.84	-0.3
			S	04	32.79	
PCP	0.88	40	P	04	25.20	0.5
			S	25	37.10	
RRL	1.26	327	P	04	30.84	-0.4
RSP	1.33	345	P	04	31.25	-1.1
BNI	1.41	327	P	04	33.70	0.1
			eSg	04	52.40	
PGF	1.61	145	Pn	04	34.79	-1.6

S.D. = 0.6 on 20 of 20 obs.

\* MAR 14, 1990 10h 06m 06.13±1.09s  
53.297 S ±10.1km 160.050 E ±21.9km  
DEPTH = 33.0km (normal)  
4.7mb ( 3 obs.) 3.9Msz ( 1 obs.)

MACQUARIE ISLANDS REGION (167)

MCQ	1.37	208	iPc	06	28.80	-0.2
			eS	06	44.00	
TOO	18.69	321	eP	10	25.00	1.2
CAN	19.59	332	eP	10	34.30	0.0
			eTT	27	52.00	
BWA	20.60	332	eP	10	44.10	-0.7
			eTT	28	14.00	
ASPA	35.58	316	iPc	13	02.30	0.0
	1.0s		25.00nm			5.1mb
	Z 21s		0.24um			3.9Msz
			LR	25	29.80	
SPA	36.89	180	iPc	13	18.60	5.5X
	0.8s		9.58nm			4.7mb
WRA	38.74	319	Pc	13	27.90	-1.0
	1.1s		10.10nm			4.5mb
WB5	38.79	319	eP	13	28.00	-1.3
KGM	72.47	299	eP	17	33.00	1.7
IPM	75.85	298	eP	18	08.50	17.7X
YKA	133.29	39	ePd	122	16.50	0.4
	0.5s		0.70nm			
MLR	149.58	274	ePKP	25	57.00	8.8X
MOX	160.46	275	ePKP	26	02.00	-0.1

S.D. = 1.1 on 10 of 13 obs.

\* MAR 14, 1990 10h 28m 02.41±10.08s  
59.179 N ±130.0km 18.070 E ±20.9km  
DEPTH = 5.0km (geophysicist)

SWEDEN (536)

NRA0	3.63	298	Pn	29	00.50	0.0
			Lg	30	02.50	
KEF	4.49	45	eP	29	13.50	0.9
			eS	30	07.00	
KAF	5.01	51	iP	29	19.50	-0.5
			iS	30	17.00	
KJN	6.73	39	eP	29	43.80	-0.4
			eS	30	59.30	

S.D. = 1.1 on 4 of 4 obs.

? MAR 14, 1990 11h 33m 39.42±5.23s  
31.137 S ±22.9km 68.688 W ±35.5km  
DEPTH = 98.1 ±54.8 km  
SAN JUAN PROVINCE, ARGENTINA (137)

RTLL	0.27	136	iPc	33	54.10	-0.1
RTCB	0.36	195	iPd	33	54.50	0.1
CFA	0.61	141	iPc	33	56.20	0.1
			(S)	34	26.00	
RTCV	0.73	170	iPc	33	57.20	-0.1
RTRS	1.17	325	iP	34	01.90	0.0

S.D. = 0.1 on 5 of 5 obs.

MAR 14, 1990 11h 56m 37.37±0.72s  
19.632 N ±6.8km 71.241 W ±4.4km  
DEPTH = 34.6 ±9.1 km  
4.3mb ( 10 obs.) 4.1Msz ( 1 obs.)  
DOMINICAN REPUBLIC REGION (88)  
MD 4.8 (SDD). Felt at Moo, Monte  
Cristi and Villa Vasquez.

MAVI	1.31	107	P	57	00.00	0.4
			S	57	20.00	
DR08	1.33	120	P	56	59.00	-0.8
			S	57	18.00	
SACA	1.61	114	P	57	03.80	-0.1
LRS	4.37	107	P	57	43.20	0.0
PORP	4.63	109	P	57	47.20	0.3
LPR	5.25	104	P	57	55.00	-0.7
CPD	5.29	107	P	57	56.30	0.2
STH	5.50	255	eP	57	58.50	-0.6
			(S)	59	17.70	
PAG	9.78	110	eP	59	00.00	1.1
UPA	13.29	218	eP	59	46.80	0.6
BLA	19.27	337	P	00	58.00	-4.0X
TBR	21.59	354	P	01	25.00	-1.2
HBVT	24.71	357	P	01	56.90	0.3
RSNY	25.00	354	P	02	00.60	1.2

1.2s 9.72nm 4.3mb  
ALQ 34.61 303 eP 03 25.00 -0.6  
1.0s 3.25nm 4.2mb

ANMO 34.61 303 P 03 27.00 1.4  
1.0s 2.50nm 4.1mb  
GOL 35.47 312 P 03 33.00 0.0  
0.9s 4.55nm 4.4mb

ZOBO 35.81 175 eP 03 36.00 -0.3  
Z 18s 0.31um 4.1Msz  
S 09 44.00  
eLR 15 40.00  
RSON 35.86 336 P 03 36.80 1.0  
0.8s 4.01nm 4.4mb

BW06 39.60 314 P 04 07.50 -0.1  
1.1s 4.46nm 4.1mb  
BAO 41.84 145 e(P) 04 19.00 -7.1X  
TNP 43.78 305 P 04 42.10 0.3  
1.0s 3.58nm 4.1mb

KVN 44.65 306 eP 04 49.00 0.2  
NEW 46.61 319 P 05 03.50 -0.5  
1.0s 11.25nm 4.8mb  
MBC 61.65 348 eP 06 53.00 -0.7  
0.9s 10.00nm 4.9mb

LKO 64.00 89 P 07 10.10 -0.2  
KIC 65.77 92 P 07 21.50 -0.2  
FBA 66.70 333 P 07 25.80 -1.0  
1.0s 6.25nm 4.7mb

IMA 69.17 334 eP 07 38.80 -3.6X  
WRA 155.93 265 PKPc 16 30.00 0.2  
0.8s 1.20nm

S.D. = 0.7 on 27 of 30 obs.

\* MAR 14, 1990 11h 58m 46.67±0.84s  
51.238 N ±16.1km 174.986 W ±7.1km  
DEPTH = 15.0km (geophysicist)  
4.3mb ( 2 obs.)  
ANDREANOF ISLANDS, ALEUTIAN IS. ( 7)



14d 11h

ADK 1.24 302 eP 59 09.80 0.6  
 IMA 18.39 28 eP 03 02.50 0.2  
 INK 26.22 34 eP 04 22.00 -0.1  
 YKA 33.59 47 eP 05 26.70 -1.0  
 0.9s 0.60nm 3.5mb  
 EDM 36.78 62 eP 05 55.50 0.4  
 KVN 40.94 84 eP 06 31.00 0.9  
 GUN 74.11 295 P 10 24.20 -0.1  
 KKN 74.54 295 P 10 26.50 -0.2  
 0.8s 16.00nm 5.1mb  
 PKI 74.64 295 P 10 26.90 -0.5  
 DMN 74.78 295 P 10 28.00 -0.1  
 S.D. = 0.6 on 10 of 10 obs.

? MAR 14, 1990 12h 03m 21.92±1.28s  
 51.391 N ±0.8km 174.960 W ± 0.8km  
 DEPTH = 15.0km (geophysicist)  
 4.8mb ( 4 obs.)

ANDREANOF ISLANDS, ALEUTIAN IS. ( 7)

ADK 1.18 295 iPc 03 44.90 1.4  
 FBA 19.49 36 eP 07 54.70 3.8X  
 INK 26.09 34 eP 08 56.00 -0.1  
 EDM 36.69 62 eP 10 30.50 0.9  
 KVN 40.91 85 eP 11 18.00 12.9X  
 BW06 44.00 75 P 11 31.30 1.0  
 1.0s 3.75nm 4.2mb  
 RSON 48.46 57 P 12 05.30 0.1  
 0.9s 6.04nm 4.6mb  
 HFS 68.61 355 eP 14 23.70 -2.0  
 1.1s 13.20nm 5.0mb  
 GUN 74.06 295 P 14 59.00 -0.3  
 KKN 74.49 295 P 15 01.40 -0.2  
 0.8s 16.00nm 5.1mb  
 PKI 74.59 295 P 15 01.80 -0.5  
 DMN 74.73 295 P 15 02.80 -0.3  
 S.D. = 1.1 on 10 of 12 obs.

MAR 14, 1990 13h 12m 53.25±0.79s  
 66.906 N ± 5.3km 156.195 W ± 7.8km  
 DEPTH = 33.0km (normal)  
 2.8mb ( 1 obs.)

ALASKA (676)

IMA 1.31 129 iPd 13 15.40 -0.1  
 NEA 3.75 125 eP 13 50.46 0.3  
 FBA 3.99 116 ePd 13 53.50 -0.1  
 TTA 3.99 179 eP 13 53.90 0.2  
 KTH 4.03 144 eP 13 54.14 -0.1  
 GLM 4.09 114 eP 13 54.79 -0.2  
 CCB 4.13 119 eP 13 55.28 -0.3  
 WRH 4.15 122 eP 13 55.53 -0.3  
 FYU 4.37 90 eP 13 58.01 -0.9  
 MCK 4.41 133 eP 13 59.37 -0.2  
 BRW 4.42 358 eP 13 59.70 0.0  
 HDA 4.57 119 eP 14 01.22 -0.7  
 RND 4.68 135 eP 14 03.38 -0.1  
 CUT 5.19 148 eP 14 10.86 0.3  
 NCG 5.80 160 eP 14 19.03 -0.3  
 SVW 5.83 177 eP 14 19.00 -0.6  
 PMR 6.16 147 eP 14 24.30 0.1  
 TOA 6.47 133 eP 14 30.60 1.9  
 YKA 18.04 84 eP 17 03.50 1.0  
 0.4s 0.30nm 2.8mb  
 S.D. = 0.7 on 19 of 19 obs.

MAR 14, 1990 13h 33m 09.13±1.16s  
 8.109 S ± 5.7km 121.788 E ± 6.1km  
 DEPTH = 173.9 ± 13.2 km  
 5.1mb ( 10 obs.)

FLORES ISLAND REGION (286)

AAI 7.74 56 eP 35 07.50 7.5X  
 TRT 9.08 272 iPc 35 19.60 2.0  
 0.3s 22.00nm 5.2mb X  
 KNA 10.21 139 eP 35 31.10 -1.4  
 0.3s 33.00nm 5.2mb X  
 MTN 10.32 118 iPc 35 34.10 0.2  
 0.3s 33.00nm 5.2mb X  
 MBL 13.11 188 eP 36 09.30 -0.7  
 0.3s 33.00nm 5.2mb X  
 NANU 15.58 202 eP 36 39.70 -1.2  
 0.4s 13.00nm 4.7mb  
 0.3s 36 43.00  
 eS 39 26.00

WB5 16.89 135 eP 36 56.50 -0.5  
 eS 39 51.90  
 WARB 18.56 166 iPc 37 15.50 0.1  
 0.3s 50.00nm 5.4mb  
 MEKA 18.66 189 iPc 37 16.40 -0.1  
 eS 40 35.00  
 ASPA 19.34 144 iPc 37 23.80 0.3  
 0.8s 343.00nm 5.8mb  
 iS 40 43.00  
 QIS 21.21 128 iPc 37 43.60 1.3  
 0.4s 25.00nm 5.0mb  
 eS 41 24.00

MRWA 21.69 194 eP 37 47.50 0.5  
 0.3s 25.00nm 5.2mb  
 eS 41 45.00

BAL 22.88 191 iPc 37 58.80 0.3  
 eS 42 26.00  
 FORR 23.38 166 iPc 38 03.00 -0.3  
 0.4s 129.00nm 5.8mb  
 KLB 23.67 189 iPc 38 05.70 -0.3  
 eS 42 34.00

MUN 24.31 192 iPd 38 12.00 -0.1  
 eS 42 50.00  
 NWA0 25.05 189 iPd 38 19.00 0.0  
 eS 43 05.00

PMG 25.10 95 eP 38 19.00 -0.6  
 RKG 26.21 189 iPd 38 34.80 5.2X  
 eS 43 46.00

CTA 26.50 119 i(P) 38 33.50 1.1  
 ADE 30.92 152 e(P) 39 12.10 0.5  
 CHG 34.97 320 eP 39 48.00 1.3  
 BRS 35.03 127 iPd 39 48.50 1.4

XAN 43.66 344 P 40 57.60 -0.7  
 LSA 47.77 323 P 41 32.80 1.6  
 BJI 48.19 354 eP 41 33.50 -0.1  
 1.0s 12.00nm 4.4mb

GBA 49.03 296 Pd 41 38.80 -1.8  
 0.7s 4.10nm 4.1mb  
 GUN 49.87 317 P 41 46.80 -0.5  
 PKI 49.97 317 P 41 47.30 -0.7

KKN 50.20 317 P 41 49.20 -0.4  
 0.7s 29.00nm 5.0mb  
 DMN 50.20 316 P 41 49.20 -0.5  
 0.8s 33.00nm 5.0mb

GTA 51.48 338 eP 41 59.00 0.0  
 MDJ 52.95 7 eP 42 08.50 -1.0  
 ZOBD 153.87 158 ePKP 52 57.00 14.6X  
 S.D. = 0.9 on 31 of 34 obs.

? MAR 14, 1990 14h 14m 43.70±7.71s  
 41.057 N ±52.3km 19.879 E ±45.7km  
 DEPTH = 10.0km (geophysicist)

ALBANIA (391)  
 ML 2.2 (SKO).

TIR 0.29 358 iPgc 14 49.60 -0.2  
 LACI 0.59 348 ePg 14 55.60 -0.1  
 OHR 0.70 85 ePg 14 57.50 0.0  
 iSg 15 06.60

PUK 0.99 1 ePg 15 02.60 0.2  
 S.D. = 0.3 on 4 of 4 obs.

& MAR 14, 1990 15h 30m 17.50s  
 63.627 N 149.853 W  
 DEPTH = 143.1km  
 CENTRAL ALASKA ( 1)  
 <AGS-P>.

MCK 0.42 75 eP 30 37.59 -0.4  
 eS 30 53.00  
 KTH 0.48 262 iP 30 37.97 -0.3  
 eS 30 52.42

RND 0.50 116 eP 30 37.82 -0.6  
 eS 30 54.06  
 HUR 0.66 171 eP 30 38.72 -0.5  
 eS 30 54.68

NEA 1.01 19 iP 30 41.20 -0.8  
 WRH 1.15 42 eP 30 42.65 -0.6  
 CUT 1.24 189 eP 30 43.58 -0.6  
 CCB 1.36 40 eP 30 44.78 -0.6

HDA 1.50 57 eP 30 46.28 -0.6  
 FBA 1.56 34 iP 30 47.06 -0.5  
 GLM 1.74 37 iP 30 49.02 -0.6  
 DDM 1.78 83 eP 30 49.78 -0.4  
 eS 31 13.22

SKT 1.82 206 eP 30 49.62 -0.9

GHO 1.91 167 iP 30 51.02 -0.6  
 eS 31 16.57  
 SML 1.96 158 eP 30 51.22 -0.9  
 eS 31 17.95  
 PWA 1.98 180 eP 30 52.01 -0.4  
 eS 31 19.27  
 PLRM 2.07 170 eP 30 52.43 -1.0  
 PAX 2.09 106 eP 30 53.12 -0.6  
 NCA 2.15 138 iP 30 53.90 -0.6  
 SUA 2.21 191 eP 30 55.51 0.2  
 TOA 2.28 131 eP 30 55.92 -0.1  
 PMS 2.40 177 eP 30 56.96 -0.5  
 eS 31 26.37

NCG 2.47 207 eP 30 57.72 -0.8  
 CGLM 2.53 204 eP 30 59.52 0.2  
 DOT 2.58 87 eP 30 59.00 -0.9  
 SPU 2.66 204 eP 31 00.80 0.0

KLU 2.81 138 eP 31 01.52 -1.3  
 VZW 3.00 148 eP 31 03.73 -1.5  
 GLI 3.04 154 eP 31 04.10 -1.6  
 eS 31 40.90

SLKM 3.14 183 eP 31 06.38 -0.6  
 eS 31 42.72  
 RDT 3.29 203 eP 31 09.47 0.5  
 SEW 3.54 177 eP 31 11.23 -0.9

GLB 3.56 125 eP 31 11.88 -0.6  
 33 obs. associated

MAR 14, 1990 15h 57m 48.83±0.45s  
 29.212 N ± 6.3km 142.319 E ±10.4km  
 DEPTH = 33.0km (normal)  
 4.6mb ( 4 obs.)

SOUTH OF HONSHU, JAPAN (211)

KAKJ 7.20 346 eP 59 34.10 -0.4  
 eS 00 52.70  
 IIDJ 7.28 330 P 59 39.30 3.7X  
 CHJJ 7.37 339 P 59 35.90 -1.0  
 eS 00 57.00

MTMJ 8.27 334 eP 59 50.30 0.7  
 NIJJ 8.47 342 eP 59 50.30 -1.9  
 CHG 40.75 265 eP 05 30.00 1.4  
 MTN 43.19 196 iPd 05 47.90 -0.5

GUN 49.17 283 P 06 37.00 0.8  
 WB5 49.40 190 eP 06 36.50 -1.0  
 WRA 49.47 190 Pd 06 36.90 -1.1  
 0.8s 7.40nm 4.8mb

KKN 49.72 283 P 06 40.80 0.6  
 BRS 57.17 169 iPc 07 34.50 -0.4  
 INK 61.07 25 eP 08 01.50 0.1  
 MBC 63.82 15 ePc 08 20.00 0.3

1.0s 11.00nm 4.9mb  
 YKA 70.23 29 eP 08 59.60 -0.6  
 0.6s 2.50nm 4.5mb

ORV 76.40 52 eP 09 37.20 0.5  
 CMB 77.86 53 ePc 09 45.90 1.0  
 FRI 78.83 54 e(P) 09 51.10 0.9  
 NB2 81.70 338 P 10 05.60 0.6

0.6s 1.00nm 4.0mb  
 ZOBD 149.21 72 PKP 17 38.00 5.5X  
 LR 52 48.00

S.D. = 1.0 on 18 of 20 obs.

\* MAR 14, 1990 16h 32m 51.92±1.19s  
 21.425 N ±11.2km 122.431 E ±23.2km  
 DEPTH = 33.0km (normal)  
 3.8mb ( 1 obs.)

TAIWAN REGION (243)

TWG 1.88 318 iPd 33 21.30 -1.0  
 eS 33 39.50  
 TWF1 2.19 332 ePc 33 27.60 0.9  
 PIP 3.52 209 iPc 33 46.00 0.3

CVP 3.75 189 eP 33 55.20 6.4X  
 eS 34 40.00  
 WB5 42.68 163 eP 40 48.00 0.6  
 WRA 42.73 163 P 40 47.00 -0.9  
 0.5s 0.90nm 3.8mb

S.D. = 1.2 on 5 of 6 obs.

MAR 14, 1990 17h 39m 22.91±0.36s  
 36.860 N ± 7.7km 73.275 E ± 6.9km  
 DEPTH = 33.0km (normal)  
 4.6mb ( 17 obs.) 4.1msz ( 1 obs.)

NORTHWESTERN KASHMIR (720)

KSH 3.35 39 Pn 40 20.00 5.6X



QUE	8.49	220	eP	41 00.50		INK	73.24	10	eP	50 51.00	-1.1	WMO	40.59	294	P	51 06.00	0.0	
			eS	41 25.10	-1.7	FBA	73.60	17	eP	50 56.40	2.2	CHG	43.07	254	eP	51 28.00	1.5	
NDI	8.80	157	iPc	41 32.00	1.2	FRB	75.25	343	eP	51 05.00	1.3	LSA	43.08	273	eP	51 30.20	3.2X	
	0.5s	31.69nm			5.7mb X	WB5	80.62	123	eP	51 34.50	0.6	PCI	45.68	213	ePd	52 01.00	13.6X	
			eS	43 07.00		WRA	80.65	123	Pc	51 34.90	0.8	GUN	47.99	274	P	52 06.40	0.3	
MAIO	11.10	271	eP	41 56.00	-6.4X		0.5s	3.00nm		4.5mb		KKN	48.51	274	P	52 10.30	0.4	
	0.8s	14.64nm			5.2mb	YKA	80.79	4	eP	51 32.40	-1.7		0.7s	29.00nm			5.4mb	
			eS	43 51.00			1.0s	5.70nm		4.5mb		PKI	48.52	274	P	52 10.10	0.0	
WMO	13.00	53	P	42 27.50	-0.5	FFC	88.69	357	eP	52 13.00	-0.9	DMN	48.74	274	P	52 11.60	-0.1	
	Z 12s	0.60um					1.0s	20.00nm		5.4mb		KSH	50.30	292	P	52 24.30	1.0	
KKN	13.58	128	P	42 33.60	-2.2		S.D. = 1.6 on 48 of 60 obs.					INK	51.39	28	eP	52 30.50	-0.5	
DMN	13.60	129	P	42 34.40	-1.7		* MAR 14, 1990 17h 40m 55.96±0.93s					MBC	53.51	17	eP	52 56.00	9.2X	
PKI	13.82	129	P	42 36.70	-2.3		39.927 N ± 8.0km	21.748 E ± 10.8km			WB5	59.95	189	eP	53 32.50	-0.7		
GUN	13.88	126	P	42 37.10	-2.8		DEPTH = 5.0km	(geophysicist)						e	53 47.50			
LSA	16.55	110	eP	43 16.80	2.3	GREECE				(364)	WRA	60.02	189	Pd	53 44.10	10.4		
	E 10s	0.70um				MD 3.1 (ATH).						0.7s	3.40nm					
POO	18.26	178	eP	43 35.00	-0.5						QUE	61.15	287	eP	53 41.60	-0.1		
			eS	46 55.00		KZN	0.38	3	ePg	41 03.50	-0.1	GBA	62.52	265	Pd	53 50.90	0.1	
SHL	19.46	120	iP	43 49.50	-0.4	EVN	1.01	177	ePg	41 14.50	-1.1		0.6s	2.30nm			4.5mb	
			iS	47 17.50		PLG	1.38	71	ePg	41 23.30	1.5	SOD	62.78	337	iP	53 50.50	-1.3	
HYB	19.92	165	iPc	43 55.10	0.3	OHR	1.39	329	ePg	41 21.20	-0.8	SUF	65.94	333	iP	54 11.10	-1.3	
	0.8s	46.15nm			4.9mb			iSg	41 37.70			0.6s	3.80nm				4.7mb	
			i	44 04.50		KEK	1.52	263	ePn	41 25.20	1.4	NUR	67.96	332	iP	54 24.00	-1.2	
			eS	47 32.00		VAY	1.53	24	ePn	41 23.00	-0.9	FFC	70.75	34	eP	54 42.00	-0.5	
GTA	21.01	75	eP	44 07.40	1.4		S.D. = 1.5 on 6 of 6 obs.						0.6s	6.00nm			4.0mb	
	Z 12s	0.50um			4.1mszX		% MAR 14, 1990 18h 18m 05.09±0.71s					CMB	71.37	56	ePc	54 47.50	0.9	
	E 11s	0.40um					41.824 N ± 9.7km	13.266 E ± 6.4km			LRM	71.39	46	eP	54 47.20	0.4		
TAB	21.40	281	eP	44 12.00	1.9		DEPTH = 33.0km	(normal)			HFS	71.95	336	eP	54 48.20	-1.4		
GBA	23.46	170	Pd	44 32.10	1.8	SOUTHERN ITALY				(390)		0.6s	5.60nm				4.7mb	
	0.7s	12.30nm			4.5mb	AZI	0.21	38	P	18 11.10	-0.6	NB2	71.99	337	P	54 48.40	-1.5	
LZH	24.55	83	eP	44 47.50	6.5X						KVN	72.20	54	eP	54 52.20	0.5		
	3.0s	83.00nm			4.8mb	RDP	0.42	261	P	18 14.00	-0.5				e	55 05.40		
	Z 13s	2.00um			4.8mszX						FRB	73.78	14	eP	54 59.00	-1.1		
CD2	25.93	94	eP	44 56.00	2.1						KHC	80.69	329	eP	55 40.50	1.6		
KOD	26.78	171	eP	45 03.90	1.8	RMP	0.42	268	P	18 21.20		KBA	82.42	328	e(P)	55 50.00	1.8	
KMI	27.73	107	eP	45 14.50	3.9X							0.8s	3.80nm				4.5mb	
	Z 20s	0.50um			4.1msz									e	25 25.50			
BTO	28.77	71	eP	45 25.00	5.3X	SDI	0.43	106	P	18 14.10	-0.6	LOR	85.85	333	eP	56 05.50	0.2	
	N 14s	0.50um									LBF	86.06	333	eP	56 06.50	0.1		
	E 14s	0.50um				DUI	0.91	100	P	18 22.50	0.9		0.8s	2.70nm			4.5mb	
CHG	28.81	122	eP	45 26.50	6.3X						SSF	86.15	333	eP	56 07.10	0.3		
XAN	29.07	85	P	45 23.40	1.0							0.8s	2.70nm				4.5mb	
HHC	29.92	70	eP	45 34.70	4.6X	ASS	1.32	340	P	18 28.00	0.5	LPL	86.31	331	eP	56 08.30	0.4	
GYA	30.12	101	P	45 37.60	5.7X							0.8s	2.70nm				4.5mb	
TIY	31.02	76	eP	45 47.00	7.3X	ARV	1.69	352	P	18 32.50	-0.2	LPG	86.32	331	eP	56 08.50	0.5	
	N 15s	0.40um					S.D. = 0.8 on 7 of 7 obs.						0.8s	4.05nm			4.7mb	
			eS	50 48.00			* MAR 14, 1990 18h 35m 56.97±3.00s					SMF	86.40	333	eP	56 08.50	0.5	
NNT	33.87	129	eP	46 06.20	1.6		23.971 N ±12.3km	122.992 E ±26.8km				0.8s	2.70nm				4.5mb	
MLR	36.21	299	eP	46 25.00	0.5		DEPTH = 33.0km	(normal)			AVF	86.44	333	eP	56 08.60	0.4		
SUF	38.60	327	eP	46 44.60	0.4	TAIWAN REGION				(243)		0.8s	4.70nm				4.8mb	
	0.6s	4.10nm			4.4mb	TWC	1.22	302	iPd	36 18.00	0.2	MAF	87.20	334	eP	56 12.70	0.8	
NUR	38.62	323	eP	46 42.00	-2.3								0.8s	4.05nm			4.7mb	
SOD	40.20	334	eP	47 02.00	4.6X	TWD	1.28	275	ePc	36 18.10	-0.5	LSF	87.53	334	eP	56 14.10	0.6	
KEV	41.16	338	eP	47 06.00	0.8	TWF1	1.67	249	ePc	36 24.50	0.2		0.8s	4.05nm			4.7mb	
BRG	43.84	308	eP	47 28.10	0.7	TW2	1.71	311	ePc	36 25.90	1.1							
	0.9s	10.00nm			4.6mb													
HFS	43.92	322	eP	47 25.00	-2.9	ANP	1.81	312	eP	36 25.50	-0.9							
	0.4s	2.90nm			4.4mb													
	Z 15s	0.13um			4.0mszX	TWG	2.10	237	ePc	36 30.60	0.0							
			LR	05 10.00		SSE	7.28	348	eP	37 43.50	-0.1		S.D. = 1.1 on 44 of 49 obs.					
TDS	44.16	292	P	47 31.50	1.4		* MAR 14, 1990 18h 43m 27.90±0.53s					ROI	2.26	304	P	55 41.50	-1.1	
KHC	44.26	306	P	47 32.00	1.1		39.864 N ±10.7km	142.783 E ± 7.3km			SOI	2.33	264	P	55 44.60	1.1		
MGR	44.61	293	P	47 34.50	0.7		DEPTH = 33.0km	(normal)						eSg	55 58.50			
RBL	44.67	302	P	47 35.50	1.3		4.6mb ( 15 obs.)	3.6msz ( 1 obs.)			CZI	2.40	292	P	55 36.90	-7.7X		
NB2	45.20	323	P	47 35.00	-3.3X	NEAR EAST COAST OF HONSHU, JAPAN (228)					TDS	2.46	303	P	55 44.40	-0.9		
	0.8s	4.90nm			4.5mb									eSg	56 00.00			
ARV	45.69	298	P	47 38.50	-3.8X	MDJ	10.87	300	eP	46 04.00	-0.2	CSI	2.55	305	P	55 48.70	2.0	
AZI	45.69	296	P	47 44.00	1.7	CN2	13.51	293	eP	46 42.00	2.4	ORI	2.62	312	P	55 52.50	4.8X	
GRF	45.71	307	eP	47 44.20	1.8		Z 18s	0.60um			ATN	2.78	268	P	55 48.90	-1.1		
ASS	45.99	297	P	47 42.50	-2.2									eSg	56 07.50			
CTI	46.05	302	P	47 43.50	-1.7													
SFI	46.36	299	P	47 45.50	-2.1						OHR	3.10	26	eP	55 54.50	0.0		
PGD	46.47	299	P	47 48.00	-0.6						MGR	3.22	305	P	55 56.50	0.3		
LPG	49.51	302	eP	48 13.10	0.6						SGO	3.62	309	P	56 01.50	-0.3		
	0.8s	2.70nm			4.3mb	SSE	19.61	250	eP	47 55.00	-1.3		S.D. = 1.3 on 8 of 10 obs.					
LPL	49.52	302	eP	48 13.10	0.6	BJI	20.38	279	eP	48 00.00	-4.4X		* MAR 14, 1990 18h 56m 36.32s					
	0.8s	4.05nm			4.5mb		Z 20s	0.30um		3.6msz		&	53.952 N			162.570 W		
BNI	49.68	301	P	48 11.50	-2.1								DEPTH = 21.9km					
SMF	51.17	304	eP	48 24.60	-0.2	NJ2	20.84	256	Pd	48 08.50	-0.6		3.5mb ( 1 abs.)					
	0.6s	3.60nm			4.5mb	HHC	23.75	283	eP	48 35.80	-2.3		SOUTH OF ALASKA ( 17 )					
AVF	51.45	304	eP	48 26.80	-0.1	WHN	24.94	257	eP	48 50.70	1.2		<PAL>					
	0.8s	5.35nm			4.6mb	BTO	24.95	282	eP	48 50.00	0.3							
MAF	52.13	304	eP	48 32.40	0.3	XAN	27.57	269	P	49 12.40	-1.5	SNKA	0.54	347	iPd	56 46.75	-0.2	
	1.0s	10.00nm			4.7mb	GYA	32.83	257	P	50 01.00	0.3	DRRA	0.99	10	iPd	56 52.35	-2.3	
MBC	66.88	3	eP	50 11.50	-1.8	CD2	32.83	267	eP	49 59.20	-1.4	PVV	1.50	17	ePd	57 00.45	-1.5	
	0.6s	21.00nm			5.4mb	GTA	32.86	283	eP	50 00.00	-0.8							
						KMI	36.52	259	Pd	50 33.50	1.1							
							2.0s	0.10nm		2.4mb X								



14d 18h

SASA 1.84 40 eS 57 18.65  
eP 57 05.90 -1.1  
eS 57 26.38  
SGB 2.01 37 eP 57 08.55 -1.0  
eS 57 31.23  
IVF 2.62 41 eP 57 16.86 -1.4  
YKA 26.08 52 eP 02 13.50 3.9  
0.8s 0.90nm 3.5mb  
FRB 45.25 39 eP 04 51.00 -2.2  
8 obs. associated

MAR 14, 1990 19h 11m 55.65± 0.37s  
22.745 S ± 9.3km 169.969 E ± 7.7km  
DEPTH = 43.9km ( 3 depth phos)  
5.0mb ( 8 obs.)

LOYALTY ISLANDS REGION (189)

DZM 3.33 281 iPd 12 45.00 -1.7  
iS 13 23.80  
SGE 9.06 57 eP 14 07.00 0.0  
SVA 9.19 61 eP 14 06.10 -2.6  
BRS 16.25 250 iP 15 40.50 -2.0  
COO 17.93 240 eP 16 05.00 1.5  
WEL 18.92 169 eP 16 13.00 -2.5  
RMQ 19.64 255 iPd 16 24.60 0.9  
CNB 21.89 231 eP 16 48.00 1.3  
MSZ 21.94 184 Pc 16 47.00 0.1  
1.0s 129.00nm 5.3mb  
CAN 22.15 231 eP 16 48.80 -0.5  
e 17 01.30 51km  
BWA 22.17 234 eP 16 48.10 -1.3  
e 16 58.70 41km  
CTA 22.23 272 iPd 16 53.20 3.1X  
1.3s 76.92nm 5.0mb  
i 17 16.50 112kmX  
CMS 23.15 243 eP 17 00.00 1.0  
e 17 18.00 81kmX  
TOO 25.71 229 eP 17 24.00 0.4  
ASPA 33.11 261 iPd 18 28.30 -1.5  
0.9s 18.00nm 4.9mb  
Z 17s 0.49um 4.3mszX  
WB5 33.24 268 eP 18 29.10 -1.9  
WRA 33.25 268 Pd 18 28.70 -2.4  
1.2s 6.00nm 4.3mb  
MBL 46.35 262 eP 20 18.50 -1.0  
PCI 53.29 287 ePd 21 14.00 1.3  
1.0s 3.50nm 4.3mb  
SSE 71.08 317 P 23 11.00 -0.4  
1.3s 26.00nm 5.0mb  
NJ2 73.20 316 Pc 23 23.60 -0.3  
WHN 75.20 313 eP 23 35.50 -0.1  
MDJ 76.51 332 eP 23 41.50 -1.2  
TIA 77.01 319 Pd 23 45.00 -0.7  
CN2 77.79 329 Pd 23 48.80 -1.0  
BJI 80.08 321 eP 24 02.00 -0.3  
1.5s 26.00nm 5.0mb  
KMI 80.70 302 Pd 24 07.00 0.7  
2.0s 0.10nm 2.4mbX  
CHG 80.73 295 eP 24 07.00 0.8  
CHTO 80.73 295 ePd 24 07.00 0.8  
eP 24 19.00 40km  
XAN 80.97 313 Pd 24 07.50 0.2  
CD2 82.90 308 eP 24 12.50 -4.9X  
HHC 83.31 319 eP 24 19.50 0.2  
LZH 85.57 312 eP 24 32.00 1.1  
1.5s 56.00nm 5.5mb  
SHL 89.59 298 iP 24 50.10 -0.4  
GTA 90.02 313 eP 24 52.40 0.3  
KVN 91.05 48 eP 24 56.50 -0.4  
FBA 93.22 17 eP 25 03.60 -2.5  
KKK 95.89 298 P 25 19.60 0.1  
DMN 95.96 297 P 25 20.20 0.3  
INK 99.64 18 eP 25 33.00 -2.2  
KRA 144.04 327 ePKP 31 28.70 0.8  
PVL 144.36 313 iPKPd 31 25.00 -3.6X  
SPC 144.41 325 ePKP 31 30.10 1.3  
PLD 145.22 312 iPKP 31 29.00 -1.2  
KSP 145.27 330 iPKPd 31 29.00 -1.0  
0.9s 29.00nm  
PSZ 145.35 324 ePKP 31 29.00 -1.3  
RZN 145.37 311 iPKPc 31 30.00 -0.7  
BZS 145.63 319 ePKP 31 29.00 -1.7  
VTS 146.04 314 ePKP 31 31.00 -0.8  
MMB 146.09 312 iPKPd 31 32.00 0.3  
SRO 146.26 325 iPKP 31 32.80 1.1  
BRG 146.29 332 iPKP 31 31.90 0.2

1.7s 44.00nm  
CLL 146.36 334 ePKP 31 30.00 -0.8  
1.9s 40.00nm  
KKB 146.42 312 iPKPd 31 33.00 0.8  
ZST 146.66 326 ePKP 31 33.50 1.2  
PRU 146.67 331 ePKP 31 32.50 0.2  
BEO 146.74 319 ePKP 31 33.50 0.9  
VAY 147.00 312 iPKPd 31 33.60 0.5  
MOX 147.43 334 ePKP 31 36.00 2.5  
SKO 147.49 314 iPKPd 31 35.70 1.8  
0.7s 100.00nm  
KHC 147.72 330 iPKPd 31 36.20 2.1  
1.2s 10.00nm  
BCI 148.21 315 ePKP 31 37.40 2.4  
PHP 148.28 314 iPKPc 31 37.10 2.0  
OHR 148.30 313 ePKPd 31 37.90 2.6X  
0.8s 0.07nm  
GRF 148.33 333 ePKP 31 37.40 2.4  
SDA 148.75 315 ePKP 31 39.70 3.8X  
LACI 148.79 314 ePKP 31 38.40 2.4  
TIR 148.82 314 ePKP 31 39.20 3.2X  
KBA 149.29 328 iPKPd 31 39.40 2.6X  
1.2s 14.30nm  
i 32 06.40  
VBY 149.35 324 ePKP 31 40.90 4.2X  
LJU 149.39 325 e(PKP) 31 39.50 2.7X  
RBL 149.62 327 PKP 31 40.00 2.8X  
CEY 149.64 325 e(PKP) 31 41.00 3.8X  
VOY 149.73 326 ePKP 31 40.50 3.1X  
FVI 149.91 328 PKP 31 41.00 3.5X  
TRI 150.01 326 PKP 31 41.50 3.8X  
DOU 150.38 341 PKP 31 42.70 4.6X  
OGA 150.55 330 ePKP 31 43.50 4.7X  
LCI 150.58 313 PKP 31 43.50 4.8X  
CTI 150.85 328 PKP 31 43.00 3.9X  
CDF 150.91 336 ePKP 31 43.60 4.5X  
0.6s 3.60nm  
BSF 151.58 336 ePKP 31 44.80 4.7X  
0.6s 3.60nm  
HAU 151.60 337 ePKP 31 45.00 4.9X  
0.6s 3.60nm  
ORI 151.72 314 PKP 31 47.00 6.5X  
ARV 151.91 323 PKP 31 47.00 6.4X  
TDS 151.99 313 PKP 31 47.00 6.1X  
DUI 152.14 318 PKP 31 47.00 5.9X  
SGO 152.21 316 PKP 31 47.00 5.9X  
SFI 152.22 325 PKP 31 52.00 11.0X  
MGR 152.27 315 PKP 31 57.00 15.8X  
PGD 152.32 325 PKP 31 47.50 6.1X  
VAI 152.33 331 PKP 31 42.50 1.4  
ASS 152.34 322 PKP 31 46.50 5.2X  
SDI 152.50 319 PKP 31 47.50 5.9X  
AZI 152.56 320 PKP 31 47.50 6.0X  
BOB 152.84 329 PKP 31 46.50 4.5X  
SOI 152.93 310 PKP 31 49.50 7.3X  
PII 153.06 326 PKP 31 48.00 5.8X  
LOR 153.10 339 ePKP 31 48.50 6.3X  
LBF 153.31 338 ePKP 31 48.70 6.2X  
SSF 153.40 339 ePKP 31 49.00 6.4X  
LPL 153.49 333 ePKP 31 49.40 6.3X  
1.0s 6.00nm  
LPG 153.50 333 ePKP 31 49.80 6.6X  
1.0s 5.00nm  
BNI 153.88 332 PKP 31 43.00 -0.5  
S.D. = 1.4 on 64 of 104 obs.

& MAR 14, 1990 19h 16m 00.54s  
60.012 N 151.491 W  
DEPTH = 43.4km  
KENAI PENINSULA, ALASKA ( 14 )  
<AGS-P>.

NNL 0.10 73 eP 16 08.70 2.7  
eS 16 14.17  
BRLK 0.39 129 eP 16 09.69 -0.5  
CNPM 0.50 165 iP 16 10.74 -0.8  
eS 16 19.02  
XLV 0.57 192 eP 16 12.58 0.2  
eS 16 20.44  
NKA 0.74 10 iP 16 15.97 1.3  
SLKM 0.81 51 eP 16 14.52 -1.1  
eS 16 26.88  
SEW 1.03 84 eP 16 18.06 -0.6  
eS 16 32.92  
AUE 1.16 236 eP 16 19.56 -1.0  
AUL 1.17 238 eP 16 19.95 -0.8

SPU 1.21 347 iP 16 20.55 -0.7  
eS 16 36.63  
CRP 1.30 346 eP 16 22.28 -0.5  
CGLM 1.32 349 eP 16 22.55 -0.4  
PDB 1.38 262 eP 16 22.44 -1.2  
iS 16 40.51  
NCG 1.43 347 iP 16 24.12 -0.5  
eS 16 43.58  
SUA 1.50 14 eP 16 24.96 -0.6  
CDD 1.54 226 eP 16 25.40 -0.7  
eS 16 44.50  
PMS 1.56 37 eP 16 25.82 -0.5  
eS 16 45.85  
PWA 1.82 25 eP 16 30.22 0.3  
PLRM 1.96 35 eP 16 30.90 -1.0  
SKT 1.98 359 eP 16 31.62 -0.5  
BGM 1.99 253 eP 16 30.60 -1.8  
eS 16 55.21  
KNK 2.05 45 eP 16 32.30 -0.9  
GLI 2.35 66 eP 16 34.54 -2.9  
CUT 2.47 13 eP 16 39.99 0.7  
VZW 2.66 65 eP 16 39.29 -2.6  
KLU 3.11 59 iP 16 46.21 -2.2  
KTH 3.56 4 eP 16 56.49 1.7  
27 obs. associated

MAR 14, 1990 19h 21m 49.70± 0.59s  
36.109 N ± 7.6km 27.214 E ± 6.6km  
DEPTH = 29.8 ± 8.2 km  
4.0mb ( 1 obs.)  
DODECANESE ISLANDS (369)  
ML 4.1 (ATH).

KAP 0.56 183 ePn 22 01.00 0.0  
ARG 0.75 81 ePn 22 03.00 -1.0  
eSn 22 16.50  
NPS 1.55 238 ePn 22 15.50 -0.1  
SMG 1.63 349 ePn 22 14.70 -1.9  
CIN 1.64 25 eP 22 15.00 -1.9  
APE 1.66 306 ePn 22 15.00 -2.2  
KSL 1.92 89 ePn 22 22.50 1.6  
VAM 2.55 255 ePn 22 30.20 0.3  
PRK 3.22 347 ePb 22 46.50 7.1X  
ATH 3.36 305 ePb 22 49.30 7.9X  
VLI 3.50 281 ePn 22 42.20 -1.3  
ITM 4.38 286 ePn 22 57.00 1.0  
CSS 5.12 101 eP 23 07.50 1.1  
EVR 5.13 305 ePn 23 06.00 -0.6  
BBTK 5.75 48 eP 23 17.00 1.6  
OHR 7.08 317 eP 23 36.50 2.5X  
DSI 8.16 121 eP 23 47.00 -2.0  
e(S) 25 15.00  
PRNI 8.69 129 eP 23 55.00 -1.4  
MBH 9.02 132 eP 23 59.00 -1.9  
e(S) 25 36.00  
KBA 15.07 321 eP 25 25.50 3.3X  
1.2s 11.40nm 4.0mb  
KHC 16.40 327 eP 25 40.70 1.5  
S.D. = 1.6 on 17 of 21 obs.

? MAR 14, 1990 19h 43m 38.14± 4.11s  
31.775 S ± 25.7km 71.514 W ± 31.1km  
DEPTH = 33.0km (normol)  
NEAR COAST OF CENTRAL CHILE (135)

JACH 1.19 139 iP 43 58.60 -0.1  
iS 44 11.50  
ROCH 1.27 161 iPd 44 00.30 0.4  
iS 44 14.50  
LCCH 1.70 182 iPd 44 06.50 0.6  
iS 44 25.00  
SAN 1.82 157 eP 44 07.00 -0.7  
iS 44 25.90  
FCH 1.86 147 iPd 44 12.70 4.1X  
iS 44 37.00  
TACH 1.94 166 iPd 44 08.50 -0.9  
iS 45 29.00  
PCH 2.02 156 iPd 44 12.70 2.0  
iS 44 30.50  
LNV 2.18 178 iPd 44 12.40 -0.3  
iS 44 35.50  
CHCH 2.27 162 iPd 44 12.70 -1.4  
iS 44 37.00  
ZON 2.43 85 eP 44 16.00 -0.4  
eS 44 46.00  
RTCV 2.54 93 iPd 44 18.20 0.3  
CFA 2.80 87 iPd 44 21.50 -0.1



(S) 48 42.40  
S.D. = 1.0 on 11 of 12 obs.

? MAR 14, 1990 20h 19m 17.74 $\pm$  5.74s  
31.152 S  $\pm$  22.7km 68.285 W  $\pm$  43.5km  
DEPTH = 94.4  $\pm$  52.1 km  
SAN JUAN PROVINCE, ARGENTINA (137)

RTLL 0.24 222 iPc 19 31.80 -0.1  
eS 19 42.00  
CFA 0.46 175 iPd 19 33.00 0.1  
iS 19 45.00  
RTCB 0.55 233 iPd 19 33.80 0.1  
eS 19 46.00  
RTCV 0.74 197 iPd 19 35.20 -0.1  
RTRS 1.41 314 iP 19 42.90 0.0  
S.D. = 0.2 on 5 of 5 obs.

& MAR 14, 1990 21h 59m 53.30s  
37.113 N 121.963 W  
DEPTH = 11.0km  
CENTRAL CALIFORNIA (39)  
<BRK>. ML 2.7 (BRK).

GCC 0.09 198 iPd 59 55.80 -0.2  
iS 59 58.30  
MHC 0.34 48 iPd 00 00.40 -0.1  
iS 00 05.70  
ARN 0.42 55 iPc 00 01.80 -0.1  
PCC 0.51 319 eP 00 03.10 -0.6  
SAO 0.54 130 iPc 00 03.00 -1.2  
BKS 0.79 344 iPc 00 08.50 -0.1  
i 00 12.90  
eS 00 19.60  
BRK 0.79 343 ePc 00 08.50 -0.1  
eS 00 19.20  
ZSP 0.86 344 ePc 00 10.00 0.2  
eS 00 22.20  
PRS 0.91 148 iPd 00 10.50 -0.2  
LLA 0.96 121 ePd 00 10.40 -1.0  
eS 00 24.20  
PRI 1.42 132 e(P) 00 19.40 0.2  
CMB 1.56 53 eP 00 20.30 -0.7  
i 00 21.60  
12 obs. associated

MAR 14, 1990 22h 16m 32.08 $\pm$  0.71s  
38.591 N  $\pm$  4.4km 14.798 E  $\pm$  6.2km  
DEPTH = 12.7  $\pm$  5.3 km  
SICILY (398)

MNO 0.66 187 P 16 45.30 0.1  
eSg 16 55.90  
ATN 0.68 129 P 16 45.10 -0.2  
eSg 16 56.80  
MSI 0.71 123 P 16 46.40 0.6  
GIB 0.85 226 P 16 48.30 0.0  
eSg 17 00.40  
SOI 1.12 117 P 16 52.20 -0.5  
eSg 17 10.50  
CZI 1.22 59 P 16 53.80 -0.6  
MEU 1.49 176 P 16 58.60 -0.1  
eSn 17 19.50  
TDS 1.60 48 P 17 01.50 1.3  
MGR 1.65 21 P 17 00.40 -0.5  
ROI 1.69 54 P 17 01.70 0.2  
ORI 1.95 41 P 17 05.00 -0.2  
SGO 2.00 11 P 17 06.00 0.0  
S.D. = 0.6 on 12 of 12 obs.

MAR 14, 1990 22h 53m 34.19 $\pm$  0.63s  
36.151 N  $\pm$  7.5km 27.242 E  $\pm$  5.9km  
DEPTH = 10.0km (geophysicist)  
DODECANESE ISLANDS (369)  
MD 3.5 (ATH).

KAP 0.60 185 ePb 53 46.20 -0.1  
eSb 53 56.00  
ARG 0.72 85 ePb 53 48.30 0.0  
eSb 54 00.00  
SMG 1.59 348 ePb 54 01.70 -0.7  
NPS 1.59 237 ePb 54 01.00 -1.5  
CIN 1.60 25 eP 54 02.00 -0.5  
APE 1.65 304 ePg 54 04.00 0.6  
KSL 1.90 90 ePb 54 07.60 0.7  
VAM 2.58 254 ePb 54 18.00 1.3  
VLI 3.52 281 ePn 54 28.70 -1.3

ITM 4.39 285 ePn 54 44.00 1.5  
S.D. = 1.2 on 10 of 10 obs.

MAR 15, 1990 00h 12m 42.92 $\pm$  0.26s  
31.658 N  $\pm$  6.8km 60.213 E  $\pm$  3.7km  
DEPTH = 16.3km (5 depth phases)  
4.9mb (37 obs.) 4.6MsZ (5 obs.)  
IRAN (348)

Felt at Nahbandon.  
CENTROID, MOMENT TENSOR (HRV)  
Data Used: GDSN  
L.P.B.: 11S, 19C  
Centroid Location:  
Origin Time 00:12:48.1 0.9  
Lat 31.44N Lon 60.30E 0.10  
Dep 15.0 FIX Half-duration 1.5  
Moment Tensor: Scale 10 $\times$ 16 Nm  
Mrr= 0.22 0.35 Mtt= 2.15 0.60  
Mff=-2.37 0.45 Mrt= 0.03 1.77  
Mrf= 0.95 1.36 Mtf= 5.85 0.35  
Principal Axes:  
T Val= 6.21 Plg= 5 Azm=325  
N 0.25 82 196  
P -6.47 7 56  
Best Double Couple: Mo=6.3 $\times$ 10 $\times$ 16  
NP1: Strike=100 Dip=82 Slip= -1  
NP2: 190 89 -172

MAIO 4.67 353 ePn 13 55.00 0.5  
0.7s 60.36nm  
eSn 15 05.00  
QUE 5.97 102 eP 14 12.70 -0.2  
TEH 8.40 301 eP 14 47.00 0.0  
IR2 8.73 300 eP 14 50.50 -1.0  
IR1 8.79 298 eP 14 51.50 -0.8  
IR7 8.96 299 eP 14 55.00 0.3  
SLY 12.88 292 ePd 16 01.50 13.7X  
e 19 34.00  
i 22 02.50  
TAB 13.07 303 eP 15 53.00 2.4  
RYD 13.84 243 iP+ 15 55.90 -4.8X  
MSL 14.91 293 ePc 16 16.00 1.4  
e 18 40.00  
eS 19 14.00  
e 20 51.00  
KSH 14.99 54 P 16 14.50 -1.3  
Z 15s 5.90um  
NDI 15.00 97 eP 16 17.50 1.6  
eS 19 07.00  
OASM 15.62 253 eP+ 16 20.50 -3.5X  
BOM 17.05 135 eP 16 39.50 -2.6  
eS 20 06.00  
POO 17.96 133 eP 16 53.00 -0.5  
eS 20 26.00  
KMSA 18.03 235 eP 16 49.70 -4.7X  
HLBJ 20.31 278 Pc 17 22.60 1.7  
MDSJ 20.40 276 Pd 17 23.70 1.9  
HRI 20.70 281 eP 17 26.00 1.0  
SHMJ 20.71 279 Pc 17 29.00 4.0X  
BURJ 20.71 278 Pc 17 28.30 3.2X  
AYN 21.09 269 eP+ 17 30.70 1.9  
HYB 21.85 126 ePd 17 39.00 2.4  
i 17 54.80 70kmX  
eS 21 48.00  
MBH 21.85 272 eP 17 46.00 9.5X  
DMN 22.00 94 P 17 40.20 1.9  
KKK 22.09 94 P 17 40.40 1.2  
PKI 22.26 94 P 17 40.60 -0.5  
GUN 22.57 93 P 17 44.60 0.5  
BBTK 23.66 298 iPd 17 56.00 1.6  
GBA 23.93 135 Pd 17 56.10 -0.9  
1.1s 7.50nm 4.2mb  
WMO 24.77 53 P 18 06.00 0.9  
Z 14s 1.10um 4.5MsZ  
S 22 30.00  
BCK 25.01 292 eP 18 08.00 0.5  
ELL 25.51 290 eP 18 13.30 1.0  
ALT 25.56 295 eP 18 16.00 3.4X  
LSA 26.64 86 eP 18 27.20 4.1X  
KOD 26.65 139 eP 18 23.00 -0.1  
SHL 28.39 94 eP 18 31.00 -7.8X  
eS 23 58.00  
SKO 32.46 300 eP 19 14.00 -0.5  
GTA 32.94 65 Pc 19 19.30 0.5  
Z 18s 0.90um 4.5MsZ  
SPC 34.62 312 eP 19 34.80 1.5  
KRA 35.05 313 eP 19 36.20 -0.5

1.1s 86.00nm 5.6mb  
Z 20s 1.10um 4.6MsZ  
E 20s 1.40um

SRO 35.55 309 eP 19 41.20 17km  
e 19 50.30 9.3X  
20 05.50 59kmX  
ZST 36.42 310 eP 19 51.50 3.1X  
SOI 36.53 293 P 19 52.50 3.1X  
SOP 36.69 309 ePd 19 52.00 1.4  
MGR 36.83 296 P 19 52.50 0.5  
SGO 37.02 297 P 19 53.50 0.0  
CD2 37.04 79 eP 19 56.40 2.5  
Z 23s 1.00um 4.5MsZ  
N 13s 1.60um  
CHG 37.10 101 eP 19 53.50 -0.9  
NUR 37.14 332 iP 19 53.70 -0.6  
0.8s 30.80nm 5.2mb  
KSP 37.50 314 ePc 19 57.00 -0.4  
DUI 37.65 299 P 20 00.50 1.5  
KMI 37.79 89 eP 20 00.00 -0.5  
Z 20s 1.00um 4.6MsZ  
N 15s 0.60um  
E 15s 0.80um  
S 25 52.00  
SUF 37.90 335 iP 20 01.00 0.4  
0.9s 18.60nm 4.9mb  
SDI 38.14 299 P 20 02.50 -0.5  
PRU 38.41 312 eP 20 04.50 -0.6  
Z 15s 0.50um 4.5MsZ  
N 16s 1.10um  
E 16s 0.40um  
e 36 00.00  
RBL 38.54 306 P 20 06.50 0.1  
KBA 38.76 307 iPc 20 06.00 -2.3  
0.8s 7.70nm 4.5mb  
ARV 38.80 301 P 20 08.00 -0.5  
KHC 38.88 310 iPd 20 09.10 0.0  
BRG 38.96 313 iP 20 10.20 0.5  
1.3s 27.00nm 4.8mb  
i 20 14.40 14km  
ASS 39.00 301 P 20 15.50 5.3X  
FVI 39.10 306 P 20 10.00 -0.9  
BHG 39.15 308 iP 20 11.60 0.2  
SFI 39.60 302 P 20 18.00 2.9  
CLL 39.63 314 iPd 20 16.20 1.0  
1.5s 52.00nm 5.0mb  
i 20 20.50 15km  
PGD 39.70 302 P 20 16.50 0.4  
CTI 39.84 305 P 20 18.00 0.8  
OGA 40.33 307 eP 20 20.70 -0.6  
MOX 40.38 313 eP 20 22.00 0.6  
1.1s 20.00nm 4.7mb  
GRF 40.49 311 eP 20 23.00 0.6  
Z 22s 0.40um 4.2MsZ  
e 20 27.00 14km  
BDI 40.51 302 P 20 21.50 -1.2  
PII 40.56 302 P 20 22.50 -0.5  
SAL 40.60 305 P 20 23.50 0.2  
XAN 40.69 73 P 20 23.50 -0.7  
BTO 40.74 63 eP 20 26.00 1.3  
N 14s 0.70um  
E 14s 0.70um  
SOD 40.84 341 eP 20 24.00 -1.0  
OSS 40.92 306 ePd 20 26.00 -0.1  
MDI 41.18 305 P 20 26.00 -2.0  
BOB 41.34 303 P 20 30.00 0.5  
VDL 41.37 306 ePd 20 29.60 -0.3  
LLS 41.72 307 eP 20 31.80 -0.9  
HFS 41.77 327 eP 20 32.00 -0.6  
0.5s 1.60nm 4.0mb  
Z 17s 0.43um 4.4MsZ  
LR 38 21.00  
TMA 41.77 305 ePd 20 32.90 -0.3  
VAI 41.84 305 P 20 33.00 -0.4  
TOD 42.04 311 eP 20 44.38 9.3X  
MMK 42.40 305 ePd 20 37.60 -0.8  
KEV 42.44 344 eP 20 38.00 -0.1  
DIX 42.79 305 ePd 20 41.00 -0.6  
SBF 42.80 302 eP 20 40.80 -0.6  
0.8s 5.35nm 4.3mb  
A8H 42.87 311 eP 20 46.16 4.2X  
DOI 42.92 303 P 20 40.00 -2.4  
CDF 42.95 309 eP 20 41.40 -1.3  
0.8s 6.70nm 4.4mb  
NB2 43.23 328 P 20 43.90 -0.8  
1.0s 12.50nm 4.6mb



15d 00h

LPG	43.25 304 eP	20 45.10 -0.3		MINDANAO, PHILIPPINE ISLANDS (259)	DSI	7.88 116 eP	30 50.00 -2.0		
	0.8s 13.45nm	4.8mb				eS	32 18.00		
BSF	43.25 308 eP	20 44.40 -0.7		DAV	1.67 228 eP+	00 27.60 2.3	SKO	7.99 328 eP	30 54.20 0.7
	0.8s 5.35nm	4.4mb			iS	00 55.60		i	30 56.50
LPL	43.26 304 eP	20 45.30 -0.1		MNI	7.01 196 eP	01 39.00 -2.1	PHP	8.23 323 eP	30 56.20 -0.6
	0.9s 16.40nm	4.8mb		SSE	23.36 348 P	05 06.00 1.5	PRNI	8.30 124 eP	30 56.00 -1.8
BNI	43.31 304 P	20 44.50 -1.2			1.3s 17.00nm	4.4mb	LACI	8.57 320 eP	31 02.30 0.9
WTS	43.55 314 eP	20 48.00 0.7		Z	20s 0.50um	4.0msz	MBH	8.59 128 eP	31 01.00 -0.8
	0.8s 10.00nm	4.7mb		WB5	28.90 165 eP	05 56.90 0.7	eS	32 34.00	
HAU	43.56 308 eP	20 46.50 -1.0		WRA	28.95 165 Pc	05 57.20 0.5	PUK	8.77 322 eP	31 03.90 -0.3
	1.1s 19.55nm	4.8mb			0.5s 2.30nm	4.1mb	LCI	8.79 308 Pc	31 01.10 -3.4X
MEM	43.92 312 P	20 50.00 -0.3		CHTO	29.03 294 e(P)	05 58.60 1.2	BCI	8.93 324 eP	31 09.40 3.0X
ENN	43.98 312 eP	20 52.00 1.2		QIS	31.24 156 eP	06 10.00 -7.0X	HQL	9.04 129 eP	31 07.50 -0.5
DOU	44.79 311 P	20 59.70 2.3		ASPA	32.44 168 eP	06 26.90 -0.6	SOI	9.26 291 Pc	31 09.70 -1.4
	0.9s 22.50nm	5.1mb			0.6s 6.00nm	4.7mb	eSn	32 45.30	
UCC	44.98 312 P-	21 00.00 1.1		BJI	33.08 345 eP	06 31.50 -1.4	ROI	9.37 300 P	31 12.40 -0.2
SNF	45.01 312 P	20 59.00 -0.1		HHC	35.21 340 eP	06 51.00 -0.4	BADA	9.54 133 eP	31 14.00 -0.9
LBF	45.16 307 eP	20 59.60 -0.9		MDJ	36.34 3 eP	07 02.00 1.3	CZI	9.55 298 P	31 12.30 -2.7
	1.1s 22.00nm	5.0mb		GTA	39.37 326 eP	07 24.80 -1.6	eSn	32 59.00	
LOR	45.23 307 eP	21 00.00 -1.0		GUN	43.29 302 P	07 58.40 -0.6	BRT	9.56 309 P	31 13.20 -2.0
	1.0s 16.00nm	4.9mb		GBA	48.72 281 Pd	08 40.20 -1.5	TDS	9.57 300 P	31 14.00 -1.3
SMF	45.26 306 eP	21 00.30 -0.9			0.8s 1.70nm	4.1mb	eSn	32 52.60	
	1.0s 44.00nm	5.4mb		INK	85.98 22 eP	12 35.50 -0.5	CSI	9.65 301 P	31 18.20 1.7
SSF	45.48 307 eP	21 02.20 -0.7		MBC	87.58 13 eP	12 44.50 0.9	ORI	9.66 303 P	31 14.50 -2.1
	0.8s 20.15nm	5.1mb			1.0s 12.00nm	5.1mb	MSI	9.68 291 P	31 14.10 -2.7
AVF	45.59 306 eP	21 03.00 -0.8		S.D. = 1.4 on 15 of 16 obs.			ATN	9.74 291 P	31 16.10 -1.5
	1.0s 20.00nm	5.0mb		MAR 15, 1990 02h 28m 56.93±0.47s			MMN	9.91 301 P	31 19.20 -0.7
BGF	45.95 306 eP	21 05.70 -0.9		35.281 N ± 4.3km 27.053 E ± 3.2km			AYN	9.92 128 eP	31 18.40 -1.7
	1.0s 12.00nm	4.8mb		DEPTH = 37.2 ± 6.2 km			MEU	9.97 284 P	31 20.30 -0.6
MAF	46.15 306 eP	21 07.70 -0.6		4.2mb ( 33 obs.)			MNO	10.28 289 P	31 24.40 -0.9
	1.2s 23.80nm	5.0mb		DODECANESE ISLANDS (369)			MGR	10.32 301 P	31 22.80 -2.7
TCF	46.40 306 eP	21 09.80 -0.5		MD 4.4 (ATH), 4.3 (HLW)			SGO	10.66 303 P	31 27.90 -2.4
	1.0s 12.00nm	4.9mb					GIB	10.81 288 P	31 30.50 -1.9
CAF	46.59 304 eP	21 11.10 -0.7		KAP	0.29 20 iPgc	29 02.00 -2.8	FAI	10.98 284 P	31 35.50 0.9
	1.2s 23.80nm	5.1mb		NPS	1.18 269 iPbd	29 20.00 2.8	HVAR	11.39 317 ePn	31 35.60 -4.5X
LSF	46.87 306 eP	21 13.00 -1.0		ARG	1.28 43 iPbc	29 19.50 0.9	iSn	33 39.60	
	1.2s 16.35nm	5.0mb		APE	2.17 326 iPnd	29 31.80 0.4	DUI	11.74 307 P	31 43.00 -2.0
LPO	47.23 304 eP	21 16.50 -0.3		KSL	2.22 67 ePn	29 34.00 1.9	SDI	12.19 306 P	31 48.50 -2.4
	1.0s 12.00nm	4.9mb		VAM	2.34 274 ePn	29 35.40 1.6	AQU	12.76 308 P	31 58.60 0.0
LFF	47.52 304 eP	21 18.80 -0.3		SMG	2.43 356 ePn	29 35.00 0.0	ASS	13.59 309 P	32 08.50 -1.1
	1.0s 20.00nm	5.1mb		CIN	2.46 20 eP	29 36.00 0.5	ARV	13.64 311 P	32 10.50 0.4
GRR	48.37 309 eP	21 24.80 -0.9		ELL	2.74 57 iP	29 41.80 2.2	SRO	14.11 335 eP	32 28.20 12.0X
	1.0s 22.00nm	5.2mb		IZM	3.11 3 iP	29 44.40 -0.5	PGD	14.59 311 P	32 23.00 0.3
TOL	51.79 298 eP	21 54.00 2.0		BCK	3.59 52 eP	29 53.70 2.1	SPC	14.77 342 eP	32 33.30 8.2X
LKO	64.48 266 P	23 20.28 -1.0		KHL	3.63 32 iP	29 52.80 0.6	ZST	14.87 333 eP	32 21.90 -4.2X
	0.8s 22.00nm	5.4mb		VLI	3.63 294 ePn	29 53.00 0.8	RBL	15.09 322 P	32 29.50 0.4
KIC	65.40 262 P	23 27.40 0.2		ATH	3.80 316 ePn	29 56.00 1.5	KBA	15.64 323 iPd	32 35.30 -1.0
LIC	65.71 262 P	23 29.70 0.5		PRK	4.01 351 ePn	29 57.30 -0.2	1.1s 23.30nm	4.3mb	
Z	20s 0.35um	4.6msz		PPCY	4.36 94 eP	30 03.30 0.9	i	32 40.20	
MBC	72.36 360 eP	24 09.00 -0.2		ALT	4.49 32 iP	30 04.80 0.4	i	32 50.20	
	1.0s 14.00nm	5.0mb		DST	4.49 16 iP	30 04.30 -0.1	i	35 45.50	
FRB	76.68 339 eP	24 36.00 1.7		ITM	4.56 296 ePn	30 08.00 2.7	PGF	15.80 303 eP	32 39.80 1.5
IMA	79.16 13 eP	24 48.50 0.4		NEO	5.05 324 ePn	30 13.00 0.8	1.0s 30.00nm	4.4mb	
	0.9s 7.30nm	4.7mb		EDC	5.10 7 iP	30 13.00 0.1	CTI	15.85 317 P	32 40.80 1.8
INK	79.81 5 eP	24 50.00 -1.3		BNT	5.11 7 iP	30 12.60 -0.5	BOB	16.45 310 P	32 47.50 0.9
FBA	81.30 12 eP	25 00.40 1.1		CSS	5.16 92 eP	30 13.50 -0.3	MDI	16.81 314 P	32 52.50 1.6
TTA	81.39 16 P	24 59.00 -1.0					KHC	17.03 328 iP	32 55.00 1.3
PMR	84.08 14 eP	25 14.80 1.1					1.0s 9.00nm	3.9mb	
	0.9s 10.40nm	5.1mb		MFT	5.50 2 iP	30 18.60 0.0	PRU	17.31 332 eP	32 56.80 -0.3
TOA	84.17 12 eP	25 15.20 0.9		EVR	5.54 312 ePn	30 21.20 2.0	SBF	17.35 305 eP	32 59.40 1.5
WB5	87.56 115 eP	25 29.50 -2.0		YLV	5.59 18 iP	30 19.10 -0.7	0.8s 48.35nm	4.7mb	
WRA	87.57 115 Pd	25 29.40 -2.2		GPA	5.62 26 eP	30 21.00 0.7	KSP	17.40 337 eP	32 59.00 0.7
	0.5s 2.00nm	4.7mb		GBZT	5.81 18 ePn	30 23.60 0.6	VAI	17.41 313 P	33 01.50 3.0X
ASPA	89.36 118 iPc	25 41.30 1.2		PLG	5.83 332 ePn	30 23.20 -0.1	DOI	17.74 307 P	33 06.00 3.3X
	0.8s 6.00nm	4.9mb		HRT	5.90 20 eP	30 23.00 -1.3	FRF	17.77 304 eP	33 03.00 0.0
RSON	94.67 344 P	26 02.00 -2.3		VLS	5.94 301 ePn	30 26.80 2.0	0.6s 7.20nm	4.0mb	
S.D. = 1.2 on 118 of 134 obs.				RDO	5.98 349 ePn	30 25.00 -0.3	LMR	17.79 303 eP	33 04.00 0.8
				ISK	5.99 15 eP	30 24.00 -1.4	0.8s 12.10nm	4.1mb	
? MAR 15, 1990 00h 16m 27.57±1.85s				BBTK	6.42 43 iPc	30 32.00 0.3	LRG	17.93 303 eP	33 05.30 0.4
44.072 N ± 28.9km 11.219 E ± 6.2km				KDZ	6.49 349 iPd	30 32.00 -0.5	0.8s 21.50nm	4.3mb	
DEPTH = 10.0km (geophysicist)				HLW	6.51 145 ePn	30 33.00 0.3	BRG	18.24 333 eP	33 11.10 2.3
NORTHERN ITALY (545)							LPG	18.48 310 eP	33 12.00 0.0
							0.6s 4.95nm	3.9mb	
PGD	0.41 118 P	16 36.30 0.2		KZN	6.53 322 ePn	30 34.20 1.1	GRF	18.48 326 eP	33 10.70 -1.0
	eSg	16 41.50		RZN	6.65 345 iPd	30 35.00 0.0	LPL	18.50 310 eP	33 11.90 -0.3
BDI	0.45 269 P	16 36.80 0.1					1.0s 11.00nm	4.0mb	
	iSg	16 43.50		MMB	6.82 338 eP	30 37.00 -0.1	CLL	18.95 332 eP	33 15.00 -2.4
SFI	0.48 108 Pc	16 37.10 -0.2		DIM	6.86 350 eP	30 37.00 -0.7	1.3s 17.00nm	4.1mb	
	eSg	16 45.10		VAY	6.98 331 eP	30 41.00 1.6	MOX	19.00 329 eP	33 19.00 1.0
PIL	0.61 235 P	16 39.80 -0.1		LSK	7.05 315 ePn	30 42.00 1.5	BSF	19.60 316 eP	33 23.00 -2.0
	eSg	16 48.80		PLD	7.06 346 iP	30 41.00 0.6	0.7s 3.30nm	3.7mb	
S.D. = 0.4 on 4 of 4 obs.				KBN	7.26 319 eP	30 44.70 1.5	CDF	19.65 318 eP	33 23.60 -1.9
				KEK	7.27 310 ePn	30 42.50 -0.9	0.8s 5.35nm	3.9mb	
* MAR 15, 1990 00h 59m 58.01±0.67s				KKB	7.27 336 iP	30 44.00 0.5	HAU	19.95 316 eP	33 26.80 -1.7
8.220 N ± 8.1km 126.815 E ± 15.3km				OHR	7.62 322 iPd	30 49.30 0.9	0.6s 3.60nm	3.9mb	
DEPTH = 33.0km (normol)					0.9s 0.06nm	2.6mb X	ABH	20.39 322 eP	33 34.16 1.1
4.4mb ( 5 obs.) 4.0msz ( 1 obs.)				BERA	7.79 316 eP	30 50.30 -0.4	SMF	20.80 310 eP	33 35.70 -1.7



LBF	0.7s	15.45nm	4.5mb	SGO	0.09	77	Pc	49 52.50	-0.4			eS	05 40.00	
	20.86	311 eP	33 36.70				eSg	49 55.80		QLP	24.28	238 eP	01 42.00	1.0
	1.0s	22.00nm	4.5mb	BSS	0.39	311	P	49 58.60	0.4	CMS	25.45	227 eP	01 52.00	0.2
LOR	21.06	312 eP	33 38.60				eSg	50 04.60		BWA	25.63	218 eP	01 50.20	-3.2X
	0.8s	5.35nm	4.0mb	MGR	0.49	145	P	49 59.20	-1.0	CNB	25.71	215 eP	01 55.00	0.8
AVF	21.17	310 eP	33 39.50				eSg	50 06.90				e	01 56.00	4kmX
	0.8s	12.10nm	4.3mb	ORI	1.07	116	P	50 10.80	0.3			e	05 23.00	
SSF	21.19	311 eP	33 40.20				eSn	50 26.50		CAN	25.92	216 eP	01 57.80	1.7
	0.8s	29.55nm	4.7mb	TDS	1.24	134	P	50 14.40	1.0	QIS	26.83	254 eP	02 04.00	-0.5
CAF	21.33	304 eP	33 42.60				SDI	50 17.70	-0.5			e	02 07.00	11kmX
	0.6s	4.95nm	4.1mb				eSn	50 40.50				e	05 27.00	
BGF	21.39	309 eP	33 42.50									e	08 58.00	
	0.8s	12.10nm	4.4mb							WEL	26.87	167 P+	02 03.00	-1.6
MAF	21.44	308 eP	33 43.80									S	06 29.00	
	1.0s	11.00nm	4.2mb									eScS	12 41.00	
EBR	21.59	293 eP	33 43.00							MSZ	29.45	179 P	02 27.00	-0.7
MEM	21.61	322 Pc	33 46.00									S	07 16.00	
TCF	21.70	308 eP	33 46.80							TOO	29.51	217 eP	02 29.00	0.5
	0.6s	1.80nm	3.7mb									e	02 31.00	7kmX
RJF	21.82	305 eP	33 47.70							BFD	31.03	220 eP	02 42.00	0.3
	0.8s	13.45nm	4.4mb									e	02 44.00	7kmX
LPO	21.86	303 eP	33 48.00							WB5	31.67	257 eP	02 46.10	-1.4
	0.6s	3.60nm	4.0mb									iPcP	05 37.30	
DOU	22.05	319 P	33 49.30									eS	07 57.90	
	0.7s	23.30nm	4.7mb									eScP	09 14.00	
LSF	22.13	307 eP	33 51.10									eScS	13 05.50	
	0.8s	8.75nm	4.2mb							WRA	31.70	257 Pd	02 46.00	-1.8
LFF	22.23	304 eP	33 51.20									0.8s	21.80nm	5.0mb
	0.8s	10.75nm	4.3mb							RAR	31.88	106 P	02 48.00	-1.3
MFF	23.33	307 eP	34 02.60							ADE	32.34	227 iPd+	02 53.20	-0.1
	1.0s	8.00nm	4.2mb									0.8s	208.96nm	6.0mb
LDF	24.05	312 eP	34 08.90							ASPA	32.51	250 iPc	02 54.20	-0.6
	0.6s	3.60nm	4.1mb									0.8s	340.00nm	6.2mb
FLN	24.33	312 eP	34 11.60									iS	08 01.70	
	0.8s	12.10nm	4.5mb									iScP	09 14.90	
GRR	24.42	311 eP	34 12.60									iScS	13 10.90	
	0.8s	16.10nm	4.6mb							MTN	35.09	269 eP	03 19.00	2.0
APHE	24.84	283 eP	34 19.50							GUMO	36.11	321 eP	03 26.00	0.4
ASMO	24.85	284 iPc	34 20.40							PJG	36.11	321 eP	03 26.00	0.4
ACHM	24.94	283 iPd	34 20.20							KNA	37.05	264 eP	03 32.70	-0.8
TOL	25.00	290 eP	34 20.00									0.3s	46.00nm	5.8mb
ATEJ	25.10	283 eP	34 22.50							FORR	39.05	239 iPd	03 50.30	0.2
AAPN	25.15	284 iPc	34 22.00									0.4s	302.00nm	6.4mb
ALOJ	25.16	283 iPc	34 22.50							AAI	40.08	282 eP	04 02.10	3.4X
TIC	40.99	234 P	36 40.00							AFR	41.26	99 iP	04 07.20	-1.1
KIC	41.02	233 P	36 39.40							PAE	41.44	100 iP	04 08.50	-1.3
LIC	41.31	233 P	36 42.20							PPT	41.45	100 iP	04 08.80	-1.1
GBA	50.09	102 Pc	37 51.90									0.8s	575.00nm	6.3mb
	0.9s	2.70nm	4.3mb							TBI	41.57	108 iP	04 11.40	0.6
FRB	61.35	330 eP	39 09.00									0.9s	100.00nm	5.5mb
FFC	80.24	333 eP	41 05.00							PPN	41.59	99 iP	04 09.80	-1.2
	0.5s	5.00nm	4.8mb							TVO	41.74	100 iP	04 11.60	-0.8
EDM	85.39	337 eP	41 32.50							PMO	43.26	96 iP	04 24.80	0.1
												0.8s	370.00nm	6.1mb
										VAH	43.49	96 iP	04 26.30	-0.3
												0.8s	285.00nm	6.0mb
										TPT	43.53	96 iP	04 26.80	-0.1
												0.8s	410.00nm	6.2mb
										RUV	43.74	96 iP	04 28.40	-0.1
												0.8s	410.00nm	6.2mb
										COOL	44.90	241 eP	04 37.00	-0.8
										MNI	45.05	288 eP	04 34.00	-5.1X
										M8L	45.32	255 iPd	04 41.00	-0.1
												0.5s	85.00nm	5.7mb
										MEKA	46.67	248 eP	04 52.00	0.2
										DAV	46.82	295 eP+	04 54.00	0.9
										KLB	47.88	241 eP	05 02.00	0.9
										MKS	47.94	277 ePd	05 06.50	4.7X
										NWAO	48.52	239 eP	05 05.00	-1.0
										BAL	48.65	242 eP	05 09.00	2.0
										RKG	48.89	238 eP	05 10.00	1.1
												0.7s	126.00nm	5.8mb
										MRWA	49.12	244 eP	05 09.50	-1.2
												0.4s	15.00nm	5.1mb
										MUN	49.24	241 eP	05 11.00	-0.6
										NANU	49.38	253 eP	05 12.00	-0.1
										HON	49.75	44 P	05 00.00	-15.5X
												20s	2.87um	5.3msz
										TSM	52.35	288 ePd	05 39.90	4.6X
										PGP	53.91	300 iPd	05 48.00	1.3
												1.0s	110.00nm	5.7mb
										PPR	54.06	294 ePd	05 49.00	1.2
												1.0s	1656.00nm	6.9mb X
										QCP	54.38	301 eP	05 56.00	5.8X
										KKM	54.76	289 ePd	05 55.60	2.5
												1.3s	587.50nm	6.3mb
												e	06 02.50	23kmX



BKS	84.48	49	91.00nm	5.7mb	2.1
Z	20s		5.00um		5.9MsZ
N	20s		2.90um		
E	20s		3.20um		
			e	09 29.50	132km
			eS	19 00.00	
			eSKS	19 09.60	
			e	19 19.20	
			eSP	19 54.80	
			ePS	20 03.20	
			eSPP	20 43.60	
			e	20 54.00	
			e	21 06.00	
			e	21 35.60	
			eSS	24 42.80	
			e	25 38.40	
			eSSS	28 02.00	
			e	28 19.60	
			e	29 05.60	
			eLQ	31 12.80	
			e	31 32.00	
			e	31 58.00	
			e	32 24.80	
			e	33 18.00	
			eLR	34 26.00	
PRS	84.50	50	ePc	08 54.60	0.7
			e	09 29.50	137km
			ePKKP	27 08.50	
SAO	84.61	50	ePc	08 54.00	-0.4
Z	20s		3.00um		5.7MsZ
N	20s		0.80um		
E	20s		2.20um		
			e	09 30.00	142km
			e	10 10.00	
			eS	19 12.00	
			e	19 37.00	
			ePS	20 04.00	
			e	20 22.00	
			e	21 01.00	
			e	21 49.00	
			e	22 08.00	
			e	23 42.00	
			eSS	24 46.00	
			ePKKP	27 09.80	
			e	28 19.00	
			eLQ	31 40.00	
			eLR	35 18.00	
MHC	84.70	49	eP	08 55.70	0.7
			e	09 31.20	140km
			e	09 33.00	
			eS	19 15.00	
			ePS	20 05.00	
			e	21 12.00	
			e	25 45.00	
			ePKKP	27 06.60	
			eLQ	31 16.00	
			eLR	35 11.00	
ARN	84.78	49	P	08 55.00	-0.3
LLA	84.93	50	eP	08 56.60	0.6
			ePKKP	27 07.50	
PR1	84.95	51	eP	08 57.20	0.9
			ePKKP	27 08.00	
TOA	85.22	20	eP	08 58.20	1.2
WDC	85.36	46	ePc	08 58.40	0.3
			e	09 33.80	139km
ORV	85.68	47	eP	08 59.80	0.1
			e	09 34.70	137km
LSA	85.75	302	P	09 05.00	4.2X
			SKS	19 13.00	
CMB	85.89	49	eP	09 01.00	0.2
			e	09 36.00	137km
			ePKKP	27 06.90	
			eP'P'	35 09.20	
MIN	85.92	46	eP	09 03.00	2.0
			eP'P'	35 07.50	
FRI	85.99	50	eP	08 59.80	-1.4
			e	09 36.70	145kmX
			ePKKP	27 01.90	
			eP'P'	35 08.50	
IMA	86.04	1			



			ePP	12	25.00		POO	97.82	287	eP	09	58.50	2.0				i	15	46.00		
			eSKS	19	04.00		YKA	97.91	27	eP	09	52.60	-3.3X		PSZ	137.64	327	ePKP	15	47.00	2.3
			eS	19	20.00			1.1s	12.30nm				5.3mb		BZS	138.09	324	ePKP	15	39.00	-6.5X
			ePS	20	20.00		KSH	100.40	308	ePdiff	10	10.00	1.9		BRG	138.36	335	ePKP	15	37.10	-8.7X
			ePPS	21	00.00		N	25s	6.10um							0.5s	20.00nm				
			eSS	25	06.00		MBC	100.71	13	ePdiff	10	10.00	1.6			Z	20s	2.50um			6.0Msz
			eSSS	28	40.00			0.7s	4.00nm				5.1mb		N	24s	2.50um				
			eLg	31	36.00		FFC	102.65	36	ePdiff	10	19.00	1.6		E	24s	3.50um				
			eLR	35	52.00		QUE	106.21	297	ePdiff	10	34.00	-0.1				i	15	39.50		
										ePP	14	57.00					i	15	47.00		
LBFM	86.12	45	P	09	02.30	0.2				eSKS	21	08.50					i	19	10.60		
ISA	86.42	52	eP	09	03.00	-0.5	RSON	107.28	41	Pdiff	10	20.00	-18.1X				i	19	20.00		
			e	09	38.00	137km	Z	20s	4.29um				6.0Msz		CLL	138.40	336	ePKP	15	38.00	-7.9X
			e	12	26.00					ePKP	15	10.00	3.4X			1.1s	49.00nm				
SBB	86.57	53	eP	09	03.00	-1.2	LPB	116.97	118	ePKP	15	10.00			Z	19s	1.50um			5.8Msz	
			e	09	37.00	133km				LR	25	20.00	4.9X				e	15	46.00		
RVR	86.67	54	eP	09	06.00	1.4	ZOBO	117.07	117	Pdiff	11	28.00					e	19	10.00		
			e	09	39.00	128km				LR	25	06.00					e	15	42.30	-3.9X	
			e	12	28.00					ePKP	15	07.00	-0.1		SRO	138.52	328	ePKP	15	50.60	
FBA	86.74	18	eP	09	01.70	-2.6	FRB	118.28	25	ePKP	15	07.00					e	15	41.80	-4.8X	
BAR	86.77	55	eP	09	05.00	-0.2	KEV	120.10	345	ePKP	15	00.00	-10.4X				e	15	50.30		
			e	09	40.00	137km				i	15	10.60			PRU	138.77	333	PKP	15	44.80	-2.0
PEC	86.80	54	P	09	05.70	0.4				e	16	36.00					i	15	52.40		
	1.3s									e	26	16.00					e	15	47.00	-0.4	
			pP	09	39.00	130km	SOD	121.87	343	ePKP	15	03.00	-10.8X		VKA	139.20	330	ePKPc	15	41.00	-6.2X
PLM	86.85	54	eP	09	06.00	0.2				i	15	13.80					e	18	35.00		
			e	09	39.00	128km	BLF	122.12	221	iPKPd	15	04.00	-11.7X		EKA	139.20	352	PKP	15	41.00	
			e	12	31.00					e	28.57nm						e	15	49.50	2.0	
CLC	87.14	52	eP	09	07.00	0.0	SCH	122.68	34	ePKP	15	16.00	0.2		BEO	139.22	323	e(PKP)	15	42.00	-5.9X
			e	09	40.00	128km	PRY	122.78	223	ePKP	15	13.20	-3.8X				e	15	54.00		
BMW	87.37	40	P	09	10.00	2.2				i	15	17.70			MOX	139.47	336	ePKP	15	42.30	-5.6X
GSC	87.57	53	eP	09	09.00	0.0				e	15	15.00	-1.4		SOP	139.48	329	ePKP	15	44.00	-4.8X
			e	09	43.00	132km				i	15	15.50	-1.4		VAY	139.82	318	ePKP	15	52.60	
TPC	87.74	54	eP	09	10.00	0.1	BNH	122.82	46	PKP	15	15.00					i	15	43.50	-5.3X	
			e	09	43.00	128km	CER	122.89	212	iPKPd	15	15.50					e	15	45.00	-4.1X	
			e	12	37.00					e	21.43nm				WET	140.12	334	ePKP	15	39.20	-10.3X
KVN	87.93	49	P	09	10.00	-0.8	BFS	123.25	223	ePKP	15	19.50	1.6				i	15	42.80		
			pP	09	44.00	132km				i	15	21.50			SKO	140.22	319	ePKP	15	58.20	
GMW	88.09	40	P	09	12.80	1.6				e	17	05.00					i	16	16.50		
TNP	88.23	50	P	09	11.30	-1.0	TAB	123.43	306	ePKP	15	19.00	1.0				i	16	49.00		
	0.8s									e	15	17.70	-1.2				i	18	49.00		
			pP	09	45.50	133km	RYD	123.73	290	ePKP	15	17.70					i	18	52.00		
GLA	88.35	55	P	09	12.50	-0.3	KSR	123.87	224	ePKP	15	17.20	-2.1				i	19	06.00		
			pP	09	47.80	138km				i	15	19.70					i	19	16.00		
LON	88.37	41	P	09	13.80	1.2				i	15	19.70					i	19	27.00		
RMW	88.66	40	P	09	14.90	0.9	TOV	124.18	88	ePKP	15	20.20	0.2				i	15	44.20	-5.5X	
			pP	09	48.30	129km				e	30	34.00					i	15	44.00	-5.5X	
PKI	89.86	299	P	09	19.30	-1.1	SLY	124.36	303	ePKPd	15	20.00	0.4				i	15	48.80	-5.8X	
KKN	90.03	299	P	09	20.20	-0.8	SUF	125.20	339	ePKP	15	11.30	-9.1X		BCI	140.86	320	ePKP	15	44.20	-6.6X
DMN	90.13	298	P	09	20.80	-0.7	KMSA	125.44	284	ePKP	15	21.70	-0.6		PHP	141.00	319	iPKPd	15	44.20	
AIA	91.02	161	eP	09	29.50	4.9X	BHD	125.49	300	ePKPd	15	25.00	3.1X		PTJ	141.00	328	ePKP	15	48.20	-2.7
NEW	91.89	40	P	09	28.40	-0.5	MSL	126.16	304	ePKPd	15	25.00	1.8		TNS	141.00	338	ePKP	15	46.50	-4.2X
	1.1s						BUL	126.31	230	iPKPc	15	19.00	-5.1X		ZAG	141.04	328	ePKP	15	48.00	-2.8
			pP	10	02.00	130km				i	15	22.00	-3.7X		OHR	141.08	318	ePKP	15	43.50	-7.6X
MSU	92.12	51	P	09	30.30	-0.1	CAR	127.09	88	ePKP	15	22.00	-3.7X				i	15	54.40		
			pP	10	03.00	126km	NUR	127.23	338	ePKP	15	15.00	-9.4X		BHG	141.19	332	ePKP	15	47.00	-4.0X
DUG	92.16	49	P	09	30.40	0.0				i	15	25.30			VAM	141.26	308	ePKP	15	48.00	-3.5X
	0.8s								e	18	40.00			KBN	141.32	318	ePKP	15	46.20	-5.2X	
			pP	10	03.00	126km				e	30	34.00			TOD	141.38	337	ePKP	15	46.67	-4.7X
KOD	92.41	280	eP	09	36.00	3.8X	NAI	128.35	256	iPKPc	15	30.40	2.1		ENN	141.38	341	ePKP	15	47.50	-3.7X
WMO	92.99	315	P	09	32.50	-1.6	AAE	129.34	269	ePKP	15	33.50	3.3X				e	17	38.00		
	Z	33s					UPP	130.12	340	iPKP	15	30.60	0.7		SDA	141.40	320	ePKP	15	48.20	-3.3X
			SKS	19	56.60		NB2	131.00	345	PKP	15	32.60	0.9		KBA	141.45	331	ePKP	15	45.30	-6.5X
			e	10	09.00	131km				e	15	22.00					i	15	48.30		
HYB	93.21	287	eP	09	35.00	-0.5	HFS	131.09	343	ePKP	15	33.30	1.5				i	15	51.30		
			e	10	09.00	131km				e	7.60nm						i	16	58.80		
INK	93.28	19	eP	09	34.00	-0.8				e	15	39.00					e	18	52.00		
GBA	93.29	283	Pd	09	36.50	0.6	HRI	132.67	301	e(PKP)	15	35.00	-0.8		MEM	141.49	341	PKP	15	47.60	-3.8X
	1.0s						DSI	133.25	299	ePKP	15	39.00	2.2		TIR	141.55	319	ePKP	15	49.00	-2.9
DAU	93.36	49	P	09	36.50	0.3				e	15	31.00	-5.9X		ABH	141.60	339	ePKP	15	47.75	-4.0X
LRM	94.11	44	eP	09	49.40	10.0X	BBTK	133.35	311	ePKP	15	31.00			DLE	141.62	354	ePKP	15	50.50	-1.1
PV09	94.40	51	P	09	41.20	0.2				e	15	39.00					i	15	48.50	-3.4X	
IMW	94.58	46	P	09	44.00	2.3	MBH	133.94	297	ePKP	15	35.00	-3.1X		VBY	141.63	328	ePKP	15	48.80	-3.1X
ALQ	95.55	55	eP	09	46.20	0.0	TLB	134.74	319	ePKP	15	42.00	2.8		DCN	141.63	355	ePKP	15	49.50	-2.1
	1.1s						LWI	135.40	251	ePKPc	15	42.60	0.9				i	15	48.30		
	Z	22s					ALT	135.55	311	ePKP	15	39.00	-2.1				i	15	51.30		
			e	10	20.00	130km	ITU	135.57	314	ePKP	15	28.00	-12.9X				i	16	58.80		
ANMO	95.55	55	P	09	36.70	-9.5X	BUC	136.04	320	ePKPc	15	44.00	2.3				e	18	52.00		
	1.4s						KHL	136.23	310	ePKP	15	41.00	-1.4		SDA	141.40	320	ePKP	15	48.20	-3.3X
	Z	19s					KRA	136.23	330	ePKP	15	41.90	0.0		KBA	141.45	331	ePKP	15	45.30	-6.5X
			e	10	20.00	130km				i	15	28.00					i	15	48.30		
EDM	95.77	36	eP	09	48.50	1.9				e	15	45.00					i	15	51.30		
SES	96.33	40	eP	09	42.00	-7.2X				e	18	26.00					e	18	52.00		
NDI	97.13	298	eP	09	54.00	0.8				e											



[illegible]



BAR	81.13	48 eP	24 56.00	11.6X
PLM	81.41	47 eP	24 46.00	0.0
RVR	81.45	47 eP	24 45.00	-0.9
SBB	81.57	46 eP	24 45.00	-1.7
ISA	81.74	45 eP	24 48.00	0.5
FRI	81.78	43 eP	24 48.10	0.5
CMB	82.03	42 eP	24 49.30	0.4
TPC	82.40	47 eP	24 50.00	-1.0
WDC	82.40	39 eP	24 51.40	0.7
CLC	82.40	45 eP	24 51.00	0.1
GSC	82.61	46 eP	24 52.00	-0.1
GLA	82.61	49 eP	24 53.00	0.9
MIN	82.78	40 eP	24 53.00	0.1
LBFM	83.27	39 P	24 56.60	1.1
TNP	84.01	44 P	24 59.90	0.5
	1.0s	10.42nm		5.0mb
KVN	84.06	42 P	24 59.50	0.0
SVW	87.09	10 eP	25 13.70	-0.2
RMW	87.33	34 P	25 16.20	0.8
MSU	87.49	45 P	25 17.40	0.9
PMR	88.75	13 eP	25 21.60	-0.1
	1.0s	12.50nm		5.2mb
TTA	88.75	10 ePc	25 21.90	0.0
ALO	89.47	51 ePc	25 26.00	0.0
	1.0s	10.00nm		5.1mb
Z	18s	0.69um		5.1msz
ANMO	89.47	51 P	25 26.40	0.4
	1.0s	9.38nm		5.0mb
NEW	90.28	35 P	25 29.00	-0.3
	0.8s	5.73nm		4.9mb
LRM	91.43	39 eP	25 35.10	0.2
BW06	91.49	43 P	25 34.80	-0.4
FBA	91.99	12 ePc	25 36.20	-0.5
IMA	92.06	9 eP	25 37.30	0.1
	1.6s	20.20nm		5.3mb
CHTO	92.09	290 eP	25 36.80	-1.3
GOL	92.60	47 P	25 40.10	-0.4
	1.2s	17.42nm		5.4mb
SES	94.75	36 eP	25 50.00	0.2
RSSD	95.63	44 P	25 53.90	-0.3
INK	97.95	15 eP	26 03.00	-0.8
YKA	99.88	25 eP	26 11.60	-1.1
	0.8s	0.60nm		4.2mb X
EKA	148.89	6 PKPc	32 15.20	3.2X
	1.1s	23.40nm		
HRI	149.77	294 ePKP	32 19.00	4.8X
MBH	150.83	288 iPKPc	32 21.50	5.8X
KRA	151.11	337 ePKP	32 21.30	5.8X
KSP	151.62	342 ePKP	32 23.50	7.2X
CLL	152.03	346 ePKP	32 23.00	6.1X
	1.1s	27.00nm		
	i	32 32.20		
BRG	152.22	344 iPKP	32 23.80	6.6X
	1.0s	24.00nm		
	i	32 33.50		
WTS	152.33	354 ePKP	32 24.00	6.8X
	e	32 34.00		
MOX	152.95	347 ePKP	32 35.00	16.8X
ENN	153.63	355 ePKP	32 30.00	10.9X
	0.9s	22.00nm		
	e	32 39.50		
KHC	153.92	343 PKP	32 19.60	-0.1
	i	32 41.50		
LKO	163.23	151 PKP	32 31.30	-0.1
	1.4s	49.00nm		
S.D. = 0.8 on 45 of 56 obs.				
MAR 15, 1990 06h 17m 46.63±0.50s 43.433 N ± 3.6km 5.471 E ± 3.7km DEPTH = 5.0km (geophysicist) NEAR SOUTH COAST OF FRANCE (379) MD 2.7 (STR).				
GELF	0.06	213 Pg	17 47.87	-0.4
PUYF	0.19	59 Pg	17 50.54	-0.1
BERF	0.20	127 Pg	17 51.13	0.4
TREF	0.20	342 Pg	17 50.67	-0.1
PRAF	0.43	330 Pg	17 55.95	0.7
VILF	0.46	23 Pg	17 55.37	-0.4
TAVF	0.47	66 Pg	17 56.05	0.1
GANF	0.65	29 Pg	17 59.27	-0.3
CALN	1.08	72 Pg	18 07.96	0.5
MVIF	1.31	69 Pn	18 11.52	0.2
		Sg	18 30.30	
REVF	1.41	77 Pn	18 12.56	-0.5
		Sg	18 32.56	
TOUF	1.41	65 Pn	18 13.44	0.2
AURF	1.42	71 Pn	18 13.10	-0.1



15d 08h

EKA	70.22	12 P	36 55.00	0.8
	1.0s	12.40nm		4.9mb
LSA	74.88	300 P	37 24.00	1.3
MOX	76.02	3 e(P)	37 29.00	0.7
KHC	77.58	2 P	37 38.00	1.0
		e	37 49.50	
CDF	78.04	6 eP	37 40.70	1.1
HAU	78.39	7 eP	37 42.50	1.1
BSF	78.59	7 eP	37 43.40	0.7
LOR	78.92	9 eP	37 45.50	1.1
	1.0s	6.00nm		4.5mb
GUN	79.02	302 P	37 46.20	0.5
	0.8s	28.00nm		5.3mb
SSF	79.09	9 eP	37 46.40	1.1
	1.2s	11.90nm		4.8mb
LBF	79.21	9 eP	37 46.70	0.7
	1.0s	4.00nm		4.4mb
AVF	79.35	9 eP	37 47.50	0.8
	1.0s	6.00nm		4.5mb
KKN	79.42	303 P	37 48.20	0.5
SMF	79.54	9 eP	37 48.50	0.8
	1.2s	8.95nm		4.6mb
PKI	79.54	302 P	37 48.20	-0.3
KBA	79.63	2 eP	37 48.50	0.1
	1.0s	13.40nm		4.9mb
		id	37 50.20	
		i	38 01.10	
DMN	79.66	303 P	37 49.40	0.4
LSF	79.70	10 eP	37 49.40	0.8
FVI	80.11	2 P	37 52.50	1.8
RBL	80.27	2 P	37 46.00	-5.7X
CTI	80.62	3 P	37 54.50	0.9
VAI	80.67	5 P	37 56.50	2.8X
BNI	81.35	7 P	38 00.00	2.5X
BOB	81.80	5 P	38 01.50	1.7
PGD	82.79	3 P	38 07.00	2.0
ARV	83.20	2 P	38 08.50	1.5
ASS	83.62	3 P	38 08.50	-0.7
SKO	84.67	356 eP	38 26.70	12.3X
AZI	84.72	2 P	38 16.00	1.4
SDI	85.01	2 P	38 15.50	-0.7
DUI	85.07	1 P	38 17.00	0.5
OHR	85.55	357 eP	38 18.80	-0.1
	1.6s	0.07nm		2.6mb X
		i	38 31.10	
		e	38 52.60	
MGR	86.60	1 P	38 24.00	0.0
HYB	91.46	302 eP	38 47.50	0.1
GBA	95.25	301 Pd	39 04.50	-0.3
	0.7s	2.30nm		4.7mb
RTCB	117.47	106 e(PKP)	44 09.50	-17.2X
BUL	145.25	339 iPKPc	45 15.00	-4.0X
	0.8s	11.19nm		

S.D. = 1.1 on 61 of 76 obs.

& MAR 15, 1990 09h 00m 47.00s  
61.958 N 148.371 W  
DEPTH = 30.3km  
SOUTHERN ALASKA ( 2 )  
<AGS-P>.

SML	0.15	173 iP	00 52.77	-0.1
GHO	0.32	235 iP	00 54.35	-0.5
		eS	01 00.92	
PLRM	0.52	225 iP	00 56.37	-1.3
		iS	01 04.56	
NCA	0.73	87 iP	00 59.47	-1.7
PWA	0.78	247 eP	01 01.11	-0.6
		eS	01 12.10	
PMS	0.91	219 iP	01 02.70	-1.0
		iS	01 15.68	
CUT	1.00	298 iP	01 03.88	-1.0
		eS	01 17.17	
TOA	1.05	81 eP	01 04.84	-0.9
		eS	01 19.29	
HUR	1.18	331 eP	01 06.57	-0.9
		eS	01 22.49	
SUA	1.23	247 eP	01 07.85	-0.5
		eS	01 25.59	
GLI	1.24	150 iP	01 06.99	-1.4
		eS	01 24.37	
VZW	1.25	135 eP	01 06.92	-1.7
		eS	01 24.27	
KLU	1.26	111 eP	01 06.92	-1.7
RND	1.47	352 eP	01 10.79	-1.0
SKT	1.49	272 eP	01 11.36	-0.6
		eS	01 31.42	

PAX	1.69	52 eP	01 13.87	-1.1
		eS	01 35.94	
SLKM	1.71	212 eP	01 14.39	-0.8
		eS	01 37.16	
MCK	1.80	352 eP	01 15.88	-0.6
NKA	1.84	230 eP	01 18.66	1.6
CGLM	1.85	251 eP	01 17.32	0.0
		eS	01 41.68	
NCG	1.89	255 eP	01 17.75	-0.1
SPU	1.93	248 iP	01 17.90	-0.4
		eS	01 42.97	
SEW	1.93	196 eP	01 17.93	-0.4
CRP	1.94	251 eP	01 18.79	0.2
		eS	01 43.76	
KTH	1.99	325 eP	01 18.39	-0.8
		eS	01 43.61	
DDM	2.17	31 eP	01 22.62	0.9
GLB	2.23	101 iP	01 21.31	-1.4
		eS	01 49.59	
RDT	2.39	236 eP	01 24.05	-1.0
WRH	2.53	3 eP	01 25.76	-1.1
HDA	2.54	14 eP	01 26.64	-0.4
NEA	2.65	353 eP	01 27.43	-1.1
CCB	2.71	5 eP	01 28.14	-1.3
CNPM	2.82	211 eP	01 30.12	-0.8
TGL	2.93	112 eP	01 30.67	-1.9
FBA	2.97	5 eP	01 32.08	-0.9
GLM	3.07	8 eP	01 33.49	-1.1
PDB	3.58	235 eP	01 40.02	-1.8

37 obs. associated

\* MAR 15, 1990 09h 07m 01.16 ± 0.65s  
21.143 S ± 5.8km 68.748 W ± 15.2km  
DEPTH = 120.0 ± 9.1 km  
4.6mb ( 3 obs.)

CHILE-BOLIVIA BORDER REGION						(124)
ANT	2.98	211	eP	07 48.50	0.7	
CCH	4.48	34	P	08 08.90	0.5	
LPB	4.63	8	P	08 11.00	0.5	
	1.1s	126.58nm				
ZOBO	4.88	7	P	08 13.00	-1.2	
ARE	5.33	330	eP	08 14.00	-6.0X	
		iS		09 11.50		
RTRS	9.01	184	eP	09 11.40	1.7	
RTLL	10.15	179	ePd	09 24.00	-1.0	
CFA	10.43	178	e(P)	09 27.50	-1.2	
RTCV	10.68	179	e(P)	09 31.60	-0.4	
LIC	68.14	74	P	17 51.10	0.4	
KIC	68.46	74	P	17 53.10	0.4	
	0.6s	6.00nm			4.6mb	
LKO	69.10	70	Pc	17 56.62	0.0	
	0.4s	5.00nm			4.7mb	
KVN	75.61	322	eP	18 35.10	0.3	
YKA	90.90	341	eP	19 51.30	-0.6	
	0.8s	1.20nm			4.1mb	
S.D. = 1.0 on 13 of 14 obs.						

S.D. = 1.0 on 13 of 14 obs.

\* MAR 15, 1990 11h 24m 30.10 ± 1.01s  
28.005 N ± 8.2km 34.575 E ± 10.0km  
DEPTH = 5.0km (geophysicist)  
ARAB REPUBLIC OF EGYPT (553)  
MD 4.0 (HLW).

HOL	1.33	18 iP+	24 54.70	-0.4
AYN	1.52	55 iP+	24 58.70	0.7
MBH	1.78	9 iP	25 01.70	0.0
WAJH	2.54	135 eP	25 12.40	-0.3
NOH	2.70	7 eP	25 14.70	-0.3
MKT	2.98	10 eP	25 18.80	-0.1
		eS	26 02.30	
KOT	3.08	309 ePn	25 20.50	0.3
		eSn	25 51.00	

S.D. = 0.5 on 7 of 7 obs.

\* MAR 15, 1990 12h 17m 46.84 ± 2.56s  
41.558 N ± 14.4km 12.617 E ± 14.6km  
DEPTH = 5.0km (geophysicist)  
SOUTHERN ITALY (390)

RDP	0.21	20 Pd	17 51.00	-0.2
		eSg	17 53.40	
RMP	0.26	14 Pc	17 51.50	-0.6
AZI	0.75	55 P	18 01.00	-0.2
SDI	0.91	80 P	18 04.90	0.1
		eSg	18 18.80	
AQU	0.99	36 P	18 07.20	1.1

DUI	1.38	85 P	18 12.50	-0.4
ASS	1.51	1 P	18 14.10	-0.5
		eSn	18 34.50	
ARV	1.95	7 P	18 21.70	0.7

S.D. = 0.7 on 8 of 8 obs.

MAR 15, 1990 12h 26m 07.36 ± 0.37s  
21.253 S ± 5.1km 68.878 W ± 10.3km  
DEPTH = 117.2km ( 2 depth phases)  
4.5mb ( 5 obs.)

CHILE-BOLIVIA BORDER REGION (124)

ANT	2.82	210 iP	26 53.80	1.9
		iS	27 20.50	
CCH	4.64	34 Pc	27 18.20	1.5
LPB	4.75	9 P	27 21.00	2.6
ZOBO	5.01	8 P	27 23.00	0.9
ARE	5.37	332 eP	27 34.00	7.3X
		eS	28 19.00	
RTRS	8.90	183 ePd	28 15.70	1.3
RTLL	10.04	178 ePd	28 29.00	-0.9
CFA	10.33	177 e(P)	28 33.00	-0.6
RTCV	10.57	178 ePc	28 36.30	-0.6
BAO	20.58	78 eP	30 38.00	-1.0
CAI	34.01	69 eP	32 42.90	0.8
JSC	56.47	348 P	35 38.30	-0.9
PRM	56.51	347 P	35 38.50	-1.0
LHS	56.57	348 P	35 39.40	-0.6
TKL	58.33	346 P	35 50.70	-1.6
GBTN	58.44	345 P	35 51.80	-1.3
RSCP	58.72	344 P	35 53.70	-1.3
BLA	59.16	349 P	35 57.50	-0.5
	0.6s 11.36nm		5.1mb	
NAV	59.33	349 P	35 58.70	-0.5
CVL	59.60	351 P	36 00.90	-0.1
OLY	60.37	339 P	36 04.70	-1.6
FVM	62.31	341 P	36 17.60	-1.6
ALQ	66.31	327 eP	36 45.10	-0.4
	0.9s 3.15nm		4.2mb	
		eP	37 14.00	117km
ANMO	66.31	327 eP	36 45.70	0.2
		e	37 14.80	118km
KIC	68.61	74 P	37 00.10	0.0
GOL	69.56	331 P	37 05.60	-0.1
	0.9s 8.52nm		4.6mb	
GLA	69.57	320 P	37 07.00	1.4
TNP	74.46	322 P	37 36.30	1.6
	0.9s 4.23nm		4.2mb	
RSON	75.06	344 P	37 36.70	-0.9
	0.9s 8.13nm		4.5mb	
KVN	75.62	323 P	37 42.20	0.8
ORV	77.92	321 P	37 55.00	1.1
LBFM	79.32	322 P	38 03.00	1.3
SES	80.46	334 eP	38 08.00	0.6
EDM	83.55	335 eP	38 23.00	-0.3

S.D. = 1.2 on 33 of 34 obs.

MAR 15, 1990 12h 26m 15.90 ± 0.38s  
46.529 N ± 3.7km 9.686 E ± 3.6km  
DEPTH = 10.0km (geophysicist)  
SWITZERLAND (544)  
ML 2.8 (LDG).

VDL	0.10	246 iPc	26 18.90	0.0
OSS	0.40	67 iPc	26 22.20	-2.0
LLS	0.54	309 ePd	26 26.00	-0.9
TMA	0.66	230 ePc	26 28.50	-0.7
SAX	0.74	346 eP	26 30.10	-0.6
MDI	0.76	174 Pc	26 30.00	-0.7
		eSg	26 38.70	
VAI	0.88	221 Pc	26 32.70	-0.1
		eSg	26 44.50	
OGA	1.03	70 iPgc	26 33.40	-2.2
SAL	1.12	145 P	26 37.50	0.6
		eSg	26 51.50	
MMK	1.23	248 eP	26 38.80	-0.2
ZLA	1.27	319 eP	26 41.30	1.9
ORX	1.44	232 P	26 41.50	-0.7
		S	26 59.28	
		e	27 01.28	
ORO	1.45	232 Pc	26 42.60	0.4
		eSg	27 00.40	
SLE	1.45	329 ePc	26 43.00	0.8
CTI	1.50	108 P	26 46.10	3.2X
SCE	1.53	70 ePn	26 42.50	-1.0
DIX	1.59	254 eP	26 45.30	0.9
BOB	1.77	184 P	26 47.00	0.2



U. S. DEPARTMENT OF THE INTERIOR  
Geological Survey  
EARTHQUAKE DATA REPORT

The Earthquake Data Report (EDR) is a bulletin of all seismic phase and amplitude data which were associated with events published in the Preliminary Determination of Epicenters (PDE) Monthly Listing. It also contains information about the hypocentral computations (such as standard errors) that are not included in the PDE Monthly Listing. A machine-readable version of this EDR is available from the Books and Open-File Reports Section of the U.S. Geological Survey.

All data in the EDR are grouped by event, with events listed by origin time in date/time order through the month. All times are in Coordinated Universal Time (UTC). Locations are in decimal degrees of geographic latitude and longitude. Depths are in kilometers below the free surface. Hypocentral coordinates are determined by a modified Geiger's method and may be constrained by reported first arriving P-waves, Pdiff, and the DF branch of PKP. Data are corrected for station elevation and for the ellipticity of the Earth. Outliers may be truncated (ie., removed from the calculation) either automatically or manually. The solution is allowed to converge between rounds of automatic truncation to insure a unique result. Convergence is aided by step length damping.

The error bars of the computed hypocentral coordinates are 90% marginal confidence intervals incorporating Bayesian information to stabilize estimates derived from small samples (Jordan and Sverdrup, 1981). It is assumed that the travel-time errors of the data used are independent, unbiased, and have an expected standard deviation of 1 s. Monte Carlo experiments suggest that the error bars are accurate for events constrained by more than about 30 data. However, care should be exercised in interpreting these numbers in terms of absolute location accuracy because of unmodeled biases. Analysis of events with independently known coordinates indicates that most PDE determinations are accurate to a few tenths of a degree in epicentral position and 25 km in depth. For special studies, we urge that inquiry be made to this office for possible recomputation of hypocenters of interest, using more complete instrumental data.

Restricted focal depths occur in four instances. If at any point in the computation the depth becomes negative, the solution is automatically restricted at 33 km and indicated by "NORMAL DEPTH." If the unrestricted depth computation is unsatisfactory, and in the judgment of the reviewing geophysicist the earthquake probably has a shallow focus, a solution may be held at 33 km. These are also indicated by "NORMAL DEPTH." The geophysicist may restrain the depth at any value indicated by evidence from available seismograms. These are indicated by, for example, "DEPTH = 100 KM (GEOPHYSICIST)." If two or more pP phases are identified, and in general, yield depths within 10 km of the mean, then the depth is automatically restricted to this value and denoted by, for example, "DEPTH = 51 KM (5 DEPTH PHASES)." pP phases may also appear as unidentified second arrivals with associated travel-time residuals. Hypocentral coordinates derived from other sources, such as the California Institute of Technology, the University of California at Berkeley, and the U. S. Department of Energy are noted on the EDR.

Two types of magnitude are computed: body-wave magnitude ( $m_b$ ) and surface-wave magnitude ( $M_{s2}$ ). Each is a 25% trimmed mean of individual station values. Station magnitudes not used in the trimmed mean are marked with an X. This includes station magnitudes of either type which deviate significantly from the mean and surface-wave magnitudes determined from horizontal amplitudes. Body-wave magnitudes are computed according to the formula  $\log(A/T) + Q$ , derived by Gutenberg and Richter (1956), where  $A$  is the P-wave amplitude in micrometers,  $T$  is the period in seconds, and  $Q$  is the depth-distance factor. Surface-wave magnitudes are computed from the formula  $\log(A/T) + 1.66 \log(\Delta) + 3.3$ , where  $A$  is the maximum vertical surface-wave amplitude in micrometers,  $T$  is the period in seconds, and  $\Delta$  is the epicentral distance in degrees. Surface-wave magnitudes are determined only for earthquakes whose focal depths (taking into account the computed standard deviations) are potentially less than 50 km, for stations having  $20^\circ \leq \Delta \leq 160^\circ$ , and for reported periods of  $18 \leq T \leq 22$  s. No correction for focal depth is used in the  $M_s$  calculation. Body-wave magnitudes are not determined from PKP arrivals or for stations having  $\Delta \leq 5^\circ$ . Amplitude values stated in this report are in nanometers (nm) for body-waves and micrometers ( $\mu\text{m}$ ) for surface-waves.

The travel-time residual (observed - computed) is based on the 1940 Jeffreys-Bullen P and 1968 Bolt PKP travel-time tables. Phases not used in the computation are marked by an X. The azimuth from the epicenter to the station is measured clockwise from north. The epicentral distance is the central angle in degrees.



The pulse distortion of seismic phases that have ray paths that touch a single internal caustic (e.g., PP, pPP, SS and PKPab) can be corrected using the method of Hilbert transformation described by Choy and Richards (1975). Arrival times that are read from the phases that are corrected for pulse distortion are identified by the symbol H preceding the phase identifier (e.g., HPP, HpPP, HSS and HP'ab).

#### Hypocenter Symbols

& Indicates that parameters of the hypocenter were supplied or determined by a computational procedure not normally used by the National Earthquake Information Service (NEIS). The source or nature of the determination is indicated by a 2 to 5 letter code enclosed by angle brackets and appearing in the first line of comments. A "-P" appended to the code indicates that the computation is preliminary. These codes are included with the list of abbreviations in the PDE Monthly Listing.

% Indicates a single network solution. A non-furnished hypocenter has been computed using data reported by a single network of stations for which the date and/or origin time cannot be confirmed from seismograms available to a NEIS analyst. Also, if we define  $\eta$  to be the geometric mean of the semi-major and semi-minor axes of the horizontal 90% confidence ellipse, then  $\eta \leq 16.0$  km.

\* Indicates a less reliable solution. In general,  $8.5 < \eta \leq 16.0$  km.

? Indicates a poor solution, published for completeness of the catalog. In general,  $\eta > 16.0$  km. This includes poor solutions computed using data reported by a single network.

The lack of any symbol indicates that  $\eta \leq 8.5$  km.

Note: On printers available to the NEIS for this publication, the symbol for degrees ( $^{\circ}$ ) appears as "°". Also note that certain phase codes are abbreviated because the data base and file format limit the length of the codes to five characters. Thus, PKP is occasionally abbreviated to P' and the numbers 2 and 3 are sometimes used to represent the AB (AC for SKKS) and BC branches of core phases, respectively. In some codes, R is used to represent repetition; for example, pRPPK represents the phase pPKPPK and RPPG represents PgPgPg.

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EMS	1.91	257	eSg	27 06.80	
LSD	2.02	239	eP	26 52.10	3.1X
			S	26 51.55	1.0
PCP	2.12	201	P	27 16.13	
RSP	2.14	231	P	26 52.68	0.7
			S	26 50.93	-1.4
FVI	2.19	87	P	27 15.23	
			eSn	26 55.30	2.5
LPG	2.24	244	Pn	27 23.30	
LPL	2.24	244	Pn	26 54.60	0.7
BSF	2.32	305	Pn	26 54.90	1.0
			Pg	26 54.50	-0.3
			Sg	27 02.20	
CDF	2.46	321	Pn	27 31.90	
			Pg	26 56.90	0.1
			Sg	27 04.30	
FIN	2.52	204	P	27 34.20	
			S	26 58.42	0.8
BNI	2.53	235	P	27 26.14	
ROB	2.55	209	P	26 58.50	0.7
RRL	2.55	232	P	26 58.52	0.5
HAU	2.67	305	Pn	26 57.55	-0.6
			Pg	26 59.80	0.2
			Sn	27 08.60	
			Sg	27 30.30	
PZZ	2.68	222	P	27 42.00	
RBL	2.74	90	P	26 58.52	-1.5
ENR	2.77	215	P	27 03.50	2.7
STV	2.79	216	P	27 00.16	-1.1
IMI	2.89	205	P	27 00.16	-1.4
SMF	3.98	274	Pn	27 02.93	0.1
LOR	4.01	283	Pn	27 17.40	-0.8
				27 18.60	-0.1

S.D. = 1.1 on 37 of 39 obs.

? MAR 15, 1990 12h 33m 56.00±2.93s  
 21.056 S ±55.5km 175.790 E ±40.5km  
 DEPTH = 33.0km (normal)  
 4.3mb ( 2 obs.)

SOUTH OF FIJI ISLANDS (171)

NDF	3.64	26	eP	34 49.00	-2.4
			eS	35 31.00	
SVA	3.86	41	iPc	34 54.30	-0.2
			eS	35 41.60	
VUN	3.94	40	iPc	34 54.90	-0.8
			eS	35 39.20	
SGE	3.99	31	eP	34 58.50	1.9
			eS	35 50.50	
MBU	4.92	35	iP	35 10.60	1.0
			eS	36 09.20	
DZM	8.76	262	iPc	36 03.90	0.4
ASPA	38.73	258	eP	41 18.10	-1.0
	1.1s	6.00nm		4.3mb	
WB5	38.75	264	eP	41 19.20	0.0
WRA	38.76	264	Pc	41 18.20	-1.2
	1.2s	6.20nm		4.3mb	
CHTO	85.02	292	e(P)	46 32.10	2.2
KHC	148.60	337	PKP	53 41.80	4.5X
KBA	150.39	335	ePKP	53 45.50	5.2X

S.D. = 1.6 on 10 of 12 obs.

& MAR 15, 1990 13h 22m 58.10s  
 63.655 N 148.782 W  
 DEPTH = 16.5km  
 CENTRAL ALASKA ( 1 )  
 <AGS-P>. ML 3.2 (PMR).

MCK	0.10	319	iP	23 01.76	0.0
RND	0.25	187	iP	23 03.67	-0.3
HUR	0.78	210	eP	23 13.07	0.2
			eS	23 23.76	
WRH	0.87	20	iP	23 14.39	0.0
			iS	23 25.48	
NEA	0.94	352	eP	23 15.66	0.2
KTH	0.96	265	eP	23 16.44	0.5
			eS	23 30.74	
CCB	1.08	23	iP	23 17.86	-0.1
			eS	23 31.46	
HDA	1.10	46	eP	23 18.01	-0.3
			eS	23 32.99	
DDM	1.31	83	eP	23 21.62	0.0
			eS	23 39.89	
FBA	1.32	19	iPc	23 21.60	-0.2
DMW	1.41	72	eP	23 22.74	-0.3
GLM	1.47	24	eP	23 23.51	-0.4
			eS	23 43.66	

PAX	1.65	113	eP	23 26.79	0.3
			eS	23 48.24	
SDG	1.86	126	eP	23 30.51	1.0
SML	1.87	173	eP	23 30.31	0.7
			eS	23 54.13	
GHO	1.89	182	eP	23 30.21	0.1
			eS	23 54.67	
NCA	1.89	151	eP	23 30.82	0.7
TOA	1.96	141	eP	23 32.00	0.9
PWA	2.07	195	eP	23 33.40	0.8
PLRM	2.08	185	eP	23 32.72	0.1
PMR	2.08	185	eP	23 32.80	0.2
SKT	2.10	218	eP	23 33.48	0.4
			eS	24 00.24	
DOT	2.11	88	eP	23 33.12	0.0
SUA	2.38	203	eP	23 37.96	0.9
PMS	2.45	189	eP	23 39.00	1.0
KLU	2.54	147	eP	23 40.67	1.3
NCG	2.75	216	eP	23 42.72	0.4
CGLM	2.79	214	eP	23 43.65	0.7
VZW	2.81	157	eP	23 44.38	1.3
GLI	2.90	163	eP	23 45.71	1.4
SPU	2.91	213	eP	23 45.31	0.7
GLB	3.20	132	eP	23 49.98	1.3
IMA	3.20	321	ePc	23 48.50	-0.3
RDT	3.53	210	eP	23 55.75	2.4
SVW	4.08	234	eP	24 00.60	-0.6
DWY	4.16	80	P	24 01.00	-1.2
PDB	4.66	216	eP	24 09.64	0.3

37 obs. associated

? MAR 15, 1990 14h 14m 07.17±5.14s  
 38.695 N ±42.3km 14.806 E ±11.4km  
 DEPTH = 10.0km (geophysicist)

SICILY (398)

ATN	0.74	136	P	14 21.50	-0.2
MNO	0.77	187	P	14 22.40	0.1
			eSg	14 33.60	
GIB	0.93	221	P	14 25.00	-0.1
			eSg	14 39.50	
SOI	1.16	122	P	14 29.00	0.1

S.D. = 0.3 on 4 of 4 obs.

& MAR 15, 1990 14h 18m 23.42s  
 63.094 N 149.620 W  
 DEPTH = 88.2km

CENTRAL ALASKA ( 1 )  
<AGS-P>.

HUR	0.12	184	eP	18 35.91	1.5
			eS	18 45.60	
RND	0.47	48	eP	18 37.94	-0.1
			eS	18 48.75	
MCK	0.71	25	eP	18 40.01	-0.2
			eS	18 52.51	
KTH	0.75	309	eP	18 40.26	-0.3
CUT	0.75	204	iP	18 40.24	-0.3
GHO	1.37	166	iP	18 47.68	-0.2
SML	1.42	155	eP	18 48.37	-0.2
SKT	1.43	219	iP	18 47.71	-0.8
			eS	19 06.50	
PWA	1.45	185	eP	18 48.92	0.1
PLRM	1.52	171	eP	18 49.83	0.1
WRH	1.54	25	iP	18 49.31	-0.7
NCA	1.70	129	eP	18 52.27	0.1
SUA	1.72	198	eP	18 52.65	0.2
CCB	1.75	26	iP	18 51.90	-0.9
HDA	1.77	41	eP	18 52.45	-0.6
DDM	1.83	66	eP	18 54.38	0.5
PMS	1.86	179	eP	18 55.21	1.0
TOA	1.88	120	eP	18 54.96	0.4
PAX	1.90	92	eP	18 55.48	0.7
			eS	19 20.37	
FBA	1.98	23	eP	18 55.18	-0.7
NCG	2.07	216	eP	18 56.35	-0.8
CGLM	2.11	213	eP	18 57.28	-0.4
GLM	2.14	26	eP	18 57.15	-0.9
CRP	2.19	214	eP	18 58.45	-0.3
SPU	2.23	212	eP	18 58.74	-0.6
KLU	2.26	131	eP	18 59.99	-1.1
VZW	2.50	143	eP	19 04.88	1.9
GLI	2.52	151	eP	19 05.13	1.9
DOT	2.56	75	eP	19 03.97	0.2
SLKM	2.61	187	eP	19 04.43	0.0
RDT	2.85	209	eP	19 08.39	0.6
NNL	3.17	195	eP	19 12.94	0.9

GLB 3.18 119 eP 19 11.33 -1.0  
 33 obs. associated

\* MAR 15, 1990 14h 20m 37.07±2.55s  
 45.886 N ±8.6km 16.029 E ±20.1km  
 DEPTH = 10.0km (geophysicist)

YUGOSLAVIA (383)  
 MD 2.8 (TRI). ML 2.7 (KBA). 2.4 (LJU). Felt in the Zagreb area.

PTJ	0.05	286	iPgc	20 38.20	-1.1
			iSg	20 40.50	
ZAG	0.08	205	iPgd	20 39.20	-0.3
			iSg	20 40.70	
VBY	0.66	235	ePgc	20 49.90	-0.3
			iSg	20 58.80	
LJU	1.05	279	ePgc	20 56.10	-0.9
			e	20 57.40	
			eSg	21 12.30	
CEY	1.13	263	ePgc	20 58.50	0.2
			eSg	21 14.00	
RIY	1.27	245	ePgc	21 00.30	-0.4
			iSg	21 18.30	
VOY	1.50	276	ePnd	21 03.80	-0.3
			eSn	21 25.20	
TRI	1.59	264	ePgc	21 05.90	0.6
			iSg	21 27.00	
RBL	1.80	289	P	21 09.50	1.1
			eSg	21 34.50	
KBA	2.20	304	iPnc	21 13.90	-0.5
			iPgc	21 17.50	
			iSg	21 46.50	
FVI	2.36	289	P	21 17.50	1.0
			eSn	21 47.50	
CTI	3.06	275	P	21 26.00	-0.4
			eSn	21 58.80	

S.D. = 0.8 on 12 of 12 obs.

? MAR 15, 1990 14h 58m 45.69±3.41s  
 7.486 S ±24.0km 127.697 E ±20.0km  
 DEPTH = 178.1 ±39.7 km  
 4.6mb ( 2 obs.)

BANDA SEA (280)

MTN	6.31	148	eP	00 19.00	1.5
			eS	01 25.00	
KNA	8.28	173	iPd	01 22.70	-1.0
	0.2s	19.00nm		5.2mb X	
			eS	02 09.00	
WB5	13.92	153	eP	01 55.30	-1.3
			iS	04 21.00	
WRA	13.96	153	Pc	01 55.40	-1.7
	0.4s	3.00nm		4.0mb	
MBL	15.57	208	eP	02 18.00	0.8
ASPA	17.16	160	iPc	02 37.40	1.0
	0.6s	52.00nm		5.1mb	
			eS	05 33.70	
QIS	17.37	140	eP	02 40.00	1.1
			eS	05 44.00	
GUN	53.58	313	P	07 51.80	0.7
PKI	53.73	312	P	07 52.30	0.1
KKN	53.95	312	P	07 52.40	-1.2

S.D. = 1.4 on 10 of 10 obs.

? MAR 15, 1990 17h 24m 18.65±4.46s  
 31.418 S ±24.4km 68.814 W ±28.7km  
 DEPTH = 91.3 ±42.7 km

SAN JUAN PROVINCE, ARGENTINA (137)

RTCB	0.07	170	iPc	24 32.20	0.2
			eS	24 43.00	
ZON	0.17	138	iPd	24 32.50	0.3
			eS	24 43.00	
RTLL	0.31	73	e(P)	24 32.00	-0.5
RTCV	0.50	152	iPc	24 33.40	-0.4
CFA	0.53	111	iPd	24 34.50	0.5
			S	24 47.00	
RTRS	1.36	336	iPc	24 43.10	0.0

S.D. = 0.6 on 6 of 6 obs.

& MAR 15, 1990 17h 47m 12.27s  
 63.554 N 152.346 W  
 DEPTH = 16.0km  
 CENTRAL ALASKA ( 1 )  
 <AGS-P>.

KTH	0.64	89	eP	47 24.74	0.1
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15d 17h

		iS	47 34.41	
HUR	1.36 114 eP	47 36.93	0.5	
CUT	1.49 140 eP	47 39.29	0.9	
MCK	1.53 82 eP	47 39.65	0.6	
		eS	48 01.26	
RND	1.57 94 eP	47 38.61	-1.1	
NEA	1.77 53 eP	47 42.03	-0.3	
		eS	48 06.71	
TTA	1.77 251 eP	47 42.35	-0.2	
WRH	2.09 62 eP	47 47.51	0.5	
		eS	48 16.58	
NCG	2.16 178 eP	47 47.84	-0.4	
PWA	2.23 148 iP	47 51.26	2.3	
SUA	2.23 160 eP	47 50.23	1.1	
CGLM	2.26 176 eP	47 50.47	0.8	
CCB	2.28 59 eP	47 45.89	-3.8	
		eS	48 15.11	
CRP	2.30 178 eP	47 50.11	-0.1	
SPU	2.39 177 eP	47 51.99	0.7	
GHO	2.39 137 eP	47 53.46	2.1	
FBA	2.41 54 eP	47 54.10	2.6	
PLRM	2.47 141 eP	47 54.21	1.8	
HDA	2.53 68 eP	47 57.77	4.5	
IMA	2.59 348 eP	47 56.53	2.2	
		eS	48 27.71	
GLM	2.60 54 eP	47 54.25	-0.1	
PMS	2.66 150 eP	47 55.71	0.5	
DDM	2.90 82 eP	48 02.56	3.9	
RD1	2.99 181 eP	47 59.09	-0.8	
PAX	3.16 98 eP	48 04.83	2.4	
TOA	3.18 114 iP	48 04.39	1.7	
KLU	3.63 122 eP	48 09.07	0.1	

27 obs. associated

? MAR 15, 1990 18h 16m 11.21 ± 4.79s  
31.244 S ± 21.2km 68.438 W ± 35.2km  
DEPTH = 88.7 ± 45.9 km  
SAN JUAN PROVINCE, ARGENTINA (137)

RTLL	0.09 198 iPc	16 24.10	-0.2	
RTCB	0.39 232 ePd	16 25.50	0.1	
CFA	0.40 155 ePd	16 25.50	0.2	
		S	16 37.00	
RTCV	0.62 188 eP	16 27.00	-0.1	
		S	16 40.20	
RTRS	1.39 320 ePc	16 35.80	0.0	

S.D. = 0.3 on 5 of 5 obs.

% MAR 15, 1990 18h 35m 19.24 ± 1.52s  
66.953 N ± 11.6km 20.943 E ± 18.2km  
DEPTH = 10.0km (geophysicist)  
SWEDEN (536)  
MD 2.6 (BER).

KTK1	2.24 22 iP	35 57.16	0.2	
		eS	36 21.08	
TRO	2.79 345 iPc	36 04.57	-0.2	
		eS	36 38.56	
LOF	3.08 296 iPc	36 08.46	-0.2	
		eS	36 46.99	
NSS	4.43 241 iPc	36 29.67	1.7	
		eS	37 18.60	
MOL	7.21 239 eP	37 06.17	-1.0	
NRA0	7.49 218 Pn	37 10.50	-0.5	
		Sn	38 36.00	
		Lg	39 25.40	

S.D. = 1.2 on 6 of 6 obs.

? MAR 15, 1990 18h 39m 57.49 ± 1.52s  
51.073 N ± 27.4km 174.491 W ± 15.0km  
DEPTH = 15.0km (geophysicist)  
4.6mb ( 8 obs.)  
ANDREANOF ISLANDS, ALEUTIAN IS. ( 7)

ADK	1.59 301 iPc	40 25.50	0.4	
KDC	14.41 54 eP	43 27.20	4.7X	
SVW	14.50 39 eP	43 30.30	6.5X	
IMA	18.39 27 eP	44 15.20	2.0	
TOA	18.93 43 eP	44 20.20	0.4	
	0.5s	8.20nm	4.2mb	
MBC	32.90 21 eP	46 31.50	-0.9	
BJI	48.08 285 eP	48 41.00	3.0X	
NB2	68.15 357 P	50 56.40	-2.0	
	0.8s	2.80nm	4.5mb	
HFS	68.95 356 eP	51 00.50	-2.8	
	0.4s	3.50nm	4.9mb	
SHL	72.72 289 eP	51 21.50	-5.4X	

KKN	74.90 295 P	51 40.20	0.7	
	0.6s	14.00nm	5.2mb	
PKI	74.99 295 P	51 40.40	0.2	
DMN	75.13 295 P	51 41.90	0.9	
SSF	82.23 1 eP	52 19.50	0.6	
	0.4s	1.15nm	4.3mb	
LBF	82.32 1 eP	52 18.80	-0.6	
	0.4s	4.10nm	4.9mb	
AVF	82.50 1 eP	52 20.70	0.4	
	0.6s	2.70nm	4.5mb	
SMF	82.65 1 eP	52 21.60	0.5	
	0.6s	3.60nm	4.7mb	
KSR	149.99 319 ePKP	59 44.00	0.4	
WIN	150.15 338 ePKP	59 31.00	-13.0X	
BLF	153.13 317 ePKP	59 58.00	9.9X	

S.D. = 1.3 on 14 of 20 obs.

% MAR 15, 1990 18h 45m 58.13 ± 2.85s  
37.129 N ± 22.8km 1.488 E ± 16.7km  
DEPTH = 33.0km (normal)  
WESTERN MEDITERRANEAN SEA (387)  
mbLg 3.3 (MDD).

ACU	2.04 313 ePn	46 30.60	-0.3	
	eSn	46 50.50		
ESEL	2.86 22 ePn	46 42.50	0.1	
	eSn	47 13.00		
ENIJ	2.97 268 ePn	46 44.00	0.0	
ECHE	3.13 323 ePn	46 47.00	0.7	
	eSn	47 17.00		
EVIA	3.50 297 ePn	46 51.60	-0.1	
	eSn	47 28.00		
EROQ	3.78 347 iPnd	46 55.00	-0.5	
	eSn	47 33.20		

S.D. = 0.6 on 6 of 6 obs.

? MAR 15, 1990 19h 12m 35.84 ± 4.89s  
9.095 S ± 24.9km 124.146 E ± 19.2km  
DEPTH = 82.9 ± 59.0 km  
4.1mb ( 1 obs.)  
TIMOR (289)

MTN	7.80 119 eP	14 30.00	1.2	
	eS	15 50.00		
KNA	8.01 146 eP	14 30.40	-1.1	
	eS	15 54.00		
MBL	12.69 199 eP	15 35.00	0.3	
	eS	17 47.00		
WB5	14.58 138 eP	15 58.00	-1.3	
	eS	18 26.20		
WRA	14.61 139 P	15 59.00	-0.7	
	0.3s	0.50nm	3.2mb X	
ASPA	17.24 148 eP	16 34.60	1.8	
	0.7s	9.00nm	4.1mb	
GUN	52.19 316 P	21 41.00	0.1	
PKI	52.30 315 P	21 41.40	-0.3	

S.D. = 1.5 on 8 of 8 obs.

& MAR 15, 1990 19h 19m 52.40s  
38.848 N 122.795 W  
DEPTH = 4.0km  
NORTHERN CALIFORNIA ( 36)  
<BRK>. ML 4.1 (BRK).  
Mo=5.8\*10\*\*14 Nm (BRK). Felt  
(IV) at Cobb, Finley and Loch  
Lomond.

NWRM	0.40 191 eP	20 00.00	-0.4	
BRK	1.06 156 eP	20 12.20	-0.7	
	eS	20 29.50		
BKS	1.07 155 iPd	20 12.60	-0.4	
	iS	20 29.90		
ORV	1.23 55 e(P)	20 14.80	-1.0	
	e	20 17.00		
PCC	1.38 166 eP	20 17.30	-1.2	
WDC	1.74 6 eP	20 20.30	-3.3	
MHC	1.76 148 eP	20 23.40	-0.6	
ARN	1.80 146 eP	20 22.80	-1.6	
GCC	1.92 161 eP	20 24.20	-2.0	
CM8	2.06 112 eP	20 26.80	-1.5	
FHC	2.16 335 e(P)	20 29.00	-0.6	
LBFM	2.59 15 e(P)	20 35.00	-1.0	
KVN	3.67 85 eP	20 50.00	-1.3	

13 obs. associated

MAR 15, 1990 19h 25m 48.60 ± 0.55s

25.334 N ± 8.7km 96.498 E ± 6.0km  
DEPTH = 33.0km (normal)  
4.0mb ( 2 obs.)  
BURMA (296)

SHL	4.18 274 iP	26 52.50	0.7	
KMI	5.66 91 Pgc	27 35.00	22.2X	
	Sg	28 52.00		
LSA	6.44 314 ePn	27 26.00	2.0	
CHG	6.87 160 ePn	27 29.00	-0.7	
	ePg	27 54.00		
	eSg	29 20.30		
BDT	8.38 163 eP	28 20.00	29.3X	
	1.0s	55.20nm		
GYA	9.22 81 P	28 10.80	8.3X	
	PP	28 17.00		
GUN	9.84 287 P	28 10.70	-0.6	
PKI	10.18 285 P	28 14.20	-1.7	
	0.6s	27.00nm	5.7mb X	
KKN	10.34 286 P	28 16.40	-1.5	
	0.4s	8.00nm	5.3mb X	
DMN	10.46 285 P	28 17.80	-1.8	
	0.4s	19.00nm	5.7mb X	
GTA	14.31 10 eP	29 18.00	7.0X	
Z	12s	0.60um		
E	14s	1.10um		
WHN	16.60 68 eP	29 44.00	3.6X	
E	10s	0.60um		
NDI	17.50 285 eP	29 54.00	2.3	
	eS	32 52.00		
TIY	18.32 44 eP	30 04.30	2.4	
HYB	18.46 248 ePd	30 05.00	1.3	
BTO	18.95 33 eP	30 07.50	-2.1	
	eS	33 41.00		
WMO	19.79 341 P	30 19.20	0.1	
HHC	19.92 35 eP	30 20.00	-0.5	
N	12s	0.60um		
E	12s	0.60um		
NJ2	20.70 66 Pc	30 34.00	5.5X	
GBA	21.40 241 Pd	30 36.00	0.3	
	0.5s	2.20nm	3.8mb	
BJI	22.05 44 eP	30 41.50	-0.6	
POO	22.05 257 eP	30 47.50	5.2X	
SSE	22.48 70 eP	30 46.00	-0.4	
Z	14s	0.40um	4.0MszX	
N	10s	0.50um		
	eS	34 45.00		
QUE	26.55 287 eP	31 25.60	0.0	
MA10	33.42 298 eP	32 26.00	-0.6	
WB5	58.10 137 eP	35 41.80	0.5	
WRA	58.13 137 Pc	35 41.60	0.0	
	0.7s	1.90nm	4.3mb	
CTA	66.16 128 e(P)	36 45.00	9.7X	
INK	79.70 17 eP	37 55.00	0.9	

S.D. = 1.3 on 21 of 29 obs.

MAR 15, 1990 20h 00m 21.35 ± 0.73s  
26.825 S ± 6.5km 26.720 E ± 7.8km  
DEPTH = 5.0km (geophysicist)  
REPUBLIC OF SOUTH AFRICA (584)  
mbLg 3.3 (BUL).

BFS	0.09 141 iPd	00 25.00	1.5	
	S	00 26.00		
PRY	0.68 99 iPc	00 34.00	-1.0	
	S	00 40.80		
KSR	0.97 9 iPd	00 40.90	0.5	
	S	00 54.00		
SEK	1.69 152 iPd	00 51.50	-0.4	
	S	01 11.50		
SLR	1.77 53 iPd	00 54.50	1.5	
	S	01 18.00		
BLF	2.32 192 eP	01 00.50	-0.5	
KIM	2.58 221 iPc	01 04.00	-0.5	
	S	01 34.50		
BUL	6.87 15 iPn	02 03.50	-1.9	
	iSn	03 15.80		
	iSg	03 55.30		
WIN	9.72 294 eP	02 46.00	0.9	

S.D. = 1.4 on 9 of 9 obs.

? MAR 15, 1990 20h 54m 41.03 ± 10.96s  
31.675 S ± 58.1km 70.090 W ± 83.4km  
DEPTH = 33.0km (normal)  
CHILE-ARGENTINA BORDER REGION (127)

RTCB	1.12 81 eP	55 02.10	1.6	
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RTCV 1.34 98 eS 55 19.30  
 S 55 03.30 -0.3  
 RTLL 1.43 76 iPc 55 03.90 -1.0  
 S 55 25.30  
 CFA 1.58 88 ePd 55 06.00 -1.1  
 S 55 27.00  
 RTRS 1.59 20 iPd 55 07.10 -0.1  
 S.D. = 1.5 on 5 of 5 obs.

MAR 15, 1990 21h 28m 37.23±0.60s  
 44.286 N ± 4.3km 7.355 E ± 4.3km  
 DEPTH = 10.0km (geophysicist)  
 NORTHERN ITALY (545)  
 ML 2.1 (GEN).

STV 0.05 208 P 28 40.06 0.6  
 S 28 41.70  
 ENR 0.08 142 P 28 40.37 0.6  
 S 28 42.42  
 TOUF 0.28 196 Pg 28 43.28 0.0  
 Sg 28 47.20  
 PZZ 0.28 320 P 28 43.04 -0.2  
 S 28 47.75  
 AUTN 0.29 170 Pg 28 43.43 -0.1  
 SAOF 0.33 154 Pg 28 44.00 -0.1  
 Sg 28 48.70  
 ROB 0.37 88 P 28 45.09 0.2  
 S 28 51.24  
 AURF 0.40 183 Pg 28 45.17 -0.3  
 Sg 28 50.67  
 MVIF 0.42 201 Pg 28 45.58 -0.2  
 IMI 0.54 134 P 28 47.55 -0.6  
 S 28 55.03  
 FIN 0.62 97 P 28 49.60 -0.1  
 S 28 57.90  
 S.D. = 0.4 on 11 of 11 obs.

MAR 15, 1990 22h 02m 41.20±0.70s  
 26.784 S ± 6.6km 26.704 E ± 9.5km  
 DEPTH = 5.0km (geophysicist)  
 REPUBLIC OF SOUTH AFRICA (584)  
 mbLg 3.8 (BUL).

BFS 0.13 147 iPd 02 44.00 -0.1  
 PRY 0.70 102 iPd 03 53.20 57.9X  
 S 03 59.40  
 KSR 0.93 11 iPd 03 00.40 0.8  
 S 03 12.60  
 SEK 1.74 152 iPc 03 12.50 0.1  
 S 03 30.50  
 SLR 1.76 54 iPd 03 13.70 1.0  
 S 03 37.00  
 BLF 2.36 191 iPd 03 20.00 -1.4  
 KIM 2.60 221 iPc 03 23.60 -1.1  
 S 03 53.60  
 BUL 6.84 15 iSn 04 23.20 -1.6  
 S 05 36.00  
 iSg 06 15.00  
 CER 9.17 223 eP 05 00.00 2.8  
 S 06 45.00  
 WIN 9.69 294 iPc 05 04.50 0.0  
 TIC 45.27 313 P 11 01.20 -0.6  
 S.D. = 1.5 on 10 of 11 obs.

? MAR 15, 1990 22h 19m 42.06±3.07s  
 4.762 N ± 23.9km 126.041 E ± 23.7km  
 DEPTH = 182.4 ± 21.2 km  
 4.9mb ( 4 obs.)  
 TALAUD ISLANDS (263)

MNI 3.51 200 iPc 20 37.00 -0.6  
 e(S) 21 17.60  
 PCI 8.37 228 ePd 21 42.30 1.1  
 AAI 8.66 166 eP 21 45.00 0.0  
 MTN 18.21 164 eP 23 44.00 0.0  
 e 27 01.00  
 KNA 20.56 173 eP 24 07.70 -0.3  
 WB5 25.82 162 eP 24 58.70 0.4  
 e 29 24.70  
 WRA 25.87 162 P 24 58.00 -0.8  
 0.4s 4.40nm 4.5mb  
 MBL 26.47 193 eP 25 02.70 -1.5  
 ASPA 29.28 165 eP 25 29.20 -0.2  
 0.5s 12.00nm 4.9mb  
 FORR 35.46 177 iPc 26 22.60 -0.1  
 0.4s 22.00nm 5.2mb

SHL 38.72 306 eP 26 50.00 -0.3  
 ADE 41.28 164 iPc 27 13.30 2.3  
 0.7s 27.40nm 4.9mb  
 S.D. = 1.1 on 12 of 12 obs.

\* MAR 16, 1990 00h 29m 21.01±0.91s  
 17.437 S ± 12.3km 70.614 W ± 10.7km  
 DEPTH = 126.4 ± 8.6 km  
 4.8mb ( 3 obs.)

NEAR COAST OF PERU (115)

ARE 1.28 319 iPc 29 46.10 -1.0  
 eS 30 03.00  
 LPB 2.57 70 iPc 30 04.20 1.3  
 ZOBO 2.65 64 iPc 30 05.00 0.8  
 LR 45 08.00  
 CCH 4.27 90 P 30 24.50 -1.0  
 ANT 6.24 178 e(P) 30 52.50 0.5  
 BAO 21.76 89 e(P) 34 02.00 -1.7  
 LIC 68.89 76 Pc 40 14.24 -0.2  
 KIC 69.20 76 Pc 40 16.48 0.1  
 0.3s 7.50nm 5.0mb  
 LKO 69.60 73 Pc 40 18.82 0.0  
 0.6s 13.00nm 4.9mb  
 YKA 86.84 341 eP 41 53.20 1.2  
 0.5s 0.80nm 3.9mb  
 GBA 149.00 93 PKPc 48 57.90 5.8X  
 0.5s 1.60nm  
 S.D. = 1.2 on 10 of 11 obs.

? MAR 16, 1990 01h 05m 06.52±10.70s  
 39.485 N ± 77.4km 28.260 E ± 33.0km  
 DEPTH = 5.0km (geophysicist)  
 TURKEY (366)

DST 0.31 67 iPg 05 12.00 -0.8  
 iSg 05 16.00  
 KCT 0.77 6 iPg 05 21.70 -0.2  
 eSg 05 34.20  
 EDC 0.91 341 ePg 05 24.00 -0.4  
 YLV 1.38 38 iSn 05 33.70 1.3  
 S.D. = 1.6 on 4 of 4 obs.

? MAR 16, 1990 01h 05m 18.19±1.53s  
 35.451 N ± 56.3km 26.689 E ± 15.8km  
 DEPTH = 10.0km (geophysicist)

CRETE (370)  
 MD 3.4 (ATH).

KAP 0.41 76 ePb 05 27.00 0.5  
 NPS 0.90 258 ePb 05 34.50 -0.9  
 ARG 1.40 56 ePb 05 43.00 -0.7  
 VAM 2.03 269 ePn 05 54.00 1.1  
 S.D. = 1.7 on 4 of 4 obs.

\* MAR 16, 1990 01h 58m 58.61±2.16s  
 16.193 N ± 23.1km 97.864 W ± 10.3km  
 DEPTH = 33.0km (normal)

OAXACA, MEXICO (60)

OXX 1.41 51 iP 59 22.12 -0.2  
 iS 59 44.65  
 ACX 2.03 290 (P) 59 31.50 0.3  
 iS 59 53.00  
 III 2.66 325 iP 59 38.45 -1.8  
 (S) 00 06.46  
 PSM 2.76 79 (P) 59 41.54 0.0  
 (S) 00 22.50  
 IIT 2.84 352 eP 59 44.31 1.4  
 (S) 00 17.12  
 PPM 2.95 346 eP 59 43.36 -1.3  
 iS 00 24.00  
 UNM 3.36 338 (P) 59 57.00 6.6X  
 CRX 3.63 332 (P) 00 01.00 6.8X  
 IIC 3.79 340 (P) 00 05.26 8.8X  
 IJJ 3.95 333 eP 00 00.36 1.5  
 iS 00 51.31  
 MRX 4.71 318 (P) 00 14.00 4.8X  
 S.D. = 1.5 on 7 of 11 obs.

MAR 16, 1990 02h 01m 50.22±0.36s  
 13.527 S ± 8.1km 77.008 W ± 6.4km  
 DEPTH = 31.6km ( 9 depth phases)  
 4.9mb ( 6 obs.)

OFF COAST OF PERU (114)

PT03 1.26 112 iPd 02 12.40 0.6

NNA 1.54 6 iPc 02 16.00 0.2  
 eS 02 33.50  
 PT08 1.62 16 eP 02 17.90 0.6  
 ARE 6.08 119 eP 03 20.00 -0.6  
 eS 04 51.00

ZOBO 9.01 109 P 04 03.00 1.2  
 Z 18s 1.08um  
 LR 07 56.00  
 LPB 9.11 110 P 04 05.00 2.0  
 Z 15s 2.00um

UPA 22.50 353 eP 06 50.30 1.7  
 8AO 28.15 98 eP 07 39.50 -2.6  
 ALQ 55.72 331 eP 11 25.80 -0.6  
 1.0s 10.00nm 4.8mb

ANMO 55.72 331 eP 11 26.60 0.2  
 eP 11 36.50 32km  
 BAR 59.57 321 eP 11 54.00 0.6  
 PLM 60.15 322 eP 11 58.00 0.5  
 TPC 60.19 323 eP 11 58.00 0.3  
 RVR 60.90 322 eP 12 03.00 0.6  
 MWC 61.47 322 eP 12 07.00 0.5  
 GSC 61.47 323 eP 12 06.00 -0.4  
 SBB 61.65 322 eP 12 07.00 -0.6  
 CLC 62.30 323 eP 12 12.00 0.1  
 ISA 62.70 323 eP 12 15.00 0.4  
 8W06 63.49 334 eP 12 18.60 -1.3  
 TNP 63.68 325 ePd 12 21.20 0.0

LLA 64.82 322 eP 12 29.00 0.6  
 e 12 38.10 29km  
 KVN 64.85 326 eP 12 28.80 0.0  
 PRS 64.89 321 eP 12 29.50 0.7  
 CMB 65.44 323 eP 12 33.00 0.6

e 12 43.20 33km  
 ORV 67.11 324 eP 12 44.10 1.1  
 e 12 53.50 30km  
 WDC 68.39 324 eP 12 50.00 -1.0  
 e 12 59.20 30km

SCH 68.62 6 eP 12 51.00 -1.2  
 SES 70.29 338 eP 13 02.00 -0.5  
 NEW 71.09 333 ePd 13 06.50 -0.9  
 0.8s 8.96nm 4.9mb

FFC 71.21 345 eP 13 07.00 -0.9  
 0.8s 9.00nm 4.9mb  
 PNT 72.98 332 eP 13 19.00 0.4  
 0.7s 8.00nm 4.8mb

EDM 73.42 338 ePc 13 20.30 -0.8  
 LIC 74.09 79 P 13 25.10 -0.6  
 TIC 74.21 79 P 13 26.00 -0.4  
 KIC 74.40 79 P 13 27.00 -0.5  
 0.7s 11.50nm 5.0mb

LKO 74.49 76 P 13 27.34 -0.7  
 FRB 77.31 4 eP 13 42.00 -0.9  
 INK 90.93 342 eP 14 51.50 -0.3  
 MBC 93.07 351 ePd 15 02.30 0.8  
 1.0s 16.00nm 5.4mb

FBA 94.22 336 eP 15 13.50 36km  
 pP 15 07.00 0.0  
 WRA 134.64 223 PKPc 21 08.60 0.5  
 0.6s 1.30nm  
 WB5 134.66 224 ePKP 21 08.10 -0.1

BJI 151.16 339 ePKP 21 41.50 5.6X  
 1.2s 26.00nm  
 GBA 155.16 87 PKPd 21 42.90 0.7  
 0.2s 0.40nm

S.D. = 0.9 on 44 of 45 obs.  
 ? MAR 16, 1990 03h 18m 58.53±1.38s  
 38.654 N ± 5.6km 15.176 E ± 15.3km  
 DEPTH = 10.0km (geophysicist)

SICILY (398)

ATN 0.54 155 P 19 10.00 0.5  
 eSg 19 19.40  
 SOI 0.90 130 P 19 15.00 -0.8  
 eSg 19 28.90  
 CZI 0.94 53 P 19 17.20 0.8  
 eS 19 30.50  
 TDS 1.35 42 P 19 22.50 -0.9  
 MMN 1.39 27 P 19 24.20 0.3  
 CSI 1.42 37 P 19 24.90 0.6  
 eS 19 49.50  
 ROI 1.42 49 P 19 24.20 -0.2  
 MGR 1.51 11 P 19 25.50 -0.1



16d 03h

SGO 1.91 3 P 19 31.00 -0.3  
S.D. = 0.7 on 9 of 9 obs.

\* MAR 16, 1990 04h 03m 23.43 ± 1.92s  
37.861 N ± 27.0km 14.989 E ± 7.1km  
DEPTH = 10.0km (geophysicist)

SICILY (398)

MNO 0.24 287 P 03 29.00 0.3  
eSg 03 35.50  
ATN 0.48 51 P 03 34.00 0.8  
eSg 03 44.50  
GIB 0.77 280 P 03 38.50 -0.1  
eSg 03 52.00  
SOI 0.87 76 P 03 40.00 -0.1  
eSg 03 54.00  
CZI 1.63 33 P 03 51.20 -0.9  
CSI 2.17 28 P 04 03.10 3.0X  
S.D. = 0.9 on 5 of 6 obs.

MAR 16, 1990 04h 07m 08.57 ± 0.62s  
32.494 N ± 5.3km 48.501 E ± 4.4km  
DEPTH = 56.6 ± 6.1 km  
4.5mb (16 obs.)

WESTERN IRAN (347)

KER 2.19 328 eP 07 45.00 1.7  
IR5 3.22 32 eP 07 58.50 0.6  
IR1 3.44 31 eP 08 01.00 0.0  
BHD 3.55 284 ePnc 08 18.00 15.6X  
e 09 02.50  
eSn 09 11.50  
i 09 16.00  
IR7 3.65 28 eP 08 03.00 -1.0  
IR2 3.73 32 eP 08 04.00 -1.2  
SLY 3.98 322 ePnc 08 08.00 -0.4  
iPg 08 19.50  
iSn 08 53.50  
iS\* 09 00.00  
iSg 09 13.00

TEH 4.02 36 e(P) 08 09.00 -0.3  
TAB 5.84 343 eP 08 53.00 18.3X  
MSL 5.88 313 Pnd 08 36.50 1.3  
eSn 09 36.50

QASM 7.71 215 eP 08 59.10 -1.7  
RYD 7.92 193 eP 09 05.30 1.6  
AYN 11.35 255 eP 09 55.00 4.5X  
MBH 11.98 260 e(P) 09 57.00 -1.9  
VRI 21.44 315 ePc 11 53.50 -0.2  
MLR 21.72 313 ePc 11 58.00 1.3  
SGO 27.74 296 P 12 55.00 1.4  
KBA 30.40 309 iPd 13 17.60 0.0  
0.6s 4.30nm 4.4mb

BDI 31.65 302 P 13 29.00 0.5  
DMN 31.95 89 P 13 31.00 0.2  
KKK 32.05 89 P 13 32.60 0.3  
0.6s 16.00nm 5.0mb

PKI 32.22 89 P 13 34.00 0.0  
0.6s 12.00nm 4.9mb  
GUN 32.52 88 P 13 37.00 0.4  
BOB 32.57 304 P 13 38.00 1.5  
SBF 33.90 302 eP 13 48.20 0.2  
0.8s 10.75nm 4.8mb

BNI 34.56 304 P 13 53.50 -0.3  
LPG 34.56 304 eP 13 53.90 -0.1  
0.6s 8.55nm 4.9mb

LPL 34.58 304 eP 13 53.90 -0.2  
0.6s 5.40nm 4.7mb  
HFS 35.89 331 eP 14 04.00 -0.7  
0.7s 5.80nm 4.6mb

LBF 36.66 306 eP 14 11.60 0.2  
0.6s 1.80nm 4.2mb  
SMF 36.71 306 eP 14 11.40 -0.4  
0.5s 6.90nm 4.8mb

SSF 36.99 307 eP 14 13.80 -0.3  
0.6s 2.70nm 4.4mb  
NB2 37.41 331 P 14 16.60 -0.9  
0.8s 2.70nm 4.2mb

LDF 39.59 309 eP 14 35.40 -0.4  
0.6s 3.60nm 4.4mb  
FLN 39.84 309 eP 14 37.10 -0.8  
0.6s 3.60nm 4.4mb

GRR 40.05 308 eP 14 38.20 -1.5  
0.8s 8.05nm 4.6mb  
KIC 55.84 254 P 16 43.40 0.7  
MBC 71.26 357 ePc 18 23.00 -0.1  
0.5s 3.00nm 4.5mb

FRB 72.06 335 eP 18 28.00 -0.1  
INK 79.50 1 eP 19 10.00 0.0  
YKA 84.37 352 eP 19 35.60 0.1  
0.8s 0.80nm 3.8mb  
S.D. = 0.9 on 38 of 41 obs.

\* MAR 16, 1990 04h 51m 29.37 ± 0.77s  
6.608 S ± 10.4km 75.709 W ± 27.0km  
DEPTH = 33.0km (normol)  
4.6mb (2 obs.)

NORTHERN PERU (111)

PT08 5.38 189 iPd 52 51.00 1.2  
iS 53 52.40  
PT03 7.34 181 eP 53 16.00 -1.0  
eS 54 37.30  
LPB 12.36 144 P 54 26.00 -0.4  
ALQ 50.49 327 eP 00 25.00 -1.6  
SES 64.48 336 eP 02 05.00 0.0  
YKA 75.06 342 eP 03 08.80 -0.6  
0.4s 0.80nm 4.1mb  
INK 84.80 342 eP 04 02.00 0.6  
MBC 86.50 350 eP 04 11.50 1.8  
0.7s 9.00nm 5.1mb  
S.D. = 1.4 on 8 of 8 obs.

MAR 16, 1990 04h 56m 30.22 ± 0.96s  
21.741 N ± 4.9km 142.993 E ± 6.6km  
DEPTH = 320.7 ± 10.5 km  
4.7mb (19 obs.)

MARIANA ISLANDS REGION (215)

PJG 8.30 167 eP 58 30.50 2.1  
GUA 8.36 167 eP 58 31.30 2.2  
0.7s 82.19nm 4.9mb  
WKYJ 14.04 334 eP 59 37.70 -0.4  
TKSJ 14.53 329 eP 59 43.40 -0.3  
KAKJ 14.62 351 P 59 43.10 -1.6  
eS 02 16.60  
CHJJ 14.68 347 P 59 43.40 -2.0  
eS 02 18.80  
TSRJ 15.05 337 P 59 49.20 -0.2  
MAT 15.32 345 (P) 59 49.00 -3.4X  
0.5s 24.65nm 4.8mb  
eS 02 29.00  
MTMJ 15.46 344 P 59 52.10 -1.9  
YONJ 15.79 330 eP 59 56.50 -0.8  
NIIJ 15.83 348 P 59 56.20 -1.5  
eS 02 45.30

SHNJ 16.18 322 eP 00 01.90 0.4  
CVP 20.33 262 eP 00 45.50 2.0  
SSE 21.61 300 P 00 56.20 0.4  
MDJ 25.35 337 Pc 01 31.20 0.7  
SNY 25.84 325 eP 01 35.80 0.9  
CN2 26.38 331 eP 01 38.20 -1.5  
KKM 30.23 243 ePc 02 14.00 -0.2  
TIY 30.77 308 eP 02 20.20 1.6  
XAN 32.36 300 P 02 32.00 -0.4  
GYA 33.42 285 P 02 42.00 0.4  
0.5s 15.60  
PcP 05 15.60

CD2 36.18 293 P 03 04.60 -0.1  
MTN 36.29 200 iPc 03 03.50 -2.1  
KNA 39.78 202 iPd 03 33.20 -1.2  
CHG 41.32 274 eP 03 48.00 0.9  
QIS 42.17 185 iPc 03 52.30 -1.5  
0.3s 22.00nm 4.9mb  
WB5 42.22 192 iPc 03 52.90 -1.3  
WRA 42.28 192 Pd 03 53.70 -1.1  
0.3s 20.40nm 4.8mb

KGM 43.28 249 eP 04 04.00 1.1  
IPM 44.09 253 ePc 04 11.30 2.0  
0.8s 46.90nm 4.8mb  
ASPA 45.99 192 iPd 04 21.70 -2.5  
0.6s 38.00nm 4.9mb  
eS 10 43.40

PPI 47.04 248 eP 04 33.40 1.0  
LSA 47.05 291 eP 04 35.00 2.1  
MBL 48.26 209 iPc 04 40.30 -1.3  
0.4s 9.00nm 4.4mb  
DZM 49.19 151 iPc 04 46.90 -1.8  
GUN 51.81 289 P 05 09.20 0.5  
0.6s 18.00nm 4.6mb

PKI 52.27 289 P 05 11.00 -0.3  
0.4s 7.00nm 4.4mb  
KKK 52.35 289 P 05 12.40 -0.2  
DMN 52.53 289 P 05 14.00 0.1  
0.4s 8.00nm 4.5mb

FORR 54.21 196 eP 05 23.00 -2.6  
0.4s 71.00nm 5.4mb  
IMA 59.57 25 eP 06 02.90 0.1  
1.0s 11.30nm 4.3mb

FBA 61.72 27 eP 06 15.00 -1.9  
GBA 62.60 274 Pd 06 23.20 -0.3  
0.4s 6.90nm 4.6mb  
INK 67.60 24 eP 06 54.00 -0.4  
MBC 70.86 15 ePd 07 13.70 -0.3  
0.5s 35.00nm 5.3mb

PNT 78.45 41 eP 07 58.00 0.6  
0.5s 5.00nm 4.6mb  
WDC 79.43 51 eP 08 03.60 0.9  
SOD 79.64 339 eP 08 04.00 0.7  
MIN 80.18 51 eP 08 07.10 0.2  
ORV 80.53 51 eP 08 09.00 0.5  
PCC 80.58 53 eP 08 09.30 0.5  
EDM 80.66 36 eP 08 09.50 0.5  
GCC 81.03 54 e(P) 08 11.80 0.6  
MHC 81.19 53 eP 08 13.00 0.8  
PRS 81.75 54 eP 08 15.90 0.9  
CMB 81.88 52 eP 08 16.30 0.7  
SUF 82.33 335 eP 08 17.60 0.2  
0.4s 3.80nm 4.6mb

FRI 82.76 53 eP 08 20.80 0.8  
SES 83.15 38 ePd 08 22.60 0.8  
pP 09 38.00 322kmX  
NUR 84.17 334 eP 08 26.70 0.1  
LRM 84.27 43 ePd 08 28.70 0.9  
FFC 85.88 32 iPd 08 36.40 1.2  
0.6s 13.00nm 5.0mb

HFS 88.62 337 ePKP 08 47.00 -1.2  
0.4s 3.60nm 4.7mb  
NB2 88.84 339 P 08 48.60 -0.7  
0.7s 3.20nm 4.4mb  
KIC 137.80 308 PKP 15 21.00 1.9  
S.D. = 1.2 on 64 of 65 obs.

& MAR 16, 1990 05h 04m 47.90s  
60.534 N 152.870 W  
DEPTH = 142.5km  
SOUTHERN ALASKA (2)  
<AGS-P>.

RDT 0.23 80 iP 05 06.81 0.8  
eS 05 23.28  
SPU 0.76 31 iP 05 09.39 -1.0  
CRP 0.81 25 iP 05 10.14 -0.8  
NKA 0.83 75 eP 05 12.25 1.5  
CGLM 0.88 28 iP 05 10.49 -0.9  
NNL 0.93 122 iP 05 12.14 0.5  
NCG 0.94 21 iP 05 11.03 -0.8  
PDB 1.00 222 iP 05 11.13 -1.1  
AUL 1.19 194 iP 05 13.92 -0.1  
AUE 1.21 192 eP 05 13.62 -0.5  
SLKM 1.31 90 eP 05 14.30 -1.0  
SUA 1.39 47 eP 05 15.54 -0.7  
eS 05 37.69

CDD 1.66 194 eP 05 18.13 -0.9  
SEW 1.76 103 eP 05 19.23 -0.8  
PMS 1.77 65 iP 05 19.31 -1.0  
eS 05 44.15  
PWA 1.84 51 eP 05 19.87 -1.1  
PLRM 2.11 58 eP 05 22.69 -1.5  
CUT 2.25 32 iP 05 25.46 -0.6  
GHO 2.28 55 iP 05 24.68 -1.8  
RND 3.45 32 eP 05 39.87 -1.6  
KLU 3.52 71 eP 05 40.37 -2.0  
21 obs. associated

& MAR 16, 1990 05h 46m 13.08s  
65.946 N 148.232 W  
DEPTH = 9.8km  
ALASKA (676)  
<AGS-P>.

GLM 1.03 160 eP 46 32.51 0.0  
eS 46 49.02  
FBA 1.07 170 eP 46 32.66 -0.5  
eS 46 49.37  
CCB 1.32 172 eP 46 35.91 -1.5  
iS 46 56.59  
FYU 1.36 62 eP 46 37.55 -0.6  
eS 46 56.56

NEA 1.42 195 eP 46 38.04 -0.4  
eS 46 57.58  
WRH 1.48 178 eP 46 38.47 -1.3



HDA 1.64 160 iP 46 41.24 -0.8  
 IMA 2.23 276 eP 46 43.16 -7.6  
 DDM 2.39 154 eP 46 51.65 -1.4  
 RND 2.56 186 eP 46 53.11 -2.3  
 KTH 2.67 207 eP 47 00.46 3.5  
 11 obs. associated

? MAR 16, 1990 05h 59m 02.15± 6.38s  
 6.437 N ± 70.4km 33.800 W ± 148.0km  
 DEPTH = 10.0km (geophysicist)  
 5.1mb ( 2 obs.) 4.1msz ( 1 obs.)  
 CENTRAL MID-ATLANTIC RIDGE (406)

ZOBO 40.78 236 P 06 48.00 1.9  
 Z 20s 0.29um 4.1msz  
 LR 19 24.00  
 LPB 40.89 236 eP 06 45.00 -1.9  
 FFC 72.24 326 eP 10 29.00 -0.4  
 1.4s 23.00nm 5.1mb  
 EDM 78.62 323 eP 11 06.00 0.2  
 YKA 80.07 332 eP 11 13.70 0.3  
 0.8s 0.70nm 3.7mb X  
 MBC 82.73 346 eP 11 27.00 -0.1  
 1.5s 19.00nm 5.0mb  
 S.D. = 1.6 on 6 of 6 obs.

? MAR 16, 1990 06h 14m 57.20± 2.82s  
 33.740 N ± 64.4km 33.291 W ± 33.8km  
 DEPTH = 10.0km (geophysicist)  
 4.8mb ( 4 obs.)  
 NORTH ATLANTIC RIDGE (403)

FRB 37.08 335 eP 22 08.00 -0.9  
 FFC 51.24 316 eP 24 02.00 -0.8  
 0.8s 8.00nm 4.7mb  
 MBC 56.60 343 eP 24 46.00 4.0X  
 1.0s 11.00nm 4.8mb  
 YKA 56.77 327 eP 24 42.80 -0.6  
 0.8s 1.30nm 4.0mb  
 NEW 61.89 311 eP 25 18.50 -0.5  
 0.8s 7.92nm 4.9mb  
 INK 62.73 336 eP 25 27.00 2.8  
 KVN 66.07 302 eP 25 47.30 0.6  
 NDI 89.57 55 eP 27 56.00 -0.5  
 S.D. = 1.6 on 7 of 8 obs.

\* MAR 16, 1990 06h 36m 57.01± 0.47s  
 5.790 N ± 10.5km 32.860 W ± 9.3km  
 DEPTH = 10.0km (geophysicist)  
 5.0mb ( 5 obs.) 5.1msz ( 2 obs.)  
 CENTRAL MID-ATLANTIC RIDGE (406)

MBO 17.83 60 eP 41 12.10 5.2X  
 BAO 26.03 215 eP 42 32.00 -0.4  
 LKO 27.28 80 P 42 43.28 -0.5  
 ZOBO 41.20 237 P 44 44.30 -0.2  
 1.5s 21.51nm 4.7mb  
 Z 18s 2.05um 5.0msz

LPB 41.31 237 P 44 46.00 0.8  
 Z 20s 3.55um 5.2msz  
 LR 53 20.00

MNO 53.68 46 P 46 28.50 7.0X  
 eSg 46 34.50

ATN 54.33 46 P 46 33.50 7.4X  
 eSg 46 43.60

SCH 55.97 337 eP 46 37.00 -0.8  
 KHC 58.27 34 P 46 54.30 0.1  
 e 47 04.50

SPC 62.13 36 eP 47 20.80 0.0  
 KRA 62.33 35 eP 47 23.00 1.1  
 NB2 64.19 22 P 47 33.80 -0.2  
 1.4s 17.70nm 5.1mb

MLR 64.30 42 ePc 47 35.00 -0.1  
 ALO 73.26 305 eP 48 30.30 -0.7  
 FFC 73.30 326 ePc 48 29.90 -0.6  
 1.2s 27.00nm 5.2mb

SES 78.03 320 eP 48 57.00 -0.5  
 LRM 78.62 315 eP 49 01.80 0.7  
 EDM 79.69 323 iPc 49 07.00 0.5  
 YKA 81.08 332 eP 49 12.30 -1.3  
 1.1s 2.50nm 4.2mb

TNP 82.03 308 eP 49 20.00 0.7  
 KVN 82.69 309 eP 49 22.90 0.1  
 MBC 83.58 346 eP 49 27.50 1.2  
 1.4s 37.00nm 5.4mb

S.D. = 0.7 on 19 of 22 obs.

MAR 16, 1990 06h 41m 48.65± 1.02s  
 37.747 N ± 10.5km 14.988 E ± 5.8km  
 DEPTH = 10.0km (geophysicist)  
 SICILY (398)

MNO 0.30 309 Pd 41 55.70 0.8  
 eSg 42 02.50

ATN 0.56 42 P 42 00.50 0.5  
 eSg 42 10.40

GIB 0.80 288 P 42 04.70 0.5  
 eSg 42 18.00

SOI 0.90 69 P 42 06.50 0.6  
 eSg 42 22.20

FAI 1.14 246 P 42 09.50 -0.6  
 eSg 42 24.50

CZI 1.72 31 P 42 17.80 -1.0  
 eSg 42 40.20

TDS 2.18 29 P 42 25.50 0.0  
 ROI 2.20 34 P 42 27.10 1.3

CSI 2.27 26 P 42 26.60 -0.2  
 MMN 2.28 20 P 42 26.40 -0.4

MGR 2.43 10 P 42 27.50 -1.5  
 SGO 2.82 5 P 42 34.50 0.0

S.D. = 0.9 on 12 of 12 obs.

& MAR 16, 1990 06h 43m 58.84s  
 58.310 N 152.948 W

DEPTH = 66.6km  
 KODIAK ISLAND REGION ( 13)  
 <AGS-P>.

CDD 0.72 330 eP 44 12.87 -1.1  
 eS 44 23.67

AUE 1.08 348 eP 44 17.56 -0.8  
 eS 44 30.55

AUL 1.10 347 iP 44 18.28 -0.5  
 eS 44 32.80

CNPM 1.51 35 iP 44 23.39 -0.9  
 eS 44 42.52

PDB 1.62 337 iP 44 24.32 -1.4  
 eS 44 42.79

NNL 1.93 25 iP 44 29.49 -0.6  
 RDT 2.29 7 eP 44 33.72 -1.4

SEW 2.54 44 eP 44 36.93 -1.6  
 SLKM 2.61 31 eP 44 37.35 -2.2

SPU 2.92 9 iP 44 42.38 -1.5  
 NCG 3.13 7 eP 44 45.43 -1.5

PMS 3.41 29 iP 44 48.65 -2.1  
 SKT 3.75 10 eP 44 53.32 -2.2

13 obs. associated

% MAR 16, 1990 07h 05m 10.49± 0.84s  
 38.043 N ± 18.2km 14.931 E ± 7.9km  
 DEPTH = 10.0km (geophysicist)

SICILY (398)

MNO 0.22 239 P 05 15.60 0.3  
 eSg 05 22.00

ATN 0.44 74 P 05 20.50 1.1  
 eSg 05 31.00

GIB 0.72 266 P 05 24.50 -0.2  
 eSg 05 38.00

SOI 0.89 88 P 05 26.50 -1.0  
 eSg 05 42.00

CZI 1.50 38 P 05 37.20 -0.3  
 eSg 05 59.80

S.D. = 1.1 on 5 of 5 obs.

? MAR 16, 1990 07h 16m 14.44± 2.33s  
 5.834 S ± 30.7km 129.031 E ± 28.2km  
 DEPTH = 277.6 ± 19.2 km  
 4.3mb ( 2 obs.)  
 BANDA SEA (280)

MTN 7.27 164 iPc 17 59.70 0.2  
 eS 17 17.00

KNA 9.86 181 eP 18 31.50 -0.4  
 eS 20 20.00

WB5 14.90 160 eP 19 33.00 -0.8  
 eS 22 21.00

WRA 14.95 160 Pc 19 34.30 -0.2  
 0.6s 2.70nm 3.8mb

MBL 17.65 209 eP 20 04.00 0.1  
 ASPA 18.34 166 eP 20 12.40 1.4

0.4s 17.00nm 4.9mb

eS 23 24.50

ZST 108.88 319 ePKP 34 11.70 -0.6  
 S.D. = 1.0 on 7 of 7 obs.

MAR 16, 1990 08h 51m 03.45± 0.36s  
 6.624 S ± 6.1km 75.631 W ± 11.7km  
 DEPTH = 33.0km (normal)  
 4.9mb ( 6 obs.)

NORTHERN PERU (111)

PT08 5.38 190 eP 52 24.60 0.7  
 iS 53 26.20

NNA 5.46 193 iPc 52 24.80 0.1  
 eS 53 25.00

PT03 7.32 181 eP 52 49.00 -1.9  
 eS 54 02.20

ARE 10.58 158 eP 53 44.00 7.7X  
 ZOBO 12.08 143 P 53 55.00 -1.9

Z 18s 0.43um 5.2msz  
 S 57 35.00

LR 59 08.00

LPB 12.30 144 P 54 08.00 0.3  
 ALO 50.54 327 eP 00 00.50 -0.6

1.0s 10.00nm 4.8mb

TNP 58.94 322 eP 01 02.00 -0.3  
 KVN 60.09 323 eP 01 09.70 -0.4

SCH 61.66 6 eP 01 20.00 -0.3  
 LRM 61.69 332 eP 01 20.50 -0.5

SES 64.52 336 ePc 01 38.80 -0.6  
 FFC 64.97 343 eP 01 41.00 -1.1

0.9s 11.00nm 5.0mb

PNT 67.60 331 eP 01 59.00 0.0  
 EDM 67.61 337 iPc 01 57.90 -1.1

LIC 71.60 81 P 02 24.80 0.6  
 TIC 71.67 81 P 02 24.40 -0.2

KIC 71.90 81 P 02 26.00 0.0  
 0.8s 6.50nm 4.7mb

YKA 75.10 342 eP 02 42.50 -1.2  
 0.5s 2.60nm 4.5mb

SPA 83.42 180 iPc 03 30.30 1.5  
 0.7s 11.33nm 5.1mb

INK 84.84 342 ePc 03 35.90 0.3  
 MBC 86.53 350 ePc 03 45.10 1.2

0.8s 36.00nm 5.7mb

FBA 88.50 336 eP 03 54.00 0.4  
 ASPA 138.31 223 ePKP 10 20.20 -7.9X

0.6s 2.00nm

WRA 140.42 228 PKPd 10 31.80 -0.2  
 0.8s 4.40nm

WB5 140.44 228 ePKP 10 39.60 7.6X  
 GTA 147.10 7 PKP 10 45.20 2.2

MTN 147.12 234 iPcPd 10 45.60 2.1  
 TIY 148.20 348 PKPd 10 48.90 4.2X

MBL 148.49 208 ePKP 10 49.00 3.5X  
 LZH 150.67 1 PKP 10 55.30 6.6X

XAN 152.40 352 PKP 10 52.00 0.9  
 GBA 152.61 73 PKPc 10 59.60 7.8X

0.9s 3.80nm

S.D. = 1.1 on 26 of 33 obs.

MAR 16, 1990 09h 25m 53.93± 0.64s  
 37.700 N ± 6.1km 15.070 E ± 5.5km  
 DEPTH = 10.0km (geophysicist)

SICILY (398)

MNO 0.38 308 Pd 26 01.50 -0.2  
 eSg 26 08.00

ATN 0.55 34 P 26 06.10 0.9  
 eSg 26 16.40

MEU 0.61 191 P 26 06.00 -0.3  
 SOI 0.86 64 P 26 10.60 0.1

eSg 26 25.20

GIB 0.88 290 P 26 10.90 0.1  
 FAI 1.19 250 P 26 16.50 0.4

eSg 26 31.50

CZI 1.73 29 P 26 23.40 -0.8  
 eSg 26 47.20

MGR 2.46 9 P 26 34.50 -0.2  
 eSn 27 05.00

S.D. = 0.6 on 8 of 8 obs.

\* MAR 16, 1990 09h 30m 04.48± 1.22s  
 37.752 N ± 13.1km 15.032 E ± 6.9km  
 DEPTH = 10.0km (geophysicist)

SICILY (398)

MNO 0.32 304 Pd 30 11.60 0.4  
 eSg 30 16.50



16d 09h

ATN	0.53	40	P	30	16.50	1.3
			eSg	30	26.00	
GIB	0.83	287	P	30	21.10	0.5
SOI	0.87	68	P	30	21.50	0.3
			eSg	30	37.50	
FAI	1.18	247	P	30	26.20	-0.3
			eSn	30	41.50	
CZI	1.70	30	P	30	33.20	-1.1
			eSg	30	53.60	
MGR	2.42	10	P	30	43.50	-1.1

S.D. = 1.1 on 7 of 7 obs.

MAR 16, 1990 09h 52m 06.65 ± 0.46s  
 37.649 N ± 4.8km 15.087 E ± 3.4km  
 DEPTH = 10.0km (geophysicist)  
 3.4mb (1 obs.)

SICILY (398)

MNO	0.42	312	P	52	14.00	-1.3
			eSg	52	23.00	
MEU	0.56	193	P	52	17.50	-0.6
ATN	0.59	30	P	52	18.60	0.0
			eSg	52	30.50	
MSI	0.67	34	P	52	20.20	0.3
SOI	0.87	61	P	52	24.40	1.0
			eSn	52	39.10	
GIB	0.91	292	P	52	23.50	-0.6
			eSg	52	38.00	
MCT	1.15	270	P	52	30.50	2.2
FAI	1.18	252	P	52	28.30	-0.4
			eSn	52	45.30	
CZI	1.77	27	P	52	35.90	-1.6
CVT	1.82	272	P	52	38.00	-0.2
USI	1.84	306	P	52	37.70	-0.8
ERC	2.01	282	P	52	41.60	0.5
LVI	2.20	280	P	52	44.60	0.8
TDS	2.23	26	P	52	44.80	0.6
MMN	2.35	17	P	52	46.50	0.7
MGR	2.51	8	P	52	46.30	-1.8

			eSn	53	19.40	
ORI	2.63	23	P	52	51.80	1.9
SGO	2.91	3	P	52	54.10	0.3
BSS	3.14	356	P	52	57.90	0.8
BRT	3.62	26	P	53	03.30	-0.6
DUI	4.04	353	P	53	09.50	-0.4
SDI	4.17	347	P	53	12.00	0.3
KEK	4.22	59	eP	53	14.00	1.5
VLS	4.38	81	eP	53	14.50	-0.3
ITM	5.47	93	eP	53	29.00	-1.1
OHR	5.61	50	ePn	53	26.70	-5.6X
TTG	5.75	33	ePn	53	33.00	-1.0

			eSn	54	39.00	
BRY	5.87	26	ePn	53	34.50	-1.4
			eSn	54	42.50	
VLI	6.34	96	eP	53	42.50	0.1
IYA	6.38	34	ePn	53	43.50	0.4
			eSn	54	55.00	
PLE	6.55	29	ePn	53	46.10	0.6
			eSn	54	59.20	
KBA	9.51	353	e(P)	54	27.00	0.3
KHC	11.53	355	eP	54	58.60	4.4X
BRG	13.25	357	e(P)	55	31.10	13.9X
YKA	72.34	338	eP	03	39.90	5.8X

S.D. = 1.0 on 31 of 35 obs.

MAR 16, 1990 10h 14m 49.14 ± 0.79s  
 37.695 N ± 7.5km 15.036 E ± 6.5km  
 DEPTH = 10.0km (geophysicist)

SICILY (398)

MNO	0.36	311	P	14	57.00	0.4
			eSg	15	03.50	
ATN	0.57	36	Pc	15	01.50	0.7
MEU	0.60	188	P	15	00.50	-0.8
			eSg	15	09.00	
GIB	0.85	291	P	15	06.50	0.9
			eSg	15	19.50	
SOI	0.89	65	P	15	07.20	1.0
			eSn	15	21.00	
FAI	1.16	249	P	15	11.90	1.1
CZI	1.75	29	P	15	18.70	-0.9
			eSg	15	42.80	
USI	1.78	305	P	15	18.30	-1.8
MGR	2.47	9	P	15	29.50	-0.6

S.D. = 1.2 on 9 of 9 obs.

% MAR 16, 1990 10h 15m 55.91 ± 0.99s  
 43.393 N ± 6.0km 5.421 E ± 7.3km  
 DEPTH = 10.0km (geophysicist)  
 NEAR SOUTH COAST OF FRANCE (379)  
 MD 2.5 (STR).

GELF	0.01	153	Pg	15	57.29	-0.5
BERF	0.21	112	Pg	16	00.44	-0.1
TREF	0.23	353	Pg	16	00.27	-0.6
PUYF	0.25	55	Pg	16	00.08	-1.1
PRAF	0.45	336	Pg	16	05.71	0.6
VILF	0.51	25	Pg	16	05.91	-0.3
TAVF	0.51	64	Pg	16	05.72	-0.6
MVIF	1.35	68	Pn	16	21.44	0.5
			Sg	16	40.57	
TOUF	1.46	64	Pn	16	23.02	0.5
AURF	1.47	70	Pn	16	23.39	0.9
AUTN	1.58	67	Pn	16	24.97	0.8
			Sg	16	47.40	
SAOF	1.66	68	Pn	16	25.10	-0.1

S.D. = 0.7 on 12 of 12 obs.

? MAR 16, 1990 10h 18m 53.84 ± 2.19s  
 37.816 N ± 28.8km 14.984 E ± 6.5km  
 DEPTH = 10.0km (geophysicist)

SICILY (398)

MNO	0.26	297	P	18	59.70	0.4
			eSg	19	04.00	
ATN	0.51	48	P	19	04.00	-0.2
			eSg	19	12.00	
GIB	0.78	283	P	19	08.70	-0.3
			eSg	19	22.00	
SOI	0.88	73	P	19	11.00	0.2
			eSg	19	25.00	

S.D. = 0.6 on 4 of 4 obs.

% MAR 16, 1990 11h 22m 43.63 ± 0.85s  
 37.664 N ± 7.6km 15.025 E ± 7.1km  
 DEPTH = 10.0km (geophysicist)

SICILY (398)

MNO	0.37	316	P	22	51.50	0.1
			eSg	22	55.50	
MEU	0.57	188	P	22	55.00	-0.2
			eSg	23	02.10	
ATN	0.60	35	P	22	56.00	0.2
GIB	0.85	293	P	23	00.50	0.3
			eSg	23	14.00	
SOI	0.91	63	P	23	02.00	1.0
			eSg	23	16.50	
CZI	1.78	29	P	23	13.20	-1.4

S.D. = 1.0 on 6 of 6 obs.

% MAR 16, 1990 11h 26m 32.62 ± 0.85s  
 37.674 N ± 7.6km 15.036 E ± 7.2km  
 DEPTH = 10.0km (geophysicist)

SICILY (398)

MNO	0.37	314	P	26	40.50	0.2
			eSg	26	44.90	
MEU	0.58	188	P	26	44.00	-0.4
			eSg	26	52.80	
ATN	0.59	35	Pd	26	45.00	0.4
			eSg	26	56.20	
GIB	0.86	292	P	26	50.00	0.8
			eSg	27	03.00	
SOI	0.90	63	P	26	51.00	1.2
			eSg	27	05.50	
CZI	1.77	29	P	27	02.60	-0.8
			eSg	27	25.20	
MGR	2.49	9	P	27	12.50	-1.4

S.D. = 1.1 on 7 of 7 obs.

MAR 16, 1990 11h 43m 58.33 ± 0.95s  
 4.399 N ± 3.8km 126.218 E ± 6.9km  
 DEPTH = 104.4 ± 9.2 km  
 5.0mb (15 obs.)

TALAUD ISLANDS (263)

DAV	2.75	347	eP	44	40.00	-1.5
			1.3s 3000.00nm			
MNI	3.24	205	ePd	44	47.70	-0.6
TSM	8.13	269	ePc	45	58.80	3.5X
AAI	8.27	166	iPd	45	53.50	-3.8X
PCI	8.27	231	ePc	45	58.20	1.0
			eS	46	45.00	

KKM	10.10	280	ePd	46	24.00	2.0
			0.9s 54.70nm			5.4mb
BAG	13.16	336	eP	47	05.10	2.6
PIP	14.88	339	ePd	47	25.50	0.9
MTN	17.81	164	e(P)	47	56.50	-4.6X
KNA	20.18	173	eP	48	25.80	-1.1
OIZ	21.61	314	Pc	48	44.70	3.4X
			N 12s 0.50um			
OZH	21.70	341	eP	48	41.10	-1.0
IPM	25.12	271	eP	49	19.30	4.1X
WB5	25.42	162	eP	49	17.20	-0.8
			eS	53	45.90	
WRA	25.47	162	Pd	49	18.10	-0.4
			0.7s 20.00nm			4.7mb
MBL	26.16	194	eP	49	24.20	-0.5
			0.6s 11.00nm			4.6mb
SSE	26.97	350	P	49	31.20	-0.9
			1.0s 0.10nm			2.3mb X
LOE	27.25	300	eP	49	35.00	0.2
NST	27.98	295	eP	49	43.00	1.7
QIS	28.07	153	eP	49	41.00	-1.1
WHN	28.31	338	Pd	49	44.00	-0.2
NJ2	28.36	347	Pd	49	44.50	-0.1
GYA	28.83	322	P	49	49.40	0.4
ASPA	28.88	165	eP	49	48.50	-0.9
			0.4s 8.00nm			4.7mb
			iS	54	43.70	
CHG	30.24	300	eP	50	03.30	1.7
KMI	30.55	315	eP	50	05.50	1.1
CTA	31.30	142	eP	50	11.50	0.7
MEKA	31.71	193	iPd	50	14.10	-0.2
			0.5s 45.00nm			5.5mb
XAN	33.59	333	Pc	50	28.60	-2.0
CD2	33.81	324	P	50	32.40	-0.1
MAT	33.83	17	eP	50	30.00	-2.7
			1.0s 12.00nm			4.7mb
DL2	34.60	354	Pd	50	39.00	-0.1
			1.0s 200.00nm			5.9mb
MRWA	34.84	196	eP	50	41.50	0.2
FORR	35.10	177	eP	50	42.00	-1.4
			0.4s 17.00nm			5.3mb
TIY	35.47	341	Pc	50	46.00	-0.7
BAL	35.98	194	eP	50	50.00	-0.9
BJI	36.62	347	eP	50	55.00	-1.2
			1.0s 85.00nm			5.6mb
KLB	36.69	192	eP	50	57.00	0.2
SNY	37.34	357	iPc	51	02.60	0.4
			1.0s 200.00nm			6.0mb X
MUN	37.41	194	eP	51	03.00	0.1
LZH	37.67	330	Pc	51	05.00	-0.3
			1.5s 0.10nm			2.5mb X
			Z 25s 0.40um			4.1msz X
NWAO	38.09	192	eP	51	09.00	0.4
HHC	38.61	342	Pd	51	13.00	0.0
SHL	39.07	306	iP	51	16.50	-0.6
CN2	39.24	359	Pc	51	17.60	-0.5
MDJ	40.16	4	Pc	51	26.00	0.4
BRS	40.70	142	eP	51	31.50	1.2
ADE	40.88	164	iPc	51	33.10	1.4
BWA	43.92	153	eP	52	01.80	5.3X
GUN	44.92	306	P	52	04.60	-0.4
CAN	44.93	153	eP	52	05.70	1.1
PKI	45.17	305	P	52	05.80	-1.2
KKN	45.36	305	P	52	06.00	-2.3
			0.4s 8.00nm			4.9mb</



NB2	0.8s	3.90nm	5.0mb		KRA	144.98	340	ePKP	32	56.40	-0.4	OHR	151.89	329	ePKP	33	14.30	6.5X
	97.96	334 P	57 23.00	-0.6	WIT	145.17	355	ePKP	32	58.50	1.6		0.8s	0.07nm				
	0.8s	7.70nm	5.3mb		KSP	145.37	344	iPKPd	32	58.50	1.1			e		33	26.00	
ZOBO	161.63	131 PKP	03 55.00	5.6X		1.0s	86.00nm					TCF	151.91	359	ePKP	33	14.40	6.7X
	S.D. = 1.1	on 67 of 74 obs.			VRI	145.47	329	ePKPc	32	59.00	1.3			0.6s	11.70nm			
	MAR 16, 1990	12h 14m 20.25 ± 0.49s			SPC	145.61	338	ePKP	33	00.00	1.9	LSF	151.95	0	ePKP	33	14.30	6.6X
	18.117 S ± 10.4km	178.173 W ± 5.4km			BBTK	145.62	316	ePKP	32	58.00	-0.3			0.7s	27.55nm			
	DEPTH = 543.6 ± 5.7 km				CLL	145.71	348	iPKPd	32	59.00	1.1	ORX	152.09	351	PKP	33	14.07	6.0X
	4.9mb ( 19 obs.)				BRG	145.92	346	iPKP	32	58.40	0.1	LPL	152.38	353	ePKP	33	16.40	7.8X
	FIJI ISLANDS REGION	(181)				1.1s	44.00nm						0.8s	10.05nm				
MBU	3.17	291 iPd	15 38.00	1.5	WTS	145.97	354	ePKP	32	59.50	1.2	LSD	152.38	352	PKP	33	16.22	7.6X
VUN	3.20	271 iPc	15 37.90	1.3		1.0s	58.00nm					LPG	152.39	353	ePKP	33	16.50	7.8X
SGE	3.75	277 iP	15 41.50	0.9	MLR	146.13	329	ePKPc	33	01.00	2.0		0.6s	7.65nm				
NDF	4.18	274 iPc	15 42.10	-1.6	PRU	146.60	345	ePKP	32	58.30	-1.1	RSP	152.67	352	PKP	33	15.92	7.0X
DZM	14.97	252 iPd	17 29.10	-0.3		e			33	02.00		BOB	152.67	348	PKP	33	16.50	7.7X
AFR	27.03	93 iP	19 20.40	-0.4	MOX	146.62	349	iPKPc	33	02.00	2.6X	BN1	152.84	352	PKP	33	17.60	8.4X
	0.6s	30.00nm	5.1mb			1.2s	35.00nm					RRL	152.96	352	PKP	33	17.25	7.8X
PAE	27.20	94 iP	19 22.00	-0.4	HOF	146.88	348	iPKPd	33	02.40	2.5X	CKI	153.22	350	PKP	33	16.70	7.2X
	0.6s	20.00nm	4.9mb		GPA	146.98	318	ePKP	33	02.90	2.5X	PZZ	153.32	352	PKP	33	17.15	7.3X
PPT	27.22	93 iP	19 22.20	-0.3	ENN	147.26	355	ePKP	33	03.50	3.1X	ROB	153.41	350	PKP	33	16.94	7.1X
	0.6s	45.00nm	5.3mb			0.7s	25.00nm				STV	153.54	351	PKP	33	16.74	6.7X	
PPN	27.36	93 iP	19 23.20	-0.5	ZST	147.52	341	iPKP	33	04.40	3.5X	ENR	153.55	351	PKP	33	16.84	6.8X
	0.6s	15.00nm	4.8mb			e			33	08.10		IMI	153.78	350	PKP	33	18.07	7.7X
TVO	27.50	94 iP	19 24.90	-0.2	TNS	147.53	352	iPKPd	33	04.10	3.1X	SDI	154.35	339	PKP	33	19.00	7.8X
	0.6s	40.00nm	5.2mb		GRF	147.60	349	ePKP	33	04.70	3.6X	KIC	166.67	150	PKP	33	25.10	0.2
TPT	29.44	88 iP	19 41.40	-0.4	KHC	147.63	346	ePKP	33	01.40	0.2	TIC	166.79	149	PKP	33	25.10	0.1
	0.6s	25.00nm	5.0mb			e			33	04.70			S.D. = 1.1	on 70 of 133 obs.				
RUV	29.62	89 iP	19 43.00	-0.4	ALT	147.78	316	ePKP	33	05.00	3.2X	& MAR 16, 1990 12h 14m 41.83s						
	0.6s	35.00nm	5.2mb		ABH	147.98	353	ePKP	33	05.52	3.9X		59.486 N			153.430 W		
CTA	33.63	261 iPd	20 17.00	-0.3	DOU	148.02	357	PKPd	33	05.60	3.9X		DEPTH = 118.8km					
	1.0s	20.00nm	4.7mb		TOD	148.09	351	ePKP	33	05.63	3.8X		2.9mb ( 1 obs.)					
CAN	33.76	233 eP	20 18.90	0.7	RUP	148.21	354	ePKP	33	06.31	4.2X	SOUTHERN ALASKA ( 2 )						
BWA	33.88	235 eP	20 18.80	-0.5	KTD	148.47	352	ePKP	33	06.58	4.1X	<AGS-P>.						
TOO	37.21	231 eP	20 48.00	1.2	KHL	148.56	316	ePKP	33	06.70	3.7X	AUL	0.10	181 eP		14 57.69	0.9	
WB5	44.79	260 eP	21 46.00	-1.5	GWf	148.86	353	PKP	33	07.65	4.6X	AUE	0.13	167 eP		14 57.63	0.9	
WRA	44.81	260 Pd	21 46.10	-1.5	FUR	149.05	348	iPKPc	33	08.50	5.1X	PDB	0.49	308 eP		14 58.84	-1.0	
	0.6s	7.80nm	4.4mb		ELL	149.10	313	ePKP	33	09.00	5.1X		eS			15 11.59		
ASPA	44.95	254 iPd	21 48.40	-0.3	FLN	149.37	3	ePKP	33	08.40	4.6X	CDD	0.57	191 eP		14 59.39	-1.0	
	0.6s	88.00nm	5.5mb			0.8s	43.00nm						iS			15 13.12		
FORR	50.09	245 iPc	22 25.80	-1.4	WLS	149.45	353	PKP	33	08.92	4.9X	XLV	0.87	91 eP		15 02.01	-0.8	
	0.5s	50.00nm	5.3mb		CDF	149.46	353	PKP	33	08.95	4.9X	CNPM	1.12	87 eP		15 04.35	-1.0	
KNA	50.67	264 iPd	22 30.50	-1.3	LDF	149.56	3	ePKP	33	08.70	4.6X		eS			15 21.86		
	0.5s	30.00nm	5.0mb			1.0s	40.00nm					RDT	1.21	25 iP		15 05.26	-1.0	
MBL	58.15	256 eP	23 23.00	-1.3	KBA	149.60	344	iPKPd	33	03.90	-0.5		eS			15 22.59		
	0.4s	8.00nm	4.4mb			0.5s	13.10nm					NNL	1.22	62 eP		15 06.28	0.0	
KAKJ	66.86	324 P	24 18.90	-1.0		i			33	08.60		BRLK	1.32	77 eP		15 06.47	-1.1	
CHJJ	67.41	323 P	24 22.00	-1.3		i			33	25.60		NKA	1.67	40 eP		15 12.35	0.8	
IJDJ	67.63	322 P	24 23.60	-1.2	ECH	149.67	353	PKP	33	09.04	4.8X	KDC	1.81	164 iPd		15 11.10	-2.2	
MAT	68.21	323 iPd	24 26.80	-1.4	GRR	149.73	4	ePKP	33	09.40	5.1X	SPU	1.83	21 eP		15 12.54	-1.1	
	0.7s	29.45nm	4.9mb			0.5s	21.15nm				CRP	1.90	19 eP		15 13.69	-0.9		
MTMJ	68.47	323 P	24 28.80	-1.1	FEL	149.89	352	PKP	33	09.68	4.9X	SLKM	1.91	56 eP		15 13.33	-1.3	
TSRJ	68.81	321 P	24 31.30	-0.5	PTJ	149.91	340	ePKP	33	09.90	5.1X	CGLM	1.96	21 eP		15 14.33	-0.9	
SSE	76.04	310 P	25 12.50	-0.8	HAU	149.96	354	ePKP	33	10.10	5.4X	SVW	1.96	327 iPd		15 13.90	-1.3	
	0.8s	13.00nm	4.4mb			0.6s	23.45nm				NCG	2.03	18 eP		15 15.32	-0.8		
NJ2	78.24	309 Pc	25 26.00	0.8	MOF	150.03	353	PKP	33	10.17	5.2X	SEW	2.11	71 eP		15 15.70	-1.3	
MDJ	78.48	325 Pd	25 26.50	0.3	LPF	150.07	4	ePKP	33	10.30	5.5X		eS			15 41.13		
KVN	79.89	43 ePc	25 34.10	0.2		0.6s	33.35nm					SUA	2.39	33 eP		15 19.90	-0.9	
SNY	80.29	320 iPd	25 35.20	-0.4	BSF	150.09	353	PKP	33	10.39	5.4X	PMS	2.61	46 iP		15 22.30	-1.3	
CN2	80.32	322 Pd	25 35.80	0.0	RBL	150.13	344	PKP	33	09.50	4.4X	SKT	2.67	20 eP		15 23.61	-0.8	
BJ1	84.09	315 eP	25 55.00	0.2	FVI	150.20	345	PKP	33	06.60	1.6	PWA	2.79	37 eP		15 24.90	-1.0	
	1.5s	58.00nm	5.0mb		BBS	150.36	352	PKP	33	10.96	5.6X	PLRM	3.00	43 eP		15 26.42	-2.2	
PNT	84.78	34 eP	25 58.00	0.0	VOY	150.42	343	ePKP	33	06.50	0.9	PMR	3.00	43 eP		15 25.00	-3.7	
	0.7s	10.00nm	4.6mb			i			33	10.90		GHO	3.19	42 eP		15 29.13	-2.3	
GYA	85.33	300 P	26 02.40	1.0	VBY	150.49	341	i (PKP)	33	11.90	6.3X	CUT	3.31	26 eP		15 31.44	-1.4	
TIY	85.57	312 Pd	26 03.70	1.5	CEY	150.53	342	e (PKP)	33	11.50	5.8X	SML	3.42	45 eP		15 32.32	-2.2	
XAN	86.56	307 Pd	26 07.70	0.7	LOMF	150.56	353	PKP	33	11.58	5.8X	GLI	3.46	63 eP		15 32.25	-2.7	
LRM	86.99	40 eP	26 09.20	0.2	VAY	150.83	327	ePKP	33	11.40	5.2X	TTA	3.67	341 iPd		15 36.00	-1.9	
KM1	88.13	297 eP	26 16.50	1.7	LOR	150.88	357	ePKP	33	12.40	6.3X	VZW	3.77	62 eP		15 37.10	-2.1	
CHG	89.28	290 eP	26 21.00	1.1		0.6s	28.20nm				HUR	3.95	26 eP		15 40.43	-1.2		
CD2	89.37	303 eP	26 21.20	1.1	SKO	150.92	329	iPKPd	33	12.20	5.9X	NCA	4.10	49 eP		15 41.49	-2.2	
SES	90.05	36 eP	26 23.00	0.2		1.0s	54.00nm				KLU	4.22	58 eP		15 43.13	-2.2		
LZH	91.19	308 P	26 29.50	0.9	CTI	150.98	346	PKP	33	07.00	0.6	KTH	4.25	15 eP		15 44.13	-1.6	
	1.5s	42.00nm	5.2mb		SSF	151.10	358	ePKP	33	12.80	6.4X	TOA	4.42	50 eP		15 46.20	-1.8	
INK	92.03	15 ePd	26 30.20	-1.3		0.8s	20.15nm				RND	4.50	27 eP		15 46.79	-2.4		
YKA	94.43	25 eP	26 41.20	-1.4	AVF	151.38	358	ePKP	33	13.00	6.2X	MCK	4.77	25 eP		15 51.24	-1.5	
	0.7s	1.80nm	4.3mb			0.8s	9.40nm				GLB	5.15	63 eP		15 55.73	-2.2		
KEV	126.11	349 ePKP	32 19.00	-2.5	SMF	151.50	357	ePKP	33	13.20	6.2X	PAX	5.20	44 eP		15 56.91	-1.7	
SOD	128.25	348 ePKP	32 27.00	1.4		0.8s	4.05nm				NEA	5.50	20 eP		15 59.64	-3.0		
SUF	132.35	345 iPKP	32 32.00	-1.5	MFF	151.55	3	ePKP	33	13.50	6.4X	WRH	5.60	24 eP		16 01.02	-3.0	
NUR	134.61	344 ePKP	32 36.00	-1.8		0.6s	18.05nm				DDM	5.62	37 eP		16 04.07	-0.3		
NB2	136.61	353 PKP	32 30.60	-11.1X	MFF													



16d 12h

YKU 6.97 84 e(P) 16 23.30 0.6  
 SIT 9.84 96 e(P) 16 59.60 -1.8  
 INK 12.38 36 eP 17 33.00 -1.8  
 YKA 18.87 64 eP 18 52.50 -2.5  
 0.9s 0.60nm 2.9mb  
 51 obs. associated

? MAR 16, 1990 12h 38m 50.95±12.59s  
 7.682 S ±110.km 129.506 E ±19.2km  
 DEPTH = 183.7 ± 50.8 km  
 4.4mb ( 2 obs.)

BANDA SEA (280)

MTN 5.38 163 e(P) 40 11.00 0.4  
 eS 41 07.00  
 KNA 8.05 185 iPd 40 46.00 0.1  
 0.2s 38.00nm 5.4mb X

WB5 13.01 159 eP 41 49.50 -0.7  
 i 41 53.00  
 eS 44 16.00

WRA 13.06 159 Pc 41 49.40 -1.5  
 0.6s 3.10nm 3.9mb X  
 QIS 16.10 144 eP 42 29.00 0.3  
 eS 45 24.00

MBL 16.34 214 eP 42 31.30 -0.2  
 0.3s 5.00nm 4.4mb  
 eS 45 29.00

ASPA 16.44 166 iPd 42 34.40 1.5  
 0.6s 11.00nm 4.4mb  
 eS 45 36.10

S.D. = 1.3 on 7 of 7 obs.

\* MAR 16, 1990 13h 22m 26.13±0.80s  
 42.551 N ± 7.4km 24.053 E ±11.4km  
 DEPTH = 10.0km (geophysicist)

BULGARIA (359)

VAY 1.65 222 iPn 22 56.00 0.7  
 RDO 1.79 141 ePn 22 56.50 -0.7  
 SKO 2.02 254 ePn 23 06.30 5.6X

PLG 2.22 192 ePn 23 03.50 -0.1  
 KZN 2.82 218 ePn 23 12.40 0.2  
 MLR 3.24 24 ePd 23 31.00 12.9X

BZS 3.53 331 ePc 23 21.00 -1.1  
 VRI 3.83 29 ePd 23 27.50 1.1  
 S.D. = 1.1 on 6 of 8 obs.

MAR 16, 1990 13h 39m 13.64±0.70s  
 37.661 N ± 7.7km 15.064 E ± 5.6km  
 DEPTH = 33.0km (normal)

SICILY (398)

MNO 0.40 313 Pd 39 20.80 -2.1  
 MEU 0.57 191 Pd 39 24.20 -1.1  
 ATN 0.59 32 Pd 39 25.30 -0.2

GIB 0.88 292 P 39 29.00 -0.8  
 eSg 39 43.50  
 SOI 0.89 62 P 39 31.00 1.3  
 eSn 39 42.80

FAI 1.17 251 P 39 35.10 1.4  
 eSn 39 52.20  
 CZI 1.77 28 P 39 45.50 3.2X

CVT 1.80 271 P 39 43.90 1.0  
 USI 1.82 306 P 39 41.80 -1.3  
 ERC 1.99 282 P 39 46.70 0.9

LVI 2.18 279 P 39 49.40 1.1  
 TDS 2.23 26 P 39 49.80 0.8  
 ROI 2.24 31 P 39 51.50 2.3

CSi 2.32 24 P 39 52.10 1.8  
 MMN 2.34 18 P 39 51.20 0.6  
 MGR 2.50 9 P 39 52.70 -0.2

ORI 2.63 24 P 39 56.00 1.3  
 SGO 2.90 4 P 39 57.80 -0.7  
 BRT 3.62 27 P 40 08.10 -0.6

BAI 3.73 21 P 40 09.00 -1.2  
 DUI 4.02 354 P 40 12.50 -2.0  
 SDI 4.15 347 P 40 17.00 0.7

KEK 4.23 60 ePn 40 19.00 1.5  
 ITM 5.48 93 ePn 40 34.00 -1.2  
 OHR 5.62 50 ePn 40 41.80 4.7X

VLI 6.36 96 ePn 40 48.50 1.1  
 SKO 6.53 47 ePn 40 50.00 0.1  
 PLG 7.07 65 ePn 40 53.00 -4.4

PTJ 8.26 4 eP 41 20.20 6.1X  
 KBA 9.50 353 e(P) 41 31.00 -0.3  
 i 41 33.90

LPG 10.00 324 eP 41 46.80 9.0X  
 1.0s 8.00nm 4.9mb X  
 LPL 10.02 324 eP 41 49.00 10.4X  
 1.2s 8.95nm

KHC 11.52 355 P 42 09.00 10.3X  
 S.D. = 1.5 on 27 of 33 obs.

\* MAR 16, 1990 13h 46m 28.87±0.86s  
 14.999 N ±15.9km 93.619 W ± 8.1km  
 DEPTH = 72.7 ± 7.4 km  
 4.7mb ( 2 obs.)

NEAR COAST OF CHIAPAS, MEXICO ( 69)

TPX 1.32 94 eP 46 50.15 -1.7  
 iS 47 11.50  
 SCX 1.97 29 iP 47 01.75 1.0  
 iS 47 25.00

PSM 2.18 321 iP 47 02.41 -1.3  
 iS 47 26.24  
 ITG 2.71 98 iPc 47 11.00 -0.3

MMG 2.88 99 iPd 47 14.00 0.4  
 BVA 2.90 96 iPd 47 14.50 0.5  
 S 47 40.00

PCG 2.94 102 iPc 47 14.80 0.3  
 GCG 3.01 97 iP 47 19.00 3.6X  
 REC 3.05 100 iPc 47 16.00 0.1

SLP 3.24 94 iP 47 19.00 0.5  
 OXX 3.63 305 eP 47 22.84 -1.3  
 IIT 6.01 312 eP 47 59.00 1.5

PPM 6.27 311 eP 48 02.34 1.1  
 iS 49 11.50  
 ACX 6.28 288 (P) 47 39.90 -21.1X  
 (S) 49 21.50

III 6.53 302 eP 48 04.50 -0.2  
 CRX 7.26 308 (P) 48 04.50 -10.3X  
 MRX 8.61 304 (P) 48 33.50 0.4

ANMO 22.98 332 e(P) 51 28.20 0.1  
 KVN 32.20 323 eP 52 53.30 1.0  
 LRM 34.57 337 eP 53 13.60 0.8

EDM 41.20 342 eP 54 07.50 -0.3  
 YKA 49.71 347 eP 55 13.60 -1.7  
 0.6s 2.50nm 4.4mb

INK 59.04 344 eP 56 22.00 -1.3  
 MBC 62.74 353 eP 56 47.50 -0.6  
 0.7s 12.00nm 5.1mb

HYB 146.88 14 ePKP 06 04.50 1.1  
 S.D. = 1.0 on 22 of 25 obs.

% MAR 16, 1990 14h 07m 15.63±0.76s  
 19.634 S ±10.0km 133.825 E ± 9.6km  
 DEPTH = 10.0km (geophysicist)

NORTHERN TERRITORY, AUSTRALIA (591)

WB5 0.57 116 iP 07 26.90 -0.2  
 ASPA 4.01 179 iPd 08 18.60 0.1  
 0.5s 42.00nm

QIS 5.51 101 eP 08 40.00 0.2  
 eS 09 40.00  
 KNA 6.18 308 eP 08 49.00 -0.1  
 eS 09 57.00

MTN 7.23 339 eP 09 04.00 0.1  
 eS 10 24.00  
 MBL 13.21 261 eP 10 18.00 -7.9X  
 eS 12 38.00

S.D. = 0.3 on 5 of 6 obs.

% MAR 16, 1990 14h 24m 13.63±0.86s  
 39.466 N ± 7.3km 28.284 E ± 8.8km  
 DEPTH = 10.0km (geophysicist)

TURKEY (366)

DST 0.30 62 iPg 24 19.30 -0.6  
 BNT 0.93 343 iPg 24 31.30 -0.1  
 EDC 0.94 340 iPg 24 31.00 -0.5

eSg 24 45.00  
 IZM 1.33 217 ePn 24 37.00 -1.2  
 YLV 1.38 37 iPn 24 38.30 -0.7

KHL 1.50 139 ePn 24 42.00 1.4  
 MFT 1.53 330 iPn 24 42.80 1.8  
 GBZT 1.59 34 ePg 25 04.50 22.6X

S.D. = 1.4 on 7 of 8 obs.

% MAR 16, 1990 15h 03m 01.64s  
 58.857 N 153.950 W

DEPTH = 155.7km  
 3.0mb ( 1 obs.)  
 KODIAK ISLAND REGION  
 <AGS-P>

( 13)

AUE 0.59 30 eP 03 24.02 -0.3  
 eS 03 37.07  
 AUL 0.59 27 eP 03 24.08 -0.3

SHU 0.87 105 eP 03 24.24 -1.9  
 PDB 0.94 353 iP 03 25.95 -0.8  
 CNPM 1.55 63 eP 03 32.40 -0.1

NNL 1.80 48 eP 03 35.46 0.2  
 RDT 1.89 24 eP 03 34.70 -1.6  
 SLKM 2.51 47 eP 03 43.50 -0.2

PLRM 3.65 39 eP 03 57.47 -0.6  
 CUT 3.99 25 eP 04 02.81 0.2  
 GLI 4.01 57 eP 04 02.13 -0.7

SML 4.07 41 eP 04 03.27 -0.4  
 NCA 4.73 45 eP 04 11.79 -0.6  
 KLU 4.80 53 eP 04 13.06 -0.3

KTH 4.93 16 eP 04 14.85 -0.3  
 GLB 5.69 59 eP 04 25.65 0.5  
 YKA 19.39 62 eP 07 22.00 4.7

0.4s 0.30nm 3.0mb  
 17 obs. associated

MAR 16, 1990 15h 52m 42.63±0.30s  
 24.897 N ± 5.1km 109.035 W ± 4.7km  
 DEPTH = 10.0km (geophysicist)

5.5mb ( 38 obs.) 6.1MsZ ( 15 obs.)

GULF OF CALIFORNIA ( 49)

Felt at Culiacan and Los Mochis, Mexico.

CENTROID, MOMENT TENSOR (HRV)

Data Used: GDSN

L.P.B.: 12S, 30C M.W.: 9S, 20C

Centroid Location:

Origin Time 15:52:49.0 0.2

Lat 24.34N 0.02 Lon 108.86W 0.02

Dep 15.0 FIX Half-duration 4.8

Moment Tensor: Scale 10\*\*18 Nm

Mrr= 0.05 0.03 Mtt=-1.68 0.03

Mff= 1.63 0.03 Mrt= 0.00 0.00

Mrf= 0.00 0.00 Mtf=-0.70 0.03

Principal Axes:

T Vol= 1.78 Plg= 0 Azm=259

N 0.05 90 180

P -1.83 0 169

Best Double Couple: Mo=1.8\*10\*\*18

NP1: Strike=304 Dip=90 Slip=-180

NP2: 34 90 0

MZX 2.92 125 P 53 26.00 -4.0X  
 eS 54 04.00

AGX 6.88 115 P 54 36.00 10.0X  
 MRX 8.91 124 P 55 01.00 6.7X  
 GLA 9.58 329 eP 55 05.00 1.4

IIJ 10.02 119 eP 55 11.30 1.1  
 BAR 10.24 321 eP 55 12.00 -0.8  
 CRX 10.25 120 eP 55 17.70 4.6X

ALO 10.26 12 ePd 55 12.90 -0.2  
 ANMO 10.26 12 P 55 13.80 0.6  
 CPE 10.64 320 eP 55 34.70 16.6X

UNM 10.68 119 eP 55 35.80 16.8X  
 PLM 10.85 323 eP 55 20.00 -1.2  
 III 11.01 124 P 55 24.50 1.1

TPC 11.02 328 eP 55 22.00 -1.4  
 PPM 11.26 119 P 55 27.00 -0.2  
 PEC 11.42 324 P 55 31.00 2.2

RVR 11.61 323 eP 55 32.00 0.6  
 ACX 11.71 131 (P) 55 18.60 -14.3X  
 MWC 12.16 322 eP 55 39.00 0.0

PAS 12.17 321 eP 55 38.00 -1.0  
 ePg 56 03.00  
 iLg 58 01.00

eLR 58 52.00  
 ePCP 00 29.00  
 GSC 12.35 329 eP 55 43.00 1.5

SBB 12.38 324 eP 55 42.00 0.1  
 CLC 13.15 328 eP 55 52.00 -0.1  
 ABL 13.28 321 P 55 53.00 -0.9

ISA 13.47 325 eP 55 56.00 -0.3  
 SYP 13.50 318 eP 56 01.00 4.2X  
 MSU 13.83 350 P 56 04.80 3.5X

OXX 13.87 122 eP 56 03.30 1.4  
 BCH 14.01 320 P 56 01.00 -2.5  
 TNP 14.87 334 P 56 15.00 0.1



PRI	15.02	321	eP	56	17.10	0.4	FBA	47.10	339	eP	01	14.30	-2.0	ETOR	85.91	47	eP	05	23.40	-0.9
GOL	15.08	11	P	56	23.00	5.4X	SVW	48.00	332	eP	01	20.80	-2.7X	BGF	86.02	40	eP	05	23.10	-1.5
FRI	15.12	325	eP	56	18.00	0.1	SDN	48.18	323	eP	01	24.60	-0.2		1.2s	29.75nm			5.3mb	
LLA	15.51	322	eP	56	23.50	0.4	NNA	48.27	136	eP	01	24.50	-1.6	MAF	86.03	40	eP	05	23.40	-1.3
PRS	15.56	320	eP	56	23.20	-0.5		1.0s	16.00nm			5.0mb			1.2s	26.80nm			5.3mb	
DUG	15.58	349	P	56	25.00	1.0	PT08	48.44	135	eP	01	22.40	-5.4X	SSF	86.13	39	eP	05	24.00	-1.1
SAO	15.90	321	eP	56	31.30	3.2X	TTA	49.02	334	P	01	26.80	-4.6X		1.2s	35.70nm			5.4mb	
KVN	16.06	334	P	56	30.60	0.4	IMA	49.77	338	eP	01	37.00	-0.2	AVF	86.19	40	eP	05	23.90	-1.5
CMB	16.27	326	eP	56	32.00	-0.8		2.0s	218.80nm			5.8mb			1.2s	20.85nm			5.2mb	
ARN	16.37	322	P	56	35.00	0.9	PT03	50.45	136	eP	01	42.00	-0.8	AAPN	86.20	51	iPc	05	27.50	1.7
MHC	16.42	322	eP	56	34.40	-0.5	MBC	51.66	357	eP	01	48.50	-2.7X	LOR	86.22	39	eP	05	24.60	-1.0
PCC	16.95	321	eP	56	43.00	1.6		0.8s	146.00nm			6.0mb			1.1s	28.10nm			5.4mb	
BKS	17.13	322	ePc	56	44.00	0.3	RUV	54.64	227	eP	02	14.00	0.0	MAL	86.27	51	iP	05	33.50	7.5X
	1.8s	1464.00nm			5.8mb			1.4s	135.00nm			5.8mb				iS			15.50.00	
		eS	00	00.00			ARE	55.04	134	e(P)	02	18.00	0.7			iPS			17.04.00	
BRK	17.15	322	eP	56	45.70	1.9	ZOBO	57.14	132	P	02	30.60	-2.2	ALOJ	86.30	51	iPc	05	26.50	0.1
	Z	20s						2.0s	181.92nm			5.8mb		ASMO	86.44	50	iPc	05	30.60	3.6X
		eS	00	20.00					LR	17	18.00		LBF	86.44	39	eP	05	25.60	-1.1	
		eLR	02	20.00			ADK	57.14	317	P	02	29.00	-2.7X		1.2s	23.80nm			5.3mb	
BW06	17.84	359	P	56	54.00	1.2		1.0s	130.00nm			5.9mb		ATEJ	86.46	51	iPc	05	30.40	3.2X
OLY	18.47	51	P	56	59.90	-0.4	LPB	57.34	132	P	02	34.00	0.0	SMF	86.55	39	eP	05	24.70	-2.5
POW	19.00	50	P	57	06.00	-0.8		Z	20s	11.70um		6.0msz			1.1s	14.65nm			5.1mb	
IMW	19.02	356	P	57	05.00	-1.5			PS	10	30.00			AFC	86.63	50	eP	05	28.20	0.2
WDC	19.29	327	eP	57	11.30	0.9			LR	17	16.00			APHE	86.67	51	iPc	05	30.00	1.8
RSSD	19.61	11	P	57	13.20	-1.1	PPN	57.69	227	eP	02	37.00	1.1	TIO	86.86	57	eP	05	29.00	-0.2
LTMT	19.74	353	ePd	57	16.50	0.7		1.4s	120.00nm			5.7mb				i			05.36.00	
FHC	20.18	325	eP	57	21.40	1.2	SMY	62.75	318	P	03	20.00	9.9X	NUR	86.94	21	iP	05	31.60	2.8X
FVM	20.50	46	P	57	24.80	1.3		Z	20s	2.00um		5.3msz			0.8s	17.60nm			5.3mb	
LRM	21.06	353	ePd	57	28.10	-1.4	RTRS	66.62	143	ePd	03	33.90	-1.5		Z	20s	9.30um			6.2msz
SXM	21.28	356	ePd	57	30.90	-0.7			e	03	37.30					i			05.38.00	
HRV	21.88	355	ePd	57	36.60	-1.0	RTLL	68.05	143	e(P)	03	41.40	-3.2X			e			16.16.00	
RSCP	22.84	57	P	58	00.00	12.9X			e	03	44.80					e			21.48.00	
	Z	20s					CFA	68.39	143	eP	03	44.00	-2.7X			LR			41.40.00	
LON	24.08	338	P	57	58.00	-1.0	KBS	71.32	10	eP	04	14.00	10.1X	IFR	87.26	54	iP	05	32.50	1.3
NEW	24.18	347	P	57	57.70	-2.3	BAO	71.85	117	eP	04	04.00	-4.2X	MOX	88.39	33	eP	05	36.00	0.0
RMW	24.70	339	P	58	06.00	0.9	KEV	80.51	14	iP	04	56.10	0.2		Z	16s	13.90um			6.5mszX
PRM	24.90	62	P	58	08.50	1.5		0.7s	17.40nm			5.2mb			N	16s	9.10um			
SES	25.50	357	ePd	58	10.80	-1.9			i	05	05.00				E	16s	8.90um			
	1.2s	277.00nm			5.8mb		PTO	81.36	49	eP	05	01.00	0.0	CLL	88.65	32	P	05	36.00	-1.2
PNT	25.74	344	eP	58	16.00	1.1			eS	15	17.00				1.6s	18.00nm			5.1mb	
	1.6s	371.00nm			5.8mb		NB2	81.78	25	P	05	05.40	2.6		Z	18s	13.00um			6.4msz
JSC	25.83	62	P	58	17.00	1.2		0.6s	26.80nm			5.5mb				e			05.44.00	
LHS	26.24	62	P	58	17.50	-2.1	SOD	82.26	16	iP	05	05.40	0.2			eS			16.37.00	
PGC	26.28	338	eP	58	20.00	0.2			i	05	13.80			GRF	88.79	34	eP	05	39.50	1.5
	1.0s	91.00nm			5.4mb		GRR	82.92	40	eP	05	08.60	-0.3		1.2s	11.00nm			5.0mb	
BLA	27.30	56	P	58	29.00	-0.4		1.2s	98.20nm			5.9mb			Z	19s	14.00um			6.4msz
	1.0s	75.00nm			5.4mb		FLN	82.95	39	eP	05	08.50	-0.6			e			05.46.00	
CLE	28.18	47	iP	58	39.80	2.5		1.4s	270.10nm			6.2mb		BRG	89.39	32	eP	05	47.80	7.0X
EDM	28.47	355	P	58	37.00	-2.8X	LPF	82.99	40	eP	05	09.60	0.3		1.5s	28.00nm			5.3mb	
RSON	28.49	21	P	58	35.60	-4.3X		1.4s	174.25nm			6.1mb				eS			16.44.00	
	1.2s	182.22nm			5.7mb		LDF	83.24	39	eP	05	09.70	-0.9	PRU	90.25	33	eP	05	48.50	3.7X
	Z	20s			6.2msz			1.2s	119.00nm			6.0mb			Z	16s	15.30um			6.5mszX
FFC	30.25	8	eP	58	52.00	-3.7X	HFS	83.30	25	eP	05	09.00	-1.7		N	16s	6.10um			
	1.1s	44.00nm			5.2mb			0.9s	8.60nm			5.0mb			E	15s	14.30um			
GMTN	33.07	53	eP	59	20.20	-0.3		Z	20s	14.66um		6.4msz				e			05.53.00	
PNJ	33.10	53	eP	59	23.70	3.0X			LR	36	49.00		KHC	90.33	34	eP	05	53.30	8.0X	
		eLR	10	21.40			EPLA	83.56	49	eP	05	15.00	2.5		Z	18s	11.70um			6.4msz
		ScS	11	07.10			EVAL	84.22	51	eP	05	16.70	0.9		N	19s	9.10um			
RSNY	34.13	46	P	59	40.00	10.3X	UCC	84.57	36	P	05	28.00	10.8X		E	21s	8.20um			
	Z	20s					GUD	84.60	48	eP	05	18.50	0.7			e			09.28.50	
SIT	37.30	336	P	00	10.00	13.7X	WIT	84.63	33	eP	05	22.00	4.5X	KBA	91.53	35	e(P)	06	02.50	11.5X
	Z	20s					SNF	84.68	36	P	05	27.00	9.2X	MAT	91.99	312	eP	05	53.00	-0.1
PSO	38.64	123	eP	00	16.00	7.4X	ECRI	84.74	45	e(P)	05	20.20	1.8		Z	20s	3.55um			5.8msz
BMG	38.67	111	eP	00	04.50	-4.0X	TOL	85.03	48	eP	05	22.00	2.2			eS			17.00.00	
BOG	39.17	115	eP	00	16.00	3.0X			ePP	08	35.00			MDJ	92.56	322	eP	06	01.50	6.0X
		iS	06	21.00					iS	15	55.00				Z	20s	4.20um			5.9msz
FISA	39.94	103	eP	00	18.00	-1.1			ePS	16	55.00					ePP			09.39.00	
TOV	40.19	105	eP	00	23.00	1.9			eSS	21	25.00			KRA	92.76	30	eP	05	56.20	-0.1
MORO	41.01	102	eP	00	27.00	-0.9			eSSS	25	33.00			SRO	93.56	32	eP	06	05.70	5.6X
CEOS	41.81	105	eP	00	35.00	0.6			eSb	25	48.00					e			06.29.70	
GUAC	42.23	103	eP	00	39.00	1.0			iSg	25	57.00					e			07.10.70	
CAR	42.40	102	iP	00	39.00	-0.3	DOU	85.08	36	P+	05	19.90	0.1			e			09.53.10	
LLAV	42.52	102	eP	00	39.00	-1.3			e	05	31.00			DZM	94.36	248	iPc	06	05.00	1.7
OLLA	42.72	103	eP	00	42.00	0.1			S	16	02.00			CN2	95.35	324	eP	06	15.50	7.1X
SCH	43.07	35	eP	00	43.00	-1.3									Z	23s	2.60um			5.6mszX
	0.7s	36.00nm			5.2mb		WTS	85.17	34	eP	05	22.00	1.8		N	19s	1.40um			
GUAN	43.77	102	eP	00	50.00	-0.5		1.0s	17.00nm			5.2mb			E	19s	1.30um			
TOA	44.77	336	eP	00	57.40	-0.6	EHOR	85.17	51	e(P)	05	22.60	2.1			PP			06.22.50	
HON	45.00	276	P	01	10.00	9.8X	ENN	85.41	35	eP	05	24.00	2.6			PP			10.07.00	
	Z	20s						1.0s	50.00nm			5.7mb				eSKS			16.50.00	
KDC	45.02	329	eP	01	01.20															



16d 16h

Z 16s	12.79um	6.5Mszx	ATN 0.74 25 P	32 59.50	0.5	GTA 25.30 314 Pc	39 10.20	-1.1	
N 16s	6.53um			eSg 33 09.50		SHL 28.63 280 eP	39 41.50	-0.4	
E 16s	8.85um		GIB 0.96 301 P	33 03.00	0.2	LSA 29.31 289 P	39 48.80	0.5	
	e	16 53.00		eSg 33 17.50		GUN 33.90 285 P	40 28.80	0.3	
	e	24 08.00					0.6s	18.00nm	5.2mb
BBTK 106.40	30 ePKP	11 00.00	-9.4X			PKI 34.33 285 P	40 31.80	-0.4	
MAIO 118.18	11 ePKP	11 41.00	9.1X			KKN 34.43 285 P	40 33.00	0.0	
	e	12 55.00					0.8s	18.00nm	5.1mb
GYA 118.40	324 ePKP	11 37.20	4.5X			DMN 34.59 285 P	40 34.20	-0.2	
WB5 121.61	261 ePKP	11 35.00	-3.8X				0.8s	26.00nm	5.2mb
WRA 121.66	261 PKPd	11 40.40	1.5			WMO 35.38 313 eP	40 40.00	-0.8	
	0.8s	2.10nm				NDI 41.49 287 eP	41 31.50	-0.2	
ASPA 123.09	257 ePKP	11 41.40	-0.2			KSH 42.78 303 eP	41 42.00	-0.4	
	1.5s	19.00nm				WB5 44.69 165 eP	41 56.10	-1.8	
Z 22s	5.53um	6.2Mszx				WRA 44.75 165 Pc	41 58.20	-0.1	
	i	11 48.50					0.7s	3.50nm	4.3mb
	LR	55 22.50				ASPA 48.25 167 iPc	42 26.20	0.3	
QUE 125.09	4 ePKP	11 40.50	-5.0X				0.8s	5.00nm	4.6mb
GUN 125.57	344 PKP	11 44.20	-2.5			QUE 50.25 290 eP	42 42.30	0.7	
	0.8s	17.00nm				MAIO 55.79 299 eP	43 24.00	1.5	
KKN 125.83	344 PKP	11 45.00	-2.1			SDN 62.98 39 eP	44 10.40	-1.2	
SHL 125.91	337 ePKP	11 47.00	-0.2			TTA 64.87 30 P	44 24.00	0.0	
DMN 126.05	344 PKP	11 45.40	-2.2				0.5s	16.53nm	5.4mb
NDI 126.39	353 ePKP	11 49.00	1.1			SVW 65.18 32 eP	44 26.90	0.9	
CHG 128.72	325 ePKP	11 53.00	0.5			IMA 65.69 26 eP	44 29.70	0.4	
HYB 137.30	349 ePKP	12 17.00	8.1X				1.0s	25.00nm	5.3mb
KIM 138.80	106 e(PKP)	12 10.00	-1.5			KDC 67.15 35 eP	44 38.20	-0.3	
KSR 140.31	101 ePKP	12 12.50	-1.9			PMR 68.22 31 eP	44 44.50	-0.7	
SLR 141.53	101 PKPd	12 11.50	-5.0X				1.0s	30.00nm	5.3mb
	1.3s	48.00nm				FBA 68.26 27 eP	44 45.40	0.0	
Z 18s	92.78um	7.6Mszx				TOA 69.50 30 ePc	44 54.00	0.8	
KOD 144.51	349 ePKP	12 17.00	-5.1X			KEV 70.09 338 iP	44 55.60	-1.0	
	S.D. = 1.3	on 136 of 193 obs.				SOD 70.85 336 iP	45 00.80	-0.4	
						SUF 72.38 331 iP	45 09.50	-0.9	
							0.7s	31.90nm	5.4mb
						INX 72.86 22 ePc	45 13.10	0.0	
							0.9s	63.00nm	5.6mb
						MBC 73.22 13 ePc	45 14.50	-0.7	
							0.5s	50.00nm	5.8mb
						NUR 73.76 329 eP	45 18.00	-0.5	
							0.6s	28.60nm	5.4mb
						UPP 77.25 330 iP	45 38.10	-0.2	
						HFS 78.89 331 eP	45 46.50	-0.8	
							0.8s	25.50nm	5.3mb
						NB2 79.51 333 P	45 50.00	-0.8	
							0.8s	16.40nm	5.1mb
						KRA 80.25 320 eP	45 55.10	0.2	
							0.9s	54.00nm	5.5mb
						SPC 80.44 320 eP	45 56.90	0.7	
						KSP 81.98 322 iPd	46 05.00	1.0	
						YKA 82.57 23 eP	46 07.10	0.3	
							0.6s	12.40nm	5.2mb
						ZST 82.75 320 eP	46 08.20	0.2	
							e	01 08.00	
						BRG 83.27 323 eP	46 10.80	0.2	
							1.3s	16.00nm	5.0mb
						PRU 83.37 322 eP	46 11.50	0.3	
							1.3s	18.10nm	5.0mb
							e	46 27.10	
						CLL 83.57 324 iPc	46 12.00	-0.1	
							1.2s	28.00nm	5.3mb
						KHC 84.34 322 iPc	46 16.60	0.4	
						GRF 85.38 323 ePKP	46 22.20	0.9	
						KBA 85.51 320 eP	46 22.00	-0.2	
						CZI 87.61 312 P	46 17.60	-14.8X	
						CDF 88.25 323 eP	46 35.60	0.2	
							1.0s	10.00nm	5.1mb
						DOU 88.70 326 Pc	46 38.20	0.8	
							0.9s	20.00nm	5.4mb
						BSF 88.85 323 eP	46 37.80	-0.5	
							1.0s	8.00nm	5.0mb
						HAU 88.99 323 eP	46 38.40	-0.5	
							0.8s	8.05nm	5.1mb
						NEW 90.20 36 P	46 45.90	1.3	
							0.9s	14.25nm	5.3mb
						LPG 90.21 321 eP	46 45.40	0.4	
							0.8s	9.40nm	5.1mb
						LPL 90.21 321 eP	46 45.40	0.5	
							1.0s	14.00nm	5.2mb
						LBF 90.89 323 eP	46 47.70	-0.1	
							0.8s	4.70nm	4.9mb
						SSF 91.10 324 eP	46 48.80	0.1	
							1.0s	5.00nm	4.8mb
						SMF 91.17 323 eP	46 49.20	0.2	
							0.8s	9.40nm	5.2mb
						AVF 91.35 323 eP	46 50.00	0.2	
							0.8s	4.05nm	4.9mb




SES 91.91 31 ePc 46 53.00 0.6	LDF 83.49 39 eP 59 19.90 11.3X	CZI 1.88 35 P 54 43.20 1.1
FRB 92.28 5 eP 46 53.00 -0.7	1.0s 8.00nm	S.D. = 1.7 on 5 of 5 obs.
FFC 92.70 24 iPd 46 56.40 0.5	TCF 86.03 40 eP 59 33.20 11.8X	
0.7s 18.00nm 5.6mb	0.8s 3.35nm	% MAR 16, 1990 17h 03m 06.40±0.92s
CAF 93.21 323 eP 46 59.30 0.8	SSF 86.38 39 eP 59 34.80 11.7X	37.690 N ± 8.4km 14.995 E ± 7.6km
1.0s 6.00nm 5.0mb	0.8s 4.05nm	DEPTH = 10.0km (geophysicist)
LRM 94.22 35 eP 47 04.90 1.5	LBF 86.69 39 eP 59 36.20 11.5X	SICILY (398)
KVN 95.13 43 P 47 08.00 0.4	0.8s 4.05nm	
ZOBO 166.88 57 PKP 53 53.00 2.4	S.D. = 0.8 on 25 of 38 obs.	MNO 0.34 315 Pd 03 13.50 0.0
S.D. = 0.9 on 94 of 102 obs.		eSg 03 20.80
MAR 16, 1990 16h 42m 30.54±0.59s	% MAR 16, 1990 16h 51m 00.16±0.91s	MEU 0.59 185 P 03 18.00 -0.4
41.513 N ± 5.5km 27.733 E ± 6.6km	37.642 N ± 7.7km 15.036 E ± 7.9km	eSg 03 25.90
DEPTH = 10.0km (geophysicist)	DEPTH = 10.0km (geophysicist)	ATN 0.60 38 P 03 18.20 -0.3
TURKEY (366)	SICILY (398)	eSg 03 26.00
DMK 0.31 3 iPg 42 36.20 -0.8	MND 0.40 317 P 51 08.10 -0.2	GIB 0.82 292 P 03 23.00 0.6
iSg 42 40.20	eSg 51 15.50	eSg 03 36.00
ITU 1.05 112 ePg 42 51.00 0.7	MEU 0.55 189 P 51 10.90 -0.3	SOI 0.92 65 P 03 25.50 1.5
iSg 43 06.00	eSg 51 20.20	CZI 1.77 30 P 03 35.70 -1.5
ISK 1.09 114 ePn 42 50.00 -1.1	ATN 0.62 33 P 51 12.70 0.1	S.D. = 1.3 on 6 of 6 obs.
BNT 1.16 173 iPn 42 52.20 -0.1	eSg 51 23.00	MAR 16, 1990 17h 04m 40.12±0.90s
EDC 1.17 175 iPn 42 53.00 0.6	GIB 0.87 294 P 51 17.80 0.8	37.628 N ± 7.6km 15.041 E ± 7.9km
HRT 1.62 115 ePn 42 57.60 -1.6	eSg 51 30.90	DEPTH = 10.0km (geophysicist)
RDO 1.69 258 ePb 43 00.20 -0.1	SOI 0.91 62 P 51 18.90 1.3	SICILY (398)
EZN 2.00 213 ePn 43 04.10 -0.6	eSg 51 33.30	
DST 2.02 160 ePn 43 07.30 2.2	CZI 1.79 28 P 51 29.70 -1.6	MNO 0.41 318 Pd 04 48.50 0.0
PRK 2.52 207 ePb 43 18.50 6.3X	eSg 51 51.90	eSg 04 54.00
PLG 3.44 252 ePn 43 24.00 -1.3	S.D. = 1.3 on 6 of 6 obs.	MEU 0.53 190 P 04 50.70 -0.2
VAY 3.89 269 ePn 43 48.00 16.4X	& MAR 16, 1990 16h 51m 10.64s	eSg 05 01.10
MLR 4.18 342 ePc 43 37.00 1.1	63.404 N 149.611 W	ATN 0.63 32 P 04 53.00 0.3
VR1 4.42 351 eP 43 40.00 0.9	DEPTH = 7.4km	eSg 05 04.00
S.D. = 1.2 on 12 of 14 obs.	CENTRAL ALASKA (1)	GIB 0.88 294 P 04 57.70 0.6
	<AGS-P>. ML 3.1 (PMR).	eSg 05 11.00
* MAR 16, 1990 16h 46m 39.36±1.55s	RND 0.34 89 iP 51 17.01 -0.6	SOI 0.92 61 P 04 58.80 1.2
24.399 N ± 16.7km 108.804 W ± 9.8km	eS 51 21.56	eSg 05 13.40
DEPTH = 10.0km (geophysicist)	HUR 0.43 182 eP 51 19.05 -0.2	CZI 1.80 28 P 05 09.70 -1.7
4.7mb (9 obs.)	eS 51 24.91	eSg 05 33.60
GULF OF CALIFORNIA (49)	MCK 0.45 42 eP 51 19.13 -0.5	S.D. = 1.3 on 6 of 6 obs.
MZX 2.48 118 iP 47 35.80 15.3X	KTH 0.61 285 eP 51 22.31 -0.5	% MAR 16, 1990 17h 07m 43.47±0.83s
(S) 48 20.70	eS 51 30.92	37.655 N ± 7.3km 15.011 E ± 6.9km
GLA 10.11 330 eP 49 13.00 5.3X	CUT 1.05 197 eP 51 30.40 -0.2	DEPTH = 10.0km (geophysicist)
ALO 10.70 10 ePd 49 16.00 0.1	NEA 1.20 11 eP 51 32.65 -0.6	SICILY (398)
ANMO 10.71 10 P 49 16.00 0.0	WRH 1.26 31 eP 51 33.80 -0.6	
1.0s 12.50nm 5.2mb	CCB 1.48 32 eP 51 36.87 -0.7	MNO 0.37 318 Pd 07 51.50 0.3
BAR 10.76 322 eP 49 22.00 5.4X	HDA 1.55 48 eP 51 37.78 -0.8	eSg 07 55.50
PLM 11.37 323 P 49 24.00 -1.1	GHO 1.67 169 eP 51 39.68 -0.7	MEU 0.56 187 P 07 54.70 -0.1
TPC 11.55 328 eP 49 26.00 -1.4	SKT 1.68 213 eP 51 40.75 0.2	eSg 08 03.40
RVR 12.14 324 eP 49 28.00 -7.2X	FBA 1.70 27 eP 51 39.70 -1.1	ATN 0.62 35 P 07 56.50 0.1
MWC 12.68 323 eP 49 47.00 4.3X	SML 1.71 159 eP 51 40.23 -0.7	eSg 08 06.50
GSC 12.89 329 eP 49 46.00 0.6	DDM 1.72 75 eP 51 41.25 0.1	GIB 0.85 294 P 08 08.00 0.1
SBB 12.91 325 eP 49 45.00 -0.6	PWA 1.76 184 eP 51 41.30 -0.4	eSg 08 14.00
CLC 13.68 328 eP 49 56.00 0.2	PLRM 1.83 173 eP 51 42.22 -0.5	SOI 0.93 63 P 08 02.00 0.9
ISA 13.99 326 eP 50 01.00 1.0	PMR 1.83 173 eP 51 42.30 -0.4	eSg 08 17.20
MSU 14.36 349 P 50 05.00 0.1	DMW 1.85 67 eP 51 44.04 1.1	CZI 1.79 29 P 08 13.40 -1.2
TNP 15.41 334 P 50 19.00 0.4	GLM 1.86 30 eP 51 42.85 -0.4	eSg 08 36.80
1.2s 26.88nm 4.4mb	NCA 1.91 137 eP 51 43.55 -0.4	S.D. = 0.9 on 6 of 6 obs.
GOL 15.53 10 P 50 27.00 6.8X	PAX 1.93 101 eP 51 44.65 0.5	* MAR 16, 1990 18h 23m 54.24±2.32s
0.8s 14.88nm 4.3mb	SUA 2.02 196 eP 51 45.79 0.3	37.310 N ± 12.0km 7.924 W ± 23.5km
KVN 16.59 334 P 50 34.00 0.2	TOA 2.05 128 iP 51 46.00 0.1	DEPTH = 33.0km (normol)
BW06 18.34 358 P 50 55.00 -0.7	PMS 2.17 179 eP 51 48.70 1.1	PORTUGAL (376)
RSSD 20.06 10 P 51 15.00 -0.8	NCG 2.33 212 eP 51 50.30 0.2	mbLg 3.5 (MDD).
LBFM 20.12 330 P 51 18.00 1.6	CGLM 2.38 209 eP 51 52.25 1.5	
LRM 21.58 353 eP 51 32.40 1.0	CRP 2.45 210 eP 51 53.44 1.7	EVAL 0.98 73 iPg 24 11.00 -0.6
NEW 24.71 347 P 52 02.00 0.1	SPU 2.51 208 eP 51 53.66 1.2	eSg 24 18.50
1.0s 36.25nm 5.0mb	KLU 2.57 137 eP 51 54.12 0.7	EJIF 2.15 113 ePn 24 31.40 3.0X
SES 26.01 357 ePc 52 15.20 1.1	SLKM 2.92 186 eP 51 59.74 1.4	eSn 24 55.20
PNT 26.28 344 eP 52 20.00 3.4X	TTA 2.94 264 eP 52 03.70 5.0	ePn 24 31.40 2.5
EDM 28.99 354 ePc 52 41.10 -0.1	IMA 3.19 329 iPc 52 01.90 -0.4	eSn 24 54.00
FFC 30.71 8 eP 52 56.00 -0.5	GLB 3.34 124 eP 52 05.65 1.3	EHOR 2.19 76 ePn 24 31.00 2.0
1.2s 21.00nm 4.9mb	SVW 3.63 233 e(P) 52 14.00 5.5	eSn 24 51.60
YKA 38.28 356 eP 54 00.70 -0.6	34 obs. associated	NKM 2.75 132 iPn 24 36.00 -1.0
0.9s 2.40nm 3.9mb	% MAR 16, 1990 16h 54m 09.66±1.58s	iSn 25 03.00
PMR 46.12 335 P 55 05.00 -0.2	37.680 N ± 8.9km 14.744 E ± 16.1km	EBAN 3.39 74 ePn 24 44.60 -1.5
0.8s 4.31nm 4.5mb	DEPTH = 10.0km (geophysicist)	AVE 4.02 174 ePn 24 56.00 0.9
INK 46.43 348 eP 55 08.00 0.4	SICILY (398)	iSn 25 37.00
FBA 47.64 339 P 55 17.00 -0.3	MNO 0.25 351 P 54 15.10 0.0	IFR 4.42 148 iPn 25 00.00 -0.9
TTA 49.56 334 P 55 31.00 -1.3	eSg 54 21.20	iSn 25 42.00
0.8s 7.76nm 4.8mb	MEU 0.60 166 P 54 21.60 -0.2	GUD 4.44 40 ePn 25 02.00 0.9
MBC 52.17 357 eP 55 52.50 0.7	eSg 54 32.50	eSn 25 45.00
0.6s 29.00nm 5.4mb	ATN 0.74 50 P 54 22.30 -1.9	EVIA 4.48 71 ePn 25 00.50 -1.2
pP 56 00.00 25kmX	eSg 54 35.00	eSn 25 46.50
GRR 83.17 40 eP 59 19.30 12.4X	SOI 1.11 69 P 54 31.50 1.1	ETOR 5.76 51 ePn 25 18.90 -0.8
1.2s 17.85nm	eSg 54 46.20	TIO 6.39 175 iPn 25 28.50 -0.2
FLN 83.20 39 eP 59 19.40 12.3X		iSn 26 34.50
1.0s 12.00nm		S.D. = 1.5 on 11 of 12 obs.



MAR 16, 1990 18h 35m 25.78 ± 0.82s  
37.651 N ± 7.3km 15.034 E ± 6.8km  
DEPTH = 10.0km (geophysicist)  
SICILY (398)

MNO	0.39	316	Pd	35	33.70	-0.1
			eSg	35	37.70	
MEU	0.55	189	P	35	36.90	-0.2
			eSg	35	45.80	
ATN	0.61	34	P	35	38.20	0.1
			eSg	35	48.50	
GIB	0.87	293	P	35	43.00	0.5
			eSg	35	56.50	
SOI	0.91	62	P	35	44.00	0.8
			eSg	35	59.60	
CZI	1.79	29	P	35	55.80	-1.1
CFR	12.38	48	iPd	38	28.00	3.1X

S.D. = 0.8 on 6 of 7 obs.

& MAR 16, 1990 18h 43m 04.49s  
59.941 N 141.323 W  
DEPTH = 3.4km  
SOUTHEASTERN ALASKA (19)  
<AGS-P>

YAH	0.47	334	iP	43	14.22	0.2
			eS	43	22.46	
PCA	0.56	73	eP	43	15.94	0.3
			eS	43	24.61	
BCPM	0.85	88	eP	43	21.00	-0.4
			eS	43	33.08	
HQN	1.33	111	iP	43	29.17	-0.6
			eS	43	46.61	

4 obs. associated

MAR 16, 1990 18h 46m 05.03 ± 0.62s  
37.704 N ± 6.3km 15.031 E ± 5.0km  
DEPTH = 10.0km (geophysicist)  
SICILY (398)

MNO	0.35	310	Pd	46	13.00	0.7
			eSg	46	17.40	
ATN	0.57	37	Pd	46	17.50	0.9
			eSg	46	28.00	
MEU	0.61	188	P	46	16.40	-1.0
			eSg	46	24.00	
MSI	0.65	40	Pd	46	19.00	1.0
GIB	0.84	290	P	46	22.00	0.6
			eSg	46	35.50	
SOI	0.89	65	Pd	46	23.10	1.0
			eSg	46	38.30	
FAI	1.16	249	P	46	27.40	0.7
CZI	1.74	29	P	46	34.70	-0.7
USI	1.77	305	P	46	34.10	-1.8
CVT	1.78	270	P	46	37.30	1.3
LVI	2.15	278	P	46	41.00	-0.4
TDS	2.20	27	P	46	41.50	-0.7
ROI	2.22	32	P	46	43.10	0.6
CSI	2.29	25	P	46	44.10	0.6
MMN	2.31	19	P	46	43.30	-0.3
MGR	2.46	9	P	46	44.70	-1.2
SGO	2.86	4	P	46	51.30	-0.1
BRT	3.59	27	P	47	00.40	-1.4

S.D. = 1.0 on 18 of 18 obs.

% MAR 16, 1990 18h 54m 40.72 ± 0.83s  
37.712 N ± 7.8km 15.041 E ± 6.7km  
DEPTH = 10.0km (geophysicist)  
SICILY (398)

MNO	0.35	309	Pd	54	48.00	0.0
			eSg	54	54.60	
ATN	0.56	37	Pd	54	52.50	0.4
			eSg	55	02.20	
MEU	0.62	188	P	54	53.00	-0.2
			eSg	55	00.70	
GIB	0.85	289	P	54	57.60	0.4
			eSg	55	10.50	
SOI	0.88	66	P	54	58.30	0.7
			eSg	55	13.90	
CZI	1.73	29	P	55	09.60	-1.4

S.D. = 1.0 on 6 of 6 obs.

MAR 16, 1990 19h 21m 56.36 ± 0.61s  
41.326 N ± 6.6km 22.741 E ± 5.9km  
DEPTH = 10.0km (geophysicist)

YUGOSLAVIA (383)  
MD 3.4 (ATH). ML 3.0 (SKO).

VAY	0.13	268	iPd	21	58.60	-0.9
			iSg	22	00.80	
PLG	1.09	150	ePg	22	17.00	0.1
SKO	1.17	304	iPn	22	20.00	1.8
			i	22	22.50	
			iSg	22	25.50	
			iSn	22	32.00	
KZN	1.26	216	ePb	22	19.50	-0.3
			eSb	22	37.90	
OHR	1.48	262	iPnc	22	22.30	-0.8
			iSn	22	42.70	
NEO	2.05	169	ePn	22	31.80	0.5
RDO	2.12	94	ePn	22	31.70	-0.5
			eSb	23	04.00	
EVR	2.51	197	ePb	22	42.50	4.5X
EZN	3.11	118	eP	22	47.20	0.8
BZS	4.37	350	ePd	22	59.50	-4.7X
MLR	4.77	28	ePc	23	11.00	0.9
VRI	5.38	31	eP	23	17.00	-1.7

S.D. = 1.2 on 10 of 12 obs.

\* MAR 16, 1990 19h 26m 35.77 ± 1.07s  
41.485 N ± 10.5km 22.717 E ± 7.9km  
DEPTH = 10.0km (geophysicist)

YUGOSLAVIA (383)  
ML 2.5 (SKO).

VAY	0.20	214	iPg	26	39.40	-0.7
			iSg	26	41.40	
SKO	1.07	297	ePg	26	55.50	-0.5
			iSg	27	10.00	
PLG	1.24	153	ePb	26	58.00	-0.8
KZN	1.38	212	ePb	27	02.60	1.5
OHR	1.49	256	ePn	27	02.80	0.1
			eSn	27	23.70	
RDO	2.15	98	ePn	27	12.50	0.4

S.D. = 1.1 on 6 of 6 obs.

% MAR 16, 1990 19h 30m 13.31 ± 0.86s  
37.664 N ± 7.7km 15.029 E ± 7.2km  
DEPTH = 10.0km (geophysicist)

SICILY (398)

MNO	0.38	315	P	30	21.00	-0.1
			eSg	30	28.20	
MEU	0.57	188	P	30	24.60	-0.3
			eSg	30	33.20	
ATN	0.60	35	P	30	25.60	0.1
			eSg	30	35.50	
GIB	0.86	293	P	30	30.50	0.6
			eSg	30	44.00	
SOI	0.91	63	P	30	31.70	1.0
			eSg	30	46.40	
CZI	1.78	29	P	30	42.90	-1.3

S.D. = 1.1 on 6 of 6 obs.

& MAR 16, 1990 19h 43m 00.37s  
61.539 N 150.185 W  
DEPTH = 43.1km  
SOUTHERN ALASKA (2)  
<AGS-P>

PWA	0.18	52	eP	43	07.84	0.0
SUA	0.28	255	iP	43	08.66	-0.2
PMS	0.42	134	eP	43	09.99	-0.4
PLRM	0.51	83	eP	43	10.73	-0.6
			eS	43	19.67	
GHO	0.65	68	eP	43	12.83	-0.5
			eS	43	23.68	
SKT	0.78	305	eP	43	13.98	-1.1
KNK	0.84	98	eP	43	15.49	-0.4
CUT	0.87	357	eP	43	15.49	-0.8
			eS	43	28.10	
CGLM	0.91	256	eP	43	16.01	-0.9
SML	0.92	72	eP	43	16.32	-0.8
NKA	0.95	213	eP	43	18.37	1.0
NCG	0.96	263	eP	43	16.75	-0.9
			eS	43	30.98	
SPU	0.97	249	eP	43	16.74	-1.0
			eS	43	30.09	
CRP	0.99	255	eP	43	17.17	-0.9
SLKM	1.03	181	eP	43	17.35	-1.3
RDT	1.45	229	eP	43	23.29	-1.3

SEW	1.48	166	eP	43	23.97	-1.0
NNL	1.60	200	eP	43	26.88	0.3
GLI	1.64	112	eP	43	25.31	-1.8
NCA	1.66	73	eP	43	26.86	-0.7
VZW	1.82	104	eP	43	28.34	-1.4
RND	1.97	18	eP	43	31.65	-0.4
TOA	1.99	72	eP	43	31.84	-0.4
KLU	2.04	89	eP	43	31.28	-1.7
KTH	2.05	351	eP	43	32.75	-0.3

25 obs. associated

? MAR 16, 1990 20h 34m 45.96 ± 1.02s  
37.654 N ± 7.5km 15.016 E ± 9.6km  
DEPTH = 10.0km (geophysicist)  
SICILY (398)

MNO	0.38	318	P	34	53.70	-0.1
			eSg	35	01.20	
MEU	0.56	187	P	34	57.30	0.0
			eSg	35	06.20	
ATN	0.62	35	P	34	58.40	0.0
			eSg	35	08.70	
GIB	0.85	293	P	35	02.50	0.0
			eSg	35	16.00	

S.D. = 0.1 on 4 of 4 obs.

% MAR 16, 1990 20h 55m 16.89 ± 3.23s  
0.431 S ± 8.0km 77.607 W ± 24.6km  
DEPTH = 10.0km (geophysicist)  
ECUADOR (107)

GECU	0.59	281	iP	55	28.50	-0.8
			iS	55	36.00	
CAYA	0.63	323	iPd	55	29.20	-0.7
			iS	55	36.60	
VC1	0.82	255	iP+	55	33.00	-0.1
			eS	55	45.50	
OUR	0.96	286	iPd	55	35.80	0.4
			iS	55	48.50	
GGP	1.02	284	iPd	55	36.90	0.3
			iS	55	50.00	
COTA	1.06	316	iPd	55	37.70	0.6
TUNG	1.29	221	iP	55	41.00	0.0

S.D. = 0.7 on 7 of 7 obs.

MAR 16, 1990 20h 56m 08.73 ± 0.50s  
31.760 S ± 7.7km 69.374 W ± 10.5km  
DEPTH = 128.3 ± 7.7 km  
4.3mb (1 obs.)

SAN JUAN PROVINCE, ARGENTINA (137)

ZON	0.63	70	iPd	56	28.70	0.0
RTCV	0.72	98	iPc	56	29.50	0.1
RTLL	0.88	61	iPc	56	30.30	-0.5
CFA	0.98	81	iPd	56	31.30	-0.3
			S	56	55.00	
RTRS	1.59	357	iPc	56	38.90	0.9
FCH	1.74	206	iPc	56	41.70	1.4
			iS	57	06.50	
ROCH	1.84	228	iPc	56	41.00	-0.3
			iS	57	05.50	
PCH	2.09	207	iPc	56	44.90	0.6
			iS	57	12.50	
TACH	2.30	215	iPc	56	46.50	-0.4
			iS	57	16.00	
CHCH	2.42	206	iPc	56	48.70	0.3
			iS	57	19.00	
LCCH	2.52	227	iPd	56	49.50	-0.2
			iS	57	18.10	
LNv	2.78	218	iPc	56	51.50	-1.5



APE	1.58	334	eP	03 48.40	-2.0	TWD	0.93	270	eP	03 00.40	-0.3	M8L	16.82	213	iPc	04 52.00	0.7
VAM	1.80	263	eP	03 29.60	1.1	TWF1	1.42	239	iPd	03 11.20	0.2	ASPA	16.94	166	iPd	07 53.00	-1.9
SMG	2.09	10	eP	03 47.30	-1.9	SSE	7.09	350	P	03 07.80	-0.1	Z	17s	0.36um	07 51.50	4.9msz	
KSL	2.64	79	eP	03 35.50	0.8		0.5s	8.00nm	4.9mb			PMG	17.54	99	iPc	05 05.00	0.5
IZM	2.83	14	ePn	03 56.50	0.2	S.D. = 0.5 on 4 of 4 obs.						CTA	20.67	130	iPc	05 40.00	1.3
VL1	2.99	292	iPc	04 15.00	0.1	MAR 17, 1990 00h 41m 01.02±0.57s						MEKA	22.03	207	eP	05 53.00	0.9
ELL	3.05	68	iPn	03 48.00	1.2	28.077 S ± 6.3km 26.742 E ± 6.8km						FORR	23.62	183	eP	06 09.00	1.4
ATH	3.16	318	eP	03 50.00	0.5	DEPTH = 5.0km (geophysicist)						QLP	23.84	146	eP	06 11.00	1.3
KHL	3.66	42	iPn	03 52.10	-0.2	4.5mb ( 1 obs.)						COOL	24.90	197	eP	06 20.00	0.2
BCK	3.83	61	iPn	03 58.90	1.1	REPUBLIC OF SOUTH AFRICA (584)						MRWA	25.41	209	eP	06 25.40	0.8
ITM	3.91	294	eP	04 02.50	1.6	SEK	0.82	108	iPd	41 18.00	0.6	BAL	26.27	206	eP	06 33.00	0.5
EVR	4.89	313	eP	04 04.00	2.1	BFS	1.17	2	iPd	41 26.00	0.5	RMO	26.52	139	eP	06 34.00	-0.8
CSS	5.72	95	eP	04 18.00	-0.1	PRY	1.32	30	iPc	41 26.00	-0.5	KLB	26.71	203	eP	06 37.00	0.6
KZN	5.91	323	eP	04 26.00	1.9	KSR	2.21	4	iPd	41 25.40	-0.1	MUN	27.67	205	eP	06 45.00	-0.2
HLW	7.12	143	e(Pn)	04 38.00	1.2	SLR	2.71	31	iPd	41 33.20	0.1	NWAO	28.10	202	eP	06 49.00	0.0
NOH	8.72	122	eP	05 02.00	-0.6		0.7s	82.19nm	4.5mb			PSI	32.11	287	ePd	07 24.90	0.2
CZI	8.90	297	P	05 07.50	-1.7	CER	8.30	229	iPc	42 04.00	0.1	BFD	32.14	160	eP	07 26.00	1.3
CSI	9.00	300	P	05 08.70	0.0	KIC	45.78	314	P	43 05.00	0.1	BWA	32.23	150	eP	07 27.90	2.3
MBH	9.25	127	eP	05 11.80	-1.1	TIC	46.17	314	P	44 35.00	0.5	CAN	33.24	150	eP	07 35.20	0.9
MGR	9.66	301	P	05 14.00	-2.1	GBA	64.23	57	Pd	49 26.10	0.5	CHG	39.72	311	eP	08 28.00	-1.1
HQL	9.69	129	iPd	05 18.60	-0.1		0.6s	2.00nm				GUN	54.73	312	P	10 24.20	-2.4
SGO	10.01	303	P	05 21.00	-0.7	BAO	69.54	263	eP	49 29.20	-0.7	KKN	55.11	311	P	10 26.60	-2.6
BADA	10.19	132	eP	05 24.60	-0.8		S.D. = 0.6 on 10 of 10 obs.					ZOBO	150.88	143	PKP	20 48.50	5.8X
AYN	10.57	127	ePd	05 26.90	0.4	% MAR 17, 1990 01h 34m 07.37±0.90s						CCH	151.10	148	PKP	20 50.00	7.3X
	S.D. = 1.2 on 27 of 27 obs.					37.655 N ± 7.9km 14.990 E ± 7.6km							S.D. = 1.6 on 26 of 29 obs.				
	* MAR 16, 1990 22h 24m 33.38±0.50s					DEPTH = 10.0km (geophysicist)						? MAR 17, 1990 03h 04m 06.82±8.70s					
	27.814 S ±12.7km 66.071 E ± 8.2km					4.6mb ( 3 obs.)						17.228 N ±46.5km 62.525 W ±48.6km					
	DEPTH = 10.0km (geophysicist)					SOUTH INDIAN OCEAN (425)						DEPTH = 10.0km (geophysicist)					
	4.6mb ( 3 obs.)											LEEWARD ISLANDS ( 92)					
SLR	33.72	265	iPd	31 17.30	0.1	MNO	0.36	320	Pd	34 15.00	0.1	ML 3.1 (FDF).					
SEK	33.83	260	eP	31 18.50	0.3	MEU	0.56	185	P	34 15.00	-0.3	BPA	0.66	106	eP	04 19.90	-0.1
PRY	34.20	262	eP	31 20.70	-0.7	ATN	0.63	36	P	34 18.40	-0.4	ANG	0.67	96	eP	04 20.16	0.1
GBA	42.62	16	Pc	32 31.70	0.2	GIB	0.83	294	P	34 19.60	-0.4	SEG	1.28	130	P	04 27.83	0.0
	0.9s	5.60nm		4.3mb		SOI	0.94	63	P	34 20.10	0.5	PAG	1.44	146	eP	04 30.50	0.0
HYB	46.56	17	eP	33 02.50	-0.7	CZI	1.80	30	P	34 34.00	-1.3	BBL	1.97	149	eP	04 40.00	-0.6
CHG	56.23	38	eP	34 16.30	0.1		S.D. = 1.2 on 6 of 6 obs.						S.D. = 0.7 on 5 of 5 obs.				
QUE	57.68	1	eP	34 26.00	-0.6	? MAR 17, 1990 01h 44m 30.86±2.94s							MAR 17, 1990 03h 55m 10.58±0.54s				
ASPA	60.55	103	eP	34 44.70	-1.8	3.521 S ±12.3km 79.545 W ±60.7km							44.772 N ± 3.5km 7.611 E ± 6.0km				
	0.8s	10.00nm		5.0mb		DEPTH = 171.9 ± 36.4 km							DEPTH = 10.0km (geophysicist)				
WRA	62.23	99	Pc	34 59.40	1.5	NEAR COAST OF ECUADOR (105)							NORTHERN ITALY (545)				
	0.9s	4.10nm		4.6mb		TUNG	2.36	28	eP	45 12.00	-0.3	ML 2.2 (GEN).					
GYA	66.59	39	P	35 26.20	0.0	VC1	3.08	22	P	45 21.50	0.3	DOI	0.37	224	P	55 17.50	-0.8
LZH	72.85	31	P	36 04.20	-0.2	GGP	3.46	16	eP	45 25.90	-0.1	PZZ	0.45	234	P	55 23.50	0.0
XAN	73.70	36	P	36 09.20	-0.1												
GTA	73.91	27	eP	36 10.80	0.3	QUR	3.48	17	eP	46 08.50	-0.4	RSP	0.46	327	P	55 19.69	-0.1
WMO	73.99	16	eP	36 10.60	-0.2	CAYA	3.90	24	eP	46 12.30	0.5						
TIY	78.34	36	Pc	36 36.40	0.9	COTA	4.02	18	P	46 08.50	0.0	ROB	0.51	159	P	55 26.13	0.0
LKO	78.55	287	P	36 37.40	0.3	PT08	8.89	161	iPc	46 12.30	0.1	ENR	0.56	194	P	55 19.18	-0.7
VRI	81.57	333	eP	36 53.00	0.5												
BJ1	82.02	36	eP	36 55.00	0.1	PT03	11.04	161	eP	48 11.30	10.0X	STV	0.57	201	P	55 25.95	0.0
CN2	89.62	39	P	37 32.60	0.1	ZOBO	16.93	139	P	47 15.20	7.0X						
FFC	151.73	345	ePKP	44 29.00	6.3X	LPB	17.14	140	eP	48 26.80	-0.1	RRL	0.61	284	P	55 27.69	0.0
	1.0s	12.00nm					S.D. = 0.4 on 8 of 10 obs.										
	S.D. = 0.7 on 19 of 20 obs.					* MAR 17, 1990 02h 01m 04.99±1.46s											
% MAR 16, 1990 22h 32m 09.48±0.72s						7.147 S ± 8.9km 129.572 E ±10.8km											
38.629 N ± 6.3km 15.662 E ±12.3km						DEPTH = 103.1 ± 17.0 km											
DEPTH = 10.0km (geophysicist)						5.0mb ( 6 obs.)											
SICILY (398)						BANDA SEA (280)											
MSI	0.43	191	P	32 19.50	1.2	AAI	3.70	338	ePd	02 03.40	2.3	FIN	0.71	143	P	55 24.33	-0.2
ATN	0.49	199	P	32 19.50	0.0	KNA	8.59	185	eP	03 08.60	0.4	LSD	0.76	335	P	55 33.30	0.0
			eSg	32 27.00			0.3s	164.00nm	6.3mb X								
SOI	0.64	151	Pd	32 21.40	-0.8	PCI	11.52	302	ePc	03 54.00	6.5X	IM1	0.88	167	P	55 22.46	-0.5
CZI	0.69	32	P	32 24.10	0.9	WB5	13.49	160	eP	04 11.00	-2.4	ORX	0.90	17	P	55 30.25	0.0
			eS	32 33.60													
MNO	1.03	228	P	32 28.50	-0.6	WRA	13.54	160	Pc	04 11.40	-2.6	SBF	0.92	188	Pg	55 24.92	-0.7
TDS	1.15	27	P	32 30.50	-0.6		0.5s	23.20nm	4.8mb								
CSI	1.24	23	P	32 32.50	-0.1	QIS	16.50	145	eP	04 50.00	-1.6						
	S.D. = 1.0 on 7 of 7 obs.																
? MAR 17, 1990 00h 02m 43.98±3.53s																	
24.090 N ±18.2km 122.618 E ±32.4km																	
DEPTH = 33.0km (normol)																	
TAIWAN REGION (243)																	
TWC	0.87	307	iPd	03 00.10	0.3												



17d 03h

Sg 55 41.00  
LPG 0.95 320 Pg 55 30.20 1.4  
Sg 55 41.60  
LPL 0.97 320 Pg 55 30.50 1.3  
Sg 55 42.50  
S.D. = 0.9 on 14 of 14 obs.

& MAR 17, 1990 04h 38m 59.22s  
54.225 N 161.517 W  
DEPTH = 23.4km  
ALASKA PENINSULA (12)  
<PAL>.

DRRA 0.83 328 ePd 39 13.60 -1.3  
PVV 1.16 352 iPd 39 18.24 -1.8  
eS 39 32.29  
SASA 1.26 27 eP 39 19.75 -1.7  
eS 39 35.00  
BKJ 1.47 50 eP 39 22.38 -2.0  
eS 39 40.08  
IVF 2.03 34 eP 39 31.34 -1.2  
eS 39 54.40  
5 obs. associated

MAR 17, 1990 04h 49m 44.59±0.47s  
40.773 N ± 4.0km 19.711 E ± 5.3km  
DEPTH = 10.0km (geophysicist)  
ALBANIA (391)  
MD 3.6 (ATH). ML 3.0 (TTG).

BERA 0.19 111 iPg 49 47.60 -1.3  
VLO 0.35 208 iPg 49 51.10 -0.6  
TPE 0.53 154 iPg 49 55.50 0.2  
TIR 0.59 12 iPg 49 55.20 -1.2  
KBN 0.85 100 iPg 50 01.70 0.7  
LACI 0.86 360 ePg 50 00.00 -1.2  
OHR 0.89 67 iPg 50 00.20 -1.5  
iSg 50 14.10  
SRN 0.92 166 iPg 50 03.50 1.4  
KEK 1.06 176 eP 50 05.30 0.7  
eS 50 21.20  
PHP 1.07 31 iPg 50 02.70 -2.0  
ULC 1.24 344 ePg 50 06.50 -1.1  
eSg 50 22.00  
SDA 1.25 353 ePg 50 09.10 1.3  
PUK 1.28 6 ePg 50 08.50 0.3  
BDV 1.65 337 ePg 50 13.90 0.2  
eSg 50 35.50  
TTG 1.69 349 ePg 50 14.20 0.0  
eSg 50 36.00  
SKO 1.77 47 iPn 50 15.80 0.4  
iSn 50 37.50  
PVY 1.83 6 ePn 50 19.00 2.5  
eSn 50 42.00  
HCY 1.90 332 ePn 50 19.00 1.6  
eSn 50 42.00  
IVA 2.10 4 ePn 50 22.40 2.1  
eSn 50 50.00  
BAI 2.18 280 P 50 25.00 3.6X  
VAY 2.23 75 ePn 50 21.30 -0.8  
EVR 2.46 138 eP 50 26.90 1.4  
ROI 2.69 245 P 50 27.80 -0.9  
CSI 2.80 250 P 50 28.00 -2.3  
MMN 2.98 254 P 50 34.60 1.9  
CZI 3.16 242 P 50 33.50 -1.7  
eSg 51 13.20  
S.D. = 1.4 on 25 of 26 obs.

\* MAR 17, 1990 05h 11m 58.11±1.20s  
24.346 N ± 16.6km 66.070 E ± 17.2km  
DEPTH = 10.0km (geophysicist)  
4.2mb (5 obs.)

PAKISTAN (710)

QUE 5.87 7 eP 13 27.00 -0.4  
eS 14 35.00  
BOM 8.29 130 ePc 14 01.40 0.1  
eS 15 33.00  
POO 9.27 127 eP 14 18.50 3.6X  
NDI 10.88 64 eP 14 37.50 0.6  
0.5s 1.41nm 4.6mb  
eSn 17 08.00  
MAIO 13.19 336 eP 15 06.00 -2.2  
HYB 13.55 118 eP 15 11.00 -1.9  
KRA 43.87 318 eP 20 10.20 4.0X  
NUR 46.00 333 eP 20 36.00 12.9X  
SUF 46.67 336 eP 20 29.40 1.0

0.5s 1.60nm 4.3mb  
HFS 50.68 329 eP 20 59.60 0.1  
0.5s 1.20nm 4.1mb  
NB2 52.15 330 P 21 09.40 -1.2  
0.7s 1.90nm 4.1mb  
INK 86.50 7 eP 24 44.00 2.0  
YKA 93.46 0 eP 25 16.70 1.9  
0.5s 0.30nm 4.0mb  
S.D. = 1.6 on 10 of 13 obs.

\* MAR 17, 1990 05h 27m 11.02±3.50s  
51.220 N ± 24.3km 16.110 E ± 21.8km  
DEPTH = 10.0km (geophysicist)  
POLAND (548)  
ML 3.7 (VKA), 3.2 (KBA).

KSP 0.39 163 iP 27 19.00 -0.1  
0.6s 103.00nm  
iS 27 26.60  
BRG 1.41 257 ePg 27 36.50 -0.2  
eSg 27 57.40  
PRU 1.59 220 Pg 27 40.80 1.6  
Sn 27 57.30  
Sg 28 04.20  
CLL 1.95 274 iPg 27 45.60 1.1  
eSg 28 12.00  
KHC 2.65 219 ePn 27 55.00 0.4  
e 27 59.90  
Sg 28 29.00  
KRA 2.70 114 eP 28 01.20 5.9X  
eS 28 37.20  
MOX 2.90 260 ePn 27 57.00 -1.1  
ePg 28 05.00  
iSg 28 45.00  
WET 2.94 226 ePn 27 58.40 -0.2  
VKA 2.96 177 e(Pn) 27 59.00 0.1  
iPg 28 06.70  
e 28 48.50  
iSg 28 51.40  
GRF 3.48 246 ePn 28 05.30 -1.0  
ePg 28 16.40  
eSg 29 04.10  
KBA 4.53 205 ePn 28 20.50 -0.8  
e 28 37.50  
iSg 29 39.30  
S.D. = 1.0 on 10 of 11 obs.

MAR 17, 1990 05h 48m 40.43±0.86s  
33.073 S ± 9.6km 118.086 E ± 6.6km  
DEPTH = 5.0km (geophysicist)  
4.0mb (1 obs.)

WESTERN AUSTRALIA (590)

NWAO 0.73 281 iPd 48 53.90 -1.1  
RKG 1.34 222 eP 49 06.00 0.4  
iS 49 22.30  
KLB 1.50 349 iPd 49 12.60 4.5X  
eS 49 36.00  
MUN 1.93 304 iPc 49 14.10 -0.1  
eS 49 39.00  
BAL 2.72 334 eP 49 27.00 1.3  
COOL 3.39 51 eP 49 40.00 4.8X  
MRWA 4.24 334 eP 49 48.20 1.1  
iS 50 36.30  
MEKA 6.45 4 eP 50 22.00 3.6X  
eS 51 34.00  
FORR 8.79 78 eP 50 51.30 0.2  
0.3s 7.00nm 5.5mb X  
eS 52 28.00  
MBL 11.97 8 eP 51 33.10 -1.6  
0.3s 2.00nm 4.9mb X  
eS 53 38.00  
ASPA 16.76 60 eP 52 36.50 -1.1  
0.6s 8.00nm 4.0mb  
eS 55 35.50  
WB5 19.59 52 eP 53 13.30 0.9  
S.D. = 1.2 on 9 of 12 obs.

MAR 17, 1990 06h 21m 15.07±0.48s  
37.112 N ± 4.9km 29.065 E ± 5.0km  
DEPTH = 10.0km (geophysicist)  
TURKEY (366)  
MD 3.7 (ATH).

ELL 0.77 118 ePg 21 30.20 0.1  
KSL 1.08 157 ePb 21 35.50 0.2  
ARG 1.17 220 ePn 21 35.80 -1.1

KHL 1.26 17 iPn 21 39.00 0.4  
BCK 1.26 74 iPn 21 38.00 -0.6  
SMG 1.87 289 ePn 21 47.50 0.1  
IZM 1.92 312 ePn 21 37.00 -11.2X  
KAP 2.18 225 ePn 21 52.80 0.9  
eSn 22 21.00  
DST 2.51 352 ePn 21 56.00 -0.6  
NPS 3.35 238 ePn 22 08.70 0.2  
BBTK 3.98 46 eP 22 18.00 0.5  
S.D. = 0.7 on 10 of 11 obs.

% MAR 17, 1990 06h 24m 14.95±1.72s  
44.792 N ± 12.3km 7.620 E ± 9.0km  
DEPTH = 10.0km (geophysicist)  
NORTHERN ITALY (545)  
ML 1.7 (GEN).

PZZ 0.47 232 P 24 24.71 0.2  
S 24 30.67  
ROB 0.53 160 P 24 25.89 0.2  
S 24 32.97  
ENR 0.58 194 P 24 26.62 -0.2  
S 24 34.00  
STV 0.59 201 P 24 26.72 -0.2  
S 24 34.27  
RRL 0.61 282 P 24 27.37 0.0  
FIN 0.72 144 P 24 29.08 0.0  
S 24 38.40  
S.D. = 0.2 on 6 of 6 obs.

% MAR 17, 1990 06h 52m 29.02±0.90s  
19.519 S ± 10.0km 133.952 E ± 11.0km  
DEPTH = 10.0km (geophysicist)  
NORTHERN TERRITORY, AUSTRALIA (591)

WB5 0.53 133 iPc 52 39.80 0.0  
ASPA 4.13 181 iPd 53 31.90 -1.6  
0.4s 70.00nm  
eS 54 16.20  
QIS 5.41 102 eP 53 52.00 0.2  
eS 54 54.00  
e 55 19.00  
KNA 6.20 306 eP 54 02.00 -0.9  
0.2s 5.00nm 5.0mb X  
eS 55 10.00  
MTN 7.17 337 iPd 54 17.00 0.5  
eS 55 38.00  
FORR 12.46 204 eP 55 31.00 1.8  
0.4s 17.00nm 5.6mb X  
eS 57 32.00  
MBL 13.34 261 eP 55 33.50 -7.6X  
eS 57 50.00  
S.D. = 1.5 on 6 of 7 obs.

& MAR 17, 1990 08h 39m 36.82s  
47.323 N 122.301 W  
DEPTH = 6.8km  
WASHINGTON (29)  
<SEA>. ML 2.9 (SEA).

SPW 0.23 9 Pd 39 41.90 0.3  
MEW 0.26 243 Pc 39 42.78 0.5  
S 39 46.69  
GHW 0.28 176 Pd 39 42.33 -0.3  
S 39 45.96  
RMW 0.36 68 Pc 39 43.91 -0.3  
GSM 0.37 109 Pd 39 44.04 -0.2  
GMW 0.40 305 Pd 39 44.12 -0.8  
RVC 0.44 149 Pd 39 45.20 -0.5  
PGW 0.54 338 Pd 39 47.15 -0.5  
BLH 0.55 19 Pd 39 46.88 -0.9  
FMW 0.58 132 Pd 39 47.39 -1.1  
S 39 55.48  
HTW 0.60 37 P 39 47.59 -1.3  
HDW 0.61 303 Pd 39 47.54 -1.4  
S 39 56.30  
LMW 0.66 179 P 39 48.45 -1.6  
LON 0.66 149 Pd 39 48.53 -1.6  
CPW 0.67 239 Pc 39 48.93 -1.3  
SMW 0.71 270 Pc 39 49.83 -1.2  
S 40 00.49  
APW 0.71 200 Pd 39 49.59 -1.5  
S 39 59.58  
WPW 0.81 140 Pd 39 51.43 -1.5  
BLN 0.82 327 Pd 39 51.01 -2.0  
S 40 02.58  
KOSW 0.87 175 P 39 52.23 -1.6



GLK 0.90 148 Pd 39 52.72 -1.7  
 CZM 0.90 189 P 39 52.66 -1.7  
 JCW 0.91 16 Pd 39 52.86 -1.6  
 S 40 05.20  
 TDL 0.97 177 P 39 54.02 -1.7  
 TWW 0.99 100 Pd 39 55.23 -0.8  
 OHW 1.01 351 P 39 54.18 -2.1  
 ERK 1.02 182 P 39 54.35 -2.1  
 BMW 1.06 217 P 39 55.32 -1.8  
 OBH 1.06 271 Pc 39 55.44 -1.7  
 OSD 1.07 298 P 39 55.82 -1.6  
 SOSW 1.09 174 Pd 39 55.83 -1.9  
 ONR 1.10 247 P 39 56.51 -1.2  
 CMW 1.11 6 Pd 39 56.39 -1.6  
 S 40 12.25

YEL 1.12 176 P 39 56.71 -1.5  
 FL2 1.13 182 P 39 56.46 -1.9  
 ESD 1.13 175 P 39 56.87 -1.6  
 SHW 1.13 178 P 39 56.85 -1.6  
 NAC 1.17 120 P 39 57.95 -1.0  
 TBM 1.17 97 P 39 57.94 -1.1  
 RVW 1.21 195 P 39 57.96 -1.7  
 STW 1.24 312 P 39 58.39 -1.8  
 RPW 1.24 25 Pd 39 58.78 -1.5  
 EBG 1.25 109 P 39 59.59 -0.9  
 ASR 1.27 157 Pd 39 58.94 -1.8  
 MTMW 1.30 177 Pd 39 59.44 -1.8  
 OOW 1.34 289 P 40 02.45 0.5  
 ETW 1.37 77 P 40 02.57 0.2  
 MCW 1.40 345 P 40 00.98 -1.9  
 S 40 19.81

NLO 1.47 213 P 40 02.54 -1.2  
 GULW 1.48 161 P 40 02.98 -1.0  
 MBW 1.49 10 P 40 03.02 -1.1  
 NLW 1.53 60 P 40 04.06 -0.6  
 MXC 1.56 118 P 40 04.52 -0.6  
 APM 1.64 165 P 40 05.43 -0.9  
 GL2 1.70 143 P 40 07.63 0.5  
 BRVW 1.79 117 P 40 08.52 0.1  
 VLMM 1.79 174 P 40 08.24 -0.3  
 PGO 1.86 183 P 40 09.01 -0.4  
 KMOR 1.88 206 P 40 08.17 -1.5  
 MDW 1.88 111 P 40 09.87 0.2  
 VLL 1.91 167 P 40 10.07 -0.1  
 SAW 2.00 78 P 40 10.28 -1.2  
 CRF 2.05 103 P 40 13.04 0.9  
 TDH 2.06 170 P 40 12.23 -0.3  
 GBL 2.08 109 P 40 12.99 0.5  
 VBEM 2.32 167 P 40 17.18 1.0

66 obs. associated

? MAR 17, 1990 09h 23m 16.32±7.49s  
 7.084 S ±69.3km 130.076 E ±19.9km  
 DEPTH = 110.0km (geophysicist)  
 4.6mb ( 2 obs.)

#### TANIMBAR ISLANDS REGION (281)

MTN 5.82 170 eP 24 43.00 1.3  
 eS 25 47.00  
 KNA 8.71 188 eP 25 20.50 -0.6  
 0.3s 52.00nm 5.8mb X  
 eS 26 55.00  
 WB5 13.38 162 eP 26 22.20 -0.9  
 eS 28 43.00  
 WRA 13.44 162 Pc 26 22.30 -1.5  
 0.5s 3.70nm 4.1mb X  
 QIS 16.27 146 eP 27 00.00 0.3  
 eS 29 50.00  
 ASPA 16.89 168 eP 27 08.80 1.3  
 0.4s 20.00nm 4.7mb  
 eS 30 07.90  
 MBL 17.15 214 eP 27 10.60 0.0  
 0.3s 7.00nm 4.4mb  
 eS 30 10.00  
 S.D. = 1.3 on 7 of 7 obs.

\* MAR 17, 1990 10h 45m 54.14±0.75s  
 19.707 N ±14.9km 71.250 W ±10.9km  
 DEPTH = 33.0km (normal)  
 4.3mb ( 2 obs.)

#### DOMINICAN REPUBLIC REGION ( 88)

LRS 4.40 108 P 47 06.00 5.6X  
 PORP 4.67 110 P 47 06.00 1.8  
 CPD 5.32 107 P 47 12.00 -1.4  
 UPA 13.34 218 eP 49 03.00 -0.7  
 ANMO 34.56 303 P 52 42.50 0.4

ZOBO 35.88 175 P 53 01.00 7.1X  
 BW06 39.54 314 e(P) 53 28.00 4.0X  
 TNP 43.73 305 eP 53 59.80 1.5  
 KVN 44.60 306 eP 54 06.30 0.9  
 NEW 46.55 319 eP 54 20.60 0.1  
 0.9s 8.55nm 4.7mb  
 YKA 52.05 336 eP 55 00.60 -2.0  
 0.9s 1.10nm 3.8mb  
 MBC 61.57 348 eP 56 09.50 -0.7  
 S.D. = 1.5 on 9 of 12 obs.

& MAR 17, 1990 11h 10m 50.30s  
 60.176 N 152.857 W  
 DEPTH = 116.1km  
 SOUTHERN ALASKA ( 2)  
 <AGS-P>.

RDT 0.46 29 iP 11 07.25 -0.6  
 eS 11 20.47  
 PDB 0.78 240 iP 11 09.20 -1.0  
 eS 11 23.98  
 >NNL 0.79 99 iP 11 10.57 0.2  
 eS 11 25.23  
 AUL 0.85 200 iP 11 10.07 -0.8  
 AUE 0.86 198 iP 11 09.83 -1.1  
 XLV 0.92 141 iP 11 10.72 -0.8  
 eS 11 27.32  
 NKA 0.98 54 eP 11 13.30 1.2  
 CNPM 1.05 128 eP 11 12.18 -0.6  
 eS 11 29.37  
 SPU 1.08 21 eP 11 12.64 -0.6  
 eS 11 30.04  
 CRP 1.15 17 eP 11 13.68 -0.4  
 eS 11 31.75  
 CGLM 1.21 20 iP 11 14.27 -0.4  
 NCG 1.28 15 eP 11 15.22 -0.2  
 CDD 1.31 198 iP 11 14.22 -1.5  
 eS 11 32.73  
 SLKM 1.35 75 eP 11 15.10 -1.1  
 eS 11 34.45  
 SVW 1.65 306 iPc 11 18.30 -1.4  
 SUA 1.66 38 iP 11 19.43 -0.4  
 iS 11 42.25  
 SEW 1.71 91 eP 11 18.85 -1.5  
 SKT 1.92 19 iP 11 22.20 -0.9  
 PMS 1.94 55 eP 11 22.30 -1.1  
 PWA 2.08 43 eP 11 23.80 -1.2  
 PMR 2.31 50 eP 11 25.90 -2.1  
 KDC 2.44 175 eP 11 27.00 -2.7  
 GH0 2.50 48 iP 11 28.73 -1.9  
 eS 11 58.50  
 CUT 2.56 28 eP 11 30.28 -1.0  
 eS 12 01.00

GLI 2.93 74 eP 11 33.63 -2.7  
 TTA 3.15 333 eP 11 37.20 -2.0  
 VZW 3.23 71 eP 11 37.69 -2.6  
 KTH 3.51 14 iP 11 42.57 -1.5  
 KLU 3.64 66 iP 11 43.40 -2.5  
 TOA 3.77 56 eP 11 46.20 -1.5  
 MCK 4.02 26 eP 11 49.85 -1.1  
 PAX 4.51 48 eP 11 55.88 -1.8  
 GLB 4.61 70 eP 11 56.35 -2.7  
 WRH 4.85 25 iP 12 00.02 -2.2  
 DDM 4.90 39 eP 12 02.37 -0.6  
 HDA 5.06 30 eP 12 02.85 -2.2  
 CCB 5.06 25 iP 12 02.70 -2.4  
 FBA 5.29 24 eP 12 05.70 -2.5  
 GLM 5.45 25 eP 12 08.00 -2.5  
 IMA 5.93 357 eP 12 15.30 -1.9  
 INK 11.66 38 eP 13 32.00 -1.9  
 41 obs. associated

? MAR 17, 1990 11h 14m 18.38±1.98s  
 15.976 S ±32.1km 168.063 E ±17.4km  
 DEPTH = 248.8 ± 20.8 km  
 4.6mb ( 2 obs.)

#### VANUATU ISLANDS (186)

PVC 1.77 172 iPd 14 59.00 0.0  
 DZM 6.25 194 iPc 15 50.30 -0.1  
 iS 17 10.90  
 8RS 18.17 229 eP 18 16.00 0.8  
 WB5 32.26 258 eP 20 25.50 -0.4  
 WRA 32.29 258 Pd 20 25.00 -1.2  
 0.6s 1.50nm 3.8mb  
 ASPA 32.97 251 iPd 20 31.80 -0.3  
 0.5s 40.00nm 5.3mb

KNA 37.76 265 iPc 21 12.90 0.5  
 CHTO 76.29 294 eP 25 43.00 1.2  
 CDF 144.01 338 ePKP 33 22.90 -2.9  
 BSF 144.68 338 ePKP 33 24.80 -2.2  
 1.0s 6.00nm  
 HAU 144.69 339 ePKP 33 24.90 -2.0  
 0.9s 13.10nm  
 FLN 145.98 346 ePKP 33 28.50 -0.5  
 0.8s 12.10nm  
 LDF 146.06 346 ePKP 33 28.70 -0.4  
 0.8s 5.35nm  
 LOR 146.16 341 ePKP 33 29.60 0.2  
 0.8s 4.05nm  
 GRR 146.42 347 ePKP 33 30.10 0.4  
 1.0s 12.00nm  
 SSF 146.46 341 ePKP 33 30.40 0.6  
 1.0s 13.00nm  
 LPL 146.64 336 ePKP 33 31.30 0.8  
 0.8s 2.70nm  
 LPG 146.65 336 ePKP 33 31.40 0.8  
 0.8s 4.05nm  
 SMF 146.72 340 ePKP 33 30.30 0.0  
 0.8s 3.35nm  
 AVF 146.75 341 ePKP 33 30.20 -0.1  
 0.8s 4.05nm  
 LPF 146.80 347 ePKP 33 31.30 1.0  
 0.8s 5.35nm  
 TCF 147.55 342 ePKP 33 33.10 1.5  
 0.8s 4.05nm  
 MFF 147.92 345 ePKP 33 34.00 1.8  
 0.8s 8.05nm  
 S.D. = 1.3 on 23 of 23 obs.

? MAR 17, 1990 11h 51m 52.76±4.99s  
 31.294 S ±22.0km 68.630 W ±37.8km  
 DEPTH = 90.0 ± 50.9 km  
 SAN JUAN PROVINCE, ARGENTINA (137)

RTLL 0.14 105 iP 52 06.00 -0.1  
 ZON 0.25 189 iPd 52 06.30 0.1  
 eS 52 18.00  
 CFA 0.46 133 iPd 52 07.50 0.1  
 S 52 20.00  
 RTCV 0.57 172 ePc 52 08.30 -0.1  
 RTRS 1.33 327 iPc 52 16.70 0.0  
 S.D. = 0.1 on 5 of 5 obs.

? MAR 17, 1990 12h 15m 35.86±5.47s  
 30.352 S ±19.8km 178.130 W ±17.6km  
 DEPTH = 191.3 ± 49.4 km  
 4.8mb ( 4 obs.)

#### KERMADEC ISLANDS (178)

DZM 16.10 297 iPc 19 13.10 -0.1  
 BRS 25.62 269 eP 20 48.00 -1.4  
 COO 25.81 262 eP 20 53.00 1.9  
 CAN 27.98 251 eP 21 11.60 0.9  
 BWA 28.46 253 eP 21 13.80 -1.2  
 RMQ 29.32 269 iPd 21 23.80 1.2  
 TOO 30.88 247 eP 21 37.00 0.7  
 CTA 33.68 279 iPc 22 01.50 0.9  
 0.8s 18.66nm 4.8mb  
 QIS 39.20 274 iPd 22 47.30 0.4  
 i 24 00.50  
 ASPA 43.00 267 iPc 23 17.60 -0.4  
 0.7s 15.00nm 4.6mb  
 WRA 43.98 272 Pc 23 24.60 -1.3  
 0.6s 17.70nm 4.8mb  
 WB5 43.98 272 eP 23 25.00 -1.0  
 FORR 45.90 255 eP 23 40.00 -0.9  
 0.4s 19.00nm 4.9mb  
 SPA 59.82 180 eP 25 22.70 -0.3  
 PLM 85.83 47 eP 27 50.00 -5.1X  
 SBB 86.10 46 eP 27 56.00 -0.2  
 ISA 86.34 45 eP 27 57.00 -0.4  
 TPC 86.83 47 eP 28 02.00 2.2  
 GLA 86.95 49 eP 28 15.00 14.7X  
 GSC 87.13 46 eP 28 01.00 -0.2  
 KVN 88.81 42 eP 28 07.60 -1.7  
 KMI 93.70 297 eP 28 37.00 4.8X  
 NUR 146.23 340 iPKP 34 54.00 1.0  
 0.7s 26.70nm  
 S.D. = 1.2 on 20 of 23 obs.

MAR 17, 1990 12h 20m 14.16±0.12s  
 4.398 S ± 2.4km 144.068 E ± 3.5km  
 DEPTH = 122.6km ( 5 depth phases)



5.4mb ( 22 obs.)			MAT			41.09 353 iPc			27 46.10 -1.3			UPP			111.39 334 iPd i f f 35 00.00 23.1X		
NEAR N COAST OF PAPUA NEW GUINEA(200)			MTMJ			1.1s 69.62nm			5.3mb			HFS			112.90 336 ePd i f f 35 01.10 17.4X		
CENTROID. MOMENT TENSOR (HRV)			SSE			41.19 352 P			27 47.30 -0.9								
Doto Used: GDSN						41.50 330 Pd			27 51.50 0.7			NB2			113.37 337 Pd i f f 35 00.60 14.8X		
L.P.B.: 9S, 12C						1.0s 0.11nm			2.6mb X								
Centroid Location:			NIJ			41.69 354 P			27 52.00 -0.2			FRB			116.22 15 ePKP 38 43.00 -1.1		
Origin Time 12:20:18.8 1.1			NJ2			43.46 328 Pc			28 08.00 1.3			ZST			117.24 323 ePKP 38 46.50 -0.1		
Lat 4.23S 0.11 Lon 144.97E 0.17			WHN			44.88 323 Pc			28 19.70 1.6								
Dep 102.610.1 Holi-duration 1.5						0.8s 100.00nm			5.6mb			BRG			117.78 327 i(PKP) 38 47.50 0.0		
Moment Tensor: Scale 10**16 Nm			MSZ			45.25 156 eP			28 22.00 1.2			PRU			117.89 326 PKP 38 47.50 -0.3		
Mrr=-0.63 0.51 Mtt=-2.21 0.87			PSI			45.66 278 eP			28 25.00 0.5			CLL			118.06 328 iPKPd 38 47.60 -0.4		
Mff= 2.84 1.14 Mrt= 4.62 0.48			HOOJ			46.56 359 eP			28 32.10 0.9								
Mrf=-0.37 0.43 Mtf=-1.65 0.65			MRRJ			46.68 357 eP			28 31.80 -0.3			KHC			118.86 325 iPKP 38 49.50 -0.2		
Principal Axes:			LOE			47.07 299 eP			28 35.60 -0.1			KBA			120.01 323 e(PKP) 38 50.50 -1.7		
T Vol= 4.46 Plg=33 Azm= 50			KUSJ			47.28 1 P			28 36.50 -0.3								
N 1.77 34 294			GYA			47.45 312 iPc			28 39.80 1.2			TOD			121.24 328 ePKP 38 53.57 -0.6		
P -6.23 39 171			ASAJ			48.31 359 eP			28 45.20 0.4			ABH			121.74 328 ePKP 38 54.91 -0.2		
Best Double Couple:Mo=5.3*10**16			SNY			49.65 340 iPc			28 55.00 -0.1			MEM			122.09 330 PKP 38 55.60 -0.1		
NP1:Strike=197 Dip=34 Slip= -6			KMI			49.72 308 eP			28 57.50 1.3			FEL			122.66 326 ePKP 38 56.16 -0.9		
NP2: 292 87 -124			CHG			50.06 299 iPc			28 59.00 0.3			CDF			122.75 327 ePKP 38 56.80 -0.4		
						0.9s 21.01nm			5.0mb			EKA			122.79 338 PKP 38 57.00 0.1		
MNDI 1.79 193 iP 20 43.00 -2.9			CHTO			50.06 299 iPc			28 59.00 0.3			SNF			123.01 331 PKP 38 57.60 0.1		
LAT 3.68 128 iPd 21 12.00 1.7			MDJ			50.49 347 Pc			29 27.50 122km			DOU			123.12 330 PKP 38 57.90 0.2		
PMG 5.85 149 iPd 21 37.00 -2.8			XAN			50.61 322 P			29 01.60 -1.1			BSF			123.36 327 ePKP 38 58.00 -0.4		
0.9s 218.49nm 5.4mb			CN2			50.83 343 Pc			29 03.20 -0.9			HAU			123.49 327 ePKP 38 58.40 -0.2		
MTN 15.29 236 eP 23 43.00 -1.7			BJI			51.12 333 eP			29 06.00 -0.3			SCH			123.89 21 ePKP 38 59.00 -0.1		
CTA 15.74 172 iPc 23 51.10 0.7			TIY			51.18 328 Pc			29 07.00 0.0			LPG			124.73 325 ePKP 39 01.40 0.0		
1.0s 175.00nm 5.3mb			CD2			52.08 315 P			29 13.60 -0.2			LPL			124.73 325 ePKP 39 01.30 0.0		
			HHC			53.96 330 Pc			29 27.50 -0.1			PGF			124.96 320 ePKP 39 01.40 -0.3		
			BTO			54.57 328 P			30 00.00 117km								
GUA 17.84 3 eP 24 17.10 0.8			LZH			55.11 320 Pc			29 36.50 0.4			LOR			125.28 328 ePKP 39 02.00 -0.1		
0.7s 164.38nm 5.4mb			GTA			59.66 321 iPc			30 08.00 0.0			LBF			125.39 327 ePKP 39 02.20 -0.1		
GUMO 17.89 3 eP 24 17.50 0.7			HYB			68.17 291 e			31 02.50 -1.2			SSF			125.60 328 ePKP 39 02.60 -0.1		
PJG 17.89 3 eP 24 17.30 0.5			GBA			68.49 286 Pc			31 04.90 -0.7			SMF			125.68 327 ePKP 39 02.60 -0.3		
WB5 18.06 211 eP 24 17.90 -0.9						1.1s 11.60nm			4.7mb			AVF			125.85 328 ePKP 39 02.70 -0.5		
WRA 18.13 211 Pd 24 18.30 -1.3			WMQ			69.69 320 iPc			31 12.50 -								



MAR 17, 1990 12h 48m 02.26 ± 0.36s  
47.295 S ± 9.8km 13.344 W ± 8.5km  
DEPTH = 10.0km (geophysicist)  
5.2mb ( 19 obs.) 4.7msz ( 2 obs.)  
SOUTH ATLANTIC RIDGE (410)

CER	28.27	72 eP	54 05.00	7.4X
BFS	37.40	71 iPd	55 16.50	-0.6
PRY	37.82	72 eP	55 20.70	0.0
	1.0s	15.00nm		4.7mb
SLR	39.17	72 eP	55 31.00	-1.0
	Z 20s	2.13um		5.0msz
SPA	42.90	180 eP	56 03.60	1.3
	1.2s	64.08nm		5.2mb
CHCH	44.54	266 eP	56 19.00	3.1X
FCH	44.65	267 eP	56 18.50	1.4
SAN	44.83	267 eP	56 19.00	0.9
TACH	44.90	266 iPc	56 19.10	0.4
LNV	45.05	265 eP	56 19.50	-0.3
LIC	53.79	10 P	57 25.90	-1.2
	1.1s	45.00nm		5.4mb
	Z 20s	0.34um		4.4msz
KIC	53.96	11 P	57 26.96	-1.4
	1.2s	46.50nm		5.4mb
TIC	54.21	10 P	57 28.68	-1.5
LPB	54.27	285 eP	57 30.00	-1.2
		LR	14 20.00	
SHGH	54.28	16 eP	57 30.00	-0.7
KOGH	54.40	16 eP	57 30.50	-1.1
KUK	54.48	16 eP	57 47.00	14.9X
ZOBO	54.48	285 P	57 31.00	-1.9
	1.2s	13.51nm		4.9mb
	Z 23s	0.95um		4.8mszX
		LR	14 08.00	
VNDA	55.43	179 (P)	57 38.10	-0.4
ARE	56.56	282 e(P)	57 48.00	0.3
LKO	57.00	9 P	57 48.76	-1.7
	1.3s	42.00nm		5.3mb
LWI	57.81	52 iPc	57 56.70	0.3
TIO	78.05	5 iPd	00 03.50	1.0
		i	00 10.00	
AVE	80.40	5 eP	00 09.50	-5.5X
IFR	80.78	7 iPc	00 19.00	1.7
TAF	82.32	9 eP	00 40.00	14.9X
TOL	87.19	7 iPc	00 50.50	1.2
	1.2s	46.88nm		5.6mb
MUN	88.98	139 eP	00 59.00	0.6
EPF	90.75	10 eP	01 06.60	0.4
	1.2s	20.85nm		5.3mb
LPO	92.48	10 eP	01 15.00	1.0
	1.0s	12.00nm		5.2mb
LFF	92.68	10 eP	01 15.80	0.9
	1.0s	16.00nm		5.4mb
CAF	92.83	11 eP	01 16.10	0.4
	1.0s	8.00nm		5.1mb
RJF	93.13	10 eP	01 17.70	0.7
	1.0s	8.00nm		5.1mb
VAY	93.82	26 eP	01 21.30	1.1
LSF	94.07	10 eP	01 22.20	0.9
	1.2s	17.85nm		5.3mb
LPG	94.08	14 eP	01 23.20	1.5
	1.0s	10.00nm		5.1mb
SKO	94.08	25 eP	01 22.00	0.6
LPL	94.09	14 eP	01 23.20	1.5
	1.0s	8.00nm		5.0mb
MAF	94.17	11 eP	01 22.40	0.6
	1.0s	8.00nm		5.1mb
TCF	94.19	11 eP	01 22.90	1.0
	0.8s	4.05nm		4.9mb
SMF	94.76	12 eP	01 25.80	1.4
	1.0s	6.00nm		5.0mb
AVF	94.83	11 eP	01 26.30	1.5
	1.0s	6.00nm		5.0mb
RSSD	120.94	303 ePKP	06 55.00	-1.1
BW06	123.36	299 ePKP	06 59.10	-1.7
	0.9s	9.75nm		
KVN	126.49	291 ePKP	07 07.20	0.3
LRM	126.80	300 ePKP	07 07.50	0.1
SES	128.41	306 ePKP	07 09.00	-1.0
EDM	131.03	308 ePKPc	07 14.50	-0.4
PNT	132.75	301 ePKP	07 18.00	-0.2
MBC	139.13	339 ePKP	07 20.00	-9.4X
BJI	143.32	82 ePKP	07 35.00	-2.9
INK	143.83	327 ePKPd	07 34.10	-3.8X
	1.1s	46.00nm		
FBA	149.99	323 ePKP	07 47.40	-0.6

PMR 151.25 316 ePKP 07 49.30 -0.6  
0.9s 18.70nm  
e 07 56.00  
IMA 151.96 326 ePKP 07 49.40 -1.7  
e 07 57.50  
S.D. = 1.1 on 48 of 55 obs.

MAR 17, 1990 15h 01m 01.68 ± 2.10s  
38.260 N ± 10.9km 75.578 E ± 12.1km  
DEPTH = 113.9 ± 21.3 km  
4.1mb ( 4 obs.)  
SOUTHERN XINJIANG, CHINA (321)

NDI	9.65	171 iPc	03 18.80	-0.1
	0.3s	25.97nm		5.5mb X
		eS	05 58.00	
QUE	10.76	224 eP	03 34.00	0.1
		eS	05 27.00	
HYB	20.93	172 eP	05 37.00	0.1
HFS	43.98	321 eP	08 59.00	0.2
	0.5s	2.40nm		4.2mb
NB2	45.21	322 P	09 08.40	-0.2
	0.5s	1.10nm		3.9mb
MBC	65.38	4 eP	11 33.00	-0.3
	0.6s	3.00nm		4.4mb
INK	71.54	11 eP	12 12.00	0.5
KIC	78.50	269 P	12 52.00	0.0
TIC	78.54	269 P	12 52.10	-0.1
LIC	78.80	269 P	12 53.60	0.0
YKA	79.26	5 eP	12 55.00	-0.2
	0.6s	1.10nm		3.8mb
	S.D. = 0.3	on 11 of 11 obs.		

MAR 17, 1990 16h 00m 36.49 ± 1.64s  
33.434 S ± 11.4km 70.545 W ± 11.6km  
DEPTH = 80.1 ± 17.4 km  
CHILE-ARGENTINA BORDER REGION (127)

SAN	0.10	259 iPc	00 48.70	0.4
		iS	00 58.70	
PCH	0.19	172 iPc	00 48.50	-0.2
		iS	00 58.70	
FCH	0.24	64 iPd	00 49.30	0.3
		iS	01 00.50	
TACH	0.39	236 iPc	00 49.70	0.1
		iS	01 00.10	
CHCH	0.51	190 iPc	00 50.40	-0.1
		iS	01 01.90	
ROCH	0.60	320 iPc	00 49.70	-2.0
		iS	01 00.10	
JACH	0.75	357 iPc	00 54.00	1.0
		iS	01 08.40	
LCCH	0.86	267 iP	00 55.20	1.1
		iS	01 09.00	
LNV	0.89	234 iPc	00 54.00	-0.4
RTCV	2.31	48 eP	01 08.20	-5.0X
RTLL	2.74	40 ePd	01 18.60	-0.5
RTRS	3.38	16 ePd	01 28.40	0.4
	S.D. = 1.0	on 11 of 12 obs.		

MAR 17, 1990 16h 03m 39.96 ± 1.04s  
41.428 N ± 7.5km 19.850 E ± 10.0km  
DEPTH = 10.0km (geophysicist)  
ALBANIA (391)  
ML 2.1 (SKO).

TIR	0.08	171 iPgC	03 42.20	-0.3
LACI	0.23	333 iPgD	03 44.50	-0.4
PHP	0.51	59 iPgD	03 49.60	-0.8
PUK	0.61	3 ePg	03 53.20	0.9
OHR	0.78	114 ePg	03 55.80	0.6
		eSg	04 08.50	
	S.D. = 1.0	on 5 of 5 obs.		

MAR 17, 1990 16h 06m 33.61 ± 2.48s  
20.248 S ± 18.5km 169.077 E ± 23.4km  
DEPTH = 76.6 ± 16.5 km  
4.8mb ( 3 obs.)  
VANUATU ISLANDS (186)

PVC	2.60	344 iPc	07 14.30	0.1
		iS	07 45.00	
DZM	3.05	233 iPd	07 20.30	-0.4
		iS	07 56.70	
RMQ	19.65	248 iPd	11 01.30	2.3
		e	11 04.00	
WB5	32.57	265 eP	12 58.90	-1.0

WRA 32.59 264 Pd 12 59.00 -1.0  
0.7s 5.60nm  
ASPA 32.75 258 iPc 13 00.90 -0.5  
0.8s 52.00nm  
Z 23s 0.19um 3.7mszX  
LR 24 48.90

MBL	45.92	260 eP	14 50.70	0.0
BJI	77.62	321 eP	18 23.00	-0.1
CHG	78.93	295 ePd	18 32.00	1.2
	1.0s	11.50nm		4.8mb
BRG	143.70	333 i(PKP)	25 57.90	-3.3X
PRU	144.09	332 ePKP	25 59.50	-2.4
MOX	144.83	335 ePKPc	26 02.00	-1.1
		e	26 19.00	
KHC	145.15	332 iPKPd	26 02.90	-0.9
	1.1s	10.00nm		
		e	26 22.00	
SKO	145.15	316 iPKP	26 02.00	-2.0
		i	26 21.00	
GRF	145.73	334 ePKP	26 05.10	0.4
OHR	145.98	315 ePKP	26 04.50	-1.0
KBA	146.74	329 ePKP	26 06.50	-0.1
TOD	146.75	336 ePKP	26 06.95	0.6
ABH	146.98	338 ePKP	26 07.81	1.1
KTD	147.25	337 ePKP	26 08.40	1.2
RUP	147.30	338 ePKP	26 08.79	1.5
DOU	147.77	341 PKP	26 09.90	2.0
		e	26 29.00	
	S.D. = 1.3	on 21 of 22 obs.		

MAR 17, 1990 16h 20m 57.07 ± 0.87s  
41.766 N ± 9.0km 12.733 E ± 6.8km  
DEPTH = 10.0km (geophysicist)  
SOUTHERN ITALY (390)

RDP	0.01	239 Pd	20 59.10	0.1
		eSg	21 00.60	
RMP	0.05	333 Pc	20 59.00	-0.3
		eSg	21 01.10	
AZI	0.57	67 P	21 08.60	0.0
		eSg	21 18.10	
SDI	0.81	94 P	21 12.80	-0.1
		eSg	21 25.30	
ASS	1.30	358 P	21 21.50	0.2
		eSg	21 40.00	
	S.D. = 0.3	on 5 of 5 obs.		

MAR 17, 1990 16h 53m 37.56 ± 0.93s  
8.251 S ± 11.6km 159.663 E ± 17.2km  
DEPTH = 33.0km (normol)  
4.1mb ( 1 obs.)  
SOLOMON ISLANDS (193)

DZM	15.21	155 iPc	57 11.80	0.0
		iS	57 50.00	
WB5	27.08	242 eP	59 19.00	-0.3
WRA	27.12	242 Pc	59 20.10	0.3
	0.6s	2.90nm		4.1mb
KAKJ	47.87	339 P	02 14.40	0.0
CHJJ	48.17	337 P	02 16.70	0.0
MAT	48.90	337 (P)	02 31.00	8.6X
	S.D. = 0.3	on 5 of 6 obs.		

MAR 17, 1990 17h 26m 38.41 ± 1.20s  
41.829 N ± 22.2km 12.790 E ± 9.5km  
DEPTH = 10.0km (geophysicist)  
SOUTHERN ITALY (390)

RMP	0.07	255 Pc	26 40.50	-0.3
		eSg	26 42.10	
RDP	0.09	218 P	26 41.40	0.3
		eSg	26 43.30	
AZI	0.51	71 P	26 49.00	0.3
		eSg	26 57.00	
SDI	0.78	99 P	26 53.20	-0.4
		eSg	27 04.00	
	S.D. = 0.7	on 4 of 4 obs.		

MAR 17, 1990 17h 52m 42.00 ± 1.46s  
36.143 N ± 16.8km 27.158 E ± 11.9km  
DEPTH = 10.0km (geophysicist)  
DODECANESE ISLANDS (369)  
MD 3.2 (ATH).

KAP	0.59	179 ePg	52 54.00	0.0
ARG	0.79	84 ePg	52 56.20	-1.1
NPS	1.53	236 ePb	53 09.30	-0.2



17d 17h

KSL 1.96 90 ePb 53 16.50 0.8  
ELL 2.30 74 ePn 53 21.00 0.3  
S.D. = 1.0 on 5 of 5 obs.

MAR 17, 1990 17h 54m 46.38 ± 0.56s  
36.195 N ± 6.3km 27.169 E ± 5.2km  
DEPTH = 10.0km (geophysicist)  
DODECANESE ISLANDS (369)  
ML 3.9 (ATH).

KAP 0.64 180 iPg 54 59.30 0.0  
ARG 0.77 88 ePg 55 01.70 0.2  
SMG 1.53 350 ePb 55 15.00 1.2  
NPS 1.57 234 ePb 55 14.30 -0.1  
APE 1.58 304 ePb 55 14.80 0.3  
KSL 1.96 92 ePn 55 21.00 1.1  
IZM 2.20 2 ePn 55 20.70 -2.8  
ELL 2.28 75 iPn 55 26.50 1.8  
VAM 2.54 253 ePg 55 35.00 6.7X  
KHL 2.84 41 ePn 55 32.20 -0.4  
BCK 3.02 64 iPn 55 37.50 2.3  
PRK 3.13 347 ePg 55 46.20 9.6X  
ATH 3.28 304 ePg 55 48.00 9.2X  
eSn 56 31.00  
VLI 3.45 280 ePn 55 41.30 0.1  
DST 3.60 18 ePn 55 41.70 -1.6  
ALT 3.69 38 ePn 55 44.00 -0.7  
ITM 4.33 285 ePn 55 56.00 2.3  
NEO 4.41 316 ePn 55 54.70 -0.2  
PLG 5.10 326 ePn 56 04.00 -0.6  
CSS 5.17 102 eP 56 06.50 0.8  
BBTK 5.72 49 eP 56 14.00 0.4  
KZN 5.91 316 ePn 56 16.00 -0.1  
PRNI 8.77 129 eP 56 54.00 -2.2  
MBH 9.11 133 eP 56 59.00 -1.8  
e(S) 58 35.00  
S.D. = 1.4 on 21 of 24 obs.

% MAR 17, 1990 17h 56m 38.77 ± 0.89s  
35.988 N ± 10.5km 27.315 E ± 8.6km  
DEPTH = 33.0km (normol)  
DODECANESE ISLANDS (369)  
MD 3.4 (ATH).

KAP 0.45 195 ePb 56 49.20 0.5  
ARG 0.70 71 ePb 56 51.90 -0.2  
eSn 57 02.00  
NPS 1.56 243 ePn 57 04.00 -0.6  
eSn 57 23.50  
APE 1.80 307 ePn 57 08.50 0.5  
VAM 2.60 258 ePn 57 19.20 -0.2  
S.D. = 0.7 on 5 of 5 obs.

MAR 17, 1990 20h 08m 58.45 ± 0.44s  
44.156 N ± 5.0km 16.655 E ± 5.2km  
DEPTH = 10.0km (geophysicist)  
YUGOSLAVIA (383)  
ML 2.9 (KBA), 2.9 (LJU), 2.7 (TTG).

HVAR 0.99 189 iPg 09 12.30 -4.9X  
iSg 09 23.70  
VBY 1.68 324 ePn 09 28.10 0.2  
iSg 09 57.90  
ZAG 1.73 344 iPg 09 32.00 3.3X  
iSg 09 54.00  
PTJ 1.81 344 ePn 09 29.20 -0.8  
eSn 09 52.10  
RIY 2.01 307 ePn 09 33.90 1.2  
iSg 10 01.90  
PLE 2.15 112 ePn 09 36.50 1.6  
eSn 10 05.00  
NKY 2.17 127 ePn 09 35.50 0.3  
eSn 10 05.00  
HCY 2.17 141 ePn 09 36.00 0.8  
eSn 10 04.00  
CEY 2.24 316 ePn 09 37.80 1.7  
eSn 10 09.00  
LJU 2.41 322 e(Pn) 09 37.00 -1.6  
e 09 41.50  
eSn 10 09.50  
BDV 2.46 139 ePn 09 39.10 -0.1  
eSn 10 10.00  
TTG 2.57 131 ePn 09 43.00 2.2  
eSn 10 14.00  
TRI 2.57 308 eP 09 43.70 2.9X  
i 09 47.60

VOY 2.71 315 ePn 10 18.70  
i 10 21.70  
eSn 09 43.60 0.7  
ARV 2.77 258 P 09 43.00 -0.7  
eSn 10 18.00  
PVY 2.88 122 ePn 09 48.00 2.7X  
eSn 10 24.00  
DUI 2.97 214 P 09 47.00 0.4  
ASS 3.10 251 P 09 48.20 -0.1  
eSn 10 27.50  
RBL 3.16 317 P 09 51.00 1.8  
SDI 3.22 221 P 09 49.30 -0.7  
eSn 10 26.60  
PGD 3.57 267 P 09 56.50 1.3  
FVI 3.66 313 P 09 55.80 -0.5  
SGO 3.73 196 P 09 56.50 -0.8  
KBA 3.73 323 ePn 10 00.50 3.0X  
e 10 12.00  
iSg 11 07.40  
BZS 3.82 66 eP 09 56.50 -2.0  
SRO 3.84 17 iP 09 57.60 -1.2  
CTI 4.02 300 P 10 00.30 -1.1  
eSn 10 48.20  
MGR 4.10 192 P 10 00.50 -2.0  
SKO 4.13 120 ePn 10 14.00 11.1X  
OHR 4.31 133 ePn 10 04.80 -0.8  
S.D. = 1.3 on 24 of 30 obs.

% MAR 17, 1990 20h 35m 15.23 ± 0.98s  
41.684 N ± 8.9km 12.746 E ± 6.8km  
DEPTH = 10.0km (geophysicist)  
SOUTHERN ITALY (390)

RDP 0.08 344 Pc 35 17.60 -0.1  
eSg 35 18.80  
RMP 0.13 346 Pc 35 18.50 0.1  
eSg 35 20.40  
AZI 0.60 59 Pc 35 26.70 -0.6  
eSg 35 36.00  
SDI 0.80 88 Pc 35 30.10 -0.7  
eSg 35 42.60  
AQU 0.83 36 P 35 31.00 -0.3  
eSg 35 45.90  
DUI 1.28 90 P 35 39.50 0.4  
ASS 1.39 357 P 35 40.20 -0.5  
eSn 36 00.20  
MAO 1.39 302 P 35 39.90 -0.8  
ARV 1.82 5 P 35 48.40 1.6  
PGD 2.32 341 P 35 54.50 0.3  
MGR 2.63 125 P 35 59.00 0.5  
S.D. = 0.8 on 11 of 11 obs.

MAR 17, 1990 20h 51m 57.36 ± 1.28s  
41.777 N ± 11.4km 12.598 E ± 7.9km  
DEPTH = 10.0km (geophysicist)  
SOUTHERN ITALY (390)

RMP 0.09 67 Pc 52 00.70 0.8  
eSg 52 04.00  
RDP 0.09 102 Pd 52 00.60 0.6  
eSg 52 02.70  
AZI 0.66 71 Pc 52 10.10 -0.4  
eSg 52 22.00  
AQU 0.83 46 P 52 12.90 -0.6  
eSg 52 28.20  
SDI 0.91 94 P 52 14.30 -0.6  
eSg 52 28.10  
MAO 1.25 301 P 52 20.30 -0.3  
ASS 1.29 2 P 52 21.80 0.4  
eSg 52 40.90  
DUI 1.40 94 P 52 23.00 0.0  
eSn 52 40.00  
ARV 1.74 8 P 52 29.30 1.5  
eSn 52 51.50  
PGD 2.19 343 P 52 35.00 0.5  
KBA 5.33 6 e(P) 53 17.00 -2.0  
e 53 46.50  
S.D. = 1.0 on 11 of 11 obs.

MAR 17, 1990 21h 21m 41.36 ± 0.71s  
43.799 N ± 5.0km 7.528 E ± 5.7km  
DEPTH = 10.0km (geophysicist)  
NEAR SOUTH COAST OF FRANCE (379)  
ML 2.7 (LDG), MD 2.2 (STR).

SBF 0.09 314 Pg 21 43.30 -0.8

REV 0.13 243 Pg 21 46.00  
Sg 21 44.82 0.3  
AURF 0.17 301 Pg 21 48.72 -0.5  
Sg 21 48.48  
SAOF 0.19 6 Pg 21 44.58 -1.0  
AUTN 0.21 340 Pg 21 45.12 -0.9  
MVIF 0.29 290 Pg 21 47.29 -0.2  
TOUF 0.29 317 Pg 21 46.81 -0.8  
Sg 21 52.33  
CALN 0.46 264 Pg 21 51.10 0.3  
Sg 21 59.29  
FRF 0.68 250 Pg 21 54.90 0.0  
DOI 0.73 344 P 21 55.00 -0.8  
eSg 22 06.20  
CKI 0.83 41 P 21 59.00 1.6  
eSg 22 13.30  
LMR 0.87 238 Pg 21 58.60 0.4  
LRG 0.92 248 Pg 21 59.50 0.7  
Sg 22 12.40  
BNI 1.39 334 P 22 07.00 0.0  
eSg 22 26.00  
PGF 1.65 139 Pn 22 09.00 -1.6  
LPG 1.79 342 Pn 22 14.40 1.7  
Pg 22 16.10  
Sg 22 39.80  
LPL 1.81 342 Pn 22 14.60 1.6  
Pg 22 17.00  
Sg 22 40.60  
S.D. = 1.0 on 17 of 17 obs.

% MAR 17, 1990 23h 01m 36.30s  
35.250 N 116.710 W  
DEPTH = 11.0km  
CENTRAL CALIFORNIA (39)  
<PAS-P> ML 3.3 (PAS).

GSC 0.09 304 iPc 01 39.00 -0.1  
SBB 1.07 239 iPd 01 55.80 -0.7  
PEC 1.40 195 iPd 02 01.20 -0.6  
ISA 1.50 286 iPc 02 01.60 -1.6  
MWC 1.51 228 iP 02 03.20 -0.3  
PLM 1.90 184 eP 02 08.20 -0.8  
ABL 2.10 260 eP 02 10.00 -2.0  
GLA 2.69 144 eP 02 17.50 -2.8  
BCH 2.76 270 eP 02 19.30 -2.1  
TNP 2.86 352 eP 02 20.50 -2.3  
KVN 3.95 344 eP 02 37.00 -1.3  
11 obs. associated

\* MAR 18, 1990 00h 45m 16.88 ± 1.07s  
9.634 N ± 9.1km 124.403 E ± 13.6km  
DEPTH = 78.9 ± 11.2 km  
4.6mb ( 6 obs.)  
MINDANAO, PHILIPPINE ISLANDS (259)

DAV 2.78 155 eP 45 59.50 -0.6  
PGP 5.12 319 iPd 46 33.00 0.3  
PPR 5.59 272 iPd 46 39.00 -0.3  
BAG 7.70 331 eP 47 08.90 0.3  
SSE 21.56 352 P 50 06.00 4.5X  
1.0s 23.00nm 4.5mb  
E 10s 0.20um  
WHN 22.82 337 eP 50 15.50 1.7  
NJ2 22.89 348 Pc 50 20.20 5.7X  
XAN 28.14 332 P 51 04.70 1.0  
CD2 28.59 321 eP 51 11.50 3.8X  
BJI 31.15 348 eP 51 29.00 -1.3  
LZH 32.29 328 P 51 40.00 -0.5  
1.5s 33.00nm 4.9mb  
ASPA 34.37 164 iPc 51 58.10 -0.4  
0.5s 5.00nm 4.7mb  
GTA 36.89 328 eP 52 19.40 -0.3  
GUN 40.52 302 P 52 50.50 0.1  
BWA 49.38 154 eP 54 02.00 1.4  
CAN 50.39 154 eP 54 09.00 0.8  
INK 85.55 21 eP 57 47.00 -0.2  
MBC 86.73 12 ePd 57 52.70 -0.2  
1.0s 8.00nm 4.8mb  
SLL 91.79 332 eP 58 15.50 -1.5  
0.5s 0.80nm 4.4mb  
YKA 95.08 24 eP 58 31.70 -0.4  
0.7s 0.70nm 4.2mb  
S.D. = 0.9 on 17 of 20 obs.

% MAR 18, 1990 00h 49m 18.62 ± 0.76s  
19.307 N ± 6.5km 99.190 W ± 7.5km



18d 00h

DEPTH = 10.0km (geophysicist) CENTRAL MEXICO (523)						MFF 0.41 250 Pg 12 44.40 -0.4 Sg 12 49.60 LSF 0.92 122 Pg 12 52.80 -1.9 Sg 13 04.10 TCF 1.33 109 Pg 13 00.90 -0.7 Sg 13 17.30 MAF 1.58 109 Pg 13 05.50 0.1 Sg 13 24.70 RJF 1.63 151 Pg 13 05.80 -0.4 Sg 13 25.80 BGF 1.69 95 Pg 13 08.10 1.1 Sg 13 28.80 CAF 2.16 147 Pg 13 16.00 2.2 Sg 13 41.80						SHL 80.75 298 eP 07 39.50 0.3 FBA 83.62 18 ePd 07 52.00 -1.1 e 08 04.00 39kmX MIN 84.37 47 eP 07 57.10 -0.5 CMB 84.50 50 eP 07 57.90 -0.2 FRI 84.68 51 eP 07 58.70 -0.2 KVN 86.52 49 eP 08 07.90 -0.4 GUN 86.55 299 P 08 09.60 0.7 PKI 86.87 299 P 08 11.60 1.1 DMN 87.14 299 P 08 13.20 1.5 PNT 88.71 39 eP 08 18.00 -0.4 WMO 89.39 315 eP 08 22.00 0.2 YKA 95.24 27 eP 08 45.40 -2.8X 0.9s 1.10nm 4.3mb					
UNM 0.03 14 iPc 49 19.90 -0.9 iS 49 21.50 IIC 0.46 352 (P) 49 28.00 -0.1 (S) 49 36.50 IIA 0.53 107 (P) 49 29.50 0.2 PPM 0.58 114 eP 49 30.90 0.1 (S) 49 36.80 IIJ 0.67 310 eP 49 33.20 1.0 iS 49 44.00 III 0.96 196 eP 49 36.70 -0.4 (S) 49 47.20						S.D. = 0.8 on 6 of 6 obs.						S.D. = 1.6 on 7 of 7 obs.					
% MAR 18, 1990 01h 06m 23.55±0.71s 46.624 N ± 9.6km 0.477 E ± 7.0km DEPTH = 5.0km (geophysicist) FRANCE (538) ML 2.4 (LDG).						* MAR 18, 1990 02h 46m 57.14±1.48s 10.958 N ± 16.7km 65.631 W ± 10.9km DEPTH = 10.0km (geophysicist) 4.2mb ( 2 obs.) NEAR COAST OF VENEZUELA ( 97) MD 4.4 (TRN).						MAR 18, 1990 04h 21m 45.20±0.74s 5.198 S ± 6.5km 129.447 E ± 11.9km DEPTH = 234.1 ± 7.7 km 4.9mb ( 10 obs.) BANDA SEA (280)					
MFF 0.43 267 Pg 06 30.70 -1.5 Sg 06 35.70 LSF 0.82 117 Pg 06 39.10 -0.8 Sg 06 50.10 TCF 1.24 105 Pn 06 45.30 -1.9 Pg 06 47.00 Sg 07 02.70 MAF 1.50 105 Pg 06 51.40 0.2 Sg 07 10.60 RJF 1.51 151 Pg 06 51.70 0.5 Sg 07 11.20 BGF 1.64 91 Pg 06 54.00 0.9 Sg 07 14.60 LFF 1.69 174 Pg 06 55.40 1.5 Sg 07 18.00 LPF 1.75 324 Pg 06 55.70 1.0 Sg 07 16.60 GRR 1.98 333 Pg 06 58.10 0.0 Sg 07 23.40 CAF 2.03 146 Pg 07 01.90 3.1X Sg 07 28.80						TCE 3.82 94 eP 47 56.81 -0.5 eS 48 47.50 GRW 4.07 73 eP 48 03.00 2.1 TRN 4.17 94 eP 48 02.00 -0.2 eS 48 50.04 TBH 4.51 96 eP 48 06.85 -0.2 SVB 4.86 61 eP 48 11.75 -0.4 eS 49 05.11 SLB 5.31 57 eP 48 18.36 -0.2 eS 49 16.98 BIM 5.68 51 eP 48 23.08 -0.7 FDF 5.76 49 ePc 48 24.74 -0.1 0.2s 0.80nm 4.1mb S 49 23.10 YKA 62.19 337 eP 57 21.70 0.8 0.7s 1.20nm 4.2mb MBC 71.19 348 eP 58 17.00 -0.8 S.D. = 1.0 on 10 of 10 obs.						AAI 1.95 320 ePd 22 27.40 1.2 e(S) 22 54.50 MTN 7.78 168 iPd 23 35.40 -1.0 eS 24 55.60 KNA 10.51 184 iPc 24 11.10 -0.3 0.3s 72.00nm 5.4mb X eS 26 02.00 WB5 15.36 162 iP 25 10.50 -1.3 eS 27 55.80 WRA 15.41 162 Pc 25 11.10 -1.3 0.6s 9.90nm 4.4mb KKM 17.30 310 ePd 25 34.20 0.2 OIS 18.18 148 iPc 25 42.40 -0.8 0.8s 57.00nm 5.1mb eS 28 56.00 ASPA 18.86 167 iPc 25 50.50 0.4 0.5s 87.00nm 5.5mb iS 29 09.80 NANU 21.89 217 iPd 26 21.50 1.5 FORR 25.55 183 iPd 26 54.30 -0.1 0.4s 20.00nm 5.1mb COOL 26.72 196 eP 27 05.00 -0.1 MRWA 27.07 207 eP 27 08.40 0.2 BAL 27.98 204 eP 27 16.00 -0.4 KLB 28.45 201 eP 27 21.00 0.4 MUN 29.39 203 iPd 27 29.00 0.2 ADE 30.84 165 eP 27 42.70 1.2 0.7s 21.92nm 4.9mb BWA 33.98 151 eP 28 10.80 2.1 CAN 34.99 151 eP 28 18.20 1.0 CHG 38.37 309 ePc 28 46.30 0.6 0.9s 13.66nm 4.5mb XAN 43.58 335 P 29 27.30 -0.7 GTA 52.14 331 P 30 34.00 0.1 GUN 53.36 311 P 30 42.80 -0.6 PKI 53.55 310 P 30 44.00 -0.8 0.6s 18.00nm 4.8mb KKN 53.76 310 P 30 45.80 -0.4 0.6s 22.00nm 4.9mb DMN 53.80 310 P 30 46.30 -0.2 0.6s 25.00nm 4.9mb KOD 53.99 287 eP 30 47.70 -0.4 GBA 54.90 291 Pc 30 53.20 -1.1 0.7s 16.10nm 4.7mb WMO 61.59 327 iPd 31 40.60 0.4 CER 103.76 234 ePd iff 35 45.40 23.3X i 44 40.00					
S.D. = 1.3 on 9 of 10 obs.						MAR 18, 1990 03h 55m 26.96±0.39s 11.385 S ± 7.3km 165.826 E ± 8.1km DEPTH = 33.0km (normol) 4.9mb ( 7 obs.) 4.6Msz ( 2 obs.) SANTA CRUZ ISLANDS (184)						ASPA 18.86 167 iPc 25 50.50 0.4 0.5s 87.00nm 5.5mb iS 29 09.80 NANU 21.89 217 iPd 26 21.50 1.5 FORR 25.55 183 iPd 26 54.30 -0.1 0.4s 20.00nm 5.1mb COOL 26.72 196 eP 27 05.00 -0.1 MRWA 27.07 207 eP 27 08.40 0.2 BAL 27.98 204 eP 27 16.00 -0.4 KLB 28.45 201 eP 27 21.00 0.4 MUN 29.39 203 iPd 27 29.00 0.2 ADE 30.84 165 eP 27 42.70 1.2 0.7s 21.92nm 4.9mb BWA 33.98 151 eP 28 10.80 2.1 CAN 34.99 151 eP 28 18.20 1.0 CHG 38.37 309 ePc 28 46.30 0.6 0.9s 13.66nm 4.5mb XAN 43.58 335 P 29 27.30 -0.7 GTA 52.14 331 P 30 34.00 0.1 GUN 53.36 311 P 30 42.80 -0.6 PKI 53.55 310 P 30 44.00 -0.8 0.6s 18.00nm 4.8mb KKN 53.76 310 P 30 45.80 -0.4 0.6s 22.00nm 4.9mb DMN 53.80 310 P 30 46.30 -0.2 0.6s 25.00nm 4.9mb KOD 53.99 287 eP 30 47.70 -0.4 GBA 54.90 291 Pc 30 53.20 -1.1 0.7s 16.10nm 4.7mb WMO 61.59 327 iPd 31 40.60 0.4 CER 103.76 234 ePd iff 35 45.40 23.3X i 44 40.00					
% MAR 18, 1990 01h 24m 33.25±1.94s 39.735 N ± 6.1km 16.660 E ± 14.7km DEPTH = 5.0km (geophysicist) SOUTHERN ITALY (390)						HNR 6.10 288 eP 56 55.00 -2.2 eS 57 02.00 DZM 10.64 177 iPc 57 59.10 -1.3 iS 00 31.00 BRS 20.10 216 iPc 00 02.00 1.2 i(pP) 00 13.00 47kmX iS 03 54.00 CTA 20.71 243 iPd 00 07.00 -0.2 1.0s 60.00nm 4.9mb e 04 15.00 RMO 22.01 225 eP 00 20.70 0.4 COO 23.06 212 eP 00 32.00 1.4 e 00 44.00 48kmX WB5 31.40 250 eP 01 46.20 -1.3 WRA 31.44 250 Pc 01 46.60 -1.2 1.0s 10.50nm 4.6mb ASPA 32.71 244 iPc 01 57.20 -1.7 1.3s 16.00nm 4.8mb Z 20s 1.18um 4.6Msz LR 13 55.30						ZOB0 152.48 141 PKP 41 17.00 7.7X Z 22s 0.20um 4.9Msz LR 52 20.00 S.D. = 0.9 on 28 of 30 obs.					
ROI 0.18 203 P 24 35.50 -1.4 TDS 0.26 253 P 24 38.50 0.0 eSg 24 42.50 CSI 0.29 278 P 24 38.60 -0.5 ORI 0.37 334 P 24 40.40 -0.2 eSg 24 45.70 MMN 0.54 287 P 24 44.00 0.0 CZI 0.66 218 P 24 46.80 0.4 MGR 0.94 296 P 24 52.00 0.4 eSg 25 04.40 ATN 1.83 211 P 25 07.00 1.4 S.D. = 1.0 on 8 of 8 obs.						PPR 51.32 292 iPc 04 31.00 0.4 MAT 54.31 333 eP 05 02.00 9.5X 1.2s 17.19nm 5.0mb MDJ 64.68 332 eP 06 03.00 -0.9 CN2 66.07 329 Pd 06 11.80 -1.0 IPM 66.38 280 ePd 06 16.70 1.3 GYA 68.67 304 iPd 06 29.60 -0.1 pP 06 39.80 33kmX TIY 69.86 317 P 06 37.00 0.3 Z 16s 0.50um 4.9MszX XAN 70.41 312 P 06 39.50 -0.6 KMI 71.36 301 eP 06 47.50 1.2 CHG 72.43 294 eP 06 53.20 0.7 1.3s 21.15nm 5.0mb CD2 72.87 307 P 06 56.90 2.0 LZH 75.04 312 eP 07 11.00 3.4X 2.0s 42.00nm 5.1mb Z 20s 0.30um 4.6Msz GTA 79.35 314 eP 07 32.00 0.6						% MAR 18, 1990 02h 12m 36.67±2.06s 46.744 N ± 25.3km 0.408 E ± 8.4km DEPTH = 5.0km (geophysicist) FRANCE (538) ML 2.3 (LDG).					
MNI 3.75 252 iPd 10 25.20 0.2 iS 11 10.20 MTN 15.58 170 eP 12 56.00 -0.7 e 15 48.00 KNA 18.23 179 eP 13 27.10 -0.1 WB5 23.09 166 eP 14 16.00 0.4 WRA 23.14 166 Pd 14 16.80 0.7 0.4s 9.60nm 4.8mb ASPA 26.64 169 eP 14 48.40 -0.2 0.7s 7.00nm 4.5mb HYB 51.08 290 ePc 18 10.60 -0.3 S.D. = 0.7 on 7 of 7 obs.						MAR 18, 1990 04h 29m 33.32±2.75s 16.166 N ± 26.4km 97.956 W ± 11.0km DEPTH = 33.0km (normol) OAXACA, MEXICO ( 60)											



18d 04h

OXX 1.49 52 iP 29 58.13 -0.1  
 ACX 1.95 291 iP 30 05.12 0.3  
 ILL 2.63 327 iP 30 13.70 -0.9  
 IIT 2.86 353 (P) 30 18.70 0.8  
 PPM 2.95 348 iP 30 19.35 -0.1  
 CRX 3.62 333 (P) 30 35.70 7.0X  
 ILL 3.93 335 (P) 30 41.50 8.2X  
 MRX 4.68 319 (P) 31 29.62 28.6X  
 S.D. = 0.9 on 5 of 8 obs.

& MAR 18, 1990 04h 30m 12.40s  
 61.134 N 151.114 W  
 DEPTH = 50.6km  
 SOUTHERN ALASKA (2)  
 <AGS-P>.

SUA 0.38 28 iP 30 22.42 -0.1  
 NKA 0.40 189 iP 30 24.46 1.9  
 SPU 0.46 276 iP 30 23.12 -0.2  
 CRP 0.52 285 iP 30 23.87 -0.3  
 NCG 0.57 299 iP 30 24.27 -0.5  
 PMS 0.76 81 iPc 30 26.90 -0.2  
 PWA 0.79 48 iPc 30 27.30 -0.1  
 RDT 0.85 229 iP 30 27.67 -0.6  
 SKT 0.87 347 iP 30 27.41 -1.2  
 PLRM 1.06 63 eP 30 30.04 -1.1  
 PMR 1.06 63 iPd 30 30.00 -1.1  
 NNL 1.10 185 iP 30 32.12 0.4  
 GH0 1.23 58 eP 30 32.51 -1.1  
 SEW 1.32 141 eP 30 33.21 -1.5  
 CUT 1.34 17 iP 30 33.66 -1.3  
 SML 1.50 62 eP 30 35.82 -1.5  
 CNPM 1.61 182 iP 30 37.76 -1.2  
 GLI 1.97 96 eP 30 40.64 -3.4  
 HUR 1.98 20 iP 30 43.76 -0.3  
 POB 2.04 230 eP 30 43.27 -1.6  
 AUL 2.10 214 eP 30 45.69 -0.1  
 AUE 2.11 213 eP 30 45.56 -0.3  
 SVW 2.19 271 iPc 30 44.70 -2.4  
 VZW 2.22 90 iP 30 44.71 -2.8  
 NCA 2.23 65 eP 30 45.96 -1.6  
 KTH 2.43 2 eP 30 49.21 -1.3  
 RND 2.51 24 eP 30 51.29 -0.4  
 KLU 2.53 80 iP 30 49.12 -2.8  
 CDD 2.55 211 eP 30 50.81 -1.3  
 TOA 2.55 65 ePc 30 51.00 -1.2  
 MCK 2.80 20 eP 30 56.14 0.4  
 TTA 2.93 310 eP 30 55.00 -2.7  
 PAX 3.23 53 eP 31 00.44 -1.6  
 KDC 3.47 192 eP 31 02.70 -2.5  
 GLB 3.54 82 eP 31 03.29 -3.0  
 DDM 3.61 40 eP 31 07.04 -0.2  
 WRH 3.63 21 eP 31 05.92 -1.5  
 HDA 3.80 28 eP 31 09.69 -0.2  
 CCB 3.84 22 eP 31 08.74 -1.6  
 FBA 4.07 20 iPc 31 12.00 -1.7  
 IMA 5.08 348 eP 31 24.30 -3.8  
 41 obs. associated

? MAR 18, 1990 05h 42m 32.14 ± 6.35s  
 20.492 N ± 40.1km 96.233 W ± 39.5km  
 DEPTH = 33.0km (normal)  
 VERA CRUZ, MEXICO (525)  
 IIT 2.44 234 iP 43 10.30 -0.5  
 IIA 2.64 240 (P) 43 13.50 0.1  
 PPM 2.66 238 iP 43 14.30 0.2  
 IIC 2.93 256 (P) 43 17.50 -0.3

(S) 43 52.00  
 ILL 3.37 258 iP 43 24.00 0.5  
 CRX 3.42 252 (P) 43 26.00 1.3  
 OXX 3.42 188 iP 43 24.00 0.1  
 ILL 3.71 236 iP 43 28.30 -0.4  
 MRX 4.73 261 (P) 44 00.70 -0.9  
 ACX 4.98 224 (P) 43 34.60 -12.0X  
 S.D. = 0.7 on 9 of 10 obs.

\* MAR 18, 1990 06h 57m 13.96 ± 0.85s  
 19.459 N ± 7.7km 65.275 W ± 16.8km  
 DEPTH = 33.0km (normal)

PUERTO RICO REGION (90)  
 LPR 1.28 206 P 57 35.90 0.3  
 CPD 1.54 203 P 57 40.00 0.6  
 SJG 1.58 212 iP 57 40.10 0.1  
 LRS 1.89 232 P 57 44.00 -0.5  
 PORP 1.90 223 P 57 44.90 0.2  
 ZOBO 35.61 185 eP 04 10.00 -1.4  
 CCH 36.62 181 (P) 04 20.00 0.4  
 SES 47.49 322 eP 05 47.00 -0.7  
 MBC 63.00 347 eP 07 40.00 0.6  
 INK 64.06 337 eP 07 47.00 0.5  
 S.D. = 0.8 on 10 of 10 obs.

\* MAR 18, 1990 07h 28m 42.40 ± 0.71s  
 30.335 N ± 16.4km 68.339 E ± 9.9km  
 DEPTH = 10.0km (geophysicist)  
 4.4mb (6 obs.)

PAKISTAN (710)  
 QUE 1.21 263 eP 29 03.40 -1.7  
 NDI 7.91 100 eP 30 40.00 -0.2  
 MAIO 9.49 311 eP 31 04.00 1.8  
 KKN 15.03 96 P 32 10.20 -6.6X  
 PKI 15.20 96 P 32 16.10 -2.9  
 HYB 15.88 142 eP 32 30.00 2.3  
 SHL 21.32 97 eP 33 33.00 1.1  
 CHG 30.01 105 eP 34 54.40 0.8  
 SUF 42.17 333 eP 36 41.70 5.3X  
 SOD 44.51 338 eP 36 54.00 -1.4  
 KBA 45.11 308 e(P) 37 01.50 0.8  
 HFS 46.73 326 eP 37 13.50 0.4  
 NB2 48.13 327 P 37 23.30 -0.9  
 MBC 73.57 2 eP 40 18.00 1.2  
 WRA 80.77 119 Pd 40 56.30 -1.6  
 YKA 87.47 1 eP 41 31.40 0.4  
 S.D. = 1.6 on 14 of 16 obs.

? MAR 18, 1990 08h 21m 43.87 ± 5.09s  
 33.086 S ± 22.4km 71.608 W ± 29.5km  
 DEPTH = 10.0km (geophysicist)

NEAR COAST OF CENTRAL CHILE (135)  
 LCCH 0.39 175 eP 21 52.00 0.1  
 ROCH 0.51 77 iPd 21 54.20 -0.1  
 TACH 0.80 135 iPd 21 59.00 -0.4  
 SAN 0.87 115 iPc 22 01.20 0.5  
 PCH 1.06 121 iPd 22 04.10 0.2  
 FCH 1.13 103 eP 22 05.30 0.0  
 CHCH 1.16 137 iPd 22 05.30 -0.3  
 S.D. = 0.4 on 7 of 7 obs.

? MAR 18, 1990 08h 41m 21.67 ± 3.94s  
 16.839 N ± 30.3km 99.875 W ± 21.7km  
 DEPTH = 10.0km (geophysicist)

NEAR COAST OF GUERRERO, MEXICO (50)  
 ACX 0.03 28 iP 41 21.51 -2.2  
 ILL 1.58 14 iP 41 46.80 -3.1X  
 PPM 2.51 28 iP 42 04.30 0.6  
 IIA 2.57 27 (P) 42 03.50 -0.5  
 IIT 2.63 34 (P) 42 06.61 1.4  
 ILL 2.88 3 (P) 42 10.50 1.6  
 IIC 2.97 11 (P) 42 15.50 5.5X  
 OXX 3.03 85 (P) 42 11.00 0.3  
 MRX 3.11 336 (P) 42 11.50 -0.2  
 S.D. = 1.6 on 7 of 9 obs.

\* MAR 18, 1990 08h 48m 25.38 ± 0.85s  
 38.541 N ± 5.7km 23.507 E ± 17.0km  
 DEPTH = 10.0km (geophysicist)  
 GREECE (364)  
 ML 2.7 (ATH).

ATH 0.59 164 ePn 48 37.50 0.2  
 NEO 0.80 344 ePn 48 41.00 0.1  
 PLG 1.83 359 ePn 48 57.00 -0.2  
 ITM 1.85 223 ePn 48 57.50 0.1  
 VLI 1.88 194 ePn 48 57.50 -0.3  
 S.D. = 0.3 on 5 of 5 obs.

\* MAR 18, 1990 08h 53m 18.76 ± 0.81s  
 39.212 N ± 7.0km 27.847 E ± 7.8km  
 DEPTH = 10.0km (geophysicist)  
 TURKEY (366)

DST 0.72 57 ePg 53 33.00 0.0  
 IZM 0.93 210 ePg 53 36.50 -0.1  
 KCT 1.11 21 iPn 53 40.00 0.5  
 EDC 1.13 1 iPn 53 39.00 -1.0  
 BNT 1.14 3 iPn 53 40.50 0.3  
 EZN 1.33 298 ePn 53 43.50 0.3  
 YLV 1.79 40 ePn 53 50.00 0.0  
 S.D. = 0.6 on 7 of 7 obs.

\* MAR 18, 1990 09h 19m 14.34 ± 0.48s  
 44.787 N ± 3.4km 7.608 E ± 5.4km  
 DEPTH = 10.0km (geophysicist)  
 NORTHERN ITALY (545)  
 ML 2.0 (GEN).

RSP 0.44 326 P 19 23.16 -0.2  
 PZZ 0.46 232 P 19 23.67 0.0  
 ROB 0.53 159 P 19 25.00 0.0  
 ENR 0.58 194 P 19 25.93 -0.2  
 STV 0.58 201 P 19 26.03 -0.1  
 RRL 0.60 283 P 19 26.95 0.3  
 FIN 0.72 143 P 19 28.29 -0.2  
 LSD 0.74 335 P 19 29.00 -0.1  
 ORX 0.89 17 P 19 31.57 0.1  
 IMI 0.90 167 P 19 32.08 0.5  
 S.D. = 0.3 on 10 of 10 obs.

& MAR 18, 1990 09h 44m 14.42s  
 59.189 N 145.160 W  
 DEPTH = 10.0km (geophysicist)  
 GULF OF ALASKA (15)  
 <AGS-P>.  
 GLI 1.95 331 eP 44 43.45 -4.5



GWF	2.59	326	Pn	55	14.06	0.4	eSg	57	04.00											
VZW	2.00	340	iP	44	43.68	-5.0														
KLU	2.34	351	iP	44	48.45	-5.2	RBL	2.60	98	Pg	55	22.18		CLL	4.91	24	(Pg)	56	06.00	19.4X
GL8	2.36	16	iP	44	48.60	-5.2	HAU	2.63	297	Pn	55	16.20	2.2	eSg	57	05.00				
SEW	2.36	295	eP	44	48.39	-5.4				Pg	55	14.30	-0.1	MAF	5.06	265	Pn	55	48.30	-0.5
PCA	2.65	68	iP	44	52.92	-5.1				Pg	55	22.40		Sg	57	10.60				
SLKM	2.88	300	iP	44	55.46	-5.7				Sn	55	44.00		SNF	5.18	317	iPc	55	50.90	0.4
NCA	2.93	344	iP	44	57.19	-4.8	CKI	2.68	205	Sg	55	53.20		TCF	5.29	266	Pn	55	50.60	-1.5
TOA	2.97	351	iP	44	58.00	-4.5	BDI	2.85	169	P	55	16.00	1.0	CAF	5.76	253	Pn	55	58.20	-0.5
SML	3.06	331	eP	45	00.33	-3.4	BNI	2.86	232	P	55	17.00	-0.6	LFF	6.64	256	Pn	56	11.80	0.8
PLRM	3.11	322	eP	45	00.34	-4.1	RRL	2.89	229	P	55	20.00	2.3	EDC	14.58	110	ePn	57	52.00	-7.2X
GHO	3.19	326	eP	45	01.29	-4.4				P	55	20.05	1.8	BNT	14.61	110	iPn	57	54.00	-5.6X
PAX	3.80	358	iP	45	08.90	-5.4	FIN	2.89	204	S	55	57.17		YLV	15.45	107	ePn	58	07.00	-3.6X
RDT	3.91	294	eP	45	10.40	-5.4				P	55	18.64	0.5	W85	127.73	79	ePKP	13	34.80	-3.6X
SPU	3.98	303	iP	45	11.27	-5.6	ROB	2.92	209	S	55	55.20		WRA	127.75	79	PKPc	13	35.00	-3.5X
CUT	4.08	324	eP	45	13.43	-4.7				P	55	19.15	0.7	0.5s	2.50nm					
NCG	4.13	306	eP	45	13.39	-5.6	VOY	2.92	105	S	55	57.38		ASPA	129.99	83	iPKPd	13	34.40	-8.3X
SKT	4.21	314	eP	45	15.41	-4.6				ePn	55	20.30	1.7	0.4s	13.00nm					
19 obs. associated										eSn	55	57.00		S.D. = 1.1 on 76 of 89 obs.						
MAR 18, 1990 09h 54m 31.10 ± 0.23s							TRI	2.96	112	P	55	19.00	0.1	MAR 18, 1990 09h 58m 48.21 ± 0.50s						
46.867 N ± 2.4km 9.841 E ± 2.3km							PZZ	3.04	220	P	55	19.53	-0.8	46.848 N ± 5.2km 9.795 E ± 4.6km						
DEPTH = 10.0km (geophysicist)							WET	3.06	41	iPnc	55	19.60	-0.8	DEPTH = 10.0km (geophysicist)						
SWITZERLAND (544)							iPg	55	29.90		55	29.90		SWITZERLAND (544)						
ML 3.6 (FUR), 3.4 (KBA), 3.4							ENR	3.14	214	P	55	20.82	-0.8	ML 2.9 (LDG), 2.8 (FUR), 2.7						
(LDG), 3.4 (GRF).							S	56	00.22		56	00.22		(GRF), 2.6 (KBA).						
							STV	3.16	215	P	55	20.69	-1.2	OSS	0.29	124	iPd	58	51.90	-2.4
OSS	0.28	131	iPd	54	35.10	-1.9	PII	3.18	171	P	55	22.50	0.4	VDL	0.43	212	iPc	58	55.60	-1.3
VDL	0.46	214	iPc	54	38.60	-1.9	IMI	3.26	206	P	55	23.87	0.5	SAX	0.51	323	ePc	58	58.30	-0.3
SAX	0.51	319	ePc	54	41.50	-0.1				S	56	03.61		LLS	0.55	272	eP	58	58.10	-1.2
LLS	0.58	271	ePd	54	41.40	-1.6	LJU	3.35	103	eP	55	20.50	-4.0X	OGA	0.84	88	ePg	59	02.50	-2.2
OGA	0.81	89	iPg	54	45.30	-1.7				e	55	28.40		TMA	0.98	221	ePc	59	05.60	-1.3
TMA	1.01	222	iPc	54	48.70	-1.7				e(Sn)	56	10.00		MDI	1.07	183	Pd	59	07.40	-1.0
MDI	1.09	185	Pd	54	50.50	-1.1	CEY	3.37	108	eP	55	35.00	10.1X				eSg	59	20.00	
			eSg	55	02.70					e(Sn)	56	19.00		VAI	1.21	216	Pc	59	10.10	-0.6
ZLA	1.17	302	ePc	54	53.00	0.1	KHC	3.38	47	iPn	55	24.40	-0.6				eSg	59	26.40	
VAI	1.24	217	Pc	54	53.00	-1.2				e	55	29.50		SLE	1.28	317	ePd	59	12.60	0.7
			eSg	55	11.10		SBF	3.45	210	Pn	55	26.40	0.4	SAL	1.34	157	P	59	14.00	1.1
SLE	1.28	315	iPd	54	55.60	0.7				Sn	56	09.00					eSg	59	31.00	
SCE	1.29	82	iPd	54	53.80	-1.4	TNS	3.48	345	ePn	55	26.80	0.3	CTI	1.51	121	P	59	15.10	-0.3
SAL	1.35	159	P	54	55.30	-0.6				eSn	56	25.20					eSg	59	34.30	
CTI	1.50	123	P	54	58.00	-0.1	MOX	3.96	17	ePn	55	30.50	-2.7	FEL	1.59	311	ePn	59	16.41	-0.2
			eSg	55	17.40					iPg	55	46.00		FUR	1.66	37	ePg	59	19.00	1.5
MMK	1.53	239	ePd	54	58.10	-0.6				iSn	56	17.00		ORO	1.76	226	P	59	20.00	1.0
FEL	1.60	310	ePn	54	59.64	0.0				iSg	56	44.00					eSg	59	42.00	
FUR	1.62	36	iPnc	55	00.70	0.8				eSg	00	01.00		FVI	2.07	96	P	59	24.40	1.0
			iPg	55	01.90		VBY	4.00	108	eP	56	02.80	29.1X	EMS	2.13	250	ePd	59	26.30	1.9
BBS	1.70	291	Pn	55	01.50	0.5				e	56	23.00		BSF	2.27	297	Pn	59	26.30	-0.1
			Pg	55	03.71					e(Sn)	56	42.10					Pg	59	33.30	
			Sg	55	26.27		FRF	4.00	215	Pn	55	33.70	-0.1				Sg	00	02.40	
ORO	1.79	227	P	55	03.50	1.1				Sn	56	21.80		CDF	2.31	314	Pn	59	27.00	0.0
			eSn	55	25.70		ARV	4.02	146	P	55	34.00	0.0				Pg	59	33.90	
DIX	1.85	246	eP	55	04.40	1.0	LBF	4.02	274	Pn	55	34.00	-0.1				Sg	00	03.00	
FVI	2.04	97	P	55	07.30	1.5				Sg	56	37.30		KBA	2.44	83	ePn	59	31.50	2.6
			eSn	55	31.50		LOR	4.11	278	Pn	55	35.40	0.1				i	59	32.80	
LOMF	2.11	284	Pn	55	07.24	0.2				Sg	56	40.00					iSg	00	04.80	
			Pg	55	11.23		SMF	4.13	269	Pn	55	35.00	-0.6				i	00	05.60	
			Sg	55	38.76					Pg	55	49.10		GRC1	2.44	28	iPnc	59	26.90	-1.9
BOB	2.12	188	P	55	07.50	0.4				Sg	56	39.20					ePg	59	33.20	
EMS	2.16	249	ePd	55	09.30	1.4	LRG	4.21	217	Pn	55	36.50	-0.2				e(Sn)	59	57.80	
BHG	2.24	66	ePn	55	10.20	1.4	LNR	4.25	215	Pn	55	37.10	-0.2				eSg	00	04.70	
ECH	2.26	308	Pn	55	09.12	0.0	ASS	4.29	151	P	55	37.00	-1.0	LPG	2.51	239	Pn	59	33.00	3.0X
			Pg	55	15.71		SSF	4.34	275	Pn	55	38.50	-0.1	LPL	2.51	239	Pn	59	33.00	3.1X
WLS	2.29	314	Pn	55	09.44	0.0				Sg	56	49.20		HAU	2.61	298	Pn	59	31.10	-0.1
			Pg	55	16.40		PTJ	4.34	101	eP	55	55.70	17.0X				Pg	59	39.20	
			Sg	55	45.82		PRU	4.42	43	Pn	55	38.50	-1.2				Sg	00	11.80	
BSF	2.29	296	Pn	55	09.49	-0.1				Pg	55	50.50		RBL	2.63	98	P	59	33.60	2.1
			Pg	55	15.03					Sg	56	40.50		VOY	2.95	105	ePn	59	44.60	8.6X
			Sg	55	45.91		AVF	4.45	271	Pn	55	39.20	-1.0				eSn	00	19.40	
CDF	2.32	313	Pn	55	10.04	0.0	MEM	4.52	327	iPd	55	40.93	-0.2	WET	3.09	41	ePn	59	36.50	-1.5
			Pg	55	17.07		VKA	4.60	70	eP	56	27.00	44.7X				iPg	59	46.60	
			Sg	55	47.46					i	56	38.30		SBF	3.42	210	Pn	59	45.20	2.6
LSD	2.34	234	P	55	11.59	1.2				i	56	52.00		S.D. = 1.5 on 24 of 27 obs.						
			S	55	45.56					i										



18d 10h

% MAR 18, 1990 10h 56m 31.41± 1.61s  
39.460 N ±13.0km 28.301 E ± 9.5km  
DEPTH = 10.0km (geophysicist)

TURKEY (366)

DST 0.29 60 iPg 56 37.60 0.1  
iSg 56 41.10  
KCT 0.79 3 iPg 56 46.90 0.1  
BNT 0.94 342 iPg 56 49.90 0.5  
iSg 57 02.40  
EDC 0.95 339 iPg 56 49.00 -0.4  
eSg 57 01.00  
YLV 1.38 36 iPn 56 56.40 -0.3  
ALT 1.46 105 ePn 56 58.00 0.1  
MFT 1.54 330 ePn 56 58.90 -0.1  
S.D. = 0.4 on 7 of 7 obs.

? MAR 18, 1990 12h 23m 28.95± 0.97s  
31.400 S ±34.0km 68.605 W ±44.9km  
DEPTH = 100.0km (geophysicist)

SAN JUAN PROVINCE, ARGENTINA (137)

RTLL 0.14 59 iPc 23 43.10 -0.4  
ZON 0.16 203 iPd 23 43.50 0.0  
eS 23 53.00  
CFA 0.37 124 iPc 23 44.50 0.3  
S 23 55.50  
RTRS 1.43 329 iPd 23 54.80 0.1  
eS 24 13.50  
S.D. = 0.5 on 4 of 4 obs.

% MAR 18, 1990 12h 50m 56.93± 0.92s  
37.791 N ±10.2km 14.953 E ± 5.1km  
DEPTH = 10.0km (geophysicist)

SICILY (398)

MNO 0.25 304 P 51 03.50 1.2  
eSg 51 10.00  
ATN 0.55 47 P 51 08.30 0.3  
eSg 51 19.00  
MSI 0.63 49 P 51 10.10 0.5  
GIB 0.76 285 P 51 11.80 0.0  
eSn 51 22.60  
SOI 0.92 72 P 51 14.50 0.1  
eSg 51 30.00  
FAI 1.14 243 P 51 18.40 0.2  
USI 1.67 304 P 51 25.00 -1.3  
CZI 1.70 33 P 51 25.20 -1.5  
TDS 2.16 30 P 51 33.80 0.4  
ROI 2.18 35 P 51 33.70 -0.1  
CSI 2.24 27 P 51 35.30 0.7  
MMN 2.25 21 P 51 34.50 -0.2  
MGR 2.39 11 P 51 36.40 -0.3  
S.D. = 0.8 on 13 of 13 obs.

? MAR 18, 1990 13h 03m 36.59± 1.28s  
37.838 N ±10.1km 15.399 E ±11.3km  
DEPTH = 10.0km (geophysicist)

SICILY (398)

ATN 0.33 9 P 03 52.50 9.2X  
eSg 04 03.30  
MNO 0.56 280 P 03 48.00 -0.2  
eSg 03 55.10  
MEU 0.83 207 P 03 52.60 0.0  
GIB 1.10 278 P 03 57.50 0.3  
eSg 04 12.00  
CZI 1.49 22 P 04 03.40 0.0  
eSg 04 19.60  
S.D. = 0.3 on 4 of 5 obs.

\* MAR 18, 1990 13h 19m 20.96± 1.22s  
50.585 N ±15.2km 13.678 E ± 8.8km  
DEPTH = 10.0km (geophysicist)

CZECHOSLOVAKIA (547)

ML 2.6 (GRF).

HOF 1.18 257 iPg 19 42.70 -0.3  
WET 1.53 200 iPn 19 47.50 -0.9  
KSP 1.68 80 iP 19 50.50 -0.1  
0.5s 61.00nm  
iS 20 13.00  
GRF 1.82 241 e(Pn) 19 53.20 0.7  
ePg 19 54.90  
eSg 20 20.30  
KBA 3.52 184 e(Pg) 20 17.50 0.6  
e 21 01.00

CTT 13.93 127 iPg 21 09.50  
S.D. = 0.9 on 5 of 6 obs.

\* MAR 18, 1990 13h 25m 25.11± 0.38s  
22.235 S ±13.1km 174.088 E ± 9.1km  
DEPTH = 21.3km ( 2 depth phases)  
4.9mb ( 3 obs.) 4.5Msz ( 1 obs.)

LOYALTY ISLANDS REGION (189)

SVA 5.80 46 eP 26 50.60 -1.5  
eS 27 58.90  
VUN 5.88 45 eP 26 51.00 -2.2  
DZM 7.09 270 iP 27 10.80 0.5  
iS 28 29.00  
WEL 19.00 178 P 29 47.00 -0.9  
eS 33 36.00  
BRS 20.01 251 iPc 30 01.00 1.6  
i(P) 30 12.00 48kmX  
iS 33 51.00  
COO 21.52 243 eP 30 15.00 0.0  
CAN 25.48 234 eP 30 54.00 0.5  
ASPA 36.95 260 eP 32 33.90 -0.9  
0.9s 15.00nm 4.8mb  
Z 22s 0.74um 4.4MszX

MBL 50.19 260 eP 34 20.50 -1.1  
KLB 50.62 247 eP 34 23.00 -1.7  
NWA0 50.98 245 eP 34 26.00 -1.5  
Z 20s 0.50um 4.5Msz  
MUN 51.91 246 eP 34 33.50 -1.0  
MAT 67.57 329 eP 36 22.00 -0.2  
1.0s 15.00nm 5.1mb

BJI 82.14 319 eP 37 54.50 8.9X  
CHG 84.01 293 eP 37 56.30 0.6  
PRS 84.28 47 e(P) 37 57.60 0.9  
MHC 84.64 46 eP 37 59.50 0.8  
PAS 85.36 50 eP 38 04.00 1.9  
MWC 85.48 50 eP 38 10.00 7.0X  
BAR 85.71 52 eP 38 05.00 1.0  
FRI 85.76 47 eP 38 03.90 -0.1  
WDC 85.84 43 eP 38 04.60 0.2  
RVR 85.85 51 eP 38 04.00 -0.6  
CMB 85.86 46 eP 38 04.30 -0.3  
SBB 85.88 50 eP 38 03.00 -1.8  
PLM 85.91 52 eP 38 05.00 -0.1  
ISA 85.92 49 eP 38 05.00 0.0  
ORV 85.94 44 e(P) 38 04.50 -0.4  
TPC 86.87 51 eP 38 10.00 0.4  
GSC 86.91 50 eP 38 10.00 0.1  
GLA 87.25 53 eP 38 13.00 1.5  
KVN 87.91 46 eP 38 14.70 -0.1  
pP 38 21.50 21km  
FBA 91.68 15 eP 38 30.20 -1.4  
pP 38 37.10 21km

PNT 92.33 37 eP 38 41.00 6.1X  
MLR 145.18 319 ePKP 45 00.00 -2.9  
KSP 146.60 334 ePKP 45 05.00 0.2  
CLL 147.46 338 ePKP 45 07.00 0.8  
BRG 147.48 336 ePKP 45 06.10 -0.1  
PRU 147.96 335 ePKP 45 08.50 1.5  
e 45 15.50

KHC 149.03 335 PKP 45 11.30 2.5  
e 45 18.00  
SKO 149.81 317 ePKP 45 13.00 2.8X  
MEM 150.18 345 PKP 45 21.70 11.3X  
OHR 150.67 316 ePKP 45 12.50 0.9  
KBA 150.75 333 e(PKP) 45 14.00 2.3  
0.7s 2.00nm  
i 45 18.50

DOU 150.99 346 PKP 45 24.30 12.6X  
LJU 151.00 330 e(PKP) 45 15.50 3.6X  
VBY 151.06 328 e(PKP) 45 23.00 11.1X  
VOY 151.31 331 e(PKP) 45 14.80 2.4  
S.D. = 1.3 on 42 of 50 obs.

\* MAR 18, 1990 13h 30m 18.70± 0.81s  
37.671 N ± 7.3km 15.045 E ± 6.6km  
DEPTH = 10.0km (geophysicist)

SICILY (398)

MNO 0.38 313 P 30 26.40 -0.2  
eSg 30 32.70  
MEU 0.58 189 P 30 30.50 0.1

ATN 0.59 34 P 30 36.80  
eSg 30 31.00 0.4  
eSg 30 41.40

GIB 0.87 292 P 30 35.50 0.1  
eSg 30 49.50  
SOI 0.89 63 P 30 35.50 -0.3  
eSg 30 51.00  
S.D. = 0.4 on 5 of 5 obs.

? MAR 18, 1990 13h 33m 09.79± 1.03s  
37.691 N ± 7.8km 15.049 E ± 9.2km  
DEPTH = 10.0km (geophysicist)

SICILY (398)

MNO 0.37 311 P 33 17.40 0.0  
eSg 33 23.70  
ATN 0.57 35 P 33 21.40 0.0  
eSg 33 31.00  
MEU 0.60 189 P 33 21.90 0.0  
eSg 33 30.10  
GIB 0.86 291 P 33 26.50 0.0  
eSg 33 40.00  
S.D. = 0.1 on 4 of 4 obs.

% MAR 18, 1990 13h 37m 07.70± 0.90s  
37.686 N ± 7.4km 15.046 E ± 8.1km  
DEPTH = 10.0km (geophysicist)

SICILY (398)

MNO 0.37 311 P 37 15.20 -0.2  
eSg 37 22.10  
ATN 0.58 35 P 37 20.00 0.6  
eSg 37 30.50  
MEU 0.59 189 P 37 19.70 0.0  
eSg 37 25.30  
GIB 0.86 291 P 37 24.60 0.2  
eSg 37 37.50  
CZI 1.75 29 P 37 37.60 -0.7  
eSg 38 01.50  
S.D. = 0.7 on 5 of 5 obs.

\* MAR 18, 1990 13h 56m 38.10s  
34.150 N 117.710 W  
DEPTH = 9.0km

SOUTHERN CALIFORNIA (43)

<PAS-P>. ML 3.2 (PAS).

MWC 0.30 284 iPc 56 43.90 -0.4  
RVR 0.32 119 iPd 56 44.10 -0.6  
PAS 0.38 270 iPc 56 45.40 -0.5  
SBB 0.55 350 iPd 56 48.40 -0.7  
CIS 0.94 218 ePc 56 55.20 -0.9  
PLM 1.06 138 ePd 56 57.10 -1.3  
SCI 1.36 211 eP 57 01.70 -1.5  
CPE 1.37 158 eP 57 01.90 -1.4  
GSC 1.37 33 iPc 57 03.40 0.0  
ABL 1.43 300 eP 57 03.30 -1.1  
BCH 2.21 298 eP 57 15.00 -0.6  
BLP 2.26 281 eP 57 14.50 -1.7  
GLA 2.64 114 eP 57 20.00 -1.7  
TNP 3.94 6 eP 57 40.40 0.1  
KVN 4.90 356 eP 57 56.00 2.1  
15 obs. associated

% MAR 18, 1990 14h 04m 26.50± 0.93s  
37.666 N ± 7.4km 15.075 E ± 8.4km  
DEPTH = 10.0km (geophysicist)

SICILY (398)

MNO 0.40 311 Pd 04 34.50 -0.3  
eSg 04 40.50  
MEU 0.58 192 P 04 38.20 0.0  
eSg 04 46.40  
ATN 0.58 32 P 04 38.90 0.6  
eSg 04 48.30  
SOI 0.87 62 P 04 47.50 4.2X  
eSg 04 59.70  
GIB 0.89 292 P 04 44.00 0.3  
eSg 04 56.50  
CZI 1.76 28 P 04 56.50 -0.7  
eSg 05 19.20  
S.D. = 0.7 on 5 of 6 obs.

? MAR 18, 1990 15h 03m 46.49± 0.93s  
40.499 N ±11.1km 2.817 W ± 7.7km  
DEPTH = 10.0km (geophysicist)

SPAIN (377)



## mbLg 2.5 (MDD).

ETOR	0.66	61	eP	03 59.80	0.1
			eS	04 08.00	
GUD	1.03	278	eP	04 06.00	0.0
			eS	04 20.60	
ECHE	1.68	122	eP	04 16.00	-0.1
			eS	04 37.80	
EVIA	1.88	173	eP	04 19.10	0.1
			eS	04 41.80	

S.D. = 0.2 on 4 of 4 obs.

? MAR 18, 1990 15h 06m 31.11±3.18s  
14.342 N ± 7.8km 61.244 W ± 60.9km  
DEPTH = 135.2 ± 38.3 km

## WINDWARD ISLANDS (95)

BIM	0.24	44	eP	06 50.10	-0.9
			S	07 04.60	
MVM	0.40	58	iPd	06 50.13	-0.4
FDF	0.40	13	eP	06 50.74	0.2
	0.1s		0.50nm		
			S	07 05.50	
CRM	0.52	38	eP	06 50.73	-0.4
SLB	0.55	159	eP	06 51.99	0.7
			eS	07 09.11	
SSV	1.01	177	eP	06 54.52	-0.4
			eS	07 12.47	
SVV	1.02	178	eP	06 54.62	-0.3
			eS	07 12.57	
SVB	1.06	180	eP	06 55.11	-0.3
			eS	07 12.79	
SFG	1.90	1	eP	07 03.80	-0.8
SEG	2.06	353	eP	07 07.00	0.4

S.D. = 0.6 on 10 of 10 obs.

? MAR 18, 1990 15h 46m 41.02±3.77s  
40.786 N ± 25.8km 14.140 E ± 25.1km  
DEPTH = 10.0km (geophysicist)

## SOUTHERN ITALY (390)

BSS	0.51	89	P	46 50.70	-0.6
			eSg	46 59.70	
DUI	0.91	15	P	46 58.90	0.5
SGO	0.92	104	P	46 59.00	0.5
			eSg	47 10.60	
SDI	0.95	345	P	46 58.80	-0.4

S.D. = 1.0 on 4 of 4 obs.

& MAR 18, 1990 16h 22m 33.00s  
36.720 N 91.490 W  
DEPTH = 5.0km (geophysicist)  
MISSOURI-ARKANSAS BORDER REGION (484)  
<SLM-P>. MD 3.0 (TEIC). Felt  
(IV) at Alton, Missouri.

AFAR	0.59	183	ePc	22 43.96	-0.8
			S	22 51.58	
POW	0.62	156	iP	22 44.40	-1.0
LRDO	0.99	139	ePc	22 51.48	-0.7
			S	23 06.78	
OLY	1.21	179	ePc	22 55.50	-0.6
			S	23 12.30	
FVM	1.52	34	eP	23 00.44	-0.4
NMNO	1.56	94	eP	23 01.80	0.3
HOGG	1.61	202	ePd	23 02.80	0.6
			S	23 24.10	
WLA	1.66	157	ePc	23 03.30	0.5
SFTN	1.81	138	ePc	23 05.26	0.3
PWLA	3.28	121	eP	23 25.00	-1.1
RSCP	4.91	101	eP	23 49.00	-0.2
GBTN	5.98	98	eP	24 03.00	-1.3
TKL	6.33	97	eP	24 07.00	-2.3
PRM	7.90	107	eP	24 52.50	21.2
BLA	8.87	84	eP	25 16.00	31.1

15 obs. associated

% MAR 18, 1990 16h 25m 45.60±1.38s  
44.651 N ± 5.8km 8.145 E ± 11.5km  
DEPTH = 10.0km (geophysicist)  
NORTHERN ITALY (545)  
ML 2.5 (GEN).

ROB	0.41	209	P	25 53.36	-0.6
			S	25 58.14	
FIN	0.44	174	P	25 54.51	-0.2
			S	26 00.69	

ENR	0.67	231	P	25 59.55	0.6
			S	26 07.10	
STV	0.71	236	P	25 59.32	-0.4
			S	26 08.23	
PZZ	0.76	259	P	26 00.95	0.4
			S	26 10.79	
IMI	0.76	194	P	26 01.05	0.5
			S	26 09.97	
RSP	0.81	309	P	26 01.46	0.1
			S	26 11.92	
RRL	1.01	286	P	26 04.43	-0.4
LSD	1.07	319	P	26 05.81	-0.1

S.D. = 0.5 on 9 of 9 obs.

MAR 18, 1990 16h 48m 58.20±0.42s  
6.245 N ± 5.5km 125.540 E ± 9.0km  
DEPTH = 60.7km (2 depth phases)  
5.0mb (4 obs.)

## MINDANAO, PHILIPPINE ISLANDS (259)

DAV	0.84	2	iPd-	49 15.00	0.7
MNI	4.82	188	eP	50 10.00	0.0
			eS	51 05.50	
PCI	9.10	219	ePc	51 11.60	2.2
			e(S)	52 16.00	
AAI	10.22	165	eP	51 23.50	-1.2
MTN	19.76	164	iPd	53 25.80	-0.3
KNA	22.09	172	iPd	53 49.20	-0.5
KLI	23.41	242	ePd	54 04.00	1.3
			e	54 56.00	
IPM	24.46	267	ePc	54 14.00	1.1
	0.8s		35.90nm		4.9mb
NNT	26.21	286	eP	54 29.70	0.4
NST	26.61	293	eP	54 35.00	2.0
GYA	26.98	320	eP	54 37.60	1.2
WB5	27.38	162	eP	54 40.10	0.2
WRA	27.43	162	Pd	54 39.60	-0.8
	0.3s		1.40nm		4.0mb
CHG	28.76	298	eP	54 51.40	-1.0
CHTO	28.76	298	eP	54 51.60	-0.8
			pP	55 07.50	66km
XAN	31.65	333	P	55 16.00	-1.9
CD2	31.93	323	eP	55 20.30	-0.1
BJI	34.68	347	P	55 45.50	1.5
LZH	35.75	329	eP	55 53.50	0.1
			pP	56 07.80	55km
FORR	36.96	176	iPd	56 02.30	-1.1
	0.4s		27.00nm		5.5mb
SHL	37.46	305	iP	56 06.50	-1.4
BAL	37.61	193	eP	56 07.30	-1.5
MDJ	38.38	5	eP	56 19.50	4.3X
MUN	39.04	193	eP	56 19.70	-1.1
NWAO	39.75	191	iPd	56 26.10	-0.6
LSA	39.91	310	P	56 28.80	0.1
GTA	40.34	329	P	56 31.00	-0.7
BRS	42.57	143	eP	56 51.00	1.1
ADE	42.83	164	eP	56 52.90	0.9
GUN	43.31	305	P	56 51.60	-4.8X
KKN	43.76	304	P	56 54.80	-5.1X
BWA	45.87	153	eP	57 17.80	1.5
CAN	46.88	154	eP	57 25.50	1.2
HYB	47.19	288	eP	57 26.50	-0.5
GBA	47.88	283	Pc	57 31.30	-1.1
	0.6s		11.00nm		5.0mb
QUE	59.82	301	eP	58 58.70	-1.5
FBA	82.97	25	eP	01 18.30	0.6
YKA	97.71	24	eP	02 41.90	14.5X
	0.8s		0.80nm		

S.D. = 1.1 on 34 of 38 obs.

\* MAR 18, 1990 17h 08m 20.53±2.33s  
16.749 N ± 12.7km 61.204 W ± 25.0km  
DEPTH = 33.0km (normal)

## LEEWARD ISLANDS (92)

SEG	0.45	220	eP	08 30.28	-0.1
			S	08 38.20	
SFG	0.49	179	eP	08 30.70	-0.3
			S	08 39.50	
BPA	0.69	295	eP	08 34.15	0.3
			eS	08 45.31	
ANG	0.72	304	eP	08 34.01	-0.2
			eS	08 45.07	
MGG	0.83	188	eP	08 35.92	0.1
			S	08 48.50	
PAG	0.85	213	eP	08 35.90	-0.2

			S	08 48.40	
BBL	1.25	192	eP	08 42.30	0.5
			S	08 58.40	

S.D. = 0.4 on 7 of 7 obs.

\* MAR 18, 1990 19h 35m 03.99±0.74s  
13.697 N ± 12.6km 144.551 E ± 18.3km  
DEPTH = 98.6 ± 5.7 km  
4.4mb (3 obs.)

## MARIANA ISLANDS (216)

Felt (III) on Guam.

GUMO	0.33	109	iPd	35 18.80	0.1
PJG	0.33	109	eP	35 18.80	0.1
GUA	0.38	114	iPd	35 18.70	-0.4
			eS	35 28.00	
MAT	23.45	347	eP	40 07.00	1.7
WRA	34.91	197	P	41 48.00	-0.2
	0.2s		0.90nm		4.3mb
MBL	42.30	215	eP	42 50.00	0.4
FBA	68.26	25	e(P)	45 54.50	-1.4
INK	74.39	22	eP	46 31.00	-1.4
MBC	78.24	14	eP	46 53.00	-0.9
	0.5s		4.00nm		4.5mb
FHC	82.28	50	eP	47 17.40	1.3
YKA	82.91	27	eP	47 17.70	-1.1
	0.6s		3.00nm		4.4mb
WDC	83.40	50	ePc	47 22.50	0.7
PNT	83.50	41	eP	47 22.00	-0.1
MHC	84.80	53	eP	47 28.60	-0.4
PRS	85.24	54	ePc	47 31.40	0.3
CMB	85.61	52	ePc	47 32.90	0.0
PR1	85.84	54	ePc	47 35.70	1.5
FR1	86.38	53	eP	47 36.60	-0.1
KVN	87.09	51	eP	47 31.10	-9.2X
KVN	87.09	51	eP	47 41.20	0.9
LRM	89.12	43	eP	47 49.30	-0.7
LIC	143.89	301	PKP	54 29.20	-1.1
ZOBO	148.35	99	PKP	54 39.00	0.7
	1.0s		5.50nm		
	Z 16s		0.11um		4.7mszX
			LR	04 14.00	

S.D. = 1.0 on 22 of 23 obs.

? MAR 18, 1990 20h 03m 46.58±2.03s  
45.860 N ± 42.6km 154.458 E ± 32.8km  
DEPTH = 33.0km (normal)  
4.6mb (5 obs.)

## KURIL ISLANDS REGION (222)

MAT	15.35	238	(P)	07 21.00	-1.3
			eS	07 46.00	
FBA	36.29	38	e(P)	10 50.20	1.8
			e	11 00.10	33kmX
YKA	51.08	37	eP	12 47.50	0.1
	1.0s		1.30nm		3.8mb
CHG	52.84	258	eP	13 04.80	3.6X
GUN	56.02	277	P	13 25.60	0.8
KKN	56.51	277	P	13 29.70	1.5
DMN	56.74	277	P	13 31.00	1.1
FRB	65.58	19	eP	14 27.00	-1.7
NB2	69.37	342	P	14 50.30	-2.3
	0.8s		4.80nm		4.6mb
HFS	69.61	340	eP	14 51.00	-3.0X
	0.6s		3.80nm		4.6mb
CLL	77.66	336	iPc	15 40.40	-0.5
	0.9s		9.00nm		4.8mb
			i	15 52.80	42kmX
KHC	79.44	335	P	15 51.20	0.4
KBA	81.35	334	iPd	16 06.10	5.0X
	0.6s		2.60nm		4.4mb
			i	16 07.70	5kmX
			i	16 19.20	

S.D. = 1.6 on 10 of 13 obs.

? MAR 18, 1990 21h 41m 14.81±12.38s  
35.334 N ± 58.5km 32.907 E ± 88.2km  
DEPTH = 10.0km (geophysicist)

## CYPRUS (372)

ELL	2.81	301	iPn	42 00.40	-0.3
KSL	2.82	287	ePg	42 00.50	-0.2
BCK	2.83	319	iPn	42 04.50	3.6X
ARG	3.99	284	ePb	42 16.50	-0.8
KHL	4.03	319	ePn	42 19.00	1.0
KAP	4.69	274	ePn	42 28.20	1.0
KBA	18.77	315	e(Pg)	45 35.50	-0.7



18d 21h

e 45 58.50  
S.D. = 1.0 on 6 of 7 obs.  
7 MAR 18, 1990 21h 45m 40.24 ± 6.25s  
33.075 S ± 20.5km 72.108 W ± 42.3km  
DEPTH = 10.0km (geophysicist)  
OFF COAST OF CENTRAL CHILE (134)

LCCH 0.60 132 iPd 45 52.50 0.1  
iS 46 02.50  
ROCH 0.93 84 iPd 45 58.00 -0.1  
iS 46 10.50  
LNV 1.05 147 iPc 46 00.00 -0.1  
iS 46 13.60  
TACH 1.14 121 iPd 46 01.00 -0.5  
iS 46 15.00  
SAN 1.27 108 iP 46 04.30 0.5  
iS 46 19.70  
PCH 1.44 113 iPd 46 06.50 0.0  
iS 46 25.20  
CHCH 1.49 126 iPd 46 07.30 0.2  
iS 46 25.90  
FCH 1.54 100 iPd 46 08.00 -0.1  
iS 46 28.80

S.D. = 0.4 on 8 of 8 obs.  
MAR 18, 1990 22h 13m 53.88 ± 0.64s  
38.975 N ± 6.6km 15.594 E ± 9.0km  
DEPTH = 281.8 ± 5.9 km  
3.5mb ( 2 obs.)  
SICILY (398)

CZI 0.48 60 P 14 30.00 -0.4  
eS 14 54.20  
ATN 0.82 187 Pd 14 30.80 -0.8  
TDS 0.89 40 Pd 14 32.40 0.3  
ROI 0.96 51 P 14 30.30 -2.2  
MMN 0.96 18 P 14 32.40 0.0  
eS 14 56.00  
CSI 0.96 34 P 14 33.60 1.2  
eS 15 00.60  
SOI 0.97 158 Pd 14 32.40 0.0  
eSn 15 00.30  
MGR 1.16 359 Pc 14 33.10 -0.3  
eSn 15 01.60  
MNO 1.26 214 Pc 14 34.50 0.2  
ORI 1.27 31 P 14 34.80 0.7  
eSn 15 04.40  
GIB 1.58 232 Pd 14 35.30 -0.9  
SGO 1.60 352 Pc 14 36.20 0.0  
BSS 1.91 342 Pd 14 38.40 -0.2  
MEU 1.94 196 Pd 14 39.10 0.1  
MCT 2.04 230 P 14 40.70 0.7  
BRT 2.27 33 Pc 14 40.90 -0.8  
eSn 15 16.10  
LCI 2.27 53 Pd 14 43.00 1.3  
eSn 15 18.20  
FAI 2.27 222 P 14 42.70 1.0  
DUI 2.82 342 P 14 47.50 0.5  
SDI 3.05 334 Pc 14 48.90 -0.4  
AZI 3.43 332 P 14 53.50 0.3  
RDP 3.54 323 P 14 54.00 -0.6  
RMP 3.59 323 P 14 54.50 -0.6  
TRI 6.86 349 eP 16 25.50 51.7X  
PTJ 6.93 2 eP 15 41.40 6.7X  
VOY 7.16 350 ePn 15 37.60 -0.1  
eSn 16 30.60  
CTI 7.64 339 P 15 45.60 2.0  
HFS 21.21 357 eP 18 16.70 -1.5  
0.4s 2.00nm 3.9mb  
NB2 22.26 354 P 18 27.20 -1.1  
0.4s 0.30nm 3.1mb  
NUR 22.29 12 eP 18 29.60 1.0  
SUF 24.62 12 eP 18 50.80 0.5

S.D. = 0.9 on 29 of 31 obs.

\* MAR 18, 1990 22h 30m 07.60 ± 0.42s  
48.688 S ± 9.1km 106.802 E ± 12.1km  
DEPTH = 10.0km (geophysicist)  
5.2mb ( 5 obs.) 5.2Msz ( 7 obs.)  
SOUTHEAST INDIAN RISE (435)  
CENTROID, MOMENT TENSOR (HRV)  
Data Used: GDSN  
L.P.B.: 12S, 26C  
Centroid Location:  
Origin Time 22:30:17.2 0.5  
Lat 48.58S 0.05 Lon 107.42E 0.11

Dep 15.0 FIX Half-duration 2.2  
Moment Tensor: Scale 10\*\*17 Nm  
Mrr= 0.51 0.10 Mtt= 1.25 0.07  
Mff=-1.77 0.13 Mrt= 0.00 0.00  
Mrf= 0.00 0.00 Mtf= 1.16 0.11

Principal Axes:  
T Val= 1.65 Plg= 0 Azm=161  
N 0.52 90 180  
P -2.16 0 71  
Best Double Couple: Mo=1.9\*10\*\*17  
NP1:Strike=206 Dip=90 Slip=-180  
NP2: 296 90 0

NWAO 17.59 30 eP 34 17.00 2.8  
MUN 18.14 26 eP 34 22.00 0.9  
KLB 18.99 30 eP 34 34.00 2.5  
BAL 19.57 26 eP 34 36.00 -2.5  
MRWA 20.69 23 eP 34 50.00 -0.2  
ASPA 32.88 50 iPc 36 42.30 -1.5  
1.0s 33.00nm 5.2mb  
VNDA 35.55 162 iPc 37 06.00 -0.2  
WRA 36.22 47 Pd 37 10.90 -1.6  
0.9s 23.30nm 5.0mb  
WB5 36.29 47 eP 37 11.90 -1.2  
i 37 26.50

RMQ 39.29 71 iPc 37 37.80 -0.4  
MSZ 41.14 108 P 37 56.00 2.9  
SPA 41.50 180 eP 37 56.30 0.1  
1.2s 28.87nm 4.9mb  
Z 19s 6.24um 5.5Msz  
DZM 53.81 83 iPc 39 33.10 0.4  
PPR 59.15 14 iPd 40 11.00 0.3  
NNT 61.33 352 eP 40 25.20 -0.4  
e 51 27.30

CHG 67.56 352 eP 41 04.90 -1.2  
HYB 70.46 331 eP 41 24.50 0.4  
GUMO 70.58 39 eP 41 24.00 -0.8  
Z 21s 0.56um 4.8Msz  
KMI 73.56 356 Pd 41 43.00 0.4  
2.0s 80.00nm 5.4mb  
Z 20s 2.30um 5.5Msz  
N 18s 1.80um

BOM 73.79 327 eP 41 48.10 4.4X  
GYA 74.80 360 P 41 50.00 0.4  
Z 20s 1.00um 5.1Msz  
N 20s 1.30um  
E 20s 1.70um

DMN 78.40 340 P 42 09.90 -0.1  
KKN 78.53 341 P 42 09.50 -1.1  
GKN 78.88 340 P 42 09.70 -2.8  
WHN 79.16 7 eP 42 15.00 1.3  
LSA 79.28 346 eP 42 17.00 2.0  
CD2 79.28 357 eP 42 14.30 -0.1

Z 23s 1.50um 5.3MszX  
eS 52 14.00  
LWI 80.40 278 ePd 42 24.00 2.9  
SSE 80.46 12 eP 42 21.00 0.4  
Z 20s 0.50um 4.9Msz  
S 52 26.00

XAN 82.38 2 P 42 30.70 0.0  
LZH 84.44 358 eP 42 41.60 0.3  
2.5s 0.10nm 2.6mb X  
Z 21s 2.50um 5.6Msz  
N 19s 1.70um  
E 18s 1.00um

PP 45 53.00  
eSKS 53 06.00  
TIA 85.02 8 eP 42 44.50 0.5  
TIY 86.17 4 eP 42 48.50 -1.3  
N 11s 0.30um  
pP 42 53.00 14kmX  
eS 53 26.00

QUE 86.23 326 eP 42 48.80 -1.6  
GTA 87.94 355 eP 42 57.00 -1.4  
Z 28s 1.30um 5.2MszX  
S 53 40.00  
BJI 88.74 7 eP 43 01.00 -1.0  
Z 22s 0.62um 5.0Msz  
eSKS 53 32.00  
eS 53 52.00

BTO 88.95 2 eP 43 06.00 2.8  
HHC 89.25 4 eP 43 05.00 0.4  
KSH 91.92 337 P 43 24.00 7.0X  
BCAO 92.15 274 iPc 43 20.30 1.7  
0.9s 13.00nm 5.3mb  
CN2 93.55 13 eP 43 29.00 4.8X

WMO 93.64 346 P 43 26.30 1.5  
MAIO 94.50 323 eP 43 33.00 4.1X  
KBA 125.03 304 e(PKP) 49 08.00 -1.1  
CLL 127.63 308 ePKP 49 14.00 0.3  
SVW 134.19 42 ePKP 49 28.50 2.5  
IMA 136.76 36 ePKP 49 31.90 1.1  
0.8s 7.70nm  
PMR 137.29 43 ePKP 49 35.40 3.7X  
PLM 144.20 99 ePKP 49 45.00 -0.2  
RVR 144.26 98 ePKP 49 40.00 -5.0X  
SBB 144.38 96 ePKP 49 44.00 -1.3  
FRI 144.47 92 ePKP 49 43.50 -1.8  
WDC 144.50 84 ePKPc 49 43.40 -1.8  
ISA 144.53 94 ePKP 49 46.00 0.5  
CMB 144.60 90 ePKP 49 43.80 -1.7  
ORV 144.67 87 ePKP 49 43.90 -1.6  
INK 144.81 34 ePKP 49 44.00 -0.8  
1.0s 58.00nm

DAG 144.84 341 iPKPd 49 42.00 -2.7  
0.9s 83.19nm  
MIN 145.00 85 ePKP 49 44.80 -1.5  
TPC 145.20 99 ePKP 49 48.00 1.3  
GLA 145.34 101 ePKP 49 48.00 1.1  
GSC 145.42 96 ePKP 49 48.00 0.9  
KVN 146.66 90 ePKP 49 51.20 2.1  
MBC 146.83 18 ePKP 49 55.00 7.0X  
0.9s 21.00nm

PGC 147.30 71 ePKP 49 53.00 3.5X  
PNT 149.91 71 ePKP 50 00.00 6.3X  
1.4s 74.00nm  
ALQ 151.91 107 ePKP 49 58.00 0.6  
1.5s 41.67nm

e 50 05.00  
LRM 153.40 81 ePKP 50 04.90 5.7X  
EDM 154.55 64 ePKP 50 05.50 5.3X  
SES 155.55 72 ePKP 50 16.00 14.3X  
FFC 161.25 60 ePKP 50 07.00 -1.1  
1.2s 14.00nm

FRB 164.69 352 ePKP 50 07.00 -4.1X  
S.D. = 1.5 on 59 of 72 obs.

MAR 18, 1990 23h 19m 29.72 ± 0.16s  
20.286 S ± 4.0km 66.740 E ± 3.0km  
DEPTH = 20.0km ( 4 depth phases)  
5.8mb ( 74 obs.) 5.4Msz ( 12 obs.)  
MASCARENE ISLANDS REGION (427)

CENTROID, MOMENT TENSOR (HRV)  
Data Used: GDSN  
L.P.B.: 9S, 19C  
Centroid Location:  
Origin Time 23:19:30.8 1.1  
Lat 20.45S FIX; Lon 66.76E FIX  
Dep 15.0 FIX Half-duration 1.6

Moment Tensor: Scale 10\*\*16 Nm  
Mrr= 5.50 0.53 Mtt=-2.60 0.72  
Mff=-2.90 0.85 Mrt= 2.62 2.10  
Mrf= 1.22 2.01 Mtf= 3.86 0.51  
Principal Axes:  
T Val= 6.86 Plg=64 Azm=324  
N -0.17 25 132  
P -6.69 5 224

Best Double Couple: Mo=6.8\*10\*\*16  
NP1:Strike=339 Dip=46 Slip= 127  
NP2: 113 55 58

NPA 26.67 277 eP 25 11.00 1.5  
KOD 32.11 20 eP 26 00.00 1.6  
NAI 34.83 299 iPd 26 23.50 1.6  
1.0s 25.00nm 5.1mb  
GBA 35.28 18 Pc 26 25.40 0.0  
2.0s 194.30nm 5.7mb

SLR 35.72 254 iPc 26 28.20 -1.2  
1.5s 125.00nm 5.6mb  
Z 18s 4.12um 5.2Msz  
SEK 36.41 250 iPd 26 35.00 -0.2  
1.0s 20.00nm 4.9mb

PRY 36.48 252 iPc 26 34.70 -1.0  
KSR 36.97 254 iPd 26 38.20 -1.7  
BFS 37.09 252 iPd 26 40.00 -0.8  
0.5s 28.17nm 5.3mb  
POO 39.20 11 iP 27 00.00 1.6  
HYB 39.22 18 iPc 26 59.90 1.3  
1.4s 125.00nm 5.4mb

BOM 39.39 9 eP 27 02.10 2.2  
eS 33 08.60  
ARO 39.40 321 iP+ 27 01.60 1.4  
AAE 40.08 314 eP 27 07.50 1.4



LWI	41.14	291	iPc	27	16.00	1.3	KSL	66.20	328	eP	30	16.50	-1.8	1.3s	183.00nm	5.9mb				
IPM	41.77	57	ePd	27	22.00	2.3	ELL	66.54	328	eP	30	20.00	-0.6	TIC	75.39	283	Pc	31	14.04	-0.3
CER	43.95	243	iPd	27	36.00	-1.3	WMO	66.63	16	ePc	30	21.04	0.1	1.4s	193.50nm	5.9mb				
	1.0s	60.00nm				5.4mb	Z	16s	1.10um			5.2mszX	LACI	75.43	325	eP	31	13.50	-0.4	
KMSA	45.90	330	eP+	27	52.30	-0.7	BCK	66.77	329	iP	30	20.50	-1.5	ATN	75.47	321	P	31	14.50	0.2
NNT	46.05	48	eP	27	54.80	0.6	GTA	66.95	27	iPc	30	22.00	-0.4	CLI	75.47	333	ePc	31	15.00	0.9
TRT	46.10	81	ePd	27	54.50	-0.1		1.4s	100.00nm			5.8mb	LCI	75.49	324	P	31	13.50	-0.8	
	0.8s	85.40nm				5.8mb	Z	20s	0.60um			4.8msz	BJI	75.65	37	eP	31	14.50	-0.7	
NWAO	46.47	116	eP	27	48.25	-9.1X			S	39	14.00		1.5s	39.00nm	5.2mb					
NST	48.51	45	iPd	28	15.00	1.5	KAP	67.01	326	eP	30	23.30	-0.2	Z	20s	0.60um	4.9msz			
BRF	48.68	341	eP	28	14.40	-0.2	ARG	67.02	327	eP	30	23.80	0.3	ROI	75.76	322	P	31	16.00	0.7
RYD	48.83	335	iP+	28	15.50	-0.4	XAN	67.32	37	P	30	24.30	-1.2	CZI	75.77	322	P	31	16.00	0.1
BBU	48.85	340	iP	28	15.30	-0.6	KVT	67.38	335	iP	30	24.50	-1.3	TDS	75.95	322	Pc	31	17.90	0.9
BDT	48.93	43	eP	28	15.30	-1.3	NPS	67.63	324	eP	30	27.50	0.1	FAI	75.99	319	P	31	18.50	1.3
DHR	49.03	340	eP+	28	18.00	0.7	ANTO	67.71	332	ePc	30	27.73	-0.2	CSI	76.05	322	P	31	19.00	1.4
NDI	49.72	12	eP	28	22.00	-0.6	KHL	67.97	329	eP	30	28.40	-1.1	ORI	76.15	323	P	31	19.00	0.9
CHG	50.06	41	ePc	28	25.10	-0.3	WHN	68.18	43	Pd	30	31.50	0.6	GIB	76.23	320	P	31	19.00	0.3
	1.5s	62.50nm				5.4mb		1.5s	200.00nm			6.0mb	MCT	76.24	319	P	31	20.70	1.8	
CHTO	50.06	41	iPc	28	25.15	-0.3	ALT	68.27	330	iP	30	31.10	-0.3	BRT	76.27	324	P	31	19.20	0.4
QUE	50.18	0	eP	28	26.90	0.6	VAM	68.52	324	eP	30	31.00	-1.9	MMN	76.30	322	P	31	18.60	-0.3
DMN	50.82	21	P	28	31.20	-0.2	KAS	68.54	334	iPc	30	33.30	0.2	MGR	76.72	322	P	31	20.40	-0.9
	1.1s	103.00nm				5.7mb	IZM	69.14	328	iP	30	36.50	-0.2	LKO	77.04	285	Pc	31	23.32	-0.3
KKN	51.05	21	P	28	33.10	0.1	GPA	69.16	331	eP	30	36.70	-0.1		1.4s	194.50nm	6.0mb			
OASM	51.31	333	eP+	28	34.70	-0.1	DST	69.40	329	iP	30	38.30	-0.1	SGO	77.13	322	P	31	22.90	-0.6
GUN	51.37	22	P	28	35.70	0.1	YLV	69.81	330	iP	30	40.60	-0.3	BEO	77.32	328	eP	31	24.00	-0.4
SHL	51.71	29	iP	28	37.80	-0.3	SPA	69.84	180	iPc	30	39.10	-1.8	BZS	77.33	329	eP	31	24.50	0.0
		iS		36	03.50			1.4s	135.29nm			5.9mb	BSS	77.57	322	P	31	25.50	-0.5	
BCAO	53.32	292	iPc	28	49.60	-0.5	HRT	69.88	331	eP	30	41.00	-0.2	HVAR	78.24	323	iPc	31	29.50	-0.1
	0.4s	63.00nm				5.9mb	PRK	70.28	328	eP	30	44.20	0.6	DUI	78.34	325	P	31	29.50	-0.8
		i		28	53.70	14km	EDC	70.35	329	iP	30	43.00	-1.0	SDI	78.74	322	Pc	31	31.70	-0.7
		i		29	57.10		ISK	70.35	331	eP	30	44.00	0.0	AZI	79.14	323	Pc	31	34.00	-0.5
WAJH	54.69	326	eP	29	00.80	0.9	SHGH	70.56	284	eP	30	45.50	-0.4	AQU	79.39	323	Pc	31	35.60	-0.4
LSA	54.98	26	eP	29	03.60	1.0	LEGH	70.58	284	eP	30	46.00	0.0	RDP	79.40	322	P	31	36.10	0.0
MAIO	56.69	353	iPc	29	13.60	-0.7	WEGH	70.69	284	eP	30	46.50	-0.2	RMP	79.44	322	P	31	36.50	0.3
	1.5s	39.41nm				5.2mb	EZN	70.70	328	iP	30	47.20	1.1	PSZ	79.81	330	eP	31	37.00	-1.2
KMI	57.12	39	iPc	29	17.23	-0.5	CTT	70.71	330	iP	30	46.10	-0.1	BUD	79.91	329	iP	31	38.40	-0.2
	2.0s	0.17nm				2.7mb X	KOGH	70.81	284	eP	30	47.00	-0.5	ASS	80.27	323	P	31	39.50	-1.2
Z	22s	1.10um				4.9msz	WIGH	70.86	283	eP	30	48.00	0.3	ZAG	80.27	327	iPc	31	40.80	0.3
IR5	57.28	344	eP	29	17.50	-1.1	MFT	70.97	329	iP	30	47.60	-0.3	PTJ	80.34	327	iP	31	41.00	0.0
BHD	57.38	338	iPd	29	20.00	0.9	ITM	71.06	323	iPc	30	47.50	-1.0	ARV	80.38	323	P	31	40.40	-0.8
BADA	57.40	327	eP+	29	20.20	0.9	VNDA	71.44	167	iPc	30	59.40	9.1X	VBY	80.44	326	e(P)	31	41.70	0.2
IR1	57.45	344	eP	29	18.50	-1.3	NEO	71.90	326	eP	30	52.50	-1.0	SRO	80.49	329	iP	31	42.20	0.6
KER	57.46	341	iPc	29	18.80	-1.0	TIY	71.94	37	eP	30	53.10	-0.7	SPC	80.57	331	eP	31	41.70	-0.6
IR2	57.63	345	eP	29	20.00	-1.0		E	15s	0.80um			MAO	80.72	322	P	31	42.50	-0.5	
IR7	57.74	344	eP	29	21.00	-0.8			eS	40	10.00		RIY	80.79	326	eP	31	42.80	-0.5	
HOL	57.98	327	eP	29	23.30	0.0	RDO	72.09	328	eP	30	54.50	0.0	RSM	80.93	324	P	31	44.20	0.2
MBH	58.47	327	iPc	29	27.50	0.8	BWA	72.17	121	eP	30	56.20	0.8	CEY	81.03	326	ePc	31	44.30	-0.3
RUWJ	58.87	332	Pc	29	31.00	1.3	CAN	72.44	122	eP	30	57.50	0.5	SNY	81.10	39	eP	31	44.40	-0.6
SLY	59.11	340	ePd	29	31.00	-0.2	VLS	72.52	323	eP	30	56.50	-0.7		1.8s	100.00nm	5.5mb			
QUTJ	59.16	329	Pc	29	31.10	-0.6	KDZ	72.53	329	iPc	30	57.00	-0.2	LJU	81.18	326	e(P)	31	45.00	-0.3
PPR	59.23	65	ePd	29	32.00	-0.3	PLG	72.57	327	eP	30	56.00	-1.4	SOP	81.25	328	iPc	31	47.80	2.1
SHBJ	59.28	331	Pd	29	32.10	-0.4	BTO	72.72	33	P	30	58.00	-0.4	PGD	81.31	323	P	31	45.50	-0.8
MDSJ	59.33	330	Pc	29	32.30	-0.5	DIM	72.78	329	eP	30	59.00	0.4	KRA	81.33	332	eP	31	45.70	-0.3
MKRJ	59.55	329	Pd	29	34.10	-0.3	RZN	72.90	328	iPc	31	00.00	0.4		1.5s	182.00nm	5.9mb			
DSI	59.69	329	ePc	29	35.00	-0.2	SSE	73.08	47	P	31	00.60	0.1		e		31	53.90	26km	
KFNJ	59.79	329	Pd	29	35.40	-0.4		1.5s	0.12nm			2.7mb X	ZST	81.34	329	iP	31	45.70	-0.4	
BURJ	60.04	330	Pc	29	37.10	-0.7		Z	20s	0.60um		4.9msz		1.2s	80.00nm	5.6mb				
KSH	60.05	8	P	29	38.00	0.3	PLD	73.23	329	iPc	31	01.00	-0.2		e		34	31.00		
HLW	60.40	325	eP	29	40.00	-0.1	MMB	73.32	328	ePc	31	01.00	-0.8		e		34	52.40		
SHMJ	60.46	330	Pc	29	40.50	0.0	KZN	73.39	326	eP	31	01.00	-1.3	TRI	81.36	326	P	31	45.50	-0.8
GVA	60.49	41	iPd	29	40.20	-0.7	TLB	73.60	332	ePc	31	04.00	0.7	VOY	81.50	326	eP	31	46.80	-0.4
	1.8s	200.00nm				5.9mb	TIA	73.66	40	eP	31	03.20	-0.7	FIR	81.51	323	eP	31	47.00	-0.1
MSL	60.61	338	ePd	29	42.50	1.0	HHC	73.71	34	P	31	04.00	-0.2	VKA	81.77	329	iPc	31	47.90	-0.4
HRI	60.93	330	eP	29	44.00	0.2		Z	14s	1.20um		5.3mszX		2.0s	299.00nm	6.0mb				
TAB	61.13	342	eP	29	45.00	-0.2	VAY	73.71	327	iPc	31	03.20	-0.8	PII	81.89	323	P	31	47.50	-1.5
ASPA	61.86	107	iPc	29	48.20	-2.2		1.3s	0.12nm			2.8mb X	RBL	81.94	326	P	31	49.00	-0.4	
	1.0s	47.00nm				5.6mb	PVL	73.77	330	iPc	31	05.00	0.7	BDI	82.06	323	P	31	48.00	-2.1
Z	22s	0.68um				4.8mszX	KKB	73.85	328	iPc	31	04.00	-0.9	PGF	82.06	321	iPc	31	50.20	0.0
		LR		52	08.00		CFR	74.02	333	eP	31	05.00	-0.7		1.3s	79.40nm	5.6mb			
CD2	62.09	36	eP	29	50.20	-1.5	KEK	74.04	324	eP	31	05.50	-0.5	MME	82.08	323	P	31	49.30	-1.1
	1.7s	300.00nm				6.2mb	SRN	74.04	324	eP	31	02.40	-3.5X	FVI	82.46	326	Pc	31	51.70	-0.2
Z	17s	0.50um				4.7mszX	VTS	74.32	328	iPc	31	07.00	-0.8	KBA	82.47	326	iPc	31	51.80	-0.5
		eS		38	17.00		OHR	74.48	326	iPc	31	08.00	-0.6		1.6s	80.90nm	5.6mb			
GZH	62.64	49	eP	29	55.30	0.0		1.0s	0.10nm			2.8mb X		i		32	00.80	28km		
		eS		38	23.00				i	31	29.90	83kmX	CTI	82.71	325	Pc	31	53.40	-0.1	
WRA	63.04	103	Pc	29	57.70	-0.5	BERA	74.65	325	eP	31	09.50	0.1	SAL	83.05	324	P	31	55.00	



	OAG	83.56	325 iPc	31 58.10	0.2	AFC	87.42	311 eP	32 17.20	0.0		1.5s	216.00nm	
		1.4s	68.00nm		5.7mb	PYM	87.43	321 P	32 17.66	0.7	CVL	145.12	308 PKP	39 06.40 -1.2
	MSZ	83.59	135 P	31 59.00	1.0	SMF	87.43	322 iPc	32 16.80	-0.1	UPA	145.56	256 iPKPc	39 09.90 0.8
	CKI	83.60	322 P	31 57.90	0.0		1.8s	120.85nm		5.9mb		1.0s	164.00nm	
	MDI	83.61	324 P	31 57.50	-0.4	AGO	87.52	321 P	32 17.59	0.3	RSON	145.81	338 PKP	39 07.20 -1.2
	KHC	83.70	328 iPc	31 57.80	-0.5	LBF	87.54	322 iPc	32 18.50	1.1	Z	20s	1.92um	5.9msz
		1.2s	43.00nm		5.5mb		1.4s	104.55nm		5.9mb	BLA	146.85	308 PKP	39 03.00 -7.6X
		e		32 24.50	102kmX	EPF	87.64	318 iPc	32 18.60	0.6	EDM	147.12	0 iPKPd	39 10.70 0.2
	ROB	83.76	322 P	31 58.49	-0.3		1.9s	130.85nm		5.9mb	JSC	148.48	303 PKP	39 16.60 3.4X
	SBF	83.76	321 iPc	31 59.20	0.4	LOR	87.76	323 iPc	32 18.80	0.4	PRM	149.41	303 PKP	39 18.90 4.2X
		1.2s	107.10nm		5.9mb		1.7s	95.60nm		5.8mb	SES	149.90	357 ePKP	39 14.00 -1.0
	PRU	83.79	329 Pc	31 58.70	0.0	AVF	87.79	322 iPc	32 18.70	0.2		1.2s	117.00nm	
		1.6s	100.00nm		5.8mb		1.4s	39.20nm		5.5mb	TKL	149.94	307 PKP	39 20.00 4.5X
		e		32 33.50	137kmX	MAL	87.80	310 iPd	32 19.80	1.0	GBTN	150.26	307 PKP	39 16.60 0.7
	OSS	83.93	325 ePc	31 59.70	0.0	SSF	87.85	322 iPc	32 19.20	0.4	PGC	150.54	14 ePKP	39 22.00 6.1X
	ENR	83.98	322 P	31 59.82	-0.2		1.7s	161.75nm		6.1mb	PNT	150.59	8 ePKP	39 16.00 0.0
	LMR	84.01	320 iPc	32 00.40	0.4	MAT	87.94	50 iPKPc	32 19.40	-0.1		1.6s	217.00nm	
		1.2s	74.40nm		5.8mb	MAF	87.94	321 iPc	32 20.10	0.8		pP		39 22.00
	STV	84.05	322 P	31 58.90	-1.4	BGF	87.96	322 iPc	32 20.10	0.7	MCW	150.64	13 PKP	39 22.80 6.7X
	WET	84.05	328 iPc	31 59.30	-0.8	LPO	87.96	319 iPc	32 20.50	1.1	RSCP	151.31	308 PKP	39 13.10 -4.5X
		1.5s	85.00nm		5.8mb		1.4s	130.70nm		6.1mb	Z	22s	1.59um	5.8msz
	FRF	84.05	321 iPc	32 00.60	0.4	RJF	88.08	320 iPc	32 20.90	0.9	RMW	152.02	12 PKP	39 25.40 7.1X
		1.2s	62.50nm		5.7mb		1.4s	165.55nm		6.2mb	LON	152.69	13 PKP	39 20.00 0.8
	LRG	84.16	320 iPc	32 01.20	0.4	ETOR	88.09	315 eP	32 21.00	0.7	PWLA	153.41	309 PKP	39 27.10 6.6X
		1.2s	71.40nm		5.8mb	TCF	88.19	321 iPc	32 21.20	0.7	FVM	153.49	317 PKP	39 21.00 0.4
	VDL	84.17	324 ePc	32 00.70	-0.3	GRC	88.23	322 P	32 21.24	0.6	LRM	154.52	359 ePKP	39 22.60 0.6
	VAI	84.18	323 P	31 56.70	-4.1X	LFF	88.36	320 iPc	32 22.20	0.9	RSSD	155.02	344 PKP	39 23.00 0.3
	FUR	84.25	326 iPc	32 01.40	0.3		1.5s	182.80nm		6.2mb	BW06	157.36	353 PKP	39 25.80 -0.1
		1.5s	344.00nm		6.4mb	EJIF	88.43	310 eP	32 22.80	0.9	WDC	158.27	19 ePKPc	39 26.30 -0.4
	DOI	84.25	322 P	32 00.40	-0.9	MEM	88.47	326 Pc				e	40 00.90	
	TMA	84.27	324 ePc	32 01.00	-0.5	AVE	88.49	306 iP	32 23.40	1.2	MIN	158.77	18 e(PKP)	39 27.50 0.1
	PZZ	84.33	322 P	32 00.44	-1.4	EPRU	88.49	310 eP	32 23.00	0.8		e	40 02.80	
	ORO	84.48	323 P	32 01.00	-1.5	LSF	88.57	321 iPc	32 23.10	0.8	GLD	159.41	342 PKP	39 29.50 1.3
	ORX	84.49	323 P	32 00.85	-1.7	ENN	88.60	326 ePc	32 23.00	0.7	Z	19s	1.62um	5.9msz
	RSP	84.62	322 P	32 01.15	-2.0		1.1s	39.00nm		5.6mb	GOL	159.50	342 PKP	39 28.70 0.3
	LLS	84.66	324 ePc	32 03.00	-0.5	SUF	88.70	343 eP	32 22.40	-0.2	Z	18s	0.91um	5.7msz
	BRG	84.66	330 iPc	32 03.60	0.5	WTS	88.86	328 ePc	32 24.50	1.0	ORV	159.53	18 e(PKP)	39 29.70 1.6
		1.8s	130.00nm		5.9mb		1.5s	86.30nm		5.8mb		e	40 05.90	
	SAX	84.70	325 ePc	32 03.50	-0.3	EHOR	88.89	311 eP	32 24.60	0.6	KVN	160.84	12 PKP	39 31.00 1.3
	RRL	84.76	322 P	32 01.97	-2.1	DQU	88.92	325 Pc	32 24.60	0.7	CMB	161.26	18 ePKPc	39 30.20 0.2
	LSD	84.86	322 P	32 04.13	-0.4	TOL	88.99	313 iPd	32 25.50	1.0		e	40 14.20	
	BNI	84.90	322 P	32 04.20	-0.4	MBO	89.15	286 eP	32 27.10	1.4	MSU	161.81	357 PKP	39 33.00 2.2
	DIX	85.07	323 ePc	32 05.50	-0.1	ECRI	89.25	316 eP	32 27.00	1.3	TNP	161.94	10 PKP	39 32.60 1.7
	LPG	85.11	322 iPc	32 05.60	-0.2	WIT	89.40	328 eP	32 27.50	1.5	FRI	162.43	17 ePKPc	39 32.20 1.1
		1.2s	26.80nm		5.3mb	GUD	89.42	314 eP	32 27.40	0.7		e	40 19.20	
	LPL	85.13	322 iPc	32 05.60	-0.3	UCC	89.44	326 iPc	32 28.00	1.7	PRS	162.51	22 ePKPc	39 32.60 1.4
		1.2s	31.25nm		5.4mb	MFF	89.74	321 iPc	32 28.50	0.7	PRI	162.92	21 e(PKP)	39 33.80 2.0
	GRF	85.24	328 iPc	32 06.20	0.2		1.4s	156.85nm		6.1mb	ANMO	164.21	339 PKP	39 34.70 1.5
		1.4s	145.00nm		6.0mb	EVAL	89.85	310 eP	32 29.00	0.4	ALQ	164.21	339 ePKP	39 34.00 0.8
	HOF	85.30	328 iPc	32 06.50	0.2	EPLA	90.47	313 eP	32 32.60	1.2		1.5s	45.14nm	
		1.5s	74.00nm		5.7mb	LDF	90.74	322 iPc	32 32.80	0.4	Z	20s	0.62um	
	ZLA	85.36	325 ePc	32 07.00	0.3	LPF	90.99	322 iPc	32 34.00	0.5		e	44 07.00	
	CLL	85.40	329 iPc	32 07.00	0.3	FLN	91.03	322 iPc	32 34.00	0.3	GSC	164.72	11 ePKP	39 36.00 2.5
	TAF	85.47	310 iPd	32 10.00	2.4	GRR	91.06	322 iPc	32 34.40	0.6	SBB	165.10	15 ePKP	39 35.00 1.2
	SLE	85.48	325 ePc	32 07.20	-0.1	APD	91.09	337 eP	32 33.50	-0.3	TPC	166.01	10 ePKP	39 34.00 -0.6
	MOX	85.64	328 iPc	32 08.50	0.5	SOD	92.29	346 eP	32 39.00	-0.2	GLA	167.21	6 ePKP	39 37.00 1.5
		1.6s	123.00nm		5.9mb	NB2	92.43	336 PKP	32 39.30	-0.7		S.D. = 0.9	on 361 of 375 obs.	
	STU	85.71	326 ePc	32 08.40	0.0	LPB	122.51	234 ePKP	38 28.00	1.4	-----			
		1.3s	57.69nm		5.6mb	ZOBO	122.69	234 PKP	38 27.00	-0.2	& MAR 19, 1990 00h 05m 00.40s			
	FEL	85.80	325 eP	32 08.54	-0.5		1.0s	6.50nm			37.927 N 121.998 W			
	BBS	85.83	324 P	32 09.20	0.1		1.6s	136.80nm		6.0mb	DEPTH = 10.0km			
	LOMF	86.14	324 P	32 10.31	-0.4		1.5s	82.30nm		5.8mb	CENTRAL CALIFORNIA (39)			
	MOF	86.27	324 P	32 10.84	-0.4		1.5s	38.20nm		5.5mb	<BRK>. ML 2.8 (BRK).			
	MDJ	86.29	40 eP	32 10.50	-0.8		1.5s	38.20nm		5.5mb	Mo=5.5*10**13 Nm (BRK). Felt at			
	STR	86.35	325 P	32 12.12	0.6		1.5s	38.20nm		5.5mb	Orinda, Pleasant Hill and Walnut			
	TOD	86.42	326 eP	32 11.57	-0.3		1.5s	38.20nm		5.5mb	Creek.			
	BSF	86.44	324 P	32 11.92	-0.2		1.5s	38.20nm		5.5mb	BKS	0.19	255 iPc	05 04.50 -0.2
	ECH	86.46	325 P	32 11.81	-0.4		1.5s	38.20nm		5.5mb		eS	05 07.70	
	ERQO	86.47	316 eP	32 13.40	1.1		1.5s	38.20nm		5.5mb	ZSP	0.21	275 iPc	05 04.90 0.0
	WLS	86.47	325 P	32 12.12	-0.1		1.5s	38.20nm		5.5mb		iS	05 09.30	
	CDF	86.52	325 P	32 12.27	-0.2		1.5s	38.20nm		5.5mb	BRK	0.21	256 iPc	05 04.80 -0.2
	KTD	86.62	326 eP	32 12.95	0.0		1.5s	38.20nm		5.5mb		iS	05 07.70	
	GWf	86.66	325 P	32 13.39	0.3		1.5s	38.20nm		5.5mb	PCC	0.52	216 iPd	05 10.20 -0.8
	ECHE	86.77	314 eP	32 15.10	1.2		1.5s	38.20nm		5.5mb	MHC	0.65	154 iPc	05 12.80 -0.7
	HAU	86.78	324 iPc	32 13.90	0.2		1.5s	38.20nm		5.5mb		iS	05 23.40	
		1.7s	169.10nm		6.0mb		1.5s	38.20nm		5.5mb	ARN	0.68	147 iPd	05 13.30 -0.7
	IFR	86.87	307 iPc	32 16.30	1.6		1.5s	38.20nm		5.5mb	NWRM	0.88	307 eP	05 16.00 -1.2
	TNS	86.97	327 ePc	32 15.20	0.6		1.5s	38.20nm		5.5mb	GCC	0.90	180 ePc	05 16.50 -1.0
	LBL	87.01	321 P	32 15.17	0.4		1.5s	38.20nm		5.5mb		iS	05 29.60	
	VITF	87.11	324 P	32 15.25	0.1		1.5s	38.20nm		5.5mb	SAO	1.24	159 iPd	05 21.40 -2.1
	PLDF	87.19	321 P	32 15.99	0.2		1.5s	38.20nm		5.5mb	CMB	1.28	85 eP	05 22.20 -2.0
	ABH	87.24	326 eP	32 15.69	-0.2		1.5s	38.20nm		5.5mb	LLA	1.56	147 e(P)	05 26.40 -1.8
	EVIA	87.35	313 eP	32 17.20	0.4		1.5s	38.20nm		5.5mb	PRS	1.67	162 eP	05 27.80 -2.0
	TIO	87.36	304 iPc	32 11.40	-5.7X		1.5s	38.20nm		5.5mb				
	RUP	87.39	326 eP	32 16.57	-0.1		1.5s	38.20nm		5.5mb				
	NUR	87.41	341 eP	32 16.40	0.0		1.5s	38.20nm		5.5mb				
		1.8s	174.20nm		6.0mb		1.5s	38.20nm		5.5mb				



19d 00h

ORV 1.67 13 e(P) 05 28.60 -1.2  
 FRI 2.05 116 ePd 05 33.60 -1.7  
 eS 05 58.40  
 KVN 3.26 69 eP 05 57.00 4.3  
 15 obs. associated

\* MAR 19, 1990 00h 22m 03.76±0.89s  
 25.375 N ±14.4km 125.310 E ±12.3km  
 DEPTH = 33.0km (normal)  
 4.1mb ( 4 obs.)

SOUTHWESTERN RYUKYU ISLANDS (246)

TWC 3.23 257 ePc 22 54.10 0.8  
 eS 23 14.50  
 TWD 3.61 250 ePd 22 57.80 -1.0  
 TWG 4.63 238 ePc 23 14.70 1.4  
 BJI 16.51 335 P 26 02.00 7.7X  
 Z 20s 0.60um

GUN 35.23 283 P 28 58.00 0.3  
 DMN 35.94 283 P 29 02.30 -1.3  
 WB5 45.84 168 eP 30 24.20 -0.4  
 e 30 31.90

GBA 46.40 265 Pd 30 28.10 -1.1  
 1.0s 5.10nm 4.4mb  
 HFS 78.34 332 eP 34 02.30 0.3  
 0.4s 1.00nm 4.2mb

NB2 78.90 333 P 34 05.80 0.7  
 0.6s 1.30nm 4.1mb  
 YKA 80.39 24 eP 34 13.40 0.3  
 0.6s 0.80nm 3.9mb

S.D. = 1.0 on 10 of 11 obs.

MAR 19, 1990 00h 38m 26.88±0.90s  
 43.007 N ± 9.3km 0.395 W ± 4.9km  
 DEPTH = 10.0km (geophysicist)

PYRENEES (378)

ML 2.4 (LDG). Felt (III) at  
 Asson, France.

JAU 0.04 32 Pg 38 28.81 -0.3  
 ESCF 0.15 299 Pg 38 30.19 -0.2  
 Sg 38 32.92

OGE 0.17 341 Pg 38 29.69 -1.1  
 Sg 38 31.99  
 LHE 0.19 241 Pg 38 31.97 0.8  
 Sg 38 35.57

ATE 0.24 289 Pg 38 31.75 -0.2  
 Sg 38 36.04  
 ISSF 0.29 274 Pg 38 33.25 0.2  
 Sg 38 38.69

MADF 0.34 294 Pg 38 33.73 -0.2  
 Sg 38 39.06  
 ELYF 0.47 291 Pg 38 35.89 -0.5  
 Sg 38 43.02

EPF 0.54 87 Pg 38 36.30 -1.5  
 Sg 38 44.20  
 LPO 2.03 34 Pg 39 02.90 1.4  
 Sg 39 28.60

LFF 2.10 23 Pg 39 04.20 1.7  
 Sg 39 30.80  
 CAF 2.61 42 Pg 39 13.70 3.8X  
 Sg 39 45.80

RJF 2.68 30 Pg 39 14.80 4.0X  
 Sg 39 48.80

S.D. = 1.1 on 11 of 13 obs.

& MAR 19, 1990 00h 43m 04.50s  
 40.288 N 124.932 W  
 DEPTH = 4.0km

NEAR COAST OF NORTHERN CALIF. (35)  
 <BRK>. ML 3.2 (BRK).

FHC 0.89 54 iPc 43 21.10 -1.0  
 eS 43 33.60  
 WDC 1.85 80 ePc 43 34.00 -3.3  
 e 43 51.20

LBFM 2.54 64 eP 43 45.20 -2.2  
 MIN 2.54 88 e(P) 43 44.00 -3.4  
 ORV 2.74 104 eP 43 47.40 -2.7  
 eS 44 16.40

ARN 3.96 137 eP 44 05.30 -2.1  
 6 obs. associated

MAR 19, 1990 01h 12m 19.78±0.56s  
 1.693 S ± 6.2km 77.909 W ±11.2km  
 DEPTH = 162.1 ± 5.1 km  
 4.3mb ( 5 obs.)

ECUADOR (107)

TUNG 0.60 297 eP 12 43.00 -0.7  
 VC1 1.16 335 iPd 12 48.20 0.3  
 OUR 1.63 338 iPd 12 52.80 0.3  
 GGP 1.66 336 iPd 12 53.00 0.1  
 iS 13 35.00

CAYA 1.76 358 P 12 54.50 0.5  
 COTA 2.06 348 P 12 58.00 0.7  
 PURC 4.28 21 ePc 13 27.35 2.2  
 SILC 4.63 20 eP 13 31.22 1.6

DIAC 5.24 19 eP 13 37.56 0.0  
 ANCC 5.28 11 eP 13 37.30 -0.6  
 HOOC 5.28 14 ePc 13 36.98 -1.2  
 CLMC 5.70 14 eP 13 42.30 -1.3

HOBC 6.26 16 eP 13 49.11 -2.0  
 NNA 10.28 174 eP 14 43.00 -1.4  
 0.7s 6.85nm 4.3mb X  
 eS 16 27.00

ZOBO 17.40 147 P 16 15.00 0.1  
 LPB 17.63 147 eP 16 17.00 -0.4  
 CCH 19.41 144 P 16 38.00 1.8  
 PRM 35.83 354 P 19 05.00 -0.4

CVL 39.48 359 P 19 36.00 0.2  
 NA2 39.62 0 P 19 37.90 0.9  
 FVM 41.14 345 P 19 48.00 -1.5  
 ALO 45.20 326 eP 20 23.00 0.5  
 1.0s 7.75nm 4.2mb

ANMO 45.21 326 P 20 23.40 0.9  
 0.9s 6.83nm 4.2mb  
 RSSD 51.25 336 P 21 09.50 0.4  
 DAU 51.79 328 P 21 13.30 -0.1

RSON 54.06 348 P 21 27.00 -2.6  
 0.6s 6.79nm 4.6mb  
 PNT 62.22 331 eP 22 28.00 1.8  
 0.7s 5.00nm 4.5mb

YKA 69.75 343 eP 23 12.30 -1.5  
 0.8s 1.10nm 3.7mb  
 KIC 73.47 83 P 23 36.50 -0.3  
 INK 79.48 342 eP 24 10.00 0.8

MBC 81.33 351 eP 24 20.00 1.2  
 S.D. = 1.2 on 31 of 31 obs.

% MAR 19, 1990 02h 03m 52.17±2.85s  
 38.376 N ± 8.7km 24.436 E ±29.7km  
 DEPTH = 10.0km (geophysicist)

AEGEAN SEA (365)  
 ML 2.8 (ATH).

ATH 0.70 235 ePn 04 05.70 -0.2  
 NEO 1.33 315 ePb 04 17.20 0.5  
 VLI 2.04 216 ePn 04 27.50 0.6  
 PLG 2.14 339 ePn 04 28.00 -0.4

ITM 2.32 240 ePn 04 30.50 -0.5  
 S.D. = 0.7 on 5 of 5 obs.

& MAR 19, 1990 02h 30m 59.94s  
 55.294 N 162.532 W  
 DEPTH = 163.0km  
 3.3mb ( 1 obs.)

ALASKA PENINSULA (12)  
 <PAL>.

DRRA 0.40 159 ePc 31 21.72 0.4  
 PVV 0.43 79 eP 31 22.00 0.6  
 eS 31 38.71

SNKA 0.83 190 ePc 31 24.38 -0.6  
 eS 31 42.48  
 SASA 1.16 87 eP 31 26.53 -1.0  
 eS 31 46.57

IVF 1.81 69 eP 31 33.41 -0.7  
 eS 31 57.66  
 YKA 25.25 54 eP 36 13.20 1.2  
 0.5s 0.40nm 3.3mb

6 obs. associated

MAR 19, 1990 02h 36m 26.61±0.47s  
 39.399 N ± 4.5km 25.555 E ± 4.6km  
 DEPTH = 10.0km (geophysicist)

AEGEAN SEA (365)  
 ML 3.4 (ATH).

PRK 0.58 105 ePb 36 37.70 -0.6  
 eSb 36 45.40  
 EZN 0.73 54 iPg 36 41.80 0.8  
 IZM 1.67 126 ePn 36 55.90 -0.1

RDO 1.75 360 ePn 36 57.20 0.1

NEO 1.81 268 ePn 37 00.00 1.9  
 PLG 1.89 302 ePg 37 03.00 3.7X  
 MFT 1.92 43 iPn 36 59.90 0.2  
 SMG 1.96 149 ePb 37 02.50 2.2

EDC 2.01 61 ePn 37 00.00 -1.0  
 ATH 2.02 226 ePn 36 59.00 -2.1  
 BNT 2.06 62 iPn 37 01.40 -0.2  
 APE 2.33 180 ePn 37 05.50 -0.1

RZN 2.37 345 iP 37 06.00 -0.4  
 DST 2.39 84 ePn 37 06.40 0.0  
 MM8 2.59 328 eP 37 09.00 -0.3  
 eSg 37 50.00

DIM 2.65 360 eP 37 11.00 0.9  
 ePg 37 16.00  
 PLD 2.78 347 eP 37 13.00 1.1  
 CTT 2.81 51 ePn 37 13.40 1.0

VAY 2.98 311 ePn 37 21.60 6.8X  
 YLV 3.16 67 ePn 37 17.00 -0.4  
 ISK 3.16 57 ePn 37 17.00 -0.3  
 HRT 3.46 64 ePn 37 22.00 0.4

VTS 3.65 332 iPc 37 35.00 10.5X  
 ARG 3.77 147 ePc 37 25.20 -0.9  
 PVL 3.82 358 iPd 37 25.00 -1.7  
 OHR 4.02 297 ePn 37 34.50 4.9X

SKO 4.05 311 ePn 37 31.20 1.3  
 MLR 6.10 3 ePd 37 59.00 0.0  
 BZS 6.86 336 ePc 38 07.50 -2.1

S.D. = 1.1 on 25 of 29 obs.

MAR 19, 1990 04h 02m 31.88±1.12s  
 32.572 S ± 6.0km 71.341 W ±11.3km  
 DEPTH = 33.0km (normal)

NEAR COAST OF CENTRAL CHILE (135)

ROCH 0.49 145 iPc 02 42.70 0.2  
 iS 02 52.20  
 JACH 0.64 100 iP 02 44.50 -0.1  
 iS 02 54.60

LCCH 0.92 192 iPd 02 48.50 0.0  
 TACH 1.13 163 iPd 02 51.40 -0.1  
 FCH 1.16 131 iPd 02 52.00 -0.2  
 PCH 1.26 147 iPc 02 53.20 -0.1

CHCH 1.48 157 iP 02 56.50 0.1  
 RTCV 2.48 74 e(P) 03 11.00 0.1  
 RTLL 2.74 64 ePd 03 14.60 0.1  
 RTRS 2.88 34 ePd 03 16.40 -0.1

S.D. = 0.1 on 10 of 10 obs.

? MAR 19, 1990 04h 32m 40.20±7.04s  
 33.956 S ±39.2km 70.936 W ±13.5km  
 DEPTH = 72.3 ± 55.3 km

CHILE-ARGENTINA BORDER REGION (127)

CHCH 0.24 85 iPc 32 51.50 0.0  
 iS 33 00.50  
 TACH 0.30 360 iPd 32 51.80 0.0  
 PCH 0.49 47 iPd 32 53.30 -0.1  
 iS 33 03.50

SAN 0.55 25 iPd 32 54.00 0.1  
 iS 33 04.60  
 LCCH 0.71 312 iPc 32 55.60 0.0  
 iS 33 06.50

FCH 0.83 41 iPd 32 57.30 0.0  
 iS 33 09.00  
 ROCH 0.98 356 iPc 32 53.30 -5.8X  
 iS 33 03.50

S.D. = 0.1 on 6 of 7 obs.

? MAR 19, 1990 04h 58m 05.94±6.47s  
 51.450 N ±42.4km 16.664 E ±41.9km  
 DEPTH = 10.0km (geophysicist)

POLAND (548)  
 ML 3.4 (GRF).

BRG 1.81 252 iPg 58 37.10 -0.2  
 iSg 58 57.20  
 PRU 1.99 223 Pn 58 40.90 0.9  
 Pg 58 42.60  
 Sn 59 00.00  
 eSg 59 07.30

CLL 2.30 268 (Pn) 58 45.20 0.8  
 iSg 59 10.70  
 KHC 3.05 222 ePg 58 57.00 1.9X  
 e 59 01.50  
 eSg 59 30.00

VKA 3.20 184 eP 58 57.00 -0.2



19d 04h

MOX 3.29 258 e(Pg) 59 18.00  
i(Sg) 59 58.40  
ePn 58 58.00 -0.5  
ePg 59 05.00  
iSg 59 44.50  
GRF 3.89 245 ePn 59 06.30 -0.7  
ePg 59 19.30  
eSg 00 04.60

S.D. = 0.9 on 6 of 7 obs.

MAR 19, 1990 04h 59m 43.54 ± 0.20s  
25.027 S ± 3.3km 68.730 W ± 6.3km  
DEPTH = 122.4km ( 4 depth phases)  
5.0mb ( 17 obs.)

CHILE-ARGENTINA BORDER REGION (127)  
Felt (III) in the Antofagasto  
area, Chile.

ANT 2.02 310 iPd- 00 15.60 -2.3  
iS 00 38.00  
RTRS 5.16 187 ePc 00 59.80 0.0  
iS 01 31.30  
RTLL 6.28 178 iPd 01 13.80 -1.4  
RTCB 6.44 181 iPd 01 16.00 -1.3  
ZON 6.49 180 eP 01 17.00 -1.1  
CFA 6.57 176 ePc 01 18.00 -1.1  
RTCV 6.81 179 ePd 01 20.80 -1.6  
CCH 7.98 18 Pc 01 38.70 0.2  
ROCH 8.16 194 iPd 01 36.30 -4.6X  
IHA 8.37 197 eP 01 45.00 1.6  
e(S) 03 15.00  
FCH 8.38 189 ePd 01 43.50 -0.4  
LPB 8.47 4 P 01 44.00 -1.3  
i 02 30.00  
SAN 8.56 191 eP 01 40.50 -5.6X  
PCH 8.70 190 eP 01 44.00 -4.0X  
ZOBO 8.73 4 P 01 46.40 -2.5

Z 20s 0.44um

i 01 47.20  
LR 05 24.00  
LCCM 8.77 196 eP 01 47.00 -1.9  
TACH 8.81 192 eP 01 43.50 -5.9X  
ARE 8.90 343 eP 01 46.00 -5.0X  
iS 03 22.40  
CHCH 9.03 190 eP 01 49.00 -3.4X  
LNV 9.20 194 eP 01 48.00 -6.5X  
PT08 14.96 329 iPc 03 11.10 0.9  
eS 05 38.30  
NNA 15.07 328 eP 03 11.00 -0.4  
1.0s 16.00nm 4.2mb

BAO 21.55 68 eP 04 22.20 -2.2  
e 04 51.00 149kmX  
CAI 35.38 64 iPc 06 29.30 -0.1  
HBF 58.70 349 P 09 29.00 -1.4  
SGS 58.97 348 P 09 31.50 -0.8  
JSC 60.17 348 P 09 39.00 -1.4  
pP 10 10.00 129km  
PRM 60.19 347 P 09 39.30 -1.3  
LHS 60.28 349 P 09 40.20 -1.0  
TKL 62.01 346 P 09 52.20 -0.7  
GBTN 62.11 346 eP 09 51.80 -1.8  
RSCP 62.37 345 P 09 53.60 -1.7  
1.0s 162.69nm 5.9mb

PWLA 62.43 342 P 09 53.40 -2.2  
BLA 62.88 350 P 09 57.50 -1.1  
0.9s 12.40nm 4.8mb  
NAV 63.04 349 P 09 58.70 -1.0  
CVL 63.34 351 P 10 01.50 0.0  
NA2 63.39 352 P 10 01.60 -0.2  
OLY 63.93 339 eP 10 03.60 -1.9  
SPA 65.12 180 iPc 10 14.10 1.0  
1.3s 36.67nm 5.2mb

FVM 65.91 341 P 10 16.40 -1.8  
TBR 66.03 355 P 10 38.20 19.4X  
HBVT 69.16 357 P 10 38.80 0.4  
WNY 69.24 356 eP 10 38.90 0.0  
LIC 69.25 72 Pc 10 40.16 0.6  
0.8s 24.00nm 5.1mb  
RSNY 69.44 356 eP 10 40.00 -0.1  
0.8s 22.70nm 5.1mb

TIC 69.46 72 P 10 41.62 0.8  
ALO 69.54 328 ePc 10 41.00 -0.1  
1.0s 12.50nm 4.7mb  
e 11 10.50 118km  
ANMO 69.54 328 P 10 41.90 0.8  
1.0s 13.75nm 4.7mb

KIC 69.57 72 Pc 10 42.38 0.9  
0.6s 339.00nm 6.3mb X  
LKO 70.43 69 Pc 10 47.34 0.6  
GLA 72.54 321 e(P) 11 00.00 1.0  
GLD 72.88 331 P 11 02.00 1.0  
1.1s 38.57nm 5.1mb  
GOL 72.91 331 P 11 01.50 0.2  
1.0s 25.00nm 5.0mb

LEGH 73.20 75 iP 11 04.00 0.9  
SHGH 73.45 75 iP 11 06.00 1.4  
RVR 74.70 320 eP 11 12.00 0.5  
CER 75.14 120 eP 11 18.50 4.3X  
0.6s 10.71nm 4.8mb

MSU 75.18 326 P 11 15.40 1.0  
MWC 75.26 319 eP 11 16.00 1.1  
GSC 75.30 321 eP 11 16.00 1.0  
SBB 75.45 320 eP 11 16.00 0.2  
RSSD 76.03 335 eP 11 19.50 0.4  
DAU 76.18 328 P 11 21.20 1.1  
ABL 76.39 319 eP 11 22.10 0.8  
ISA 76.51 320 eP 11 23.00 1.2  
DUG 76.78 327 P 11 24.40 1.2

1.0s 20.00nm 4.9mb  
BW06 77.25 330 eP 11 25.50 -0.4  
TNP 77.52 323 P 11 28.40 1.0  
pP 11 58.30 117km  
PRI 78.13 319 ePc 11 31.80 1.1  
FRI 78.15 321 eP 11 30.00 -0.6  
PTI 78.61 329 eP 11 34.00 0.7  
LLA 78.62 320 eP 11 34.20 0.9  
PRS 78.68 319 ePc 11 34.60 1.0  
KVN 78.70 323 P 11 34.40 0.5  
RSON 78.71 344 P 11 32.60 -0.8  
1.0s 86.77nm 5.5mb

pP 12 04.40 126km  
IMW 78.75 330 P 11 34.90 0.7  
SAO 79.01 319 e(P) 11 35.90 0.5  
CMB 79.26 321 eP 11 37.30 0.5  
ARN 79.46 320 eP 11 39.00 1.2  
MHC 79.52 320 eP 11 39.50 1.2  
SCH 79.53 1 eP 11 38.00 0.3  
BRK 80.24 320 eP 11 42.80 0.9  
LRM 80.92 331 ePc 11 46.60 1.0  
ORV 80.94 321 ePc 11 46.60 1.1  
MIN 81.54 322 e(P) 11 48.50 -0.3  
WDC 82.22 322 iPc 11 51.50 -0.7  
LBFM 82.38 323 P 11 54.20 0.9  
SES 83.91 334 ePc 12 00.70 0.1  
KSR 84.12 116 eP 12 02.70 0.2  
FFC 84.41 341 iPc 12 03.00 0.0  
0.9s 18.00nm 5.0mb

NEW 84.86 330 eP 12 05.00 -0.4  
1.2s 12.31nm 4.7mb  
DPW 85.08 329 eP 12 07.00 0.5  
SLR 85.31 116 eP 12 09.50 1.1  
LON 86.03 327 eP 12 11.00 -0.3  
RMW 86.51 327 eP 12 13.30 -0.4  
PNT 86.77 329 iPd 12 15.50 0.8  
EDM 87.01 335 iPc 12 15.00 -0.9  
FRB 88.47 0 eP 12 22.00 -0.5  
BCAO 89.38 85 iPd 12 29.70 1.7  
1.1s 28.00nm 5.3mb

YKA 94.55 340 eP 12 49.80 -0.9  
0.7s 7.80nm 5.2mb  
ASPA 126.86 206 ePKP 18 34.40 -0.5  
0.5s 15.00nm  
WRA 129.98 209 PKPd 18 41.20 0.3  
0.6s 3.90nm  
WB5 130.03 209 ePKP 18 41.30 0.3  
KOD 144.71 109 ePKP 19 09.00 0.5  
POD 144.74 93 iPKPd 19 09.20 1.2  
1.3s 50.00nm  
GBA 146.20 103 PKPc 19 10.50 0.0  
0.8s 10.60nm

HYB 148.64 98 ePKP 19 16.00 1.6  
1.0s 60.00nm

S.D. = 1.0 on 98 of 107 obs.

\* MAR 19, 1990 05h 55m 34.00 ± 1.27s  
37.736 N ± 10.4km 21.304 E ± 14.3km  
DEPTH = 33.0km (normal)  
SOUTHERN GREECE (368)  
MD 3.2 (ATH).

VLS 0.72 308 ePn 55 47.00 -0.7  
ITM 0.74 138 ePb 55 48.00 -0.1

VLI 1.65 127 ePn 56 01.50 0.4  
NEO 2.17 43 ePn 56 08.40 -0.2  
KEK 2.30 330 ePb 56 15.00 4.7X  
KZN 2.59 8 ePb 56 17.00 2.4  
PLG 3.12 32 ePn 56 20.00 -2.0  
OHR 3.39 354 ePn 56 30.40 4.4X  
VAY 3.71 15 ePn 56 30.40 0.0

S.D. = 1.6 on 7 of 9 obs.

% MAR 19, 1990 06h 14m 36.14 ± 1.12s  
37.737 N ± 11.0km 21.374 E ± 13.1km  
DEPTH = 10.0km (geophysicist)  
SOUTHERN GREECE (368)  
MD 2.6 (ATH).

ITM 0.71 141 ePn 14 49.00 -1.1  
eSn 14 59.00  
VLS 0.76 306 ePb 14 50.80 -0.2  
VLI 1.61 129 ePb 15 06.20 1.5  
NEO 2.14 42 ePn 15 11.40 -0.9  
KZN 2.58 7 ePn 15 19.50 0.7

S.D. = 1.6 on 5 of 5 obs.

? MAR 19, 1990 07h 15m 15.97 ± 5.92s  
31.226 S ± 23.7km 68.366 W ± 42.0km  
DEPTH = 98.5 ± 54.1 km  
SAN JUAN PROVINCE, ARGENTINA (137)

RTLL 0.14 220 iPc 15 30.00 -0.3  
CFA 0.40 164 iPc 15 31.50 0.3  
S 15 43.00  
RTCB 0.45 235 ePd 15 31.90 0.3  
eS 15 42.50  
RTCV 0.65 193 iPd 15 32.80 -0.3  
RTRS 1.41 318 iPd 15 41.40 0.0  
eS 16 00.00

S.D. = 0.6 on 5 of 5 obs.

MAR 19, 1990 07h 23m 05.64 ± 0.36s  
8.210 S ± 4.4km 121.559 E ± 11.1km  
DEPTH = 40.4km ( 5 depth phases)  
5.0mb ( 14 obs.) 4.5msz ( 6 obs.)  
FLORES ISLAND REGION (286)

PCI 7.46 347 ePd 24 54.20 -0.5  
eS 25 45.50  
MNI 10.13 19 e(P) 25 30.00 -1.7  
KNA 10.29 137 iPc 25 29.20 -4.6X  
0.3s 52.00nm 6.2mb X  
eS 27 20.00  
MTN 10.48 117 eP 25 31.00 -5.4X  
MBL 12.98 187 eP 26 08.00 -2.1  
0.4s 19.00nm 5.5mb

eS 28 27.00  
KKM 15.13 339 ePd 26 43.50 5.1X  
NANU 15.40 201 eP 26 41.00 -0.8  
eS 29 27.00  
WB5 16.98 134 eP 26 56.80 -5.2X  
i 27 00.00  
eS 30 03.00  
WRA 17.01 135 P 26 57.00 -5.3X  
0.9s 13.40nm 4.1mb

PPR 18.09 351 ePd 27 16.00 0.3  
1.5s 280.00nm 5.2mb  
MEKA 18.53 189 eP 27 21.00 -0.1  
eS 30 40.00  
ASPA 19.39 144 iPc 27 30.20 -1.2  
1.4s 108.00nm 4.9mb

Z 18s 2.46um 5.5msz  
eS 30 55.60  
LR 37 06.00  
KGM 20.83 298 ePc 27 49.70 3.2X  
MRWA 21.54 193 eP 27 54.00 0.4  
0.6s 38.00nm 5.0mb  
COOL 22.56 181 eP 28 03.60 -0.1  
0.5s 17.00nm 4.8mb  
QCP 22.70 359 eP 27 54.50 -10.6X  
BAL 22.74 191 eP 28 06.20 0.8  
FORR 23.34 166 eP 28 11.00 -0.2  
0.4s 34.00nm 5.2mb  
KLB 23.53 188 eP 28 14.00 0.9  
IPM 24.10 301 ePd 28 22.20 3.4X  
1.0s 90.00nm 5.3mb  
MUN 24.17 191 eP 28 20.30 1.0  
BAG 24.48 358 eP 28 25.00 2.4  
NWA0 24.92 189 eP 28 26.00 -0.5  
0.5s 12.00nm 4.7mb



RKG 26.07 189 eP 28 50.00 12.7X  
 QIZ 29.43 337 eP 29 09.50 1.6  
 ADE 30.93 152 e(P) 29 32.00 10.9X  
 NST 31.84 318 eP 29 31.00 1.9  
 LOE 32.12 322 eP 29 32.00 0.4  
 BDT 33.72 319 eP 29 33.00 -12.5X

1.0s 41.40nm  
 CHG 34.91 320 ePd 29 56.90 1.1  
 1.1s 22.15nm 5.0mb  
 CHTO 34.91 320 eP 29 56.90 1.2  
 pP 30 07.20 36km  
 BRS 35.15 127 iPc 29 59.00 1.2  
 TOO 36.38 147 eP 30 09.00 0.9  
 GYA 37.37 338 P 30 16.00 -0.6  
 pP 30 28.60 47km  
 KMI 37.87 332 Pd 30 22.50 1.6  
 2.0s 0.11nm 2.4mb X  
 Z 20s 0.70um 4.5msz  
 E 15s 0.80um

SSE 39.08 359 P 30 36.50 5.8X  
 1.4s 41.00nm 5.0mb  
 Z 20s 0.50um 4.3msz  
 eS 36 24.00

WHN 39.15 350 Pd 30 31.50 0.3  
 pP 30 42.00 37km  
 NJ2 40.12 356 eP 30 39.50 0.3  
 CD2 42.48 337 eP 30 58.20 -0.5  
 XAN 43.69 345 P 31 07.50 -1.1  
 SHL 44.28 320 iP 31 14.00 0.4  
 DZM 45.29 113 iPc 31 27.30 5.6X  
 TIY 46.47 350 eP 31 31.20 0.5  
 Z 18s 0.60um 4.6msz

LZH 47.11 340 eP 31 34.00 -1.9  
 2.0s 84.00nm 5.4mb  
 Z 18s 0.50um 4.5msz  
 pP 31 46.70 47km  
 sP 31 52.50

LSA 47.71 323 eP 31 43.20 2.1  
 S 38 37.00

BJI 48.26 354 eP 31 42.00 -2.6  
 Z 20s 0.60um 4.6msz  
 GBA 48.87 296 Pd 31 48.00 -1.7  
 0.8s 9.20nm 4.9mb

HYB 49.54 301 eP 31 53.50 -1.4  
 BTO 49.72 348 eP 31 54.00 -2.0  
 GUN 49.79 317 P 31 56.80 -0.3  
 PKI 49.89 317 P 31 57.00 -0.8  
 KKN 50.12 317 P 31 59.10 -0.3  
 DMN 50.12 317 P 31 58.90 -0.6  
 GTA 51.49 338 eP 32 09.00 -0.6  
 MDJ 53.08 7 eP 32 22.50 1.3  
 WMO 60.19 332 iPc 33 12.00 0.0  
 Z 22s 0.40um 4.5msz

S 41 25.00  
 KSH 63.47 322 P 33 38.00 3.9X  
 VNDA 72.38 172 e(P) 34 28.90 -0.1  
 MAIO 73.08 312 eP 34 47.00 13.0X  
 eS 44 12.00

SPA 81.84 180 eP 35 23.30 1.4  
 0.9s 14.09nm 5.0mb

LKO 127.80 276 PKP 42 19.18 9.5X  
 CCH 153.46 163 ePKP 43 05.00 10.4X  
 LPB 153.62 159 PKP 43 04.00 9.0X  
 ZOBO 153.86 158 PKP 43 08.00 12.5X  
 1.0s 9.50nm

LR 36 20.00  
 S.D. = 1.2 on 45 of 64 obs.

? MAR 19, 1990 07h 58m 55.08 ± 1.33s  
 12.420 N ± 11.4km 145.410 E ± 36.8km  
 DEPTH = 33.0km (normal)  
 3.9mb (2 obs.)

SOUTH OF MARIANA ISLANDS (210)

GUA 1.21 336 eP 59 16.60 0.8  
 eS 59 34.00

GUMO 1.28 336 eP 59 16.30 -0.4  
 PJG 1.28 336 eP 59 16.30 -0.4  
 WB5 33.89 199 eP 05 38.90 1.8  
 WRA 33.96 199 P 05 36.00 -1.7  
 0.7s 1.80nm 4.1mb

YKA 83.65 27 eP 11 21.40 0.0  
 0.4s 0.20nm 3.6mb  
 S.D. = 1.5 on 6 of 6 obs.

MAR 19, 1990 08h 08m 38.74s  
 61.284 N 150.702 W  
 DEPTH = 57.4km  
 SOUTHERN ALASKA (2)  
 <AGS-P>

SUA 0.18 354 iP 08 48.02 0.0  
 eS 08 56.17  
 PWA 0.54 47 eP 08 50.50 -0.5  
 PMS 0.55 94 iP 08 50.99 -0.3  
 eS 09 00.95  
 NKA 0.60 206 iP 08 53.06 1.3  
 CGLM 0.63 273 eP 08 51.73 -0.5  
 SPU 0.66 262 iP 08 52.03 -0.5  
 eS 09 02.71

CRP 0.70 269 iP 08 52.74 -0.4  
 NCG 0.71 280 iP 08 52.68 -0.5  
 eS 09 04.02

SKT 0.80 331 iP 08 53.63 -0.6  
 eS 09 05.62

SLKM 0.81 163 eP 08 53.72 -0.7  
 PLRM 0.82 67 iP 08 53.48 -0.9  
 eS 09 05.87

GHO 0.98 59 eP 08 55.96 -0.7  
 eS 09 09.67

RDT 1.10 230 iP 08 57.59 -0.6  
 eS 09 12.80

CUT 1.14 10 eP 08 57.80 -1.0  
 SML 1.25 64 eP 08 59.46 -0.8  
 >NNL 1.28 193 eP 09 01.32 0.7

SEW 1.34 152 eP 09 01.77 0.4  
 CNPM 1.78 189 eP 09 06.61 -1.1  
 GLI 1.80 101 eP 09 05.57 -2.3

NCA 1.98 67 eP 09 09.52 -1.0  
 PDB 2.29 231 eP 09 13.65 -1.1  
 TOA 2.31 67 eP 09 14.43 -0.7

KLU 2.31 83 iP 09 12.98 -2.2  
 SVW 2.39 268 iP 09 14.72 -1.5  
 24 obs. associated

? MAR 19, 1990 09h 08m 40.67 ± 13.52s  
 51.608 N ± 77.1km 16.382 E ± 90.5km  
 DEPTH = 10.0km (geophysicist)

POLAND (548)

KSP 0.77 184 iP 08 55.60 -0.1  
 0.3s 77.00nm  
 iS 09 03.50

PRU 2.00 216 ePg 09 15.00 0.2  
 eSg 09 39.00

CLL 2.13 263 (Pg) 09 17.00 0.2  
 eSg 09 43.00

KHC 3.06 217 Pg 09 34.50 4.5X  
 eSg 09 59.90

MOX 3.15 254 ePn 09 31.00 -0.3  
 ePg 09 37.50  
 iSg 10 17.00

VKA 3.35 181 iP 09 56.00 21.9X  
 i 09 57.90  
 iSg 10 24.50

S.D. = 0.4 on 4 of 6 obs.

? MAR 19, 1990 10h 19m 19.41 ± 5.08s  
 39.066 N ± 45.2km 21.940 E ± 24.1km  
 DEPTH = 33.0km (normal)

GREECE (364)

NEO 1.03 76 ePn 19 37.50 0.0  
 KZN 1.25 354 ePn 19 40.50 -0.2  
 PLG 1.75 41 ePn 19 48.00 0.1

OHR 2.22 337 ePn 19 54.80 0.1  
 S.D. = 0.2 on 4 of 4 obs.

% MAR 19, 1990 10h 36m 17.00 ± 0.96s  
 39.114 N ± 8.1km 27.611 E ± 14.6km  
 DEPTH = 10.0km (geophysicist)

TURKEY (366)

IZM 0.77 201 ePg 36 32.10 0.1  
 eSg 36 43.10

DST 0.93 58 ePn 36 34.50 -0.3  
 EDC 1.25 9 iPn 36 40.00 -0.1  
 BNT 1.26 11 iPn 36 41.50 1.0  
 MFT 1.69 351 iPn 36 46.00 -0.8  
 S.D. = 0.9 on 5 of 5 obs.

MAR 19, 1990 10h 46m 31.92 ± 0.20s  
 63.883 N ± 5.4km 22.074 W ± 3.9km  
 DEPTH = 10.0km (geophysicist)  
 4.8mb (26 obs.) 4.5msz (2 obs.)  
 ICELAND REGION (637)  
 Felt in the Reykjavik area.

REY 0.27 16 iPd 46 35.70 -1.8  
 AKU 2.48 41 iP 47 10.10 -2.9  
 1.2s 1531.25nm  
 eS 47 45.20

DMU 12.67 135 eP 49 32.60 -2.2  
 EKA 12.80 123 P 49 37.00 0.6  
 1.2s 20.60nm 5.2mb

DAG 13.00 3 eP 49 40.10 1.1  
 DCN 13.04 137 eP 49 39.10 -0.5  
 DLE 13.31 136 eP 49 43.40 0.2  
 FLN 19.15 132 eP 50 57.00 -0.6  
 0.8s 10.75nm 4.1mb

WTS 19.20 115 eP 50 58.00 -0.1  
 LPF 19.61 134 eP 51 01.30 -1.7  
 1.0s 2.20nm 3.4mb X

ENN 19.80 118 eP 51 08.00 3.1X  
 1.0s 36.00nm 4.6mb

DOU 19.83 122 P 51 06.90 1.6  
 MEM 19.96 119 Pc 51 09.50 2.9X

FRB 20.16 291 eP 51 07.00 -1.6  
 ABH 21.09 119 eP 51 18.22 -0.3  
 RUP 21.14 118 eP 51 18.66 -0.3

TNS 21.23 116 ePd 51 22.20 2.4  
 GWF 21.89 119 P 51 26.25 -0.3  
 VITF 21.89 122 P 51 26.06 -0.4

LOR 21.92 127 eP 51 25.80 -1.0  
 1.1s 46.40nm 4.8mb

SSF 21.97 128 iPc 51 26.20 -1.1  
 1.2s 44.65nm 4.8mb

LSF 22.01 132 iPc 51 26.80 -0.9  
 1.1s 39.05nm 4.8mb

AVF 22.15 129 iPc 51 28.00 -1.1  
 1.2s 35.70nm 4.7mb

BGF 22.18 130 iPc 51 28.40 -1.0  
 1.0s 52.00nm 4.9mb

MOX 22.19 111 eP 51 31.00 1.6  
 Z 11s 1.60um 4.7mszX

TCF 22.20 131 iPc 51 28.80 -0.8  
 1.1s 43.95nm 4.8mb

HAU 22.21 122 eP 51 29.60 0.0  
 1.2s 65.45nm 5.0mb

LBF 22.21 127 iPc 51 28.80 -0.9  
 1.1s 39.05nm 4.8mb

CDF 22.22 120 P 51 29.54 -0.3  
 WLS 22.25 120 P 51 29.93 -0.2

CLL 22.27 108 eP 51 29.00 -1.2  
 1.5s 58.00nm 4.8mb

e 51 36.00 25kmX  
 ECH 22.34 121 P 51 30.61 -0.3

MAF 22.38 131 iPc 51 30.60 -0.8  
 1.2s 32.75nm 4.7mb

SMF 22.45 128 iPc 51 31.20 -0.9  
 1.2s 41.65nm 4.8mb

BSF 22.52 122 P 51 32.65 -0.2  
 MOF 22.63 121 P 51 33.60 -0.3

LOMF 22.93 122 P 51 36.94 0.1  
 FEL 22.94 120 P 51 36.31 -0.7

BBS 23.09 121 P 51 37.93 -0.5  
 SLE 23.22 120 ePc 51 41.30 1.7

ZLA 23.41 120 ePc 51 43.20 1.7  
 PRU 23.91 108 eP 51 47.50 1.3

Z 14s 1.50um 4.6mszX  
 E 12s 1.30um  
 e 51 52.00 9kmX

DIX 24.22 123 ePc 51 50.50 0.9  
 MMK 24.45 123 ePc 51 52.90 1.1  
 LPL 24.45 125 eP 51 51.30 -0.5  
 1.2s 32.75nm 4.8mb

LPG 24.47 125 eP 51 51.60 -0.5  
 1.2s 32.75nm 4.8mb

VDL 24.65 120 ePc 51 54.90 1.2  
 OSS 24.75 119 ePc 51 56.30 1.7



19d 10h

BN1 24.83 126 P 51 57.70 2.3  
 VAI 24.91 122 P 51 56.50 0.6  
 MDI 25.34 121 P 52 01.50 1.5  
 DOI 25.51 126 P 52 01.00 -0.7  
 KBA 25.70 114 eP 52 04.00 0.4  
 1.1s 14.00nm 4.6mb  
 CTI 25.86 118 P 52 05.00 -0.1  
 FVI 25.86 115 P 52 06.00 1.1  
 TOUF 25.93 126 P 52 05.69 -0.1  
 CKI 25.95 124 P 52 06.00 0.2  
 AUTN 26.01 126 P 52 06.23 -0.4  
 SAOF 26.07 126 P 52 06.42 -0.5  
 AURF 26.07 126 P 52 06.40 -0.6  
 BOB 26.09 122 P 52 07.50 0.3  
 KRA 26.16 102 eP 52 08.00 0.3

Z 18s 1.30um 4.5msz  
 E 16s 1.50um

TOL 26.29 147 eP 52 09.50 0.5  
 RBL 26.30 115 P 52 09.50 0.4  
 SPC 26.94 103 eP 52 15.60 0.5  
 BDI 27.12 121 P 52 16.50 -0.1  
 PGD 27.71 120 P 52 24.50 2.4  
 PTJ 27.71 112 eP 52 19.60 -2.4  
 PGF 27.84 125 P 52 22.44 -0.7  
 ARV 28.50 119 P 52 22.50 -6.5X  
 SDI 30.36 120 P 52 44.00 -1.8  
 SKO 33.19 110 eP 53 09.00 -1.5

Z 18s 0.87um 4.5msz  
 N 13s 0.48um  
 E 18s 0.87um

YKA 38.27 312 eP 53 51.50 -1.8  
 0.9s 3.70nm 4.1mb

RSON 38.55 285 P 53 55.00 -0.9  
 0.9s 30.20nm 5.0mb

FFC 39.16 295 eP 54 01.00 0.1  
 0.9s 21.00nm 4.8mb

INK 39.44 327 eP 54 01.00 -2.1  
 EDM 44.72 301 ePd 54 46.50 0.0

FBA 45.51 331 P 54 51.50 -1.0  
 0.9s 11.46nm 4.8mb

IMA 45.67 335 P 54 54.70 0.8  
 1.0s 6.38nm 4.5mb

SES 46.04 297 ePc 54 57.00 0.0  
 JSC 46.33 259 P 55 00.00 0.6

GBTN 46.45 263 P 55 00.00 -0.3  
 PRM 46.98 260 P 55 04.80 0.3

FVM 47.27 271 P 55 06.40 -0.4  
 OLY 49.80 270 P 55 25.50 -0.9

NEW 50.12 300 P 55 30.00 1.2  
 0.7s 4.00nm 4.5mb

PNT 50.21 302 eP 55 30.00 0.6  
 LRM 50.29 295 eP 55 30.20 -0.1

IMW 51.25 292 P 55 38.00 0.2  
 BW06 51.60 290 P 55 38.80 -1.6

0.8s 5.36nm 4.5mb  
 VGB 53.80 301 P 55 57.80 1.3

DUG 55.10 291 P 56 07.80 1.6  
 LKO 55.51 160 P 56 07.24 -1.9

MSU 56.26 289 P 56 14.30 -0.4  
 ALQ 56.85 282 eP 56 18.20 -0.7

LBFM 57.77 299 P 56 25.00 -0.3  
 KVN 58.23 294 P 56 27.60 -1.0

TIC 58.44 160 P 56 30.40 0.5  
 TNP 58.70 293 P 56 27.00 -4.9X

0.9s 4.56nm 4.6mb  
 CMB 60.02 296 e(P) 56 48.20 7.4X

FRI 60.65 294 eP 56 46.40 1.4  
 GSC 60.92 291 eP 56 49.00 2.0

ISA 61.29 293 eP 56 51.00 1.5  
 TPC 61.64 290 eP 56 52.00 0.1

SBB 61.87 292 eP 56 53.00 -0.4  
 GLA 62.04 288 eP 56 55.00 0.5

BAR 63.13 290 eP 57 02.00 0.3  
 BAO 66.18 135 iPd 57 20.10 -1.5

0.7s 9.00nm 5.1mb  
 GTA 67.30 45 eP 57 22.90 9kmX

Z 16s 0.60um 4.9mszX  
 BTO 69.18 37 eP 57 43.30 3.0X

HHC 69.36 36 eP 57 47.60 6.2X  
 DMN 72.70 63 P 58 03.40 1.5

CD2 76.37 46 eP 58 25.40 2.7  
 GYA 81.43 45 eP 58 52.00 1.7

S.D. = 1.1 on 111 of 119 obs.  
 % MAR 19, 1990 11h 21m 09.93± 0.73s

40.079 N ± 7.7km 15.911 E ± 6.6km  
 DEPTH = 10.0km (geophysicist)  
 SOUTHERN ITALY (390)

MMN 0.20 162 P 21 14.20 -0.1  
 MGR 0.28 282 P 21 15.50 -0.3

ORI 0.41 92 P 21 18.00 -0.4  
 eSg 21 26.00

CSI 0.42 136 P 21 19.00 0.5  
 SGO 0.66 316 P 21 23.50 0.4

eSg 21 30.00  
 CZI 0.88 169 P 21 26.60 -0.1

eSg 21 42.50  
 S.D. = 0.5 on 6 of 6 obs.

? MAR 19, 1990 11h 41m 18.29± 3.30s  
 15.872 N ± 12.1km 61.044 W ± 29.6km

DEPTH = 33.0km (normal)  
 LEEWARD ISLANDS (92)

ML 2.3 (FDF).  
 MGG 0.27 280 iPd 41 25.71 0.1

S 41 29.60  
 SFG 0.41 339 eP 41 27.20 -0.3

BBL 0.54 230 eP 41 29.60 0.0  
 S 41 36.60

DOG 0.57 286 iPd 41 29.88 -0.1  
 S 41 37.00

PAG 0.63 284 eP 41 30.60 -0.2  
 S 41 38.50

SEG 0.69 320 ePd 41 32.05 0.5  
 S 41 40.30

S.D. = 0.4 on 6 of 6 obs.  
 MAR 19, 1990 12h 50m 48.92± 0.56s

0.097 S ± 6.3km 122.903 E ± 7.2km  
 DEPTH = 168.8 ± 7.2 km

4.6mb (2 obs.)  
 MINAHASSA PENINSULA (265)

MNI 2.47 52 ePd 51 30.40 -0.6  
 eS 51 55.50

PCI 3.17 255 ePd 51 40.00 0.3  
 eS 52 18.00

AAI 6.38 124 ePc 52 22.00 0.3  
 TSM 6.46 312 ePd 52 23.20 0.5

KKM 9.04 313 ePd 52 57.00 -0.2  
 PPR 10.65 337 ePd 53 22.00 3.9X

KNA 16.60 160 eP 54 33.40 0.0  
 MBL 21.15 188 eP 55 20.60 -1.3

WB5 22.64 151 eP 55 35.80 -0.7  
 WRA 22.68 151 Pc 55 36.40 -0.5

0.5s 6.60nm 4.4mb  
 MEKA 26.70 189 iPd 56 14.20 -0.1

0.3s 8.00nm 4.9mb  
 LOE 27.15 311 eP 56 18.00 -0.5

CHG 30.11 310 eP 56 45.20 0.3  
 GYA 30.69 331 P 56 50.40 0.4

CD2 35.80 331 eP 57 33.80 0.0  
 BWA 41.67 148 eP 58 24.60 2.1

CAN 42.66 148 eP 58 31.00 0.5  
 GTA 44.64 334 eP 58 46.40 0.0

GUN 45.11 311 P 58 43.30 -7.3X  
 PKI 45.29 311 P 58 39.60 -12.4X

KKN 45.50 311 P 58 39.50 -14.0X  
 DMN 45.54 310 P 58 40.70 -13.2X

KIC 127.39 278 PKP 09 35.40 -0.8  
 S.D. = 0.8 on 18 of 23 obs.

% MAR 19, 1990 13h 13m 27.76± 2.95s  
 32.864 S ± 23.2km 71.367 W ± 7.0km

DEPTH = 10.0km (geophysicist)  
 NEAR COAST OF CENTRAL CHILE (135)

IHA 0.28 235 iPd 13 33.80 0.1  
 iS 13 40.10

LCCH 0.63 196 iPd 13 41.00 0.5  
 iS 13 51.50

SAN 0.83 135 iPd 13 44.70 0.8  
 iS 13 59.50

TACH 0.87 156 iPd 13 44.70 0.3  
 iS 14 00.50

FCH 1.01 117 iPd 13 46.50 -0.7  
 iS 14 04.00

PCH 1.04 137 iPd 13 47.50 0.0  
 iS 14 06.00

LNK 1.09 182 iPd 13 46.80 -1.4  
 iS 14 04.50

CHCH 1.22 151 iPd 13 50.80 0.3  
 iS 14 10.80

S.D. = 0.8 on 8 of 8 obs.  
 MAR 19, 1990 13h 15m 02.15± 0.32s

2.695 N ± 4.9km 79.682 W ± 6.3km  
 DEPTH = 33.0km (normal)

4.7mb (10 obs.) 4.1msz (2 obs.)  
 SOUTH OF PANAMA (83)

CUMC 2.50 134 iPd 15 40.40 -1.4  
 COTA 2.70 150 P 15 43.00 -1.7

iS 16 12.20  
 ANCC 2.93 74 iPd 15 47.19 -0.3

GGP 3.05 159 iPd 15 48.10 -1.7  
 eS 16 23.00

OUR 3.07 158 iPd 15 48.10 -1.8  
 iS 16 23.50

CAYA 3.10 147 iPd 15 50.70 0.3  
 eS 16 30.00

HOOC 3.14 76 iPd 15 50.15 -0.6  
 CLMC 3.33 69 eP 15 52.36 -1.0

PURC 3.34 96 ePd 15 54.65 0.9  
 SILC 3.34 90 eP 15 54.14 0.5

DIAC 3.53 80 iPd 15 56.49 0.3  
 VCI 3.55 159 P 15 56.70 -0.1

eS 16 37.60  
 TUNG 4.27 163 P 16 08.00 1.2

UPA 6.25 1 eP 16 34.00 -0.5  
 NNA 14.86 169 eP 18 30.00 -1.7

0.6s 6.67nm 4.2mb  
 ARE 20.68 157 iPd 19 44.00 1.5

ZOBO 22.04 149 Pd 19 56.80 0.4  
 1.0s 30.00nm 4.7mb

Z 22s 0.49um 3.9msz  
 LR 27 42.00

LPB 22.27 149 P 20 00.00 1.4  
 1.2s 125.00nm 5.2mb

Z 18s 1.37um 4.4msz  
 LR 27 42.00

CCH 24.01 147 P 20 19.30 3.9X  
 PRM 31.33 356 P 21 22.00 0.2

JSC 31.46 357 P 21 23.50 0.6  
 LHS 31.64 358 P 21 24.70 0.2

OLY 34.43 343 P 21 47.30 -1.4  
 POW 34.95 344 P 21 51.90 -1.3

FVM 36.47 346 P 22 05.00 -1.1  
 ALO 40.60 325 eP 22 41.50 0.7

1.0s 18.75nm 4.8mb  
 ANMO 40.60 325 P 22 42.00 1.2

0.9s 14.44nm 4.7mb  
 CAI 43.45 102 eP 23 07.70 3.5X

GLD 43.56 331 P 23 05.50 0.5  
 1.3s 31.61nm 4.9mb

GOL 43.60 331 P 23 06.00 0.7  
 0.8s 10.42nm 4.7mb

RSDD 46.54 336 P 23 29.00 0.3  
 DAU 47.16 327 P 23 34.20 0.4

TNP 49.17 321 P 23 49.80 0.4  
 RSON 49.43 348 P 23 48.60 -2.3

0.9s 12.78nm 5.0mb  
 KVN 50.30 321 P 23 58.00 0.0

SES 54.42 336 eP 24 28.00 -0.4  
 NEW 55.62 331 P 24 36.00 -1.1

0.9s 6.03nm 4.6mb  
 LON 57.09 327 P 24 47.30 -0.5

EDM 57.51 337 ePd 24 49.00 -1.5  
 PNT 57.55 330 ePd 24 51.00 0.1

GMW 58.10 327 P 24 53.50 -1.3  
 YKA 65.06 343 eP 25 38.70 -2.6

1.0s 2.90nm 4.3mb  
 KIC 74.75 84 P 26 42.00 0.7

INK 74.78 342 ePd 26 39.70 -0.8  
 RUP 85.85 41 eP 27 41.18 1.3

ABH 86.17 40 eP 27 42.43 1.0  
 KKN 146.41 25 PKP 34 43.40 2.3

DMN 146.50 25 PKP 34 43.40 2.1  
 GUN 146.55 24 PKP 34 42.90 1.4

PKI 146.66 25 PKP 34 43.40 1.8  
 MTN 147.89 250 iPKPc 34 45.70 2.3

HYB 150.67 46 ePKP 34 48.00 0.3  
 e 35 01.00

SHL 150.74 16 ePKP 34 53.00 5.2X



19d 13h

KMI 152.25 355 ePKP 34 57.00 6.9X  
S.D. = 1.2 on 50 of 54 obs.

\* MAR 19, 1990 14h 20m 56.03±2.01s  
12.735 N ±10.4km 145.571 E ±21.0km  
DEPTH = 49.3 ±15.2 km  
4.6mb ( 2 obs.)

SOUTH OF MARIANA ISLANDS (210)

GUA 1.03 321 iPc 21 14.40 0.1  
eS 21 29.30 0.0  
GUMO 1.09 321 iPc 21 15.20 0.0  
PJG 1.09 321 eP 21 15.20 0.0  
WB5 34.23 199 eP 27 39.00 -0.4  
WRA 34.30 199 Pc 27 39.90 -0.1  
0.8s 10.60nm 4.8mb  
ASPA 37.94 198 eP 28 09.60 -1.1  
0.8s 4.00nm 4.4mb  
TIY 38.61 316 Pd 28 16.00 -0.3  
MBL 42.12 217 eP 28 46.00 0.7  
GTA 48.25 312 P 29 34.00 -0.3  
WMO 58.22 314 P 30 46.00 -1.8  
HYB 64.60 283 eP 31 34.00 2.9  
FBA 68.71 25 eP 32 02.70 6.4X  
INK 74.89 22 eP 32 32.00 -1.1  
MBC 78.93 14 eP 32 55.00 -0.5  
PNT 83.57 41 eP 33 35.00 14.7X  
0.6s 4.00nm  
EDM 86.43 36 eP 33 36.50 1.9  
LRM 89.14 43 eP 34 02.30 14.2X  
SUF 91.52 336 eP 34 12.10 13.7X  
0.6s 4.70nm  
NUR 93.31 335 eP 33 56.00 -10.6X  
KIC 144.92 301 PKP 40 29.78 -0.6  
TIC 145.00 302 PKP 40 29.88 -0.7  
LIC 145.24 301 PKP 40 30.68 -0.2  
ZOBO 147.21 100 PKP 40 36.00 1.2  
S.D. = 1.2 on 18 of 23 obs.

MAR 19, 1990 14h 46m 15.88±0.43s  
44.410 N ±2.7km 7.298 E ±3.2km  
DEPTH = 10.6 ±5.4 km  
NORTHERN ITALY (545)  
ML 2.8 (GEN).

DOI 0.10 338 Pc 46 19.50 0.7  
eSg 46 21.20  
STV 0.17 173 Pc 46 19.71 -0.1  
S 46 21.57  
PZZ 0.17 304 Pc 46 20.27 0.4  
S 46 22.80  
ENR 0.20 154 P 46 20.32 -0.1  
S 46 23.11  
FOUF 0.39 288 iPg 46 24.00 0.1  
i(Sg) 46 28.70  
AUTN 0.42 167 Pg 46 24.73 0.1  
ROB 0.43 105 P 46 25.05 0.4  
S 46 31.82  
SAOF 0.46 156 Pg 46 25.23 -0.1  
MVIF 0.52 192 Pg 46 26.25 -0.3  
Sg 46 33.42  
RRL 0.63 325 P 46 28.69 0.1  
S 46 37.26  
IMI 0.66 139 Pc 46 28.87 -0.1  
S 46 37.48  
FIN 0.68 107 P 46 29.39 0.0  
S 46 38.41  
CKI 0.70 88 P 46 30.20 0.5  
eSg 46 39.00  
CALN 0.72 204 Pg 46 30.21 0.1  
RSP 0.74 358 P 46 29.49 -1.0  
S 46 38.82  
BNI 0.78 326 P 46 31.60 0.5  
eSg 46 41.50  
PCP 0.90 81 P 46 33.72 0.6  
S 46 46.61  
LSD 1.05 355 P 46 35.30 -0.5  
S 46 51.12  
PGF 2.24 146 Pn 46 41.18 -12.3X  
S.D. = 0.5 on 18 of 19 obs.

% MAR 19, 1990 14h 49m 40.92±0.84s  
44.406 N ±8.1km 7.329 E ±6.6km  
DEPTH = 10.0km (geophysicist)  
NORTHERN ITALY (545)  
ML 2.0 (GEN).

STV 0.16 181 P 49 44.69 0.0  
S 49 46.61  
ENR 0.19 160 P 49 45.27 0.1  
S 49 47.91  
PZZ 0.19 301 P 49 45.24 0.0  
S 49 47.81  
ROB 0.40 106 P 49 49.24 0.0  
S 49 55.32  
IMI 0.64 141 P 49 53.76 0.0  
S 50 02.56  
FIN 0.66 107 P 49 54.10 0.0  
S 50 13.13  
S.D. = 0.0 on 6 of 6 obs.

% MAR 19, 1990 15h 12m 02.28±0.74s  
44.388 N ±7.2km 7.299 E ±6.3km  
DEPTH = 10.0km (geophysicist)  
NORTHERN ITALY (545)  
ML 2.2 (GEN).

STV 0.14 173 P 12 05.93 0.2  
S 12 07.69  
ENR 0.18 152 P 12 06.44 0.0  
S 12 08.90  
PZZ 0.18 310 P 12 06.44 0.0  
S 12 09.00  
ROB 0.42 103 P 12 11.26 0.4  
S 12 17.33  
IMI 0.64 138 P 12 14.95 -0.2  
S 12 23.17  
FIN 0.68 105 P 12 15.26 -0.5  
S 12 23.69  
PCP 0.91 80 P 12 19.77 0.1  
S 12 30.87  
S.D. = 0.3 on 7 of 7 obs.

% MAR 19, 1990 16h 16m 42.47±0.81s  
44.382 N ±9.0km 7.281 E ±8.1km  
DEPTH = 10.0km (geophysicist)  
NORTHERN ITALY (545)  
ML 1.8 (GEN).

STV 0.14 167 P 16 46.11 0.2  
S 16 47.91  
PZZ 0.18 314 P 16 46.52 0.0  
S 16 49.11  
ENR 0.18 147 P 16 46.63 0.0  
S 16 49.11  
ROB 0.43 101 P 16 51.37 0.1  
S 16 57.50  
IMI 0.64 137 P 16 55.04 -0.4  
S 17 03.86  
FIN 0.69 104 P 16 56.21 0.1  
S.D. = 0.3 on 6 of 6 obs.

? MAR 19, 1990 16h 42m 05.13±1.10s  
30.997 S ±37.7km 175.641 W ±12.5km  
DEPTH = 33.0km (normol)  
4.8mb ( 2 obs.) 4.3msz ( 1 obs.)  
KERMADEC ISLANDS REGION (177)

DZM 18.31 295 iPd 46 18.70 0.4  
ASPA 45.11 266 eP 50 18.60 -1.7  
1.1s 9.00nm 4.6mb  
Z 19s 0.33um 4.3msz  
WRA 46.15 271 Pc 50 29.80 1.3  
1.0s 20.50nm 5.0mb  
WB5 46.15 272 eP 50 28.50 0.0  
FRI 85.52 42 e(P) 54 41.30 0.4  
CMB 85.87 41 ePc 54 42.90 0.1  
ORV 86.34 39 ePc 54 44.80 -0.2  
WDC 86.52 38 ePc 54 46.00 0.2  
KVN 87.86 41 eP 54 52.80 0.2  
ANMO 92.38 50 eP 55 13.90 0.1  
FBA 98.03 12 e(P) 55 37.00 -1.6  
SUF 145.31 343 ePKP 01 39.10 -1.2  
NUR 147.55 341 iPKP 01 46.00 2.0  
0.7s 26.70nm  
NB2 149.61 353 PKP 01 51.60 4.3X  
0.9s 10.70nm  
BCAO 150.40 210 ePKPc 02 00.80 10.9X  
0.9s i 02 09.50  
S.D. = 1.1 on 13 of 15 obs.

? MAR 19, 1990 16h 43m 07.02±3.25s

14.501 N ±22.3km 60.916 W ±14.8km  
DEPTH = 10.0km (geophysicist)  
WINDWARD ISLANDS (95)  
ML 1.8 (FDF).

MVM 0.06 20 iPc 43 09.29 0.0  
S 43 12.20  
BIM 0.15 276 iPd 43 10.57 0.0  
S 43 14.30  
CRM 0.25 0 iPc 43 12.35 0.0  
S 43 17.80  
FDF 0.32 316 eP 43 13.75 0.0  
0.1s 0.37nm  
S 43 20.10  
S.D. = 0.0 on 4 of 4 obs.

% MAR 19, 1990 17h 22m 56.19±1.00s  
11.032 N ±10.8km 61.109 W ±8.7km  
DEPTH = 10.0km (geophysicist)  
WINDWARD ISLANDS (95)  
MD 2.5 (TRN).

TPR 0.36 65 eP 23 03.69 0.1  
eS 23 10.50  
BOT 0.41 71 eP 23 04.40 -0.1  
TRN 0.48 217 eP 23 05.85 -0.1  
eS 23 12.74  
TBH 0.55 176 eP 23 07.27 0.0  
eS 23 15.17  
TCE 0.71 242 eP 23 10.31 0.0  
eS 23 20.89  
S.D. = 0.1 on 5 of 5 obs.

% MAR 19, 1990 20h 17m 34.93±1.09s  
40.633 N ±9.7km 27.444 E ±10.4km  
DEPTH = 10.0km (geophysicist)  
TURKEY (366)

MFT 0.20 321 iPg 17 39.30 0.0  
iSg 17 42.80  
EDC 0.43 132 iPg 17 44.00 0.3  
iSg 17 49.00  
BNT 0.46 127 iPg 17 49.30 0.1  
iSg 17 49.30  
KCT 0.80 119 iPg 17 49.80 -0.6  
iSg 18 01.80  
CTT 0.91 55 iPg 17 52.30 0.0  
YLV 1.47 92 ePn 18 01.80 0.3  
S.D. = 0.4 on 6 of 6 obs.

% MAR 19, 1990 21h 15m 08.23s  
63.058 N 148.558 W  
DEPTH = 78.7km  
CENTRAL ALASKA (1)  
<AGS-P>.

RND 0.37 339 iP 15 20.98 -0.1  
eS 15 30.91  
HUR 0.50 261 iP 15 21.70 -0.3  
eS 15 32.83  
MCK 0.70 346 iP 15 24.03 0.0  
eS 15 35.71  
CUT 1.03 231 eP 15 27.50 -0.2  
KTH 1.18 296 iP 15 29.82 0.1  
eS 15 46.40  
SML 1.26 175 iP 15 30.43 -0.4  
eS 15 48.58  
GHO 1.30 188 iP 15 31.12 -0.3  
eS 15 48.65  
NCA 1.34 142 iP 15 31.65 -0.1  
eS 15 51.62  
PAX 1.41 92 eP 15 32.28 -0.5  
eS 15 50.79  
DDM 1.42 58 eP 15 33.23 0.4  
eS 15 52.24  
WRH 1.43 8 iP 15 32.18 -0.8  
eS 15 50.13  
TOA 1.46 130 iP 15 33.53 0.1  
eS 15 52.74  
PLRM 1.50 191 eP 15 33.71 -0.1  
HDA 1.53 27 iP 15 33.67 -0.6  
eS 15 52.77  
PWA 1.54 204 iP 15 34.80 0.4  
NEA 1.54 352 iP 15 33.52 -0.9  
eS 15 52.40  
CCB 1.63 11 iP 15 34.62 -1.0  
eS 15 54.13



	0.5 s	16.22 nm		5.0 mb
KVN	33.02	321 eP	02 14.40	1.6
		pP	02 45.30	143 km
CMB	33.87	317 eP	02 21.00	1.1
		epP	02 52.00	143 km
		esP	03 06.20	
LRM	35.01	335 eP	02 30.40	0.6
		e	03 01.70	140 km
RSON	35.52	358 P	02 34.70	1.0
NEW	38.91	333 P	03 01.00	-1.2
	0.6 s	3.54 nm		4.3 mb
ZOBO	39.15	142 P	03 05.00	-0.1
	1.0 s	10.50 nm		4.5 mb
FFC	40.14	351 eP	03 12.00	-0.2
	0.7 s	6.00 nm		4.4 mb
CCH	41.20	141 (P)	03 25.00	3.4 X
EDM	41.47	341 iP	03 22.50	-0.7
	0.5 s	16.00 nm		4.9 mb
YKA	49.82	346 eP	04 27.80	-1.1
	0.6 s	6.80 nm		4.6 mb
FRB	51.05	13 eP	04 36.00	-2.2
BAO	53.13	123 e(P)	04 50.00	-4.5 X
INK	59.26	343 eP	05 36.00	-1.2
MBG	62.67	353 eP	05 59.00	-1.1
EKA	76.87	36 P	07 26.00	-0.6
	0.9 s	7.20 nm		4.4 mb
LPF	79.36	43 eP	07 38.90	-1.5
GRR	79.42	43 eP	07 39.60	-1.0
FLN	79.59	42 eP	07 40.40	-1.2
	0.5 s	2.90 nm		4.3 mb
LFF	81.20	46 eP	07 48.40	-1.7
MAF	82.16	44 eP	07 53.80	-1.3
	0.8 s	3.35 nm		4.1 mb



20d 00h

BGF 82.26 44 eP 07 54.30 -1.4  
 0.8s 6.05nm 4.4mb  
 AVF 82.55 44 eP 07 55.50 -1.6  
 SSF 82.58 43 eP 07 55.90 -1.4  
 WRA 135.80 257 PKPc 14 56.50 1.4  
 0.6s 1.20nm  
 HYB 146.17 17 ePKP 15 13.00 -0.6  
 GBA 149.42 21 PKP 15 23.00 4.3X  
 0.7s 2.70nm  
 S.D. = 1.2 on 49 of 53 obs.

& MAR 19, 1990 23h 58m 25.30s  
 36.878 N 121.407 W  
 DEPTH = 8.0km  
 CENTRAL CALIFORNIA (39)  
 <BRK>. ML 2.5 (BRK).

SAO 0.12 195 iPd 58 28.30 0.3  
 LLA 0.45 125 iPc 58 34.20 -0.3  
 i 58 36.00  
 iS 58 41.20  
 ARN 0.48 348 eP 58 34.70 -0.3  
 GCC 0.50 288 iPc 58 34.60 -0.7  
 MHC 0.50 338 ePc 58 35.00 -0.4  
 iS 58 42.80  
 PRS 0.55 177 ePc 58 35.80 -0.5  
 PRI 0.95 141 ePc 58 43.50 -0.1  
 i 58 47.10  
 PCC 1.00 309 ePc 58 43.30 -1.0  
 BKS 1.20 327 ePd 58 47.70 -0.1  
 BRK 1.20 326 e(P) 58 48.00 0.1  
 ZSP 1.26 328 e(P) 58 47.80 -1.1  
 e 58 49.20  
 PHAM 1.32 142 eP 58 49.50 -0.4  
 FRI 1.37 85 e(P) 58 50.50 -0.1  
 CMB 1.41 35 ePd 58 50.20 -1.1  
 14 obs. associated

? MAR 20, 1990 00h 14m 35.79±4.05s  
 31.377 S ±12.5km 68.691 W ±34.8km  
 DEPTH = 97.0 ± 42.5 km  
 SAN JUAN PROVINCE, ARGENTINA (137)

ZON 0.17 176 iPd 14 50.00 0.0  
 eS 15 02.00  
 RTLL 0.20 76 iPc 14 49.70 -0.4  
 CFA 0.45 121 iPd 14 51.20 0.0  
 S 15 03.00  
 RTRS 1.37 331 iPc 15 01.00 0.3  
 FCH 2.37 214 iPd 15 15.50 1.5  
 iS 15 47.50  
 ROCH 2.53 230 iPc 15 16.30 0.2  
 iS 15 47.80  
 PCH 2.72 214 iPc 15 19.90 1.4  
 iS 15 54.50  
 TACH 2.96 219 iP 15 21.00 -0.7  
 iS 15 57.70  
 CHCH 3.04 212 iP 15 23.00 0.2  
 iS 16 01.30  
 LCCH 3.21 229 iP 15 24.80 -0.3  
 LNV 3.45 221 iPd 15 26.20 -2.1  
 iS 15 59.50  
 S.D. = 1.2 on 11 of 11 obs.

MAR 20, 1990 01h 12m 19.72±0.11s  
 27.220 N ± 2.7km 141.605 E ± 2.5km  
 DEPTH = 47.0km (geophysicist)  
 5.8mb (89 obs.) 5.0MsZ (18 obs.)  
 BONIN ISLANDS REGION (212)

Ms 5.3 (BRK). Depth from  
 broadband displacement  
 seismograms.  
 FAULT PLANE SOLUTION: P-Waves  
 NP1:Strike= 3 Dip=70 Slip=-38  
 NP2: 108 55 -155  
 Principal Axes:  
 T P1g=10 Azm= 59  
 P 41 320  
 Comment: The focal mechanism is  
 poorly controlled and  
 corresponds to strike-slip  
 faulting with a large normal  
 component. The preferred fault  
 plane is not determined.  
 MOMENT TENSOR SOLUTION  
 Dep 41 No. of sta: 13  
 Moment Tensor; Scale 10\*\*17 Nm

Mrr=-1.62 Mtt= 0.73  
 Mff= 0.89 Mrt=-0.89  
 Mrf=-2.74 Mtf=-3.98  
 Principal axes:  
 T Val= 5.09 P1g=13 Azm= 50  
 N 0.04 50 155  
 P -5.13 37 310  
 Best Double Couple: Mo=5.1\*10\*\*17  
 NP1:Strike= 97 Dip=54 Slip=-160  
 NP2: 355 74 -37  
 CENTROID, MOMENT TENSOR (HRV)  
 Data Used: GDSN  
 L.P.B.: 11S, 27C  
 Centroid Location:  
 Origin Time 01:12:28.3 0.5  
 Lat 27.70N 0.08 Lon 141.32E 0.05  
 Dep 15.0 FIX Half-duration 2.9  
 Moment Tensor; Scale 10\*\*17 Nm  
 Mrr=-2.55 0.15 Mtt=-0.79 0.18  
 Mff= 3.34 0.19 Mrt=-1.28 0.42  
 Mrf=-5.08 0.65 Mtf=-1.39 0.17  
 Principal Axes:  
 T Val= 6.31 P1g=29 Azm= 85  
 N -0.22 19 185  
 P -6.09 54 304  
 Best Double Couple: Mo=6.2\*10\*\*17  
 NP1:Strike=133 Dip=23 Slip=-144  
 NP2: 10 77 -71

GUMO 13.90 167 eP 15 42.40 6.4X  
 1.2s 755.56nm 6.3mb  
 eS 18 06.50  
 GUA 13.96 167 eP 15 43.00 6.3X  
 1.0s 360.00nm 6.1mb  
 ANP 18.14 268 eP 16 35.20 5.2X  
 eS 20 07.60  
 SSE 18.24 287 P 16 32.00 0.9  
 Z 20s 2.57um  
 YSS 19.78 2 P 16 48.00 -0.7  
 MDJ 19.86 334 eP 16 50.00 0.4  
 Z 35s 5.90um  
 N 14s 1.40um  
 ePP 17 12.00  
 S 20 25.00  
 sS 20 37.00  
 eScP 24 35.80  
 NJ2 20.34 289 iPd 16 56.00 1.3  
 4.0s 800.00nm 5.4mb X  
 Z 22s 1.30um 4.2MsZ  
 E 11s 0.80um  
 PP 17 16.00  
 DL2 20.35 310 eP 16 52.00 -2.7  
 Z 22s 2.70um 4.6MsZ  
 N 15s 1.60um  
 PP 17 16.00  
 eS 20 36.00  
 CVP 20.57 247 eP 17 01.00 3.9X  
 0.6s 60.00nm 5.2mb  
 SNY 20.75 319 Pd 16 56.00 -2.7  
 1.0s 200.00nm 5.4mb  
 Z 33s 5.50um 4.7MsZ  
 N 32s 3.60um  
 E 32s 3.00um  
 PP 17 16.00  
 S 20 37.00

QZH 20.79 269 eP 17 02.00 2.7  
 4.0s 800.00nm 5.4mb X  
 Z 16s 1.80um 4.5MsZ  
 E 20s 2.90um  
 sP 17 18.00  
 S 20 47.00  
 CN2 21.07 326 Pd 17 02.80 0.7  
 Z 20s 4.00um 4.8MsZ  
 N 15s 1.30um  
 E 15s 2.30um  
 sP 17 14.00  
 PIP 21.26 250 ePc 17 08.50 4.4X  
 1.0s 222.00nm 5.5mb  
 SZP 21.77 248 ePc 17 12.50 3.3X  
 1.0s 471.00nm 5.9mb  
 TIA 22.63 299 Pd 17 18.20 0.6  
 Z 20s 3.00um 4.7MsZ  
 N 16s 1.30um  
 S 21 19.00  
 OCP 22.86 241 eP 17 18.00 -2.0  
 WHN 24.07 284 eP 17 33.50 1.8  
 5.0s 1100.00nm 5.6mb X

Z 28s 2.40um 4.5MsZ  
 E 12s 1.00um  
 sP 17 53.00  
 BJI 24.64 308 eP 17 35.50 -1.6  
 1.7s 71.00nm 4.9mb  
 Z 10s 3.20um 5.1MsZ  
 N 10s 0.54um  
 ePcP 21 14.50  
 eS 21 45.00  
 eScP 24 47.00  
 eScS 28 34.00  
 DAV 25.15 220 eP 17 44.20 2.0  
 HKC 25.36 265 iP 17 47.40 3.3X  
 eS 22 06.00  
 GZH 25.89 267 P 17 51.70 2.7  
 Z 26s 3.20um 4.7MsZ  
 E 17s 1.30um  
 eS 22 12.00  
 TIY 26.65 300 Pd 17 55.50 -0.5  
 E 17s 1.80um  
 sP 18 15.00  
 S 22 29.50  
 PPR 27.69 236 eP 18 11.00 5.5X  
 HIA 27.73 328 ePd 18 11.51 5.9X  
 eS 22 43.78  
 HHC 28.21 307 Pd 18 10.00 -0.2  
 Z 30s 3.90um 4.8MsZ  
 N 18s 1.60um  
 E 18s 1.60um  
 XAN 28.85 292 iPd 18 16.00 0.1  
 1.0s 200.00nm 5.7mb  
 N 12s 0.80um  
 E 12s 0.60um  
 pP 18 32.00 67kmX  
 PcP 21 24.90  
 S 22 57.00  
 SS 24 34.00  
 BTO 29.24 305 P 18 18.00 -1.5  
 N 15s 1.30um  
 E 15s 1.80um  
 PP 19 13.00  
 S 23 11.00  
 MNI 30.26 215 eP 18 29.50 0.9  
 QIZ 30.26 261 P 18 30.00 1.4  
 E 13s 1.40um  
 sP 18 48.00  
 PP 19 25.00  
 S 23 27.00  
 SS 25 11.00  
 GYA 31.13 277 P 18 37.00 0.7  
 1.4s 100.00nm 5.4mb  
 N 18s 1.10um  
 E 18s 1.60um  
 PcP 21 31.60  
 S 23 37.20  
 ScP 25 10.00  
 PcS 25 14.00  
 ScS 29 04.60  
 KKM 32.04 233 ePc 18 47.00 2.6  
 LZH 33.17 295 iPd 18 54.00 -0.1  
 3.0s 0.41nm 2.8mb X  
 Z 20s 3.30um 5.0MsZ  
 E 16s 1.60um  
 ePP 20 09.00  
 PcP 21 37.50  
 ScP 25 16.00  
 ScS 29 15.00  
 CD2 33.18 286 iPc 18 54.20 0.1  
 1.0s 300.00nm 6.1mb  
 Z 20s 1.80um 4.8MsZ  
 S 24 08.00  
 KMI 34.85 276 iPd 19 10.30 1.5  
 Z 20s 1.60um 4.8MsZ  
 iSPc 19 28.84  
 eS 24 38.00  
 eSS 27 19.81  
 PCI 34.94 220 ePc 19 11.00 1.7  
 1.0s 33.50nm 5.2mb  
 SMY 35.12 35 P 19 12.60 2.1  
 GTA 36.67 300 Pd 19 23.20 -0.8  
 Z 20s 1.90um 4.9MsZ  
 N 12s 0.80um  
 PP 20 52.00  
 PcP 21 46.80  
 S 25 00.00  
 eS 25 27.00  
 ScP 25 27.60



20d 01h

PMG	36.81	171	eP	19	24.00	-1.0	NWAO	64.15	203	eP	22	51.00	-0.5	ABL	81.83	55	P	24	36.60	0.9
ADK	39.73	40	eP	19	49.70	0.6	Z	0.9s	79.00nm			5.8mb		UPP	81.86	335	iPd	24	35.20	0.2
	1.7s	388.90nm				5.9mb		20s	0.50um			4.7MsZ		FFC	81.91	32	iPd	24	35.90	0.5
CHG	39.99	267	ePd	19	53.30	1.5	QUE	64.43	292	eP	22	52.00	-1.8		0.8s	74.00nm				5.8mb
	1.1s	98.73nm				5.5mb			eS	31	28.50		ISA	82.00	54	eP	24	36.00	-0.4	
CHTO	39.99	267	iPd	19	53.41	1.7			eScS	32	39.30		RGS	82.10	340	iP	24	40.00	3.8X	
	1.1s	98.73nm				5.5mb	TOO	64.55	177	ePd	22	54.50	0.4	SBB	82.93	55	eP	24	42.00	0.8
		esPc	20	11.46				1.0s	108.00nm			5.8mb			e	25	13.00	121kmX		
NST	40.10	262	eP	19	56.00	3.4X	RKG	65.26	202	eP	23	02.00	3.3X	PAS	82.93	55	eP	24	41.00	-0.1
BDT	40.50	265	eP	19	57.00	1.1	MBC	65.90	15	ePd	23	02.30	-0.1		e	25	13.00	125kmX		
MTN	41.10	196	iPc	20	00.50	-0.3	MAIO	68.47	301	iPd	23	19.40	0.0	MWC	82.97	55	eP	24	41.00	-0.6
SNG	43.66	251	eP	20	20.20	-1.5		0.7s	74.00nm			5.8mb			e	25	13.00	125kmX		
	0.9s	109.24nm				5.6mb	KBS	70.34	351	iPd	23	31.20	1.2	IMW	83.04	44	P	24	43.40	1.5
		e	25	49.00			YKA	72.28	28	eP	23	41.90	0.1	RYD	83.18	294	eP	24	42.10	-0.6
LSA	44.15	286	iP	20	28.00	1.9		0.6s	56.30nm			5.7mb		KVT	83.27	313	iP	24	57.80	15.0X
		PP	22	12.00			KEV	72.69	341	iP	23	45.00	0.9	NB2	83.30	338	P	24	42.80	0.2
		eS	26	56.00			PGC	73.16	44	eP	23	48.00	0.8	GSC	83.37	54	eP	24	43.00	-0.5
KGM	44.40	242	eP	20	30.00	2.2	GMW	74.00	45	P	23	53.00	0.9		e	25	15.00	125kmX		
KNA	44.49	198	eP	20	28.20	-0.2	SOD	74.10	339	iP	23	53.00	0.7	RVR	83.58	55	eP	24	44.00	-0.5
IPM	44.74	247	ePd	20	33.00	2.5	BMW	74.13	46	P	23	53.60	0.6	DUG	83.73	48	P	24	46.00	0.7
	0.9s	89.90nm				5.6mb	MNG	74.47	154	P	23	53.70	-1.1	PEC	83.79	55	P	24	45.60	0.0
WMO	46.08	306	iPd	20	40.42	-0.5	THZ	74.49	156	P	23	53.70	-1.3	PLM	84.26	56	eP	24	49.00	0.8
CTA	47.24	174	iPd	20	49.90	-0.2	RMW	74.64	44	P	23	56.60	0.6		e	25	19.00	116kmX		
WB5	47.34	189	iPd	20	50.60	-0.3	WEL	74.77	155	P	23	55.00	-1.5	BW06	84.48	44	P	24	49.60	0.4
		ScP	26	08.70				1.0s	*****nm			8.0mb X			1.0s	75.00nm				5.7mb
		eS	27	36.30				(PcP)	24	11.00			TPC	84.49	55	eP	24	49.00	-0.2	
WRA	47.41	189	Pc	20	51.60	0.1	PGZ	74.78	153	P	23	54.90	-1.7		e	25	19.00	116kmX		
	0.7s	187.80nm				6.2mb		0.5s	67.00nm			5.8mb	DAU	84.64	47	P	24	51.00	0.9	
GUN	49.03	284	P	21	05.30	0.8	LON	74.92	45	ePd	23	57.77	0.2	BAR	84.73	56	eP	24	50.00	-0.3
PKI	49.51	284	P	21	08.30	0.1	LTZ	75.17	157	P	23	57.60	-1.2		e	25	22.00	124kmX		
KKK	49.57	284	P	21	09.20	0.7	PNT	75.22	42	eP	23	59.00	-0.2	MSU	85.01	49	P	24	53.00	1.1
DMN	49.77	284	P	21	10.20	0.1		1.3s	107.00nm			5.6mb			pP	25	07.00	48kmX		
SDN	49.93	39	eP	21	09.90	-0.6	KHZ	75.29	156	P	23	57.50	-2.0	CLI	85.63	321	ePc	24	56.00	1.4
ASPA	51.13	189	iPd	21	19.10	-1.0	MSZ	75.48	161	Pc	24	01.00	0.6	GLA	85.90	55	eP	24	57.00	0.8
	0.6s	60.00nm				5.8mb	DAG	75.55	355	iPd	24	00.40	-0.1	CFR	85.93	319	ePc	24	57.00	1.0
Z	22s	1.45um				4.9MsZ		1.5s	255.56nm			5.9mb	ANTO	86.02	313	iPd	24	56.53	-0.1	
		iPcP	22	35.20			FHC	75.87	51	eP	24	03.80	0.7		isPc	25	14.57			
		iS	28	29.40			SUF	76.85	335	iP	24	08.70	0.6	BBTK	86.05	313	eP	24	57.00	0.1
		iScS	31	04.30				0.5s	90.00nm			6.0mb	FRB	86.27	13	eP	24	58.00	0.7	
		LR	41	41.80			WDC	76.96	51	ePd	24	09.30	0.2		0.7s	50.00nm				5.9mb
MBL	52.51	206	eP	21	29.10	-1.4			epP	24	23.30	49kmX	MLR	87.01	321	eP	25	00.00	-1.5	
	0.4s	20.00nm				5.5mb	EDM	77.02	37	iPd	24	09.20	-0.1	RSSD	87.07	41	P	25	02.30	0.4
SVW	53.45	33	ePd	21	37.90	0.9	LBFM	77.09	50	P	24	10.20	0.1	KRA	87.33	327	iPc	25	03.30	0.5
TTA	53.60	30	ePd	21	38.60	0.5	NEW	77.16	42	P	24	10.60	0.4		1.2s	116.00nm				6.0mb
RMO	53.84	172	eP	21	39.00	-1.2		0.9s	101.97nm			5.9mb	Z	17s	1.20um					5.4MsZ
DZM	54.57	151	iPd	21	45.00	-0.8			pP	24	25.00	50kmX		e	25	14.00	34kmX			
KDC	54.62	37	eP	21	45.20	-0.4	TAB	77.60	306	eP	24	13.00	0.1	HRI	87.45	306	eP	25	04.00	0.2
KSH	55.08	301	P	21	50.00	0.6	MIN	77.71	51	ePd	24	13.10	-0.3	HLBJ	87.65	305	Pd	25	04.80	0.0
IMA	55.21	27	ePd	21	50.50	0.5	ORV	78.12	52	ePd	24	15.40	-0.1	SPC	87.75	326	eP	25	05.50	0.5
	1.8s	321.40nm				6.1mb			epP	24	29.80	50kmX	MDSJ	87.92	305	Pd	25	05.10	-1.0	
BR5	55.35	168	iPc	21	40.60	-10.6X	BRK	78.30	53	ePd	24	16.80	0.3	BURJ	87.93	305	Pc	25	05.30	-0.8
	1.0s	24.00nm					BKS	78.31	53	ePd	24	16.80	0.2	KFNJ	88.22	305	Pd	25	06.30	-1.0
		i	22	03.50		93kmX		0.8s	113.00nm			5.9mb	RSON	88.24	31	P	25	06.80	-0.3	
BRW	55.45	20	ePd	21	52.30	0.8	Z	20s	1.20um			5.2MsZ		0.9s	116.17nm				6.1mb	
		ePcP	22	52.10			N	20s	0.70um				Z	22s	1.06um				5.2MsZ	
NDI	56.26	288	iPd	21	56.40	-1.5	E	20s	1.20um					1.0s	11.00nm				5.1mb	
PMR	56.61	32	eP	21	59.00	-0.9	PCC	78.37	54	eP	24	16.50	-0.4	DSI	88.59	305	eP	25	08.00	-1.1
	1.3s	179.20nm				5.9mb	KER	78.59	303	eP	24	18.00	-0.4	PSZ	88.75	325	eP	25	09.00	-0.7
Z	22s	1.10um				4.9MsZ	NUR	78.72	333	iP	24	19.00	0.7	GOL	88.81	45	P	25	11.20	0.8
		ePcP	22	56.10				0.5s	126.30nm			6.1mb		1.4s	97.91nm					5.9mb
COL	57.47	29	iPd	22	05.95	0.0	GCC	78.85	54	ePd	24	19.40	-0.1	Z	22s	2.06um				5.5MsZ
		esPc	22	25.15					epP	24	34.00	51kmX	BZS	89.33	323	eP	25	11.00	-1.4	
		iS	29	59.80			MHC	78.97	54	ePd	24	20.70	0.3	SRO	89.62	326	eP	25	14.60	0.9
		e	30	24.30			ARN	79.04	54	P	24	21.10	0.4		e	26	31.20	323kmX		
F8A	57.47	29	ePd	22	05.70	-0.3	SAO	79.36	54	ePd	24	23.30	0.9	CLL	89.69	331	iPd	25	13.70	-0.3
MEKA	57.94	204	eP	22	10.30	0.6	CMB	79.56	53	iPd	24	23.33	-0.2		1.9s	190.00nm				6.1mb
TOA	58.04	32	ePd	22	10.40	0.4			epP	24	37.07	47kmX	MBH	89.89	304	eP	25	14.00	-1.3	
COO	58.31	170	eP	22	12.00	-0.2	PRS	79.56	53	iPd	24	23.16	-0.3	PRU	89.94	329	Pd	25	15.30	0.1
HYB	58.63	275	ePd	22	14.50	-0.2	SES	79.65	38	iPd	24	24.00	0.3		1.8s	109.40nm				5.9mb
	1.2s	78.60nm				5.7mb		1.3s	333.00nm			6.1mb	Z	16s	1.00um					5.3MsZ
GBA	61.08	271	Pc	22	31.80	0.2	LLA	79.79	54	eP	24	24.90	0.2		89.96	327	iP	25	15.40	0.1
	1.0s	31.40nm				5.4mb	PRI	80.20	54	ePd	24	27.70	0.7	VKA	90.30	327	eP	25	16.50	-0.4
MRWA	61.25	206	eP	22	32.20	-0.2	FRI	80.51	53	ePd	24	28.50	0.0		i	25	17.70	4kmX		
BWA	61.65	174	iPd	22	34.90	-0.1	PHAM	80.53	55	P	24	29.60	0.9	BEQ	90.47	322	e(P)	25	17.00	-0.7
ADE	61.91	183	iPd	22	36.50	-0.3	MSL	80.62	306	ePc	24	29.50	0.4	SOP	90.58	326	eP	25	20.20	2.0
	0.9s	63.87nm				5.8mb	KVN	80.70	51	P	24	29.90	0.2	MOX	90.77	331	iP	25	19.50	0.5
BAL	62.23	204	eP	22	38.50	-0.5	BHD	81.10	303	eP	24	32.00	0.4		1.8s	138.00nm				6.0mb
POO	62.38	278	iP	22	40.60	0.3	LRM	81.13	43	iPd	24	32.50	0.6	Z	20s	0.90um				5.2MsZ
KOD	62.44	268	eP	22																



KHC	1.0s	80.00nm	6.1mb	TMA	95.37	329	ePd	25	39.90	-0.6	SPA	117.06	180	iPKPc	31	00.80	0.3	
	90.99	329 Pd	25 20.40	0.3	VAI	95.60	329 P	25	40.30	-1.0		0.9s	40.45nm					
	1.3s	144.00nm	6.2mb	PGD	95.67	326 P		25	42.60	0.7	SLR	120.96	255	iPKPd	31	09.00	-0.2	
Z	16s	0.80um	5.3MszX	ASS	95.77	325 P		25	42.00	-0.3	PRY	122.00	254	iPKPd	31	11.20	0.0	
E	18s	0.50um		MMK	95.83	330 ePd		25	42.60	-0.1		0.7s	10.00nm					
	e		26 25.00	267kmX	DUI	95.83	323 P	25	43.00	0.4	KSR	122.19	255	iPKPc	31	10.70	-0.9	
WIT	91.16	335 eP	25 22.00	1.3	ORI	95.85	321 P	25	43.50	0.9		0.7s	7.50nm					
WET	91.30	329 eP	25 21.50	0.0	MME	95.93	327 P	25	43.70	0.5	SEK	122.26	252	iPKPc	31	12.00	0.4	
	1.5s	88.00nm	6.0mb	DIX	96.05	330 ePd		25	43.50	-0.3	BFS	122.59	254	iPKPd	31	11.00	-1.2	
VAY	91.51	319 iP	25 22.40	-0.1	BDI	96.08	327 P	25	44.00	0.3		0.7s	54.79nm					
GRF	91.65	330 iPd	25 23.60	0.5	ECP	96.11	341 eP	25	35.00	-8.5X	LKO	131.55	314 PKP	31	30.64	1.0		
	1.2s	151.00nm	6.3mb	BOB	96.11	328 P	25	43.70	-0.1		0.8s	45.00nm						
Z	19s	0.70um	5.1Msz	ORX	96.14	329 P	25	42.69	-1.3	TIC	133.35	311 PKP	31	33.52	0.4			
WTS	91.74	334 eP	25 23.50	0.1	SGO	96.14	322 P	25	44.00	0.2	KIC	133.37	311 PKPc	31	33.32	0.2		
	0.9s	52.00nm	6.0mb	AZI	96.14	324 P	25	43.00	-0.8	LIC	133.66	311 PKP	31	34.08	0.4			
SKO	91.75	320 eP	25 23.50	-0.2	SDI	96.14	323 P	25	43.50	-0.5		Z 20s	0.38um		5.1Msz			
	1.7s	132.00nm	6.1mb	TDS	96.18	321 Pc	25	44.90	0.8	NNA	140.92	75 iPKP	31	38.50	-8.7X			
Z	17s	0.69um	5.2MszX	MGR	96.29	321 P	25	43.00	-1.6		0.8s	8.96nm						
N	19s	0.57um		LSO	96.65	330 P	25	46.18	-0.2	ARE	147.56	78 iPKPc	32	00.50	1.8			
E	18s	0.63um		LOR	96.65	333 eP	25	45.40	-0.7	ZOBO	150.39	75 PKPc	32	03.30	-0.1			
	i		25 24.60	3kmX		1.2s	68.45nm		6.1mb			1.2s	27.03nm					
PTJ	92.11	325 eP	25 25.10	-0.3	PCP	96.70	328 P	25	45.26	-1.2		Z 22s	0.33um		5.1Msz			
ZAG	92.15	325 eP	25 26.00	0.6	LPL	96.79	330 eP	25	46.50	-0.5		LR		22 18.00				
BHG	92.32	328 eP	25 26.50	0.3		0.6s	22.55nm		5.9mb		LPB	150.53	75 PKP	32	05.80	2.4		
	1.0s	138.00nm	6.3mb	LPG	96.80	330 eP	25	46.60	-0.5		1.1s	202.53nm						
EKA	92.42	341 P	25 27.00	0.5		0.6s	25.25nm		5.9mb		LCCH	150.78	110 ePKP	32	08.50	5.7X		
	1.0s	55.30nm	5.9mb	LBF	96.82	332 eP	25	46.20	-0.7	LNW	150.88	111 iPKPc	32	09.20	6.3X			
TNS	92.44	332 ePd	25 26.90	0.1		1.1s	34.20nm		5.8mb		ANT	150.92	90 iPKPc	32	10.20	6.9X		
KBA	92.57	328 iPd	25 26.80	-0.8	RSP	96.83	329 P	25	47.00	-0.1	TACH	151.30	111 ePKP	32	10.20	6.6X		
	0.7s	21.70nm	5.7mb	CKI	96.92	328 P	25	46.00	-1.3	CHCH	151.51	112 ePKPc	32	10.70	6.7X			
	e		29 10.00	GRC	96.94	333 P	25	47.50	0.1	SAN	151.54	111 iPKPc	32	11.00	7.0X			
	e		51 04.00	SSF	96.96	333 eP	25	47.00	-0.5	PCH	151.65	111 ePKP	32	11.30	7.0X			
	e(Sg)		51 10.50	FLN	97.11	336 eP	25	47.40	-0.7	FCH	151.86	110 ePKP	32	13.00	8.1X			
OHR	92.67	319 eP	25 27.50	-0.5		1.0s	40.00nm		5.9mb		CCH	152.58	75 PKP	32	08.90	2.6		
	1.2s	0.06nm	2.9mb X	FIN	97.11	328 P	25	46.69	-1.6		i		32 15.40					
	eS		35 53.00	LDF	97.12	336 eP	25	47.50	-0.7	CAI	159.38	356 ePKP	32	27.10	12.4X			
LJU	92.72	326 ePd	25 27.50	-0.6		0.9s	22.95nm		5.7mb		BAO	165.42	40 ePKP	32	22.50	1.8		
VBY	92.74	325 ePc	25 28.60	0.5	SMF	97.15	332 eP	25	47.70	-0.7		e		33 20.10				
FUR	92.74	329 iPd	25 28.40	0.2		1.2s	56.55nm		6.0mb		S.D. = 0.9 on 318 of 344 obs.							
	1.0s	171.00nm	6.4mb	BNI	97.17	330 P	25	44.30	-4.3X		MAR 20, 1990 06h 16m 22.35±3.94s							
TOD	92.76	331 eP	25 28.28	0.1	ROB	97.21	328 P	25	47.20	-1.5		39.023 N ±12.1km 15.857 E ±19.0km						
RBL	92.91	327 P	25 28.30	-0.7	RRL	97.23	329 P	25	48.33	-0.7		DEPTH = 220.2 ± 36.2 km						
CEY	92.99	326 ePd	25 29.00	-0.3	AVF	97.24	333 eP	25	48.10	-0.6		SOUTHERN ITALY (390)						
VOY	93.04	327 ePd	25 28.50	-1.2		1.0s	63.00nm		6.1mb		CZI	0.29	48 P	16	50.60	-0.6		
ENN	93.05	334 iPd	25 29.60	0.1	SOI	97.43	320 Pc	25	50.40	0.7	TDS	0.74	30 Pc	16	52.90	-0.1		
	1.0s	74.00nm	6.1mb	ENR	97.47	329 P	25	48.64	-1.3	ROI	0.78	45 P	16	53.40	0.1			
ABH	93.08	332 eP	25 29.62	-0.1	IMI	97.49	328 P	25	48.84	-1.2	CSI	0.82	24 P	16	54.20	0.7		
MEM	93.14	333 P	25 30.20	0.4	STV	97.50	329 P	25	48.23	-1.8		eS		17 13.80				
FVI	93.18	327 P	25 29.20	-0.9	GRR	97.56	336 eP	25	49.90	-0.2	ATN	0.91	200 Pc	16	53.70	-0.3		
STU	93.22	331 ePd	25 30.40	0.1		0.8s	26.85nm		5.8mb		SOI	0.96	171 P	16	54.50	0.3		
	1.2s	103.13nm	6.1mb	BGF	97.63	333 eP	25	50.00	-0.5		eSn		17 14.50					
KTD	93.28	332 eP	25 30.50	-0.1		1.2s	31.25nm		5.7mb		ORI	1.14	24 P	16	55.30	-0.1		
TRI	93.34	326 iPc	25 30.40	-0.5	SBF	97.74	328 eP	25	49.60	-1.5		eSn		17 16.00				
RUP	93.42	332 eP	25 31.29	0.0		0.8s	16.10nm		5.6mb		MGR	1.14	348 P	16	55.20	-0.2		
UCC	93.63	334 P-	25 32.80	0.7	PLDF	97.78	332 P	25	51.41	0.1	SGO	1.59	345 P	16	59.50	0.6		
GWF	93.74	332 P	25 32.81	0.1	AGO	97.92	332 P	25	52.28	0.4	LCI	2.08	50 P	17	04.20	0.7		
OGA	93.81	329 eP	25 33.20	-0.2	LPF	97.92	336 eP	25	51.70	-0.1	BRT	2.12	29 Pc	17	02.80	-1.1		
	1.6s	124.00nm	6.1mb	PGF	97.99	327 eP	25	51.10	-1.2	BAI	2.23	20 P	17	05.00	0.0			
SNF	93.89	334 iP	25 33.38	0.0		0.8s	8.05nm		5.3mb		S.D. = 0.6 on 12 of 12 obs.							
STR	93.98	331 P	25 34.30	0.5	MAF	98.02	333 eP	25	52.10	-0.2		MAR 20, 1990 06h 39m 27.10±4.83s						
DOU	94.10	334 P	25 34.30	0.0	TCF	98.11	333 eP	25	52.30	-0.4		18.816 S ±110.km 178.280 W ±58.8km						
CTI	94.12	328 P	25 33.90	-0.8		0.8s	10.75nm		5.4mb			DEPTH = 521.7 ± 50.7 km						
WLS	94.29	331 P	25 35.11	-0.2	PYM	98.21	332 P	25	53.26	0.0		4.3mb ( 2 obs.)						
SLE	94.29	330 ePd	25 34.90	-0.4	FRF	98.34	329 eP	25	52.20	-1.5		FIJI ISLANDS REGION (181)						
SAX	94.30	330 ePd	25 35.60	-0.1		0.8s	6.70nm		5.2mb		DZM	14.68	255 iPc	42	36.00	2.1		
CDF	94.32	331 P	25 35.32	-0.2	LSF	98.41	333 eP	25	53.60	-0.4	WB5	44.58	261 eP	46	52.80	-1.3		
OSS	94.35	329 ePd	25 35.80	0.0		0.8s	25.50nm		5.8mb		WRA	44.59	260 P	46	54.00	-0.2		
FEL	94.41	331 eP	25 35.35	-0.7	LBL	98.53	332 P	25	54.74	0.2		0.4s	2.40nm		4.1mb			
ECH	94.52	331 P	25 36.04	-0.3	LRG	98.55	329 eP	25	53.70	-1.0	ASPA	44.67	255 iPc	46	52.50	-2.3		
ZLA	94.55	330 ePd	25 36.10	-0.4		1.1s	22.00nm		5.6mb			0.5s	10.00nm		4.6mb			
LLS	94.74	330 ePd	25 37.20	-0.4	LMR	98.58	329 eP	25	53.40	-1.4		iS		52 49.30				
DMU	94.74	342 iPc	25 37.90	0.6	MFF	98.78	334 eP	25	55.30	-0.4	PRS	76.79	44 eP	50	26.00	-0.1		
MOF	94.81																	



20d 06h

FLN 150.07 3 ePKP 58 17.70 3.8X  
 0.4s 3.45nm  
 CDF 150.13 353 ePKP 58 18.70 4.6X  
 LDF 150.26 2 ePKP 58 18.00 3.9X  
 GRR 150.43 3 ePKP 58 18.80 4.4X  
 0.3s 2.55nm  
 HAU 150.64 354 ePKP 58 19.50 4.7X  
 BSF 150.76 353 ePKP 58 19.90 4.8X  
 LPF 150.77 4 ePKP 58 19.50 4.6X  
 0.5s 7.30nm

S.D. = 1.4 on 14 of 22 obs.

% MAR 20, 1990 06h 44m 18.07 ± 0.58s  
 44.387 N ± 6.4km 7.278 E ± 6.0km  
 DEPTH = 10.0km (geophysicist)  
 NORTHERN ITALY (545)  
 ML 2.0 (GEN).

STV 0.15 167 P 44 21.73 0.2  
 S 44 23.58  
 PZZ 0.17 313 P 44 22.24 0.2  
 S 44 24.81  
 ENR 0.19 147 P 44 22.24 -0.1  
 S 44 24.72  
 ROB 0.44 102 P 44 27.17 0.2  
 S 44 33.42  
 RRL 0.64 327 P 44 30.86 -0.2  
 S 44 39.48  
 IMI 0.65 137 P 44 30.86 -0.2  
 S 44 39.28  
 FIN 0.69 105 P 44 31.88 0.1  
 S 44 41.02  
 PCP 0.92 80 P 44 35.58 -0.1  
 S 44 48.51

S.D. = 0.2 on 8 of 8 obs.

? MAR 20, 1990 07h 07m 06.58 ± 2.63s  
 24.503 N ± 28.8km 109.103 W ± 12.9km  
 DEPTH = 10.0km (geophysicist)  
 4.3mb (5 obs.)  
 GULF OF CALIFORNIA (49)

MZX 2.77 117 iP 08 11.20 19.4X  
 GLA 9.89 331 eP 09 32.00 0.2  
 ANMO 10.66 12 eP 09 42.00 -0.5  
 0.8s 4.29nm 4.9mb X  
 PLM 11.13 324 eP 09 48.50 -0.5  
 TNP 15.20 335 eP 10 44.00 0.9  
 GOL 15.48 11 P 10 52.00 5.2X  
 0.8s 5.36nm 3.9mb  
 KVN 16.38 334 e(P) 10 59.50 1.2  
 BW06 18.23 359 eP 11 21.00 -0.6  
 OLY 18.77 50 eP 11 29.00 1.1  
 LRM 21.44 354 eP 11 57.50 0.2  
 NEW 24.55 347 eP 12 27.00 -0.5  
 1.0s 31.25nm 4.9mb  
 YKA 38.16 356 eP 14 25.60 -1.9  
 1.0s 1.30nm 3.6mb  
 FBA 47.44 339 eP 15 43.50 0.6  
 0.7s 3.49nm 4.6mb  
 MBC 52.05 357 eP 16 18.00 -0.1  
 0.6s 3.00nm 4.4mb

S.D. = 1.0 on 12 of 14 obs.

MAR 20, 1990 07h 51m 55.95 ± 0.28s  
 15.797 N ± 6.3km 46.797 W ± 4.3km  
 DEPTH = 10.0km (geophysicist)  
 4.8mb (28 obs.) 3.8Msz (1 obs.)  
 NORTH ATLANTIC RIDGE (403)

SLB 13.91 264 eP 55 15.10 -0.5  
 CAI 24.15 156 e(P) 57 13.50 0.2  
 BLA 36.59 312 P 59 10.00 5.8X  
 CCH 38.09 211 eP 59 20.00 2.8  
 ZOBO 38.19 214 P 59 18.00 -0.3  
 1.0s 7.00nm 4.4mb  
 Z 20s 0.15um 3.8Msz  
 LR 10 56.00

LPB 38.39 214 P 59 20.00 0.2  
 RSCP 39.80 307 P 59 28.50 -2.5  
 ARE 40.26 218 iPd 59 34.50 -0.8  
 LKO 40.63 94 P 59 36.84 -1.3  
 1.2s 34.50nm 5.0mb  
 TIC 41.90 98 P 59 48.00 -0.5  
 ALQJ 43.26 52 iPc 00 01.00 1.4  
 ATEJ 43.27 53 iPc 00 01.00 1.3  
 AAPN 43.31 52 iPc 00 01.40 1.5

APHE 43.54 53 iPc 00 03.40 1.6  
 ASMO 43.61 52 iPc 00 03.70 1.3  
 FVM 44.24 309 P 00 09.00 1.7  
 OLY 44.36 305 P 00 09.00 0.7  
 DCN 48.56 31 eP 00 48.60 7.4X  
 0.8s 47.00nm 5.6mb  
 DLE 48.89 31 eP 00 50.00 6.3X  
 DMU 49.06 30 eP 00 45.80 0.7  
 0.8s 32.00nm 5.4mb  
 MFF 49.34 41 eP 00 47.70 0.4  
 0.8s 16.10nm 5.1mb  
 LPF 49.35 39 eP 00 47.60 0.2  
 0.8s 13.45nm 5.0mb

LPO 49.51 44 eP 00 49.40 0.7  
 GRR 49.61 39 eP 00 49.50 0.1  
 0.8s 8.05nm 4.8mb  
 FLN 50.00 39 eP 00 52.20 -0.1  
 0.8s 6.70nm 4.7mb  
 LDF 50.14 39 eP 00 53.20 -0.3  
 1.0s 14.00nm 4.9mb  
 CAF 50.18 44 eP 00 54.00 0.1  
 1.0s 6.00nm 4.5mb  
 FRB 50.21 348 eP 00 56.00 2.3  
 LSF 50.28 42 eP 00 54.50 -0.1  
 TCF 50.74 43 eP 00 58.10 0.0  
 0.9s 9.85nm 4.7mb

MAF 50.95 43 eP 00 59.80 0.1  
 RSON 51.24 324 P 01 01.50 -0.2  
 0.8s 6.01nm 4.6mb  
 BGF 51.25 42 eP 01 01.90 0.0  
 AVF 51.65 42 eP 01 04.90 -0.1  
 0.8s 8.75nm 4.7mb  
 SSF 51.84 42 eP 01 06.20 -0.2  
 0.8s 5.35nm 4.5mb  
 SMF 51.92 43 eP 01 06.90 -0.1  
 0.9s 7.35nm 4.6mb

LBF 52.12 42 eP 01 08.50 -0.1  
 0.9s 9.00nm 4.7mb  
 LOR 52.14 42 eP 01 08.40 -0.3  
 0.8s 4.05nm 4.4mb  
 LMR 52.79 47 eP 01 13.50 -0.1  
 FRF 52.94 47 eP 01 14.70 0.0  
 BNI 53.34 45 P 01 27.90 10.1X  
 LPL 53.51 45 eP 01 19.70 0.6  
 LPG 53.52 45 eP 01 19.90 0.6  
 SNF 53.53 38 P 01 19.20 0.3  
 DOU 53.57 39 P 01 18.90 -0.3  
 SBF 53.57 47 eP 01 19.30 -0.1  
 0.9s 11.45nm 4.9mb

DOI 53.60 46 P 01 20.50 0.9  
 HAU 53.97 42 eP 01 21.40 -0.8  
 BSF 54.20 42 eP 01 23.40 -0.6  
 CKI 54.30 46 P 01 24.00 -0.7  
 MEM 54.60 39 P 01 27.20 0.5  
 VAI 54.98 45 P 01 28.50 -1.1  
 BDI 55.84 47 P 01 35.50 -0.5  
 PGD 56.60 48 P 01 41.00 -0.6  
 SFI 56.71 48 P 01 41.50 -0.6  
 CTI 56.98 45 P 01 43.70 -0.5  
 ASS 57.14 49 P 01 42.00 -3.4X  
 FFC 57.37 326 eP 01 46.00 -0.7  
 0.7s 5.00nm 4.7mb

ARV 57.41 48 P 01 46.20 -1.0  
 AZI 57.55 50 P 01 48.00 -0.1  
 SDI 57.79 50 P 01 49.00 -0.9  
 FVI 57.85 45 P 01 49.70 -0.4  
 MOX 58.02 40 eP 01 51.50 0.2  
 DUL 58.26 51 P 01 54.00 0.8  
 KBA 58.33 44 iPc 01 53.00 -0.7  
 1.4s 21.70nm 5.0mb  
 RBL 58.36 45 P 01 53.50 -0.3  
 PV09 58.77 306 P 01 57.00 -0.2  
 SGO 58.78 52 P 01 56.50 -0.2  
 MGR 58.92 52 P 01 56.00 -1.8  
 CLL 59.03 39 iPd 01 58.20 -0.1  
 1.2s 26.00nm 5.2mb

BW06 59.50 311 P 02 04.90 22kmX  
 PRU 59.69 41 eP 02 01.50 -1.4  
 KSP 60.96 40 eP 02 11.50 -0.1  
 ZST 61.02 43 eP 02 12.30 0.3  
 SES 61.60 319 eP 02 16.00 0.0  
 SRO 61.77 44 eP 02 19.50 2.4  
 OHR 62.97 52 eP 02 21.70 -3.6X  
 KRA 63.13 42 eP 02 24.00 -2.1  
 e 02 29.50 18kmX  
 EDM 63.48 322 ePc 02 28.10 -0.3

SKO 63.49 51 eP 02 25.00 -3.6X  
 i 02 29.00 13kmX  
 VAY 64.31 51 eP 02 34.60 0.6  
 BCAA 65.08 92 iPd 02 38.20 -1.3  
 0.5s 13.00nm 5.4mb  
 TNP 65.12 305 P 02 40.00 0.4  
 0.9s 4.69nm 4.7mb  
 NEW 65.30 316 P 02 39.80 -0.6  
 1.2s 19.70nm 5.2mb  
 KVN 65.79 306 P 02 43.50 -0.4  
 YKA 65.89 332 eP 02 42.00 -1.8  
 0.8s 2.00nm 4.4mb

MLR 66.85 47 eP 02 51.00 0.6  
 PNT 67.00 317 eP 02 52.00 0.8  
 ELL 70.19 56 eP 03 12.00 0.7  
 MBC 70.63 346 eP 03 14.50 1.4  
 1.0s 6.00nm 4.7mb  
 INK 74.24 337 eP 03 34.50 -0.1  
 FBA 80.42 335 P 04 10.00 1.0  
 1.0s 19.00nm 5.0mb  
 PMR 82.00 332 P 04 23.80 6.6X  
 1.0s 14.00nm 5.0mb

S.D. = 1.0 on 85 of 93 obs.

MAR 20, 1990 07h 53m 50.52 ± 0.52s  
 41.151 N ± 4.6km 20.368 E ± 4.7km  
 DEPTH = 10.0km (geophysicist)  
 ALBANIA (391)  
 MD 3.0 (ATH). ML 2.9 (SKO).

OHR 0.33 97 iPg 53 56.60 -0.7  
 iSg 54 02.10  
 TIR 0.43 297 ePg 53 58.20 -1.0  
 PHP 0.54 6 iPg 54 00.90 -0.5  
 BERA 0.55 215 ePg 54 01.60 0.0  
 LACI 0.69 315 ePg 54 03.50 -0.7  
 KKS 0.92 2 ePg 54 09.20 1.1  
 PUK 0.96 338 ePg 54 08.50 -0.2  
 SDA 1.08 323 ePn 54 19.80 9.0X  
 SKO 1.15 44 ePg 54 12.50 0.5  
 eSg 54 28.00  
 ULC 1.17 314 ePn 54 12.40 0.1  
 eSg 54 30.50  
 KZN 1.36 128 ePb 54 14.00 -1.6  
 eSb 54 34.00  
 PVY 1.47 349 ePn 54 18.00 0.8  
 eSn 54 42.00  
 KEK 1.50 197 ePn 54 19.30 1.8  
 eSb 54 40.50  
 TTG 1.52 327 ePn 54 18.70 1.0  
 eSn 54 43.30  
 BDV 1.62 315 ePn 54 18.20 -0.9  
 eSn 54 43.00  
 VAY 1.67 83 ePn 54 20.40 0.5

S.D. = 1.0 on 15 of 16 obs.

? MAR 20, 1990 08h 08m 57.03 ± 2.31s  
 22.616 N ± 24.8km 120.501 E ± 19.5km  
 DEPTH = 46.6 ± 12.0 km  
 3.8mb (1 obs.)  
 TAIWAN (244)

TWM1 0.22 341 iPc 09 04.80 -0.4  
 TWG 0.56 69 iPc 09 09.70 0.8  
 TWO 1.68 10 ePc 09 25.90 1.4  
 TWD 1.77 34 ePd 09 24.50 -1.2  
 eS 09 46.90  
 TWC 2.34 32 eP 09 33.20 -0.5  
 ANP 2.72 20 eP 09 43.00 3.6X  
 eS 10 16.00  
 HYB 39.66 270 eP 16 14.50 -12.0X  
 YKA 84.65 22 eP 21 26.70 0.0  
 0.8s 0.60nm 3.8mb

S.D. = 1.5 on 6 of 8 obs.

% MAR 20, 1990 09h 15m 00.64 ± 2.06s  
 39.458 N ± 15.4km 28.325 E ± 12.5km  
 DEPTH = 10.0km (geophysicist)  
 TURKEY (366)

DST 0.28 58 iPg 15 06.00 -0.5  
 iSg 15 13.00  
 KCT 0.79 2 iPg 15 16.90 0.9  
 BNT 0.95 341 iPg 15 18.90 0.2  
 iSg 15 32.40  
 EDC 0.96 338 iPg 15 18.00 -0.8  
 eSg 15 30.00



YLV 1.37 36 iPn 15 25.90 0.1  
ALT 1.44 106 ePn 15 27.10 0.2  
S.D. = 0.8 on 6 of 6 obs.

? MAR 20, 1990 09h 55m 57.64 ± 9.24s  
39.465 N ± 69.0km 28.342 E ± 21.4km  
DEPTH = 10.0km (geophysicist)

TURKEY (366)

DST 0.26 57 iPg 56 03.00 -0.2  
iSg 56 07.00

KCT 0.78 1 iPg 56 12.90 0.0  
eSg 56 21.90

BNT 0.95 340 iPg 56 15.90 0.2  
iSg 56 29.40

EDC 0.95 337 iPg 56 15.50 -0.3  
iSg 56 27.00

YLV 1.36 35 ePn 56 22.90 0.3  
S.D. = 0.4 on 5 of 5 obs.

% MAR 20, 1990 10h 23m 54.28 ± 1.67s  
11.055 N ± 7.7km 61.907 W ± 21.4km  
DEPTH = 33.0km (normol)

WINDWARD ISLANDS (95)  
MD 3.5 (TRN).

TCE 0.39 157 iP 24 03.01 -0.2  
eS 24 13.11

TRN 0.64 129 iP 24 06.50 -0.3  
eS 24 18.62

TPP 0.86 149 eP 24 10.94 1.0  
eS 24 21.29

TBH 1.00 124 iP 24 11.06 -1.0  
eS 24 23.51

GRW 1.12 12 iP 24 14.55 0.7  
eS 24 34.64

BOT 1.17 84 iP 24 15.16 0.8  
eS 24 35.52

SLB 2.88 17 eP 24 38.00 -1.0  
eS 25 14.85

S.D. = 1.0 on 7 of 7 obs.

MAR 20, 1990 10h 50m 47.05 ± 0.65s  
8.330 N ± 8.7km 103.368 W ± 11.7km  
DEPTH = 10.0km (geophysicist)

4.8mb (6 obs.)  
OFF COAST OF MEXICO (63)

III 10.68 20 (P) 53 22.70 -0.7

MRX 11.50 10 (P) 53 35.80 1.4

CRX 11.58 18 (P) 53 35.80 0.1

PPM 11.62 23 (P) 53 29.50 -7.1X

IIJ 11.87 17 (P) 53 38.80 -1.1

ANMO 26.64 354 eP 56 28.20 0.2

GLA 26.79 338 eP 56 29.00 -0.2

BAR 27.19 335 eP 56 33.00 0.2

PLM 27.85 335 eP 56 39.00 0.0

TPC 28.19 337 eP 56 41.00 -0.9

RVR 28.62 335 eP 56 45.00 -0.7

PV09 30.48 351 eP 57 02.90 0.1

GOL 31.29 357 P 57 10.00 0.2

0.9s 8.71nm 4.7mb

KVN 33.33 339 P 57 28.10 0.6

CMB 33.33 335 P 57 27.80 0.4

0.7s 4.88nm 4.5mb

BW06 34.74 352 eP 57 36.00 -3.7X

ORV 35.08 335 P 57 43.50 1.1

LRM 38.17 350 eP 58 10.10 1.4

NEW 41.46 346 eP 58 31.40 -4.3X

SES 42.41 353 eP 58 39.00 -4.4X

ZOBO 42.59 125 P 58 45.00 -0.9

1.0s 11.25nm 4.6mb

Z 24s 0.28um 4.1ms2X

LPB 42.76 125 P 58 47.00 -0.1

LR 12 38.00

PNT 43.07 344 eP 58 50.00 1.2

CCH 44.79 125 (P) 59 05.00 1.5

EDM 45.49 352 eP 59 03.00 -5.3X

FFC 46.28 1 eP 59 15.00 0.6

1.2s 16.00nm 4.9mb

PMR 62.84 337 P 01 13.50 -1.5

1.1s 22.50nm 5.3mb

INK 63.14 348 eP 01 11.00 -6.0X

FBA 64.43 341 eP 01 24.50 -1.0

MBC 68.44 356 eP 01 49.00 -1.8

1.5s 16.00nm 5.0mb

S.D. = 1.0 on 24 of 30 obs.

\* MAR 20, 1990 10h 55m 50.36 ± 2.05s  
34.732 N ± 14.2km 121.058 W ± 14.1km  
DEPTH = 10.0km (geophysicist)  
OFF COAST OF CALIFORNIA (38)  
ML 2.6 (BRK).

BLP 0.57 107 eP 56 02.20 0.3

BCH 0.92 60 eP 56 08.00 0.0

PHAM 1.23 26 eP 56 13.00 -0.2

PR1 1.44 13 e(P) 56 16.30 -0.3

e(S) 56 38.90

ABL 1.52 85 eP 56 17.20 -0.6

PRS 1.62 351 ePc 56 18.70 -0.3

LLA 1.88 3 e(P) 56 24.30 1.4

SAO 2.05 351 eP 56 24.80 -0.5

FRI 2.51 26 e(P) 56 31.80 0.0

e(S) 56 58.40

S.D. = 0.7 on 9 of 9 obs.

\* MAR 20, 1990 11h 25m 36.08 ± 0.77s  
6.976 N ± 9.2km 73.277 W ± 13.2km  
DEPTH = 154.8 ± 7.6 km  
4.2mb (1 obs.)  
NORTHERN COLOMBIA (99)

BMG 0.22 65 eP 25 58.50 -0.1

BOG 2.47 199 iPd 26 18.00 0.2

iS 26 48.00

UPA 6.51 288 ePd 27 10.50 -0.1

0.5s 28.17nm 4.8mb X

PSO 7.02 215 eP 27 18.00 0.0

ZOBO 23.65 168 P 30 35.00 -0.2

i 31 05.00

INK 72.83 340 ePd 36 49.00 -0.2

MBC 73.62 350 eP 36 54.00 0.3

0.6s 3.00nm 4.2mb

S.D. = 0.3 on 7 of 7 obs.

MAR 20, 1990 11h 52m 28.50 ± 0.50s  
42.168 N ± 4.2km 15.687 E ± 6.4km  
DEPTH = 10.0km (geophysicist)  
ADRIATIC SEA (382)

DUI 1.05 241 P 52 47.20 -1.1

eSg 53 01.50

HVAR 1.15 29 iPg 52 51.20 1.1

iSg 53 09.90

BAI 1.37 139 P 52 52.00 -1.6

SDI 1.47 252 P 52 53.90 -1.2

eSg 53 12.70

BSS 1.53 206 P 52 55.10 -0.7

eSg 53 15.30

RFI 1.54 236 P 52 57.31 1.3

1.0s 190.30nm

SGO 1.63 190 P 52 56.40 -0.9

eSg 53 16.50

AZI 1.69 265 P 52 58.60 0.5

eSg 53 20.00

AQU 1.71 277 P 52 58.80 0.3

ORI 2.18 164 P 53 06.50 1.2

eSn 53 33.00

ASS 2.41 293 P 53 08.50 -0.1

ARV 2.42 304 P 53 11.00 2.3

CSI 2.43 169 P 53 10.80 1.9

TDS 2.55 169 P 53 10.70 0.1

ROI 2.68 165 P 53 13.60 1.1

CZI 2.97 173 P 53 15.10 -1.3

RIY 3.31 344 e(Pn) 53 20.30 -1.1

iSn 54 00.90

VBY 3.35 355 e(Pn) 53 31.10 9.2X

iSn 54 02.00

PGD 3.37 302 P 53 22.50 0.1

CEY 3.68 346 eP 53 35.00 8.3X

eSn 54 11.50

PTJ 3.74 3 ePn 53 26.80 -0.7

eSn 54 12.50

TRI 3.80 339 eP 53 42.00 13.7X

e 54 13.40

i 54 38.00

LJU 3.96 348 eP 53 32.00 1.4

eSn 54 16.00

OHR 3.97 104 e(Pn) 53 48.00 17.2X

VOY 4.07 342 e(Pn) 53 30.90 -1.3

eSn 54 20.30

CTI 4.85 325 P 53 44.00 0.7

KBA 5.19 342 iPnd 53 46.30 -1.8  
0.5s 6.80nm 4.5mb

i 53 56.60  
i 53 58.10  
iSn 54 40.70  
i 54 46.10  
i 54 49.70  
e(Sg) 06 33.00  
e 19 42.00  
e(Sg) 20 25.00

S.D. = 1.3 on 23 of 27 obs.

MAR 20, 1990 11h 54m 34.20 ± 0.51s  
18.263 N ± 5.0km 61.742 W ± 8.3km  
DEPTH = 33.0km (normol)  
4.5mb (2 obs.)

LEEWARD ISLANDS (92)  
ML 4.1 (FDF). MD 3.7 (TRN).

ANG 1.11 184 eP 54 52.76 -0.6

BPA 1.22 185 eP 54 53.86 -1.1

SEG 1.86 173 eP 55 04.96 0.6

S 55 28.10

SFG 2.07 165 eP 55 06.90 -0.3

DOG 2.22 177 eP 55 09.00 -0.5

PAG 2.22 178 eP 55 09.10 -0.4

S 55 36.60

BBL 2.74 175 eP 55 16.80 0.0

MDN 2.95 174 eP 55 20.05 0.3

FDF 3.56 171 eP 55 27.27 -1.2

0.1s 0.65nm

S 56 07.10

CRM 3.58 167 eP 55 27.60 -1.2

MVM 3.78 167 eP 55 30.20 -1.3

BIM 3.78 170 eP 55 31.21 -0.4

LPR 3.92 271 P 55 32.70 -1.0

CPD 3.97 267 P 55 34.40 0.0

SLB 4.46 171 eP 55 42.00 0.6

SVB 4.98 175 eP 55 50.50 1.7

GRW 6.07 179 eP 56 04.50 0.4

TCE 7.52 180 eP 56 26.00 1.6

TRN 7.58 177 eP 56 28.00 2.8

FRB 45.68 356 eP 02 55.00 1.6

LKO 55.02 91 P 04 05.04 -0.3

0.6s 11.00nm 5.0mb

LIC 56.49 95 P 04 15.30 -0.6

KIC 56.72 94 P 04 17.00 -0.6

YKA 57.16 334 eP 04 19.10 -0.9

0.8s 1.40nm 4.0mb

MBC 64.90 347 eP 05 13.00 0.9

INK 66.45 337 eP 05 22.00 -0.1

S.D. = 1.1 on 26 of 26 obs.

\* MAR 20, 1990 13h 03m 47.04 ± 1.01s  
22.333 S ± 7.0km 69.865 W ± 11.5km  
DEPTH = 60.9 ± 11.9 km  
4.7mb (4 obs.)  
NORTHERN CHILE (123)  
Felt (IV) in the Pedro de  
Voldio-Tocopilla area.

ANT 1.46 200 iPc 04 13.50 2.0

i 04 28.20

i(S) 04 33.70

LPB 6.01 16 P 05 22.00 6.2X

S 06 34.00

ARE 6.04 345 iP 05 14.50 -1.6

CCH 6.04 36 Pc 05 21.90 5.7X

i 05 40.50

ZOBO 6.25 16 Pc 05 21.00 1.6

Z 23s 0.97um

S 06 40.00

LR 07 34.00

RTRS 7.81 177 ePd 05 40.00 -0.4

RTLL 9.05 172 ePc 05 55.40 -2.1

RTCB 9.17 174 eP 05 58.00 -1.2

CFA 9.35 171 e(P) 05 50.00 -11.7X

PT03 10.03 325 eP 06 10.50 -0.5

ROCH 10.65 185 eP 06 31.00 11.5X

IHA 10.77 188 eP 06 38.50 17.6X

e(S) 08 49.00

LCCH 11.20 187 iP 06 42.50 15.7X

CHCH 11.58 183 eP 06 40.60 8.7X

LNV 11.66 186 iP 06 46.00 13.1X

NNA 12.26 326 eP 06 52.50 11.5X

0.8s 4.48nm

e 09 03.00



20d 13h

ITB1 14.39 102 e(P) 07 10.50 1.6  
 ITB 14.56 103 e(P) 07 18.50 7.2X  
 BAO 21.72 76 eP 08 35.00 0.0  
 OLY 61.06 340 eP 13 55.80 -1.0  
 FVM 63.03 342 eP 14 09.70 -0.2  
 SPA 67.80 180 eP 14 42.70 2.2  
 1.1s 12.50nm 4.8mb  
 LIC 69.47 74 P 14 50.80 -0.6  
 0.6s 3.50nm 4.5mb  
 TIC 69.66 74 P 14 52.10 -0.5  
 KIC 69.79 74 P 14 52.70 -0.6  
 0.6s 11.50nm 5.0mb  
 LKO 70.48 71 P 14 56.64 -0.9  
 KVN 75.93 323 eP 15 31.40 2.2  
 EDM 84.14 335 eP 16 12.50 0.0  
 YKA 91.68 341 eP 16 49.00 0.7  
 0.6s 1.80nm 4.7mb  
 GBA 147.77 100 PKPc 23 29.00 4.7X  
 0.6s 2.30nm

S.D. = 1.4 on 19 of 30 obs.

& MAR 20, 1990 13h 31m 22.10s  
 37.928 N 122.002 W  
 DEPTH = 10.0km  
 CENTRAL CALIFORNIA (39)  
 <BRK>. ML 1.9 (BRK). Felt at  
 Concord.

BKS 0.19 255 iPc 31 26.10 -0.2  
 iS 31 29.50  
 ZSP 0.20 275 iPc 31 26.60 0.1  
 iS 31 31.00  
 i 31 32.00  
 BRK 0.21 255 iPc 31 26.50 -0.2  
 eS 31 30.10  
 PCC 0.52 215 ePd 31 31.80 -0.9  
 eS 31 39.20  
 MHC 0.65 154 ePc 31 34.50 -0.7  
 eS 31 45.20  
 ARN 0.69 147 eP 31 34.80 -0.9  
 NWRM 0.88 307 eP 31 37.70 -1.2  
 GCC 0.90 180 e(P) 31 39.20 -0.1  
 eS 31 50.70  
 SAO 1.24 159 eP 31 43.30 -1.9  
 i 31 47.20  
 CMB 1.28 85 eP 31 44.90 -1.0  
 eS 31 59.80  
 i 32 03.00  
 KVN 3.26 69 eP 32 21.00 6.5  
 11 obs. associated

\* MAR 20, 1990 13h 33m 39.66± 2.02s  
 5.341 S ± 10.8km 152.893 E ± 14.7km  
 DEPTH = 47.0 ± 16.8 km  
 4.4mb (3 obs.)  
 NEW BRITAIN REGION (192)

RAB 1.35 328 iPc 34 03.00 0.6  
 iS 34 20.50  
 PMG 6.98 234 eP 35 32.00 10.1X  
 eS 36 40.00  
 DZM 21.18 143 iPd 38 23.00 -0.5  
 WB5 23.10 230 eP 38 43.20 0.7  
 ASPA 25.82 223 eP 39 07.60 -0.9  
 1.2s 9.00nm 4.2mb  
 CN2 54.83 336 eP 43 05.50 -1.9  
 XAN 57.07 317 P 43 22.30 -1.5  
 CHTO 58.30 296 eP 43 31.50 -1.0  
 CD2 59.16 311 eP 43 37.60 -0.8  
 SHL 66.66 301 eP 44 22.00 -6.3X  
 WMQ 76.20 317 P 45 26.00 1.0  
 TTA 78.24 21 eP 45 31.10 -4.8X  
 IMA 80.93 19 eP 45 50.40 0.0  
 1.1s 6.30nm 4.5mb  
 FBA 82.35 22 eP 45 57.00 -0.6  
 KSH 83.34 311 eP 46 06.00 2.6  
 INK 88.92 21 ePd 46 30.20 0.1  
 MBC 94.61 14 eP 46 56.50 0.3  
 YKA 95.86 28 eP 47 02.20 0.0  
 0.9s 1.10nm 4.4mb  
 KHC 124.45 329 ePKP 52 36.50 1.1  
 IFR 145.31 327 iPKPc 53 15.50 0.8  
 AVE 146.69 329 ePKP 53 26.00 9.2X  
 TIO 148.44 326 iPKPd 53 25.00 5.1X  
 BAO 150.64 136 e(PK) 53 28.00 4.5X  
 S.D. = 1.2 on 17 of 23 obs.

% MAR 20, 1990 14h 03m 03.83± 0.72s  
 41.155 N ± 7.4km 28.685 E ± 4.5km  
 DEPTH = 10.0km (geophysicist)  
 TURKEY (366)

CTT 0.19 268 iPg 03 08.20 0.1  
 iSg 03 10.70  
 ISK 0.30 107 ePg 03 10.50 0.5  
 GBZT 0.68 122 ePg 03 16.50 -0.8  
 iSg 03 25.50  
 YLV 0.79 138 ePg 03 20.00 0.8  
 HRT 0.82 114 ePg 03 19.50 -0.2  
 KCT 0.94 196 iPg 03 20.60 -1.2  
 DMK 0.96 314 ePn 03 22.00 -0.2  
 BNT 0.99 216 iPn 03 23.10 0.5  
 EDC 1.02 218 iPg 03 23.50 0.4  
 eSg 03 37.00  
 S.D. = 0.8 on 9 of 9 obs.

? MAR 20, 1990 14h 33m 26.86± 1.04s  
 39.249 N ± 10.2km 27.800 E ± 16.3km  
 DEPTH = 10.0km (geophysicist)  
 TURKEY (366)

DST 0.73 61 ePg 33 41.00 -0.3  
 IZM 0.95 206 ePg 33 45.00 0.0  
 eSg 34 00.00  
 KCT 1.09 23 iPn 33 48.10 0.8  
 BNT 1.11 5 iPn 33 47.10 -0.6  
 S.D. = 1.0 on 4 of 4 obs.

? MAR 20, 1990 15h 24m 59.19± 6.70s  
 31.681 S ± 41.1km 69.786 W ± 50.2km  
 DEPTH = 33.0km (normal)  
 SAN JUAN PROVINCE, ARGENTINA (137)

RTCB 0.86 77 iPc 25 16.00 1.0  
 S 25 30.00  
 RTCV 1.08 100 e(P) 25 18.20 0.1  
 RTLL 1.18 73 iPd 25 18.90 -0.6  
 eS 25 35.00  
 CFA 1.32 87 iPc 25 21.00 -0.5  
 S 25 39.00  
 RTRS 1.53 11 iPd 25 24.50 0.0  
 eS 25 45.50  
 S.D. = 0.9 on 5 of 5 obs.

MAR 20, 1990 15h 35m 15.29± 0.46s  
 39.278 N ± 9.3km 138.735 E ± 7.3km  
 DEPTH = 33.0km (normal)  
 4.7mb (10 obs.)  
 EASTERN SEA OF JAPAN (223)

CN2 10.93 299 eP 37 54.50 2.0  
 BJI 17.39 280 eP 39 17.00 0.2  
 TIY 20.63 274 eP 39 54.00 -0.4  
 GUN 44.90 272 P 43 28.20 -0.8  
 KKN 45.42 272 P 43 32.00 -1.0  
 IMA 45.86 32 eP 43 36.50 0.6  
 FBA 48.36 33 ePc 43 56.00 0.7  
 INK 53.37 28 eP 44 33.00 -0.2  
 WB5 58.99 185 eP 45 14.40 0.4  
 SOD 62.07 336 eP 45 46.00 11.4X  
 ASPA 62.78 185 eP 45 40.10 0.5  
 0.7s 3.00nm 4.5mb  
 YKA 62.93 30 eP 45 39.40 -0.8  
 0.6s 0.90nm 4.1mb  
 SUF 65.02 332 eP 45 52.80 -1.1  
 0.4s 1.40nm 4.4mb  
 NUR 66.97 331 eP 46 04.80 -1.6  
 NB2 71.29 336 P 46 31.80 -1.3  
 0.9s 5.30nm 4.6mb  
 FFC 72.94 32 iPc 46 43.10 0.2  
 0.6s 10.00nm 5.0mb  
 GRF 80.07 328 eP 47 23.80 0.9  
 0.9s 10.00nm 4.8mb  
 LOR 84.91 331 eP 47 48.30 0.3  
 LBF 85.10 331 eP 47 48.60 -0.4  
 0.7s 3.30nm 4.6mb  
 SSF 85.21 331 eP 47 49.50 0.0  
 0.8s 5.35nm 4.8mb  
 LPL 85.23 328 eP 47 50.10 0.2  
 LPG 85.24 328 eP 47 50.10 0.1  
 SMF 85.44 331 eP 47 50.90 0.3  
 AVF 85.50 331 eP 47 51.00 0.1  
 0.6s 7.20nm 5.1mb  
 LPF 86.01 334 eP 47 53.90 0.5

0.6s 7.20nm 5.1mb  
 MAF 86.27 331 eP 47 55.20 0.4  
 TCF 86.35 331 eP 47 55.10 -0.1  
 LSF 86.63 332 eP 47 56.50 -0.1  
 MFF 86.93 333 eP 47 58.70 0.7  
 SEG 121.47 23 ePKP 54 15.00 7.9X  
 MGG 121.98 23 ePKP 54 14.50 6.4X  
 S.D. = 0.8 on 28 of 31 obs.

\* MAR 20, 1990 16h 28m 08.93± 0.84s  
 38.247 N ± 10.5km 15.124 E ± 6.1km  
 DEPTH = 10.0km (geophysicist)  
 SICILY (398)

ATN 0.28 108 P 28 15.30 0.5  
 eSg 28 19.20  
 MNO 0.46 227 P 28 18.20 -0.2  
 eSg 28 24.40  
 SOI 0.75 103 P 28 23.20 -0.5  
 eSg 28 34.40  
 GIB 0.90 254 P 28 26.50 0.2  
 eSg 28 40.00  
 CZI 1.25 39 P 28 32.10 0.0  
 S.D. = 0.5 on 5 of 5 obs.

? MAR 20, 1990 16h 44m 55.42± 1.31s  
 27.564 S ± 46.6km 175.478 W ± 15.0km  
 DEPTH = 33.0km (normal)  
 4.8mb (1 obs.)  
 KERMADEC ISLANDS REGION (177)

DZM 17.29 284 iPd 48 56.00 -0.1  
 ASPA 45.56 263 eP 53 15.30 1.1  
 0.5s 7.00nm 4.8mb  
 WB5 46.30 268 eP 53 18.60 -1.4  
 CMB 83.18 41 ePc 57 20.00 0.4  
 WDC 83.73 38 ePc 57 22.60 0.3  
 KVN 85.19 41 eP 57 29.80 -0.1  
 PNT 91.26 33 eP 57 58.00 -0.4  
 CHG 94.74 289 eP 58 16.10 1.0  
 NB2 146.23 354 PKP 04 31.60 -0.8  
 0.9s 7.20nm  
 S.D. = 0.9 on 9 of 9 obs.

MAR 20, 1990 17h 11m 39.72± 0.30s  
 5.561 S ± 4.4km 129.633 E ± 6.3km  
 DEPTH = 33.7km (4 depth phases)  
 5.1mb (13 obs.) 4.3msz (1 obs.)  
 BANDA SEA (200)

AAI 2.35 322 iPd 12 15.00 -1.8  
 e(S) 12 43.50  
 MTN 7.39 169 iPc 13 28.00 0.0  
 eS 15 04.00  
 KUPT 7.51 232 eP 13 43.20 13.4X  
 0.5s 189.70nm  
 MNI 8.45 325 eP 13 42.00 -0.8  
 KNA 10.16 185 iPc 14 05.20 -1.2  
 0.3s 142.00nm 6.7mb X  
 eS 15 54.00  
 PCI 10.82 295 ePd 14 18.60 3.2X  
 1.0s 24.50nm 5.4mb  
 DAV 13.20 342 eP 14 39.20 -8.3X  
 MNDI 13.96 93 eP 14 56.00 -1.8  
 WB5 14.96 162 iP 15 08.00 -2.6  
 eS 17 49.20  
 TSM 15.09 310 eP 15 21.50 9.2X  
 TRT 17.02 262 iPc 15 44.80 7.9X  
 KKM 17.67 311 ePd 15 48.00 2.8  
 1.0s 76.20nm 4.8mb  
 OIS 17.78 148 eP 15 45.00 -1.4  
 eS 18 52.00  
 PMG 17.78 103 eP 15 48.00 1.5  
 MBL 18.19 211 eP 15 50.00 -1.4  
 0.5s 18.00nm 4.5mb  
 ASPA 18.46 168 iPc 15 54.10 -0.8  
 1.2s 150.00nm 5.0mb  
 Z 17s 3.25um 4.3msz  
 iS 19 14.10  
 LR 23 25.50  
 PPR 18.71 324 ePd 16 09.00 11.1X  
 CTA 21.67 133 iPd 16 33.00 3.4X  
 1.1s 94.94nm 5.1mb  
 i 16 41.00 29km  
 e 16 50.50  
 eS 20 31.00  
 i 21 03.00



QCP	21.79	337 e(P)	16	46.00	15.2X
TP1	22.10	276 ePc	16	34.50	0.6
MEKA	23.46	206 iPc	16	51.90	4.7X
GUA	24.29	39 eP	16	55.60	0.3
	0.8s	77.61nm			5.3mb
GUMO	24.30	38 eP	16	56.30	0.9
		eS	21	15.00	
PJG	24.30	38 eP	16	56.50	1.1
CVP	24.37	342 eP	16	58.00	2.0
	1.0s	50.00nm			5.0mb
FORR	25.20	183 eP	17	05.00	1.2
	0.4s	30.00nm			5.2mb
PIP	25.35	340 ePc	17	14.00	8.7X
COOL	26.42	197 eP	17	17.00	1.7
MRWA	26.83	207 eP	17	20.00	0.9
BAL	27.72	204 eP	17	28.00	0.8
KLB	28.19	202 eP	17	33.00	1.7
MUN	29.13	204 eP	17	41.00	1.2
NWAO	29.58	201 eP	17	40.00	-3.9X
IPM	30.29	289 ePc	17	51.80	1.4
ADE	30.44	165 e(P)	17	55.00	3.5X
	0.7s	20.55nm			5.0mb
BRS	30.92	137 iPc	17	56.50	0.6
		iPP	18	06.50	36km
		i	18	12.50	
		eS	22	00.00	
OIZ	31.26	322 eP	17	59.00	0.2
E	13s	1.80um			
OZH	32.17	341 eP	18	10.50	3.8X
BWA	33.58	151 eP	18	23.10	4.1X
CAN	34.58	151 eP	18	30.80	3.2X
TOO	34.99	158 eP	18	36.00	4.9X
LOE	35.78	310 eP	18	38.00	0.0
SSE	37.33	348 P	18	50.70	-0.1
Z	22s	0.50um			4.3MsZ
E	11s	0.20um			
BDT	37.80	307 eP	18	54.20	-0.8
CHG	38.75	309 ePd	19	03.70	0.8
	0.9s	15.13nm			4.8mb
WHN	38.77	339 eP	19	03.00	0.1
		pP	19	14.50	42km
NJ2	38.79	345 eP	19	03.00	0.0
GYA	38.84	326 P	19	04.20	0.5
		pP	19	12.80	29km
DZM	39.18	118 iPc	19	08.10	1.5
KMI	40.18	321 Pd	19	16.50	1.5
N	15s	0.70um			
E	20s	0.70um			
		sP	19	30.00	
		S	25	20.00	
CD2	43.90	327 eP	19	44.90	-0.2
XAN	43.99	335 P	19	45.00	-0.8
Z	24s	0.30um			4.1MsZx
TIIY	45.94	341 eP	20	01.20	-0.1
BJI	47.04	346 eP	20	08.50	-1.4
SNY	47.48	354 eP	20	12.20	-1.1
Z	23s	1.00um			4.7MsZx
N	22s	0.80um			
		PP	22	09.00	
SHL	47.97	312 iP	20	17.00	-0.7
LZH	47.97	332 eP	20	18.30	0.8
Z	33s	1.00um			4.6MsZx
N	12s	0.28um			
BTO	49.34	340 eP	20	27.00	-0.9
MDJ	49.95	360 eP	20	32.80	0.5
LSA	50.92	316 P	20	42.00	1.4
		S	27	56.00	
MSZ	51.32	146 P	20	53.00	10.2X
GTA	52.54	331 P	20	52.00	-0.3
GUN	53.74	311 P	21	00.50	-1.1
PKI	53.92	310 P	21	01.80	-1.1
	0.8s	14.00nm			5.0mb
KKN	54.13	310 P	21	03.40	-0.9
	0.8s	18.00nm			5.2mb
DMN	54.17	310 P	21	03.70	-1.0
	0.8s	27.00nm			5.3mb
HYB	55.36	295 eP	21	11.50	-1.7
NDI	60.83	307 eP	21	49.00	-2.3
WMO	62.00	327 iP	21	59.00	-0.1
QUE	69.68	305 eP	22	48.00	-0.6
MAIO	77.50	309 eP			



20d 19h

WDC 151.46 87 ePKP 15 18.90 7.8X  
 MWC 151.51 102 ePKP 15 20.00 8.4X  
 BAR 151.55 106 ePKP 15 20.00 8.5X  
 ORV 151.76 89 ePKP 15 19.90 8.3X  
 PLM 151.82 105 ePKP 15 23.00 10.9X  
 FRI 151.83 95 ePKP 15 20.30 8.6X  
 RVR 151.85 103 ePKP 15 20.00 8.1X  
 CMB 151.86 93 ePKP 15 20.20 8.3X  
 SBB 151.93 101 ePKP 15 20.00 7.9X  
 ISA 152.01 99 ePKP 15 21.00 8.8X  
 TPC 152.81 104 ePKP 15 18.00 4.7X  
 GSC 152.96 101 ePKP 15 24.00 10.5X  
 KVN 153.92 93 e(PKP) 15 16.30 1.4  
 YKA 155.79 35 ePKP 15 25.30 8.9X  
 0.8s 1.80nm

S.D. = 1.1 on 29 of 49 obs.

? MAR 20, 1990 18h 58m 37.29 ± 1.95s  
 19.968 S ± 20.2km 177.646 W ± 22.2km  
 DEPTH = 550.3 ± 15.3 km  
 4.7mb ( 6 obs.)

## FIJI ISLANDS REGION (181)

NOF 5.14 295 iP 00 09.30 0.3  
 DZM 15.00 259 iPc 01 50.10 3.6X  
 BR5 28.03 249 iP 03 47.00 0.7  
 TOO 36.48 233 eP 04 58.00 0.6  
 ASPA 44.97 256 iPd 06 04.00 -1.4  
 0.9s 79.00nm 5.2mb  
 iS 11 56.90

WB5 44.99 262 eP 06 04.80 -0.7  
 FORR 49.77 246 iPc 06 40.60 -0.9  
 0.4s 13.00nm 4.8mb  
 MBL 58.20 257 eP 07 39.50 -1.7  
 0.4s 33.00nm 5.0mb

MEKA 58.48 250 eP 07 43.60 0.5  
 PCI 63.94 279 ePc 08 20.00 1.3  
 1.0s 6.50nm 4.1mb

OZH 76.40 303 eP 09 31.50 -0.3  
 NJ2 79.80 309 Pc 09 50.00 0.3  
 MDJ 80.28 325 eP 09 52.00 0.1  
 CN2 82.08 322 Pc 10 01.40 0.2

TTA 84.37 10 e(P) 10 11.80 -0.4  
 GYA 86.68 300 P 10 24.20 0.0  
 TIY 87.17 312 eP 10 26.80 0.6  
 FBA 87.65 12 eP 10 26.00 -1.8  
 0.7s 9.88nm 4.7mb

IMA 87.67 10 eP 10 27.40 -0.6  
 0.6s 2.16nm 4.1mb

XAN 88.08 307 P 10 31.00 0.5  
 CHG 90.38 290 eP 10 42.10 0.8  
 KEV 128.01 349 ePKP 16 56.00 14.6X  
 SUF 134.26 345 ePKP 16 53.00 -0.5  
 0.6s 3.40nm

NUR 136.52 344 ePKP 16 53.00 -4.8X  
 DMU 145.39 10 ePKP 17 14.00 0.3  
 DCN 145.87 10 ePKP 17 16.70 2.3  
 LWI 145.93 233 iPKPd 17 18.80 2.8X

KRA 146.88 339 ePKP 17 16.00 -0.2  
 KSP 147.28 344 iPKPd 17 20.10 3.3X  
 SPC 147.51 338 e(PKP) 17 20.20 2.7X  
 CLL 147.62 347 iPKP 17 20.30 3.0X  
 0.8s 23.00nm

WTS 147.85 355 ePKP 17 21.50 3.9X  
 0.8s 13.00nm

MLR 147.96 328 ePKP 17 10.00 -8.2X  
 PRU 148.51 345 ePKP 17 22.50 3.7X  
 MOX 148.52 349 ePKP 17 23.00 4.2X  
 PRNI 148.80 296 ePKP 17 24.00 4.1X

MBH 149.01 295 ePKPd 17 25.00 4.9X  
 ENN 149.14 356 ePKP 17 24.50 4.8X  
 0.9s 13.00nm

MEM 149.29 355 PKP 17 24.80 4.9X  
 ZST 149.42 340 e(PKP) 17 24.80 4.6X  
 KHC 149.54 345 iPKPd 17 26.30 5.9X  
 1.2s 31.00nm

e 17 30.50  
 ABH 149.87 353 ePKP 17 26.11 5.2X  
 DOU 149.89 357 PKP 17 26.30 5.5X  
 TOD 149.98 352 ePKP 17 26.25 5.2X  
 RUP 150.10 354 ePKP 17 26.88 5.6X

FLN 151.18 4 ePKP 17 28.60 5.8X  
 0.7s 13.25nm  
 CDF 151.35 353 ePKP 17 29.30 6.1X  
 0.5s 3.65nm

LDF 151.37 3 ePKP 17 28.90 5.8X

0.5s 4.35nm  
 KBA 151.51 344 ePKP 17 29.00 5.4X  
 GRR 151.53 4 ePKP 17 29.50 6.2X  
 0.5s 8.00nm  
 HAU 151.84 354 ePKP 17 30.30 6.5X  
 0.7s 4.40nm  
 LPF 151.87 5 ePKP 17 30.30 6.5X  
 0.5s 11.65nm  
 BSF 151.97 354 ePKP 17 30.60 6.5X  
 0.7s 4.40nm  
 LOR 152.74 358 ePKP 17 32.50 7.4X  
 0.6s 2.70nm  
 SSF 152.96 358 ePKP 17 33.20 7.8X  
 0.8s 4.05nm  
 LBF 153.02 358 ePKP 17 33.20 7.7X  
 0.8s 5.35nm  
 MFF 153.36 4 ePKP 17 33.50 7.6X  
 TCF 153.75 0 ePKP 17 34.60 8.1X  
 LSF 153.78 1 ePKP 17 34.50 8.0X

S.D. = 1.0 on 24 of 59 obs.

? MAR 20, 1990 19h 59m 57.10 ± 10.98s  
 33.119 S ± 59.5km 70.267 W ± 43.2km  
 DEPTH = 10.0km (geophysicist)

## CHILE-ARGENTINA BORDER REGION (127)

FCH 0.21 186 iP 00 01.70 -0.1  
 iS 00 04.00  
 PCH 0.54 202 iP 00 08.00 -0.1  
 iS 00 16.00

TACH 0.77 226 iP 00 12.20 0.0  
 CHCH 0.87 202 iPc 00 14.20 0.3  
 iS 00 26.20  
 LNV 1.27 229 iPd 00 20.50 -0.1  
 iS 00 36.50

S.D. = 0.2 on 5 of 5 obs.

? MAR 20, 1990 20h 43m 10.80 ± 3.13s  
 34.883 N ± 29.6km 23.546 E ± 14.9km  
 DEPTH = 10.0km (geophysicist)

## CRETE (370)

MD 3.5 (ATH).

VAM 0.75 46 ePb 43 25.80 0.4  
 NPS 1.74 77 ePn 43 41.40 0.2  
 VLI 1.90 345 ePn 43 42.50 -1.0  
 ITM 2.64 331 ePn 43 55.00 0.8  
 APE 2.71 36 ePg 44 03.50 8.3X  
 KAP 3.04 76 ePn 43 59.50 -0.4

S.D. = 1.0 on 5 of 6 obs.

MAR 20, 1990 20h 57m 09.96 ± 0.91s  
 36.420 N ± 10.4km 26.513 E ± 5.9km  
 DEPTH = 165.1 ± 13.7 km

## DODECANESE ISLANDS (369)

KAP 1.02 148 eP 57 35.70 -0.9  
 eS 57 53.50  
 APE 1.02 310 eP 57 36.50 -0.2  
 SMG 1.31 11 iPd 57 39.00 -0.1  
 ARG 1.32 98 eP 57 39.00 -0.2  
 eS 57 58.00

NPS 1.37 213 eP 57 39.50 -0.2  
 eS 58 00.00  
 VAM 2.13 242 eP 57 48.50 0.6  
 KSL 2.50 96 iPc 57 52.50 0.3  
 eS 58 21.50

ELL 2.75 82 iPn 57 56.20 0.7  
 VLI 2.89 277 eP 57 57.50 0.4  
 ITM 3.76 283 eP 58 09.50 1.4  
 VLS 5.04 292 eP 58 24.80 -0.1  
 ROI 8.46 295 P 59 09.20 -1.2  
 CZI 8.68 292 P 59 12.30 -0.9  
 CSI 8.73 296 P 59 14.50 0.5

S.D. = 0.8 on 14 of 14 obs.

MAR 20, 1990 21h 08m 17.69 ± 0.63s  
 43.883 N ± 4.8km 7.843 E ± 3.9km  
 DEPTH = 10.0km (geophysicist)

## NEAR SOUTH COAST OF FRANCE (379)

ML 2.3 (LDG), 2.1 (GEN).

IMI 0.04 51 P 08 19.38 -0.5  
 S 08 20.77  
 SAOF 0.23 297 Pg 08 22.28 -0.4  
 Sg 08 26.33

SBF 0.30 266 Pg 08 24.00 0.1

Sg 08 27.80  
 AUTN 0.32 291 Pg 08 24.38 -0.1  
 Sg 08 29.17

REVF 0.37 248 Pg 08 25.70 0.3  
 AURF 0.37 271 Pg 08 25.22 -0.2  
 ROB 0.41 3 P 08 26.29 0.2  
 S 08 31.83

FIN 0.42 39 P 08 26.09 -0.2  
 S 08 31.63  
 TOUF 0.45 287 Pg 08 26.81 -0.1  
 Sg 08 33.39

ENR 0.46 319 P 08 26.70 -0.4  
 S 08 32.76  
 MVIF 0.50 272 Pg 08 27.89 0.0  
 STV 0.52 314 P 08 27.53 -0.7  
 S 08 34.76

PZZ 0.82 320 P 08 33.07 -0.6  
 S 08 43.84  
 PCP 0.83 37 P 08 33.69 -0.1  
 S 08 45.84

FRF 0.92 250 Pg 08 35.50 0.1  
 Sg 08 48.20  
 LMR 1.11 241 Pg 08 38.00 -0.6  
 Sg 08 52.30

LRG 1.16 249 Pg 08 39.70 0.4  
 Sg 08 55.10  
 LPG 1.79 335 Pg 08 50.50 1.3  
 LPL 1.82 335 Pg 08 50.70 1.3

S.D. = 0.6 on 19 of 19 obs.

% MAR 20, 1990 21h 09m 20.70 ± 1.45s  
 18.489 S ± 17.0km 124.311 E ± 11.8km  
 DEPTH = 33.0km (normal)

## WESTERN AUSTRALIA (590)

MBL 4.98 237 eP 10 34.70 -0.5  
 eS 11 26.00  
 KNA 5.06 58 eP 10 36.80 0.5  
 iS 11 31.50

MTN 8.64 50 eP 11 10.00 -16.4X  
 eS 12 53.00  
 WB5 9.60 100 eP 11 40.30 0.5  
 eS 13 24.60

ASPA 10.33 122 eP 11 47.60 -2.2  
 eS 13 49.20  
 COOL 12.67 193 eP 12 22.00 0.6  
 eS 14 35.00

FORR 12.78 165 eP- 12 24.00 1.3  
 0.4s 2.60nm 4.7mb  
 eS 14 43.00

MRWA 13.11 214 eP 12 25.50 -1.6  
 eS 14 40.00  
 BAL 13.90 208 eP 12 39.00 1.4  
 MUN 15.29 207 eP 12 51.00 -4.8X  
 eS 15 32.00

S.D. = 1.6 on 8 of 10 obs.

\* MAR 20, 1990 21h 47m 57.11 ± 0.58s  
 38.709 N ± 8.4km 74.098 E ± 9.8km  
 DEPTH = 33.0km (normal)

## TAJIK-XINJIANG BORDER REGION (719)

NDI 10.33 165 eP 50 28.00 1.9  
 0.4s 20.34nm 5.7mb X  
 eS 52 08.80

QUE 10.34 217 iPc 50 26.80 0.4  
 eS 52 12.20  
 MAIO 11.85 263 eP 50 45.00 -1.8  
 eS 52 49.00

KKN 14.34 136 P 51 19.20 -0.8  
 0.5s 8.00nm 4.6mb  
 GUN 14.58 134 P 51 23.40 0.2  
 PKI 14.58 136 P 51 21.60 -1.7

HYB 21.57 168 eP 52 45.50 -0.4  
 GBA 25.18 172 Pc 53 22.00 0.9  
 0.6s 2.60nm 4.0mb

SUF 37.42 326 eP 55 09.40 0.9  
 NUR 37.54 322 eP 55 10.20 0.7  
 NB2 44.14 322 P 56 03.90 0.0  
 0.6s 4.00nm 4.4mb

MBC 65.00 4 ePd 58 35.80 0.3  
 0.5s 30.00nm 5.6mb X  
 YKA 78.90 4 eP 59 57.50 -0.7  
 0.5s 1.00nm 4.1mb

S.D. = 1.2 on 13 of 13 obs.



? MAR 20, 1990 21h 57m 50.27±1.63s  
 1.372 N ±23.8km 126.468 E ±17.4km  
 DEPTH = 33.0km (normal)  
 4.6mb ( 2 obs.)

MOLUCCA PASSAGE (266)

MNI 1.63 272 iPd 58 18.00 1.0  
 eS 58 36.00  
 PCI 7.01 251 ePd 59 32.60 -0.6  
 1.0s 8.50nm 4.6mb X  
 WB5 22.50 160 eP 02 48.40 -0.1  
 ASPA 25.92 164 iPd 03 21.70 0.4  
 0.4s 15.00nm 4.9mb  
 HYB 49.70 292 eP 06 42.50 0.9  
 GBA 49.99 287 Pc 06 42.30 -1.5  
 0.5s 1.50nm 4.3mb  
 S.D. = 1.2 on 6 of 6 obs.

MAR 20, 1990 22h 04m 48.44±0.12s  
 29.496 N ±2.6km 131.595 E ±2.6km  
 DEPTH = 31.4km ( 17 depth phases)  
 5.6mb ( 78 obs.) 5.1MsZ ( 10 obs.)

RYUKYU ISLANDS REGION (239)

CENTROID, MOMENT TENSOR (HRV)

Data Used: GDSN

L.P. 8.: 8S, 17C

Centroid Location:

Origin Time 22:04:52.1 1.3

Lat 29.35N 0.10 Lon 131.43E 0.08

Dep 57.4 4.8 Half-duration 2.1

Moment Tensor; Scale 10\*\*17 Nm

Mrr= 1.92 0.12 Mtt=-0.96 0.21

Mrf=-0.96 0.19 Mrt=-0.52 0.15

Mri= 0.47 0.17 Mtf=-1.07 0.16

Principal Axes:

T Vol= 2.16 Plg=71 Azm=223

N -0.13 19 45

P -2.03 1 315

Best Double Couple: Mo=2.1\*10\*\*17

NP1: Strike= 27 Dip=47 Slip= 64

NP2: 243 49 115

SSE 9.14 283 Pd 07 00.00 -1.1  
 1.0s 0.13nm 3.1mb X  
 Z 20s 6.00um  
 N 13s 4.30um  
 E 13s 4.40um

ANP 9.94 247 eP 07 07.20 -5.0X  
 eS 10 04.00

NJ2 11.25 286 iPd 07 30.00 -0.1  
 1.0s 100.00nm 6.0mb  
 Z 16s 4.40um 4.0MsZ  
 N 14s 2.30um  
 E 15s 6.40um

OZH 12.43 252 eP 07 45.30 -0.7  
 Z 22s 3.20um  
 E 13s 2.20um

DL2 12.49 321 Pd 07 47.00 0.3  
 4.0s 1200.00nm 6.4mb X  
 Z 14s 5.60um 3.8MsZ  
 N 14s 5.50um  
 E 14s 5.40um

TIA 13.88 303 eP 08 05.90 0.8  
 Z 18s 5.50um  
 N 11s 2.40um  
 E 15s 5.20um

SNY 13.91 334 iPd 08 06.00 0.5  
 7.0s 1400.00nm 5.8mb X  
 Z 16s 11.40um 4.2MsZ  
 N 15s 5.60um  
 E 14s 3.30um

CVP 14.75 219 eP 08 15.60 -1.1  
 1.0s 83.00nm 5.1mb  
 PIP 14.97 224 ePd 08 26.30 6.9X  
 WHN 14.98 278 ePd 08 21.50 1.9

Z 22s 2.70um  
 N 16s 6.40um  
 pP 08 27.50  
 eS 11 06.00  
 CN2 15.10 343 Pd 08 22.00 1.0

4.0s 1000.00nm 5.5mb X  
 Z 18s 10.80um 4.5MsZ X  
 N 14s 6.70um  
 E 14s 1.80um

MDJ 15.18 355 Pd 08 33.00 1.9  
 Z 25s 4.10um  
 N 14s 1.80um

BJI 16.44 314 eP 08 38.00 -0.3  
 8.0s 1.07nm 2.0mb X  
 Z 14s 11.40um 3.9MsZ X  
 N 14s 5.16um  
 E 13s 3.40um

HKC 17.22 249 eP 08 55.00 1.8  
 eS 12 08.00  
 GZH 17.56 253 P 08 53.70 1.3  
 Z 16s 2.68um  
 N 15s 3.20um  
 E 16s 3.40um

OCP 17.69 216 eP 08 51.80 -2.4  
 TIY 17.92 302 Pd 08 57.50 0.6  
 1.2s 100.00nm 4.8mb  
 N 14s 3.60um

XAN 19.79 289 Pc 09 17.50 -1.6  
 0.8s 100.00nm 5.2mb  
 N 12s 3.80um  
 E 14s 2.10um

HHC 19.86 310 P 09 19.00 -0.9  
 Z 16s 6.10um  
 N 16s 3.50um  
 E 13s 2.90um

GUM 20.04 139 eP 09 26.00 4.2X  
 1.1s 489.99nm 5.8mb  
 Z 23s 4.48um 4.8MsZ X  
 eS 13 10.00

GUA 20.11 139 eP 09 26.90 4.4X  
 0.9s 315.97nm 5.7mb  
 Z 22s 4.73um 4.8MsZ  
 BTO 20.80 308 P 09 28.00 -1.6  
 Z 15s 4.80um 5.0MsZ X  
 N 15s 4.00um  
 E 16s 3.80um

GYA 22.21 268 iPd 09 43.00 -1.0  
 1.4s 100.00nm 5.1mb  
 N 14s 3.30um  
 E 14s 2.70um

OIZ 22.36 247 Pc 09 46.00 0.6  
 N 13s 2.00um  
 E 16s 2.40um

PP 10 14.00  
 eS 13 49.00  
 sS 13 58.00  
 SS 14 30.00

DAV 23.00 195 eP 09 52.00 0.4  
 PPR 23.02 214 ePd 09 54.00 2.2  
 1.0s 83.00nm 5.2mb  
 CD2 24.08 280 eP 10 00.20 -1.9

1.0s 100.00nm 5.3mb  
 Z 14s 2.30um 4.8MsZ X  
 N 11s 3.10um

pP 10 11.40 43kmX  
 sP 10 17.00  
 S 14 10.50  
 LZH 24.19 293 eP 10 03.00 -0.2  
 5.0s 0.47nm 2.3mb X  
 Z 15s 6.62um 5.2MsZ X  
 N 13s 1.10um

E 14s 3.91um  
 pP 10 13.00 37km  
 sP 10 19.00  
 PP 10 35.00  
 S 14 18.00

KMI 25.97 267 eP 10 20.00 -0.4  
 Z 15s 3.70um 5.0MsZ X  
 N 13s 1.30um  
 E 13s 1.60um

pP 10 30.00 37km

GTA 27.89 299 eP 10 36.20 -1.4  
 Z 18s 2.90um 4.9MsZ  
 E 12s 1.90um

LOE 29.83 253 eP 10 53.00 72kmX  
 CHG 31.53 258 eP 10 35.00 -20.1X  
 0.9s 29.41nm 5.1mb

NST 32.02 251 eP 11 16.00 1.6  
 BDT 32.20 255 eP 11 16.00 0.1  
 PCI 32.25 202 ePc 11 16.70 0.3  
 1.0s 5.00nm 4.4mb X

NNT 34.01 247 iPd 11 31.80 0.1  
 LSA 35.04 281 Pd 11 41.80 0.8  
 E 15s 1.09um

SHL 35.32 273 iP 17 09.00  
 iS 11 41.00 -2.1  
 SNG 36.63 239 eP 11 55.30 1.3  
 1.1s 194.94nm 5.9mb

WMO 37.56 305 P 17 35.00  
 eS 12 01.50 -0.2  
 Z 20s 2.50um 5.0MsZ  
 N 15s 1.00um  
 E 15s 1.50um

IPM 38.08 235 ePc 12 08.40 2.2  
 1.1s 165.40nm 5.8mb  
 TPI 39.42 220 ePc 12 18.00 0.6  
 e 14 00.00 590kmX

GUN 39.93 279 P 12 21.80 -0.2  
 PKI 40.42 279 P 12 25.20 -0.8  
 KKN 40.48 279 P 12 25.90 -0.4  
 DMN 40.67 279 P 12 27.30 -0.6  
 1.1s 89.00nm 5.4mb

TRT 41.24 209 iPd 12 32.20 -0.1  
 PMG 41.48 156 eP 12 35.00 0.7  
 MTN 42.10 181 eP 12 38.00 -1.3  
 e 12 54.00 63kmX

KNA 45.06 184 iPd 13 03.60 0.3  
 0.8s 118.00nm 5.8mb  
 e 13 20.20 66kmX  
 KSH 46.27 298 P 13 13.80 0.8

Z 20s 3.10um 5.3MsZ  
 E 14s 1.70um  
 NDI 47.15 283 iPd 13 18.50 -1.4  
 1.0s 40.00nm 5.4mb

WB5 49.16 177 eP 13 35.30 -0.1  
 HYB 49.75 268 eP 13 40.50 0.3  
 CTA 51.28 162 iPd 13 52.50 0.8  
 1.2s 93.75nm 5.6mb

eS 21 15.00  
 MBL 51.62 194 eP 13 53.70 -0.5  
 0.6s 33.00nm 5.5mb  
 GBA 52.35 265 Pc 13 59.30 -0.6  
 0.9s 33.80nm 5.3mb

ASPA 52.90 177 iPd 14 03.20 -0.6  
 1.0s 85.00nm 5.7mb  
 Z 20s 3.28um 5.4MsZ

LR 51 05.20  
 POO 53.40 272 iPd 14 09.00 1.3  
 KOD 53.89 261 eP 14 11.80 0.2  
 QUE 55.37 288 eP 14 22.50 0.4

eScS 24 08.60  
 TTA 56.20 32 ePc 14 27.40 -0.2  
 SVW 56.39 34 ePc 14 29.50 0.6  
 BRW 56.48 22 ePc 14 29.50 0.1

MEKA 57.18 194 eP 14 35.50 0.7  
 IMA 57.25 28 ePc 14 35.00 -0.1  
 1.3s 40.10nm 5.3mb  
 RMQ 58.05 162 eP 14 40.00 -0.9  
 KDC 58.18 38 eP 14 41.00 -0.4  
 PMR 59.48 33 ePc 14 49.50 -1.0  
 1.3s 117.90nm 5.9mb

MAIO 59.66 297 iPd 14 53.00 0.9  
 eS 23 08.00  
 FBA 59.75 29 ePc 14 52.00 -0.3  
 BRS 60.09 158 iPd 14 54.80 -0.3  
 i 15 11.00 61kmX

TOA 60.81 32 ePc 14 59.80 0.1  
 COOL 60.86 190 eP 14 59.00 -1.2  
 DZM 61.27 143 iPd 15 03.00 -0.3  
 BAL 61.43 195 eP 15 03.30 -0.8  
 KLB 62.16 193 eP 15 08.10 -0.9  
 NWA0 63.56 193 eP 15 17.00 -1.2  
 ADE 64.47 174 iPd 15 24.00 -0.1  
 0.8s 89.55nm 5.9mb



RKG	64.71	193	eP	15	28.70	3.0X			1.0s	40.00nm	5.4mb	BCI	84.73	316	iP	17	21.50	0.8		
INK	64.71	24	eP	15	24.00	-1.4	DIM	81.53	314	iPc	17	05.00	0.7	KZN	84.86	314	eP	17	20.20	-1.3
	0.7s	26.00nm				5.4mb	PSZ	81.63	321	eP	17	05.20	0.4	PHP	84.90	315	iPd	17	21.20	-0.3
BWA	65.53	165	iPc	15	32.10	1.1	KSP	81.80	325	iPc	17	06.50	1.0	CMB	84.97	49	ePc	17	22.00	-0.1
		i		15	59.80	112kmX		1.1s	101.00nm		5.8mb				iP	17	39.00	60kmX		
MBC	65.95	14	ePc	15	32.70	-0.5									esP	17	45.10			
	1.0s	171.00nm				6.1mb	KDZ	81.82	313	iPc	17	17.00	1.2	PTJ	85.00	321	eP	17	22.80	0.7
		pP		15	49.00	60kmX	KSL	81.92	307	iPc	17	05.40	-1.0	OHR	85.01	315	eP	17	15.30	-6.9X
IR2	66.48	299	eP	15	38.00	0.7	BZS	81.96	318	eP	17	06.50	0.1		1.2s	0.09nm			2.9mb X	
CAN	66.52	165	eP	15	37.80	0.4	PLD	82.03	314	iPc	17	08.00	1.1			e	44	17.30		
		i		16	07.00	118kmX	PGB	82.12	315	iPc	17	08.00	0.5	ZAG	85.03	321	iPc	17	23.50	1.4
KBS	66.60	349	iPc	15	37.10	-0.3	WDC	82.19	48	ePc	17	07.90	0.1	WIT	85.05	330	eP	17	23.00	1.0
IR1	66.72	299	eP	15	40.00	1.1			iP	17	24.60	60kmX	GRF	85.05	326	iPc	17	23.20	1.0	
IR5	66.88	298	eP	15	41.00	1.1	LBFM	82.20	47	P	17	08.60	0.5		1.5s	183.00nm			6.1mb	
BFD	67.11	171	eP	15	41.00	0.0			pP	17	25.50	60kmX	Z	22s	0.90um			5.1MsZ		
KEV	67.49	339	iP	15	42.50	-0.6	RZN	82.24	314	iPc	17	09.00	0.7			e	17	34.20	35km	
	1.0s	54.00nm				5.6mb	IZM	82.33	310	eP	17	08.30	-0.3	NPS	85.12	308	eP	17	22.20	-0.6
TOO	67.97	168	eP	15	47.00	0.5	BUD	82.36	321	iP	17	09.80	1.3	LRM	85.22	39	ePc	17	23.90	0.5
SOD	68.62	336	iP	15	49.40	-0.7	PRK	82.54	311	eP	17	10.00	0.4	PRS	85.26	51	ePc	17	23.50	0.0
TAB	69.05	303	eP	15	54.00	0.5	SRO	82.55	321	iP	17	11.00	1.5			epP	17	40.20	59kmX	
SLY	70.59	300	ePd	16	03.00	0.3	ARG	82.88	308	eP	17	10.80	-0.6			e	17	51.00		
		e		16	14.00	36km	MIN	82.92	48	ePc	17	11.20	-0.6	SDA	85.28	316	iPd	17	24.20	0.8
SUF	70.87	332	iP	16	03.30	-0.6			epP	17	27.80	59kmX	KBN	85.28	314	iPd	17	24.20	0.8	
	1.0s	85.60nm				5.8mb	ZST	82.98	322	iP	17	13.50	1.8	LACI	85.37	316	eP	17	24.10	0.2
MSL	72.04	302	ePd	16	11.50	0.0	SMG	82.98	309	eP	17	11.50	-0.4	LLA	85.39	50	eP	17	24.50	0.4
		ePcP		16	22.00		BE0	83.09	318	eP	17	13.00	0.7	TIR	85.45	315	eP	17	24.50	0.2
		eS		25	32.00		CLL	83.14	326	iPc	17	13.00	0.5	BHG	85.50	324	iPc	17	25.30	0.8
BHD	72.36	299	ePd	16	11.50	-1.9		1.5s	280.00nm		6.2mb	WTS	85.56	329	ePc	17	24.50	-0.1		
		ePcP		16	25.00				iP	17	22.40	30km		1.0s	33.00nm			5.5mb		
		iS		25	38.00		KKB	83.17	314	iPc	17	14.00	1.2	EVR	85.63	313	eP	17	24.50	-0.9
DAG	72.41	353	iPc	16	12.10	-0.9	PRU	83.21	325	Pc	17	13.50	0.6	VBY	85.63	321	eP	17	26.50	1.4
	1.1s	132.91nm				5.9mb		1.2s	84.20nm		5.7mb	AKSR	85.64	295	eP	17	27.50	2.0		
NUR	72.54	330	iP	16	13.30	-0.6		Z	15s	2.40um		5.7MsZ X	KBA	85.67	323	iPc	17	25.40	-0.1	
	1.0s	80.00nm				5.7mb		N	15s	1.30um				0.8s	14.40nm			5.2mb		
YKA	74.31	26	eP	16	23.20	-1.0		E	16s	1.40um					i	17	38.40	43kmX		
	1.0s	26.00nm				5.2mb									i	17	50.40			
KVT	75.11	309	iP	16	29.10	-0.2	VKA	83.36	323	iPc	17	15.00	1.3			e	20	46.00		
UPP	75.87	332	iP	16	32.50	-0.6		2.0s	403.00nm		6.2mb	LJU	85.69	322	eP	17	25.60	0.2		
QASM	76.07	292	eP	16	35.20	0.2			i	17	24.50	30km			epP	17	36.70	36km		
KAS	76.52	310	iPc	16	39.30	2.0			i	17	31.80		FRB	85.71	9	eP	17	24.00	-1.2	
IAS	77.64	317	eP	16	42.00	-1.3	ORV	83.41	48	ePc	17	13.50	-0.6		0.9s	112.00nm			6.1mb	
NB2	77.68	335	P	16	42.70	-0.6			epP	17	30.40	60kmX	BERA	85.77	315	eP	17	25.60	-0.3	
	1.0s	62.30nm				5.6mb	SOP	83.58	322	iPc	17	18.30	3.5X	PRI	85.84	51	ePc	17	27.10	0.6
MCW	77.78	41	P	16	48.00	3.9X	PLG	83.77	313	eP	17	15.90	-0.1	KVN	85.88	47	P	17	26.70	-0.1
		pP		17	04.50	59kmX	VAY	83.79	314	iPc	17	16.40	0.4			pP	17	44.00	61kmX	
KMSA	77.83	287	eP	16	44.30	-0.5		1.4s	0.16nm		3.0mb X	AGAL	85.90	294	iPd	17	28.50	1.7		
BBTK	77.91	309	iPc	16	45.00	-0.1			i	17	24.30	25km	CEY	85.94	321	eP	17	26.50	-0.2	
PPE	78.10	316	eP	16	46.00	0.2			i	17	32.80				epP	17	36.10	30km		
CLI	78.13	317	ePc	16	46.00	0.0			i	17	42.40		RBL	85.95	322	P	17	26.10	-0.7	
CFR	78.29	315	eP	16	47.00	0.2			i	17	50.50		TPE	85.97	315	eP	17	28.50	1.6	
TLB	78.66	315	ePc	16	49.50	0.6	HLW	83.81	301	eP	17	16.00	-0.3	ANMR	86.00	295	iPd	17	28.50	1.2
VRI	78.81	316	ePc	16	50.50	0.8	BRK	83.82	50	eP	17	16.00	-0.2	FRI	86.00	49	ePc	17	27.00	-0.1
RMW	79.00	41	P	16	51.30	0.4	BKS	83.84	50	ePd	17	16.90	0.6			epP	17	43.90	60kmX	
PNT	79.24	39	eP	16	52.00	-0.1	KAP	83.89	307	eP	17	17.00	0.4	VAM	86.01	309	eP	17	27.50	0.3
ISR	79.29	316	ePc	16	54.50	2.0	SKO	84.12	315	iPc	17	18.70	1.0	FUR	86.03	325	eP	17	27.00	-0.1
GPA	79.34	310	eP	16	52.00	-0.8		Z	20s	0.72um		5.1MsZ	TNS	86.03	327	ePc	17	27.20	0.1	
LON	79.37	42	P	16	52.80	-0.1		N	16s	0.48um			VOY	86.04	322	iPc	17	26.70	-0.6	
MLR	79.47	316	iPc	16	54.00	0.5		E	20s	0.72um					i	17	31.40			
		e		44	03.00										iP	17	38.10	37km		
HRT	79.50	311	eP	16	51.00	-2.7							AGMR	86.07	295	eP	17	30.00	2.3	
GBZT	79.66	311	iPc	16	54.50	0.0							VLI	86.13	310	eP	17	27.00	-0.8	
BMR	79.75	319	ePd	16	44.00	-10.8X							FVI	86.27	323	Pc	17	27.50	-0.8	
YLV	79.82	311	iP	16	55.70	0.3	MOX	84.24	326	iPc	17	19.00	0.9	TOD	86.28	327	eP	17	28.53	0.2
ALT	80.08	309	eP	16	57.50	0.6		1.4s	109.00nm		5.8mb	TRI	86.31	322	iPc	17	28.00	-0.5		
CMP	80.13	317	ePd	16	59.00	2.1		Z	17s	2.50um		5.7MsZ X	KEK	86.44	314	eP	17	28.50	-0.8	
MTUR	80.14	317	eP	16	57.50	0.5		N	16s	1.50um			ITM	86.54	311	iPd	17	29.60	-0.2	
EDM	80.25	34	ePc	16	57.50	0.1		E	16s	1.00um			ABH	86.69	328	eP	17	30.57	0.2	
KRA	80.38	323	iPc	16	59.00	0.9							ENN	86.81	329	iPc	17	30.80	0.0	
	1.0s	93.00nm				5.7mb								1.0s	43.00nm			5.6mb		
Z	21s	1.80um				5.4MsZ							KTD	86.82	327	eP	17	31.14	0.1	
E	16s	1.30um											VLS	86.83	313	eP	17	30.50	-0.7	
		e		17	06.10	23km	KHC	84.24	324	Pd	17	19.00	0.8	MEM	86.89	329	P	17	31.20	0.0
		i		17	09.80			1.5s	214.00nm		6.1mb		TNP	87.01	47	P	17	33.00	0.7	
		eS		27	06.00			Z	16s	2.00um		5.6MsZ X		1.2s	40.32nm			5.5mb		
SPC	80.71	322	iP	17	01.50	1.4									pP	17	49.60	58kmX		
PRNI	80.81	300	eP	17	01.00	0.1							OGA	87.01	324	iPc	17	32.20	0.0	
KHL	80.85	309	eP	17	00.80	-0.1							RUP	87.04	328	eP	17	32.39	0.3	
MSZ	80.91	155	P	17	01.00	0.2	HOF	84.33	326	iPc	17	19.20	0.6	EKA	87.06	336	Pd	17	32.00	0.0
MFT	81.08	312	iP	17	02.70	0.6		1.1s	126.00nm		6.0mb			1.1s	22.70nm			5.3mb		
FHC	81.14	48	e(P)	17	03.50	1.1	FFC	84.34	28	iPc	17	18.50	0.0			e	17	34.00	0.8	
MBH	81.18	299	ePc	17	03.50	0.8		1.2s	62.00nm		5.7mb	SYP	87.20	52	eP	17	32.10	-1.0		
NEW	81.20	39	P	17	02.10	-0.4	MHC	84.52	50	ePc	17	20.20	0.3	CTI	87.22	323	Pc	17	32.10	-1.0
	1.3s	33.02nm				5.2mb			epP	17	37.00									



	87.80	327 P	17 35.62	-0.1		0.9s	9.85nm	5.2mb	MAR 20, 1990 22h 44m 11.21± 0.69s
CDF	87.83	327 P	17 35.81	-0.1	GLA	91.55	50 eP	17 54.00 0.4	60.391 N ± 7.5km 147.702 W ± 6.5km
FEL	87.85	326 P	17 34.99	-1.1			e	18 10.00 55kmX	DEPTH = 33.0km (normal)
DOU	87.89	329 P	17 35.30	-0.7	GRR	91.55	331 eP	17 52.20 -1.1	3.3mb ( 1 obs.)
ZLA	87.93	325 ePc	17 36.20	-0.2		1.2s	59.50nm	5.9mb	SOUTHERN ALASKA ( 2 )
ECH	88.03	326 P	17 36.22	-0.6	MAF	91.64	327 eP	17 52.80 -0.9	ML 3.9 (PMR). Felt (IV) at Whittier.
LDS	88.05	325 ePc	17 36.80	-0.4		1.1s	24.40nm	5.5mb	
VDL	88.06	324 ePc	17 37.40	0.1	LRG	91.75	323 eP	17 53.20 -1.1	
SAL	88.11	323 P	17 37.00	-0.2		0.9s	18.00nm	5.5mb	MID 1.19 144 eP 44 32.00 0.5
RSM	88.17	321 P	17 38.50	1.0	TCF	91.76	328 eP	17 53.70 -0.6	PMS 1.25 314 iPc 44 33.80 1.3
ARV	88.18	320 P	17 38.10	0.5		1.3s	28.90nm	5.5mb	PMR 1.39 331 iPc 44 35.60 1.1
MOF	88.29	326 P	17 37.56	-0.6	LMR	91.76	323 eP	17 52.70 -1.6	PWA 1.65 321 iPc 44 39.40 1.2
ORI	88.30	316 P	17 39.50	1.3		1.2s	26.80nm	5.5mb	TOA 1.87 23 iPd 44 42.40 0.9
BBS	88.38	326 P	17 38.28	-0.3	PYM	91.78	327 P	17 54.12 -0.4	KDC 3.63 225 eP 45 06.50 0.2
BSF	88.47	326 P	17 38.32	-0.7	LPF	91.90	330 eP	17 54.00 -0.9	SVW 3.95 284 eP 45 10.10 -1.0
DUG	88.48	44 P	17 40.40	1.1		1.1s	56.15nm	5.9mb	FBA 4.53 360 eP 45 18.60 -0.6
DUI	88.49	318 P	17 42.00	2.8X	LBL	92.04	326 P	17 55.32 -0.2	TTA 4.71 306 eP 45 20.40 -1.4
SFI	88.51	321 Pc	17 40.20	1.1	LSF	92.10	328 eP	17 55.10 -0.8	HYT 5.04 81 P 45 25.00 -1.7
ROI	88.52	316 P	17 40.90	1.5		1.1s	24.40nm	5.5mb	IMA 6.30 337 eP 45 43.20 -1.2
HAU	88.56	327 eP	17 38.10	-1.3	MFF	92.60	329 eP	17 57.30 -0.8	INK 10.01 32 P 46 35.00 -0.7
	0.9s	26.20nm				1.1s	63.50nm	6.0mb	YKA 15.86 68 eP 47 54.70 1.4
SBB	88.57	51 eP	17 40.00	0.3	RJF	92.81	327 eP	17 58.50 -0.7	0.8s 1.80nm 3.3mb
		e	21 07.00			1.0s	28.00nm	5.6mb	S.D. = 1.2 on 13 of 13 obs.
CSI	88.57	316 P	17 40.50	0.9	CAF	92.83	327 eP	17 58.60 -0.7	
VITF	88.59	327 P	17 38.91	-0.5		1.0s	20.00nm	5.5mb	MAR 20, 1990 23h 19m 09.86± 0.67s
PGD	88.61	321 P	17 41.00	1.1	GOL	93.15	40 P	18 01.70 0.5	42.651 N ± 5.5km 16.159 E ± 8.6km
ASS	88.61	320 Pc	17 40.60	0.8		1.3s	36.46nm	5.6mb	DEPTH = 10.0km (geophysicist)
TDS	88.61	316 Pc	17 40.30	0.5			pP	18 19.00 61kmx	ADRIATIC SEA (382)
TMA	88.63	324 ePc	17 39.30	-0.6	LPO	93.43	327 eP	18 01.30 -0.7	
SGO	88.68	317 P	17 40.00	0.0		1.0s	10.00nm	5.2mb	HVAR 0.57 22 iPg 19 22.00 0.6
MWC	88.68	51 eP	17 40.00	-0.4	LFF	93.45	327 eP	18 01.40 -0.7	iSg 19 31.50
MMN	88.68	316 P	17 38.40	-1.6		1.0s	24.00nm	5.6mb	DUI 1.61 233 P 19 39.70 1.3
BW06	88.75	40 P	17 40.60	-0.1	ANMO	95.72	44 P	18 17.80 4.8X	eSg 20 01.30
	1.2s	12.33nm				1.6s	29.17nm	5.5mb	BAI 1.62 161 P 19 40.00 1.5
		pP	17 57.40	59kmX	ALO	95.72	44 eP	18 13.00 0.0	BRT 1.94 156 P 19 40.90 -2.2
LOMF	88.79	326 P	17 39.69	-0.9		1.5s	22.22nm	5.4mb	SDI 1.98 242 P 19 43.40 -0.4
MGR	88.79	316 P	17 40.00	-0.6	Z	18s	0.34um	4.9MsZ	SGO 2.19 197 P 19 47.00 0.3
SDI	88.83	318 P	17 40.50	-0.3	TOL	99.60	327 eP	18 30.50 0.3	BLY 2.22 19 eP 20 22.50 35.2X
VAI	88.84	324 Pc	17 39.60	-1.1			ePS	31 35.00	ARV 2.50 291 P 19 50.60 -0.7
AZI	88.87	319 P	17 41.00	0.1			eSS	37 26.00	MGR 2.55 190 P 19 51.90 -0.1
GSC	88.89	50 eP	17 42.00	0.7	BCAO	107.63	286 ePKPd	23 14.60 -0.1	ASS 2.61 280 P 19 53.00 0.2
		e	17 58.00	56kmX		0.5s	5.00nm		VBY 2.93 347 eP 20 04.50 7.3X
		e	21 11.00		SLR	113.12	253 iPKPd	23 24.50 -0.4	eSn 20 48.50
FIR	88.93	321 eP	17 44.00	2.9X	BFS	114.80	252 ePKP	23 25.50 -2.6	PTJ 3.25 358 eP 20 02.40 0.4
MME	88.95	322 Pc	17 42.60	1.0	LKO	123.37	307 PKP	23 43.74 -0.9	CEY 3.33 339 eP 20 45.20 42.2X
CZI	89.01	315 P	17 41.60	0.0		1.0s	32.50nm		eSn 21 00.40
BDI	89.10	322 P	17 41.50	-0.6	KIC	124.95	303 PKP	23 47.36 -0.3	TRI 3.51 331 eP 20 01.90 -3.6X
MMK	89.12	325 ePc	17 42.40	0.0		1.0s	36.50nm		VOY 3.75 335 e(Pn) 20 08.20 -0.9
BOB	89.24	323 P	17 42.50	-0.2	TIC	124.97	304 PKP	23 47.42 -0.3	eSn 21 05.80
DAU	89.28	43 P	17 43.90	0.6		1.0s	21.00nm		S.D. = 1.2 on 11 of 15 obs.
		pP	18 00.50	58kmX	LIC	125.26	303 PKP	23 47.92 -0.4	& MAR 20, 1990 23h 54m 37.86s
						1.0s	42.50nm		63.459 N 151.175 W
PII	89.36	322 P	17 42.50	-0.7	CAI	154.80	333 ePKP	24 45.60 5.9X	DEPTH = 1.8km
DIX	89.38	325 ePc	17 43.60	-0.1	ZOBO	157.61	58 PKP	24 44.00 -0.1	CENTRAL ALASKA ( 1 )
SOI	89.76	315 Pc	17 45.70	0.5	Z	22s	0.61um	5.4MsZ	<AGS-P>.
MSU	89.92	45 P	17 47.30	1.0			LR	12 35.00	KTH 0.15 50 iP 54 40.70 -0.1
CKI	90.08	323 P	17 45.50	-1.1	LPB	157.79	59 PKP	24 46.00 1.9	HUR 0.85 124 eP 54 54.52 -0.3
TPC	90.10	50 eP	17 46.00	-0.9			LR	12 32.00	eS 55 05.50
LPL	90.12	325 eP	17 45.80	-1.2	BAO	166.20	358 ePKP	24 54.30 2.3	MCK 1.04 74 eP 54 57.47 -0.8
	1.1s	15.85nm					e	25 10.10	RND 1.05 92 iP 54 57.70 -0.7
LPG	90.12	325 eP	17 45.90	-1.2			e	25 53.50	eS 55 12.19
	1.1s	22.00nm			S.D. = 0.9 on 326 of 340 obs.				CUT 1.14 158 iP 54 59.87 0.0
LOR	90.27	327 eP	17 46.60	-0.8					SKT 1.49 186 eP 55 04.20 -1.6
	1.2s	26.80nm							WRH 1.70 52 eP 55 08.85 0.2
LBF	90.42	327 eP	17 47.10	-1.1					eS 55 33.48
	1.1s	26.85nm			MAR 20, 1990 22h 28m 07.39± 0.87s				GH0 1.99 147 eP 55 12.43 -0.5
BNI	90.47	324 P	17 46.00	-2.6	43.439 N ± 5.4km 5.471 E ± 5.6km				eS 55 39.48
BAR	90.52	52 eP	17 49.00	0.1	DEPTH = 5.0km (geophysicist)				SUA 2.01 174 eP 55 13.35 0.0
RSON	90.56	27 P	17 48.30	-0.4	NEAR SOUTH COAST OF FRANCE (379)				eS 55 40.37
SSF	90.58	327 eP	17 48.20	-0.7	MD 2.5 (STR).				HDA 2.09 61 eP 55 16.50 2.1
	1.1s	25.65nm							eS 55 44.53
GRC	90.61	328 P	17 49.12	0.2	PUYF	0.19	61 Pg	28 10.87 -0.5	PLRM 2.10 152 iP 55 14.27 -0.2
SMF	90.73	327 eP	17 48.00	-1.5	TREF	0.20	341 Pg	28 10.94 -0.5	SML 2.11 140 eP 55 13.95 -0.8
	1.1s	45.20nm			BERF	0.20	128 Pg	28 11.85 0.3	CRP 2.25 192 eP 55 16.20 -0.6
RSSD	90.84	36 P	17 50.60	0.2	PRAF	0.43	329 Pg	28 16.05 0.1	
AVF	90.85	327 eP	17 48.70	-1.4	VILF	0.45	23 Pg	28 17.11 0.7	GLM 2.26 45 eP 55 20.55 3.7
	1.2s	50.60nm			TAVF	0.46	67 Pg	28 16.28 -0.4	eS 55 47.92
SBF	90.91	323 eP	17 48.50	-2.0	GANF	0.64	29 Pg	28 20.48 0.2	SPU 2.32 191 eP 55 18.90 1.1
	0.8s	16.10nm			MVIF	1.30	69 Pn	28 32.44 0.4	PMS 2.35 161 eP 55 18.13 0.0
PGF	90.98	321 eP	17 49.70	-1.2	REVf	1.41	77 Pn	28 33.60 -0.2	DDM 2.40 80 eP 55 22.75 3.9
	1.1s	26.85nm			TOUF	1.41	65 Pn	28 33.87 -0.1	KNK 2.41 147 eP 55 18.28 -0.8
LDF	91.08	330 eP	17 49.60	-1.5	AURF	1.42	71 Pn	28 34.23 0.3	NCA 2.49 124 eP 55 19.42 -0.7
	1.1s	31.75nm					Sg	28 54.49	PAX 2.63 98 eP 55 22.55 0.4
FLN	91.11	331 eP	17 49.70	-1.5	AUTN	1.52	68 Pn	28 35.44 -0.1	eS 55 58.48
	1.0s	18.00nm					Sg	28 57.67	TOA 2.67 118 iP 55 22.73 0.0
PLDF	91.32	327 P	17 52.24	-0.1	SAOF	1.61	69 Pn	28 36.26 -0.3	
AGO	91.50	327 P	17 52.91	-0.2	PGF	2.74	108 Pn	28 52.91 0.0	
FRF	91.53	323 eP	17 51.50	-1.8					S.D. = 0.4 on 14 of 14 obs.



20d 23h

RD	2.95	192	eP	55	27.82	1.1
SLKM	3.00	171	eP	55	28.25	0.9
KLU	3.14	127	iP	55	29.50	0.2
			eS	56	09.02	
GLI	3.22	142	eP	55	30.67	0.2
GLB	3.97	117	iP	55	41.48	0.2
26 obs. associated						

% MAR 21, 1990 00h 00m 55.65±0.60s  
42.700 N ± 4.9km 19.004 E ± 5.5km  
DEPTH = 10.0km (geophysicist)  
YUGOSLAVIA (383)  
ML 2.0 (TTG).

NKY	0.11	358	ePg	00	59.50	0.9
			eSg	01	01.50	
TTG	0.33	145	ePg	01	02.90	0.4
			eSg	01	08.00	
BRY	0.39	301	ePg	01	03.50	-0.3
			eSg	01	09.00	
BDV	0.44	197	ePg	01	04.50	0.0
			eSg	01	09.70	
HCY	0.45	236	ePg	01	04.70	-0.1
			eSg	01	10.00	
PLE	0.69	24	ePg	01	09.00	-0.4
			eSg	01	19.20	
PVY	0.72	98	ePg	01	09.50	-0.5
			eSg	01	21.00	
S.D. = 0.6 on 7 of 7 obs.						

? MAR 21, 1990 01h 27m 34.60±4.27s  
44.320 N ±20.8km 6.660 E ±26.6km  
DEPTH = 10.0km (geophysicist)  
FRANCE (538)  
ML 2.1 (GEN).

PZZ	0.37	60	P	27	42.16	0.0
			S	27	46.78	
STV	0.48	99	P	27	43.90	-0.5
			S	27	50.06	
ENR	0.55	99	P	27	46.26	0.3
			S	27	51.49	
RRL	0.61	8	P	27	46.88	-0.1
			S	27	55.29	
S.D. = 0.6 on 4 of 4 obs.						

MAR 21, 1990 01h 29m 49.72±0.19s  
44.490 N ± 1.5km 7.098 E ± 2.2km  
DEPTH = 10.0km (geophysicist)  
NORTHERN ITALY (545)  
ML 3.0 (GEN), 2.7 (LDG).

PZZ	0.01	10	P	29	51.69	-0.1
			S	29	53.46	
DOI	0.11	83	Pc	29	52.80	0.2
			eSg	29	54.70	
FOUF	0.23	280	iPg	29	54.45	-0.2
			iSg	29	57.45	
STV	0.29	146	P	29	55.82	-0.1
			S	29	59.61	
ENR	0.35	139	P	29	56.97	0.0
			S	30	01.46	
RRL	0.48	333	P	29	59.33	-0.3
			S	30	06.53	
TOUF	0.49	167	Pg	29	59.48	-0.2
AUTN	0.55	154	Pg	30	00.63	-0.2
			Sg	30	08.09	
ROB	0.59	109	P	30	01.61	0.0
			S	30	10.38	
MVIF	0.60	176	Pg	30	01.65	-0.2
			Sg	30	09.86	
SAOF	0.60	147	Pg	30	01.69	-0.2
AURF	0.62	165	Pg	30	02.21	-0.2
			Sg	30	10.77	
BNI	0.64	332	Pc	30	02.00	-0.6
			eSg	30	10.30	
RSP	0.67	10	P	30	02.84	-0.3
			S	30	12.38	
SBF	0.67	159	Pg	30	02.80	-0.3
			Sg	30	12.90	
CALN	0.75	192	Pg	30	04.60	0.0
REV	0.77	165	Pg	30	05.36	0.5
IMI	0.81	135	P	30	05.59	0.1
			S	30	15.92	
FIN	0.84	109	P	30	06.12	0.1
			S	30	17.61	
CKI	0.85	94	P	30	06.40	0.3

LSD	0.97	2	P	30	08.25	-0.1
			S	30	20.84	
FRF	0.98	199	Pg	30	08.30	-0.1
			Sg	30	21.30	
LPG	1.04	346	Pg	30	09.80	0.3
			Sg	30	23.60	
PCP	1.04	87	P	30	09.74	0.4
			S	30	23.45	
LPL	1.06	346	Pg	30	10.10	0.3
			Sg	30	24.40	
LRG	1.16	207	Pg	30	11.60	0.2
LMR	1.23	200	Pg	30	12.70	0.1
			Sg	30	28.40	
ORX	1.30	28	P	30	13.30	-0.6
			S	30	28.99	
PGF	2.38	144	Pn	30	29.80	0.3
BGF	3.63	306	Pn	30	48.20	1.0
S.D. = 0.3 on 30 of 30 obs.						

? MAR 21, 1990 01h 35m 44.19±1.46s  
6.736 S ±20.5km 146.806 E ±18.1km  
DEPTH = 33.0km (normal)  
3.9mb (2 obs.)

EAST PAPUA NEW GUINEA REGION (207)

LAT	0.21	67	iPd	35	51.00	0.1
			eS	36	02.00	
PMG	2.68	173	eP	36	26.00	0.1
WB5	17.79	222	eP	39	50.80	-0.3
WRA	17.86	221	Pc	39	53.20	1.3
			0.6s	2.30nm	3.5mb	
ASPA	20.91	215	eP	40	25.20	-1.3
			0.5s	6.00nm	4.2mb	
S.D. = 1.3 on 5 of 5 obs.						

\* MAR 21, 1990 02h 12m 26.17±0.35s  
19.625 S ±11.8km 175.469 W ±11.6km  
DEPTH = 33.0km (normal)  
4.8mb (7 obs.) 5.2msz (2 obs.)

TONGA ISLANDS (173)

MBU	6.12	295	eP	13	28.80	-27.9X
			eS	14	20.20	
DZM	17.08	259	iPc	16	23.90	-0.3
MTW	22.81	198	P	17	35.10	7.9X
CAW	22.89	199	P	17	28.50	0.5
WDW	23.06	199	Pd	17	28.50	-1.1
MRW	23.11	199	P	17	30.40	0.3
ASPA	47.04	256	eP	20	52.70	-4.0X
			1.0s	41.00nm	5.4mb	
			Z	19s	3.43um	5.3msz
					LR	39
					eP	20
					P	20
					1.2s	12.40nm
					5.12	307
					eP	21
					e(P)	24
					6.36	46
					eP	24
					76.48	46
					eP	24
					76.56	48
					eP	24
					76.80	47
					eP	24
					76.81	46
					eP	24
					76.90	46
					eP	24
					77.02	43
					eP	24
					77.04	44
					eP	24
					77.22	42
					ePc	24
					77.50	38
					ePc	24
					77.79	47
					eP	24
					77.90	39
					eP	24
					77.94	46
					eP	24
					78.06	48
					eP	24
					79.26	43
					eP	24
					1.0s	5.00nm
					79.26	42
					eP	24
					84.62	33
					eP	24
					84.84	46
					eP	24
					85.01	50
					eP	25
					1.2s	8.98nm
					Z	18s
					0.64um	5.1msz
					86.54	39
					eP	25
					86.71	42
					eP	25
					1.0s	5.00nm
					86.90	11
					iP	25
					1.0s	25.00nm
					90.10	32
					eP	25
					91.09	296
					eP	25

Z	24s	0.70um	5.0mszX
		eS	36
		eP	25
YKA	94.74	24	38.70
	0.9s	0.60nm	4.0mb
MAIO	129.34	301	41.00
		ePKP	31
KSP	147.49	346	05.20
		ePKP	32
SPC	147.92	340	02.00
		ePKP	32
BBTK	148.48	316	08.00
		ePKP	32
MOX	148.54	351	16.00
		e(PKP)	32
PRU	148.67	348	09.00
		ePKP	32
		e	32
MLR	148.71	330	08.00
		ePKP	32
KHC	149.68	348	13.00
		ePKP	32
		e	32
SRO	149.73	341	15.60
		ePKP	32
		e	32
ZST	149.73	343	08.50
		ePKP	32
		e	32
FLN	150.65	7	17.20
		ePKP	32
		1.1s	19.55nm
LDF	150.86	6	17.80
		ePKP	32
		1.1s	17.10nm
GRR	150.98	7	18.30
		ePKP	32
		0.9s	16.40nm
CDF	151.20	356	18.50
		ePKP	32
LPF	151.30	8	19.30
		ePKP	32
		1.2s	29.75nm
KBA	151.68	347	14.00
		i(PKP)	32
		2.2s	55.00nm
		i	32
		i	32
RBL	152.24	347	21.00
		PKP	32
FVI	152.26	348	22.50
		PKP	32
LJU	152.		



RTLL	2.73	74	ePc	38 08.10	0.2
CFA	2.86	81	e(P)	38 13.00	3.4X
S.D. = 0.9 on 8 of 9 obs.					
% MAR 21, 1990 04h 13m 31.13±1.34s					
38.720 N ±13.5km 28.965 E ±13.4km					
DEPTH = 10.0km (geophysicist)					
TURKEY (366)					
KHL	0.59	132	iPg	13 42.90	-0.2
			iSg	13 51.90	
DST	0.92	344	iPg	13 47.40	-1.4
			eSg	13 59.00	
ALT	0.95	69	ePg	13 49.60	0.2
KCT	1.60	343	iPn	14 00.30	0.8
BNT	1.82	334	iPn	14 03.30	0.5
EDC	1.83	333	iPn	14 03.00	0.1
YLV	1.87	10	iPn	14 05.80	2.3X
S.D. = 1.0 on 6 of 7 obs.					
% MAR 21, 1990 06h 08m 16.24±1.78s					
33.986 S ±16.2km 71.397 W ±10.0km					
DEPTH = 33.0km (normol)					
NEAR COAST OF CENTRAL CHILE (135)					
LNV	0.03	339	iPd	08 22.10	0.4
TACH	0.51	49	iPd	08 27.50	0.5
			iS	08 37.50	
LCCH	0.53	344	iPd	08 26.90	-0.4
			iS	08 37.00	
CHCH	0.62	85	iPd	08 28.30	-0.3
			iS	08 39.20	
SAN	0.81	49	iPd	08 31.60	0.3
			iS	08 45.00	
PCH	0.82	64	iP	08 31.20	-0.3
			iS	08 44.50	
ROCH	1.06	18	iP	08 35.00	-0.1
			iS	08 51.50	
FCH	1.13	55	iPd	08 36.00	-0.1
			iS	08 53.00	
S.D. = 0.4 on 8 of 8 obs.					
MAR 21, 1990 06h 20m 30.45±0.57s					
42.445 N ±5.5km 19.185 E ±5.6km					
DEPTH = 14.0 ± 5.6 km					
YUGOSLAVIA (383)					
ML 2.7 (TTG).					
TTG	0.06	105	iPg	20 33.70	0.4
			iSg	20 36.30	
NKY	0.39	340	iPg	20 39.00	0.3
			eSg	20 46.20	
ULC	0.48	174	iPg	20 39.50	-0.7
			iSg	20 47.20	
HCY	0.51	271	iPg	20 40.80	0.2
			iSg	20 49.90	
PVY	0.60	75	iPg	20 41.60	-0.7
			iSg	20 50.50	
BRY	0.66	314	ePg	20 43.80	0.5
			eSg	20 55.50	
IVA	0.68	51	iPg	20 43.50	-0.1
			iPgd	20 54.40	
PLE	0.90	10	ePg	20 47.50	0.1
			eSg	21 01.50	
SKO	1.74	105	iPn	21 01.60	1.2
			iSn	21 24.50	
OHR	1.80	137	ePn	21 03.80	2.5
HVAR	2.14	291	i(Pn)	21 12.30	6.1X
BRT	2.16	224	P	21 13.50	7.0X
MGR	3.58	231	P	21 25.50	-1.1
			eSn	22 06.00	
BZS	3.62	28	ePc	21 27.50	0.2
VOY	5.23	315	e(Pn)	21 50.30	0.2
			eSn	22 52.40	
S.D. = 1.1 on 13 of 15 obs.					
& MAR 21, 1990 06h 24m 33.55s					
63.008 N 149.365 W					
DEPTH = 79.8km					
CENTRAL ALASKA (1)					
<AGS-P>.					
HUR	0.13	256	iP	24 45.10	1.6
			eS	24 53.79	
RND	0.46	30	iP	24 46.93	-0.3
			eS	24 57.22	
CUT	0.74	215	iP	24 49.72	0.0
S.D. = 1.5 on 4 of 4 obs.					
MCK	0.75	15	iP	24 49.90	-0.1
			eS	25 01.83	
KTH	0.89	309	iP	24 51.72	0.1
			eS	25 06.08	
GHO	1.26	170	iP	24 56.15	0.0
			eS	25 15.09	
SML	1.30	158	eP	24 56.33	-0.3
PWA	1.38	190	eP	24 57.97	0.3
PLRM	1.43	175	eP	24 58.56	0.3
			eS	25 17.55	
SKT	1.44	225	iP	24 58.20	-0.3
NCA	1.56	130	eP	25 00.28	0.2
			eS	25 23.17	
SUA	1.68	203	eP	25 02.25	0.5
			eS	25 23.95	
TOA	1.73	120	eP	25 03.28	0.8
			eS	25 26.08	
DDM	1.76	62	eP	25 03.68	0.9
HDA	1.77	36	eP	25 02.02	-0.8
			eS	25 23.57	
PMS	1.77	183	eP	25 03.40	0.5
			eS	25 26.20	
PAX	1.78	89	eP	25 03.34	0.3
			eS	25 25.03	
CCB	1.78	22	iP	25 02.08	-1.0
			eS	25 22.61	
FBA	2.02	19	iP	25 05.47	-0.8
			eS	25 28.18	
GLM	2.17	23	iP	25 07.44	-0.9
KLU	2.22	132	eP	25 08.17	-0.9
			eS	25 36.40	
SPU	2.23	216	eP	25 09.80	0.7
			eS	25 38.03	
VZW	2.36	145	eP	25 10.25	-0.8
GLI	2.39	152	eP	25 10.31	-1.0
			eS	25 40.06	
SLKM	2.54	190	eP	25 14.32	0.8
RDT	2.84	212	eP	25 18.13	0.5
SEW	2.92	181	eP	25 18.81	0.3
GLB	3.04	119	eP	25 19.67	-0.7
			eS	25 55.57	
28 obs. associated					
% MAR 21, 1990 06h 54m 26.26±3.71s					
17.103 N ±25.8km 61.615 W ±24.3km					
DEPTH = 10.0km (geophysicist)					
LEEWARD ISLANDS (92)					
ML 3.2 (FDF).					
ANG	0.21	284	eP	54 30.76	-0.1
BPA	0.24	256	iP	54 31.62	0.3
			eS	54 37.79	
SEG	0.70	171	eP	54 41.22	1.1
			S	54 57.20	
DOG	1.06	180	eP	54 46.07	-0.3
PAG	1.07	183	eP	54 45.90	-0.5
			S	55 04.00	
BBL	1.58	175	eP	54 53.90	-0.4
S.D. = 0.8 on 6 of 6 obs.					
? MAR 21, 1990 08h 40m 25.49±6.34s					
38.959 N ±42.2km 23.868 E ±36.8km					
DEPTH = 10.0km (geophysicist)					
GREECE (364)					
ML 2.1 (THE).					
PAIG	0.98	351	ePg	40 43.90	-0.1
AGG	1.20	273	ePb	40 47.80	-0.1
			eSb	41 02.20	
OUR	1.38	4	ePb	40 50.70	0.0
LIT	1.56	317	ePbc	40 53.50	0.2
			eSb	41 09.20	
S.D. = 0.2 on 4 of 4 obs.					
? MAR 21, 1990 09h 03m 11.88±1.00s					
39.276 N ±13.8km 29.313 E ±12.9km					
DEPTH = 10.0km (geophysicist)					
TURKEY (366)					
DST	0.62	302	iPg	03 23.50	-1.0
			eSg	03 33.50	
ALT	0.66	109	ePg	03 24.80	-0.3
			eSg	03 35.30	
KHL	0.97	170	ePn	03 30.50	0.2
BNT	1.52	316	iPn	03 40.20	1.1
S.D. = 1.5 on 4 of 4 obs.					
MAR 21, 1990 09h 09m 46.27±0.49s					
37.928 N ±4.5km 27.272 E ±5.9km					
DEPTH = 10.0km (geophysicist)					
TURKEY (366)					
MD 3.6 (ATH).					
SMG	0.41	238	iPbc	09 56.00	1.4
IZM	0.47	359	iPn	09 56.00	0.2
PRK	1.53	330	ePb	10 10.15	-3.5X
APE	1.63	239	ePn	10 14.30	-0.8
KHL	1.82	77	iPn	10 17.50	-0.4
ARG	1.84	158	ePb	10 20.00	1.9
DST	1.98	32	iPn	10 24.50	4.2X
KAP	2.37	182	ePn	10 25.50	-0.4
ELL	2.41	118	ePn	10 26.60	0.1
EDC	2.46	11	ePn	10 30.00	3.0X
BNT	2.48	12	iPn	10 29.20	1.9
ALT	2.50	62	ePn	10 31.00	3.3X
KSL	2.58	134	ePn	10 28.00	-0.8
BCK	2.67	99	iPn	10 28.50	-1.7
MFT	2.85	0	ePn	10 32.00	-0.8
NPS	2.98	207	ePb	10 37.00	2.6X
YLV	3.10	31	ePn	10 37.00	0.8
GBZT	3.32	30	ePn	10 49.00	9.8X
CTT	3.34	15	ePn	10 46.00	6.5X
HRT	3.43	32	ePn	10 41.00	0.1
RDO	3.48	338	ePn	10 40.80	-0.7
VAM	3.53	225	ePn	10 42.00	-0.2
DMK	3.91	5	ePn	10 50.00	2.4
KDZ	3.98	340	eP	10 47.00	-1.7
ITM	4.31	262	ePn	10 50.00	-3.4X
MMB	4.56	324	eP	10 55.00	-2.0
BBTK	4.69	64	eP	11 16.00	17.1X
			eS	12 16.00	
VAY	4.97	314	eP	11 07.00	4.4X
KKB	5.08	322	eP	11 05.00	0.7
MLR	7.62	353	eP	11 40.00	-0.1
S.D. = 1.3 on 20 of 30 obs.					
? MAR 21, 1990 09h 15m 22.39±0.87s					
42.714 N ±11.7km 19.110 E ±9.8km					
DEPTH = 10.0km (geophysicist)					
YUGOSLAVIA (383)					
MD 2.0 (TTG).					
NKY	0.13	320	iPg	15 25.50	-0.1
			eSg	15 28.50	
TTG	0.31	159	ePg	15 28.70	0.0
			eSg	15 34.40	
BRY	0.46	294	ePg	15 31.80	0.1
			eSg	15 39.90	
PVY	0.65	100	ePg	15 35.50	0.0
			eSg	15 46.50	
S.D. = 0.2 on 4 of 4 obs.					
? MAR 21, 1990 09h 16m 03.12±1.81s					
5.329 S ±21.3km 151.904 E ±31.3km					
DEPTH = 59.5 ±12.8 km					
4.3mb (3 obs.)					
NEW BRITAIN REGION (192)					
RAB	1.16	13	iPd	16 23.60	0.1
PMG	6.21	229	eP	17 34.00	-0.4
			eS	18 44.00	
WB5	22.37	228	eP	20 58.00	0.4
WRA	22.43	228	Pd	20 59.10	0.9
	0.6s	3.70nm		4.0mb	
KNA	24.96	244	eP	21 23.00	0.3
ASPA	25.16	222	eP	21 23.70	-0.9
	0.7s	16.00nm		4.6mb	
GUN	71.63	302	P	27 20.60	-0.5
MBC	94.84	14	eP	29 19.50	0.3
YKA	96.31	28	eP	29 25.80	-0.3
	0.6s	0.70nm		4.4mb	
S.D. = 0.7 on 9 of 9 obs.					
& MAR 21, 1990 09h 39m 35.89s					
59.371 N 148.122 W					
DEPTH = 12.2km					
2.8mb (1 obs.)					
KENAI PENINSULA, ALASKA (14)					
<AGS-P>. ML 3.0 (PMR).					
SEW	1.00	318	iP	39 53.24	-1.3
			eS	40 06.39	
SLKM	1.55	318	eP	40 01.62	-1.8



21d 09h

CNPM	1.60	277	eS	40	21.95	
			eP	40	01.60	-2.4
			eS	40	20.50	
GLI	1.60	18	iP	40	01.94	-2.1
NNL	1.74	294	eP	40	05.62	-0.5
			eS	40	29.16	
VZW	1.87	24	iP	40	06.05	-1.9
PMS	2.01	340	eP	40	08.30	-1.7
NKA	2.08	313	eP	40	10.73	-0.2
PLRM	2.28	348	eP	40	11.89	-2.0
PMR	2.28	348	eP	40	12.90	-1.0
KLU	2.39	26	eP	40	13.65	-1.9
GHO	2.44	351	eP	40	14.78	-1.4
PWA	2.45	340	eP	40	15.52	-0.7
SML	2.45	358	eP	40	15.04	-1.2
RDT	2.47	301	eP	40	13.91	-2.7
SUA	2.47	329	eP	40	15.34	-1.3
SPU	2.67	315	eP	40	17.53	-2.0
NCA	2.71	13	eP	40	19.18	-0.8
CRP	2.76	315	eP	40	19.91	-1.0
KDC	2.81	236	eP	40	23.00	1.7
CDD	2.88	264	eP	40	20.39	-2.0
TOA	2.91	18	eP	40	21.90	-0.9
GLB	2.98	44	eP	40	21.39	-2.5
TGL	2.99	60	eP	40	21.19	-2.9
SKT	3.11	329	eP	40	24.41	-1.2
PDB	3.12	280	eP	40	23.38	-2.3
PAX	3.83	18	eP	40	34.26	-1.8
PCA	4.05	76	eP	40	36.31	-2.7
SVW	4.12	298	eP	40	47.10	7.1
TTA	5.23	316	e(P)	40	57.30	1.6
FBA	5.55	1	eP	40	57.70	-2.5
IMA	7.19	342	eP	41	19.70	-3.7
YKA	16.47	65	eP	43	36.20	8.3
	0.9s			0.70nm		2.8mb
				33 obs. associated		

? MAR 21, 1990 09h 46m 40.95±11.32s  
 19.473 N ±84.8km 66.159 W ±19.8km  
 DEPTH = 10.0km (geophysicist)  
 PUERTO RICO REGION (90)

LPR	1.19	167	P	47	03.30	0.1
LRS	1.34	209	P	47	05.50	-0.2
SJG	1.35	180	iP	47	05.90	0.0
CPD	1.44	171	P	47	06.90	-0.3
PORP	1.48	198	P	47	08.00	0.3
	S.D. = 0.3	on	5	of	5	obs.

\* MAR 21, 1990 09h 52m 25.74±0.90s  
 37.850 N ±9.9km 27.143 E ±8.7km  
 DEPTH = 10.0km (geophysicist)  
 TURKEY (366)  
 MD 3.3 (ATH).

SMG	0.28	240	iPg	52	30.40	-1.2
Izm	0.55	10	iPg	52	35.50	-1.5
			iSg	52	44.00	
APE	1.50	239	ePn	52	53.50	0.7
PRK	1.55	334	ePb	52	55.20	1.8
			eSb	53	14.60	
ARG	1.81	154	ePb	53	01.00	3.8X
KHL	1.94	75	ePn	52	59.00	-0.1
DST	2.10	33	ePn	53	05.50	4.0X
ELL	2.46	116	ePn	53	07.00	0.3
KSL	2.61	131	ePn	53	14.40	5.8X
ALT	2.62	62	ePn	53	12.00	3.1X
YLV	3.22	32	ePn	53	22.00	4.6X
	S.D. = 1.6	on	6	of	11	obs.

? MAR 21, 1990 09h 56m 40.06±0.95s  
 37.066 N ±10.9km 43.759 E ±10.2km  
 DEPTH = 10.0km (geophysicist)  
 TURKEY (366)

MSL	0.84	216	ePg	56	56.00	-0.3
			iSg	57	09.80	
SLY	2.03	136	ePnc	57	15.00	0.4
			iP*	57	18.00	
			iPg	57	20.50	
			iSn	57	42.50	
			iS*	57	44.00	
			iSg	57	48.50	
TAB	2.27	63	eP	57	18.00	-0.4
BHD	3.82	172	ePn	57	59.00	18.9X
			eSn	58	52.00	
KER	3.84	134	eP	57	50.00	9.4X

CLL 26.02 313 e(P) 02 15.00 0.3  
 S.D. = 0.6 on 4 of 6 obs.

\* MAR 21, 1990 10h 14m 45.25±1.22s  
 39.401 N ±17.1km 143.502 E ±21.7km  
 DEPTH = 33.0km (normol)  
 4.2mb (1 obs.)  
 OFF EAST COAST OF HONSHU, JAPAN (229)

KAKJ	4.14	221	P	15	46.80	-0.9
			eS	16	33.00	
NIJ	4.14	240	eP	15	47.70	-0.1
CHJJ	4.89	228	P	15	58.00	-0.5
			eS	16	52.40	
MAT	5.06	237	iPc	16	01.30	0.4
	0.8s		61.94nm			5.1mb X
			(S)	17	06.00	
MTMJ	5.30	240	P	16	04.70	0.4
IIDJ	5.92	230	P	16	14.10	1.1
GUN	48.58	275	P	23	27.60	-0.3
KKN	49.10	275	P	23	31.60	-0.2
INK	51.53	28	eP	23	50.00	0.5
NB2	72.63	338	P	26	10.60	-0.4
	0.7s		1.70nm			4.2mb
	S.D. = 0.7	on	10	of	10	obs.

? MAR 21, 1990 10h 34m 51.71±5.47s  
 37.053 S ±51.5km 176.902 E ±15.1km  
 DEPTH = 33.0km (normol)  
 NORTH ISLAND, NEW ZEALAND (159)

HBZ	1.24	116	eP	35	13.40	0.6
PUZ	1.48	134	eP	35	15.20	-1.1
NOZ	1.80	150	eP	35	21.40	0.5
PGZ	3.59	188	P	35	49.90	3.5X
MNG	3.73	197	eP	35	48.50	0.2
CAW	4.29	199	eP	35	56.70	0.3
TCW	4.63	205	eP	36	02.40	1.3
THZ	5.63	212	eP	36	14.90	-0.4
KHZ	5.95	205	eP	36	18.50	-1.3
	S.D. = 1.1	on	8	of	9	obs.

% MAR 21, 1990 10h 48m 31.58±0.84s  
 38.612 N ±7.8km 0.495 W ±8.9km  
 DEPTH = 10.0km (geophysicist)  
 SPAIN (377)  
 mbLg 2.9 (MDD). Felt (III) at  
 Alcoy and Benilloba.

ACU	0.12	147	iPg	48	34.70	0.1
			eSg	48	36.00	
ECHE	1.04	339	ePg	48	51.40	0.1
			eSg	49	05.00	
EVIA	1.57	272	ePn	49	00.00	0.3
			eSn	49	21.00	
EROO	2.32	17	ePn	49	10.20	-0.1
			eSn	49	38.50	
EBAN	2.62	261	ePn	49	14.40	-0.4
TOL	3.04	296	ePg	49	35.00	14.4X
			eSg	50	09.00	
	S.D. = 0.4	on	5	of	6	obs.

? MAR 21, 1990 10h 59m 32.35±3.20s  
 34.397 N ±30.7km 26.924 E ±9.7km  
 DEPTH = 10.0km (geophysicist)  
 CRETE (370)  
 MD 3.6 (ATH).

KAP	1.17	10	ePb	59	53.30	-0.9
			eSb	00	08.20	
NPS	1.38	309	ePb	59	56.00	-1.7
			eSb	00	13.50	
ARG	2.06	28	ePn	00	07.50	0.0
KSL	2.77	51	ePn	00	18.00	0.4
			eSn	00	49.30	
APE	2.90	337	ePb	00	21.20	1.8
ELL	3.38	45	ePn	00	26.00	-0.3
VLI	3.99	307	ePn	00	35.50	0.6
ITM	4.92	306	ePb	00	57.60	9.5X
	S.D. = 1.4	on	7	of	8	obs.

& MAR 21, 1990 11h 38m 15.70s  
 40.352 N 124.502 W  
 DEPTH = 16.0km  
 NEAR COAST OF NORTHERN CALIF. (35)  
 <BRK>. ML 3.4 (BRK).

FHC	0.60	41	iPc	38	27.10	-0.2
			i	38	33.00	
			iS	38	35.00	
WDC	1.51	81	iPc	38	39.80	-2.4
			iS	38	56.20	
			i	38	58.70	
LTCM	1.82	94	eP	38	45.20	-1.5
MIN	2.21	89	eP	38	49.50	-3.0
			eS	39	17.30	
LBFM	2.22	63	eP	38	50.80	-1.8
ORV	2.44	108	eP	38	52.70	-2.8
			eS	39	23.00	
BRK	3.03	144	e(P)	39	01.60	-2.2
PCC	3.29	149	eP	39	05.40	-2.2
MHC	3.74	142	eP	39	11.60	-2.6
ARN	3.79	141	eP	39	12.40	-2.3
GCC	3.85	149	eP	39	12.10	-3.4
CMB	3.95	125	eP	39	15.60	-1.3
PRS	4.71	147	eP	39	25.20	-2.6
KVN	5.11	103	eP	39	30.60	-2.9

14 obs. associated  
 MAR 21, 1990 11h 42m 05.97±0.63s  
 35.954 N ±8.0km 27.280 E ±5.9km  
 DEPTH = 10.0km (geophysicist)  
 DODECANESE ISLANDS (369)  
 MD 3.5 (ATH).

KAP	0.41	192	ePb	42	14.50	0.1
			eSb	42	21.50	
ARG	0.73	69	ePb	42	18.50	-1.9
NPS	1.52	244	ePb	42	33.70	0.4
SMG	1.79	349	ePn	42	38.00	1.0
KSL	1.87	84	ePn	42	38.50	0.2
ELL	2.27	69	ePn	42	45.60	1.5
VAM	2.57	259	ePb	42	53.00	4.7X
BCK	3.05	60	ePn	42	55.20	-0.1
VLI	3.59	284	ePn	43	02.00	-0.8
ITM	4.48	287	ePn	43	15.00	-0.4
YLV	4.89	19	ePn	44	04.10	42.8X
	S.D. = 1.1	on	9	of	11	obs.

% MAR 21, 1990 11h 57m 32.64±0.85s  
 40.625 N ±6.7km 22.504 E ±7.4km  
 DEPTH = 10.0km (geophysicist)  
 GREECE (364)  
 ML 1.7 (THE).

GRG	0.34	347	ePg	57	40.70	1.0
THE	0.35	89	ePg	57	39.70	-0.2
LIT	0.52	181	ePg	57	43.70	0.4
			eSg	57	50.40	
KNT	0.61	29	ePg	57	44.50	-0.5
FNA	0.87	281	ePg	57	48.70	-0.7
	S.D. = 1.0	on	5	of	5	obs.

% MAR 21, 1990 12h 24m 13.79±3.42s  
 41.904 N ±26.6km 14.807 E ±12.6km  
 DEPTH = 10.0km (geophysicist)  
 SOUTHERN ITALY (390)

DUI	0.36	227	Pc	24	21.00	-0.2
			eSg	24	24.30	
SDI	0.77	255	P	24	28.90	0.1
			eSg	24	41.00	
BSS	1.11	180	P	24	34.90	0.3
			eSg	24	48.10	
SGO	1.40	164	P	24	38.70	-0.6
MGR	1.85	162	P	24	46.20	0.3
	S.D. = 0.5	on	5	of	5	obs.

& MAR 21, 1990 12h 24m 33.31s  
 58.544 N 142.697 W  
 DEPTH = 10.0km (geophysicist)  
 GULF OF ALASKA (15)  
 <AGS-P>.

PCA	2.00	38	iP	25	02.53	-5.0
			eS	25	26.24	
MID	2.08	297	eP	25	03.87	-4.8
TGL	2.22	358	iP	25	05.61	-5.2
			eS	25	30.43	
GLB	2.96	350	iP	25	15.67	-5.6
VZW	3.19	324	eP	25	18.82	-5.7
GLI	3.23	318	eP	25	21.39	-3.7
KLU	3.37	333	iP	25	21.35	-5.8
TOA	3.97	336	eP	25	30.48	-5.1



NCA 4.02 331 eP 25 30.65 -5.7  
 SIT 4.22 108 eP 25 32.97 -6.0  
 SLKM 4.31 300 eP 25 33.49 -6.9  
 PMS 4.39 311 iP 25 35.81 -5.7  
 PLRM 4.44 316 eP 25 36.28 -5.9  
 GHO 4.49 319 eP 25 38.20 -4.8  
 14 obs. associated

MAR 21, 1990 13h 25m 02.58±0.73s  
 42.505 N ± 7.6km 24.115 E ± 10.1km  
 DEPTH = 10.0km (geophysicist)

BULGARIA (359)  
 ML 2.9 (THE).

SRS 1.44 196 ePgc 25 27.90 -0.8  
 eSg 25 33.90  
 KNT 1.62 215 ePgc 25 30.80 -0.5  
 VAY 1.65 225 ePn 25 31.50 -0.2  
 RDO 1.72 141 ePb 25 33.00 0.2  
 SOH 1.78 199 ePg 25 32.70 -0.9  
 eSg 25 42.80  
 SKO 2.06 256 ePn 25 39.00 1.4  
 iSg 26 06.00  
 OUR 2.17 183 ePb 25 41.60 2.4  
 PLG 2.19 194 ePb 25 38.40 -1.1  
 PAIG 2.60 187 ePb 25 49.10 3.8X  
 FNA 2.68 231 ePn 25 51.70 5.1X  
 OHR 2.84 242 ePn 26 50.00 61.1X  
 MFT 2.93 125 ePn 25 50.00 -0.1  
 MLR 3.26 23 eP 25 53.00 -1.9  
 NEO 3.27 192 ePg 26 00.70 5.8X  
 TLB 3.53 52 eP 26 06.00 7.5X  
 BZS 3.59 331 ePc 26 06.00 6.6X  
 BRD 3.68 34 eP 26 03.00 2.3  
 VRI 3.85 28 ePc 26 02.50 -0.7  
 S.D. = 1.5 on 12 of 18 obs.

MAR 21, 1990 13h 37m 22.85±0.67s  
 25.194 S ± 9.8km 129.531 E ± 9.0km  
 DEPTH = 10.0km (geophysicist)  
 NORTHERN TERRITORY, AUSTRALIA (591)

ASPA 4.26 70 iPnd 38 29.80 0.5  
 0.5s 71.00nm  
 iPg 38 41.70  
 iS 39 18.60  
 FORR 5.78 192 eP 38 52.00 1.4  
 eS 39 57.00  
 WRA 6.86 41 Pc 39 06.90 0.9  
 0.5s 7.30nm  
 WB5 6.92 41 eP 39 07.70 0.8  
 eS 40 23.90  
 COOL 9.33 231 eP 39 40.00 -0.4  
 0.3s 3.00nm  
 iS 41 20.90  
 KNA 9.42 355 eP 39 42.50 0.9  
 MBL 9.78 292 eP 39 49.30 2.7X  
 0.3s 5.00nm  
 iS 41 34.60  
 MEKA 10.00 260 eP 39 53.10 3.4X  
 eS 41 43.00  
 OIS 10.37 66 eP 39 53.00 -1.7  
 eS 41 42.00  
 MTN 12.37 7 eP 40 20.00 -2.0  
 eS 42 35.00  
 BAL 12.55 242 eP 40 23.30 -1.1  
 eS 42 36.00  
 MRWA 12.69 249 eP 40 25.00 -1.2  
 eS 42 40.00  
 NANU 13.08 279 eP 40 33.40 2.1  
 0.3s 2.00nm  
 eS 42 50.00  
 NWA0 13.22 232 eP 40 33.00 -0.3  
 eS 42 56.00  
 MUN 13.51 237 eP 42 32.00 -5.1X  
 eS 42 59.00  
 S.D. = 1.4 on 12 of 15 obs.

MAR 21, 1990 14h 22m 24.74±0.33s  
 40.081 N ± 3.7km 19.907 E ± 3.3km  
 DEPTH = 10.0km (geophysicist)  
 ALBANIA (391)  
 ML 3.2 (ATH), 3.2 (THE).

SRN 0.21 160 iPg 22 29.10 -0.3  
 KEK 0.38 193 ePg 22 31.80 -0.7  
 eSg 22 40.00

LSK 0.54 82 iPgc 22 31.90 -3.7X  
 KBN 0.88 52 iPg 22 38.50 -3.1X  
 OHR 1.23 33 iPn 22 44.80 -2.9X  
 1.4s 0.74nm

TIR 1.26 359 ePn 22 47.70 -0.5  
 FNA 1.32 57 ePb 22 47.10 -2.1  
 KZN 1.45 80 ePb 22 51.00 0.0  
 LCI 1.52 280 P 22 50.40 -1.5  
 eSg 23 14.50

LACI 1.56 355 iPnd 22 51.90 -0.6  
 PHP 1.66 14 iPnc 22 53.00 -0.9  
 EVR 1.88 128 ePn 22 58.50 1.3  
 SDA 1.96 351 ePn 22 59.70 1.4

PUK 1.96 360 ePn 22 57.90 -0.4  
 VLS 1.97 164 ePg 23 03.50 4.9X  
 LIT 1.98 89 ePnd 22 59.20 0.5  
 KKS 2.03 11 ePn 23 00.50 1.2  
 GRG 2.09 65 ePn 23 01.40 1.1  
 AGG 2.15 119 ePn 23 04.20 3.0X

SKO 2.22 31 iPn 23 02.00 -0.1  
 iS 23 30.00  
 iSg 23 33.70

BCI 2.29 3 ePn 23 03.90 0.9  
 VAY 2.37 58 ePn 23 04.00 -0.3  
 ROI 2.62 260 P 23 17.50 9.6X  
 ORI 2.65 271 P 23 09.00 0.7

NEO 2.67 186 ePg 23 14.50 5.9X  
 PLG 2.72 83 ePn 23 10.00 0.6  
 SOH 2.73 73 ePn 23 09.60 0.1  
 PAIG 2.90 92 ePn 23 11.20 -0.6  
 MMN 3.01 268 P 23 13.40 0.0  
 CZI 3.04 255 P 23 13.50 -0.2

MMB 3.27 61 eP 23 16.00 -1.1  
 ITM 3.30 151 ePn 23 18.50 1.0  
 MGR 3.34 272 P 23 19.60 1.6  
 VTS 3.53 44 eP 23 21.00 0.1  
 SGO 3.55 279 P 23 21.50 0.6  
 eSn 24 07.00

SOI 3.61 237 P 23 20.10 -1.7  
 S.D. = 1.0 on 29 of 36 obs.

& MAR 21, 1990 15h 51m 46.98s  
 63.379 N 151.396 W  
 DEPTH = 11.2km  
 3.2mb (1 obs.)  
 CENTRAL ALASKA (1)  
 <AGS-P>. ML 3.8 (PMR).

KTH 0.28 50 iP 51 52.77 -0.1  
 HUR 0.89 116 eP 52 03.71 -0.3  
 eS 52 16.45  
 CUT 1.11 152 iP 52 07.72 0.1  
 RND 1.15 87 iP 52 08.20 -0.2

eS 52 24.42  
 MCK 1.16 71 eP 52 08.40 -0.1  
 SKT 1.41 183 iP 52 11.98 -0.5  
 eS 52 29.76  
 NEA 1.58 39 eP 52 13.22 -1.7  
 eS 52 36.74

WRH 1.83 52 iP 52 16.93 -1.6  
 eS 52 44.31  
 PWA 1.87 157 eP 52 18.32 -0.8  
 SUA 1.95 171 eP 52 19.84 -0.5  
 GHO 1.98 144 iP 52 20.31 -0.5  
 NCG 2.01 190 eP 52 20.59 -0.8

CCB 2.03 50 iP 52 19.69 -1.7  
 PLRM 2.08 149 eP 52 21.86 -0.3  
 PMR 2.08 149 eP 52 21.90 -0.2  
 SML 2.12 137 iP 52 22.23 -0.6  
 TTA 2.14 260 eP 52 20.40 -2.8

CRP 2.15 190 eP 52 21.23 -2.1  
 FBA 2.20 44 eP 52 22.00 -1.9  
 HDA 2.22 60 iP 52 22.42 -1.8  
 SPU 2.23 188 eP 52 23.71 -0.7  
 PMS 2.31 157 eP 52 25.05 -0.5  
 GLM 2.38 46 iP 52 24.73 -1.9

eS 52 53.84  
 DDM 2.51 78 eP 52 27.46 -0.9  
 NKA 2.65 178 eP 52 32.11 1.8  
 PAX 2.72 96 eP 52 31.81 0.4  
 TOA 2.72 116 eP 52 32.20 0.7

SDG 2.81 105 eP 52 32.98 0.4  
 RDT 2.86 190 eP 52 32.77 -0.5  
 IMA 2.87 341 eP 52 32.00 -1.6  
 SLKM 2.93 169 eP 52 34.03 -0.4

SVW 3.02 223 eP 52 35.70 0.2  
 KLU 3.17 124 eP 52 38.30 0.5  
 GLI 3.22 139 eP 52 38.83 0.4  
 VZW 3.25 134 eP 52 38.84 0.0  
 SEW 3.42 163 eP 52 42.66 1.5  
 PDB 3.84 202 eP 52 45.61 -1.7  
 CNPM 3.87 179 eP 52 47.78 0.1  
 GLB 4.03 115 eP 52 50.59 0.7  
 TGL 4.81 119 eP 53 00.77 -0.3  
 HYT 7.00 105 P 53 32.00 0.0  
 INK 8.82 48 P 53 53.00 -4.1  
 YKA 16.62 76 eP 55 42.00 1.0  
 0.6s 1.20nm 3.2mb  
 43 obs. associated

% MAR 21, 1990 16h 01m 02.05±1.66s  
 40.507 N ± 13.5km 27.493 E ± 14.4km  
 DEPTH = 10.0km (geophysicist)  
 TURKEY (366)

MFT 0.32 330 iPg 01 08.80 0.0  
 iSg 01 12.30  
 EDC 0.33 119 iPg 01 09.00 0.2  
 iSg 01 14.00  
 BNT 0.36 115 iPg 01 09.90 0.4  
 KCT 0.71 111 iPg 01 15.30 -0.7  
 CTT 0.96 48 iPg 01 20.30 0.0  
 S.D. = 0.6 on 5 of 5 obs.

MAR 21, 1990 16h 46m 05.45±0.10s  
 31.092 S ± 4.1km 179.093 W ± 3.0km  
 DEPTH = 144.8km (geophysicist)  
 6.2mb (52 obs.)

KERMADEC ISLANDS REGION (177)  
 mb 6.2 (BRK). Mo=2.0\*10\*\*19 Nm  
 (PPT). Felt on Raoul Island.  
 Felt on North Island, New  
 Zealand from the Bay of Plenty  
 region to Wellington. Two events  
 about 1.8 seconds apart. Depth  
 from broadband displacement  
 seismograms, based on second  
 event.

FAULT PLANE SOLUTION: P-Waves  
 NP1: Strike=320 Dip=80 Slip= 90  
 NP2: 140 10 90  
 Principal Axes:  
 T P1g=55 Azm=230  
 P 35 50

Comment: The focal mechanism is  
 poorly controlled and  
 corresponds to reverse  
 faulting. The preferred fault  
 plane is NP2.

RADIATED ENERGY  
 No. of sta: 6 Focal mech. C  
 Energy 5.2±1.8\*10\*\*13 Nm  
 CENTROID, MOMENT TENSOR (HRV)

Data Used: GDSN  
 L.P.B.: 14S, 35C M.W.: 17S, 37C  
 Centroid Location:  
 Origin Time 16:46:16.9 0.2  
 Lat 30.71S 0.02 Lon 179.38W 0.03  
 Dep 157.3 0.8 Half-duration 7.6  
 Moment Tensor; Scale 10\*\*18 Nm  
 Mrr= 3.07 0.13 Mrt=-1.96 0.14  
 Mtf=-1.11 0.15 Mrt=-5.96 0.09  
 Mrf= 4.75 0.11 Mtf= 2.27 0.14

Principal Axes:  
 T Val= 7.98 P1g=57 Azm=218  
 N 0.78 1 309  
 P -8.76 33 39  
 Best Double Couple: Mo=8.4\*10\*\*18  
 NP1: Strike=131 Dip=12 Slip= 93  
 NP2: 309 78 89

RAO 2.10 29 iP 46 40.00 -1.8  
 S 47 07.00  
 HBZ 6.84 198 P 47 40.20 -4.3X  
 0.3s 2020.00nm 7.0mb  
 PUZ 7.30 197 P 47 45.70 -5.0X  
 S 49 08.40  
 NOZ 7.87 197 P 47 52.60 -5.7X  
 TAZ 7.99 206 eP 47 56.70 -3.2X  
 WLZ 8.04 212 P 47 59.60 -0.9  
 UTU 8.06 208 P 47 59.70 -1.2  
 WHH 8.57 204 P 48 02.50 -5.3X



21d 16h

[illegible]



	7.5s	2500.00nm	6.1mb X			ePP	02	06.00		CN2	90.13	323	iPc	58	49.60	-0.3					
E	19s	9.20um				ePKKP	16	26.80			3.0s	3200.00nm				6.9mb					
		PP	01	40.00		e	17	12.70					pP	59	28.00	151kmX					
		S	08	34.00		eP'P'	24	27.70					SKS	09	00.00						
PSI	84.52	276	ePc	58	22.50	-1.1	FHC	87.82	39	ePd	58	39.80	0.6	NST	90.31	288	iPc	58	53.00	1.7	
	1.4s	942.80nm	6.4mb				CMB	87.90	42	eP	58	39.40	-0.3				e	02	29.20		
YSS	85.03	335	P	58	26.00	0.6				ec	58	41.71		III	90.82	69	eP	58	55.20	1.3	
TSI	85.24	277	ePd	58	23.00	-4.2X				epP	59	19.00	156kmX	GYA	91.08	300	iPc	58	55.40	0.5	
SYP	85.78	45	eP	58	30.00	0.4				ec	59	31.87		Z	30s		2.40um			5.5MsZ	
NJ2	85.98	311	Pc	58	30.50	0.0				ePP	02	08.00		N	20s		7.30um				
	5.0s	3200.00nm	6.4mb X							e	07	49.30		E	20s		6.30um				
		pP	59	12.00	166kmX					eS	08	53.50					pP	59	36.00	160kmX	
		S	08	48.00						ePKKP	16	26.90					sP	59	50.00		
LNv	86.04	127	iPc	58	32.00	1.1				e	17	13.30					SKS	09	12.00		
PRS	86.17	43	ePd	58	31.90	0.6				eP'P'	24	26.30					S	09	38.00		
		ePKKP	16	31.20			TPC	87.94	48	eP	58	40.00	0.0				sS	10	50.00		
LCCH	86.20	127	iP	58	32.80	1.1				e	02	10.00		CRX	91.20	68	(P)	58	57.80	2.0	
GCC	86.28	42	ePd	58	32.20	0.4				e	09	00.00		KDC	91.28	14	eP	58	57.10	2.2	
PCC	86.39	42	ePd	58	32.50	0.2	WHN	88.02	308	Pc	58	40.70	0.4		0.9s		95.80nm			5.9mb	
IHA	86.41	127	eP	58	34.50	1.7				pP	59	20.00	155kmX	IIJ	91.33	68	iP	58	57.80	1.2	
SAO	86.42	43	ePd	58	32.40	-0.1				SKS	08	52.00		PPM	91.86	69	(P)	58	59.10	0.0	
ABL	86.46	45	P	58	33.80	0.8				S	09	06.00		BDT	92.06	289	eP	58	58.00	-1.3	
PR1	86.45	44	ePd	58	32.60	-0.3				S	10	18.00			1.0s		89.70nm			5.9mb	
	0.9s	249.00nm	6.1mb							SS	15	00.00		ORV	92.35	72	eP	59	01.80	0.8	
		ePP	02	04.00			GLA	88.06	49	eP	58	41.00	0.5	ANT	92.66	120	iPc	59	03.00	0.8	
		ePKKP	16	30.20						e	02	09.00		BJI	92.76	316	ePc	59	02.34	0.2	
		e	17	20.50						e	09	08.00			5.0s		1290.00nm			6.4mb X	
		eP'P'	24	27.40						e	09	08.00					ec	59	04.00	5kmX	
TACH	86.53	127	eP	58	38.00	4.6X	MZX	88.06	61	eP	58	41.00	0.3				ed	59	41.57		
CHCH	86.57	128	eP	58	35.00	1.4	GSC	88.24	46	eP	58	41.00	-0.4				eSKS	09	19.00		
LLA	86.61	43	e(P)	58	34.00	0.5				e	02	02.00					eS	09	55.00		
BAR	86.63	48	eP	58	33.00	-0.7				e	09	01.00		VGB	92.78	37	P	59	03.10	0.9	
		e	01	51.00			ORV	88.31	41	eP	58	41.20	-0.3	CHG	92.93	290	ePc	59	03.90	0.5	
		e	08	51.00						ePP	02	09.80			1.5s		359.72nm			6.4mb	
PAS	86.64	47	eP	58	34.26	0.6				e	07	49.20					eS	02	51.60		
		e	58	36.08						e	17	10.30		CHTO	92.93	290	ePc	59	03.76	0.4	
		esP	59	18.00						eP'P'	24	26.30					ec	59	05.58	6kmX	
		ePP	01	56.53						eP	58	42.20	0.0				ed	59	42.83		
		eHPP	01	57.52			WDC	88.44	39	ePP	02	12.20					ed	59	57.73		
		ePP	02	02.00						e	07	48.50					eHPP	02	46.06		
		eHppP	02	21.03	6kmX					eS	08	52.60					ePP	02	46.61		
		epPP	02	26.33						ePKKP	16	21.00					e	03	36.55		
		iSKS	08	45.00						eP'P'	24	24.70		LON	93.11	35	eP	59	04.94	1.3	
		ePS	10	32.00			MDJ	88.67	326	Pc	58	43.00	-0.1				ed	59	40.20	137kmX	
		eSSS	18	34.00													ec	59	56.09		
		eSKKP	19	42.00						Z	25s		7.20um				ePP	02	47.62		
		eLg	22	06.00						E	14s		2.80um		MSU	93.14	46	P	59	04.70	0.4
		eLR	25	02.00											GMW	93.19	34	P	59	06.40	2.5X
MHC	86.70	42	ePd	58	34.20	0.1				epP	59	23.20	159kmX	KMI	93.30	297	Pc	59	06.00	0.8	
		e	17	17.80						ePP	02	15.00		RMW	93.60	35	P	59	07.00	1.1	
BRK	86.72	42	eP	58	34.30	0.4				iSKS	08	54.00		TIY	93.63	312	iPc	59	06.00	-0.3	
		ipP	59	11.00	144kmX					iS	09	12.00					pP	59	47.00	162kmX	
		e	01	28.00						SS	10	20.00					sP	59	57.00		
		e	07	40.00						eP	58	48.00	4.0X				SKS	09	25.00		
		iS	08	44.00			PCT	88.74	288	eP	58	43.40	-0.6				SKS	09	26.00		
		i	09	05.00			MIN	88.79	40	eP	58	43.40					iS	10	03.00		
		iSP	09	57.00						ePP	02	16.00									
		eLR	25	12.00						ePKKP	16	18.80		PGC	93.64	33	eP	59	07.00	1.1	
BKS	86.73	42	ePd	58	34.20	0.2				e	17	08.40		DUG	93.78	45	P	59	07.50	0.4	
	0.9s	298.00nm	6.2mb				DL2	88.82	318	iP	58	44.00	0.0		1.5s		39.68nm			5.4mb	
		epP	59	12.00	149kmX									XAN	93.78	308	P	59	07.50	0.4	
		e(PP)	01	44.00						Z	20s		4.00um			5.0s		1400.00nm			6.5mb X
		eS	08	48.00						N	18s		4.50um								
		eLR	25	00.00						E	20s		7.40um		N	12s		2.30um			
		e	29	10.00										E	11s		3.00um				
		e	58	35.00	0.5					pP	59	20.00	141kmX				pP	59	49.00	164kmX	
		e	01	45.00						SKS	08	55.00					SKS	09	28.00		
		e	08	54.00						S	09	16.00					S	10	04.00		
SAN	86.84	127	eP	58	36.00	1.1	NNT	89.01	285	iPd	58	45.20	-0.2	SVW	93.84	11	eP	59	11.40	4.7X	
		e	08	48.00			CFA	89.58	127	e(P)	58	47.00	-1.0	PT03	93.90	109	eP	59	10.80	2.8X	
PCH	86.84	128	eP	58	36.20	1.2	RTRS	89.58	125	ePc	58	49.90	2.0	MCW	93.96	34	P	59	10.20	2.7X	
ROCH	86.88	127	eP	58	37.00	1.7	RTLL	89.58	127	ePc	58	48.40	0.4	NNA	94.13	107	iPd	59	10.00	0.9	
PLM	86.94	48	eP	58	35.00	-0.4	ACX	89.70	70	iP	58	51.50	3.0X		1.3s		38.46nm			5.5mb	
		e	02	01.00			SNY	89.73	321	iPc	58	47.00	-1.1	ALO	94.74	52	eP	59	11.30	-0.4	
		e	08	43.00											1.5s		91.67nm			5.9mb	
RVR	87.03	47	eP	58	35.00	-0.5				Z	25s		4.40um				e	59	49.70	150kmX	
PEC	87.10	47	P	58	37.30	1.4				N	15s		2.60um				e	59	12.10	0.5	
FCH	87.16	127	eP	58	37.20	0.4											ePDIF	59	12.10		
SBB	87.21	46	eP	58	36.00	-0.5									1.5s		86.81nm			5.8mb	
		e	02	04.00											Z	20s		4.26um			5.9MsZ
		e	08	57.00													ec	59	13.76	5kmX	
PFO	87.37	48	eP	58	39.08	1.8											ed	59	47.53		
		ic	58	40.57	5kmX												ec	00	05.40		
ISA	87.45	45	eP	58	38.00	0.4											ePP	03	00.30		
		e	08	51.00													eHPP	03	04.99		
SDN	87.55	11	eP	58	37.80	0.3								DAU	94.86	45	P	59	13.20	1.0	
FRI	87.60	44	ePd	58	38.10	0.0								TTA	95.50	10	eP	59	15.00	0.7	
							KVN	89.91	43	P	58	49.40	0.1	PMR	95.50	14	eP	59	14.40	0.2	
															1.4s		69.80nm			5.	



CD2	95.66	303	eP	59	15.60	-0.2	POO	113.65	278	ePKP	04	28.50	-0.2	SUF	144.45	340	iPKP	05	21.80	-3.3X
	Z	23s	2.16um		5.6MszX				iS	15	06.00		MSL	144.68	290	ePKPd	05	24.50	-1.9	
			pP	59	54.40	152kmX	BAO	113.94	127	ePKP	04	23.50	-6.0X				i	05	26.00	
PNT	95.94	35	iP	59	18.00	1.5	BOM	114.68	278	ePKP	04	16.40	-14.2X				e	07	25.00	
	0.8s		43.00nm		5.9mb				eS	15	06.40					eSKP	08	50.50		
ARE	95.98	113	eP	59	20.00	2.1	NDI	115.07	290	ePKP	04	29.00	-2.1				ePKS	09	05.50	
HHC	96.04	314	Pc	59	19.00	1.7			eS	12	13.00		NSS	145.83	352	iPKPc	05	26.77	-0.7	
	Z	34s	6.90um		5.9MszX		PRY	116.97	207	ePKP	04	33.20	-1.8	NUR	146.63	339	iPKP	05	28.90	0.1
			pP	59	58.50	155kmX			0.7s	57.50nm					0.7s	587.30nm	i	05	32.10	
			sS	11	30.00				i	04	36.20						i	06	06.00	
TOA	96.59	15	eP	59	21.60	2.3	BFS	117.26	206	iPKPd	04	32.50	-3.1X				i	08	54.00	
BTO	96.85	314	P	59	23.00	2.1			1.0s	360.00nm							e	19	40.00	
	Z	18s	2.50um		5.7Msz				i	05	26.60						e	05	32.50	2.4
	N	17s	1.40um				SLR	117.72	208	ePdiff	01	02.00	7.5X	RGS	147.48	352	ePKP	05	32.50	
	E	18s	1.60um				SLR	117.72	208	iPKPd	04	36.20	-0.3	BCAO	148.72	216	ePKPc	05	31.90	-1.8
			pP	59	59.00	140kmX			1.2s	190.63nm					1.1s	228.00nm	i	05	33.50	
			SKS	09	40.00				Z	18s	6.53um	6.3Msz					i	06	59.10	
			S	10	30.00				i	15	00.00						i	08	34.80	
			sS	11	32.00		KSR	118.15	207	ePdiff	00	53.20	-3.2X				i	10	13.60	
IMW	97.14	43	P	59	23.30	0.9	KSR	118.15	207	ePKP	04	34.00	-3.3X				i	05	37.33	3.7X
LRM	97.44	40	eP	59	24.90	1.2			1.2s	320.00nm				BCAO	148.72	216	ePKP	05	37.33	
GOL	98.13	48	P	59	27.70	0.8				i	04	50.40		UPP	149.12	344	iPKP	05	32.80	0.0
	1.5s		69.18nm		6.0mb		KSH	119.76	300	PKP	04	39.40	-0.5				i	05	35.40	
	Z	20s	4.00um		5.9Msz			Z	36s	4.40um	5.8MszX						i	05	37.70	
LZH	98.38	307	ePDIFc	59	28.80	0.8		N	11s	2.20um							i	05	42.90	
	1.5s		230.00nm		6.5mb		TBR	120.20	58	PKP	04	40.00	-0.5	NB2	149.28	350	PKP	05	34.10	1.0
	Z	25s	4.90um		5.9MszX		RSNY	120.90	54	PKP	04	40.00	-1.7	GAZ	149.47	291	iPKP	05	36.00	1.9
	N	21s	12.30um				NPA	121.13	224	ePKP	04	45.00	2.0	AYN	149.60	275	ePKP	05	3	



ELL	155.33	291	ePKP	05	42.00	-0.6	PAIG	159.51	302	ePKP	05	47.40	0.0	GW	161.42	346	PKP	05	49.57	0.4
KHL	155.46	295	ePKP	05	43.00	0.3	PLG	159.54	303	ePKP	05	46.50	-1.0	SDA	161.55	311	ePKP	05	50.30	0.9
ISR	155.56	312	ePKP	05	52.50	9.9X				e	06	25.00		ITM	161.58	295	ePKP	05	48.50	-1.1
EKA	155.60	6	PKP	05	45.00	2.8X	SOP	159.55	329	ePKP	05	48.80	1.6				e	06	36.00	
	0.9s	17.50nm					KHC	159.59	336	PKPc	05	48.00	0.7	LACI	161.60	310	ePKP	05	48.40	-1.0
KSL	155.64	290	ePKP	05	42.00	-0.9				2.30um			6.1msz	TIR	161.63	309	ePKP	05	49.20	-0.3
MLR	155.78	313	iPKPd	05	42.50	-0.5	N	22s	2.00um					LSK	161.64	305	ePKP	05	50.20	0.5
DST	155.92	298	iPKP	05	43.60	0.3	E	22s	1.70um					LJU	161.70	328	ePKP	05	47.50	-2.0
DMK	155.99	304	iPKP	05	42.60	-0.6				e	06	29.00					ePKP	06	29.90	
BMR	156.07	320	ePKPd	05	32.00	-11.1X	VAY	159.81	306	iPKPc	05	46.60	-1.1	VBY	161.77	326	iPKPc	05	50.30	0.8
BUC1	156.24	311	ePKPc	05	44.00	0.6				1.02nm							ePKP	06	34.00	
BNT	156.28	300	iPKP	05	40.80	-2.9X								RBL	161.81	331	PKP	05	48.80	-0.8
KRA	156.29	328	ePKPc	05	43.10	-0.2								CEY	161.98	328	ePKPc	05	50.00	0.2
	1.4s	760.00nm					WET	159.82	337	iPKPc	05	47.60	0.1	VOY	161.99	330	iPKP	05	49.60	-0.3
EDC	156.32	300	ePKP	05	43.00	-0.7				1.8s	196.00nm						ePKP	06	35.00	
MDB	156.41	316	ePKP	06	02.00	18.4X	GRF	159.86	340	iPKPc	05	47.90	0.4	FVI	162.00	333	PKP	05	49.30	-0.4
CMP	156.45	314	ePKPc	05	44.00	0.2				e	06	30.90		WLS	162.02	346	PKP	05	49.55	-0.2
JMB	156.60	306	iPKP	05	44.00	0.0	ENN	159.99	351	ePKP	05	47.90	0.3	CDP	162.03	346	PKP	05	49.90	0.1
MFT	156.63	302	iPKP	05	42.80	-1.4				1.0s	50.00nm			ECH	162.24	346	PKP	05	49.47	-0.5
MBO	156.66	131	iPKPc	05	48.20	3.4X				e	06	27.50		RIY	162.30	327	ePKPc	05	49.80	-0.2
			i	06	16.80		ATH	160.02	296	ePKP	05	51.40	3.4X	TRI	162.30	329	iPKPc	05	49.60	-0.4
SPC	156.76	327	ePKP	05	42.00	-2.2				e	06	28.50					i	06	38.80	
			i	06	15.60					e	09	35.60					i	10	58.00	
ARG	156.81	290	ePKP	05	33.50	-10.9X				e	14	47.20					i	27	28.00	
			e	06	16.20					e	30	06.00					i	32	58.00	
BRN	156.86	341	ePKP	05	45.00	1.1	NEO	160.04	300	ePKP	05	47.50	-0.6	FLN	162.32	3	ePKP	05	48.60	-1.4
			epP	06	17.00		VAM	160.06	289	ePKP	05	49.00	0.8		1.6s	323.40nm				
PVL	157.17	309	iPKPd	05	45.00	0.4				e	06	31.30		SLE	162.36	343	ePKPc	05	50.10	0.0
KSP	157.19	334	ePKPc	05	44.50	0.0	GRG	160.07	306	ePKP	05	47.80	-0.2	FEL	162.38	344	PKP	05	50.40	0.2
	1.6s	145.00nm				TNS	160.07	346	ePKPc	05	48.20	0.4	OGA	162.42	336	iPKPc	05	50.80	0.4	
			i	05	57.50					e	06	28.90			1.5s	219.00nm				
			i	06	16.50		MEM	160.13	350	iPKPc	05	48.07	0.4	VITF	162.46	349	PKP	05	50.63	0.5
			i	07	00.00					id	06	29.50		LDF	162.50	2	ePKP	05	48.70	-1.5
IEM	157.20	296	ePKP	05	44.00	-0.9	UCC	160.14	354	PKP+	05	48.40	0.7	HAU	162.60	348	ePKP	05	48.90	-1.4
DEV	157.42	317	ePKPc	05	45.00	0.1				i	06	32.00			1.4s	169.90nm				
DIM	157.48	306	iPKP	05	45.00	-0.1	KMR	160.28	333	iPKP+	05	48.00	0.0	SAX	162.61	340	ePKPc	05	50.80	0.1
ALN	157.50	303	ePKP	05	44.00	-1.1				i	06	33.00		ZLA	162.65	343	ePKPc	05	50.30	-0.1
KAP	157.63	289	ePKP	05	45.20	-0.3				i	07	30.40		GRR	162.67	4	ePKP	05	49.20	-1.1
			e	06	20.00					i	09	01.80			1.6s	186.55nm				
SMG	157.65	294	ePKP	05	59.00	13.6X				i	10	10.90		BSF	162.68	347	PKP	05	50.68	0.1
KDZ	157.70	305	ePKP	05	45.00	-0.4	SKO	160.30	309	iPKPc	05	47.60	-0.6	OSS	162.87	338	ePKPc	05	51.00	0.2
PRK	157.78	298	ePKP	05	38.50	-7.0X				1.6s	173.00nm		8BS	162.88	345	PKP	05	50.70	0.0	
			e	06	20.00					i	05	52.20		CTI	162.89	334	PKP	05	50.00	-0.8
RDO	157.78	304	ePKP	05	45.00	-0.4				i	05	47.70	-0.6	LPF	163.02	4	ePKP	05	49.50	-1.2
PSZ	157.80	325	iPKP	05	54.30	8.9X	LIT	160.32	303	ePKPc	05	47.70	-0.6		1.6s	217.65nm				
WIT	157.89	351	ePKP	05	46.50	1.3	SNF	160.44	354	iPKP	05	48.66	0.6	LLS	163.05	341	ePKPc	05	51.10	0.0
			e	06	20.50					i	06	29.40		LOMF	163.14	346	PKP	05	50.96	0.0
CLL	157.90	340	iPKP	05	45.10	-0.2								VDL	163.26	339	ePKPc	05	51.20	-0.1
	2.0s	190.00nm				TOD	160.57	344	ePKP	05	48.45	0.2	BRT	163.61	311	PKP	05	52.50	0.9	
PLD	158.03	307	ePKP	05	45.00	-0.7	ABH	160.58	347	ePKP	05	48.87	0.6	SAL	163.68	335	PKP	05	52.00	0.6
RZN	158.18	306	iPKPc	05	45.00	-1.2	KZN	160.76	304	ePKP	05	48.50	-0.3	LOR	163.69	353	ePKP	05	50.10	-1.3
PRU	158.53	335	iPKPc	05	46.20	0.2				e	06	30.00			1.6s	217.65nm				
	1.6s	57.50nm				AGG	160.79	300	ePKPc	05	48.20	-0.6	GRC	163.73	355	PKP	05	52.54	1.1	
BUD	158.53	325	iPKP	05	46.20	0.1	DOU	160.81	353	PKP	05	49.00	0.6	TMA	163.78	340	ePKPc	05	51.50	-0.3
SRO	158.65	326	ePKP	05	46.40	0.2				i	06	32.10		MDI	163.81	337	PKP	05	51.00	-0.5
			i	06	24.70					e	21	14.00		SSF	163.93	354	ePKP	05	50.40	-1.3
WTS	158.67	350	ePKPc	05	46.50	0.5	RUP	160.84	348	ePKP	05	49.35	0.8		1.6s	223.90nm				
	0.9s	67.00nm				FNA	160.85	306	ePKPc	05	48.50	-0.4	LBF	163.95	352	ePKP	05	50.50	-1.2	
			e	06	18.00		VLI	160.89	293	ePKP	05	50.00	1.1		1.6s	199.00nm				
APE	158.78	293	ePKP	05	50.00	3.2X				e	06	32.00		VAI	164.03	340	PKP	05	51.40	-0.3
VTG	158.85	309	iPKPc	05	46.00	-0.8	KKS	160.93	310	ePKP	05	49.00	0.2	MMK	164.09	342	ePKPc	05	52.70	0.5
MOX	158.89	341	ePKPc	05	46.00	-0.4	KTD	161.00	345	ePKP	05	48.98	0.3	DIX	164.20	343	ePKPc	05	52.80	0.5
	1.8s	142.00nm				BHG	161.03	334	ePKP	05	48.50	-0.3	AVF	164.21	354	ePKP	05	50.30	-1.6	
						PHP	161.09	309	iPKPc	05	48.10	-0.8		1.6s	130.60nm					
Z	24s	3.10um				OHR	161.11	307	iPKP	05	47.20	-1.9								
N	28s	2.40um											RSM	164.27	328	PKP	05	52.90	0.9	
			i	06	25.00								SMF	164.30	353	ePKP	05	50.40	-1.6	
			ipP	07	07.00									1.6s	133.70nm					
MMB	158.90	306	ePKP	05	46.00	-0.8	PTJ	161.14	326	iPKPc	05	49.20	0.2	ARV	164.37	326	PKP	05	52.30	0.1
ZST	158.92	329	ePKP	05	45.10	-1.4	ZAG	161.19	326	iPKPc	05	49.10	0.2	ORX	164.47	341	PKP	05	51.96	-0.4
			i	05	47.40		FUR	161.20	338	ePKP	05	49.00	0.1	ORO	164.48	341	PKP	05	51.50	-0.9
			e	13	43.30		EV	161.21	300	ePKP	05	50.00	0.7	BGF	164.48	355	ePKP	05	50.80	-1.4
NPS	158.92	288	ePKP	05	47.80	0.9				e	06	35.30		MFF	164.49	3	ePKP	05	51.00	-1.2
			e	06	26.00									1.6s	286.05nm					
HOF	159.12	340	iPKPc	05	45.50	-1.2	STU	161.25	343	ePKPc	05	49.20	0.3	SFI	164.55	329	PKP	05	53.00	0.7
OUR	159.16	303	ePKP	05	46.00	-1.0	PUK	161.28	311	ePKP	05	54.00	4.9X	PGD	164.64	329	PKP	05	52.10	-0.5
VKA	159.21	330	iPKPc	05	46.90	0.1	KBN	161.30	306	ePKP	05	49.50	0.3	ROI	164.69	308	PKP	05	52.60	0.0
	2.0s	418.00nm				KBA	161.38	333	iPKPc	05	48.20	-1.1	CSI	164.77	309	PKP	05	51.80	-0.9	
			i	06	25.10					1.6s</										



21d 17h

LSF	164.86	358	ePKP	05 51.00	-1.5	EHOR	171.58	35	ePKP	05 59.00	1.9	SLY	19.90	292	ePd	30 52.50	0.5	
	1.5s	172.35nm				EBAN	171.96	27	ePKP	05 59.40	2.1	RYD	19.90	260	eP	30 33.30	-18.9X	
CTFE	164.87	96	ePKPd	05 56.80	3.7X	EVIA	171.97	19	ePKP	05 58.00	0.6	BHD	20.56	285	P	30 58.50	-0.4	
LPL	164.90	344	ePKP	05 51.80	-1.1	EJIF	172.47	43	ePKP	06 00.00	2.5X				eS	34 30.00		
	1.1s	48.85nm				AVE	172.61	70	ePKP	05 58.00	0.3	WMO	20.73	43	iPc	31 00.20	-0.5	
LPG	164.91	344	ePKP	05 51.90	-1.1					06 20.00		Z	15s	2.10um		4.6mszX		
	0.9s	34.40nm								11 20.00					S	34 52.00		
FIR	164.92	330	ePKP	05 53.00	0.4	AFC	172.83	30	ePKP	05 57.80	-0.1	SHL	21.37	96	iP	31 07.00	-0.5	
BDI	164.96	332	PKP	05 52.70	-0.1	MAL	172.85	37	iPKPc	05 59.00	1.4				eS	34 54.00		
AGO	164.96	354	PKP	05 53.36	0.7					17 46.00		KOD	21.47	154	eP	31 09.40	0.7	
AOU	164.96	322	PKP	05 54.50	1.7					iS	21 46.00		MSL	21.91	294	eP	31 19.00	6.4X
PLDF	165.00	353	PKP	05 53.41	0.7	EALH	172.98	15	ePKP	06 00.00	2.3	QASM	22.13	266	eP	31 13.80	-1.2	
MGR	165.07	311	PKP	05 51.80	-1.1	TIO	172.99	89	iPKPc	05 58.60	0.5	KMSA	23.48	251	eP	31 29.30	1.0	
RSP	165.11	342	PKP	05 51.24	-1.7					i	06 41.80		ABHA	25.97	249	eP	31 58.10	5.8X
CZI	165.15	307	PKP	05 51.60	-1.3					ic	11 14.00		GTA	27.49	62	iPc	32 06.60	0.6
SDI	165.18	319	PKP	05 52.30	-0.7					i	15 14.00		CHTO	30.01	105	iP	32 28.00	-0.6
AZI	165.20	321	PKP	05 53.50	0.6	NKM	173.16	49	iPKP	06 00.00	2.2				1.0s	46.25nm	5.3mb	
PYM	165.27	354	PKP	05 54.03	1.0					08 28.00		LZH	30.35	69	Pc	32 31.50	-0.2	
PII	165.27	332	PKP	05 51.80	-1.1					i	11 26.00					1.4s	40.00nm	5.1mb
PCP	165.29	338	PKP	05 52.27	-0.7					i	15 08.00					pP	32 38.50	24km
BNI	165.35	344	PKP	05 53.90	0.7	ENIJ	173.59	23	ePKP	05 59.60	1.6	BBTK	30.53	298	eP	32 34.00	0.8	
RRL	165.44	343	PKP	05 53.80	0.4	IFR	174.35	63	iPKPc	06 00.00	1.4	CD2	30.56	79	eP	32 33.60	0.1	
CKI	165.48	338	PKP	05 52.70	-0.4					06 02.00		KMI	30.90	91	Pc	32 37.00	0.3	
FIN	165.69	338	PKP	05 51.65	-1.7					i	11 31.00					1.5s	100.00nm	5.4mb
DOI	165.71	341	PKP	05 54.00	0.6					i	16 08.00		LOE	33.00	105	eP	32 54.40	-0.5
SOI	165.72	303	PKP	05 54.00	0.6	TAF	175.36	36	iPKPc	06 01.00	2.3	NNT	33.92	114	eP	33 03.00	0.2	
ROB	165.72	339	PKP	05 52.88	-0.5					i	06 51.00		GYA	33.94	86	iPc	33 03.00	-0.1
RDP	165.74	322	PKP	05 54.00	0.5					i	11 50.00					N	15s	0.70um
PZZ	165.75	342	PKP	05 53.70	0.2					i	15 01.00		E	15s	0.60um			
LBL	165.76	353	PKP	05 54.64	1.4											S	38 26.00	
RJF	165.80	358	ePKP	05 52.30	-1.0							XAN	34.57	73	P	33 08.00	-0.4	
	1.6s	248.75nm										BTO	35.41	61	P	33 16.50	0.9	
ENR	165.92	340	PKP	05 52.37	-1.2										N	13s	0.60um	
STV	165.93	341	PKP	05 52.57	-1.0										E	13s	0.60um	
STS	166.02	30	ePKP	05 55.00	1.4													
EMON	166.05	26	ePKP	05 55.30	1.7													
IMI	166.06	339	PKP	05 53.29	-0.4													
SAOF	166.10	340	PKP	05 53.57	-0.1	KHL	0.55	88	iPg	20 16.40	-0.4	CLI	35.69	309	ePd	33 18.50	0.7	
ATN	166.10	304	PKP	05 54.30	0.5					eSg	20 23.60		VRI	35.93	308	eP	33 20.50	0.7
AUTN	166.13	340	PKP	05 53.92	0.0	IZM	1.23	275	iPn	20 27.20	-1.5	KDZ	36.27	301	eP	33 25.00	2.3	
CAF	166.16	357	ePKP	05 52.80	-0.9	ALT	1.26	53	iPn	20 30.50	1.2	MLR	36.39	307	iPd	33 25.50	1.6	
	1.7s	191.15nm				DST	1.31	354	iPn	20 30.60	0.6	PVL	36.49	303	eP	33 25.00	0.5	
TOUF	166.16	341	PKP	05 53.70	-0.2	BCK	1.63	120	ePn	20 33.50	-1.3	HHC	36.60	61	P	33 27.00	1.4	
LFF	166.17	0	ePKP	05 52.60	-1.0	SMG	1.67	250	ePn	20 35.00	-0.3	RZN	36.80	301	eP	33 28.00	0.6	
	1.6s	199.00nm				ELL	1.78	151	ePn	20 35.00	-2.0	CMP	36.99	307	ePc	33 33.00	4.3X	
SBF	166.25	340	ePKP	05 52.00	-1.8	KCT	1.97	350	ePn	20 39.30	-0.4	TIY	37.23	66	iP	33 31.20	0.3	
	1.1s	87.90nm				ARG	2.16	195	ePb	20 43.00	0.7	VTS	37.98	302	iP	33 39.00	1.7	
AURF	166.25	340	PKP	05 53.70	-0.1	BNT	2.16	342	iPn	20 42.80	0.3	VAY	38.39	300	eP	33 41.40	0.9	
MVIF	166.30	341	PKP	05 54.18	0.2	EDC	2.17	340	ePn	20 43.00	0.5	SKO	39.26	301	ePc	33 47.20	-0.6	
REVF	166.38	340	PKP	05 53.92	0.0	PRK	2.20	296	ePn	20 48.30	5.3X	BZS	39.42	307	eP	33 49.50	0.5	
LPO	166.43	359	ePKP	05 53.10	-0.7	KSL	2.27	164	ePn	20 45.50	1.6	WHN	39.62	77	eP	33 52.00	1.2	
	1.7s	338.20nm				GPA	2.29	30	iPn	20 49.60	5.2X	OHR	39.72	299	eP	33 52.70	1.0	
CALN	166.50	341	PKP	05 54.31	0.2	YLV	2.30	11	ePn	20 45.00	-1.5	BJI	40.10	62	eP	33 55.50	0.8	
EZAM	166.55	32	ePKP	05 56.20	2.2	MFT	2.75	335	ePn	20 50.00	-0.9				1.0s	17.00nm	4.7mb	
CFTV	166.71	98	iPKPd	05 56.90	2.3							SPC	40.86	312	eP	34 01.70	0.6	
												TIA	41.07	68	eP	34 03.70	0.9	
												SRO	41.93	309	eP	34 12.40	2.7X	
FRF	166.75	342	ePKP	05 52.50	-1.6							NUR	42.00	329	iP	34 09.40	-0.5	
	1.7s	205.85nm													1.0s	32.00nm	5.0mb	
MNO	166.75	305	PKP	05 55.30	0.7							SUF	42.43	333	eP	34 13.10	-0.4	
PGF	166.87	333	PKP	05 54.63	0.2										0.5s	8.00nm	4.7mb	
LRG	166.92	342	ePKP	05 53.00	-1.2							ZST	42.79	310	eP	34 17.20	0.6	
	1.6s	205.20nm										NJ2	43.11	74	eP	34 20.50	1.1	
LMR	167.00	342	ePKP	05 52.90	-1.4							CZI	43.35	297	P	34 22.10	0.8	
	1.7s	176.45nm										KSP	43.64	314	eP	34 24.00	0.5	
ERUA	167.01	27	ePKP	05 56.20	1.8							LJU	44.39	307	eP	34 30.40	0.7	
PTO	167.38	35	iPKPc	05 56.00	1.4							CEY	44.45	306	eP	34 30.50	0.2	
MCT	167.63	305	PKP	05 58.00	2.8X							DUI	44.48	300	P	34 32.50	1.9	
FAI	167.76	304	PKP	06 02.00	7.0X							PRU	44.65	312	P	34 34.70	3.0X	
EPF	168.07	2	ePKP	05 54.50	-0.6							SOD	44.79	339	eP	34 32.00	-0.6	
	1.5s	163.20nm										VOY	44.83	307	eP	34 33.00	-0.4	
ECRI	168.18	12	ePKP	05 57.00	1.8							SDI	44.96	300	P	34 34.50	0.1	
ETER	168.70	353	ePKP	05 57.40	1.9							RBL	45.07	307	P	34 35.50	0.2	
EPLA	169.40	30	ePKP	05 58.20	2.2							KHC	45.20	311				



MOX	46.57	313	eP	34	48.00	1.0	S.D. = 0.9 on 11 of 11 obs.	RSON	46.17	335	P	59	33.00	-1.1		
FIR	46.74	303	eP	34	52.00	3.7X				0.7s	39.79nm			5.5mb		
GRF	46.77	312	eP	34	49.80	1.3				49.82	318	P	00	02.40	-0.6	
			e	34	52.70	10kmX				MSU	49.95	312	P	00	05.00	1.0
CN2	46.90	56	P	34	49.40	-0.3				GLA	50.37	304	eP	00	08.00	1.0
BDI	47.20	304	P	34	52.00	-0.1				TPC	51.62	305	eP	00	17.00	0.5
PII	47.27	303	P	34	52.00	-0.5				BAR	51.79	303	eP	00	27.00	9.1X
BOB	47.98	305	P	34	55.00	-3.3X				PLM	52.10	304	eP	00	28.00	7.6X
NB2	48.37	327	P	35	02.40	1.4				FFC	52.44	334	eP	00	21.00	-1.3
	1.1s	20.50nm				5.1mb					1.9s	53.00nm			5.1mb	
VAI	48.41	306	P	35	01.50	0.1			GSC	52.52	306	eP	00	25.00	1.6	
SBF	49.49	304	eP	35	08.50	-1.4			RVR	52.66	305	eP	00	33.00	8.7X	
	0.7s	15.45nm				5.1mb			FRB	52.89	358	eP	00	25.00	-0.4	
BSF	49.69	309	eP	35	09.80	-1.6			LRM	53.03	320	eP	00	27.60	0.4	
MDJ	49.82	55	eP	35	12.00	-0.3			SBB	53.18	305	eP	00	29.00	0.7	
LPG	49.84	306	eP	35	11.40	-1.5			MWC	53.26	305	eP	00	30.00	1.0	
	1.0s	12.00nm				4.9mb			ISA	53.93	306	eP	00	44.00	10.3X	
LPL	49.86	306	eP	35	11.50	-1.4			KVN	54.51	310	P	00	38.00	-0.1	
	0.8s	8.05nm				4.8mb			SYF	54.88	305	eP	00	49.00	8.2X	
BNI	49.93	305	P	35	12.50	-0.9			FRI	55.21	308	e(P)	00	43.00	0.0	
HAU	49.98	309	eP	35	12.10	-1.4			CMB	55.98	309	e(P)	00	49.40	0.8	
DOU	51.05	312	P	35	22.30	0.7					e	00	55.20	19km		
LBF	51.65	308	eP	35	24.70	-1.5			NEW	56.95	321	P	00	54.00	-1.4	
LOR	51.70	309	eP	35	24.80	-1.8				1.0s	33.75nm			5.3mb		
SMF	51.77	308	eP	35	25.70	-1.4			EDM	57.00	328	eP	00	54.50	-1.1	
	0.7s	9.90nm				4.9mb				1.0s	48.00nm			5.5mb		
SSF	51.96	308	eP	35	27.10	-1.5			ORV	57.19	310	eP	00	58.30	1.1	
	0.9s	11.45nm				4.8mb			MIN	57.46	311	eP	00	59.40	0.1	
AVF	52.09	308	eP	35	27.90	-1.6					e	01	05.60	20km		
	1.0s	8.00nm				4.6mb			PNT	58.87	322	eP	01	17.00	8.2X	
BGF	52.46	308	eP	35	30.70	-1.6			TIC	59.74	89	P	01	14.06	-1.3	
TCF	52.93	307	eP	35	34.70	-1.1			LIC	59.79	89	Pc	01	14.62	-1.1	
CAF	53.20	306	eP	35	36.70	-1.1				1.1s	23.50nm			5.2mb		
	0.8s	8.05nm				4.7mb			KIC	60.05	89	Pc	01	16.52	-1.0	
BCAO	53.30	252	ePc	35	38.30	-0.6				1.1s	36.50nm			5.4mb		
	1.0s	25.00nm				5.1mb			ALOJ	60.70	54	eP	01	23.00	1.3	
LSF	53.40	307	eP	35	37.80	-1.5			ATEJ	60.74	54	iPc	01	24.00	2.0	
MAT	57.72	64	(P)	36	09.00	-1.5			APHE	61.00	54	iPc	01	25.00	1.2	
	1.0s	10.00nm				4.8mb			ASMO	61.02	53	eP	01	25.00	1.1	
TOL	58.61	301	eP	36	17.00	0.3			TOL	61.20	50	eP	01	26.00	1.1	
ASMO	59.04	298	eP	36	19.50	-0.3			LPF	64.93	42	eP	01	48.60	-0.8	
APHE	59.11	297	iPd	36	19.50	-0.9				1.5s	83.55nm			5.7mb		
ATEJ	59.37	297	iPd	36	21.20	-1.0			EPF	64.98	48	eP	01	49.50	-0.4	
IFR	61.26	294	iP	36	35.00	-0.2				1.5s	67.90nm			5.6mb		
TIO	63.83	292	eP	36	54.00	1.7			GRR	65.12	42	eP	01	50.10	-0.5	
KIC	72.11	267	P	37	45.80	1.6				1.5s	114.90nm			5.8mb		
MBC	73.91	2	ePc	37	53.50	-0.2			MFF	65.24	44	eP	01	50.90	-0.5	
	0.8s	15.00nm				5.1mb				1.4s	74.05nm			5.6mb		
IMA	79.00	16	eP	38	21.40	-1.2			FLN	65.44	41	eP	01	51.90	-0.8	
FRB	80.54	342	eP	38	30.00	-0.7				1.5s	99.25nm			5.7mb		
WB5	80.66	119	eP	38	32.30	0.2			LFF	65.56	46	eP	01	52.70	-0.8	
INK	80.67	8	iPc	38	31.60	0.3				1.4s	43.55nm			5.4mb		
WRA	80.68	119	P	38	33.00	0.8			LDF	65.64	41	eP	01	53.20	-0.8	
	0.8s	11.80nm				5.0mb				1.3s	61.35nm			5.6mb		
FBA	81.34	15	eP	38	34.50	-0.4			LPO	65.83	46	eP	01	54.50	-0.8	
ASPA	82.58	123	iPc	38	42.10	0.1				1.4s	47.90nm			5.4mb		
	0.9s	21.00nm				5.2mb			RJF	66.16	45	eP	01	56.40	-1.0	
YKA	87.81	1	eP	39	07.40	0.0				1.5s	52.25nm			5.4mb		
	0.9s	8.00nm				5.0mb			LSF	66.32	44	eP	01	57.50	-0.9	
FFC	95.21	354	eP	39	42.00	0.0				1.4s	43.55nm			5.4mb		
	0.9s	12.00nm				5.3mb			CAF	66.49	46	eP	01	58.70	-0.8	
S.D. = 1.0 on 109 of 124 obs.										1.3s	39.70nm			5.4mb		
* MAR 21, 1990 18h 30m 33.77±0.61s										TCF	66.79	44	eP	02	00.30	-1.1
29.927 N ±14.4km 68.311 E ±12.7km											1.4s	30.50nm			5.2mb	
DEPTH = 33.0km (normol)										MAF	67.03	44	eP	02	02.00	-0.9
4.7mb ( 6 obs.)											1.4s	37.05nm			5.3mb	
PAKISTAN (710)										BGF	67.27	44	eP	02	03.50	-0.9
										1.5s	62.70nm			5.5mb		
CHTO	29.93	105	eP	36	40.50	-0.6			AVF	67.65	44	eP	02	05.40	-1.4	
	1.0s	13.75nm				4.7mb				1.6s	55.95nm			5.4mb		
BJI	40.08	62	eP	38	08.00	0.3			SSF	67.79	44	eP	02	06.40	-1.3	
SUF	42.52	333	eP	38	29.00	1.6				1.4s	39.20nm			5.4mb		
SOD	44.88	339	eP	38	45.00	-1.5			SMF	67.96	44	eP	02	07.60	-1.2	
NB2	48.46	327	P	39	15.20	0.4				1.5s	62.70nm			5.5mb		
	0.8s	3.60nm				4.5mb			LOR	68.06	43	eP	02	08.00	-1.4	
BCAO	53.34	252	ePd	39	52.00	-0.4				1.5s	52.25nm			5.4mb		
	0.5s	5.00nm				4.8mb			LBF	68.10	44	eP	02	08.10	-1.6	
MBC	73.98	2	eP	42	07.00	-0.1				1.4s	21.80nm			5.1mb		
	0.9s	6.00nm				4.6mb			DOU	68.94	40	P	02	14.90	0.2	
WB5	80.57	119	eP	42	45.10	0.4			LMR	69.49	48	eP	02	17.30	-0.9	
WRA	80.59	119	Pd	42	45.00	0.2				1.5s	26.10nm			5.1mb		
	0.8s	6.10nm				4.7mb			VITF	69.60	43	P	02	18.57	-0.2	
INK	80.73	8	eP	42	44.00	-0.6			FRF	69.61	48	eP	02	17.50	-1.5	
ASPA	82.48	123	iPd	42	54.90	0.3			BNI	69.75	46	P	02	29.00	9.0X	
	0.8s	10.00nm				4.9mb			HAU	69.82	43	eP	02	19.10	-1.1	
										1.5s	41.80nm			5.3mb		
									LPL	69.83	45	eP	02	20.30	-0.3	



LPG	1.2s	23.80nm	5.2mb	CMP	82.71	45 ePc	03 44.00	11.2X	Sg	24 25.30			
	69.85	45 eP	02 20.60	BCAO	83.22	87 iPc	03 35.40	-0.7	SSF	2.24	87 Pg	24 01.00	2.3
ENN	1.3s	55.95nm	5.5mb		0.8s	14.00nm		5.2mb			Sg	24 29.00	
	69.88	40 ePd	02 21.00			i	03 44.40	28km	LPO	2.39	163 Pn	24 06.20	5.4X
	0.8s	24.00nm	5.4mb	MLR	83.31	45 iPc	03 37.00	1.0			Sg	24 36.40	
MEM	69.91	40 Pc	02 21.30	VRI	83.79	45 ePc	03 48.00	9.7X	CAF	2.42	147 Pn	24 00.30	-0.9
		e	02 28.50	CLI	84.06	44 ePc	03 48.50	8.8X			Pg	24 06.50	
LOMF	70.07	44 P	02 20.09	BJI	129.37	358 ePKP	10 23.50	5.5X			Sg	24 36.60	
BSF	70.10	43 P	02 21.46	BDT	148.13	29 ePKP	10 58.00	5.5X	LOR	2.49	82 Pg	24 06.20	4.0X
SBF	70.20	47 eP	02 21.70	NNT	152.44	33 ePKP	11 10.20	11.1X			Sg	24 36.30	
	1.1s	19.55nm	5.1mb	WRA	158.95	242 PKP	11 11.00	3.6X	SMF	2.50	96 Pg	24 06.00	3.7X
DAG	70.31	10 eP	02 29.00		1.2s	4.00nm					Sg	24 36.60	
MOF	70.33	43 P	02 22.62		S.D. = 1.0	on 145 of 181 obs.			LBF	2.57	89 Pg	24 08.20	4.9X
ECH	70.38	43 P	02 23.43								Sg	24 38.60	
RUP	70.47	41 eP	02 24.89	? MAR 21, 1990	19h 50m	21.78±1.39s				S.D. = 1.5	on 13 of 17 obs.		
CDF	70.48	42 P	02 22.49	30.194 N ±20.8km	68.876 E ±17.0km								
WLS	70.53	42 P	02 24.20	DEPTH = 33.0km (normal)									
BBS	70.54	43 P	02 24.20	4.1mb ( 3 obs.)									
WTS	70.59	39 iP	02 25.70	PAKISTAN		(710)							
	0.8s	42.00nm	5.6mb										
		e	02 33.00	NDI	7.43	100 eP	52 12.00	1.4					
WIT	70.61	38 eP	02 27.00			eS	53 41.00		GIB	1.16	131 P	32 08.50	-1.0
		e	02 34.00	DMN	14.45	96 P	53 46.30	0.2			eSg	32 23.00	
GWf	70.76	42 P	02 25.92	KKN	14.56	95 P	53 46.70	-0.8	FAI	1.59	158 P	32 18.00	2.0
ABH	70.81	41 eP	02 26.97	PKI	14.72	96 P	53 48.10	-1.6			eSn	32 35.00	
FEL	70.92	43 P	02 25.23	GUN	15.05	94 P	53 52.90	-1.1	MNO	1.62	120 P	32 17.50	0.9
VAI	71.28	45 P	02 29.50	HYB	15.49	143 eP	53 58.00	-1.4			eSn	32 35.00	
MBC	71.37	348 eP	02 30.00	CHG	29.52	106 eP	56 27.50	2.0	ATN	2.08	106 P	32 21.00	-2.2
	1.1s	44.00nm	5.5mb	CHTO	29.52	106 eP	56 27.30	1.8			eSn	32 43.00	
TNS	71.42	41 ePc	02 30.80		0.8s	2.75nm		4.1mb	CZI	2.55	78 P	32 28.80	-1.0
TOD	71.59	41 eP	02 25.57	MBC	73.69	2 eP	01 53.00	-0.5			eSg	32 58.00	
BOB	71.70	46 P	02 35.00	WRA	80.30	120 Pc	02 31.80	0.6	SOI	2.56	104 P	32 29.00	-0.9
MDI	71.94	45 P	02 38.00		0.5s	0.80nm		4.0mb	SGO	2.58	45 P	32 32.00	1.8
INK	71.98	339 eP	02 32.00	YKA	87.60	2 eP	03 07.00	-0.5			eSn	32 59.50	
PII	72.43	48 P	02 43.50		0.8s	1.00nm		4.1mb	MMN	2.64	64 P	32 30.90	-0.2
CTI	73.30	45 P	02 47.00		S.D. = 1.4	on 11 of 11 obs.			TDS	2.81	70 P	32 33.00	-0.5
PGD	73.30	47 P	02 46.00	? MAR 21, 1990	20h 09m	00.34±9.95s			CSI	2.81	68 P	32 35.00	1.4
MOX	73.47	40 e(P)	02 50.00	8.946 S ±90.1km	127.773 E ±18.3km				ROI	2.95	73 P	32 35.20	-0.4
	1.8s	54.00nm	5.3mb	DEPTH = 110.2 ± 46.1 km					ORI	3.03	63 P	32 37.50	0.8
ASS	73.98	48 P	02 44.00	4.0mb ( 2 obs.)					PGF	4.82	323 Pn	33 05.30	3.1X
RDP	74.02	50 P	02 54.00	TIMOR		(289)					Sn	33 54.50	
FVI	74.10	45 P	02 46.30						SBF	6.56	323 Pn	33 26.00	-0.1
NB2	74.11	29 P	02 49.90	MTN	5.09	140 eP	10 16.00	0.4	LMR	6.66	315 Pn	33 27.80	-0.2
	1.2s	43.50nm	5.4mb			eS	11 15.00		FRF	6.74	317 Pn	33 28.00	-1.2
ARV	74.18	48 P	02 52.50	KNA	6.83	172 eP	10 39.50	0.0	LRG	6.82	316 Pn	33 30.60	0.3
WET	74.22	42 iPc	02 47.20			eP	11 54.00			S.D. = 1.2	on 16 of 17 obs.		
		i	02 54.60	WB5	12.60	150 eP	11 56.00	-0.9	? MAR 21, 1990	21h 40m	07.54±13.02s		
CLL	74.38	40 iPd	02 47.90			eS	14 11.10		35.160 S ±106.km	71.249 W ±30.2km			
	1.7s	100.00nm	5.6mb	WRA	12.64	151 P	11 57.00	-0.4	DEPTH = 91.4 ± 30.4 km				
		i	02 54.60		0.2s	1.00nm		4.1mb					
KBA	74.49	44 iPc	02 48.40	MBL	14.35	211 eP	12 19.50	-0.1	CENTRAL CHILE		(136)		
	1.2s	88.10nm	5.7mb	ASPA	15.77	159 eP	12 38.60	1.1					
		i	02 55.60		0.7s	6.00nm		4.0mb	LNv	1.21	354 iPd	40 30.00	-0.1
RBL	74.64	45 P	02 49.40			eS	15 23.50				iS	40 54.00	
KHC	74.68	42 eP	02 50.00	NANU	17.93	220 eP	13 09.00	4.9X	CHCH	1.32	22 iPc	40 31.20	-0.3
		e	02 56.50		S.D. = 1.1	on 6 of 7 obs.					iS	40 59.00	
VOY	74.86	45 eP	02 49.80						TACH	1.53	10 iPd	40 33.80	-0.3
		e	02 58.30	% MAR 21, 1990	20h 23m	21.35±0.73s					iS	40 52.50	
CEY	75.24	45 e(P)	02 54.00	46.980 N ± 7.9km	0.230 E ± 8.6km						i	41 01.00	
LJU	75.31	45 eP	02 53.50	DEPTH = 13.2 ± 5.4 km					PCH	1.65	22 iPc	40 36.00	0.2
		e	03 01.00								iS	41 07.00	
PRU	75.32	41 P	02 53.60	FRANCE		(538)			LCCH	1.70	351 iP	40 36.50	0.1
	1.5s	96.00nm	5.6mb	ML 2.7 (LDG).							iS	41 04.00	
		e	03 01.60						FCH	1.99	24 iPd	40 41.00	0.4
VBY	75.82	46 e(P)	03 02.50	MFF	0.46	214 Pg	23 31.10	0.4			iS	41 15.50	
TOA	76.19	331 eP	02 59.10			Sg	23 37.40		ROCH	2.19	5 iPd	40 43.00	-0.1
KSP	76.44	40 iPc	03 00.00	LSF	1.16	129 Pg	23 42.60	-0.1			iS	41 18.00	
		ic	03 07.90			Sg	23 57.00		RTCV	3.99	35 e(P)	41 08.00	0.3
VKA	76.50	43 e(P)	03 06.00	LPF	1.36	321 Pg	23 46.30	0.4	CFA	4.35	36 e(P)	41 13.00	0.4
ZST	77.02	43 eP	03 02.60			Sg	24 04.90		RTLL	4.47	32 ePc	41 13.20	-1.1
		i	03 09.70	TCF	1.53	116 Pn	23 46.60	-1.8			iS	41 24.50	0.2
FBA	77.05	334 eP	03 03.80			Pg	23 49.30			S.D. = 0.5	on 11 of 11 obs.		
PMR	77.58	331 eP	03 04.10			Sg	24 08.80		% MAR 21, 1990	21h 45m	55.39±1.31s		
SRO	77.85	43 eP	03 15.20	GRR	1.59	333 Pn	23 49.00	-0.2	44.787 N ± 7.2km	7.616 E ±12.2km			
SPC	79.05	42 iP	03 21.20			Pg	23 50.90		DEPTH = 10.0km (geophysicist)				
		e	03 39.60	LDF	1.63	352 Pg	23 51.30	1.5	NORTHERN ITALY		(545)		
IMA	79.49	335 eP	03 17.00			Sg	24 12.50		ML 2.1 (GEN).				
	1.1s	25.00nm	5.2mb	MAF	1.78	114 Pg	23 53.40	1.4					
OHR	80.12	50 eP	03 28.20			Sg	24 15.60		RSP	0.45	325 P	46 04.49	0.0
NUR	80.69	30 eP	03 22.00	FLN	1.85	345 Pn	23 53.00	0.1			S	46 10.54	
SVW	80.72	331 eP	03 24.80			Sg	24 18.60		PZZ	0.46	233 P	46 04.90	0.1
TTA	80.73	332 eP	03 23.40	BGF	1.85	102 Pg	23 54.60	1.7			S	46 11.05	
SOD	80.87	23 eP	03 31.00			Sg	24 16.90		ROB	0.52	160 P	46 06.03	0.0
SUF	81.17	28 eP	03 25.20	RJF	1.90	151 Pg	23 56.10	2.4			S	46 13.51	
BMR	81.35	43 ePd	03 23.00			Sg	24 20.00		ENR	0.58	194 P	46 07.36	0.2
VAY	81.43	50 eP	03 26.50	AVF	2.15	94 Pn	23 56.10	-1.2			S	46 15.67	



STV	0.58	201	P	46	06.95	-0.3	XAN	56.59	317	P	15	33.60	-1.1	BBTK	18.44	296	eP	46	32.00	0.2
	S.D. = 0.2	on	5 of	5	obs.		TIY	56.60	323	Pd	15	34.10	-0.6	NDI	20.14	98	eP	46	56.00	4.9X
%	MAR	21, 1990	21h	50m	53.94 ± 1.89s		KMI	56.73	305	Pc	15	36.00	-0.1	ELL	20.26	286	eP	46	54.00	1.5
					32.181 N ± 5.7km	35.462 E ± 14.8km			1.0s	100.00nm			5.8mb	ALT	20.31	293	eP	46	52.00	-1.0
DEPTH = 10.0km					(geophysicist)		CHG	57.58	296	iPc	15	41.00	-0.1	KHL	20.67	291	eP	46	55.00	-1.7
DEAD SEA REGION					(373)			1.4s	40.12nm				5.3mb	AGAL	21.38	248	eP	47	08.00	4.2X
SALJ	0.26	132	Pd	50	59.40	0.0	CD2	58.60	311	P	15	48.20	-0.7	ANMR	21.46	249	eP	47	06.00	1.3
BURJ	0.30	78	Pc	51	00.20	0.0	HHC	59.16	325	Pd	15	52.20	-0.5	DST	21.53	294	iP	47	05.70	0.4
KFNJ	0.37	150	Pc	51	01.60	0.1	BTO	59.89	324	eP	15	57.00	-0.7	AGMR	21.54	248	eP	47	07.00	1.5
JARJ	0.41	82	P	51	02.40	0.0	LZH	61.19	316	Pc	16	06.00	-0.7	CTT	21.95	298	eP	47	29.00	19.5X
MASJ	0.50	154	Pd	51	04.00	-0.1		1.0s	37.00nm				5.5mb	BOM	21.97	127	eP	47	07.70	-2.1
SHMJ	0.60	25	Pd	51	06.10	0.0	GTA	65.64	318	iPc	16	35.40	-0.4					49	06.90	
	S.D. = 0.1	on	6 of	6	obs.		SHL	65.98	301	iP	16	37.10	-1.2	POO	22.92	126	eP	47	23.40	4.1X
							LSA	67.99	305	P	16	52.00	0.7	ALN	23.68	296	eP	47	27.50	1.1
							GUN	71.81	302	P	17	14.10	-0.4	NPS	23.77	282	eP	47	29.50	2.1
								0.4s	8.00nm				5.0mb	RDO	24.10	297	eP	47	31.50	1.0
MAR	21, 1990	22h	05m	55.61 ± 0.92s			PKI	72.11	301	P	17	15.10	-1.2	ARO	24.25	208	iP+	47	34.80	2.5X
					5.503 S ± 4.5km	152.007 E ± 5.9km	KKN	72.28	301	P	17	16.20	-1.0	KDZ	24.27	298	eP	47	34.00	1.8
DEPTH = 60.8 ± 7.9 km								0.4s	8.00nm				5.0mb	CLI	24.37	310	ePd	47	34.00	0.8
5.3mb (18 obs.)							DMN	72.38	301	P	17	17.20	-0.6	VRI	24.48	309	ePc	47	37.00	2.8X
NEW BRITAIN REGION								0.4s	11.00nm				5.1mb	PVL	24.65	302	eP	47	37.00	1.2
CENTROID, MOMENT TENSOR							WMO	75.72	318	iPc	17	36.40	-0.2	RZN	24.79	298	iP	47	38.00	0.5
Data Used: GDSN							HYB	75.98	289	eP	17	37.50	-0.9	MLR	24.87	307	eP	47	50.00	11.9X
L.P.B.: 10S, 16C								1.0s	25.00nm				5.1mb	VAM	24.91	283	eP	47	38.40	0.0
Centroid Location:							ANM	76.68	17	eP	17	42.30	0.8	ATH	25.22	289	eP	47	43.20	1.9
Origin Time	22:05:51.1	3.4					KDC	77.18	27	P	17	44.00	-0.3	PAIG	25.35	294	eP	47	42.40	-0.1
Lat 6.04S 0.33 Lon 152.59E 0.16							SVW	77.77	23	eP	17	48.60	1.0	CMP	25.41	306	ePc	47	46.00	3.0X
Dep 62.512.5 Half-duration 1.7								0.6s	34.10nm				5.5mb	MMB	25.51	297	ePd	47	45.00	0.9
Moment Tensor: Scale 10 <sup>16</sup> Nm							TTA	78.71	22	eP	17	53.20	0.4	SRS	25.55	296	ePd	47	44.90	0.5
Mrr=-2.70 1.00 Mtt=-2.31 1.36							PMR	80.65	25	eP	18	02.90	-0.1	PLG	25.57	295	eP	47	45.00	0.4
Mff= 5.01 1.37 Mrt= 2.70 1.36								1.3s	75.50nm				5.5mb	SOH	25.69	296	eP	47	46.00	0.2
Mrf= 0.79 1.40 Mtf=-8.55 1.31							IMA	81.38	20	eP	18	07.60	0.6	VLI	25.86	286	eP	47	55.50	8.2X
Principal Axes:								0.8s	10.30nm				4.8mb	KKB	26.03	298	iP	47	50.00	1.1
T Vol= 10.71 Plg= 4 Azm= 56							TOA	82.12	25	eP	18	11.60	0.7	VTs	26.05	300	eP	47	50.00	0.8
N -1.62 67 317							KSH	82.77	311	P	18	17.00	2.2	KNT	26.07	296	eP	47	47.90	-1.4
P -9.09 23 148							F8A	82.83	22	eP	18	13.80	-0.6	AGG	26.34	291	ePd	47	39.90	-11.8X
Best Double Couple: Mo=9.9*10 <sup>16</sup>							INK	89.39	21	eP	18	46.00	-0.5	VAY	26.34	297	eP	47	51.40	-0.3
NP1: Strike=189 Dip=71 Slip=-14							KVN	93.34	51	P	19	06.40	0.8	GRG	26.42	296	eP	47	52.10	-0.4
NP2: 284 77 -161							NEW	94.65	42	P	19	12.00	0.8	KZN	26.84	294	eP	47	57.50	1.1
								1.0s	9.63nm				5.2mb	HYB	26.97	120	eP	47	57.50	-0.2
RAB	1.31	7	iPd-	06	17.50	-0.6	MBC	94.98	14	eP	19	12.50	0.3	DMN	27.06	94	P	47	58.80	0.1
LAT	5.11	257	eP	07	12.00	0.6		0.9s	30.00nm				5.7mb	KKN	27.14	94	P	47	59.80	0.4
			eS	08	36.00		YKA	96.41	28	eP	19	18.70	-0.2	SKO	27.26	298	eP	48	00.50	0.4
PMG	6.18	231	eP	07	27.00	0.6		0.8s	4.90nm				5.1mb	PKI	27.32	94	P	48	01.20	0.0
			eS	08	37.00		EDM	97.16	37	ePc	19	23.90	1.4	GUN	27.60	93	P	48	04.00	0.2
GUA	20.19	340	eP	10	28.60	0.6	OHR	123.91	317	ePKP	24	48.50	-0.3	OHR	27.64	296	eP	48	03.50	-0.2
	1.0s	304.00nm				5.6mb	KHC	124.13	328	ePKP	24	50.50	1.5	WMO	27.84	58	P	48	07.10	1.6
GUMO	20.25	340	eP	10	29.00	0.4	BCAO	133.64	271	ePKPd	25	08.30	0.1	AAE	28.25	214	eP	48	12.00	2.3
	1.0s	240.00nm				5.5mb		0.7s	7.00nm				GBA	28.84	128	Pc	48	13.80	-0.7	
RMO	21.10	188	eP	10	36.00	-1.2					25	24.70			1.0s	14.50nm		48	42.50	2.9X
			e	10	41.00		ZOBO	134.79	119	PKP	25	10.00	-0.9	SOP	31.69	308	eP	48	42.50	0.3
DZM	21.60	141	iPc	10	41.90	-0.4	NKM	143.65	328	ePKP	25	27.00	1.2	KSP	32.68	314	eP	48	48.50	0.3
BRS	21.78	178	eP	10	43.00	-1.1	IFR	144.95	326	iPKPc	25	28.00	-0.3	TRI	33.24	304	eP	48	52.30	-0.8
	0.9s	3.50nm				3.8mb X	TIO	148.08	325	iPKPc	25	37.50	4.1X	SHL	33.45	94	iP	48	53.70	-1.7
MTN	21.85	249	eP	10	46.00	1.2		S.D. = 0.9	on	63 of	65	obs.		RBL	33.48	305	P	48	56.00	0.7
			e	14	41.00									ARV	33.63	300	P	48	56.00	-0.6
WB5	22.33	229	eP	10	50.70	1.1		MAR	21, 1990	22h	42m	17.06 ± 0.25s		KBA	33.72	306	i(P)	48	57.00	-0.5
WRA	22.39	229	Pc	10	51.20	1.1									1.1s	9.90nm		49	01.80	4.6mb
	0.7s	18.20nm				4.6mb												49	13.40	
KNA	24.98	244	eP	11	15.30	0.1												49	01.80	0.9
ASPA	25.10	222	iPc	11	16.80	0.4	IRAN							BHG	34.14	307	eP	49	01.80	0.9
	0.8s	91.00nm				5.3mb									1.0s	15.00nm		49	04.40	1.3
Z	20s	0.77um				4.2Msz	TEH	3.34	314	eP	43	08.00	-0.3	WET	34.39	310	eP	49	02.50	-1.0
			iPcS	14	58.90		IR5	3.58	300	eP	43	11.00	-0.7	SFI	34.44	300	P	49	05.00	0.4
			eS	15	32.30		IR1	3.60	304	eP	43	12.00	-0.1	PGD	34.53	300	P	49	05.50	-0.8
			LR	22	34.30		MAIO	5.08	55	ePn	43	31.00	-2.0	CTI	34.75	304	P	49	06.90	0.4
MBL	34.85	240	eP	12	42.30	-0.8		0.7s	14.29nm				4.5mb	CLL	34.80	313	iPd	49	08.00	0.9
MEKA	38.20	233	eP	13	12.00	0.6									1.0s	34.00nm		49	12.00	0.6
NANU	39.08	241	eP	13	15.00	-3.7X	KER	6.10	280	eP	44	31.00		FIR	34.87	300	eP	49	14.00	1.5
MRWA	41.40	231	eP	13	37.00	-0.7	SLY	7.61	289	eP	44	45.50	37.0X	BDI	35.35	300	P	49	16.50	-0.9
MAT	43.77	344	eP	13	58.00	1.0								MOX	36.07	303	P	49	19.00	0.4
	1.0s	10.00nm				4.5mb								BOB	36.20	302	P	49	25.00	1.7
OZH	44.41	314	Pd	14	02.90	0.7	TAB	7.98	307	eP	44	18.00	4.2X	GTA	36.74	67	P	49	29.10	-1.5
OIZ	48.15	302	eP	14	33.40	1.5	BBU	7.98	206	ePn	44	13.20	-0.4	SBF	37.63	300	eP	49	31.50	-0.3
NJ2	48.90	322	eP	14	38.50	1.1	BJA	8.13	205	(Pn)	44	14.90	-0.8	DOI	37.77	301	P	49	32.20	-1.1
	Z	20s	0.20um			4.1Msz	BHD	8.35	271	ePnd	44	34.00	15.3X	CDP	37.95	307	eP	49	33.50	-1.6
MDJ	53.80	340	eP	15	14.50	0.3								LPG	38.14	303	eP	49	33.50	-1.6
GYA	54.20	308	P	15	18.00	0.4									0.9s	9.00nm		49	33.70	-1.4
LOE	54.61	296</																		



[illegible]



JAY	47.95	307	ePc	08 34.00	-0.3	TIA	91.63	315	Pd	12 59.80	1.1	POO	111.38	278	ePKP	18 26.20	0.7
RKG	48.37	254	iPd	08 37.10	-0.3	MDJ	91.88	328	eP	12 59.50	-0.1	BAO	112.58	132	ePKP	18 28.50	0.6
NWAO	48.63	256	iPc	08 39.37	0.0	CHG	92.13	292	ePc	13 02.70	1.3	YKA	113.05	28	ePdiff	14 39.20	4.9X
			epP	09 23.74	201kmX				1.0s	68.25nm	5.6mb				0.6s	0.30nm	
KLB	48.73	258	iPc	08 40.70	0.5				e	16 41.00		YKA	113.05	28	ePKP	18 26.00	-1.3
	0.4s		61.00nm		5.4mb	CHTO	92.13	292	iPc	13 02.43	1.0				0.5s	2.50nm	
MUN	49.79	257	iPc	08 48.70	0.5				esP	14 13.61		NDI	114.06	289	ePKP	18 28.00	-2.4X
	0.9s		477.00nm		6.0mb	SNY	92.41	323	Pc	13 02.00	-0.2	WMQ	114.06	308	iPKPd	18 28.60	-1.4
BAL	49.96	259	eP	08 49.50	0.0	BCH	92.42	47	P	13 02.60	0.1	FFC	114.40	39	ePKP	18 29.00	-1.2
	0.6s		136.00nm		5.6mb	PRS	92.48	45	ePc	13 03.90	1.2				1.0s	16.00nm	
MEKA	50.24	264	iPc	08 53.30	1.6				epP	13 53.90	201kmX	RSON	117.04	45	PKP	18 33.90	-1.4
	0.4s		120.00nm		5.7mb	GCC	92.63	44	ePc	13 04.20	0.9	MBG	119.67	14	ePKP	18 38.00	-1.6
MRWA	51.10	260	iPc	08 58.90	0.7	ABL	92.69	48	P	13 05.10	1.1	BLA	119.82	64	PKP	18 40.40	-0.7
	0.3s		34.00nm		5.3mb	BAR	92.75	51	eP	13 05.00	1.0	QUE	122.64	285	iPKPd	18 47.30	0.4
MBL	51.83	271	iPc	09 03.20	-0.5	PCC	92.75	44	eP	13 04.50	0.7	BIM	123.86	97	ePKP	18 49.93	0.5
SPA	53.27	180	iPd	09 18.20	4.3X	SAO	92.75	45	e(P)	13 04.30	0.4	FDF	123.92	97	ePKP	18 50.18	0.6
	1.2s		422.54nm		5.9mb	PRI	92.75	46	ePc	13 05.50	1.4				0.4s	0.50nm	
NANU	54.57	267	iPc	09 23.70	0.0				epP	13 55.40	201kmX	MVM	124.02	97	ePKP	18 47.80	-2.0
GUA	58.68	323	eP	09 50.50	-2.1	LLA	92.93	45	e(P)	13 05.20	0.5	BBL	124.11	96	ePKP	18 48.00	-1.9
GUMO	58.74	323	eP	09 51.00	-2.0	MWC	92.95	49	eP	13 05.00	-0.1	CRM	124.12	97	ePKP	18 42.70	-7.2X
MNI	61.68	296	ePd	10 12.40	-0.6	MHC	93.05	44	ePc	13 06.40	1.0	NEV	124.12	94	ePKP	18 49.00	-0.9
KHK I	62.37	281	ePc	10 16.90	-0.6	CN2	93.05	325	iPd	13 05.40	0.3	MGH	124.18	94	ePKP	18 49.00	-1.0
			e	13 53.00					1.0s	100.00nm	5.9mb	PAG	124.23	95	ePKP	18 49.00	-1.2
HON	62.47	26	P	10 17.30	-0.6				pP	13 59.00	218kmX	MGG	124.45	96	ePKP	18 50.00	-0.5
OPA	62.81	26	P	10 19.70	-0.5				eS	23 55.00		BPA	124.64	94	ePKP	18 49.50	-1.4
TRT	65.11	279	iPc	10 36.30	1.0	PLM	93.09	50	eP	13 07.00	1.3	TBR	125.79	62	PKP	18 52.00	-0.5
	1.1s		912.80nm		6.5mb				e	13 57.00		CAI	126.16	136	ePKPc	18 54.70	0.7
BKB2	65.79	288	iPc	10 41.50	1.9	RVR	93.21	49	eP	13 06.00	0.0	RSNY	126.71	58	PKP	18 53.60	-0.5
AIA	67.58	156	eP	10 52.20	2.0	KMI	93.32	299	Pc	13 08.50	1.5	WNY	127.12	58	PKP	18 54.10	-0.9
TSM	68.51	293	ePd	10 58.00	1.5				1.5s	0.10nm	2.7mb X				pP	19 50.00	
KKM	71.09	293	ePc	11 12.00	-0.3				pP	14 01.00	213kmX	NAI	127.16	233	iPKPc	19 00.00	3.8X
	0.9s		257.60nm		6.0mb				SKS	23 20.00					1.0s	10.00nm	
PPR	71.81	298	ePc	11 17.00	0.6				iS	24 00.00		HBVT	127.65	59	PKP	18 55.50	-0.4
	1.0s		193.00nm		5.8mb	SBB	93.41	48	eP	13 08.00	0.9	MAIO	130.81	289	ePKP	19 02.00	-0.3
KLI	72.99	277	eP	11 22.50	-0.8				e	13 58.00		CBM	131.68	56	PKP	19 02.60	-0.9
BAG	75.21	304	eP	11 35.80	-0.4	FRI	93.90	46	eP	13 09.80	0.7	FRB	133.01	34	ePKP	18 49.00	-16.4X
PIP	76.56	305	ePd	11 43.90	0.4				epP	13 59.70	201kmX	KBS	137.46	356	iPKP	19 13.00	-0.6
IIDJ	80.75	328	P	12 05.30	-0.5	TPC	94.09	50	eP	13 11.00	0.8	DAG	139.42	6	ePKP	19 07.00	-10.2X
CHJJ	80.79	329	P	12 04.90	-1.0				e	14 08.00					0.7s	21.23nm	
MAT	81.54	329	eP	12 09.00	-0.8	GLA	94.14	51	eP	13 13.00	2.6	KER	139.73	282	ePKP	19 11.00	-8.2X
	1.0s		33.00nm		5.0mb				e	14 03.00		TAB	141.37	287	ePKP	19 16.00	-6.0X
TSRJ	81.63	327	P	12 09.90	-0.3	CMB	94.24	45	iPc	13 11.10	0.3	BHD	141.52	279	ePKPd	19 23.50	1.3
MTMJ	81.74	329	P	12 10.20	-0.8				epP	14 01.20	202kmX	BCAO	142.21	216	iPKPd	19 18.50	-5.5X
IPM	81.75	282	ePd	12 12.50	1.1				esP	14 19.40					0.9s	105.00nm	
	0.8s		134.40nm		5.7mb	FHC	94.26	41	eP	13 11.80	1.0				i	20 11.90	
PSI	82.25	279	ePc	12 14.50	0.5	GSC	94.44	49	eP	13 13.00	1.2				i	21 05.00	
	0.8s		125.40nm		5.7mb				e	14 07.00					i	22 38.30	
QZH	82.64	309	eP	12 16.50	0.8	ORV	94.69	43	e(P)	13 13.00	0.2	KEV	143.39	343	iPKP	19 21.00	-3.3X
			S	22 14.00		WDC	94.86	42	iPc	13 13.90	0.4				0.9s	71.00nm	
HKC	83.63	304	eP	12 22.70	1.9				epP	14 04.20	203kmX	MSL	143.41	283	iPKPd	19 22.50	-2.9X
QIZ	84.37	299	P	12 25.80	1.2	BJI	94.89	318	eP	13 14.00	0.4	TKT1	144.82	344	iPKPd	19 24.87	-1.9
HOJJ	84.77	335	eP	12 27.00	1.0				eSKS	23 24.00		TRO	145.17	347	iPKPd	19 25.94	-1.4
LNV	84.86	129	iPd	12 29.00	2.1				eS	24 10.00		SOD	145.25	341	iPKP	19 26.80	-0.7
KUSJ	84.95	337	eP	12 27.90	1.0	XAN	94.99	309	P	13 15.00	0.7	AKSR	146.55	257	ePKP	19 34.00	3.0X
LCCH	85.08	129	ePd	12 30.10	2.1	TIY	95.35	314	eP	13 16.50	0.6	AGAL	146.59	256	ePKP	19 32.00	1.0
CHCH	85.35	129	eP	12 31.00	1.6	KVN	96.24	45	P	13 19.70	-0.3	AGMR	146.87	256	ePKP	19 32.00	0.5
TACH	85.36	129	eP	12 31.00	1.5				pP	14 09.30	200kmX	ANMR	146.95	257	ePKP	19 31.50	-0.1
MRRJ	85.57	334	eP	12 29.90	0.0	CD2	96.28	304	P	13 20.70	0.5	BADA	147.28	266	ePKP	19 31.70	-0.3
SSE	85.59	314	Pd	12 30.40	0.1	BTO	98.69	315	eP	13 32.00	1.1	LOF	147.42	349	iPKPd	19 32.55	1.5
	1.0s		39.00nm		5.2mb	LPB	98.75	118	P	13 35.00	2.7X	MBH	147.88	268	ePKP	19 33.00	0.1
E	10s		0.20um			ZOBO	98.91	118	P	13 35.00	1.8	JARJ	147.91	273	PKPd	19 37.20	4.2X
PCH	85.64	129	ePc	12 33.50	2.5				0.9s	15.14nm	5.4mb	MKRJ	147.92	272	PKPd	19 37.10	4.0X
SAN	85.66	129	eP	12 33.20	2.2	LZH	99.48	308	eP	13 34.00	-0.8	KFNJ	148.00	272	PKPc	19 37.60	4.6X
ROCH	85.76	128	eP	12 32.20	0.5				pP	14 30.00	228kmX	PRNI	148.00	269	e(PKP)	19 33.00	-0.2
FCH	85.98	129	eP	12 35.00	2.1	CCH	99.54	120	eP	13 38.00	2.2	BURJ	148.02	273	PKPc	19 37.90	4.6X
ASAJ	86.53	336	eP	12 35.30	0.6	ALO	100.69	54	ePdiff	13 40.00	-0.4	SHMJ	148.21	274	PKPd	19 38.30	4.9X
NJ2	87.63	314	iPd	12 41.30	1.1				0.9s	3.57nm	4.9mb	HRI	148.40	275	iPKPd	19 34.00	0.2
	1.0s		100.00nm		5.6mb	ANMO	100.70	54	Pdiff	13 40.20	-0.2	SUF	148.64	335	ePKP	19 31.90	-1.2
ZON	88.18	129	eP	12 45.00	1.8	PMR	101.91	16	Pdiff	13 44.00	-0.8	LIC	149.38	176	PKP	19 36.30	0.6
CFA	88.41	129	ePd	12 46.50	2.2	PNT	102.45	37	ePdiff	14 00.00	-12.4X	KIC	149.53	176	PKP	19 36.60	0.6
RTLL	88.46	129	ePc	12 46.30	1.8	HYB	107.03	279	ePKPc	18 15.00	-2.3X	TIC	149.80	176	PKP	19 36.98	0.6
ADK	88.59	4	P	12 42.90	-1.4				e	18 38.50		AKU	149.82	13	ePKP	19 35.80	1.0
	0.7s		372.09nm		6.4mb	GUN	107.15	292	Pdiff	14 11.20	1.8				0.9s	87.39nm	
			pP	13 36.30	217kmX	GUN	107.15	292	PKP	18 16.20	-1.5				i	19 41.00	
RTRS	88.62	127	ePd	12 48.00	2.8X				0.8s	23.00nm		FAM	150.26	277	ePKP	19 42.00	5.6X
LOE	89.19	292	eP	12 48.50	0.6	PKI	107.31	292	Pdiff	14 11.20	1.1	REY	150.42	17	iPKP	19 42.00	6.3X
WHN	89.25	310	Pd	12 49.00	1.1	PKI	107.31	292	PKP	18 15.60	-2.4X	NUR	150.65	332	iPKP	19 35.50	-0.7
			pP	13 42.00	215kmX				0.8s	21.00nm					0.7s	529.90nm	
			S	23 20.00		KKN	107.53	292	Pdiff	14 12.40	1.5				i	19 41.20	
NST	89.30	290	eP	12 51.00	2.6X	KKN	107.53	292	PKP	18 16.80	-1.4	HLW	150.74	266	ePKP	19 44.00	6.7X
SMY	89.32	358	P	12 46.90	-0.7				0.8s	27.00nm		CSS	150.79	277	ePKP	19 42.50	5.2X
	1.0s		240.00nm		6.1mb	DMN	107.56	292	Pdiff								



BCK	153.47	281	ePKP	19 39.30	-1.8X																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																														
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WRA	26.35	242	Pc	17	17.20	-0.6	PMO	52.40	102	iP	20	53.80	0.3	WMQ	82.54	316	iPc	24	02.00	0.0
	0.5s	24.70nm				5.0mb		1.0s	305.00nm			6.2mb					pP	24	31.00	112km
BWA	27.56	199	eP	17	28.80	0.1	VAH	52.66	103	iP	20	55.40	0.0				SKS	34	09.50	
			e	17	55.20	123km		1.0s	180.00nm			6.0mb					sS	35	07.00	
MTN	27.62	259	eP	17	29.00	-0.3	TPT	52.67	102	iP	20	55.60	0.1	FBA	83.13	20	eP	24	02.60	-1.9
CNB	28.10	197	eP	17	35.00	1.4		1.0s	305.00nm			6.2mb			0.7s	45.70nm			5.5mb	
			i	17	43.20	29kmX	RUV	52.90	103	iP	20	57.20	0.0	HYB	83.40	289	eP	24	08.00	1.2
CAN	28.22	197	iPc	17	35.50	0.9		1.0s	365.00nm			6.3mb					e	24	38.70	119km
			e	19	02.00		SSE	53.40	319	P	21	00.50	-0.1	GBA	83.76	285	Pd	24	08.80	0.2
ASPA	28.29	235	iPd	17	33.80	-1.6		1.5s	49.00nm			5.2mb			0.8s	4.30nm			4.4mb X	
	0.5s	70.00nm				5.6mb	QIZ	55.53	300	eP	21	16.70	0.3	FHC	85.87	48	eP	24	20.60	1.9
KNA	30.30	253	eP	17	52.60	-0.6	NJ2	55.54	319	Pd	21	16.00	-0.2	BRK	86.45	51	ePc	24	22.70	1.1
			eS	18	22.00				pP	21	45.00	122km	BKS	86.47	51	ePd	24	23.10	1.4	
TOO	31.41	201	eP	18	03.50	0.7			S	28	54.00			0.9s	55.00nm			5.5mb		
BFD	32.19	205	eP	18	10.00	0.4	WHN	57.70	314	Pd	21	31.50	0.0	PRS	86.79	53	eP	24	23.50	0.2
ADE	32.21	212	eP	18	09.30	-0.5			pP	22	00.00	118km	MHC	86.81	52	ePc	24	24.30	0.8	
	0.4s	69.49nm				5.8mb			S	29	13.00		SAO	86.83	52	e(P)	24	23.50	0.0	
HBZ	33.90	152	eP	18	20.50	-3.8X	DL2	58.48	326	eP	21	36.10	-0.7	WDC	86.88	48	ePc	24	24.80	1.2
PUZ	34.26	152	eP	18	26.00	-1.5			pP	22	04.00	115km				epP	24	54.40	113km	
NOZ	34.61	153	eP	18	29.20	-1.2	Z	27s	0.70um			4.6mszX	LLA	87.19	53	ePc	24	26.80	1.6	
MNG	35.25	158	P	18	35.00	-0.9			S	29	29.00		PR1	87.31	53	ePc	24	27.50	1.6	
KIW	35.26	159	P	18	35.40	-0.5			S	29	29.00		ORV	87.42	50	ePc	24	26.60	0.4	
TCW	35.35	160	P	18	36.50	-0.1	MDJ	59.09	336	eP	21	39.50	-1.5	SYP	87.52	55	eP	24	28.00	1.0
THZ	35.40	162	P	18	36.60	-0.5			epP	22	08.50	120km				e	25	05.00	145kmX	
MRW	35.51	159	P	18	37.40	-0.6			S	29	32.00		MIN	87.52	49	ePc	24	27.60	0.7	
CAW	35.53	159	eP	18	37.10	-1.1			S	30	24.00		CMB	87.93	51	ePc	24	29.70	0.9	
PGZ	35.55	157	eP	18	36.90	-1.5			S	33	30.00		FRI	88.24	52	ePc	24	30.60	0.4	
WEL	35.58	159	Pd	18	38.00	-0.6			S	33	30.00		PAS	88.91	55	eP	24	34.00	0.5	
	1.0s	*****nm				7.9mb X	SNY	59.60	330	eP	21	43.00	-1.4	ISA	88.95	54	eP	24	35.00	1.2
WDW	35.65	159	P	18	38.10	-1.1			Z	40s	1.70um					e	25	10.00	136kmX	
MTW	35.73	158	eP	18	38.40	-1.5			N	40s	1.70um		MWC	89.01	55	eP	24	35.00	0.8	
			e	19	05.00	116km			E	40s	1.30um					e	25	11.00	140kmX	
			e	19	16.40					pP	22	11.50	117km	SBB	89.29	55	eP	24	36.00	0.6
MOW	35.87	159	P	18	39.60	-1.5				S	29	44.00		RVR	89.53	56	eP	24	37.00	0.6
			e	19	06.80	119km	CN2	60.22	333	iPd	21	48.20	-0.5				e	25	07.00	114km
			e	19	17.70					pP	22	15.00	109km	PEC	89.69	56	P	24	38.40	1.2
BLW	35.91	159	eP	18	39.90	-1.5				eS	29	48.00		INK	89.75	20	eP	24	36.00	-0.7
			e	19	07.30	120km				S	30	08.00					pP	25	06.00	114km
			e	19	18.00		GYA	61.42	306	iPd	21	57.80	0.4	PLM	89.83	56	eP	24	39.00	0.9
LTZ	36.14	163	P	18	42.70	-0.7				S	30	08.00					e	25	10.00	119km
KHZ	36.19	162	P	18	43.20	-0.5	LOE	62.05	295	eP	22	01.00	-0.5	BAR	89.87	57	eP	24	39.00	0.9
FORR	36.34	228	eP	18	45.20	0.1	BJI	62.34	324	eP	22	01.50	-1.5				e	25	15.00	140kmX
MSZ	36.90	169	P	18	50.80	1.2				2.0s	55.00nm		KVN	89.89	51	P	24	38.70	0.5	
MOZ	37.10	163	P	18	51.20	-0.1	NNT	62.39	289	eP	22	03.60	-0.1	GSC	90.22	54	eP	24	40.00	0.3
MHZ	37.55	168	P	18	55.20	0.0	XAN	63.46	315	P	22	09.50	-1.1				e	25	15.00	136kmX
MBL	39.69	247	eP	19	13.20	0.0				0.8s	100.00nm		TPC	90.63	56	eP	24	42.00	0.4	
			i	19	39.50	115km				S	30	32.00					e	25	13.00	118km
COOL	41.65	232	eP	19	29.00	-0.2	ADK	63.68	17	eP	22	10.80	-0.8	PNT	90.85	40	ePc	24	43.00	0.8
	0.3s	15.00nm				5.2mb				0.5s	30.70nm			1.0s	19.00nm			5.2mb		
MEKA	42.26	240	eP	19	36.80	2.5	KMI	64.04	303	Pd	22	15.50	0.7	GLA	91.47	57	eP	24	47.00	1.6
PPR	43.91	294	ePd	19	48.00	0.3				1.5s	100.00nm					e	25	17.00	114km	
KKM	44.93	287	ePc	19	56.00	0.0						5.5mb	NEW	92.27	42	P	24	48.30	-0.5	
BAL	45.08	235	eP	19	57.00	0.1								1.0s	12.50nm			5.1mb		
	0.5s	9.00nm				4.8mb	RKT	64.81	112	iP	22	18.80	-0.7				pP	25	17.80	112km
MRWA	45.20	237	eP	19	58.00	0.1				1.3s	205.00nm		LRM	95.07	45	eP	25	02.10	0.1	
	0.4s	9.00nm				4.9mb	CHTO	65.02	295	eP	22	21.00	0.1	EDM	95.38	37	eP	25	02.00	-0.9
NWAO	45.51	232	iPc	20	00.50	0.2				1.0s	12.50nm		YKA	95.83	28	eP	25	04.00	-0.7	
	0.9s	43.00nm				5.2mb				i	22	51.00	122km				0.8s	13.00nm	5.5mb	
N	20s	1.00um					CD2	65.72	309	P	22	25.40	0.2	SES	96.50	40	eP	25	08.00	-0.1
E	20s	0.40um								1.2s	100.00nm		BW06	96.82	48	P	25	10.00	0.0	
TRT	45.78	267	ePc	20	02.00	-0.7				pP	22	54.40	117km				0.8s	15.54nm	5.6mb	
MUN	45.96	233	eP	20	05.00	1.1				S	31	01.30					pP	25	40.00	114km
	0.9s	35.00nm				5.1mb	BTO	66.39	321	eP	22	29.50	0.1	ALO	98.59	56	eP	25	18.00	-0.1
RKG	46.13	230	eP	20	08.20	3.0X	LZH	68.08	314	Pc	22	39.50	-0.8		1.0s	4.50nm			5.0mb	
KAKJ	47.80	339	eP	20	17.80	-0.4				1.4s	150.00nm									
IIDJ	47.99	337	eP	20	18.50	-1.2				Z	50s	1.20um		ANMO	98.59	56	P	25	19.00	1.0
CHJJ	48.08	338	P	20	19.50	-0.9				E	15s	0.90um			0.8s	3.36nm			5.0mb	
MAT	48.81	338	(P)	20	23.00	-3.0X								RSSD	100.91	47	Pdiff	25	29.00	0.6
			eS	27	10.00												pP	25	59.00	
TSRJ	48.82	335	P	20	26.10	0.1	VNDA	69.03	179	P	22	45.00	-0.1	FRB	115.38	21	ePKP	30	18.00	-1.8
MTMJ	49.00	337	P	20	26.40	-1.2	GTA	72.47	316	iPc	23	07.00	0.3	SUF	116.06	338	ePKP	30	19.80	-1.3
NIJ	49.14	339	P	20	28.00	-0.5				pP	23	36.00	115km		0.6s	7.50nm				
AFR	50.69	106	iP	20	40.00	-0.6	SHL	73.37	300	iP	23	12.40	0.2	NUR	117.95	336	iPKP	30	23.80	-1.0
	1.0s	145.00nm				5.9mb				iS	23	43.00		NB2	122.33	342	PKP	30	35.00	1.8
PPT	50.88	106	iP	20	42.10	0.0	LSA	75.29	304	P	23	25.00	1.4		0.9s	12.80nm				
	1.0s	115.00nm				5.8mb	ANM	77.60	15	eP	23	35.80	0.6	BBTK	122.85	312	ePKP	30	35.00	0.0
PAE	50.88	106	iP	20	42.00	-0.1	SVW	77.95	21	eP	23	37.50	0.3	ARE	124.34	116	ePKP	30	39.00	0.2
	1.0s	135.00nm				5.8mb	GUN	79.19	300	P	23	44.80	-0.3	MLR	125.32	321	ePKP	30	39.00	-0.6
PPN	51.02	106	iP	20	43.20	0.1	PKI	79.50	300	P	23	46.00	-0.7	SPC	126.70	327	iPKP	30	41.80	-0.5
	1.0s	100.00nm				5.7mb	KKN	79.66	300	P	23	47.20	-0.3	LPB	127.29	118	PKP	30	45.50	0.9
TVO	51.20	106	iP	20	45.00	0.4	DMN	79.77												



CLL	128.90	333	iPKPd	30	46.10	0.0	0.9s	9.85nm			DEPTH = 186.5 ± 19.6 km		
	1.2s	25.00nm								4.0mb ( 1 obs.)			
ZST	128.96	328	ePKP	30	47.00	0.7	LSF	137.64	337	ePKP	31 02.70 -0.2	CHILE-ARGENTINA BORDER REGION (127)	
			e	31	18.10			0.8s	6.70nm				
			e	54	04.00		LRG	137.69	330	ePKP	31 01.60 -1.5		
PRU	129.10	331	PKP	30	47.30	0.8		0.8s	10.75nm				
VAY	129.43	318	iPKP	30	46.00	-1.4	LMR	137.70	330	ePKP	31 01.40 -1.7		
SKO	129.86	319	iPKP	30	47.50	-0.8		1.0s	12.00nm				
MOX	129.99	333	ePKPc	30	49.00	0.7	MFF	137.98	338	ePKP	31 03.60 0.1		
	2.0s	34.00nm					BCAO	140.42	267	iPKPd	31 00.90 -8.0X		
			e	33	36.00			0.5s	12.00nm				
KHC	130.14	331	ePKP	30	49.00	0.4				31 35.50			
	1.1s	25.00nm					ETOR	143.61	335	ePKP	31 11.00 -2.8X		
			e	31	03.00					32 17.00			
WET	130.47	331	ePKP	30	49.80	0.6	STS	143.99	344	ePKP	31 12.80 -1.4		
	1.4s	21.00nm					ECHE	144.15	333	ePKP	31 13.90 -0.8		
OHR	130.71	318	ePKP	30	48.70	-1.3	BAO	144.18	132	ePKP	31 12.40 -3.1X		
	0.9s	0.04nm					GUD	144.59	337	iPKPd	31 14.50 -1.0		
GRF	130.86	333	ePKP	30	49.80	-0.1	TOL	145.20	337	iPKPd	31 16.50 0.1		
			e	30	51.00			1.2s	312.50nm				
VBY	131.63	326	ePKP	30	51.90	0.4	EVIA	145.62	334	ePKP	31 18.20 0.9		
			e	34	08.00		PTO	145.63	343	iPKPc	31 17.60 0.5		
KBA	131.63	329	i(PKP)	30	50.00	-1.7	EALH	145.76	332	ePKP	31 18.20 0.8		
	0.8s	5.00nm					EPLA	145.80	339	ePKP	31 18.90 1.4		
			e	30	52.60		EBAN	146.56	335	ePKP	31 20.00 1.3		
			e	33	11.00		ENIJ	146.85	332	ePKP	31 20.00 0.8		
			e	33	41.00		AFC	147.22	334	ePKP	31 21.50 1.5		
			e	34	07.00		EHOR	147.45	336	e(PKP)	31 23.80 3.7X		
			e	34	48.00		MAL	148.04	334	iPKPd	31 24.50 3.4X		
LJU	131.68	327	ePKP	30	50.50	-1.1	EPRU	148.18	335	iPKPd	31 25.80 4.4X		
CEY	131.93	327	ePKP	30	52.00	-0.1	EVAL	148.24	338	ePKP	31 25.40 4.0X		
RBL	131.94	328	PKP	30	49.50	-2.7X	TAF	148.67	330	ePKP	31 28.00 5.7X		
VOY	132.03	327	ePKP	30	51.50	-0.9				e	31 36.00		
FVI	132.24	329	PKP	30	52.50	-0.1	EJIF	148.72	335	ePKP	31 26.70 4.5X		
TRI	132.31	327	PKP	30	52.50	-0.3	NKM	149.55	334	iPKP	31 27.50 4.0X		
MEM	132.36	337	PKP	30	53.10	0.4	IFR	151.04	332	iPKPd	31 27.00 1.0		
CTI	133.19	329	PKP	30	53.00	-1.6				i	31 32.50		
DOU	133.32	337	PKP	30	54.90	0.4	AVE	152.24	335	iPKP	31 34.00 6.4X		
CDF	133.55	334	ePKP	30	54.40	-0.8				i	31 44.50		
	0.7s	4.40nm								i	32 10.00		
ARV	134.17	325	PKP	30	56.00	-0.4	AVE	152.24	335	iPKP	31 28.00 0.4		
BSF	134.20	334	ePKP	30	55.80	-0.7				e	31 36.00		
	0.7s	8.80nm					TIO	154.19	332	iPKP	31 39.50 9.0X		
HAU	134.26	334	ePKP	30	56.00	-0.5				i	32 27.50		
	0.7s	7.70nm					LIC	163.89	263	PKP	31 41.40 -0.4		
SFI	134.53	327	PKP	30	55.50	-1.5	TIC	163.95	265	PKP	31 41.50 -0.4		
SGO	134.53	321	PKP	30	56.00	-1.1		S.D. = 0.9 on 223 of 251 obs.					
ASS	134.60	325	PKP	30	54.00	-3.3X							
PGD	134.61	327	PKP	30	49.00	-0.4X							
MGR	134.61	320	PKP	30	56.50	-0.8							
VAI	134.75	331	PKP	30	57.00	-0.4							
SDI	134.78	323	PKP	30	53.50	-4.2X							
BDI	135.09	328	PKP	30	52.00	-6.2X							
BOB	135.20	329	PKP	30	59.50	1.1							
SOI	135.40	317	PKP	30	55.00	-3.9X							
LOR	135.88	336	ePKP	30	59.30	-0.3							
	0.9s	13.10nm											
LPL	135.98	332	ePKP	31	00.00	-0.1							
	0.8s	8.05nm											
LPG	135.99	332	ePKP	31	00.00	-0.2							
	0.7s	9.90nm											
LBF	136.06	335	ePKP	30	59.70	-0.2							
SSF	136.19	336	ePKP	31	00.00	-0.1							
	0.8s	10.75nm											
FLN	136.25	340	ePKP	30	59.90	-0.3							
	0.6s	10.80nm											
LDF	136.27	340	ePKP	30	59.80	-0.4							
BNI	136.35	331	PKP	30	56.00	-4.7X							
SMF	136.39	335	ePKP	31	00.10	-0.4							
	0.9s	8.20nm											
AVF	136.47	336	ePKP	31	00.10	-0.5							
	0.8s	4.70nm											
GRR	136.70	340	ePKP	31	01.00	0.0							
	0.6s	6.30nm											
SBF	136.86	330	ePKP	31	00.90	-0.7							
	0.7s	8.80nm											
BGF	136.87	336	ePKP	31	01.40	0.0							
	0.8s	10.05nm											
PGF	136.97	327	ePKP	31	00.00	-1.9							
	0.7s	17.65nm											
LPF	137.07	340	ePKP	31	01.90	0.2							
	0.7s	22.05nm											
MAF	137.25	336	ePKP	31	02.30	0.1							
TCF	137.34	336	ePKP	31	02.30	-0.1							
	0.7s	9.90nm											
FRF	137.47	330	ePKP	31	00.80	-1.9							
												</	



22d 05h

LEeward ISLANDS  
ML 3.0 (FDF).

( 92 )

PAG	1.20	62	eP	14	28.20	-0.1
			S	14	44.50	
BBL	1.26	88	eP	14	29.60	0.5
MGH	1.35	24	eP	14	30.50	0.1
NEV	1.66	7	eP	14	34.90	-0.1
FDF	1.74	115	eP	14	36.52	0.4
	0.1s		0.45nm			
			S	15	00.50	
BPA	1.80	30	eP	14	31.50	-5.4X
			S	14	48.90	
BIM	1.91	120	iPc	14	39.60	1.1
			S	15	04.00	
CRM	1.94	111	eP	14	37.87	-1.1
			S	15	02.10	
MVM	2.04	116	eP	14	39.72	-0.7
	S.D. = 0.9	on	8 of	9 obs.		

MAR 22, 1990 07h 15m 49.72±0.38s  
41.916 N ± 3.3km 23.059 E ± 3.9km  
DEPTH = 10.0km (geophysicist)  
GREECE-BULGARIA BORDER REGION (363)  
ML 3.1 (SKO), 3.3 (ATH).

KKB	0.05	160	iPgc	15	53.00	1.1
MMB	0.60	123	iPgc	16	02.00	0.2
VTS	0.68	9	iPgc	16	02.00	-1.4
VAY	0.70	212	iPgc	16	03.50	0.0
			iSg	16	12.70	
KNT	0.76	189	iPgc	16	04.40	-0.2
			iSg	16	14.80	
SRS	0.89	153	ePbc	16	06.60	-0.2
			eSb	16	19.90	
PGB	1.04	52	iPg	16	08.00	-1.4
GRG	1.08	208	ePb	16	10.00	0.0
			eSb	16	25.20	
SOH	1.12	168	ePb	16	10.80	0.1
			eSb	16	27.00	
SKO	1.21	273	iPg	16	12.40	0.2
			iSg	16	29.40	
PLD	1.24	81	iPgc	16	14.00	1.3
RZN	1.26	100	iPd	16	13.00	-0.3
THE	1.28	183	ePb	16	13.70	0.2
			eSb	16	31.20	
PLG	1.57	169	ePg	16	17.80	0.1
FNA	1.70	229	ePb	16	19.80	0.2
			eSb	16	41.70	
OUR	1.73	156	ePn	16	19.40	-0.5
			eSn	16	45.80	
KDZ	1.78	98	iPd	16	19.00	-1.8
DIM	1.85	85	eP	16	24.00	2.3X
LIT	1.86	194	ePnc	16	22.40	0.4
			eSn	16	46.40	
OHR	1.88	245	ePn	16	21.50	-0.7
KZN	1.88	212	ePg	16	25.30	3.1X
PAIG	2.04	166	ePn	16	24.60	0.1
PVL	2.12	52	iPd	16	26.00	0.3
NEO	2.61	177	ePb	16	32.70	0.0
JMB	2.68	77	eP	16	40.00	6.4X
AGG	2.94	191	ePn	16	36.90	-0.5
EVR	3.14	198	ePg	16	46.00	5.7X
MFT	3.37	108	ePn	15	47.00	-56.6X
CTT	4.10	99	ePn	16	06.60	-47.2X
MLR	4.14	29	eP	16	56.00	1.5
VRI	4.76	33	ePd	17	04.50	1.3
			ec	28	20.50	
	S.D. = 0.8	on	25 of	31 obs.		

MAR 22, 1990 07h 26m 14.12±0.48s  
38.385 N ± 4.8km 21.868 E ± 4.6km  
DEPTH = 8.6 ± 3.1 km  
3.8mb ( 2 obs.)

AGG	0.73	29	iPg	26	27.30	-1.4
			iSg	26	39.20	
VLS	1.03	259	ePg	26	31.50	-2.2
ITM	1.20	178	ePg	26	36.00	-0.7
NEO	1.40	49	ePb	26	40.00	0.1
ATH	1.51	105	ePg	26	43.00	1.6
			eSb	27	01.60	
LIT	1.78	16	ePn	26	45.20	-0.1
			iSn	27	09.60	
VLI	1.87	153	ePb	26	46.70	0.1

KZN	1.92	358	ePn	26	48.60	1.2
LSK	2.02	331	iPnc	26	51.20	2.4X
SRN	2.08	316	iPn	26	51.10	1.4
KEK	2.09	310	ePb	26	50.00	0.3
PAIG	2.09	42	ePn	26	48.70	-1.0
PLG	2.33	31	ePn	26	52.50	-0.8
KBN	2.38	340	ePn	26	56.00	2.1
TPE	2.39	324	ePn	26	57.70	3.6X
OUR	2.54	39	ePn	26	55.40	-0.8
BERA	2.75	328	ePn	27	01.10	1.9
OHR	2.84	343	iPn	27	02.30	1.7
			iSn	27	44.50	
KNT	2.88	16	iPn	27	01.00	-0.1
VAY	2.98	10	iPn	27	02.30	-0.2
SRS	3.03	25	ePn	27	02.50	-0.7
TIR	3.33	333	ePn	27	16.20	8.7X
PHP	3.48	342	ePn	27	12.30	2.8X
MMB	3.50	23	ePc	27	09.00	-0.9
VAM	3.51	147	ePn	27	09.70	-0.3
SKO	3.60	355	ePn	27	12.50	1.3
			i	27	18.20	
			i	27	27.80	
			iSn	27	55.50	
KKB	3.60	15	iP	27	09.00	-2.3
LCI	3.60	304	P	27	09.00	-2.3
LACI	3.65	334	ePn	27	15.10	3.2X
RDO	3.95	45	ePn	27	17.20	1.0
PUK	3.95	338	ePn	27	21.40	5.2X
RZN	3.96	33	iPd	27	16.00	-0.5
SMG	3.98	98	ePn	27	16.00	-0.6
SDA	4.05	334	ePb	27	26.00	8.4X
VTS	4.32	13	iP	27	22.00	0.3
NPS	4.33	135	ePn	27	23.30	1.6
TDS	4.49	288	P	27	27.00	3.1
			eSn	28	17.50	
CZI	4.56	282	P	27	24.10	-0.7
			eSn	28	12.40	
CSI	4.56	289	P	27	24.70	-0.2
SOI	4.59	268	P	27	32.00	6.7X
MGR	5.20	292	P	27	34.00	0.0
			eSn	28	40.50	
SGO	5.52	295	P	27	34.50	-4.0X
			eSn	28	35.00	
DUI	6.56	302	P	27	53.00	-0.3
			eSn	29	04.00	
SDI	7.01	301	P	27	59.50	-0.1X
MLR	7.72	22	eP	28	10.00	0.5
ARV	8.47	310	P	28	17.50	-2.4
			eSn	29	52.00	
NB2	23.64	347	P	31	27.00	0.7
	0.7s		2.70nm			3.9mb
SUF	24.50	5	eP	31	32.60	-1.9
YKA	73.55	341	eP	37	46.20	-2.7X
	0.5s		0.30nm			3.6mb
	S.D. = 1.4	on	38 of	49 obs.		

MAR 22, 1990 07h 59m 58.81±3.74s  
33.804 S ± 15.0km 71.750 W ± 28.9km  
DEPTH = 23.0 ± 9.3 km

LNV	0.32	118	iPd	00	06.00	0.0
			iS	00	16.60	
LCCH	0.36	25	iPc	00	06.60	0.0
			iS	00	18.00	
TACH	0.69	78	iPc	00	12.20	0.0
			iS	00	30.00	
CHCH	0.92	98	iPc	00	16.00	-0.1
			iS	00	34.20	
SAN	0.97	69	eP	00	17.00	0.1
			iS	00	37.20	
ROCH	1.03	37	eP	00	18.10	0.0
			iS	00	36.20	
PCH	1.05	80	iPd	00	18.10	0.0
FCH	1.31	69	eP	00	22.00	0.0
			iS	00	45.50	
	S.D. = 0.1	on	8 of	8 obs.		

MAR 22, 1990 09h 00m 31.04±1.25s  
39.518 N ± 6.9km 22.075 E ± 11.4km  
DEPTH = 10.0km (geophysicist)  
GREECE (364)  
ML 2.1 (THE).

AGG	0.53	158	ePgc	00	41.90	0.0
LIT	0.66	29	iPgc	00	44.70	0.4
			iSg	00	56.50	

KZN	0.82	344	ePb	00	47.00	0.0
NEO	0.91	103	ePb	00	48.50	-0.1
PAIG	1.30	71	ePb	00	55.90	0.7
			eSb	01	11.20	
PLG	1.36	51	ePb	00	55.00	-1.0
GRG	1.46	10	ePb	01	01.00	3.6X
	S.D. = 0.8	on	6 of	7 obs.		

MAR 22, 1990 09h 12m 08.38±1.18s  
28.843 S ± 6.9km 72.390 W ± 15.2km  
DEPTH = 33.0km (normal)  
OFF COAST OF CENTRAL CHILE (134)

RTRS	2.88	118	ePd	12	51.70	-1.2
ZON	4.19	131	eP	13	13.00	1.3
ROCH	4.28	164	iPd	13	13.00	-0.1
			iS	13	59.00	
RTCV	4.49	133	eP	13	15.60	-0.3
LCCH	4.67	172	iPd	13	18.50	0.1
			iS	14	06.50	
FCH	4.82	159	iPd	13	22.00	1.2
			iS	14	13.50	
SAN	4.83	163	eP	13	20.50	-0.1
			iS	14	11.50	
			i	14	12.50	
TACH	4.95	166	iPc	13	22.50	0.0
			iS	14	14.00	
PCH	5.03	162	iPc	13	23.50	-0.1
			iS	14	17.00	
LNv	5.16	171	iP	13	24.50	-0.9
			iS	14	17.50	
CHCH	5.29	164	iPc	13	27.00	-0.2
			iS	14	21.50	
ANT	5.42	20	e(P)	13	29.00	0.1
	S.D. = 0.8	on	12 of	12 obs.		

MAR 22, 1990 09h 54m 14.70±1.01s  
39.110 N ± 9.1km 27.610 E ± 16.8km  
DEPTH = 10.0km (geophysicist)  
TURKEY (366)

IZM	0.76	201	iPg	54	29.60	0.0
			eSg	54	40.60	
DST	0.93	58	iPn	54	32.50	0.0
EDC	1.25	9	iPn	54	37.50	-0.5
BNT	1.27	11	iPn	54	38.70	0.5
	S.D. = 0.6	on	4 of	4 obs.		

MAR 22, 1990 10h 21m 39.14±0.87s  
46.645 N ± 13.5km 9.871 E ± 7.1km  
DEPTH = 10.0km (geophysicist)  
SWITZERLAND (544)

OSS	0.19	77	iPc	21	43.50	0.0
VDL	0.32	240	iPc	21	45.80	0.0
LLS	0.64	291	ePd	21	52.10	0.0
TMA	0.88	232	ePd	21	56.00	-0.1
MMK	1.45	246	ePd	22	05.80	0.2
	S.D. = 0.2	on	5 of	5 obs.		

MAR 22, 1990 10h 59m 53.85±0.57s  
37.633 N ± 6.1km 15.097 E ± 4.6km  
DEPTH = 10.0km (geophysicist)  
SICILY (398)

MNO	0.44	313	Pd	00	02.00	-0.8
			eSg	00	06.70	
MEU	0.55	194	Pd	00	05.20	0.3
			eSg	00	14.50	
ATN	0.60	29	P	00	06.20	0.2
			eSg	00	17.00	
MSI	0.68	32	P	00	08.20	1.0
			eSg	00	20.50	
SOI	0.88	60	P	00	12.10	1.4
			eSg	00	27.50	
GIB	0.92	293	P	00	10.00	-1.5
			eSg	00	24.00	
MCT	1.16	270	P	00	17.10	1.4
FAI	1.19	253	P	00	16.10	0.1
			eSg	00	33.10	
CZI	1.78	27	P	00	23.40	-1.4
CVT	1.83	272	P	00	26.00	0.5
USI	1.85	306	P	00	23.30	-2.6X
LVI	2.21	280	P	00	31.70	0.6
TDS	2.24	25	P	00	30.40	-1.2
ROI	2.25	30	P	00	32.80	1.0
CSI	2.33	23	P	00	33.10	0.2



22d 11h

MMN 2.36 17 P 00 35.10 1.9  
 MGR 2.53 8 P 00 33.70 -1.9  
 ORI 2.65 23 P 00 38.60 1.3  
 SGO 2.93 3 P 00 39.80 -1.4  
 KEK 4.23 59 eP 01 01.50 1.8  
 VLS 4.38 81 eP 00 59.30 -2.6X  
 EVR 5.43 74 eP 01 16.20 -0.8  
 ITM 5.46 93 eP 01 15.40 -1.8  
 OHR 5.62 50 eP 02 07.50 48.0X  
 VLI 6.33 96 eP 01 28.50 -1.0

S.D. = 1.3 on 22 of 25 obs.

? MAR 22, 1990 11h 08m 32.22± 8.11s  
 22.772 N ± 60.0km 121.131 E ± 42.2km  
 DEPTH = 10.0km (geophysicist)

TAIWAN REGION (243)

TWG 0.07 311 iPd 08 33.50 -1.1  
 eS 08 34.70  
 TWF1 0.60 15 ePc 08 43.80 -0.5  
 TWM1 0.65 275 ePd 08 44.90 -0.4  
 TWO 1.52 350 ePc 09 00.10 0.6  
 TWC 1.94 20 eP 09 07.30 1.7X  
 ANP 2.43 8 eP 09 17.30 4.7X

S.D. = 1.2 on 4 of 6 obs.

% MAR 22, 1990 11h 37m 22.94± 0.82s  
 37.655 N ± 7.2km 15.032 E ± 6.8km  
 DEPTH = 10.0km (geophysicist)

SICILY (398)

MNO 0.38 316 P 37 30.60 -0.3  
 eSg 37 34.70  
 MEU 0.56 188 P 37 34.20 -0.1  
 eSg 37 42.50  
 ATN 0.61 34 P 37 35.00 -0.2  
 eSg 37 44.00  
 GIB 0.86 293 P 37 40.00 0.4  
 eSg 37 53.50  
 SOI 0.91 62 P 37 40.60 0.3  
 eSg 37 56.30

S.D. = 0.4 on 5 of 5 obs.

% MAR 22, 1990 11h 40m 07.61± 0.98s  
 45.450 N ± 11.3km 26.870 E ± 10.1km  
 DEPTH = 33.0km (narmol)

ROMANIA (358)

VRI 0.43 346 ePc 40 18.50 1.3  
 MLR 0.65 274 iP 40 20.00 -0.5  
 PPE 0.93 34 ePd 40 23.00 -1.3  
 CFR 0.94 106 iPc 40 25.00 0.5  
 CLI 1.14 15 iPc 40 22.50 -4.8X  
 TL8 1.19 136 ePd 40 28.00 0.0

S.D. = 1.4 on 5 of 6 obs.

& MAR 22, 1990 11h 45m 21.38s  
 58.393 N 152.979 W  
 DEPTH = 78.8km  
 3.1mb (1 obs.)

KODIAK ISLAND REGION (13)

&lt;AGS-P&gt;.

CDD 0.64 327 eP 45 34.93 -1.6  
 eS 45 46.14  
 KDC 0.70 158 eP 45 35.85 -1.2  
 eS 45 46.73  
 AUE 0.99 348 eP 45 40.16 -0.3  
 eS 45 52.61  
 AUL 1.02 347 eP 45 40.12 -0.7  
 XLV 1.25 31 eP 45 43.00 -0.8  
 CNPM 1.45 38 eP 45 45.18 -1.3  
 PDB 1.53 336 eP 45 46.10 -1.4  
 eS 46 04.19  
 BGM 1.54 312 iP 45 46.16 -1.4  
 eS 46 05.05  
 NNL 1.87 27 iP 45 51.39 -0.6  
 RDT 2.21 7 eP 45 55.59 -1.1  
 SEW 2.50 45 eP 45 58.10 -2.5  
 eS 46 24.91  
 NKA 2.52 20 eP 46 01.15 0.3  
 SLKM 2.55 32 eP 45 59.31 -2.0  
 eS 46 28.24  
 SPU 2.84 9 eP 46 04.22 -1.2  
 CRP 2.91 8 eP 46 05.71 -0.8  
 SUA 3.28 19 eP 46 10.14 -1.4  
 PMS 3.34 30 eP 46 10.52 -1.8

PWA 3.62 24 eP 46 14.71 -1.5  
 SKT 3.67 11 eP 46 15.16 -1.8  
 PLRM 3.75 29 eP 46 15.26 -2.7  
 GLI 3.89 48 eP 46 16.67 -3.3  
 GHO 3.95 29 eP 46 18.35 -2.6  
 SML 4.14 32 eP 46 21.30 -2.3  
 VZW 4.21 48 eP 46 21.44 -3.1  
 KLU 4.72 46 eP 46 29.11 -2.5  
 YKA 19.16 61 eP 49 39.50 -1.4  
 0.4s 0.50nm 3.1mb

26 obs. associated

% MAR 22, 1990 12h 36m 17.60± 0.79s  
 40.416 N ± 8.3km 27.920 E ± 5.9km  
 DEPTH = 10.0km (geophysicist)

TURKEY (366)

BNT 0.06 180 iPg 36 19.30 -0.6  
 EDC 0.08 212 iPg 36 19.50 -0.6  
 iSg 36 21.50  
 KCT 0.37 116 iPg 36 24.80 -0.5  
 MFT 0.61 307 iPg 36 30.30 0.3  
 DST 0.97 146 ePg 36 37.50 1.3  
 eSg 36 50.50  
 YLV 1.12 82 iPn 36 38.30 -0.3  
 EZN 1.36 245 iPn 36 42.60 0.1

S.D. = 0.9 on 7 of 7 obs.

? MAR 22, 1990 13h 19m 48.34± 3.39s  
 42.290 N ± 30.7km 23.935 E ± 11.2km  
 DEPTH = 10.0km (geophysicist)

BULGARIA (359)

ML 2.6 (THE).

SRS 1.20 192 ePb 20 10.80 0.1  
 eSb 20 31.40  
 KNT 1.37 215 ePb 20 13.50 0.0  
 eSb 20 37.30  
 VAY 1.41 227 ePn 20 14.00 0.0  
 SOH 1.53 197 ePb 20 15.60 -0.2  
 eSb 20 43.00  
 GRG 1.76 221 ePn 20 22.30 3.2X  
 eSn 20 49.50  
 ALN 2.11 131 ePn 20 24.10 0.0  
 eSn 20 54.20  
 PAIG 2.37 185 ePn 20 31.30 3.5X

S.D. = 0.1 on 5 of 7 obs.

& MAR 22, 1990 13h 22m 14.49s  
 63.187 N 149.372 W  
 DEPTH = 87.7km

CENTRAL ALASKA (1)

&lt;AGS-P&gt;.

HUR 0.24 210 iP 22 27.22 -0.4  
 eS 22 36.56  
 RND 0.32 47 eP 22 27.99 -0.1  
 eS 22 37.92  
 MCK 0.58 20 eP 22 29.77 -0.2  
 eS 22 40.57  
 KTH 0.79 298 eP 22 31.78 -0.3  
 CUT 0.89 208 iP 22 32.58 -0.4  
 eS 22 46.66  
 WRH 1.41 23 iP 22 38.74 -0.6  
 GHO 1.44 171 eP 22 39.64 -0.1  
 eS 23 00.03  
 SML 1.47 160 iP 22 39.91 -0.2  
 eS 23 00.21  
 PWA 1.56 189 eP 22 41.52 0.2  
 eS 23 03.17  
 SKT 1.57 220 eP 22 40.59 -0.9  
 PLRM 1.60 176 eP 22 41.86 0.0  
 eS 23 03.96  
 CCB 1.62 25 iP 22 41.32 -0.8  
 HDA 1.63 40 eP 22 41.58 -0.6  
 NCA 1.68 134 eP 22 43.26 0.3  
 DDM 1.69 68 eP 22 43.08 0.0  
 PAX 1.79 95 iP 22 45.18 0.7  
 eS 23 07.66  
 TOA 1.83 125 eP 22 46.25 1.2  
 SUA 1.84 201 eP 22 45.36 0.2  
 eS 23 10.39  
 PMS 1.95 183 eP 22 46.62 0.1  
 GLM 2.01 25 eP 22 46.48 -0.8  
 CRP 2.33 215 eP 22 52.56 0.8  
 KLU 2.34 135 eP 22 51.07 -0.8  
 SPU 2.37 213 eP 22 52.40 0.1

VZW 2.51 147 eP 22 53.24 -0.9  
 GLI 2.55 154 eP 22 53.03 -1.6  
 SLKM 2.72 189 eP 22 56.95 0.0  
 RDT 2.99 210 eP 23 01.30 0.6  
 SEW 3.09 181 eP 23 01.52 -0.6  
 GLB 3.13 122 eP 23 01.70 -1.0  
 CNPM 3.78 195 eP 23 10.63 -1.0  
 PDB 4.12 216 eP 23 15.12 -1.2

31 obs. associated

MAR 22, 1990 13h 26m 09.97± 0.67s  
 40.257 N ± 7.1km 28.940 E ± 5.4km  
 DEPTH = 10.0km (geophysicist)

TURKEY (366)

KCT 0.45 269 iPg 26 20.10 1.0  
 YLV 0.45 47 iPg 26 18.60 -0.6  
 GBZT 0.66 36 ePg 26 21.60 -1.4  
 iSg 26 31.60  
 DST 0.69 200 iPg 26 22.50 -1.2  
 eSg 26 32.50  
 BNT 0.79 278 iPg 26 25.10 -0.2  
 HRT 0.79 44 ePg 26 24.80 -0.6  
 EDC 0.83 277 ePg 26 25.50 -0.5  
 CTT 0.97 337 iPg 26 29.50 1.1  
 GPA 1.05 88 ePg 26 32.00 2.2  
 ALT 1.50 143 iPn 26 37.20 0.1

S.D. = 1.3 on 10 of 10 obs.

MAR 22, 1990 13h 27m 44.93± 1.11s  
 7.816 N ± 4.1km 126.747 E ± 6.3km  
 DEPTH = 75.9 ± 10.6 km  
 4.9mb (19 obs.)

MINDANAO, PHILIPPINE ISLANDS (259)

DAV 1.37 238 iPd- 28 07.50 -1.2  
 MNI 6.61 197 eP 29 21.50 0.0  
 eS 30 34.00  
 PPR 8.16 284 ePd 29 40.00 -2.9X  
 iS 30 15.00  
 TSM 9.34 248 ePd 30 01.50 2.5  
 KKM 10.60 261 ePd 30 18.00 1.7  
 CVP 10.94 334 eP 30 20.00 -0.7  
 PCI 11.07 219 ePd 30 24.00 1.5  
 1.0s 5.50nm 4.4mb  
 PIP 12.03 331 iP 30 39.00 3.8X  
 GUMO 18.70 71 eP 32 18.40 18.3X  
 GUA 18.73 71 eP 32 19.10 18.7X  
 OIZ 19.84 306 P 32 11.30 -1.1  
 E 12s 0.90um  
 sS 35 54.00  
 MTN 20.98 168 eP 32 23.00 -1.1  
 KNA 23.50 175 eP 32 49.00 0.1  
 SSE 23.74 348 eP 32 51.50 0.4  
 Z 20s 0.50um 4.0Msz  
 KGM 24.03 257 eP 32 55.30 1.2  
 KLI 25.21 241 eP 33 07.00 1.7  
 e 33 36.00  
 IPM 25.77 264 ePc 33 12.00 1.5  
 1.0s 31.20nm 4.8mb  
 GYA 26.61 317 P 33 18.40 0.1  
 TKSJ 26.90 13 eP 33 20.70 0.0  
 NNT 27.00 282 ePd 33 22.00 0.2  
 NST 27.18 289 eP 33 24.50 1.1  
 WKYJ 27.51 16 eP 33 26.40 0.1  
 YONJ 27.93 12 eP 33 30.00 0.0  
 PSI 28.16 261 iPc 33 33.90 1.6  
 WB5 28.53 165 eP 33 33.90 -1.6  
 WRA 28.58 165 Pd 33 34.30 -1.7  
 0.8s 4.20nm 4.1mb  
 TSRJ 28.86 16 P 33 38.40 0.0  
 CHG 29.13 295 eP 33 40.50 -0.6  
 MBL 29.58 193 eP 33 44.00 -1.0  
 CHJJ 30.25 20 P 33 49.40 -1.4  
 MTMJ 30.36 18 P 33 51.50 -0.3  
 MAT 30.44 18 iPc 33 51.20 -1.3  
 0.8s 7.46nm 4.5mb  
 OIS 30.90 156 iPd 33 55.60 -1.0  
 NIJJ 31.34 19 P 33 58.10 -2.2  
 CD2 31.46 320 P 34 01.90 0.4  
 ASPA 32.06 168 iPc 34 05.10 -1.7  
 0.8s 8.00nm 4.6mb  
 Z 21s 0.14um 3.6Msz  
 iS 39 09.00  
 LR 48 47.30  
 BJI 33.45 345 eP 34 16.00 -2.7X  
 SNY 33.99 356 eP 34 22.20 -1.1



MEKA	35.14 193 eP	34 35.00	1.7
CN2	35.86 358 P	34 38.00	-1.2
MRRJ	36.71 18 eP	34 47.60	1.2
MDJ	36.74 3 Pc	34 47.50	0.9
HOOJ	37.39 20 eP	34 55.10	3.0X
SHL	37.60 302 iP	34 53.00	-1.3
	iS	37 10.00	
MRWA	38.25 195 iPd	35 00.00	0.6
KUSJ	38.52 21 eP	35 03.80	2.2
ASAJ	38.73 18 eP	35 05.50	2.2
COOL	38.85 188 eP	35 03.00	-1.5
	0.3s 3.00nm	4.7mb	
BAL	39.40 194 eP	35 08.50	-0.5
	0.4s 7.00nm	4.9mb	
GTA	39.67 327 eP	35 10.00	-1.3
LSA	39.86 308 P	35 13.30	-0.2
KLB	40.12 192 eP	35 15.00	0.1
MUN	40.83 194 eP	35 20.00	-0.7
NWAO	41.52 192 iPd	35 26.80	0.5
	0.6s 20.00nm	5.1mb	
RKG	42.67 192 iPc	35 41.10	5.3X
BRS	43.13 145 iPc	35 39.50	-0.2
GUN	43.45 303 P	35 42.00	-0.7
PKI	43.73 302 P	35 43.60	-1.4
	0.4s 7.00nm	4.8mb	
KKN	43.91 302 P	35 45.00	-1.3
DMN	44.00 302 P	35 44.60	-2.4
	0.4s 6.00nm	4.8mb	
ADE	44.03 166 iPc	35 47.50	0.7
GKN	44.52 302 P	35 49.80	-1.3
	0.4s 9.00nm	5.0mb	
BFD	47.14 163 eP	36 12.00	0.5
HYB	47.87 286 ePd	36 16.90	-0.7
GBA	48.73 281 Pc	36 22.70	-1.4
	0.8s 10.90nm	4.9mb	
WMQ	49.45 323 P	36 28.20	-1.2
ANM	73.56 25 ePc	39 12.50	1.2
SVW	77.22 29 eP	39 34.00	1.8
	0.8s 13.70nm	4.9mb	
BRW	78.32 19 ePc	39 39.70	1.7
IMA	78.67 24 ePc	39 41.70	1.5
	0.7s 8.60nm	4.8mb	
PMR	80.38 29 eP	39 49.70	0.5
	0.7s 20.00nm	5.2mb	
FBA	81.05 25 ePd	39 53.70	1.0
	0.8s 12.07nm	4.9mb	
TOA	81.78 28 eP	39 58.60	1.9
KEV	86.08 340 eP	40 10.00	-8.2X
INK	86.38 22 eP	40 20.00	0.3
SOD	86.72 338 eP	40 20.00	-1.4
PRNI	87.61 300 eP	40 27.00	0.5
SUF	87.94 333 eP	40 26.10	-1.2
MBC	87.99 13 eP	40 28.50	1.2
	0.9s 29.00nm	5.4mb	
NUR	89.16 331 eP	40 33.00	-0.1
	0.7s 12.00nm	5.2mb	
YKA	95.79 24 eP	41 04.40	0.7
	0.8s 7.20nm	5.2mb	
ALO	114.24 46 ePKP	46 19.00	0.8
	1.0s 3.25nm		
LKO	129.49 289 PKP	46 47.98	0.3
ZOBO	163.21 121 PKP	47 43.00	1.9X
S.D. = 1.2 on 75 of 84 obs.			
MAR 22, 1990 13h 48m 29.07± 0.46s 44.532 N ± 4.7km 10.394 E ± 4.3km DEPTH = 10.0km (geophysicist)			
NORTHERN ITALY (545) ML 3.0 (LDG).			
MME	0.40 147 P	48 37.20	-0.2
	iSg	48 41.90	
BDI	0.49 163 P	48 38.20	-0.9
	eSg	48 47.70	
BOB	0.72 290 P	48 45.10	1.9
PIT	0.82 173 P	48 44.70	-0.2
	eSg	48 57.90	
SAL	1.08 5 P	48 49.80	0.5
PGD	1.16 124 P	48 52.00	1.2
SFI	1.21 120 P	48 53.10	1.5
	eSn	49 07.80	
MDI	1.34 339 P	48 54.80	1.1
	eSn	49 11.00	
CKI	1.52 267 P	48 57.10	0.8
ARV	2.11 118 P	49 03.50	-1.4
SAOF	2.11 256 Pn	49 04.95	0.0
	Pg	49 09.59	
AUTN	2.20 257 Pn	49 06.51	0.1
	Sg	49 36.93	
PGF	2.23 208 Pn	49 03.00	-3.7X
SBF	2.23 254 Pn	49 06.20	-0.5
	Sn	49 36.20	
TOUF	2.32 258 Pn	49 08.24	0.2
MVIF	2.42 256 Pn	49 09.48	0.1
	Pg	49 15.00	



22d 17h

\* MAR 22, 1990 17h 53m 25.77±0.70s  
28.170 N ±14.7km 57.473 E ± 6.8km  
DEPTH = 33.0km (normal)  
4.4mb ( 2 obs.)

SOUTHERN IRAN (353)

BBU	6.54	254	(Pn)	55	02.70	0.5
			(Sn)	56	16.30	
BEE	6.56	253	(Pn)	55	03.70	1.3
			(Sn)	56	16.80	
MAIO	8.29	11	eP	55	40.00	13.3X
QUE	8.53	74	eP	55	30.00	-0.1
RYD	10.32	253	eP	55	52.50	-2.2
QASM	12.59	264	eP	56	21.50	-3.9X
PRNI	19.73	282	eP	57	55.00	-0.6
PKI	24.69	85	P	58	46.00	0.5
KHL	25.39	301	eP	58	52.30	0.5
VAY	31.32	304	eP	59	44.60	-0.6
TDS	35.72	300	P	00	25.00	1.7
MGR	36.37	300	Pd	00	28.80	0.0
SGO	36.61	301	P	00	31.00	0.3
BSS	37.01	301	P	00	34.40	0.3
DUI	37.37	303	P	00	37.50	0.3
KHC	39.47	314	P	00	53.80	-0.8
MBC	75.82	359	eP	05	09.00	-0.7
	1.0s				6.00nm	4.5mb
INK	83.47	4	eP	05	51.00	0.1
YKA	89.43	356	eP	06	19.70	-0.6
	0.8s				1.50nm	4.3mb

S.D. = 1.0 on 17 of 19 obs.

MAR 22, 1990 18h 21m 22.52±0.73s  
40.121 N ± 6.0km 29.617 E ± 6.4km  
DEPTH = 10.0km (geophysicist)

TURKEY (366)

YLV	0.48	337	iPg	21	31.80	-0.5
			iSg	21	37.30	
GPA	0.56	72	ePg	21	34.00	0.2
GBZT	0.68	349	ePg	21	36.50	0.5
			iSg	21	50.20	
HRT	0.70	3	ePg	21	36.00	-0.4
DST	0.92	236	iPg	21	38.50	-1.6
			iSg	21	50.50	
KCT	0.97	278	iPn	21	41.80	0.8
ALT	1.13	160	iPn	21	44.20	0.4
BNT	1.32	281	iPn	21	48.40	1.5
CTT	1.37	319	iPn	21	46.80	-0.8

S.D. = 1.1 on 9 of 9 obs.

MAR 22, 1990 18h 23m 40.62±0.71s  
15.979 N ±11.0km 97.860 W ± 5.9km  
DEPTH = 33.0km (normal)  
4.9mb ( 19 obs.)

NEAR COAST OF OAXACA, MEXICO ( 66)

OXX	1.55	45	iP	24	07.80	1.4
			iS	24	32.00	
ACX	2.11	295	iP	24	09.70	-4.7X
			iS	24	35.50	
PSM	2.80	75	iP	24	23.80	-0.4
			iS	24	59.70	
III	2.84	327	iP	24	23.50	-1.3
			(S)	25	06.50	
UNM	3.56	339	(P)	24	49.50	14.3X
			iS	25	35.50	
CRX	3.82	333	iP	24	47.50	8.6X
			iS	25	53.00	
IIJ	4.14	335	iP	24	52.50	8.9X
			(S)	25	41.50	
MRX	4.88	320	(P)	24	54.00	0.4
			(S)	26	12.00	
TPX	5.50	100	(P)	25	06.00	3.5X
			(S)	26	47.50	
OLY	20.27	15	P	28	19.00	2.9X
ALO	20.40	339	ePc	28	17.00	-0.7
	1.0s				25.75nm	4.5mb
ANMO	20.40	339	P	28	17.00	-0.7
	1.0s				21.25nm	4.5mb
RSCP	22.41	27	P	28	37.30	-0.5
	0.7s				48.44nm	5.1mb
PRM	22.80	35	P	28	41.10	-0.5
FVM	22.88	15	P	28	42.50	0.1
GLA	22.90	321	eP	28	44.00	1.3
SGS	23.23	39	P	28	47.00	1.2
JSC	23.56	36	P	28	50.00	1.0
BAR	23.81	318	eP	28	50.00	-1.6

LHS 23.96 37 P 28 53.00 0.1  
TPC 24.37 321 eP 29 03.00 6.0X  
PLM 24.37 319 eP 28 58.00 0.9  
GOL 24.53 346 P 29 00.00 1.3

0.8s 47.62nm 5.1mb  
RVR 25.11 319 eP 29 06.00 2.0  
GSC 25.64 322 eP 29 10.00 0.9  
MSU 25.74 333 P 29 10.00 -0.1  
SBB 25.85 320 eP 29 11.00 0.0  
BLA 26.19 33 P 29 14.00 -0.1

1.0s 50.00nm 5.1mb  
CVL 27.80 34 P 29 27.80 -0.9  
FRI 28.51 321 eP 29 36.40 1.2  
BW06 28.53 342 P 29 35.00 -0.5  
KVN 29.03 326 P 29 40.00 -0.1  
CMB 29.61 322 e(P) 29 45.60 0.5  
LRM 32.17 341 eP 30 08.30 0.5  
RSNY 34.64 30 P 30 28.00 -0.9

1.0s 13.74nm 4.8mb  
RSON 34.95 5 P 30 29.00 -2.5  
0.9s 10.46nm 4.8mb

NEW 35.88 338 P 30 39.00 -0.5  
1.0s 7.50nm 4.6mb

SES 35.94 346 eP 30 41.00 1.0  
LON 36.57 332 P 30 45.00 -0.4  
FFC 38.80 356 iPc 31 04.00 0.2

0.9s 25.00nm 5.0mb  
EDM 39.11 345 ePd 31 06.50 0.0  
ZOBO 43.45 136 eP 31 36.00 -7.1X

Z 24s 0.15um 3.8mszX  
LR 44 48.00

SCH 45.58 25 eP 31 59.00 -0.2  
YKA 47.94 350 eP 32 16.10 -1.5

1.1s 7.20nm 4.6mb  
FRB 51.83 16 eP 32 47.00 -0.4

RTLL 54.86 149 iPc 32 49.80 -20.5X  
INK 57.01 345 iPd 33 24.40 -0.8

BAO 58.40 120 e(P) 33 34.00 -1.8  
FBA 59.23 338 P 33 39.00 -1.8

0.8s 5.17nm 4.7mb  
MBC 61.33 354 eP 33 55.00 0.0

1.0s 14.00nm 5.0mb  
ALOJ 83.45 53 iPc 36 08.40 1.7

ATEJ 83.57 54 iPc 36 08.60 1.3  
ASMO 83.67 53 iPc 36 09.50 1.7

APHE 83.82 53 iPc 36 10.00 1.5  
RJF 85.23 44 eP 36 21.10 5.9X

1.0s 10.00nm 5.0mb  
TCF 85.38 43 eP 36 15.90 -0.2

0.8s 4.05nm 4.7mb  
MAF 85.64 43 eP 36 17.30 0.0

1.1s 11.00nm 5.0mb  
BGF 85.72 43 eP 36 16.30 -1.4

1.1s 12.20nm 5.0mb  
SSF 85.98 42 eP 36 18.70 -0.3

1.1s 7.35nm 4.8mb  
LOR 86.14 42 eP 36 19.60 -0.2

1.2s 11.90nm 5.0mb  
LBF 86.31 42 eP 36 20.30 -0.4

0.8s 4.05nm 4.7mb  
WRA 130.34 257 PKP 42 56.00 5.9X

0.5s 0.50nm  
HYB 146.63 6 ePKP 43 19.80 0.0

1.0s 25.00nm  
GBA 150.24 9 PKPd 43 29.60 4.2X

0.9s 8.50nm  
S.D. = 1.0 on 52 of 64 obs.

? MAR 22, 1990 18h 56m 57.08±4.80s  
10.964 N ±18.9km 62.114 W ±56.4km  
DEPTH = 33.0km (normal)

NEAR COAST OF VENEZUELA ( 97)

TCE 0.44 127 eP 57 07.37 0.5  
eS 57 17.08

TRN 0.77 114 eP 57 11.05 -0.4  
eS 57 22.69

TPP 0.92 135 eP 57 13.31 -0.3  
eS 57 28.20

TBH 1.13 115 eP 57 16.70 0.0  
eS 57 33.44

GRW 1.27 20 eP 57 20.21 1.5  
eS 57 35.42

SVB 2.44 20 eP 57 35.61 0.1  
eS 58 05.95

SVV 2.50 20 eP 57 35.05 -1.3  
eS 58 08.50

SSV 2.52 21 eP 57 35.55 -1.1  
eS 58 09.28  
SOA 2.57 21 eP 57 38.07 0.7  
eS 58 10.43

S.D. = 1.0 on 9 of 9 obs.

& MAR 22, 1990 19h 22m 10.46s  
62.874 N 150.814 W

DEPTH = 99.3km  
CENTRAL ALASKA ( 1)  
<AGS-P>.

CUT 0.53 152 iP 22 26.43 -0.2  
eS 22 30.73

HUR 0.55 79 eP 22 26.41 -0.4  
eS 22 38.49

KTH 0.68 356 iP 22 27.81 -0.2  
eS 22 40.99

SKT 0.96 201 iP 22 30.23 -0.4  
RND 1.04 58 iP 22 31.23 -0.4

iS 22 46.99  
PWA 1.30 160 iP 22 35.10 0.5

GHO 1.41 141 iP 22 35.86 -0.2  
eS 22 55.74

SUA 1.42 179 eP 22 36.17 0.0  
eS 22 55.55

PLRM 1.51 148 eP 22 36.24 -0.9  
SML 1.58 132 iP 22 37.34 -0.7

NCG 1.60 204 eP 22 38.02 -0.5  
CRP 1.73 202 eP 22 41.00 0.8

eS 23 04.40  
PMS 1.74 160 eP 22 39.18 -1.0

eS 23 01.37  
SPU 1.80 200 eP 22 40.63 -0.3

eS 23 03.55  
KNK 1.84 142 eP 22 40.24 -1.2

eS 23 04.32  
NCA 2.06 114 eP 22 43.94 -0.3

TOA 2.29 108 eP 22 47.84 0.4  
SLKM 2.39 173 eP 22 48.66 -0.1

RDT 2.43 199 eP 22 49.61 0.3  
GLI 2.67 137 eP 22 50.62 -1.8

20 obs. associated

MAR 23, 1990 01h 36m 51.20±1.47s  
4.210 S ± 6.5km 102.302 E ± 7.6km  
DEPTH = 62.5 ± 12.9 km

5.0mb ( 13 obs.) 4.5msz ( 5 obs.)

SOUTHERN SUMATERA (274)

KLI 2.63 104 ePd 37 32.00 -0.1  
e 37 45.00

KGM 6.27 9 ePc 38 25.50 2.3  
e 39 37.70

IPM 8.82 352 ePc 39 03.20 4.6X  
1.0s 47.80nm 5.4mb

TRT 10.85 109 iPd 39 26.00 -0.2  
SNG 11.44 352 eP 39 32.60 -1.6

eS 43 15.10  
KKM 17.23 54 ePc 40 51.60 2.3

TSM 17.84 62 ePd 40 59.00 2.2  
PPR 21.47 50 ePc 41 40.00 3.5X

LOE 21.49 359 eP 41 34.70 -1.9  
BDT 21.56 351 eP 41 34.70 -2.7

1.0s 34.50nm 4.7mb  
CHG 23.12 352 eP 41 52.40 -0.3

1.0s 20.00nm 4.5mb  
MBL 23.96 136 eP 42 00.50 -0.3

OIZ 24.26 18 P 42 05.60 1.9  
PGP 25.54 46 iPc 42 13.50 -2.4

KMI 29.16 1 Pc 42 49.00 0.0  
pP 43 02.00 51kmX

GBA 30.37 306 Pd 43 08.40 8.8X  
0.7s 2.60nm 4.1mb

GYA 30.78 8 Pd 43 03.20 0.0  
SHL 31.28 342 eP 43 05.60 -2.1

HYB 31.80 313 eP 43 11.00 -1.2  
WB5 34.91 119 eP 43 37.50 -1.6

WRA 34.91 119 eP 43 37.80 -1.3  
0.3s 4.20nm 4.8mb

CD2 34.95 2 P 43 38.80 -0.5  
Z 20s 0.70um 4.4msz

PKI 35.55 334 P 43 44.30 -0.5  
GUN 35.64 335 P 43 45.40 -0.2

DMN 35.72 333 P 43 46.10 -0.1  
KKN 35.80 334 P 43 46.35 -0.4

ASPA 36.10 125 iPc 43 48.30 -0.9



0.9s 24.00nm 5.1mb			DEPTH = 10.0km (geophysicist)					
Z	20s	0.29um	4.0Msz	YUGOSLAVIA (383)			EHOR	3.93 68 eSn 17 36.20
		eS	49 21.50	MD 2.3 (LJU). ML 1.6 (KBA).				ePn 16 59.80 0.0
		LR	59 25.80				EPLA	4.70 38 iPn 17 10.20 -0.3
GKN	36.27 333 P		43 50.60 -0.1	PTJ	0.01 6 iPg	26 33.70 -0.6		eSn 18 00.00
XAN	38.55 9 P		44 08.50 -1.1		eSg	26 38.70	IFR	4.82 125 iPn 17 11.00 -1.3
NJ2	39.35 22 Pd		44 17.20 1.0	ZAG	0.08 167 ePg	26 35.20 0.4		eSn 17 59.00
	Z 14s	0.20um	4.1MszX		iSg	26 41.00		iS 18 01.00
SSE	39.46 26 P		44 18.50 1.4	LJU	1.00 279 e(Pg)	26 50.70 -0.7	PTO	4.83 11 iPnc 17 11.90 -0.2
	1.0s	15.00nm	4.8mb		iSg	27 09.20		iSn 18 03.00
QIS	39.75 117 eP		44 18.00 -1.7	VOY	1.45 276 e(Pn)	26 58.10 -0.5	AFC	5.12 79 ePn 17 16.70 0.3
LZH	40.11 2 P		44 20.50 -2.1		e(Sn)	27 23.70		eSn 18 11.60
	Z 18s	0.80um	4.6Msz	KBA	2.16 304 i(Pg)	27 10.20 1.2	EBAN	5.13 68 ePn 17 16.00 -0.5
NDI	40.64 325 iPc		44 26.50 -0.4		iSg	27 40.00		eSn 18 08.50
	0.9s	75.63nm	5.5mb	S.D. = 1.1 on 5 of 5 obs.			TOL	5.73 51 ePn 17 24.00 -0.8
TIY	42.76 12 Pd		44 44.70 0.5					eSn 18 25.00
	Z 20s	0.63um	4.5Msz	& MAR 23, 1990 02h 59m 18.19s				eSb 18 36.00
	N 12s	0.35um		60.187 N 153.014 W				eSg 18 51.00
GTA	43.46 357 eP		44 49.00 -0.2	DEPTH = 126.0km			EZAM	5.81 8 ePn 17 25.70 -0.1
	Z 18s	0.70um	4.6Msz	SOUTHERN ALASKA ( 2)				eSn 18 27.50
BTO	45.15 8 eP		45 03.20 -0.3	<AGS-P>.			TIO	5.87 158 iPn 17 26.50 -0.2
CTA	45.59 114 iP		45 07.00 -0.2					iSn 18 25.50
	1.0s	42.50nm	5.3mb	RDT	0.49 38 iP	59 36.40 -0.7		i 18 26.50
HHC	45.64 10 P		45 08.20 0.8	PDB	0.72 236 iP	59 37.34 -1.2	GUD	6.14 45 ePn 17 29.90 -0.6
BJI	45.84 15 eP		45 09.50 0.7	AUL	0.84 195 iP	59 38.83 -0.7		eSn 18 35.00
	1.0s	24.00nm	5.1mb	AUE	0.85 192 eP	59 38.56 -1.1	EVIA	6.24 67 ePn 17 31.40 -0.4
	Z 16s	0.70um	4.7MszX	NNL	0.87 99 eP	59 40.02 0.2		eSn 18 36.30
QUE	48.10 318 eP		45 26.80 -0.2	NKA	1.04 57 eP	59 42.77 1.4	ERUA	6.33 18 ePn 17 33.00 0.0
WMO	49.59 346 iPc		45 37.90 -0.3		eS	59 59.15		eSn 18 41.20
KSH	49.76 333 P		45 40.30 0.7	SPU	1.10 25 iP	59 41.74 -0.4	STS	6.55 8 ePn 17 35.80 -0.2
CN2	52.14 21 iPd		45 56.40 -1.0	CNPM	1.12 126 iP	59 41.52 -0.7		eSn 18 45.00
	1.0s	40.00nm	5.4mb		iS	59 59.25	ETOR	7.52 52 ePn 17 49.00 -0.3
BRS	53.29 121 iP		46 06.50 0.2	CRP	1.16 21 eP	59 42.81 0.0		eSn 19 08.50
MAIO	56.76 319 eP		46 30.00 -1.4	CDD	1.30 195 eP	59 42.76 -1.4	ECRI	8.39 40 ePn 18 02.20 1.0
PRNI	72.78 303 iPd		48 16.00 0.7	SLKM	1.43 76 iP	59 45.17 -0.4	EPF	10.25 47 Pn 18 26.90 0.5
VNDA	79.56 169 e(P)		48 54.20 1.7	SUA	1.70 40 eP	59 48.84 0.0		Sn 20 12.20
NPS	81.61 306 eP		49 05.00 0.9	SEW	1.79 91 eP	59 48.47 -1.2	LFF	11.70 40 Pn 18 45.80 0.3
VAM	82.77 306 eP		49 11.30 1.2	SKT	1.94 21 eP	59 51.41 -0.2	LPO	11.77 42 Pn 18 46.50 0.1
VRI	83.03 317 ePd		49 12.00 0.8	PMS	2.00 56 eP	59 52.02 -0.4	RJF	12.35 40 Pn 18 53.40 -0.7
MLR	83.48 317 eP		49 04.00 -9.7X	PLRM	2.36 52 eP	59 55.85 -1.1		Sn 21 03.00
RZN	83.55 313 iPc		49 14.00 -0.2	GHO	2.55 50 eP	59 58.23 -1.3	CAF	12.40 43 Pn 18 53.60 -1.2
PLD	83.65 313 iP		49 15.00 0.6	KNK	2.55 59 eP	59 58.10 -1.3		Sn 21 03.30
PAIG	83.99 311 eP		49 15.80 -0.4	CUT	2.59 30 eP	59 59.70 -0.2	MFF	12.50 32 Pn 18 56.20 0.2
VLI	84.00 307 eP		49 14.50 -1.8	KLU	3.71 66 eP	00 12.47 -2.4	LSF	13.01 37 Pn 19 03.20 0.5
PGB	84.12 313 iPc		49 17.00 0.1	20 obs. associated				Sn 21 18.80
BCAO	84.12 275 iPd		49 17.50 0.1	MAR 23, 1990 03h 14m 07.05 ± 0.60s			LPF	13.31 26 Pn 19 07.30 0.7
	0.6s	5.00nm	4.7mb	39.038 N ± 5.8km 22.478 E ± 5.7km			TCF	13.38 39 Pn 19 07.80 0.3
KKB	84.79 313 iPc		49 20.00 -0.2	DEPTH = 5.0km (geophysicist)			GRR	13.68 26 Pn 19 11.60 0.3
KNT	84.80 312 eP		49 20.00 0.6	GREECE (364)			FLN	14.13 26 Pn 19 17.30 0.1
VTS	84.83 313 iP		49 21.00 0.5	ML 2.4 (THE).			S.D. = 0.8 on 35 of 36 obs.	
LIT	84.92 311 eP		49 20.00 -0.9	AGG	0.12 262 ePg	14 08.50 -1.0	MAR 23, 1990 03h 33m 52.82 ± 0.89s	
VAY	85.07 312 eP		49 21.00 -0.6	EVN	0.54 257 ePg	14 17.50 -0.3	39.048 N ± 5.4km 23.545 E ± 9.2km	
EVR	85.25 309 eP		49 22.00 -0.7	NEO	0.64 65 ePb	14 20.10 0.3	DEPTH = 10.0km (geophysicist)	
FNA	85.87 311 eP		49 25.00 -0.7	LIT	1.06 0 ePb	14 27.50 0.0	AEGEAN SEA (365)	
OHF	86.35 312 eP		49 27.00 -1.0		eSb	14 45.50	ML 2.4 (THE).	
	1.0s	0.04nm	2.5mb X	PAIG	1.29 46 ePb	14 31.00 -0.3	NEO	0.36 316 ePg 34 00.80 0.6
SUF	87.40 333 iP		49 33.30 0.7	KZN	1.38 337 ePg	14 34.20 1.2	PAIG	0.88 7 ePb 34 10.20 0.4
	0.8s	9.90nm	5.0mb	PLG	1.53 29 ePb	14 33.50 -1.6		eSb 34 24.40
NUR	87.58 331 iPKP		49 33.60 0.2	VLS	1.71 240 ePg	14 41.30 3.6X	AGG	0.95 269 ePb 34 09.40 -1.5
SOD	88.38 338 iPKP		49 37.20 0.0	ITM	1.91 193 ePb	14 41.20 0.7		eSb 34 24.50
LCI	88.39 310 P		49 38.50 0.7	FNA	1.94 334 ePn	14 42.00 1.0	PLG	1.33 357 ePb 34 17.00 -0.3
BRT	89.02 311 P		49 41.50 0.7	VLI	2.34 171 ePn	14 47.00 0.1		eSb 34 35.00
SRO	89.05 318 eP		49 41.50 0.7	S.D. = 1.0 on 10 of 11 obs.			OUR	1.33 15 ePb 34 16.70 -0.6
CSI	89.60 310 P		49 45.70 2.1	MAR 23, 1990 03h 16m 00.60 ± 0.91s			LIT	1.33 323 ePb 34 17.00 -0.4
CZI	89.66 309 P		49 44.30 0.5	36.402 N ± 4.8km 9.833 W ± 8.7km				eSb 34 36.80
ZST	89.91 318 eP		49 45.40 0.6	DEPTH = 99.8 ± 14.1 km			EVN	1.36 265 ePg 34 19.50 1.6
MGR	90.20 310 P		49 46.00 -0.3	WEST OF GIBRALTAR (384)			GRG	2.10 336 ePn 34 28.80 0.3
ZAG	90.42 316 eP		49 47.00 -0.2	MD 3.6 (RBA).			KNT	2.17 347 ePn 34 29.60 0.1
SGO	90.42 310 P		49 48.00 0.7	EVAL	2.74 64 ePn	16 43.60 0.0	ITM	2.26 215 ePn 34 30.00 -0.8
PTJ	90.45 316 eP		49 47.80 0.4		eSn	16 47.00 0.0	VLI	2.37 192 ePb 34 33.00 0.6
KSP	90.71 321 eP		49 49.00 0.6		iS	17 12.00	S.D. = 0.9 on 11 of 11 obs.	
			50 08.00	CNIL	3.05 89 iP	16 48.50 0.7	MAR 23, 1990 03h 58m 21.04 ± 1.15s	
VBY	90.90 315 e(P)		49 50.50 1.1	GIBL	3.15 81 iP	16 50.00 0.8	3.171 S ± 12.9km 130.182 E ± 15.7km	
LJU	91.45 316 eP		49 53.00 1.1	ALJ	3.42 84 iP	16 52.00 -0.9	DEPTH = 33.0km (normal)	
VOY	91.89 316 eP		49 54.00 -0.1	OJEN	3.49 94 iP	16 55.50 1.7	4.1mb ( 2 obs.) 3.7Msz ( 1 obs.)	
TRI	91.96 316 P		49 58.50 4.3X	EJIF	3.52 88 ePn	16 55.00 0.8	CERAM (272)	
RBL	92.15 316 P		49 56.00 0.8		eSn	17 32.50	AAI	2.05 255 ePc 58 54.80 0.9
ARV	92.40 313 P		49 57.50 1.1	LIJA	3.59 81 iP	16 32.00 -23.3X		eS 59 40.40
CTI	93.45 316 P		50 01.50 0.2	AVE	3.68 147 iPn	16 57.50 1.1	MTN	9.66 174 eP 00 42.00 1.1
YKA	115.78 18 ePKP		55 25.30 -2.6X		iS	17 33.00		eS 02 27.00
	0.8s	0.80nm		NKM	3.71 104 ePn	16 55.00 -1.9	WB5	17.10 166 eP 02 18.70 -0.6
FFC	125.93 17 ePKP		55 47.00 -0.6		eSn	17 32.00		eS 05 33.20
	0.8s	9.00nm		EPRU	3.74 80 ePn	16 58.00 0.7	WRA	17.16 167 Pc 02 19.70 -0.3
S.D. = 1.1 on 83 of 89 obs.								
MAR 23, 1990 02h 26m 32.33 ± 1.13s								
45.895 N ± 9.8km 15.957 E ± 11.4km								



23d 04h

0.5s 2.30nm 3.6mb  
 OIS 19.57 153 eP 02 50.00 0.6  
 MBL 20.52 209 eP 02 57.20 -2.1  
 ASPA 20.69 170 iPc 03 01.30 0.2  
 1.0s 31.00nm 4.6mb  
 Z 19s 0.31um 3.7msz  
 eS 06 47.00  
 LR 16 39.40  
 CHG 37.71 307 eP 05 35.80 0.1  
 KMI 38.73 318 eP 05 44.00 -0.4  
 S.D. = 1.1 on 9 of 9 obs.

MAR 23, 1990 04h 17m 43.52±0.55s  
 43.263 N ± 7.9km 4.456 W ± 4.9km  
 DEPTH = 10.0km (geophysicist)  
 SPAIN (377)  
 mbLg 3.5 (MDD). ML 3.4 (LDG).  
 Felt (III) at Cervereo.

ECRI 1.57 114 iPnd 18 11.80 0.3  
 eSn 18 30.00  
 EMON 2.10 276 ePn 18 20.00 1.5  
 eSn 18 47.00  
 ERUA 2.16 247 ePn 18 18.90 -1.2  
 eSn 18 41.70  
 GUD 2.63 175 ePn 18 18.50 -8.4X  
 eSn 18 44.00  
 STS 3.02 264 ePn 18 31.80 -0.5  
 eSn 19 06.20  
 ETOR 3.03 143 ePn 18 36.60 4.2X  
 eSn 19 08.00  
 TOL 3.39 175 ePn 18 41.00 3.4X  
 eSn 19 17.50  
 EPLA 3.42 201 ePn 18 30.40 -7.6X  
 eSn 19 03.50  
 EPF 3.52 92 Pn 18 40.40 1.0  
 Sn 19 19.80  
 LFF 4.10 64 Pn 18 48.60 1.0  
 Sn 19 36.40  
 LPO 4.31 69 Pn 18 51.30 0.6  
 Sn 19 41.60  
 EROQ 4.37 122 ePn 18 47.50 -3.9X  
 eSn 19 35.50  
 MFF 4.53 41 Pn 18 54.60 0.9  
 Sn 19 46.60  
 RJF 4.75 62 Pn 18 59.90 3.0X  
 Sn 19 56.40  
 LSF 5.20 53 Pn 19 03.40 0.1  
 Sn 20 01.00  
 LPF 5.34 25 Pn 19 05.60 0.5  
 Sn 20 06.00  
 TCF 5.63 55 Pn 19 08.40 -0.9  
 Sn 20 12.40  
 GRR 5.71 25 Pn 19 12.00 1.7  
 Sn 20 15.30  
 MAF 5.81 57 Pn 19 11.20 -0.6  
 Sn 20 16.30  
 LDF 6.13 28 Pn 19 15.60 -0.6  
 Sn 20 24.60  
 BGF 6.14 55 Pn 19 16.00 -0.5  
 Sn 20 24.00  
 FLN 6.16 25 Pn 19 15.80 -0.8  
 Sn 20 25.80  
 AVF 6.56 55 Pn 19 22.10 -0.3  
 Sn 20 34.00  
 SMF 6.79 57 Pn 19 25.00 -0.6  
 Sn 20 40.00  
 SSF 6.79 53 Pn 19 25.50 -0.1  
 Sn 20 40.40  
 LBF 7.03 55 Pn 19 28.40 -0.6  
 Sn 20 46.40  
 LOR 7.10 53 Pn 19 28.80 -1.2  
 Sn 20 46.80  
 S.D. = 0.9 on 21 of 27 obs.

? MAR 23, 1990 04h 39m 03.20±4.95s  
 53.644 N ± 67.8km 164.706 W ± 45.8km  
 DEPTH = 33.0km (normal)  
 3.6mb (1 obs.)

UNIMAK ISLAND REGION (10)  
 SNKA 1.41 53 eP 39 26.06 -0.7  
 DRRA 1.91 47 eP 39 34.15 0.1  
 eS 39 56.72  
 PVV 2.43 43 eP 39 42.76 1.4  
 eS 40 10.16  
 IVF 3.75 51 eP 39 59.48 -0.6

INK 20.74 33 eP 43 42.00 -1.0  
 YKA 27.26 51 eP 44 46.70 0.8  
 0.6s 0.90nm 3.6mb  
 S.D. = 1.2 on 6 of 6 obs.

MAR 23, 1990 05h 37m 37.62±0.42s  
 29.725 N ± 7.3km 51.320 E ± 6.6km  
 DEPTH = 33.0km (normal)  
 4.8mb (9 obs.)

SOUTHERN IRAN (353)

DHR 3.56 197 ePd 38 33.10 1.2  
 BBU 3.58 193 iPn 38 33.00 0.9  
 (Sn) 39 29.00  
 KER 5.84 323 eP 39 20.00 15.7X  
 RYD 6.51 221 eP 39 12.00 -1.7  
 BHD 6.90 203 ePnd 40 02.00 43.0X  
 eSn 41 40.00  
 QASM 7.78 244 ePd 39 27.70 -3.8X  
 MLR 25.38 315 eP 43 07.00 3.5X  
 GKN 29.17 85 P 43 38.40 0.1  
 0.8s 20.00nm 4.9mb  
 DMN 29.66 86 P 43 42.50 -0.3  
 0.6s 18.00nm 5.0mb  
 KKN 29.77 85 P 43 43.60 -0.2  
 0.4s 14.00nm 5.1mb  
 PKI 29.93 86 P 43 45.00 -0.3  
 0.8s 28.00nm 5.1mb  
 GUN 30.27 85 P 43 48.40 0.1  
 0.8s 34.00nm 5.2mb  
 KHC 34.53 315 P 44 26.60 1.7  
 SUF 36.81 341 iP 45 07.80 23.8X  
 SBF 37.43 304 eP 44 50.80 1.3  
 0.6s 4.50nm 4.5mb  
 LPG 38.14 307 eP 44 55.30 -0.4  
 0.5s 2.90nm 4.4mb  
 LPL 38.15 307 eP 44 55.30 -0.5  
 SMF 40.31 308 eP 45 12.80 -0.6  
 0.6s 4.95nm 4.4mb  
 LKO 56.65 262 P 47 19.26 -1.1  
 KIC 57.52 258 P 47 26.40 0.0  
 YKA 87.41 354 eP 50 22.50 0.0  
 0.6s 0.40nm 3.9mb  
 S.D. = 0.9 on 16 of 21 obs.

\* MAR 23, 1990 05h 42m 41.46±1.27s  
 39.032 N ± 8.0km 20.093 E ± 13.2km  
 DEPTH = 10.0km (geophysicist)

GREECE-ALBANIA BORDER REGION (392)

KEK 0.72 342 ePn 42 55.00 -0.6  
 eSn 43 07.10  
 VLS 0.94 155 ePb 42 59.60 0.2  
 eSn 43 13.50  
 EVR 1.34 94 ePn 43 05.10 -1.2  
 KZN 1.82 45 ePn 43 14.50 1.4  
 LIT 2.14 59 eP 43 17.50 -0.2  
 ITM 2.35 141 ePn 43 20.70 0.0  
 VAY 2.97 39 eP 43 10.40 -19.1X  
 S.D. = 1.1 on 6 of 7 obs.

? MAR 23, 1990 07h 23m 12.60±0.99s  
 37.496 N ± 8.0km 22.146 E ± 11.4km  
 DEPTH = 10.0km (geophysicist)

SOUTHERN GREECE (368)

MD 2.8 (ATH).

ITM 0.36 209 ePb 23 19.50 -0.5  
 eSb 23 25.50  
 VLI 1.00 141 ePb 23 32.00 0.4  
 VLS 1.41 299 ePn 23 39.00 0.7  
 AGG 1.53 5 eP 23 39.40 -0.6  
 LIT 2.61 6 eP 23 59.80 4.2X  
 OHR 3.76 344 eP 24 36.00 24.1X  
 S.D. = 1.2 on 4 of 6 obs.

MAR 23, 1990 07h 56m 56.84±0.60s  
 5.709 S ± 4.7km 149.117 E ± 5.1km  
 DEPTH = 147.5 ± 6.3 km  
 4.9mb (8 obs.)

NEW BRITAIN REGION (192)

LAT 2.30 246 iPc 57 37.00 1.1  
 RAB 3.40 64 e(P) 57 49.00 -0.8  
 PMG 4.16 208 eP 58 00.00 0.1  
 eS 58 49.00  
 OIS 17.41 211 iPc 00 51.80 -0.5

0.4s 23.00nm 4.9mb  
 MTN 19.11 247 iPc 01 10.40 -0.4  
 e 03 22.00  
 GUMO 19.63 348 eP 01 16.00 -0.3  
 0.5s 85.71nm 5.4mb  
 PJG 19.63 348 eP 01 16.00 -0.3  
 WB5 20.10 224 iPd 01 20.50 -0.6  
 eS 04 57.20  
 WRA 20.17 224 Pd 01 21.00 -0.7  
 0.3s 19.40nm 5.0mb  
 RMQ 20.67 181 iPd 01 26.90 0.2  
 e 01 44.00  
 BRS 21.84 171 iPc 01 37.80 -0.6  
 e 02 06.50  
 iS 07 02.50  
 KNA 22.32 242 eP 01 43.60 0.6  
 ASPA 23.09 218 iPd 01 51.50 0.9  
 0.4s 47.00nm 5.3mb  
 Z 20s 0.15um 3.4msz  
 eS 05 52.90  
 LR 11 13.90

FORR 31.86 216 iPc 03 09.00 -0.9  
 MBL 32.26 239 iPd 03 13.10 -0.5  
 0.4s 7.00nm 4.8mb  
 THZ 41.69 153 P 04 32.60 0.1  
 TCW 41.89 151 eP 04 34.50 0.4  
 KIW 41.93 150 P 04 35.90 1.5  
 MNG 42.03 150 P 04 35.10 -0.2  
 0.4s 18.00nm 5.1mb  
 MRW 42.11 151 P 04 35.70 -0.2  
 CAW 42.20 151 P 04 36.50 -0.1  
 LTZ 42.23 154 eP 04 37.50 0.6  
 CCW 42.28 152 P 04 38.40 1.1  
 WDW 42.28 151 P 04 36.90 -0.3  
 MTW 42.45 150 eP 04 38.20 -0.4  
 KHZ 42.49 153 eP 04 37.90 -1.0  
 MOW 42.52 151 P 04 38.90 -0.4  
 FBA 84.10 22 eP 09 12.80 0.8  
 1.0s 10.00nm 4.6mb  
 INK 90.62 21 eP 09 43.00 -0.2  
 YKA 97.93 28 eP 10 17.50 0.8  
 0.8s 0.50nm 4.1mb  
 BAO 152.86 142 ePKP 16 38.00 6.6X  
 S.D. = 0.7 on 30 of 31 obs.

% MAR 23, 1990 08h 25m 09.88±0.83s  
 40.529 N ± 9.2km 23.675 E ± 10.0km  
 DEPTH = 10.0km (geophysicist)

GREECE (364)

ML 2.0 (THE).

OUR 0.30 130 ePg 25 16.30 0.1  
 eSg 25 21.90  
 SOH 0.38 320 ePg 25 17.90 0.2  
 THE 0.55 281 ePg 25 21.00 0.0  
 PAIG 0.60 180 ePg 25 21.90 -0.1  
 eSg 25 30.10  
 KNT 0.86 317 ePg 25 26.10 -0.4  
 eSg 25 39.60  
 GRG 1.06 294 ePb 25 30.10 0.3  
 eSb 25 46.10  
 S.D. = 0.3 on 6 of 6 obs.

% MAR 23, 1990 09h 33m 01.10±1.36s  
 41.800 N ± 8.4km 12.700 E ± 13.2km  
 DEPTH = 10.0km (geophysicist)

SOUTHERN ITALY (390)

RMP 0.01 9 P 33 02.00 -1.0  
 eSg 33 03.90  
 RDP 0.04 163 P 33 03.60 0.3  
 eSg 33 05.00  
 AZI 0.58 71 P 33 13.20 0.4  
 eSg 33 23.00  
 MNS 0.58 359 P 33 13.40 0.4  
 eSg 33 24.30  
 SDI 0.84 96 P 33 16.50 -0.9  
 eSg 33 30.00  
 S.D. = 1.0 on 5 of 5 obs.

\* MAR 23, 1990 09h 40m 33.95±2.20s  
 6.207 S ± 14.4km 151.876 E ± 20.0km  
 DEPTH = 54.0 ± 23.4 km  
 4.5mb (3 obs.)

NEW BRITAIN REGION (192)

RAB 2.02 8 iPc 41 05.30 -0.9



LAT 4.87 265 eP 41 48.00 1.5  
 PMG 5.66 235 eP 41 54.00 -3.5X  
 eS 42 54.00  
 RMO 20.39 188 eP 45 10.00 1.0  
 e 45 14.00  
 BRS 21.09 178 eP 45 16.00 -0.1  
 e 47 46.00  
 e 50 06.00  
 WB5 21.77 230 eP 45 20.70 -2.3  
 WRA 21.83 230 P 45 23.00 -0.6  
 1.1s 18.70nm 4.4mb  
 ASPA 24.50 223 iPd 45 49.60 -0.1  
 0.9s 22.00nm 4.7mb  
 INK 90.09 21 ePd 53 29.70 0.8  
 YKA 97.09 28 eP 54 01.80 0.7  
 0.8s 1.10nm 4.4mb  
 S.D. = 1.5 on 9 of 10 obs.

% MAR 23, 1990 10h 05m 36.80±2.63s  
 45.109 N ± 9.0km 28.480 E ± 24.1km  
 DEPTH = 10.0km (geophysicist)  
 SOUTHWESTERN USSR (357)

CFR 0.24 288 iPc 05 41.00 -1.0  
 TLB 0.61 212 ePc 05 48.50 -0.6  
 PPE 1.26 332 ePc 05 59.50 -0.7  
 ISR 1.37 272 ePd 06 03.50 1.5  
 VRI 1.45 302 ePd 06 03.50 0.4  
 CLI 1.67 330 eP 06 06.50 0.3  
 MLR 1.83 283 eP 06 12.00 3.3X  
 S.D. = 1.2 on 6 of 7 obs.

\* MAR 23, 1990 10h 19m 55.90±3.39s  
 33.736 N ± 36.2km 25.351 E ± 6.3km  
 DEPTH = 10.0km (geophysicist)  
 EASTERN MEDITERRANEAN SEA (371)

NPS 1.54 8 iPc 20 22.00 -1.4  
 VAM 1.92 331 eP 20 32.20 3.3X  
 KAP 2.35 39 eP 20 36.50 1.3  
 ARG 3.36 42 eP 20 49.50 0.0  
 VLI 3.57 327 eP 20 53.50 1.0  
 SMG 4.14 17 eP 21 05.00 4.5X  
 KSL 4.21 54 eP 21 02.00 0.4  
 ITM 4.43 322 eP 21 05.00 1.1  
 ELL 4.79 50 eP 21 10.00 0.1  
 BCK 5.66 47 eP 21 21.00 -1.1  
 CZI 9.22 309 P 22 11.10 -0.7  
 MGR 10.11 312 P 22 23.80 -0.3  
 eSn 23 57.70  
 SGO 10.51 313 P 22 29.20 -0.4  
 S.D. = 1.0 on 11 of 13 obs.

MAR 23, 1990 11h 37m 20.97±0.94s  
 26.255 S ± 5.4km 70.636 W ± 13.7km  
 DEPTH = 34.9 ± 9.6 km  
 4.6mb ( 5 obs.)  
 NEAR COAST OF NORTHERN CHILE (122)

RTRS 4.04 165 ePd 38 23.80 1.9  
 RTLL 5.40 160 ePd 38 41.30 0.0  
 ZON 5.54 162 eP 38 42.00 -1.3  
 CFA 5.73 159 ePd 38 46.00 0.0  
 (S) 38 56.50  
 RTCV 5.88 162 e(P) 38 48.00 -0.1  
 ROCH 6.70 183 eP 39 07.60 7.8X  
 FCH 7.06 178 eP 39 08.00 3.1X  
 i 40 30.00  
 SAN 7.17 180 eP 39 10.50 4.3X  
 i 40 14.50  
 i 40 32.50  
 LCCH 7.24 186 eP 39 00.50 -6.6X  
 i 39 18.50  
 iS 40 38.00  
 PCH 7.34 179 eP 39 13.20 4.6X  
 TACH 7.38 182 iP 39 04.20 -4.9X  
 CHCH 7.65 180 eP 39 19.00 6.0X  
 i 40 49.50  
 LNV 7.70 185 eP 39 07.00 -6.6X  
 i 39 19.00  
 iS 40 40.70  
 CCH 9.76 26 P 39 47.80 5.4X  
 ARE 9.78 355 eP 39 41.00 -1.6  
 LPB 9.96 14 P 39 47.00 1.8  
 SS 42 50.00  
 LR 43 16.00  
 ZOBO 10.21 14 P 39 48.00 -0.8

Z 21s 0.56um  
 LR 43 22.00  
 BAO 23.60 68 eP 42 30.00 0.2  
 CAI 37.46 64 eP 44 33.60 0.4  
 SPA 63.90 180 iPc 47 51.70 -0.8  
 0.9s 7.73nm 4.8mb  
 ALQ 69.67 329 eP 48 30.00 0.6  
 0.7s 2.74nm 4.4mb  
 e 48 39.50  
 LIC 71.26 73 P 48 39.00 -0.2  
 TIC 71.48 73 P 48 40.60 0.1  
 KIC 71.57 73 Pc 48 41.00 -0.1  
 0.6s 5.00nm 4.7mb  
 LKO 72.47 70 Pc 48 46.04 -0.4  
 0.9s 17.00nm 5.1mb  
 KUK 75.27 75 eP 49 01.90 -0.7  
 EDM 87.41 336 eP 50 05.50 -0.1  
 YKA 95.14 341 eP 50 42.50 1.2  
 0.8s 1.10nm 4.3mb  
 GBA 147.55 107 PKP 57 04.00 2.9X  
 S.D. = 1.0 on 19 of 29 obs.

\* MAR 23, 1990 11h 43m 27.98±0.63s  
 60.023 S ± 12.3km 26.572 W ± 15.6km  
 DEPTH = 33.0km (normal)  
 5.1mb ( 5 obs.) 3.9Msz ( 1 obs.)  
 SOUTH SANDWICH ISLANDS REGION (153)

SPA 30.14 180 iPc 49 37.70 1.0  
 1.0s 25.00nm 5.0mb  
 e 50 18.60  
 VNDA 42.61 183 eP 51 21.20 -0.7  
 BAO 47.00 331 eP 51 53.20 -4.6X  
 BFS 48.94 72 iPc 52 08.00 -4.9X  
 0.9s 25.21nm 5.2mb  
 PRY 49.25 73 iPd 52 14.70 -0.5  
 KSR 49.87 71 iPc 52 18.80 -1.2  
 1.0s 20.00nm 5.1mb  
 SLR 50.64 73 iPc 52 25.00 -0.9  
 1.0s 20.00nm 5.1mb  
 ZOBO 53.01 307 P 52 44.00 -0.3  
 Z 20s 0.10um 3.9Msz  
 LR 09 14.00  
 LIC 68.21 23 P 54 27.60 0.6  
 KIC 68.40 23 P 54 28.00 -0.2  
 TIC 68.62 23 P 54 29.80 0.2  
 LKO 71.34 22 P 54 46.02 -0.2  
 LWI 71.42 60 iPc 54 49.60 2.6  
 BAO 73.32 48 iPd 54 58.30 0.4  
 0.7s 12.00nm 5.0mb  
 ic 55 08.20  
 YKA 139.28 315 ePKP 02 50.90 -0.8  
 0.8s 0.70nm  
 MBC 147.72 333 ePKP 03 10.00 4.2X  
 1.0s 18.00nm  
 INK 149.00 316 ePKP 03 12.00 4.0X  
 BJI 149.43 114 PKP 03 03.00 -6.6X  
 S.D. = 1.1 on 13 of 18 obs.

\* MAR 23, 1990 13h 35m 37.42±0.45s  
 49.235 S ± 8.1km 122.283 E ± 10.3km  
 DEPTH = 10.0km (geophysicist)  
 5.0mb ( 5 obs.) 5.4Msz ( 1 obs.)  
 SOUTH OF AUSTRALIA (437)  
 CENTROID, MOMENT TENSOR (HRV)  
 Data Used: GDSN  
 L.P.B.: 13S, 22C  
 Centroid Location:  
 Origin Time 13:35:42.6 0.8  
 Lat 49.60S 0.12 Lon 122.43E 0.12  
 Dep 15.0 FLX Half-duration 1.6  
 Moment Tensor: Scale 10<sup>16</sup> Nm  
 Mrr= 4.55 0.41 Mtt=-0.09 0.49  
 Mff=-4.46 0.48 Mrt=-5.86 1.21  
 Mrf=-2.06 1.49 Mtr=-2.22 0.46  
 Principal Axes:  
 T Vol= 8.55 Plg=56 Azm=176  
 N -1.27 23 48  
 P -7.28 24 307  
 Best Double Couple: Mo=7.9\*10<sup>16</sup>  
 NP1: Strike= 0 Dip=29 Slip= 38  
 NP2: 235 72 114  
 RKG 15.65 344 eP 39 11.00 -8.5X  
 NWA 16.72 345 iPc 39 34.40 1.2  
 0.6s 27.00nm 4.6mb  
 Z 20s 3.00um 4.3Msz

N 20s 2.60um  
 E 20s 1.50um  
 MUN 17.83 343 eP 39 47.00 -0.1  
 BAL 19.08 345 eP 40 01.00 -1.4  
 TOO 20.41 64 eP 40 16.00 -1.2  
 MRWA 20.56 344 eP 40 17.30 -1.4  
 MEKA 22.77 351 eP 40 43.00 2.0  
 CAN 24.01 65 eP 40 54.90 1.8  
 BWA 24.30 62 eP 40 58.20 2.3  
 ASPA 27.11 24 eP 41 20.70 -1.6  
 1.2s 17.00nm 4.6mb  
 Z 22s 0.83um 4.2MszX  
 LR 50 17.80  
 MBL 28.08 355 eP 41 29.40 -1.6  
 RMO 30.58 52 P 41 52.00 -1.5  
 i 41 58.60  
 WB5 30.85 23 eP 41 54.80 -1.0  
 VNDA 32.11 165 e(P) 42 05.00 -1.3  
 SPA 40.96 180 iPc 43 20.90 -0.6  
 1.1s 39.88nm 5.1mb  
 IPM 56.70 334 ePd 45 22.00 -1.4  
 CHG 70.85 337 eP 46 55.80 -0.4  
 PRY 73.08 248 eP 47 10.70 1.0  
 SLR 73.45 250 eP 47 12.00 0.1  
 Z 20s 2.13um 5.4Msz  
 KSR 74.20 249 eP 47 14.00 -2.3  
 KMI 76.05 342 Pd 47 27.50 0.7  
 HYB 76.85 317 eP 47 31.00 -0.1  
 WHN 79.73 353 eP 47 46.50 -0.1  
 SSE 79.97 359 P 47 48.00 0.2  
 1.4s 37.00nm 5.2mb  
 NJ2 80.98 357 eP 47 53.00 -0.2  
 CD2 81.48 344 P 47 57.50 1.6  
 XAN 83.75 349 P 48 08.00 0.4  
 TIY 87.01 352 eP 48 25.70 2.0  
 BJI 89.06 355 eP 48 33.00 -0.3  
 1.5s 26.00nm 5.3mb  
 HHC 90.20 352 eP 48 39.30 0.4  
 GTA 90.47 343 eP 48 40.40 0.2  
 LWI 90.60 266 ePd 48 43.90 2.3  
 SNY 90.69 1 eP 48 40.00 -0.8  
 CN2 92.69 2 Pc 48 51.00 0.9  
 INK 139.54 34 ePKP 55 04.00 -1.4  
 ALO 141.79 93 ePKP 55 23.00 12.1X  
 1.4s 26.16nm  
 LRM 143.56 74 ePKP 55 14.90 1.3  
 MBC 143.88 21 ePKP 55 10.00 -2.9X  
 1.3s 97.00nm  
 EDM 145.68 62 ePKPd 55 16.00 -0.7  
 1.7s 127.00nm  
 SES 146.19 67 ePKPd 55 17.40 -0.2  
 YKA 146.63 45 ePKP 55 17.50 -0.4  
 1.0s 10.90nm  
 EKA 146.82 302 PKP 55 21.00 2.6X  
 1.1s 23.30nm  
 DAG 148.47 344 iPKPc 55 22.20 1.8  
 1.2s 48.44nm  
 FFC 152.56 61 ePKP 55 32.00 4.8X  
 1.0s 21.00nm  
 S.D. = 1.3 on 39 of 44 obs.

& MAR 23, 1990 13h 50m 19.00s  
 36.855 N 121.618 W  
 DEPTH = 7.0km  
 CENTRAL CALIFORNIA (39)  
 <BRK>. ML 3.7 (BRK).  
 Mo=8.9\*10<sup>14</sup> Nm (BRK). Felt  
 (IV) at Aromas, Gilroy, Morgan  
 Hill and San Martin. Felt (III)  
 at Carmel Valley, Castroville,  
 Hollister, Moss Landing,  
 Salinas, San Juan Bautista and  
 Watsonville.

SAO 0.17 123 iPd 50 22.18 -0.4  
 e 50 23.50  
 iS 50 24.50  
 GCC 0.35 300 iPc 50 25.70 -0.4  
 MHC 0.49 358 iPd 50 28.93 0.1  
 iS 50 36.20  
 ARN 0.50 8 iPc 50 29.00 0.0  
 PRS 0.56 159 iPc 50 29.60 -0.6  
 LLA 0.59 113 iPc 50 30.40 -0.5  
 PCC 0.89 317 iPc 50 35.00 -1.3  
 PRI 1.05 133 ePd 50 38.30 -0.8  
 eS 50 55.00  
 BKS 1.13 334 iPd 50 38.50 -2.0



23d 13h

BRK 1.14 333 ePc 50 38.40 -2.2  
 CMB 1.53 39 eP 50 45.10 -1.8  
 FRI 1.54 84 iPc 50 44.50 -2.3  
 BCH 2.08 143 eP 50 52.00 -2.8  
 BLP 2.49 156 e(P) 50 58.00 -2.6  
 ABL 2.79 135 eP 51 02.30 -2.8  
 KVN 3.54 51 eP 51 14.30 -1.4  
 16 obs. associated

MAR 23, 1990 13h 50m 43.16 $\pm$  1.14s  
 16.044 N  $\pm$  10.2km 96.361 W  $\pm$  6.0km  
 DEPTH = 50.0  $\pm$  8.2 km  
 4.9mb (9 obs.)

OAXACA, MEXICO (60)  
 Felt in the state of Oaxaca.

OXX 1.09 341 iP 51 03.60 1.1  
 PSM 1.43 62 iP 51 07.30 0.2  
 ACX 3.46 284 iP 51 38.20 2.3  
 SCX 3.64 79 (P) 52 31.00 52.5X  
 III 3.77 308 iP 51 40.20 -0.2  
 TPX 4.11 105 (P) 51 49.50 4.4X  
 CRX 4.60 317 (P) 51 57.50 5.2X  
 IIJ 4.88 319 iP 51 11.30 -45.1X  
 MRX 5.87 309 (P) 52 18.50 8.7X  
 OLY 19.87 12 P 55 11.80 -1.2  
 POW 20.55 12 P 55 23.00 2.9X  
 ANMO 20.89 336 P 55 23.00 -0.8  
 RSCP 21.73 24 P 55 32.70 0.7  
 PRM 21.94 32 P 55 34.20 0.1  
 GBTN 22.35 27 P 55 39.30 1.1  
 FVM 22.47 12 P 55 37.50 -1.9  
 TKL 22.54 28 P 55 40.70 0.7  
 JSC 22.68 34 P 55 42.00 0.6  
 LHS 23.07 34 P 55 45.90 0.7  
 PLM 25.29 317 P 56 06.80 -0.1  
 BLA 25.37 31 P 56 06.50 -0.9  
 TNP 28.63 324 P 56 35.10 -2.2  
 FRI 29.38 320 e(P) 56 49.30 5.5X  
 KVN 29.80 325 P 56 48.90 1.1  
 CMB 30.46 321 e(P) 56 53.80 0.4  
 LBFM 33.48 324 P 57 20.40 0.3  
 FFC 38.85 355 iPc 58 05.60 0.6  
 ZOBO 42.51 138 P 58 35.00 -1.3  
 FRB 51.37 15 eP 59 44.00 -0.6  
 INK 57.32 345 eP 00 27.00 -1.1  
 PMR 58.71 334 P 00 36.80 -1.0  
 FBA 59.73 337 P 00 44.00 -0.9  
 MBC 61.41 354 eP 00 56.00 -0.2  
 TTA 62.19 333 P 01 00.70 -1.0  
 LPF 81.74 42 eP 02 58.00 0.2  
 ALOJ 82.26 54 iPd 03 02.40 1.4  
 ATEJ 82.37 54 iPd 03 02.70 1.0  
 ASMO 82.48 53 iPd 03 03.00 0.9  
 APHE 82.62 54 iPd 03 03.70 0.8  
 TCF 84.35 44 eP 03 11.50 0.1  
 MAF 84.60 44 eP 03 12.80 0.2  
 AVF 84.95 43 eP 03 13.90 -0.4  
 SSF 84.96 43 eP 03 14.30 -0.1  
 LOR 85.13 42 eP 03 15.30 0.1  
 LBF 85.29 43 eP 03 15.90 -0.2  
 HYB 146.38 9 ePKP 10 19.00 -0.7  
 S.D. = 1.0 on 39 of 46 obs.

MAR 23, 1990 14h 07m 15.47 $\pm$  0.87s  
 16.132 N  $\pm$  7.4km 96.278 W  $\pm$  4.5km  
 DEPTH = 62.8  $\pm$  6.3 km

5.2mb (47 obs.)  
 OAXACA, MEXICO (60)  
 Felt in the state of Oaxaca.  
 CENTROID, MOMENT TENSOR (HRV)  
 Data Used: GDSN  
 L.P.B.: 12S, 22C  
 Centroid Location:  
 Origin Time 14:07:16.2 1.9  
 Lat 16.44N 0.14 Lon 96.03W 0.14  
 Dep 44.1 8.0 Half-duration 1.7  
 Moment Tensor: Scale 10\*\*16 Nm  
 Mrr= 3.23 0.60 Mtt=-7.58 0.88  
 Mff= 4.35 0.95 Mrt= 7.41 1.49  
 Mrf=-0.01 1.15 Mtf=-6.43 0.87  
 Principal Axes:  
 T Val= 9.43 Plg=36 Azm= 52  
 N 3.82 45 275  
 P -13.25 23 160  
 Best Double Couple: Mo= 1.1\*10\*\*17  
 NP1: Strike=201 Dip=46 Slip= 12  
 NP2: 103 82 135

PSM 1.32 64 iP 07 36.70 -1.5  
 ACX 3.51 283 (P) 08 44.50 35.6X  
 PPM 3.68 323 iP 08 13.20 1.5  
 III 3.78 307 iP 08 12.20 -0.6  
 TPX 4.06 107 eP 08 10.20 -6.4X  
 CRX 4.59 316 iP 08 26.50 2.1  
 IIJ 4.86 318 (P) 08 29.20 0.8  
 MZX 11.86 308 iP 10 02.50 -1.6  
 OLY 19.76 12 P 11 42.10 -1.0  
 PWLA 20.16 20 P 11 45.00 -2.3  
 POW 20.45 12 P 11 50.80 0.6  
 ALO 20.84 336 eP 11 54.50 0.1  
 ANMO 20.84 336 P 11 54.60 0.2  
 RSCP 21.61 24 P 12 04.30 2.3  
 GBTN 22.24 27 P 12 08.10 -0.1  
 FVM 22.37 12 P 12 08.10 -1.4  
 TKL 22.42 28 P 12 08.60 -1.4  
 GLA 23.77 318 P 12 24.40 1.2  
 BAR 24.75 315 eP 12 33.00 0.3  
 TPC 25.23 319 eP 12 37.00 -0.2  
 BLA 25.26 31 P 12 36.00 -1.4  
 PLM 25.28 316 eP 12 38.00 0.1  
 PEC 25.81 317 P 12 42.80 0.2  
 RVR 26.01 317 eP 12 41.00 -3.4X  
 GSC 26.48 320 eP 12 49.00 0.2  
 MWC 26.60 317 eP 12 50.00 0.0  
 SBB 26.74 318 eP 12 50.00 -1.1  
 DAU 27.47 335 P 12 58.90 0.9  
 ISA 27.76 319 eP 12 53.00 -7.4X  
 TNP 28.60 324 P 13 08.60 0.5  
 RSSD 28.66 348 P 13 09.30 0.7  
 BW06 28.89 340 P 13 09.30 -1.4  
 FRI 29.36 320 eP 13 13.40 -1.3  
 KVN 29.77 324 P 13 19.20 0.6  
 CMB 30.44 320 eP 13 23.60 -0.7  
 MHC 30.80 318 e(P) 13 27.40 -0.2  
 TBR 31.38 33 P 13 31.00 -1.4  
 ORV 32.08 322 eP 13 39.00 0.4  
 LRM 32.55 339 iPc 13 43.00 0.8  
 WDC 33.34 322 eP 13 47.40 -2.2  
 LBFM 33.46 324 P 13 51.00 0.1  
 RSNY 33.76 28 P 13 53.40 0.2  
 WNY 33.95 29 P 13 53.80 -1.1  
 RSON 34.70 3 P 14 01.50 0.3  
 PNT 38.16 335 ePc 14 31.00 0.6  
 CBM 38.57 31 P 14 16.80 -17.0X  
 FFC 38.77 355 iPc 14 35.70 0.4

ZOBO 42.52 138 P 15 03.00 -4.3X  
 Z 1.0s 11.25nm 4.6mb  
 24s 0.73um 4.5mszX  
 LPB 42.73 138 P 15 09.00 0.1  
 Z 20s 1.42um 4.9msz  
 CCH 44.62 137 eP 15 23.00 -1.0  
 SCH 44.82 24 eP 15 24.00 -0.8  
 YKA 48.07 349 eP 15 49.00 -1.3  
 FRB 51.27 15 eP 16 14.00 -0.7  
 INK 57.26 344 ePc 16 57.30 -1.2  
 PMR 58.66 333 P 17 07.90 -0.5  
 FBA 59.68 337 P 17 14.40 -1.0  
 MBC 61.33 354 iPc 17 26.40 -0.1  
 TTA 62.15 333 P 17 31.40 -0.9  
 DAG 71.54 14 iPc 18 30.40 -0.9  
 ADK 71.58 320 P 18 29.60 -2.3  
 EKA 78.65 36 Pd 19 12.40 0.3  
 EPLA 79.95 51 eP 19 19.80 0.3  
 AVE 80.40 58 eP 19 22.50 0.5  
 TIO 81.06 60 iPd 19 25.50 -0.2  
 EHOR 81.09 53 eP 19 26.00 0.5  
 GUD 81.25 50 eP 19 27.00 0.5  
 TOL 81.51 51 iP 19 28.00 0.3  
 NKM 81.52 56 iP 19 29.00 1.2  
 LPF 81.62 43 iPc 19 28.20 0.2  
 GRR 81.64 42 iPc 19 28.60 0.4  
 FLN 81.79 42 iPc 19 29.30 0.4  
 ECR1 81.97 48 eP 19 31.00 0.9  
 LDF 82.06 42 iPc 19 30.70 0.3  
 EBAN 82.13 53 eP 19 31.00 0.0  
 IFR 82.21 57 iPd 19 32.00 0.3  
 AFC 82.54 53 eP 19 34.00 0.7  
 MFF 82.58 44 iPc 19 33.40 0.3  
 LFF 83.63 45 iPc 19 38.80 0.3  
 LSF 83.79 44 iPc 19 39.20 -0.1  
 EPF 83.89 47 iPc 19 40.30 0.4  
 LPO 84.01 45 iPc 19 40.60 0.2  
 RJF 84.05 45 iPc 19 40.80 0.2  
 TCF 84.23 44 iPc 19 41.70 0.2  
 MAF 84.48 44 iPc 19 42.90 0.1  
 CAF 84.53 45 iPc 19 43.10 0.0  
 EROQ 84.56 49 eP 19 43.80 0.6  
 BGF 84.57 43 iPc 19 43.30 0.1  
 BGF 84.57 43 eP 19 44.20 1.0  
 DOU 84.58 39 P 19 43.80 0.7  
 EBR 84.62 49 eP 19 45.00 1.5  
 SSF 84.85 43 iPc 19 44.60 0.0  
 WIT 84.91 36 eP 19 46.00 1.3  
 LOR 85.01 42 iPc 19 45.50 0.1  
 ENN 85.16 39 eP 19 46.00 0.0  
 LBF 85.18 43 iPc 19 46.20 -0.1  
 SMF 85.19 43 iPc 19 46.20 -0.1  
 MEM 85.27 39 P 19 47.70 1.2



WTS	85.27	37 eP	19 47.00	0.5	KMI	70.59	6 Pd	50 22.50	0.3	NKY	1.27 330 ePg	48 06.50	-0.2
	1.0s	39.00nm		5.5mb	Z	20s	0.60um		4.8Msz		eSg	48 27.20	
KEV	85.68	17 eP	19 49.00	0.7			pP	50 30.00	24kmX	KBN	1.35 130 ePn	48 07.80	-0.1
ETER	85.87	47 eP	19 50.80	1.0			S	50 40.00		SKO	1.39 75 iPn	48 08.40	-0.1
RUP	86.21	39 eP	19 52.62	1.2	GYA	72.30	10 P	50 33.00	0.7		i	48 10.00	
HAU	86.36	41 eP	19 52.40	0.3	LWI	72.65	285 iPc	50 35.90	1.1		iSg	48 28.00	
	0.9s	19.65nm		5.3mb	PKI	73.42	350 P	50 38.60	-0.5		LQ	48 32.10	
ABH	86.45	39 eP	19 53.61	1.1	GUN	73.70	351 P	50 40.80	0.0	BRY	1.50 320 ePg	48 10.60	0.3
BSF	86.70	41 eP	19 54.00	0.1	GKN	73.95	349 P	50 41.60	-0.3		eSg	48 34.00	
	0.8s	8.05nm		4.9mb	CD2	76.41	7 eP	50 56.10	0.3	FNA	1.56 122 eP	48 11.50	0.4
CDF	86.80	40 eP	19 54.60	0.3	QUE	79.91	335 eP	51 15.20	-0.1	LSK	1.65 154 ePn	48 12.50	0.1
	0.9s	9.85nm		5.0mb	XAN	80.06	11 P	51 16.00	0.2	PLE	1.70 354 ePg	48 15.50	2.4
SOD	86.99	19 eP	19 54.00	-0.8	TIY	84.18	13 eP	51 37.50	0.4		eSn	48 40.00	
LPL	87.47	43 eP	19 58.90	1.1	Z	20s	0.50um		4.9Msz	VAY	2.23 97 ePn	48 21.00	0.4
LPG	87.49	43 eP	19 58.90	0.9			eS	02 04.00		KNT	2.50 100 eP	48 25.00	0.5
BN1	87.59	44 P	20 02.00	3.7X	BCAO	84.50	282 iPd	51 40.00	0.8	LIT	2.65 124 eP	48 28.50	1.8
LRG	87.93	45 eP	20 00.10	0.4		0.8s	16.00nm		5.3mb	HVAR	2.82 304 e(Pn)	48 33.30	4.2X
LKO	88.05	81 Pc	19 59.54	-1.3	GTA	84.64	3 eP	51 39.80	0.4	S.D. = 0.9 on 23 of 24 obs.			
	1.0s	21.00nm		5.3mb	BTO	86.66	11 eP	51 50.00	0.6	MAR 23, 1990 19h 46m 44.79±0.21s			
LMR	88.07	45 eP	20 00.50	0.1	BJI	87.08	15 eP	51 52.00	0.7	39.312 N ± 2.7km 25.505 E ± 1.9km			
	0.9s	13.10nm		5.1mb		1.5s	26.00nm		5.2mb	DEPTH = 10.0km (geophysicist)			
FRF	88.09	45 eP	20 00.40	-0.1	Z	22s	0.31um		4.7Msz	3.8mb ( 1 obs.)			
DOI	88.16	44 P	20 01.00	0.0	HHC	87.12	12 eP	51 52.00	0.4	AEGEAN SEA (365)			
MOX	88.57	37 e(P)	20 03.00	0.3	MAIO	87.93	331 eP	51 55.00	-0.6	ML 3.9 (THE), 3.7 (ATH).			
CLL	89.10	36 iPd	20 05.70	0.6	WMO	89.30	354 eP	52 02.00	0.0	PRK	0.60 96 iPnc	46 57.00	0.1
		eSg	49 14.00		BAO	110.98	217 e(Pdi)	53 59.00	18.4X	EZN	0.82 51 iPg	47 00.00	-0.6
TIC	89.38	83 P	20 05.40	-1.8	MBC	145.87	14 ePKPc	58 43.00	-0.7	PAIG	1.54 294 ePnc	47 12.50	0.2
LIC	89.49	84 P	20 06.50	-1.2		1.5s	146.00nm		-1.2	OUR	1.56 312 ePn	47 12.50	0.0
SUF	89.57	23 eP	20 06.40	-0.8	INK	146.06	31 ePKP	58 43.00	-1.2	ALN	1.64 15 ePn	47 13.30	-0.4
KIC	89.73	84 P	20 07.40	-1.4	WDC	151.51	86 ePKP	58 57.90	4.3X	IZM	1.65 123 iPn	47 14.80	0.9
BRG	89.82	36 iP	20 09.10	0.5	PAS	151.51	101 ePKP	59 02.00	8.2X	NEO	1.77 271 ePn	47 15.20	-0.5
	1.1s	21.00nm		5.3mb	MWC	151.63	101 ePKP	59 00.00	5.8X	RDO	1.83 1 ePnc	47 16.00	-0.5
KHC	90.36	38 P	20 13.00	1.9	BAR	151.69	106 ePKP	59 02.00	7.9X	PLG	1.91 304 ePn	47 18.50	0.8
KBA	91.09	40 eP	20 14.00	-0.7	FRI	151.92	95 e(PKP)	58 58.80	4.5X	SMG	1.91 146 ePn	47 17.50	-0.2
	1.0s	6.30nm		5.0mb	CMB	151.94	92 e(PKP)	58 57.00	2.6X	ATH	1.94 227 ePn	47 18.00	0.0
RBL	91.50	41 P	20 16.50	0.0	PLM	151.96	104 ePKP	59 03.00	8.3X	EDC	2.09 60 iPn	47 19.50	-0.8
ASS	92.33	44 P	20 19.50	-0.9	RVR	151.97	103 ePKP	59 02.00	7.5X	BNT	2.13 60 iPn	47 21.30	0.4
SDI	93.68	45 P	20 26.00	-0.6	SBB	152.05	101 ePKP	59 01.00	6.3X	SOH	2.24 313 ePn	47 22.80	0.3
OHR	98.61	43 eP	20 49.00	0.0	ISA	152.12	98 ePKP	59 03.00	8.3X		eSn	47 57.20	
WB5	131.83	258 ePKP	26 21.80	-2.2X	GSC	153.08	101 ePKP	59 04.00	7.9X	APE	2.24 179 ePn	47 21.20	-1.3
POO	144.21	16 ePKP	26 43.50	-3.2X	YKA	155.59	35 ePKP	59 04.20	5.7X	SRS	2.32 322 ePnc	47 23.50	-0.2
MBL	145.47	256 ePKP	26 45.00	-3.8X		0.8s	2.80nm				iSn	48 01.00	
HYB	146.28	9 ePKP	26 48.50	-1.7	EDM	159.44	57 ePKP	59 02.50	-1.0	THE	2.36 305 ePnc	47 24.70	0.6
	1.0s	50.00nm			S.D. = 0.9 on 34 of 50 obs.					KCT	2.39 66 iPn	47 25.30	0.7
NNT	147.36	330 ePKP	26 39.20	-12.8X	? MAR 23, 1990 16h 45m 24.99±8.72s					DST	2.44 82 iPn	47 25.50	0.2
GBA	149.81	12 PKPd	26 54.50	-1.3	17.824 N ± 78.5km 66.708 W ± 41.0km					LIT	2.46 290 ePnc	47 25.00	-0.5
	0.2s	0.90nm			DEPTH = 33.0km (normol)					AGG	2.48 264 ePnd	47 25.90	-0.1
KOD	153.08	14 ePKP	27 07.50	6.5X	PUERTO RICO REGION ( 90)					KNT	2.72 314 ePnc	47 29.90	0.6
S.D. = 0.9 on 122 of 134 obs.					PORP	0.24	17 P	45 31.20	-0.8	GRG	2.89 306 ePn	47 32.30	0.5
MAR 23, 1990 14h 39m 04.73±0.34s					LRS	0.48	344 P	45 35.60	0.2	CTT	2.89 50 iPn	47 31.30	-0.5
45.552 S ± 7.3km 96.137 E ± 6.8km					SJG	0.60	62 iP	45 36.90	-0.2	EVR	2.90 263 ePn	47 32.00	0.0
DEPTH = 10.0km (geophysicist)					CPD	0.78	74 P	45 39.60	0.0	VAY	3.01 313 iPn	47 35.00	1.6
5.1mb ( 7 obs.) 4.7Msz ( 6 obs.)							S	45 51.60		1.0s 0.50nm			
SOUTHEAST INDIAN RISE (435)					LPR	0.93	59 P	45 42.20	0.4		i	47 39.50	
							S	45 54.70			i	47 41.00	
RKG	19.65	62 eP	43 39.00	2.5	S.D. = 0.7 on 5 of 5 obs.						i	47 46.00	
NWAO	20.56	60 eP	43 45.00	-1.1	MAR 23, 1990 18h 47m 43.06±0.51s						i	47 52.00	
	0.9s	29.00nm		4.6mb	41.637 N ± 4.4km 19.638 E ± 5.0km						iSg	48 22.30	
Z	20s	1.50um		4.4Msz	DEPTH = 9.2 ± 3.6 km						LR	48 25.40	
N	20s	0.90um			ALBANIA (391)					DMK	3.04 34 iPn	47 32.70	-1.1
E	20s	0.90um			ML 2.8 (TTG).					KZN	3.04 290 ePn	47 34.20	0.3
MUN	20.63	56 eP	43 45.00	-1.8	LACI	0.05	91 iPgd	47 44.80	-0.3	YLV	3.23 66 iPn	47 36.30	-0.3
	1.0s	72.00nm		5.0mb	TIR	0.34	149 iPgd	47 49.00	-1.0	ITU	3.23 55 ePn	47 38.00	1.5
BAL	21.93	54 eP	43 59.00	-1.0	SDA	0.39	345 iPgc	47 51.30	0.2		iSg	48 26.00	
	0.9s	38.00nm		4.8mb	ULC	0.44	318 iPgd	47 51.60	-0.3	ISK	3.24 56 ePn	47 36.00	-0.6
MAW	28.07	207 eP	44 57.00	-0.9			iSg	47 59.10		VLI	3.29 219 ePn	47 36.00	-1.4
ADE	33.81	87 eP	45 45.20	-3.8X	PHP	0.60	85 iPgc	47 53.80	-1.4	KHL	3.29 106 ePn	47 39.00	1.5
TOO	37.28	96 eP	46 20.00	1.6	KKS	0.72	53 iPg	47 57.50	0.1	FNA	3.49 296 ePn	47 41.30	1.0
ASPA	37.50	67 iPd	46 20.00	-0.4	BCI	0.80	24 iPgc	47 58.10	-0.5	ITM	3.53 234 ePn	47 42.00	1.2
	1.0s	31.00nm		5.0mb	TTG	0.84	341 ePg	47 58.40	-0.9	HRT	3.53 63 iPn	47 40.30	-0.6
Z	18s	0.48um		4.3Msz			eSg	48 11.50		ALT	3.59 93 iPn	47 41.90	0.2
		LR	00 28.20		BDV	0.88	317 ePg	48 00.00	-0.1	ARG	3.72 145 ePn	47 43.00	-0.6
WB5	40.54	64 eP	46 44.90	-0.8			eSg	48 13.50		GPA	3.83 74 iPn	47 45.50	0.4
VNDA	40.77	162 (P)	46 46.90	0.0	PVY	0.99	14 ePg	48 01.30	-0.7	KAP	3.98 160 ePn	47 46.00	-1.2
CAN	40.85	95 eP	46 49.30	1.1			eSg	48 17.00		OHR	4.03 298 ePn	47 49.20	1.3
BWA	40.91	93 eP	46 51.70	3.0X			eSg	48 17.30		VAM	4.03 195 ePn	47 49.00	1.1
SPA	44.64	180 iPc	47 19.10	0.2	OHR	1.02	121 iPg	48 01.30	-1.2	NPS	4.04 179 ePn	47 47.00	-1.1
	1.8s	107.41nm		5.4mb			iSg	48 17.20		SKO	4.08 312 ePn	47 49.50	1.0
Z	19s	5.06um		5.5Msz			LQ	48 19.20		N	12s	1.75um	
		e	49 05.40		HCY	1.17	314 ePg	48 04.00	-1.0	E	12s	1.53um	
RMQ	45.73	84 eP	47 27.00	-0.9			eSg	48 22.50			i	47 52.20	
BRS	48.00	88 iP	47 41.50	-4.2X	IVA	1.25	9 ePg	48 06.10	-0.3		i	48 09.50	
		e	50 49.00				eSg	48 26.40		ELL	4.32 125 ePn	47 53.00	0.9
		e(S)	54 49.00				eSg				i	48 54.70	
MSZ	49.06	116 P	47 54.10	0.5			eSg				iSg	48 54.70	
CHG	64.11	3 eP	49 40.90	-0.3			eSg				ePn	47 53.00	0.9



23d 19h

BCK 4.40 113 ePn 47 54.40 1.2  
 KEK 4.43 277 ePn 47 55.20 1.6  
 KSL 4.54 133 ePb 47 59.00 3.9X  
 DRA 5.44 351 eP 48 07.00 -0.9  
 BBTK 5.63 82 ePn 48 14.00 3.3X  
 iPg 48 30.00  
 iSg 49 47.00  
 CMP 5.96 357 ePc 48 10.00 -5.2X  
 MLR 6.18 3 iPc 48 17.00 -1.4  
 CFR 6.19 18 eP 48 25.00 6.7X  
 VRI 6.62 7 iPc 48 24.50 0.1  
 BEO 6.66 327 ePn 48 48.50 23.4X  
 ROI 6.92 275 P 48 28.20 -0.6  
 ORI 7.02 279 P 48 28.00 -2.2  
 TDS 7.10 276 P 48 30.00 -1.2  
 CSI 7.14 277 P 48 31.50 -0.3  
 CZI 7.27 272 P 48 34.10 0.5  
 CLI 7.35 10 ePd 48 33.00 -1.7  
 MMN 7.37 278 P 48 35.20 0.2  
 MGR 7.71 279 Pc 48 39.80 0.0  
 SGO 7.93 282 P 48 42.40 -0.5  
 BSS 8.34 284 P 48 48.40 -0.2  
 DUI 8.74 289 P 48 53.00 -1.2  
 NB2 23.49 342 P 51 56.50 1.2

0.8s 2.40nm 3.8mb  
 S.D. = 0.9 on 62 of 67 obs.

MAR 23, 1990 19h 49m 06.92 ± 0.71s  
 39.420 N ± 7.7km 25.532 E ± 6.7km  
 DEPTH = 10.0km (geophysicist)

AEGEAN SEA (365)  
 MD 3.5 (ATH).

PRK 0.60 107 iPg 49 17.50 -1.5  
 EZN 0.73 56 iPg 49 21.00 -0.3  
 iSg 49 31.00  
 IZM 1.69 127 ePn 49 37.00 0.3  
 RDO 1.72 0 ePb 49 37.00 -0.1  
 NEO 1.79 267 ePb 49 36.00 -2.2  
 PLG 1.87 301 ePg 49 41.00 1.8  
 SMG 1.99 149 ePb 49 42.00 1.0  
 EDC 2.02 62 ePn 49 42.50 1.1  
 BNT 2.06 62 ePn 49 41.00 -1.0  
 APE 2.35 180 ePn 49 46.50 0.3  
 DST 2.40 85 ePn 49 47.50 0.5  
 YLV 3.16 68 ePn 50 01.00 3.2X

S.D. = 1.3 on 11 of 12 obs.

\* MAR 23, 1990 20h 09m 50.79 ± 0.81s  
 36.537 N ± 16.5km 141.558 E ± 9.7km  
 DEPTH = 33.0km (normal)  
 4.7mb (2 obs.)  
 NEAR EAST COAST OF HONSHU, JAPAN(228)

KAKJ 1.17 254 P 10 12.20 1.4  
 CHUJ 2.13 258 P 10 23.20 -1.5  
 S 10 55.50  
 NIJJ 2.17 290 P 10 26.20 1.0  
 S 11 02.80  
 MTMJ 3.02 272 P 10 41.00 3.5X  
 IIDJ 3.14 251 P 10 42.00 2.9X  
 TSRJ 4.63 259 P 11 04.10 3.9X  
 MDJ 12.15 315 eP 12 53.60 9.2X  
 BJI 20.21 288 eP 14 24.50 -1.0  
 TIY 23.21 282 eP 14 53.00 -2.8X  
 Z 15s 1.18um 4.5MszX  
 E 13s 0.63um  
 WHN 23.41 263 eP 14 57.70 0.1  
 HHC 23.74 290 eP 15 00.40 -0.5  
 BTO 24.92 289 eP 15 10.60 -1.7  
 XAN 26.69 274 P 15 28.00 -0.8  
 GYA 31.26 261 Pd 16 09.00 -0.8  
 CD2 31.79 271 eP 16 13.00 -1.5  
 KMI 35.00 262 Pd 16 41.50 -1.0  
 LOE 39.94 252 eP 17 23.40 -0.3  
 WMO 41.17 297 P 17 35.50 1.8  
 CHG 41.29 256 eP 17 35.00 0.2  
 LSA 42.37 276 eP 17 45.30 1.1  
 GUN 47.32 276 P 18 24.20 0.5  
 PKI 47.84 276 P 18 28.00 0.2  
 KKN 47.85 276 P 18 28.40 0.7  
 DMN 48.07 276 P 18 30.90 1.4  
 GKN 48.28 277 P 18 31.60 0.7  
 INK 54.78 27 eP 19 18.00 -1.1  
 WB5 56.52 188 eP 19 18.50 -13.7X  
 MBC 56.97 16 eP 19 34.50 -0.4

SUF 68.48 333 eP 20 51.10 -0.3  
 0.6s 3.40nm 4.6mb  
 NUR 70.44 332 eP 20 45.00 -18.4X  
 NB2 74.69 337 P 21 31.20 2.7X  
 1.0s 9.70nm 4.8mb  
 KVN 74.97 52 eP 21 31.00 0.2  
 VAY 84.50 319 eP 22 22.50 1.0  
 ZOBO 146.83 60 ePKP 29 31.00 0.6  
 S.D. = 1.0 on 26 of 34 obs.

\* MAR 23, 1990 20h 31m 38.30 ± 1.40s  
 32.706 S ± 7.6km 71.623 W ± 11.9km  
 DEPTH = 19.5 ± 8.2 km  
 NEAR COAST OF CENTRAL CHILE (135)

IHA 0.32 183 eP 31 45.00 0.7  
 iS 31 52.50  
 ROCH 0.58 117 iPd 31 49.90 0.1  
 iS 31 59.50  
 LCCH 0.77 177 iP 31 52.60 -0.3  
 iS 32 04.50  
 SAN 1.10 133 iPd 31 58.30 -0.2  
 iS 32 14.50  
 TACH 1.11 149 iPc 31 58.30 -0.3  
 iS 32 14.00  
 LNV 1.26 172 iP 32 00.60 -0.2  
 iS 32 18.50  
 FCH 1.28 119 iPd 32 00.70 -0.8  
 iS 32 19.50  
 PCH 1.30 135 iPc 32 01.40 -0.2  
 iS 32 20.50  
 CHCH 1.47 147 iPd 32 04.60 0.7  
 iS 32 24.90  
 RTCV 2.75 73 e(P) 32 24.00 1.8  
 RTLL 3.01 64 ePd 32 26.00 0.1  
 CFA 3.07 70 eP 32 27.00 0.2  
 S 32 30.00  
 RTRS 3.13 37 ePc 32 27.10 -0.5  
 eS 33 00.30  
 S.D. = 0.8 on 13 of 13 obs.

MAR 23, 1990 21h 00m 50.77 ± 0.75s  
 39.120 N ± 6.2km 20.059 E ± 7.3km  
 DEPTH = 10.0km (geophysicist)  
 GREECE-ALBANIA BORDER REGION (392)  
 ML 3.0 (THE). MD 3.1 (ATH).

IGT 0.46 27 ePg 00 59.40 -0.8  
 KEK 0.63 341 ePb 01 03.50 0.2  
 VLS 1.03 156 ePn 01 08.00 -2.2  
 AGG 1.77 92 ePn 01 21.60 -0.1  
 eSn 01 48.20  
 KZN 1.77 48 ePn 01 23.00 1.2  
 OHR 2.07 16 ePn 01 25.50 -0.5  
 LIT 2.12 62 ePn 01 25.30 -1.4  
 ITM 2.43 142 ePb 01 33.00 1.8  
 NEO 2.47 85 ePn 01 34.00 2.3  
 GRG 2.57 44 ePn 01 32.00 -1.1  
 BRT 2.81 310 P 01 36.00 -0.6  
 VAY 2.92 40 ePn 01 39.50 1.4  
 SKO 3.04 20 ePn 01 40.50 0.8  
 SOH 3.05 55 ePn 01 38.40 -1.6  
 CZI 3.05 273 P 01 40.60 0.7  
 eSn 02 17.60  
 VLI 3.31 136 ePn 01 43.50 -0.1  
 MGR 3.62 288 P 01 59.50 11.4X  
 eSn 02 57.00  
 S.D. = 1.4 on 16 of 17 obs.

MAR 23, 1990 21h 06m 03.06 ± 0.19s  
 43.718 N ± 4.4km 147.756 E ± 3.0km  
 DEPTH = 32.8km (20 depth phases)  
 5.2mb (59 obs.) 4.7Msz (15 obs.)  
 KURIL ISLANDS (221)  
 CENTROID, MOMENT TENSOR (HRV)  
 Data Used: GDSN  
 L.P.B.: 10S, 22C  
 Centroid Location:  
 Origin Time 21:06:10.4 0.6  
 Lat 43.66N 0.10 Lon 147.22E 0.07  
 Dep 20.4 7.2 Half-duration 1.7  
 Moment Tensor: Scale 10\*\*17 Nm  
 Mrr = 0.29 0.06 Mtt = 0.72 0.07  
 Mff = -1.01 0.06 Mrt = -0.31 0.14  
 Mrf = 0.41 0.21 Mtf = -0.38 0.06  
 Principal Axes:  
 T Val = 1.02 Plg = 30 Azm = 197

N 0.15 57 347  
 P -1.17 14 99  
 Best Double Couple: Mo = 1.1\*10\*\*17  
 NP1: Strike = 234 Dip = 59 Slip = 168  
 NP2: 331 79 32

MDJ 13.08 280 Pc 09 09.50 0.5  
 Z 18s 8.20um  
 E 16s 3.40um  
 epP 09 18.00  
 eS 09 26.00  
 S 11 32.00  
 SHK 14.85 237 eP 09 30.00 -2.3  
 CN2 16.12 278 Pd 09 48.50 -0.1  
 1.0s 100.00nm 4.9mb  
 Z 16s 4.80um 4.0Msz  
 N 15s 1.50um  
 E 15s 3.70um  
 epP 09 54.00  
 eS 12 44.00  
 SNY 17.84 272 iPc 10 11.40 1.2  
 1.2s 100.00nm 4.8mb  
 Z 18s 2.40um 5.4Msz  
 N 12s 1.00um  
 E 15s 1.50um  
 S 13 22.00  
 sS 13 34.50  
 SMY 19.64 53 P 10 33.70 2.0  
 DL2 20.17 265 Pd 10 38.00 0.6  
 Z 18s 1.20um 4.3Msz  
 E 13s 1.30um  
 pP 10 45.00 26km  
 S 14 18.00  
 BJI 23.72 272 eP 11 12.50 -0.3  
 1.5s 0.25nm 2.5mb X  
 Z 20s 2.40um 4.7Msz  
 N 14s 1.29um  
 eS 15 18.00  
 SSE 24.46 248 Pc 11 20.00 -0.1  
 4.0s 0.80nm 2.6mb X  
 Z 20s 2.00um 4.6Msz  
 N 14s 0.70um  
 E 14s 0.60um  
 sP 11 31.00  
 sS 15 50.00  
 TIA 24.55 263 Pc 11 21.00 0.1  
 pP 11 29.00 28km  
 ADK 25.04 58 eP 11 25.30 -0.1  
 NJ2 25.48 253 iPd 11 30.80 1.1  
 1.0s 100.00nm 5.4mb  
 Z 16s 1.60um 4.6MszX  
 N 15s 1.20um  
 E 15s 1.80um  
 pP 11 40.00 33km  
 HHC 26.80 276 Pc 11 42.00 0.0  
 N 14s 0.66um  
 E 14s 1.31um  
 S 16 11.00  
 sS 16 36.00  
 TIY 27.29 270 eP 11 47.00 0.5  
 Z 20s 1.63um 4.6Msz  
 E 15s 0.98um  
 sP 11 57.50  
 S 16 24.00  
 sS 16 40.00  
 BTD 27.99 277 P 11 52.00 -0.8  
 N 14s 1.50um  
 E 14s 1.80um  
 pP 12 02.50 39km  
 eS 16 35.00  
 WHN 29.49 255 Pc 12 06.00 -0.3  
 1.0s 100.00nm 5.5mb  
 Z 18s 1.80um 4.7Msz  
 N 16s 2.00um  
 E 16s 2.40um  
 GUMO 30.13 186 eP 12 15.00 3.0X  
 Z 22s 0.75um 4.3Msz  
 QZH 30.28 241 eP 12 13.50 0.2  
 Z 20s 0.90um 4.4Msz  
 E 14s 0.60um  
 eS 17 13.50  
 XAN 31.49 265 Pc 12 28.00 4.0X  
 N 12s 0.60um  
 LZH 34.21 272 Pc 12 47.50 -0.3  
 Z 20s 1.50um 4.7Msz  
 N 15s 1.20um  
 pP 12 56.50 31km



		S	18	10.00		WDC	63.31	58	eP	16	31.10	0.2	EKA	78.28	344	P	18	01.00	0.2	
		sS	18	27.00		QUE	63.59	287	eP	16	32.60	-0.5		1.0s	17.20nm			5.0mb		
BAG	35.66	229	eP	13	00.00	-0.3	SES	63.96	44	eP	16	34.00	-1.1	SRO	78.57	328	eP	18	03.40	0.9
GTA	35.73	280	P	13	00.00	-0.7			pP	16	47.00	45kmX	MOX	78.57	333	eP	18	03.00	0.5	
	Z	14s	2.20um		5.1MsZ	X	SUF	64.14	334	eP	16	33.80	-2.2		1.2s	25.00nm		5.1mb		
	E	13s	1.20um					0.6s	9.30nm		5.1mb		CAN	78.67	179	eP	18	04.10	1.0	
		S	18	36.00			WB5	64.47	194	eP	16	37.50	-1.0	ZST	78.71	329	eP	18	04.50	1.2
CD2	36.84	265	P	13	09.60	-0.4	ORV	64.56	59	eP	16	38.50	-0.6	HOF	78.77	333	eP	18	03.70	0.1
	1.1s	100.00nm		5.6mb			MAIO	64.93	297	iPc	16	41.30	-0.4		1.2s	47.00nm		5.4mb		
	Z	16s	1.00um		4.7MsZ	X	FFC	65.46	37	iPd	16	44.20	-0.4	WTS	78.87	337	eP	18	04.00	-0.1
		S	18	50.00				0.7s	14.00nm		5.2mb			1.0s	31.00nm		5.3mb			
TTA	37.18	39	P	13	12.50	0.0	GCC	65.77	61	eP	16	57.20	10.4X	KHC	79.20	331	iPc	18	07.60	1.6
	0.9s	37.50nm		5.3mb			MHC	65.80	61	eP	16	50.00	2.7X		1.0s	17.50nm		5.0mb		
SVW	37.28	42	iPd	13	14.30	1.0	POO	65.90	273	iPc	16	47.40	-0.6	WET	79.43	332	iPc	18	07.50	0.2
		e	13	25.40	39km		LRM	66.04	49	eP	16	48.70	-0.1		1.2s	38.00nm		5.3mb		
GYA	37.34	256	iPc	13	13.80	-0.5	CMB	66.17	60	eP	16	49.60	0.1	CTT	79.44	318	iP	18	08.10	0.6
	Z	18s	1.20um		4.7MsZ		NUR	66.26	333	iP	16	47.60	-2.0	GRF	79.52	333	iPc	18	08.10	0.4
	N	16s	1.50um				PRS	66.59	62	eP	16	52.00	-0.2		1.5s	79.00nm		5.5mb		
	E	16s	2.00um				LLA	66.69	61	eP	17	03.40	10.6X	Z	19s	0.40um		4.8MsZ		
		PcP	15	34.40			KVN	66.96	58	P	16	54.80	0.0		e		18	15.50	24km	
PGP	37.88	226	iPc	13	19.00	0.3	FRI	67.24	60	e(P)	16	57.20	1.0		e		18	29.90		
BRW	38.34	25	eP	13	21.50	-0.5	BCH	68.12	62	P	17	11.20	9.2X	TNS	79.94	335	ePd	18	10.40	0.4
IMA	38.46	34	iPd	13	23.70	0.4	ASPA	68.25	194	iPc	17	02.40	-0.2	ALT	80.20	316	eP	18	12.10	0.4
	0.7s	33.60nm		5.3mb				1.2s	16.00nm		5.0mb		ENN	80.21	337	eP	18	12.00	0.6	
KDC	39.00	47	e(P)	13	25.80	-1.9	KOD	68.76	264	eP	17	06.20	-0.2		1.0s	20.00nm		5.1mb		
PMR	40.39	41	eP	13	39.10	0.0	ISA	68.84	61	eP	17	16.00	9.6X	MEM	80.33	336	P	18	12.80	0.8
		i	13	50.70	42km		UPP	68.98	336	iP	17	05.30	-1.4		e		18	23.20	33km	
FBA	40.86	36	iPd	13	43.80	0.8	FRB	69.09	16	eP	17	06.00	-1.3	ALN	80.78	319	eP	18	15.00	0.5
KMI	40.94	258	Pc+	13	54.00	9.6X	MBL	69.46	208	eP	17	10.00	0.0	FUR	80.82	332	eP	18	15.10	0.4
	2.0s	0.50nm		2.9mb	X		BW06	69.59	50	P	17	10.60	-0.4	SNF	80.91	337	P	18	17.30	2.3
	Z	18s	2.40um		5.1MsZ			1.1s	16.67nm		5.0mb		KBA	81.03	330	iPd	18	16.40	0.4	
	N	15s	1.00um				NB2	69.79	339	P	17	13.20	1.5		1.2s	38.70nm		5.3mb		
		i	14	06.50	46kmX			0.5s	4.90nm		4.8mb			i		18	31.00	51kmX		
		S	19	50.00			RMO	69.87	179	eP	17	13.00	0.6	KHL	81.06	315	eP	18	16.60	0.4
		iS	19	54.00			SBB	69.87	61	eP	17	08.00	-4.7X	PTJ	81.06	328	eP	18	16.00	0.0
		sS	20	16.00				e		17	23.00	54kmX	DOU	81.19	337	P	18	14.90	-1.7	
		SS	23	00.00			HFS	69.89	337	eP	17	10.20	-2.0	NWAO	81.21	206	eP	18	16.00	-0.7
KMI	40.94	258	Pc	13	44.50	0.1		0.6s	8.40nm		5.0mb			0.9s	14.00nm		5.0mb			
	1.5s	100.00nm		5.3mb			Z	19s	0.54um		4.8MsZ		HRI	81.47	308	iPd	18	20.00	1.5	
	Z	18s	2.40um		5.1MsZ				LR	46	24.00		RBL	81.49	330	P	18	19.00	0.7	
	N	15s	1.00um				PAS	70.00	62	eP	17	23.00	9.7X	FVI	81.65	330	P	18	33.00	14.1X
	E	15s	0.80um				MWC	70.02	62	eP	17	17.00	3.3X	ECP	81.90	344	eP	18	22.50	2.3
		pP	13	54.00	32km				e	17	25.00	26km	CDF	81.90	335	ePKP	18	19.80	-0.6	
		S	19	50.00			GSC	70.13	60	eP	17	14.00	-0.2		0.8s	6.70nm		4.7mb		
TOA	41.75	40	eP	13	51.30	0.9	BRS	70.91	175	iP	17	19.60	0.8	HLBJ	82.02	307	Pc	18	23.20	1.9
WMO	42.52	292	iPc	13	57.10	0.2		e	20	55.00			OGA	82.03	332	eP	18	21.40	0.2	
		S	20	19.00			PLM	71.34	62	eP	17	24.00	2.2	SKO	82.03	323	ePc	18	21.20	0.1
HYT	46.06	41	P	14	26.80	1.5		e	17	32.00	26km		VAY	82.05	322	eP	18	21.40	0.2	
INK	46.21	30	eP	14	26.50	0.4	TPC	71.37	61	eP	17	21.00	-0.8	ELL	82.06	314	eP	18	21.00	-0.5
	1.0s	90.00nm		5.7mb				e	17	32.00	36km		SOH	82.09	321	eP	18	21.10	-0.4	
LSA	46.63	272	P	14	31.20	0.6	RSSD	71.66	46	P	17	23.00	-0.6	JARJ	82.11	307	Pd	18	23.30	1.5
LOE	46.73	251	eP	14	31.00	0.1	RSON	71.75	36	P	17	22.60	-1.1	OUR	82.19	320	eP	18	22.30	0.4
		e	16	04.90	494kmX			1.0s	48.81nm		5.5mb		MDSJ	82.37	307	Pd	18	24.90	1.7	
CHG	47.70	255	iPc	14	39.20	0.7	BAR	71.90	62	eP	17	24.00	-0.9	GRG	82.42	321	eP	18	23.40	0.2
	1.1s	47.15nm		5.4mb				e	17	35.00	36km		SALJ	82.43	307	Pd	18	24.90	1.5	
SIT	48.21	46	e(P)	14	41.60	-0.4	TAB	71.97	306	eP	17	25.00	-0.4	CTI	82.52	331	P	18	22.00	-1.7
		e	14	54.20	46kmX		GLA	72.83	61	eP	17	30.00	-0.4	HAU	82.55	335	eP	18	23.00	-0.7
MBC	48.71	19	eP	14	45.00	-0.6		e	17	41.00	36km		BSF	82.57	335	eP	18	23.10	-0.8	
	0.9s	9.00nm		4.8mb			KER	73.98	302	eP	17	38.00	0.8	PAIG	82.66	320	eP	18	24.60	0.3
NST	49.03	250	eP	14	51.00	2.2	SLY	74.12	304	ePd	17	36.00	-1.7	PHP	82.70	323	iPc	18	23.40	-1.1
GUN	51.45	274	P	15	07.60	-0.1	MSL	74.98	306	ePd	17	43.00	0.2	MKRJ	82.79	307	Pc	18	26.30	1.0
NNT	51.49	248	eP	15	03.00	-4.6X	KVT	75.64	314	iP	17	47.30	0.8	DSI	82.92	307	eP	18	26.00	0.1
KNK	51.96	274	P	15	11.00	-0.3	CLI	75.84	322	ePd	17	47.00	-0.5	OHR	83.01	323	eP	18	26.00	-0.3
PKI	51.99	274	P	15	11.00	-0.7	BHD	76.37	303	ePd	17	52.50	1.8		1.0s	0.04nm		2.5mb	X	
DMN	52.19	274	P	15	12.80	-0.3	CFR	76.49	321	eP	17	51.00	-0.1	LACI	83.06	324	eP	18	26.10	-0.3
GKN	52.30	275	P	15	13.40	-0.5	VRI	76.61	322	ePd	17	51.00	-0.8	FVM	83.11	43	P	18	26.10	-0.7
SNG	54.91	243	eP	15	24.30	-8.7X	ANMO	76.67	54	P	17	53.40	0.8	TIR	83.23	323	eP	18	27.20	-0.1
YKA	55.58	34	eP	15	36.20	-1.1		1.2s	23.44nm		5.1mb		KBN	83.40	322	eP	18	26.20	-1.9	
	0.8s	6.00nm		4.7mb			ALQ	76.67	54	eP	17	53.00	0.4	MDI	83.42	332	P	18	35.00	6.8X
NDI	57.24	280	iPc	15	48.80	-0.8		1.1s	20.25nm		5.1mb		VAI	83.66	333	P	18	29.10	-0.3	
	0.8s	31.34nm		5.4mb			Z	20s	0.28um		4.6MsZ		FLN	83.78	339	eP	18	29.50	-0.5	
		eS	23	41.80				e	18	03.80	35km			1.2s	38.70nm		5.4mb			
KEY	58.90	340	eP	16	07.00	6.4X	SPC	76.70	328	eP	17	52.90	0.4	LDF	83.84	339	eP	18	29.80	-0.5
GMW	59.26	52	P	16	03.60	0.1	KSP	76.81	331	iPd	17	52.90	0.1		1.1s	19.55nm		5.2mb		
BMW	59.58	53	P	16	05.30	-0.5		1.2s	46.00nm		5.4mb		LOR	83.95	336	eP	18	30.20	-0.7	
PNT	60.07	49	iP	16	08.00	-1.0	MLR	77.25	322	eP	17	56.00	0.4		1.0s	10.00nm		4.9mb		
TRT	60.26	221	iPd	16	10.10	-0.4	CLL	77.54	333	iPc	17	56.30	-0.5	RSM	84.05	329	P	18	32.60	1.2
	0.7s	51.80nm		5.8mb				1.3s	76.00nm		5.6mb		ORO	84.14	333	P	18	35.50	3.5X	
SOD	60.66	338	iP	16	10.70	-2.1			iPp	18	06.10	31km	LBF	84.18	336	eP	18	31.40	-0.7	
EDM	61.13	43	eP	16	15.50	-0.7	BRG	77.60	332	eP	17	57.20	0.0		0.8s	5.35nm		4.8mb		
KLI	61.88	230																		



23d 21h

PGD	84.36	330 P	18 34.00	0.8
BOB	84.40	332 P	18 34.00	0.7
MME	84.46	331 P	18 34.80	1.0
CRE	84.49	329 P	18 34.50	0.7
SMF	84.52	336 eP	18 33.30	-0.5
	1.0s	23.00nm	5.3mb	
AVF	84.53	336 eP	18 33.30	-0.5
	1.0s	13.00nm	5.1mb	
MBH	84.54	306 ePc	18 35.00	0.9
LPF	84.59	340 eP	18 34.20	0.1
	1.1s	22.00nm	5.3mb	
BDI	84.61	331 P	18 33.00	-1.3
LPL	84.64	334 eP	18 34.70	0.0
	0.8s	5.35nm	4.8mb	
LPG	84.65	334 eP	18 34.80	0.0
	0.8s	9.40nm	5.0mb	
ASS	84.71	329 P	18 35.00	0.2
BNI	85.07	333 P	18 37.50	0.8
CKI	85.10	332 P	18 41.00	4.3X
DUI	85.21	327 P	18 38.00	0.6
MAF	85.28	337 eP	18 37.80	0.2
	1.0s	27.00nm	5.4mb	
MNS	85.29	328 P	18 37.30	-0.4
TCF	85.32	337 eP	18 37.70	-0.1
	0.8s	6.70nm	4.9mb	
AZI	85.34	328 P	18 38.00	0.2
SDI	85.43	327 P	18 38.00	-0.4
LSF	85.55	337 eP	18 38.70	-0.2
	1.2s	41.65nm	5.5mb	
MFF	85.68	338 eP	18 39.60	0.0
	1.1s	29.30nm	5.4mb	
S8F	85.88	332 eP	18 39.60	-1.1
FRF	86.41	333 eP	18 42.30	-0.9
RJF	86.42	337 eP	18 43.30	0.1
	1.0s	10.00nm	5.0mb	
PGF	86.50	331 eP	18 42.70	-1.1
LRG	86.60	333 eP	18 43.70	-0.4
	0.9s	13.10nm	5.2mb	
CAF	86.61	336 eP	18 44.60	0.4
	1.1s	22.00nm	5.3mb	
LMR	86.66	333 eP	18 43.90	-0.5
	1.0s	20.00nm	5.3mb	
LFF	86.97	337 eP	18 46.40	0.5
LPO	87.08	337 eP	18 46.80	0.3
BLA	88.36	37 P	18 54.30	1.5
	1.1s	28.13nm	5.5mb	
NA2	88.70	34 P	18 55.30	1.0
EPF	88.84	337 eP	18 54.10	-0.9
SLR	128.26	269 iPKPd	25 08.00	0.1
	1.0s	20.00nm		
ZOBO	139.11	59 ePKP	25 25.00	-4.2X
	Z 20s	0.20um	4.9msz	
		LR	13 16.00	
LPB	139.33	60 PKP	25 31.00	1.6
BAO	148.96	30 ePKP	25 49.00	3.7X
	S.D. = 0.9	on 203 of 224 obs.		

& MAR 23, 1990 21h 07m 16.61s  
63.516 N 152.365 W  
DEPTH = 5.9km  
CENTRAL ALASKA (1)  
<AGS-P>.

KTH	0.65	86 iP	07 29.16	-0.4
		iS	07 38.83	
CUT	1.47	138 eP	07 44.02	0.4
MCK	1.55	80 eP	07 44.36	-0.4
RND	1.58	92 eP	07 43.32	-2.0
SKT	1.59	166 eP	07 44.83	-0.5
		eS	08 09.26	
TTA	1.75	252 eP	07 48.02	0.2
NEA	1.80	52 eP	07 47.56	-0.8
WRH	2.11	61 eP	07 52.94	0.0
SUA	2.19	159 eP	07 56.23	2.0
PWA	2.20	147 eP	07 53.84	-0.3
CCB	2.30	58 eP	07 55.19	-0.5
SPU	2.35	176 eP	07 58.38	2.0
GHO	2.36	136 eP	07 56.98	0.3
FBA	2.43	53 eP	07 59.44	1.9
PLRM	2.44	141 eP	08 00.64	3.0
SML	2.53	131 eP	07 57.52	-1.4
HDA	2.55	67 eP	07 59.39	0.2
GLM	2.63	54 eP	08 03.42	3.1
PMS	2.63	149 eP	08 00.70	0.4
KNK	2.78	138 P	08 02.65	0.1
DDM	2.91	82 eP	08 04.95	0.5
	21 obs.	associated		

? MAR 23, 1990 21h 37m 02.11±12.34s  
41.744 N ±67.5km 12.571 E ±80.2km  
DEPTH = 10.0km (geophysicist)  
SOUTHERN ITALY (390)

RDP	0.11	82 P	37 04.50	-0.5
		eSg	37 05.90	
RMP	0.12	55 P	37 05.00	-0.1
		eSg	37 06.50	
MNS	0.65	7 P	37 15.10	0.0
		eSg	37 25.80	
SDI	0.93	92 P	37 20.30	0.4
		eSg	37 31.40	
	S.D. = 0.6	on 4 of 4 obs.		

% MAR 23, 1990 21h 37m 36.81±2.38s  
35.056 N ±29.6km 25.819 E ±8.2km  
DEPTH = 10.0km (geophysicist)  
CRETE (370)  
MD 3.6 (ATH).

NPS	0.27	321 iPbc	37 43.20	0.8
KAP	1.21	66 ePn	37 59.50	0.1
VAM	1.37	285 ePb	38 03.00	1.1
ARG	2.21	58 ePn	38 14.00	0.0
VLI	2.87	306 ePn	38 21.50	-1.9
	S.D. = 1.6	on 5 of 5 obs.		

\* MAR 23, 1990 23h 28m 12.63±1.95s  
39.007 N ±11.1km 19.941 E ±23.1km  
DEPTH = 10.0km (geophysicist)  
GREECE-ALBANIA BORDER REGION (392)  
MD 2.5 (ATH).

KEK	0.71	351 ePb	28 26.00	-0.7
VLS	0.97	148 ePb	28 31.50	0.4
EVR	1.46	93 ePb	28 38.00	-1.1
FNA	2.09	31 eP	28 49.50	1.3
OHR	2.20	17 ePn	28 49.70	-0.1
	S.D. = 1.3	on 5 of 5 obs.		

? MAR 23, 1990 23h 32m 28.18±2.24s  
45.960 N ±9.0km 14.593 E ±20.7km  
DEPTH = 10.0km (geophysicist)  
YUGOSLAVIA (383)  
MD 2.2 (LJU). ML 1.8 (KBA).

LJU	0.09	334 iPg	32 30.10	-0.7
		iSg	32 32.00	
CEY	0.25	208 iPg	32 33.50	0.0
		iSg	32 38.40	
VOY	0.49	279 ePg	32 38.00	-0.2
		eSg	32 46.00	
KBA	1.41	323 ePg	32 55.00	0.9
		eSg	33 13.00	
	S.D. = 1.2	on 4 of 4 obs.		

% MAR 24, 1990 01h 54m 40.90±0.58s  
44.909 N ±4.4km 6.627 E ±11.3km  
DEPTH = 10.0km (geophysicist)  
FRANCE (538)  
ML 2.1 (LDG).

LPG	0.59	8 Pg	54 53.00	-0.1
		Sg	55 01.40	
LPL	0.61	7 Pg	54 53.30	-0.1
		Sg	55 02.00	
SBF	1.20	151 Pg	55 03.70	0.5
		Sg	55 19.00	
FRF	1.35	179 Pg	55 05.40	-0.3
		Sg	55 22.40	
LRG	1.47	188 Pg	55 07.40	0.0
		Sg	55 26.00	
LMR	1.58	183 Pg	55 08.70	-0.3
		Sg	55 29.70	
BGF	3.12	303 Pn	55 31.30	0.3
		Pg	55 40.00	
	S.D. = 0.3	on 7 of 7 obs.		

% MAR 24, 1990 02h 44m 44.78±3.31s  
31.445 N ±22.0km 35.705 E ±11.3km  
DEPTH = 10.0km (geophysicist)  
DEAD SEA REGION (373)

MKRJ	0.12	333 Pc	44 47.90	0.1
MASJ	0.28	2 Pc	44 51.10	0.3

KFNJ	0.42	357 Pc	44 53.00	-0.3
MDSJ	0.50	68 Pc	44 55.00	0.0
BURJ	0.80	6 Pd	45 00.60	0.2
HLBJ	0.81	39 Pc	45 00.50	0.0
SHMJ	1.28	2 P	45 08.20	-0.3
	S.D. = 0.3	on 7 of 7 obs.		

% MAR 24, 1990 02h 53m 06.80±3.33s  
31.453 N ±22.7km 35.711 E ±12.1km  
DEPTH = 10.0km (geophysicist)  
DEAD SEA REGION (373)

MKRJ	0.12	329 Pc	53 09.80	0.0
MASJ	0.27	1 Pc	53 13.00	0.4
KFNJ	0.41	356 Pc	53 14.90	-0.2
MDSJ	0.50	69 Pd	53 16.90	0.0
JARJ	0.81	14 Pc	53 22.30	-0.2
	S.D. = 0.4	on 5 of 5 obs.		

? MAR 24, 1990 03h 08m 06.44±8.00s  
22.785 N ±60.3km 121.120 E ±42.2km  
DEPTH = 10.0km (geophysicist)  
TAIWAN REGION (243)

TWG	0.06	308 iPd	08 07.60	-1.1
		eS	08 08.60	
TWF1	0.59	16 eP	08 17.70	-0.6
		eS	08 26.20	
TWM1	0.64	274 ePd	08 19.10	-0.2
TWO	1.51	350 ePd	08 34.50	1.0
	S.D. = 1.5	on 4 of 4 obs.		

& MAR 24, 1990 03h 10m 19.65s  
63.314 N 151.202 W  
DEPTH = 17.1km  
CENTRAL ALASKA (1)  
<AGS-P>.

KTH	0.27	28 eP	10 25.64	-0.2
		eS	10 30.12	
HUR	0.79	115 eP	10 34.51	0.0
		eS	10 45.32	
CUT	1.01	154 eP	10 38.52	0.3
		eS	10 52.73	
RND	1.06	84 eP	10 39.40	0.1
		eS	10 54.36	
MCK	1.10	67 eP	10 40.56	0.7
SKT	1.35	187 eP	10 43.86	0.2
		eS	11 01.10	
NEA	1.58	36 eP	10 46.04	-0.9
PWA	1.78	159 eP	10 50.55	0.7
WRH	1.80	48 eP	10 49.00	-1.2
SUA	1.87	173 eP	10 51.55	0.3
GHO	1.87	145 eP	10 51.57	0.3
PLRM	1.98	150 eP	10 52.85	0.1
CCB	2.01	47 eP	10 52.02	-1.1
SML	2.01	137 eP	10 53.06	-0.2
RDS	2.03	40 eP	10 50.86	-2.6
SPU	2.18	191 eP	10 56.44	0.8
PMS	2.21	159 eP	10 57.70	1.5
KNK	2.30	145 eP	10 58.00	0.6
	18 obs.	associated		

? MAR 24, 1990 03h 26m 10.78±7.17s  
9.972 N ±41.9km 59.452 W ±44.7km  
DEPTH = 33.0km (normal)  
3.7mb (1 obs.)  
NORTH ATLANTIC OCEAN (402)  
MD 4.0 (TRN).

TBH	1.67	288 iP	26 38.88	0.8
		eS	26 54.91	
BOT	1.72	314 iP	26 39.85	1.0
		eS	26 54.03	
TPR	1.78	313 iP	26 40.06	0.4
		eS	26 56.92	
TPP	2.00	280 iP	26 43.40	0.5
		eS	27 05.15	
TRN	2.03	289 iP	26 42.53	-0.8
		eS	27 04.79	
TCE	2.38	288 iP	26 47.41	-0.9
		eS	27 12.01	
GRW	3.07	315 eP	26 57.62	-0.6
		eS	27 27.06	
SVB	3.72	332 iP	27 06.95	-0.4
		eS	27 46.03	
SSV	3.74	333 eP	27 07.49	-0.3



SLB 4.13 338 eS 27 46.13  
 4.13 338 iP 27 13.00 -0.3  
 MVM 4.77 343 eS 27 53.58  
 4.77 343 eP 27 22.25 0.0  
 BIM 4.79 341 eP 27 22.49 0.0  
 FDF 5.01 341 eP 27 26.28 0.5  
 0.1s 0.45nm 3.7mb  
 S 28 19.60  
 S.D. = 0.7 on 13 of 13 obs.

? MAR 24, 1990 04h 58m 00.08±4.61s  
 51.342 N ±34.2km 15.968 E ±27.5km  
 DEPTH = 10.0km (geophysicist)  
 POLAND (548)

KSP 0.54 158 iP 58 10.90 -0.1  
 0.3s 24.00nm  
 iS 58 20.20  
 eLR 58 26.50  
 BRG 1.36 251 iPg 58 25.00 0.0  
 iSg 58 44.30  
 CLL 1.86 270 iPg 58 32.90 0.7  
 eSg 58 58.00  
 KHC 2.69 216 Pn 58 45.50 1.2  
 Pg 58 51.60  
 Sg 59 21.50  
 HOF 2.79 250 iPnc 58 44.30 -1.3  
 MOX 2.84 257 ePg 58 53.00 6.7X  
 iSg 59 32.00  
 VKA 3.09 176 eP 58 53.00 3.2X  
 eSg 59 46.00  
 K8A 4.60 203 e(Pn) 59 11.00 -0.4  
 e 00 11.00  
 e 00 34.00  
 S.D. = 1.1 on 6 of 8 obs.

\* MAR 24, 1990 06h 09m 05.40±0.94s  
 47.315 S ±13.8km 165.281 E ±7.5km  
 DEPTH = 33.0km (normal)  
 4.5mb (3 obs.) 4.3Msz (1 obs.)  
 OFF W. COAST OF S. ISLAND, N.Z. (161)

MSZ 3.22 36 P 09 56.50 1.7  
 S 10 42.50  
 TLC 3.38 52 P 09 57.00 -0.3  
 MMCZ 3.54 51 P 09 59.60 0.2  
 MHZ 3.58 52 P 09 58.90 -1.1  
 LTZ 6.71 50 eP 10 44.20 0.0  
 THZ 7.77 47 P 10 58.70 -0.4  
 MRW 9.09 51 P 11 26.00 8.8X  
 S 13 03.00  
 CAN 17.08 309 eP 13 05.70 2.5  
 eTT 28 24.50  
 TOO 17.51 297 eP 13 08.00 -0.5  
 BWA 18.07 309 eP 13 15.60 0.1  
 eTT 28 45.00  
 ASPA 34.40 302 eP 15 49.80 -1.8  
 0.8s 8.00nm 4.7mb  
 Z 19s 0.62um 4.3Msz  
 LR 29 11.80  
 WRA 37.11 307 Pc 16 13.10 -1.4  
 1.4s 9.40nm 4.5mb  
 WB5 37.14 307 eP 16 19.80 5.0X  
 SPA 42.88 180 eP 17 03.10 1.1  
 1.1s 11.31nm 4.5mb  
 FRB 146.61 41 ePKP 28 42.00 -0.1  
 SUF 152.56 319 ePKP 28 57.20 5.9X  
 S.D. = 1.3 on 13 of 16 obs.

MAR 24, 1990 06h 28m 07.22±0.73s  
 40.712 N ±8.1km 21.782 E ±4.7km  
 DEPTH = 10.0km (geophysicist)  
 GREECE (364)  
 ML 2.1 (THE), 2.4 (SKO).

FNA 0.32 283 ePg 28 13.50 -0.3  
 eSg 28 18.60  
 GRG 0.53 62 ePg 28 17.40 -0.6  
 eSg 28 26.10  
 LIT 0.82 138 ePg 28 22.80 -0.2  
 eSg 28 33.40  
 OHR 0.85 299 ePg 28 24.00 0.4  
 eSg 28 36.00  
 KNT 0.96 62 ePbc 28 25.40 -0.1  
 eSb 28 39.70  
 SOH 1.20 84 ePb 28 30.40 0.8  
 eSb 28 48.10

SKO 1.29 349 ePn 28 31.00 0.0  
 eSn 28 48.50  
 S.D. = 0.6 on 7 of 7 obs.

MAR 24, 1990 07h 05m 52.17±0.26s  
 47.624 S ±6.2km 165.261 E ±4.2km  
 DEPTH = 33.0km (normal)  
 5.4mb (21 obs.) 5.1Msz (7 obs.)  
 OFF W. COAST OF S. ISLAND, N.Z. (161)

CENTROID, MOMENT TENSOR (HRV)  
 Data Used: GDSN  
 L.P.B.: 15S, 35C  
 Centroid Location:  
 Origin Time 07:05:53.8 0.6  
 Lat 47.96S 0.05 Lon 164.53E 0.05  
 Dep 15.0 FIX Half-duration 2.0  
 Moment Tensor: Scale 10\*\*17 Nm  
 Mrr=-1.06 0.07 Mtt= 2.70 0.09  
 Mff=-1.64 0.08 Mrt= 0.00 0.00  
 Mrf= 0.00 0.00 Mtr=-0.77 0.08  
 Principal Axes:  
 T Vol= 2.84 Plg= 0 Azm=190  
 N -1.06 90 180  
 P -1.78 0 100  
 Best Double Couple: Mq=2.3\*10\*\*17  
 NP1: Strike=235 Dip=90 Slip=-180  
 NP2: 325 90 0

MSZ 3.48 33 P 06 46.80 1.5  
 TLC 3.59 49 P 06 46.80 -0.1  
 MMCZ 3.75 47 P 06 49.50 0.3  
 MHZ 3.78 49 P 06 48.30 -1.3  
 MQZ 6.49 56 P 07 23.30 -4.5X  
 LTZ 6.92 48 P 07 33.10 -0.8  
 MCQ 7.94 208 iPc 07 41.10 -7.0X  
 eS 07 47.00  
 THZ 8.00 46 P 07 46.90 -2.0  
 TCW 9.09 48 P 08 02.90 -1.1  
 WEL 9.29 50 P 08 08.00 1.3  
 S 09 45.00  
 MRW 9.29 50 P 08 05.50 -1.3  
 WDW 9.42 51 P 08 05.20 -3.3X  
 MOW 9.45 53 P 08 05.80 -3.2  
 CAW 9.57 51 P 08 07.00 -3.7X  
 KIW 9.67 49 P 08 09.40 -2.6  
 MTW 9.77 52 P 08 11.60 -1.7  
 MNG 10.14 50 P 08 15.10 -3.4X  
 CNB 17.08 310 eP 09 51.00 1.0  
 CAN 17.27 310 eP 09 51.90 -0.4  
 eTT 24 00.00  
 TOO 17.64 298 eP 09 56.00 -0.9  
 BWA 18.26 310 eP 10 03.10 -1.5  
 eTT 24 30.00  
 COO 19.88 324 iPc 10 24.50 1.0  
 BRS 22.44 330 iPd- 10 54.50 5.0X  
 e(P) 11 16.50  
 e(PP) 11 22.00  
 e 12 25.50  
 e 13 34.00  
 e 13 54.00  
 e(S) 14 40.00  
 eTT 15 27.00

ADE 23.49 293 iPd 11 01.00 1.3  
 1.4s 465.12nm 5.8mb  
 RMO 24.77 323 iPc 11 13.40 1.3  
 0.5s 112.00nm 5.7mb  
 DZM 25.51 3 iPc 11 22.00 2.8X  
 VNDA 30.03 181 Pd 11 57.80 -1.8  
 SBA 30.34 179 (P) 12 01.80 -0.6  
 CTA 31.50 324 iPd 12 13.50 0.3  
 1.5s 138.89nm 5.6mb  
 iS 17 21.00  
 OIS 34.05 314 ePd 12 34.70 -0.7  
 ASPA 34.55 303 iPd 12 38.60 -1.1  
 0.8s 110.00nm 5.8mb  
 Z 19s 10.16um 5.6Msz  
 LR 26 01.50  
 WRA 37.28 307 Pc 13 02.10 -0.6  
 0.9s 49.50nm 5.4mb  
 WB5 37.32 307 iPd 13 02.00 -1.1  
 COOL 37.47 280 iPd 13 03.50 -0.8  
 0.5s 17.00nm 5.2mb  
 HNR 38.33 352 eP 13 13.00 1.5  
 NWA0 38.84 274 eP 13 14.00 -1.7  
 0.7s 25.00nm 5.1mb  
 Z 20s 2.00um 4.9Msz  
 N 20s 0.70um

E 20s 1.50um  
 KLB 39.29 277 eP 13 18.00 -1.5  
 MUN 40.10 275 eP 13 25.00 -1.2  
 BAL 40.61 277 eP 13 29.00 -1.4  
 PMG 41.06 332 eP 13 37.00 2.9X  
 MRWA 41.97 278 eP 13 41.00 -0.5  
 0.6s 19.00nm 5.0mb  
 MEKA 41.99 283 eP 13 43.40 1.7  
 SPA 42.57 180 iPd 13 45.10 -1.2  
 1.2s 126.06nm 5.5mb  
 Z 20s 1.80um 5.0Msz  
 KNA 43.75 304 iPc 13 55.60 -0.5  
 MTN 44.86 309 eP 14 05.00 -0.1  
 e 15 46.00  
 MBL 44.97 290 iPd 14 05.00 -1.0  
 0.6s 24.00nm 5.3mb  
 NANU 46.75 284 eP 14 19.40 -0.6  
 AFR 47.37 66 iP 14 26.20 1.3  
 0.9s 35.00nm 5.4mb  
 PPT 47.47 67 iP 14 27.20 1.4  
 0.9s 50.00nm 5.5mb  
 TVO 47.51 67 iP 14 28.10 2.0  
 0.9s 70.00nm 5.7mb  
 PPN 47.59 67 iP 14 28.10 1.4  
 0.9s 30.00nm 5.3mb  
 VAH 50.45 67 iP 14 49.70 1.1  
 0.9s 15.00nm 5.0mb  
 PMO 50.46 66 iP 14 50.20 1.4  
 0.9s 35.00nm 5.4mb  
 RUV 50.64 67 iP 14 51.40 1.3  
 0.9s 30.00nm 5.3mb  
 TPT 50.65 66 iP 14 51.50 1.3  
 0.9s 30.00nm 5.3mb  
 GUMO 63.60 338 eP 16 28.00 6.1X  
 Z 17s 0.89um 5.0MszX  
 eS 25 08.00  
 OIZ 82.85 308 eP 18 15.50 1.0  
 QZH 83.54 318 Pd 18 19.00 1.1  
 4.0s 600.00nm 6.1mbX  
 LOE 86.05 301 eP 18 31.00 0.3  
 BDT 87.52 299 eP 18 37.00 -0.8  
 CFA 87.66 137 ePc 18 38.00 -0.5  
 RTLL 87.79 136 ePc 18 38.20 -1.0  
 SSE 87.80 323 Pd 18 40.80 2.0  
 1.2s 30.00nm 5.5mb  
 Z 20s 0.90um 5.2Msz  
 S 29 12.00  
 SS 35 12.00  
 RTRS 88.29 135 ePd 18 42.00 0.6  
 CHTO 88.78 300 iP 18 44.50 0.7  
 1.2s 21.53nm 5.3mb  
 NJ2 89.59 322 Pc 18 49.00 1.7  
 Z 20s 0.20um 4.5Msz  
 GYA 90.60 310 P 18 53.00 0.7  
 KMI 91.60 306 Pd 18 59.00 1.9  
 Z 30s 1.10um 5.1MszX  
 pP 19 07.50 26kmX  
 SKS 29 30.00  
 XAN 95.68 316 P 19 16.00 0.6  
 LZH 99.77 314 P 19 30.50 -3.5X  
 2.5s 54.00nm 5.6mb  
 LPB 100.31 129 (Pd) 19 39.00 1.7  
 Z 20s 1.42um 5.5Msz  
 LR 53 06.00  
 PKI 103.49 296 Pd 20 00.00 8.8X  
 WMO 113.75 309 ePKP 24 28.00 -0.4  
 IMA 117.67 18 ePKP 24 35.50 0.2  
 0.8s 4.30nm  
 SES 121.22 48 ePKP 24 42.00 -0.4  
 INK 124.23 23 ePKPd 24 46.80 -0.8  
 MAIO 125.63 287 iPKPc 24 52.20 0.7  
 YKA 126.76 35 ePKP 24 50.20 -2.5  
 0.8s 2.20nm  
 BCOA 128.35 224 iPKPc 24 56.00 -1.2  
 0.5s 7.00nm  
 ic 27 06.30  
 MBC 132.39 18 ePKPc 25 02.50 -0.5  
 1.0s 8.00nm  
 BHD 133.87 274 ePKPd 25 09.00 1.9  
 MSL 136.48 277 ePKPd 25 03.00 -9.0X  
 LIC 137.92 194 PKP 25 02.60 -12.7X  
 Z 20s 0.40um 5.2Msz  
 KIC 138.00 195 PKP 25 03.70 -11.8X  
 MBH 138.15 263 ePKP 25 15.00 -0.3  
 TIC 138.33 195 PKP 25 03.00 -13.1X  
 PRNI 138.43 264 ePKP 25 15.00 -0.9  
 BBTk 145.27 275 iPKPd 25 27.00 -0.7



24d 07h

KAS	145.31	278	iPKPd	25	27.30	-0.3
KSL	145.49	267	ePKP	25	27.00	-1.0
ELL	145.62	268	ePKP	25	28.00	-0.4
ARG	146.53	266	ePKP	25	31.00	1.3
ALT	146.67	272	ePKP	25	29.00	-1.0
KHL	146.70	270	ePKP	25	29.00	-1.0
KAP	146.80	264	ePKP	25	32.00	1.8
FRB	146.85	41	ePKP	25	30.00	0.7
	0.9s	58.00nm				
KBS	147.09	351	iPKP	25	31.50	2.1
GPA	147.14	274	ePKP	25	31.00	0.4
SCH	147.29	58	ePKP	25	32.00	1.7
NPS	147.69	262	ePKP	25	34.00	2.4
HRT	147.82	274	ePKP	25	34.00	2.3
SMG	148.20	267	ePKP	25	35.00	2.7X
IZM	148.27	269	iPKP	25	35.50	3.0X
APE	148.75	265	ePKP	25	35.00	1.7
BNT	148.78	272	iPKP	25	37.10	3.9X
CTT	148.80	274	ePKP	25	33.50	0.3
EDC	148.81	272	iPKP	25	36.50	3.3X
PRK	149.36	269	ePKP	25	38.00	3.9X
EZN	149.61	270	iPKP	25	38.10	3.7X
KEV	150.01	332	iPKP	25	39.70	5.6X
	0.8s	36.70nm				
ALN	150.30	272	ePKP	25	35.70	0.3
CFR	150.60	281	ePKP	25	41.00	5.3X
DAG	150.70	2	iPKPc	25	39.10	4.1X
	0.7s	24.66nm				
KDZ	151.05	273	ePKP	25	36.00	-0.6
SOD	151.11	328	iPKP	25	41.80	6.0X
OUR	151.43	270	ePKP	25	42.50	5.4X
PAIG	151.45	269	ePKP	25	42.60	5.4X
NEO	151.45	267	ePKP	25	43.00	5.7X
CLI	151.62	284	iPKPd	25	44.00	6.7X
VR1	151.77	282	ePKPc	25	44.00	6.5X
PLG	151.81	269	ePKP	25	43.00	5.2X
AGG	151.92	266	ePKP	25	43.90	5.9X
SRS	152.05	271	ePKP	25	43.40	5.3X
MLR	152.17	281	iPKPc	25	45.00	6.7X
		e		34	56.00	
EVN	152.22	265	ePKP	25	45.00	6.5X
LIT	152.33	268	ePKP	25	44.20	5.7X
KNT	152.54	270	ePKP	25	44.60	5.8X
KKB	152.72	272	ePKP	25	36.00	-3.0X
SUF	152.78	319	ePKP	25	45.80	7.4X
	0.7s	31.80nm				
VAY	152.84	270	ePKP	25	37.60	-1.5
		i		25	45.60	
		i		26	01.20	
KZN	152.92	268	ePKP	25	46.00	6.6X
SKO	153.88	271	ePKP	25	38.70	-1.9
		i		25	48.00	
OHR	155.94	269	ePKP	25	39.00	-1.8
	1.4s	0.10nm				
NUR	153.99	314	iPKP	25	48.60	8.5X
DEV	154.31	280	ePKPc	25	50.00	9.0X
BEO	155.62	277	ePKP	25	52.00	9.2X
TDS	156.26	262	PKP	25	44.50	0.6
MGR	157.02	262	PKP	25	44.00	-0.8
KRA	157.17	289	ePKP	25	44.80	0.1
SRO	157.85	283	ePKP	25	52.20	6.6X
		e		26	18.60	
KBA	161.00	279	ePKP	25	44.00	-5.2X
	1.4s	12.50nm				
		e		26	34.00	
						S.D. = 1.3 on 96 of 141 obs.

& MAR 24, 1990 07h 44m 07.30s  
40.327 N 124.787 W  
DEPTH = 5.0km  
3.7mb ( 2 obs.)  
NEAR COAST OF NORTHERN CALIF. ( 35)  
<BRK>. ML 4.0 (BRK).

FHC	0.77	52	iPc	44	22.40	-0.4
		eS		44	33.10	
WDC	1.73	81	iPc	44	35.90	-2.3
LTCM	2.04	92	eP	44	40.50	-2.2
LBFM	2.42	64	eP	44	46.60	-1.8
MIN	2.43	89	iPc	44	45.70	-2.8
ORV	2.64	106	eP	44	49.10	-2.2
		eS		45	20.80	
BRK	3.14	140	eP	44	55.50	-2.8
PCC	3.39	146	eP	44	59.30	-2.6
MHC	3.86	140	eP	45	06.30	-2.5
GCC	3.95	146	eP	45	07.00	-2.9
		eS		45	52.30	

SAO	4.42	143	eP	45	12.40	-4.1
KVN	5.31	102	eP	45	25.70	-3.8
DUG	9.16	87	eP	46	21.30	-1.9
MSU	9.93	96	eP	46	33.00	-0.9
FFC	20.95	39	eP	48	50.00	-3.3
	0.8s	6.00nm			4.0mb	
YKA	23.03	12	eP	49	19.10	5.1
	0.9s	1.10nm			3.4mb	
		16 obs. associated				

\* MAR 24, 1990 08h 09m 14.47 ± 0.94s  
51.483 N ± 19.0km 174.228 W ± 8.1km  
DEPTH = 33.0km (normal)  
4.6mb ( 10 obs.)  
ANDREANOF ISLANDS, ALEUTIAN IS. ( 7)

ADK	1.58	286	iPd	09	40.80	0.3
KDC	14.03	55	e(P)	12	41.00	8.2X
SVW	14.07	40	eP	12	41.20	7.8X
TTA	15.06	33	eP	12	53.30	7.0X
PMS	16.69	45	eP	13	07.10	-0.1
PMR	17.03	44	eP	13	11.70	0.4
TOA	18.52	44	eP	13	29.70	-0.1
FBA	19.15	35	eP	13	35.00	-2.3X
BRW	21.40	15	e(P)	14	01.70	0.7
INK	25.75	34	eP	14	43.00	-0.2
MBC	32.45	21	ePc	15	43.30	0.1
	0.5s	1.00nm			4.0mb	
FFC	41.73	56	eP	17	02.00	0.5
HFS	68.55	356	eP	20	13.70	-1.6
	0.4s	1.90nm			4.5mb	
GUN	74.44	295	P	20	51.50	0.1
KKN	74.87	296	P	20	54.00	0.3
PKI	74.96	295	P	20	54.30	-0.1
GKN	75.07	296	P	20	54.80	0.0
DMN	75.11	296	P	20	55.50	0.3
CDF	80.48	359	eP	21	23.70	-0.5
	0.8s	5.35nm			4.6mb	
HAU	80.89	360	eP	21	26.00	-0.3
BSF	81.06	359	eP	21	26.80	-0.5
	0.6s	3.60nm			4.5mb	
LOR	81.62	1	eP	21	29.70	-0.4
	0.7s	4.40nm			4.6mb	
SSF	81.82	2	eP	21	31.70	0.6
	0.8s	6.70nm			4.7mb	
LBF	81.90	1	eP	21	31.80	0.2
AVF	82.09	2	eP	21	32.00	-0.5
	0.8s	6.70nm			4.7mb	
MFF	82.16	4	eP	21	33.40	0.5
	1.0s	16.00nm			5.0mb	
SMF	82.24	1	eP	21	32.90	-0.4
TCF	82.56	2	eP	21	35.20	0.2
	0.7s	3.30nm			4.5mb	
LSF	82.58	3	eP	21	35.50	0.4
MAF	82.64	2	eP	21	35.30	-0.1
	0.7s	4.95nm			4.7mb	
						S.D. = 0.5 on 26 of 30 obs.

& MAR 24, 1990 08h 16m 41.00s  
38.475 N 118.202 W  
DEPTH = 6.0km  
3.9mb ( 2 obs.)  
CALIFORNIA-NEVADA BORDER REGION ( 40)  
<BRK>. Felt (V) at Luning and  
Mina, Nevada.

KVN	0.58	8	iPd	16	51.90	-0.8
TNP	0.87	117	iPc	16	58.30	0.1
CMB	1.77	256	eP	17	12.40	-0.1
		eS		17	36.20	
FRI	1.90	219	iPd	17	15.20	0.9
ORV	2.79	294	eP	17	26.20	-0.8
LLA	2.86	230	eP	17	33.20	5.1
MHC	2.95	248	eP	17	29.20	-0.1
		eS		18	10.70	
PRI	3.05	221	eP	17	32.80	2.1
SAO	3.09	237	e(P)	17	32.70	1.5
MIN	3.23	306	eP	17	32.90	-0.5
BRK	3.25	261	eP	17	32.50	-1.1
BCH	3.61	205	e(P)	17	40.00	1.2
ABL	3.71	193	eP	17	40.00	-0.3
WDC	3.96	303	eP	17	52.40	8.8
DUG	4.52	66	eP	17	51.00	-0.7
PEC	4.65	169	eP	17	53.80	0.3
MSU	4.73	88	eP	17	55.50	0.7
PLM	5.23	168	eP	18	02.00	0.3
DAU	5.71	68	P	18	10.00	1.2

BW06	7.85	54	eP	18	40.00	1.2
LRM	8.49	28	eP	18	51.20	3.6
ANMO	10.06	107	e(P)	19	10.00	0.7
ALO	10.07	107	eP	19	15.00	5.6
PNT	10.89	355	eP	19	22.00	1.7
FFC	19.63	29	eP	21	13.00	0.0
	1.0s	12.00nm			4.1mb	
YKA	24.15	4	eP	22	00.10	1.7
	0.8s	1.80nm			3.7mb	
INK	31.06	349	eP	23	05.00	3.5
FBA	31.62	336	eP	23	09.90	3.4
IMA	34.26	335	eP	23	33.00	3.3
MBC	37.87	360	eP	24	01.00	1.2
FRB	38.65	33	eP	24	09.00	2.5
						31 obs. associated

? MAR 24, 1990 09h 04m 35.22 ± 1.03s  
39.163 N ± 9.0km 27.615 E ± 16.4km  
DEPTH = 10.0km (geophysicist)  
TURKEY (366)

IZM	0.81	200	ePg	04	51.00	0.0
		eSg		05	04.00	
DST	0.90	60	iPn	04	52.50	0.0
EDC	1.20	9	ePn	04	57.00	-0.5
BNT	1.21	11	iPn	04	58.40	0.6
						S.D. = 0.8 on 4 of 4 obs.

? MAR 24, 1990 09h 21m 05.00 ± 3.97s  
48.075 S ± 57.4km 165.335 E ± 21.0km  
DEPTH = 33.0km (normal)  
4.1mb ( 1 obs.)  
OFF W. COAST OF S. ISLAND, N.Z. (161)

MSZ	3.85	29	P	22	03.20	0.0
		S		22	49.50	
TLC	3.87	43	P	22	03.50	-0.2
MMCZ	4.04	42	P	22	06.70	0.6
MHZ	4.06	44	P	22	06.10	-0.3
LTZ	7.19	45	P	22	50.60	0.0
WRA	37.59	307	Pd	28	17.90	-0.3
	0.8s	2.10nm			4.1mb	
WB5	37.63	308	eP	28	18.80	0.3
						S.D. = 0.4 on 7 of 7 obs.

% MAR 24, 1990 10h 01m 26.30 ± 0.86s  
39.106 N ± 7.0km 27.590 E ± 9.0km  
DEPTH = 10.0km (geophysicist)  
TURKEY (366)

IZM	0.75	200	ePg	01	41.00	-0.1
DST	0.95	58	iPn	01	44.50	0.1
EZN	1.21	307	ePn	01	49.00	0.1
EDC	1.26	10	iPn	01	49.50	-0.1
BNT	1.27	11	iPn	01	49.90	0.0
						S.D. = 0.2 on 5 of 5 obs.

\* MAR 24, 1990 10h 27m 53.53 ± 1.29s  
5.744 S ± 13.2km 146.893 E ± 11.9km  
DEPTH = 116.9 ± 10.4 km  
4.8mb ( 3 obs.)  
EAST PAPUA NEW GUINEA REGION (207)

LAT	0.91	173	iPd	28	16.00	1.3
MNDI	3.24	263	eP	28	44.00	0.1
		eS		29		



43.963 N $\pm$ 23.6km 147.819 E $\pm$ 14.5km DEPTH = 33.0km (normol) 3.8mb ( 2 obs.)	MSZ 3.49 31 P 36 02.70 1.4 S 36 45.00	HYB 48.82 293 eP 58 34.50 -1.0 S.D. = 0.6 on 11 of 13 obs.
KURIL ISLANDS (221)	TLC 3.56 47 P 36 01.60 -0.9 MMCZ 3.73 45 P 36 05.20 0.5 MHZ 3.76 47 P 36 04.10 -1.0 LTZ 6.90 47 P 36 48.60 -0.8 S 38 04.30	% MAR 24, 1990 15h 02m 42.07 $\pm$ 1.33s 43.991 N $\pm$ 10.7km 7.585 E $\pm$ 6.5km DEPTH = 10.0km (geophysicist) NEAR SOUTH COAST OF FRANCE (379) ML 2.2 (GEN).
KUSJ 2.42 250 P 05 17.00 -1.8 eS 05 41.00 HOOJ 3.67 246 eP 05 36.60 0.1 eS 06 17.00 ASAJ 3.74 274 eP 05 38.50 1.0 MRRJ 5.17 255 P 05 58.20 0.4 S 06 54.90	THZ 7.98 45 P 37 04.20 -0.3 S 38 32.70 CAN 17.38 309 eP 39 11.20 1.7 eTT 54 25.50 BWA 18.37 310 eP 39 20.80 -1.0 eTT 54 30.00 ADE 23.60 293 iPc- 40 18.00 1.4 RMO 24.88 322 eP 40 31.00 2.0 ASPA 34.66 303 iPd 41 55.00 -1.5 1.1s 15.00nm 4.8mb Z 20s 0.53um 4.3msz LR 55 13.20	IMI 0.23 110 P 02 47.23 0.1 S 02 50.25 ENR 0.26 333 P 02 47.64 0.0 S 02 51.33 STV 0.31 324 P 02 48.56 -0.1 S 02 52.66 ROB 0.37 34 P 02 49.90 0.3 S 02 55.23 FIN 0.50 64 P 02 51.84 -0.4 PZZ 0.62 326 P 02 54.71 0.1 S 03 02.82 PCP 0.88 51 P 02 59.12 0.1 S.D. = 0.2 on 7 of 7 obs.
WRA 55.36 34 eP 14 12.80 -0.5 0.7s 0.40nm 3.6mb WRA 64.78 194 P 15 19.00 0.8 1.0s 1.40nm 4.0mb S.D. = 1.4 on 6 of 6 obs.	WRA 37.39 307 P 42 18.40 -1.1 0.8s 4.60nm 4.4mb WB5 37.43 307 eP 42 18.90 -0.9 NWA0 38.93 274 eP 42 31.00 -1.3 Z 20s 0.10um 3.6msz MUN 40.20 275 eP 42 41.50 -1.3 SPA 42.50 180 eP 43 02.10 0.5 1.0s 5.50nm 4.2mb INK 124.26 23 ePKP 54 04.00 0.5 FRB 146.84 41 ePKP 54 47.00 1.9 MLR 152.27 281 ePKP 55 00.00 5.8X S.D. = 1.3 on 18 of 19 obs.	MAR 24, 1990 15h 28m 50.83 $\pm$ 0.60s 72.789 N $\pm$ 7.9km 5.001 E $\pm$ 8.0km DEPTH = 10.0km (geophysicist) 4.6mb ( 13 obs.) NORWEGIAN SEA (642)
? MAR 24, 1990 12h 43m 43.01 $\pm$ 0.95s 39.105 N $\pm$ 8.2km 27.635 E $\pm$ 9.6km DEPTH = 10.0km (geophysicist) TURKEY (366)	% MAR 24, 1990 13h 50m 52.00 $\pm$ 0.89s 39.046 N $\pm$ 11.1km 27.990 E $\pm$ 9.3km DEPTH = 10.0km (geophysicist) TURKEY (366)	LOF 5.48 144 eP 30 13.48 -0.9 eS 31 04.02 TRO 5.50 118 iPc 30 15.33 0.7 eS 31 08.45 KTK1 7.06 113 iPd 30 37.76 1.1 eS 31 48.20 DAG 7.37 314 iPc 30 31.30 -9.6X 0.4s 12.71nm 5.5mb X
IZM 0.76 203 ePg 43 58.00 0.0 eSg 44 09.00 DST 0.92 57 iPn 44 00.50 -0.1 EZN 1.24 306 ePn 44 06.00 -0.1 BNT 1.27 10 iPn 44 06.70 0.1 S.D. = 0.2 on 4 of 4 obs.	EDC 1.30 356 ePn 51 19.50 3.4X EZN 1.51 302 iPn 51 19.70 0.7 ALT 1.65 89 ePn 51 22.00 0.8 YLV 1.85 35 iPn 51 24.10 -0.1 HRT 2.19 36 ePn 51 28.00 -1.0 S.D. = 1.1 on 5 of 7 obs.	KEV 7.68 103 iP 30 45.00 -0.2 iS 32 06.00 NSS 8.67 160 eP 30 55.80 -3.3X eS 32 14.53 SOD 9.11 116 iP 31 05.10 -0.1 RGS 10.02 166 eP 31 15.50 -2.2 eS 32 47.80 KJN 11.98 125 iP 31 44.00 -0.3 NB2 12.04 165 P 31 43.80 -1.4 0.7s 3.60nm 4.8mb X
* MAR 24, 1990 12h 58m 45.91 $\pm$ 1.50s 51.528 N $\pm$ 29.1km 174.347 W $\pm$ 11.4km DEPTH = 33.0km (normol) 4.6mb ( 5 obs.) ANDREANOF ISLANDS, ALEUTIAN IS. ( 7)	? MAR 24, 1990 14h 13m 46.58 $\pm$ 3.11s 46.856 N $\pm$ 26.5km 15.344 E $\pm$ 19.7km DEPTH = 10.0km (geophysicist) YUGOSLAVIA (383) ML 2.3 (KBA).	NRA0 12.37 165 P 31 45.90 -3.7X Lg 33 54.20 SUF 12.78 131 iP 31 53.70 -1.4 KEF 13.00 135 iP 31 57.00 -0.9 KAF 13.35 132 iP 32 01.60 -1.0 NUR 14.46 138 iP 32 16.00 -1.1 0.9s 50.70nm 5.2mb X
ADK 1.50 285 iPd 59 11.40 0.7 TTA 15.06 34 eP 02 23.00 5.2X IMA 17.94 28 eP 02 55.00 0.8 FBA 19.16 36 eP 03 04.70 -4.2X INK 25.76 34 eP 04 14.00 -0.7 MBC 32.44 21 eP 05 13.50 -1.0 YKA 33.10 47 eP 05 22.20 1.9 0.4s 0.20nm 3.4mb X	PTJ 1.05 156 eP 14 06.00 -0.4 RBL 1.29 252 Pd 14 09.30 -1.3 eSg 14 24.60 KBA 1.39 280 ePg 14 12.50 0.4 ic 14 14.00 iSg 14 31.80 TRI 1.59 224 P 14 16.00 1.3 FV1 1.78 262 P 14 17.50 -0.1 S.D. = 1.3 on 5 of 5 obs.	PRF 14.78 137 eP 32 19.10 -2.2 WTS 20.89 177 eP 33 34.00 -1.1 CLL 21.84 166 iPc 33 46.90 2.1 2.0s 82.00nm 4.8mb i 33 59.50 e 34 15.00
CDF 80.43 359 eP 10 55.20 -0.2 HAU 80.85 360 eP 10 57.40 -0.1 BSF 81.02 359 eP 10 58.30 -0.2 LOR 81.57 1 eP 11 01.20 -0.1 0.7s 4.40nm 4.6mb SSF 81.77 1 eP 11 02.30 0.0 0.7s 5.50nm 4.7mb LBF 81.86 1 eP 11 02.40 -0.4 AVF 82.04 2 eP 11 03.50 -0.2 0.7s 4.40nm 4.6mb SMF 82.20 1 eP 11 04.30 -0.2 BGF 82.27 2 eP 11 04.70 -0.2 0.9s 11.45nm 4.9mb TCF 82.52 2 eP 11 06.10 -0.1 LSF 82.54 3 eP 11 06.10 -0.2 MAF 82.60 2 eP 11 06.80 0.2 0.7s 4.40nm 4.6mb LFF 83.82 4 eP 11 13.00 0.1 LPO 84.09 3 eP 11 14.30 0.0 S.D. = 0.6 on 19 of 21 obs.	* MAR 24, 1990 14h 49m 56.02 $\pm$ 0.96s 0.687 N $\pm$ 9.7km 125.235 E $\pm$ 12.6km DEPTH = 80.6 $\pm$ 8.6 km 4.5mb ( 4 obs.) MOLUCCA PASSAGE (266)	MOX 22.41 169 e(P) 33 51.00 0.5 KSP 22.58 161 eP 33 52.00 -0.1 DOU 22.77 181 P 33 58.90 4.8X ABH 23.02 176 eP 34 02.52 6.0X RUP 23.19 177 eP 34 03.20 5.0X PRU 23.27 164 eP 34 05.00 6.1X 1.0s 14.50nm 4.5mb KRA 23.75 156 eP 34 03.20 -0.4 e 34 10.20
? MAR 24, 1990 13h 25m 49.89 $\pm$ 7.22s 15.829 N $\pm$ 16.0km 61.040 W $\pm$ 65.6km DEPTH = 33.0km (normol) LEEWARD ISLANDS ( 92) ML 2.2 (FDF).	MNI 0.85 332 ePc 50 13.50 -0.1 eS 50 27.80 PCI 5.63 254 ePc 51 19.00 0.1 1.0s 5.50nm 3.8mb DAV 6.37 3 eP 51 34.00 4.8X WB5 22.31 157 eP 54 47.80 -0.3 WRA 22.36 157 Pd 54 48.10 -0.4 0.8s 10.00nm 4.3mb ASPA 25.63 161 iPc 55 20.60 0.7 0.6s 18.00nm 4.7mb BWA 41.14 150 eP 57 37.50 3.6X GUN 46.39 309 P 58 16.50 -0.3 PK1 46.59 309 P 58 18.60 0.2 KKK 46.80 309 P 58 20.30 0.5 DMN 46.85 308 P 58 20.00 -0.3 GKN 47.40 309 P 58 25.20 0.7 1.1s 20.00nm 4.9mb	WET 23.99 167 iPc 34 08.40 2.5 KHC 24.05 166 iPc 34 09.00 2.5 SPC 24.64 156 eP 34 13.60 1.1 HAU 24.87 178 eP 34 14.00 -0.5 0.9s 11.45nm 4.6mb BSF 25.05 177 eP 34 15.40 -0.9 1.1s 14.65nm 4.6mb ZST 25.28 161 eP 34 19.30 1.0 i 34 24.20 LOR 25.61 182 eP 34 20.90 -0.5 0.9s 9.00nm 4.5mb SRO 25.78 159 eP 34 28.50 5.5X SSF 25.82 182 eP 34 23.00 -0.4 1.2s 20.85nm 4.7mb
MGG 0.28 288 ePd 25 57.49 0.1 S 26 02.10 BBL 0.52 234 eP 26 00.82 0.0 S 26 08.20 PAG 0.65 288 eP 26 02.60 0.0 S 26 10.40 SEG 0.73 322 eP 26 03.63 0.0 S 26 12.20 S.D. = 0.1 on 4 of 4 obs.		
* MAR 24, 1990 13h 35m 08.00 $\pm$ 0.82s 47.689 S $\pm$ 12.7km 165.394 E $\pm$ 7.7km DEPTH = 33.0km (normol) 4.4mb ( 3 obs.) 4.0msz ( 2 obs.) OFF W. COAST OF S. ISLAND, N.Z. (161)		



24d 15h

LBF 25.89 182 eP 34 24.00 -0.1  
1.0s 18.00nm 4.7mb  
AVF 26.09 183 eP 34 25.30 -0.6  
1.1s 20.75nm 4.7mb  
BGF 26.33 183 eP 34 30.10 2.0  
1.1s 14.65nm 4.6mb  
MAF 26.67 184 eP 34 31.90 0.6  
0.9s 7.35nm 4.4mb  
RBL 26.72 167 P 34 36.50 4.7X  
CTI 27.00 170 P 34 39.00 4.6X  
MBC 27.54 335 eP 34 39.50 0.6  
SBF 29.03 176 eP 34 51.20 -1.5  
1.0s 16.00nm 4.8mb  
MLR 29.06 149 eP 34 50.00 -3.0X  
CMP 29.14 150 ePc 34 56.00 2.4  
CRE 29.43 170 P 35 02.50 6.2X  
ARV 29.62 168 P 34 57.50 -0.4  
ASS 30.03 169 P 35 06.50 4.9X  
MNS 30.71 169 P 35 11.00 3.4X  
SDI 31.46 167 P 35 14.00 -0.2  
DUI 31.54 166 P 35 18.00 3.0X  
OHR 32.67 158 eP 35 24.50 -0.3  
VAY 32.68 155 eP 35 25.30 0.5  
SGO 32.70 165 P 35 27.50 2.5  
MGR 33.14 165 P 35 34.00 5.2X  
ORI 33.28 164 P 35 33.50 3.4X  
TDS 33.68 164 P 35 35.50 2.0  
INK 36.55 336 eP 35 56.00 -1.7  
YKA 38.99 320 eP 36 17.30 -1.0  
0.8s 0.60nm 3.3mb X  
PRNI 45.35 143 eP 37 17.00 6.5X  
MAIO 45.38 113 eP 37 13.00 2.2  
MBH 45.89 143 e(P) 37 21.00 6.3X  
SES 49.47 311 eP 37 42.00 -0.6  
BCAO 68.78 166 ePd 40 00.80 4.0X  
0.6s 7.00nm 5.0mb  
S.D. = 1.4 on 45 of 66 obs.

% MAR 24, 1990 16h 42m 58.48 ± 1.60s  
47.244 N ± 12.3km 0.665 W ± 24.1km  
DEPTH = 10.0km (geophysicist)  
FRANCE (538)  
ML 2.4 (LDG).

MFF 0.73 151 Pg 43 12.30 -0.6  
Sg 43 21.70  
LPF 0.83 342 Pg 43 14.60 0.1  
Sg 43 24.40  
GRR 1.15 354 Pg 43 20.50 0.5  
Sg 43 36.10  
LDF 1.40 15 Pn 43 23.60 -0.4  
Pg 43 25.40  
Sg 43 44.20  
FLN 1.52 5 Pn 43 25.40 -0.4  
Pg 43 27.30  
Sg 43 47.40  
LSF 1.81 123 Pg 43 31.70 1.8  
Sg 43 56.00  
TCF 2.19 115 Pn 43 34.50 -1.0  
Pg 43 40.20  
Sg 44 08.30  
S.D. = 1.1 on 7 of 7 obs.

? MAR 24, 1990 16h 55m 30.91 ± 4.61s  
3.287 S ± 55.4km 150.281 E ± 19.6km  
DEPTH = 121.0 ± 25.4 km  
3.7mb (1 obs.)  
NEW IRELAND REGION (190)

RAB 2.09 116 e(P) 56 06.00 0.0  
iS 56 51.00  
PMG 6.83 207 eP 57 10.00 0.0  
HNR 11.38 123 eP 58 11.00 0.0  
WB5 22.65 222 eP 00 22.50 -0.1  
WRA 22.72 222 Pd 00 23.40 0.1  
0.8s 3.00nm 3.7mb  
S.D. = 0.2 on 5 of 5 obs.

? MAR 24, 1990 17h 01m 32.70 ± 9.43s  
48.864 N ± 57.8km 0.916 W ± 39.0km  
DEPTH = 10.0km (geophysicist)  
FRANCE (538)  
ML 2.1 (LDG).

FLN 0.30 109 Pg 01 38.60 -0.4  
Sg 01 44.80  
GRR 0.48 175 Pg 01 42.30 -0.1

Sg 01 50.30  
LDF 0.59 117 Pg 01 44.90 0.2  
Sg 01 54.40  
LPF 0.84 186 Pg 01 48.80 -0.1  
Sg 02 02.40  
S.D. = 0.5 on 4 of 4 obs.  
MAR 24, 1990 17h 20m 18.32 ± 0.16s  
16.247 S ± 6.1km 173.058 W ± 4.7km  
DEPTH = 29.6km (2 depth phases)  
5.3mb (33 obs.) 4.9msz (6 obs.)  
TONGA ISLANDS (173)  
Ms 5.2 (BRK).  
CENTROID, MOMENT TENSOR (HRV)  
Data Used: GDSN  
L.P.B.: 135, 27C  
Centroid Location:  
Origin Time 17:20:22.8 0.5  
Lat 16.52S 0.07 Lon 172.49W 0.06  
Dep 29.6 4.3 Half-duration 1.9  
Moment Tensor: Scale 10<sup>17</sup> Nm  
Mrr = 0.76 0.05 Mtt = 0.39 0.09  
Mff = -1.16 0.07 Mrt = 0.65 0.15  
Mrf = -0.64 0.17 Mtr = -0.23 0.05  
Principal Axes:  
T Vol = 1.42 Plg = 52 Azm = 24  
N -0.07 33 170  
P -1.35 17 271  
Best Double Couple: Mo = 1.4 × 10<sup>17</sup> N  
NP1: Strike = 39 Dip = 40 Slip = 146  
NP2: 156 69 55

VUN 8.29 257 iPd 22 25.20 5.6X  
SVA 8.32 256 eP 22 26.90 7.0X  
RAR 13.52 113 P 23 25.00 -5.6X  
S 25 56.00  
DZM 20.20 250 iPd 24 53.00 -0.8  
PAE 22.50 97 iPd 25 18.00 1.1  
0.9s 35.00nm 4.8mb  
PPN 22.64 97 iPd 25 19.30 1.0  
0.9s 20.00nm 4.6mb  
TVO 22.81 97 iPd 25 21.40 1.3  
0.9s 55.00nm 5.1mb  
PUZ 23.05 198 eP 25 27.50 5.3X  
NOZ 23.62 198 P 25 31.80 4.2X  
PMO 24.26 91 iPd 25 34.70 0.7  
0.9s 30.00nm 4.8mb  
VAH 24.49 91 iPd 25 36.40 0.1  
0.9s 20.00nm 4.7mb  
TPT 24.53 91 iPd 25 37.00 0.3  
0.9s 30.00nm 4.9mb  
RUV 24.73 91 iPd 25 38.70 0.1  
0.9s 35.00nm 4.9mb  
MNG 26.24 200 eP 25 50.30 -2.3  
THZ 28.16 203 eP 26 08.90 -1.2  
KHZ 28.50 201 eP 26 13.60 0.5  
LTZ 29.27 202 P 26 19.40 -0.8  
MSZ 32.57 206 P 26 55.30 6.2X  
COO 35.02 240 eP 27 09.00 -1.6  
CNB 38.50 233 eP 27 40.00 0.1  
CAN 38.78 233 eP 27 42.20 0.0  
BWA 38.95 235 eP 27 41.70 -1.9  
TOO 42.19 232 eP 28 11.00 0.7  
ADE 46.83 237 eP 28 48.20 0.6  
WRA 49.97 257 Pc 29 10.50 -1.6  
0.5s 5.40nm 4.8mb  
ASPA 50.17 253 iPd 29 11.90 -1.7  
0.8s 62.00nm 5.7mb  
Z 19s 2.56um 5.2msz  
LR 49 15.90  
GUA 51.00 303 eP 29 27.80 7.9X  
GUMO 51.07 303 eP 29 28.50 8.1X  
PJG 51.07 303 eP 29 27.50 7.1X  
MTN 54.00 266 eP 29 41.00 -1.3X  
FORR 55.30 244 eP 29 50.00 -1.7  
KNA 55.75 262 eP 29 53.70 -1.4  
COOL 61.28 243 eP 30 32.00 -1.6  
0.4s 4.00nm 4.9mb  
VNDA 62.57 186 P 31 03.40 22.0X  
MBL 63.35 254 iPd 30 46.40 -1.0  
0.4s 19.00nm 5.6mb  
MEKA 63.87 248 eP 30 52.50 1.6  
KLB 64.13 242 eP 30 51.00 -1.5  
NWA0 64.49 241 eP 30 54.70 -0.1  
0.5s 4.00nm 4.8mb  
Z 20s 0.50um 4.7msz  
N 20s 0.40um

E 20s 0.40um  
BAL 65.11 243 eP 30 58.00 -0.8  
0.4s 5.00nm 5.0mb  
MUN 65.42 242 iPd 31 00.60 -0.2  
NANU 67.10 252 eP 31 11.60 0.0  
0.5s 16.00nm 5.4mb  
PCI 67.79 276 ePd 31 18.50 2.4X  
1.0s 4.50nm 4.5mb  
SYP 71.37 44 eP 31 38.00 0.2  
BCH 71.68 44 P 31 39.00 -0.7  
SAO 71.74 42 eP 31 39.50 -0.4  
PRI 71.87 42 eP 31 41.00 0.2  
MHC 71.97 41 eP 31 41.00 -0.4  
ARN 72.04 41 P 31 41.00 -0.7  
ABL 72.06 44 P 31 41.50 -0.6  
PAS 72.37 45 eP 31 43.00 -0.6  
MWC 72.49 45 eP 31 44.00 -0.6  
BAR 72.60 47 eP 31 44.00 -1.1  
FHC 72.74 37 eP 31 45.50 -0.2  
RVR 72.83 46 eP 31 46.00 -0.4  
PLM 72.83 47 P 31 46.00 -0.6  
SBB 72.91 45 eP 31 46.00 -0.9  
PEC 72.92 46 P 31 45.30 -1.7  
CMB 73.18 41 iPd 31 47.80 -0.6  
ORV 73.42 39 P 31 49.00 -0.7  
WDC 73.44 38 eP 31 49.00 -0.8  
TPC 73.81 46 eP 31 52.00 -0.1  
SPA 73.86 180 iPd 31 54.20 2.2  
1.1s 61.31nm 5.5mb  
Z 20s 0.95um 5.1msz  
GSC 73.95 45 eP 31 52.00 -0.9  
GLA 74.11 48 eP 31 53.00 -0.9  
LBFM 74.31 38 P 31 54.00 -1.1  
KVN 75.23 41 P 31 59.80 -0.6  
TNP 75.24 42 P 32 00.00 -0.5  
KDC 75.67 11 eP 32 01.40 -0.8  
BMW 76.86 33 P 32 08.80 -0.5  
GMW 77.80 32 P 32 14.00 -0.3  
PGC 78.19 31 eP 32 16.00 -0.4  
RMW 78.24 33 P 32 16.60 -0.3  
MSU 78.80 44 P 32 20.60 0.2  
DUG 79.26 43 P 32 21.60 -1.1  
1.1s 26.32nm 5.2mb  
PMR 79.88 11 iPd 32 24.50 -0.9  
1.0s 52.50nm 5.5mb  
MDJ 79.89 322 eP 32 26.00 0.2  
Z 25s 0.90um 5.0msz  
eS 42 25.00  
TTA 80.04 8 ePd 32 26.50 0.2  
PNT 80.55 32 ePd 32 29.00 -0.3  
0.9s 60.00nm 5.6mb  
TOA 80.93 12 iPd 32 31.20 0.1  
ALQ 81.09 50 eP 32 32.30 -0.4  
0.9s 26.89nm 5.3mb  
Z 18s 0.65um 5.0msz  
ANMO 81.09 50 P 32 32.70 0.0  
0.8s 37.31nm 5.5mb  
NEW 81.22 34 P 32 31.50 -1.3  
0.9s 23.03nm 5.2mb  
CN2 81.94 320 Pd 32 36.60 0.0  
Z 22s 0.60um 4.9msz  
ePd 32 46.20 30km  
eS 42 52.00  
SNY 82.12 318 Pd 32 38.00 0.5  
IMW 82.38 40 P 32 39.00 -0.3  
LRM 82.48 38 ePd 32 39.50 -0.2  
BW06 82.68 42 P 32 40.20 -0.6  
0.9s 50.85nm 5.6mb  
FBA 83.16 11 iPd 32 41.90 -0.6  
IMA 83.35 8 iPd 32 43.50 -0.1  
1.3s 44.80nm 5.4mb  
GOL 84.00 46 P 32 47.40 -0.3  
1.0s 85.00nm 5.9mb  
SES 85.71 35 ePd 32 55.30 -0.4  
1.2s 161.00nm 6.1mb  
BJI 86.29 313 eP 32 58.00 -0.6  
1.5s 47.00nm 5.5mb  
Z 28s 0.35um 4.6msz  
IPM 87.36 276 ePd 33 07.00 2.5X  
TIY 88.04 310 eP 33 08.50 1.2  
Z 12s 0.48um 5.1msz  
SNG 88.48 278 eP 33 08.20 -1.6  
GYA 88.73 298 P 33 12.20 1.3  
INK 89.01 14 eP 33 10.00 -1.2  
XAN 89.39 306 P 33 15.00 1.2  
HHC 89.84 313 P 33 17.50 1.7  
YKA 90.74 23 eP 33 17.90 -1.4



NNT	1.0s	15.00nm	5.3mb	SOP	147.66	348	iPKPc	40	02.60	3.9X	STS	150.33	23	ePKP	40	09.00	6.0X			
BTO	90.83	283	eP	33	21.20	0.5	KMR	147.73	351	iPKP+	40	02.60	3.8X	KHL	150.38	322	iPKP	40	09.30	6.0X
NST	90.85	312	eP	33	21.00	0.5	WLS	147.92	359	PKP	40	02.38	3.2X	PYM	150.40	6	PKP	40	04.45	1.3
KMI	91.33	286	eP	33	26.70	3.8X	CDF	147.92	360	PKP	40	01.48	2.2X	VAI	150.43	357	PKPc	40	08.20	5.2X
	91.69	296	Pc	33	26.20	1.4	FUR	147.97	355	iPKPc	40	02.80	3.6X	MDI	150.47	356	PKP	40	07.50	4.4X
		pP	33	35.50	29km			1.0s	139.00nm				SAL	150.58	355	PKPc	40	08.60	5.4X	
FFC	92.63	33	eP	33	27.00	-1.2	VITF	148.11	1	PKP	40	02.17	2.8X	RJF	150.68	8	iPKPc	40	09.40	5.9X
	1.3s	32.00nm	5.6mb	ECH	148.12	360	PKP	40	02.59	3.1X				1.3s	86.65nm					
POW	93.06	53	P	33	29.00	-1.6	BHG	148.23	352	iPKPc	40	05.50	5.9X	ORX	150.69	359	PKP	40	09.16	5.5X
CHG	93.29	289	iPc	33	33.90	1.9		1.3s	150.00nm				ORO	150.70	359	PKP	40	09.50	5.9X	
	1.0s	20.00nm	5.5mb	BZS	148.24	340	ePKP	40	03.00	3.3X			LPL	150.82	0	iPKPc	40	11.00	7.0X	
LZH	93.99	306	Pd	33	38.00	2.9	HAU	148.33	1	iPKPc	40	03.70	3.9X		1.1s	56.15nm				
	2.5s	74.00nm	5.7mb		1.1s	87.90nm						LPG	150.84	0	iPKPc	40	11.00	6.9X		
		pP	33	52.00	47kmX		FEL	148.45	359	PKP	40	01.56	1.4		1.3s	97.50nm				
RSON	95.89	39	P	33	41.30	-2.0	MOF	148.48	360	PKP	40	03.01	2.9X	LSD	150.88	360	PKPc	40	10.70	6.6X
	1.1s	24.84nm	5.6mb	BSF	148.50	0	PKP	40	02.82	2.6X			MMB	150.89	334	iPKPc	40	10.00	6.1X	
MBC	97.69	11	eP	33	50.50	-0.4	HRT	148.59	326	ePKP	40	06.00	5.5X	LFF	150.92	9	iPKPc	40	10.00	6.2X
	1.0s	11.00nm	5.3mb	GPA	148.61	324	ePKP	40	04.80	4.3X				0.9s	55.70nm					
GTA	97.96	309	eP	33	53.80	0.7	KBA	148.80	352	iPKPc	40	04.20	3.4X	KKB	150.93	335	iPKPc	40	10.00	6.0X
ZOBO	99.23	110	P	34	02.00	2.2X		1.0s	35.70nm				LBL	150.94	5	PKP	40	06.07	2.3X	
	Z	22s	0.28um	4.7msz								EZN	151.07	328	iPKP	40	09.70	5.5X		
		LR	07	32.00								MBH	151.07	303	ePKP	40	14.70	10.2X		
QUE	123.70	296	ePKP	39	16.20	0.6						CAF	151.12	7	iPKPc	40	10.60	6.4X		
SUF	131.66	348	ePKP	39	29.30	-0.2	BBS	148.87	359	PKP	40	03.27	2.6X		1.1s	41.50nm				
	0.8s	9.00nm					GRC	148.88	5	PKP	40	00.58	-0.1	ELL	151.16	319	ePKP	40	10.00	5.4X
NUR	133.98	348	iPKP	39	34.20	0.2	PVL	148.88	333	iPKPc	40	06.00	5.2X	RSP	151.18	360	PKP	40	09.88	5.5X
WIT	143.52	0	ePKP	39	52.00	0.4	JMB	148.92	331	iPKPc	40	06.00	5.1X	LPO	151.24	9	ePKP	40	10.60	6.3X
WTS	144.34	0	ePKP	39	51.00	-2.0	YLV	148.93	326	iPKP	40	05.90	4.8X		1.0s	42.00nm				
	1.0s	25.00nm					LOR	148.96	4	iPKPc	40	05.20	4.4X	ERUA	151.28	22	ePKP	40	11.40	6.9X
QASM	144.60	292	ePKP	39	53.80	-0.6		1.1s	58.60nm				BNi	151.28	0	PKP	40	06.30	1.7	
KRA	144.67	345	ePKP	39	51.80	-1.9	HRI	148.99	308	ePKP	40	07.00	5.6X	BADA	151.40	300	iPKP+	40	12.00	7.0X
	0.9s	64.00nm					LOMF	148.99	0	PKP	40	04.12	3.2X	RRL	151.42	0	PKP	40	11.32	6.4X
		e	40	00.70			CTT	149.01	328	iPKP	40	06.80	5.7X	BOB	151.49	356	PKPc	40	11.00	6.2X
KSP	144.68	350	ePKP	39	50.80	-2.9X	HLBJ	149.06	306	PKPc	40	05.90	4.4X	KNT	151.60	334	ePKP	40	11.00	6.0X
	1.1s	46.00nm					SSF	149.14	5	iPKPc	40	05.90	4.8X	VAY	151.60	335	ePKP	40	04.00	-0.9
		id	39	52.70				1.2s	107.10nm						i	40	11.00			
CLL	144.69	353	iPKPc	39	51.40	-2.3	MFF	149.16	10	ePKP	40	05.40	4.3X	IZM	151.62	325	ePKP	40	11.00	5.9X
	0.9s	21.00nm						1.2s	71.40nm				BCI	151.64	339	iPKP	40	11.90	7.0X	
		i	42	19.00			LBF	149.25	4	iPKPc	40	06.00	4.7X	LWI	151.65	232	iPKP+	40	14.30	8.2X
KVT	144.73	320	iPKP	39	54.30	0.1		1.2s	77.35nm				PCP	151.76	358	PKPc	40	11.11	5.9X	
BRG	145.00	352	iPKP	39	43.40	-10.8X	JARJ	149.27	306	PKPc	40	06.40	4.5X	DOI	151.83	360	PKP	40	10.70	5.4X
	2.0s	66.00nm					MDSJ	149.27	305	PKPc	40	06.50	4.6X	PZZ	151.83	360	PKP	40	11.42	6.0X
CLI	145.37	335	ePKPc	39	55.00	0.0	OCA	149.28	355	ePKP	40	02.20	0.6	CKI	151.89	358	PKP	40	11.50	6.2X
SPC	145.40	345	iPKP	39	55.80	0.6	BEO	149.32	341	iPKP	40	06.00	4.6X	HVAR	151.96	345	iPKPc	40	11.70	6.3X
UCC	145.47	3	PKP+	39	55.00	0.0	FVI	149.35	352	PKPc	40	05.20	3.8X	MME	151.96	354	PKP	40	12.90	7.2X
MOX	145.48	355	iPKPc	39	55.00	-0.1	BURJ	149.37	307	PKPc	40	06.90	4.8X	RSM	152.01	351	PKPc	40	13.00	7.6X
	1.2s	92.00nm					RBL	149.39	351	PKP	40	05.50	3.9X	ROB	152.03	359	PKPc	40	11.93	6.3X
ENN	145.56	1	ePKP	39	55.00	-0.2	AVF	149.40	5	iPKPc	40	06.10	4.6X	STV	152.09	359	PKP	40	11.32	5.6X
	1.0s	71.00nm						1.2s	68.45nm				BDI	152.10	354	PKP	40	10.60	4.9X	
MEM	145.72	1	PKPc	39	55.40	0.0	PTJ	149.49	348	ePKP	40	06.40	4.6X	SFI	152.10	352	PKPc	40	13.10	7.5X
SNF	145.75	3	PKPc	39	55.80	0.3	ALT	149.55	323	ePKP	40	07.30	5.2X	PHP	152.11	338	iPKPc	40	11.80	6.2X
NAI	145.76	242	ePKP	39	48.00	-8.9X	SALJ	149.56	306	PKPc	40	07.00	4.7X	ENR	152.11	359	PKP	40	11.11	5.4X
PRU	145.79	351	iPKPc	39	56.30	0.7	ZAG	149.56	347	iPKPc	40	06.70	5.0X	FIN	152.11	358	PKP	40	11.62	6.0X
	1.2s	99.00nm					SMF	149.58	4	iPKPc	40	06.50	4.7X	SDA	152.14	340	ePKP	40	12.70	7.0X
KAS	145.92	323	iPKPc	39	57.70	1.5		1.2s	56.55nm				PGD	152.16	353	PKP	40	13.20	7.3X	
TNS	146.09	358	ePKPc	39	56.70	0.5	BGF	149.59	6	iPKPc	40	06.70	4.9X	FIR	152.31	353	ePKP	40	13.00	7.1X
VRI	146.15	335	ePKPc	39	57.00	0.6		1.1s	75.70nm				ARV	152.36	351	PKPc	40	07.10	1.1	
DOU	146.18	3	PKPc	39	57.00	0.7	LJU	149.62	350	ePKP	40	02.00	0.1	CRE	152.38	352	PKP	40	12.50	6.3X
	1.3s	242.80nm											LACI	152.41	339	ePKP	40	13.50	7.4X	
ABH	146.45	359	ePKP	39	58.00	1.2	VOY	149.74	350	ePKP	40	04.30	2.1	IMI	152.41	359	PKPc	40	13.06	6.9X
GRF	146.46	355	ePKP	39	56.80	0.0							Pli	152.45	354	PKP	40	12.00	5.9X	
		e	39	58.60			LSF	149.75	7	iPKPc	40	06.80	4.8X	SBF	152.47	359	ePKP	40	13.30	7.1X
RUP	146.63	360	ePKP	39	58.73	1.7		1.1s	73.25nm					0.9s	24.55nm					
PSZ	146.66	344	iPKP	39	59.00	1.8	TCF	149.79	7	iPKPc	40	07.10	5.0X	OHR	152.48	337	ePKP	40	07.00	0.7
KHC	146.76	352	ePKP	39	57.50	0.2		1.2s	50.60nm					1.5s	0.22nm					
		i	39	59.50			BNT	149.85	327	iPKP	40	07.90	5.5X		i	40	13.10			
MLR	146.77	335	iPKPd	39	59.00	1.5	MFT	149.86	328	iPKP	40	07.90	5.4X	ECRI	152.51	15	ePKP	40	14.20	7.9X
WET	146.83	353	iPKPc	39	59.50	2.1	EDC	149.89	327	iPKP	40	07.50	5.1X	FNA	152.54	336	ePKP	40	13.30	6.9X
	1.5s	129.00nm					MAF	149.89	6	iPKPc	40	07.60	5.3X	LIT	152.65	333	ePKPc	40	12.50	6.0X
KTD	147.00	359	ePKP	39	59.36	1.7		1.3s	126.35nm				EPF	152.72	11	ePKP	40	14.00	7.4X	
FLN	147.01	9	iPKPc	39	59.20	1.6	PGB	149.92	334	iPKPc	40	08.00	5.5X	FRF	152.77	0	ePKP	40	14.20	7.6X
	0.9s	49.15nm					CSS	149.92	313	ePKP	40	08.00	5.3X		1.1s	29.30nm				
ZST	147.06	347	iPKP	40	00.50	2.8X	CEY	149.94	350	ePKP	40	03.00	0.6	ASS	152.82	351	PKP	40	13.50	6.8X
VKA	147.15	348	iPKPc	40	00.80	2.9X			e	40	07.50		LRG	152.88	1	ePKP	40	14.80	8.1X	
	1.0s	89.60nm					DSI	149.98	306	ePKP	40	09.00	6.2X		1.1s	39.05nm				
SRO	147.15	346	ePKP	39	58.60	0.7	VBY	150.01	348	ePKP										



24d 17h

SGO 154.71 345 PKP 40 11.50 2.3X  
 MGR 155.04 344 PKP 40 08.90 -0.8  
 TDS 155.27 342 PKP 40 10.50 0.4  
 BCAO 163.65 225 iPKPc 40 20.60 0.4  
 0.5s 5.00nm  
 id 41 13.10  
 LIC 164.61 129 PKPd 40 21.60 0.5  
 TIC 164.89 128 PKPd 40 21.00 -0.3  
 KIC 164.92 129 PKPc 40 21.90 0.5  
 1.1s 11.00nm  
 LKO 166.09 117 PKP 40 22.20 -0.1  
 1.1s 28.00nm  
 S.D. = 1.1 on 154 of 303 obs.

& MAR 24, 1990 18h 43m 05.43s  
 19.505 N 155.485 W  
 DEPTH = 6.4km  
 HAWAII (613)  
 <HVO-P>. MD 4.2 (HVO). Felt at  
 Hawaii Volcanoes National Park.

PLL 0.04 39 iPc 43 06.94 -0.2  
 MLH 0.09 95 iPd 43 07.95 0.2  
 WOB 0.10 290 iPc 43 08.17 0.2  
 HMH 0.10 360 iPc 43 08.26 0.3  
 eS 43 10.51  
 KFH 0.10 143 iPc 43 08.16 0.2  
 TRH 0.11 214 iPd 43 08.51 0.4  
 MWH 0.11 261 iPc 43 08.22 0.2  
 AIN 0.13 170 iPc 43 08.73 0.4  
 MLX 0.14 109 iPd 43 08.81 0.3  
 CPK 0.18 126 iPc 43 09.53 0.2  
 DES 0.19 151 iPc 43 09.44 0.0  
 UWE 0.20 114 iPc 43 09.90 0.3  
 iS 43 13.00  
 NPH 0.21 115 iPd 43 09.87 0.0  
 OUT 0.22 121 iPc 43 10.02 -0.1  
 RIM 0.22 118 iPd 43 10.15 0.1  
 DAH 0.23 229 iPd 43 09.86 -0.4  
 AHA 0.25 122 iPc 43 10.46 0.0  
 eS 43 14.06  
 ESR 0.25 112 iPd 43 10.32 -0.3  
 KNH 0.25 133 iPc 43 10.51 -0.1  
 WOH 0.25 184 iPc 43 10.45 -0.2  
 HLP 0.26 141 iPc 43 10.76 -0.1  
 KIH 0.26 271 iPc 43 10.74 -0.1  
 HPU 0.28 5 iPc 43 11.32 0.2  
 HTC 0.28 163 iPc 43 10.85 -0.2  
 PUH 0.28 117 iPd 43 10.83 -0.4  
 KHU 0.28 206 iPd 43 10.93 -0.4  
 PWH 0.33 132 iPc 43 11.74 -0.4  
 MKA 0.33 114 iPd 43 11.64 -0.5  
 PPL 0.35 177 iPc 43 11.84 -0.6  
 HUH 0.38 299 iPc 43 13.86 0.7  
 WKH 0.39 335 iPc 43 13.02 -0.3  
 KAE 0.40 123 iPc 43 13.04 -0.4  
 MVH 0.40 90 iPd 43 13.19 -0.3  
 KKH 0.41 19 iPc 43 13.55 -0.1  
 CPH 0.41 268 iPd 43 13.42 -0.3  
 KUH 0.44 237 iPd 43 13.55 -0.7  
 WHA 0.45 113 ePd 43 13.48 -0.9  
 NGH 0.47 65 eP 43 14.72 -0.2  
 PKL 0.53 95 iPd 43 15.25 -0.9  
 SPT 0.55 198 ePc 43 15.26 -1.2  
 HBH 0.55 87 iPd 43 15.87 -0.7  
 POH 0.60 94 iPd 43 16.22 -1.2  
 KPO 0.61 90 iPd 43 16.31 -1.3  
 KOH 0.68 336 iP 43 17.64 -1.4  
 44 obs. associated

\* MAR 24, 1990 18h 47m 30.68±0.80s  
 35.927 N ±12.2km 23.598 E ±11.9km  
 DEPTH = 10.0km (geophysicist)  
 CRETE (370)  
 ML 3.5 (ATH).

VAM 0.71 137 iPgC 47 45.00 0.3  
 VLI 0.95 326 ePg 47 48.00 -0.8  
 NPS 1.77 111 ePn 48 01.00 -0.6  
 ITM 1.84 313 ePg 48 04.00 1.5  
 APE 1.93 53 ePn 48 08.00 4.1X  
 ATH 2.04 3 ePn 48 07.00 1.5  
 KAP 2.93 96 ePg 48 29.00 10.8X  
 SMG 3.15 55 ePb 48 31.00 9.8X  
 AGG 3.25 342 eP 48 21.78 -0.9  
 EVR 3.31 335 ePn 48 23.50 -0.1  
 KEK 4.83 323 ePn 48 44.00 -1.1

VAY 5.45 352 eP 48 50.00 -3.8X  
 ORI 6.99 308 P 49 29.00 13.4X  
 eSn 49 46.00  
 MGR 7.61 306 P 49 24.50 0.2  
 eSn 49 45.00  
 SGO 7.99 308 P 49 29.70 0.1  
 S.D. = 1.1 on 10 of 15 obs.

MAR 24, 1990 19h 11m 32.27±0.49s  
 51.238 N ±11.5km 178.910 W ±4.9km  
 DEPTH = 33.0km (normol)  
 4.9mb (20 obs.)  
 ANDREANOF ISLANDS, ALEUTIAN IS. (7)

ADK 1.53 64 iPc 11 59.90 2.3  
 SMY 4.57 292 e(P) 12 44.50 3.7X  
 KDC 16.60 57 eP 15 24.40 0.7  
 TTA 16.97 38 e(P) 15 30.00 1.6  
 IMA 19.61 31 eP 16 00.30 -0.2  
 1.0s 13.80nm 4.2mb  
 FBA 21.10 38 eP 16 15.80 0.0  
 INK 27.61 35 eP 17 17.00 -1.1  
 MBC 33.76 22 eP 18 12.50 0.2  
 0.5s 2.00nm 4.3mb  
 YKA 35.38 46 eP 18 25.20 -1.1  
 0.7s 2.20nm 4.2mb  
 LON 36.92 74 eP 18 41.50 1.9  
 PNT 37.05 69 eP 18 41.00 0.4  
 0.5s 5.00nm 4.6mb  
 SES 41.49 64 eP 19 18.00 0.6  
 BJI 45.34 282 eP 19 49.00 0.3  
 DUG 45.97 77 eP 19 54.00 0.1  
 BW06 46.41 72 eP 19 57.70 0.2  
 DAU 46.79 76 eP 20 01.50 0.9  
 RSSD 48.88 67 eP 20 15.50 -1.2  
 RSON 50.59 55 eP 20 26.50 -3.0  
 GOL 50.79 73 eP 20 31.60 0.2  
 FRB 53.18 31 eP 20 48.00 -0.7  
 ANMO 53.19 78 eP 20 51.50 2.0  
 KEV 57.84 350 eP 21 35.00 12.7X  
 FVM 60.68 65 eP 21 41.00 -1.3  
 PWLA 64.14 66 eP 22 04.50 -0.9  
 SUF 64.67 348 eP 22 08.40 -0.1  
 0.3s 2.00nm 4.7mb  
 RSCP 65.10 64 eP 22 10.50 -1.2  
 GBTN 65.83 63 eP 22 15.50 -0.8  
 TKL 66.08 63 eP 22 17.00 -0.9  
 NUR 67.00 348 iP 22 23.00 -0.4  
 JSC 68.49 62 eP 22 32.50 -0.6  
 HFS 68.52 353 e(P) 22 55.40 22.5X  
 0.7s 2.70nm  
 GUN 71.85 292 P 22 54.60 0.5  
 KKN 72.28 292 P 22 57.20 0.7  
 0.5s 17.00nm 5.3mb  
 PKI 72.37 292 P 22 57.60 0.4  
 0.6s 19.00nm 5.3mb  
 GKN 72.50 293 P 22 58.20 0.5  
 DMN 72.52 292 P 22 58.60 0.6  
 0.6s 17.00nm 5.2mb  
 KHC 79.44 352 eP 23 37.10 0.7  
 ZST 80.00 349 eP 23 38.50 -0.8  
 FLN 80.37 1 eP 23 40.70 -0.6  
 LDF 80.54 1 eP 23 41.70 -0.5  
 0.8s 10.75nm 4.9mb  
 CDF 80.59 356 eP 23 42.20 -0.4  
 GRR 80.74 1 eP 23 43.20 0.0  
 0.7s 8.80nm 4.9mb  
 HAU 81.03 356 eP 23 44.60 -0.2  
 KBA 81.50 352 eP 23 49.00 1.5  
 1.4s 27.10nm 5.1mb  
 i 23 49.40  
 SSF 82.06 358 eP 23 50.10 -0.1  
 AVF 82.33 358 eP 23 51.30 -0.3  
 1.0s 7.00nm 4.7mb  
 SMF 82.47 358 eP 23 52.10 -0.2  
 0.6s 4.50nm 4.7mb  
 LSF 82.89 360 eP 23 54.40 -0.1  
 MAF 82.91 359 eP 23 54.80 0.2  
 HYB 84.20 290 eP 24 02.00 0.4  
 LFF 84.20 0 eP 24 01.50 0.3  
 0.5s 5.85nm 5.0mb  
 CAF 84.21 359 eP 24 01.50 0.2  
 0.9s 8.20nm 4.9mb  
 LPO 84.46 360 eP 24 02.60 0.1  
 0.7s 6.60nm 4.9mb  
 SBF 85.12 355 eP 24 05.80 -0.1  
 0.8s 12.10nm 5.2mb

FRF 85.46 356 eP 24 07.60 0.1  
 LRG 85.58 356 eP 24 08.50 0.4  
 LMR 85.69 356 eP 24 09.00 0.3  
 0.5s 2.90nm 4.8mb  
 PGF 86.34 354 eP 24 12.00 -0.1  
 0.6s 8.10nm 5.1mb  
 GBA 87.85 289 P 24 19.70 0.2  
 0.6s 3.10nm 4.8mb  
 SLR 147.16 311 iPKPc 31 14.00 2.8X  
 KSR 147.92 312 ePKP 31 14.20 1.7X  
 PRY 148.55 310 iPKPc 31 17.20 3.8X  
 BFS 148.85 312 iPKPd 31 12.50 -1.4  
 S.D. = 0.9 on 57 of 63 obs.

& MAR 24, 1990 19h 53m 01.15s  
 60.038 N 153.079 W  
 DEPTH = 132.9km  
 3.8mb (2 obs.)  
 SOUTHERN ALASKA (2)  
 <AGS-P>.

PDB 0.61 246 eP 53 20.29 -1.2  
 eS 53 34.73  
 RDT 0.63 32 iP 53 20.85 -0.9  
 AUL 0.68 195 eP 53 21.16 -0.8  
 eS 53 36.30  
 AUE 0.70 192 eP 53 21.07 -1.0  
 XLV 0.90 130 iP 53 22.75 -1.0  
 eS 53 39.56  
 CNPM 1.06 118 iP 53 24.53 -0.7  
 eS 53 42.05  
 BRLL 1.14 103 eP 53 25.55 -0.4  
 eS 53 43.86  
 CDD 1.15 195 iP 53 24.73 -1.3  
 eS 53 43.61  
 NKA 1.16 51 eP 53 27.19 1.1  
 SPU 1.25 23 iP 53 26.48 -0.7  
 eS 53 45.70  
 BGM 1.27 240 iP 53 25.66 -1.6  
 eS 53 44.25  
 BGL 1.28 15 iP 53 27.16 -0.3  
 CRP 1.31 20 iP 53 27.48 -0.5  
 eS 53 47.03  
 SLKM 1.50 70 iP 53 28.98 -0.9  
 eS 53 49.51  
 SVW 1.65 312 iPc 53 30.10 -1.5  
 SEW 1.82 86 eP 53 32.24 -1.2  
 SUA 1.83 38 iP 53 33.18 -0.6  
 eS 53 57.88  
 SKT 2.09 20 iP 53 35.93 -0.9  
 PMS 2.11 54 eP 53 36.10 -1.1  
 PWA 2.25 43 eP 53 37.50 -1.3  
 KDC 2.32 172 iPd 53 37.10 -2.5  
 PLRM 2.48 49 eP 53 39.54 -2.2  
 PMR 2.48 49 eP 53 39.50 -2.2  
 KNK 2.66 57 iP 53 41.99 -2.0  
 GHO 2.67 48 iP 53 42.28 -2.0  
 MTU 2.73 89 eP 53 44.43 -0.5  
 CUT 2.74 29 eP 53 43.72 -1.3  
 SML 2.92 50 iP 53 45.33 -2.1  
 GLI 3.08 72 eP 53 47.24 -2.3  
 TTA 3.23 335 ePd 53 49.90 -1.6  
 HUR 3.38 28 eP 53 52.75 -0.7  
 VZW 3.38 70 eP 53 51.50 -2.1  
 NCA 3.62 55 eP 53 54.77 -2.0  
 KTH 3.67 15 eP 53 55.94 -1.5  
 KLU 3.80 64 iP 53 57.01 -2.2  
 RND 3.93 29 eP 53 59.10 -1.8  
 TOA 3.94 55 iPc 53 59.90 -1.2  
 MCK 4.19 26 eP 54 02.79 -1.6  
 PAX 4.68 48 eP 54 09.32 -1.7  
 NEA 4.92 21 eP 54 11.84 -2.3  
 WRH 5.02 25 eP 54 13.29 -2.2  
 DDM 5.08 39 iP 54 15.85 -0.5  
 TGL 5.13 78 eP 54 16.12 -1.0  
 HDA 5.24 31 iP 54 16.23 -2.1  
 CCB 5.24 26 iP 54 16.07 -2.3  
 FBA 5.46 24 ePd 54 19.00 -2.4  
 GLM 5.62 25 eP 54 21.51 -2.1  
 IMA 6.06 358 eP 54 28.30 -1.5  
 YKA 18.47 66 eP 57 07.00 -2.0  
 0.6s 2.20nm 3.6mb  
 MBC 20.00 23 eP 57 24.00 -0.7  
 0.9s 5.00nm 3.9mb  
 50 obs. associated

% MAR 24, 1990 20h 06m 16.52±1.11s



1.039 S  $\pm$  6.1km 78.283 W  $\pm$  17.5km  
 DEPTH = 10.0km (geophysicist)  
 ECUADOR (107)

TUNG 0.41 203 P 06 25.00 0.0  
 S 06 30.00  
 VC1 0.41 344 P 06 25.00 -0.1  
 S 06 30.00  
 GECU 0.72 7 eP 06 31.00 -0.1  
 S 06 40.50  
 QUR 0.90 344 eP 06 34.10 0.1  
 S 06 45.70  
 GGP 0.91 340 eP 06 34.50 0.1  
 S 06 47.00  
 CAYA 1.15 15 eP 06 38.50 0.1  
 S.D. = 0.1 on 6 of 6 obs.

% MAR 24, 1990 20h 34m 05.02  $\pm$  0.56s  
 40.811 N  $\pm$  6.0km 15.291 E  $\pm$  5.9km  
 DEPTH = 10.0km (geophysicist)  
 SOUTHERN ITALY (390)

SGO 0.25 177 Pc 34 09.70 -0.7  
 eSn 34 12.70  
 BSS 0.37 267 P 34 12.40 -0.2  
 eSn 34 17.80  
 MGR 0.70 163 P 34 17.40 -1.5  
 eSn 34 29.00  
 DUI 1.06 324 P 34 26.50 1.5  
 eSn 34 41.50  
 MMN 1.06 150 P 34 26.00 1.0  
 ORI 1.16 130 P 34 27.90 1.2  
 BAI 1.23 75 P 34 27.00 -0.9  
 CSI 1.28 143 P 34 29.90 1.0  
 TDS 1.40 145 P 34 31.20 0.6  
 SDI 1.43 309 P 34 29.80 -1.2  
 eSn 34 52.00  
 BRT 1.45 87 P 34 30.30 -1.0  
 eSn 34 48.40  
 ROI 1.58 141 P 34 36.10 3.0X  
 CZI 1.72 158 P 34 34.80 -0.3  
 AZI 1.83 311 P 34 37.00 0.3  
 S.D. = 1.1 on 13 of 14 obs.

? MAR 24, 1990 21h 39m 02.93  $\pm$  5.46s  
 32.660 S  $\pm$  9.4km 73.125 W  $\pm$  46.7km  
 DEPTH = 10.0km (geophysicist)  
 OFF COAST OF CENTRAL CHILE (134)

ROCH 1.81 100 iPc 39 33.60 -0.9  
 LNV 1.93 132 ePc 39 36.00 -0.1  
 iS 39 57.10  
 TACH 2.08 119 iPd 39 38.00 -0.4  
 iS 40 02.00  
 PCH 2.39 114 iPc 39 43.00 0.2  
 iS 40 10.60  
 CHCH 2.43 122 ePc 39 44.00 0.7  
 iS 40 10.60  
 FCH 2.47 106 iPd 39 44.20 0.0  
 iS 40 12.00  
 RTCV 3.97 80 ePd 40 06.20 1.0  
 RTRS 4.00 53 ePd 40 05.30 -0.2  
 RTLL 4.17 73 ePd 40 07.90 -0.2  
 CFA 4.28 77 ePc 40 09.50 -0.1  
 S.D. = 0.6 on 10 of 10 obs.

? MAR 24, 1990 23h 04m 40.82  $\pm$  5.23s  
 23.493 S  $\pm$  72.5km 179.544 E  $\pm$  40.8km  
 DEPTH = 521.8  $\pm$  45.4 km  
 4.4mb ( 3 obs.)  
 SOUTH OF FIJI ISLANDS (171)

NDF 6.03 341 iPc 06 19.60 0.3  
 ASPA 41.69 260 eP 11 45.10 0.0  
 0.5s 13.00nm 4.7mb  
 WB5 42.01 266 eP 11 47.20 -0.4  
 WRA 42.02 266 Pd 11 47.60 0.0  
 0.4s 1.40nm 3.8mb  
 NANU 58.46 257 iPc 13 47.70 -0.9  
 0.4s 8.00nm 4.4mb  
 PLM 82.83 49 eP 16 11.00 -0.4  
 SBB 82.92 48 eP 16 11.00 -0.7  
 TPC 83.81 49 eP 16 16.00 -0.1  
 GSC 83.96 47 eP 16 17.00 0.2  
 PNT 90.40 35 eP 16 47.00 0.2  
 FBA 91.65 13 iP 16 51.50 -0.8  
 NB2 141.62 351 PKP 23 09.70 -3.7X

0.8s 4.00nm  
 HFS 142.07 349 ePKP 23 08.70 -5.4X  
 0.4s 11.40nm  
 PRNI 147.75 290 ePKP 23 27.00 2.4  
 MBH 147.89 289 ePKP 23 29.00 4.3X  
 KRA 149.06 334 ePKP 23 30.30 4.4X  
 KSP 149.76 339 iPKPc 23 32.10 5.2X  
 0.7s 22.00nm  
 CLL 150.34 343 iPKP 23 33.30 5.5X  
 0.9s 23.00nm  
 BRG 150.47 341 iPKP 23 33.50 5.5X  
 PRU 151.07 340 PKP 23 35.20 6.3X  
 S.D. = 1.0 on 12 of 20 obs.

% MAR 24, 1990 23h 16m 33.24  $\pm$  0.92s  
 37.722 N  $\pm$  9.0km 1.501 W  $\pm$  8.6km  
 DEPTH = 10.0km (geophysicist)  
 SPAIN (377)  
 mbLg 3.1 (MDD).

EALH 0.15 25 iPgd 16 36.70 0.0  
 eSg 16 38.90  
 ENIJ 0.94 217 iPg 16 50.80 -0.4  
 eSg 17 05.00  
 ACU 1.17 47 ePg 16 55.10 0.1  
 eSg 17 11.00  
 EVIA 1.21 319 iPg 16 55.70 -0.1  
 eSg 17 12.00  
 AFC 1.69 255 ePn 17 04.00 0.9  
 eSn 17 26.00  
 EBAN 1.86 284 ePn 17 05.00 -0.4  
 eSn 17 29.40  
 TOL 2.93 318 ePg 17 29.00 8.2X  
 eSn 17 49.00  
 GUD 3.57 326 ePn 17 39.90 10.0X  
 eSn 18 22.00  
 S.D. = 0.6 on 6 of 8 obs.

MAR 25, 1990 00h 01m 10.68  $\pm$  0.34s  
 33.619 N  $\pm$  8.2km 57.022 E  $\pm$  3.7km  
 DEPTH = 33.0km (normol)  
 4.8mb ( 31 obs.) 4.6msz ( 2 obs.)  
 IRAN (348)  
 Felt at Tabas.  
 CENTROID, MOMENT TENSOR (HRV)  
 Data Used: GDSN  
 L.P.B.: 105, 16C  
 Centroid Location:  
 Origin Time 00:01:11.1 0.8  
 Lat 33.34N 0.13 Lon 56.99E 0.06  
 Dip 15.0 FLX Half-duration 1.5  
 Moment Tensor: Scale 10<sup>16</sup> Nm  
 Mrr= 1.02 0.53 Mtt= 5.97 0.84  
 Mff=-6.99 0.54 Mrt= 0.00 0.00  
 Mrf= 0.00 0.00 Mtf= 0.42 0.49  
 Principal Axes:  
 T Val= 5.98 Plg= 0 Azm=178  
 N 1.02 90 180  
 P -7.00 0 88  
 Best Double Couple: Mo=6.5 $\times$ 10<sup>16</sup>  
 NP1: Strike=223 Dip=90 Slip=-180  
 NP2: 313 90 0

MHI 3.36 37 iPnc 02 01.00 -1.2  
 0.6s 621.33nm  
 eSn 02 42.00  
 TEH 5.10 296 eP 02 26.00 -1.0  
 IR2 5.44 294 eP 02 30.00 -1.7  
 IR1 5.53 291 eP 02 30.00 -2.9X  
 IR5 5.56 288 eP 02 31.50 -1.8  
 KER 8.27 278 eP 03 10.00 -1.4  
 QUE 9.11 109 eP 03 21.50 -1.5  
 e 05 42.00  
 BBU 9.32 219 (Pn) 03 25.90 0.2  
 (Sn) 05 36.00  
 SLY 9.70 285 eP 03 31.00 0.0  
 iS 05 12.00  
 TAB 9.75 300 eP 03 33.00 1.2  
 BHD 10.56 272 ePnc 03 40.00 -2.8X  
 ePn 04 03.00  
 eSn 05 35.00  
 eS 06 16.00  
 eSg 06 44.00  
 MSL 11.71 288 ePd 04 01.50 3.1X  
 e 05 42.00  
 eS 06 36.50

e 07 30.50  
 e 08 25.00  
 RYD 12.70 228 eP+ 04 07.20 -4.5X  
 QASM 13.89 241 eP 04 22.70 -4.8X  
 KSH 16.30 64 eP 04 56.00 -2.8X  
 N 12s 9.30um  
 HLB 17.48 271 Pd 05 12.80 -0.8  
 JARJ 17.75 271 Pc 05 16.60 -0.3  
 HRI 17.77 275 eP 05 16.00 -1.2  
 SHMJ 17.82 273 Pc 05 19.10 1.4  
 BURJ 17.87 271 Pc 05 18.40 0.0  
 NDI 17.97 100 iPc 05 18.00 -1.5  
 0.7s 41.10nm 4.7mb  
 eS 08 52.00  
 SALJ 18.01 271 Pc 05 19.50 -0.6  
 DSI 18.35 270 eP 05 22.00 -2.2  
 MBH 19.22 264 eP 05 34.00 -0.8  
 8ADA 19.52 261 ePd 05 37.80 -0.4  
 KAS 19.97 300 eP 05 45.00 2.0  
 BBTk 20.38 295 eP 05 46.00 -1.4  
 POO 21.27 131 iPd 05 57.60 1.2  
 0.7s 31.51nm 4.8mb  
 BCK 21.82 288 eP 06 04.90 2.9X  
 HLW 22.14 267 eP 06 10.00 4.9X  
 ALT 22.31 292 eP 06 09.00 2.2  
 GPA 22.31 295 eP 06 08.00 1.2  
 ELL 22.35 286 eP 06 09.00 1.7  
 KHL 22.71 290 eP 06 13.00 2.3  
 HRT 22.88 296 eP 06 12.00 -0.4  
 YLV 23.06 296 eP 06 15.00 0.8  
 DST 23.51 293 eP 06 19.50 1.0  
 CTT 23.86 297 iP 06 22.80 1.0  
 BNT 24.13 295 iP 06 27.80 3.3X  
 EDC 24.17 295 eP 06 27.50 2.7X  
 PSN 24.55 303 eP 06 29.00 0.5  
 HYB 25.17 125 eP 06 35.40 0.7  
 JMB 25.44 299 eP 06 42.00 5.1X  
 ARO 25.53 214 eP+ 07 04.00 25.9X  
 WMO 25.88 58 iPc 06 41.50 0.4  
 Z 20s 1.40um 4.5msz  
 E 10s 1.60um  
 DIM 26.14 298 eP 06 45.00 1.5  
 VRI 26.15 307 ePd 06 43.00 -0.5  
 MLR 26.57 306 eP 06 49.00 1.5  
 RZN 26.70 297 eP 06 48.00 -0.8  
 CMP 27.13 305 eP 06 57.00 4.5X  
 MMB 27.42 297 eP 06 58.00 2.7X  
 VTS 27.92 299 eP 06 59.00 -0.9  
 VAY 28.26 296 eP 07 01.60 -1.2  
 SKO 29.16 297 eP 07 07.50 -3.4X  
 N 16s 3.45um  
 BZS 29.55 304 eP 07 14.00 -0.3  
 OHR 29.58 295 eP 07 17.00 2.2  
 KOD 29.90 136 eP 07 21.00 2.9X  
 SPC 31.31 311 eP 07 38.80 8.7X  
 e 08 53.80  
 KRA 31.74 312 eP 07 34.40 0.8  
 MGR 33.57 293 P 07 52.00 2.3  
 SGO 33.74 294 P 07 53.00 1.9  
 NUR 34.14 332 iP 07 57.30 2.9X  
 0.9s 23.70nm 5.1mb  
 KSP 34.20 313 eP 07 54.80 -0.2  
 DUI 34.36 296 P 07 58.00 1.4  
 LJU 34.51 304 e(P) 07 57.00 -0.7  
 CEY 34.56 303 e(P) 08 00.90 2.7X  
 GTA 34.63 68 eP 07 59.20 0.2  
 SDI 34.85 296 P 08 03.50 2.8X  
 VOY 34.95 304 e(P) 08 03.00 1.4  
 SUF 35.00 336 eP 08 04.50 2.8X  
 TRI 35.02 303 P 08 01.00 -1.0  
 AZI 35.12 297 P 08 05.50 2.5  
 AQU 35.15 297 P 08 05.60 2.3  
 RBL 35.22 304 P 08 04.10 0.2  
 KBA 35.44 306 e(P) 08 05.50 -0.4  
 0.9s 5.40nm 4.5mb  
 ARV 35.49 299 P 08 05.20 -1.0  
 KHC 35.56 309 Pc 08 07.90 1.2  
 BRG 35.65 312 eP 08 08.60 1.2  
 1.6s 28.00nm 4.9mb  
 MNS 35.68 297 P 08 09.50 1.7  
 ASS 35.69 299 P 08 11.50 3.6X  
 FVI 35.77 305 P 08 09.00 0.6  
 CRE 36.21 300 P 08 14.00 1.6  
 SFI 36.29 300 P 08 15.00 2.2  
 CLL 36.33 313 iPc 08 14.20 1.1  
 1.6s 26.00nm 4.9mb  
 PGD 36.38 300 P 08 16.50 2.6



25d 00h

CTI	36.51	304	P	08 15.50	0.6	CN2	52.97	58	eP	10 27.40	1.3	1.0s	35.00nm	4.9mb									
FIR	36.72	300	eP	08 19.00	2.6	DAG	54.31	344	iPc	10 33.10	-2.4		e	02 41.00	0.5								
MME	37.12	300	P	08 23.10	3.0X		1.1s	17.72nm			5.0mb	CAI	29.92	63	iPc	01 42.00	0.5						
GRF	37.17	310	eP	08 18.60	-1.6	LKO	62.00	263	P	11 28.80	-1.5	CEOS	31.36	351	iP	01 52.00	-1.8						
	1.5s	6.00nm			4.2mb		1.1s	32.50nm			5.4mb	OLLA	32.15	354	eP	01 59.40	-1.1						
BDI	37.20	300	P	08 22.30		LIC	63.37	259	Pc	11 37.88	-1.4	LLAV	32.60	354	iP	02 03.20	-1.0						
PII	37.25	300	P	08 20.60	-0.3		0.7s	6.00nm			4.8mb	CAR	32.64	354	iP	02 03.80	-0.8						
MDI	37.85	303	P	08 28.50	2.6X	Z	19s	0.50um			4.7msz	MORO	33.17	352	iP	02 08.00	-1.0						
BOB	38.02	301	P	08 29.50	2.0	MBC	70.38	359	eP	12 22.00	-0.7	FISA	33.70	350	iP	02 11.20	-2.3						
SOD	38.12	342	eP	08 22.00	-5.9X	FRB	73.88	338	eP	12 42.00	-1.6	SLB	35.87	4	eP	02 30.79	-0.7						
				08 35.00		INK	78.08	4	eP	13 10.00	2.8X	BIM	36.55	4	eP	02 36.21	-0.8						
LZH	38.22	73	eP	08 29.50	0.1	YKA	83.99	356	eP	13 40.00	1.5	MVM	36.60	4	eP	02 36.56	-0.9						
	1.2s	31.00nm			5.0mb		1.0s	5.70nm			4.7mb	FDF	36.76	4	eP	02 38.16	-0.6						
Z	30s	1.05um			4.5mszX	FFC	90.17	348	eP	14 10.00	1.2		0.3s	0.90nm		3.9mb							
N	10s	0.46um					1.0s	10.00nm			5.0mb	PRM	58.72	342	eP	05 22.20	-1.6						
E	14s	0.86um					S.D. = 1.4 on 117 of 147 obs.									BLA	61.16	345	iP	05 39.50	-0.4		
VAI	38.51	303	P	08 36.00	22kmX								1.0s	25.00nm		4.6mb	OLY	63.15	335	iP	05 55.08	2.4	
HFS	38.66	327	eP	08 31.00	-0.5	? MAR 25, 1990 00h	38m 14.96±11.53s					LIC	63.91	71	P	05 57.44	-0.5						
	0.7s	7.90nm			4.6mb	15.184 N ±79.9km	60.176 W ±41.6km					TIC	64.11	70	P	05 58.74	-0.6						
CD2	39.36	81	P	08 38.80	0.0	DEPTH = 10.0km (geophysicist)						KIC	64.22	71	P	05 59.66	-0.3						
SBF	39.48	300	eP	08 37.80	-1.9	LEEWARD ISLANDS (92)						FVM	64.93	337	iP	06 02.10	-1.9						
	0.8s	37.60nm			5.2mb	ML 2.6 (FDF).							1.0s	60.00nm		5.1mb	LKO	65.02	67	Pd	06 04.50	-0.6	
DOI	39.60	301	P	08 39.00	-1.7	MVM	0.94	228	iPd	38 32.97	0.1		68.00	73	iPc	06 22.00	-1.4	KUK	68.00	73	iPc	06 22.00	-1.4
CDP	39.63	307	eP	08 39.70	-1.2					38 43.90		ALO	69.86	323	eP	06 34.20	-0.2		69.86	323	eP	06 34.20	-0.2
KEV	39.81	344	iP	08 41.20	-0.8	FDF	1.04	245	eP	38 34.75	0.1		1.0s	28.00nm		4.8mb	GLD	72.82	328	iP	06 52.00	0.5	
				08 47.00						38 46.60			1.0s	82.00nm		5.2mb	GOL	72.86	327	iP	06 52.00	0.2	
LPG	39.93	303	eP	08 41.60	-2.0	BIM	1.09	233	iPd	38 35.31	-0.2		1.0s	55.00nm		5.0mb	GLA	73.50	317	eP	06 56.00	0.7	
	0.9s	10.65nm			4.6mb					38 48.30		BAR	74.44	316	eP	07 02.00	1.4		74.44	316	eP	07 02.00	1.4
LPL	39.94	303	eP	08 41.50	-2.2	SLB	1.59	212	iP	38 42.80	-0.5	TPC	74.96	317	eP	07 04.00	0.5		74.96	317	eP	07 04.00	0.5
BN1	39.99	302	P	08 42.80	-1.2					39 03.56		PLM	75.00	316	eP	07 04.00	0.2		75.00	316	eP	07 04.00	0.2
FRF	40.07	300	eP	08 42.20	-2.3	SVV	2.11	209	iP	38 50.95	0.2	PEC	75.53	316	iP	07 07.10	0.5		75.53	316	iP	07 07.10	0.5
CHG	40.11	101	eP	08 45.10	0.0					39 13.89		RVR	75.73	316	eP	07 09.00	1.4		75.73	316	eP	07 09.00	1.4
	1.0s	30.50nm			5.0mb	SVB	2.17	209	eP	38 51.89	0.3	GSC	76.21	318	eP	07 11.00	0.7		76.21	318	eP	07 11.00	0.7
NB2	40.14	327	P	08 46.00	1.2					39 15.20		MWC	76.32	316	eP	07 12.00	0.9		76.32	316	eP	07 12.00	0.9
	1.4s	32.00nm			4.9mb		S.D. = 0.3 on 6 of 6 obs.				SBB	76.46	317	eP	07 13.00	1.3		76.46	317	eP	07 13.00	1.3	
LRG	40.28	299	eP	08 44.40	-1.8	% MAR 25, 1990 00h	39m 25.04±0.89s					SCH	76.73	358	eP	07 12.00	-0.6		76.73	358	eP	07 12.00	-0.6
	1.0s	14.00nm			4.7mb	39.166 N ± 7.5km	29.354 E ± 9.1km					TNP	78.25	320	iP	07 23.00	1.5		78.25	320	iP	07 23.00	1.5
KMI	40.46	90	Pd	08 47.50	-0.7	DEPTH = 10.0km (geophysicist)							1.0s	21.25nm		4.5mb	KVN	79.41	320	iP	07 28.10	0.6	
Z	15s	0.60um			4.6mszX	TURKEY (366)							80.16	318	iP	07 32.00	0.7		80.16	318	iP	07 32.00	0.7
DOU	41.47	310	P	08 56.40	0.5	ALT	0.60	100	iPg	39 36.50	-0.7		80.89	328	eP	07 35.80	0.7		80.89	328	eP	07 35.80	0.7
LOR	41.91	305	eP	08 58.10	-1.4					39 44.70		ORV	81.78	319	eP	07 41.00	1.5		81.78	319	eP	07 41.00	1.5
	0.9s	7.35nm			4.4mb	DST	0.71	308	iPg	39 38.50	-0.6	FFC	83.34	339	iPd	07 47.30	0.4		83.34	339	iPd	07 47.30	0.4
SMF	41.93	304	eP	08 57.90	-1.8					39 46.50			1.1s	34.00nm		4.8mb	SES	83.51	332	eP	07 48.00	0.1	
	1.3s	41.50nm			5.0mb	KHL	0.85	171	ePg	39 42.00	0.5		85.72	358	eP	07 57.50	-0.8		85.72	358	eP	07 57.50	-0.8
SSF	42.15	305	eP	08 59.80	-1.7					39 53.40			86.82	327	ePc	08 04.00	0.0		86.82	327	ePc	08 04.00	0.0
	1.1s	14.65nm			4.6mb	GPA	1.34	33	ePn	39 50.00	0.2		0.7s	12.00nm		4.7mb	LFF	88.82	40	eP	08 13.50	0.2	
AVF	42.26	305	eP	09 01.20	-1.2	YLV	1.40	1	iPn	39 51.30	0.7		0.9s	14.75nm		4.9mb	LPO	88.94	40	eP	08 14.10	0.2	
	0.9s	9.85nm			4.5mb		S.D. = 0.9 on 5 of 5 obs.					89.22	38	eP	08 15.10	-0.1		88.94	40	eP	08 14.10	0.2	
BTO	42.30	65	eP	09 04.00	1.1		MAR 25, 1990 00h	56m 14.71±0.27s					89.52	37	eP	08 16.00	-0.5		89.52	37	eP	08 16.00	-0.5
	14s	0.90um						22.178 S ± 3.5km	63.619 W ± 4.3km				89.83	36	eP	08 17.20	-0.7		89.83	36	eP	08 17.20	-0.7
E	14s	1.00um						DEPTH = 524.0 ± 3.7 km					0.7s	12.15nm		4.9mb	LSF	89.99	39	eP	08 18.50	-0.3	
XAN	42.73	74	P	09 06.00	-0.4			SALTA PROVINCE, ARGENTINA (129)					90.24	36	eP	08 19.20	-0.6		89.99	39	eP	08 18.50	-0.3
				15 20.00		CCH	5.33	333	iP	57 47.00	-0.1		1.0s	18.00nm		5.0mb	FLN	90.24	36	eP	08 19.20	-0.6	
TCF	43.07	304	eP	09 07.50	-1.6					58 06.10	0.2		90.35	36	eP	08 19.70	-0.6		90.24	36	eP	08 19.20	-0.6
	1.1s	11.00nm			4.5mb	LPB	7.03	322	Pc	58 04.70	1.3		0.9s	16.40nm		5.0mb	LDF	90.35	36	eP	08 19.70	-0.6	
GYA	43.23	86	P	09 10.60	-0.1					58 06.10			0.9s	11.00nm		4.8mb		90.35	36	eP	08 19.70	-0.6	
	1.0s	25.00nm			4.9mb					58 06.10			1.1s	11.00nm		4.8mb	TCF	90.41	39	eP	08 20.40	-0.3	
CAF	43.26	302	eP	09 09.20	-1.5	ZOBO	7.26	323	iPc	58 06.10	0.2												



WRA	134.61	204	PKPd	14	35.20	-0.3	VNDA	45.52	186	e(S)	25	18.60	OHR	162.64	303	ePKP	30	41.00	-1.1
	0.8s		5.40nm							e(P)	19	01.20		163.28	331	ePKP	30	45.00	2.3
WB5	134.66	204	ePKP	14	35.90	0.4	KNA	50.53	277	eP	19	38.70	KBA	1.0s		4.50nm			
HYB	144.16	91	iPKPd	14	52.30	-0.4	COOL	50.69	255	eP	19	39.00							
	0.6s		56.70nm					0.4s		4.00nm									
NDI	144.16	71	iPKPd	14	52.00	-0.4	SPA	57.22	180	iPc	20	29.10	LJU	163.56	326	ePKP	30	41.50	-1.3
	0.8s		41.04nm					1.0s		45.00nm				S.D. = 1.2		on 59 of 96 obs.			
GKN	150.72	72	PKP	15	03.70	0.7		Z	20s	2.03um									
DMN	151.17	73	PKP	15	04.80	1.0				i	20	43.80							
KKN	151.31	72	PKP	15	04.70	0.7	GUMO	58.05	317	e	20	34.00							
PKI	151.44	73	PKP	15	04.50	0.2		Z	19s	0.71um									
GUN	151.83	72	PKP	15	05.70	0.8				eS	28	39.00							
	S.D. = 0.9		on 95 of 95 obs.				NANU	58.51	262	eP	20	36.00							
							PRS	87.16	43	eP	23	27.80							
							MWC	87.64	46	eP	23	31.00							
							MHC	87.72	42	eP	23	28.20							
							PLM	87.79	47	eP	23	31.00							
							RVR	87.90	47	eP	23	31.00							
							SBB	88.10	46	eP	23	32.00							
							FRI	88.57	43	eP	23	34.10							
							TPC	88.80	47	eP	23	35.00							
							GLA	88.86	49	eP	23	36.00							
							CMB	88.91	42	eP	23	35.70							
							GSC	89.13	46	eP	23	37.00							
							ORV	89.36	40	eP	23	37.10							
							WDC	89.54	39	eP	23	38.70							
							TNP	90.76	44	eP	23	44.00							
								1.0s		11.25nm									
							KVN	90.91	43	eP	23	44.40							
							LPB	97.31	115	P	24	27.00							
										eLR	56	42.00							
							ZOBO	97.45	115	eP	24	19.00							
								Z	24s	0.33um									
							INK	106.34	16	ePKP	29	06.00							
							YKA	107.91	26	ePKP	29	06.80							



25d 01h

MNS	45.79	296 P	40 40.00	0.4
CRE	46.01	298 P	40 46.00	4.6X
SFI	46.01	299 P	40 44.00	2.8
BDI	46.86	299 P	40 48.00	0.0
PII	46.99	299 P	40 46.00	-3.0
VAI	47.70	302 P	40 37.00	-17.5X
PGF	48.37	297 eP	40 59.10	-0.9
	0.7s	6.60nm		4.8mb
BSF	48.58	305 eP	41 00.80	-0.7
HAU	48.83	305 eP	41 02.70	-0.7
	0.9s	19.65nm		5.1mb
SBF	49.11	300 eP	41 05.20	-0.4
	1.0s	22.00nm		5.1mb
LPG	49.16	302 eP	41 05.80	-0.4
	0.9s	9.85nm		4.8mb
LPL	49.17	302 eP	41 05.90	-0.3
	0.9s	6.55nm		4.7mb
FRF	49.75	299 eP	41 09.70	-0.7
SMF	50.82	304 eP	41 17.40	-1.1
	0.8s	6.70nm		4.7mb
AVF	51.10	304 eP	41 19.50	-1.2
	1.1s	15.85nm		4.9mb
MAF	51.78	304 eP	41 25.20	-0.7
	1.0s	12.00nm		4.8mb
TCF	52.00	304 eP	41 26.80	-0.7
	1.1s	14.65nm		4.9mb
CAF	52.50	302 eP	41 30.70	-0.6
RJF	52.75	303 eP	41 32.50	-0.7
GRR	53.40	307 eP	41 36.30	-1.5
	0.9s	19.65nm		5.1mb
DAG	54.69	344 iPc	41 46.00	-1.0
	0.4s	15.25nm		5.4mb
TOL	58.52	298 ePKP	42 15.00	0.2
		ePKP	43 21.00	
BCAO	59.25	250 iPd	42 18.10	-2.0
	0.7s	7.00nm		4.9mb
MBC	66.75	3 ePc	43 08.70	-0.2
	0.7s	31.00nm		5.5mb
INK	73.15	10 eP	43 47.00	-1.0
FRB	75.02	343 eP	43 57.00	-1.8
YKA	80.66	4 eP	44 29.10	-0.8
	0.8s	8.20nm		4.8mb
WB5	80.97	123 eP	44 32.50	0.3
WRA	81.00	123 Pc	44 32.70	0.4
	0.7s	7.60nm		4.8mb
PMG	83.30	107 eP	44 45.00	0.6
ASPA	83.32	126 iPc	44 44.70	0.3
	0.9s	8.00nm		4.8mb
FFC	88.53	357 iPd	45 09.80	0.2
	0.9s	20.00nm		5.4mb
EDM	89.98	4 iPc	45 17.00	0.5
	0.7s	24.00nm		5.6mb
SES	92.90	3 eP	45 30.00	-0.1
PNT	93.34	8 ePc	45 32.00	-0.1

S.D. = 1.1 on 72 of 88 obs.

MAR 25, 1990 01h 57m 23.96±0.62s  
 36.185 N ± 7.1km 27.219 E ± 5.9km  
 DEPTH = 10.0km (geophysicist)  
 DODECANESE ISLANDS (369)

KAP	0.63	183 ePg	57 37.00	0.3
ARG	0.73	87 ePb	57 37.50	-0.9
SMG	1.55	349 ePb	57 51.50	-0.1
NPS	1.60	235 ePb	57 51.80	-0.5
APE	1.62	304 ePb	57 53.00	0.3
KSL	1.91	91 ePn	57 57.50	0.6
ELL	2.24	75 ePn	58 02.00	0.2
VAM	2.57	253 ePg	58 12.50	6.1X

S.D. = 0.6 on 7 of 8 obs.

\* MAR 25, 1990 02h 10m 03.36±0.76s  
 17.298 N ± 12.2km 94.390 W ± 8.3km  
 DEPTH = 33.0km (normal)  
 4.0mb (1 obs.)  
 CHIAPAS, MEXICO (61)

PSM	0.86	227 iPd	10 18.94	-0.2
SCX	1.77	108 eP	10 32.07	-0.1
		eS	10 55.88	
OXX	2.24	265 eP	10 40.13	1.1
		eS	11 08.96	
TPX	3.14	139 (P)	10 57.07	5.4X
		(S)	11 16.99	
PPM	4.39	294 (P)	11 37.12	27.1X
		eS	12 25.69	
III	4.95	283 eP	11 16.39	-1.3

CRX	5.44	293 (S)	13 00.69	
		(P)	11 00.00	-24.6X
		iS	11 30.50	
IIJ	5.62	296 eP	11 37.56	10.3X
ALO	20.61	331 eP	14 49.00	6.3X
YKA	47.31	347 eP	18 36.50	1.0
	0.7s	1.10nm		4.0mb
FRB	49.68	15 eP	18 53.00	-0.8
MBC	60.38	353 eP	20 11.50	0.2

S.D. = 1.1 on 7 of 12 obs.

& MAR 25, 1990 02h 20m 27.35s  
 60.863 N 152.763 W  
 DEPTH = 147.3km  
 SOUTHERN ALASKA (2)  
 <AGS-P>

RDT	0.34	149 iP	20 47.28	0.9
		eS	21 03.53	
CKL	0.39	32 eP	20 47.74	1.1
		eS	21 03.56	
SPU	0.47	47 iP	20 47.66	-0.9
CRP	0.50	36 iP	20 48.38	-0.5
		eS	21 03.88	
NKA	0.76	98 iP	20 51.12	1.0
NNL	1.10	138 iP	20 53.33	0.3
SUA	1.15	57 eP	20 52.96	-0.7
		eS	21 12.52	
SKT	1.27	27 iP	20 53.70	-1.0
		eS	21 14.60	
PDB	1.29	214 iP	20 53.94	-0.9
SLKM	1.30	105 iP	20 53.78	-1.2
		eS	21 14.18	
SVW	1.42	281 eP	20 54.32	-1.9
CNPM	1.54	150 eP	20 57.00	-0.5
		eS	21 18.98	
PWA	1.60	59 eP	20 56.89	-1.2
		eS	21 21.69	
PMS	1.60	75 iP	20 56.96	-1.3
		eS	21 20.61	
SEW	1.81	113 iP	20 59.20	-1.2
		eS	21 24.24	
PLRM	1.90	66 eP	20 59.30	-2.2
		eS	21 25.19	
CUT	1.95	36 eP	21 00.61	-1.5
		eS	21 26.39	
CDD	1.99	193 eP	21 01.72	-0.9
GHO	2.06	62 eP	21 01.66	-1.9
		eS	21 28.59	
SML	2.34	64 eP	21 04.76	-2.1
GLI	2.77	87 eP	21 09.35	-2.9
		eS	21 42.14	
VZW	3.03	84 eP	21 13.42	-2.2
		eS	21 49.97	
RND	3.14	34 eP	21 15.52	-1.6
KLU	3.37	76 iP	21 17.97	-2.1
		eS	21 58.11	
PAX	4.05	55 eP	21 27.42	-1.5
WRH	4.21	29 eP	21 28.16	-2.9
DDM	4.35	45 iP	21 32.67	-0.3
GLB	4.38	78 eP	21 31.48	-1.8
CCB	4.43	29 eP	21 31.26	-2.6
HDA	4.45	34 eP	21 32.01	-2.2
GLM	4.81	28 eP	21 36.72	-2.3
TGL	4.87	87 eP	21 38.67	-1.2

32 obs. associated

\* MAR 25, 1990 03h 14m 59.55±1.86s  
 8.821 S ± 15.4km 124.170 E ± 9.9km  
 DEPTH = 113.5 ± 21.9 km  
 4.5mb (4 obs.)  
 TIMOR (289)

KUG	1.45	203 iPc	15 39.60	13.2X
		eS	15 42.50	
		e	19 14.30	
WSI	3.91	257 ePd	15 59.50	0.8
		eS	16 43.00	
		e	18 53.00	
MTN	7.92	121 eP	16 54.00	0.4
		eS	18 17.00	
KNA	8.22	147 eP	16 56.90	-0.7
	0.2s	25.00nm		5.5mb X
		eS	18 22.00	
MBL	12.96	198 eP	17 59.30	-1.3
	0.3s	4.00nm		4.5mb
		eS	20 16.00	

WB5	14.77	139 eP	18 23.10	-0.9
		eS	20 58.90	
WRA	14.80	139 Pd	18 23.20	-1.2
	0.4s	10.30nm		4.4mb
NANU	15.99	210 eP	18 40.30	1.1
		eS	21 28.00	
ASPA	17.45	149 iPd	18 57.90	0.5
	0.6s	42.00nm		4.9mb
		eS	22 00.10	
OIS	18.93	130 ePd	19 16.80	2.4
	0.4s	8.00nm		4.4mb
		eS	22 37.00	
GUN	52.01	316 P	23 59.80	-0.2
PKI	52.12	315 P	24 00.30	-0.6
GKN	52.93	315 P	24 06.20	-0.3
YKA	111.89	25 ePKP	33 13.00	-9.3X
	0.5s	0.30nm		

S.D. = 1.3 on 12 of 14 obs.

MAR 25, 1990 03h 23m 24.92±0.40s  
 40.582 N ± 4.4km 20.615 E ± 3.6km  
 DEPTH = 10.0km (geophysicist)  
 GREECE-ALBANIA BORDER REGION (392)  
 ML 3.1 (THE).

KBN	0.16	74 iPg	23 27.70	-0.8
OHR	0.55	15 iPg	23 35.60	-0.4
		iSg	23 44.80	
		Lg	23 46.20	
FNA	0.61	71 ePg	23 36.30	-1.0
SRN	0.84	214 ePg	23 40.10	-1.1
KZN	0.92	107 ePg	23 41.50	-1.1
TIR	0.95	324 ePn	23 43.50	0.5
KEK	1.07	216 ePg	23 46.50	1.4
PHP	1.11	353 iPn	23 43.90	-1.9
LACI	1.26	327 ePn	23 50.00	1.8
LIT	1.51	108 ePb	23 52.00	-0.1
		eSb	24 15.00	
SKO	1.52	24 ePn	23 54.50	2.3
		iSg	24 15.50	
		Lg	24 21.40	
VAY	1.65	63 ePn	23 54.30	0.2
SDA	1.66	330 ePn	23 57.00	2.8X
THE	1.79	88 ePn	23 56.50	0.5
KNT	1.83	71 ePn	23 56.80	0.2
		eSn	24 20.00	
EVR	1.90	151 ePn	23 58.50	0.7
AGG	2.04	139 ePn	24 00.00	0.2
LCI	2.05	264 P	23 59.40	-0.4
PLG	2.17	95 ePn	24 02.00	0.4
NEO	2.38	122 ePn	24 05.00	0.4
BRT	2.61	278 P	24 12.40	4.5X
ORI	3.23	262 P	24 22.00	5.4X
MGR	3.89	265 P	24 24.90	-1.2
		eSn	25 37.00	
SGO	4.04	271 P	24 28.40	0.3
SDI	5.26	285 P	24 44.50	-1.0

S.D. = 1.1 on 22 of 25 obs.

MAR 25, 1990 03h 32m 48.10±0.72s  
 36.605 N ± 8.4km 28.788 E ± 6.6km  
 DEPTH = 10.0km (geophysicist)  
 DODECANESE ISLANDS (369)

ARG	0.66	234 ePg	33 00.00	-1.2
		eSg	33 11.00	
KSL	0.80	127 ePg	33 03.50	-0.2
ELL	0.91	81 iPn	33 04.70	-0.9
BCK	1.68	59 iPn	33 19.40	1.7
KAP	1.68	232 ePb	33 19.00	1.4
KHL	1.81	19 ePn	33 19.00	-0.7
SMG	1.91	306 ePb	33 21.50	0.6
		eSn	33 48.00	
Izm	2.16	326 ePn	33 24.00	-0.7

S.D. = 1.3 on 8 of 8 obs.

\* MAR 25, 1990 03h 37m 34.90±1.06s  
 2.374 S ± 11.1km 79.946 W ± 13.6km  
 DEPTH = 33.0km (normal)  
 4.1mb (3 obs.)  
 NEAR COAST OF ECUADOR (105)

VC1	2.31	42 eP	38 12.00	0.0
		eS	38 42.00	
GGP	2.57	32 iPd	38 16.40	0.7
		S	38 46.50	
OUR	2.61	33 iPd	38 16.30	0.3



eS 38 48.00  
 GECU 2.69 41 eP 38 16.70 -0.7  
 COTA 3.13 31 P 38 23.50 -0.1  
 eS 39 00.00  
 ZOBO 18.06 141 P 41 46.00 0.3  
 ALQ 44.68 329 eP 45 48.50 1.7  
 0.9s 2.73nm 4.1mb  
 PNT 61.82 332 eP 47 53.00 0.0  
 0.7s 4.00nm 4.7mb  
 YKA 69.81 344 eP 48 40.00 -3.9X  
 0.6s 0.40nm 3.7mb  
 INK 79.49 342 ePd 49 37.20 -2.2  
 S.D. = 1.2 on 9 of 10 obs.

MAR 25, 1990 03h 59m 33.80 ± 0.64s  
 37.167 N ± 6.2km 28.670 E ± 6.9km  
 DEPTH = 10.0km (geophysicist)  
 TURKEY (366)

ARG 1.04 205 ePb 59 52.70 -0.8  
 ELL 1.08 112 ePn 59 53.90 -0.2  
 KSL 1.28 145 ePb 59 56.50 -1.0  
 KHL 1.34 30 ePn 59 57.50 -1.0  
 SMG 1.56 291 ePb 00 01.50 0.0  
 BCK 1.56 79 iPn 00 02.40 0.7  
 IZM 1.66 318 ePn 00 02.40 -0.7  
 KAP 2.01 217 ePb 00 10.00 1.8  
 ALT 2.20 31 ePn 00 13.00 2.0  
 DST 2.44 359 iPn 00 13.50 -0.8  
 S.D. = 1.3 on 10 of 10 obs.

\* MAR 25, 1990 05h 10m 34.03 ± 0.95s  
 32.644 N ± 7.5km 30.450 E ± 17.0km  
 DEPTH = 33.0km (normal)  
 EASTERN MEDITERRANEAN SEA (371)  
 MD 3.4 (HLW). ML 3.9 (CSS).

HLW 2.88 164 ePn 11 19.50 0.9  
 eSn 11 51.00  
 KOT 2.95 156 ePn 11 20.00 0.4  
 eSn 11 51.50  
 CSS 3.33 45 eP 11 25.50 0.4  
 eSn 12 03.00  
 ELL 4.12 354 iPn 11 37.20 0.9  
 BCK 4.81 1 iPn 11 47.90 1.9  
 HOL 5.19 129 eP+ 11 51.90 0.5  
 BADA 5.68 135 eP 11 56.70 -1.6  
 KHL 5.72 353 ePn 11 58.00 -0.9  
 AYN 6.08 127 eP 12 03.50 -0.4  
 ALT 6.40 358 iPn 12 07.90 -0.7  
 DST 7.10 349 ePn 12 17.00 -1.3  
 S.D. = 1.2 on 11 of 11 obs.

\* MAR 25, 1990 05h 14m 44.70 ± 0.94s  
 60.359 N ± 9.4km 138.358 W ± 9.4km  
 DEPTH = 10.0km (geophysicist)  
 SOUTHERN YUKON TERRITORY, CANADA (18)

HYT 0.63 42 P 14 57.30 -0.1  
 BCPM 0.76 238 iP 14 59.30 -0.2  
 eS 15 08.93  
 HON 0.95 196 iP 15 03.02 0.3  
 eS 15 16.34  
 PCA 0.98 255 eP 15 03.02 -0.4  
 eS 15 15.91  
 KLU 3.86 290 eP 15 46.00 0.5  
 S.D. = 0.5 on 5 of 5 obs.

\* MAR 25, 1990 05h 51m 38.37 ± 1.05s  
 9.063 S ± 22.7km 116.848 E ± 15.1km  
 DEPTH = 33.0km (normal)  
 4.1mb (3 obs.)  
 SUMBAWA ISLAND REGION (285)

KHKI 1.41 299 iPc 52 03.10 1.2  
 iS 52 24.10  
 e 54 40.00  
 DNP 1.66 283 eP 52 04.00 -1.6  
 TRT 4.38 288 ePd 52 44.60 0.3  
 eS 53 07.80  
 MBL 12.37 167 eP 54 39.00 3.9X  
 eS 57 02.00  
 NANU 13.48 185 eP 54 53.30 3.5X  
 eS 57 22.00  
 MEKA 17.53 175 eP 55 42.70 0.7  
 0.3s 8.00nm 4.3mb  
 WB5 20.06 124 e(P) 56 11.20 -0.7

WRA 20.07 125 P 56 13.00 1.0  
 0.5s 1.10nm 3.4mb  
 ASPA 21.84 134 eP 56 29.10 -0.9  
 0.6s 6.00nm 4.2mb  
 S.D. = 1.3 on 7 of 9 obs.

MAR 25, 1990 06h 05m 33.42 ± 0.89s  
 40.645 N ± 6.4km 20.657 E ± 8.4km  
 DEPTH = 10.0km (geophysicist)  
 GREECE-ALBANIA BORDER REGION (392)  
 ML 2.7 (SKO).

OHR 0.48 13 iPg 05 43.50 0.3  
 iSg 05 52.50  
 FNA 0.56 76 eP 05 44.10 -0.8  
 KEK 1.14 216 ePb 05 54.20 -0.5  
 LIT 1.50 111 eP 06 00.50 0.1  
 EVR 1.94 152 ePn 06 07.40 0.5  
 AGG 2.07 141 eP 06 08.90 0.2  
 PLG 2.14 96 ePn 06 09.70 0.0  
 S.D. = 0.6 on 7 of 7 obs.

MAR 25, 1990 06h 22m 20.38 ± 1.59s  
 7.944 N ± 4.7km 127.329 E ± 7.3km  
 DEPTH = 53.1 ± 15.0 km  
 5.0mb (21 obs.) 4.3msz (6 obs.)  
 PHILIPPINE ISLANDS REGION (248)

CENTROID, MOMENT TENSOR (HRV)  
 Data Used: GDSN  
 L.P.B.: 12S, 27C  
 Centroid Location:  
 Origin Time 06:22:22.7 0.7  
 Lat 7.82N 0.08 Lon 127.16E 0.07  
 Dep 32.9 5.2 Half-duration 1.5  
 Moment Tensor: Scale 10\*\*16 Nm  
 Mrr=-5.84 0.35 Mtt=-0.67 0.47  
 Mff= 6.51 0.54 Mrt= 0.57 0.87  
 Mrf= 1.46 0.98 Mtf=-1.47 0.46  
 Principal Axes:  
 T Vol= 6.94 Plg= 6 Azm=259  
 N -0.82 9 350  
 P -6.11 79 136  
 Best Double Couple: Mo=6.5\*10\*\*16  
 NP1: Strike=339 Dip=40 Slip=-104  
 NP2: 177 52 -78

DAV 1.94 244 iPc+ 22 53.60 2.2  
 iS 23 25.20  
 QCP 9.04 318 eP 24 28.00 -3.1X  
 TSM 9.92 249 ePc 24 48.50 5.4X  
 BAG 10.69 323 eP 24 50.80 -3.0X  
 KKM 11.19 261 ePd 25 04.50 4.0X  
 PCI 11.54 221 e(P)d 25 07.50 2.5  
 AA1 11.59 176 eP 25 00.00 -5.7X  
 GUMO 18.11 70 eP 26 28.00 -1.9  
 QZH 18.85 335 eP 26 37.00 -1.9  
 Z 20s 1.30um  
 N 20s 1.30um

HKC 19.08 320 eP 26 40.00 -1.6  
 KHKI 19.97 216 eP 26 56.20 5.0X  
 e 28 21.00  
 GZH 20.18 320 Pc 26 52.50 -0.7  
 OIZ 20.24 305 eP 26 52.60 -1.3  
 E 18s 4.00um  
 MTN 21.00 170 eP 27 00.00 -1.7  
 KNA 23.58 177 eP 27 27.70 0.5  
 0.6s 69.00nm 5.3mb  
 SSE 23.74 347 Pc 27 30.50 1.9  
 1.0s 61.00nm 5.0mb  
 Z 20s 0.80um 4.2msz  
 NJ2 25.25 343 Pc 27 44.40 1.3  
 Z 16s 0.30um 3.9mszX  
 WHN 25.56 333 eP 27 47.00 1.0  
 Z 18s 0.70um 4.2msz  
 PMG 26.21 131 eP 27 52.00 -0.2  
 SNG 26.49 270 eP 28 03.90 9.1X  
 LOE 26.65 293 eP 27 55.00 -1.3  
 GYA 26.92 316 P 27 58.60 -0.1  
 N 16s 0.50um  
 E 16s 1.10um

NNT 27.53 282 eP 28 06.20 1.9  
 NST 27.68 289 eP 28 07.00 1.4  
 WB5 28.50 166 eP 28 11.70 -1.3  
 i 28 18.00  
 WRA 28.56 166 Pd 28 11.50 -2.0  
 0.6s 6.90nm 4.5mb  
 BDT 29.11 291 eP 28 16.00 -2.5X

CHG 29.60 294 eP 28 23.20 0.2  
 1.2s 19.92nm 4.7mb  
 TIA 29.64 343 eP 28 23.60 0.5  
 MBL 29.84 194 eP 28 22.50 -2.5X  
 QIS 30.79 157 iPc 28 32.50 -0.8  
 1.0s 198.00nm 5.8mb  
 XAN 31.02 329 eP 28 31.00 -4.4X  
 CD2 31.73 319 P 28 40.00 -1.6  
 Z 18s 0.90um 4.5msz  
 ASPA 32.07 169 iPd 28 42.50 -2.1  
 1.2s 19.00nm 4.8mb  
 Z 18s 0.47um 4.2msz  
 iPcP 31 33.50  
 iPcS 35 16.80  
 LR 44 55.80  
 NANU 32.45 201 eP 28 49.00 1.2  
 TIY 32.56 338 Pd 28 49.00 0.2  
 Z 16s 0.83um 4.5mszX  
 E 14s 0.55um  
 BJI 33.48 344 eP 28 58.00 1.4  
 1.0s 61.00nm 5.4mb  
 Z 12s 0.72um 4.6mszX  
 CTA 33.51 146 iPd 28 57.00 -0.1  
 1.2s 74.22nm 5.4mb  
 i 29 09.30  
 SNY 33.91 355 eP 29 00.90 0.6  
 LZH 35.27 326 eP 29 11.50 -0.8  
 1.0s 58.00nm 5.5mb  
 Z 20s 0.60um 4.3msz  
 N 10s 0.40um  
 E 10s 0.40um  
 pP 29 25.00 51kmX  
 MEKA 35.40 194 eP 29 15.40 2.1  
 0.6s 19.00nm 5.2mb  
 HHC 35.65 339 P 29 15.00 -0.4  
 BTO 35.99 337 eP 29 16.00 -2.3  
 N 15s 0.80um  
 E 15s 1.10um  
 MDJ 36.58 3 eP 29 24.00 1.0  
 MRWA 38.53 196 eP 29 39.30 -0.2  
 0.4s 7.00nm 4.9mb  
 COOL 39.06 188 eP 29 41.00 -3.0  
 BAL 39.66 194 eP 29 48.50 -0.5  
 0.5s 15.00nm 5.1mb  
 GTA 39.88 326 P 29 50.40 -0.5  
 KLB 40.36 193 eP 29 54.00 -0.7  
 MUN 41.09 194 iPc 30 00.90 0.2  
 NWA0 41.76 193 eP 30 02.50 -3.7X  
 BRS 42.91 146 eP 30 14.00 -1.7  
 e 30 22.00  
 i 31 45.00  
 RKG 42.91 193 iPd 30 22.00 6.4X  
 GUN 43.86 302 P 30 22.90 -1.0  
 ADE 44.01 167 eP 30 24.70 0.2  
 0.9s 36.97nm 5.1mb  
 PKI 44.15 302 P 30 25.10 -1.1  
 KKN 44.33 302 P 30 26.20 -1.3  
 DMN 44.42 302 P 30 27.50 -0.8  
 GKN 44.94 302 P 30 31.30 -1.0  
 BWA 46.63 156 eP 30 47.10 1.7  
 CAN 47.64 156 eP 30 54.50 1.1  
 CNB 47.79 156 eP 30 55.70 1.2  
 TOO 48.36 161 eP 31 00.00 1.1  
 e 31 14.00  
 HYB 48.39 286 eP 30 58.00 -1.4  
 KOD 49.25 277 eP 31 07.20 0.8  
 GBA 49.27 281 Pc 31 06.00 -0.1  
 0.8s 22.00nm 5.2mb  
 WMQ 49.69 323 iPd 31 10.50 1.4  
 Z 20s 0.60um 4.6msz  
 QUE 60.49 300 eP 32 27.80 0.0  
 MAIO 67.49 306 eP 33 13.00 -0.3  
 BRW 78.01 19 eP 34 16.20 1.8  
 IMA 78.32 24 eP 34 17.90 1.5  
 0.7s 3.60nm 4.5mb  
 PMR 79.99 29 eP 34 25.90 0.7  
 0.6s 4.60nm 4.6mb  
 FBA 80.68 26 eP 34 29.50 0.6  
 INK 86.05 22 eP 34 58.00 1.8  
 KEV 86.16 340 iP 35 05.60 8.8X  
 SOD 86.82 338 eP 35 09.00 9.0X  
 VNDA 87.50 173 P 35 04.10 1.0  
 MBC 87.74 13 eP 35 06.00 1.7  
 0.8s 11.00nm 5.1mb  
 SUF 88.09 333 eP 35 06.10 -0.1  
 0.4s 2.90nm 4.9mb  
 NUR 89.33 331 iP 35 13.10 1.0



25d 06h

DAG 93.20 353 eP 35 29.50 -0.2  
 HFS 94.58 333 ePKP 35 35.80 -0.6  
 0.5s 2.50nm 4.9mb  
 NB2 95.29 334 P 35 42.70 2.9X  
 0.8s 2.50nm 4.7mb  
 YKA 95.44 24 eP 35 41.30 1.0  
 0.8s 1.80nm 4.6mb  
 VAY 95.73 313 eP 35 41.00 -1.0  
 LPB 162.69 121 ePKP 42 38.00 19.3X  
 ZOBO 162.78 120 PKP 42 21.80 2.8X  
 1.0s 4.00nm

S.D. = 1.3 on 70 of 87 obs.

% MAR 25, 1990 06h 34m 18.21 ± 0.75s  
 39.717 N ± 7.5km 16.172 E ± 7.5km  
 DEPTH = 10.0km (geophysicist)

SOUTHERN ITALY (390)

CSI 0.11 57 P 34 21.60 0.5  
 TDS 0.14 114 Pc 34 20.70 -0.8  
 eSg 34 22.70  
 MMN 0.22 321 P 34 22.00 -1.0  
 ROI 0.34 115 P 34 25.50 0.3  
 CZI 0.50 183 P 34 28.50 0.2  
 MGR 0.63 312 P 34 31.80 0.9  
 S.D. = 1.0 on 6 of 6 obs.

MAR 25, 1990 06h 43m 38.17 ± 0.42s  
 7.913 N ± 6.7km 127.102 E ± 12.3km  
 DEPTH = 33.0km (normol)  
 4.6mb (6 obs.)

PHILIPPINE ISLANDS REGION (248)

MTN 21.01 169 eP 48 20.00 -1.4  
 KNA 23.57 176 eP 48 46.80 0.0  
 NJ2 25.21 343 Pd 49 04.50 2.0  
 LOE 26.46 293 eP 49 14.00 -0.3  
 WB5 28.53 166 eP 49 31.20 -1.8  
 WRA 28.58 166 Pc 49 29.30 -4.2X  
 0.6s 2.20nm 4.0mb  
 XAN 30.94 330 P 49 52.50 -1.9  
 ASPA 32.08 168 iPc 50 02.90 -1.6  
 0.9s 7.00nm 4.6mb  
 eSg 52 53.10  
 eS 56 35.70  
 TIY 32.51 338 eP 50 07.50 -0.7  
 BJI 33.45 345 eP 50 16.00 -0.2  
 1.0s 24.00nm 5.1mb  
 SNY 33.92 355 eP 50 20.60 0.3  
 LZH 35.18 326 eP 50 30.00 -1.4  
 1.0s 16.00nm 4.9mb  
 MEKA 35.31 193 eP 50 35.00 2.6  
 MRWA 38.43 196 eP 50 59.40 0.7  
 BAL 39.58 194 eP 51 08.50 0.3  
 GTA 39.78 326 iPc 51 10.00 0.1  
 KLB 40.28 192 eP 51 14.00 0.0  
 GUN 43.69 302 P 51 42.60 0.2  
 PKI 43.98 302 P 51 44.40 -0.3  
 KKN 44.16 302 P 51 46.00 0.0  
 DMN 44.25 302 P 51 46.70 -0.1  
 GKN 44.76 302 P 51 50.60 -0.2  
 BWA 46.69 156 eP 52 06.70 0.9  
 CAN 47.71 156 eP 52 13.50 -0.3  
 HYB 48.18 286 eP 52 18.00 0.2  
 GBA 49.05 281 Pd 52 24.20 -0.3  
 0.6s 5.90nm 4.8mb  
 WMO 49.58 323 P 52 29.00 0.7  
 INK 86.16 22 eP 56 17.00 0.0  
 VNDA 87.50 173 P 56 23.80 0.5  
 MBC 87.82 13 eP 56 27.00 2.1  
 YKA 95.56 24 eP 56 59.40 -1.7  
 0.7s 0.50nm 4.1mb  
 ZOBO 162.96 121 PKP 03 41.30 1.7  
 Z 24s 0.11um  
 LR 37 46.00  
 S.D. = 1.2 on 31 of 32 obs.

\* MAR 25, 1990 07h 24m 04.13 ± 0.79s  
 21.002 N ± 9.7km 122.128 E ± 18.4km  
 DEPTH = 10.0km (geophysicist)  
 4.5mb (1 obs.)

TAIWAN REGION (243)

TWG 2.06 332 ePd 24 39.20 0.0  
 TWF1 2.46 342 eP 24 44.80 -0.2  
 eS 25 04.90  
 PIP 3.02 208 iPd 24 42.50 -10.3X

CVP 3.29 185 eP 25 15.00 1.2  
 eS 25 34.00  
 XAN 17.47 321 eP 28 10.10 0.6  
 TIY 18.65 335 eP 28 25.00 0.8  
 CD2 19.22 305 P 28 30.00 -1.1  
 BJI 19.65 346 eP 28 37.00 1.0  
 LZH 21.94 317 eP 28 57.50 -2.3  
 Z 16s 0.40um 3.9MszX  
 pP 29 08.00 40kmX  
 BTO 22.09 335 eP 29 03.00 1.8  
 CTA 47.17 148 iPc 32 38.00 -0.8  
 INK 75.84 22 eP 35 51.00 -0.9  
 YKA 85.55 23 eP 36 43.30 -0.2  
 0.7s 2.30nm 4.5mb  
 S.D. = 1.3 on 12 of 13 obs.

& MAR 25, 1990 07h 31m 57.70s  
 38.800 N 122.790 W  
 DEPTH = 3.0km  
 NORTHERN CALIFORNIA (36)  
 <BRK>. ML 3.1 (BRK).

BRK 1.01 156 eP 32 16.70 -0.8  
 eS 32 31.70  
 ORV 1.25 53 eP 32 19.70 -2.0  
 e 32 28.10  
 MHC 1.71 148 eP 32 27.30 -1.5  
 WDC 1.79 6 eP 32 30.70 1.0  
 MIN 1.79 30 eP 32 28.50 -1.4  
 CMB 2.04 111 eP 32 32.20 -1.2  
 iS 32 59.20  
 6 obs. associated

MAR 25, 1990 07h 54m 50.00 ± 0.73s  
 38.918 N ± 7.2km 21.919 E ± 6.2km  
 DEPTH = 5.0km (geophysicist)  
 GREECE (364)  
 ML 2.7 (THE). MD 2.9 (ATH).

EVR 0.09 269 ePg 54 50.60 -1.5  
 AGG 0.34 72 ePg 54 56.20 -0.6  
 eSg 55 02.90  
 LIT 1.26 20 ePb 55 14.50 0.6  
 eSb 55 31.60  
 VLS 1.28 235 ePg 55 14.00 -0.2  
 IGT 1.38 297 ePb 55 14.60 -1.2  
 KZN 1.39 355 ePb 55 15.30 -0.8  
 eSb 55 35.70  
 PAIG 1.70 53 ePn 55 18.90 -1.5  
 eSn 55 40.70  
 ITM 1.74 180 ePg 55 22.10 1.1  
 KEK 1.83 296 ePb 55 23.70 1.4  
 PLG 1.87 39 ePb 55 23.00 0.0  
 FNA 1.91 348 ePn 55 22.90 -0.7  
 Sn 55 48.50  
 OHR 2.35 339 ePn 55 31.80 1.8  
 VAY 2.45 12 ePn 55 32.70 1.4  
 S.D. = 1.3 on 13 of 13 obs.

% MAR 25, 1990 08h 15m 04.72 ± 0.92s  
 39.122 N ± 7.5km 27.611 E ± 9.5km  
 DEPTH = 10.0km (geophysicist)

TURKEY (366)

IZM 0.77 201 ePg 15 20.00 0.2  
 eSg 15 32.00  
 DST 0.92 58 ePn 15 22.00 -0.4  
 EZN 1.22 306 ePn 15 27.00 -0.4  
 EDC 1.24 9 ePn 15 27.50 -0.2  
 BNT 1.26 11 iPn 15 28.90 0.8  
 S.D. = 0.7 on 5 of 5 obs.

? MAR 25, 1990 08h 49m 12.74 ± 1.00s  
 39.136 N ± 8.7km 27.594 E ± 16.2km  
 DEPTH = 10.0km (geophysicist)

TURKEY (366)

IZM 0.78 199 ePg 49 28.00 0.0  
 eSg 49 40.00  
 DST 0.93 59 ePn 49 30.50 0.0  
 EDC 1.23 10 ePn 49 35.50 0.0  
 BNT 1.24 12 iPn 49 35.90 0.1  
 S.D. = 0.1 on 4 of 4 obs.

% MAR 25, 1990 09h 02m 01.77 ± 2.53s  
 41.538 N ± 24.1km 14.814 E ± 25.6km

DEPTH = 10.0km (geophysicist)  
 SOUTHERN ITALY (390)

DUI 0.29 295 P 02 07.70 -0.3  
 eSg 02 12.60  
 BSS 0.75 180 P 02 16.10 -0.3  
 eSg 02 29.80  
 SDI 0.77 283 Pc 02 17.00 0.2  
 eSg 02 26.50  
 SGO 1.05 159 P 02 22.50 1.0  
 eSg 02 37.50  
 AZI 1.13 294 P 02 23.00 0.2  
 eSg 02 38.50  
 MGR 1.51 158 P 02 28.00 -0.8  
 eSg 02 47.50  
 S.D. = 0.8 on 6 of 6 obs.

MAR 25, 1990 09h 32m 57.11 ± 0.41s  
 13.139 N ± 6.3km 70.085 W ± 5.0km  
 DEPTH = 10.0km (geophysicist)  
 4.9mb (7 obs.) 4.5Msz (1 obs.)  
 CARIBBEAN SEA (94)

PORP 5.91 34 P 34 27.70 0.9  
 LRS 6.00 31 P 34 28.80 0.7  
 SJG 6.23 37 iP 34 31.80 0.4  
 CPD 6.31 39 P 34 32.80 0.2  
 LPR 6.55 38 P 34 36.80 0.9  
 MGH 8.40 64 eP 35 00.00 -1.8  
 TCE 8.51 106 eP 35 11.36 8.0X  
 SVB 8.60 88 eP 35 03.96 -0.7  
 PAG 8.63 70 eP 35 04.00 -1.1  
 S 36 40.00  
 eTT 42 20.00  
 BBL 8.67 73 eP 35 09.00 3.4X  
 eTT 43 26.00  
 SLB 8.82 85 eP 35 05.47 -2.3  
 eS 35 24.50  
 TRN 8.85 105 eP 35 10.19 2.2  
 TPP 8.91 107 eP 35 12.12 3.3X  
 TBH 9.21 106 eP 35 13.97 0.9  
 UPA 10.15 247 eP 35 27.20 1.2  
 PRM 23.65 334 eP 38 13.00 3.6X  
 NNA 25.85 195 eP 38 29.50 -1.2  
 0.8s 7.46nm 4.4mb  
 ZOBO 29.28 176 P 38 59.00 -3.6X  
 Z 18s 1.01um 4.5Msz  
 S 44 28.00  
 LR 47 04.00  
 LPB 29.55 176 eP 39 04.00 -0.8  
 CCH 30.57 173 P 39 09.90 -3.9X  
 FVM 30.66 327 eP 39 14.00 0.0  
 ALO 39.36 310 eP 40 28.50 -0.3  
 1.0s 3.75nm 4.0mb  
 ANMO 39.36 310 eP 40 32.00 3.2X  
 SCH 41.66 3 eP 40 50.00 2.8X  
 FFC 48.41 336 iPd 41 41.10 -0.1  
 1.0s 15.00nm 5.0mb  
 KVN 49.52 310 eP 41 50.00 -0.3  
 SES 49.88 327 eP 41 53.00 0.3  
 FRB 50.55 1 eP 41 58.50 1.1  
 EDM 52.63 329 eP 42 12.50 -0.9  
 YKA 58.50 338 eP 42 53.90 -1.7  
 0.8s 3.10nm 4.4mb  
 LKO 63.20 86 Pc 43 29.16 0.8  
 0.8s 17.50nm 5.3mb  
 TIC 64.28 89 P 43 35.32 -0.2  
 LIC 64.36 89 P 43 36.02 0.1  
 KIC 64.61 89 Pc 43 37.78 0.2  
 0.7s 12.00nm 5.2mb  
 INK 68.18 339 eP 43 59.00 -0.4  
 MBC 68.20 349 eP 43 59.00 -0.4  
 MLR 84.92 45 eP 45 40.00 6.1X  
 BAO 87.67 86 iPc 45 49.50 1.7  
 0.6s 12.00nm 5.4mb  
 WRA 155.65 251 PKP 52 54.00 0.8  
 0.5s 0.30nm  
 S.D. = 1.1 on 30 of 39 obs.

? MAR 25, 1990 10h 11m 13.82 ± 0.94s  
 39.080 N ± 8.0km 27.566 E ± 9.7km  
 DEPTH = 10.0km (geophysicist)

TURKEY (366)

IZM 0.72 199 ePg 11 28.00 0.0  
 eSg 11 40.00  
 DST 0.98 57 iPn 11 32.50 0.1



EZN 1.22 308 ePn 11 36.50 0.1  
BNT 1.30 12 iPn 11 37.80 -0.1  
S.D. = 0.2 on 4 of 4 obs.

% MAR 25, 1990 10h 17m 54.40 ± 0.99s  
41.162 N ± 9.5km 28.992 E ± 6.4km  
DEPTH = 10.0km (geophysicist)

TURKEY (366)

ISK 0.11 152 ePg 17 57.20 0.0  
CTI 0.42 268 iPg 18 02.20 -0.9  
HRT 0.61 123 ePg 18 06.50 -0.3  
YLV 0.66 154 iPg 18 07.80 0.2  
DMK 1.14 306 iPn 18 16.20 0.5  
BNT 1.15 226 iPn 18 16.30 0.5  
EDC 1.18 227 ePn 18 16.50 0.0  
S.D. = 0.6 on 7 of 7 obs.

\* MAR 25, 1990 10h 22m 29.08 ± 0.89s  
35.763 N ± 9.4km 118.265 W ± 9.4km  
DEPTH = 5.0km (geophysicist)  
CENTRAL CALIFORNIA (39)  
ML 3.4 (BRK).

FRI 1.69 317 eP 22 58.30 -1.1  
eS 23 21.00  
PRI 1.98 282 eP 23 04.10 0.3  
TNP 2.46 20 eP 23 10.50 -0.2  
PRS 2.58 284 eP 23 11.60 -0.6  
PLM 2.67 154 eP 23 13.70 0.0  
SAO 2.76 292 eP 23 14.90 0.1  
CMB 2.83 324 eP 23 17.20 1.3  
eS 23 54.80  
KVN 3.28 2 eP 23 25.50 3.1X  
S.D. = 0.9 on 7 of 8 obs.

MAR 25, 1990 10h 42m 40.23 ± 0.71s  
36.711 N ± 6.8km 21.257 E ± 3.7km  
DEPTH = 49.3 ± 8.7 km  
3.8mb (3 obs.)  
SOUTHERN GREECE (368)  
MD 3.8 (ATH).

ITM 0.71 49 iPnd 42 53.20 -1.0  
VLI 1.35 89 ePn 43 03.50 0.5  
VLS 1.56 340 ePn 43 06.50 0.6  
EVR 2.24 11 ePb 43 18.00 2.3  
ATH 2.33 57 ePn 43 16.50 -0.3  
AGG 2.46 20 ePd 43 20.00 1.3  
VAM 2.72 118 ePn 43 21.00 -0.5  
NEO 3.02 30 ePn 43 26.50 -0.2  
KEK 3.21 339 ePn 43 29.50 0.1  
SRN 3.31 343 ePn 43 31.40 0.5  
LIT 3.52 16 ePc 43 33.50 -0.3  
KZN 3.61 6 ePn 43 35.70 0.5  
TPE 3.71 345 ePn 43 38.10 1.6  
PAIG 3.73 30 eP 43 36.50 -0.3  
NPS 3.82 111 ePb 43 43.50 5.5X  
KBN 3.92 355 iPnd 43 41.00 1.6  
PLG 4.04 24 ePn 43 40.00 -1.1  
FNA 4.07 1 eP 43 41.50 -0.1  
THE 4.14 18 eP 43 41.10 -1.3  
GRI 4.37 300 P 43 46.20 0.4  
OHR 4.41 355 iPn 43 46.00 -0.3  
LCI 4.45 325 P 43 45.30 -1.5  
KNT 4.62 16 ePd 43 49.70 0.4  
VAY 4.67 309 P 43 51.80 1.8  
TIR 4.72 12 ePn 43 50.20 -0.4  
CZI 4.75 347 ePn 43 51.20 0.1  
SRS 4.76 22 ePc 43 50.50 -0.8  
ATN 4.83 289 P 43 52.40 0.1  
TDS 4.87 309 P 43 53.30 0.5  
CSI 4.97 310 P 43 51.70 -2.5  
PHP 5.01 353 ePn 43 55.10 0.3  
ORI 5.05 613 P 43 55.20 -0.2  
IZM 5.06 69 eP 43 57.00 1.4  
LACI 5.06 347 ePn 43 54.50 -1.0  
MEU 5.09 276 P 43 56.20 0.2  
PZI 5.10 275 P 43 54.95 -1.1  
MRN 5.22 309 P 43 58.30 0.6  
BRT 5.23 324 P 43 57.30 -0.6  
SKO 5.26 1 ePn 43 57.00 -1.3  
MNO 5.37 285 P 44 03.80 3.7X  
SDA 5.47 346 ePn 44 00.00 -1.2  
MGR 5.63 309 P 44 02.90 -0.7  
SGO 6.04 311 P 44 10.50 1.3

BSS 6.48 311 P 44 17.20 1.8  
SDI 7.63 313 P 44 34.00 2.5  
AZI 8.03 313 P 44 35.00 -1.9  
MNS 8.71 313 P 44 46.00 -0.5  
ARV 9.30 319 P 44 53.30 -1.2  
MLR 9.46 20 eP 44 57.00 0.3  
RBL 11.29 332 P 45 20.00 -1.7  
CTI 11.78 325 P 45 25.50 -2.8X  
NUR 23.92 4 iP 47 49.70 -0.4  
HFS 23.94 351 eP 47 49.60 -0.8  
0.6s 2.80nm 4.0mb  
NB2 25.17 348 P 48 03.90 1.6  
0.7s 2.20nm 3.8mb  
SUF 26.21 5 eP 48 11.60 -0.2  
YKA 74.97 340 eP 54 18.20 0.6  
0.6s 0.30nm 3.4mb  
S.D. = 1.1 on 54 of 57 obs.

% MAR 25, 1990 10h 54m 30.97 ± 2.57s  
39.285 N ± 21.2km 28.251 E ± 9.6km  
DEPTH = 10.0km (geophysicist)  
TURKEY (366)

DST 0.43 42 iPg 54 39.50 -0.3  
eSg 54 49.50  
BNT 1.10 347 iPn 54 51.80 0.2  
EDC 1.10 344 iPn 54 51.50 -0.1  
YLV 1.54 34 ePn 54 59.00 0.4  
EZN 1.58 291 ePn 54 59.00 -0.1  
HRT 1.88 35 ePn 55 07.00 3.5X  
S.D. = 0.4 on 5 of 6 obs.

% MAR 25, 1990 11h 10m 31.81 ± 0.85s  
41.494 N ± 10.0km 14.507 E ± 14.5km  
DEPTH = 10.0km (geophysicist)  
SOUTHERN ITALY (390)

DUI 0.17 348 P 10 36.00 0.3  
SDI 0.56 292 P 10 43.00 -0.2  
BSS 0.74 162 P 10 47.20 0.9  
eSg 11 01.80  
SGO 1.11 147 P 10 52.50 -0.2  
eSg 11 08.50  
MGR 1.57 149 P 10 59.00 -0.8  
S.D. = 0.9 on 5 of 5 obs.

\* MAR 25, 1990 12h 02m 17.73 ± 1.43s  
28.846 N ± 19.8km 33.160 E ± 7.7km  
DEPTH = 10.0km (geophysicist)  
ARAB REPUBLIC OF EGYPT (553)  
MD 3.8 (HLW).

KOT 1.59 313 ePb 02 45.50 -0.4  
eS 03 37.60  
BADA 1.65 101 iP+ 02 47.00 0.2  
HOL 1.71 75 eP 02 47.00 -0.7  
MBH 1.76 58 iP 02 49.00 0.6  
HLW 1.88 303 ePn 02 50.50 0.3  
eSn 03 16.00  
PRNI 2.19 47 iP 02 54.70 0.0  
S.D. = 0.6 on 6 of 6 obs.

\* MAR 25, 1990 12h 21m 03.98 ± 0.92s  
14.992 S ± 16.7km 70.575 W ± 12.9km  
DEPTH = 215.4 ± 11.1 km  
4.6mb (8 obs.)

PERU (116)

ZOBO 2.68 119 iPd 21 52.80 0.9  
LPB 2.83 123 P 21 55.00 1.6  
S 22 32.00  
CCH 4.88 120 iPd 22 18.70 0.6  
NNA 6.79 295 iPc 22 41.00 -1.4  
eS 23 48.00  
ANT 8.67 179 iPd 23 04.50 -2.3  
OLY 53.98 339 iP 30 06.00 -1.9  
FVM 55.89 341 iP 30 20.00 -1.6  
1.0s 30.00nm 4.9mb  
ALQ 60.22 326 eP 30 50.50 -1.4  
0.9s 6.30nm 4.3mb  
GOL 63.34 330 iP 31 13.00 0.4  
0.8s 8.33nm 4.6mb  
LIC 68.28 77 P 31 42.20 -1.9  
0.5s 5.00nm 4.5mb  
TIC 68.43 77 P 31 43.90 -1.1  
TNP 68.55 322 iP 31 47.00 1.4  
1.0s 7.00nm 4.3mb

KIC 68.60 77 P 31 44.40 -1.6  
0.5s 12.50nm 4.9mb  
LKO 68.86 73 P 31 45.86 -1.8  
KVN 69.71 322 iP 31 53.10 0.5  
ORV 72.07 321 iP 32 08.20 1.8  
SES 74.15 334 iPc 32 19.20 0.8  
PNT 77.28 330 eP 32 37.00 1.1  
0.5s 7.00nm 4.6mb  
FRB 78.50 1 eP 32 34.00 -8.1X  
YKA 84.55 341 eP 33 13.30 -0.3  
0.8s 8.10nm 4.5mb  
INK 94.31 341 ePc 34 00.30 0.8  
MBC 95.58 350 eP 34 07.00 1.9  
WRA 137.51 216 PKPd 40 05.40 0.8  
0.5s 1.00nm  
WB5 137.54 216 ePKP 40 05.80 1.1  
MAT 146.56 315 iPKPc 40 22.60 2.7X  
0.8s 26.12nm  
GBA 148.98 88 PKPd 40 25.80 1.5  
0.6s 4.20nm  
S.D. = 1.5 on 24 of 26 obs.

\* MAR 25, 1990 12h 34m 41.98 ± 1.00s  
44.033 N ± 19.1km 149.555 E ± 12.7km  
DEPTH = 33.0km (normal)  
3.7mb (2 obs.)  
KURIL ISLANDS (221)

KUSJ 3.64 257 P 35 36.60 -0.8  
S 36 15.20  
HOOJ 4.87 252 P 35 56.00 1.2  
S 36 48.50  
ASAJ 4.98 273 eP 35 57.50 1.1  
MRRJ 6.40 258 eP 36 15.40 -1.0  
eS 37 25.10  
MAT 11.44 233 eP 37 25.00 -1.1  
INK 45.28 31 eP 42 58.00 0.3  
YKA 54.59 35 eP 44 08.10 -0.9  
0.9s 0.50nm 3.5mb  
WRA 65.17 196 Pd 45 23.00 1.1  
0.4s 0.40nm 3.9mb  
S.D. = 1.2 on 8 of 8 obs.

MAR 25, 1990 13h 16m 06.92 ± 0.13s  
9.814 N ± 2.8km 84.828 W ± 2.2km  
DEPTH = 26.6km (geophysicist)  
5.8mb (76 obs.) 6.4Msz (2 obs.)  
COSTA RICA (78)

Felt (V) at San Jose. Felt throughout Costa Rica, in western Ponomo and in the San Marcos area, Nicaragua. Depth from broadband displacement seismograms.  
FAULT PLANE SOLUTION: P-Waves  
NP1: Strike=98 Dip=70 Slip=90  
NP2: 278 20 90  
Principal Axes:  
T P1g=65 Azm=8  
P 25 188

Comment: The focal mechanism is poorly controlled and corresponds to reverse faulting. The preferred fault plane is NP2.

RADIATED ENERGY  
No. of sto: 4 Focal mech. F  
Energy 1.3 ± 0.6 × 10<sup>13</sup> Nm

EPA 0.29 53 P 16 16.10 2.2  
CAO 0.29 248 iP 16 11.00 -3.0  
PTCR 0.40 93 iP 16 17.70 2.0  
JTS 0.49 345 P 16 18.70 1.7  
AR6 0.63 353 iPd 16 21.90 2.6X  
POA2 0.67 58 P 16 23.20 2.9X  
HDC2 0.72 73 iPd 16 23.60 2.7X  
SJS 0.77 81 iPc 16 23.60 1.8  
JUD 0.79 296 P 16 21.30 -0.7  
OPS 0.80 121 P 16 21.40 -0.7  
LCR2 0.82 95 iPd 16 21.80 -0.7  
OCM 0.86 85 iPd 16 24.40 1.1  
IRZ2 0.93 80 P 16 26.20 1.7  
CDM 1.08 104 P 16 27.40 0.7  
BUS 1.09 104 iPc 16 27.50 0.7  
RIN3 1.11 331 P 16 28.50 1.6  
VCR 1.23 75 iP 16 21.80 -6.7X  
LIO 1.78 84 iPc 16 38.70 2.4



25d 13h

ACR	2.00	125	ePd	16	38.10	-1.5	ANMO	31.88	325	iPc	22	32.40	-0.1			ePcP	25	51.00		
CTCR	2.24	114	P	16	43.30	0.2		1.0s	99.25nm				5.7mb			eS	30	29.00		
PBC	2.25	128	P	16	41.80	-1.3			e	22	34.06			GCC	43.11	315	eP	24	07.60	0.9
SMCN	2.48	327	P	17	44.00	57.6X			epPd	22	40.51	28kmX		PCC	43.61	315	eP	24	11.60	0.9
			S	18	01.00				ePP	23	47.28			BRK	43.71	316	eP	24	12.70	1.1
UPA	5.29	99	iP	17	25.30	-1.0			eS	27	46.62					ePcP	25	55.80		
OZA	5.50	312	eP	17	30.50	1.2	LVNJ	32.13	14	P	22	35.20	0.8	RTLL	43.81	160	ePd	24	12.40	-0.1
SJAS	5.72	312	eP	17	38.00	5.5X	GMTN	32.35	15	iP	22	37.40	1.2	ORV	44.07	318	eP	24	15.20	0.7
LFU	5.74	313	eP	17	37.20	4.5X			pP	22	46.60	32kmX		CFA	44.14	160	iPd	24	15.50	0.3
SSS	5.75	312	eP	17	35.70	2.8X	PNJ	32.38	15	eP	22	37.40	0.9	BAO	44.39	124	eP	24	17.50	0.0
VSS	5.82	313	eP	17	37.50	3.5X	PNJ	32.38	15	iP	22	37.80	1.3	BDF	44.47	124	iPc	24	17.66	-0.5
TME	6.09	314	eP	17	39.00	1.4			pP	22	47.40	33kmX				e	24	19.32		
YPE	6.39	313	eP	17	47.50	5.5X			(PP)	23	50.40					iS	30	51.29		
CUSS	6.46	310	eP	17	51.80	9.0X	TBR	32.58	15	P	22	38.70	0.4			e	32	56.27		
TPX	8.85	306	iP	19	02.95	46.8X	CCH	32.73	146	P	22	38.40	-1.8			eSS	34	04.56		
ANCC	10.08	128	ePc	18	32.85	-0.3	DLA	33.04	4	P	22	41.18	-1.0	MIN	44.56	319	eP	24	17.90	-0.7
HOOC	10.29	127	ePc	18	35.15	-1.2	LDN	33.25	5	P	22	42.90	-1.2			ePcP	26	01.70		
SALC	10.56	130	ePc	18	39.13	-0.7	ELF	33.39	5	P	22	44.00	-1.3	FCH	45.08	163	eP	24	23.70	0.6
DIAC	10.74	127	ePc	18	43.03	0.6	HRV	34.58	17	iPc	22	56.27	0.7	SAN	45.09	163	eP	24	23.50	0.7
CUMC	11.19	141	ePd	18	48.56	-0.3			e	22	58.09		TACH	45.20	164	eP	24	17.50	-6.1X	
PURC	11.23	131	ePc	18	49.29	-0.1			epPd	23	04.21	27kmX		WDC	45.29	319	eP	24	21.20	-3.0X
FUO	11.81	111	iP	19	01.00	4.0X			i	24	19.31				ePcP	26	03.90			
BOG	11.85	115	iPd	19	00.00	2.3	GLD	34.91	332	P	22	58.30	-0.4	ITB1	45.33	140	eP	24	23.30	-1.4
PSM	12.07	306	iP	19	08.33	8.0X		1.0s	225.00nm			6.1mb		LVN	45.36	164	eP	24	21.50	-3.3X
OXX	13.63	303	iP	19	29.33	8.1X	GOL	34.94	332	ePd	22	57.80	-1.2	ITB	45.55	140	Pc	24	24.80	-1.7
TOV	14.82	89	eP	19	37.20	0.6	WNY	35.74	14	P	23	05.10	-0.4	ITB7	45.81	140	e(P)	24	25.00	-3.5X
FISA	15.30	83	iP	19	43.00	0.0	HBVT	35.90	14	P	23	07.00	0.2	SES	45.89	337	ePc	24	28.00	-0.9
PPM	16.21	306	iP	19	57.08	1.9	PV09	35.93	327	eP	23	06.40	-1.1		1.5s	128.00nm			5.6mb	
ACX	16.21	297	iP	20	05.47	10.8X	GLA	36.03	314	eP	23	09.00	0.9	FHC	46.34	319	eP	24	33.00	0.4
MORO	16.28	85	eP	19	55.00	-0.6	ANT	36.17	157	e(P)	23	10.00	0.7	FFC	46.83	346	eP	24	34.00	-2.2
CEOS	16.29	91	eP	19	54.70	-1.0	BAR	37.15	313	eP	23	19.00	1.5		1.0s	37.00nm			5.3mb	
III	16.54	303	iP	20	03.09	4.0X			e	25	48.00		VGB	47.05	326	P	24	38.00	-0.2	
UNM	16.80	306	iP	20	09.00	6.7X	TPC	37.45	315	eP	23	21.00	0.9	SCH	47.12	14	ePc	24	36.10	-2.5X
PLAV	17.07	88	eP	20	05.40	-0.3	PFO	37.47	314	eP	23	22.07	1.7		0.9s	168.00nm			6.1mb	
IIC	17.09	307	iP	20	12.05	6.0X			eS	29	16.88		LON	48.37	326	P	24	47.70	-0.8	
CRX	17.23	305	iP	20	12.64	4.8X	PLM	37.63	313	eP	23	23.00	1.3	PNT	48.87	330	iPc	24	51.70	-0.6
GUAC	17.30	87	eP	20	09.00	0.5			e	25	10.00			1.3s	169.00nm			5.9mb		
IIJ	17.45	306	iP	20	14.07	3.3X	MSU	37.65	324	P	23	22.30	0.4	EDM	49.00	338	iPc	24	51.00	-2.3
CAR	17.63	86	eP	20	13.00	0.4	MIM	37.83	18	P	23	23.00	0.0	GMW	49.38	327	P	24	54.00	-2.3
LLAV	17.75	86	iP	20	13.00	-1.1	EMM	37.88	20	P	23	24.50	1.1	PGC	50.40	328	eP	25	03.00	-0.9
OLLA	17.76	88	eP	20	13.00	-1.2	PEC	38.12	314	eP	23	27.00	1.3	YKA	56.83	344	eP	25	48.20	-3.0X
MRX	18.61	304	iP	20	30.69	6.1X			e	23	37.10			1.3s	18.40nm			5.0mb		
GUAN	18.90	88	iP	20	26.20	-2.0	RVR	38.33	314	eP	23	28.00	0.6	RKT	58.98	236	iP	26	07.40	0.5
LRS	19.36	62	P	20	33.00	-0.7	OAU	38.44	327	P	23	28.30	-0.3		1.0s	35.00nm			5.4mb	
PORP	19.45	63	P	20	34.00	-0.7	VPD	38.51	313	iPd	23	31.30	2.4X	GDH	62.72	12	iPd	26	28.30	-3.3X
SJG	19.90	63	eP	20	40.00	0.5	GSC	38.63	316	eP	23	33.00	3.0X		1.5s	177.78nm			6.0mb	
CPD	20.08	64	P	20	41.00	-0.4			e	25	43.00				e	30	32.00			
AGX	20.62	308	iP	20	50.15	3.2X	MWC	38.93	314	eP	23	34.00	1.3	CHIE	65.06	64	iPd	26	48.00	0.4
SKI	22.72	68	eP	21	15.15	7.0X	PAS	38.97	314	iPc	23	34.76	2.0	TBT	65.14	63	eP	26	57.80	9.7X
TCE	22.72	86	eP	21	09.15	1.0			e	23	36.91		MBO	66.33	79	iPc	26	57.30	1.5	
NEV	22.82	69	eP	21	10.00	0.9			epPd	23	42.70	27kmX	INK	66.48	342	eP	26	54.00	-2.0	
TPP	23.02	87	eP	21	13.20	2.1			ePP	25	04.69			1.2s	101.00nm			5.8mb		
MGH	23.04	70	eP	21	12.50	1.2			ePcP	25	44.00		CTFE	66.59	63	iPd	26	58.80	1.4	
NNA	23.07	160	iPc	21	12.50	0.9			eS	29	37.31		RUV	66.77	249	iP	26	59.90	1.3	
	1.3s	96.15nm			5.2mb		SBB	39.01	315	eP	23	34.00	0.9		1.2s	45.00nm			5.5mb	
		eS	25	24.00				e	25	44.00			TPT	66.92	249	iP	27	00.80	1.2	
TRN	23.07	86	eP	21	11.17	-0.3	DUG	39.15	325	P	23	35.00	0.7		1.2s	50.00nm			5.5mb	
SVB	23.35	79	eP	21	17.13	2.9X		1.0s	50.00nm			5.2mb	VAH	67.01	249	iP	27	01.30	1.1	
PAG	23.38	72	eP	21	16.00	1.4	CBM	39.63	18	ePd	23	38.00	0.0		1.2s	45.00nm			5.5mb	
TBH	23.40	86	eP	21	16.32	1.6			e	23	47.90		GGC	67.13	64	eP	27	02.10	1.2	
BPA	23.45	70	eP	21	14.00	-1.3	ISA	39.97	315	eP	23	33.00	-8.1X	PMO	67.18	249	iP	27	02.60	1.3
BBL	23.47	74	eP	21	17.00	1.6			e	25	48.00			1.2s	50.00nm			5.5mb		
SLB	23.62	78	eP	21	18.23	1.3	SYP	40.46	313	eP	23	47.00	1.8	CFTV	68.50	63	iPd	27	10.00	0.5
FDF	23.64	76	eP	21	17.00	-0.1	TNP	40.47	319	eP	23	46.00	0.6	MBC	68.98	352	eP	27	08.50	-3.0X
		S	26	00.00				1.0s	59.25nm			5.3mb		1.1s	159.00nm			6.0mb		
CPB	23.64	68	eP	21	16.35	-0.7	BCH	40.86	314	eP	23	50.00	1.6	TVO	69.27	247	eP	27	17.00	2.7X
MGG	23.70	73	eP	21	20.00	2.4	FRI	41.51	316	eP	23	53.70	0.1		1.2s	55.00nm			5.5mb	
PRM	24.26	5	eP	21	24.70	1.7			ePcP	25	51.70		PMR	69.32	333	eP	27	07.40	-6.4X	
MZX	24.57	305	iP	21	29.88	3.9X	KVN	41.59	320	ePc	23	55.00	0.5		1.7s	64.80nm			5.5mb	
OLY	26.28	348	eP	21	40.50	-1.5	PRI	41.74	315	eP	23	56.70	1.0	COL	69.87	336	iPc	27	15.76	-1.4
BLA	27.57	8	ePc	21	54.50	0.7			ePcP	25	53.80				e	27	17.41			
	1.1s	215.19nm			5.7mb		LLA	42.17	315	eP	23	59.00	-0.1			epPd	27	23.87	26kmX	
FVM	28.50	351	iPc	21	59.90	-2.3			ePcP	25	55.10				iS	36	33.74			
	1.2s	147.06nm			5.6mb		PRS	42.33	314	eP	24	01.20	0.8		e	38	30.45			
CBN	29.05	12	iPd	22	08.50	1.4			ePcP	25	55.30		FBA	69.87	336	eP	27	15.20	-1.9	
	1.0s	120.00nm			5.6mb		RTRS	42.41	160	ePc	24	02.40	1.4	KIP	70.91	289	ePc	27	20.30	-3.9X
ARE	29.25	153	eP	22	11.00	1.5	CMB	42.52	317	ePc	24	00.94	-1.1	IMA	72.56	336	eP	27	32.10	-1.4
ZOBO	30.74	147	ePc	22	22.44	-0.6			ePcP	26	02.00			1.7s	41.70nm			5.2mb		
		e	22	27.																



EMON	74.25	48 eP	27 44.00	0.3	AGO	81.61	45 P	28 22.89	-1.2	VDL	85.91	44 ePd	28 46.80	0.6
TIO	74.40	61 iPc	27 45.50	0.6	AVF	81.69	44 eP	28 23.30	-1.1	BOB	86.19	45 Pc	28 47.00	-0.4
		i	27 53.00			1.6s	74.65nm		5.5mb	MDI	86.19	44 P	28 46.50	-0.8
EVAL	74.66	54 eP	27 46.80	0.7	KBS	81.74	11 iP	28 24.00	-0.1	PGF	86.25	48 P	28 46.92	-0.9
DCN	74.76	37 eP	27 46.40	0.1	LBL	81.77	46 P	28 24.59	-0.2	OSS	86.33	43 ePc	28 48.10	-0.1
	1.1s	110.00nm		5.8mb	SSF	81.77	44 eP	28 23.70	-1.1	GRF	86.48	40 iPc	28 48.70	0.0
BRW	74.99	341 eP	27 46.10	-1.3		1.8s	120.85nm		5.6mb		2.2s	386.00nm		6.2mb
DMU	75.01	37 eP	27 46.30	-1.5	ETER	81.77	49 eP	28 25.80	0.9	MOX	86.55	39 iPc	28 49.00	0.0
	0.7s	51.00nm		5.7mb	SNF	81.95	40 P	28 24.50	-1.2		1.9s	207.00nm		6.0mb
DAG	75.11	13 iPc	27 45.00	-3.0X	PLDF	81.95	45 P	28 25.16	-0.8	SAL	86.79	44 P	28 50.00	-0.2
	1.4s	97.67nm		5.6mb	LOR	81.99	43 eP	28 25.00	-1.0	FUR	86.81	42 eP	28 50.00	-0.3
EPLA	75.16	51 eP	27 48.80	-0.2		1.8s	155.35nm		5.7mb	OGA	86.89	43 iPc	28 50.80	-0.2
DLE	75.19	37 eP	27 51.00	2.2	SMF	82.04	44 eP	28 25.10	-1.2		1.8s	156.00nm		5.9mb
ECP	75.24	39 eP	27 46.90	-2.1		1.8s	103.60nm		5.6mb	BDI	87.12	46 P	28 50.50	-1.5
EJIF	75.71	55 eP	27 53.30	1.2	ESEL	82.06	51 eP	28 27.20	0.7	PII	87.14	46 P	28 51.00	-0.9
NKM	75.79	56 iPc	27 53.30	0.7	LBF	82.10	44 eP	28 25.60	-1.0	MME	87.17	46 P	28 52.10	-0.3
EHOR	75.85	53 eP	27 53.60	0.7		1.8s	69.05nm		5.4mb	CLL	87.28	39 iPc	28 52.00	-0.4
IFR	76.10	58 iPc	27 55.50	0.9	DOU	82.19	41 P+	28 25.80	-1.1		1.7s	140.00nm		5.9mb
		i	28 00.00		ENN	82.96	40 ePc	28 30.50	-0.4			i	29 01.10	
AIA	76.42	171 eP	27 56.40	1.0		1.0s	47.00nm		5.6mb			e	29 16.90	
MAL	76.55	55 iPc	27 58.00	1.2	MEM	83.03	40 Pc	28 30.40	-0.9	CTI	87.47	44 Pc	28 53.00	-0.7
GUD	76.62	51 eP	27 57.00	-0.4			i	28 39.40		FIR	87.65	46 eP	28 55.00	0.6
TOL	76.72	51 ePc	27 58.24	0.4	VITF	83.31	42 P	28 30.65	-2.1	WET	87.66	41 iPc	28 54.50	0.1
		e	28 00.23		WTS	83.36	38 ePc	28 32.00	-0.9		1.7s	493.00nm		6.5mb
		ePd	28 06.52	27kmX		1.0s	94.00nm		5.9mb	UPP	87.77	30 iP	28 52.20	-2.4
		ePP	30 56.67		WIGH	83.41	86 eP	28 35.00	1.0	BRG	87.95	39 iP	28 55.20	-0.5
		eS	37 42.78		ADK	83.51	321 iP	28 34.10	0.4		2.0s	220.00nm		6.1mb
		e	38 06.21		KUK	83.53	85 eP	28 34.10	-0.5			i	29 04.20	
AAPN	76.76	54 iPc	27 58.50	0.3	HAU	83.58	43 eP	28 33.50	-0.7			i	32 21.10	
ALOJ	76.78	54 iPc	27 58.50	0.2		1.8s	155.35nm		5.9mb	SFI	88.04	46 P	28 56.20	0.0
ATEJ	76.86	54 iPc	27 59.50	0.7	WEGH	83.66	85 eP	28 35.00	-0.3	KHC	88.11	41 iPc	28 56.50	-0.1
EBAN	76.99	53 eP	27 59.80	0.5	KOGH	83.66	85 eP	28 36.00	0.7	FVI	88.13	43 Pc	28 56.50	-0.1
ASMO	77.05	54 iPc	27 59.50	-0.3	LEGH	83.80	85 eP	28 36.00	0.1	KEV	88.21	19 eP	28 56.00	-0.6
APHE	77.12	54 iPc	28 00.70	0.5	RUP	83.82	41 eP	28 33.91	-1.5	KBA	88.40	43 iPc	28 57.20	-1.0
AFC	77.22	54 eP	28 01.60	0.8	SHGH	83.89	85 eP	28 37.50	1.1		1.7s	237.00nm		6.2mb
EKA	77.26	35 P	27 59.00	-1.4	BSF	83.89	43 P	28 33.01	-2.9X			i	29 28.80	
	1.3s	79.50nm		5.6mb	TEGH	83.97	85 eP	28 38.00	1.2			ePP	32 24.00	
ECRI	77.79	48 eP	28 04.20	0.5	LOMF	83.98	43 P	28 34.12	-2.2	RSM	88.46	46 P	28 58.50	0.2
LKO	77.91	82 Pd	28 05.06	0.3	ABH	84.11	41 eP	28 35.27	-1.6	PRU	88.52	40 Pc	28 58.00	-0.5
	1.5s	433.50nm		6.3mb	MOF	84.12	43 P	28 34.80	-2.3		2.0s	117.20nm		5.9mb
ETOR	78.21	50 eP	28 05.50	-0.6	CDF	84.14	42 P	28 35.03	-2.1			e	29 09.50	
TAF	78.27	56 iPd	28 08.00	1.5	LPL	84.17	45 eP	28 37.60	0.1	RBL	88.69	43 P	28 53.30	-6.2X
ENIJ	78.29	54 eP	28 06.00	-0.5		1.4s	34.85nm		5.4mb	KMR	88.71	42 eP	29 00.00	0.6
LPF	78.63	43 eP	28 07.30	-0.8	LPG	84.19	45 eP	28 37.80	0.1	ARV	88.90	46 P	29 00.10	-0.4
	1.8s	250.30nm		5.9mb		1.8s	103.60nm		5.7mb	MNS	88.95	47 P	29 00.50	-0.2
GRR	78.74	43 eP	28 08.00	-0.7	LRG	84.19	47 eP	28 37.10	-0.3	TRI	88.99	44 iPd	29 01.50	0.7
	1.8s	379.80nm		6.1mb		1.8s	207.15nm		6.0mb	VOY	89.00	44 eP	29 00.80	-0.2
BOH	78.87	48 P	28 10.25	0.6	BNI	84.20	45 P	28 37.60	0.0	SOD	89.05	21 iP	28 59.10	-1.6
EALH	78.87	53 eP	28 10.00	0.4	EMS	84.23	44 ePd	28 37.90	0.1	RMP	89.09	48 P	29 01.00	-0.4
LIC	78.94	86 P	28 10.76	0.3	GWf	84.28	41 P	28 36.06	-1.7	RDP	89.11	48 P	29 02.10	0.6
	1.4s	371.50nm		6.2mb	LMR	84.32	47 eP	28 37.70	-0.3	KSP	89.40	38 iP	29 01.50	-1.2
		S	38 09.00			1.6s	174.15nm		6.0mb	CEY	89.43	44 eP	29 03.00	0.0
FLN	78.98	42 eP	28 09.40	-0.6	FRF	84.39	47 eP	28 38.20	-0.1	LJU	89.44	43 eP	29 02.00	-0.9
	1.8s	310.75nm		6.0mb		1.5s	146.25nm		6.0mb	AQU	89.48	47 P	29 03.70	0.4
MADF	79.01	48 P	28 09.50	-0.8	NB2	84.41	29 P	28 40.00	1.9	AZI	89.58	48 Pd	29 04.00	0.4
ISSF	79.03	48 P	28 10.25	-0.3		1.6s	115.10nm		5.8mb	SDI	89.92	48 P	29 02.90	-2.5X
ATE	79.10	48 P	28 10.25	-0.5	BBS	84.43	43 P	28 37.26	-1.3	VBY	90.06	44 eP	29 06.00	0.2
ECHE	79.11	51 eP	28 11.80	0.8	CALN	84.53	47 P	28 38.60	-0.7	VKA	90.08	41 eP	29 04.00	-1.9
ESCF	79.19	48 P	28 11.08	-0.2	KTD	84.53	41 eP	28 39.05	0.0		2.4s	484.00nm		6.3mb
LDF	79.22	42 eP	28 10.60	-0.7	DIX	84.56	44 ePd	28 40.30	0.8			i	29 06.50	
	1.8s	224.40nm		5.9mb	TNS	84.63	40 ePc	28 39.10	-0.4			i	29 32.00	
OGE	79.26	48 P	28 11.81	0.2	DOI	84.68	46 P	28 40.00	0.1	RFI	90.14	48 P	29 07.23	1.0
MFF	79.30	44 eP	28 11.20	-0.6	MVIF	84.70	47 P	28 39.30	-0.8		0.9s	97.80nm		6.1mb
	1.8s	189.90nm		5.8mb	FEL	84.70	42 P	28 37.69	-2.3	SOP	90.38	41 eP	29 07.10	-0.2
JAU	79.34	48 P	28 12.42	0.1	TOUF	84.75	46 P	28 39.83	-0.6	DUI	90.40	48 P	29 08.00	0.4
BTH	79.46	48 P	28 22.50	9.8X	KRW	84.76	41 eP	28 40.08	0.0	PTJ	90.43	43 eP	29 04.40	-3.3X
ACU	79.62	53 eP	28 14.80	1.1	AURF	84.83	47 P	28 40.21	-0.5	ZAG	90.47	43 eP	29 07.00	-0.7
EPF	79.86	48 eP	28 14.80	-0.2	REVF	84.88	47 P	28 40.66	-0.2	ZST	90.60	41 eP	29 08.10	-0.2
	1.7s	22.05nm		4.9mb	AUTN	84.88	46 P	28 40.44	-0.7			e	32 49.20	
LFF	80.02	46 eP	28 15.30	-0.4	SBF	84.91	47 eP	28 40.60	-0.4	MCT	90.70	52 eP	29 11.00	1.8
	1.8s	345.25nm		6.1mb		1.6s	335.80nm		6.3mb	SUF	90.71	25 eP	29 08.00	-0.4
EROQ	80.07	50 eP	28 16.60	0.5	MMK	84.95	44 ePc	28 42.20	0.8	FAI	90.81	52 P	29 11.70	2.3
EBR	80.14	50 (P)	28 04.00	-12.4X	SAOF	84.97	46 P	28 41.12	-0.2	BSS	90.86	48 P	29 09.90	0.3
LPO	80.36	46 eP	28 17.00	-0.5	ZLA	85.01	43 ePd	28 41.50	0.0	NUR	90.89	28 eP	29 13.00	3.7X
	1.8s	345.25nm		6.1mb	ORO	85.02	45 P	28 41.00	-0.6		0.7s	17.40nm		5.5mb
LSF	80.48	45 eP	28 17.20	-0.9	SLE	85.04	43 ePc	28 41.00	-0.6			i	29 19.40	
	2.0s	303.20nm		6.0mb	STU	85.34	41 ePc	28 42.50	-0.5	GIB	90.92	51 P	29 09.00	-1.1
RJF	80.54	46 eP	28 17.90	-0.6		2.0s	352.94nm		6.2mb	SGO	91.29	49 P	29 11.20	-0.3
	1.8s	336.65nm		6.1mb	CKI	85.42	46 P	28 43.50	0.0	SRO	91.49	41 iP	29 10.60	-1.7
TCF	80.95	45 eP	28 19.90	-0.7	LLS	85.52	43 ePc	28 44.30	0.1	KRA	91.86	39 ePd	29 14.40	0.4
	1.6s	111.95nm		5.6mb	VAI	85.53	44 Pc	28 43.30	-0.7		1.5s	143.00nm		6.2mb
CAF	80.96	46 eP	28 20.20	-0.5	TMA	85.56	44 ePd	28 44.70	0.3			e	29 23.30	
MAF	81.20	45 eP	28 21.20	-0.7	SAX	85.69	43 ePd	28 45.60	0.4	MMN	91.96	49 P	29 13.70	-0.9
	1.8s	198.55nm		5.8mb	HFS	85.79	30 eP	28 44.70	-0.3	BUD	92.04	41 iP	29 15.20	0.3
BGF	81.36	44 eP	28 21.90	-0.9		0.6s	6.30nm		5.0mb	CSI	92.21	49 P	29 16.70	0.8
	1.8s	246.00nm		5.9mb	Z	17s	85.42um		7.2mszx	CZI	92.23	50 P	29 14.50	-1.4
PYM	81.55	45 P	28 23.37	-0.5			LR	04 12.00		TDS	92.27	49 P	29 16.20	0.1



25d 13h

SPC	92.31	39	eP	29	16.20	-0.2	NJ2	132.61	332	PKPc	35	21.50	0.1	NNT	157.29	348	ePKP	36	02.20	-0.4
ROI	92.47	49	P	29	17.70	0.6			PP	37	46.00		SNG	162.27	342	ePKP	36	08.90	1.0	
PSZ	92.47	41	iP	29	18.00	1.0	LZH	133.62	350	PKP	35	24.50	1.0	IPM	164.56	338	ePKPc	36	11.90	1.7
BEO	93.78	43	eP	29	23.00	0.1		1.6s	159.00nm					1.4s	78.60nm					
TIM	94.01	42	eP	29	25.00	1.0	Z	30s	81.70um			7.3MsZ		S.D.	= 1.0	on 399 of 483 obs.				
OHR	95.15	47	iPc	29	30.00	0.6	N	10s	28.60um											
	1.6s	0.24nm			3.4mb	X			pPKP	35	33.50									
SKO	95.34	46	eP	29	30.20	0.0			i	37	40.00			MAR	25, 1990	13h	22m	55.60±0.12s		
	1.5s	114.00nm			6.1mb				PP	38	49.00							9.919 N ± 2.7km	84.808 W ± 2.2km	
VAY	96.35	46	eP	29	34.70	-0.1			PKS	38	53.00							DEPTH = 22.2km	(geophysicist)	
VTS	96.38	45	iPg	29	36.00	0.8			PPP	42	12.00							6.2mb (56 obs.)	7.0MsZ (23 obs.)	
KKB	96.53	46	iPd	29	37.00	1.3			SKKS	45	41.00							COSTA RICA	(78)	
CMP	96.70	42	ePc	29	40.00	3.6X			SS	57	57.00							Ms 6.8 (BRK). Mo=6.0*10**19 Nm		
MLR	97.21	42	ePd	29	39.00	0.2	XAN	134.48	344	PKP	35	25.20	0.2					(PPT). Ten people slightly		
SPA	99.75	180	eP	29	50.20	0.4		N 10s	27.00um									injured. Damage (VIII) in the		
	1.0s	6.00nm			5.1mb		E 11s	15.00um										Puntarenos area and about 60		
ITU	100.96	45	ePd	30	00.00	4.4X	WHN	135.85	336	ePKP	35	24.00	-3.6X					buildings severely damaged (VII)		
BCAO	102.36	83	iPd	30	03.30	0.8	Z	28s	58.80um			7.2MsZ						in the San Jose area. Several		
	1.0s	8.00nm			5.3mb		E 11s	30.80um										landslides blocked roads in the		
									PP	38	06.00							area for a short time. Felt		
									e(PKP)	35	21.00	-7.1X						throughout Costa Rica and		
BBTK	104.08	45	iPd	30	12.00	2.3	QIS	135.94	251	e(PKP)	35	21.00	-7.1X					southwestern Nicaragua. Felt		
HLW	107.08	55	ePKP	34	48.00	15.2X			e	35	26.00							(IV) at Almirante and Puerto		
							NDI	137.98	24	iPKPc	35	32.00	0.2					Armuelles and (III) at David,		
									ePP	38	24.00							Panama. Depth from broadband		
LWI	113.66	88	ePKP	34	37.30	-8.7X			eS	45	08.00							displacement seismograms.		
PRY	114.22	115	ePKP	34	34.50	-12.2X	QZH	138.59	327	ePKP	35	28.00	-4.9X					FAULT PLANE SOLUTION: P-Waves		
	0.7s	10.00nm					E 36s	43.70um										NP1:Strike=102 Dip=72 Slip= 130		
									PP	38	20.00							NP2: 212 43 27		
SLR	114.96	114	iPKPc	34	45.20	-2.9X	CD2	138.68	349	PKP	35	32.20	-0.8					Principal Axes:		
	1.2s	31.25nm							SKS	42	38.00							T	Plg=47 Azm= 54	
							ASPA	140.58	245	iPKPd	35	28.60	-8.0X					P	17 164	
MDJ	117.52	333	ePKP	34	51.00	-1.2		2.0s	25.00nm									Comment: The focal mechanism is		
Z	30s	53.90um			7.0MsZ		WB5	140.90	251	ePKP	35	30.70	-6.6X					poorly controlled and		
MAT	118.67	321	(PKP)	34	55.00	0.3	WRA	140.92	250	PKPd	35	30.00	-7.3X					corresponds to reverse		
	1.1s	12.66nm						1.2s	19.10nm									faulting with a large left-		
NAI	121.37	85	PKP	35	04.80	4.1X	GKN	141.05	15	PKP	35	34.30	-3.2X					lateral strike-slip component.		
SNY	122.37	335	PKPc	35	01.40	-0.1	KKN	141.41	14	PKP	35	35.00	-3.3X					The preferred fault plane is		
Z	24s	85.70um			7.3MsZ		GUN	141.44	13	PKP	35	34.00	-4.5X					NP2.		
N	18s	143.00um					DMN	141.54	14	PKP	35	36.20	-2.4					RADIATED ENERGY		
E	16s	38.60um					PKI	141.65	14	PKP	35	34.00	-4.9X					No. of sto: 9	Focal mech. F	
MAIO	123.16	34	ePKP	35	03.00	-0.3	GYA	142.26	343	PKP	35	36.00	-3.7X					Energy	2.2±0.7*10**14 Nm	
CNB	124.68	234	ePKP	35	07.00	0.7		N 20s	51.70um									CENTROID, MOMENT TENSOR	(HRV)	
CAN	124.97	234	ePKP	35	09.00	2.2		E 20s	68.20um									Data Used: GDSN		
NPA	125.26	102	e(PKP)	35	10.40	2.5X			PP	38	50.00							L.P.B.: 18S, 50C	M.W.: 14S, 38C	
							PIP	142.42	318	ePKPd	35	35.00	-4.9X					Centroid Location:		
							GZH	142.78	332	PKP	35	35.00	-5.4X					Origin Time	13:23: 7.8 0.1	
									PP	38	50.00							Lot	9.95N 0.02 Lon 84.58W 0.01	
GUMO	125.48	294	ePKP	35	12.00	3.7X	HKC	143.04	330	ePKP	35	38.80	-2.1					Dep	17.9 0.8 Half-duration 15.0	
DL2	125.63	335	ePKP	35	07.00	-0.9	BAG	143.79	316	ePKP	35	38.00	-4.6X					Moment Tensor:	Scale 10**19 Nm	
Z	30s	30.90um			6.8MsZ		KMI	144.50	348	ePKPc	35	41.27	-2.4					Mrr=	4.09 0.06 Mtt=-3.44 0.04	
N	22s	16.30um					MTN	144.63	262	ePKP	35	42.00	-1.8					Mff=-0.65 0.04 Mrt=	9.70 0.58	
E	22s	19.40um					OCF	144.65	313	ePKP	35	55.00	11.2X					Mrf=-3.13 0.26 Mtf=	1.71 0.03	
BWA	125.65	235	ePKP	35	07.40	-0.8	POO	144.84	37	iPKPc	35	42.00	-2.1					Principal Axes:		
WMO	126.19	7	ePKPc	35	09.12	0.1	DAV	145.37	298	ePKPc	35	46.00	0.9					T	Vol= 10.96 Plg=56 Azm= 15	
								1.6s	1866.67nm									N	0.10 3 109	
							PGP	145.48	312	ePKPc	35	45.20	0.0					P	-11.06 34 201	
									eS	36	14.20							Best Double Couple:Mo=1.1*10**20		
BJI	126.72	340	PKPc	35	10.00	0.0	AAI	146.67	278	ePKP	35	50.00	2.7X					NP1:Strike=303 Dip=11 Slip= 104		
							KNA	146.74	256	ePKP	35	48.70	1.4					NP2: 108 79 87		
BJI	126.72	340	ePd	31	51.65	1.4	OIZ	147.90	333	PKP	35	51.00	1.9					GEOSCOPE MOMENT TENSOR	(PAR)	
								E 20s	27.20um									Dep	15.0 Half-duration 25.0	
									PP	39	20.00							Best Double Couple:Mo=7.8*10**19		
							COOL	148.02	225	ePKP	35	52.00	3.0X					NP1:Strike=275 Dip=26 Slip= 43		
							HYB	148.35	31	ePKPc	35	50.00	0.1					NP2: 145 73 110		
								1.0s	100.00nm											
RMO	126.83	244	ePKP	35	10.00	-0.7	RKG	148.63	216	ePKP	35	51.00	1.1	CAO	0.36	233	P	23	00.60 -2.8	
TOO	127.07	230	ePKP	35	11.00	0.2	NWAO	149.29	218	ePKP	35	55.00	4.1X	JTS	0.40	339	iP	23	03.70 -0.3	
HHC	127.37	344	PKPd	35	10.80	-0.6		1.0s	100.00nm					PTCR	0.40	109	P	23	05.50 1.4	
							PPR	149.53	309	ePKP	36	00.00	8.3X	AR6	0.53	349	iPd	23	11.20 5.0X	
KSH	127.84	19	PKPd	35	13.00	0.6	KLB	149.86	221	ePKP	35	56.30	4.5X	VACR	0.57	13	P	23	11.50 4.7X	
Z	25s	42.60um			7.0MsZ		MUN	150.57	218	ePKP	35	58.20	5.3X	POA2	0.61	65	P	23	12.40 4.7X	
E	11s	34.80um						1.0s	240.00nm					HDC2	0.68	81	P	23	13.10 4.4X	
BTO	128.00	346	PKP	35	13.00	0.4	GBA	150.83	37	PKPc	35	54.60	1.0	SJS	0.74	88	iPc	23	13.00 3.1X	
TIA	129.77	337	PKPc	35	16.10	0.2		1.2s	94.60nm					JUD	0.77	288	iPd	23	11.30 1.1	
							BAL	151.19	221	ePKP	35	59.70	5.9X	LCR2	0.81	102	iPd	23	12.50 1.4	
CTA	129.77	252	iPKPc	35	15.30	-1.1	CHG	151.31	353	ePKPc	35	55.00	0.7	OCM	0.84	92	iPc	22	13.70 -57.8X	
	1.3s	19.23nm						1.2s	65.63nm					OPS	0.84	128	iP	23	11.10 -0.3	
TIY	130.04	342	iPKP	35	16.00	-0.5	CHTO	151.31	353	ePKPc	35	54.76	0.4	IRZ2	0.90	87	iPc	23	15.50 2.8X	
Z	31s	68.00um			7.2MsZ		LOE	152.19	346	ePKP	35	56.00	0.4	RIN3	1.03	327	P	23	17.30 2.6X	
									e	42	45.20			VTU	1.04	84	P	22	17.70 -57.3X	
							BDT	152.85	352	ePKP	35	55.20	-1.3	CDM	1.09	109	P	23	16.50 0.6	
								1.0s	151.80nm					BUS	1.10	109	ePc	23	17.10 1.1	
GTA	130.84	355	PKP	35	18.60	0.5	TSM	153.26	300	ePKP	36	10.70	13.5X	VCR	1.18	80	iPd	23	11.90 -5.0X	
							KOD	153.41	42	ePKP	35	59.40	1.6	LIO	1.75	87	iPc	23	28.20 3.3X	
QUE	131.85	33	ePKP	35	21.50	1.2	MBL	153.74	242	ePKP	36	04.50	6.8X	ACR	2.05	128	ePd	23	27.70 -1.6	
SSE	132.28	329	PKPc	35	20.00	-0.8	PCI	153.92	288	ePKPc										



UPA	5.29	100	iP	24	17.00	1.7	SCP	31.36	10	iPc	29	17.27	0.4	N	20s	46.00um				
QZA	5.45	312	iPd	24	19.50	1.9				epP	29	22.90	20kmX	E	20s	97.00um				
SJAS	5.66	312	eP	24	25.50	4.7X				e	29	29.35		ARN	42.89	316	P	30	56.00	1.7
LFU	5.68	313	iPd	24	25.70	4.8X				e	29	35.98		LRM	42.89	332	eP	30	53.00	-0.6
SSS	5.70	311	eP	24	24.80	3.6X				eS	34	24.79		MHC	42.96	315	eP	30	56.30	1.4
			eS	25	40.20		CLE	31.58	5	iP	29	18.60	-0.2	Z	20s	70.00um			6.6Msz	
VSS	5.77	312	eP	24	25.50	3.3X	ALO	31.80	325	iPc	29	20.00	-1.1	N	20s	63.00um				
TME	6.03	313	iPd	24	28.10	2.3X		1.0s	250.00nm			6.1mb		E	20s	89.00um				
YPE	6.34	312	eP	24	33.00	2.7X		Z	20s	141.84um		6.6Msz				ePcP	32	42.00		
CUSS	6.40	309	eP	24	36.70	5.5X	ANMO	31.80	325	iPc	29	20.73	-0.3			iS	37	28.00		
TPX	8.81	305	iPc	25	07.50	2.9X		Z	18s	128.87um		6.6Msz				eLO	40	24.00		
ANCC	10.13	128	ePd	25	23.78	0.8				eS	34	37.37				eLR	43	23.00		
SCX	10.19	312	eP	25	35.50	11.8X	LVNJ	32.03	14	P	29	23.80	1.1	GCC	43.05	315	eP	30	56.50	1.0
HOQC	10.34	128	ePd	25	29.23	3.2X	GMTN	32.24	15	eP	29	25.60	1.0	PCC	43.55	315	eP	31	00.00	1.3
SALC	10.61	130	ePd	25	29.61	0.0				i	29	26.80	4kmX	BRK	43.65	316	eP	31	01.40	1.1
CUMC	11.26	142	ePc	25	39.30	0.4	PNJ	32.27	15	iP	29	26.70	1.9	RTLL	43.90	160	ePd	31	01.10	-1.4
PURC	11.29	131	ePd	25	39.90	0.7				pP	29	36.60	35kmX	ORV	44.00	318	eP	31	03.70	0.5
COTA	11.49	146	eP	25	40.00	-2.0				(PP)	30	40.10		ZON	44.03	160	e(P)	30	48.00	-15.5X
GGP	11.78	148	eP	25	48.00	2.0	TBR	32.47	15	P	29	27.20	0.6	CFA	44.23	160	ePd	31	04.50	-0.7
QUR	11.81	148	eP	25	49.00	2.7X	CCH	32.80	146	P	29	28.60	-1.5	MIN	44.49	319	ePc	31	06.00	-0.6
BOG	11.88	116	iPc	26	02.50	15.4X	DLA	32.93	4	P	29	29.94	-0.6	IHA	44.51	164	eP	31	10.00	2.7X
PSM	12.02	305	iPd	25	54.65	5.8X	LDN	33.15	5	P	29	31.83	-0.6	BDF	44.52	124	iPc	31	07.00	-0.8
VC1	12.27	148	eP	25	55.00	2.4	ELF	33.29	5	P	29	32.78	-0.9			epPd	31	14.45	25kmX	
TUNG	12.92	150	P	26	06.00	4.9X	HRV	34.48	17	iPc	29	44.43	0.5			eS	37	41.88		
QXX	13.59	303	iP	26	15.57	5.7X				epP	29	51.38	24kmX			eSS	40	56.39		
FISA	15.27	84	eP	26	33.20	1.5				esP	29	53.54				eHSS	41	04.25		
PPM	16.17	306	iPd	26	48.35	4.7X				ePP	31	08.69		ROCH	44.63	163	eP	31	14.00	5.4X
ACX	16.18	297	iP	26	54.97	11.6X				eS	35	14.44		LCCN	44.95	164	eP	31	18.00	7.1X
MORO	16.25	85	eP	26	45.50	1.2	GLD	34.83	332	P	29	47.00	-0.3	FCH	45.17	163	eP	31	12.50	-0.6
CEOS	16.27	92	eP	26	43.00	-1.6		Z	18s	321.99um		7.1Msz		SAN	45.18	163	eP	31	13.50	0.7
III	16.51	302	iPd	26	55.19	7.5X	GOL	34.86	332	iPc	29	46.80	-0.8	WDC	45.22	319	eP	31	10.50	-2.5
UNM	16.75	306	iP	26	58.50	7.6X	WNY	35.63	14	P	29	53.40	-0.4			ePcP	32	51.60		
IIC	17.04	307	iPd	27	05.02	10.4X	HBVT	35.79	14	P	29	54.90	-0.3	TACH	45.29	164	eP	31	12.70	-0.9
PLAV	17.05	89	eP	26	57.20	2.6	PV09	35.85	327	eP	29	55.00	-1.1	ITB1	45.40	140	Pd	31	12.20	-2.3
CRX	17.19	305	iP	27	01.00	4.6X	GLA	35.97	314	eP	29	58.00	1.1	LNK	45.45	164	eP	31	13.50	-1.3
GUAC	17.27	88	eP	27	01.00	3.7X	ANT	36.26	157	e(P)	29	58.50	-0.8	ITB	45.62	140	Pd	31	11.39	-4.9X
IJJ	17.40	306	iP	27	02.50	3.2X	HAY	36.89	315	eP	30	06.00	1.4	CHCH	45.64	163	eP	31	20.50	4.1X
CAR	17.61	87	eP	27	04.00	2.5	BAR	37.09	312	eP	30	07.00	0.7	SES	45.80	337	ePc	31	15.00	-2.5X
LLAV	17.73	87	eP	27	04.00	1.1				e	32	28.00				1.4s	256.00nm		6.0mb	
OLLA	17.73	88	eP	27	03.00	0.0	TPC	37.39	315	eP	30	10.00	1.2	ITB7	45.87	140	e(P)	31	20.00	1.7
MRX	18.57	303	eP	27	22.67	9.4X	PFO	37.42	314	iP	30	10.57	1.4	FHC	46.27	318	eP	31	22.00	0.6
GUAN	18.87	88	eP	27	15.00	-2.1				eS	36	04.32		FFC	46.73	346	eP	31	23.00	-1.7
LRS	19.29	62	P	27	23.20	1.1	CPE	37.51	312	eP	30	11.40	1.7			1.0s	49.00nm		5.5mb	
PORP	19.38	63	P	27	23.80	0.7	PLM	37.57	313	eP	30	12.00	1.5	SCH	47.07	14	ePc	31	25.70	-1.3
SJG	19.84	64	eP	27	29.00	0.9	MIM	37.72	18	P	30	12.50	1.1			0.7s	615.00nm		6.8mb	
CPD	20.02	64	P	27	30.00	0.0	EMM	37.78	20	P	30	12.80	1.0	LON	48.29	326	iPc	31	35.78	-1.4
AGX	20.57	307	iP	27	40.00	4.3X	PEC	38.06	314	eP	30	15.70	1.2	RMW	48.73	327	P	31	42.00	1.5
TCE	22.70	86	eP	27	59.15	2.0				0.8s	203.46nm		6.0mb	PNT	48.79	330	iPc	31	40.00	-0.9
NEV	22.76	69	eP	27	58.00	0.2	RVR	38.27	314	eP	30	17.00	0.9			1.2s	362.00nm		6.3mb	
			eTT	43	00.00					e	32	32.00		EDM	48.92	338	iPc	31	39.10	-2.8X
GRW	22.83	82	eP	28	02.03	3.5X	VPD	38.46	313	iPd	30	19.50	1.8			0.8s	207.00nm		6.2mb	
MGH	22.99	71	eP	28	02.00	2.0	GSC	38.56	316	eP	30	21.00	2.3	PGC	50.33	327	eP	31	52.00	-0.6
			eTT	43	05.00		SCI	38.61	312	eP	30	20.70	1.7	BAA	50.81	152	P-	32	03.00	6.5X
TPP	23.00	87	eP	28	00.70	0.6	MWC	38.87	314	eP	30	23.00	1.6			S	39	13.00		
TRN	23.04	86	eP	28	00.50	0.0	PAS	38.92	313	iPc	30	23.26	1.7	FR8	54.98	9	eP	32	23.00	-4.1X
PAG	23.33	73	eP	28	04.00	0.6				epPd	30	30.87	26kmX	YKA	56.73	344	eP	32	36.50	-3.3X
			eTT	43	32.00					ePcP	32	41.00				0.6s	15.70nm		5.2mb	
SVV	23.35	79	eP	28	07.07	3.6X				eS	36	26.96		RKT	59.05	236	iP	32	55.40	-1.3
TBH	23.37	87	eP	28	05.73	2.0				ePcS	36	27.00				1.3s	130.00nm		5.9mb	
SSV	23.37	79	eP	28	06.37	2.5				eSS	39	25.00		PDA	59.68	52	iPc	33	05.00	4.2X
BPA	23.40	70	eP	28	02.50	-1.5				eLR	39	57.00		GDH	62.61	12	iPd	33	16.90	-3.3X
			eTT	43	06.00		SBB	38.95	314	eP	30	23.00	1.1			1.0s	120.00nm		6.0mb	
BBL	23.42	74	eP	28	05.00	0.8				e	32	41.00				i	37	10.00		
			eTT	43	35.00		TWL	39.28	313	eP	30	26.50	1.8			i	41	52.00		
SOA	23.42	79	eP	28	08.77	4.6X	CLC	39.39	316	eP	30	26.70	1.2	CHIE	65.00	64	iPc	33	36.40	-0.1
MDN	23.45	74	eP	28	05.98	1.5	CBM	39.52	18	iPd	30	26.70	0.3	TBT	65.07	63	iP	33	37.00	0.8
DPMT	23.46	75	eP	28	06.72	2.2	ISA	39.91	315	eP	30	31.00	1.1	MBO	66.29	79	iPc	33	46.30	1.4
SLB	23.58	78	eP	28	08.92	3.2X				e	32	38.00		INK	66.39	342	eP	33	43.00	-1.7
CPB	23.58	69	eP	28	05.44	-0.3	SYN	40.40	313	eP	30	35.00	1.0			0.9s	261.00nm		6.4mb	
FDF	23.59	76	eP	28	09.15	3.2X				e	32	41.00		CTFE	66.52	63	ePc	33	49.40	3.1X
			S	32	15.00		TNP	40.40	319	iPc	30	34.50	0.4			iS	42	45.50		
BIM	23.64	76	eP	28	10.30	4.0X	BCH	40.80	314	eP	30	38.80	1.6	RUV	66.82	249	iP	33	48.20	-0.1
MGG	23.65	73	eP	28	08.00	1.6	FRI	41.45	316	ePc	30	42.50	0.1			1.4s	175.00nm		6.0mb	
			eTT	43	40.00					ePcP	32	42.20		VAH	67.07	249	iP	33	49.70	-0.1
TPR	23.66	85	eP	28	05.59	-0.9	KVN	41.53	320	iPc	30	43.80	0.5			1.4s	175.00nm		6.0mb	
BOT	23.71	85	eP	28	06.00	-1.0	PRI	41.68	315	eP	30	45.50	1.0	GGO	67.07	64	iPc	33	56.20	6.4X
PRM	24.16	5	eP	28	12.00	0.8				ePcP	32	45.50		PMO	67.24	249	iP	33	51.10	0.2
MZX	24.52	305	iPc	28	17.00	2.2X	LLA	42.11	315	eP										



25d 13h

			epPd	34	12.72	27kmX	EMEL	77.72	56 e(P)	34	58.00	5.3X	HAU	83.49	43 eP	35	22.70	-0.4	
			eS	43	12.36		LKO	77.88	82 P	34	54.10	0.2		1.8s	539.45nm			6.4mb	
			eSKS	44	06.44			1.1s	766.50nm			6.6mb	KUK	83.50	85 eP	35	20.00	-3.7X	
FBA	69.78	336	ePc	34	04.10	-1.8	EVIA	77.89	53 eP	34	54.80	1.1			S	45	46.00		
HON	70.89	289	P	34	20.00	6.6X	ETOR	78.13	50 eP	34	55.00	0.1	WEGH	83.63	85 eP	35	24.00	-0.4	
	Z	20s	37.23um		6.6Msz		TAF	78.20	56 iPc	34	56.00	0.6	KOGH	83.64	85 eP	35	25.50	1.0	
KIP	70.89	289	ePd	34	14.77	1.3	ENIJ	78.22	54 eP	34	55.80	0.4			S	45	48.00		
			epPc	34	20.40	18kmX	LPF	78.54	43 eP	34	56.60	-0.3	RUP	83.73	41 eP	35	22.58	-1.7	
			iS	43	37.07		GRR	78.65	43 eP	34	57.20	-0.3	LEGH	83.77	85 eP	35	26.00	0.9	
			eS	43	57.49		BOH	78.78	48 P	34	57.86	-0.7			S	45	52.00		
			eSKS	44	22.32		EALH	78.79	53 e(P)	34	59.00	0.5	BSF	83.81	43 eP	35	24.20	-0.6	
TBI	71.32	241	eP	34	19.00	3.0X	ELYF	78.80	48 P	34	57.25	-1.3	SHGH	83.86	85 eP	35	27.00	1.4	
	1.6s	205.00nm			6.0mb		FLN	78.89	42 eP	34	58.60	-0.2			S	45	52.00		
AKU	71.51	24	iP	34	15.70	-0.7		1.2s	441.65nm			6.4mb	TEGH	83.95	85 eP	35	28.00	2.0	
	1.6s	360.00nm			6.2mb		LIC	78.92	86 P	34	59.00	-0.6			S	45	51.00		
IMA	72.47	336	eP	34	20.70	-1.6		1.0s	664.00nm			6.6mb	ABH	84.01	41 eP	35	23.83	-1.9	
LIS	72.69	53	iPc	34	23.50	-0.4	MADF	78.92	48 P	34	58.68	-0.5	MOF	84.03	43 P	35	24.22	-1.7	
TTA	72.70	333	eP	34	21.40	-2.2	ISSF	78.95	48 P	34	59.35	-0.1	ODF	84.05	42 P	35	24.94	-1.0	
VAL	72.74	39	iP	34	24.10	0.2	ATE	79.01	48 P	34	59.05	-0.6	LPL	84.08	45 eP	35	26.80	0.4	
			S	44	00.00		ECHE	79.03	51 eP	35	01.60	1.8	LPG	84.10	45 eP	35	27.00	0.4	
EZAM	73.13	49	eP	34	27.00	0.6	LHE	79.08	48 P	35	00.26	0.1		1.6s	291.50nm			6.3mb	
PLO	73.17	50	iPc	34	26.00	-0.6	ESCF	79.11	48 P	35	00.02	-0.2	LRG	84.11	47 eP	35	26.60	0.4	
			iS	43	54.00		LDF	79.13	42 eP	34	59.90	-0.2		1.8s	674.35nm			6.6mb	
STS	73.26	48	eP	34	27.80	0.6	OGE	79.17	48 P	35	00.13	-0.4	BNI	84.11	45 P	35	26.60	0.2	
SDN	73.76	325	eP	34	30.20	0.4	KIC	79.18	85 P	35	00.20	-0.9	EMS	84.14	44 ePc	35	26.10	-0.6	
	Z	19s	23.00um		6.5Msz			1.0s	492.00nm			6.5mb	GW	84.19	41 P	35	25.74	-0.9	
AVE	74.12	58	iPc	34	33.00	0.6			S	45	03.00		LMR	84.23	47 eP	35	27.10	0.2	
			i	35	05.00	128kmX	MFF	79.21	44 eP	35	00.30	-0.3	FRF	84.30	47 eP	35	27.20	0.0	
			i	35	50.00		JAU	79.26	48 P	35	01.02	-0.2	NB2	84.31	29 P	35	28.70	1.7	
EMON	74.17	48	eP	34	32.00	-0.5	BTH	79.37	48 P	35	01.20	-0.4		1.0s	132.20nm			6.1mb	
ERUA	74.28	49	e(P)	34	34.00	0.8	ACU	79.54	53 eP	35	04.00	1.4	STR	84.34	42 P	35	26.77	-0.5	
TIO	74.33	61	iPc	34	34.00	0.2	EPF	79.78	48 eP	35	03.90	0.1	KTD	84.44	41 eP	35	25.81	-2.1	
			i	35	31.50	245kmX		1.0s	250.00nm			6.2mb	CALN	84.45	47 P	35	27.71	-0.5	
EVAL	74.58	54	eP	34	35.00	0.0	RAR	79.81	246 P	35	04.00	-0.3	DIX	84.47	44 ePc	35	28.30	-0.1	
DCN	74.66	37	iPc	34	34.70	-0.4			S	45	12.00		TNS	84.54	40 ePc	35	37.20	8.8X	
	0.9s	192.00nm			6.1mb		LFF	79.93	46 eP	35	04.50	0.0	DOI	84.59	46 P	35	28.30	-0.5	
BRW	74.90	341	eP	34	34.90	-1.2	EROO	79.99	50 eP	35	05.20	0.2	FEL	84.61	42 P	35	27.59	-1.3	
DMU	74.92	37	eP	34	34.80	-1.7	EBR	80.06	50 iPd	35	05.00	-0.3	MVIF	84.61	47 P	35	28.44	-0.6	
	1.0s	394.00nm			6.4mb				eS	45	09.00		TOUF	84.66	46 P	35	28.83	-0.5	
DAG	75.01	13	iPc	34	39.90	3.2X	LPO	80.27	46 eP	35	05.90	-0.5	KRW	84.67	41 eP	35	25.13	-3.8X	
	1.0s	146.00nm			6.0mb		LSF	80.39	45 eP	35	06.50	-0.5	AURF	84.74	47 P	35	28.81	-0.8	
EPLA	75.08	51	eP	34	37.20	-0.6	RJF	80.46	46 eP	35	07.10	-0.2	REV	84.79	47 P	35	29.24	-0.5	
DLE	75.10	37	iPc	34	37.00	-0.6	TCF	80.86	45 eP	35	08.90	-0.6	AUTN	84.80	46 P	35	29.20	-0.8	
	1.0s	93.00nm			5.8mb		CAF	80.87	46 eP	35	09.20	-0.4	SBF	84.82	47 eP	35	29.70	-0.2	
ECP	75.14	39	iPd	34	37.20	-0.6	MAF	81.11	45 eP	35	10.30	-0.5	MMK	84.86	44 ePd	35	31.60	1.3	
	0.9s	342.00nm			6.4mb		BGF	81.28	44 eP	35	11.00	-0.6	SAOF	84.89	46 P	35	29.61	-0.6	
EJIF	75.63	55	eP	34	41.60	0.6	PYM	81.46	45 P	35	13.22	0.5	ZLA	84.92	43 ePd	35	30.30	-0.1	
NKM	75.71	56	iPc	34	41.30	-0.2	AGO	81.52	45 P	35	11.20	-1.7	ORO	84.94	45 P	35	30.40	-0.1	
EHOR	75.77	53	eP	34	41.80	0.1	BER	81.53	30 eP	35	17.70	5.1X	SLE	84.95	43 ePc	35	29.50	-0.9	
EPRU	75.80	54	e(P)	34	42.60	0.6	AVF	81.60	44 eP	35	12.40	-0.9	STU	85.25	41 ePc	35	30.80	-1.1	
IFR	76.03	58	iPc	34	44.00	0.5	KBS	81.63	11 iPc	35	12.40	-0.5		2.0s	1258.82nm			6.8mb	
			i	34	51.00	22kmX	LBL	81.68	46 P	35	13.13	-0.6	CKI	85.33	46 P	35	31.50	-0.9	
JNW	76.26	19	iPc	34	45.00	1.1	SSF	81.68	44 eP	35	13.00	-0.7	LLS	85.43	43 ePc	35	32.70	-0.4	
MAL	76.47	55	iPc	34	46.20	0.5	ETER	81.69	49 eP	35	14.00	0.2	VAI	85.44	44 P	35	31.90	-1.0	
			iS	44	34.00		SNF	81.86	40 Pc	35	14.50	0.0	TMA	85.47	44 ePd	35	33.80	0.5	
AIA	76.52	171	eP	34	48.20	2.9X			i	35	21.00	21kmX	TRO	85.50	20 iPd	35	33.50	0.8	
EAB	76.52	35	eP	34	44.90	-0.7	PLDF	81.87	45 P	35	13.61	-1.2	SAX	85.60	43 ePc	35	33.70	-0.4	
	1.0s	156.00nm			6.0mb		LOR	81.90	43 eP	35	14.20	-0.7	HFS	85.69	30 ePKP	35	32.50	-1.3	
GUD	76.54	51	eP	34	46.00	-0.2		1.0s	125.00nm			5.9mb		0.8s	37.20nm			5.7mb	
TOL	76.64	51	iPc	34	46.91	0.2	SMF	81.95	44 eP	35	14.30	-0.8	VDL	85.82	44 ePd	35	35.50	0.5	
			epPd	34	53.20	20kmX	ESEL	81.98	51 eP	35	16.20	0.8	COP	85.95	34 iPd+	35	35.00	-0.1	
			esP	34	57.83		LBF	82.01	44 eP	35	14.40	-1.1		0.5s	163.38nm			6.5mb	
			ePP	37	47.11		DOU	82.10	41 Pc+	35	15.30	-0.5	BOB	86.10	45 P	35	35.50	-0.8	
			ePP	39	45.00				i	35	21.10	18kmX	MDI	86.11	44 Pc	35	34.80	-1.4	
			iS	44	34.76				PP	38	24.00		PGF	86.16	48 eP	35	36.60	-0.1	
			ePS	45	23.87				SKS	45	32.00		OSS	86.24	43 ePc	35	36.60	-0.5	
			iSS	49	20.00								GRF	86.39	40 iPc	35	37.20	-0.4	
			iSSS	53	35.00		DBN	82.25	39 iP+	35	17.00	0.5		Z	20s	128.00um			7.3Msz
AAPN	76.68	54	iPc	34	46.98	-0.1		Z	20s	85.00um					e	35	43.10	19kmX	
ALOJ	76.70	54	iPc	34	47.59	0.4				iPP	38	25.00			eSKS	46	06.30		
ATEJ	76.78	54	iPc	34	48.04	0.4	ILT	82.35	338 iPc	35	16.30	-0.5			e	47	26.10		
ELO	76.88	34	eP	34	45.60	-2.0				iS	45	40.00			e	48	57.00		
EBAN	76.91	53	eP	34	48.00	-0.2	BLS1	82.38	31 eP	35	18.00	0.8	MOX	86.46	39 iPc+	35	37.00	-0.9	
ACHM	76.92	54	iPc	34	48.70	0.4	BLS2	82.44	31 iP	35	18.10	0.6		2.0s	721.00nm			6.6mb	
ASMO	76.98	54	iPc	34	48.94	0.2	SSB	82.58	45 P	35	18.30	-0.2		Z	18s	107.40um			7.3Msz
EBH	76.99	34	eP	34	47.50	-0.7	ENN	82.87	40 ePc	35	18.50	-1.2		N	18s	66.60um			
	1.5s	486.00nm			6.3mb			1.0s	295.00nm			6.4mb		E	19s	74.80um			
EAU	77.01	35	iP	34	47.40	-0.9	MEM	82.94	40 iPc	35	18.70	-1.4	SAL	86.70	44 P	35	39.40	0.3	
	1.6s	416.00nm			6.2mb				i	35	20.50	6kmX	FUR	86.72	42 eP	35	38.80	-0.4	
APHE	77.04	54	iPc	34	49.50	0.4			e	37	12.50			Z	19s	184.00um			7.5Msz
AFC	77.14	54	eP	34	50.00	0.3	WIT	83.07	38 eP	35	20.00	-0.8			eS	46	06.50		
EDI	77.16	35	eP	34	48.70	-0.4	WTS	83.26	38 ePc	35	21.00	-0.8	OGA	86.80	43 iP				



[illegible]



LJU	0.21	342	iSg	52	25.10
			iPg d	52	22.40 -0.4
			eSg	52	25.00
R IY	0.53	199	P g	52	27.80 -1.0
			iSg	52	36.40
V O Y	0.54	291	iPgd	52	28.60 -0.6
			eSg	52	37.40
V B Y	0.56	127	iPgc	52	28.40 -1.1
			iSg	52	36.20
T R I	0.62	258	iPg d	52	29.90 -0.7
			iSg	52	39.30
P T J	0.93	86	iPgc	52	35.30 -0.8
			eSg	53	49.90
R B L	0.95	310	Pd	52	36.70 0.4
			eSg	52	51.00
Z A G	0.95	91	iPgc	52	35.90 -0.4
F V I	1.48	301	P	52	46.50 1.6
K B A	1.52	325	iPg d	52	46.20 0.6
			i	53	06.80
			iSg	53	08.80
C T I	2.09	277	Pc	52	54.60 0.9
B H G	2.23	328	iPnc	52	57.90 2.1
S O P	2.27	35	eP	52	58.40 2.1
A R V	2.63	208	P	53	02.20 0.7
V K A	2.69	25	e(Pn)	53	01.50 -0.8
			iPg	53	09.50
			iSn	53	32.40
			iSg	53	46.20
Z S T	2.90	35	iPn	53	04.40 -0.9
			i	53	54.30
C R E	2.92	222	P	53	07.00 1.4
H V A R	2.97	153	i(Pn)	53	07.10 0.9
			iSn	53	44.90
S R O	3.21	51	ePn	53	17.30 7.7X
			i	54	08.90
K H C	3.37	348	P n	53	12.10 0.2
			Pg	53	21.80
			eSn	53	51.50
			Sg	54	05.00
B D I	3.37	240	P	53	12.50 0.5
M D I	3.44	271	P	53	14.10 1.3
W E T	3.51	341	iPnc	53	14.60 0.7
M N S	3.73	203	P	53	18.00 0.9
P R U	4.15	359	ePn	53	22.50 -0.4
			Pg	53	36.50
			Sn	54	09.00
			Sg	54	26.30
S D I	4.18	188	P	53	24.00 0.6
B R G	5.06	355	e(P)	53	44.80 9.0X
			ePg	53	54.00
			i	54	31.00
			iSg	55	04.00
K S P	5.13	12	ePn	53	15.80 -21.0X
			ePg	53	40.70
			eS	54	35.70
			i	55	05.70
			e	01	40.50
M O X	5.21	338	ePn	53	38.00 0.0
			eSn	54	37.00
			eSg	55	04.00
K R A	5.52	38	eP	53	29.50 -13.0X
L P G	5.53	269	Pn	53	42.60 -0.2
L P L	5.54	269	Pn	53	42.80 -0.1
			Sn	54	45.80
C L L	5.58	349	(Pg) (Sg)	53 55	43.60 15.00 -0.2
C D F	5.63	300	Pn	53	40.70 -3.4X
B S F	5.73	293	Pn	53	44.70 -0.8
			Sn	54	49.20
H A U	6.07	294	Pn	53	49.30 -0.8
			Sn	54	58.80
O H R	6.52	134	eP	53	19.80 -36.8X
S M F	7.52	280	Pn	54	08.80 -1.7
A V F	7.86	281	Pn	54	13.30 -2.0
B G F	8.20	279	Pn	54	18.60 -1.5
	S.D.	= 1.1	on	35	of 41 obs.
<hr/>					
MAR 25, 1990 14h 17m 18.82± 0.13s					
37.034°N ± 3.5km      72.942°E ± 2.0km					
DEPTH = 33.0km (normol)					
6.0mb (73 obs.)    6.3Msz ( 5 obs.)					



KSH	3.40	44	Pgd	18 15.50	4.5X		6.0s	3000.00nm	6.3mb X	TDD	36.85	235	iPd	24 27.85	1.9	
DSH	3.63	296	Sg	18 59.00		N	12s	62.80um		QIZ	36.89	109	Pd	24 26.00	-0.3	
			eP	18 15.00	0.8	E	12s	32.00um		N	23s	119.00um				
			eS	19 05.00				S	28 24.00		E	20s	83.00um			
FRU	5.93	12	iPc	18 51.00	4.3X	BDT	30.27	124 eP	23 26.70				S	30 09.00		
			iS	19 53.00			1.0s	95.20nm	5.5mb				SS	32 43.00		
TLG	7.09	27	eP	19 03.00	0.0	GYA	30.41	101 iPd	23 31.00	0.6	ATA	36.91	234 iPd	24 28.22	1.8	
NDI	9.07	155	iP	19 28.50	-1.9		N	14s	96.80um		MDB	36.94	300 iPd	24 11.00	-15.4X	
			0.5s	380.28nm	6.8mb X	E	14s	28.00um		AGAL	36.95	260 eP	24 28.00	1.4		
			eS	21 10.00				S	28 31.00		ANMR	37.04	261 iPd	24 28.20	0.7	
MHI	10.83	270	eP	19 52.00	-2.7	KAS	30.49	290 iPc	23 31.20	0.3	ARO	37.09	235 iPd	24 30.50	2.5	
	0.5s		718.31nm		7.1mb X	HRI	30.52	274 eP	23 33.00	1.7	AGMR	37.12	260 iPd	24 29.60	1.5	
WMO	13.12	54	iPc	20 24.50	-0.9	OBN	30.55	318 eP	23 30.00	-1.2	PLD	37.14	293 iPd	24 29.00	0.9	
			6.0s	*****nm	7.3mb X		1.2s	550.00nm	6.2mb	RZN	37.19	292 iPd	24 28.00	-0.8		
	N	11s	463.00um					eS	28 37.00		DAF	37.24	235 iPd	24 31.12	1.9	
	E	11s	0.90um			MDSJ	30.65	271 Pc	23 33.60	1.2	SGH	37.30	235 iPd	24 31.95	2.2	
			S	22 54.50		SHMJ	30.67	273 Pd	23 35.00	2.4	HLD	37.32	235 iPd	24 31.57	1.8	
GKN	13.35	129	P	20 23.00	-5.6X	TIY	31.23	77 Pd	23 39.00	1.5	GZH	37.35	100 Pc	24 31.40	1.4	
KKN	13.90	128	P	20 29.90	-6.0X			S	28 41.00		PCB	37.46	294 iPc	24 31.00	0.1	
DMN	13.92	129	P	20 30.50	-5.7X	DSI	31.36	271 ePd	23 40.00	1.4	BMR	37.47	302 ePc	24 44.00	13.2X	
PKI	14.14	128	P	20 33.20	-5.9X	BBTK	31.42	288 iPc	23 39.00	-0.2	APE	37.53	285 eP	24 31.00	-0.5	
GUN	14.20	126	P	20 34.60	-5.4X	CSS	31.96	278 eP	23 44.50	0.7	NJ2	37.86	84 iPc	24 36.40	2.1	
LSA	16.86	110	P	21 11.40	-3.0	LOE	32.01	120 iPd	23 43.00	-1.4		7.0s	5000.00nm		6.5mb X	
	E	10s	187.00um			NST	32.15	124 iPd	23 47.00	1.4			S	30 24.00		
TEH	17.41	272	eP	21 23.00	2.2	WAJH	32.64	261 eP	23 51.00	1.2	MMB	37.94	293 eP	24 35.00	0.1	
IR2	17.81	272	eP	21 25.00	-0.8	PPCY	32.76	279 eP	23 50.50	-0.2	NPS	37.95	282 eP	24 35.00	-0.1	
IR1	18.03	272	eP	21 28.00	-0.5	GPA	33.22	289 eP	23 54.00	-0.7	OUR	37.98	290 eP	24 34.90	-0.2	
IR7	18.03	272	eP	21 29.00	0.4	BCK	33.51	284 iP	23 56.90	-0.5	DEV	37.99	300 ePc	24 38.00	2.8X	
IR5	18.15	271	eP	21 30.00	-0.1	HRT	33.62	290 eP	23 58.00	-0.3	DL2	38.07	72 P	24 37.00	1.1	
POO	18.45	177	iPd	21 32.50	-1.2	BJI	33.71	71 eP	23 59.00	0.1		8.0s	5700.00nm		6.5mb X	
			1.2s	515.63nm	5.6mb	N	14s	77.10um	3.4mb X	Z	18s	33.10um		6.2Msz		
HYB	20.16	164	iPd	21 51.00	-2.2			ePcP	26 39.00		N	14s	33.70um			
			1.0s	640.00nm	5.9mb	E	12s	26.80um		E	12s	26.80um				
			iS	25 36.00				eS	29 20.00				S	30 30.00		
TAB	21.11	281	eP	22 04.00	1.0	GBZT	33.80	290 eP	24 00.40	0.7	SRS	38.12	292 eP	24 36.10	-0.3	
KER	21.14	270	ePc	22 05.00	1.7	YLV	33.88	290 iP	24 00.00	-0.6	VTS	38.16	294 iPc	24 37.00	0.1	
GTA	21.22	75	P	22 04.00	-0.1	ISK	34.05	291 eP	24 03.00	1.1			iPP	26 11.00		
			6.0s	*****nm	6.9mb X	ITU	34.08	291 iPd	24 03.00	0.9	CEI	38.17	303 eP	24 42.00	5.3X	
	Z	14s	101.00um	6.4Msz X	KHL	34.16	286 eP	24 02.60	-0.4	UZH	38.24	304 eP	24 37.00	-0.3		
	E	10s	85.20um		NNT	34.18	128 ePn	23 59.00	-4.3X	PAIG	38.28	290 eP	24 37.30	-0.4		
			S	25 54.00				eSg	24 04.20		SUF	38.31	327 eP	24 36.70	-0.9	
BRF	21.91	246	eP	22 08.70	-2.2			e	29 33.00			0.9s	208.70nm		6.0mb	
BBU	21.92	247	eP	22 08.90	-2.1	ELL	34.20	283 eP	24 02.90	-0.5	NUR	38.32	323 iP	24 37.00	-0.7	
			0.5s	456.00nm	6.2mb	CFR	34.35	298 eP	24 05.00	0.6		1.4s	492.10nm		6.1mb	
BEE	21.99	246	eP	22 09.20	-2.5	PSN	34.41	295 iPd	24 07.00	2.0	SOH	38.35	291 eP	24 39.60	1.2	
	0.5s		546.00nm	6.2mb	TLB	34.46	297 ePc	24 17.00	11.6X	KKB	38.37	293 iPc	24 38.00	-0.4		
DHR	22.11	248	ePd	22 12.50	-0.4	CTT	34.51	291 iP	24 06.40	0.5	PLG	38.37	291 eP	24 38.00	-0.5	
SLY	22.13	275	iPc	22 16.00	2.9X	DST	34.60	288 iP	24 07.50	0.7	HKC	38.41	101 eP	24 41.00	2.1	
			iPPP	23 08.00		KSL	34.61	282 eP	24 07.00	0.2	KNT	38.63	292 ePc	24 41.30	0.7	
			iS	26 19.50		BIR	34.68	300 eP	24 10.00	2.7X	ATH	38.70	287 eP	24 42.00	0.8	
			iSSS	26 41.50		PPE	34.69	300 ePd	24 08.50	1.1	NEO	38.76	289 eP	24 43.00	1.2	
			iPcS	29 32.50		IAS	34.72	302 eP	24 09.00	1.4	VAY	38.84	292 iP	24 41.50	-0.9	
			iLO	30 22.00		KOT	34.81	271 ePc	24 09.50	1.0		1.4s	0.38nm		3.0mb X	
BKR	23.16	291	iPd	22 26.00	2.6	WHN	34.81	88 P	24 14.00	5.5X			i	24 43.60		
			iS	26 34.00			Z	20s	46.70um	6.2Msz	BZS	38.91	299 eP	24 42.00	-0.9	
BHD	23.61	269	iPc	22 30.00	2.5		N	14s	30.30um		SNG	38.96	133 iPd	24 44.10	0.5	
			iS	26 50.00			E	15s	33.10um			0.9s	164.71nm		5.8mb	
GBA	23.68	169	Pc	22 27.50	-0.8			S	29 38.00				eS	26 59.40		
	1.2s		496.20nm	5.9mb		CLI	34.92	300 ePd	24 11.00	1.7	VAM	39.02	283 eP	24 43.00	-0.9	
MSL	23.85	277	ePc	22 30.50	0.6	DMK	34.92	292 iP	24 11.20	1.8	GRG	39.04	292 eP	24 44.90	0.8	
			i	22 56.50		BNT	35.01	290 iP	24 09.50	-0.7	LIT	39.14	290 ePd	24 43.70	-1.3	
			eS	26 55.00		EDC	35.05	290 iP	24 11.50	0.9	AGG	39.50	289 eP	24 48.90	0.9	
			eSS	27 44.50		BRD	35.11	299 ePc	24 15.00	4.0X	SKO	39.55	294 eP	24 48.00	-0.4	
			eSS	28 21.50		TIA	35.23	78 P	24 12.80	0.7		1.5s	328.00nm		5.9mb	
			eScS	33 26.00			7.0s	4600.00nm	6.5mb X				i	24 49.60		
LZH	24.79	83	ePd	22 41.65	2.4		E	11s	31.30um				i	24 52.00		
			eS	27 06.68				S	29 49.00				i	25 28.50		
RYD	25.63	249	eP+	22 45.00	-2.0	VRI	35.32	299 ePd	24 13.00	0.2	SPC	39.58	305 iP	24 48.00	-0.7	
CD2	26.20	94	eP	22 52.60	0.2	PUL	35.39	324 iPd	24 14.00	0.8	VLI	39.62	285 eP	24 46.00	-3.0X	
			PP	23 32.30		MFT	35.42	290 iP	24 13.50	-0.3	KZN	39.64	291 eP	24 50.00	0.9	
			sS	27 41.60		ISR	35.49	298 iPc	24 15.00	0.8	KRA	39.75	306 eP	24 49.40	-0.4	
KOD	26.99	170	eP	23 00.70	0.8	PTT	35.53	301 eP	24 16.00	1.5		0.9s	350.00nm		6.1mb	
QASM	27.23	255	eP	23 03.30	1.5	JMB	35.70	293 iPc	24 17.00	1.0			i	24 50.80		
KMI	28.03	107	ePd	23 09.75	0.5			iPP	25 33.00				i	24 57.80		
			eS	28 11.07		ARG	35.73	283 eP	24 15.00	-1.3			i	25 21.10		
KVT	28.79	290	iP	23 17.40	1.6	IZM	35.88	286 eP	24 17.10	-0.5	BEO	39.82	298 iP	24 53.00	2.5	
BTO	28.97	71	P	23 18.00	0.6	EZN	36.31	289 iP	24 20.20	-0.9			i	26 47.70		
			N	16s	109.00um		ALN	36.33	291 eP	24 20.60	-0.7	FNA	39.83	292 eP	24 49.80	-0.9
	E	16s	110.00um		SMG	36.36	285 eP	24 21.00	-0.6	PSZ	39.89	303 iP	24 52.70	1.6		
CHG	29.13	121	ePd	23 17.80	-1.2	PRK	36.46	288 eP	24 23.00	0.6	EVR	39.92	289 eP	24 50.00	-1.5	
	1.8s		170.45nm	5.5mb	MTUR	36.53	298 ePc	24 24.00	0.9	SOD	39.93	334 iP	24 50.30	-0.8		
XAN	29.32	85	P	23 19.50	-1.1	PVL	36.53	295 eP	24 24.00	1.1	CN2	39.98	63 Pd	24 52.00	0.2	
			N	14s	59.60um		DIM	36.53	293 eP	24 24.00	1.0		5.0s	3700.00nm		6.4mb X
	E	14s	79.20um		CMP	36.54	298 iPd	24 28.00	4.9X		Z	15s	65.00um		6.6Msz X	
			S	28 10.00		KAP	36.65	282 eP	24 23.00	-1.1		N	15s	54.00um		
KMSA	29.81	244	eP	23 23.30	-1.8	RDO	36.67	291 eP	24 24.00	-0.1		E	15s	56.00um		
HHC	30.12	71	eP	23 27.20	-0.5	AKSR	36.69	260 iPd	24 26.00	1.5			sP	25 06.00		



25d 14h

SSE	40.06	84	iPd	24	54.50	1.9		RIY	43.98	300	eP	25	25.70	1.2		TMA	47.61	302	ePc	25	51.80	-1.8
	7.0s	5800.00nm				6.4mb X		MMN	44.04	292	P	25	25.40	0.4		ZLA	47.63	304	ePc	25	53.10	-0.5
OHR	40.19	292	eP	24	51.00	-2.7		CLL	44.07	309	iPd	25	25.90	0.7		KAGJ	47.70	79	eP	25	55.40	1.2
ITM	40.28	286	eP	24	54.00	-0.4					iP	25	53.40	120kmX		ABH	47.71	307	eP	25	54.91	0.8
KBN	40.28	292	iPd	24	54.60	0.3					iSP	26	05.00			VAI	47.73	302	Pd	25	53.50	-0.7
KKS	40.29	294	eP	24	55.70	1.4					eS	32	04.00			WIT	47.78	311	eP	25	56.00	1.5
PHP	40.34	293	eP	24	54.70	-0.1		CZI	44.12	291	P	25	25.20	-0.4		BER	47.79	322	iPc	25	55.60	1.1
BCI	40.49	294	eP	24	56.90	1.0		COP	44.16	315	iPc	25	28.00	2.2		FEL	47.80	305	P	25	55.15	0.2
BUD	40.51	302	eP	24	56.00	-0.1									WTS	47.81	310	iPd	25	56.00	1.2	
PVY	40.51	295	e(P)	24	58.70	2.3		MGR	44.30	292	P	25	26.30	-0.9			0.8s	96.00nm			5.9mb	
IVA	40.52	295	eP	24	57.50	1.1		TRI	44.34	301	iPd	25	29.00	1.6		STR	47.82	306	P	25	56.03	1.1
LSK	40.55	291	eP	24	55.70	-0.9		RBL	44.35	302	P	25	27.60	0.0		SHK	47.83	74	eP	25	56.20	1.0
OZH	40.59	94	Pc	24	58.00	0.9		SGO	44.37	293	P	25	27.70	0.0		GWf	47.83	306	P	25	56.22	1.1
	6.0s	4100.00nm				6.3mb X		KBA	44.39	303	eP	25	26.00	-2.1		ASK	47.85	322	iP	25	56.20	1.2
Z	20s	40.00um				6.3MsZ			1.4s	259.00nm				5.9mb		PTS	47.96	289	P	25	57.40	1.2
N	12s	30.70um									i	25	28.70			RUP	48.06	307	eP	25	57.81	1.0
E	12s	13.00um									i	26	03.40			CDf	48.17	305	P	25	58.00	0.3
		S		31	02.00						i	27	00.30			YONJ	48.20	73	eP	25	57.60	-0.5
TIR	40.83	293	eP	24	59.50	0.7		BHG	44.60	304	iPc	25	29.00	-0.5		MMK	48.23	302	ePd	25	57.70	-0.8
IGT	40.89	290	eP	24	58.00	-1.3			1.7s	285.00nm				5.9mb		ORO	48.33	302	P	25	58.00	-1.1
LACI	40.89	293	eP	25	00.00	0.7		BSS	44.68	293	P	25	30.20	0.0		MOF	48.38	305	P	25	59.72	0.3
KEV	40.89	338	iP	25	00.00	1.0		KGM	44.69	134	ePc	25	31.50	1.0		PGF	48.41	297	eP	25	57.50	-2.2
	1.3s	278.30nm				5.8mb		TIK	44.69	22	eP	25	28.00	-1.9		CKI	48.42	300	P	25	59.30	-0.3
SRO	40.95	303	eP	25	01.50	1.8					eS	32	05.00			KBS	48.44	347	iP	25	58.50	-0.9
SDA	40.97	294	eP	25	00.30	0.4		DUI	44.72	295	P	25	31.70	1.1		MEM	48.55	309	iPd	26	01.50	1.0
VLS	41.03	288	eP	25	00.00	-0.5		MSI	44.84	290	P	25	32.60	1.1		ENN	48.57	309	iPd	26	01.40	0.7
SRN	41.06	291	iP	25	00.50	-0.1		FVI	44.86	302	P	25	31.90	0.4			0.7s	40.00nm			5.6mb	
TTG	41.06	295	e(P)	25	02.00	1.3		LOF	44.88	333	iPc	25	31.76	0.3		DIX	48.60	302	ePc	26	02.50	1.1
KEK	41.25	291	eP	25	01.00	-1.3		NSS	44.88	328	iPc	25	31.95	0.5		BSF	48.61	305	eP	25	59.30	-1.9
IPM	41.29	135	ePc	25	04.10	1.2		NB2	44.90	323	P	25	32.40	0.6		PGP	48.71	106	ePc	26	02.50	0.4
	0.9s	176.80nm				5.8mb		ATN	44.92	290	P	25	31.20	-1.0			1.0s	103.00nm			5.8mb	
BRY	41.49	296	e(P)	25	05.00	0.6		MOX	45.02	308	iPd	25	34.00	1.2		HAU	48.87	305	eP	26	01.20	-1.9
UPP	41.62	321	iP	25	04.10	-0.9			1.8s	554.00nm				6.2mb		EMS	48.93	302	ePd	26	04.20	0.4
AAE	41.63	237	eP	25	08.60	2.6X		SDI	45.17	295	P	25	34.70	0.5		SAOF	49.03	300	P	26	03.72	-0.7
ZST	41.73	304	eP	25	07.60	1.5		AOU	45.31	296	P	25	34.10	-1.2		VITF	49.06	305	P	26	05.16	0.7
		i		26	49.00			ARV	45.37	298	P	25	33.30	-2.4		TKSJ	49.08	74	eP	26	06.00	1.1
KTK1	41.77	336	iPc	25	06.30	0.1		AZI	45.38	296	P	25	36.30	0.6		DOI	49.11	300	P	26	04.60	-0.5
KSP	42.04	308	eP	25	08.20	-0.4		GRF	45.39	307	iPd	25	36.00	0.2		AUTN	49.12	300	P	26	04.63	-0.7
	1.1s	144.00nm				5.6mb					e	25	38.00			SBF	49.15	300	eP	26	03.70	-1.7
		i		25	10.40						e	25	41.50				1.6s	298.50nm			6.1mb	
		i		25	40.00			RGS	45.40	325	iP	25	38.50	2.9X		LPG	49.19	302	eP	26	04.30	-1.7
		eLR		44	45.00			MNO	45.57	290	P	25	39.50	1.9			1.8s	876.65nm			6.5mb	
BLY	42.13	299	eP	25	12.10	2.6X		FUR	45.59	304	eP	25	37.00	-0.4		LPL	49.20	302	eP	26	04.70	-1.2
VKA	42.24	304	eP	25	10.00	-0.3		RSM	45.62	298	P	25	39.40	1.8		AURF	49.22	300	P	26	05.41	-0.5
		i		25	12.10			PIP	45.63	101	iPc	25	41.00	3.0X		REVF	49.23	299	P	26	06.38	0.4
		ic		25	12.60			MEU	45.64	288	P	25	39.60	1.6		TOUF	49.24	300	P	26	05.88	-0.3
		i		25	17.20			ASS	45.67	297	P	25	40.60	2.4		MVIF	49.34	300	P	26	05.17	-1.8
		i		25	17.20			CTI	45.73	301	P	25	38.90	0.3		BNI	49.36	301	Pd	26	07.30	0.2
		i		25	43.70			MNS	45.82	296	P	25	38.30	-1.0		FOUF	49.42	301	ePc	26	07.80	0.5
		i		26	58.00			RMP	45.95	295	P	25	40.80	0.5		DOU	49.54	308	P	26	09.30	1.1
LCI	42.47	292	Pc	25	11.30	-1.0		RDP	45.96	295	P	25	41.00	0.6		CALN	49.56	300	P	26	09.50	0.9
MDJ	42.78	61	Pd	25	15.50	0.7		OGA	45.99	303	iPc	25	39.40	-1.4		SNF	49.65	309	P	26	09.30	0.3
	E	18s				57.40um		CRE	46.04	298	P	25	43.00	1.9		FRF	49.78	299	eP	26	08.10	-2.1
		S		31	38.00			SFI	46.05	299	P	25	42.00	1.0		LMR	49.94	299	eP	26	09.40	-2.0
PTJ	42.80	300	eP	25	14.60	-0.4		GIB	46.05	290	P	25	40.30	-0.9		TSRJ	49.99	72	eP	26	10.90	-0.9
KLM	42.85	135	eP	25	17.00	1.4		MCT	46.46	290	ePd	25	46.36	1.8		LRG	50.01	299	eP	26	10.20	-1.7
BRT	42.90	293	P	25	16.80	1.0		FIR	46.50	298	eP	25	46.50	2.0			1.4s	340.35nm			6.2mb	
HVAR	42.94	296	iP	25	16.60	0.5					e	28	10.00			KKM	50.05	117	ePc	26	14.60	2.0
BAI	43.09	293	P	25	17.50	0.2		FAI	46.54	289	P	25	47.50	2.5			1.4s	410.70nm			6.3mb	
PRU	43.22	307	P	25	18.00	-0.3		SAL	46.59	301	P	25	47.00	1.8		WKYJ	50.18	73	eP	26	14.90	1.5
	0.9s	111.80nm				5.6mb		OSS	46.62	303	ePc	25	44.50	-1.3		LBF	50.67	304	eP	26	14.50	-2.4
		i		25	20.50			BAG	46.69	103	eP	25	48.00	1.4		LOR	50.68	305	eP	26	14.40	-2.5
VBY	43.35	300	iPd	25	21.50	2.1										1.3s	112.80nm			5.7mb		
TRO	43.42	336	iPc	25	20.83	1.2					eS	32	38.00			NAI	50.74	230	iPd	26	22.00	4.0X
BRG	43.52	308	iP	25	20.30	-0.4										SSB	50.75	302	P	26	15.96	-1.6
	1.3s	240.00nm				5.8mb		MOL	46.70	325	iP	25	46.57	0.7		SMF	50.85	304	eP	26	15.90	-2.4
		i		25	21.90			SHNJ	46.76	75	eP	25	47.00	0.8		SSF	50.96	305	eP	26	16.80	-2.3
		iP		25	51.50	139kmX		MME	46.79	299	P	25	48.10	0.9		MTMJ	50.99	70	P	26	20.30	0.8
HFS	43.62	321	eP	25	20.90	-0.4		BDI	46.89	299	P	25	48.00	0.2		AVF	51.14	304	eP	26	18.00	-2.4
	1.1s	464.00nm				6.2mb		MAO	46.91	297	P	25	48.60	0.7		PLDF	51.18	303	P	26	19.47	-1.4
Z	17s	23.69um				6.2MsZ		CVP	46.93	101	ePd	25	51.00	2.8X		GRC	51.19	305	P	26	20.18	-0.6
		LR		40	20.00				0.5s	36.00nm				5.6mb		MAT	51.31	70	eP	26	20.00	-1.9
ORI	43.66	292	P	25	21.60	-0.4		TOD	46.96	307	eP	25	49.03	0.8			0.8s					



EDU	52.64	317	iPd	26	31.20	-0.4	EPRU	60.63	296	eP	27	27.80	-1.0	WRA	80.96	123	Pd	29	30.70	-0.9
JNW	52.70	336	iPc	26	34.00	2.1	NPA	60.79	218	iP	27	34.50	4.5X		0.9s	115.20nm			5.9mb	
RJF	52.79	303	eP	26	31.20	-1.7		1.0s	290.00nm	e	27	39.00	6.4mb	COOL	81.24	140	eP	29	33.00	0.1
ETER	52.82	299	eP	26	33.60	0.5					35	46.00			0.9s	77.00nm			5.7mb	
EBL	52.82	317	eP	26	33.50	0.5	EZAM	60.82	303	eP	27	31.00	1.0	MBO	81.40	281	iPc	29	35.80	1.8
	1.0s	114.00nm			5.8mb		ALJ	61.03	296	iP	27	31.00	-0.6	RKG	81.78	144	iPc	29	39.30	3.7X
EDI	52.87	317	ePd	26	33.00	-0.3	EJIF	61.03	295	eP	27	31.00	-0.5	SCH	82.20	338	eP	29	37.00	-0.6
LDF	52.90	307	eP	26	30.80	-2.8	PTO	61.19	302	eP	27	32.50	0.0		1.1s	204.00nm			6.1mb	
KAKJ	52.90	69	P	26	33.60	-0.2	NKM	61.43	294	iPd	27	33.00	-1.2	PMG	83.26	107	eP	29	44.00	0.4
EBH	52.97	317	eP	26	33.40	-0.7	EVAL	61.44	297	eP	27	34.20	-0.1	ASPA	83.29	126	iPc	29	40.20	-3.5X
	0.7s	107.00nm			5.9mb		CNIL	61.49	296	iP	27	51.50	16.9X		1.6s	296.00nm			6.2mb	
HOOU	52.97	61	eP	26	34.40	0.2	IFR	62.11	292	iPd	27	37.80	-1.3	RAB	83.94	100	e(P)	29	48.00	0.9
EKA	52.99	316	P	26	33.00	-1.2					27	40.50		QIS	84.97	120	eP	29	51.00	-1.1
	1.0s	144.40nm			5.9mb		ILT	62.63	24	iPc	27	40.40	-1.4						29	53.00
FLN	53.08	308	eP	26	32.00	-3.0	LIS	62.63	299	iPd	27	42.40	0.2	FFC	88.50	357	eP	30	08.00	-0.9
	1.0s	125.00nm			5.8mb		AVE	63.90	293	iPd	27	50.50	-0.1	CTA	89.36	116	iPd	30	13.80	0.4
LPO	53.20	302	eP	26	34.00	-1.9					28	11.00			1.3s	226.92nm			6.3mb	
	1.8s	405.70nm			6.1mb						28	51.00		EDM	89.95	4	iP	30	14.50	-1.4
LFF	53.42	303	eP	26	35.50	-2.0	WSI	64.25	126	ePd	27	47.50	-5.6X		0.7s	338.00nm			6.7mb	
	1.4s	270.10nm			6.0mb						31	42.50		SES	92.87	3	eP	30	29.00	-0.4
GRR	53.43	307	eP	26	34.60	-2.9	TIO	64.93	291	iPd	27	57.50	-0.1		1.6s	625.00nm			6.8mb	
EAB	53.44	317	eP	26	37.00	-0.5					28	16.50		HNR	93.23	99	eP	30	32.00	0.6
	0.8s	716.00nm			6.7mb		AAI	65.36	116	eP	27	59.00	-1.3	PNT	93.31	8	eP	30	31.00	-0.4
MFF	53.50	305	eP	26	35.20	-2.8	BRW	66.38	16	eP	28	06.60	0.5		1.0s	122.00nm			6.3mb	
LPF	53.65	307	eP	26	36.50	-2.6	MBC	66.73	3	ePd	28	07.00	-1.2	PGC	93.45	11	eP	30	33.00	1.0
ESEL	53.66	296	eP	26	40.00	0.7		0.7s	234.00nm	pP	28	36.50	119kmX	ADE	94.15	131	eP	30	35.10	-0.2
KUSJ	53.73	60	eP	26	37.30	-2.4					28	19.00	9.7X		1.0s	94.00nm			6.2mb	
EPF	54.32	301	eP	26	41.10	-3.2X	KUG	66.77	124	eP	28	19.00	9.7X	RMO	95.18	119	eP	30	42.00	1.8
DAG	54.69	344	iPd	26	44.20	-2.2		1.5s	13.50nm	e	34	57.00		LRM	97.38	4	eP	30	51.10	0.7
	0.8s	246.27nm			6.3mb						28	10.00	0.0	BWA	99.88	126	eP	31	03.10	1.7
ESCF	54.94	301	P	26	47.67	-1.1	GDH	67.00	342	iPc	28	10.00	0.0	CAN	100.81	126	ePdfff31	09.80	4.2X	
EBR	55.00	298	iPd	26	49.00	-0.1		1.3s	269.23nm	ePd	28	15.04	0.5	WDC	101.47	12	ePdfff31	12.80	4.5X	
ATE	55.02	301	P	26	46.97	-2.4	GUMO	67.58	90	e(P)	28	12.70	-1.8	MIN	101.85	11	e(Pdfff31	12.10	1.8	
EROQ	55.05	298	eP	26	49.40	-0.2	PJG	67.58	90	e(P)	28	12.70	-1.8	ORV	102.64	11	ePdfff31	19.20	5.6X	
MADF	55.08	301	P	26	48.58	-1.2	ANM	68.94	23	eP	28	21.70	-0.5	GLD	103.57	359	Pdiff	31	23.00	5.0X
ISSF	55.11	301	P	26	48.88	-1.2	IMA	71.14	18	eP	28	34.20	-1.6		1.2s	80.81nm			6.4mb	
ELYF	55.19	301	P	26	46.87	-3.7X		1.0s	120.00nm	e	28	44.40	-0.5	KVN	103.61	9	Pdiff	31	18.00	-0.2
DLE	55.44	314	eP	26	51.80	-0.4	ADK	72.67	37	e(P)	28	44.40	-0.5	GOL	103.63	359	Pdiff	31	17.50	-0.8
	1.0s	116.00nm			5.9mb	MBL	72.83	135	iPc	28	46.00	-0.2	CMB	104.30	11	e(Pdfff31	22.10	1.0		
DMU	55.47	315	eP	26	51.80	-0.6		0.8s	155.00nm					FRI	105.42	10	e(Pdfff31	27.10	1.1	
	1.0s	204.00nm			6.1mb	SHGH	72.87	264	eP	28	45.00	-1.7	GSC	107.46	8	ePdfff31	40.00	4.7X		
ECP	55.67	313	eP	26	53.60	-0.2	CTFE	72.89	293	ePd	28	48.50	1.9	GSC	107.46	8	ePKP	35	36.00	-7.8X
	0.7s	235.00nm			6.3mb	KOGH	72.94	265	eP	28	46.00	-1.1	ALO	108.39	359	e(Pdfff31	41.00	1.4		
DCN	55.84	314	eP	26	55.40	0.3	TTA	72.97	21	eP	28	47.40	0.8	RVR	108.69	9	ePKP	35	46.00	0.0
	0.9s	278.00nm			6.3mb	KUK	72.98	265	eP	28	44.40	-2.9	TPC	108.73	8	ePdfff31	44.00	3.1X		
DAV	56.25	108	eP	27	00.80	2.3X	TEGH	73.02	264	eP	28	47.00	-0.5	TPC	108.73	8	ePKP	35	46.00	-0.1
		eS			34	51.00	INK	73.12	10	ePd	28	45.90	-1.3	PLM	109.38	9	ePdfff31	54.00	10.0X	
ECRI	56.43	301	eP	27	00.50	0.9		0.8s	219.00nm	pP	29	14.00	110kmX	PLM	109.38	9	ePKP	35	43.00	-4.6X
ECHE	56.50	297	eP	27	01.40	1.4	LEGH	73.15	264	eP	28	47.00	-1.3	BAR	110.07	9	ePdfff31	33.00	-13.9X	
ACU	56.52	296	eP	27	03.40	3.2X	WEGH	73.30	264	eP	28	38.00	-11.2X	BAR	110.07	9	ePKP	35	43.00	-5.7X
LWI	56.59	236	ePd	26	59.30	-1.9	FBA	73.51	17	eP	28	48.20	-1.4	SPA	126.85	180	iPKPd	36	19.60	-0.3
ETOR	56.79	299	eP	27	02.20	0.0	WIGH	73.67	264	eP	28	50.00	-1.3		1.0s	24.50nm				
AKU	57.33	331	iP	27	06.70	1.2	MTN	73.80	120	eP	28	53.00	1.0	Z	20s	7.61um			6.4MsZ	
	1.5s	333.33nm			6.2mb	TBT	73.99	294	iPc	28	54.00	1.0	PMO	137.67	70	ePKP	36	38.00	-3.8X	
PCI	57.50	120	ePc	27	05.60	-1.7	KNA	74.27	124	eP	28	55.00	0.4		0.8s	20.00nm				
		eS			27	32.00		0.5s	122.00nm					TPT	137.87	70	ePKP	36	40.00	-2.1
EALH	57.51	295	eP	27	08.00	0.9	FRB	75.01	343	eP	28	51.00	-7.3X		0.8s	20.00nm				
TRT	57.97	132	iPd	27	09.40	-1.1		1.1s	192.00nm					ZOBO	139.89	290	PKP	36	39.00	-7.5X
	0.9s	7.00nm			4.7mb X	LKO	75.18	271	P	28	56.82	-3.3X		1.4s	43.74nm					
VAL	58.01	314	iP	27	11.20	0.8	SLR	75.26	221	iPc	29	00.30	-0.1							
GUD	58.33	299	eP	27	12.80	-0.2		1.0s	85.00nm						i				36	49.00
ENIJ	58.45	295	eP	27	14.00	0.2	PMR	75.96	19	eP	29	02.20	-1.5	LPB	140.04	290	PKP	36	48.00	1.4
TOL	58.56	299	iPd	27	15.24	0.7		0.9s	91.70nm					AIA	142.30	208	ePKP	36	47.80	-0.8
EBAN	59.08	297	eP	27	18.00	-0.2	TOA	76.28	18	eP	29	05.10	-0.5	ARE	142.51	294	ePKP	36	51.00	0.2
AFC	59.29	296	eP	27	18.80	-1.0	MEKA	76.46	139	eP	29	07.00	0.0	ANT	145.92	282	e(PKP)	36	57.00	0.9
BCAO	59.31	251	iPc	27	16.20	-3.8X	PRY	76.65	221	iPc	29	06.10	-2.1	CFA	147.64	268	ePKP	37	00.00	1.3
	1.0s	152.00nm			6.1mb			1.2s	120.00nm				RTRS	148.10	271	ePKPc	37	03.40	4.0X	
		id			28	51.30	LIC	76.68	268	P	29	06.64	-1.9	FCH	149.84	266	ePKP	37	08.50	6.0X
EMON	59.38	303	eP	27	20.80	0.6								PCH	150.11	266	ePKP	37	08.50	6.0X
REY	59.38	329	iP	27	22.30	2.5		20s	0.95um					SAN	150.18	266	ePKPc	37	08.00	5.4X
ASMO	59.39	296	iPc	27	19.50	-0.9	BFS	76.99	221	iPd	29	03.50	-6.6X	CHCH	150.31	265	ePKPc	37	08.50	5.7X
TAF	59.52	293	iPd	27	22.00	0.7		1.3s	365.38nm					ROCH	150.31	267	ePKP	37	13.00	10.0X
APHE	59.52	295	iPc	27	18.50	-2.9	MRWA	77.30	142	eP	29	11.50	0.0	TACH	150.45	266	ePKP	37	08.50	5.5X
ACHM	59.56	295	iPc	27	21.00	-0.6								LCCH	150.91	266	iPKPd	37	13.10	9.5X
ERUA	59.67	302	eP	27	23.00	0.8	SEK	77.70	220	iPd	29	14.00	0.0	LNV	150.92	265	ePKPc	37	09.60	6.0X
AAPN	59.68	296	iPc	27	21.50	-0.9		1.0s	80.00nm						S.D. = 1.3	on 474 of 540 obs.				
EMEL</																				



25d 14h

RTCV 2.94 117 ePc 29 39.30 -0.2  
 FCH 2.98 158 eP 29 41.50 1.2  
 CFA 3.08 111 e(P) 29 42.50 1.0  
 TACH 3.13 170 eP 29 41.50 -0.7  
 PCH 3.19 163 eP 29 46.00 2.9X  
 LNV 3.38 177 eP 29 45.50 -0.3  
 CHCH 3.46 167 eP 29 47.10 0.2  
 iS 30 24.60

S.D. = 1.1 on 8 of 10 obs.

\* MAR 25, 1990 14h 50m 55.15 ± 0.78s  
 18.399 S ± 11.3km 167.931 E ± 13.7km  
 DEPTH = 33.0km (normal)  
 4.6mb (5 obs.)

VANUATU ISLANDS (186)

DZM 3.91 201 iP 51 53.00 -1.5  
 HNR 11.81 318 eP 53 42.00 -2.3  
 BRS 16.57 235 eP 54 47.00 0.3  
 RMO 19.45 242 iPc 55 23.90 1.8  
 CTA 20.53 262 iPd 55 34.90 1.4  
 PMG 22.04 291 eP 55 50.00 1.2  
 CNB 23.56 221 eP 56 06.00 2.4X  
 BWA 23.60 224 eP 56 04.80 0.8  
 CAN 23.79 221 eP 56 08.30 2.5X  
 WB5 31.71 262 eP 57 16.20 -2.1  
 WRA 31.74 262 Pd 57 17.30 -1.2  
 ASPA 32.14 255 iPc 57 20.80 -1.3  
 PCI 50.28 285 ePd 59 53.00 2.2  
 SPA 71.72 180 eP 02 15.00 -0.8  
 KMI 76.78 302 Pc 02 53.00 7.2X  
 LZH 81.25 313 P 03 02.50 -7.2X  
 KBA 144.60 330 e(PKP) 10 27.00 -3.2X  
 RBL 144.94 329 PKP 10 30.50 -0.2  
 RUP 145.19 338 ePKP 10 27.32 -3.6X  
 FVI 145.22 329 PKP 10 31.50 0.5  
 CTI 146.16 330 PKP 10 32.00 -0.8  
 CDF 146.19 337 ePKP 10 32.00 -0.7  
 BCAA 147.03 249 iPKPd 10 35.30 0.3  
 SFI 147.57 327 PKP 10 35.00 0.1  
 VAI 147.62 332 PKP 10 36.00 1.1  
 CRE 147.72 326 PKP 10 47.00 11.6X  
 SDI 147.95 322 PKP 10 37.00 1.3  
 LOR 148.38 339 ePKP 10 38.10 1.9X  
 LBF 148.59 339 ePKP 10 38.80 2.2X  
 SSF 148.68 339 ePKP 10 39.10 2.5X  
 LPL 148.77 334 ePKP 10 39.90 2.8X  
 LPG 148.77 334 ePKP 10 39.80 2.6X  
 BNI 149.17 334 PKP 10 44.00 6.3X  
 BGF 149.34 340 ePKP 10 40.20 2.5X  
 TCF 149.79 340 ePKP 10 41.60 3.2X  
 LSF 150.03 341 ePKP 10 41.20 2.5X

S.D. = 1.4 on 20 of 36 obs.

? MAR 25, 1990 15h 02m 07.63 ± 3.91s  
 47.155 N ± 21.8km 0.990 W ± 48.9km  
 DEPTH = 10.0km (geophysicist)  
 FRANCE (538)  
 ML 2.1 (LDG).

MFF 0.80 133 Pg 02 23.10 -0.1  
 LPF 0.88 358 Pg 02 24.50 0.0  
 GRR 1.24 4 Pg 02 30.20 -0.4  
 LDF 1.55 22 Pg 02 35.20 -0.1  
 FLN 1.64 12 Pg 02 37.20 0.5  
 LSF 1.96 117 Pg 02 41.20 0.0  
 Sg 03 05.70

S.D. = 0.4 on 6 of 6 obs.

MAR 25, 1990 15h 10m 40.14 ± 0.22s  
 36.979 N ± 5.2km 73.062 E ± 3.6km  
 DEPTH = 33.0km (normal)  
 5.1mb (42 obs.)

NORTHWESTERN KASHMIR (720)

KSH 3.38 42 ePg 11 37.00 5.1X  
 QUE 8.48 219 iPc 12 41.30 -2.5  
 NDI 8.98 156 iPc 12 50.00 -0.5  
 MHI 10.92 271 iPd 13 13.00 -4.3X  
 WMO 13.07 54 P 13 45.50 -0.6  
 KKN 13.79 128 P 13 50.60 -5.2X  
 DMN 13.81 129 P 13 51.10 -5.0X  
 PKI 14.03 128 P 13 53.40 -5.6X  
 GUN 14.09 126 P 13 54.20 -5.7X  
 LSA 16.75 110 P 14 32.20 -2.1  
 TEH 17.50 272 eP 14 44.00 0.6  
 POO 18.39 178 iPd 14 52.40 -1.9  
 HYB 20.08 165 iPd 15 12.00 -1.7  
 GTA 21.14 75 Pd 15 25.40 0.8  
 TAB 21.21 281 eP 15 28.00 2.6  
 KER 21.23 271 eP 15 25.00 -0.6  
 BRF 21.98 247 eP 15 34.40 1.5  
 BBU 21.99 247 eP 15 31.70 -1.3  
 BEE 22.06 247 eP 15 32.40 -1.3  
 SLY 22.23 275 eP 15 39.00 3.6X  
 GBA 23.60 169 Pd 15 49.00 0.9  
 BHD 23.70 270 eP 15 49.00 -0.8  
 MSL 23.96 278 eP 15 53.00 0.8  
 LZH 24.70 83 eP 16 01.00 1.3  
 CD2 26.11 94 P 16 10.00 32kmX  
 KOD 26.92 170 eP 16 20.70 0.1  
 KMI 27.92 107 eP 16 29.00 -0.6  
 BTO 28.90 71 eP 16 40.00 1.9  
 CHG 29.02 122 eP 16 40.90 1.6  
 XAN 29.23 85 P 16 41.00 -0.1  
 GYA 30.31 101 P 17 04.20 51kmX  
 KAS 30.59 291 eP 16 54.50 1.3  
 TIY 31.15 77 eP 16 58.80 0.7  
 LOE 31.90 120 eP 17 04.00 -0.8  
 BJI 33.63 71 eP 17 20.50 0.9  
 YLV 33.99 290 iP 17 22.50 -0.3  
 NNT 34.07 129 eP 17 24.60 1.0  
 KHL 34.26 286 eP 17 24.00 -1.2  
 ELL 34.31 283 eP 17 25.00 -0.7  
 CLI 35.03 300 ePd 17 33.00 1.4  
 BNT 35.12 290 iP 17 34.00 1.6  
 VRI 35.43 299 ePd 17 36.50 1.5  
 JMB 35.81 294 iP 17 38.00 -0.3  
 PVL 36.64 295 eP 17 47.00 1.8  
 CMP 36.65 298 ePc 17 50.00 4.7X  
 KDZ 36.79 292 eP 17 49.00 2.5  
 RZN 37.30 293 eP 17 51.00 0.0  
 PGB 37.57 294 eP 17 55.00 1.9  
 DL2 37.99 72 eP 17 58.50 1.9

MMB 38.05 293 eP 17 57.00 -0.1  
 VTS 38.27 294 iPd 18 01.00 1.9  
 SUF 38.40 327 eP 17 59.40 -0.4  
 NUR 38.42 323 iP 17 59.30 -0.6  
 KKB 38.47 293 iP 18 00.00 -0.7  
 SNY 38.88 67 eP 18 04.00 0.0  
 VAY 38.95 292 eP 18 03.30 -1.3  
 BZS 39.02 299 eP 18 08.00 2.9  
 LIT 39.25 291 eP 18 07.00 -0.2  
 SKO 39.66 294 eP 18 09.00 -1.6  
 SPC 39.69 305 eP 18 11.90 1.0  
 KRA 39.85 306 eP 18 11.60 -0.4  
 FNA 39.94 292 ePd 18 13.00 0.1  
 SSE 39.97 84 eP 18 11.00 -2.2  
 SOD 40.02 334 iP 18 12.70 -0.4  
 BUD 40.62 303 eP 18 20.00 1.7  
 KEV 40.98 338 eP 18 20.00 -1.0  
 SRO 41.06 303 eP 18 23.80 1.8  
 IPM 41.19 135 ePd 18 25.00 1.7  
 UPP 41.72 321 iP 18 26.30 -0.9  
 ZST 41.84 304 eP 18 30.60 2.3  
 KSP 42.15 308 eP 18 31.00 0.2  
 SOP 42.26 303 eP 18 33.20 1.4  
 MDJ 42.72 61 eP 18 36.00 0.4  
 PRU 43.33 307 eP 18 40.00 -0.5  
 VBY 43.46 300 e(P) 18 45.50 3.9X  
 BRG 43.63 308 iP 18 44.00 1.1  
 HFS 43.72 321 eP 18 42.20 -1.3  
 LJU 43.87 301 e(P) 18 42.00 -2.9  
 TDS 43.95 292 P 18 44.50 -1.2  
 CSI 43.96 292 P 18 52.40 6.6X  
 KHC 44.05 306 iPd 18 48.00 1.6  
 MMN 44.15 292 P 18 47.80 0.6  
 CLL 44.18 309 iPd 18 48.60 1.2  
 CZI 44.22 291 P 18 48.70 0.9  
 RBL 44.46 302 P 18 51.00 1.2  
 SGO 44.48 293 P 18 49.50 -0.4  
 KBA 44.50 303 iPc 18 50.60 0.3  
 BHG 44.71 304 eP 18 55.60 3.9X  
 BSS 44.79 294 P 18 51.60 -0.8  
 FVI 44.97 302 P 18 54.00 0.3  
 NB2 45.00 323 P 18 55.40 1.5  
 ATN 45.03 290 P 18 55.00 0.6  
 MOX 45.12 308 eP 18 56.00 1.0  
 SDI 45.28 295 P 19 03.50 7.1X  
 ARV 45.48 298 P 18 57.60 -0.3  
 AZI 45.49 296 P 18 59.00 1.1  
 GRF 45.50 307 eP 18 57.70 -0.3  
 ASS 45.78 297 P 18 55.00 -5.3X  
 CTI 45.84 302 P 19 01.00 0.2  
 MNS 45.93 296 P 19 00.90 -0.6  
 CRE 46.15 298 P 19 04.50 1.2  
 SFI 46.16 299 P 19 03.50 0.4  
 FIR 46.61 299 eP 19 08.00 1.3  
 MME 46.90 299 P 19 10.20 0.8  
 BDI 47.00 299 P 19 10.00 0.0  
 BOB 47.63 300 P 19 16.50 1.5  
 VAI 47.84 302 P 19 14.00 -2.4  
 KBS 48.52 347 iPc 19 21.30 0.0  
 BSF 48.72 305 eP 19 22.00 -1.4  
 HAU 48.98 305 eP 19 23.70 -1.5  
 LPG 49.30 302 eP 19 27.20 -0.9



LPL	0.8s	17.45nm	5.1mb	HYB	20.19	163	eP	44	10.00	-2.0	N	13s	2.50um			
	49.31	302 eP	19 27.00	-1.1	GTA	21.50	75	P	44	21.80	-3.7X	E	13s	2.20um		
	0.9s	13.10nm	5.0mb		LZH	25.08	83	eP	45	01.50	1.1			pP	52	03.00
BNI	49.47	301 P	19 31.50	2.3				pP	45	11.00	34kmX	CD2	26.11	94 eP	52	09.80
NAI	50.78	230 iPd	19 42.00	2.4	CD2	26.48	94 eP	45	14.60	1.2	KOD	26.90	170 eP	52	16.80	
LBF	50.78	304 eP	19 37.40	-1.7	KMI	28.29	106 P	45	30.00	0.0		27.92	107 Pd	52	25.50	
	0.8s	5.35nm	4.6mb		N	18s	53.20um				N	12s	1.30um			
LOR	50.79	305 eP	19 37.10	-2.0	CHTO	29.35	121 eP	45	41.50	2.1	E	14s	1.90um			
	0.8s	6.70nm	4.7mb			0.8s	1.46nm			3.8mb			pP	52	33.50	28kmX
SMF	50.96	304 eP	19 38.70	-1.7	XAN	29.61	85 P	45	41.30	-0.3	KVT	28.90	290 iP	52	35.00	0.8
	0.8s	17.45nm	5.1mb		GYA	30.68	100 P	45	52.00	0.7	BTO	28.91	71 eP	52	35.00	0.6
SSF	51.07	305 eP	19 39.70	-1.5	HFS	43.48	321 eP	47	38.20	-0.5	CHG	29.01	121 eP	52	36.10	0.7
	0.8s	8.05nm	4.7mb			0.6s	3.90nm			4.3mb	XAN	29.24	85 P	52	37.00	-0.4
MAT	51.24	70 eP	19 42.00	-0.6	NB2	44.77	323 P	47	51.10	1.9	HHC	30.06	71 eP	52	45.00	0.3
	1.0s	29.00nm	5.2mb			0.8s	3.80nm			4.3mb	GYA	30.31	100 Pd	52	47.00	0.0
AVF	51.25	304 eP	19 40.80	-1.7	MAT	51.59	69 eP	48	42.00	-0.5			pP	53	01.60	59kmX
	0.7s	16.55nm	5.1mb			1.0s	10.00nm			4.7mb			S	57	50.80	
BGF	51.65	304 eP	19 43.80	-1.8	BCAO	59.03	250 ePd	49	50.70	14.2X	KAS	30.60	291 eP	52	50.50	1.2
	0.8s	13.45nm	5.0mb			0.4s	5.00nm				HRI	30.62	274 eP	52	50.00	0.4
MAF	51.93	304 eP	19 46.60	-1.1	MBC	66.79	3 eP	50	26.50	-0.6	TIY	31.17	76 eP	52	55.20	0.8
	0.8s	12.10nm	4.9mb			1.0s	18.00nm			5.1mb	BBTK	31.52	288 iPd	52	59.00	1.4
TCF	52.14	304 eP	19 48.00	-1.4	FBA	73.65	17 eP	51	21.50	12.6X	LOE	31.90	120 eP	53	00.00	-0.9
	0.8s	13.45nm	5.0mb			0.8s	5.17nm				PRNI	32.20	269 eP	53	04.00	0.5
LSF	52.61	304 eP	19 50.90	-2.0	FRB	74.98	343 eP	51	15.00	-1.6	MBH	32.51	269 eP	53	06.00	-0.1
	0.8s	9.40nm	4.8mb		YKA	80.70	3 eP	51	46.20	-1.8	GPA	33.32	289 eP	53	12.00	-1.2
CAF	52.64	302 eP	19 52.30	-0.9		0.8s	2.00nm			4.2mb	BCK	33.61	284 eP	53	15.40	-0.4
	0.6s	7.20nm	4.8mb		WB5	81.15	123 eP	51	52.20	1.1	BJI	33.65	71 eP	53	16.50	0.6
GRR	53.54	307 eP	19 57.70	-1.9	WRA	81.17	123 P	51	51.00	-0.2						
	0.6s	14.45nm	5.2mb			0.8s	2.00nm			4.2mb	Z	16s	9.61um			5.6MszX
DAG	54.76	344 iPd	20 07.00	-1.3	FFC	88.54	357 eP	52	27.00	-0.6	YLV	33.99	290 iP	53	20.00	1.0
	0.5s	26.76nm	5.5mb			1.0s	71.00nm			5.9mb X	NNT	34.06	128 eP	53	19.40	-0.3
PCI	57.39	120 ePd	20 25.40	-2.4		S.D. = 1.4 on 19 of 28 obs.							e	17	40.40	
BCAO	59.38	251 iPd	20 37.60	-4.2X							KHL	34.26	286 eP	53	20.00	-1.4
	0.8s	9.00nm	5.0mb			MAR 25, 1990 15h 46m 36.30± 0.15s					ELL	34.30	283 eP	53	22.00	0.2
		ic	20 56.30			36.953 N ± 3.9km 73.051 E ± 2.5km					CFR	34.46	298 eP	53	24.00	1.1
APHE	59.63	295 iPc	20 43.00	-0.5		DEPTH = 33.0km (normal)					PSN	34.53	295 iPc	53	25.00	1.5
ATEJ	59.88	295 iPc	20 44.70	-0.5		5.3mb ( 65 obs.) 5.2Msz ( 1 obs.)					WHN	34.73	88 eP	53	25.50	0.2
NPA	60.80	218 iP	20 53.50	2.1		NORTHWESTERN KASHMIR (720)					PPE	34.81	300 eP	53	25.50	-0.4
MBC	66.77	3 ePd	21 29.30	-0.5							CLI	35.03	301 ePc	53	28.00	0.2
	0.6s	51.00nm	5.8mb		KSH	3.40	42 ePg	47	32.50	4.0X	BNT	35.12	290 eP	53	29.50	0.9
IMA	71.16	18 eP	21 56.20	-1.0	QUE	8.45	219 iPc	48	37.80	-1.7	TIA	35.16	78 P	53	30.10	1.1
	1.0s	10.00nm	4.8mb		NDI	8.96	156 iPd	48	46.00	-0.4	VRI	35.44	299 ePd	53	32.50	1.2
INK	73.16	10 eP	22 08.50	-0.3		0.6s	173.33nm			6.4mb X	ISR	35.60	298 ePd	53	35.50	2.8
FBA	73.54	17 eP	22 10.60	-0.5			eS	50	25.50		JMB	35.82	294 eP	53	35.00	0.5
KNA	74.16	124 iPd	22 16.30	1.0	MHI	10.92	271 iPd	49	09.50	-3.9X	IZM	35.99	287 eP	53	36.00	0.0
	0.7s	82.00nm	5.8mb			0.8s	146.27nm			6.2mb	PVL	36.64	295 iPd	53	43.00	1.7
FRB	75.09	343 eP	22 18.00	-2.0			eS	51	12.00		MTUR	36.64	298 eP	53	40.00	-1.5
PWA	75.73	20 eP	22 22.90	-0.8	WMO	13.09	54 iPd	49	41.70	-0.9X	CMP	36.66	298 ePc	53	47.00	5.5X
KIC	76.46	268 P	22 25.60	-3.1X			S	52	04.00		KDZ	36.79	292 eP	53	44.00	1.3
YKA	80.68	4 eP	22 50.40	-0.4	GKN	13.23	129 P	49	40.00	-4.5X	RZN	37.30	293 eP	53	47.00	-0.2
	0.5s	9.90nm	5.1mb		KKN	13.78	128 P	49	46.60	-5.2X	PCB	37.58	294 iP	53	51.00	1.7
WB5	80.83	123 eP	22 52.40	0.2	DMN	13.80	129 P	49	47.90	-4.2X	NJ2	37.78	84 Pc	53	52.00	0.9
WRA	80.86	123 Pc	22 52.90	0.5	PKI	14.02	128 P	49	49.50	-5.5X	DL2	38.01	72 eP	53	54.00	1.1
	0.7s	9.40nm	4.9mb		GUN	14.08	126 P	49	50.80	-5.1X	MMB	38.05	293 eP	53	55.00	1.7
SCH	82.29	338 eP	22 58.00	-1.4	LSA	16.75	110 P	50	26.80	-3.7X	OUR	38.09	291 eP	53	54.30	0.8
PMG	83.15	107 eP	23 06.00	1.6		Z	10s	9.30um		DEV	38.10	300 ePc	53	56.00	2.4	
ASPA	83.18	126 iPd	23 04.40	0.0		N	10s	7.40um		SRS	38.23	292 eP	53	55.70	0.9	
	0.9s	18.00nm	5.2mb			E	10s	5.60um		VTS	38.27	294 iP	53	56.00	0.7	
QIS	84.86	120 iPc	23 13.20	0.3	TEH	17.50	273 eP	50	45.00	5.6X	PAIG	38.39	290 eP	53	57.10	1.0
FFC	88.56	357 iPd	23 30.60	0.0	IR2	17.90	273 eP	50	45.00	0.6	SUF	38.42	327 eP	53	56.80	0.7
	1.0s	39.00nm	5.7mb		IR1	18.11	272 eP	50	47.00	-0.1		0.8s	53.50nm			5.4mb
EDM	90.00	4 iPd	23 37.50	0.1	IR7	18.12	273 eP	50	48.00	0.8	NUR	38.43	323 iP	53	56.00	-0.2
	0.6s	33.00nm	5.8mb		IR5	18.24	271 eP	50	49.00	0.3		1.0s	64.00nm			5.4mb
SES	92.92	3 ePc	23 51.50	0.5	POO	18.36	178 iPc	50	48.50	-1.6	KKB	38.48	293 iP	53	57.00	0.1
PNT	93.35	8 eP	23 53.00	0.1	HY8	20.06	165 eP	51	08.00	-1.6	KNT	38.74	292 ePc	53	59.50	0.4
	S.D. = 1.3 on 136 of 151 obs.				GTA	21.16	75 iPd	51	21.40	0.5	SNG	38.84	133 eP	54	05.80	5.7X
						1.2s	100.00nm			5.1mb	SNY	38.90	67 eP	54	00.00	-0.3
* MAR 25, 1990 15h 39m 37.30± 0.52s					Z	16s	5.50um			5.0MszX	VAY	38.95	292 eP	54	01.50	0.7
36.983 N ± 9.6km 72.591 E ± 8.5km					E	12s	3.50um				BZS	39.02	299 eP	54	01.00	-0.4
DEPTH = 33.0km (normal)					TAB	21.21	281 eP	51	23.00	1.5	GRG	39.15	292 eP	54	02.60	0.1
4.3mb ( 7 obs.)					KER	21.22	271 ePc	51	22.00	0.3	LIT	39.25	291 ePc	54	03.10	-0.3
AFGHANISTAN-USSR BORDER REGION (717)					BRF	21.96	247 eP	51	30.60	1.7	SKO	39.67	294 eP	54	07.00	0.2
					BBU	21.97	247 eP	51	26.70	-2.3	SPC	39.70	305 iP	54	07.50	0.4
QUE	8.25	216 eP	41 39.00	1.2		1.2s	747.00nm			6.0mb	KRA	39.86	306 eP	54	07.60	-0.7
		iS	43 16.80		BEE	22.04	247 eP	51	28.40	-1.2		1.0s	74.00nm			5.4mb
NDI	9.14	154 iPd	41 48.00	-1.9		1.1s	599.00nm			5.9mb			e	54	12.10	
	0.6s	25.33nm	5.6mb X		SLY	22.23	275 ePd	51	33.00	1.5	BEO	39.93	298 eP	54	09.80	0.9
		eS	43 24.00				eS	55	43.50		CN2	39.94	63 Pd	54	08.80	-0.1
MHI	10.55	270 eP	42 10.00	0.7	GBA	23.58	169 Pd	51	45.80	1.0	FNA	39.94	292 eP	54	07.90	-1.2
	0.8s	104.48nm	6.1mb X			0.8s	77.10nm			5.3mb	SSE	39.98	84 eP	54	13.50	4.0X
		eS	44 10.00		BHD	23.69	270 ePd	51	48.00	2.1		1.5s	66.00nm			5.2mb
WMO	13.37	55 eP	42 41.60	-5.7X			eS	56	11.00		PSZ	40.00	303 eP	54	10.50	1.0
GKN	13.54	128 P	42 42.00	-7.5X	MSL	23.95	278 ePd	51	49.00	0.6	SOD	40.04	334 iP	54	09.00	-0.5
KKN	14.09	127 P	42 47.80	-9.1X			eS	56	13.00		OHR	40.30	293 eP	54	11.30	-0.8
DMN	14.11	128 P	42 49.40	-7.7X	LZH	24.71	83 Pd	51	56.50	0.5	BUD	40.62	303 eP	54	16.00	1.5
PKI	14.33	127 P	42 51.30	-8.8X			2.0s	270.00nm		5.5mb	KEV	41.00	338 iP	54	18.00	0.7
GUN	14.40	125 P	42 51.50	-9.6X	Z	20s	8.50um			5.2Msz		1.0s	56.00nm			5.2mb



25d 15h

SRO	41.07	303	eP	54	14.80	-3.4X	0.9s	21.30nm	5.2mb	INK	73.19	10	ePd	58	04.80	-0.3		
			i	54	19.30		49.31	302 eP	55	23.80	-0.5	1.1s	68.00nm			5.6mb		
			e	56	02.60		1.0s	28.00nm	5.2mb	FBA	73.57	17	eP	58	06.80	-0.6		
IPM	41.17	135	ePd	54	21.00	1.6	49.32	302 eP	55	23.80	-0.5	KNA	74.15	124	iPd	58	12.30	0.9
	1.5s	120.50nm				5.4mb	1.0s	32.00nm	5.3mb		0.7s	72.00nm				5.8mb		
UPP	41.74	321	iP	54	22.20	-1.3	49.48	301 Pd	55	25.30	-0.1	FRB	75.11	343	eP	58	14.50	-1.8
ZST	41.84	304	eP	54	24.70	0.2	49.66	308 P	55	26.40	-0.2	PWA	75.76	20	eP	58	18.80	-1.3
			e	56	05.80		1.0s	61.10nm	5.6mb	TOA	76.33	18	eP	58	23.50	0.1		
KSP	42.16	308	eP	54	26.20	-0.9				KIC	76.45	268	P	58	23.70	-1.1		
			i	54	27.80		49.77	309 P	55	28.00	0.6		1.0s	17.00nm			5.0mb	
			e	56	05.50		49.90	299 eP	55	27.70	-0.8	TIC	76.51	268	P	58	24.00	-1.1
MDJ	42.74	61	eP	54	32.00	0.0	1.0s	36.00nm	5.4mb		1.0s	11.50nm				4.8mb		
PTJ	42.92	301	eP	54	30.20	-3.3X	50.13	299 eP	55	29.40	-0.8	LIC	76.76	268	P	58	25.60	-0.9
PRU	43.34	307	P	54	37.30	0.6	1.0s	44.00nm	5.4mb	MRWA	77.18	142	iPc	58	28.80	0.4		
			e	56	23.80		50.75	230 eP	55	30.00	-5.5X	BAL	78.67	143	eP	58	36.40	-0.2
VBY	43.47	300	e(P)	54	39.00	1.2	50.79	304 eP	55	34.00	-1.3	MUN	79.56	144	eP	58	41.20	-0.2
			e(PP)	56	26.00		1.0s	13.00nm	4.9mb	KLB	79.99	142	eP	58	43.50	-0.2		
BRG	43.64	308	iPc	54	39.50	0.4	50.79	305 eP	55	33.70	-1.6	YKA	80.71	4	eP	58	46.50	-0.6
	1.6s	42.00nm				5.0mb	0.8s	9.40nm	4.8mb		0.8s	30.70nm				5.4mb		
			i	55	00.80		50.97	304 eP	55	35.30	-1.3	WB5	80.82	123	iPd	58	48.40	0.0
			i	55	08.80		1.0s	50.00nm	5.4mb	WRA	80.85	123	Pc	58	49.10	0.6		
HFS	43.73	321	eP	54	38.20	-1.6	51.08	305 eP	55	36.10	-1.4		0.7s	14.90nm			5.1mb	
	0.9s	62.60nm				5.4mb	1.0s	30.00nm	5.2mb	SCH	82.31	338	eP	58	55.00	-0.7		
ORI	43.77	292	P	54	41.50	1.2	51.25	304 eP	55	37.40	-1.4	PMG	83.15	107	eP	59	03.00	2.5
ROI	43.81	291	P	54	41.30	0.6	0.9s	45.85nm	5.4mb	ASPA	83.17	126	iPd	59	08.70	0.1		
LJU	43.87	301	eP	54	41.50	0.4	51.25	70 eP	55	38.00	-0.9		0.8s	20.00nm			5.3mb	
TDS	43.95	292	P	54	42.80	1.0	1.3s	36.54nm	5.2mb	OIS	84.85	120	eP	59	09.00	0.0		
CSI	43.96	292	P	54	41.10	-0.8	51.65	304 eP	55	40.50	-1.3	FFC	88.59	357	iPd	59	26.70	-0.1
KHC	44.06	306	iPc	54	43.50	0.9	0.8s	14.80nm	5.0mb		1.0s	71.00nm				5.9mb		
	1.0s	10.50nm				4.6mb	51.93	304 eP	55	43.10	-0.9	CTA	89.24	116	iPd	59	30.00	-0.4
			e	56	25.50		0.9s	39.30nm	5.4mb		2.0s	147.06nm				5.9mb		
MMN	44.15	292	P	54	44.20	0.8	52.15	304 eP	55	44.80	-0.8	SES	92.95	3	eP	59	47.00	-0.3
CLL	44.19	309	iPc	54	43.80	0.2	1.0s	44.00nm	5.4mb	PNT	93.37	8	eP	59	50.00	0.8		
	1.8s	62.00nm				5.1mb	52.61	304 eP	55	47.70	-1.4		0.9s	16.00nm			5.4mb	
			e	55	14.00		0.8s	20.15nm	5.1mb	LRM	97.45	4	eP	00	09.50	1.3		
			e	56	27.00		52.65	302 eP	55	48.70	-0.7	S.D. = 1.0 on 209 of 231 obs.						
CZI	44.22	291	P	54	44.00	0.0	0.8s	14.80nm	5.0mb	& MAR 25, 1990 15h 51m 22.40s								
VOY	44.31	301	eP	54	44.00	-0.8	52.91	303 eP	55	50.50	-0.7	36.963 N 121.613 W						
MGR	44.41	292	P	54	45.70	0.2	0.8s	16.10nm	5.0mb	DEPTH = 4.0km								
RBL	44.46	302	P	54	46.50	0.5	53.02	307 eP	55	50.50	-1.5	CENTRAL CALIFORNIA ( 39 )						
SGO	44.48	293	P	54	46.80	0.7	0.8s	24.20nm	5.2mb	<BRK> ML 2.9 (BRK).								
KBA	44.51	303	eP	54	46.00	-0.5	53.11	316 Pd	55	51.80	-0.8	SAO	0.24	146	iPd	51	27.40	0.2
	1.4s	31.30nm				5.0mb	1.0s	35.10nm	5.3mb	GCC	0.31	282	iPc	51	28.40	-0.3		
			ic	54	46.50		53.20	308 eP	55	51.60	-1.7		IS	51	33.30			
BHG	44.72	304	iPd	54	48.50	0.5	1.0s	28.00nm	5.2mb	MHC	0.38	357	iPd	51	30.40	0.4		
	1.1s	41.00nm				5.2mb	53.32	302 eP	55	53.40	-0.9	LLA	0.64	123	eP	51	34.60	-0.6
BSS	44.79	294	P	54	49.30	0.7	0.8s	16.10nm	5.1mb	PRS	0.66	163	iPd	51	34.80	-0.8		
DUI	44.83	295	P	54	50.00	1.0	53.55	307 eP	55	54.30	-1.5	PCC	0.81	311	eP	51	37.70	-1.0
FVI	44.97	302	P	54	49.90	0.0	0.8s	32.25nm	5.4mb	BKS	1.04	332	iPc	51	42.00	-0.5		
NB2	45.02	323	P	54	51.20	1.0	54.44	301 eP	56	00.60	-2.0	BRK	1.04	331	eP	51	41.30	-1.3
	0.9s	54.90nm				5.5mb	1.0s	12.00nm	4.9mb	PRI	1.12	137	eP	51	43.70	-0.3		
ATN	45.03	290	Pd	54	50.50	0.0	54.79	344 iPd	56	03.00	-1.7	CMB	1.45	42	eP	51	48.10	-1.4
MOX	45.13	308	iP	54	52.50	1.3	0.5s	57.75nm	5.9mb	FRI	1.53	88	eP	51	48.70	-1.8		
	1.2s	39.00nm				5.2mb	55.56	314 eP	56	10.20	-0.3	11 obs. associated						
SDI	45.29	295	P	54	53.00	0.4	55.59	315 eP	56	10.60	-0.1	* MAR 25, 1990 16h 20m 35.52±0.68s						
AQU	45.43	296	P	54	55.60	1.9	1.0s	60.00nm	5.6mb		37.239 N	±10.2km	72.727 E	±14.8km				
ARV	45.49	298	Pd	54	55.00	0.9	55.96	314 eP	56	12.80	-0.6	DEPTH = 33.0km (normol)						
GRF	45.51	307	eP	54	52.00	-2.2	1.0s	74.00nm	5.7mb		4.3mb ( 6 obs.)							
			e	54	55.10		56.62	237 ePc	56	17.60	-1.3	TAJIK SSR (715)						
FUR	45.71	305	eP	54	56.30	0.5	57.38	120 ePd	56	24.00	0.0	QUE	8.52	216	eP	22	41.00	1.3
CTI	45.85	302	P	54	58.00	1.0	1.2s	3.00nm	4.2mb X			NDI	9.33	155	eP	22	50.00	-0.7
MNS	45.94	296	Pd	54	57.90	0.2	58.44	299 eP	56	30.80	-0.5	GKN	13.61	129	P	23	42.20	-6.5X
RDP	46.07	295	P	54	59.10	0.3	58.56	295 eP	56	31.60	-0.4	KKN	14.16	128	P	23	48.90	-7.1X
OGA	46.11	303	iPd	54	59.00	-0.2	58.67	299 iPd	56	33.00	0.2	DMN	14.18	129	P	23	49.40	-6.9X
CRE	46.16	298	P	55	03.50	4.0X	1.0s	80.00nm	5.8mb	PKI	14.40	128	P	23	51.80	-7.4X		
SFI	46.16	299	P	55	01.00	1.7	59.19	297 eP	56	36.00	-0.4	GUN	14.46	126	P	23	51.20	-8.9X
FIR	46.61	299	eP	55	05.00	2.1	59.36	251 iPc	56	34.50	-3.4X	GBA	23.91	169	P	25	48.00	0.7
MME	46.90	299	P	55	05.90	0.3	0.8s	34.00nm	5.5mb		0.3s	2.20nm				4.2mb		
BDI	47.01	299	P	55	06.50	0.3						43.35	321	eP	28	35.70	-0.2	
PII	47.14	299	P	55	03.00	-4.1X	59.40	296 eP	56	36.80	-1.3		0.7s	3.90nm			4.3mb	
MDI																		



36.824 N ±14.6km 72.659 E ±16.1km					SMF 50.90 304 eP 35 05.00 -2.4					DZM 15.16 258 iPC 29 00.10 2.4				
DEPTH = 33.0km (normal)					0.8s 6.70nm 4.7mb					WLZ 19.11 197 P 29 38.10 2.4				
4.5mb ( 7 obs.)					AVF 51.19 304 eP 35 06.20 -3.3X					MNG 21.76 194 P 29 58.20 -2.0				
AFGHANISTAN-USSR BORDER REGION (717)					0.8s 5.35nm 4.6mb					THZ 23.52 198 P 30 16.00 -0.1				
NDI 8.98 153 eP 24 24.80 -0.4					DAG 54.75 344 eP 35 33.90 -1.8					LTZ 24.64 198 P 30 24.40 -1.7				
eS 26 03.00 0.2					PCI 57.45 120 ePd 35 55.50 -0.2					AFR 26.39 90 iP 30 41.40 -0.3				
MHI 10.60 271 eP 24 47.00 -0.7					BCAO 59.30 251 ePc 36 05.00 -3.7X					0.8s 30.00nm 5.0mb				
eS 26 46.00 0.2					0.5s 3.00nm 4.7mb					PPT 26.58 90 iP 30 43.00 -0.3				
HYB 20.02 163 eP 26 52.00 4.2X					MBC 66.79 3 ePd 36 56.20 -1.2					0.8s 35.00nm 5.0mb				
NUR 38.35 324 iP 29 35.80 1.7					0.6s 31.00nm 5.6mb					PPN 26.72 90 iP 30 44.90 0.3				
SUF 38.36 327 eP 29 35.80 1.7					BUL 70.54 224 eP 38 03.10 41.6X					0.8s 20.00nm 4.8mb				
0.7s 5.20nm 4.5mb					0.8s 5.22nm 4.7mb					MSZ 27.75 203 P 30 38.70 -14.6X				
SOD 40.02 334 eP 29 48.00 0.2					INK 73.18 10 eP 37 35.00 -1.4					BRS 28.24 248 iPC 30 56.20 -1.7				
KEV 41.00 338 eP 29 50.00 -5.9X					FBA 73.57 17 eP 37 37.80 -0.9					PMO 28.65 85 iP 31 01.00 -0.4				
HFS 43.64 322 eP 30 17.00 -0.6					1.1s 13.13nm 4.8mb					0.8s 20.00nm 4.8mb				
0.8s 4.50nm 4.3mb					FRB 75.08 343 eP 37 46.00 -1.4					VAH 28.85 86 P 31 02.30 -0.8				
NB2 44.93 323 P 30 31.20 3.2X					YKA 80.69 4 eP 38 16.80 -1.5					0.8s 20.00nm 4.8mb				
0.8s 2.80nm 4.2mb					1.1s 9.90nm 4.7mb					TPT 28.92 86 iP 31 03.30 -0.4				
MBC 66.95 3 ePd 33 04.30 -1.3					WB5 80.89 123 eP 38 19.40 -0.6					0.8s 25.00nm 4.9mb				
0.7s 20.00nm 5.3mb					WRA 80.92 123 Pd 38 19.40 -0.7					RUV 29.09 86 iP 31 04.60 -0.6				
YKA 80.85 3 eP 34 24.90 -1.5					1.1s 9.50nm 4.7mb					0.8s 40.00nm 5.1mb				
0.7s 4.00nm 4.5mb					FFC 88.57 357 iPd 38 57.20 -0.8					RMO 31.69 251 iPC 31 28.10 0.8				
WB5 81.01 123 eP 34 27.40 -0.5					1.1s 25.00nm 5.4mb					CNB 33.07 235 iPd 31 40.30 1.3				
WRA 81.04 123 Pc 34 30.40 2.3					SES 92.94 3 eP 39 18.00 -0.5					CAN 33.36 235 iP 31 42.10 0.8				
0.6s 1.20nm 4.1mb					S.D. = 1.3 on 45 of 52 obs.					BWA 33.53 237 iP 31 41.70 -1.1				
FFC 88.70 357 eP 35 05.00 -0.9					MAR 25, 1990 17h 13m 22.80 ± 0.48s					CTA 34.01 263 iPC 31 47.50 0.6				
0.8s 11.00nm 5.2mb					36.958 N ± 8.3km 72.734 E ± 8.2km					0.5s 33.45nm 5.2mb				
S.D. = 1.5 on 11 of 14 obs.					DEPTH = 33.0km (normal)					TOO 36.76 233 iPC 32 10.80 1.3				
MAR 25, 1990 16h 26m 07.58 ± 0.33s					4.7mb ( 10 obs.)					QIS 40.17 261 eP 32 36.00 -1.4				
36.970 N ± 6.8km 72.962 E ± 5.6km					AFGHANISTAN-USSR BORDER REGION (717)					ADE 41.43 239 iPd 32 48.00 0.6				
DEPTH = 33.0km (normal)					KSH 3.57 45 ePg 14 21.40 4.1X					WB5 45.13 261 iPd 33 15.80 -0.7				
4.8mb ( 16 obs.)					Sg 15 07.00 0.1					ASPA 45.14 256 iPd 33 15.90 -0.7				
AFGHANISTAN-USSR BORDER REGION (717)					0.9s 110.00nm 5.4mb					0.6s iPCP 34 45.50				
QUE 8.42 218 eP 28 10.60 0.2					QUE 8.30 217 eP 15 25.40 1.4					iS 39 15.30				
NDI 9.00 155 eP 28 19.50 1.2					eS 15 33.00 -1.4					WRA 45.15 261 Pd 33 15.40 -1.2				
eS 29 56.50 0.2					MHI 10.66 270 eP 15 56.00 -0.4					0.6s 18.60nm 4.8mb				
MHI 10.84 270 eP 28 39.00 -4.7X					eS 17 12.80 0.1					MTN 49.59 270 iPC 33 49.10 -1.2				
eS 30 39.00 0.2					GKN 13.43 128 P 16 27.20 -6.4X					FORR 50.00 246 eP 33 52.20 -0.9				
WMO 13.14 54 P 29 14.00 -0.5					KKN 13.99 127 P 16 33.00 -8.0X					COOL 55.97 246 eP 34 34.60 -1.3				
S 31 40.00 0.2					DMN 14.00 128 P 16 35.70 -5.6X					MBL 58.37 257 iPd 34 51.20 -1.1				
HYB 20.09 164 eP 30 39.50 -1.8					PKI 14.22 128 P 16 37.80 -6.4X					0.4s 11.00nm 4.5mb				
TAB 21.14 281 e(P) 30 57.00 5.0X					GUN 14.29 125 P 16 38.20 -6.9X					KLB 58.81 244 eP 34 54.20 -1.0				
GTA 21.22 75 P 30 53.60 0.7					HYB 20.13 164 eP 17 55.00 -1.9					VNDA 58.81 185 iP 34 56.20 1.7				
GBA 23.61 169 Pc 31 17.10 0.7					GTA 21.40 75 eP 18 08.00 -1.9					BAL 59.80 245 eP 35 00.50 -1.2				
0.8s 22.50nm 4.7mb					GBA 23.63 169 Pc 18 33.20 1.3					MUN 60.09 244 eP 35 03.00 -0.6				
LZH 24.78 83 eP 31 28.50 0.6					0.6s 6.20nm 4.3mb					MRWA 60.58 247 eP 35 06.30 -0.6				
2.5s 54.00nm 4.7mb					LZH 24.96 83 eP 18 45.00 0.1					NANU 62.04 254 iPd 35 16.20 -0.2				
pP 31 40.50 48kmX					2.5s 74.00nm 4.8mb					0.5s 26.00nm 4.9mb				
CD2 26.18 94 eP 31 41.40 0.5					pP 18 53.50 30kmX					PCI 63.98 279 ePd 35 30.20 1.3				
KOD 26.93 170 eP 31 48.00 -0.1					BTO 29.15 71 eP 18 59.30 1.5					SPA 70.50 180 iPd 36 09.90 1.8				
KMI 28.00 106 eP 31 57.50 -0.2					XAN 29.50 85 P 19 24.70 1.7					1.0s 61.00nm 5.1mb				
BTO 28.97 71 eP 32 07.50 1.3					TIIY 31.41 76 eP 19 44.60 1.5					CMB 78.53 43 e(P) 36 50.00 -3.1X				
CHG 29.08 121 eP 32 11.70 4.4X					NNT 34.27 128 eP 20 11.30 3.3X					0.6s 5.87nm 4.2mb				
XAN 29.31 85 P 32 08.00 -1.3					CN2 40.16 63 eP 21 01.20 3.9X					ORV 78.74 41 e(P) 36 54.00 -0.1				
GYA 30.38 100 P 32 18.00 -1.0					HFS 43.57 321 eP 21 24.70 -0.3					KVN 80.58 43 eP 37 04.00 0.1				
TIIY 31.23 76 eP 32 28.60 2.3					0.7s 9.90nm 4.7mb					TNP 80.61 44 eP 37 04.50 0.4				
ELL 34.23 283 eP 32 52.00 -0.5					NB2 44.86 323 P 21 37.60 2.2					0.8s 5.29nm 4.1mb				
SUF 38.37 327 eP 33 26.10 -0.8					0.7s 3.70nm 4.4mb					TTA 84.01 10 eP 37 20.30 -0.2				
0.8s 9.80nm 4.7mb					DAG 54.71 344 eP 22 49.50 -1.1					PMR 84.07 13 eP 37 20.00 -0.7				
NUR 38.38 323 iP 33 28.50 1.5					BCAO 59.13 250 ePd 23 25.20 2.5X					0.5s 9.20nm 4.7mb				
SNY 38.95 67 eP 33 32.70 0.6					0.5s 4.00nm 4.8mb					BJI 85.57 315 eP 37 46.00 17.6X				
SPC 39.63 305 eP 33 37.40 -0.5					MBC 66.81 3 ePc 24 12.20 -0.5					Z 20s 3.00um 5.7msZ				
SOD 39.99 334 eP 33 42.00 1.6					0.7s 16.00nm 5.2mb					85.69 34 eP 37 29.00 0.1				
KSP 42.09 308 eP 34 13.80 16.0X					INK 73.22 10 eP 24 51.00 -0.8					0.9s 12.00nm 4.6mb				
MDJ 42.80 61 eP 34 05.00 1.3					FBA 73.64 17 eP 24 54.00 -0.3					PV09 86.26 47 eP 37 32.50 0.3				
PRU 43.27 307 eP 34 07.00 -0.5					1.0s 10.00nm 4.8mb					ALQ 86.52 51 eP 37 34.00 0.6				
BRG 43.57 308 eP 34 11.60 1.7					YKA 80.72 3 eP 25 32.60 -1.0					1.0s 5.00nm 4.2mb				
1.7s 37.00nm 4.9mb					0.6s 2.50nm 4.4mb					FBA 87.30 12 iPd 37 35.20 -1.0				
KHC 43.99 306 P 34 15.00 1.6					WB5 81.04 123 eP 25 34.90 -1.1					IMA 87.32 10 eP 37 35.70 -0.7				
MMN 44.08 292 P 34 13.60 -0.5					WRA 81.06 123 P 25 37.00 0.9					LRM 87.77 39 eP 37 39.30 0.2				
CLL 44.13 309 eP 34 17.00 2.7					1.2s 11.40nm 4.7mb					BW06 88.04 43 e(P) 37 40.00 -0.5				
e 34 53.00 0.6					FFC 88.57 357 eP 26 13.00 -0.2					0.6s 2.33nm 4.2mb				
CZ1 44.15 291 P 34 15.30 0.6					1.0s 17.00nm 5.3mb					KMI 89.34 297 Pc 37 47.50 0.7				
NB2 44.96 323 P 34 22.20 1.2					S.D. = 1.3 on 21 of 30 obs.					CHTO 90.35 290 iP 37 52.00 0.8				
1.0s 15.10nm 4.8mb					MAR 25, 1990 17h 25m 46.65 ± 0.74s					0.8s 10.07nm 4.8mb				
MOX 45.07 308 eP 34 22.00 0.0					19.625 S ± 8.0km 177.544 W ± 5.2km					SES 90.92 36 ePd 37 53.50 0.3				
GRF 45.44 307 eP 34 24.80 -0.2					DEPTH = 542.9 ± 9.3 km					RSSD 92.23 44 eP 37 59.70 0.0				
e 34 27.20 0.2					4.8mb ( 21 obs.)					YKA 95.54 25 eP 38 08.70 -5.3X				
BSF 48.66 305 eP 34 48.20 -2.2					FIJI ISLANDS REGION (181)					0.6s 1.50nm 4.4mb				
0.8s 5.35nm 4.6mb					SGE 4.75 294 iPd 27 15.70 0.9					FRB 115.82 28 ePd i f40 04.50 20.2X				
LPG 49.24 302 eP 34 56.50 1.4					S 28 30.00 0.0					KEV 127.69 349 iPKP 43 51.00 0.1				
1.0s 12.00nm 4.9mb					NDF 5.10 291 iPC 27 13.70 -3.9X					SOD 129.84 348 ePKP 43 55.00 0.0				
LPL 49.25 302 eP 34 56.40 1.3					1.0s 13.00nm 4.9mb					SUF 133.95 345 iPKP 44 01.90 -1.1				
1.0s 13.00nm 4.9mb										0.6s 6.50nm 4.8mb				



HFS	138.74	351	ePKP	44	00.50	-11.5X	FVI	151.80	345	PKP	44	40.00	6.2X	N	12s	1.00um					
	0.6s		2.40nm				LJU	151.83	342	ePKP	44	41.00	7.0X	E	12s	0.50um					
EKA	144.10	5	PKP	44	20.00	-1.5	VOY	152.03	343	ePKP	44	40.90	6.5X			pP	34	24.00	14kmX		
	0.9s		21.00nm				VBY	152.10	341	iPKPc	44	42.30	8.0X	BTO	28.94	72	eP	34	26.00	0.8	
DMU	145.04	10	iPKPc	44	23.50	0.3	LOR	152.40	358	iPKPd	44	43.24	8.5X	N	15s	3.60um					
	0.6s		30.00nm					0.8s		18.00nm			E	16s	3.60um						
DCN	145.51	10	iPKPc	44	24.90	0.9	VAY	152.41	326	ePKP	44	41.30	6.4X			S	39	17.50			
	0.8s		52.00nm				CTI	152.58	346	PKP	44	42.00	6.8X	CHG	29.18	122	eP	34	30.00	2.5	
KAS	145.69	316	iPKPd	44	27.20	2.4X	SSF	152.62	358	iPKPd	44	43.10	8.1X	XAN	29.32	85	P	34	27.50	-1.1	
DLE	145.69	10	iPKPc	44	25.50	1.3		1.0s		22.00nm				N	13s	0.90um					
	0.6s		25.00nm				LBF	152.68	358	ePKP	44	43.10	7.9X	GYA	30.43	101	P	34	38.60	-0.1	
LWI	146.22	233	iPKPd	44	29.80	3.2X		0.8s		8.05nm				N	12s	0.62um					
PPE	146.37	328	ePKPc	44	27.50	1.9	AVF	152.90	359	iPKPd	44	43.10	7.7X	E	12s	1.10um					
KRA	146.59	339	iPKPd	44	27.90	2.1		0.8s		6.70nm						30.45	290	eP	34	39.50	0.9
			e	44	30.40		MFF	153.01	4	iPKPd	44	43.60	8.0X	HRI	30.51	274	iPd	34	31.50	-7.8X	
KSP	146.98	344	ePKP	44	27.00	0.6		0.6s		10.80nm				TIY	31.22	77	eP	34	45.60	0.2	
	0.7s		38.00nm				VAI	153.31	350	PKP	44	42.00	6.0X	Z	20s	1.25um			4.6Msz		
			id	44	29.80		TCF	153.41	0	ePKP	44	44.50	8.3X	N	12s	0.77um					
			e	46	34.00			1.0s		12.00nm				PRNI	32.11	269	eP	34	52.00	-1.3	
VR1	147.06	328	ePKPc	44	29.50	2.8X	LSF	153.44	1	ePKP	44	44.20	8.0X	MBH	32.43	268	eP	34	59.00	3.0X	
HLBJ	147.25	299	PKPd	44	30.50	2.9X		0.8s		17.45nm				BJI	33.68	72	eP	35	07.00	0.2	
CLL	147.31	348	iPKP	44	30.30	3.4X	MAF	153.47	360	iPKPd	44	45.10	8.8X	YLV	33.85	290	iP	35	08.80	0.5	
	0.9s		50.00nm					0.8s		9.40nm				KHL	34.13	286	eP	35	10.00	-0.8	
MDSJ	147.40	298	PKPd	44	31.20	3.4X	BNI	154.40	353	PKP	44	47.50	9.8X	ELL	34.18	283	eP	35	11.50	0.2	
JARJ	147.51	299	PKPc	44	31.00	3.0X	BCAO	158.23	228	iPKPc	44	43.50	0.2	WHN	34.81	88	P	35	19.00	2.4	
WTS	147.52	355	ePKP	44	30.50	3.3X		0.9s		16.00nm				Z	20s	0.80um			4.5Msz		
	0.8s		24.00nm						ic	45	21.80			N	12s	0.80um					



KBA	44.34	302	e(P)	36	20.50	-15.2X	KEK	4.28	313	eP	12	25.50	-0.3	ic 51 57.00				
			e	36	35.00		KNT	4.35	350	eP	12	27.20	0.4	S.D. = 1.0 on 27 of 28 obs.				
			e	38	22.00		FNA	4.36	334	eP	12	26.70	-0.3					
DUI	44.67	295	P	36	39.50	1.2	VAY	4.55	348	eP	12	29.40	0.0					
FVI	44.80	302	P	36	42.00	2.8X	OHR	4.86	331	eP	13	26.30	52.7X	MAR 25, 1990 18h 33m 07.86± 0.71s				
NB2	44.82	323	P	36	41.00	1.8	LCI	5.78	309	P	12	43.40	-2.3	39.956 N ± 5.1km 22.411 E ± 6.9km				
	0.9s	24.90nm			5.1mb		CZI	6.54	293	P	12	50.30	-5.6X	DEPTH = 10.0km (geophysicist)				
ATN	44.88	290	P	36	39.50	-0.5	TDS	6.54	297	P	12	57.20	1.2	GREECE (364)				
MOX	44.95	308	eP	36	41.00	0.6	CSI	6.62	298	P	12	59.00	1.9	ML 1.7 (THE).				
SDI	45.13	295	P	36	45.50	3.5X	ORI	6.63	301	P	12	57.00	-0.3	LIT	0.16	23 ePg	33 11.50	0.0
ARV	45.33	298	P	36	43.50	0.1	ATN	6.80	283	P	12	58.00	-0.7			eSg	33 14.70	
GRF	45.33	306	eP	36	44.00	0.6	MMN	6.88	298	P	13	01.40	0.9	THE	0.80	32 ePg	33 23.90	0.6
			e	36	44.90		MEU	7.16	274	P	13	05.50	1.1	AGG	0.93	184 ePb	33 25.70	0.0
AZI	45.33	295	P	36	44.50	1.1	MGR	7.29	299	Pc	13	05.10	-0.9			eSb	33 42.70	
CTI	45.68	301	P	36	45.50	-0.8	SGO	7.63	301	Pd	13	10.40	-0.2	PAIG	0.98	91 ePb	33 26.30	-0.1
MNS	45.78	296	P	36	47.00	0.0	BSS	8.08	302	P	13	15.90	-0.6			eSb	33 39.70	
SFI	46.00	298	P	36	50.00	1.4	HRI	10.37	107	eP	13	46.00	-0.9	GRG	1.00	360 ePb	33 26.40	-0.4
BOB	47.47	300	P	37	01.00	0.5	PRNI	11.33	122	eP	13	58.00	-1.4			eSb	33 43.00	
VAI	47.68	302	P	37	02.00	0.1	MBH	11.61	124	eP	14	04.00	1.0	SOH	1.13	39 ePb	33 28.90	-0.1
BSF	48.55	305	eP	37	08.10	-0.8	S.D. = 0.9 on 31 of 33 obs.								eSb	33 45.20		
	0.8s	10.75nm			4.9mb		* MAR 25, 1990 18h 23m 28.37± 4.18s						FNA	1.14	317 ePb	33 29.50	0.2	
LPG	49.14	302	eP	37	13.10	-0.5	39.214 N ± 7.6km 15.075 E ± 18.1km						KNT	1.26	17 ePb	33 31.10	-0.2	
	1.0s	12.00nm			4.9mb		DEPTH = 260.5 ± 44.2 km								eSb	33 49.20		
LPL	49.15	302	eP	37	13.20	-0.4	SOUTHERN ITALY (390)						S.D. = 0.3 on 8 of 8 obs.					
	0.8s	6.05nm			4.7mb		CZI	0.82	89	P	24	03.30	-0.6	* MAR 25, 1990 18h 59m 58.99± 0.61s				
BNI	49.31	301	P	37	12.00	-2.7	MMN	0.98	46	P	24	05.00	0.4	37.148 N ± 8.9km 72.825 E ± 12.2km				
LOR	50.62	305	eP	37	23.40	-1.2	MGR	0.99	22	Pc	24	04.50	-0.2	DEPTH = 33.0km (normol)				
	1.0s	6.00nm			4.5mb		TDS	1.07	65	Pc	24	05.00	-0.2	4.3mb ( 4 obs.)				
SMF	50.80	304	eP	37	25.00	-0.9	ATN	1.09	164	P	24	04.60	-0.7	TAJIK SSR (715)				
	0.8s	9.40nm			4.8mb		CSI	1.09	59	P	24	06.20	0.9	KSH	3.39	46 ePg	00 56.50	5.6X
NAI	50.80	230	iPc	37	28.00	1.5	ROI	1.21	72	P	24	05.60	-0.5			Sg	01 40.00	
AVF	51.08	304	eP	37	27.00	-1.0	SGO	1.35	8	P	24	07.00	0.1	QUE	8.49	217 eP	02 02.60	-0.2
	0.8s	12.75nm			4.9mb		ORI	1.36	51	P	24	07.50	0.5	NDI	9.21	155 eP	02 12.80	0.2
MAT	51.28	70	(P)	37	30.00	0.3	GIB	1.47	214	Pd	24	08.30	0.4			eS	03 52.80	
MAF	51.76	304	eP	37	32.50	-0.7	BSS	1.59	353	Pd	24	08.70	0.1	WMO	13.13	55 eP	03 05.50	-0.2X
	0.8s	14.80nm			5.0mb		MEU	2.11	183	P	24	13.40	0.3	KKN	14.04	128 P	03 10.30	-7.7X
TCF	51.98	304	eP	37	34.20	-0.7	DUI	2.49	349	P	24	16.50	-0.2	PKI	14.28	128 P	03 15.40	-5.8X
	1.0s	14.00nm			4.9mb		SDI	2.67	339	P	24	18.20	-0.3	GUN	14.34	126 P	03 16.50	-5.5X
EKA	52.92	316	P	37	41.00	-0.7	S.D. = 0.5 on 14 of 14 obs.						GTA	21.28	76 eP	04 45.00	0.1	
	1.1s	19.50nm			5.0mb		* MAR 25, 1990 18h 32m 31.89± 1.66s						HFS	43.47	321 eP	07 59.40	-0.9	
PCI	57.55	120	ePd	38	19.20	3.5X	10.912 S ± 8.0km 166.250 E ± 9.7km							0.5s	3.10nm		4.3mb	
BCAO	59.34	250	iPc	38	24.50	-3.8X	DEPTH = 182.3 ± 14.5 km						NB2	44.75	323 P	08 12.50	1.7	
	0.6s	6.00nm			4.9mb		4.5mb ( 6 obs.)							0.6s	1.60nm		4.1mb	
APHE	59.48	295	iPc	38	27.50	-1.6	SANTA CRUZ ISLANDS (184)						MBC	66.62	3 eP	10 47.50	-0.2	
ATEJ	59.73	295	eP	38	28.00	-2.9X	HNR	6.38	283	eP	34	04.00	-0.7		0.6s	6.00nm		4.9mb
MBC	66.63	3	iPd	39	15.60	0.0	DZM	11.10	179	iPd	35	08.30	1.5	INK	73.02	10 eP	11 26.50	-0.4
	0.5s	26.00nm			5.6mb				iS	37	03.40		YKA	80.52	3 eP	12 08.40	-0.4	
IMA	71.05	18	eP	39	42.20	-1.1	BRS	20.72	216	iP	37	00.20	0.7		0.7s	1.80nm		4.2mb
	1.2s	5.90nm			4.5mb		RMO	22.64	224	eP	37	20.00	1.8	S.D. = 0.9 on 8 of 13 obs.				
INK	73.03	10	eP	39	54.00	-0.8			e	37	52.00		? MAR 25, 1990 20h 22m 06.12± 3.02s					
FBA	73.42	17	eP	39	56.50	-0.7	COO	23.68	212	eP	37	29.00	0.7	7.794 S ± 28.3km 128.488 E ± 12.3km				
PWA	75.62	20	eP	40	08.30	-1.6	BWA	28.51	212	eP	38	10.90	-1.5	DEPTH = 128.7 ± 15.8 km				
KIC	76.37	268	P	40	15.00	0.1	CAN	28.92	210	eP	38	15.80	-0.2	4.6mb ( 3 obs.)				
YKA	80.53	4	eP	40	36.10	-0.6	NOZ	29.53	161	P	38	20.30	-1.0	BANDA SEA (280)				
	0.8s	11.80nm			4.9mb		MNG	30.69	166	P	38	31.10	-0.4	KUG	5.38	244 ePc	23 39.50	14.1X
WB5	80.99	123	eP	40	38.50	-1.4		0.2s	5.00nm			4.9mb				eS	24 40.00	
WRA	81.02	123	Pd	40	38.70	-1.3	PGZ	30.89	165	eP	38	29.50	-3.6X	MTN	5.65	153 iPd	23 30.00	0.9
	0.8s	8.70nm			4.8mb		THZ	31.28	170	eP	38	36.00	-0.7			eS	24 25.00	
SCH	82.11	338	eP	40	45.00	-0.2	WB5	31.95	250	eP	38	41.50	-1.2	KNA	7.91	178 eP	24 00.70	0.9
ASPA	83.35	126	iPc	40	51.20	-0.8			e	41	29.10			0.3s	51.00nm		5.7mb X	
	1.2s	20.00nm			5.1mb		WRA	31.99	250	Pc	38	42.00	-1.1			eS	25 22.00	
FFC	88.41	357	iPd	41	16.60	0.0		0.9s	9.20nm			4.5mb	WSI	8.31	256 ePd	24 05.00	-0.1	
	0.9s	25.00nm			5.5mb		LTZ	32.18	172	P	38	43.80	-0.7			eS	25 34.60	
PNT	93.21	8	eP	41	39.00	0.0	ASPA	33.30	243	iPc	38	52.80	-1.6			e	27 22.00	
NEW	94.51	7	e(P)	41	44.70	-0.4		0.8s	9.00nm			4.5mb	WB5	13.30	155 eP	25 08.70	-2.3	
S.D. = 1.0 on 105 of 124 obs.							ADE	34.66	222	eP	39	07.00	1.1			eS	27 31.50	
MAR 25, 1990 18h 11m 21.06± 0.40s							MBL	45.61	251	eP	40	36.00	0.1	WRA	13.34	155 Pc	25 06.30	-5.3X
36.873 N ± 5.9km 23.866 E ± 4.7km							PCI	47.16	279	ePc	40	48.00	-0.1		0.6s	9.10nm		4.4mb
DEPTH = 158.5 ± 8.1 km							SPA	79.16	180	iPc	44	17.90	0.3	MBL	15.70	211 eP	25 41.00	-0.5
SOUTHERN GREECE (368)								1.0s	9.50nm			4.5mb			eS	28 25.00		
VLI	0.76	259	eP	11	44.40	-0.7	FBA	83.04	18	eP	44	37.90	0.2	ASPA	16.61	162 iPc	25 52.80	-0.1
ATH	1.10	354	iPc	11	47.40	-0.4		0.9s	8.75nm			4.5mb			0.4s	16.00nm		4.7mb
APE	1.35	81	eP	11	50.00	-0.1	KVN	85.90	49	iP	44	53.00	0.3			eS	28 49.10	
VAM	1.49	169	eP	11	51.70	0.2	GUN	86.69	299	P	44	58.00	1.0	NANU	19.26	219 iPc	26 23.00	-0.2
ITM	1.58	282	eP	11	53.20	0.7	PKI	87.01	299	P	44	59.10	0.6		0.4s	17.00nm		4.7mb
NPS	2.14	138	eP	11	57.80	-0.9	KKN	87.17	299	P	45	00.00	0.8	FORR	22.94	181 eP	27 00.50	0.7
AGG	2.47	331	ePc	12	03.00	0.4	DMN	87.28	299	P	45	00.60	0.9	COOL	23.98	196 eP	27 10.00	0.1
NEO	2.48	348	eP	12	02.80	0.0	GKN	87.77	299	P	45	02.10	0.1	MRWA	24.34	207 eP	27 14.00	0.6
EVR	2.61	322	eP	12	05.00	0.5	YKA	94.63	27	eP	45	31.50	-1.2	NWAO	27.10	201 eP	27 38.20	-0.5
VLS	2.91	298	eP	12	07.50	-0.7		0.7s	0.90nm			4.1mb	BWA	32.24	148 eP	28 24.90	0.6	
KAP	2.98	115	eP	12	09.80	0.7	BCAO	147.38	261	ePKPd	51	53.90	0.1	CAN	33.23	148 eP	28 32.80	-0.1
LIT	3.40	342	ePc	12	14.20	-0.2		0.3s	50.00nm				S.D. = 1.0 on 13 of 15 obs.					
ARG	3.49	100	eP	12	17.00	1.4												
KZN	3.80	335	eP	12	20.00	0.3												



% MAR 25, 1990 20h 53m 45.55± 0.99s  
37.447 N ± 7.0km 12.318 E ± 9.0km  
DEPTH = 10.0km (geophysicist)  
SICILY (398)

CVT	0.44	58 P	53 53.50	-1.0
		eSg	54 04.00	
LVI	0.54	2 Pd	53 56.50	0.1
		eSg	54 07.20	
ERC	0.63	20 Pc	53 58.10	-0.1
		eSg	54 09.30	
PTS	0.69	202 Pd	53 59.20	0.0
		eSg	54 11.30	
MCT	1.06	80 P	54 06.90	1.2
GIB	1.46	68 P	54 11.40	-0.6
MNO	1.95	75 P	54 20.30	1.1
MEU	2.11	99 P	54 20.10	-1.4
ATN	2.59	73 P	54 28.90	0.7
	S.D. = 1.0	on 9 af	9 obs.	

& MAR 25, 1990 21h 28m 05.52s  
62.385 N 149.507 W  
DEPTH = 58.7km  
3.2mb (1 obs.)  
CENTRAL ALASKA (1)  
<AGS-P>.

CUT	0.36	274 iP	28 15.58	-0.4
		eS	28 23.47	
HUR	0.60	354 iP	28 17.98	-0.6
		eS	28 28.11	
GHO	0.67	156 iP	28 18.99	-0.6
		eS	28 29.93	
PWA	0.76	194 iP	28 20.01	-0.5
		eS	28 32.20	
SML	0.80	136 iP	28 20.31	-0.8
		eS	28 32.67	
PLRM	0.82	167 iP	28 20.46	-0.7
		eS	28 33.19	
SKT	1.03	248 iP	28 23.42	-0.7
		eS	28 38.28	
RND	1.07	16 eP	28 23.71	-0.9
		eS	28 37.58	
SUA	1.09	213 iP	28 25.00	0.0
		eS	28 40.81	
KNK	1.10	153 eP	28 24.40	-0.6
		eS	28 39.97	
PMS	1.14	181 eP	28 25.03	-0.6
		eS	28 40.93	
NCA	1.32	106 eP	28 27.51	-0.5
		eS	28 45.25	
KTH	1.34	332 eP	28 27.58	-0.8
		eS	28 44.52	
MCK	1.38	11 eP	28 28.48	-0.4
TOA	1.59	99 iP	28 31.89	0.1
		eS	28 54.22	
CRP	1.68	229 eP	28 33.33	0.1
		eS	28 54.86	
SPU	1.71	226 eP	28 32.88	-0.6
BGL	1.77	232 eP	28 34.55	0.2
CKL	1.80	230 eP	28 34.73	0.0
GLI	1.90	142 eP	28 34.88	-1.2
SLKM	1.91	191 eP	28 36.92	0.6
KLU	1.92	116 iP	28 35.43	-1.0
		eS	28 58.93	
VZW	1.94	132 eP	28 35.27	-1.4
PAX	1.95	71 eP	28 36.63	-0.3
		eS	29 00.56	
DDM	2.18	48 eP	28 41.08	1.1
		eS	29 09.42	
WRH	2.19	16 eP	28 39.31	-0.8
RDT	2.29	219 eP	28 42.07	0.5
		eS	29 11.45	
SEW	2.29	179 eP	28 41.76	0.3
HDA	2.33	28 iP	28 41.58	-0.6
		eS	29 09.11	
CCB	2.40	18 eP	28 41.87	-1.1
		eS	29 10.82	
FBA	2.64	16 eP	28 45.44	-1.0
		eS	29 14.98	
GLM	2.78	19 iP	28 47.38	-1.1
GLB	2.86	107 eP	28 48.10	-1.6
CNPM	2.99	197 eP	28 51.12	-0.4
PDB	3.46	223 eP	28 59.08	1.0
TGL	3.59	114 iP	28 57.75	-2.2
PCA	5.02	113 eP	29 17.70	-2.5

YKA 16.04 74 eP 31 57.60 9.3  
0.5s 0.90nm 3.2mb  
38 obs. associated

\* MAR 25, 1990 21h 31m 09.14± 1.09s  
36.571 N ± 11.9km 21.227 E ± 7.1km  
DEPTH = 33.0km (normal)  
SOUTHERN GREECE (368)  
MD 3.2 (ATH).

ITM	0.83	43 ePn	31 22.50	-1.9
VLI	1.38	83 ePb	31 33.00	0.7
VLS	1.68	343 ePb	31 39.00	2.3
EVR	2.39	11 ePb	31 50.00	3.1X
VAM	2.68	115 ePn	31 50.00	0.0
IGT	3.04	347 eP	31 37.80	-18.2X
NEO	3.15	29 ePn	31 58.30	0.7
KEK	3.33	341 ePn	32 00.00	-0.2
KZN	3.75	6 ePn	32 06.00	-0.2
GRG	4.47	11 eP	31 28.50	-47.9X
LCI	4.55	327 P	32 15.40	-2.0
CZI	4.82	305 P	32 20.20	-1.0
VAY	4.86	12 ePn	32 22.00	0.2
ATN	4.86	291 P	32 22.00	0.2
MGR	5.70	310 P	32 33.90	0.1
		eSn	33 34.90	
SGO	6.11	312 P	32 40.50	1.0
	S.D. = 1.3	on 13 of	16 obs.	

MAR 25, 1990 21h 35m 24.44± 0.51s  
9.591 N ± 3.9km 84.659 W ± 2.7km  
DEPTH = 40.8 ± 4.0 km  
5.6mb (64 obs.) 5.4msz (14 obs.)  
COSTA RICA (78)  
MD 5.3 (UPA). Ms 5.2 (BRK).  
CENTROID, MOMENT TENSOR (HRV)  
Data Used: GDSN  
L.P.B.: 15S, 33C  
Centroid Location:  
Origin Time 21:35:30.5 0.6  
Lat 9.65N FIX; Lon 84.67W FIX  
Dep 15.0 FIX Half-duration 2.4  
Moment Tensor; Scale 10<sup>17</sup> Nm  
Mrr= 1.55 0.12 Mtt=-1.66 0.15  
Mff= 0.11 0.17 Mrt= 2.77 0.39  
Mrf=-2.38 0.34 Mtf= 0.28 0.14  
Principal Axes:  
T Val= 4.13 Plg=54 Azm= 51  
N -0.28 11 305  
P -3.85 33 207  
Best Double Couple: Mo=4.0\*10<sup>17</sup>  
NP1: Strike=259 Dip=16 Slip= 43  
NP2: 127 79 102

LCR2	0.66	77 iPd	35 37.10	-0.5
SJS	0.69	60 iPc	35 38.20	0.3
AR6	0.88	344 iPd	35 41.00	0.4
VCR	1.15	62 iPd	35 40.30	-4.1X
LIO	1.65	75 iPc	35 52.80	1.4
ACR	1.74	122 ePc	35 50.90	-1.8
UPA	5.09	96 iP	36 39.90	-0.4
FUO	11.57	110 eP	38 17.00	6.5X
BOG	11.61	114 eP	38 12.00	1.0
		eS	40 24.00	
BMG	11.73	101 iPd	38 11.40	-1.0
OXX	13.90	304 (P)	38 41.95	0.7
TOV	14.66	88 eP	38 52.30	1.3
FISA	15.16	82 eP	38 59.00	1.4
CEOS	16.12	91 eP	39 09.00	-1.0
MORO	16.13	84 eP	39 09.00	-1.2
PPM	16.48	306 iPd	39 15.50	0.6
		iS	39 23.62	
III	16.80	303 eP	39 21.25	2.5
GUAC	17.14	87 eP	39 24.00	1.1
CAR	17.48	85 iP	39 26.00	-1.1
		iS	42 42.00	
CRX	17.50	306 eP	39 30.30	2.8
		(S)	39 50.51	
OLLA	17.60	87 eP	39 27.00	-1.6
IIJ	17.72	306 iPc	39 32.52	2.1
		(S)	39 38.06	
NNA	22.80	160 eP	40 22.20	-2.7
	1.0s	11.00nm	4.3mb X	
		eS	44 12.00	
PAG	23.29	72 eP	40 30.00	0.3
SLB	23.50	77 eP	40 33.71	1.9
HBF	23.56	9 P	40 33.50	1.4

SGS	23.80	9 P	40 35.80	1.4
PRM	24.47	5 P	40 41.70	0.8
JSC	24.77	7 P	40 43.30	-0.5
PWLA	25.46	353 P	40 49.50	-0.9
RSCP	25.90	358 P	40 53.00	-1.5
GBTN	25.96	1 P	40 55.00	0.0
TKL	25.96	2 P	40 54.80	-0.2
OLY	26.53	347 P	40 58.20	-2.0
POW	27.10	348 P	41 04.00	-1.4
BLA	27.76	7 P	41 11.00	-0.5
	1.4s	88.89nm	5.2mb	
NAV	27.82	7 P	41 11.70	-0.4
CVL	28.81	10 P	41 20.00	-0.9
ARE	28.98	153 iPd	41 23.70	0.7
NA2	29.08	11 P	41 23.00	-0.3
CBN	29.23	12 iPd	41 25.40	0.7
ZOBO	30.46	147 Pc	41 34.70	-1.8
	1.1s	11.89nm	4.6mb	
Z	22s	4.56um	5.1msz	
		S	46 40.00	
		LR	54 36.00	
LPB	30.69	148 P	41 37.00	-1.4
Z	18s	11.00um	5.6msz	
		S	48 14.00	
		SS	51 28.00	
		LR	54 20.00	
CLE	31.89	4 iP	41 47.20	-0.9
ALQ	32.15	325 ePc	41 49.30	-1.5
	1.0s	18.75nm	4.9mb	
Z	18s	1.89um	4.8msz	
ANMO	32.15	325 P	41 49.40	-1.4
	1.0s	21.25nm	5.0mb	
TBR	32.75	15 P	41 55.00	-0.6
GOL	35.21	332 P	42 15.00	-2.2
	1.0s	23.75nm	5.1mb	
WNY	35.91	13 P	42 21.70	-1.1
RSNY	35.92	12 P	42 21.40	-1.4
	1.2s	51.51nm	5.3mb	
GLA	36.30	315 eP	42 27.00	0.8
		e	44 51.00	
BAR	37.42	313 eP	42 36.00	0.3
TPC	37.73	315 eP	42 39.00	0.8
		e	44 55.00	
PLM	37.90	313 eP	42 41.00	1.1
		e	44 57.00	
MSU	37.93	324 P	42 39.50	-0.6
PEC	38.40	314 P	42 44.50	0.6
RVR	38.60	314 eP	42 46.00	0.5
		e	44 57.00	
GSC	38.90	316 eP	42 49.00	0.9
		e	45 00.00	
MWC	39.20	314 ePc	42 51.00	0.2
PAS	39.25	314 eP	42 52.00	1.1
SBB	39.28	315 eP	42 52.00	0.7
CLC	39.72	316 eP	42 55.00	0.1
		e	45 02.00	
CBM	39.79	18 P	42 55.00	-0.2
TNP	40.75	319 P	43 03.70	0.2
	0.9s	32.55nm	5.1mb	
FRI	41.79	316 ePc	43 11.30	-0.4
RSON	41.81	351 P	43 10.00	-1.8
	0.8s	64.10nm	5.4mb	
KVN	41.87	320 P	43 12.20	-0.5
PRI	42.02	315 eP	43 13.70	-0.1
RTRS	42.15	160 eP	43 15.60	0.9
LLA	42.45	315 ePc	43 17.30	0.1
		ePcP	45 11.30	
PRS	42.60	315 ePc	43 18.60	0.1
		ePcP	45 11.50	
CMB	42.80	317 ePc	43 20.20	0.1
		ePcP	45 11.80	
SAD	42.87	315 eP	43 21.30	0.7
ARN	43.22	316 P	43 24.00	0.5
LRM	43.25	332 eP	43 22.70	-1.2
		e	45 24.50	
MHC	43.29	316 ePc	43 24.80	0.6
GCC	43.39	315 ePc	43 25.30	0.5
RTLL	43.55	160 eP	43 25.40	-0.8
CFA	43.88	160 e(P)	43 28.00	-0.9
BRK	43.98	316 eP	43 29.50	-0.1
Z	20s	3.70um	5.3msz	
		eLR	00 11.00	
ORV	44.34	318 ePc	43 32.50</	



SES	46.16	337	eP	43	46.00	-0.9	LFF	80.05	46	iPd	47	31.20	-0.3	HFS	85.89	30	eP	48	00.00	-1.2
FHC	46.62	319	eP	43	50.70	0.1		1.0s	76.00nm				5.6mb		0.8s	26.70nm			5.5mb	
FFC	47.08	346	eP	43	52.00	-2.0	EROQ	80.09	50	eP	47	32.60	0.8		Z	17s	1.23um		5.4MszX	
	0.7s	10.00nm			4.9mb		LPO	80.39	46	iPd	47	33.00	-0.3				LR	21	42.00	
NEW	47.22	331	P	43	53.00	-2.3		1.1s	136.75nm				5.8mb	VDL	85.95	44	ePc	48	02.50	0.5
	1.0s	5.63nm			4.5mb	X	LSF	80.52	45	iPd	47	33.30	-0.7	BOB	86.22	45	Pc	48	03.50	0.3
SCH	47.29	14	ePc	43	53.50	-2.3		1.0s	44.00nm				5.4mb	MDI	86.24	44	P	48	03.00	-0.1
	1.0s	54.00nm			5.5mb		RJF	80.58	46	iPd	47	33.80	-0.5	PGF	86.27	48	P	48	03.91	0.4
PNT	49.15	330	eP	44	08.00	-2.2		1.0s	80.00nm				5.6mb	OSS	86.38	43	ePc	48	04.40	0.3
	1.0s	24.00nm			5.2mb		TCF	80.99	45	iPd	47	35.50	-1.0	GRF	86.55	40	iPc	48	04.50	-0.1
FRB	55.28	9	eP	44	51.50	-4.3X		1.1s	68.35nm				5.5mb		Z	19s	0.90um		5.2Msz	
	0.9s	61.00nm			5.6mb		CAF	80.99	46	iPd	47	36.00	-0.6				ic	48	05.20	
YKA	57.09	344	eP	45	04.30	-4.5X	MAF	81.24	45	iPd	47	37.10	-0.7	MOX	86.62	39	iP	48	05.00	0.1
	1.0s	8.40nm			4.7mb			1.2s	80.35nm				5.6mb	SAL	86.83	44	P	48	06.50	0.5
INK	66.74	342	eP	46	12.00	-1.3	BGF	81.41	44	iPd	47	37.80	-0.8	HOF	86.84	40	iPd	48	06.40	0.3
	1.2s	48.00nm			5.4mb		PYM	81.59	45	P	47	39.51	-0.2		1.2s	26.00nm			5.3mb	
TOA	68.45	334	eP	46	25.50	1.2	AGO	81.65	45	P	47	39.29	-0.6	FUR	86.86	42	eP	48	06.40	0.2
MBC	69.22	352	ePc	46	26.60	-2.1	AVF	81.73	44	iPd	47	39.20	-1.1		1.2s	73.00nm			5.8mb	
	1.0s	47.00nm			5.4mb			1.0s	48.00nm				5.5mb	OGA	86.94	43	iPc	48	07.30	0.4
PMR	69.60	333	eP	46	31.30	0.1	ETER	81.79	48	eP	47	41.80	1.1		1.2s	85.00nm			5.9mb	
	1.4s	34.90nm			5.2mb		LBL	81.80	46	P	47	40.85	0.2	MME	87.21	46	P	48	08.20	0.0
FBA	70.13	336	eP	46	34.60	0.1	SSF	81.81	44	iPd	47	39.60	-1.1	CLL	87.34	39	iPc	48	08.70	0.3
IMA	72.83	337	eP	46	51.40	0.6		1.0s	46.00nm				5.5mb		1.2s	120.00nm			6.0mb	
	1.3s	25.90nm			5.0mb		PLDF	81.99	45	P	47	41.35	-0.4	CTI	87.52	44	P	48	09.30	-0.2
TTA	73.06	333	eP	46	52.00	-0.1	SNF	82.01	40	Pc	47	40.70	-0.9	FIR	87.68	46	eP	48	10.50	0.3
EZAM	73.23	49	eP	46	53.70	0.3	UCC	82.03	40	P	47	41.00	-0.7	UPP	87.88	30	iP	48	10.20	-0.6
PTO	73.26	50	iP	46	54.00	0.4	LOR	82.03	43	iPd	47	41.00	-0.9	PGD	87.99	46	P	48	11.50	-0.4
STS	73.36	48	eP	46	54.20	0.1		1.0s	48.00nm				5.5mb	BHG	88.01	42	iPd	48	12.40	0.7
AVE	74.17	58	iPc	46	59.80	0.8	SMF	82.08	44	iPd	47	41.00	-1.1		1.3s	150.00nm			6.1mb	
TIO	74.36	61	iPd	47	02.20	1.8		1.0s	40.00nm				5.4mb	BRG	88.02	39	iPc	48	11.80	0.1
DCN	74.83	37	eP	47	00.60	-1.8	LBF	82.14	44	iPd	47	41.40	-1.1		1.2s	75.00nm			5.8mb	
	1.2s	116.00nm			5.7mb			1.0s	14.00nm				5.0mb				i	48	27.00	
DMU	75.09	37	eP	47	02.60	-1.3	DOU	82.25	41	Pc	47	42.30	-0.6	SFI	88.07	46	P	48	12.10	0.1
	1.0s	116.00nm			5.8mb		SSB	82.71	45	P	47	45.59	0.1	FVI	88.18	43	Pc	48	12.70	0.2
EPLA	75.17	51	eP	47	05.00	0.3	ENN	83.02	40	iPc	47	46.70	-0.2	CRE	88.20	46	P	48	12.00	-0.9
DLE	75.27	37	eP	47	02.70	-2.2		1.0s	102.00nm				5.8mb	K8A	88.45	43	iPc	48	14.00	-0.1
DAG	75.29	13	iPd	47	02.20	-2.5	MEM	83.09	40	Pc	47	46.70	-0.5		1.1s	94.90nm			6.0mb	
	0.8s	13.43nm			5.0mb		WIT	83.24	38	eP	47	49.00	1.1				i	48	21.60	
	Z	20s	3.97um		5.7Msz		KUK	83.38	85	eP	47	48.50	-1.0				e	49	16.00	
EJIF	75.70	55	eP	47	09.20	1.5	WTS	83.43	38	iPc	47	49.00	0.1	PRU	88.59	40	P	48	14.50	0.1
NKM	75.77	56	iPc	47	09.00	0.8		1.0s	147.00nm				6.0mb		1.1s	32.10nm			5.5mb	
IFR	76.07	58	iPc	47	11.50	1.3	HAU	83.63	43	iPd	47	49.50	-0.6	RBL	88.74	43	P	48	15.40	0.1
		i			47	18.50		1.0s	56.00nm				5.6mb	ARV	88.93	46	P	48	16.00	-0.3
MAL	76.54	55	iPc	47	14.20	1.8	ADK	83.78	321	iPc	47	52.00	1.3	MNS	88.98	47	Pd	48	17.00	0.5
GUD	76.63	50	iPc	47	13.60	0.5	RUP	83.88	41	eP	47	51.28	-0.1	VOY	89.05	44	e(P)	48	17.00	0.1
TOL	76.73	51	iPc	47	14.00	0.5	BSF	83.94	43	iPd	47	51.00	-0.8	SOD	89.19	21	eP	48	11.00	-6.0X
	1.2s	156.25nm			5.9mb			0.8s	37.60nm				5.5mb	KSP	89.47	38	iPc	48	18.70	0.1
		eS	57	12.00			ABH	84.16	41	eP	47	52.49	-0.3		1.1s	36.00nm			5.6mb	
AAPN	76.75	54	iPd	47	14.80	1.0	MOF	84.17	43	P	47	52.39	-0.6	LJU	89.48	43	eP	48	19.00	0.2
ALOJ	76.77	54	iPc	47	15.00	1.1	CDF	84.19	42	P	47	52.60	-0.4	AZI	89.61	48	Pd	48	20.00	0.6
ATEJ	76.85	54	iPc	47	15.60	1.2	LPL	84.21	45	eP	47	53.80	0.4	SDI	89.95	48	P	48	20.80	-0.3
EBAN	76.99	53	eP	47	15.20	0.2		1.0s	24.00nm				5.3mb	VKA	90.13	41	iPc	48	21.90	0.1
ACHM	76.99	54	iPc	47	16.00	0.9	LRG	84.22	47	eP	47	53.20	0.1				id	48	22.70	
ASMO	77.05	54	iPc	47	16.50	1.0		1.0s	48.00nm				5.6mb	DUI	90.43	48	P	48	24.00	0.7
APHE	77.11	54	iPc	47	17.00	1.2	LPG	84.23	45	eP	47	53.70	0.2	PTJ	90.48	43	eP	48	27.10	13.6X
AFC	77.21	54	eP	47	17.50	1.1		1.0s	34.00nm				5.4mb	ZST	90.66	41	iP	48	24.70	0.6
EKA	77.34	35	Pd	47	15.70	-0.8	BNI	84.23	45	P	47	54.00	0.6	SUF	90.83	26	iP	48	24.90	0.2
	1.2s	75.10nm			5.6mb		GWf	84.34	41	P	47	53.66	0.0		1.1s	28.40nm			5.6mb	
ECRI	77.81	48	eP	47	20.20	0.7	LMR	84.35	47	eP	47	53.60	-0.2	NUR	91.00	28	iP	48	25.20	-0.3
ETOR	78.22	50	iPc	47	22.80	1.0		1.0s	46.00nm				5.6mb		0.8s	19.10nm			5.5mb	
TAF	78.25	56	iP	47	23.50	1.4	FRF	84.41	47	eP	47	54.00	-0.1	SGO	91.31	49	P	48	27.50	0.2
ENIJ	78.29	54	eP	47	21.80	-0.3		0.8s	29.55nm				5.5mb	SRO	91.54	41	eP	48	28.60	0.4
LPF	78.68	43	iPd	47	23.40	-0.6	STR	84.49	42	P	47	54.51	0.2	MGR	91.59	49	P	48	28.60	0.0
	1.0s	100.00nm			5.8mb		NB2	84.52	29	P	47	56.80	2.4	KRA	91.93	39	iPd	48	30.70	0.8
GRR	78.79	42	iPd	47	24.10	-0.5		1.1s	39.30nm				5.5mb		1.2s	182.00nm			6.4mb	
	1.0s	132.00nm			5.9mb		KTD	84.59	41	eP	47	55.12	0.2		Z	18s	2.00um		5.6Msz	
LIC	78.80	86	P	47	25.84	0.5	DIX	84.60	44	ePd	47	56.40	1.0				e	48	37.20	
	1.2s	173.50nm			5.9mb		TNS	84.69	40	iPc	47	55.30	-0.2	BUD	92.10	41	eP	48	31.00	0.2
	Z	20s	0.31um		4.6Msz		DOI	84.71	46	P	47	56.40	0.7	TDS	92.29	49	P	48	32.20	0.3
BOH	78.89	48	P	47	26.58	1.1	MVIF	84.73	47	P	47	56.45	0.5	SPC	92.38	39	eP	48	33.10	0.8
ELYF	78.91	48	P	47	24.99	-0.5	FEL	84.75	42	P	47	55.68	-0.2	PSZ	92.53	41	iP	48	34.00	1.1
FLN	79.03	42	iPd	47	25.30	-0.6	TOUF	84.78	46	P	47	56.45	0.2	BZS	94.36	43	eP	48	41.50	0.3
	1.0s	122.00nm			5.8mb		AURF	84.86	47	P	47	56.61	0.1	OHR	95.17	47	eP	48	45.50	0.3
MADF	79.03	48	P	47	25.75	-0.4	REVF	84.91	47	P	47	57.43	0.8	IGT	95.30	49	eP	48	37.00	-8.7X
ISSF	79.06	48	P	47	27.03	0.7	AUTN	84.91	46	P	47	57.43	0.5	SKO	95.37	46	iPc	48	46.40	0.4
ECHE	79.11	51	eP	47	27.50	0.8	SBF	84.94	47	eP	47	56.80	0.0		1.0s	59.00nm			6.0mb	
ATE	79.12	48	P	47	26.73	0.1	MMK	84.99	44	ePd	47	58.70	1.4	FNA	95.69	47	eP	48	48.30	0.7
LHE	79.19																			



25d 21h

WMO	126.39	7	PKP	54	29.60	4.6X
BJI	126.98	340	ePKP	54	26.00	0.0
	Z	20s	1.02um			5.5Msz
			ePP	56	20.00	
HHC	127.63	344	ePKP	54	28.20	0.8
	Z	22s	2.70um			5.9Msz
KSH	128.00	19	PKP	54	29.50	1.3
BTO	128.25	346	ePKP	54	28.50	-0.1
CTA	129.86	252	iPKPd	54	32.50	0.4
		1.0s	15.00nm			
TIA	130.04	337	ePKP	54	31.40	-0.6
TIY	130.30	342	PKP	54	33.50	0.9
	Z	22s	1.56um			5.7Msz
	N	22s	2.00um			
GTA	131.07	355	PKP	54	34.50	0.4
	Z	20s	0.60um			5.3Msz
QUE	131.94	34	ePKP	54	36.70	0.6
NJ2	132.88	332	ePKP	54	37.80	0.3
LZH	133.87	350	ePKP	54	38.50	-1.0
NDI	138.12	24	ePKP	54	48.00	0.4
CD2	138.93	349	ePKP	54	48.20	-0.8
ASPA	140.64	244	iPKPd	54	52.00	-0.3
		0.9s	7.00nm			
WB5	140.99	250	ePKP	54	46.60	-6.4X
WRA	141.00	250	PKPd	54	46.20	-6.8X
		1.0s	6.00nm			
GKN	141.22	15	PKP	54	47.00	-6.4X
KKN	141.58	14	PKP	54	47.90	-6.2X
GUN	141.61	14	PKP	54	49.40	-5.0X
DMN	141.71	15	PKP	54	48.80	-5.6X
PKI	141.83	14	PKP	54	48.30	-6.4X
GYA	142.52	343	PKP	54	53.20	-2.5
KMI	144.75	348	PKPc	54	58.50	-1.1
	Z	20s	0.60um			5.4Msz
MTN	144.76	261	iPKPd	54	59.00	-0.6
			i	55	05.20	
POO	144.92	37	ePKP	54	58.00	-1.8
PGP	145.76	312	ePKPc	55	01.20	0.0
		1.0s	139.00nm			
KNA	146.85	256	ePKP	55	04.70	1.7
QIZ	148.17	333	PKPc	55	09.00	4.0X
			PP	58	37.00	
HYB	148.45	32	ePKP	55	05.00	-0.6
		1.0s	105.00nm			
KLB	149.80	220	ePKP	55	11.50	4.2X
MUN	150.50	218	ePKP	55	12.00	3.7X
		1.0s	80.00nm			
CHG	151.55	353	ePKP	55	10.10	-0.2
LOE	152.44	347	ePKP	55	12.50	1.0
BDT	153.09	352	ePKP	55	11.00	-1.4
		1.0s	74.50nm			
KOD	153.46	43	ePKP	55	15.10	1.7
SNG	162.53	342	ePKP	55	23.80	0.1
S.D. = 0.9 on 290 of 309 obs.						
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%	MAR 25, 1990	22h	26m	33.95±	0.88s	
	43.770 N	±11.6km		11.535 E	± 5.4km	
	DEPTH = 10.0km (geophysicist)					
CENTRAL ITALY						(381)
PGD	0.17	52	P	26	38.60	0.7
			iSg	26	42.00	
FIR	0.20	272	e(Pg)	26	30.00	-8.4X
			i(Sg)	26	43.00	
SFI	0.27	57	P	26	39.00	-0.7
			eSn	26	45.00	
CRE	0.33	115	P	26	41.00	0.1
			eSn	26	46.50	
PII	0.73	267	P	26	48.20	-0.1
			eSg	26	59.00	
BDI	0.74	294	P	26	48.60	0.1
S.D. = 0.7 on 5 of 6 obs.						
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?	MAR 25, 1990	22h	44m	30.84±	2.00s	
	37.949 N	±12.0km		29.880 E	±28.0km	
	DEPTH = 10.0km (geophysicist)					
TURKEY						(366)
KHL	0.47	323	iPg	44	39.70	-0.7
			eSg	44	47.00	
BCK	0.74	131	iPn	44	51.30	5.8X
ELL	1.20	179	ePn	44	53.10	-0.2
DST	1.92	330	ePn	45	04.50	0.6
IZM	2.11	283	ePn	45	07.00	0.3
YLV	2.64	352	iPn	45	22.60	8.3X
EDC	2.86	327	ePn	45	23.50	6.1X
S.D. = 0.9 on 4 of 7 obs.						

* MAR 26, 1990 00h 28m 06.34±0.63s					
47.713 S ±11.1km 165.225 E ±7.9km					
DEPTH = 10.0km (geophysicist)					
4.4mb (3 obs.) 3.8Msz (1 obs.)					
OFF W. COAST OF S. ISLAND, N.Z. (161)					
TLC	3.66	48 P	29	04.60	0.2
MMCZ	3.83	46 P	29	07.00	0.3
MHZ	3.86	48 P	29	06.70	-0.4
LTZ	7.00	48 eP	29	51.00	-0.4
		eS	31	06.70	
RMO	24.83	323 eP	33	31.00	1.1
ASPA	34.58	303 iPd	34	57.00	-0.3
	1.0s	14.00nm			4.8mb
Z	20s	0.16um			3.8Msz
		LR	47	53.00	
WRA	37.31	307 Pc	35	20.00	-0.4
	1.0s	7.00nm			4.4mb
WB5	37.35	307 eP	35	20.20	-0.5
SPA	42.48	180 eP	36	02.90	-0.1
	1.2s	7.75nm			4.3mb
INK	124.33	23 ePKP	47	05.00	-0.6
YKA	126.85	35 ePKP	47	10.00	-0.6
	0.9s	0.70nm			
FRB	146.94	41 ePKP	47	49.00	1.8
S.D. = 0.8 on 12 of 12 obs.					
* MAR 26, 1990 00h 46m 50.61±1.74s					
41.351 N ±16.3km 22.699 E ±6.5km					
DEPTH = 10.0km (geophysicist)					
YUGOSLAVIA (383)					
ML 2.2 (THE).					
VAY	0.10	253 iPg	46	53.30	0.0
		iSg	46	55.70	
KNT	0.24	141 ePg	46	55.60	-0.2
		eSg	46	59.70	
GRG	0.45	210 ePg	46	59.90	0.0
		eSg	47	07.60	
SRS	0.71	109 ePg	47	04.70	0.0
SOH	0.72	137 ePg	47	05.00	0.1
		eSg	47	15.60	
S.D. = 0.1 on 5 of 5 obs.					
% MAR 26, 1990 01h 17m 33.58±2.27s					
11.234 N ±7.8km 62.288 W ±24.2km					
DEPTH = 33.0km (normal)					
WINDWARD ISLANDS (95)					
MD 3.7 (TRN).					
TCE	0.75	135 eP	17	47.53	-0.2
		eS	17	59.88	
TRN	1.05	124 eP	17	51.18	-0.8
		eS	18	06.22	
GRW	1.11	34 eP	18	01.33	8.5X
		eS	18	25.83	
TPP	1.23	138 eP	17	55.16	0.7
		eS	18	11.26	
TBH	1.41	122 eP	17	59.99	2.8X
		eS	18	16.65	
TPR	1.48	92 eP	17	58.62	0.4
		eS	18	21.37	
BOT	1.54	92 eP	17	59.03	0.0
		eS	18	22.02	
SVB	2.26	26 eP	18	09.83	0.4
		eS	18	46.70	
SVV	2.32	27 eP	18	09.99	-0.3
		eS	18	46.75	
SSV	2.34	27 eP	18	10.47	-0.1
		eS	18	47.09	
S.D. = 0.5 on 8 of 10 obs.					
& MAR 26, 1990 01h 27m 18.34s					
46.850 N 121.913 W					
DEPTH = 10.7km					
WASHINGTON (29)					
<SEA>. ML 3.4 (SEA).					
FMW	0.18	64 Pd	27	22.19	-0.5
		S	27	25.25	
TDL	0.54	203 Pd	27	28.12	-1.2
		S	27	35.88	
YEL	0.67	197 Pd	27	30.51	-1.2
		S	27	39.83	
NAC	0.76	98 P	27	32.42	-0.7
TWW	0.77	68 P	27	32.57	-0.8

EBG	0.92	86	Pd	27	35.66	-0.3
GULW	0.95	167	P	27	35.36	-1.1
TBM	0.95	70	Pd	27	35.83	-0.7
YAKW	1.01	109	P	27	37.08	-0.3
APM	1.13	172	P	27	38.70	-0.7
MXC	1.15	103	P	27	39.49	-0.3
GL2	1.17	139	P	27	39.44	-0.7
NLO	1.31	235	P	27	41.43	-1.1
VLMM	1.31	184	P	27	41.61	-1.0
ETW	1.32	54	Pd	27	41.38	-1.3
VTG	1.32	85	P	27	42.28	-0.4
JCW	1.34	360	Pd	27	41.51	-1.5
BRVW	1.37	105	P	27	43.32	-0.2
BVW	1.40	91	P	27	43.87	0.1
VLL	1.40	173	P	27	43.47	-0.4
MDW	1.50	98	P	27	45.32	0.1
VGB	1.55	149	P	27	45.87	-0.1
OSD	1.56	309	P	27	45.24	-1.0
TDH	1.56	177	P	27	45.75	-0.5
CMW	1.58	355	P	27	45.88	-0.6
WTV	1.58	57	Pd	27	45.99	-0.4
WAH2	1.62	92	P	27	47.16	0.3
RPW	1.62	9	Pd	27	46.21	-0.8
NLW	1.63	40	P	27	46.87	-0.3
KMOR	1.63	223	P	27	46.13	-1.1
EPH	1.66	71	P	27	47.11	-0.5
RSW	1.67	105	P	27	47.39	-0.3
GBL	1.71	98	P	27	48.83	0.6
CRF	1.73	90	P	27	48.53	0.0
STW	1.76	318	P	27	48.62	-0.4
PATW	1.78	122	P	27	50.09	0.9
OOW	1.79	301	P	27	51.17	1.8
VBEM	1.80	173	P	27	50.59	0.8
DHW2	1.85	51	P	27	49.40	-0.9
WIW	1.86	102	P	27	50.58	0.2
WRD	1.90	85	P	27	51.40	0.4
SAW	1.91	63	Pd	27	50.15	-1.1
VTHM	1.92	150	P	27	51.41	0.1
MCW	1.93	342	P	27	50.94	-0.6
CROR	1.98	161	P	27	52.42	0.2
JBO	2.00	133	P	27	51.51	-1.0
VIPM	2.51	158	P	27	59.32	-0.6
DPW	2.72	67	P	28	01.22	-1.6
48 obs. associated						
<hr/>						
%	MAR 26, 1990	01h 34m	55.47±	0.62s		
	39.275 N ± 5.4km		28.222 E ± 5.9km			
DEPTH = 10.0km (geophysicist)						
TURKEY				(366)		
DST	0.46	43	iPg	35	03.50	-1.3
			iSg	35	12.50	
KCT	0.98	6	iPg	35	14.40	0.3
			iSg	35	26.90	
BNT	1.10	348	iPn	35	15.90	-0.3
EDC	1.11	346	iPn	35	15.50	-0.7
IZM	1.15	221	ePn	35	16.40	-0.7
KHL	1.39	133	ePn	35	21.00	0.0
LYV	1.56	34	iPn	35	23.40	0.0
EZN	1.57	291	ePn	35	24.30	1.0
MFT	1.67	335	ePn	35	24.90	-0.1
GPA	1.90	57	ePn	35	29.00	0.7
HRT	1.90	35	ePn	35	29.30	1.0
S.D. = 0.8 on 11 of 11 obs.						
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MAR 26, 1990		01h 51m	28.91±	0.18s		
44.769 N ± 1.6km			6.732 E ± 2.1km			
DEPTH = 10.0km (geophysicist)						
FRANCE				(538)		
ML 3.0 (GEN), 2.7 (LDG).						
RRL	0.16	14	Pc	51	32.92	0.2
			S	51	36.32	
FOUF	0.24	172	iPgc	51	33.25	-0.8
BNI	0.29	352	P	51	35.00	0.0
			eSg	51	39.50	
PZZ	0.37	135	P	51	36.40	-0.2
			S	51	42.27	
DOI	0.45	126	P	51	37.90	-0.2
			eSg	51	42.70	
RSP	0.53	44	P	51	40.12	0.4
			S	51	48.63	
STV	0.67	141	P	51	41.54	-0.8
			S	51	51.30	
LPG	0.73	1	Pg	51	43.30	-0.1
			Sg	51	54.00	
ENR	0.73	137	P	51	42.49	-0.9



LPL	0.75	0	Pg	51 53.14	-0.2	INK	64.14	24	eP	28 19.00	9.9X	E	12s	0.40um			
			Sg	51 43.50		MBC	65.42	14	eP	28 19.00	1.8			eS	21 21.50		
LSD	0.75	23	P	51 55.00			1.0s	21.00nm			5.2mb			eS	27 50.00		
			S	51 43.66	-0.1	YKA	73.73	26	eP	29 09.00	0.7	HHC	46.60	9	P	21 10.00	0.3
TOUF	0.84	154	Pg	51 55.09			0.3s	0.20nm			3.6mb X	BJI	46.77	14	eP	21 10.00	-0.9
AUTN	0.92	147	Pg	51 44.67	-0.6	HFS	77.07	333	eP	29 28.60	1.3	Z	18s	1.17um			4.9Msz
MVIF	0.92	161	Pg	51 47.10	0.4		0.7s	3.90nm			4.5mb	WMQ	50.63	346	iPd	21 41.00	0.2
ROB	0.94	120	P	51 46.19	-0.5	CLL	82.98	326	eP	29 58.00	-1.0			S	28 51.00		
			S	51 46.85	-0.1	CMB	84.39	49	e(P)	30 07.10	0.5	BWA	51.40	131	eP	21 49.00	2.2
			S	51 59.76					e	30 18.00		CAN	52.19	131	eP	21 53.50	0.7
AURF	0.98	154	Pg	51 47.51	-0.1	FRB	85.21	9	eP	30 09.00	-1.1	BRS	52.58	121	iPd	21 53.40	-2.4
CALN	1.02	174	Pg	51 48.81	0.5	KVN	85.29	47	eP	30 10.80	-0.5			e	22 05.00	40km	
			Sg	52 06.73		FRI	85.41	50	e(P)	30 12.00	0.4			e	22 30.00		
SBF	1.04	151	Pg	51 48.90	0.4				e	30 23.00		CN2	53.02	21	Pc	21 56.50	-2.2
			Sg	52 02.20		S.D. = 1.1 on 18 of 22 obs.											
REVF	1.13	156	Pg	51 51.06	1.0	MAR 26, 1990 04h 12m 42.88 ± 0.28s											
			Sg	52 08.61		5.236 S ± 5.2km 102.520 E ± 5.7km											
CKI	1.16	107	P	51 50.80	0.2	DEPTH = 34.1km ( 3 depth phases)											
			eSg	52 06.70		5.0mb ( 10 obs.) 4.8Msz ( 4 obs.)											
IMI	1.19	136	P	51 51.18	0.0	SOUTHERN SUMATERA (274)											
			S	52 05.23		KGM	7.25	6	eP	14 31.50	2.3	MDJ	55.26	23	eP	22 15.50	0.4
FIN	1.20	117	P	51 51.53	0.3	IPM	9.86	351	ePd	15 05.50	0.0	MHI	57.68	319	iPd	22 31.20	-1.5
			S	52 06.02					e	15 09.10		MBH	73.46	303	iPd	24 14.50	0.4
FRF	1.21	183	Pg	51 51.20	-0.2	SNG	12.48	351	eP	15 40.70	-0.3	PRNI	73.53	304	iPd	24 15.00	0.4
			Sg	52 07.40					eS	17 55.50		DSI	73.56	305	eP	24 16.00	1.3
ORO	1.23	45	P	51 52.20	0.3	MKS	16.88	91	ePd	16 38.50	0.2	VNDA	78.52	169	(P)	24 41.90	0.0
			eSg	52 08.10		KKM	17.68	51	ePd	16 49.50	1.1	ELL	79.34	309	eP	24 47.00	-0.2
PCP	1.31	99	P	51 53.61	0.4	NNT	17.92	351	eP	16 53.20	1.9	JMB	83.22	314	iPd	25 08.00	0.7
			S	52 10.20		TSM	18.15	59	eP	16 56.00	1.9	VRI	83.92	317	ePd	25 12.00	1.2
LRG	1.34	192	Pg	51 54.10	0.5	NST	20.91	354	eP	17 24.50	-0.5	PVL	84.28	314	eP	25 12.00	-0.7
			Sg	52 11.30		NANU	21.33	145	eP	17 30.00	0.8	RZN	84.40	313	iPd	25 14.00	0.4
LMR	1.44	186	Pg	51 55.50	0.4				eS	21 14.00		BCAO	84.43	275	iPd	25 13.40	-0.6
			Sg	52 14.00		BDT	22.60	351	eP	17 34.40	-7.6X		0.6s	8.00nm			5.1mb
SMF	2.76	314	Pn	52 14.50	0.5	MBL	23.08	135	eP	17 48.00	1.4	PGB	84.98	313	iP	25 16.00	-0.3
			Pg	52 20.40			0.4s	7.00nm			4.5mb	KKB	85.64	313	iPd	25 19.00	-0.5
PGF	2.76	143	Pn	52 14.70	0.6	CHG	24.16	352	iPc	17 56.80	-0.3	VTS	85.68	313	iP	25 20.00	0.1
			Sn	52 46.50		QIZ	25.17	16	eP	18 09.00	2.2	NUR	88.58	331	iP	25 33.50	0.2
LBF	2.93	320	Pn	52 16.00	-0.5		N	16s	1.80um				0.8s	14.70nm			5.3mb
AVF	3.11	312	Pn	52 19.50	0.6	KNA	27.80	114	iPd	18 29.80	-1.3	SPC	88.89	319	eP	25 35.70	0.4
			Sg	53 08.00		MTN	29.22	107	eP	18 43.00	-1.0	SOD	89.41	338	iP	25 37.00	-0.2
LOR	3.20	322	Pn	52 19.60	-0.7	KOD	29.31	302	iP	18 46.00	0.9	KEV	89.90	340	eP	25 40.00	0.6
SSF	3.21	317	Pn	52 20.80	0.4	KMI	30.18	0	Pd	18 53.00	0.4	SRO	89.95	318	eP	25 41.10	1.0
HAU	3.25	355	Pn	52 21.50	0.6	GYA	31.76	7	P	19 05.60	-0.8	ZST	90.81	318	eP	25 44.70	0.7
			Sn	53 00.30			N	15s	1.30um			PTJ	91.33	316	eP	25 47.00	0.4
BGF	3.26	305	Pn	52 21.10	0.0	SHL	32.31	342	iP	19 09.50	-1.8	KSP	91.64	321	ePc	25 49.20	1.4
			Sg	53 13.40		WRA	34.23	118	P	19 44.00	16.1X	BRG	93.12	321	iP	25 55.60	1.0
MAF	3.27	298	Pn	52 22.30	1.1		0.5s	5.50nm				APQ	93.82	330	eP	25 56.80	-0.8
			Sg	53 13.80		ASPA	35.34	124	iPc	19 37.30	-0.1		1.4s	42.00nm			5.7mb
CAF	3.32	274	Pn	52 21.40	-0.6		1.2s	27.00nm			5.1mb	INK	106.92	19	ePKP	31 06.00	-0.1
TCF	3.52	297	Pn	52 24.80	0.0	CD2	35.96	2	eP	19 40.80	-1.7	YKA	116.68	18	ePKP	31 23.20	-1.7
CDJ	3.66	6	Pn	52 25.00	-1.9	LSA	36.41	343	eP	19 46.00	-0.8		0.6s	0.50nm			
RJF	3.74	280	Pn	52 27.80	-0.1	PKI	36.56	334	P	19 47.60	-0.4	FRB	121.25	355	ePKP	31 32.00	-1.5
LSF	3.95	294	Pn	52 30.50	-0.3	GUN	36.66	335	P	19 48.80	0.0	PNT	123.49	32	ePKP	31 52.00	13.7X
S.D. = 0.6 on 42 of 42 obs.						DMN	36.73	334	P	19 48.60	-0.7	ALO	140.12	38	ePKP	32 08.00	-2.6X
* MAR 26, 1990 03h 17m 36.11 ± 0.56s						KKN	36.81	334	P	19 49.80	-0.1	BAO	144.19	234	ePKP	32 17.00	-1.1
29.951 N ± 10.4km 132.040 E ± 8.5km						POO	36.83	311	iPc	19 51.00	1.0	ZOBO	156.71	203	PKP	32 41.00	3.6X
DEPTH = 33.0km (normal)						GKN	37.28	333	P	19 53.70	0.0	S.D. = 1.1 on 72 of 80 obs.					
4.9mb ( 5 obs.)						QIS	39.09	116	eP	20 08.50	-0.4	* MAR 26, 1990 05h 06m 29.69 ± 0.96s					
SOUTHEAST OF SHIKOKU, JAPAN (237)						XAN	39.53	8	P	20 10.10	-2.3	6.512 S ± 8.5km 130.288 E ± 12.0km					
									S	26 10.20		DEPTH = 182.2 ± 11.9 km					
MAT	8.36	37	iPd	19 36.30	-1.6	SSE	40.29	25	eP	20 19.00	0.4	4.5mb ( 5 obs.)					
	0.7s		8.90nm		5.0mb	LZH	41.12	2	eP	20 26.00	0.4	BANDA SEA (280)					
			(S)	21 09.00			2.2s	53.00nm			4.9mb	AAI	3.50	323	eP	07 26.00	0.9
CN2	14.79	341	eP	21 09.00	4.5X		Z	18s	1.00um		4.7Msz	MTN	6.35	173	iPc	08 01.10	-1.0
									pP	20 34.00	27km			eS	09 08.00		
BJI	16.42	312	eP	21 27.00	1.5	NDI	41.60	326	iPd	20 09.50	-19.9X	KNA	9.30	189	eP	08 40.00	-1.0
TIY	18.01	301	eP	21 49.60	4.0X				58.22nm				0.3s	56.00nm			5.6mb X
HHC	19.87	309	eP	22 08.60	1.1				eS	26 42.00				eS	10 19.00		
XAN	20.02	288	P	22 06.00	-3.0X	TIY	43.71	11	eP	20 44.90	-1.7	WB5	13.87	164	eP	09 35.50	-4.3X
BTQ	20.83	307	eP	22 16.00	-1.4		Z	18s	1.20um		4.8Msz			eS	12 05.00		
							N	16s	1.40um			WRA	13.92	164	Pc	09 39.60	-0.9
			N	15s	0.60um	PMG	44.44	98	eP	20 52.00	-0.8		0.2s	1.00nm			3.9mb
			E	15s	0.40um	GTA	44.49	357	iPc	20 57.70	4.7X	QIS	16.63	148	eP	10 14.00	0.1
GYA	22.62	267	P	22 35.00	-0.5		Z	16s	1.20um		4.9MszX			eS	13 07.00		
CD2	24.38	279	eP	22 52.00	-0.5		N	14s	0.70um			PMG	16.95	101	eP	10 18.00	0.2
GTA	28.01	298	eP	23 26.00	-0.2	ADE	44.62	136	eP	20 55.10	1.1	ASPA	17.41	169	eP	10 25.20	2.1
GUN	40.24	279	P	25 10.80	-1.2				30.14nm		5.3mb		0.3s	7.00nm			4.5mb
	0.8s		30.00nm		5.1mb	CTA	44.99	113	iPc	20 56.90	-0.2			eS	13 30.00		
WB5	49.59	177	eP	26 26.50	0.3		0.9s		21.01nm		5.0mb	MBL	17.73	214	iPc	10 28.20	1.6
WRA	49.65	177	Pd	26 26.90	0.2	BTQ	46.13	8	eP	21 05.50	-0.4		0.3s	8.00nm			4.6mb
	0.9s		3.50nm		4.4mb		N	15s	1.20um					eS	13 41.00		
												CHTO	39.85	310	iP	13 47.30	0.2
													0.8s	11.16nm			4.5mb
												GUN	54.85	311	P	15 43.50	-0.4
												PKI	55.03	310	P	15 44.50	-0.7
													0.6s	11.00nm			4.8mb
												KKN	55.24	310	P	15 46.20	-0.4



26d 05h

DMN 55.28 310 P 15 46.60 -0.3  
GKN 55.84 310 P 15 50.50 -0.3  
S.D. = 1.1 on 14 of 15 obs.

MAR 26, 1990 05h 24m 30.75 ± 0.21s  
26.737 S ± 3.7km 70.781 W ± 8.2km  
DEPTH = 29.6km ( 2 depth phases)  
5.1mb ( 13 obs.) 4.7MsZ ( 1 obs.)  
NEAR COAST OF NORTHERN CHILE (122)

ANT 3.04 6 iPc+ 25 17.00 -0.9  
i 26 05.00  
i 26 14.00  
RTRS 3.61 162 e(P) 25 28.70 2.7X  
RTL 5.00 157 iPd 25 47.00 1.1  
ZON 5.13 160 eP 25 48.00 0.3  
CFA 5.34 156 e(P) 25 53.00 2.5X  
RTCV 5.47 160 e(P) 25 53.40 1.0  
ROCH 6.22 182 eP 26 00.50 -2.6  
IHA 6.31 187 eP 26 13.50 9.3X  
i(S) 27 33.80  
FCH 6.58 176 eP 26 07.50 -0.9  
SAN 6.69 179 eP 26 04.50 -5.2X  
LCCH 6.75 186 iPc 26 05.70 -4.7X  
PCH 6.87 178 eP 26 10.00 -2.1  
TACH 6.89 181 iPd 26 08.00 -4.4X  
CHCH 7.17 179 ePc 26 15.00 -1.4  
i 27 32.00  
LNV 7.22 184 eP 26 11.00 -5.9X  
ARE 10.25 356 eP 26 55.00 -4.2X  
CCH 10.25 26 P 26 59.00 -0.3  
LPB 10.46 14 P 27 02.00 -0.2  
1.0s 160.00nm 6.2mb X  
Z 15s 5.00um 5.1MsZ X

ZOBO 10.70 14 P 27 03.00 -2.7  
S 29 36.00  
LR 30 44.00  
NNA 15.74 338 eP 28 13.00 0.9  
BAO 23.91 67 ePc 29 43.00 -0.2  
HBF 60.04 351 P 34 36.20 -0.9  
PRM 61.48 349 P 34 45.60 -1.3  
JSC 61.49 350 P 34 45.90 -1.1  
TKL 63.26 348 P 34 57.20 -1.6  
SPA 63.42 180 iPc 34 59.20 -0.6  
1.0s 47.50nm 5.6mb X  
e 35 22.40 91kmX

RSCP 63.56 347 P 34 59.20 -1.6  
BLA 64.25 351 P 35 04.80 -0.5  
CBN 64.89 354 eP 35 09.00 -0.4  
POW 65.44 342 P 35 12.00 -1.0  
FVM 66.96 343 P 35 21.80 -0.9  
ALO 70.02 329 eP 35 42.00 0.0  
0.9s 6.93nm 4.8mb  
ANMO 70.02 329 P 35 42.30 0.3  
WNY 70.84 358 P 35 46.50 0.0  
RSNY 71.02 357 P 35 48.10 0.5  
1.0s 43.38nm 5.5mb  
LIC 71.52 73 P 35 51.44 0.2  
0.6s 10.00nm 5.0mb  
Z 20s 0.40um 4.7MsZ

GLA 72.72 322 eP 35 58.00 -0.1  
CBM 73.36 2 P 36 02.10 0.8  
BAR 73.47 321 eP 36 03.00 0.6  
GOL 73.54 333 P 36 02.90 -0.1  
0.8s 17.86nm 5.1mb  
TPC 74.19 322 eP 36 17.00 10.4X  
PEC 74.64 321 P 36 09.60 0.4  
0.8s 7.31nm 4.7mb  
RVR 74.84 321 eP 36 11.00 0.7  
MWC 75.39 321 eP 36 14.00 0.3  
GSC 75.49 323 eP 36 15.00 0.9  
KUK 75.51 75 eP 36 14.00 -0.5  
MSU 75.59 328 P 36 15.80 1.0  
SBB 75.60 321 eP 36 15.00 0.3  
CLC 76.31 322 eP 36 19.00 0.3  
ISA 76.68 322 eP 36 22.00 1.3  
RSSD 76.81 336 P 36 22.20 0.7  
DUG 77.22 328 P 36 24.70 0.9  
TNP 77.79 324 P 36 27.20 0.2  
0.8s 6.37nm 4.7mb  
PRI 78.25 321 eP 36 32.10 2.6X  
PRS 78.78 321 eP 36 32.50 0.2  
KVN 78.97 324 P 36 33.80 0.3  
IMW 79.34 332 P 36 36.00 0.5  
CMB 79.45 322 eP 36 36.20 0.3

RSON 79.87 345 P 36 37.50 -0.3  
0.7s 38.93nm 5.5mb  
ORV 81.15 323 eP 36 44.90 0.1  
SCH 81.29 2 eP 36 45.00 -0.2  
LRM 81.53 332 ePc 36 47.90 0.9  
e 36 57.30 30km  
WDC 82.43 323 ePc 36 50.30 -1.2  
e 36 59.60 29km  
BFS 84.48 117 iPd 36 56.00 -6.5X  
0.5s 49.30nm 6.0mb  
SEK 84.49 119 iPc 37 04.00 1.4  
0.7s 10.27nm 5.1mb  
SES 84.67 335 ePc 37 02.50 -0.2  
NEW 85.43 331 P 37 06.40 -0.2  
1.0s 5.63nm 4.7mb  
FFC 85.45 342 iPd 37 06.80 0.3  
1.0s 18.00nm 5.2mb  
PNT 87.31 330 eP 37 16.00 0.3  
FRB 90.19 1 eP 37 28.00 -0.9  
YKA 95.55 341 eP 37 52.30 -1.4  
0.8s 3.60nm 4.9mb  
INK 105.25 340 ePKP 43 02.50 11.4X  
MBC 107.03 349 ePKP 43 13.00 18.7X  
WRA 127.59 210 PKPd 43 34.60 -0.7  
0.6s 5.30nm  
WB5 127.63 210 ePKP 43 34.80 -0.6  
KOD 145.84 113 ePKP 44 11.00 1.7  
POO 146.44 97 iPKPc 44 11.70 1.8  
1.0s 36.00nm  
KSH 149.58 57 PKP 44 20.00 5.6X  
HYB 150.17 102 ePKP 44 17.00 1.3  
1.0s 70.00nm  
e 44 21.50  
i 44 27.00

NDI 151.64 79 iPKPc 44 25.00 7.4X  
0.8s 41.04nm  
MAT 153.54 299 ePKP 44 18.00 -2.1  
GKN 158.14 81 PKP 44 27.20 0.7  
DMN 158.53 82 PKP 44 28.00 0.9  
KKN 158.70 82 PKP 44 28.00 0.8  
PKI 158.80 82 PKP 44 27.90 0.4  
GUN 159.23 81 PKP 44 28.60 0.6  
GTA 165.12 30 ePKP 44 34.60 1.4  
e 45 31.20  
TIA 168.40 326 PKPd 44 37.00 1.4  
CD2 173.66 48 ePKP 44 40.20 1.9  
S.D. = 1.0 on 74 of 89 obs.

MAR 26, 1990 05h 58m 22.22 ± 0.28s  
26.793 S ± 4.5km 70.793 W ± 10.3km  
DEPTH = 33.0km (normal)  
5.1mb ( 15 obs.)  
NEAR COAST OF NORTHERN CHILE (122)  
Felt (IV) at Coladero.

ANT 3.09 6 iPc 59 08.70 -1.2  
eS 59 56.50  
RTL 4.96 156 iPd 59 38.00 1.6  
ZON 5.08 159 e(P) 59 46.00 7.8X  
CFA 5.29 156 e(P) 59 44.00 2.9X  
RTCV 5.42 159 e(P) 59 44.30 1.4  
ROCH 6.16 182 eP 59 57.70 4.2X  
IHA 6.25 187 eP 00 05.00 10.4X  
i(S) 01 22.80  
FCH 6.53 176 iP 59 58.50 -0.3  
SAN 6.64 179 eP 59 57.50 -2.5  
i 01 17.30  
LCCH 6.69 186 iPd 59 56.00 -4.8X  
PCH 6.81 178 eP 00 00.50 -2.0  
TACH 6.84 181 eP 59 58.50 -4.3X  
CHCH 7.12 179 eP 00 04.50 -2.3  
i 07 46.50  
ARE 10.30 356 eP 00 47.00 -4.1X  
CCH 10.31 26 P 00 51.00 -0.2  
LPB 10.51 14 P 00 53.50 -0.6  
1.0s 110.00nm 6.0mb X  
Z 15s 3.33um 4.8MsZ X  
LR 04 44.00  
ZOBO 10.76 14 Pd 00 55.00 -2.7  
0.8s 10.35nm 5.1mb  
Z 20s 1.69um 4.5MsZ X  
LR 04 24.00  
NNA 15.79 338 eP 02 05.50 1.6  
BAO 23.94 67 eP 03 51.20 16.7X  
JSC 61.54 350 P 08 37.00 -1.3  
TKL 63.31 348 P 08 48.40 -1.7  
SPA 63.36 180 iPc 08 50.20 -0.2

1.0s 45.00nm 5.5mb  
i 09 13.80  
RSCP 63.61 347 P 08 50.90 -1.2  
0.7s 83.04nm 6.0mb X  
POW 65.50 342 P 09 03.20 -1.1  
FVM 67.02 343 P 09 12.80 -1.2  
ALO 70.06 329 eP 09 33.50 0.3  
0.9s 62.82nm 5.7mb  
ANMO 70.07 329 P 09 33.50 0.3  
WNY 70.89 358 P 09 37.80 0.0  
RSNY 71.08 357 P 09 39.10 0.2  
0.9s 27.88nm 5.3mb  
LIC 71.55 73 P 09 42.44 0.1  
0.7s 9.00nm 4.9mb  
TIC 71.77 73 P 09 43.88 0.2  
0.8s 8.50nm 4.8mb  
KIC 71.86 73 P 09 44.50 0.2  
0.7s 13.00nm 5.1mb  
GOL 73.59 333 P 09 54.20 0.0  
0.8s 14.14nm 5.0mb  
PEC 74.68 321 P 10 01.00 0.6  
0.8s 4.87nm 4.6mb  
KUK 75.54 75 eP 10 04.80 -0.8  
MSU 75.63 328 P 10 06.80 0.8  
TNP 77.83 324 P 10 19.00 0.8  
0.8s 5.39nm 4.6mb  
PRI 78.29 321 eP 10 22.40 1.8  
PRS 78.82 321 eP 10 24.90 1.5  
KVN 79.01 324 P 10 25.00 0.3  
IMW 79.39 332 P 10 27.00 0.3  
CMB 79.49 322 ePc 10 27.20 0.1  
RSON 79.92 345 P 10 28.00 -1.0  
0.8s 38.06nm 5.4mb  
ORV 81.18 323 eP 10 37.00 1.0  
SCH 81.35 2 eP 10 36.00 -0.5  
LRM 81.58 332 ePc 10 39.10 0.9  
e 10 46.50  
WDC 82.47 323 eP 10 41.60 -1.1  
SES 84.71 335 eP 10 54.00 0.1  
NEW 85.48 331 P 10 57.30 -0.4  
0.9s 4.39nm 4.7mb  
FFC 85.50 342 eP 10 57.00 -0.7  
1.0s 15.00nm 5.2mb  
PNT 87.36 330 eP 11 07.00 0.1  
BCAO 91.37 86 iPd 11 28.20 1.6  
0.6s 11.00nm 5.4mb  
YKA 95.60 341 eP 11 44.40 -0.5  
0.8s 2.50nm 4.7mb  
WRA 127.54 210 PKPc 17 25.40 -0.8  
0.7s 5.60nm  
WB5 127.58 210 ePKP 17 25.00 -1.2  
KOD 145.83 113 ePKP 18 02.10 1.8  
POO 146.44 97 iPKPc 18 03.50 2.7X  
HYB 150.17 102 ePKP 18 08.00 1.3  
1.0s 50.00nm  
i 18 12.50  
NDI 151.67 79 iPKPc 18 15.60 7.0X  
0.7s 27.40nm

GKN 158.16 81 PKP 18 18.60 1.1  
DMN 158.55 82 PKP 18 20.00 1.9  
KKN 158.72 82 PKP 18 19.40 1.2  
PKI 158.82 82 PKP 18 19.40 0.9  
GUN 159.25 82 PKP 18 20.00 1.0  
S.D. = 1.2 on 54 of 64 obs.

\* MAR 26, 1990 06h 18m 18.37 ± 1.88s  
39.142 N ± 14.4km 23.624 E ± 10.4km  
DEPTH = 10.0km (geophysicist)  
AEGEAN SEA (365)  
ML 2.6 (THE).  
PAIG 0.78 3 ePgc 18 34.70 1.1  
eSg 18 47.50  
AGG 1.01 264 ePb 18 37.90 0.3  
LIT 1.30 318 ePb 18 41.60 -0.8  
eSb 18 56.40  
THE 1.57 341 ePb 18 46.50 0.2  
SOH 1.69 353 ePb 18 48.30 0.2  
SRS 1.97 359 ePn 18 52.00 -0.2  
GRG 2.04 333 ePn 18 53.10 -0.1  
eSn 19 17.90  
KNT 2.09 345 ePn 18 54.30 0.4  
eSn 19 17.80  
MMB 2.45 2 ePc 18 58.00 -1.0  
RZN 2.68 18 iPc 19 03.00 0.6  
KKB 2.75 352 iPc 19 03.00 -0.4  
KDZ 2.85 28 eP 19 04.00 -0.8



OHR	2.93	313	ePn	19	16.30	10.5X	MBL	16.81	157	eP	27	08.00	3.8X	E	12s	3.10um								
VTS	3.46	355	eP	19	14.00	0.5	NANU	16.99	172	eP	27	07.00	0.6			S	38	17.00						
S.D. = 0.7 on 13 of 14 obs.																								
? MAR 26, 1990 08h 33m 23.83± 0.95s																								
39.221 N ± 8.4km 27.726 E ± 9.2km																								
DEPTH = 10.0km (geophysicist)																								
TURKEY (366)																								
DST	0.80	61	ePg	33	39.50	0.1	SNG	17.67	316	eP	27	08.00	-7.0X	HHC	46.30	359	P	31	35.40	1.3				
			eSg	33	52.50				eS	30	10.00			Z	15s	2.40um			5.3MsZx					
IZM	0.90	204	ePg	33	41.00	-0.1	DAV	17.92	45	eP	27	19.00	0.9	N	11s	2.00um								
			eSg	33	55.00		KNA	18.54	124	eP	27	25.60	-0.1	E	12s	2.10um								
BNT	1.14	7	iPn	33	45.00	-0.2	MTN	19.37	113	eP	27	35.00	-0.6	GTA	46.45	346	eP	31	37.40	2.0				
EZN	1.24	300	ePn	33	47.00	0.1	MEKA	21.52	166	eP	28	03.40	5.4X	Z	15s	2.20um			5.2MsZx					
S.D. = 0.3 on 4 of 4 obs.																								
? MAR 26, 1990 08h 45m 12.25± 1.01s																								
42.777 N ± 7.8km 19.162 E ± 9.4km																								
DEPTH = 10.0km (geophysicist)																								
YUGOSLAVIA (383)																								
ML 2.0 (TTG).																								
NKY	0.13	287	ePg	45	15.90	0.5	NNT	22.35	324	eP	28	03.30	-3.0X	HNR	46.79	98	eP	31	39.00	0.7				
			eSg	45	19.00		BAG	23.22	19	eP	28	14.00	-1.1	MAT	48.22	28	(P)	31	47.00	-2.2				
TTG	0.35	168	ePg	45	19.50	0.0	SZP	24.26	18	eP	28	29.00	4.2X	Z	15s	36.11nm			5.2mb					
			eSg	45	24.70		NST	24.67	329	eP	28	43.20	14.3X	E	14s	4.30um			4.9MsZ					
BRY	0.47	285	ePg	45	21.50	-0.4	QIZ	24.72	353	eP	28	32.00	2.6X	SNY	48.27	11	eP	31	46.20	-3.2X				
			eSg	45	28.50				E	13s	8.70um		Z	17s	1.80um			5.1MsZx						
PLE	0.58	17	ePg	45	24.00	-0.1					PP	29	10.00	N	15s	1.50um								
S.D. = 0.6 on 4 of 4 obs.																								
? MAR 26, 1990 10h 38m 15.38± 1.04s																								
44.284 N ± 10.2km 7.281 E ± 10.3km																								
DEPTH = 10.0km (geophysicist)																								
NORTHERN ITALY (545)																								
ML 1.8 (GEN).																								
STV	0.05	142	P	38	17.96	0.3	PIP	25.03	18	ePc	28	32.50	0.2	NDI	48.42	317	eP	31	49.00	-1.8				
			S	38	19.39		WB5	25.23	126	eP	28	33.50	-0.8	QUE	56.61	312	eP	32	49.00	-2.4				
ENR	0.12	120	P	38	18.57	0.2			eS	33	40.30		MHI	65.05	314	eP	33	47.00	-2.3					
			S	38	20.32		WRA	25.24	126	Pd	28	34.00	-0.4			eS	42	32.00						
PZZ	0.26	330	P	38	20.83	0.0			1.0s	70.80nm		5.2mb	VNDA	76.24	170	(P)	34	57.10	1.0					
			S	38	25.03		BDT	26.57	329	eP	28	44.80	-1.8	MBH	82.44	301	e(P)	35	30.00	-0.4				
ROB	0.42	88	P	38	24.01	0.0	ASPA	27.02	134	iPc	28	50.20	-0.6	BCAO	94.74	274	ePd	36	42.20	12.5X				
			S	38	29.65				1.4s	39.00nm		4.8mb			0.5s	5.00nm								
IMI	0.58	130	P	38	26.57	-0.5	Z	17s	5.21um		5.1MsZx		YKA	113.53	22	ePKP	41	44.60	-1.1					
FIN	0.67	96	P	38	28.83	0.1			eS	34	13.00				0.5s	0.30nm								
S.D. = 0.4 on 6 of 6 obs.																								
* MAR 26, 1990 10h 48m 16.21± 2.61s																								
9.749 N ± 14.8km 84.947 W ± 19.8km																								
DEPTH = 10.0km (geophysicist)																								
3.3mb ( 1 obs.)																								
COSTA RICA ( 78)																								
AR6	0.69	3	iPd	48	29.80	-0.1	CHG	27.93	331	eP	28	59.80	0.7	BAO	151.59	222	e(PKP)	42	40.00	-16.7X				
SJS	0.90	78	iPc	48	33.20	-0.3	CHTO	27.93	331	eP	28	59.80	0.7	S.D. = 1.1 on 45 of 58 obs.										
LCR2	0.93	90	iP	48	33.80	-0.3			1.0s	10.00nm		4.5mb	? MAR 26, 1990 11h 31m 29.25± 0.85s											
BUS	1.19	99	iPd	48	38.70	0.0	GZH	28.58	1	eP	29	00.00	-4.8X	39.116 N ± 7.1km 27.550 E ± 12.9km										
VCR	1.36	74	iPd	48	32.10	-9.1X	Z	18s	2.70um		4.9MsZ		DEPTH = 10.0km (geophysicist)											
LIO	1.90	82	iPd	48	49.90	0.9	N	16s	2.90um				TURKEY (366)											
ACR	2.07	122	eP	48	51.20	-0.2	E	15s	1.90um				IZM	0.75	197	ePg	31	44.00	0.0					
UPA	5.40	98	ePc	49	41.20	2.5X	QIS	29.87	122	eP	29	16.00	-0.6			eSg	31	56.00						
	0.8s	44.78nm			5.2mb X				e	29	59.00		DST	0.97	59	iPg	31	47.50	-0.2					
YKA	56.86	344	eP	58	09.90	6.7X	KMI	32.15	343	Pc	29	39.50	2.7X			eSg	32	01.50						
	0.6s	0.20nm			3.3mb		Z	12s	7.80um		5.6MsZx		EDC	1.25	11	ePn	31	52.50	0.0					
S.D. = 0.6 on 6 of 9 obs.																								
MAR 26, 1990 11h 23m 09.59± 1.35s																								
5.667 S ± 6.2km 112.873 E ± 6.5km																								
DEPTH = 33.0 ± 13.1 km																								
5.0mb ( 10 obs.) 5.0MsZ ( 3 obs.)																								
JAVA SEA (275)																								
BKB2	5.94	43	iPc	24	50.50	12.9X	CTA	35.46	117	eP	30	07.00	1.8	PRK	0.34	151	iPg	43	33.90	0.5				
			eS	26	26.00				1.0s	15.00nm		4.9mb	SHL	37.14	328	eP	30	19.40	-0.1					
MKS	6.58	86	ePc	24	46.50	-0.1			iS	35	44.00				iS	36	12.40							
	1.5s	4424.80nm			7.0mb X		KOD	38.64	294	eP	30	32.40	0.0	ALN	1.35	359	ePn	43	52.00	-0.1				
TSM	11.11	28	eP	25	48.00	-1.3	XAN	39.67	355	P	30	32.00		IZM	1.48	140	iPn	43	53.10	-0.9				
KKM	12.10	16	ePc	26	02.00	-0.8			12s	2.60um		1.2	MFT	1.56	36	iPn	43	56.30	1.2					
	1.0s	83.10nm			5.8mb X		E	12s	3.40um				EDC	1.60	59	iPn	43	56.50	0.8					
KGM	12.22	308	ePd	26	04.30	0.0	HYB	40.93	305	eP	30	51.00	0.1	BNT	1.64	60	iPn	43	55.80	-0.5				
IPM	15.61	310	ePd	26	50.00	1.1	GUN	42.35	323	P	31	03.00	0.2	RDO	1.65	346	ePb	43	56.30	-0.1				
	0.6s	33.70nm			4.7mb		PKI	42.38	323	P	31	02.80	-0.3	OUR	1.79	297	ePn	43	58.00	-0.3				
			e	31	29.30				1.0s	30.00nm		5.0mb	KCT	1.90	67	iPn	44	00.80	0.7					
S.D. = 0.6 on 6 of 9 obs.																								
MAR 26, 1990 11h 43m 26.65± 0.29s																								
39.541 N ± 3.0km 26.063 E ± 2.7km																								
DEPTH = 4.9 ± 2.0 km																								
TURKEY (366)																								
MD 3.6 (ATH). ML 3.4 (THE).																								
							LZH	42.39	349	eP	31	04.50	1.7	SMG	1.93	161	ePg	44	03.00	2.6X				
							Z	2.0s	47.00nm		4.9mb		DST	1.98	87	iPn	44	00.50	-0.8					
							Z	14s	4.90um		5.5MsZx		KDZ	2.16	347	iP	44	04.00	0.2					
							N	13s	2.50um				PLG	2.18	293	ePn	44	03.50	-0.6					
							E	10s	1.70um				NEO	2.21	265	ePg	44	11.00	6.4X					
									eS	37	22.00		RZN	2.38	335	iPc	44	07.00	-0.1					
							DMN	42.59	322	P	31	04.70	0.0	CTT	2.42	48	ePn	44	08.30	0.8				
									1.0s	81.00nm		5.4mb	SOH	2.44	303	ePn	44	08.20	0.4					
							KKN	42.62	323	P	31	04.90	0.0	SRS	2.46	311	ePn	44	09.30	1.2				
									0.8s	27.00nm		5.0mb			eSn	44	46.10							
							TIY	43.16	359	eP	31	10.00	1.1	APE	2.50	190	ePn	44	08.50	-0.2				
							GKN	43.16	322	P	31	09.40	0.2	DIM	2.54	351	eP	44	09.00	-0.2				
							CAN	44.46	136	eP	31	20.20	0.7	DMK	2.62	29	iPn	44	08.50	-1.8				
							POO	45.37	303	iPd	31	27.00	0.0	MMB	2.71	320	ePc	44	11.00	-0.7				
							BJI	45.58	4	eP	31	28.50	0.2	YLV	2.74	67	iPn	44	12.30	0.1				
									N	12s	2.00um		ITU	2.74	54	ePn	44	17.00	4.9X					
									E	12s	3.10um				iSg	44	53.50							
							BTO	46.11	357	P	31	34.00	1.4	ISK	2.75	55	ePn	44	12.00	-0.2				
									N	12s	2.00um		PLD	2.76	338	iP	44	16.00	3.6X					
													LIT	2.81	283	ePn	44	12.00	-1.1					
													GBZT	2.88	63	ePn	44	20.30	6.3X					
															iSg	45	01.00							



26d 11h

KNT 2.91 305 ePn 44 14.50 0.0  
 JMB 2.95 8 eP 44 22.00 7.0X  
 KHL 2.96 113 ePn 44 15.00 -0.3  
 HRT 3.04 64 ePn 44 16.00 -0.4  
 ALT 3.18 98 ePn 44 14.00 -4.4X  
 VAY 3.20 305 ePn 44 27.40 8.8X  
 KKB 3.24 317 iP 44 23.00 3.8X  
 PGB 3.33 335 iP 44 20.00 -0.5  
 GPA 3.35 76 ePn 44 21.00 0.2  
 PVL 3.71 352 eP 44 25.00 -0.9  
 VTS 3.73 326 iP 44 28.00 1.7  
 VLI 3.74 222 ePn 44 26.70 0.3  
 ITM 4.02 235 ePn 44 31.50 1.3  
 BBTk 5.18 85 eP 45 06.00 19.2X  
 eS 46 16.00  
 MLR 5.95 359 eP 44 58.00 0.4  
 VRI 6.34 4 ePc 45 03.00 -0.1  
 SUF 23.21 0 eP 48 22.10 -13.0X  
 S.D. = 0.8 on 35 of 46 obs.

? MAR 26, 1990 12h 11m 13.94±8.47s  
 36.524 N ±64.4km 14.880 E ±22.1km  
 DEPTH = 10.0km (geophysicist)  
 SICILY (398)

MEU 0.58 4 P 11 25.70 0.0  
 eSg 11 36.20  
 FAI 1.22 308 P 11 36.50 -0.2  
 eSn 11 52.80  
 MNO 1.41 354 P 11 39.50 -0.4  
 GIB 1.61 335 P 11 43.10 0.5  
 eSn 12 05.00  
 ATN 1.70 16 P 11 43.80 0.0  
 eSg 12 05.20  
 S.D. = 0.5 on 5 of 5 obs.

& MAR 26, 1990 12h 28m 47.20s  
 36.568 N 121.198 W  
 DEPTH = 5.0km  
 CENTRAL CALIFORNIA (39)  
 <BRK>. ML 2.8 (BRK).

LLA 0.21 77 iPc 28 51.30 -0.2  
 PRS 0.27 211 iPd 28 52.70 0.0  
 SAO 0.28 315 iPc 28 52.50 -0.4  
 PRI 0.61 135 ePd 28 58.80 -0.5  
 i 28 59.50  
 GCC 0.79 306 ePd 29 01.90 -1.1  
 ARN 0.82 341 eP 29 03.40 -0.3  
 MHC 0.85 335 ePc 29 03.80 -0.3  
 PKEM 1.01 120 e(P) 29 06.00 -0.9  
 FRI 1.27 70 iPc 29 09.60 -1.6  
 iS 29 09.10  
 PCC 1.33 315 ePc 29 10.50 -1.7  
 BRK 1.55 327 ePc 29 16.20 0.7  
 CMB 1.60 24 ePc 29 15.40 -0.9  
 eS 29 37.30  
 BCH 1.65 146 eP 29 14.50 -2.5  
 BLP 2.11 162 eP 29 21.10 -2.4  
 ABL 2.35 136 eP 29 25.00 -2.3  
 KVN 3.49 44 eP 29 50.00 6.6  
 TNP 3.51 63 eP 29 48.00 4.2  
 17 obs. associated

MAR 26, 1990 12h 41m 48.75±0.90s  
 13.183 N ±5.0km 145.551 E ±6.8km  
 DEPTH = 55.5 ± 7.1 km  
 4.9mb (12 obs.) 4.3Msz (2 obs.)  
 MARIANA ISLANDS (216)

GUA 0.72 308 ePd 42 03.50 0.4  
 eS 42 17.00  
 GUMO 0.78 301 ePd 42 04.20 0.4  
 PJG 0.78 301 ePd 42 04.20 0.4  
 DAV 20.57 255 eP 46 13.00 -12.5X  
 PMG 22.50 176 eP 46 44.00 -0.8  
 IIDJ 23.25 344 P 46 51.50 -0.5  
 CHJJ 23.52 347 P 46 55.30 0.7  
 TSRJ 23.87 340 eP 46 57.50 -0.5  
 MAT 24.18 345 eP 46 58.00 -3.0X  
 1.2s 57.81nm 5.0mb  
 Z 20s 0.71um 4.1Msz  
 eS 51 18.00  
 MTMJ 24.32 345 P 47 01.00 -1.5  
 BAG 24.35 281 eP 47 03.00 0.0  
 NIJJ 24.66 347 P 47 04.30 -1.4  
 DL2 33.24 325 eP 48 22.20 -0.5

MDJ 34.17 340 eP 48 29.00 -1.6  
 SNY 34.35 330 eP 48 31.00 -1.2  
 WB5 34.65 199 eP 48 33.50 -1.5  
 WRA 34.72 199 Pd 48 34.60 -1.0  
 0.7s 5.90nm 4.6mb  
 CN2 35.06 334 eP 48 41.60 3.3X  
 BJI 37.17 321 eP 48 55.50 -0.6  
 TIY 38.28 316 Pd 49 06.00 0.4  
 ASPA 38.35 197 eP 49 05.70 -0.6  
 0.7s 5.00nm 4.5mb  
 Z 22s 0.62um 4.4MszX  
 LR 03 48.40  
 XAN 39.17 308 P 49 13.00 0.0  
 PcP 51 23.00  
 HHC 40.51 319 eP 49 24.40 0.3  
 MBL 42.46 217 iPd 49 40.70 0.6  
 0.4s 6.00nm 4.7mb  
 LZM 43.79 309 eP 49 51.50 0.5  
 1.5s 38.00nm 4.9mb  
 Z 18s 0.50um 4.5Msz  
 pP 50 09.00 70kmX  
 CHG 45.05 283 eP 50 03.00 1.8  
 NANU 46.13 220 iPd 50 10.40 0.9  
 0.5s 14.00nm 5.1mb

GTA 47.94 312 P 50 23.60 -0.3  
 GUN 57.26 295 P 51 33.50 -0.2  
 PKI 57.67 294 P 51 36.70 0.2  
 WMQ 57.90 314 P 51 37.00 -0.6  
 GKN 58.37 295 P 51 40.80 -0.4  
 HYB 64.48 283 eP 52 22.50 0.2  
 POO 68.79 285 eP 52 50.00 0.3  
 POO 68.79 285 eP 52 40.00 -9.7X  
 INK 74.49 22 eP 53 22.00 -0.7  
 MBC 78.50 14 eP 53 46.50 1.4  
 1.0s 20.00nm 5.0mb  
 MHI 79.18 305 eP 53 51.00 1.3  
 YKA 82.91 27 eP 54 07.60 -1.0  
 0.8s 3.70nm 4.4mb  
 PNT 83.24 41 eP 54 11.00 0.4  
 NEW 85.09 42 eP 54 20.50 0.5  
 1.0s 10.00nm 4.9mb

KVN 86.66 51 eP 54 28.50 0.4  
 KEV 87.11 342 eP 54 31.00 1.5  
 CLC 87.85 54 eP 54 34.00 0.3  
 SBB 87.95 55 eP 54 35.00 0.7  
 SES 88.31 39 eP 54 36.00 0.4  
 SOD 88.47 340 eP 54 43.00 7.0X  
 GSC 88.60 54 eP 54 38.00 0.6  
 LRM 88.83 43 eP 54 38.70 0.2  
 BAR 89.39 57 eP 54 27.00 -14.1X  
 GLA 90.79 56 eP 54 48.00 0.4  
 SUF 91.10 336 eP 54 47.40 -1.0  
 0.7s 10.60nm 5.4mb  
 FFC 91.80 32 eP 54 52.00 0.3  
 1.2s 18.00nm 5.4mb  
 NUR 92.90 335 eP 55 11.00 14.3X  
 NB2 97.66 339 P 55 19.60 1.0  
 0.9s 2.60nm 4.8mb  
 BCOA 124.56 285 ePKPd 00 46.00 1.5  
 0.4s 3.00nm  
 KIC 144.68 302 PKPc 01 21.36 -0.5  
 0.8s 19.00nm  
 TIC 144.75 302 PKPc 01 21.50 -0.5  
 0.8s 18.00nm  
 LIC 144.99 302 PKPc 01 22.30 -0.1  
 0.8s 20.50nm  
 ZOBO 147.31 100 PKP 01 30.00 3.2X  
 S.D. = 0.8 on 52 of 60 obs.

? MAR 26, 1990 13h 52m 11 08±5.55s  
 31.449 N ±31.7km 35.608 E ±25.8km  
 DEPTH = 10.0km (geophysicist)  
 DEAD SEA REGION (373)

MKRJ 0.11 15 Pd 52 13.80 -0.1  
 MASJ 0.29 19 Pd 52 17.40 0.1  
 SALJ 0.56 7 Pd 52 22.20 -0.3  
 MDSJ 0.58 71 Pd 52 23.00 0.1  
 BURJ 0.81 12 Pd 52 27.20 0.4  
 JARJ 0.84 20 Pc 52 27.00 -0.3  
 HLBJ 0.86 43 Pd 52 27.60 -0.1  
 SHMJ 1.28 6 Pd 52 35.10 0.3  
 S.D. = 0.3 on 8 of 8 obs.

? MAR 26, 1990 15h 27m 39.16±3.59s  
 37.653 N ±20.3km 20.693 E ±27.4km  
 DEPTH = 10.0km (geophysicist)

IONIAN SEA (399)  
 ML 3.3 (ATH).

VLS 0.53 351 ePg 27 50.20 0.3  
 ITM 1.09 115 ePg 27 59.10 -0.6  
 EVR 1.54 34 ePb 28 04.60 -2.1  
 AGG 1.88 43 eP 28 11.60 0.0  
 VLI 2.02 117 ePg 28 19.30 5.7X  
 KEK 2.17 341 ePg 28 21.00 5.1X  
 ATH 2.42 82 ePb 28 20.70 1.4  
 NEO 2.58 49 ePb 28 21.70 0.0  
 KZN 2.78 17 ePg 28 28.00 3.4X  
 LIT 2.82 29 ePc 28 25.80 0.7  
 FNA 3.17 9 eP 28 29.70 -0.4  
 PAIG 3.26 45 eP 28 00.10 -31.1X  
 OHR 3.45 1 ePn 28 53.00 18.9X  
 VAY 3.94 21 ePn 28 41.50 0.6  
 S.D. = 1.1 on 9 of 14 obs.

? MAR 26, 1990 16h 52m 51.05±0.74s  
 18.135 N ±12.7km 146.898 E ±30.2km  
 DEPTH = 33.0km (normal)  
 4.1mb (4 obs.)

MARIANA ISLANDS (216)

GUMO 4.93 204 eP 54 05.50 0.8  
 PJG 4.92 204 eP 54 05.40 0.7  
 GUA 4.95 203 eP 54 05.70 0.5  
 0.6s 90.67nm eS 54 58.50  
 MAT 19.87 339 (P) 57 22.00 -0.4  
 1.0s 7.00nm 3.9mb  
 WB5 39.73 199 eP 00 19.50 -2.9  
 WRA 39.80 199 Pd 00 19.70 -3.2X  
 1.0s 5.10nm 4.2mb  
 INK 69.44 23 eP 03 58.00 0.3  
 MBC 73.41 14 eP 04 22.50 1.2  
 1.0s 20.00nm 5.1mb  
 YKA 77.95 28 eP 04 47.00 -0.2  
 0.7s 0.80nm 3.9mb  
 KVN 82.56 51 eP 05 12.50 0.0  
 S.D. = 1.4 on 9 of 10 obs.

\* MAR 26, 1990 17h 35m 33.47±0.63s  
 37.111 N ±9.2km 72.673 E ±9.7km  
 DEPTH = 33.0km (normal)  
 4.5mb (8 obs.)

TAJIK SSR (715)

KSH 3.50 47 ePn 36 28.00 1.0  
 QUE 8.39 216 eP 37 35.00 -0.9  
 eS 39 22.00  
 NDI 9.23 154 eP 37 48.50 1.2  
 eS 39 25.00  
 MHI 10.61 270 eP 38 06.00 -0.4  
 eS 40 04.00  
 WMO 13.25 55 eP 38 37.50 -4.3X  
 GKN 13.56 129 P 38 38.40 -7.7X  
 0.6s 29.00nm 5.3mb  
 KKN 14.12 128 P 38 44.90 -8.5X  
 0.6s 16.00nm 4.9mb  
 DMN 14.14 129 P 38 45.70 -8.0X  
 0.6s 19.00nm 4.9mb  
 PKI 14.35 128 P 38 47.90 -8.7X  
 GUN 14.42 126 P 38 48.80 -8.7X  
 0.7s 18.00nm 4.7mb  
 HYB 20.29 164 eP 40 10.00 0.7  
 GTA 21.41 76 P 40 18.60 -2.1  
 HFS 43.42 321 eP 43 34.20 -0.2  
 0.9s 6.20nm 4.4mb  
 NB2 44.71 323 P 43 47.20 2.3  
 0.8s 2.50nm 4.1mb  
 MBC 66.66 3 ePd 46 22.00 -0.4  
 0.8s 21.00nm 5.3mb X  
 YKA 80.57 3 eP 47 42.70 -0.8  
 0.7s 1.80nm 4.2mb  
 WRA 81.19 123 P 47 47.00 -0.5  
 0.8s 1.50nm 4.0mb  
 S.D. = 1.4 on 11 of 17 obs.

? MAR 26, 1990 19h 06m 28.50±3.21s  
 31.369 S ±37.2km 69.330 W ±17.1km  
 DEPTH = 33.0km (normal)  
 SAN JUAN PROVINCE, ARGENTINA (137)

ZON 0.58 108 iPd 06 42.00 1.6  
 eS 06 53.00



26d 19h

RTLL 0.74 87 iPc 06 42.80 0.3  
 RTCV 0.84 126 ePc 06 43.60 -0.3  
 CFA 0.96 105 iPd 06 44.00 -1.7  
 S 06 56.00  
 FCH 2.12 202 iP 07 04.00 1.4  
 S 07 33.00  
 ROCH 2.14 221 iP 07 04.00 1.2  
 S 07 33.00  
 PCH 2.46 204 eP 07 07.50 0.3  
 S 07 39.00  
 TACH 2.65 210 iP 07 09.20 -0.7  
 S 07 43.00  
 LNV 3.12 214 iPc 07 14.40 -2.1  
 S 07 46.00  
 S.D. = 1.5 on 9 of 9 obs.

& MAR 26, 1990 19h 12m 28.32s  
 55.586 N 160.606 W  
 DEPTH = 91.1km  
 ALASKA PENINSULA (12)  
 <PAL>.

SGB 0.10 115 eP 12 40.88 0.9  
 eS 12 49.91  
 SASA 0.25 166 iPd 12 41.31 -0.5  
 eS 12 51.04  
 IVF 0.68 63 eP 12 44.55 -0.4  
 eS 12 56.23  
 PVV 0.71 253 ePd 12 44.78 -0.4  
 eS 12 56.92  
 BKJ 0.74 125 ePc 12 45.05 -0.4  
 eS 12 57.58  
 DLG 0.83 238 eP 12 46.06 -0.5  
 DRRRA 1.17 236 ePc 12 49.73 -0.6  
 eS 13 05.31  
 SNKA 1.67 229 eP 12 56.06 -0.7  
 eS 13 16.36  
 8 obs. associated

\* MAR 26, 1990 19h 12m 45.12 ± 0.62s  
 37.137 N ± 11.8km 72.839 E ± 9.7km  
 DEPTH = 33.0km (normal)  
 4.1mb (5 obs.)  
 TAJIK SSR (715)

KSH 3.39 46 ePn 13 37.50 0.4  
 QUE 8.49 217 eP 14 47.50 -1.4  
 NDI 9.20 155 eP 14 56.00 -2.5X  
 eS 16 35.00  
 MHI 10.75 270 eP 15 20.00 0.1  
 eS 17 22.00  
 WMO 13.12 55 eP 15 50.30 -1.5  
 GKN 13.48 129 P 15 49.60 -7.0X  
 0.5s 22.00nm 5.3mb X  
 KKN 14.03 128 P 15 56.20 -7.7X  
 DMN 14.05 129 P 15 56.80 -7.4X  
 PKI 14.26 128 P 15 59.20 -7.9X  
 GUN 14.33 126 P 16 00.50 -7.4X  
 HYB 20.28 164 eP 17 22.00 1.2  
 GTA 21.27 76 eP 17 30.60 -0.4  
 HFS 43.48 321 eP 20 50.70 4.1X  
 0.6s 2.50nm 4.2mb  
 NB2 44.77 323 P 21 04.00 7.0X  
 0.7s 2.10nm 4.1mb  
 BAO 59.26 250 ePc 22 46.10 0.1  
 0.5s 3.00nm 4.7mb  
 MBC 66.63 3 eP 23 39.00 5.1X  
 YKA 80.53 3 eP 24 56.00 1.0  
 0.6s 0.90nm 3.9mb  
 WRA 81.09 123 P 24 59.00 0.4  
 0.6s 0.60nm 3.8mb  
 S.D. = 1.1 on 9 of 18 obs.

& MAR 26, 1990 20h 22m 04.83s  
 62.235 N 150.976 W  
 DEPTH = 75.7km  
 CENTRAL ALASKA (1)  
 <AGS-P>.

SKT 0.36 226 iP 22 16.49 -0.8  
 CUT 0.37 62 iP 22 16.61 -0.6  
 SUA 0.78 172 iP 22 20.99 -0.4  
 eS 22 33.95  
 PWA 0.78 138 eP 22 20.85 -0.4  
 S 22 33.47  
 HUR 0.97 39 eP 22 22.66 -0.9  
 eS 22 36.43

GHO 1.07 115 eP 22 24.42 -0.5  
 S 22 40.79  
 PLRM 1.09 126 eP 22 24.15 -0.8  
 eS 22 41.09  
 CRP 1.12 211 iP 22 24.84 -0.8  
 eS 22 40.94  
 SPU 1.18 206 iP 22 25.35 -0.8  
 S 22 41.98  
 BGL 1.18 215 eP 22 25.83 -0.5  
 PMS 1.20 145 eP 22 26.03 -0.5  
 CKL 1.23 212 iP 22 26.22 -0.7  
 SML 1.32 108 iP 22 27.30 -0.7  
 KTH 1.32 1 eP 22 27.29 -0.8  
 KNK 1.45 123 eP 22 28.85 -0.9  
 S 22 48.94  
 NKA 1.50 185 eP 22 32.23 1.8  
 RND 1.53 39 eP 22 29.67 -1.2  
 MCK 1.77 31 eP 22 34.04 0.0  
 SLKM 1.77 168 eP 22 33.97 -0.1  
 RDT 1.80 203 iP 22 33.83 -0.7  
 S 22 57.26  
 NNL 2.21 184 eP 22 42.32 2.3  
 TOA 2.26 91 eP 22 39.72 -1.1  
 SEW 2.26 160 eP 22 43.17 2.4  
 GLI 2.30 124 eP 22 39.52 -1.8  
 KLU 2.51 105 eP 22 42.05 -2.2  
 WRH 2.59 29 eP 22 43.68 -1.7  
 PAX 2.65 71 eP 22 45.33 -0.9  
 CNPM 2.72 183 eP 22 47.23 0.1  
 PDB 2.91 214 eP 22 49.00 -0.8  
 29 obs. associated

\* MAR 26, 1990 20h 31m 07.91 ± 0.81s  
 6.231 S ± 20.4km 112.399 E ± 15.6km  
 DEPTH = 33.0km (normal)  
 4.6mb (3 obs.)

JAVA (277)

MKS 7.11 82 ePc 32 53.00 0.7  
 IPM 15.63 313 ePc 34 51.50 4.0X  
 MTN 19.60 111 eP 35 34.00 -2.5  
 NNT 22.54 326 eP 35 54.40 -12.1X  
 WB5 25.29 124 eP 36 33.20 0.0  
 WRA 25.30 125 Pd 36 34.90 1.7  
 0.8s 12.50nm 4.6mb  
 ASPA 26.98 132 eP 36 49.00 0.2  
 0.8s 8.00nm 4.4mb  
 GUN 42.52 324 P 39 02.60 0.0  
 0.7s 11.00nm 4.7mb  
 PKI 42.54 323 P 39 02.90 0.2  
 DMN 42.75 323 P 39 04.20 -0.1  
 KKN 42.78 324 P 39 04.40 -0.1  
 GKN 43.32 323 P 39 08.80 0.0  
 BJI 46.17 4 eP 39 27.50 -3.7X  
 S.D. = 1.2 on 10 of 13 obs.

& MAR 26, 1990 20h 52m 22.02s  
 59.931 N 151.057 W  
 DEPTH = 40.6km  
 3.0mb (1 obs.)

KENAI PENINSULA, ALASKA (14)  
 <AGS-P>. ML 3.6 (PMR).

NNL 0.16 313 iP 52 30.04 0.9  
 BRLK 0.19 153 iP 52 29.08 -0.3  
 CNPM 0.42 193 iP 52 31.09 -0.7  
 eS 52 38.32  
 XLV 0.58 215 eP 52 33.00 -0.9  
 eS 52 41.49  
 SLKM 0.71 35 iP 52 35.21 -0.6  
 NKA 0.82 354 eP 52 38.54 1.4  
 eS 52 49.37  
 SEW 0.83 77 iP 52 36.28 -1.0  
 eS 52 49.49  
 RDT 0.93 314 iP 52 38.21 -0.7  
 eS 52 51.43  
 RED 0.99 300 eP 52 38.71 -1.0  
 AUE 1.31 245 iP 52 43.91 -0.2  
 eS 53 01.27  
 AUL 1.33 247 eP 52 44.32 -0.1  
 eS 53 01.75  
 SPU 1.35 339 eP 52 44.37 -0.4  
 eS 53 01.93  
 CKL 1.42 334 eP 52 45.33 -0.5  
 CRP 1.45 338 eP 52 46.19 -0.1  
 BGL 1.49 334 eP 52 46.60 -0.2  
 PMS 1.51 29 iPc 52 47.00 -0.1

SUA 1.55 6 eP 52 47.60 0.0  
 PDB 1.59 266 eP 52 47.11 -1.0  
 eS 53 07.89  
 CDD 1.66 234 iP 52 48.99 -0.2  
 eS 53 11.19  
 PWA 1.82 18 eP 52 51.20 -0.2  
 PLRM 1.92 29 eP 52 51.90 -0.9  
 PMR 1.92 29 iPc 52 52.00 -0.8  
 KNK 1.96 40 iP 52 52.51 -1.0  
 SKT 2.07 354 eP 52 55.18 0.1  
 GHO 2.12 29 eP 52 55.05 -0.8  
 BGM 2.19 257 eP 52 55.50 -1.3  
 eS 53 22.07  
 GLI 2.18 62 iP 52 54.09 -2.6  
 SML 2.31 34 eP 52 57.48 -1.0  
 KDC 2.31 199 ePc 52 56.20 -2.3  
 KDC 2.31 199 eP 52 59.85 1.4  
 VZW 2.50 61 eP 52 58.83 -2.4  
 CUT 2.51 8 eP 53 01.76 0.5  
 SVW 2.55 300 ePc 53 00.20 -1.7  
 NCA 2.92 43 eP 53 05.69 -1.5  
 KLU 2.97 56 iP 53 06.10 -1.8  
 TOA 3.23 45 ePc 53 10.60 -0.9  
 KTH 3.64 1 eP 53 18.11 0.8  
 RND 3.64 16 eP 53 17.26 -0.2  
 TTA 3.84 324 ePc 53 19.00 -1.2  
 GLB 3.87 64 eP 53 17.59 -3.1  
 TGL 4.17 75 eP 53 21.91 -3.0  
 DDM 4.58 30 eP 53 30.91 0.1  
 FBA 5.21 16 eP 53 38.00 -1.5  
 IMA 6.28 350 ePc 53 53.50 -1.1  
 YKA 17.59 66 eP 56 21.70 -3.6  
 0.9s 1.10nm 3.0mb  
 MBC 19.71 22 eP 56 47.00 -3.4  
 46 obs. associated

& MAR 26, 1990 21h 03m 00.57s  
 60.394 N 152.266 W  
 DEPTH = 78.5km  
 SOUTHERN ALASKA (2)  
 <AGS-P>.

RDT 0.19 339 iP 03 11.88 1.1  
 eS 03 21.10  
 NNL 0.60 126 iP 03 15.82 0.5  
 NKA 0.62 55 iP 03 16.68 1.3  
 SPU 0.80 7 iP 03 16.72 -0.7  
 eS 03 29.70  
 CKL 0.81 358 iP 03 16.88 -0.7  
 eS 03 30.22  
 BGL 0.87 356 iP 03 17.77 -0.6  
 CRP 0.88 3 iP 03 17.93 -0.6  
 eS 03 31.78  
 XLV 0.98 164 iP 03 18.79 -0.8  
 eS 03 32.99  
 CNPM 1.01 149 iP 03 19.42 -0.6  
 eS 03 35.18  
 SLKM 1.02 83 iP 03 19.35 -0.7  
 PDB 1.14 239 iP 03 20.17 -1.4  
 eS 03 35.88  
 SUA 1.31 34 iP 03 23.67 -0.1  
 eS 03 40.99  
 SEW 1.43 100 iP 03 24.51 -0.8  
 PMS 1.58 56 iP 03 27.01 -0.3  
 eS 03 47.32  
 SKT 1.63 12 eP 03 26.71 -1.3  
 PWA 1.72 42 iP 03 29.48 0.4  
 SVW 1.80 295 iP 03 28.10 -2.2  
 PLRM 1.94 50 eP 03 30.65 -1.5  
 GHO 2.13 48 eP 03 33.29 -1.6  
 SML 2.38 52 iP 03 36.43 -1.8  
 KLU 3.29 68 iP 03 47.94 -2.9  
 21 obs. associated

? MAR 26, 1990 21h 12m 30.74 ± 4.89s  
 16.746 N ± 18.3km 61.015 W ± 35.9km  
 DEPTH = 10.0km (geophysicist)  
 LEEWARD ISLANDS (92)  
 ML 2.7 (FDF).

SEG 0.58 234 eP 12 42.69 0.2  
 S 12 49.50  
 BPA 0.86 290 eP 12 47.30 0.0  
 S 12 57.80  
 MGG 0.87 199 eP 12 47.24 -0.3  
 S 12 58.30  
 PAG 0.96 222 eP 12 48.70 -0.3



26d 21h

S 13 05.00  
BBL 1.29 200 eP 12 55.10 0.4  
S.D. = 0.4 on 5 of 5 obs.

\* MAR 26, 1990 21h 25m 45.73 ± 1.48s  
34.634 S ± 12.7km 72.617 W ± 15.1km  
DEPTH = 33.0km (normol)  
5.0mb ( 1 obs.)

NEAR COAST OF CENTRAL CHILE (135)

LNV 1.21 56 iPd 26 06.30 0.0  
LCCH 1.45 37 iPd 26 09.60 -0.2  
iS 26 23.60  
TACH 1.70 55 iPd 26 13.10 -0.5  
CHCH 1.77 67 iP 26 15.00 0.4  
iS 26 32.50  
IHA 1.80 27 iPc 26 15.40 0.5  
eS 26 32.00  
SAN 2.01 55 iP 26 18.00 0.0  
iS 26 38.50  
PCH 2.02 61 iPd 26 18.00 -0.2  
iS 26 39.00  
ROCH 2.13 39 iPd 26 19.50 -0.4  
iS 26 43.00  
FCH 2.33 57 iPd 26 22.70 -0.2  
iS 26 47.50  
RTCV 4.40 52 e(P) 26 52.90 0.9  
CFA 4.75 52 ePd 26 57.00 0.0  
RTLL 4.80 48 ePc 26 57.10 -0.5  
eS 27 47.70  
KIC 75.73 72 P 37 30.00 -0.1  
LKO 77.04 69 P 37 37.52 0.1  
0.6s 10.00nm 5.0mb  
S.D. = 0.4 on 14 of 14 obs.

& MAR 26, 1990 21h 37m 12.32s  
58.314 N 152.979 W  
DEPTH = 72.8km  
3.3mb ( 1 obs.)  
KODIAK ISLAND REGION (13)  
<AGS-P>.

CDD 0.71 331 iP 37 26.77 -1.0  
AUE 1.07 349 iP 37 31.36 -0.7  
eS 37 45.17  
AUL 1.10 348 iP 37 31.68 -0.8  
CNPM 1.51 36 eP 37 36.72 -1.3  
BGM 1.59 314 iP 37 37.89 -1.2  
PDB 1.61 338 eP 37 37.73 -1.5  
iS 37 56.08  
NNL 1.94 26 iP 37 43.07 -0.7  
RDT 2.29 7 iP 37 47.27 -1.4  
SEW 2.55 44 eP 37 49.82 -2.4  
SLKM 2.61 31 iP 37 50.95 -2.2  
CKL 2.91 6 iP 37 55.88 -1.5  
SPU 2.91 9 iP 37 55.92 -1.4  
BGL 2.97 5 eP 37 56.12 -2.1  
CRP 2.99 8 iP 37 57.39 -1.1  
SUA 3.35 19 iP 38 01.75 -1.8  
PMS 3.41 29 iP 38 02.19 -2.1  
PWA 3.69 24 eP 38 06.36 -1.8  
SKT 3.75 11 iP 38 06.68 -2.3  
PLRM 3.82 29 iP 38 06.99 -2.8  
GLI 3.95 47 eP 38 08.50 -3.2  
GHO 4.02 29 eP 38 10.05 -2.8  
SML 4.21 32 iP 38 12.82 -2.6  
YKA 19.20 61 eP 41 31.20 -1.5  
0.4s 0.70nm 3.3mb  
23 obs. associated

MAR 26, 1990 21h 53m 28.35 ± 1.05s  
17.317 N ± 6.5km 121.425 E ± 7.6km  
DEPTH = 27.7 ± 7.2 km  
4.8mb ( 13 obs.)

LUZON, PHILIPPINE ISLANDS (249)  
Felt (1 RF) at Colloco Caves and  
Cagayon de Oro.

CVP 0.54 44 ePc 53 40.00 0.7  
eS 54 08.00  
SZP 0.95 284 ePc 53 43.80 -2.0  
eS 53 55.00  
BAG 1.21 222 iPc+ 53 50.20 0.5  
PIP 1.26 323 iPd 53 49.00 -1.2  
iS 53 57.00  
OCP 2.69 187 eP 53 46.00 -24.6X  
WHN 14.66 335 eP 56 55.00 -0.7

GYA 16.43 306 pP 57 03.00  
KMI 19.06 297 eP 57 53.50 2.0  
TIA 19.20 349 eP 57 52.70 -0.2  
XAN 20.08 328 P 58 02.50 0.0  
CD2 21.01 313 eP 58 12.00 -0.3  
BDT 21.41 273 eP 58 15.50 -0.8  
CHG 21.42 277 ePc 58 17.00 0.5  
1.0s 12.50nm 4.3mb  
NNT 21.47 260 eP 58 18.20 1.3  
e 25 52.00  
TIY 21.80 341 eP 58 20.80 0.6  
MKS 22.47 185 ePd 58 29.00 2.1  
BJI 23.10 350 eP 58 33.00 0.2  
IPM 23.66 240 ePd 58 41.10 2.6  
0.9s 34.00nm 4.9mb  
LZH 24.34 324 eP 58 47.00 1.8  
2.0s 47.00nm 4.7mb  
SNY 24.50 4 eP 58 44.00 -2.4  
HHC 24.95 342 P 58 52.60 1.7  
BTO 25.21 339 eP 58 54.00 0.6  
GTA 28.95 324 eP 59 27.40 -0.2  
GUN 34.35 294 P 00 15.00 -0.5  
PKI 34.71 294 P 00 17.30 -1.2  
0.7s 19.00nm 5.1mb  
KKN 34.85 294 P 00 18.80 -0.9  
0.8s 21.00nm 5.1mb  
DMN 34.98 294 P 00 19.80 -1.0  
0.6s 14.00nm 5.1mb  
GKN 35.45 294 P 00 23.50 -1.2  
0.8s 21.00nm 5.1mb  
WMO 38.82 320 eP 00 53.60 0.9  
WB5 39.09 160 eP 00 52.80 -2.3  
WRA 39.14 161 Pc 00 53.60 -1.9  
1.0s 5.30nm 4.2mb  
HYB 40.85 277 eP 01 09.00 -0.8  
ASPA 42.52 163 eP 01 16.00 -7.3X  
1.5s 11.00nm 4.4mb  
MHI 57.49 302 eP 03 18.00 0.3  
KEV 75.42 339 eP 05 15.00 3.9X  
SOD 76.00 337 eP 05 15.00 0.6  
SUF 77.17 332 ePKP 05 19.00 -2.0  
INK 79.49 21 eP 05 34.00 0.4  
MBC 79.88 12 eP 05 35.50 -0.1  
1.0s 31.00nm 5.3mb  
HFS 83.65 331 eP 05 54.70 -0.8  
1.1s 6.70nm 4.7mb  
NB2 84.39 333 P 06 00.50 1.2  
0.8s 2.10nm 4.4mb  
VAY 85.19 312 eP 06 02.70 -0.9  
YKA 89.19 23 eP 06 23.10 0.5  
0.8s 2.20nm 4.5mb  
KIC 121.85 289 PKP 12 21.60 -0.9  
0.6s 2.50nm  
LIC 122.17 289 PKP 12 23.00 -0.1  
0.6s 3.00nm  
S.D. = 1.3 on 41 of 45 obs.

MAR 26, 1990 22h 08m 57.13 ± 0.45s  
44.462 N ± 9.1km 148.772 E ± 6.4km  
DEPTH = 33.0km (normol)  
5.0mb ( 43 obs.) 5.8msz ( 1 obs.)  
KURIL ISLANDS (221)

MAT 11.27 229 (P) 11 36.00 -2.9X  
0.7s 15.07nm 5.3mb  
MDJ 13.69 277 Pc 12 13.50 2.4  
CN2 16.75 276 Pc 12 52.80 2.1  
BJI 24.43 271 eP 14 14.00 0.2  
TIA 25.37 262 Pc 14 22.70 0.0  
NJ2 26.40 252 Pc 14 35.00 2.7  
HHC 27.45 276 eP 14 41.80 -0.1  
TIY 28.04 269 eP 14 42.60 -4.7X  
BTO 28.64 276 eP 14 54.00 1.4  
LZH 34.92 272 iPc 15 48.00 0.1  
1.0s 49.00nm 5.4mb  
pP 15 59.00 40kmX  
TTA 36.14 40 eP 15 58.70 0.9  
SVW 36.23 43 eP 16 00.30 1.7  
GTA 36.33 279 P 15 59.60 -0.1  
BRW 37.35 26 eP 16 08.60 0.8  
IMA 37.43 34 eP 16 09.70 1.0  
0.7s 12.10nm 4.9mb  
CD2 37.64 265 eP 16 09.80 -0.9  
GYA 38.23 256 eP 16 15.40 -0.4  
FBA 39.83 37 iP 16 30.00 1.4  
0.9s 12.92nm 4.7mb

INK 45.20 31 eP 17 13.00 0.8  
MBC 47.77 19 eP 17 31.50 -0.9  
0.6s 7.00nm 4.9mb  
CHG 48.60 255 eP 17 39.50 0.0  
GUN 52.14 274 P 18 05.90 -1.0  
KKN 52.64 274 P 18 09.60 -0.9  
0.7s 24.00nm 5.3mb  
PKI 52.67 274 P 18 09.80 -1.1  
0.5s 10.00nm 5.0mb  
DMN 52.87 274 P 18 11.40 -0.8  
0.6s 29.00nm 5.4mb  
GKN 52.97 275 P 18 11.90 -1.0  
YKA 54.56 34 eP 18 23.80 -0.1  
0.8s 5.40nm 4.6mb  
SUF 63.79 334 eP 19 25.90 -1.8  
0.4s 7.10nm 5.1mb  
HYB 63.96 269 ePc 19 28.50 -1.0  
FFC 64.43 37 iPc 19 32.20 0.2  
0.6s 12.00nm 5.2mb  
WB5 65.37 195 eP 19 38.00 -0.3  
WRA 65.44 195 Pc 19 38.60 -0.2  
0.8s 1.70nm 4.2mb  
NUR 65.93 333 iP 19 39.30 -2.2  
0.5s 11.20nm 5.2mb  
KVN 65.95 58 eP 19 42.50 0.2  
POO 66.59 273 eP 19 58.00 11.6X  
FRB 68.17 17 eP 19 54.00 -1.6  
NB2 69.35 339 P 20 04.40 1.3  
0.7s 7.40nm 4.9mb  
HFS 69.48 338 eP 20 01.90 -1.9  
0.6s 10.50nm 5.1mb  
KRA 75.86 329 eP 20 41.30 -0.2  
0.7s 34.00nm 5.5mb  
KSP 76.51 331 iPd 20 45.00 -0.2  
CLL 77.21 333 iPc 20 48.80 -0.2  
0.8s 39.00nm 5.5mb  
BRG 77.28 333 iP 20 49.20 -0.2  
1.0s 18.00nm 5.1mb  
EKA 77.77 344 Pd 20 52.10 0.0  
0.7s 6.50nm 4.8mb  
PRU 77.84 332 P 20 52.60 0.1  
e 21 04.00  
MOX 78.23 334 eP 20 55.00 0.3  
SRO 78.32 328 eP 20 55.70 0.5  
WTS 78.47 337 eP 20 56.00 0.1  
0.8s 14.00nm 5.0mb  
KHC 78.89 332 iPc 20 58.90 0.5  
0.7s 9.50nm 4.9mb  
WET 79.12 332 iPd 21 00.30 0.7  
1.1s 27.00nm 5.2mb  
z 20s 4.00um 5.8msz  
GRF 79.18 333 iPc 21 00.50 0.6  
0.8s 30.00nm 5.3mb  
ENN 79.82 337 eP 21 03.00 -0.3  
0.8s 13.00nm 5.0mb  
DMU 79.83 346 eP 20 57.00 -6.3X  
BHG 80.35 332 iPd 21 07.10 0.9  
0.6s 11.00nm 5.0mb  
DLE 80.35 345 eP 21 06.00 -0.1  
DCN 80.43 346 eP 21 07.00 0.5  
KBA 80.74 331 iPc 21 08.60 0.1  
1.0s 15.20nm 4.9mb  
i 21 09.10  
CDF 81.54 335 eP 21 11.80 -0.7  
0.8s 5.35nm 4.6mb  
HRI 81.58 309 eP 21 14.00 0.9  
VAY 81.92 322 eP 21 14.70 0.2  
HAU 82.18 336 eP 21 15.10 -0.7  
BSF 82.20 335 eP 21 15.10 -0.9  
FLN 83.33 340 eP 21 21.10 -0.6  
0.5s 5.10nm 4.9mb  
LDF 83.40 340 eP 21 21.40 -0.7  
LOR 83.56 337 eP 21 22.40 -0.6  
0.7s 5.50nm 4.8mb  
GRR 83.77 340 eP 21 23.80 -0.2  
0.5s 7.30nm 5.1mb  
LBF 83.79 337 eP 21 23.40 -0.8  
0.7s 3.30nm 4.6mb  
SSF 83.85 337 eP 21 23.80 -0.6  
0.7s 4.40nm 4.7mb  
SMF 84.14 337 eP 21 25.50 -0.4  
0.7s 5.50nm 4.8mb  
AVF 84.14 337 eP 21 25.40 -0.5  
0.7s 4.40nm 4.7mb  
LPF 84.15 340 eP 21 25.80 0.0  
0.6s 7.20nm 5.0mb  
LPL 84.30 334 eP 21 27.00 0.0



LPG 0.5s 2.20nm 4.6mb  
84.31 334 eP 21 27.10 0.0  
0.5s 2.90nm 4.7mb  
MBH 84.68 307 eP 21 19.00 -9.8X  
MAF 84.88 337 eP 21 30.00 0.4  
0.7s 13.25nm 5.2mb  
TCF 84.92 337 eP 21 29.70 -0.1  
0.7s 4.40nm 4.8mb  
LSF 85.14 338 eP 21 30.70 -0.2  
0.9s 14.75nm 5.2mb  
MFF 85.25 339 eP 21 31.50 0.1  
0.5s 5.10nm 5.0mb  
CAF 86.21 337 eP 21 36.80 0.5  
0.5s 2.55nm 4.7mb  
LFF 86.56 338 eP 21 38.50 0.6  
0.5s 4.35nm 4.9mb  
LPO 86.68 337 eP 21 38.90 0.4  
S.D. = 0.9 on 75 of 80 obs.

MAR 26, 1990 22h 19m 29.81± 0.34s  
37.000 N ± 7.7km 72.771 E ± 5.6km  
DEPTH = 33.0km (normol)  
4.8mb (25 obs.)

TAJIK SSR (715)

KSH 3.52 45 Pn 20 27.00 3.3X  
Sn 21 12.00  
QUE 8.35 217 eP 20 32.80 -58.9X  
NOI 9.10 154 eP 21 42.00 0.2  
eS 23 22.00  
MHI 10.69 270 iPc 22 03.40 -0.4  
0.8s 95.52nm 6.1mb X  
eS 23 59.00  
WMO 13.25 54 P 22 34.00 -4.1X  
S 25 01.50  
GKN 13.43 128 P 22 35.10 -5.6X  
KKN 13.99 127 P 22 41.40 -6.6X  
DMN 14.01 128 P 22 42.40 -5.9X  
0.9s 51.00nm 5.3mb  
PKI 14.22 128 P 22 44.80 -6.4X  
GUN 14.29 126 P 22 45.40 -6.8X  
0.5s 21.00nm 5.0mb  
POO 18.42 177 eP 23 46.10 1.7  
SHL 19.88 120 eP 23 56.00 -5.3X  
eS 27 23.00  
HYB 20.16 164 eP 24 03.00 -1.3  
eS 27 39.00  
TAB 20.98 281 eP 24 16.00 3.3X  
GTA 21.36 75 iPd 24 15.40 -1.1  
XAN 29.46 85 P 25 31.60 -1.3  
HHC 30.26 71 P 25 42.50 2.6  
GYA 30.54 100 eP 25 46.40 3.8X  
TIY 31.38 76 eP 25 51.00 1.2  
BJI 33.85 71 eP 26 14.00 2.9  
ELL 34.08 283 eP 26 15.30 2.0  
MLR 35.78 299 eP 26 30.50 2.6  
SUF 38.26 327 iP 26 48.30 0.1  
0.8s 12.80nm 4.8mb  
NUR 38.26 323 iP 26 48.30 0.0  
0.8s 14.70nm 4.9mb  
SNY 39.08 67 eP 26 57.00 1.6  
SOD 39.90 334 eP 27 02.00 0.2  
SSE 40.20 84 eP 27 05.10 0.3  
UPP 41.56 321 eP 27 16.00 0.5  
PRU 43.13 307 eP 27 30.20 1.6  
BRG 43.43 308 iP 27 32.00 1.0  
HFS 43.56 321 eP 27 31.20 -0.7  
0.7s 16.20nm 4.9mb  
KHC 43.85 305 Pc 27 36.00 1.5  
CLL 43.99 309 iPc 27 36.50 1.0  
NB2 44.84 323 P 27 43.80 1.5  
0.8s 12.70nm 4.9mb  
GRF 45.30 307 eP 27 47.90 1.8  
1.1s 10.00nm 4.6mb  
CDF 48.08 305 eP 28 08.40 0.3  
BSF 48.52 305 eP 28 11.40 -0.1  
0.7s 4.40nm 4.6mb  
HAU 48.77 305 eP 28 13.30 -0.1  
LPG 49.09 302 eP 28 16.60 0.4  
LPL 49.10 302 eP 28 16.60 0.4  
LBF 50.58 304 eP 28 26.50 -0.7  
LOR 50.58 305 eP 28 26.50 -0.7  
SMF 50.76 304 eP 28 28.10 -0.4  
0.7s 4.40nm 4.5mb  
SSF 50.87 304 eP 28 29.00 -0.4  
0.7s 2.75nm 4.3mb  
AVF 51.04 304 eP 28 30.10 -0.6

BGF 0.8s 10.75nm 4.9mb  
51.44 304 eP 28 33.10 -0.6  
MAT 51.45 69 (P) 28 31.00 -2.9  
1.0s 16.00nm 4.9mb  
MAF 51.72 304 eP 28 35.90 0.0  
0.8s 8.05nm 4.7mb  
TCF 51.94 304 eP 28 37.40 -0.1  
0.7s 4.40nm 4.5mb  
LSF 52.40 304 eP 28 40.40 -0.6  
LDF 52.81 307 eP 28 43.10 -0.9  
0.5s 4.35nm 4.7mb  
EKA 52.92 316 Pc 28 44.20 -0.5  
0.8s 8.40nm 4.8mb  
FLN 52.99 307 eP 28 44.30 -1.0  
0.6s 5.40nm 4.7mb  
GRR 53.34 307 eP 28 47.00 -0.8  
0.7s 11.00nm 5.0mb  
MFF 53.40 305 eP 28 47.50 -0.9  
LPF 53.56 307 eP 28 48.50 -0.9  
DAG 54.68 344 eP 28 56.30 -1.1  
0.6s 9.33nm 5.0mb  
BCAO 59.17 250 iPc 29 28.20 -1.8  
0.6s 5.00nm 4.8mb  
MBC 66.77 3 ePd 30 18.90 -0.5  
0.6s 37.00nm 5.7mb  
INK 73.18 10 eP 30 58.00 -0.6  
FBA 73.59 17 eP 31 00.00 -1.0  
0.9s 7.50nm 4.7mb  
FRB 75.00 343 eP 31 08.00 -1.2  
YKA 80.67 3 eP 31 39.50 -0.9  
0.8s 5.30nm 4.6mb  
WB5 81.03 123 eP 31 42.20 -0.8  
WRA 81.06 123 Pc 31 42.60 -0.5  
1.0s 7.90nm 4.7mb  
FFC 88.53 357 eP 32 20.00 -0.1  
0.9s 18.00nm 5.4mb  
S.D. = 1.2 on 55 of 66 obs.

MAR 26, 1990 22h 47m 16.75± 0.67s  
9.253 N ± 2.8km 125.606 E ± 3.8km  
DEPTH = 39.2 ± 5.9 km  
5.6mb (39 obs.) 5.5msz (20 obs.)  
MINDANAO, PHILIPPINE ISLANDS (259)  
One person killed, two injured  
and some damage in the Santiago  
area. Felt (IV RF) on Comiguin  
and (II) at Cotabato. Also felt  
at Gingoog.  
CENTROID, MOMENT TENSOR (HRV)  
Data Used: GDSN  
L.P.B.: 12S, 29C  
Centroid Location:  
Origin Time 22:47:14.4 0.4  
Lat 9.04N 0.06 Lon 125.74E 0.06  
Dep 44.0 4.6 Half-duration 3.5  
Moment Tensor: Scale 10<sup>17</sup> Nm  
Mrr = 2.33 0.42 Mtt = 2.33 0.41  
Mff = -4.66 0.67 Mrt = -3.07 0.57  
Mrf = -2.09 0.52 Mtf = -6.28 0.48  
Principal Axes:  
T Vol = 6.72 Plg = 23 Azm = 205  
N 2.62 61 64  
P -9.34 16 302  
Best Double Couple: Mo = 8.0 × 10<sup>17</sup>  
NP1: Strike = 345 Dip = 61 Slip = 5  
NP2: 252 85 151

DAV 2.15 181 ePc+ 47 52.00 1.1  
1.1s 3301.27nm  
PPR 6.80 275 ePd 48 56.00 -0.7  
eS 50 02.00  
QCP 6.95 321 eP 48 31.00 -27.7X  
MNI 7.80 186 ePc 49 09.50 -1.1  
BAG 8.64 326 iPd- 49 22.00 -0.5  
TSM 9.00 237 ePc 48 31.80 -55.4X  
CVP 9.17 337 eP 49 29.00 -0.6  
eS 50 00.00  
SZP 9.65 329 eP 49 36.00 -0.2  
eS 50 41.50  
KKM 9.84 252 ePc 49 39.20 0.3  
PIP 10.23 332 ePd 49 43.00 -1.3  
2.0s 5606.00nm 7.4mb X  
AAI 13.11 169 eP 50 23.50 0.5  
BK82 13.58 220 ePd 50 42.50 13.3X  
MKS 15.62 203 ePd 50 57.00 1.1  
1.5s 965.40nm 5.8mb  
ANP 16.31 347 eP 51 05.20 0.4

QZH 16.97 338 eP 51 10.00 -3.0X  
Z 24s 16.60nm  
E 14s 9.90nm  
HKC 17.00 321 iP 51 14.90 1.6  
iS 54 32.00  
MCO 17.25 319 iP 51 16.60 0.1  
GZH 18.09 321 Pd 51 28.50 1.7  
5.0s 8700.00nm 6.1mb X  
Z 20s 29.60nm 5.1msz X  
N 18s 41.00nm  
E 15s 7.50nm  
OIZ 18.10 304 iPd 51 27.50 0.5  
E 15s 33.60nm  
pP 51 36.50  
GUMO 19.36 75 eP 51 44.50 2.3  
1.2s 361.11nm 5.5mb  
Z 22s 6.48nm 4.8msz X  
eS 55 08.00  
PJG 19.36 75 eP 51 43.80 1.6  
TT 10 39.00  
GUA 19.39 76 eP 51 44.50 1.9  
1.5s 711.11nm 5.7mb  
pP 51 50.50 22kmX  
SSE 22.12 350 Pd 52 10.00 -0.5  
4.0s 2400.00nm 6.0mb X  
Z 20s 11.00nm 5.3msz  
N 13s 5.40nm  
E 13s 5.60nm  
pP 52 18.00 29kmX  
sS 56 24.00  
MTN 22.63 166 eP 52 15.00 -0.7  
KGM 23.30 253 eP 52 25.00 2.8X  
NJ2 23.53 346 iPc 52 24.80 0.5  
Z 20s 5.20nm 5.0msz  
N 14s 8.70nm  
E 11s 1.20nm  
WHN 23.64 335 Pd 52 25.50 0.1  
Z 16s 11.90nm 5.5msz X  
N 15s 12.50nm  
E 14s 8.50nm  
pP 52 32.00 23kmX  
sP 52 40.00  
KLM 24.58 257 eP 52 38.00 3.3X  
GYA 24.80 316 iPd 52 38.40 1.6  
3.0s 2100.00nm 6.2mb  
Z 24s 7.20nm 5.1msz X  
N 18s 19.20nm  
E 18s 13.80nm  
sP 52 56.00  
SNG 24.82 267 eP 52 38.50 1.6  
eS 57 06.20  
IPM 24.83 261 ePc 52 39.00 1.9  
0.9s 78.40nm 5.3mb  
KNA 25.04 173 iPd 52 39.00 0.0  
1.0s 690.00nm 6.2mb  
NNT 25.61 280 eP 52 46.00 1.6  
NST 25.66 287 eP 52 46.00 1.1  
SHK 25.98 13 eP 52 47.60 -0.1  
LAT 26.54 126 eP 53 02.00 9.0X  
KMI 26.88 309 Pd 52 57.00 0.7  
2.0s 400.00nm 5.7mb  
Z 26s 15.30nm 5.4msz X  
N 20s 20.90nm  
E 20s 11.40nm  
pP 53 09.00 47kmX  
BDT 27.06 290 iPc 52 56.00 -1.7  
1.1s 108.20nm 5.4mb  
CHG 27.52 293 iPd 53 02.00 0.0  
1.1s 89.87nm 5.3mb  
eS 57 46.00  
TIA 27.92 345 Pc 53 04.00 -1.4  
Z 20s 9.60nm 5.4msz  
N 15s 6.75nm  
E 13s 4.30nm  
PMG 28.35 130 eP 53 12.00 2.5  
XAN 29.05 331 P 53 13.00 -2.6  
N 19s 12.60nm  
E 19s 15.20nm  
MAT 29.48 21 (P) 53 17.00 -2.4  
2.0s 470.59nm 5.9mb  
Z 20s 10.64nm 5.5msz  
eS 58 10.00  
CD2 29.64 320 eP 53 19.70 -1.3  
Z 18s 12.20nm 5.6msz  
N 17s 25.00nm  
PP 54 10.00



BHD	77.67	302	ePc	59	13.00	1.7
			iS	09	03.50	
			eScS	09	26.00	
IMA	77.83	24	ePd	59	12.50	0.8
	1.0s	50.00nm				5.5mb
KDC	77.91	33	eP	59	12.70	0.7
MSL	78.53	305	ePd	59	15.50	-0.4
			e	59	24.50	
			e	59	33.00	
			eS	09	11.00	
KMSA	78.56	289	eP	59	16.30	-0.1
QASM	78.91	295	eP	59	18.90	0.6
PMR	79.67	29	ePc	59	21.80	0.2
	1.0s	75.00nm				5.6mb
Z	20s	1.50um				5.3Msz
FBA	80.24	26	ePd	59	24.40	-0.2
TOA	81.06	28	eP	59	30.80	1.7
KVT	83.67	310	iP	59	43.90	0.9
KEV	84.35	340	eP	59	46.00	0.2
			e	10	16.00	
HLBJ	84.57	301	Pc	59	48.40	0.6
JARJ	84.85	302	Pc	59	49.90	0.7
HRI	84.89	303	ePd	59	50.00	0.7
SHMJ	84.94	302	Pd	59	51.00	1.5
SOD	84.97	337	iP	59	48.40	-0.5
SALJ	85.10	301	Pc	59	51.10	0.7
MKRJ	85.20	301	Pc	59	51.60	0.7
AYN	85.26	298	eP	59	52.30	1.2
KAS	85.33	311	iPd	59	52.20	0.8
DSI	85.42	301	eP	59	53.00	1.1
INK	85.47	21	ePd	59	51.90	0.5
	1.1s	153.00nm				6.1mb
AAE	85.49	278	eP	59	56.50	3.6X
HOL	86.02	299	eP	59	55.70	0.8
MBH	86.10	299	iPd	59	56.50	1.2
SUF	86.16	333	iP	59	54.40	-0.5
	0.7s	25.90nm				5.6mb
BADA	86.17	298	eP	59	56.30	0.6
BBTK	86.32	310	iPd	59	56.00	-0.4
CSS	86.62	305	eP	59	58.00	0.2
MBC	86.84	13	eP	59	59.00	0.9
	0.7s	89.00nm				6.1mb
NUR	87.36	331	iP	00	00.40	-0.4
	0.8s	24.90nm				5.5mb
Z	16s	4.40um				6.0MszX
		i	00	28.00		
		e	10	34.00		
		e	11	12.00		
		LR	43	06.00		
BCK	88.39	308	eP	00	05.50	-0.9
ALT	88.47	309	eP	00	06.10	-0.7
YLV	88.75	311	eP	00	07.00	-1.0
VNDA	89.01	173	e(P)	00	09.00	0.7
PMO	89.01	105	eP	00	16.00	6.5X
	1.2s	45.00nm				5.7mb
NAI	89.02	269	iPc	00	12.50	2.5X
CLI	89.03	317	eP	00	10.00	0.9
ELL	89.06	307	eP	00	08.00	-1.6
KHL	89.06	309	eP	00	09.00	-0.6
DST	89.58	310	eP	00	08.50	-3.0X
RUV	89.53	105	eP	00	19.00	7.1X
	1.2s	85.00nm				5.9mb
VRI	89.55	316	ePd	00	11.50	-0.1
ISR	89.84	316	eP	00	27.00	14.0X
SBA	89.92	172	e(P)	00	03.60	-9.0X
MLR	90.17	316	eP	00	14.00	-0.7
JMB	90.41	313	eP	00	15.00	-0.6
ARG	90.57	307	eP	00	16.00	-0.5
UPP	90.91	331	iP	00	15.30	-2.2
DIM	91.26	313	eP	00	14.00	-5.5X
SMG	91.26	308	eP	00	20.00	0.4
KDZ	91.44	312	eP	00	20.00	-0.4
KAP	91.46	306	eP	00	20.00	-0.6
DAG	91.68	3				



KKB 93.08 313 iP 00 17.00 -10.9X  
 NB2 93.37 334 P 00 29.20 0.2  
 1.1s 24.20nm 5.5mb  
 VAY 93.59 313 eP 00 28.70 -1.6  
 VAM 93.86 307 eP 00 32.00 0.3  
 SKO 94.23 314 eP 00 33.50 0.3  
 Z 20s 1.80um 5.5Msz  
 N 20s 1.10um  
 E 21s 423.00um  
 SRO 94.58 320 eP 00 33.00 0.4  
 00 37.60 2.9X  
 00 41.70  
 KSP 94.79 323 ePc 00 35.60 0.0  
 03 58.30  
 OHR 94.93 313 eP 00 34.00 -2.6  
 YKA 94.95 24 eP 00 36.20 0.1  
 0.9s 28.30nm 5.7mb  
 PRU 96.14 323 eP 00 41.50 -0.4  
 Z 20s 5.10um 6.0Msz  
 N 18s 2.00um  
 E 20s 3.40um  
 BRG 96.16 324 eP 01 09.20 0.1  
 2.1s 50.00nm 5.6mb  
 Z 18s 2.50um 5.7Msz  
 N 18s 2.00um  
 E 18s 3.50um  
 CLL 96.53 324 eP 04 13.50 0.0  
 00 43.00 -0.6  
 2.3s 51.00nm 5.6mb  
 Z 19s 2.00um 5.6Msz  
 MOX 97.60 324 eP 00 49.00 0.6  
 01 17.00  
 GRF 98.23 323 iPd 00 51.10 -0.2  
 0.9s 9.00nm 5.3mb  
 Z 20s 4.40um 5.9Msz  
 PNT 98.62 37 eP 00 35.00 -18.1X  
 0.6s 9.00nm  
 WDC 100.16 46 ePdfff01 06.10 5.9X  
 NEW 100.57 37 Pdfff01 01 01.40 -0.5  
 1.0s 12.50nm 5.4mb  
 DOU 101.85 326 Pdfff01 03.80 -3.7X  
 CMB 102.66 48 ePdfff01 17.50 6.0X  
 SES 102.98 33 ePdfff01 18.00 5.4X  
 LRM 104.54 38 ePdfff01 22.80 2.9X  
 FFC 104.84 26 ePdfff01 21.00 0.3X  
 1.0s 18.00nm 5.9mb  
 FRB 106.42 7 ePdfff01 26.50 -0.9X  
 GOL 112.20 40 PKP 05 52.30 1.7  
 Z 22s 1.18um 5.4Msz  
 ALO 114.05 45 e(PKP)05 53.00 -1.3  
 FVM 122.20 33 PKP 06 09.60 0.2  
 RSNY 123.44 17 PKP 06 16.00 4.4X  
 RSCP 126.56 32 PKP 06 18.00 0.0  
 LKO 127.95 290 PKP 06 20.78 -0.4  
 1.0s 33.00nm  
 KIC 128.14 286 PKP 06 21.98 0.4  
 TIC 128.33 286 PKP 06 22.28 0.4  
 LIC 128.46 286 PKP 06 22.48 0.3  
 UPA 149.10 55 ePKPc 07 02.90 3.7X  
 1.0s 90.00nm  
 LNV 150.86 150 ePKP 07 11.50 10.2X  
 LCCH 151.16 149 ePKP 07 10.00 8.2X  
 TACH 151.33 150 ePKP 07 10.50 8.4X  
 PCH 151.57 151 ePKP 07 14.20 11.7X  
 SAN 151.63 150 ePKP 07 14.00 11.5X  
 ROCH 151.85 149 ePKP 07 16.50 13.4X  
 FCH 151.91 151 ePKP 07 16.20 12.9X  
 LPB 164.81 120 PKP 07 23.00 4.1X  
 ZOBO 164.91 119 PKP 07 21.00 1.8  
 1.2s 37.16nm  
 CCH 166.01 126 ePKP 07 16.00 -3.7X  
 BAO 171.10 224 ePKP 07 25.00 2.2  
 S.D. = 1.1 on 190 of 235 obs.  
 MAR 26, 1990 22h 57m 43.42 ± 0.59s  
 39.864 N ± 4.8km 23.403 E ± 5.3km  
 DEPTH = 10.0km (geophysicist)  
 AEGEAN SEA (365)  
 ML 2.4 (THE).  
 PAIG 0.22 73 ePg 57 48.80 0.6  
 eSg 57 53.60  
 PLG 0.51 4 ePb 57 53.20 -0.6  
 NEO 0.57 194 ePb 57 54.00 -1.1  
 OUR 0.65 43 ePg 57 56.20 -0.1

LIT 0.74 289 ePg 57 57.60 -0.4  
 THE 0.84 337 ePg 57 59.30 -0.3  
 SOH 0.96 358 ePb 58 01.80 0.1  
 AGG 1.18 225 ePb 58 06.40 0.9  
 KZN 1.33 290 ePb 58 08.50 0.5  
 KNT 1.35 344 ePb 58 08.50 0.2  
 eSb 58 28.00  
 S.D. = 0.7 on 10 of 10 obs.  
 ? MAR 26, 1990 23h 13m 26.61 ± 1.05s  
 2.528 N ± 26.3km 84.290 W ± 35.7km  
 DEPTH = 33.0km (normal)  
 4.5mb ( 5 obs.) 3.9Msz ( 1 obs.)  
 OFF COAST OF CENTRAL AMERICA ( 76)  
 ZOBO 24.58 140 P 18 45.20 -0.5  
 1.2s 23.99nm 4.6mb  
 Z 22s 0.45um 3.9Msz  
 LPB 24.79 140 P 18 48.00 0.4  
 ALO 38.27 330 e(P) 20 46.00 0.0  
 1.0s 7.50nm 4.5mb  
 SES 52.80 339 eP 22 42.00 1.0  
 YKA 63.95 345 eP 23 56.70 -1.8  
 1.0s 4.20nm 4.5mb  
 INK 73.55 343 eP 24 58.00 0.2  
 MBC 76.22 352 ePc 25 13.40 0.4  
 1.0s 21.00nm 5.1mb  
 LIC 79.06 84 P 25 29.60 -0.3  
 KIC 79.34 84 P 25 31.90 0.5  
 0.9s 5.00nm 4.5mb  
 WRA 138.51 242 PKPc 32 48.80 -2.9X  
 0.6s 0.90nm  
 S.D. = 0.9 on 9 of 10 obs.  
 MAR 27, 1990 00h 02m 43.34 ± 0.55s  
 43.302 N ± 5.2km 4.418 W ± 5.7km  
 DEPTH = 10.0km (geophysicist)  
 SPAIN (377)  
 mbLg 3.2 (MDD). ML 3.2 (LDG).  
 Felt (III) at Cervera.  
 ECR1 1.56 116 ePnd 03 11.00 -0.2  
 eSn 03 30.80  
 EMON 2.13 275 iPnd 03 20.00 0.6  
 eSn 03 47.00  
 GUD 2.66 176 ePn 03 23.20 -4.0X  
 eSn 03 52.00  
 ETOR 3.04 144 ePn 03 32.60 0.2  
 TOL 3.43 175 ePg 03 29.00 -8.9X  
 eSg 04 17.00  
 EPLA 3.46 202 ePn 03 37.80 -0.6  
 eSn 04 14.60  
 EPF 3.49 93 Pn 03 39.60 0.8  
 Sn 04 20.20  
 LFF 4.06 64 Pn 03 47.40 0.6  
 Sn 04 36.60  
 LPO 4.27 69 Pn 03 50.60 0.7  
 Sn 04 40.60  
 MFF 4.48 41 Pn 03 53.70 0.9  
 Sn 04 47.00  
 RJF 4.71 63 Pn 03 56.20 0.1  
 Sn 04 52.20  
 CAF 4.94 69 Pn 03 58.60 -0.8  
 Sn 04 55.60  
 LSF 5.16 53 Pn 04 03.40 1.0  
 Sn 05 03.40  
 LPF 5.29 25 Pn 04 04.60 0.4  
 Sn 05 04.90  
 TCF 5.58 55 Pn 04 08.10 -0.4  
 Sn 05 12.10  
 GRR 5.66 25 Pn 04 08.10 -1.4  
 Sn 05 13.60  
 MAF 5.77 57 Pn 04 11.00 0.0  
 Sn 05 16.20  
 LDF 6.08 28 Pn 04 14.90 -0.5  
 Sn 05 23.50  
 BGF 6.10 55 Pn 04 15.30 -0.4  
 Sn 05 23.50  
 FLN 6.11 25 Pn 04 16.40 0.6  
 Sn 05 24.80  
 AVF 6.52 55 Pn 04 20.00 -1.6  
 S.D. = 0.8 on 19 of 21 obs.  
 ? MAR 27, 1990 00h 03m 44.49 ± 0.82s  
 16.750 N ± 22.6km 94.163 W ± 11.1km  
 DEPTH = 73.7 ± 15.8 km  
 4.2mb ( 2 obs.)

OAXACA, MEXICO ( 60)  
 PSM 0.84 267 iPc 04 01.57 0.0  
 iS 04 21.95  
 SCX 1.46 90 eP 04 09.47 0.0  
 (S) 04 34.01  
 OXX 2.47 278 eP 04 30.06 6.5X  
 eS 05 00.66  
 TPX 2.59 135 eP 04 25.01 0.0  
 eS 04 49.76  
 PPM 4.83 299 eP 05 02.74 5.8X  
 eS 05 56.30  
 YKA 47.89 347 eP 12 17.00 0.2  
 0.8s 0.90nm 3.8mb  
 MBC 60.95 353 eP 13 51.50 -0.2  
 0.7s 4.00nm 4.7mb  
 S.D. = 0.3 on 5 of 7 obs.  
 MAR 27, 1990 00h 20m 53.66 ± 1.34s  
 15.071 S ± 6.1km 167.282 E ± 5.6km  
 DEPTH = 189.2 ± 11.7 km  
 5.2mb ( 24 obs.)  
 VANUATU ISLANDS (186)  
 DZM 7.01 186 iPc 22 32.20 -2.6  
 iS 23 50.20  
 HNR 9.10 307 eP 23 04.00 1.8  
 e(S) 24 36.00  
 BRS 18.23 225 iPc 24 57.00 1.7  
 1.2s 20.00nm 4.4mb  
 PMG 20.45 284 eP 25 18.00 0.0  
 CTA 20.65 253 iPc 25 20.00 0.8  
 0.9s 73.95nm 5.2mb  
 iS 29 06.00  
 RMO 20.68 234 iPc 25 22.00 1.7  
 1.0s 456.00nm 5.9mb  
 COO 20.92 220 iPc 25 25.00 2.3  
 WLZ 23.84 164 eP 25 52.00 1.1  
 QLP 24.35 238 iPc 25 57.00 1.2  
 PUZ 24.88 159 eP 25 59.60 -1.0  
 BWA 25.70 218 iP 26 07.90 -0.2  
 e 26 37.20  
 CAN 26.00 216 eP 26 11.80 1.0  
 MNG 26.44 166 P 26 13.70 -1.1  
 0.5s 14.00nm 4.9mb  
 PGZ 26.63 165 eP 26 14.70 -1.8  
 0.5s 48.00nm 5.5mb  
 QIS 26.89 254 iPc 26 18.30 -0.7  
 THZ 27.04 171 P 26 20.30 0.1  
 LTZ 27.95 172 P 26 28.40 0.0  
 TOO 29.58 217 iPc 26 43.60 0.6  
 MM CZ 29.88 177 P 26 45.80 0.3  
 MHZ 29.94 177 P 26 45.90 -0.2  
 TLC 30.06 177 P 26 47.60 0.4  
 WB5 31.73 257 iP 27 00.00 -1.9  
 ePcP 29 49.00  
 eScP 33 21.20  
 WRA 31.75 256 P 27 00.00 -2.1  
 1.1s 32.80nm 4.9mb  
 ADE 32.42 227 iPc 27 08.80 1.0  
 1.0s 126.00nm 5.5mb  
 ASPA 32.57 250 iPc 27 08.00 -1.2  
 0.9s 108.00nm 5.5mb  
 Z 22s 0.23um 3.8MszX  
 iS 32 10.70  
 LR 39 38.20  
 MTN 35.13 269 eP 27 30.00 -1.1  
 KNA 37.10 264 iPc 27 46.80 -0.8  
 FORR 39.12 239 iPc 28 05.00 0.7  
 0.4s 30.00nm 5.3mb  
 PMO 43.23 96 iP 28 38.50 0.5  
 0.8s 80.00nm 5.3mb  
 VAH 43.46 96 iP 28 40.40 0.5  
 0.8s 50.00nm 5.1mb  
 TPT 43.50 96 iP 28 41.00 0.8  
 0.8s 60.00nm 5.2mb  
 RUV 43.70 96 iP 28 42.50 0.7  
 0.8s 70.00nm 5.3mb  
 COOL 44.97 241 eP 28 51.00 -0.8  
 MBL 45.37 255 iPc 28 55.20 0.2  
 0.6s 45.00nm 5.1mb  
 KLB 47.94 241 eP 29 14.50 -0.5  
 NWA0 48.59 239 eP 29 19.00 -1.0  
 MRWA 49.18 244 iPc 29 24.40 -0.2  
 0.5s 10.00nm 4.6mb  
 MUN 49.31 241 eP 29 25.20 -0.3  
 PPR 54.08 294 ePc 30 03.00 1.8



KKM	54.78	289	ePd	30	06.00	-0.5
VNDA	62.52	181	P	30	59.30	0.5
SBA	62.80	180	P	31	02.10	1.5
BJI	72.54	321	eP	32	00.50	-1.1
SPA	75.03	180	iPc	32	16.10	0.2
	1.0s		60.00nm			5.3mb
CHG	75.23	294	ePc	32	18.30	0.7
	0.9s		11.76nm			4.6mb
LZH	78.56	312	eP	32	36.00	0.1
	1.5s		19.00nm			4.6mb
			i	33	11.00	
MAW	81.57	202	eP	32	51.50	0.4
PEC	86.73	54	iP	33	16.10	-1.5
PLM	86.78	54	eP	33	18.00	0.0
KVN	87.86	49	eP	33	22.00	-1.1
GUN	89.57	299	P	33	31.30	-0.3
	0.8s		26.00nm			5.2mb
PKI	89.87	299	P	33	32.60	-0.4
	0.8s		28.00nm			5.3mb
KKN	90.04	299	P	33	33.40	-0.2
	0.8s		24.00nm			5.2mb
DMN	90.14	298	P	33	34.00	-0.1
	0.8s		44.00nm			5.5mb
GKN	90.65	299	P	33	35.60	-0.7
	0.8s		26.00nm			5.3mb
YKA	97.84	27	eP	34	05.00	-3.2X
	0.7s		0.40nm			4.0mb X
MBC	100.64	13	ePdiff	34	20.50	-0.1
	0.9s		8.00nm			5.2mb
SOD	121.83	343	ePKP	39	20.00	-6.0X
SUF	125.16	339	ePKP	39	31.60	-1.0
	0.6s		4.70nm			
NUR	127.19	338	iPKP	39	36.40	-0.1
NB2	130.96	345	PKP	39	45.20	1.4
	0.9s		2.80nm			
CLL	138.37	336	ePKP	39	59.00	1.0
KHC	139.79	333	ePKP	40	02.90	2.2
CDF	142.90	338	ePKP	40	03.30	-3.0X
	0.7s		4.40nm			
OSS	143.15	334	ePKPc	40	04.10	-2.8X
LLS	143.49	335	ePKPc	40	05.00	-2.5X
BSF	143.56	338	ePKP	40	05.00	-2.5
HAU	143.57	338	iPKPc	40	05.10	-2.3
	0.8s		13.45nm			
VDL	143.60	334	ePKPc	40	05.70	-2.0
SAL	143.82	332	PKP	40	06.00	-1.8
TMA	144.15	334	ePKPc	40	06.80	-1.8
ARV	144.18	327	PKP	40	07.80	-0.8
VAI	144.38	334	PKPc	40	07.10	-1.6
ORI	144.39	320	PKPc	40	08.20	-0.8
SFI	144.44	329	PKPc	40	09.00	0.1
PGD	144.54	329	PKP	40	09.50	0.2
MMK	144.57	335	ePKPc	40	08.90	-0.5
CRE	144.60	328	PKP	40	09.00	-0.4
ROI	144.61	319	PKP	40	09.00	-0.4
ASS	144.63	327	PKP	40	08.50	-0.9
CSI	144.66	320	PKP	40	08.70	-0.8
TDS	144.70	320	PKPc	40	09.10	-0.4
DIX	144.72	335	ePKPc	40	09.50	-0.3
MMN	144.78	320	PKP	40	05.70	-3.9X
SGO	144.79	322	PKPc	40	08.50	-1.1
MME	144.80	330	PKP	40	09.70	-0.2
FIR	144.84	329	iPKPd	40	09.00	-0.6
MGR	144.90	321	PKP	40	08.20	-1.7
ORX	144.90	334	PKP	40	08.47	-1.4
ORO	144.91	334	PKP	40	09.00	-0.8
FLN	144.93	346	iPKPc	40	08.50	-1.1
	0.6s		21.65nm			
SDI	144.93	324	PKPc	40	09.10	-0.8
BDI	144.95	330	PKPc	40	08.40	-1.5
BOB	144.95	332	PKPc	40	09.50	

LPL	145.51	336	iPKPc	40	11.80	0.8
	0.8 s	46.35nm				
LPG	145.52	336	iPKPc	40	11.80	0.7
PCP	145.53	333	PKP	40	10.52	-0.3
RSP	145.59	335	PKP	40	10.42	-0.6
SMF	145.61	340	iPKPc	40	11.20	0.3
	1.0 s	62.00nm				
AVF	145.65	340	iPKPc	40	11.30	0.4
	1.0 s	29.00nm				
CKI	145.74	333	PKP	40	11.50	0.4
LPF	145.74	346	iPKPc	40	11.80	0.8
	0.8 s	67.15nm				
BNI	145.91	335	PKPc	40	12.90	1.3
FIN	145.94	333	PKP	40	11.45	-0.1
RRL	145.98	335	PKP	40	12.88	1.0
BGF	146.02	341	iPKPd	40	12.50	1.0
	0.8 s	45.00nm				
ROB	146.02	333	PKP	40	11.86	0.2
PZZ	146.18	334	PKP	40	12.88	0.8
ENR	146.27	334	PKP	40	12.16	0.0
PLDF	146.28	339	PKP	40	13.87	1.8
STV	146.30	334	PKP	40	11.55	-0.6
IMI	146.32	333	PKP	40	12.78	0.6
AGO	146.37	340	PKP	40	13.80	1.7
MAF	146.40	341	iPKPc	40	13.90	1.7
	0.9 s	32.75nm				
TCF	146.46	341	iPKPc	40	14.10	1.8
	0.9 s	36.05nm				
SSB	146.55	338	PKP	40	14.49	2.0
SBF	146.55	333	iPKPc	40	13.90	1.3
	0.9 s	95.00nm				
PYM	146.68	340	PKP	40	15.03	2.3
LSF	146.70	342	iPKPc	40	14.50	1.9
	0.8 s	43.00nm				
MFF	146.85	344	iPKPc	40	15.00	2.2
	0.7 s	49.60nm				
PGF	146.86	330	iPKPc	40	15.10	2.0
	1.1 s	107.45nm				
LBL	147.05	339	PKP	40	16.33	3.2
FRF	147.14	334	ePKP	40	15.60	2.2
	1.1 s	58.60nm				
LRG	147.35	334	iPKPc	40	16.60	2.9
	1.0 s	52.00nm				
LMR	147.38	334	iPKPc	40	16.50	2.7
	1.1 s	56.15nm				
BCAO	147.49	254	iPKPd	40	14.60	-0.3
	0.3 s	113.00nm				
		ic	40	17.90		
		id	41	02.40		
RJF	147.55	341	iPKPc	40	17.30	3.3
	0.9 s	32.75nm				
CAF	147.72	340	iPKPc	40	17.80	3.4
	0.9 s	19.65nm				
LFF	148.12	342	iPKPc	40	18.70	3.8
	0.8 s	48.35nm				
LPO	148.21	341	iPKPc	40	19.10	4.0
	0.8 s	41.65nm				
EPF	149.97	341	ePKP	40	23.00	5.1
	0.9 s	15.55nm				
KIC	168.33	223	PKP	40	39.30	0.1
	0.9 s	10.50nm				
LIC	168.41	221	PKP	40	39.40	0.1
TIC	168.72	223	PKP	40	39.60	0.1
LKO	171.13	233	PKP	40	39.56	-1.2
	0.8 s	20.00nm				
S.D. = 1.1 on 133 of 147 obs.						
* MAR 27, 1990	00h 27m 29.	34 ± 0.44				
54.635 N ± 9.5km	160.931 E ± 8.0km					
DEPTH = 70.7km ( 3 depth phases)						
4.6mb ( 15 obs.)						
NEAR EAST COAST OF KAMCHATKA				(218)		
SMY	8.05	98 P	29 23.60	-2.2		</

SES	0.6 s	24.00nm	5.3mb
50.36	56 eP	36 20.00	-0.7
	pP	36 38.00	71km
FFC	51.60	47 iPc	36 30.10 0.1
	0.9 s	15.00nm	5.0mb
LRM	52.73	61 eP	36 38.60 -0.3
SOD	53.62	340 eP	36 54.00 9.2X
KVN	54.44	71 P	36 52.20 0.7
		pP	37 09.80 68km
TNP	55.61	71 P	37 00.60 0.6
	0.7 s	12.96nm	5.1mb
FRB	55.89	24 eP	37 00.00 -1.4
8W06	56.34	62 P	37 05.50 0.2
	1.0 s	6.00nm	4.6mb
DUG	56.49	66 P	37 06.80 0.6
SUF	57.76	337 eP	37 13.90 -0.8
	0.4 s	1.70nm	4.5mb
RSON	57.88	46 P	37 15.30 -0.4
	0.7 s	15.57nm	5.2mb
RSSD	58.15	58 P	37 17.80 -0.1
		pP	37 36.60 73km
GLA	60.62	74 P	37 35.20 0.4
GOL	60.74	62 P	37 36.60 0.7
NB2	62.20	344 P	37 46.00 0.9
	0.7 s	1.90nm	4.3mb
HFS	62.63	342 eP	37 45.60 -2.3
	0.4 s	1.10nm	4.3mb
ANMO	63.76	66 P	37 56.50 0.6
	0.7 s	4.28nm	4.5mb
ALQ	63.76	66 eP	37 55.80 -0.2
	1.0 s	8.00nm	4.6mb
FVM	69.40	53 P	38 31.00 -0.3
DMU	71.37	352 eP	38 42.90 -0.1
DCN	71.95	353 eP	38 46.50 0.1
DLE	71.95	352 eP	38 46.30 -0.1
PWLA	72.95	53 P	38 52.30 -0.3
WB5	77.62	206 eP	39 19.00 -0.2
WRA	77.69	206 Pd	39 19.70 0.1
	0.7 s	3.70nm	4.4mb
ASPA	81.37	205 eP	39 39.90 0.6
	0.8 s	9.00nm	4.8mb
SPA	144.45	180 iPKPd	46 55.20 -2.4
	0.8 s	17.92nm	
S. D. = 1.1 on 37 of 38 obs.			
* MAR 27, 1990 00h 53m 29.20± 3.14s			
31.332 S ± 33.3km 69.805 W ± 18.0km			
DEPTH = 33.0km (normal)			
SAN JUAN PROVINCE, ARGENTINA (137)			
ZON	0.99	103 iPc	53 48.00 1.2
		eS	54 01.00
RTLL	1.14	90 iPd	53 48.90 -0.1
RTCV	1.20	116 ePd	53 49.90 0.1
CFA	1.37	102 iPc	53 51.00 -1.2
		S	54 07.00
ROCH	1.93	212 iP	54 02.20 1.7
		iS	54 27.20
FCH	2.03	192 eP	54 03.20 1.1
		iS	54 29.40
SAN	2.24	199 eP	54 05.00 0.3
		iS	54 33.00
PCH	2.36	195 iPd	54 06.60 0.1
		iS	54 35.20
		iS	54 37.50
TACH	2.50	202 iPc	54 07.80 -0.7
		iS	54 38.00
LCCH	2.61	214 iPc	54 10.00 0.1
		iS	54 41.50
CHCH	2.69	195 iPc	54 10.30 -0.8
		iS	54 42.70
LNV	2.95	207 iP	54 13.00 -1.7
S. D. = 1.1 on 12 of 12 obs.			
MAR 27, 1990 01h 12m 31.13± 0.51s			
24.649 S ± 5.5km 179.996 W ± 5.3km			
DEPTH = 549.7 ± 6.6 km			
4.9mb ( 10 obs.)			
SOUTH OF FIJI ISLANDS (171)			
DZM	12.72	279 iPd	15 17.30 -0.2
PGZ	16.23	190 eP	15 52.70 0.6
	0.5 s	33.00nm	5.1mb
MNG	16.37	192 eP	15 51.60 -1.9
		eS	18 36.00
WDW	17.09	193 eP	16 00.10 -0.4
WEL	17.16	193 P	16 01.00 -0.1



1.1s *****nm	7.8mb X	BNT	1.38	6	iPn	13	27.00	-0.5	RJF	147.74	341	ePKP	41	59.30	2.8X			
TCW	17.20 195 eP	16	01.30	-0.2	EZN	1.38	308	iPn	13	29.10	1.6	LFF	148.30	342	ePKP	42	00.50	3.1X
THZ	18.06 197 eP	16	10.60	0.7	KHL	1.54	115	ePn	13	31.00	1.2		0.8s	8.05nm				
	eS	19	08.00		MFT	1.84	349	ePn	13	36.00	1.9X	LPO	148.40	341	ePKP	42	00.90	3.3X
KHZ	18.51 195 P	16	14.80	0.6	YLV	2.02	38	iPn	13	40.00	3.2X		S.D. = 1.1	en	41	of	47	obs.
	0.4s	19.00nm	5.1mb			S.D. = 1.4	on	6	of	8	obs.							
LTZ	19.18 198 P	16	20.50	0.0														
MOZ	19.94 196 P	16	27.70	0.1														
RMO	28.22 260 iPd	17	42.80	1.1														
CAN	28.78 241 iPd	17	48.00	1.5														
BWA	29.06 243 iPd	17	48.30	-0.6														
CTA	31.49 271 iPd	18	09.90	0.1														
	0.8s	76.12nm	5.4mb															
ADE	37.05 244 iPd	18	57.00	1.1														
ASPA	41.92 261 iPd	19	35.60	0.2														
	0.4s	28.00nm	5.1mb															
WB5	iS	25	15.70															
	iPd	19	38.30	-0.5														
	iScP	24	25.80															
	e	25	19.50															
WRA	42.36 267 Pc	19	38.60	-0.3														
	0.4s	12.10nm	4.8mb															
FORR	46.02 250 iPd	20	07.10	0.0														
	0.4s	101.00nm	5.7mb															
KNA	48.66 270 eP	20	27.00	-0.4														
COOL	51.95 249 eP	20	50.70	-0.6														
	0.4s	8.00nm	4.5mb															
KLB	54.70 248 eP	21	10.80	0.0														
BAL	55.76 249 eP	21	18.10	-0.1														
MUN	55.94 247 eP	21	19.50	0.1														
NANU	58.62 258 iPd	21	37.10	-0.7														
ARN	82.60 43 P	23	58.60	0.8														
PLM	83.27 49 P	24	01.40	0.0														
CMB	83.74 43 P	24	03.70	0.2														
	1.2s	16.20nm	4.5mb															
GLA	84.50 50 P	24	08.00	0.7														
KVN	85.78 44 eP	24	13.00	-0.5														
GMW	88.35 35 P	24	25.40	0.2														
RMW	88.81 35 P	24	27.60	0.2														
PNT	91.11 35 eP	24	38.00	0.2														
ALO	91.41 52 eP	24	39.20	-0.6														
	1.0s	4.00nm	4.4mb															
ANMO	91.41 52 P	24	40.20	0.4														
	1.0s	4.13nm	4.4mb															
BW06	93.23 44 P	24	48.40	0.3														
GOL	94.46 48 P	24	54.00	0.2														
YKA	101.03 25 ePd	25	22.20	-0.3														
	0.4s	0.10nm	3.7mb X															
LPB	102.02 115 Pd	25	37.00	8.5X														
FRB	121.30 29 ePKP	30	21.00	-1.4														
SUF	138.11 342 ePKP	30	46.70	-7.8X														
	0.4s	1.00nm																
NUR	140.32 341 iPKP	30	51.80	-6.7X														
NB2	142.82 351 PKP	31	01.80	-1.1														
	1.0s	7.20nm																
HFS	143.28 349 ePKP	31	00.00	-3.7X														
	0.4s	21.40nm																
HRI	147.70 294 ePKP	31	17.00	5.0X														
DSI	148.14 291 ePKP	31	18.00	5.5X														
MBH	148.64 287 ePKP	31	19.00	5.6X														
EKA	149.26 4 PKPd	31	18.20	4.7X														
	0.6s	4.20nm																
DMU	150.33 8 ePKP	31	20.70	5.5X														
MLR	150.50 321 ePKP	31	22.00	6.1X														
DCN	150.82 9 ePKP	31	21.70	5.8X														
DLE	150.98 8 ePKP	31	22.10	6.0X														
KSP	150.98 338 iPKPc	31	23.00	6.7X														
CLL	151.57 343 iPKPc	31	24.10	7.0X														
	0.7s	23.00nm																
BRG	151.69 341 iPKP	31	24.60	7.3X														
	0.6s	24.00nm																
PRU	152.29 340 ePKP	31	25.90	7.8X														
KHC	153.34 340 ePKP	31	28.30	8.6X														
LKO	164.06 160 PKP	31	33.76	0.9														
	S.D. = 0.7	on	41	of	58	obs.												
* MAR 27, 1990 01h 13m 02.18±0.91s																		
38.980 N ± 8.6km 27.741 E ± 10.0km																		
DEPTH = 10.0km (geophysicist)																		
TURKEY (366)																		
IZM	0.69 213 iPg	13	14.80	-1.1														
	iSg	13	25.80															
DST	0.93 48 iPg	13	19.50	-0.5														
	iSg	13	33.50															
EDC	1.37 4 ePn	13	26.50	-0.8														
VANUATU ISLANDS (186)																		
DZM	6.86 187 iPd	24	08.00	-0.1														
	iS	25	19.00															
PMG	20.59 284 eP	27	01.00	1.8														
RMQ	20.67 234 iPd	27	01.50	1.5														
CTA	20.70 253 iPc	27	02.00	1.7														
	1.0s	50.00nm	4.9mb															
QIS	26.94 255 iPc	27	59.80	0.0														
WB5	31.79 257 iPd	28	41.20	-1.7														
	eScP	35	03.00															
WRA	31.82 257 Pc	28	42.00	-1.1														
	0.7s	10.60nm	4.7mb															
ASPA	32.61 250 iPd	28	48.90	-1.1														
	0.9s	90.00nm	5.5mb															
PMO	43.11 96 iP	30	18.10	0.3														
	1.3s	60.00nm	5.1mb															
VAH	43.34 96 iP	30	19.60	0.0														
	1.3s	70.00nm	5.2mb															
TPT	43.38 96 iP	30	20.00	0.0														
	1.3s	70.00nm	5.2mb															
RUV	43.58 96 iP	30	21.40	-0.2														
	1.3s	90.00nm	5.3mb															
COOL	44.98 241 eP	30	32.20	-0.5														
NWAO	48.59 239 eP	31	00.00	-0.9														
MUN	49.32 241 eP	31	06.10	-0.4														
NANU	49.41 253 eP	31	07.20	-0.1														
KKM	54.93 289 ePd	31	47.50	-1.1														
YKA	97.94 27 eP	35	48.20	-2.2														
	0.8s	0.70nm	4.2mb															
CDF	143.08 338 ePKP	41	45.30	-3.5X														
BSF	143.74 338 ePKP	41	47.20	-2.8X														
HAU	143.76 338 ePKP	41	47.30	-2.6X														
VAI	144.57 334 PKPc	41	49.80	-1.4														
TDS	144.89 319 PKP	41	53.00	1.0														
MGR	145.09 321 PKP	41	51.50	-0.9														
ORO	145.10 334 PKP	41	51.00	-1.3														
FLN	145.11 346 e																	



27d 02h

MAR 27, 1990 02h 53m 05.93 $\pm$  0.84s  
 51.731 N  $\pm$  5.1km 16.341 E  $\pm$  8.5km  
 DEPTH = 10.0km (geophysicist)  
 POLAND (548)  
 ML 3.7 (GRF), 3.7 (VKA), 3.4  
 (KBA).

KSP 0.89 182 iPd 53 22.80 -0.2  
 0.5s 141.00nm  
 iS 53 32.30  
 iLR 53 39.50  
 BRG 1.73 241 iPn 53 36.10 -0.1  
 iPg 53 37.50  
 iSg 53 57.10  
 PRU 2.08 214 Pn 53 41.30 0.0  
 Pg 53 43.20  
 Sn 53 57.70  
 Sg 54 06.00  
 CLL 2.13 260 iPn 53 42.00 0.0  
 iPg 53 46.00  
 iSg 54 11.90  
 KHC 3.15 215 Pn 53 56.20 -0.3  
 Pg 54 02.40  
 Sn 54 32.50  
 Sg 54 42.40  
 HOF 3.16 245 iPnc 53 56.50 -0.1  
 MOX 3.17 252 ePg 54 05.00 8.3X  
 iSg 54 45.00  
 WET 3.41 222 iPnc 54 00.30 0.1  
 VKA 3.47 180 iPnc 54 01.30 0.2  
 iPg 54 11.00  
 iSg 54 54.50  
 GRF 3.84 240 iPn 54 06.60 0.2  
 ePg 54 20.10  
 eSg 55 05.20  
 KBA 5.05 204 iPnc 54 23.40 -0.2  
 iSg 55 46.00  
 RBL 5.60 200 P 54 31.50 0.2  
 FVI 5.65 206 P 54 32.00 0.1  
 CTI 6.47 210 P 54 39.00 -4.7X  
 NRA0 9.41 345 Pn 55 24.40 0.0  
 Sn 57 06.00  
 Lg 58 13.60

S.D. = 0.2 on 13 of 15 obs.

MAR 27, 1990 03h 00m 20.88 $\pm$  0.38s  
 7.850 N  $\pm$  5.9km 126.961 E  $\pm$  8.5km  
 DEPTH = 45.0km ( 3 depth phases)  
 4.6mb ( 7 obs.) 4.3Msz ( 10 obs.)  
 MINDANAO, PHILIPPINE ISLANDS (259)

DAV 1.57 241 eP 00 49.20 2.5  
 OCP 8.88 320 eP 02 08.00 -21.5X  
 BAG 10.55 324 eP 02 58.90 6.2X  
 ANP 18.00 344 eP 04 28.00 -1.6  
 GUMO 18.49 71 eP 04 36.00 0.4  
 Z 18s 0.97um  
 eS 08 02.00  
 QZH 18.78 336 eP 04 40.00 0.9  
 Z 16s 1.20um  
 N 12s 0.50um  
 OIZ 19.99 305 eP 04 52.00 -0.6  
 N 17s 3.20um  
 sS 08 54.00  
 MTN 20.97 169 iPc 05 01.20 -1.5  
 KNA 23.52 176 eP 05 28.00 0.2  
 SSE 23.75 348 Pd 05 32.00 2.0  
 Z 20s 0.60um 4.1Msz  
 N 10s 0.50um  
 pP 05 44.00 48km  
 eS 10 10.00  
 NJ2 25.23 344 eP 05 47.00 2.7  
 Z 20s 0.30um 3.8Msz  
 SNG 26.13 270 eP 05 51.90 -0.8  
 NST 27.37 289 eP 06 05.80 1.7  
 WB5 28.50 165 eP 06 14.20 -0.1  
 WRA 28.56 165 P 06 14.00 -0.8  
 0.9s 2.70nm 3.9mb  
 KMI 28.80 309 eP 06 22.50 5.3X  
 Z 20s 1.50um 4.6Msz  
 E 15s 0.90um  
 pP 06 30.50 28kmX  
 CHTO 29.31 295 eP 06 22.10 0.4  
 1.0s 4.50nm 4.1mb  
 TIA 29.62 344 eP 06 22.70 -1.6  
 Z 19s 0.50um 4.2Msz  
 N 12s 0.30um

E 14s 0.60um  
 eS 11 16.30  
 OIS 30.85 156 eP 06 33.00 -2.2  
 CD2 31.57 320 eP 06 41.80 0.3  
 Z 21s 0.60um 4.2Msz  
 N 15s 1.20um  
 eS 11 53.20  
 ASPA 32.05 168 eP 06 47.20 1.4  
 0.8s 6.00nm 4.5mb  
 Z 19s 0.55um 4.2Msz  
 LR 23 56.30  
 TIY 32.51 338 eP 06 47.90 -1.8  
 Z 20s 1.00um 4.5Msz  
 N 13s 0.70um  
 BJI 33.47 345 eP 06 57.00 -0.9  
 Z 20s 0.42um 4.2Msz  
 eS 12 13.00  
 CTA 33.63 146 eP 06 55.00 -4.6X  
 SNY 33.97 355 Pc 07 02.10 -0.1  
 Z 20s 0.80um 4.4Msz  
 N 20s 0.90um  
 S 12 20.00  
 HHC 35.61 340 eP 07 15.20 -1.2  
 CN2 35.83 358 Pc 07 17.00 -1.1  
 4.0s 300.00nm 5.6mb X  
 Z 16s 0.60um 4.5MszX  
 N 13s 0.30um  
 E 13s 0.30um  
 pP 07 30.00 49km  
 PP 08 42.00  
 eS 12 54.00  
 eSS 15 22.00  
 MDJ 36.70 3 eP 07 26.50 1.2  
 Z 20s 0.90um 4.6Msz  
 epP 07 37.50 39km  
 eS 13 04.00  
 SS 15 30.00  
 MRWA 38.34 196 eP 07 39.40 0.1  
 GTA 39.75 326 eP 07 50.20 -1.0  
 Z 14s 0.50um 4.5MszX  
 BRS 43.04 145 iP 08 17.00 -1.1  
 GUN 43.61 303 P 08 22.20 -1.0  
 PKI 43.89 302 P 08 24.60 -0.9  
 KKN 44.07 302 P 08 26.20 -0.6  
 DMN 44.16 302 P 08 27.00 -0.5  
 GKN 44.68 302 P 08 30.60 -1.0  
 BWA 46.70 155 eP 08 48.70 1.4  
 CAN 47.71 155 eP 09 00.00 4.7X  
 HYB 48.07 286 eP 08 55.00 -3.3X  
 WMO 49.55 323 P 09 14.00 4.6X  
 MHI 67.25 306 eP 11 13.00 -0.3  
 KEV 86.12 340 eP 12 57.00 -1.1  
 INK 86.27 22 eP 13 01.00 2.2  
 SOD 86.77 338 eP 13 03.00 1.7  
 MBC 87.91 13 eP 13 08.00 1.4  
 0.9s 20.00nm 5.4mb  
 SUF 88.01 333 iP 13 06.60 -0.7  
 0.7s 8.70nm 5.1mb  
 NUR 89.23 331 eP 13 10.00 -3.2X  
 NB2 95.22 334 P 13 41.80 0.9  
 1.1s 3.50nm 4.7mb  
 YKA 95.67 24 eP 13 43.70 0.8  
 0.9s 1.60nm 4.5mb  
 ZOBO 163.05 121 ePKP 20 38.00 17.2X  
 eLR 17 44.00  
 S.D. = 1.3 on 41 of 50 obs.

MAR 27, 1990 03h 32m 12.46 $\pm$  0.27s  
 43.208 N  $\pm$  2.9km 0.641 W  $\pm$  3.4km  
 DEPTH = 14.1  $\pm$  2.2 km  
 PYRENEES (378)  
 mbLg 3.1 (MDD). ML 3.6 (LDG).  
 Felt (IV) at Born and Soule;  
 (II) at Pou, France.

OGE 0.13 108 Pg 32 17.16 1.1  
 ATE 0.13 201 Pg 32 15.48 -0.6  
 ESCF 0.14 160 Pg 32 15.59 -0.6  
 Sg 32 17.06  
 MADF 0.14 245 Pg 32 16.99 0.7  
 ISSF 0.21 212 Pg 32 16.75 -0.8  
 Sg 32 18.75  
 ELYF 0.26 262 Pg 32 19.14 0.9  
 JAU 0.26 130 Pg 32 18.04 -0.3  
 Sg 32 21.44  
 BOH 0.29 249 Pg 32 19.21 0.3  
 Sg 32 23.34

LHE 0.30 177 Pg 32 17.18 -1.8  
 Sg 32 19.55  
 BTH 0.33 105 iPg 32 19.80 0.3  
 EPF 0.74 104 Pg 32 27.00 0.4  
 Sg 32 37.20  
 ECR1 1.50 247 iPn 32 41.40 2.5  
 eSn 33 00.00  
 LPO 1.98 41 Pn 32 47.20 1.4  
 Pg 32 52.20  
 Sg 33 19.50  
 LFF 2.00 29 Pn 32 47.60 1.5  
 Pg 32 53.00  
 Sg 33 21.00  
 EROQ 2.51 161 ePn 32 55.00 1.6  
 eSn 33 21.00  
 EBR 2.53 160 ePn 32 58.00 4.3X  
 eS 33 29.00  
 eSg 33 33.00  
 CAF 2.60 48 Pn 32 55.00 0.2  
 Sn 33 26.00  
 Sg 33 39.40  
 RJF 2.61 36 Pn 32 56.00 1.2  
 Pg 33 03.90  
 Sg 33 39.00  
 ETOR 2.61 204 ePn 32 55.30 0.3  
 eSn 33 21.50  
 ETER 2.73 108 ePn 33 03.30 6.7X  
 eSn 33 37.00  
 LSF 3.41 26 Pn 33 05.50 -0.7  
 Sn 33 45.40  
 Sg 34 02.70  
 MFF 3.41 6 Pn 33 06.00 -0.2  
 Pg 33 18.50  
 Sn 33 45.20  
 Sg 34 01.50  
 LBL 3.45 53 Pn 33 06.77 0.0  
 PYM 3.64 45 Pn 33 09.60 -0.1  
 GUD 3.67 227 iPn 33 10.00 0.0  
 eSn 33 50.00  
 TCF 3.69 32 Pn 33 09.00 -1.2  
 Sn 33 51.80  
 Sg 34 13.00  
 MAF 3.78 36 Pn 33 11.20 -0.3  
 Sg 34 16.50  
 AGO 3.92 42 Pn 33 12.74 -0.7  
 PLDF 4.11 46 Pn 33 16.74 0.5  
 BGF 4.17 35 Pn 33 16.20 -0.8  
 Sg 34 28.30  
 SSB 4.26 59 Pn 33 18.25 -0.1  
 AVF 4.57 37 Pn 33 22.20 -0.4  
 Sn 34 13.80  
 Sg 34 40.20  
 SMF 4.68 41 Pn 33 23.90 -0.5  
 Sn 34 17.00  
 LPF 4.83 357 Pn 33 25.70 -0.7  
 Sn 34 20.50  
 SSF 4.84 36 Pn 33 26.00 -0.6  
 Sg 34 49.00  
 LBF 4.99 39 Pn 33 28.00 -0.7  
 Sg 34 54.00  
 LOR 5.16 36 Pn 33 31.00 0.0  
 Sg 34 58.00  
 GRR 5.18 358 Pn 33 30.20 -1.1  
 Sn 34 28.20  
 LDF 5.40 4 Pn 33 34.20 -0.2  
 Sn 34 33.00  
 FLN 5.56 1 Pn 33 35.50 -1.1  
 LPG 5.77 64 Pn 33 40.00 0.0  
 ASMO 6.31 203 iPd 33 47.50 0.2  
 ALOJ 6.64 205 eP 33 50.50 -1.6  
 APHE 6.67 202 eP 33 51.50 -1.0  
 DOU 7.77 26 P 34 11.20 3.5X  
 S.D. = 0.9 on 42 of 45 obs.

& MAR 27, 1990 03h 45m 45.90s  
 36.677 N 121.352 W  
 DEPTH = 2.0km  
 CENTRAL CALIFORNIA ( 39)  
 <BRK>. ML 2.6 (BRK).  
 SAO 0.12 320 iPc 45 48.20 0.0  
 LLA 0.33 100 iPc 45 52.80 0.2  
 iS 45 58.00  
 PRS 0.34 182 iPd 45 52.90 0.1  
 iS 45 58.00  
 GCC 0.63 304 ePc 45 57.70 -0.7  
 ARN 0.69 348 eP 45 59.40 -0.2



27d 03h

MHC 0.70 341 iPc 46 00.10 0.2  
 PRI 0.77 134 ePc 46 00.00 -0.5  
 PHAM 1.14 137 eP 46 06.70 -1.3  
 PCC 1.16 315 ePc 46 06.90 -1.5  
 FRI 1.36 76 ePc 46 10.70 -1.0  
 eS 46 28.10  
 CMB 1.56 29 eP 46 13.20 -1.6  
 eS 46 32.90  
 KVN 3.50 46 eP 46 49.00 6.4  
 12 obs. associated

? MAR 27, 1990 03h 56m 41.12 $\pm$ 1.92s  
 0.639 S  $\pm$ 19.4km 124.688 E  $\pm$ 20.1km  
 DEPTH = 105.9  $\pm$  26.3 km  
 4.7mb ( 2 obs.)  
 MOLUCCA SEA (269)

MNI 2.07 4 iPd 57 15.40 0.0  
 iS 57 46.00  
 WB5 21.34 154 iPc 01 21.10 -0.2  
 WRA 21.39 154 Pc 01 21.50 -0.3  
 0.8s 31.50nm 4.7mb  
 LAT 23.04 106 eP 01 38.00 0.0  
 ASPA 24.57 159 iPc 01 53.20 0.5  
 0.5s 14.00nm 4.7mb  
 OIS 24.59 145 iPd 01 46.50 -6.4X  
 HYB 48.83 294 eP 05 18.00 0.0  
 S.D. = 0.4 on 6 of 7 obs.

& MAR 27, 1990 04h 29m 31.93s  
 61.676 N 151.033 W  
 DEPTH = 71.7km  
 SOUTHERN ALASKA ( 2 )  
 <AGS-P>.

SUA 0.25 147 iP 29 43.13 -0.2  
 eS 29 52.17  
 SKT 0.39 323 iP 29 43.18 -0.9  
 eS 29 52.58  
 PWA 0.55 92 iP 29 45.09 -0.5  
 iS 29 56.55  
 CRP 0.68 233 eP 29 46.64 -0.5  
 eS 29 58.27  
 SPU 0.70 225 iP 29 46.66 -0.5  
 iS 29 58.60  
 BGL 0.77 238 eP 29 47.52 -0.6  
 eS 30 01.02  
 CKL 0.79 233 iP 29 47.59 -0.7  
 iS 30 00.26  
 CUT 0.82 26 iP 29 47.96 -0.5  
 eS 30 00.10  
 PMS 0.83 121 iP 29 47.91 -0.8  
 iS 30 01.14  
 PLRM 0.91 94 iP 29 48.53 -1.1  
 iS 30 02.54  
 NKA 0.94 186 eP 29 51.53 1.5  
 GH0 1.01 84 eP 29 50.05 -0.9  
 eS 30 04.87  
 SLKM 1.24 161 eP 29 53.10 -0.8  
 RDT 1.29 212 eP 29 54.12 -0.5  
 iS 30 12.07  
 SML 1.29 83 eP 29 53.48 -1.1  
 eS 30 10.63  
 HUR 1.46 26 eP 29 56.56 -0.3  
 eS 30 14.63  
 >NNL 1.64 185 eP 30 00.68 1.4  
 SEW 1.76 153 eP 30 01.66 0.8  
 KTH 1.88 2 eP 30 01.88 -0.8  
 RND 2.01 29 eP 30 04.04 -0.4  
 NCA 2.02 79 eP 30 03.40 -1.1  
 eS 30 29.08  
 GLI 2.06 111 eP 30 02.57 -2.5  
 eS 30 28.10  
 CNPM 2.16 183 eP 30 06.13 -0.3  
 VZW 2.24 104 eP 30 05.60 -2.0  
 eS 30 32.37  
 MCK 2.28 24 eP 30 08.47 0.4  
 TOA 2.34 77 eP 30 07.74 -1.2  
 PDB 2.45 221 eP 30 09.39 -1.0  
 KLU 2.45 92 eP 30 08.28 -2.2  
 iS 30 38.00  
 PAX 2.90 61 eP 30 15.82 -1.0  
 HDA 3.31 32 eP 30 21.80 -0.6  
 GLB 3.46 91 eP 30 22.26 -2.4  
 TGL 4.07 99 eP 30 32.85 -0.4  
 32 obs. associated

MAR 27, 1990 06h 48m 20.57 $\pm$ 0.97s  
 39.114 N  $\pm$  6.7km 21.896 E  $\pm$  9.4km  
 DEPTH = 10.0km (geophysicist)  
 GREECE (364)  
 ML 2.7 (THE). MD 2.9 (ATH).

EVR 0.21 199 ePg 48 25.20 0.0  
 AGG 0.35 105 iPgc 48 27.40 -0.4  
 iSg 48 33.10  
 NEO 1.05 79 ePb 48 41.30 0.9  
 LIT 1.09 25 ePbc 48 41.00 0.0  
 eSb 48 57.60  
 KZN 1.20 355 ePb 48 43.70 0.8  
 IGT 1.28 290 ePb 48 50.10 5.7X  
 PAIG 1.60 59 ePb 48 45.60 -3.4X  
 OHR 2.17 337 e(Pn) 49 09.00 11.8X  
 KNT 2.19 20 ePn 48 56.10 -1.4  
 S.D. = 1.1 on 6 of 9 obs.

& MAR 27, 1990 06h 53m 54.48s  
 58.624 N 142.750 W  
 DEPTH = 10.0km (geophysicist)  
 GULF OF ALASKA ( 15 )  
 <AGS-P>.

YAH 1.82 16 eP 54 21.52 -4.7  
 eS 54 41.49  
 PCA 1.95 40 eP 54 22.97 -5.1  
 eS 54 45.03  
 BCPM 2.08 49 eP 54 24.93 -4.9  
 eS 54 48.75  
 HQN 2.17 66 iP 54 25.87 -5.2  
 eS 54 51.15  
 KLU 3.29 332 eP 54 41.80 -5.3  
 HYT 3.45 48 P 54 45.00 -4.5  
 SLKM 4.24 300 eP 54 56.80 -3.8  
 SPU 5.34 303 eP 55 11.20 -5.0  
 8 obs. associated

MAR 27, 1990 07h 55m 05.31 $\pm$ 1.01s  
 0.893 S  $\pm$  5.9km 120.513 E  $\pm$  8.4km  
 DEPTH = 46.5  $\pm$  10.0 km  
 4.8mb ( 3 obs.) 4.4MsZ ( 1 obs.)  
 MINAHASSA PENINSULA (265)

BKB2 3.63 264 iPc 56 01.00 0.5  
 MKS 4.42 194 ePc 56 12.00 0.4  
 MNI 4.91 62 eP 56 25.50 7.0X  
 TSM 5.64 334 ePd 56 27.60 -1.2  
 KKM 8.12 328 ePc 57 01.00 -2.5X  
 OCP 15.44 2 eP 58 44.00 2.3  
 BAG 17.19 0 eP 59 03.00 -1.1  
 IPM 20.21 286 ePd 59 38.80 -0.4  
 WB5 23.24 145 eP 00 09.20 -0.3  
 WRA 23.27 145 Pd 00 09.70 -0.1  
 0.8s 23.90nm 4.7mb  
 ASPA 26.10 151 eP 00 35.80 -0.9  
 Z 23s 0.81um 4.2MsZ  
 LR 10 40.20  
 OIS 27.02 138 iPc 00 44.60 -0.6  
 GUMO 28.10 58 eP 01 09.00 14.0X  
 CHG 28.86 314 eP 01 03.10 1.3  
 LZH 39.93 339 eP 02 36.50 -0.5  
 1.5s 19.00nm 4.7mb  
 Z 28s 0.60um 4.3MsZ  
 pP 02 51.50 59kmX  
 BJI 40.93 355 eP 02 45.00 0.1  
 1.0s 36.00nm 5.1mb  
 Z 20s 0.54um 4.4MsZ  
 eS 09 00.00  
 BWA 42.34 145 eP 03 00.00 3.4X  
 CAN 43.32 145 eP 03 05.30 0.7  
 GUN 43.87 313 P 03 08.60 -1.0  
 PKI 44.03 313 P 03 10.80 0.0  
 KKN 44.24 313 P 03 12.60 0.2  
 DMN 44.27 313 P 03 12.80 0.1  
 GKN 44.83 313 P 03 17.10 0.0  
 HYB 45.15 296 eP 03 19.00 -0.6  
 MHI 67.53 310 eP 05 58.00 -1.3  
 PRNI 86.57 300 eP 07 46.50 1.1  
 MBH 86.64 300 eP 07 46.00 0.4  
 YKA 106.21 23 ePKP 13 38.60 12.8X  
 0.8s 0.80nm  
 KIC 125.12 277 PKP 14 09.00 5.6X  
 0.6s 4.00nm  
 ZOBO 160.93 154 ePKP 15 04.00 1.0  
 Z 20s 0.13um 4.5MsZ

e 15 49.00  
 LR 20 10.00  
 S.D. = 0.9 on 24 of 30 obs.

MAR 27, 1990 08h 37m 33.81 $\pm$ 0.46s  
 46.767 N  $\pm$  5.8km 10.159 E  $\pm$  3.8km  
 DEPTH = 5.5  $\pm$  4.4 km  
 NORTHERN ITALY (545)  
 ML 2.7 (KBA).

OSS 0.08 187 iPd 37 36.20 0.3  
 VDL 0.55 240 iPc 37 44.30 -0.6  
 OGA 0.60 80 iPgc 37 44.80 -1.1  
 LLS 0.80 278 ePc 37 48.40 -1.6  
 MDI 1.04 198 P 37 54.50 0.7  
 eSn 38 07.50  
 SCE 1.10 75 iPgc 37 53.20 -1.8  
 TMA 1.11 234 ePc 37 54.40 -0.7  
 CTI 1.26 124 P 37 57.10 -0.6  
 eSg 38 14.00  
 VAI 1.32 227 P 37 58.50 -0.1  
 eSg 38 18.00  
 ZLA 1.40 301 ePc 38 01.40 1.3  
 SLE 1.51 312 ePd 38 01.70 0.2  
 MMK 1.68 246 ePd 38 04.10 0.0  
 FVI 1.81 95 P 38 06.90 1.1  
 eSn 38 31.00  
 KBA 2.21 81 iPgc 38 13.50 1.8  
 iSg 38 41.80  
 i 38 45.20  
 RBL 2.37 97 P 38 16.50 2.5X  
 BSF 2.53 296 Pn 38 16.40 0.2  
 Pg 38 23.70  
 Sn 38 44.90  
 Sg 38 56.60  
 CDF 2.55 311 Pn 38 16.10 -0.5  
 Pg 38 22.60  
 Sn 38 44.80  
 Sg 38 50.00  
 LPG 2.69 243 Pn 38 22.00 3.3X  
 Sg 39 01.80  
 LPL 2.69 244 Pn 38 22.30 3.6X  
 Sg 39 02.60  
 HAU 2.87 297 Pn 38 21.40 0.4  
 Pg 38 28.50  
 Sn 38 50.20  
 Sg 39 05.30

S.D. = 1.1 on 17 of 20 obs.

MAR 27, 1990 08h 43m 27.80 $\pm$ 1.32s  
 43.397 N  $\pm$  8.0km 5.427 E  $\pm$  8.2km  
 DEPTH = 10.0km (geophysicist)  
 NEAR SOUTH COAST OF FRANCE (379)  
 MD 2.6 (STR).

BERF 0.21 114 Pg 43 32.54 0.1  
 TREF 0.23 352 Pg 43 32.16 -0.6  
 PUYF 0.24 56 Pg 43 32.11 -0.8  
 PRAF 0.45 335 Pg 43 37.30 0.4  
 VILF 0.50 25 Pg 43 37.54 -0.4  
 TAVF 0.51 64 Pg 43 37.76 -0.4  
 GANF 0.69 30 Pg 43 41.18 -0.4  
 CALN 1.12 71 Pg 43 49.48 0.6  
 Sg 44 05.95  
 MVIF 1.35 68 Pn 43 53.06 0.3  
 Sg 44 12.88  
 REVF 1.45 76 Pn 43 53.77 -0.3  
 TOUF 1.46 64 Pn 43 54.47 0.1  
 AURF 1.46 70 Pn 43 54.53 0.2  
 AUTN 1.57 67 Pn 43 56.31 0.3  
 SAOF 1.65 68 Pn 43 57.11 0.1  
 DOI 1.72 49 P 43 59.80 1.8  
 eSg 44 21.60  
 PGF 2.76 107 Pn 44 11.87 -1.1  
 S.D. = 0.7 on 16 of 16 obs.

? MAR 27, 1990 08h 54m 01.58 $\pm$ 0.98s  
 39.071 N  $\pm$  9.2km 27.635 E  $\pm$  16.6km  
 DEPTH = 10.0km (geophysicist)  
 TURKEY (366)

Izm 0.73 204 ePg 54 16.00 0.0  
 eSg 54 28.00  
 DST 0.94 55 iPn 54 19.50 0.0  
 EDC 1.29 8 iPn 54 25.50 0.1  
 BNT 1.30 10 iPn 54 25.60 -0.1  
 S.D. = 0.1 on 4 of 4 obs.



? MAR 27, 1990 08h 55m 27.88±0.99s  
39.121 N ± 8.9km 27.619 E ± 16.2km  
DEPTH = 10.0km (geophysicist)  
TURKEY (366)

IZM 0.77 201 ePg 55 43.00 0.0  
eSg 55 54.00  
DST 0.92 58 ePn 55 45.50 0.0  
EDC 1.24 9 iPn 55 51.00 0.1  
BNT 1.26 11 iPn 55 51.10 -0.1  
S.D. = 0.2 on 4 of 4 obs.

? MAR 27, 1990 09h 01m 30.76±0.92s  
42.710 N ± 6.1km 12.793 E ± 16.6km  
DEPTH = 10.0km (geophysicist)  
CENTRAL ITALY (381)

MNS 0.34 194 Pd 01 37.50 -0.2  
eSg 01 43.50  
ASS 0.37 345 P 01 39.00 0.6  
eSg 01 45.20  
ARV 0.80 8 P 01 45.60 -0.6  
eSg 01 58.10  
SDI 1.26 143 P 01 54.50 0.3  
eSg 02 11.50  
S.D. = 0.9 on 4 of 4 obs.

& MAR 27, 1990 09h 40m 42.08s  
64.539 N 152.308 W  
DEPTH = 58.9km  
3.5mb (2 obs.)  
CENTRAL ALASKA (1)  
<AGS-P>

KTH 1.16 148 iP 41 01.91 -0.6  
NEA 1.40 87 eP 41 05.20 -0.4  
eS 41 23.47  
IMA 1.64 340 iPd 41 09.10 0.0  
MCK 1.69 117 eP 41 09.76 0.1  
eS 41 32.30  
RDS 1.81 79 eP 41 10.91 -0.5  
WRH 1.83 90 iP 41 10.99 -0.6  
RND 1.90 125 eP 41 12.79 0.0  
CCB 1.95 85 iP 41 12.58 -0.7  
HUR 1.97 142 iP 41 14.38 0.8  
eS 41 40.04  
FBA 1.97 77 iPc 41 13.10 -0.5  
GLM 2.16 76 iP 41 15.70 -0.6  
eS 41 43.57  
TTA 2.31 227 eP 41 17.00 -1.4  
HDA 2.32 91 eP 41 17.64 -0.9  
CUT 2.33 156 iP 41 19.41 0.8  
SKT 2.59 172 iP 41 22.28 -0.1  
eS 41 54.65  
DMW 2.91 97 eP 41 27.17 0.3  
DDM 2.92 102 eP 41 26.46 -0.7  
PWA 3.10 158 eP 41 29.20 -0.4  
SUA 3.17 166 iP 41 30.26 -0.4  
GHO 3.17 150 iP 41 30.66 -0.1  
SML 3.28 145 iP 41 31.81 -0.4  
CRP 3.29 179 iP 41 32.24 -0.1  
BGL 3.29 181 iP 41 32.13 -0.2  
PLRM 3.29 153 iP 41 32.24 0.0  
PMR 3.29 153 eP 41 32.20 -0.1  
CKL 3.36 180 iP 41 33.14 -0.2  
SPU 3.37 178 iP 41 33.21 -0.3  
PAX 3.42 114 eP 41 35.06 0.8  
PMS 3.54 158 eP 41 36.00 0.2  
NCA 3.56 133 eP 41 36.24 0.2  
FYU 3.58 52 eP 41 35.11 -1.1  
SDG 3.64 121 eP 41 38.28 1.1  
TOA 3.69 129 eP 41 38.80 0.8  
SVW 3.76 205 iPc 41 37.30 -1.7  
NKA 3.84 172 eP 41 41.81 1.8  
RDT 3.98 181 eP 41 41.41 -0.6  
RED 4.14 183 eP 41 43.22 -1.1  
SLKM 4.16 166 eP 41 44.35 -0.2  
KLU 4.22 134 eP 41 46.11 0.7  
VZW 4.38 140 eP 41 47.77 0.2  
GLI 4.39 144 iP 41 47.84 0.2  
NNL 4.54 174 eP 41 50.89 1.1  
SEW 4.65 162 eP 41 51.98 0.7  
PDB 4.85 191 eP 41 52.21 -2.0  
GLB 4.97 125 eP 41 56.73 0.8  
CNPM 5.06 174 eP 41 57.29 0.1  
DWY 5.63 89 P 42 03.60 -1.5

CDD 5.67 187 eP 42 04.95 -0.7  
TGL 5.79 127 eP 42 07.08 -0.3  
PCA 7.16 123 eP 42 27.68 1.1  
HYT 7.76 112 P 42 36.00 1.2  
INK 8.41 55 P 42 41.00 -2.6  
MBC 15.77 29 eP 44 21.50 0.1  
1.0s 5.00nm 3.6mb  
YKA 16.77 80 eP 44 38.20 4.1  
0.6s 2.00nm 3.5mb  
EDM 22.69 101 eP 45 43.00 3.9  
55 obs. associated

MAR 27, 1990 10h 41m 09.11±0.54s  
43.211 N ± 5.9km 0.652 W ± 6.2km  
DEPTH = 10.0km (geophysicist)  
PYRENEES (378)  
ML 3.2 (LDG). mblg 3.2 (MDD).  
Felt (IV) at Oloron Sainte  
Marie, France. Also felt in the  
Aspe Valley, France.

BTH 0.34 105 iPg 41 16.40 0.3  
i(S) 41 21.00  
(Sg) 41 23.00  
(Lg) 41 28.00  
EPF 0.75 104 Pg 41 23.60 -0.2  
Sg 41 34.00  
ECRI 1.49 247 iP 41 37.50 1.5  
eS 41 57.50  
LPD 1.98 41 Pn 41 43.70 0.7  
Pg 41 48.20  
Sg 42 16.30  
LFF 2.00 30 Pg 41 48.80 5.5X  
Sg 42 17.70  
EROO 2.51 161 eP 41 58.80 8.1X  
eS 42 26.80  
CAF 2.60 48 Pn 41 52.60 0.6  
ETOR 2.61 204 eP 41 51.40 -0.7  
eS 42 21.60  
RJF 2.61 36 Pn 41 53.20 1.2  
Sg 42 35.00  
MFF 3.41 6 Pn 42 02.60 -0.8  
Pg 42 16.00  
LSF 3.41 26 Pn 42 03.60 0.2  
Sn 42 41.60  
Sg 42 59.20  
GUD 3.66 227 eP 42 06.50 -0.6  
eS 42 48.00  
TCF 3.69 33 Pn 42 06.10 -1.3  
Sg 43 09.20  
MAF 3.78 36 Pn 42 09.00 0.3  
Sg 43 12.30  
BGF 4.17 35 Pn 42 13.20 -0.9  
Sg 43 22.20  
S.D. = 0.9 on 13 of 15 obs.

MAR 27, 1990 14h 27m 21.61±1.18s  
6.675 S ± 7.6km 154.849 E ± 7.7km  
DEPTH = 92.4 ± 11.1 km  
4.6mb (6 obs.)  
SOLOMON ISLANDS (193)

RAB 3.63 313 e(P) 28 16.00 -0.8  
iS 29 14.00  
HNR 5.74 119 eP 28 48.00 2.0  
eS 29 36.00  
LAT 7.80 270 eP 29 07.00 -7.3X  
PMG 8.09 250 eP 29 18.00 -0.3  
eS 30 42.00  
CTA 15.73 211 iP 30 59.50 0.3  
DZM 18.96 145 iPc 31 36.00 -2.6  
QIS 20.22 225 eP 31 51.00 -0.6  
i 31 54.60  
RMO 20.54 196 eP 31 55.00 0.1  
WB5 23.83 235 eP 32 29.10 1.8  
ePcP 36 10.90  
WRA 23.88 235 Pc 32 29.10 1.3  
0.5s 4.60nm 4.2mb  
ASPA 26.28 228 eP 32 48.00 -2.3  
0.6s 6.00nm 4.3mb  
Z 22s 0.14um 3.5mszx  
LR 41 55.80  
BWA 28.25 191 eP 33 06.30 -1.7  
IPM 54.88 280 ePd 36 46.00 0.8  
LOE 57.67 295 iPc 37 05.00 0.0  
XAN 59.38 316 P 37 15.40 -1.3  
CHG 60.63 296 eP 37 26.70 1.2

CHTO 60.63 296 iP 37 26.00 0.5  
0.9s 13.85nm 5.0mb  
CD2 61.50 310 eP 37 30.00 -0.3  
GTA 68.41 317 eP 38 15.60 -0.2  
GUN 74.83 301 P 38 54.70 0.2  
PKI 75.14 301 P 38 56.20 -0.1  
KKK 75.31 301 P 38 57.40 0.3  
DMN 75.41 301 P 38 58.70 0.4  
GKN 75.91 301 P 39 00.00 0.4  
HYB 79.03 289 eP 39 18.00 0.4  
FBA 82.87 21 eP 39 35.00 -1.1  
SPA 83.37 180 eP 39 41.00 1.4  
0.8s 7.92nm 4.7mb  
KVN 91.87 51 eP 40 21.10 0.0  
TNP 92.44 52 eP 40 24.10 0.3  
0.9s 2.34nm 4.5mb  
YKA 96.12 28 eP 40 38.60 -1.2  
0.8s 3.40nm 4.9mb  
BAO 148.33 135 ePKP 46 57.40 1.2  
S.D. = 1.2 on 30 of 31 obs.

MAR 27, 1990 14h 52m 19.54±0.63s  
9.540 N ± 6.1km 84.755 W ± 4.6km  
DEPTH = 35.5 ± 4.3 km  
4.9mb (27 obs.)  
COSTA RICA (78)  
Felt in the San Jose area.

CAO 0.38 295 iPd 52 27.00 -1.5  
PTCR 0.41 53 iPd 52 28.30 -0.7  
EPA 0.47 19 iPd 52 29.40 -0.3  
OPS 0.63 102 iPd 52 30.90 -1.0  
LCR2 0.77 75 iPd 52 34.00 -0.1  
SJS 0.80 60 iP 52 35.00 0.5  
POA2 0.80 38 iPd 52 36.00 1.3  
OCM 0.86 66 iPd 52 35.30 -0.1  
AR6 0.91 350 iPd 52 37.10 1.1  
IRZ2 0.95 63 iPd 52 37.50 0.7  
CDM 0.98 89 ePd 52 37.00 -0.3  
BUS 0.98 89 iPc 52 37.60 0.2  
JUD 1.00 308 iPd 52 37.10 -0.2  
VTU 1.09 64 iPd 52 39.70 0.8  
VCR 1.26 62 iPc 52 37.50 -3.6X  
RIN3 1.39 334 ePc 52 44.50 1.5  
LIO 1.76 75 iP 52 50.10 2.0  
ACR 1.80 119 eP 52 48.20 -0.5  
PBC 2.03 123 eP 52 50.70 -1.4  
UPA 5.18 96 iPc 53 36.40 -0.4  
0.8s 64.18nm 5.1mb  
PRM 24.53 5 P 57 37.70 0.6  
JSC 24.83 7 P 57 40.20 0.2  
LHS 25.08 8 P 57 42.80 0.4  
PWLA 25.50 354 P 57 46.00 -0.3  
RSCP 25.95 358 P 57 50.00 -0.6  
1.0s 181.67nm 5.6mb  
GBTN 26.01 1 P 57 50.00 -1.1  
TKL 26.01 2 P 57 50.50 -0.6  
OLY 26.56 348 P 57 55.20 -0.9  
POW 27.13 349 P 58 00.70 -0.6  
NAV 27.88 7 P 58 08.70 0.5  
CVL 28.88 10 P 58 16.50 -0.6  
NA2 29.15 11 P 58 19.20 -0.4  
ZOBO 30.47 147 P 58 32.00 -0.2  
Z 24s 9.82um 5.4mszx  
S 03 48.00  
LR 10 34.00  
ALO 32.14 325 eP 58 45.20 -1.1  
0.9s 4.20nm 4.3mb  
ANMO 32.14 325 P 58 45.70 -0.6  
1.1s 7.91nm 4.5mb  
GLA 36.27 315 eP 59 24.00 2.4  
TPC 37.70 315 eP 59 35.00 1.4  
PLM 37.87 314 eP 59 38.00 2.7X  
RVR 38.57 314 eP 59 42.00 1.1  
GSC 38.87 316 eP 59 47.00 3.5X  
SBB 39.25 315 eP 59 55.00 8.4X  
ISA 40.21 316 eP 59 56.00 1.4  
FRI 41.76 316 e(P) 00 03.00 -4.2X  
KVN 41.85 320 P 00 09.10 1.1  
RSON 41.85 352 P 00 05.10 -2.6  
1.2s 29.15nm 4.9mb  
PRS 42.57 315 eP 00 01.50 -12.4X  
CMB 42.77 317 eP 00 17.80 2.3  
LRM 43.25 332 eP 00 17.00 -2.5  
BAO 44.18 124 eP 00 28.30 1.1  
ORV 44.32 319 eP 00 30.80 2.8X  
EDM 49.28 338 eP 01 05.50 -1.4



FR8	55.34	9 eP	01 49.00	-2.9X	KAGJ	1.80 345 iP+	35 55.40	0.5	IHA	1.23 176 eP	26 16.00	0.5
YKA	57.11	344 eP	02 01.10	-3.6X		S	36 16.70			iS	26 35.80	
	0.5s	0.70nm		4.0mb	SSE	9.01 283 Pc	37 36.00	-0.5	ROCH	1.33 152 iPc	26 16.50	-0.7
INK	66.76	342 eP	03 08.00	-1.2	Z	12s	0.50um			iS	26 35.00	
MBC	69.26	352 eP	03 23.00	-1.6	E	12s	0.40um		LCCH	1.68 175 iPc	26 22.10	0.0
	1.4s	13.00nm		4.8mb	MAT	9.08 37 (P)	37 37.00	-0.4		iS	26 42.50	
MAL	76.65	54 eP	04 17.00	8.2X	WHN	14.85 278 eP	39 01.00	6.1X	SAN	1.89 151 ePc	26 25.70	0.5
TOL	76.84	51 eP	04 10.00	0.2	CN2	15.11 343 iPc	39 04.60	6.4X		iS	26 50.50	
AAPN	76.86	54 iPc	04 11.30	1.2	Z	14s	0.60um			i	26 51.40	
ALOJ	76.88	54 iPc	04 12.20	1.9	BJI	16.38 314 eP	39 16.00	1.4	FCH	1.96 142 iPd	26 26.50	0.0
ATEJ	76.96	54 iPc	04 12.50	1.8	Z	14s	0.59um			iS	26 52.50	
ASMO	77.16	54 iPd	04 13.00	1.2	N	12s	0.58um		TACH	1.97 160 iPd	26 26.60	0.2
APHE	77.22	54 iPd	04 13.40	1.3	TIY	17.83 303 eP	39 33.50	0.6		iS	26 52.00	
LKO	77.88	82 P	04 16.40	0.4	Z	12s	0.70um		PCH	2.10 151 iPd	26 28.20	0.0
	1.1s	38.50nm		5.4mb	XAN	19.68 289 P	39 52.40	-2.6		iS	26 56.00	
LPF	78.78	43 eP	04 19.70	-0.6	BTO	20.72 308 eP	40 05.10	-0.7	LNv	2.17 173 iPd	26 28.50	-0.6
	0.9s	9.85nm		4.8mb	GYA	22.07 268 P	40 21.00	1.3		i	26 54.10	
TIC	78.84	85 P	04 21.70	0.4	CD2	23.95 280 eP	40 38.10	0.2		i	27 03.20	
GRR	78.89	42 eP	04 20.50	-0.4	WB5	49.12 176 eP	44 11.80	-0.3	CHCH	2.32 157 iPc	26 31.40	0.1
	0.9s	16.40nm		5.0mb	WRA	49.18 176 Pc	44 12.70	0.1		iS	27 02.80	
LIC	78.89	85 P	04 22.18	0.6		0.9s	3.20nm	4.4mb	RTRS	2.54 51 ePc	26 34.50	0.1
	0.9s	19.50nm		5.1mb	MBL	51.54 194 iPc	44 30.90	0.3	ZON	2.63 85 iPd	26 36.00	0.3
KIC	79.16	85 P	04 23.61	0.6		0.5s	9.00nm	5.0mb	RTLL	2.83 81 ePc	26 38.10	-0.5
	0.9s	10.50nm		4.8mb	MBC	66.03 14 eP	46 10.50	-0.3	CFA	2.99 87 iPd	26 41.00	0.1
MFF	79.45	44 eP	04 23.40	-0.6		0.6s	3.00nm	4.6mb	S.D. = 0.4 on 13 of 13 obs.			
	0.9s	9.85nm		4.8mb	SUF	70.85 332 eP	46 41.20	0.4	* MAR 27, 1990 16h 27m 33.30±1.84s			
EPF	79.99	48 eP	04 27.10	0.1	DAG	72.45 353 eP	46 49.30	-0.9	31.840 S ± 9.5km 71.603 W ± 19.3km			
	1.0s	14.00nm		4.9mb	YKA	74.41 26 eP	47 01.70	-0.1	DEPTH = 10.0km (geophysicist)			
LFF	80.16	46 eP	04 27.50	-0.3		0.8s	2.40nm	4.2mb	NEAR COAST OF CENTRAL CHILE (135)			
	1.1s	19.55nm		5.0mb	HFS	77.28 333 eP	47 17.50	-0.6	ROCH	1.23 156 iP	27 55.70	-0.7
RJF	80.68	46 eP	04 30.20	-0.4		0.5s	3.60nm	4.7mb		iS	28 14.00	
	1.1s	24.40nm		5.1mb	NB2	77.67 335 P	47 19.20	-1.1	LCCH	1.63 179 iPc	28 02.50	0.4
TCF	81.09	45 eP	04 32.00	-0.8		0.7s	3.70nm	4.5mb		iS	28 21.50	
	1.0s	10.00nm		4.8mb	CLL	83.10 326 iPd	47 50.40	1.1	FCH	1.85 144 iP	28 06.00	0.3
CAF	81.10	46 eP	04 32.30	-0.5		1.1s	12.00nm	4.9mb		iS	28 31.00	
	1.1s	18.30nm		5.0mb	PRU	83.17 325 eP	47 48.20	-1.5	TACH	1.89 163 iP	28 05.90	-0.1
MAF	81.34	45 eP	04 33.30	-0.8	KHC	84.20 324 eP	47 57.00	2.0		iS	28 30.00	
	1.1s	14.65nm		4.9mb	FRB	85.79 9 eP	48 02.50	0.0	PCH	2.00 153 iP	28 07.50	-0.1
AVF	81.84	44 eP	04 35.50	-1.1	KVN	86.02 47 eP	48 05.50	1.0		iS	28 35.50	
	1.0s	10.00nm		4.8mb	S.D. = 1.1 on 23 of 25 obs.				LNv	2.12 176 iP	28 09.00	-0.1
SSF	81.92	44 eP	04 36.00	-1.0	& MAR 27, 1990 16h 21m 29.66s					iS	28 38.50	
LOR	82.14	43 eP	04 37.10	-1.1	63.281 N 151.212 W				CHCH	2.24 159 iP	28 11.20	0.2
SMF	82.18	44 eP	04 37.30	-1.1	DEPTH = 5.7km					iS	28 40.40	
	1.0s	10.00nm		4.8mb	CENTRAL ALASKA ( 1)				RTRS	2.48 48 iPc	28 14.00	-0.4
HAU	83.73	42 eP	04 45.70	-0.7	<AGS-P>.				RTLL	2.72 80 e(P)	28 18.30	0.4
RUP	83.98	41 eP	04 47.47	-0.1	KTH	0.30 25 iP	21 35.49	-0.3		eS	28 56.50	
BSF	84.05	43 eP	04 47.50	-0.6		iS	21 40.15		S.D. = 0.4 on 9 of 9 obs.			
	1.0s	10.00nm		4.9mb	HUR	0.78 112 eP	21 44.55	-0.7	MAR 27, 1990 16h 37m 13.15±0.41s			
ABH	84.27	41 eP	04 49.01	0.0		eS	21 55.07		45.491 N ± 3.5km 9.779 E ± 4.2km			
CDF	84.29	42 eP	04 48.70	-0.6	CUT	0.98 153 iP	21 48.47	-0.2	DEPTH = 10.0km (geophysicist)			
	1.0s	12.00nm		5.0mb		eS	22 03.82		NORTHERN ITALY (545)			
NB2	84.61	29 P	04 54.70	4.2X	RND	1.07 82 iP	21 49.32	-1.0	ML 3.1 (LDG), 3.0 (KBA).			
	1.6s	16.50nm		5.0mb		iS	22 03.75		MDI	0.29 351 P	37 21.00	1.8
FEL	84.85	42 eP	04 51.75	-0.4	MCK	1.12 65 eP	21 50.26	-0.8		eSg	37 25.00	
HFS	85.99	30 eP	04 56.50	-0.8		eS	22 05.26		SAL	0.54 77 P	37 23.70	-0.3
	0.6s	1.40nm		4.4mb	SKT	1.31 187 iP	21 53.74	-0.6		eSg	37 31.00	
MOX	86.72	39 eP	05 02.00	0.8		eS	22 10.84		BOB	0.76 198 Pd	37 29.00	0.9
CLL	87.44	39 iP	05 04.90	0.3	NEA	1.61 35 eP	21 59.11	0.4		eSg	37 41.60	
	1.5s	34.00nm		5.4mb		eS	22 19.60		VAI	0.80 298 P	37 29.70	1.0
BRG	88.12	39 iP	05 08.40	0.5	PWA	1.75 159 iP	22 00.53	-0.2		eSg	37 41.70	
	1.1s	31.00nm		5.5mb	WRH	1.83 48 eP	22 02.40	0.5	TMA	0.88 314 ePc	37 31.10	0.9
PRU	88.69	40 eP	05 10.20	-0.4		iS	22 26.72		VDL	1.02 348 ePc	37 33.40	0.8
KRA	92.03	39 eP	05 22.00	-4.1X	SUA	1.84 173 eP	22 01.74	-0.4	OSS	1.22 12 ePd	37 36.40	0.4
		e	05 27.00		GHO	1.85 144 eP	22 01.15	-1.1	ORO	1.27 277 P	37 38.50	1.7
		e	05 33.00		PLRM	1.95 149 eP	22 02.86	-0.8	ORX	1.27 277 P	37 50.38	13.6X
BJI	127.00	340 ePKP	11 22.00	0.2	SML	1.99 137 eP	22 03.15	-1.2		S	37 54.07	
HHC	127.65	344 ePKP	11 25.00	1.7	CCB	2.03 46 eP	22 05.64	0.8	PCP	1.29 223 P	37 37.17	0.1
TIY	130.32	342 PKPc	11 36.40	8.0X	RDS	2.06 40 eP	22 06.92	1.7		S	37 55.46	
ASPA	140.53	244 ePKP	11 48.70	0.8	BGL	2.10 196 eP	22 05.53	-0.4	MMK	1.39 294 ePc	37 38.70	-0.1
	1.2s	6.00nm			SPU	2.14 191 eP	22 05.89	-0.6	CTI	1.42 66 Pc	37 38.00	-1.1
WB5	140.88	250 ePKP	11 41.20	-7.4X	PMS	2.19 159 eP	22 06.98	-0.1		eSn	37 54.50	
WRA	140.89	250 PKPd	11 42.30	-6.3X	HDA	2.20 57 eP	22 07.09	-0.2	LLS	1.48 339 ePc	37 40.90	0.9
	0.9s	2.40nm			FBA	2.21 41 eP	22 08.84	1.4	CKI	1.51 225 P	37 40.20	0.0
GYA	142.54	343 ePKP	11 56.80	5.3X	GLM	2.40 43 eP	22 11.14	1.0		eSn	38 00.20	
KMI	144.78	348 ePKP	11 56.50	1.0	RDT	2.78 192 eP	22 15.53	0.0	BDI	1.54 158 P	37 41.00	0.2
QIZ	148.17	333 ePKP	12 05.70	4.9X	SLKM	2.82 170 eP	22 15.74	-0.5		eSg	38 00.60	
HYB	148.54	32 ePKP	12 05.00	3.5X	RED	2.97 195 eP	22 19.41	1.2	OGA	1.63 32 ePn	37 43.50	1.4
CHG	151.59	353 ePKP	12 12.90	6.8X	KLU	3.05 124 iP	22 19.69	0.3	FIN	1.70 222 P	37 45.06	2.0
KOD	153.57	42 ePKP	12 18.80	9.4X	25 obs. associated					S	38 05.61	
S.D. = 1.0 on 84 of 104 obs.					* MAR 27, 1990 16h 25m 54.51±1.82s							
MAR 27, 1990 15h 35m 25.69±0.52s					31.795 S ± 9.8km 71.746 W ± 16.8km							
29.445 N ± 8.0km 131.436 E ± 8.0km					DEPTH = 31.9 ± 4.5 km							
DEPTH = 33.0km (normol)					NEAR COAST OF CENTRAL CHILE (135)							
4.6mb ( 7 obs.)												
RYUKYU ISLANDS REGION (239)												



27d 16h

LSD	1.85	270	P	37	48.04	2.7X
PII	1.85	163	P	37	46.50	1.4
			eSn	38	07.50	
EMS	2.08	287	ePc	37	49.50	0.9
IMI	2.08	221	P	37	47.42	-1.1
ENR	2.10	234	P	37	48.53	-0.4
LPG	2.13	271	Pn	37	49.40	-0.1
			Sn	38	14.40	
PZZ	2.14	244	P	37	50.38	0.9
LPL	2.14	272	Pn	37	49.70	0.1
			Sn	38	15.30	
STV	2.14	235	P	37	49.15	-0.4
RRL	2.19	256	P	37	51.92	1.5
SBF	2.33	227	Pn	37	51.70	-0.5
FVI	2.36	61	P	37	51.00	-1.5
SLE	2.44	339	ePd	37	58.20	4.5X
KBA	2.94	56	iPnc	38	06.40	5.5X
			i	38	16.20	
			i	38	38.40	
			i	38	44.00	
			i (Sg)	38	46.40	
FRF	2.96	230	Pn	37	59.80	-1.2
PGF	2.99	191	Pn	38	01.00	-0.6
			Sn	38	35.60	
BSF	3.12	320	Pn	38	02.50	-0.8
			Sn	38	36.40	
LMR	3.18	229	Pn	38	02.60	-1.6
CDF	3.39	331	Pn	38	05.40	-1.8
HAU	3.45	318	Pn	38	06.50	-1.5
			Sn	38	45.20	
VBY	3.85	88	eP	38	51.70	38.0X
			eSn	39	18.70	
SMF	4.29	288	Pn	38	18.60	-1.4
LBF	4.29	292	Pn	38	18.60	-1.5
			Sn	39	06.70	
KHC	4.47	34	ePg	38	30.50	8.1X
			e	39	09.00	
			Sg	39	30.00	
LOR	4.47	296	Pn	38	20.00	-2.4X
			Sn	39	10.50	
AVF	4.65	289	Pn	38	23.00	-2.1
BGF	4.95	285	Pn	38	27.60	-1.6

S.D. = 1.2 on 39 of 47 obs.

\* MAR 27, 1990 17h 04m 43.29±0.55s  
 6.041 S ± 9.3km 127.817 E ± 17.5km  
 DEPTH = 423.6 ± 11.2 km  
 4.8mb ( 3 obs.)

BANDA SEA (280)

AAI	2.37	9	eP	05	44.20	0.0
SLKI	3.96	119	iPc	05	57.00	0.0
MTN	7.51	154	iPc	06	34.20	0.2
	0.4s	40.00nm			5.0mb	
			eS	07	59.00	
WB5	15.16	156	iPc	07	58.00	-0.5
			eS	10	37.00	
WRA	15.20	156	Pc	07	58.40	-0.6
	0.2s	2.90nm			4.4mb	
MBL	16.90	206	eP	08	15.40	-0.9
ASPA	18.48	162	iPc	08	33.20	1.2
	0.4s	16.00nm			4.8mb	
			iS	11	41.20	
NANU	20.26	215	iPd	08	50.00	0.8
GUN	52.70	312	PKP	13	19.20	0.0
PKI	52.86	311	PKP	13	24.10	3.7X
KKN	53.08	311	PKP	13	21.90	0.1
DMN	53.11	311	PKP	13	21.80	-0.3
GKN	53.67	311	PKP	13	26.10	0.1

S.D. = 0.7 on 12 of 13 obs.

% MAR 27, 1990 17h 50m 47.49±0.64s  
 44.810 N ± 5.0km 7.634 E ± 5.9km  
 DEPTH = 10.0km (geophysicist)

NORTHERN ITALY (545)  
ML 2.4 (GEN).

RSP	0.43	322	P	50	57.60	1.2
			S	51	03.24	
PZZ	0.49	231	P	50	57.19	-0.2
			S	51	02.52	
ROB	0.54	162	P	50	59.24	0.8
			S	51	07.03	
ENR	0.60	195	P	50	59.14	-0.6
			S	51	06.93	
STV	0.61	201	P	50	59.04	-0.8

RRL	0.61	281	P	51	06.62	0.0
			S	51	08.06	
PCP	0.70	112	P	51	01.29	-0.1
			S	51	10.11	
FIN	0.73	145	P	51	02.62	0.8
			S	51	11.85	
ORX	0.86	17	P	51	02.83	-1.3
			S	51	12.47	

S.D. = 0.9 on 9 of 9 obs.

MAR 27, 1990 19h 16m 02.46±0.61s  
 44.483 N ± 4.4km 13.215 E ± 5.8km  
 DEPTH = 10.0km (geophysicist)  
 ADRIATIC SEA (382)  
 ML 2.8 (KBA). MD 2.8 (TRI).

ARV	1.00	191	P	16	20.80	-0.7
			eSg	16	34.80	
SFI	1.13	241	P	16	25.50	1.9
RIY	1.20	44	e(Pg)	16	24.60	-0.1
			iSg	16	37.80	
PGD	1.23	241	P	16	28.10	2.6X
CRE	1.25	227	P	16	27.00	1.3
TRI	1.29	17	ePg	16	26.20	-0.1
			iSg	16	42.60	
ASS	1.47	196	P	16	28.20	-0.8
			eSn	16	47.00	
VBY	1.77	54	ePn	16	37.40	4.1X
			eSn	16	59.10	
CTI	1.92	325	P	16	37.80	2.3X
			eSn	17	03.00	
FVI	2.13	352	P	16	40.00	1.5
			eSn	17	10.00	
PTJ	2.40	53	eP	16	48.60	6.1X
KBA	2.60	2	iPnc	16	45.60	0.2
			iPg	16	55.00	
			iSg	17	18.40	
PGF	3.63	239	Pn	16	59.60	-0.3
			Sn	17	41.40	
SBF	4.20	264	Pn	17	08.60	0.5
LPG	4.70	285	Pn	17	14.40	-0.9
LPL	4.71	285	Pn	17	14.60	-0.9
FRF	4.83	261	Pn	17	17.10	0.2
LMR	4.98	259	Pn	17	19.40	0.4
CDF	5.68	316	Pn	17	29.60	0.6
HAU	5.92	309	Pn	17	33.00	0.7
			Sn	18	40.00	
SMF	6.93	291	Pn	17	46.00	-0.5
LBF	6.93	294	Pn	17	45.80	-0.8
LOR	7.10	296	Pn	17	48.30	-0.6
AVF	7.29	292	Pn	17	51.00	-0.5
BGF	7.57	290	Pn	17	54.50	-1.0

S.D. = 0.9 on 21 of 25 obs.

MAR 27, 1990 19h 18m 38.36±0.62s  
 44.460 N ± 4.8km 13.182 E ± 5.7km  
 DEPTH = 10.0km (geophysicist)  
 ADRIATIC SEA (382)  
 ML 2.7 (KBA). MD 2.7 (TRI).

ARV	0.98	190	P	18	56.10	-0.8
			eSg	19	12.00	
RIY	1.23	44	e(Pg)	19	00.90	-0.3
			iSg	19	14.50	
TRI	1.32	18	ePg	19	02.00	-0.6
			iSg	19	18.50	
ASS	1.44	195	P	19	06.00	1.5
VBY	1.81	54	eP	19	22.50	12.8X
			eSn	19	37.10	
CTI	1.92	326	P	19	13.50	2.0
RBL	2.00	8	P	19	18.00	5.4X
PTJ	2.43	53	eP	19	27.90	9.0X
KBA	2.62	2	iPnc	19	21.80	0.2
			iPg	19	31.60	
			i	19	32.60	
			iSn	19	53.80	
			i	20	07.00	
			iSg	20	08.00	
			i	20	09.20	
PGF	3.59	239	Pn	19	34.80	-0.5
SBF	4.18	264	Pn	19	44.00	0.4
LPG	4.68	285	Pn	19	50.80	-0.2
LPL	4.70	285	Pn	19	51.00	-0.2
FRF	4.80	261	Pn	19	52.90	0.5
LMR	4.95	259	Pn	19	54.60	0.1

BSF	5.57	309	Pn	20	04.20	0.7
HAU	5.92	309	Pn	20	08.60	0.4
			Sn	21	15.60	
SMF	6.91	292	Pn	20	21.60	-0.6
LBF	6.92	295	Pn	20	21.80	-0.5
LOR	7.09	297	Pn	20	24.20	-0.5
AVF	7.28	292	Pn	20	27.10	-0.1
BGF	7.56	290	Pn	20	29.70	-1.5

S.D. = 0.9 on 19 of 22 obs.

& MAR 27, 1990 19h 21m 31.90s  
 40.327 N 124.598 W  
 DEPTH = 8.0km  
 NEAR COAST OF NORTHERN CALIF. (35)  
 <BRK>. ML 3.4 (BRK). Felt (III)  
 at Rio Dell.

FHC	0.67	44	iPc	21	44.90	-0.4
			i	21	56.30	
			iS	21	58.00	
WDC	1.59	80	ePc	21	58.20	-2.2
			eS	22	28.50	
MIN	2.29	89	eP	22	10.40	-0.3
ORV	2.50	107	eP	22	12.00	-1.6
			eS	22	41.10	
PCC	3.31	148	eP	22	21.40	-3.6
MHC	3.77	141	ePc	22	28.40	-3.3
ARN	3.82	140	eP	22	29.00	-3.3
GCC	3.87	147	eP	22	28.70	-4.3
SAO	4.33	144	eP	22	34.70	-4.8
PRS	4.73	147	eP	22	41.50	-3.7
KVN	5.17	102	e(P)	22	49.00	-2.6

11 obs. associated

MAR 27, 1990 20h 04m 16.23±0.15s  
 5.298 S ± 2.4km 145.865 E ± 3.4km  
 DEPTH = 81.7km ( 8 depth phases)  
 5.3mb ( 32 obs.)  
 EAST PAPUA NEW GUINEA REGION (207)  
 CENTROID, MOMENT TENSOR (HRV)  
 Data Used: GDSN  
 L.P.B.: 14S, 25C  
 Centroid Location:  
 Origin Time 20:04:21.4 0.5  
 Lat 5.38S 0.04 Lon 145.67E 0.06  
 Dep 69.3 4.3 Half-duration 1.7  
 Moment Tensor: Scale 10\*\*17 Nm  
 Mrr= 0.35 0.05 Mtt=-1.16 0.07  
 Mff= 0.82 0.08 Mrt= 0.59 0.06  
 Mrf= 0.38 0.05 Mtf= 0.32 0.06  
 Principal Axes:  
 T Vol= 1.18 Plg=33 Azm=287  
 N 0.21 51 72  
 P -1.38 18 185  
 Best Double Couple: Mo=1.3\*10\*\*17  
 NP1: Strike=322 Dip=53 Slip= 167  
 NP2: 59 80 38

LAT	1.76	140	eP	04	47.10	1.7
MNDI	2.35	249	eP	04	57.00	3.2X
PMG	4.28	163	iPd	05	19.00	-1.4
			eS	06	06.00	
RAB	6.38	80	iPc	05	48.00	-1.6
HNR	14.56	107	eP	07	40.00	0.6
			eS	10	33.00	
CTA	14.71	179	iPc	07	42.20	0.8
	1.8s	231.82nm				5.1mb
			i	08	09.50	
			i	10	33.20	
			eS	10	44.00	
			e	17	14.00	
SLKI	14.71	259	iPc	07	44.10	2.7X
QIS	16.34	201	eP	08	00.00	-2.1
			e	08	07.00	
			e	11	05.00	
MTN	16.36	242	eP	08	02.00	-0.4
			e	10	59.00	
AAI	17.69	274	ePc	08	20.00	1.2
WB5	18.31	217	eP	08	24.80	-1.6
			eS	11	38.20	
WRA	18.38	217	Pc	08	25.70	-1.5
	0.7s	41.90nm				4.8mb
GUA	18.74	357	eP	08	32.40	0.9
	1.2s	400.00nm				5.5mb
GUMD	18.79	357	eP	08	32.70	0.7
	0.5s	87.76nm				5.3mb
			eS	12	04.00	



PJG	18.79	357	eP	08 32.50	0.5	NJ2	45.18	327	Pc	12 27.50	0.8	* MAR 27, 1990 20h 45m 56.40± 1.29s			
KNA	19.74	237	eP	08 41.00	-1.2	IPM	45.84	282	ePd	12 33.50	1.2	6.017 S ± 15.5km 145.739 E ± 9.5km			
	0.4s	182.00nm			5.7mb	WHN	46.68	322	eP	12 40.00	1.4	DEPTH = 94.2 ± 9.5 km			
QLP	21.22	184	eP	08 57.00	-0.3		1.0s	100.00nm			5.7mb	4.0mb ( 2 obs.)			
RMQ	21.25	173	eP	08 57.00	-0.6	LOE	49.07	298	eP	12 59.00	1.5	PAPUA NEW GUINEA (202)			
	0.6s	252.00nm			5.7mb	TIA	49.29	329	Pd	12 58.20	-0.7				
ASPA	21.60	211	iPd	09 00.20	-0.9	GYA	49.37	312	P	13 00.60	0.8				
	1.1s	105.00nm			5.1mb	NST	49.84	295	eP	13 02.50	-0.8				
Z	20s	3.15um			4.7msz	SNY	51.12	339	Pc	13 12.00	-0.7				
		iS		12 52.20		Z	40s	1.10um		4.6mszX					
		iScS		20 16.60		N	40s	1.10um							
		LR		20 59.90		KMI	51.68	308	Pd	13 18.50	1.0				
MNI	22.04	287	eP	09 05.40	-0.1	MDJ	51.79	345	Pc	13 17.40	-0.4				
BRS	22.94	164	iPc	09 14.00	-0.2	CHG	52.06	299	ePc	13 20.00	-0.2				
	0.6s	24.00nm			4.8mb	CN2	52.23	341	Pd	13 20.30	-0.8				
		i		09 19.10	18kmX	Z	24s	0.70um		4.6mszX					
		e		09 28.50				pP	13 41.00	83km					
		eS		10 15.00		XAN	52.43	321	Pc	13 22.00	-0.7				
				13 10.00		BJI	52.75	331	eP	13 24.00	-0.9				
COO	25.78	168	iPc	09 41.30	0.0	Z	24s	0.32um		4.3mszX					
DZM	25.97	132	iPc	09 42.00	-1.2	TIY	52.90	327	eP	13 25.00	-1.2				
MKS	26.28	269	ePc	09 47.50	1.5	CD2	53.98	315	eP	13 33.90	-0.3				
BWA	29.08	176	eP	10 11.10	-0.1	HHC	55.65	329	eP	13 45.00	-1.2				
MBL	29.76	236	eP	10 18.00	0.6	BTO	56.28	328	eP	13 51.00	0.2				
CAN	30.02	175	eP	10 19.10	-0.4	LZH	56.95	320	P	13 56.00	0.3				
KHKI	30.19	263	ePd	10 19.60	-1.6			pP	14 15.50	76km					
		e		12 46.50		GTA	61.48	321	iPc	14 26.50	-0.4				
ADE	30.26	192	iPd	10 21.30	-0.3	LSA	62.92	307	P	14 36.60	-0.4				
	0.9s	73.95nm			5.4mb	GUN	66.54	303	P	15 00.00	-0.4				
FORR	30.42	211	eP	10 22.50	-0.5		0.7s	16.00nm		5.1mb					
TOO	32.12	181	iPc	10 38.70	0.8	PKI	66.82	303	P	15 01.40	-0.7				
		e		13 25.00			0.8s	5.00nm		4.5mb					
MEKA	33.61	228	iPd	10 55.20	4.2X	KKN	67.00	303	P	15 02.60	-0.5				
NANU	33.96	237	iPc	10 55.50	1.5		0.8s	16.00nm		5.0mb					
	0.6s	89.00nm			5.8mb	DMN	67.08	303	P	15 03.20	-0.5				
COOL	34.46	219	iPc	10 58.30	0.0		0.8s	16.00nm		5.0mb					
	0.6s	140.00nm			6.1mb	GKN	67.61	303	P	15 06.40	-0.5				
KLB	37.12	222	iPc	11 21.20	0.5		0.7s	12.00nm		4.9mb					
	0.6s	45.00nm			5.6mb	KOD	69.84	283	eP	15 21.60	0.6				
BAL	37.23	224	iPc	11 22.20	0.6	HYB	70.16	291	eP	15 21.50	-1.0				
	0.5s	65.00nm			5.8mb	WMO	71.53	320	eP	15 33.50	3.1X				
MUN	38.39	223	eP	11 32.00	0.6	VNDA	72.67	176	iPd	15 36.90	0.4				
	0.7s	169.00nm			6.1mb	SBA	73.34	175	P	15 42.10	1.7				
RKG	39.18	219	iPc	11 42.10	4.2X	NDI	74.05	302	iPc	15 44.70	-0.7				
	0.6s	385.00nm			6.5mb X		0.5s	14.00nm		5.1mb					
QZH	40.09	320	Pd	11 46.50	1.0	POO	74.77	291	iPd	15 48.50	-1.3				
	1.0s	200.00nm			6.0mb	SVW	80.07	25	eP	16 19.50	1.2				
WKYJ	40.48	347	eP	11 48.40	-0.3	MAW	82.46	203	iPc	16 31.90	1.3				
TKSJ	40.63	345	eP	11 49.30	-0.5	PMR	83.07	26	eP	16 33.70	-0.1				
IIDJ	41.24	350	P	11 54.40	-0.5		0.8s	6.80nm		4.6mb					
SHNJ	41.62	341	eP	11 57.70	-0.1			e	16 54.20	75km					
CHJJ	41.63	352	P	11 57.60	-0.4	QUE	83.11	301	eP	16 34.80	-0.2				
TSRJ	41.67	348	P	11 58.10	-0.1	IMA	83.31	21	eP	16 35.00	-0.2				
YONJ	41.93	345	eP	12 00.20	-0.2		1.0s	10.00nm		4.7mb					
MAT	42.23	351	iPc	12 01.90	-1.0			e	16 58.00	86km					
	1.0s	25.00nm			5.0mb	TOA	84.56	26	eP	16 41.70	0.3				
		eS		18 16.00		SPA	84.74	180	iPc	16 42.80	0.4				
MTMJ	42.34	350	P	12 03.20	-0.7		0.9s	63.64nm		5.6mb					
GZH	42.49	313	Pc	12 06.40	1.3	Z	20s	2.25um		5.6msz					
NIIJ	42.80	352	P	12 07.50	0.0			e	17 04.90	82km					
OIZ	42.93	305	eP	12 08.60	-0.2	FBA	84.98	23	eP	16 42.50	-0.9				
SSE	43.19	328	Pc	12 11.00	0.3			e	17 05.70	86km					
Z	32s	0.60um			4.3mszX	BRW	85.05	16	eP	16 44.50	0.9				
E	15s	0.40um				INK	91.42	22	eP	17 13.00	-1.0				
		pP		12 31.00	83km	MBC	96.25	14	eP	17 35.50	-0.6				
THZ	43.58	150	P	12 14.20	0.3		1.0s	5.00nm		5.0mb					
HBZ	43.68	142	P	12 15.40	0.8			pP	17 58.00	82km					
	0.4s	71.00nm			5.8mb	KVN	97.99	51	e(P)	17 45.00	0.0				
TCW	43.86	149	P	12 16.50	0.4	YKA	99.08	28	eP	17 47.90	-1.2				
KIW	43.94	148	P	12 17.10	0.3		0.8s	1.20nm		4.5mb					
PUZ	43.95	142	P	12 17.10	0.2	BCAO	127.52	272	iPKPc	23 15.00	0.5				
LTZ	44.05	152	P	12 17.70	0.0		0.6s	8.00nm							
MNG	44.07	147	P	12 18.20	0.4	ZOBO	140.13	123	PKP	23 30.80	-8.1X				
	0.8s	120.00nm			5.8mb			LR	01 30.00						
MRW	44.10	148	P	12 17.80	-0.2	SHGH	146.07	273	ePKP	23 49.50	1.0				
NOZ	44.17	143	P	12 19.00	0.4	LEGH	146.20	272	ePKP	23 51.00	2.3				
WEL	44.17	148	P	12 19.00	-8.6X	WEGH	146.35	272	ePKP	23 51.00	2.0				
CAW	44.20	148	P	12 19.00	0.1	KUK	146.39	273	ePKP	23 50.00	1.0				
WDW	44.28	148	P	12 19.10	-0.3	WIGH	146.63	272	ePKP	23 51.00	1.6				
KHZ	44.38	151	P	12 19.90	-0.4	KIC	150.74	274	PKP	24 01.04	5.2X				
	0.9s	33.00nm			5.2mb		0.8s	22.50nm							
MTW	44.47	148	P	12 20.80	-0.2	TIC	151.01	274	PKP	24 01.52	5.3X				
PGZ	44.50	147	P	12 21.30	0.0	LIC	151.03	273	PKP	24 01.58	5.4X				
	0.8s	169.00nm			5.9mb		0.7s	36.00nm							
MOW	44.52	148	P	12 21.20	-0.3	LKO	151.39	280	PKP	24 02.10	5.3X				
BLW	44.60	148	P	12 21.70	-0.4	BAO	155.08	147	ePKP	24 11.00	9.0X				
MOZ	44.94	152	P	12 24.50	-0.2										
							S.D. = 0.9	on 116	of 128	obs.					



27d 22h

\* MAR 27, 1990 22h 41m 24.89±1.90s  
33.584 S ± 7.1km 71.770 W ± 14.7km  
DEPTH = 18.6 ± 12.1 km  
NEAR COAST OF CENTRAL CHILE (135)

LCCH	0.20	57	iPd	41 30.10	0.1
			iS	41 57.60	
LNK	0.48	141	iPd	41 34.50	0.1
			iS	41 44.50	
IHA	0.57	11	eP	41 36.00	0.0
			iS	41 43.00	
TACH	0.70	96	iP	41 38.00	-0.3
			iS	41 50.00	
ROCH	0.88	46	iPd	41 41.30	-0.2
SAN	0.94	82	eP	41 42.50	0.2
			iS	41 57.60	
CHCH	0.99	111	iPc	41 43.10	-0.2
			i	41 54.60	
			iS	42 00.20	
PCH	1.05	92	iPc	41 44.50	0.2
			iS	42 00.00	
FCH	1.26	79	iPd	41 48.00	0.1
			iS	42 07.20	

S.D. = 0.2 on 9 of 9 obs.

MAR 28, 1990 00h 33m 43.39±0.62s  
39.302 N ± 5.1km 28.225 E ± 7.4km  
DEPTH = 10.0km (geophysicist)  
TURKEY (366)

DST	0.44	46	iPg	33 51.50	-0.8
			eSg	33 59.50	
KCT	0.95	6	iPg	34 01.90	0.4
BNT	1.08	348	iPn	34 03.40	-0.3
IZM	1.17	220	iPn	34 04.80	-0.5
KHL	1.41	134	ePn	34 08.00	-1.1
ALT	1.49	99	ePn	34 11.60	1.4
YLV	1.54	35	iPn	34 10.90	-0.1
MFT	1.65	334	ePn	34 13.00	0.4
CIN	1.70	184	eP	34 14.00	0.7
CTT	1.85	5	ePn	34 18.00	2.6X
HRT	1.88	36	ePn	34 19.00	3.1X

S.D. = 0.9 on 9 of 11 obs.

% MAR 28, 1990 00h 39m 56.79±1.92s  
39.005 N ± 11.0km 26.518 E ± 19.3km  
DEPTH = 10.0km (geophysicist)  
TURKEY (366)

EZN	0.83	350	iPg	40 13.00	0.1
IZM	0.84	136	ePg	40 13.00	-0.1
			eSg	40 27.30	
BNT	1.73	38	iPn	40 27.00	-0.1
DST	1.74	69	ePn	40 27.50	0.2
MFT	1.87	18	ePn	40 29.00	-0.2

S.D. = 0.2 on 5 of 5 obs.

MAR 28, 1990 00h 43m 36.09±0.56s  
43.573 N ± 9.4km 147.924 E ± 7.8km  
DEPTH = 33.0km (normal)  
4.5mb (10 obs.)  
KURIL ISLANDS (221)

KUSJ	2.39	260	P	44 12.40	-1.4
			eS	44 39.80	
HOOJ	3.60	252	eP	44 32.90	2.0
			eS	45 14.80	
ASAJ	3.86	280	eP	44 36.30	1.7
MRRJ	5.15	259	P	44 53.40	0.5
			eS	45 52.20	
MAT	10.23	230	eP	46 02.00	-1.7
	0.8s	16.42nm		5.3mb X	
MTMJ	10.43	231	P	46 05.60	-0.8
TSRJ	12.21	233	P	46 30.60	0.1
CN2	16.26	279	eP	47 25.00	1.6
BJI	23.85	272	eP	48 47.00	0.0
	1.0s	15.00nm		4.5mb	
TIY	27.41	270	P	49 21.90	1.3
			pP	49 27.50	20kmX
			eS	54 05.00	
BTO	28.13	277	eP	49 28.00	0.9
XAN	31.60	266	P	49 57.20	-0.7
GTA	35.88	280	eP	50 34.40	-0.5
FBA	40.91	36	eP	51 25.00	8.6X
	0.8s	6.90nm		4.4mb	
WMO	42.68	292	P	51 36.00	4.7X
INK	46.27	30	eP	52 01.00	1.4

CHTO	47.78	255	eP	52 13.00	0.9
	1.0s	3.00nm		4.3mb	
GUN	51.59	274	P	52 41.34	-0.3
	0.8s	14.00nm		5.0mb	
KKN	52.09	274	P	52 44.40	-0.9
	0.7s	12.00nm		4.9mb	
PKI	52.12	274	P	52 45.26	-0.5
DMN	52.32	274	P	52 47.04	-0.1
GKN	52.43	275	P	52 46.42	-1.4
	0.5s	7.00nm		4.9mb	
YKA	55.64	34	eP	53 10.30	-0.4
	0.6s	0.70nm		3.9mb	
HYB	63.33	269	eP	54 03.50	-0.8
CTA	63.36	182	e(P)	54 05.00	0.8
WB5	64.35	194	eP	54 11.50	0.7
WRA	64.42	194	Pc	54 11.40	0.2
	0.8s	2.60nm		4.4mb	
KVN	66.94	58	eP	54 29.00	1.4
			epP	54 40.00	36kmX
NB2	69.97	339	P	54 44.50	-1.3
	0.8s	2.70nm		4.4mb	
HFS	70.07	338	eP	54 44.30	-2.0
	0.4s	1.30nm		4.3mb	
CLL	77.73	333	eP	55 30.00	-0.9
KHC	79.39	331	eP	55 40.50	0.5

S.D. = 1.1 on 30 of 32 obs.

MAR 28, 1990 00h 50m 31.53±0.53s  
13.872 N ± 5.0km 120.803 E ± 7.8km  
DEPTH = 204.5 ± 5.6 km  
4.6mb (12 obs.)  
MINDORO, PHILIPPINE ISLANDS (250)

PGP	0.40	158	iPc	50 59.20	-0.9
			eS	51 10.50	
CVP	3.93	14	ePd	51 32.50	-0.7
	0.9s	51.00nm			
PIP	4.43	358	ePd	51 40.30	0.9
PPR	4.55	207	iPc	51 42.00	1.1
			iS	52 36.00	
QZH	11.21	350	eP	53 07.30	0.1
QIZ	11.69	297	eP	53 13.00	-0.5
GYA	18.22	316	P	54 35.40	3.3X
MKS	19.01	184	iPd	54 42.00	1.8
CHTO	21.54	286	eP	55 07.00	1.6
	1.0s	5.00nm		4.0mb	
XAN	22.79	334	P	55 17.30	-0.2
CD2	23.10	320	eP	55 21.00	0.5
GTA	31.45	328	Pc	56 36.20	0.3
MBL	34.83	182	eP	57 04.30	-0.5
	0.4s	15.00nm		5.0mb	
PMG	34.91	130	eP	57 05.00	-0.7
GUN	35.35	299	Pc	57 09.82	0.1
PKI	35.66	298	Pc	57 11.78	-0.5
	0.4s	11.00nm		4.8mb	
KKN	35.83	298	P	57 13.00	-0.6
	0.8s	13.00nm		4.6mb	
DMN	35.93	298	Pc	57 14.14	-0.3
	0.4s	7.00nm		4.6mb	
WB5	36.10	158	eP	57 15.00	-0.6
WRA	36.15	158	Pd	57 13.70	-2.3
	0.6s	17.10nm		4.8mb	
GKN	36.43	299	P	57 18.08	-0.5
QIS	38.89	151	iPd	57 40.00	1.1
			eS	01 07.00	
ASPA	39.45	161	iPc	57 43.60	0.2
	0.4s	54.00nm		5.5mb	
HYB	40.78	281	eP	57 55.00	0.5
WMO	41.13	323	eP	58 03.60	6.5X
CTA	42.02	143	iPc	58 06.90	2.3
	0.9s	29.41nm		4.8mb	
			e(PP)	00 23.00	
COOL	44.50	180	eP	58 23.30	-1.0
			eS	02 29.00	
MUN	45.80	185	eP	58 34.00	-0.6
			eS	02 55.00	
NWAO	46.66	184	eP	58 40.50	-0.8
BRS	51.43	143	eP	59 06.00	-11.9X
ADE	51.46	161	iPd	59 18.20	0.1
SOD	78.91	337	eP	02 14.00	0.7
SUF	79.91	332	eP	02 18.00	-0.6
NUR	81.05	330	eP	02 23.00	-1.6
INK	82.90	21	eP	02 35.00	0.9
MBC	83.36	12	eP	02 37.00	0.7
	1.0s	6.00nm		4.3mb	
HFS	86.37	331	eP	02 50.90	-0.6
	0.6s	3.80nm		4.4mb	

NB2 87.15 333 P 02 54.60 -0.7  
0.7s 4.90nm 4.4mb  
YKA 92.58 22 eP 03 21.60 1.0  
0.6s 1.60nm 4.3mb  
S.D. = 1.0 on 36 of 39 obs.

? MAR 28, 1990 00h 53m 57.66±2.62s  
36.232 S ± 13.3km 179.376 E ± 30.0km  
DEPTH = 201.8 ± 14.1 km  
OFF E. COAST OF N. ISLAND, N.Z. (160)

HBZ	1.61	212	eP	54 30.80	-2.0
PUZ	2.04	206	P	54 36.90	-0.2
			eS	55 09.20	
NOZ	2.61	204	eP	54 43.80	0.6
TAZ	3.04	228	eP	54 49.80	1.6
GBZ	3.15	269	iPc	54 45.60	-4.0
			S	55 25.00	
UTU	3.20	232	eP	54 51.60	1.4
MOH	3.39	211	eP	54 53.90	1.4
WLZ	3.43	241	eP	54 53.60	0.6
			eS	55 38.70	
WHH	3.50	220	P	54 54.60	0.7
TUTZ	3.66	226	eP	54 57.50	1.7
HITZ	3.79	228	P	54 58.90	1.5
TTH	3.87	211	eP	54 59.50	1.1
RATZ	3.89	226	P	55 00.00	1.3
KETZ	4.11	225	eP	55 02.80	1.2
PGZ	5.01	208	P	55 13.20	0.4
MNG	5.34	214	P	55 16.40	-0.7
MTW	5.78	210	eP	55 21.80	-0.9
KIW	5.80	216	eP	55 22.30	-0.7
CAW	5.92	213	P	55 23.80	-0.8
BLW	5.97	210	eP	55 25.10	-0.1
WDW	6.08	213	P	55 25.60	-1.1
MOW	6.10	211	P	55 26.50	-0.4
MRW	6.18	215	eP	55 27.50	-0.5
WEL	6.20	214	eP	55 28.00	-0.2
			eS	56 41.40	
TCW	6.37	217	P	55 29.50	-0.9
THZ	7.48	220	eP	55 44.00	-1.0
KHZ	7.65	214	eP	55 46.30	-1.0
LTZ	8.54	218	eP	55 57.40	-1.4
MQZ	9.07	213	eP	56 04.40	-1.3
TMP	10.73	218	P	56 29.50	2.4
			S	58 28.00	
DZM	18.05	318	iPd	57 57.60	1.2
YKA	111.63	27	ePKP	12 17.30	8.7X
	0.7s	0.60nm			
BCAO	143.77	214	iPKPc	13 20.70	10.0X
	0.7s	48.00nm			
KUK	150.10	181	ePKP	13 38.00	17.2X

S.D. = 1.4 on 31 of 34 obs.



VUN	4.88	40	iP	21	51.30	-5.4X	TPC	85.80	51	eP	33	23.00	0.3	GRR	153.29	354	ePKP	40	39.90	6.6X	
DZM	8.12	267	iPd	22	42.90	0.5	HHC	85.84	317	Pd	33	23.40	0.6		0.8s	10.75nm					
MNG	18.75	179	P	25	03.30	0.6	GSC	85.86	50	eP	33	23.00	0.0	LOR	153.65	347	ePKP	40	40.70	6.8X	
KIW	19.00	181	P	25	06.30	0.6	GLA	86.18	52	eP	33	26.00	1.5		0.8s	5.35nm					
HNR	19.13	308	eP	25	01.00	-6.5X	CD2	86.24	305	eP	33	24.80	-0.1	LPF	153.66	354	ePKP	40	40.70	6.8X	
CAW	19.24	180	P	25	08.50	-0.1	KVN	86.89	46	eP	33	28.10	0.1		1.0s	20.00nm					
MTW	19.29	179	P	25	08.50	-0.8	TNP	86.98	47	iP	33	29.00	0.5	LBF	153.90	346	ePKP	40	41.30	7.0X	
TCW	19.36	182	Pc	25	10.80	0.7		1.0s	11.25nm			5.0mb			1.0s	5.00nm					
MRW	19.37	181	P	25	10.20	0.0	LZH	88.62	310	eP	33	37.50	1.1	SSF	153.92	347	ePKP	40	41.40	7.1X	
WDW	19.40	180	P	25	10.10	-0.5		1.3s	36.00nm			5.5mb			1.0s	5.00nm					
WEL	19.42	181	P	25	10.60	-0.2		Z	23s	0.40um			4.8mszX	AVF	154.21	347	ePKP	40	41.60	6.9X	
	1.4s	131.35nm				5.0mb	FBA	91.01	15	eP	33	45.50	-1.2	SMF	154.25	346	ePKP	40	41.80	7.0X	
THZ	19.99	185	P	25	17.30	0.2		1.0s	10.00nm			5.1mb		MFF	154.98	352	ePKP	40	43.40	7.7X	
LTZ	21.06	186	Pc	25	28.70	0.6	NEW	92.24	38	eP	33	50.50	-2.3		0.8s	6.70nm					
BRS	21.11	250	e(P)	25	48.00	19.2X		1.0s	3.00nm			4.6mb		LSF	155.08	350	ePKP	40	44.40	8.6X	
		eS		29	27.00		PV09	92.79	50	eP	33	56.00	0.1		1.1s	9.75nm					
COO	22.62	242	eP	25	45.00	1.1	GTA	92.97	311	eP	33	56.40	0.0		S.D. = 1.0 on 86 of 128 obs.						
RMQ	24.55	254	iPd	26	03.60	1.0	ALQ	93.24	54	eP	33	57.00	-0.9		MAR 28, 1990 02h 22m 35.90±0.32s						
	0.8s	256.00nm				5.9mb		1.0s	10.00nm			5.2mb			40.200 N ± 4.5km 25.063 E ± 2.6km						
CAN	26.56	234	eP	26	17.10	-4.4X		Z	20s	0.53um		5.0msz			DEPTH = 10.0km (geophysicist)						
CTA	27.06	268	iPd	26	28.60	2.4	LRM	93.85	42	eP	34	00.50	0.0		AEGEAN SEA (365)						
	1.0s	21.00nm				4.8mb	BW06	94.35	46	eP	34	02.10	-0.8		ML 3.8 (THE). MD 3.8 (ATH).						
	Z	20s	3.55um			4.9msz	GOL	95.95	50	eP	34	10.50	0.2		RDO	1.01	21	iPnc	22	55.80	0.8
		iS		31	04.00			1.0s	9.00nm			5.2mb		ALN	1.02	47	ePb	22	56.00	0.8	
PMG	29.62	290	eP	26	50.00	0.7	FRB	120.91	28	ePKP	39	33.00	-2.0	EZN	1.04	111	iPn	22	56.00	0.5	
TOO	30.04	232	eP	26	53.00	0.0	BBTK	143.40	308	ePKP	40	14.00	-4.3X	PLG	1.25	279	iPnd	22	59.50	0.4	
ADE	34.47	240	eP	27	31.50	-0.3	VRI	144.85	321	ePKPd	40	18.50	-1.9	SOH	1.44	296	ePb	23	02.50	0.4	
ASPA	38.03	259	iPd	28	01.00	-1.0	MLR	145.52	321	ePKP	40	20.00	-1.7			eSb	23	25.20			
	0.9s	26.00nm				5.0mb	ALT	145.59	308	ePKP	40	21.00	-1.0	SRS	1.45	310	ePbd	23	02.30	0.2	
	Z	22s	2.39um			5.0mszX	KRA	145.73	331	ePKP	40	20.60	-1.1			iSb	23	24.50			
		LR		42	10.80			e			40	24.10		THE	1.66	286	ePbd	23	05.20	0.1	
WB5	38.12	265	eP	28	02.00	-0.7	CTT	146.01	312	iPKP	40	30.40	7.9X			iSb	23	30.40			
		e		29	30.20		SPC	146.21	330	ePKP	40	22.70	-0.1	NEO	1.68	238	ePn	23	04.40	-1.0	
WRA	38.14	265	P	28	05.00	2.2	KHL	146.27	307	ePKP	40	22.00	-1.1	MFT	1.79	70	iPn	23	06.90	-0.2	
	1.3s	20.20nm				4.7mb	EKA	146.50	358	PKPd	40	22.90	0.1	KNT	1.91	301	iPn	23	09.40	0.6	
COOL	48.87	248	eP	29	28.70	-0.8		1.0s	28.50nm							iSn	23	38.20			
NWAO	52.08	245	eP	29	52.30	-1.7	KSP	146.65	335	iPKPd	40	24.10	0.9	LIT	1.97	268	e(Pn)d	23	08.40	-1.4	
	Z	20s	1.10um			4.9msz		1.1s	40.00nm					EDC	2.15	85	iPn	23	12.00	-0.2	
	N	20s	0.80um				CLL	147.44	339	iPKPd	40	26.10	1.7	BNT	2.19	85	iPn	23	12.40	-0.5	
	E	20s	1.00um					1.0s	30.00nm				VAY	2.20	301	iPn	23	13.60	0.6		
BAL	52.70	248	eP	29	58.00	-0.7	BRG	147.49	338	iPKP	40	26.00	1.5	AGG	2.42	242	ePn	23	15.40	-0.7	
MUN	53.01	246	eP	29	58.50	-2.4		1.1s	31.00nm				IZM	2.48	136	ePn	23	17.40	0.4		
VNDA	56.13	183	(P)	30	22.20	-0.9	WIT	147.81	347	ePKP	40	27.00	2.1X	KCT	2.52	88	iPn	23	19.40	1.8	
SBA	56.24	182	P	30	25.00	1.2	PRU	148.00	336	PKP	40	27.00	1.6	KZN	2.52	273	ePn	23	18.00	0.4	
MAT	67.74	328	eP	31	40.00	-1.4		e		40	33.00		DMK	2.60	51	iPn	23	17.50	-1.2		
	1.2s	23.44nm				5.3mb	SRO	148.09	330	ePKP	40	25.60	0.0	CTT	2.73	69	ePn	23	18.80	-1.8	
SPA	68.32	180	iPd	31	44.40	-0.5	ZST	148.36	332	ePKP	40	28.00	2.0X	DST	2.81	101	iPn	23	21.50	-0.2	
	1.0s	65.00nm				5.8mb	DCN	148.46	3	ePKP	40	28.60	2.6X	FNA	2.87	283	Pn	23	22.80	0.2	
WHN	78.24	310	eP	32	43.50	0.3		1.0s	63.00nm				ITU	3.14	72	ePn	23	36.00	9.7X		
CN2	79.63	326	eP	32	50.00	-0.5	MOX	148.47	340	ePKPd	40	29.00	2.9X	ISK	3.16	73	ePn	23	27.00	0.4	
	Z	20s	0.40um			4.8msz	DLE	148.55	2	ePKP	40	30.00	3.9X	SKO	3.26	304	ePn	23	28.70	0.6	
		pP		33	00.00	32kmX	WTS	148.55	346	ePKPc	40	28.50	2.3X			iSg	24	16.00			
GYA	81.88	303	P	33	02.60	-0.4	KHC	149.06	336	iPKPc	40	30.10	2.9X	YLV	3.31	82	iPn	23	27.40	-1.5	
AIA	82.17	159	eP	32	52.50	-11.1X		1.0s	14.00nm				OHR	3.37	287	ePn	23	30.30	0.6		
BJI	82.50	318	eP	33	04.00	-1.7	GRF	149.42	339	iPKPc	40	31.20	3.5X	GBZT	3.39	79	ePn	23	41.00	11.1X	
	Z	44s	0.94um			4.8mszX	VAY	149.83	316	ePKP	40	30.60	2.1X	CIN	3.51	137	iPnd	23	31.00	-0.5	
		eS		43	22.00		ENN	149.90	346	ePKPc	40	32.00	3.7X	HRT	3.56	78	ePn	23	34.00	1.6	
GCC	83.21	46	ePc	33	09.70	0.3		1.0s	31.00nm				KHL	3.94	117	ePn	23	40.00	2.3		
SYR	83.23	49	eP	33	09.00	-0.8	MEM	150.03	346	iPKPc	40	32.40	3.9X	GPA	4.02	87	ePn	23	37.00	-1.8	
PRS	83.24	47	ePc	33	10.30	0.6	SKO	150.18	318	ePKP	40	33.00	4.0X	ALT	4.06	105	iPn	23	39.90	0.4	
SAO	83.43	46	ePc	33	11.00	1.2	SNF	150.48	348	PKP	40	35.60	6.4X	DRA	4.52	353	eP	24	03.00	17.2X	
BRK	83.50	45	ePc	33	11.30	0.4	PTJ	150.59	330	ePKP	40	25.50	-4.1X	ISR	5.05	12	eP	24	04.00	10.5X	
BCH	83.51	48	eP	33	12.10	0.9	DOU	150													



28d 02h

EZN 1.17 231 iPn 47 07.00 -0.3  
 DST 1.30 138 iPn 47 10.50 1.0  
 YLV 1.42 90 iPn 47 11.40 0.0  
 HRT 1.66 81 ePn 47 14.50 -0.3  
 S.D. = 0.5 on 9 of 9 obs.

MAR 28, 1990 03h 30m 11.33 ± 0.47s  
 38.361 S ± 4.8km 176.244 E ± 8.8km  
 DEPTH = 171.1 ± 5.6 km  
 4.2mb ( 2 obs.)

NORTH ISLAND, NEW ZEALAND (159)  
 Felt at Wellington, Napier,  
 Gisborne and Palmerston North.  
 Also felt at Blenheim, South  
 Island.

UTU 0.19 347 Pc 30 33.90 -0.3  
 TAZ 0.24 59 Pc 30 33.80 -0.5  
 TUTZ 0.40 209 Pc 30 35.50 0.7  
 HITZ 0.51 227 Pc 30 36.00 0.6  
 WHH 0.56 159 P 30 35.90 0.2  
 RATZ 0.63 216 Pd 30 36.80 0.8  
 WLZ 0.73 315 Pd 30 35.80 -0.7  
 KETZ 0.87 212 Pc 30 38.70 1.1  
 TTH 1.26 159 Pd 30 42.30 1.7  
 NOZ 1.43 101 P 30 42.20 0.0  
 PUZ 1.61 80 Pd 30 42.70 -1.3  
 HBZ 1.79 66 P 30 44.70 -1.2  
 GBZ 2.22 344 iPc 30 49.60 -1.1  
 S 31 18.00

PGZ 2.26 179 Pd 30 52.30 1.3  
 MNG 2.33 194 Pc 30 53.10 1.2  
 KIW 2.70 202 Pc 30 57.00 0.6  
 MTW 2.85 191 Pc 30 58.70 0.5  
 CAW 2.89 198 Pc 30 59.30 0.6  
 WDW 3.06 198 Pd 31 01.00 0.2  
 BLW 3.06 191 Pc 31 01.20 0.4  
 MRW 3.10 202 Pc 31 01.50 0.2  
 WEL 3.13 201 Pc 31 01.90 0.2  
 MOW 3.15 194 Pc 31 02.20 0.3  
 TCW 3.23 207 Pc 31 03.00 0.1  
 CCW 3.73 204 Pc 31 09.70 0.5  
 THZ 4.26 216 P 31 15.50 -0.6  
 eS 32 06.40

KHZ 4.55 206 Pc 31 19.50 -0.3  
 LTZ 5.35 213 P 31 29.10 -1.4  
 S 32 30.20  
 MOZ 5.99 206 P 31 36.50 -2.3  
 TMP 7.52 216 P 31 58.10 -1.2  
 S 33 15.50

MHZ 8.48 216 eP 32 08.20 -3.8X  
 MMCZ 8.50 216 eP 32 10.00 -2.3  
 DNZ 8.62 208 P 32 13.00 -0.7  
 S 33 45.00  
 TLC 8.67 216 P 32 13.50 -1.1  
 DZM 18.29 330 iPc 34 14.80 -0.1  
 CTA 31.68 297 eP 36 22.00 1.4  
 DRV 34.97 204 eP 36 28.80 -19.5X  
 ASPA 38.79 280 eP 37 21.00 0.1  
 S 37 12.00nm 4.7mb  
 WRA 40.53 285 Pc 37 35.90 0.7  
 S 37 0.80nm 3.7mb  
 WB5 40.55 285 eP 37 36.10 0.8  
 MTN 47.34 290 iPd 38 30.90 1.2  
 LIC 147.99 178 PKP 49 39.70 4.8X  
 KIC 148.13 178 PKP 49 40.00 4.9X  
 LKO 151.26 176 PKPc 49 47.60 7.7X  
 S 49 19.00nm

S.D. = 1.0 on 39 of 44 obs.

MAR 28, 1990 05h 47m 31.51 ± 0.44s  
 38.191 N ± 4.0km 14.930 E ± 3.0km  
 DEPTH = 37.2 ± 6.6 km  
 4.7mb ( 12 obs.)

SICILY (398)  
 MD 4.0 (ATH). ML 4.4 (TTG).

MNO 0.32 216 Pd 47 38.20 -1.8  
 eSg 47 41.70  
 ATN 0.42 94 Pc 47 40.20 -0.9  
 eSg 47 47.10  
 GIB 0.74 255 P 47 44.80 -0.8  
 eSg 47 56.10  
 MEU 1.09 180 Pd 47 50.00 -0.6  
 MCT 1.17 242 Pc 47 54.00 2.2  
 FAI 1.35 228 Pd 47 57.80 3.6X  
 eSg 48 11.00

USI 1.47 291 Pd 47 54.80 -1.1  
 TDS 1.83 36 Pc 48 01.10 0.0  
 ROI 1.88 42 P 48 02.40 0.5  
 CSI 1.90 33 P 48 03.00 0.8  
 LVI 2.06 265 P 48 05.00 0.7  
 ORI 2.21 32 P 48 08.00 1.4  
 SGO 2.38 7 Pc 48 09.10 0.1  
 BSS 2.60 358 Pd 48 12.70 0.7  
 BAI 3.28 26 P 48 22.00 0.3  
 eSn 48 56.50

DUI 3.48 354 Pd 48 27.00 2.3X  
 SDI 3.61 347 P 48 28.80 2.3X  
 AZI 3.96 344 P 48 33.00 1.6  
 RMP 4.00 335 P 48 33.00 1.0  
 KEK 4.09 67 ePn 48 33.50 0.2  
 eSn 49 18.20

AQU 4.32 345 P 48 38.60 2.1  
 VLS 4.46 88 ePn 48 38.40 -0.1  
 TPE 4.47 60 ePn 48 37.00 -1.6  
 MNS 4.53 338 P 48 41.00 1.6  
 BERA 4.62 56 ePn 48 43.20 2.4X  
 LSK 4.82 64 ePn 48 42.90 -0.8  
 TIR 4.94 49 ePn 48 45.00 -0.3  
 ULC 5.02 40 ePn 48 45.10 -1.3  
 eSn 49 41.00  
 LACI 5.03 45 ePn 48 49.60 3.0X  
 HCY 5.05 32 ePn 48 45.30 -1.5  
 eSn 49 41.00

BDV 5.06 35 ePn 48 45.00 -2.0  
 eSn 49 40.60  
 HVAR 5.11 13 iPn 48 48.50 0.8  
 KBN 5.16 60 ePn 48 50.00 1.6  
 ASS 5.17 341 P 48 49.40 0.8  
 SDA 5.18 41 ePn 48 50.00 1.4  
 SDA 5.18 41 ePn 48 50.90 2.3  
 TTG 5.37 37 iPnd 48 49.80 -1.5  
 eSn 49 48.00

OHR 5.39 55 ePn 48 51.50 -0.1  
 PUK 5.41 43 ePn 48 51.30 -0.5  
 BRY 5.45 29 ePn 48 51.20 -1.3  
 eSn 49 50.00  
 PHP 5.49 49 iPnc 48 50.80 -2.1  
 ARV 5.51 345 P 48 54.90 1.6  
 NKY 5.56 33 ePn 48 52.70 -1.4  
 eSn 49 52.50

FNA 5.62 61 ePg 48 58.50 3.6  
 ITM 5.64 98 ePn 48 54.80 -0.3  
 KZN 5.71 66 ePn 48 57.00 0.8  
 BCI 5.73 42 ePn 48 56.70 0.4  
 PVY 5.84 40 ePn 48 57.70 -0.4  
 eSn 50 02.50  
 AGG 5.86 80 ePb 49 13.10 14.9X  
 IVA 6.01 37 ePn 49 00.90 0.4  
 eSn 50 06.00

PLE 6.15 32 ePn 49 02.50 0.1  
 eSn 50 08.50  
 LIT 6.18 70 ePg 49 02.30 -0.5  
 SKO 6.26 51 ePn 49 04.00 0.1  
 PGF 6.28 316 Pn 49 04.60 0.4  
 Sn 50 13.80

PII 6.45 330 P 49 08.00 1.5  
 NEO 6.58 78 ePn 49 09.00 0.6  
 VAY 6.66 60 ePn 49 08.00 -1.5  
 BDI 6.72 332 Pc 49 12.10 1.8  
 KNT 6.82 62 ePb 49 12.10 0.3  
 eSb 49 32.60  
 PLG 6.96 69 ePn 49 11.70 -2.0  
 PAIG 7.03 73 e(Pb) 49 15.10 0.5  
 eSb 49 39.40

RIY 7.16 357 ePn 49 16.20 -0.2  
 SRS 7.29 64 ePb 49 19.90 1.5  
 VBY 7.31 2 eP 49 18.50 -0.1  
 i 49 21.80  
 e(S) 51 07.00  
 PTJ 7.74 5 eP 49 23.80 -0.9  
 CKI 7.99 323 P 49 28.20 0.2  
 LMR 8.20 311 Pn 49 28.40 -2.5  
 CTI 8.22 344 P 49 31.20 -0.1  
 RBL 8.31 353 P 49 33.00 0.5  
 LRG 8.36 312 Pn 49 29.30 -3.8  
 FVI 8.55 350 P 49 34.00 -1.7  
 BZS 8.94 32 ePc 49 39.00 -2.1  
 KBA 8.96 353 iPd 49 42.60 1.0  
 0.8s 16.60nm 5.2mb  
 i 49 50.60

ALN 9.00 69 ePn 49 43.70 1.7  
 BNI 9.23 321 P 49 43.50 -1.8

LPG 9.51 323 Pn 49 50.80 1.5  
 LPL 9.53 323 Pn 49 51.00 1.4  
 MLR 10.98 45 eP 50 10.00 0.7  
 KHC 10.98 355 eP 50 07.50 -1.7  
 BSF 11.32 331 Pn 50 13.60 -0.3  
 HAU 11.63 330 Pn 50 16.10 -1.9  
 GRF 11.80 348 eP 50 19.80 -0.5  
 1.8s 18.00nm 4.9mb  
 Z 18s 0.40um 4.7mszX

ELL 11.99 92 eP 50 23.00 0.0  
 MOX 12.67 350 eP 50 32.50 0.6  
 CLL 13.19 355 e(P) 50 46.00 7.3X  
 ENN 14.11 336 eP 51 00.50 9.8X  
 0.9s 16.00nm 4.7mb  
 WTS 14.93 340 eP 51 10.00 8.5X  
 0.8s 13.00nm 4.3mb

DSI 18.02 105 eP 51 40.00 -0.6  
 PRNI 18.32 109 eP 51 45.00 0.6  
 EKA 21.05 330 Pd 52 14.10 -0.2  
 0.7s 8.90nm 4.3mb  
 DLE 21.15 322 eP 52 18.00 2.6X  
 DCN 21.54 322 eP 52 19.60 0.3  
 0.8s 41.00nm 4.9mb

UPP 21.76 4 iP 52 24.60 3.2X  
 HFS 21.98 358 eP 52 23.00 -0.6  
 0.7s 26.00nm 4.8mb  
 Z 14s 0.20um 3.7mszX  
 LR 01 25.00  
 NB2 22.99 355 P 52 33.80 0.1  
 0.7s 7.20nm 4.3mb

NUR 23.17 12 iP 52 35.80 0.5  
 0.7s 14.70nm 4.6mb  
 SUF 25.50 12 eP 52 37.30 -20.4X  
 0.8s 19.80nm  
 SOD 29.97 9 eP 53 37.00 -1.2  
 BCOA 33.76 174 ePc 54 13.30 1.4  
 0.5s 4.00nm 4.6mb  
 LKO 33.97 218 P 54 15.34 1.6  
 0.8s 18.50nm 5.1mb

FRB 53.75 327 eP 56 51.00 -0.8  
 INK 71.22 348 eP 58 48.00 -0.2  
 YKA 71.79 338 eP 58 51.10 -0.6  
 0.6s 0.40nm 3.6mb X  
 FFC 72.86 327 iPd 58 58.10 -0.1  
 1.0s 13.00nm 4.9mb  
 S.D. = 1.3 on 92 of 104 obs.

& MAR 28, 1990 06h 08m 25.40s  
 36.850 N 121.578 W

DEPTH = 5.0km  
 CENTRAL CALIFORNIA (39)  
 <BRK>. ML 3.8 (BRK). Felt (11)  
 at Aromos and Moss Landing. Also  
 felt at Pacific Grove and  
 Solinas.

SAO 0.14 128 iPd 08 28.07 -0.2  
 eS 08 29.25  
 GCC 0.38 298 iPd 08 32.70 -0.3  
 MHC 0.49 354 iPd 08 35.48 0.2  
 eS 08 42.90  
 ARN 0.50 4 P 08 35.50 0.1  
 PRS 0.54 162 iPd 08 35.70 -0.6  
 LLA 0.56 114 iPd 08 36.40 -0.2  
 PCC 0.91 316 iPd 08 42.10 -1.2  
 PRI 1.02 134 iPd 08 44.80 -0.4  
 BKS 1.15 333 ePc 08 45.55 -1.8  
 BRK 1.16 332 ePc 08 45.40 -2.1  
 ZSP 1.22 334 iPd 08 47.00 -1.5  
 iS 09 04.00

PHAM 1.39 136 eP 08 49.00 -2.5  
 PKEM 1.42 123 eP 08 51.00 -0.9  
 FRI 1.51 84 iPd 08 50.80 -2.2  
 iS 09 11.50  
 CMB 1.52 38 iPd 08 51.50 -1.8  
 NWRM 1.91 327 eP 08 55.00 -3.9  
 BCH 2.06 143 eP 08 58.20 -2.9  
 BLP 2.48 157 eP 09 04.40 -2.7  
 ORV 2.70 1 ePd 09 09.10 -1.2  
 ABL 2.77 135 eP 09 08.20 -3.2  
 KVN 3.52 50 eP 09 20.00 -2.1  
 TNP 3.68 69 eP 09 23.00 -1.4  
 22 obs. associated

? MAR 28, 1990 06h 54m 39.69 ± 2.63s  
 55.376 N ± 25.3km 135.106 W ± 17.4km



DEPTH = 10.0km (geophysicist)					eSn	22 39.60			DUG	1.96 354 eP	47 59.00	-1.8
4.1mb ( 3 obs.)					eSg	22 43.00			DAU	2.38 24 eP	48 07.00	-0.1
OFF COAST OF SOUTHEASTERN ALASKA ( 20)					SAX	1.74 266 iPd	22 23.80	2.0	PV09	2.68 84 eP	48 12.00	0.7
SIT	1.69 356 eP	55 08.40	-0.9		VOY	1.95 134 ePnc	22 25.00	0.4	TNP	3.70 269 eP	48 23.00	-2.7
YKA	12.72 48 eP	57 43.50	0.3				22 51.20		KVN	4.43 282 eP	48 35.00	-1.1
	0.9s	2.80nm	4.5mb		SAL	2.04 208 P	22 27.00	1.2	BW06	5.06 26 P	48 55.00	9.9
EDM	12.88 91 P	57 45.00	-0.4		LLS	2.05 256 ePd	22 27.00	0.8	GOL	5.76 73 P	49 10.00	15.0
INK	13.00 3 eP	57 47.00	0.2		KHC	2.05 33 Pn	22 28.50	2.4	GLD	5.89 73 e(P)	48 59.00	2.3
IMA	13.98 327 eP	58 00.00	0.1				22 51.50		ANMO	5.89 122 eP	48 54.40	-2.3
FFC	18.89 78 eP	58 58.00	-4.2X				22 55.50		RSSD	8.68 45 eP	49 37.00	1.1
	0.9s	10.00nm	4.0mb		TRI	2.14 142 eP	22 27.20	0.0	11 obs. associated			
MBC	21.76 10 eP	59 33.50	0.7				22 54.00		* MAR 28, 1990 11h 06m 45.19±0.60s			
	0.9s	7.00nm	4.1mb		MDI	2.22 223 P	22 32.00	3.6X	37.080 N ± 9.1km 72.815 E ± 11.7km			
S.D. = 0.8 on 6 of 7 obs.					SLE	2.33 280 ePd	22 30.60	0.6	DEPTH = 33.0km (normol)			
? MAR 28, 1990 07h 10m 00.88±2.25s					ZLA	2.38 273 eP	22 31.20	0.4	4.6mb ( 10 obs.)			
13.973 S ± 50.0km 74.594 W ± 25.6km					TMA	2.45 239 ePd	22 33.30	1.4	TAJIK SSR (715)			
DEPTH = 80.9 ± 31.5 km					VAI	2.65 235 P	22 39.00	4.5X	QUE	8.43 217 eP	08 49.50	1.3
4.4mb ( 3 obs.)					FEL	2.67 281 Pn	22 34.94	0.0		eS	10 26.50	
PERU (116)							23 15.42		NDI	9.15 155 ePn	08 56.00	-2.0
ARE	3.88 130 eP	11 00.00	0.2		HOF	2.90 360 iPnc	22 45.90	7.7X		eS	10 31.50	
ZOBO	6.65 111 P	11 39.00	0.6		VBY	3.01 128 eP	22 45.90	6.4X	MHI	10.73 270 eP	09 18.00	-1.7
	S	13 48.00			MMK	3.03 245 eP	22 41.40	1.3		eS	11 18.00	
LPB	6.77 113 P	11 39.00	-0.8		PRU	3.12 33 Pg	22 50.00	8.9X	GKN	13.46 129 P	09 50.30	-6.1X
CCH	8.82 114 P	12 03.40	-4.5X				23 29.00			0.5s	27.00nm	5.4mb
ALO	57.28 329 eP	19 41.20	-0.7		WLS	3.22 290 Pn	22 42.18	-0.4	KKN	14.01 128 P	09 56.74	-7.0X
	1.2s	5.08nm	4.5mb		MOX	3.24 357 ePn	22 40.50	-2.4		0.6s	28.00nm	5.2mb
SES	71.61 336 ePd	21 14.80	0.3				23 53.00		DMN	14.03 129 P	09 59.04	-4.9X
KIC	72.19 79 P	21 18.60	0.1		MOF	3.25 280 Pn	22 42.82	-0.3		0.7s	32.00nm	5.1mb
	0.8s	5.50nm	4.5mb		GWf	3.26 300 Pn	22 53.37	10.1X	PKI	14.24 128 P	09 59.66	-7.2X
LKO	72.33 75 P	21 19.10	-0.3				23 35.65			0.6s	30.00nm	5.1mb
EDM	74.72 337 ePc	21 32.50	-0.1		CDF	3.26 290 Pn	22 42.92	-0.4	GUN	14.31 126 P	10 00.94	-6.8X
FRB	77.62 3 eP	21 49.00	0.6		ECH	3.29 286 Pn	22 42.81	-0.9	HYB	20.23 164 eP	11 22.50	2.2
YKA	82.37 342 eP	22 14.10	0.2		DIX	3.36 248 ePd	22 45.70	0.8	GBA	23.74 169 Pc	11 55.30	0.0
	0.8s	2.40nm	4.1mb		LOMF	3.44 271 Pn	22 45.24	-0.6		0.7s	6.70nm	4.3mb
S.D. = 0.6 on 10 of 11 obs.					BSF	3.48 279 Pn	22 45.59	-0.8	HFS	43.52 321 eP	14 47.50	0.6
* MAR 28, 1990 07h 19m 23.69±0.63s					TNS	3.62 322 ePn	22 48.00	-0.4		0.4s	1.30nm	4.0mb
23.248 N ± 10.7km 142.587 E ± 23.1km							23 30.30		NB2	44.80 323 P	14 57.30	-0.1
DEPTH = 33.0km (normol)					EMS	3.67 250 ePd	22 49.10	-0.1		0.7s	2.40nm	4.2mb
4.6mb ( 6 obs.)					BRG	3.72 20 e(P)	23 01.00	11.3X	MBC	66.69 3 ePd	17 34.70	0.4
VOLCANO ISLANDS REGION (213)							24 49.00			0.5s	4.00nm	4.8mb
CTA	43.22 175 eP	27 25.00	1.5		HAU	3.79 281 Pn	22 50.30	-0.5	INK	73.09 10 eP	18 14.00	0.5
WB5	43.61 191 eP	27 26.10	-0.6				23 50.40		YKA	80.59 3 eP	18 55.20	-0.1
WRA	43.68 191 Pd	27 27.00	-0.3		LPG	4.04 244 Pn	22 55.20	0.7		0.9s	2.00nm	4.1mb
	1.0s	10.70nm	4.6mb		LPL	4.04 244 Pn	22 55.00	0.5	WB5	81.05 123 eP	18 57.90	-0.5
ASPA	47.39 191 iPd	27 56.20	-0.6		KSP	4.49 38 eP	23 00.70	0.1	WRA	81.08 123 Pc	18 58.00	-0.6
	1.0s	6.00nm	4.6mb				23 11.00			0.6s	0.90nm	3.9mb
GUN	50.98 288 P	28 38.50	13.5X		LBF	5.41 268 Pn	23 11.80	-2.0	S.D. = 1.3 on 12 of 17 obs.			
GKN	52.06 288 P	28 33.30	0.4		SMF	5.56 265 Pn	23 14.20	-1.6	MAR 28, 1990 11h 34m 57.84±0.52s			
INK	66.38 24 eP	30 04.00	-7.1X		AVF	5.87 267 Pn	23 17.60	-2.5X	39.347 N ± 4.4km 26.186 E ± 5.0km			
YKA	75.35 28 eP	31 06.00	0.7		BGF	6.25 265 Pn	23 23.00	-2.5X	DEPTH = 10.0km (geophysicist)			
	0.7s	0.70nm	3.8mb				24 31.60		TURKEY (366)			
SUF	80.81 335 iP	31 35.90	0.6		MAF	6.51 263 Pn	23 26.50	-2.8X	ML 3.6 (ATH).			
	0.5s	3.00nm	4.5mb				24 38.80		PRK	0.12 147 ePg	35 01.30	0.5
SES	82.21 38 eP	31 46.00	3.2X		TCF	6.74 264 Pn	23 29.70	-2.7X	EZN	0.49 13 iPn	35 07.60	-0.2
FFC	84.81 32 eP	31 55.00	-0.9		S.D. = 1.1 on 35 of 46 obs.				IZM	1.27 138 iPn	35 20.60	-0.8
	1.2s	18.00nm	5.1mb		* MAR 28, 1990 10h 38m 25.90±1.08s				KGT	1.40 38 iPn	35 23.30	-0.1
HFS	87.09 337 eP	32 06.30	-0.8		23.617 S ± 8.4km 70.744 W ± 17.0km				ALN	1.55 356 eP	35 25.20	-0.3
	0.6s	3.50nm	4.8mb		DEPTH = 33.0km (normol)				EDC	1.63 52 iPn	35 26.50	-0.2
ALO	92.66 50 eP	32 37.00	3.0X		4.1mb ( 1 obs.)				MFT	1.67 30 iPn	35 28.30	1.0
S.D. = 1.0 on 9 of 13 obs.					NEAR COAST OF NORTHERN CHILE (122)				BNT	1.67 52 iPn	35 27.80	0.5
MAR 28, 1990 08h 21m 51.04±0.37s					Felt (IV) at Antofagosto.				SMG	1.71 162 ePn	35 29.00	1.1
47.412 N ± 4.2km 11.896 E ± 3.4km					ANT	0.31 106 iPd-	38 33.13	-0.7		Sb	35 52.00	
DEPTH = 10.0km (geophysicist)							38 38.00		RDO	1.86 345 ePb	35 30.00	0.0
AUSTRIA (546)					ARE	7.15 354 eP	40 10.00	-1.2	KCT	1.90 61 iPn	35 30.30	-0.3
ML 2.7 (FUR), 2.8 (KBA), 3.0 (GRF), 3.4 (LDG).							41 26.00		DST	1.91 81 iPn	35 31.50	0.7
BHG	0.73 65 iPg	22 06.20	0.7		LPB	7.47 20 P	40 19.00	3.2X	PAIG	2.02 287 eP	35 32.50	0.2
OGA	0.81 228 iPg	22 05.50	-1.3		CCH	7.55 36 P	40 17.30	0.5	NEO	2.30 270 ePn	35 40.00	3.6X
FUR	0.86 331 iPg	22 08.50	0.8		ZOBO	7.71 19 P	40 20.00	0.7	PLG	2.35 297 ePb	35 42.00	4.9X
	eSg	22 21.20			RTLL	7.94 166 ePc	40 22.20	0.2	ATH	2.37 235 ePb	35 42.00	4.6X
FVI	1.02 143 P	22 09.00	-1.3				40 30.00		YLV	2.74 63 iPn	35 41.30	-1.4
	eSg	22 21.50			CFA	8.26 165 e(P)	40 34.50	8.1X	KHL	2.80 110 ePn	35 45.00	1.4
KBA	1.04 108 iPg	22 09.50	-1.3		YKA	92.62 341 eP	51 35.50	0.6	GBZT	2.89 59 ePn	35 51.50	6.8X
	iSg	22 22.90					51 35.50		LIT	2.95 286 eP	35 45.30	-0.3
CTI	1.38 187 P	22 16.00	-0.3		S.D. = 1.0 on 6 of 8 obs.				AGG	3.01 265 eP	35 50.60	4.1X
	eSg	22 33.50			* MAR 28, 1990 10h 47m 25.91s				HRT	3.05 60 ePn	35 46.80	-0.2
RBL	1.50 130 Pd	22 18.00	-0.1		38.245 N 112.530 W				ALT	3.06 94 iPn	35 47.80	0.5
	eSg	22 36.50			DEPTH = 0.7km				GPA	3.31 72 ePn	35 51.00	0.2
JRC1	1.60 351 ePn	22 20.00	0.5		UTAH (478)				ELL	3.92 130 eP	35 57.00	-2.5
	ePg	22 23.00			<SLC-P>. MD 3.1 (SLC). Felt at Beaver.				BBTK	5.10 82 eP	36 39.00	22.7X
					MSU	0.39 46 iP	47 33.70	0.1		iS	37 49.00	
					S.D. = 0.9 on 20 of 27 obs.				MLR	6.14 358 eP	36 36.00	5.1X



28d 12h

MAR 28, 1990 12h 15m 20.36 $\pm$ 0.53s  
 42.458 N  $\pm$  5.4km 24.241 E  $\pm$  6.8km  
 DEPTH = 10.0km (geophysicist)

BULGARIA (359)  
 ML 3.1 (THE). MD 3.1 (ATH).

SRS	1.42	200	ePnc	15	46.20	-0.1
RDO	1.63	143	ePb	15	50.00	0.8
KNT	1.64	218	ePn	15	48.80	-0.5
			iSn	16	13.80	
SOH	1.76	202	ePn	15	51.00	-0.2
			eSn	16	18.60	
GRG	2.04	223	e(Pn)	15	51.10	-4.0X
			eSn	16	25.80	
ALN	2.06	138	ePn	15	55.20	-0.3
			eSn	16	30.00	
SKO	2.14	258	iPn	15	57.00	0.4
PLG	2.17	196	ePn	15	56.50	-0.5
KZN	2.84	222	ePn	16	07.20	0.5
MLR	3.27	21	eP	16	13.00	0.2
VRI	3.85	27	ePd	16	20.50	-0.4

S.D. = 0.5 on 10 of 11 obs.

\* MAR 28, 1990 12h 20m 02.85 $\pm$ 1.15s  
 35.604 N  $\pm$  10.2km 28.337 E  $\pm$  9.8km  
 DEPTH = 28.5  $\pm$  9.5 km  
 EASTERN MEDITERRANEAN SEA (371)

ARG	0.63	344	iPnd	20	15.30	-0.1
KSL	1.14	63	ePn	20	24.50	1.6
			eSn	20	38.20	
ELL	1.71	48	iPn	20	33.00	1.8
CIN	2.00	354	ePn	20	35.00	-0.4
			iSg	20	56.00	
SMG	2.42	331	ePn	20	42.80	1.5
BCK	2.59	44	iPn	20	45.30	1.4
KHL	2.88	19	iPn	20	46.70	-1.1
Izm	2.92	343	ePn	20	43.00	-5.4X
ALT	3.72	22	ePn	20	59.00	-0.9
CSS	4.13	97	eP	21	06.50	0.8
VLI	4.51	286	ePn	21	12.00	1.0
DSI	7.12	122	eP	21	47.00	-0.7
PRNI	7.67	131	e(P)	21	55.00	-0.5
MBH	8.01	135	eP	22	00.00	-0.2

S.D. = 1.2 on 13 of 14 obs.

? MAR 28, 1990 13h 48m 01.81 $\pm$ 5.85s  
 51.602 N  $\pm$  36.5km 16.184 E  $\pm$  34.7km  
 DEPTH = 10.0km (geophysicist)

POLAND (548)  
 ML 2.9 (KBA).

KSP	0.76	175	iPd	48	16.60	-0.1
	0.3s	82.00nm				
			iS	48	25.60	
BRG	1.58	243	iPg	48	30.50	0.5
			iSg	48	51.00	
PRU	1.92	213	Pn	48	34.50	-0.4
			Pg	48	36.20	
			Sn	48	53.50	
			Sg	48	59.00	
CLL	2.01	263	ePn	48	36.00	-0.1
			iSg	49	04.60	
KHC	2.98	215	Pn	48	49.80	-0.3
			Pg	48	55.90	
			eSn	49	18.00	
			Sg	49	34.00	
HOF	3.01	246	iPnc	48	50.30	-0.1
WET	3.24	222	ePn	48	53.60	-0.2
KBA	4.09	203	ePn	49	18.00	0.7
			i	49	25.30	
			e	50	24.00	
			e(Sg)	50	37.00	

S.D. = 0.5 on 8 of 8 obs.

MAR 28, 1990 14h 27m 23.31 $\pm$ 0.65s  
 5.610 S  $\pm$  3.3km 149.474 E  $\pm$  4.7km  
 DEPTH = 166.8  $\pm$  6.5 km  
 5.3mb (22 obs.)

NEW BRITAIN REGION (192)

LAT	2.67	247	eP	28	10.00	2.2
			eS	28	39.00	
RAB	3.03	62	iPd	28	09.70	-2.6
			iS	28	52.00	
PMG	4.42	211	iPc+	28	28.50	-1.6
			eS	29	21.50	

MNDI 5.81 264 eP 28 50.50 1.8  
 CTA 14.73 192 iPc 30 45.00 0.2  
 1.2s 129.69nm 5.2mb

OIS 17.68 212 eP 31 19.00 -1.8

MTN 19.47 247 iPd 31 38.10 -1.5

GUA 19.55 347 eP 31 40.80 0.3

GUMO 19.61 347 eP 31 41.20 0.2

PJG 19.61 347 eP 31 41.10 0.1

WBS 20.42 225 iPc 31 48.80 -0.4

WRA 20.48 225 Pc 31 49.40 -0.4

RMQ 20.77 182 iPc 31 53.50 0.8

0.5s 43.00nm 5.2mb

KNA 22.68 242 eP 32 11.10 -0.3

DZM 23.18 137 iPc 32 16.70 0.4

ASPA 23.39 218 iPd 32 19.40 1.1

0.4s 42.00nm 5.3mb

Z 17s 0.41um 3.9mszX

iS 36 20.70

iScP 39 20.00

LR 42 11.70

iScS 43 13.90

COO 24.94 175 eP 32 34.00 1.2

CAN 29.57 181 eP 33 14.20 -0.4

TOO 32.02 186 iPd 33 36.80 0.8

FORR 32.15 216 iPc 33 36.50 -0.6

0.2s 16.00nm 5.4mb

MBL 32.62 239 iPd 33 40.30 -1.1

0.5s 44.00nm 5.4mb

COOL 36.60 223 eP 34 14.30 -0.8

0.3s 4.00nm 4.6mb

NANU 36.85 239 iPd 34 16.70 -0.5

0.5s 21.00nm 5.1mb

KLB 39.36 225 eP 34 37.20 -0.9

MRWA 39.39 229 iPc 34 29.50 -8.9X

BAL 39.58 227 eP 34 38.00 -1.9

NWAO 40.49 224 eP 34 47.00 -0.3

MUN 40.68 226 iPc 34 48.80 -0.1

RKG 41.30 222 iPc 34 57.10 3.1X

0.6s 38.00nm 5.2mb

PUZ 41.58 145 P 34 56.80 0.6

TCW 41.81 152 Pc 34 59.00 1.0

NOZ 41.83 146 P 34 59.20 1.0

KIW 41.84 151 P 34 59.70 1.4

MNG 41.94 150 Pc 34 59.70 0.6

MRW 42.03 151 P 35 00.30 0.5

CAW 42.11 151 P 35 01.00 0.5

WDW 42.19 151 P 35 01.20 0.1

LIDJ 42.29 346 eP 34 57.60 -4.5X

MTW 42.36 151 P 35 02.60 0.1

MOW 42.44 151 P 35 03.20 0.1

BLW 42.50 151 eP 35 03.20 -0.5

CHJJ 42.59 347 P 35 03.90 -0.5

OZH 42.72 317 iPc 35 06.50 0.9

0.7s 300.00nm 6.0mb

TSRJ 42.85 344 P 35 07.30 0.8

MAT 43.24 347 iPd 35 09.10 -0.6

MTMJ 43.37 346 P 35 10.90 0.0

NIJ 43.73 348 P 35 14.00 0.4

GZH 45.38 310 Pc 35 29.00 2.1

SSE 45.42 325 Pc 35 27.20 0.1

0.5s 41.52.00

QIZ 46.08 303 P 35 33.60 1.1

NJ2 47.47 324 iPc 35 44.50 1.3

1.0s 100.00nm 5.4mb

HOJ 48.09 354 eP 35 49.10 1.3

MRRJ 48.41 352 eP 35 50.70 0.4

KUSJ 48.67 355 eP 35 52.50 0.3

WHN 49.22 319 ePd 35 57.50 0.9

1.0s 100.00nm 5.4mb

ASAJ 49.88 354 eP 36 02.70 1.2

DL2 51.25 332 iPd 36 12.00 0.0

1.0s 200.00nm 5.7mb

TIA 51.47 326 Pd 36 13.10 -0.6

GYA 52.30 310 P 36 21.00 0.8

LOE 52.40 297 eP 36 19.00 -1.9

0.5s 00 40.00

SNY 52.80 336 iPd 36 23.10 -0.3  
 MDJ 53.10 342 iPd 36 26.30 0.8  
 CN2 53.75 339 Pd 36 30.00 -0.4  
 KMI 54.73 306 P 36 40.00 1.8  
 BJI 54.80 329 eP 36 37.50 -0.5

1.5s 79.00nm 5.3mb

Z 24s 0.32um 4.3mszX

XAN 54.98 319 P 36 38.20 -1.4

TIY 55.19 324 iPc 36 41.30 0.3

Z 28s 0.80um 4.0mszX

CHG 55.38 297 eP 36 42.90 0.3

HHC 57.83 327 P 37 00.40 0.7

BTO 58.52 325 P 37 05.00 0.5

LZH 59.55 318 eP 37 12.00 0.3

1.5s 0.06nm 2.3mbX

Z 22s 0.30um 4.4mszX

ADK 64.14 23 eP 37 46.50 1.5kmX

0.9s 83.30nm 5.0mb

GUN 69.73 302 P 38 16.70 -1.1

PKI 70.02 302 P 38 18.20 -1.4

KKN 70.19 302 P 38 19.10 -1.4

DMN 70.29 302 P 38 19.90 -1.2

GKN 70.80 302 P 38 22.80 -1.3

ANM 77.55 18 eP 39 01.70 -0.2

SVW 78.87 24 eP 39 09.60 0.4

TTA 79.75 22 eP 39 13.30 -0.6

PMR 81.80 25 eP 39 23.10 -1.4

1.3s 37.70nm 5.0mb

IMA 82.33 20 eP 39 26.80 -0.6

1.1s 18.80nm 4.0mb

TOA 83.29 25 eP 39 32.30 0.0

1.0s 75.00nm 5.4mb

FBA 83.88 22 eP 39 32.50 -2.6

1.0s 50.00nm 5.3mb

BRW 84.39 15 eP 39 37.40 -0.1

SPA 84.43 180 iPd 39 38.70 0.6

0.8s 11.25nm 4.7mb

i 40 12.20

INK 90.40 21 eP 40 06.00 -0.4

KVN 95.38 51 P 40 30.00 -0.2

MBC 95.69 14 eP 40 31.00 0.3

0.8s 4.00nm 4.8mb

BLA 124.77 48 PKP 46 10.00 4.8X

WNY 125.92 37 PKP 45 59.30 -7.9X

CBM 127.67 32 PKP 46 03.00 -7.4X

ZOBO 136.92 121 PKP 46 19.00 -10.6X

IFR 143.56 323 ePKP 46 41.00 0.5

AVE 145.06 325 iPKP 46 42.50 -0.3

TIO 146.66 322 iPKP 46 47.50 1.8

S.D. = 1.0 on 89 of 96 obs.

MAR 28, 1990 14h 31m 09.23 $\pm$ 0.42s  
 49.509 N  $\pm$  4.0km 128.131 W  $\pm$  5.0km  
 DEPTH = 10.0km (geophysicist)  
 4.5mb (11 obs.)

VANCOUVER ISLAND REGION (25)



28d 14h

LON	5.05	121 eP	32 26.00	-0.9
TDL	5.08	126 P	32 26.60	-0.7
YEL	5.19	127 P	32 28.68	-0.2
ETW	5.52	107 P	32 32.39	-1.2
ASR	5.54	125 P	32 32.75	-1.0
NEW	7.37	96 eP	32 58.00	-1.4
FHC	9.18	160 e(P)	33 25.90	1.2
WDC	9.76	154 eP	33 30.90	-1.7
EDM	9.96	62 P	33 34.50	-0.9
MIN	10.26	151 ePc	33 38.80	-0.8
ORV	11.01	152 ePc	33 48.70	-1.1
SES	11.05	79 eP	33 50.00	-0.3
LRM	11.20	103 eP	33 51.10	-1.4
BRK	12.38	158 e(P)	34 13.50	5.3X
KVN	12.67	142 eP	34 12.50	0.1
CMB	12.75	151 e(P)	34 15.00	1.7
MHC	13.04	156 eP	34 16.60	-0.6
ARN	13.06	156 eP	34 17.50	0.1
GCC	13.24	158 e(P)	34 25.30	5.6X
TNP	13.86	141 eP	34 27.00	-1.1
0.9s 16.93nm 4.9mb				
LLA	13.91	155 eP	34 31.30	2.8
FRI	13.92	151 eP	34 29.20	0.5
PRS	14.06	157 eP	34 33.20	2.6
BW06	14.51	111 eP	34 39.00	2.3
1.0s 6.00nm 4.2mb				
YKA	15.00	25 eP	34 41.60	-1.1
0.7s 4.10nm 4.0mb				
ISA	15.54	149 eP	34 54.00	4.1X
TOA	16.11	328 eP	34 58.60	1.5
1.0s 80.00nm 4.8mb				
GSC	16.45	145 eP	35 06.00	4.4X
SBB	16.64	149 eP	35 12.00	7.9X
FFC	16.84	62 eP	35 04.00	-2.3
1.0s 23.00nm 4.3mb				
FFC	16.84	62 eP	35 10.00	3.7X
0.9s 368.00nm 5.5mb				
PMR	16.86	324 eP	35 06.90	0.4
MWC	16.99	150 eP	35 12.00	3.4X
PAS	17.02	151 eP	35 15.00	6.2X
RSSD	17.32	99 eP	35 12.00	-0.7
RVR	17.43	149 eP	35 16.00	2.2
TPC	17.80	145 eP	35 21.00	2.5
PLM	18.18	148 eP	35 24.00	0.5
FBA	18.61	333 eP	35 28.30	0.1
1.2s 23.40nm 4.3mb				
BAR	18.86	149 eP	35 36.00	4.4X
GOL	18.88	113 eP	35 32.50	0.5
INK	19.04	354 eP	35 34.00	0.5
GLA	19.19	144 eP	35 39.00	3.3X
SVW	19.31	317 eP	35 35.00	-2.0
TIA	20.29	322 eP	35 45.90	-1.7
IMA	21.21	331 eP	35 56.10	-0.9
1.5s 83.30nm 4.9mb				
ANMO	21.56	124 eP	36 00.00	-0.9
ALO	21.56	124 eP	36 00.00	-1.0
1.0s 16.25nm 4.4mb				
RSON	21.97	73 eP	36 06.00	0.1
1.0s 130.15nm 5.3mb				
ANM	24.76	321 eP	36 32.00	0.2
BRW	25.53	339 eP	36 39.90	0.9
MBC	27.06	5 eP	36 54.00	0.9
1.0s 5.00nm 4.2mb				
ZOBO	84.15	123 P	43 40.00	-2.5
S.D. = 1.3 on 69 of 79 obs.				
? MAR 28, 1990 14h 33m 01.34±4.12s				
42.409 N ±45.8km 7.729 E ±18.5km				
DEPTH = 10.0km (geophysicist)				
WESTERN MEDITERRANEAN SEA (387)				
ML 2.7 (LDG).				
PGF	0.95	81 Pn	33 19.50	0.0
Sn 33 33.60				
LMR	1.29	316 Pn	33 25.10	-0.1
Sn 33 43.40				
FRF	1.40	326 Pn	33 27.00	0.1
Sn 33 46.80				
SBF	1.47	352 Pn	33 27.90	0.0
Sn 33 50.50				
S.D. = 0.2 on 4 of 4 obs.				
& MAR 28, 1990 15h 40m 27.52s				
61.687 N 147.944 W				
DEPTH = 7.5km				
SOUTHERN ALASKA (2)				

&lt;AGS-P&gt;.

SML	0.22	303 eP	40 33.49	1.3
iS 40 36.04				
GHO	0.47	281 iP	40 37.40	0.3
eS 40 44.93				
PLRM	0.57	261 iP	40 38.66	-0.4
iS 40 47.29				
NCA	0.61	59 iP	40 39.43	-0.4
PMS	0.89	241 iP	40 44.35	-0.6
iS 40 56.83				
GLI	0.91	153 iP	40 44.39	-0.7
eS 40 58.02				
VZW	0.92	133 eP	40 44.29	-1.1
PWA	0.92	269 iP	40 44.21	-1.2
TOA	0.94	63 iP	40 45.06	-0.6
iS 40 58.87				
KLU	0.99	100 iP	40 45.05	-1.5
CUT	1.31	304 eP	40 50.05	-1.9
eS 41 07.07				
SUA	1.36	262 eP	40 51.11	-1.8
eS 41 09.90				
HUR	1.52	329 eP	40 53.27	-1.8
eS 41 12.79				
SLKM	1.62	224 iP	40 55.79	-0.7
eS 41 16.94				
SKT	1.73	281 iP	40 56.74	-1.3
iS 41 19.54				
PAX	1.73	41 eP	40 56.55	-1.7
SEW	1.75	206 eP	40 57.39	-1.0
RND	1.78	347 eP	40 57.22	-1.6
GLB	1.99	95 eP	41 00.53	-1.5
NCG	2.04	264 iP	41 01.49	-1.2
eS 41 28.39				
SPU	2.04	257 eP	41 01.18	-1.5
iS 41 28.47				
CRP	2.06	260 eP	41 03.02	-0.1
CKL	2.17	259 eP	41 03.44	-1.1
BGL	2.18	261 eP	41 04.02	-0.7
KTH	2.32	325 eP	41 05.71	-1.1
RDT	2.44	245 eP	41 06.38	-2.0
26 obs. associated				

? MAR 28, 1990 17h 24m 50.88±1.37s  
10.862 N ±32.5km 83.906 W ±23.8km  
DEPTH = 33.0km (normal)  
4.2mb (3 obs.)

COSTA RICA (78)

UPA	4.69	113 iPd	26 01.50	0.2
0.7s 65.75nm				
OLY	25.47	346 eP	30 18.00	0.3
GOL	34.47	330 eP	31 36.00	-2.1
PLM	37.59	312 eP	32 05.00	0.5
KVN	41.40	319 eP	32 37.20	1.2
YKA	56.08	343 eP	34 27.90	-1.0
0.5s 0.40nm 3.7mb				
MBC	68.08	351 eP	35 49.00	0.0
LKO	76.88	83 P	36 41.80	-0.3
TIC	77.90	85 P	36 47.20	-0.6
LIC	77.96	86 P	36 47.40	-0.7
KIC	78.22	86 P	36 49.00	-0.5
NB2	83.06	29 P	37 16.10	1.8
0.9s 3.00nm 4.4mb				
HFS	84.43	30 eP	37 22.20	1.0
0.5s 1.20nm 4.3mb				
HYB	146.99	32 ePKP	44 31.00	0.3
GBA	149.45	38 PKPc	44 44.00	9.5X
0.2s 0.80nm				
S.D. = 1.1 on 14 of 15 obs.				

\* MAR 28, 1990 18h 45m 53.38±2.50s  
32.397 S ±12.5km 71.636 W ±21.5km  
DEPTH = 20.2 ± 7.4 km  
NEAR COAST OF CENTRAL CHILE (135)

ROCH	0.78	138 iPd	46 08.00	-0.3
iS 46 24.00				
LCCH	1.08	177 iP	46 13.50	0.3
iS 46 29.80				
TACH	1.38	155 eP	46 17.50	-0.1
iS 46 41.00				
FCH	1.46	130 iPd	46 18.40	-0.7
iS 46 40.60				
PCH	1.54	143 iP	46 20.60	0.6
iS 46 44.50				
LNV	1.57	173 eP	46 19.50	-0.7

iS 46 43.00				
CHCH	1.74	152 iPc	46 23.50	0.7
iS 46 51.70				
RTCV	2.68	79 e(P)	46 37.10	0.7
RTLL	2.90	69 e(P)	46 39.40	0.1
eS 47 18.50				
CFA	2.99	76 e(P)	46 40.00	-0.7
S.D. = 0.7 on 10 of 10 obs.				
? MAR 28, 1990 18h 53m 19.74±15.25s				
19.505 N ±76.9km 67.385 W ±97.2km				
DEPTH = 10.0km (geophysicist)				
MONA PASSAGE (89)				
LRS	1.31	157 P	53 44.00	0.0
PORP	1.61	154 P	53 48.30	0.0
SJG	1.81	140 iP	53 51.00	-0.3
LPR	1.86	129 P	53 52.00	0.0
CPD	2.02	136 P	53 54.50	0.3
S.D. = 0.3 on 5 of 5 obs.				
* MAR 28, 1990 19h 28m 56.36±0.62s				
40.051 N ±8.1km 78.797 E ±12.0km				
DEPTH = 33.0km (normal)				
4.4mb (6 obs.)				
SOUTHERN XINJIANG, CHINA (321)				
NDI	11.41	187 eP	31 41.00	0.9
eS 33 44.00				
GKN	12.95	156 P	32 00.40	-0.5
KKN	13.36	154 P	32 05.40	-0.9
GUN	13.45	152 P	32 07.50	-0.2
DMN	13.47	155 P	32 08.30	0.5
PKI	13.60	154 P	32 08.90	-0.7
QUE	13.80	228 eP	32 11.00	-1.1
eS 34 44.00				
HYB	22.56	181 eP	33 57.00	2.0
GBA	26.37	183 P	34 35.00	3.6X
0.9s 2.80nm 3.9mb				
LPG	51.54	301 eP	38 02.20	0.9
0.8s 2.70nm 4.3mb				
LPL	51.54	301 eP	38 01.60	0.3
0.4s 1.70nm 4.4mb				
AVF	53.26	304 eP	38 12.40	-1.4
0.6s 3.60nm 4.5mb				
MBC	63.40	5 eP	39 24.50	0.2
0.5s 6.00nm 5.0mb				
YKA	77.23	6 eP	40 48.30	0.0
0.5s 1.60nm 4.3mb				
S.D. = 1.0 on 13 of 14 obs.				
MAR 28, 1990 19h 50m 19.97±0.24s				
16.094 S ±8.1km 173.112 W ±8.2km				
DEPTH = 33.0km (normal)				
5.3mb (17 obs.) 4.3Msz (2 obs.)				
TONGA ISLANDS (173)				



28d 19h

BRS	33.52	245	eP	56	52.00	-6.8X		1.0s	15.00nm	5.4mb	JARJ	149.13	307	PKPd	10	07.10	4.3X			
COO	35.05	239	eP	57	10.00	-2.1	CHTO	93.19	289	iP	03	34.20	1.5	MDSJ	149.14	305	PKPd	10	07.50	4.7X
RMO	36.88	247	eP	57	25.00	-2.5		1.9s	53.64nm	5.7mb	BEQ	149.16	341	ePKP	10	06.50	4.2X			
CTA	38.76	258	eP	57	43.00	-0.4	MBC	97.55	11	eP	03	51.50	0.1	FVI	149.20	352	PKP	10	06.00	3.7X
CAN	38.83	233	eP	57	42.80	-1.0		0.7s	3.00nm	4.9mb	RBL	149.23	351	PKPc	10	06.50	4.0X			
TOD	42.25	231	eP	58	10.00	-1.9	GTA	97.83	309	eP	03	55.00	1.4	AVF	149.25	5	ePKP	10	06.80	4.4X
ADE	46.87	237	eP	58	49.00	-0.1	QUE	123.59	296	ePKP	09	17.50	1.0		1.0s	22.00nm				
WB5	49.94	257	eP	59	10.20	-2.8X	NB2	135.01	357	PKP	09	37.80	0.6	LLS	149.27	357	ePKPd	10	07.60	4.9X
WRA	49.96	257	Pd	59	11.80	-1.4		0.9s	3.20nm					OSS	149.38	356	ePKPd	10	08.00	5.2X
	1.0s	10.00nm					WTS	144.18	0	ePKP	09	52.50	-1.4	SMF	149.43	4	ePKP	10	07.20	4.5X
GUMO	50.94	303	eP	59	10.90	-9.7X		1.0s	13.00nm						0.9s	11.45nm				
Z	20s	0.19um					KRA	144.51	345	iPKPd	09	53.10	-1.5	BGF	149.44	5	ePKP	10	07.30	4.6X
		eS							e	10	10.30				1.0s	28.00nm				
MTN	53.96	266	eP	59	42.00	-1.2	KSP	144.52	350	ePKP	09	53.30	-1.3	LJU	149.46	349	ePKP	10	07.00	4.2X
FORR	55.32	243	eP	59	50.50	-2.5	CLL	144.53	353	iPKPc	09	53.30	-1.2	DIM	149.57	332	iPKPd	10	09.00	6.0X
	0.4s	18.00nm						0.9s	14.00nm					VOY	149.58	350	ePKP	10	07.10	4.1X
MBL	63.34	254	eP	00	47.00	-1.6	BRG	144.84	352	iPKP	09	54.00	-1.1	LSF	149.60	7	ePKP	10	07.60	4.6X
	0.5s	10.00nm					SPC	145.24	345	ePKP	09	56.40	0.3		0.8s	18.15nm				
KLB	64.16	242	iPc	00	53.00	-0.8	MOX	145.32	355	iPKPd	09	56.00	0.0	VDL	149.62	356	ePKPd	10	08.80	5.6X
NWAO	64.52	241	eP	00	55.00	-1.2		1.1s	31.00nm				TCF	149.64	6	ePKP	10	07.80	4.8X	
BAL	65.13	243	eP	00	58.30	-1.8	PPE	145.34	334	ePKP	09	53.00	-3.1X		1.0s	16.00nm				
MUN	65.45	242	eP	01	00.30	-1.9	ENN	145.40	1	ePKP	09	56.50	0.5	MKRJ	149.65	306	PKPd	10	08.90	5.3X
NANU	67.10	252	iPd	01	12.30	-0.5		0.9s	24.00nm				MAF	149.75	6	ePKP	10	08.30	5.1X	
	0.6s	33.00nm					MEM	145.56	1	PKP	09	57.00	0.7		1.2s	41.65nm				
PRS	71.45	42	ePc	01	39.20	-0.1	SNF	145.60	3	PKP	09	56.80	0.4	PGB	149.76	334	ePKP	10	09.00	5.6X
GCC	71.47	41	ePc	01	39.10	-0.3	PRU	145.63	351	PKPd	09	57.20	0.7	CEY	149.78	349	PKP	10	08.40	5.1X
PCC	71.52	40	ePc	01	39.30	-0.4		1.0s	43.40nm					DSI	149.85	306	e(PKP)	10	10.00	6.3X
BCH	71.61	44	P	01	40.00	-0.4			e	09	59.50			VBY	149.85	348	ePKP	10	09.40	6.1X
SAO	71.66	42	eP	01	40.00	-0.6	KAS	145.77	323	ePKP	09	59.50	2.4X	CTI	149.87	353	PKP	10	09.00	5.5X
PRJ	71.79	42	ePc	01	41.50	0.0	NAI	145.78	242	iPKPc	10	01.00	2.9X	TRI	149.92	350	PKP	10	05.50	2.1
BRK	71.83	40	eP	01	41.50	0.0	TNS	145.93	358	ePKPc	09	57.30	0.2	KDZ	149.94	332	iPKPd	10	09.00	5.4X
MHC	71.89	41	ePc	01	42.00	-0.1	VRI	145.99	335	ePKPd	09	58.50	1.3	TMA	150.03	357	ePKPd	10	09.20	5.4X
LLA	71.89	42	e(P)	01	40.50	-1.5	DOU	146.03	3	PKP	09	58.40	1.3	DIX	150.10	359	ePKPd	10	10.50	6.4X
FRI	72.91	42	ePc	01	47.50	-0.4	ABH	146.30	359	ePKP	09	58.40	0.8	EMS	150.11	360	ePKPd	10	10.10	6.1X
CMB	73.10	41	ePc	01	48.50	-0.6	GRF	146.31	355	iPKP	09	59.10	1.5	VTB	150.12	335	iPKPd	10	04.00	0.0X
		e					RUP	146.48	360	ePKP	09	59.33	1.4	MMK	150.12	358	ePKPd	10	10.50	6.4X
ORV	73.34	39	eP	01	49.70	-0.6	TOD	146.54	358	ePKP	09	59.02	1.0	RZN	150.22	332	iPKPd	10	10.00	5.7X
WDC	73.35	38	eP	01	50.30	-0.1	KHC	146.60	352	ePKP	10	00.00	1.8	KHL	150.23	322	ePKP	10	10.00	5.8X
SPA	74.01	180	iPc	01	54.30	0.2		1.2s	25.00nm				VAI	150.28	357	PKP	10	06.80	2.9X	
	1.1s	42.86nm							e	10	16.70		MDI	150.31	356	PKP	10	08.50	4.5X	
KVN	75.15	41	P	02	00.00	-1.1	MLR	146.61	335	ePKP	10	00.00	1.6	AYN	150.34	300	ePKP	10	10.50	6.0X
TNP	75.16	43	P	02	00.00	-1.2	FLN	146.87	9	ePKP	09	59.90	1.4	SAL	150.42	355	PKP	10	09.00	4.9X
	0.8s	11.76nm						0.8s	21.50nm				RJF	150.53	8	ePKP	10	09.80	5.4X	
BMW	76.76	33	P	02	09.00	-0.9	ZST	146.90	347	ePKP	10	00.00	2.2		1.0s	20.00nm				
LON	77.69	33	P	02	14.00	-1.0	SRO	146.99	346	ePKP	10	00.00	2.1	ORO	150.55	358	PKP	10	10.00	5.5X
RMW	78.14	33	P	02	17.00	-0.5	LDF	147.08	9	ePKP	10	00.60	1.7	PRNJ	150.63	304	ePKP	10	11.50	6.5X
MSU	78.73	44	P	02	21.40	0.3		0.8s	13.45nm				LPL	150.67	0	ePKP	10	11.60	6.7X	
PMR	79.74	11	eP	02	24.90	-0.9	BUD	147.13	345	ePKP	10	06.50	7.5X		0.8s	12.75nm				
	1.6s	112.90nm					CMP	147.15	336	ePKPc	10	04.00	4.8X	LPG	150.69	0	ePKP	10	11.70	6.7X
TTA	79.90	8	eP	02	26.90	0.2	GRR	147.17	10	ePKP	10	01.20	2.2		1.0s	28.00nm				
PNT	80.45	32	eP	02	30.00	0.1		1.0s	40.00nm					MMB	150.73	334	iPKPd	10	11.00	6.2X
TOA	80.80	12	eP	02	31.20	-0.3	BBTK	147.33	322	iPKPd	10	03.00	3.3X	KKB	150.77	335	iPKPd	10	11.00	6.1X
	0.9s	66.70nm					LPF	147.49	10	ePKP	10	02.10	2.6X	LFF	150.78	9	ePKP	10	10.60	5.9X
ALO	81.03	50	eP	02	33.00	-0.5		0.8s	38.40nm						0.8s	21.50nm				
	1.0s	10.50nm					SOP	147.50	348	iPKPc	10	03.20	3.6X	CAF	150.97	7	ePKP	10	11.20	6.1X
Z	20s	0.23um					CDF	147.77	360	ePKP	10	03.30	3.2X		1.0s	20.00nm				
								1.0s	24.00nm				LPO	151.10	8	ePKP	10	11.30	6.1X	
ANMO	81.03	50	P	02	32.40	-1.1	FUR	147.81	354	ePKP	10	03.40	3.3X		0.8s	13.45nm				
NEW	81.12	34	P	02	32.30	-1.2		1.0s	61.00nm				BNI	151.13	0	PKP	10	06.50	1.0	
CN2	81.79	320	Pd	02	37.80	0.8	BHG	148.08	352	iPKPd	10	04.50	4.0X	SKO	151.33	337	iPKP	10	11.60	5.9X
SNY	81.97	318	eP	02	38.80	0.9		1.2s	50.00nm						i	10	20.60			
LRM	82.39	38	eP	02	40.30	-0.1	BZS	148.08	340	ePKP	10	04.00	3.5X	LWI	151.7					



RJF 1.75 156 Pg 57 54.20 1.0  
Sg 58 17.00  
LDF 1.75 346 Pg 57 52.90 -0.3  
Sg 58 15.60  
GRR 1.75 329 Pg 57 53.60 0.4  
Sg 58 16.10  
AVF 1.96 92 Pg 57 56.60 0.3  
Sg 58 20.70  
SSF 2.07 84 Pg 57 59.10 1.2  
Sg 58 23.80  
S.D. = 0.8 on 11 of 11 obs.

% MAR 28, 1990 21h 48m 15.24 ± 0.83s  
40.525 N ± 9.1km 23.644 E ± 9.7km  
DEPTH = 10.0km (geophysicist)  
GREECE (364)  
ML 1.9 (THE).

OUR 0.32 126 ePg 48 21.80 -0.1  
eSg 48 26.40  
SOH 0.37 323 ePg 48 22.80 -0.1  
eSg 48 29.00  
THE 0.53 282 ePg 48 25.80 -0.1  
eSg 48 33.30  
PAIG 0.60 177 ePg 48 27.40 0.1  
KNT 0.85 319 ePg 48 31.80 0.1  
eSg 48 44.10  
S.D. = 0.2 on 5 of 5 obs.

MAR 28, 1990 21h 58m 31.40 ± 0.27s  
36.490 N ± 4.4km 87.381 E ± 4.2km  
DEPTH = 33.0km (normal)  
4.8mb (13 obs.)  
SOUTHERN XINJIANG, CHINA (321)

LSA 7.47 154 ePn 00 25.00 3.7X  
GUN 8.65 189 P 00 42.30 4.7X  
GKN 8.77 196 P 00 38.70 -0.4  
KKN 8.86 192 P 00 41.50 1.2  
PKI 9.05 191 P 00 43.40 0.3  
DMN 9.06 193 P 00 43.00 -0.2  
KSH 9.48 292 eP 00 48.50 -0.3  
GTA 10.24 70 eP 00 58.40 -0.9

N 10s 1.10um  
LZH 13.29 87 P 01 38.00 -2.4X  
N 13s 0.60um  
E 10s 0.30um

KMI 17.37 126 Pc 02 33.50 0.5  
Z 12s 0.90um  
XAN 17.76 92 P 02 37.20 -0.5  
BTO 18.16 70 eP 02 43.00 0.3

N 11s 0.30um  
E 11s 0.20um

QUE 18.18 256 eP 02 43.00 0.0  
GYA 19.22 116 P 02 55.60 0.0

N 12s 0.40um  
E 12s 0.50um

HHC 19.36 70 P 02 58.50 1.3  
TIY 20.01 79 eP 03 09.00 4.8X  
Z 12s 0.70um  
N 11s 0.80um

CHG 20.34 147 eP 03 07.90 0.2  
HYB 20.54 205 eP 03 10.00 0.2

POO 21.50 217 eP 03 20.00 0.5  
MHI 22.42 278 eP 03 30.00 1.3

BJI 22.84 72 eP 03 35.00 2.4  
NNT 26.26 152 eP 04 04.00 -1.5

PRNI 43.71 278 eP 06 36.00 0.9  
SUF 45.23 325 iP 06 47.70 0.8

0.6s 4.70nm  
NUR 45.79 322 eP 06 52.00 0.6

MLR 46.22 301 eP 06 58.00 2.9X  
HFS 51.25 322 eP 07 32.70 -1.0

0.8s 4.50nm  
NB2 52.34 323 P 07 41.30 -0.6

0.8s 5.00nm  
LPG 59.12 306 eP 08 30.60 -0.7

0.8s 6.05nm  
LPL 59.13 306 eP 08 30.80 -0.4

0.8s 6.70nm  
SMF 60.55 308 eP 08 37.00 -3.7X

1.2s 14.90nm  
AVF 60.80 308 eP 08 37.80 -4.6X

1.2s 8.95nm  
EKA 61.21 319 Pd 08 45.30 0.3

1.2s 16.00nm  
MBC 66.26 7 eP 09 18.00 0.2

1.0s 12.00nm 4.9mb  
WB5 71.50 133 eP 09 49.80 -1.2  
WRA 71.54 134 Pc 09 50.40 -0.8  
0.9s 1.70nm 4.1mb  
YKA 79.78 10 eP 10 36.90 -0.4  
0.9s 2.00nm 4.1mb  
LKO 86.77 279 P 11 13.40 -0.5  
0.9s 22.50nm 5.4mb  
FFC 88.80 5 eP 11 23.00 0.1  
0.8s 10.00nm 5.2mb  
ZOBO 150.36 306 PKP 18 15.00 -1.6  
S.D. = 0.9 on 33 of 40 obs.

\* MAR 28, 1990 22h 27m 31.72 ± 1.03s  
32.340 N ± 8.6km 30.886 E ± 16.6km  
DEPTH = 33.0km (normal)  
EASTERN MEDITERRANEAN SEA (371)  
MD 4.3 (HLW). ML 3.7 (CSS).

KOT 2.53 161 ePn 28 13.50 2.1  
eSn 28 41.50  
PPCY 2.82 25 eP 28 15.20 -0.1  
CSS 3.32 37 eP 28 24.00 1.5  
eSn 29 00.00

ELL 4.47 350 ePn 28 39.60 0.5  
HOL 4.71 129 eP 28 42.40 0.1  
eS 29 33.30

BCK 5.11 357 iPn 28 49.10 1.0  
BADA 5.21 136 eP 28 47.50 -1.8  
AYN 5.60 127 eP 28 54.00 -0.9

eS 29 53.30  
CIN 5.73 337 eP 28 56.00 -0.7  
KHL 6.07 350 ePn 29 00.80 -0.8

ALT 6.73 355 iPn 29 10.00 -0.9  
S.D. = 1.3 on 11 of 11 obs.

\* MAR 28, 1990 22h 56m 44.05 ± 1.04s  
37.085 N ± 10.7km 72.776 E ± 13.7km  
DEPTH = 33.0km (normal)

4.0mb (2 obs.)  
TAJIK SSR (715)

QUE 8.42 217 eP 58 47.00 0.1  
NDI 9.17 155 eP 58 57.00 -0.1

eS 00 37.00  
MHI 10.70 270 eP 59 18.00 -0.1

eS 01 16.00  
HFS 43.49 321 eP 04 45.70 0.1

0.7s 2.80nm 4.1mb  
NB2 44.78 323 P 04 56.00 0.0

0.7s 1.10nm 3.8mb  
S.D. = 0.2 on 5 of 5 obs.

? MAR 28, 1990 23h 11m 14.20 ± 0.99s  
43.054 N ± 11.0km 0.827 W ± 9.5km  
DEPTH = 10.0km (geophysicist)

PYRENEES (378)  
MD 1.0 (STR).

ISSF 0.04 138 Pg 11 16.28 -0.1  
Sg 11 17.49

MADF 0.09 4 Pg 11 16.77 -0.1  
Sg 11 18.38

ATE 0.10 71 Pg 11 17.00 0.1  
Sg 11 18.79

BOH 0.14 290 Pg 11 17.71 0.1  
Sg 11 19.70

S.D. = 0.2 on 4 of 4 obs.

MAR 29, 1990 00h 13m 22.26 ± 0.42s  
44.366 N ± 3.0km 7.176 E ± 3.4km  
DEPTH = 10.0km (geophysicist)

NORTHERN ITALY (545)  
ML 2.3 (GEN). 2.2 (LDG).

PZZ 0.15 339 P 13 26.05 0.2  
S 13 28.51

STV 0.16 139 P 13 25.95 -0.1  
S 13 28.26

ENR 0.22 128 P 13 27.28 0.1  
S 13 30.25

TOUF 0.36 172 Pg 13 29.44 -0.2  
AUTN 0.41 154 Pg 13 30.68 -0.1

SAOF 0.47 144 Pg 13 31.69 -0.1  
MVIF 0.47 182 Pg 13 31.80 0.0

Sg 13 38.24  
AURF 0.49 167 Pg 13 31.98 -0.3

ROB 0.50 98 P 13 33.02 0.5  
S 13 40.10  
SBF 0.54 159 Pg 13 32.70 -0.4  
Sg 13 39.90  
RRL 0.62 333 P 13 34.36 -0.6  
S 13 42.66  
IMI 0.69 131 P 13 35.89 0.0  
S 13 44.74  
FIN 0.76 102 P 13 37.13 0.0  
S 13 46.54  
FRF 0.89 206 Pg 13 39.40 0.1  
Sg 13 50.30  
LRG 1.08 213 Pg 13 43.00 0.4  
Sg 13 56.60  
LMR 1.14 205 Pg 13 44.10 0.5  
Sg 13 58.10  
S.D. = 0.3 on 16 of 16 obs.

\* MAR 29, 1990 01h 01m 53.98 ± 0.56s  
49.017 S ± 11.1km 109.015 E ± 18.8km  
DEPTH = 10.0km (geophysicist)  
4.9mb (4 obs.)  
SOUTHEAST INDIAN RISE (435)

ASPA 32.00 47 iPc 08 23.00 0.5  
1.0s 17.00nm 4.9mb  
Z 23s 1.07um 4.5mszX

LR 18 56.40  
VNDA 34.79 162 e(P) 08 46.20 0.1

WRA 35.41 44 P 08 50.00 -2.0  
WB5 35.47 44 eP 08 53.20 0.7

SPA 41.17 180 eP 09 40.00 0.1  
1.0s 15.50nm 4.7mb

e 10 01.30  
CHG 68.12 350 eP 12 55.10 -0.9

CHTO 68.12 350 eP 12 55.30 -0.7  
1.2s 7.99nm 4.8mb

KMI 74.01 354 Pd 13 33.00 1.4  
GUN 79.32 339 P 14 00.80 -0.7

CD2 79.70 355 eP 14 03.60 0.5  
GKN 79.71 338 P 14 02.20 -1.1

XAN 82.69 360 P 14 19.20 0.6  
LZH 84.85 356 P 14 30.50 0.8

2.0s 70.00nm 5.5mb  
TIY 86.40 3 eP 14 38.00 0.7

GTA 88.42 353 P 14 47.60 0.5  
BJI 88.90 5 eP 14 50.00 0.9

INK 144.26 34 iPkPd 21 28.70 -1.6  
DAG 145.63 341 ePKP 21 31.00 -1.4

MBC 146.67 19 ePKP 21 36.00 1.9  
1.0s 6.00nm

PNT 148.64 71 ePKP 21 43.00 4.9X  
ALO 150.42 105 ePKP 21 47.00 5.5X

1.0s 11.75nm  
LRM 152.01 81 ePKP 21 51.90 8.3X  
S.D. = 1.1 on 19 of 22 obs.

MAR 29, 1990 01h 42m 24.35 ± 0.36s  
20.930 S ± 11.6km 175.910 W ± 6.7km  
DEPTH = 33.0km (normal)

5.0mb (11 obs.) 4.9msz (1 obs.)  
TONGA ISLANDS (173)

SVA 6.00 297 eP 43 52.50 -0.8  
DZM 16.46 263 iPc 46 17.00 2.4

BRS 29.24 251 e(P) 48 28.50 3.0X  
eS 53 18.00

RMO 32.75 253 eP 48 55.00 -1.5  
CAN 33.91 237 eP 49 08.50 1.9

BWA 34.15 239 eP 49 08.30 -0.3  
CTA 35.39 264 iPc 49 19.00 -0.4

ASPA 46.33 257 eP 50 45.70 -3.6X  
0.7s 27.00nm 5.3mb

Z 22s 0.70um 4.6mszX  
LR 07 16.60

WB5 46.46 262 eP 50 48.80 -1.5  
WRA 46.48 262 P 50 51.00 0.6

1.3s 26.30nm 5.0mb  
SPA 69.20 180 eP 53 28.10 -1.6

1.0s 11.50nm 4.9mb  
PRS 76.79 43 eP 54 14.60 0.1

BCH 76.91 44 P 54 16.20 0.8  
SAO 77.02 42 eP 54 21.90 6.1X

PRI 77.12 43 eP 54 17.10 0.6  
RVR 78.01 46 eP 54 21.00 -0.3

SBB 78.11 46 eP 54 22.00 0.1  
FRI 78.25 43 eP 54 22.60 0.1



29d 01b

ISA	78.25	45	eP	54	23.00	0.3
CMB	78.47	42	eP	54	23.70	-0.1
WDC	78.77	39	eP	54	25.60	0.3
CLC	78.92	45	eP	54	26.00	-0.3
TPC	78.97	47	eP	54	27.00	0.3
GSC	79.15	46	eP	54	28.00	0.4
TNP	80.49	43	P	54	35.00	0.1
	1.0s		6.67nm			4.6mb
KVN	80.51	42	P	54	34.60	-0.4
LON	83.16	34	P	54	48.50	0.1
GMW	83.18	33	P	54	49.50	1.1
RMW	83.62	34	P	54	51.00	0.2
CN2	83.84	322	P	54	51.00	-0.8
MSU	84.01	45	P	54	54.00	0.8
PMR	85.00	12	P	54	56.90	-0.3
TTA	85.05	9	P	54	57.90	0.3
	1.2s		28.41nm			5.3mb
DAU	85.63	44	P	55	07.60	6.3X
PNT	85.93	33	eP	55	02.00	-0.2
	0.8s		10.00nm			5.1mb
ALO	86.15	50	eP	55	03.00	-0.9
	1.5s		13.89nm			5.0mb
ANMO	86.16	50	P	55	04.30	0.4
NEW	86.59	35	P	55	04.70	-0.8
	1.0s		5.63nm			4.8mb
BJI	87.58	315	eP	55	14.50	4.1X
LRM	87.81	39	eP	55	11.50	-0.2
FBA	88.25	12	P	55	11.40	-1.7
	1.0s		22.50nm			5.4mb
IMA	88.35	9	P	55	13.50	-0.2
	1.3s		12.15nm			5.0mb
GOL	89.18	47	P	55	24.00	5.6X
	1.0s		8.75nm			5.0mb
XAN	89.95	307	P	55	22.50	0.6
SES	91.08	35	eP	55	27.00	0.3
EDM	91.42	32	eP	55	28.00	-0.2
RSSD	92.12	43	P	55	32.00	0.2
INK	94.18	15	eP	55	40.00	-0.5
MHI	129.65	300	ePKP	01	31.00	-1.1
EKA	145.22	7	PKP	02	04.00	4.1X
	1.0s		17.20nm			
WIT	148.11	357	e(PKP)	02	11.50	6.9X
KRA	148.34	340	ePKPd	02	07.30	2.2
			e	02	12.30	
KSP	148.64	345	ePKP	02	08.50	2.9X
CLL	148.89	349	ePKP	02	09.00	3.0X
	1.8s		48.00nm			
WTS	148.92	357	ePKP	02	10.00	4.0X
	1.0s		22.00nm			
			e	02	15.00	
SPC	148.99	339	ePKP	02	10.30	3.8X
BBTK	149.11	314	iPKPd	02	10.00	3.1X
BRG	149.13	348	iPKP	02	09.60	3.2X
	1.4s		36.00nm			
HRI	149.38	300	ePKPd	02	10.00	2.5X
MOX	149.76	350	ePKP	02	12.00	4.7X
			e	02	17.00	
PRU	149.84	347	PKP	02	11.50	4.0X
			e	02	17.00	
DSI	150.10	297	ePKP	02	13.00	4.6X
ENN	150.19	358	ePKP	02	13.50	5.6X
	1.0s		12.00nm			
CMP	150.22	329	ePKPc	02	15.00	6.8X
MEM	150.34	358	PKP	02	18.20	10.1X
SNF	150.48	360	PKP	02	20.20	11.8X
PRNI	150.68	295	ePKPd	02	14.00	4.6X
GRF	150.74	351	ePKP	02	13.50	4.6X
	Z	21s	0.20um			4.9Msz
			e	02	19.00	
			ec	02	26.00	
SRO	150.82	340	ePKP	02	13.10	4.1X
ZST	150.85	342	ePKP	02	14.10	

LPF	152.65	8	ePKP	02	17.70	6.1X
	1.2s	23.80nm				
KBA	152.85	346	e(PKP)	02	24.00	11.8X
	1.0s	8.90nm				
		i		02	31.50	
FEL	152.93	354	ePKP	02	23.28	11.0X
SSF	153.93	1	ePKP	02	24.20	10.7X
	1.0s	6.00nm				
MFF	154.16	7	ePKP	02	25.90	12.1X
	0.8s	5.35nm				
AVF	154.20	1	ePKP	02	25.90	12.1X
	1.0s	8.00nm				
SMF	154.35	0	ePKP	02	26.00	11.9X
	1.0s	4.00nm				
LSF	154.66	4	ePKP	02	28.80	14.3X
	1.0s	8.00nm				
BCAO	158.41	223	ePKPd	02	24.40	4.1X
	0.8s	11.00nm				
		id		03	07.00	
S.D. = 0.9 on 44 of 90 obs.						
-----						
& MAR 29, 1990 01h 49m 27.70s						
38.833 N 122.797 W						
DEPTH = 3.0km						
NORTHERN CALIFORNIA (36)						
<BRK>. ML 3.3 (BRK).						
-----						
NWRM	0.38	191	eP	49	35.20	-0.1
ZSP	0.98	154	eP	49	46.50	-0.5
			eS	50	02.30	
BRK	1.05	156	eP	49	47.30	-0.8
			eS	50	02.80	
ORV	1.24	54	ePc	49	49.40	-2.0
PCC	1.37	166	eP	49	51.30	-2.3
			eS	50	11.40	
MHC	1.75	148	eP	49	58.50	-0.7
MIN	1.77	31	eP	49	58.00	-1.5
ARN	1.79	146	eP	49	57.50	-2.2
GCC	1.91	160	eP	49	59.50	-1.9
CMB	2.05	112	eP	50	02.00	-1.6
SAO	2.33	152	e(P)	50	05.60	-1.9
11 obs. associated						
-----						
MAR 29, 1990 03h 10m 19.25± 0.89s						
38.337 N ± 9.1km 0.202 E ± 6.0km						
DEPTH = 13.3 ± 6.6 km						
SPAIN (377)						
mbLg 3.7 (MDD). ML 3.7 (LDG).						
Felt (III) at Alteo, Benidorm						
and Villosoyoso.						
-----						
ACU	0.51	290	iPn	10	30.50	0.9
EALH	1.37	250	iPn	10	43.60	-0.3
			eSn	11	02.00	
ECHE	1.55	324	iPnd	10	48.00	1.5
			eSn	11	08.00	
EVIA	2.14	279	iPnd	10	55.60	0.3
			eSn	11	21.00	
ENIJ	2.35	235	ePn	10	57.80	-0.4
			eSn	11	24.00	
EROO	2.49	4	ePn	11	01.20	1.2
			eSn	11	32.00	
EBR	2.49	5	ePn	11	01.00	1.0
			eSg	11	40.00	
ETOR	3.03	326	ePn	11	11.80	4.0X
			eSn	11	47.00	

LMR	6.91	42	Pn	13 12.20	
			Sn	12 03.70	1.1
LRG	6.92	40	Pn	13 13.50	
			Sn	12 04.20	1.5
			Sn	13 15.00	
RJF	7.03	8	Pn	12 14.40	10.1X
LBL	7.26	17	Pn	12 07.67	0.3
PYM	7.70	15	Pn	12 13.91	0.3
SBF	7.76	42	Pn	12 14.40	-0.2
PGF	7.92	55	Pn	12 17.70	0.9
LSF	7.97	7	Pn	12 15.80	-1.6
AGO	8.01	15	Pn	12 17.84	-0.2
MAF	8.07	12	Pn	12 17.40	-1.4
MFF	8.26	358	Pn	12 20.30	-1.2
8GF	8.44	13	Pn	12 22.00	-2.0
LPL	8.67	32	Pn	12 29.00	1.7
SMF	8.73	17	Pn	12 27.40	-0.5
AVF	8.76	14	Pn	12 27.50	-0.9
SSF	9.05	15	Pn	12 33.00	0.6
GRR	10.08	356	Pn	12 44.60	-1.9
LDF	10.26	359	Pn	12 48.80	-0.2
S.D. = 1.1 on 34 of 37 obs.					
<hr/>					
% MAR 29, 1990 04h 11m 18.64±1.60s					
62.121 N ±13.1km 5.981 E ±14.3km					
DEPTH = 10.0km (geophysicist)					
SOUTHERN NORWAY (535)					
MD 2.9 (BER). Felt in					
northwestern Norway.					
<hr/>					
MOL	0.86	58	iPgc	11 35.36	0.2
			iSg	11 47.17	
HYA	0.96	174	iPc	11 37.05	0.1
			iS	11 51.30	
SUE	1.22	209	iP	11 40.81	-0.4
			iS	11 56.15	
ASK	1.69	193	iP	11 48.93	0.7
			eS	12 09.93	
BER	1.77	190	iP	11 49.95	0.5
			eS	12 12.30	
ODD1	2.24	172	eP	11 56.40	0.1
			eS	12 24.38	
RGS	2.25	64	iP	12 01.60	5.1X
			eS	12 28.00	
BLS1	2.77	171	eP	12 04.89	0.9
			eS	12 36.47	
KMY	2.94	187	iP	12 04.83	-1.4
			eS	12 38.30	
NRA0	3.01	115	Pn	12 06.60	-0.6
			Sn	12 43.10	
S.D. = 0.8 on 9 of 10 obs.					
<hr/>					
MAR 29, 1990 04h 34m 04.29±0.17s					
45.331 N ±4.3km 150.204 E ±2.2km					
DEPTH = 49.9km ( 9 depth phases)					
5.2mb ( 70 obs.) 4.1Msz ( 2 obs.)					
KURIL ISLANDS (221)					
CENTROID, MOMENT TENSOR (HRV)					
Data Used: GDSN					
L.P.B.: 11S, 21C					
Centroid Location:					
Origin Time 04:34:12.9 0.7					
Lat 45.59N 0.08 Lon 149.26E 0.10					
Dep 60.7 8.3 Half-duration 1.5					
Moment Tensor; Scale 10**16 Nm					
Mrr= 3.58 0.32 Mtt=-2.47 0.57					
Mff=-1.11 0.41 Mrt= 1.32 0.42					
Mrf= 2.67 0.43 Mtf=-2.05 0.46					
Principal Axes:					
T Vol= 4.80 Plg=67 Azm=278					
N 0.01 14 44					
P -4.81 18 139					
Best Double Couple: Mo=4.8*10**16					
NP1: Strike=251 Dip=30 Slip= 120					
NP2: 37 65 74					
SAP	6.77	254	eP	35 47.00	3.5X
			eS	37 09.00	
MAT	12.61	230	eP	37 00.00	-3.3X
	1.0s	32.00nm			5.2mb
			eS	39 45.00	
MDJ	14.61	275	eP	37 30.20	0.7
	Z 24s	2.50um			
	E 15s	1.00um			
		epP	37 34.50		
		esP	37 44.00		
CN2	17.69	274	P	38 09.00	0.5







29d 04h

FLN 82.85 341 iPc 46 24.30 -0.1  
0.8s 29.55nm 5.4mb  
LIT 82.89 322 eP 46 23.80 -0.9  
LDF 82.93 341 iPc 46 24.50 -0.3  
0.8s 13.45nm 5.0mb  
VAI 83.01 334 Pd 46 25.10 -0.1  
MMK 83.09 335 ePd 46 26.70 0.7  
LOR 83.16 338 iPc 46 25.90 -0.1  
1.0s 28.00nm 5.2mb  
BNH 83.21 28 P 46 26.20 -0.1  
DIX 83.23 335 ePd 46 27.20 0.5  
GRR 83.29 341 iPc 46 26.80 0.2  
0.8s 10.75nm 4.9mb  
MIM 83.36 27 P 46 27.40 0.4  
EMS 83.38 335 ePd 46 27.90 0.5  
LBF 83.39 337 iPc 46 27.00 -0.2  
0.8s 10.75nm 4.9mb  
SSF 83.44 338 iPc 46 27.40 0.0  
0.8s 23.35nm 5.3mb  
ORX 83.46 334 P 46 26.59 -1.1  
ORO 83.47 334 P 46 28.00 0.3  
LPF 83.67 341 iPc 46 29.00 0.5  
0.8s 43.00nm 5.5mb  
AVF 83.73 338 iPc 46 29.00 0.1  
0.7s 13.80nm 5.1mb  
SMF 83.73 337 iPc 46 29.10 0.1  
0.8s 33.60nm 5.4mb  
BOB 83.78 333 P 46 29.50 0.2  
PGD 83.82 331 P 46 31.00 1.4  
LSD 83.87 335 P 46 30.69 0.7  
LPL 83.95 335 iPc 46 30.80 0.5  
1.0s 36.00nm 5.4mb  
LPG 83.96 335 iPc 46 30.90 0.4  
0.8s 25.50nm 5.3mb  
BDI 84.04 332 P 46 31.60 1.0  
BGF 84.08 338 iPc 46 30.60 -0.1  
0.8s 14.10nm 5.1mb  
RSP 84.12 335 P 46 33.15 2.1  
PCP 84.27 334 P 46 32.03 0.3  
BNI 84.38 335 P 46 33.00 0.6  
PRNI 84.46 308 eP 46 34.00 1.1  
CKI 84.46 334 P 46 32.50 -0.1  
MAF 84.47 338 iPc 46 33.40 0.8  
1.0s 60.00nm 5.6mb  
RRL 84.47 335 P 46 33.67 0.7  
TCF 84.50 338 iPc 46 33.40 0.6  
0.8s 16.10nm 5.2mb  
FIN 84.68 334 P 46 32.95 -0.8  
ROB 84.70 334 P 46 33.26 -0.7  
LSF 84.71 339 eP 46 34.30 0.5  
PZZ 84.75 334 P 46 32.95 -1.3  
MFF 84.80 340 iPc 46 34.30 0.1  
0.7s 24.25nm 5.4mb  
AZI 84.88 329 Pd 46 35.50 0.8  
MBH 84.96 308 eP 46 37.00 1.7  
SDI 84.99 329 Pd 46 35.50 0.1  
IMI 85.04 334 P 46 35.21 -0.4  
TBR 85.18 32 P 46 36.10 -0.1  
ORI 85.41 326 P 46 38.00 0.5  
RJF 85.59 338 iPc 46 38.40 0.1  
0.8s 21.50nm 5.4mb  
CAF 85.80 338 iPc 46 39.80 0.4  
0.8s 32.90nm 5.6mb  
LFF 86.13 339 iPc 46 41.30 0.4  
0.8s 40.30nm 5.7mb  
LPO 86.26 338 iPc 46 41.80 0.2  
0.8s 21.50nm 5.4mb  
LKO 121.19 332 PKP 52 52.44 -1.0  
TIC 123.69 330 PKP 52 58.00 -0.2  
KIC 123.86 330 PKP 52 58.00 -0.6  
LIC 124.09 330 PKP 52 58.70 -0.3  
SLR 129.98 272 ePKP 53 10.00 -0.2  
ZOBO 136.79 60 ePKP 53 25.00 1.1  
LPB 137.01 61 PKP 53 22.00 -2.1  
BAO 146.67 33 ePKP 53 42.00 1.3  
S.D. = 0.7 on 230 of 233 obs.

LTCM 1.59 98 eP 44 44.50 0.0  
MIN 1.97 92 eP 44 47.40 -2.8  
ORV 2.24 112 eP 44 51.20 -2.7  
0.6s 45.15.40  
PCC 3.25 154 eP 45 04.80 -3.5  
MHC 3.67 147 e(P) 45 12.10 -2.4  
ARN 3.71 145 eP 45 17.20 2.3  
GCC 3.81 153 eP 45 11.80 -4.4  
PRS 4.66 151 ePc 45 26.00 -2.3  
KVN 4.88 105 e(P) 45 29.20 -2.5  
11 obs. associated

MAR 29, 1990 05h 36m 42.03±1.06s  
44.805 N ± 7.7km 141.673 E ± 5.9km  
DEPTH = 261.5 ± 11.5 km  
4.4mb (29 obs.)

## HOKKAIDO, JAPAN REGION (224)

MDJ 8.61 273 iPd 38 44.80 1.1  
MAT 8.66 199 iPc 38 43.80 -0.6  
0.7s 44.52nm 4.6mb  
CN2 11.67 271 P 39 21.60 -0.6  
0.6s 39.28.60  
SNY 13.51 264 eP 39 45.00 0.2  
BJI 19.38 265 eP 40 48.50 -1.4  
HHC 22.37 270 eP 41 19.50 0.2  
TIY 23.01 262 eP 41 30.00 4.6X  
BTO 23.56 271 eP 41 32.00 1.5  
GTA 31.26 275 iPc 42 42.20 2.7  
TTA 39.12 40 P 43 46.80 1.4  
BRW 39.28 27 eP 43 45.50 -1.0  
IMA 40.04 35 eP 43 52.20 -0.8  
0.5s 10.20nm 4.5mb  
KDC 41.49 48 P 44 04.80 0.1  
0.8s 31.03nm 4.7mb  
PMR 42.46 41 P 44 12.40 -0.2  
FBA 42.57 36 eP 44 12.90 -0.6  
0.4s 13.40nm 4.6mb  
TOA 43.75 40 eP 44 23.80 0.8  
INK 47.48 30 iPc 44 51.00 -1.0  
MBC 49.06 18 eP 45 03.00 -1.0  
0.5s 3.00nm 4.0mb  
SUF 61.19 332 iP 46 29.20 -1.7  
PNT 62.58 47 eP 46 40.00 -0.3  
0.6s 5.00nm 4.4mb  
NUR 63.24 330 eP 46 39.00 -5.3X  
NEW 64.53 47 P 46 52.70 -0.2  
0.9s 4.93nm 4.2mb  
WB5 64.71 188 eP 46 53.20 -1.0  
WRA 64.78 188 Pd 46 53.60 -1.0  
0.6s 1.90nm 4.0mb  
FFC 67.12 34 iPc 47 08.90 -0.3  
0.8s 11.00nm 4.6mb  
HFS 67.12 335 eP 47 07.30 -1.8  
0.5s 11.70nm 4.9mb  
NB2 67.13 336 P 47 08.10 -1.1  
0.7s 5.50nm 4.4mb  
ASPA 68.51 188 eP 47 17.90 -0.1  
0.9s 8.00nm 4.4mb  
FRB 69.18 14 eP 47 35.00 13.4X  
KVN 69.99 55 P 47 27.70 0.5  
TNP 71.15 55 P 47 34.90 0.7  
0.7s 2.22nm 4.0mb  
BW06 72.15 47 P 47 40.00 0.0  
0.7s 5.26nm 4.4mb  
DUG 72.20 51 P 47 41.40 1.1  
0.9s 5.64nm 4.3mb  
RSON 73.33 33 P 47 44.70 -1.7  
0.7s 4.15nm 4.3mb  
MSU 73.73 52 P 47 50.00 0.7  
RSSD 73.96 43 P 47 50.50 0.0  
CLL 74.48 329 iPd 47 52.70 -0.3  
1.0s 21.00nm 4.8mb  
PV09 75.42 50 P 48 00.00 1.1  
GRF 76.46 329 eP 48 04.50 0.4  
GOL 76.55 47 P 48 06.00 0.9  
GLD 76.59 47 P 48 06.80 1.6  
ALO 79.48 51 eP 48 22.00 1.0  
SSF 81.38 333 eP 48 30.40 -0.1  
0.8s 2.70nm 4.1mb  
LPL 81.61 330 eP 48 32.10 0.1  
1.0s 8.00nm 4.4mb  
LPG 81.62 330 eP 48 32.20 0.0  
0.6s 4.05nm 4.4mb  
SMF 81.63 332 eP 48 31.40 -0.4  
0.8s 6.70nm 4.4mb  
AVF 81.67 332 eP 48 31.80 -0.2

0.8s 5.35nm 4.3mb  
LPF 81.93 336 eP 48 33.20 -0.1  
0.6s 3.60nm 4.3mb  
8GF 82.04 333 eP 48 34.00 0.1  
0.6s 3.60nm 4.3mb  
MAF 82.43 333 eP 48 36.30 0.4  
0.8s 5.35nm 4.3mb  
TCF 82.48 333 eP 48 36.30 0.1  
0.8s 3.35nm 4.1mb  
LSF 82.74 333 eP 48 37.60 0.1  
0.6s 3.60nm 4.3mb  
MFF 82.94 335 eP 48 38.60 0.1  
0.8s 5.35nm 4.3mb  
CAF 83.74 332 eP 48 43.20 0.6  
0.8s 4.05nm 4.3mb  
S.D. = 0.9 on 51 of 54 obs.

? MAR 29, 1990 05h 54m 14.77±2.23s  
32.859 S ± 44.6km 177.169 W ± 31.7km  
DEPTH = 33.0km (normal)  
4.6mb (3 obs.) 3.0Msz (1 obs.)

## SOUTH OF KERMADEC ISLANDS (179)

DZM 18.06 302 iPc 58 25.20 0.4  
BRS 26.51 274 iPc 59 53.10 1.9  
0.7s 26.10  
CTA 34.95 282 iPc 01 04.00 -1.8  
1.0s 20.00nm 5.0mb  
ASPA 43.74 269 eP 02 19.30 0.5  
0.8s 7.00nm 4.5mb  
Z 21s 0.13um 3.8Msz  
LR 19 10.90  
WRA 44.94 274 P 02 28.70 0.1  
0.7s 3.40nm 4.3mb  
WB5 44.94 274 eP 02 27.20 -1.4  
SPA 57.32 180 iPc 04 22.20 20.5X  
0.9s 5.00nm  
i 04 40.20  
SOD 142.74 345 ePKP 13 27.00 -18.4X  
SUF 146.66 341 iPKP 13 52.50 0.4  
BCAO 148.14 211 iPKPc 14 08.00 12.0X  
0.5s 15.00nm  
id 14 12.20  
ic 14 27.20  
NUR 148.86 339 iPKP 13 59.70 4.0X  
UPP 151.27 344 iPKP 14 04.60 5.3X  
NB2 151.28 352 PKP 14 05.70 6.3X  
0.7s 9.40nm  
HFS 151.79 348 ePKP 14 06.50 6.4X  
0.8s 17.30nm  
S.D. = 1.6 on 7 of 14 obs.

& MAR 29, 1990 06h 03m 30.69s  
63.329 N 149.699 W  
DEPTH = 104.3km  
CENTRAL ALASKA (1)  
<AGS-P>

HUR 0.35 175 iP 03 46.13 -0.2  
RND 0.39 78 iP 03 46.42 -0.1  
MCK 0.53 40 iP 03 47.26 -0.1  
0.6s 03 59.67  
KTH 0.59 293 iP 03 47.71 -0.2  
CUT 0.96 196 iP 03 51.07 -0.2  
0.6s 04 06.58  
NEA 1.28 12 iP 03 54.01 -0.9  
WRH 1.35 31 iP 03 54.93 -0.8  
CCB 1.56 31 iP 03 57.37 -1.0  
SKT 1.60 213 iP 03 57.93 -0.8  
0.6s 04 19.14  
GHO 1.60 167 iP 03 58.79 -0.1  
HDA 1.63 47 iP 03 58.18 -1.0  
0.6s 04 21.16  
RDS 1.65 24 iP 03 58.71 -0.8  
SML 1.65 157 eP 04 00.41 0.9  
PWA 1.69 183 iP 04 00.23 0.4  
0.6s 04 22.74  
PLRM 1.76 171 eP 04 00.35 -0.5  
0.6s 04 23.91  
PMR 1.76 171 eP 04 00.50 -0.3  
DDM 1.78 73 eP 04 00.89 -0.2  
FBA 1.79 27 eP 04 00.20 -0.9  
NCA 1.89 134 eP 04 02.31 -0.2  
DMW 1.91 66 eP 04 02.40 -0.4  
SUA 1.93 195 eP 04 03.24 0.0  
GLM 1.95 30 iP 04 02.33 -1.0  
PAX 1.95 99 eP 04 03.48 0.1

& MAR 29, 1990 04h 44m 17.60s  
40.442 N 124.175 W  
DEPTH = 23.0km  
NEAR COAST OF NORTHERN CALIF. (35)  
<BRK>. ML 3.5 (BRK). Felt (III)  
at Rio Dell.

FHC 0.39 22 iPd 44 25.70 -0.2  
eS 44 32.20  
WDC 1.25 83 iPc 44 37.70 -2.1



TOA 2.04 126 eP 04 05.40 0.9  
SDG 2.06 111 eP 04 04.53 -0.3  
PMS 2.09 178 eP 04 04.86 -0.3  
iS 04 31.00  
NCG 2.25 212 iP 04 06.44 -0.8  
CGLM 2.30 209 eP 04 07.30 -0.6  
CRP 2.37 210 eP 04 08.36 -0.6  
SPU 2.42 208 eP 04 08.90 -0.6  
BGL 2.42 212 eP 04 09.38 -0.3  
CKL 2.47 211 eP 04 09.67 -0.6  
KLU 2.55 135 eP 04 09.87 -1.4  
DOT 2.55 80 eP 04 10.08 -1.2  
NKA 2.69 196 eP 04 16.20 3.1  
VZW 2.71 146 eP 04 12.11 -1.4  
GLI 2.75 152 eP 04 12.06 -1.8  
SLKM 2.84 185 iP 04 14.82 -0.4  
TTA 2.90 265 eP 04 14.50 -1.4  
RDT 3.05 206 eP 04 18.20 0.2  
IMA 3.24 330 eP 04 19.30 -1.3  
SEW 3.24 178 eP 04 19.63 -0.9  
RED 3.26 208 eP 04 21.97 1.0  
GLB 3.33 122 eP 04 20.78 -1.1  
SVW 3.56 234 eP 04 23.70 -1.2  
CNPM 3.89 192 eP 04 28.25 -1.2  
TGL 4.14 126 eP 04 31.14 -1.8  
PDB 4.15 213 eP 04 32.31 -0.7  
DWY 4.63 76 P 04 37.60 -1.9  
CDD 4.81 205 eP 04 42.04 0.0  
INK 8.29 46 eP 05 28.00 -1.7

51 obs. associated

? MAR 29, 1990 06h 48m 18.37±1.06s  
18.445 S ±19.4km 168.016 E ±25.1km  
DEPTH = 33.0km (normal)  
4.6mb ( 2 obs.) 4.0Msz ( 1 obs.)  
VANUATU ISLANDS (186)

DZM 3.90 202 iPc 49 17.60 0.1  
iS 50 01.60  
CTA 20.61 262 iPc 52 59.00 1.5  
ASPA 32.21 255 eP 54 44.00 -1.9  
0.5s 2.00nm 4.3mb  
Z 20s 0.31um 4.0Msz  
LR 07 04.50  
SPA 71.67 180 eP 59 38.70 -0.1  
1.0s 11.00nm 4.8mb  
i 59 53.30  
CHG 77.27 295 eP 00 11.40 -0.2  
TOD 144.71 336 ePKP 07 50.29 -3.0X  
MEM 144.85 340 PKP 07 50.60 -2.8X  
ABH 144.94 338 ePKP 07 51.23 -2.5X  
RUP 145.26 338 ePKP 07 52.28 -2.0  
DOU 145.74 341 PKP 07 53.10 -1.9  
BCAO 147.09 249 ePKPc 07 59.00 0.7  
0.7s 8.00nm  
LOR 148.45 339 ePKP 08 01.30 1.8  
0.8s 8.05nm  
LBF 148.66 339 ePKP 08 01.90 2.0  
0.8s 6.70nm  
SSF 148.75 339 ePKP 08 02.40 2.4X  
0.8s 9.40nm  
LPL 148.84 334 ePKP 08 03.00 2.5X  
0.8s 5.35nm  
LPG 148.85 334 ePKP 08 03.10 2.5X  
0.8s 6.70nm  
SMF 149.00 339 ePKP 08 02.90 2.5X  
1.0s 7.00nm  
AVF 149.04 339 ePKP 08 02.60 2.2X  
0.8s 4.05nm  
LPF 149.17 346 ePKP 08 03.30 2.7X  
1.0s 26.00nm  
BGF 149.41 340 ePKP 08 03.60 2.6X  
0.8s 8.05nm  
MAF 149.80 340 ePKP 08 04.80 3.2X  
0.8s 5.35nm  
TCF 149.86 340 ePKP 08 05.00 3.3X  
0.8s 6.05nm  
LSF 150.10 341 ePKP 08 05.30 3.2X  
0.8s 6.70nm  
MFF 150.27 343 ePKP 08 05.70 3.4X  
0.8s 13.45nm  
RJF 150.95 340 ePKP 08 07.30 3.9X  
0.8s 5.35nm  
LFF 151.52 341 ePKP 08 08.60 4.4X  
0.6s 7.20nm  
LPO 151.61 340 ePKP 08 09.20 4.8X  
0.8s 2.70nm

S.D. = 1.7 on 10 of 27 obs.

? MAR 29, 1990 08h 34m 13.64±6.73s  
33.397 S ±26.9km 71.789 W ±51.7km  
DEPTH = 30.9 ± 8.3 km

NEAR COAST OF CENTRAL CHILE (135)

LCCH 0.20 113 iPc 34 20.00 0.0  
iS 34 24.70  
LNV 0.64 151 iPc 34 26.30 0.0  
iS 34 36.00  
TACH 0.76 110 iPd 34 27.50 -0.5  
iS 34 37.50  
SAN 0.94 94 eP 34 30.70 -0.1  
e 34 43.00  
CHCH 1.09 120 iPc 34 33.20 0.4  
iS 34 48.50  
PCH 1.09 102 eP 34 33.20 0.3  
iS 34 48.60  
FCH 1.26 87 iPc 34 35.50 0.0  
iS 34 52.00

S.D. = 0.4 on 7 of 7 obs.

MAR 29, 1990 08h 38m 11.19±0.57s  
39.867 N ± 4.8km 28.908 E ± 5.2km  
DEPTH = 10.0km (geophysicist)

TURKEY (366)

DST 0.34 220 iPg 38 17.00 -1.2  
iSg 38 21.50  
KCT 0.57 312 iPg 38 22.10 -0.7  
YLV 0.78 27 iPg 38 25.60 -0.9  
iSg 38 35.10  
BNT 0.90 303 iPn 38 29.10 0.6  
EDC 0.93 301 ePn 38 29.50 0.5  
GBZT 1.01 24 ePg 38 32.00 1.7  
HRT 1.12 31 ePn 38 31.60 -0.6  
GPA 1.16 68 ePn 38 32.00 -0.8  
ISK 1.20 5 ePn 38 33.10 -0.5  
ALT 1.23 131 ePn 38 34.50 0.3  
CTT 1.33 344 ePn 38 36.10 0.4  
KHL 1.61 163 ePn 38 41.00 1.1

S.D. = 1.0 on 12 of 12 obs.

? MAR 29, 1990 09h 00m 14.08±1.04s  
39.129 N ± 8.8km 27.544 E ±17.0km  
DEPTH = 10.0km (geophysicist)

TURKEY (366)

IZM 0.76 197 ePg 00 29.00 0.0  
eSg 00 40.00  
DST 0.97 60 ePn 00 32.50 0.0  
EDC 1.24 11 ePn 00 37.50 0.4  
BNT 1.26 13 iPn 00 37.10 -0.4

S.D. = 0.5 on 4 of 4 obs.

MAR 29, 1990 09h 14m 33.74±0.61s  
53.768 N ± 7.8km 159.700 W ± 6.5km  
DEPTH = 33.0km (normal)

SOUTH OF ALASKA (17)

BKJ 1.39 3 eP 14 58.15 1.1  
eS 15 17.24  
SASA 1.64 344 eP 15 01.52 0.9  
eS 15 23.08  
SGB 1.84 346 eP 15 04.25 0.8  
eS 15 27.88  
DRRA 1.90 308 eP 15 04.27 -0.2  
SNKA 1.94 293 eP 15 03.93 -1.1  
PVV 2.02 324 eP 15 06.66 0.6  
eS 15 32.42  
IVF 2.14 3 eP 15 08.71 1.0  
eS 15 36.10  
KDC 5.70 43 eP 15 55.90 -2.3  
TTA 9.39 10 eP 16 48.80 -1.0  
PMR 9.66 32 eP 16 50.50 -2.9  
FBA 12.68 24 eP 17 28.00 -6.3X  
IMA 12.69 11 e(P) 17 33.00 -1.6  
INK 19.07 30 ePd 18 55.00 -0.6  
0.8s 26.00nm 4.5mb  
YKA 24.86 51 eP 19 55.40 1.2  
0.8s 3.20nm 4.0mb  
PNT 25.08 84 eP 19 58.00 1.6  
NEW 27.03 84 eP 20 14.40 -0.1  
MBC 27.17 20 ePd 20 17.30 1.8  
1.0s 22.00nm 4.8mb

EDM 27.20 72 eP 20 17.00 1.0  
KVN 31.72 101 eP 20 56.50 -0.2  
GOL 38.83 89 eP 21 57.70 0.3  
FRB 44.32 40 eP 22 42.00 0.3  
SUF 63.76 357 iP 25 04.40 0.4  
NUR 66.02 358 eP 25 19.00 0.5  
GUN 80.94 305 P 26 47.00 0.5  
KKN 81.33 306 P 26 49.00 0.6  
PKI 81.45 305 P 26 49.20 0.0  
GKN 81.46 306 P 26 49.40 0.4  
WB5 92.53 239 eP 27 40.70 -1.9  
WRA 92.60 239 Pd 27 41.80 -1.1  
0.8s 1.40nm 4.4mb

S.D. = 1.2 on 28 of 29 obs.

\* MAR 29, 1990 09h 54m 13.23±0.75s  
19.966 S ±22.3km 175.548 E ±10.8km  
DEPTH = 33.0km (normal)

4.7mb ( 4 obs.) 4.2Msz ( 2 obs.)  
SOUTH OF FIJI ISLANDS (171)

NDF 2.84 40 eP 54 57.30 0.1  
eS 55 52.40  
SGE 3.26 44 iP 55 06.40 3.0X  
e 55 55.60  
SVA 3.31 57 iP 55 03.00 -1.0  
e 55 52.30  
e 56 12.60  
e 57 03.40  
VUN 3.38 55 iP 55 03.40 -1.6  
e 55 47.90  
DZM 8.76 255 iPc 56 15.00 -5.7X  
HNR 18.35 303 eP 58 17.00 -10.0X  
eS 00 06.00  
WB5 38.65 263 eP 01 28.80 -6.8X  
WRA 38.66 263 Pc 01 28.60 -7.2X  
1.2s 9.30nm 4.5mb  
ASPA 38.74 257 iPc 01 28.00 -8.4X  
1.1s 12.00nm 4.6mb  
Z 19s 0.43um 4.3Msz  
LR 17 08.80  
GUMO 44.98 315 eP 02 43.00 15.6X  
Z 22s 0.21um 4.0Msz  
eS 09 25.00  
MAT 66.36 328 eP 05 03.00 2.1  
1.0s 23.00nm 5.2mb  
CN2 78.30 325 eP 06 11.00 -0.5  
BJI 81.35 318 eP 06 27.00 -0.9  
GCC 81.69 46 eP 06 30.70 0.9  
PRS 81.74 47 eP 06 30.50 0.4  
BRK 81.97 45 e(P) 06 33.50 2.3  
MHC 82.09 46 eP 06 32.50 0.4  
PRI 82.13 47 e(P) 06 33.30 1.0  
TIY 82.50 314 eP 06 34.40 0.3  
XAN 83.06 310 P 06 37.00 -0.1  
FRI 83.22 47 eP 06 39.20 1.4  
CMB 83.31 46 eP 06 37.50 -0.7  
ORV 83.37 44 eP 06 39.20 0.7  
MIN 83.73 43 eP 06 40.80 0.3  
CHG 84.40 292 eP 06 43.00 -1.1  
KVN 85.36 46 eP 06 48.00 -0.8  
CD2 85.46 305 P 06 48.00 -1.2  
TNP 85.48 47 iP 06 48.20 -1.2  
1.0s 7.00nm 4.8mb  
LZH 87.70 310 P 07 00.00 -0.2  
PNT 89.71 36 eP 07 10.00 0.7  
ALQ 91.88 54 eP 07 16.50 -3.3X  
GKN 99.89 296 P 08 00.00 3.5X  
FRB 119.13 27 ePKP 13 09.00 9.2X  
SPC 144.77 332 ePKP 13 43.70 -4.8X  
KSP 145.10 337 ePKPd 13 46.00 -2.8X  
CLL 145.84 340 e(PKP) 13 47.00 -3.0X  
BRG 145.91 339 e(PKP) 13 47.20 -2.9X  
1.1s 10.00nm  
PRU 146.44 338 PKP 13 49.80 -1.2  
KHC 147.51 338 iPKPd 13 53.00 0.2  
1.4s 4.50nm  
GRF 147.81 341 ePKP 13 53.50 0.3  
BCAO 152.80 238 ePKPc 14 01.20 -0.6  
0.6s 6.00nm  
id 14 12.20

S.D. = 1.1 on 27 of 41 obs.

% MAR 29, 1990 10h 29m 51.34±0.62s  
39.884 N ± 5.4km 28.918 E ± 6.0km  
DEPTH = 10.0km (geophysicist)  
TURKEY (366)



29d 10h

DST 0.36 219 iPg 29 57.50 -1.2  
 KCT 0.56 310 iPg 30 02.50 -0.3  
 YLV 0.77 27 iPg 30 05.50 -0.8  
 BNT 0.90 302 iPn 30 09.50 0.9  
 EDC 0.93 300 ePn 30 09.50 0.4  
 HRT 1.10 31 ePn 30 12.00 0.0  
 ALT 1.24 132 ePn 30 14.70 0.3  
 KHL 1.63 163 ePn 30 21.00 0.8  
 S.D. = 0.9 on 8 of 8 obs.

? MAR 29, 1990 11h 49m 15.76 ± 3.94s  
 51.193 N ± 32.7km 16.034 E ± 25.7km  
 DEPTH = 10.0km (geophysicist)  
 POLAND (548)

KSP 0.39 155 iPc 49 23.60 -0.1  
 BRG 1.36 257 iPg 49 40.00 -0.7  
 PRU 1.54 219 Pn 49 43.60 0.4  
 CLL 1.91 275 iPg 49 49.00 0.4  
 KHC 2.60 218 ePg 50 06.00 7.4X  
 MOX 2.85 261 ePg 50 10.00 7.9X  
 GRF 3.42 246 e(Pg) 50 21.50 11.3X  
 S.D. = 0.9 on 4 of 7 obs.

MAR 29, 1990 12h 05m 54.55 ± 0.35s  
 39.944 N ± 3.2km 23.884 E ± 3.5km  
 DEPTH = 10.0km (geophysicist)  
 AEGEAN SEA (365)  
 ML 3.2 (THE), 3.4 (ATH).

PAIG 0.16 264 ePg 05 58.30 0.1  
 OUR 0.40 11 ePg 06 03.00 0.3  
 PLG 0.55 322 iPg 06 04.50 -1.1  
 NEO 0.82 219 ePb 06 10.00 -0.4  
 SOH 0.97 335 ePb 06 12.50 -0.4  
 THE 0.98 315 ePb 06 13.50 0.3  
 LIT 1.08 279 ePbd 06 15.00 0.1  
 SRS 1.19 349 ePbc 06 16.70 -0.1  
 KNT 1.43 329 ePbc 06 20.90 0.4  
 AGG 1.51 233 ePbd 06 21.10 -0.6  
 MMB 1.65 356 iPc 06 23.00 -0.7  
 KZN 1.66 283 ePb 06 24.20 0.3  
 VAY 1.70 324 iPn 06 25.00 0.6  
 RDO 1.74 46 ePn 06 25.70 -1.3  
 RZN 1.85 20 iPc 06 27.00 0.2  
 EZN 1.88 93 ePn 06 29.00 2.0  
 ALN 1.90 59 ePn 06 26.90 -0.4  
 EVR 1.91 238 ePn 06 27.00 -0.5  
 PRK 1.97 110 ePb 06 30.00 1.7  
 ATH 1.97 184 ePn 06 28.20 -0.1  
 KKB 2.01 343 iPc 06 28.00 -1.0  
 PLD 2.25 16 eP 06 38.00 5.7X  
 DIM 2.45 30 iP 06 35.00 -0.1  
 PGB 2.61 5 iP 06 37.00 -0.6  
 OHR 2.62 297 ePn 06 39.20 1.4  
 VTS 2.69 349 iP 06 39.00 0.2  
 MFT 2.73 71 iPn 06 37.90 -1.4  
 SKO 2.74 318 ePn 06 41.30 1.9  
 EDC 3.08 81 ePn 06 48.00 3.9X  
 BNT 3.12 81 ePn 06 50.00 5.3X  
 ITM 3.16 210 ePn 06 45.50 0.2  
 JMB 3.24 38 eP 06 54.00 7.6X  
 VLI 3.31 193 ePn 06 46.20 -1.2  
 KCT 3.44 84 iPn 06 57.40 8.1X  
 PVL 3.45 18 iPc 06 46.00 -3.3X  
 DST 3.67 94 ePn 06 47.50 -5.1X  
 YLV 4.25 80 ePn 07 06.90 6.1X

S.D. = 0.9 on 29 of 37 obs.

\* MAR 29, 1990 12h 20m 55.01 ± 0.90s  
 59.987 N ± 8.5km 153.278 W ± 10.6km  
 DEPTH = 155.1 ± 11.8 km  
 3.5mb (2 obs.)

SOUTHERN ALASKA

SVW 1.61 315 iPd 21 26.90 0.3  
 KDC 2.28 169 iPd 21 34.00 -0.1  
 PMR 2.59 50 eP 21 37.60 -0.3  
 TTA 3.23 337 iPd 21 45.90 -0.2  
 TOA 4.06 55 eP 21 50.00 1.2  
 FBA 5.55 25 iPc 22 15.80 -0.8  
 IMA 6.11 358 eP 22 24.00 -0.2  
 INK 11.93 37 eP 23 41.00 0.0  
 YKA 18.58 66 eP 25 01.70 -0.7  
 MBC 20.09 23 eP 25 18.50 0.8  
 0.7s 4.00nm 4.0mb

S.D. = 0.7 on 10 of 10 obs.

\* MAR 29, 1990 13h 25m 05.05 ± 2.10s  
 41.245 N ± 19.3km 122.129 W ± 10.9km  
 DEPTH = 5.0km (geophysicist)  
 NORTHERN CALIFORNIA (36)  
 ML 2.9 (BRK).

MIN 0.98 156 iPc 25 21.80 -0.5  
 LTCM 1.04 180 eP 25 23.00 -0.1  
 FHC 1.47 253 e(P) 25 30.20 -0.1  
 ORV 1.75 164 ePc 25 35.00 0.7  
 KVN 3.79 124 eP 26 03.50 0.0  
 S.D. = 0.6 on 5 of 5 obs.

MAR 29, 1990 14h 15m 44.82 ± 0.17s  
 16.572 N ± 3.6km 145.831 E ± 3.6km  
 DEPTH = 24.0km (7 depth phases)  
 5.3mb (21 obs.) 4.6msz (11 obs.)

MARIANA ISLANDS (216)

CENTROID, MOMENT TENSOR (HRV)

Data Used: GDSN

L.P.B.: 13S, 28C

Centroid Location:

Origin Time 14:15:43.2 0.7

Lat 16.72N 0.06 Lon 146.11E 0.08

Dep 15.0 FIX Half-duration 1.7

Moment Tensor; Scale 10<sup>16</sup> Nm

Mrr = -3.72 0.34 Mtt = -1.51 0.42

Mff = 5.22 0.45 Mrt = -0.76 1.20

Mrf = 0.96 1.67 Mtt = 6.41 0.37

Principal Axes:

T Vol = 9.12 Plg = 2 Azm = 301

N -3.14 63 207

P -5.98 27 32

Best Double Couple: Mo = 7.6 × 10<sup>16</sup>

NP1: Strike = 73 Dip = 70 Slip = -18

NP2: 170 73 -159

GUMO 3.11 198 eP 16 32.70 -0.8

PJG 3.11 198 eP 16 32.50 -1.0

GUA 3.14 197 iPd 16 33.20 -0.8

KAGJ 19.92 320 eP 20 18.80 1.0

IIDJ 20.11 341 P 20 22.00 2.1

CHJJ 20.33 344 P 20 22.50 0.4

KUMJ 20.91 322 eP 20 29.40 1.4

MAT 21.01 343 eP 20 28.00 -1.1

1.4s 158.14nm 5.2mb

Z 20s 2.84um 4.6msz

MTMJ 21.17 342 P 20 30.40 -0.4

NIJJ 21.45 345 P 20 31.40 -2.1

RAB 21.56 163 e(P) 20 35.00 0.2

SHNJ 21.92 326 eP 20 42.70 4.5X

DAV 21.93 247 eP 20 39.80 1.3

OCP 23.92 269 eP 20 44.00 -13.9X

BAG 24.21 273 eP 21 01.00 0.0

MNI 25.56 236 eP 21 14.50 0.8

PMG 25.85 177 eP 21 26.00 9.6X

SSE 26.70 307 Pd 21 23.30 -0.8

Z 20s 1.40um 4.5msz

E 16s 1.20um

sP 21 32.00

NJ2 28.90 307 Pd 21 43.00 -1.1  
 Z 20s 0.70um 4.3msz  
 HNR 29.37 151 eP 22 03.00 14.6X  
 DL2 30.71 321 eP 22 01.00 0.9  
 Z 18s 0.60um 4.3msz  
 N 13s 0.80um  
 KKM 30.82 254 ePd 22 01.00 -0.5  
 MDJ 31.13 337 eP 22 03.50 -0.3  
 Z 17s 2.20um 4.9mszX  
 GZH 31.19 287 eP 22 04.70 0.2  
 Z 22s 1.50um 4.6msz  
 SNY 31.61 327 eP 22 11.40 3.5X  
 Z 16s 1.20um 4.7mszX  
 N 15s 1.80um  
 E 15s 1.50um  
 WHN 31.91 302 eP 22 10.00 -0.7  
 TIA 32.12 313 Pd 22 12.40 -0.1  
 N 20s 2.70um  
 OIZ 34.32 280 eP 22 32.00 0.2  
 N 13s 1.20um  
 BJI 34.77 318 eP 22 35.00 -0.5  
 1.5s 0.22nm 2.9mb X  
 Z 18s 1.17um 4.7msz  
 N 14s 0.52um  
 TIY 36.13 312 Pc 22 47.40 0.2  
 Z 20s 1.25um 4.7msz  
 N 21s 3.70um  
 CTA 36.43 179 eP 22 52.00 2.3  
 1.8s 147.73nm 5.6mb  
 XAN 37.37 305 Pc 22 57.40 -0.2  
 S 28 44.20  
 OIS 37.40 190 eP 22 50.00 -7.9X  
 e 22 59.00 30km  
 GYA 37.61 292 P 23 01.00 1.2  
 N 15s 0.60um  
 E 15s 0.60um  
 WB5 37.93 198 eP 22 58.00 -3.6X  
 e 23 04.10 18km  
 WRA 38.00 198 Pd 23 01.20 -1.7  
 1.1s 33.50nm 5.1mb  
 HHC 38.20 316 eP 23 05.00 0.5  
 Z 20s 1.30um 4.7msz  
 N 11s 0.40um  
 S 28 57.50  
 BTO 39.11 315 P 23 13.00 0.8  
 N 15s 0.80um  
 E 15s 0.50um  
 CD2 40.82 298 P 23 26.40 0.0  
 Z 22s 0.70um 4.5msz  
 N 13s 1.10um  
 KMI 41.02 289 Pc 23 29.50 1.3  
 2.0s 0.10nm 2.2mb X  
 Z 20s 1.90um 5.0msz  
 pP 23 36.00 22km  
 sP 23 42.00  
 S 29 44.00  
 sS 29 56.00  
 ASPA 41.66 197 eP 23 32.10 -1.1  
 0.9s 10.00nm 4.5mb  
 LZH 41.96 306 iPc 23 37.00 1.2  
 4.0s 0.56nm 2.6mb X  
 Z 32s 1.20um 4.6mszX  
 N 17s 0.70um  
 pP 23 47.50 36kmX  
 eS 29 59.00  
 LOE 42.12 278 eP 23 37.80 0.7  
 RMO 42.90 176 eP 23 42.00 -1.3  
 DZM 43.39 152 iPc 23 49.10 1.7  
 NST 43.84 276 eP 23 53.00 1.9  
 BRS 44.22 171 iPd 23 53.30 -0.7



CHG	3.1s	0.60nm	2.9mb X	LRM	86.19	43 ePd	28 25.70	-0.2		0.8s	10.00nm	5.2mb		
	44.63	280 eP	23 57.40	-0.1	GSC	86.42	54 eP	28 27.00	0.0	ZOBO	147.41	94 PKP	56 13.70	3.3X
	1.0s	22.00nm	5.0mb		HPI	86.47	45 P	28 28.40	1.1		1.0s	7.50nm		
NNT	44.72	271 eP	23 58.80	0.6	RKT	86.86	115 iP	28 35.60	6.5X	Z	24s	0.14um	4.7MsZx	
BDT	44.72	278 eP	23 56.80	-1.4		1.0s	40.00nm	5.6mb				LR	24 32.00	
SNG	45.13	264 eP	23 48.20	-13.3X	PLM	86.96	56 eP	28 41.00	11.2X	S.D. = 1.1 on 32 of 39 obs.				
IPM	45.51	260 ePc	24 06.50	1.9	BAR	87.32	57 eP	28 33.00	1.6	MAR 29, 1990 16h 19m 15.80± 0.12s				
GTA	45.96	309 iPc	24 08.50	0.5	TPC	87.37	55 eP	28 30.00	-1.6	39.408 N ± 3.1km 73.256 E ± 2.0km				
	1.4s	100.00nm	5.6mb		DUG	87.85	49 P	28 34.00	0.1	DEPTH = 24.8km ( 16 depth phases)				
Z	18s	0.90um	4.8MsZ		IMW	87.87	45 P	28 34.70	0.6	5.4mb ( 78 obs.) 5.1MsZ ( 8 obs.)				
E	15s	0.60um			GLA	88.68	56 eP	28 39.00	1.1	TAJIK-XINJIANG BORDER REGION (719)				
		pP	24 14.00	18km	FFC	88.81	32 eP	28 37.00	-1.0	Felt (IV) at Sufi-Kurgon and				
		sP	24 18.00			1.0s	32.00nm	5.6mb		(III) at Osh, USSR.				
		s	30 54.00		MSU	88.89	50 P	28 40.00	1.0	CENTROID, MOMENT TENSOR (HRV)				
		sS	31 04.50		RSSD	92.35	43 P	28 54.60	-0.4	Data Used: GDSN				
BWA	50.77	177 eP	24 44.10	-1.1	GOL	93.33	47 P	28 59.90	0.3	L.P.B.: 13S, 29C				
LSA	51.53	295 Pc	24 52.00	0.3		1.0s	32.50nm	5.7mb		Centroid Location:				
CAN	51.69	177 eP	24 51.80	-0.4	GLD	93.41	47 P	29 02.00	2.1	Origin Time 16:19:21.0 0.7				
CNB	51.71	176 eP	24 54.00	1.7	ALQ	94.48	52 eP	29 05.00	0.1	Lat 39.04N 0.08 Lon 73.09E 0.08				
TOO	53.85	180 eP	25 14.00	5.9X		1.0s	4.25nm	4.8mb		Dep 22.0 FIX Half-duration 1.8				
WMQ	55.80	312 iPc	25 27.00	4.5X	BCAO	123.89	287 ePKPc	34 48.10	4.6X	Moment Tensor: Scale 10**17 Nm				
Z	24s	0.80um	4.7MsZx			0.5s	3.00nm			Mrr=-0.10 0.06 Mtt=-0.23 0.09				
GUN	56.15	293 P	25 25.20	-0.4			id	36 28.70		Mrr= 0.33 0.07 Mrt=-0.12 0.14				
PKI	56.58	292 P	25 27.80	-0.9	RTCB	145.23	122 iPKPc	35 22.50	-0.3	Mrf= 0.74 0.11 Mtr=-1.02 0.07				
KKN	56.69	293 P	25 28.80	-0.5	RTLL	145.55	122 ePKPd	35 22.70	-0.5	Principal Axes:				
DMN	56.85	292 P	25 30.20	-0.3	CFA	145.65	122 ePKPc	35 23.00	-0.4	T Val= 1.41 Plg=24 Azm=236				
GKN	57.25	293 P	25 32.60	-0.6	ZOBO	147.45	94 PKP	35 27.00	-0.4	N -0.25 56 8				
ANM	58.10	23 eP	25 37.70	-0.7		1.5s	121.51nm			P -1.16 22 136				
SVW	60.61	28 eP	25 54.90	-0.9			i	35 30.00		Best Double Couple:Mo=1.3*10**17				
	0.7s	14.30nm	5.2mb		LPB	147.50	95 PKP	35 31.30	4.1X	NP1:Strike=276 Dip=56 Slip= 178				
TTA	61.08	26 eP	25 57.60	-1.5	CCH	149.43	96 PKP	35 37.90	7.8X	NP2: 6 89 34				
	1.1s	25.00nm	5.3mb		S.D. = 1.0 on 116 of 133 obs.									
IMA	63.16	23 eP	26 11.50	-1.5	MAR 29, 1990 14h 36m 29.26± 0.40s									
PMR	63.74	29 eP	26 14.50	-2.1	16.546 N ± 5.9km 145.867 E ± 8.5km									
	1.2s	39.10nm	5.4mb		DEPTH = 33.0km (normol)									
HYB	64.02	282 iPc	26 18.50	-0.8	4.8mb ( 8 obs.)									
		i	26 26.00	24km	MARIANA ISLANDS (216)									
MSZ	64.19	163 P	26 24.20	4.5X	GUMO	3.10	198 eP	37 15.70	-1.3	KSH	2.11	88 iPnc	19 55.00	4.7X
KSH	64.20	306 P	26 25.50	5.2X	PJG	3.10	198 eP	37 15.80	-1.1			Sn	20 25.00	
BRW	64.22	18 eP	26 18.40	-1.3	GUA	3.13	197 ePd	37 16.10	-1.3	QUE	10.55	211 eP	21 46.80	-2.0
FBA	65.15	26 eP	26 23.50	-2.3			eS	37 51.20				eS	23 46.50	
TOA	65.22	29 eP	26 25.70	-0.7	MAT	21.04	343 eP	41 12.00	-0.8	NDI	11.19	162 iPc	21 55.20	-2.0
GBA	65.82	278 Pc	26 29.80	-1.0	PMG	25.82	177 eP	42 07.00	7.6X		0.5s	169.01nm	6.5mb X	
	0.9s	9.90nm	4.9mb		SSE	26.74	307 eP	42 07.00	-0.8	MHI	11.31	258 eP	21 54.00	-5.0X
KOD	66.54	274 eP	26 35.70	-0.2			pP	42 13.00	21kmX		0.7s	328.77nm	6.7mb X	
POO	68.22	284 iPd	26 44.70	-1.4	BJI	34.81	318 eP	43 18.50	-0.6	WMQ	11.67	63 iPd	22 10.00	6.1X
INK	71.27	23 iPc	27 02.10	-1.7		1.5s	26.00nm	4.9mb		Z	13s	21.00um		
	1.0s	52.00nm	5.6mb		TIY	36.18	312 eP	43 36.40	5.6X		14.79	137 P	22 39.60	-5.6X
QUE	72.42	297 eP	27 11.60	-0.1	XAN	37.42	305 eP	43 41.00	-0.2	GKN	15.30	136 P	22 46.20	-5.8X
MBC	75.17	14 eP	27 25.50	-1.1	GYA	37.66	292 eP	43 48.00	4.6X	KKN	15.35	136 P	22 47.90	-4.8X
	1.3s	26.00nm	5.1mb		WB5	37.92	198 eP	43 46.90	1.4	GUN	15.54	134 P	22 49.80	-5.4X
MHI	77.49	304 eP	27 41.00	0.5	WRA	37.99	198 Pc	43 47.70	1.6	PKI	15.54	136 P	22 50.20	-5.1X
		i	30 39.00			0.8s	8.50nm	4.7mb		LSA	17.61	118 P	23 20.80	-0.7
MCW	78.61	43 P	27 47.50	1.2	BTO	39.16	315 eP	43 56.70	0.9	Z	10s	3.20um		
BMW	78.81	45 P	27 48.50	1.0	CD2	40.87	298 eP	44 10.20	0.2	N	11s	2.70um		
GMW	78.88	44 P	27 48.70	0.9	ASPA	41.64	197 eP	44 18.40	2.1	E	11s	1.40um		
SHW	79.55	45 P	27 53.00	1.4		0.4s	8.00nm	4.8mb		TEH	17.71	265 eP	23 22.00	-0.5
RMW	79.55	44 P	27 52.10	0.6	LZH	42.00	306 eP	44 21.00	1.6	IR2	18.11	265 eP	23 26.50	-0.9
YKA	79.80	28 eP	27 50.40	-2.0		2.5s	34.00nm	4.6mb		IR4	18.25	264 eP	23 28.00	-1.1
	0.8s	17.60nm	5.1mb		CHG	44.67	280 eP	44 41.20	0.1	IR7	18.32	265 eP	23 29.00	-1.0
PNT	80.53	41 eP	27 57.00	0.4	GTA	46.00	309 eP	44 52.00	0.5	IR5	18.50	264 eP	23 31.00	-1.3
	1.0s	36.00nm	5.4mb		BWA	50.74	177 eP	45 34.00	5.8X	BOM	20.44	181 eP	23 36.66	-17.4X
WDC	80.62	51 eP	27 58.00	0.7	LSA	51.57	295 eP	45 35.60	0.4			eS	27 29.60	
VGB	80.70	45 P	27 58.00	0.4	CAN	51.67	177 eP	45 37.80	2.7X	GTA	20.50	82 iPd	23 55.70	1.0
MIN	81.37	51 e(P)	28 01.00	-0.4			e	45 40.50			3.0s	1700.00nm	5.9mb	
ORV	81.65	51 eP	28 02.80	0.2	WMQ	55.85	312 iPd	46 07.10	1.1	Z	14s	6.40um	5.1MsZx	
DPW	81.81	43 P	28 03.80	0.4	GUN	56.20	293 P	46 09.40	0.3	E	11s	5.10um		
MHC	82.10	54 eP	28 05.20	0.0	PKI	56.63	292 P	46 10.40	-1.8			pP	24 05.00	36kmX
NEW	82.40	42 P	28 06.00	-0.4	KKN	56.73	293 P	46 12.20	-0.6			sP	24 11.00	
	1.2s	45.45nm	5.4mb		GKN	57.29	293 P	46 16.20	-0.5	POO	20.81	178 Pc	23 56.30	-1.6
PRS	82.57	54 ePd	28 08.00	0.5	HYB	64.06	282 eP	47 03.00	0.3			iS	27 35.50	
CMB	82.88	53 ePd	28 09.40	0.3	FBA	65.15	26 eP	47 10.50	1.5	SHL	20.86	126 iP	23 56.00	-2.5
EDM	83.21	36 iPc	28 10.30	-0.2	INK	71.28	23 eP	47 45.00	-2.0			eS	27 42.50	
PHAM	83.46	55 P	28 13.00	0.9	MBC	75.19	14 eP	48 16.50	6.7X	TAB	21.03	275 eP	24 01.00	0.9
FRI	83.68	53 eP	28 13.40	0.3	YKA	79.81	28 eP	48 34.30	-1.2	KER	21.48	265 iPc	24 05.50	0.7
BCH	83.88	55 P	28 14.90	0.5		0.7s	4.80nm	4.6mb		SLY	22.31	269 iPc	24 14.80	2.0
KVN	84.32	51 P	28 16.90	0.3	NEW	82.40	42 eP	48 49.50	0.0			iPP	24 45.50	
ISA	85.01	54 eP	28 20.00	0.0		1.1s	9.69nm	4.8mb				eS	25 05.50	
TNP	85.27	52 P	28 21.00	-0.4	EDM	83.21	37 eP	48 53.50	-0.1			eSS	29 01.00	
	0.6s	7.72nm	5.1mb		KVN	84.31	51 eP	49 00.50	0.8	HYB	22.39	167 eP	24 13.00	-0.8
SES	85.50	39 ePd	28 21.60	-0.5	TNP	85.26	52 eP	49 05.50	1.0		1.0s	70.00nm	5.1mb	
CLC	85.65	54 eP	28 23.00	-0.1		1.0s	7.00nm	4.8mb		BBU	23.16	242 iP	24 21.40	0.1
		e	28 31.00	25km	SES	85.50	39 eP	49 04.00	-1.2		0.9s	1470.00nm	6.5mb X	
PAS	85.68	56 eP	28 25.00	1.7	LRM	86.19	43 eP	49 08.80	-0.2	BEE	23.25	242 (P)	24 22.50	0.4
MWC	85.75	56 eP	28 25.00	1.1	FFC	88.81	33 eP	49 21.00	-0.1	DHR	23.33	243 eP+	24 23.50	0.7
SBB	85.80	55 eP	28 24.00	0.1										



MSL	23.90	272	ePd	24	29.00	0.6		Z	20s	2.90um	5.0Msz		i	26	58.50	69kmX		
			e	24	37.00	28km		N	16s	3.80um			iPP	28	16.50			
BHD	23.99	264	iPd	24	31.50	2.3		WHN	34.57	92 Pd	26 04.00	-0.5	iPPP	38	35.00			
			i	24	40.00	30km			1.2s	200.00nm		5.9mb	iS	32	28.00			
			iS	28	50.00			Z	16s	4.80um		5.3MszX	iSSS	35	35.00			
			iSSS	29	50.00			N	14s	3.20um								
			eLO	33	05.00			E	14s	3.00um			SGH	38.90	233 iP+	26 42.95 1.7		
LZH	24.36	88	iPd	24	35.00	2.0		KOT	35.10	267 eP	26 08.50	-0.6	HLD	38.91	233 iP+	26 42.58 1.4		
	4.0s	1855	0.00nm		6.0mb X			IZM	35.51	283 eP	26 11.70	-0.8	KSU	38.96	233 iP+	26 43.11 1.4		
Z	18s		9.70um		5.3Msz			HLW	35.51	268 eP	26 14.00	1.4	BEQ	38.96	296 iP	26 42.50 1.1		
N	15s		6.50um					NNT	35.52	131 eP	26 10.50	-2.2	AGG	39.02	286 eP	26 42.00 -0.1		
E	14s		4.20um							e	47 40.20		BUD	39.49	300 iP	26 47.00 1.2		
			pP	24	51.50	72kmX		MTUR	35.68	295 ePc	26 16.00	2.1	OHR	39.57	290 eP	26 45.70 -0.9		
			sP	25	05.00			CMP	35.69	295 ePd	26 14.00	0.0	SSE	39.62	87 P	26 48.50 1.4		
			i	26	08.00			EZN	35.83	286 eP	26 15.20	0.1		Z	18s	2.00um	5.0Msz	
			eS	29	06.00			KDZ	36.07	289 iPd	26 18.00	0.8		N	16s	2.10um		
			PcS	31	23.00			SUF	36.47	325 iP	26 19.90	-0.4		E	15s	1.20um		
GBA	25.97	171	Pd	24	47.00	-1.1		RZN	36.57	290 iPc	26 23.00	1.4	PHP	39.68	291 eP	26 46.10 -1.3		
	0.6s		15.80nm		4.8mb			NUR	36.59	321 iP	26 20.60	-0.7	KBN	39.69	289 eP	26 44.00 -3.5X		
CD2	26.24	99	P	24	52.00	1.3			0.8s	51.30nm		5.4mb	SRO	39.91	301 iP	26 50.50 1.2		
	1.0s		200.00nm		5.7mb					e	36 04.00				e	28 33.50	597kmX	
Z	14s		3.90um		5.1MszX					e	37 38.00		UPP	39.95	320 iP	26 48.00 -1.4		
N	10s		2.60um					PGB	36.78	291 iPc	26 25.00	1.8	LSK	39.98	288 iPd	26 50.80 0.8		
RYD	26.79	245	iP+	24	55.00	-0.8		DL2	37.15	75 eP	26 27.00	0.7	TIR	40.18	290 eP	26 53.70 2.1		
BTO	28.06	76	P	25	08.00	0.7			1.0s	200.00nm		5.9mb	LACI	40.22	291 eP	26 53.00 1.2		
			3.00um					Z	16s	2.40um		5.1MszX	SDA	40.27	292 eP	26 52.00 -0.3		
			4.30um					N	12s	1.40um			BERA	40.30	290 eP	26 52.20 -0.3		
			pP	25	15.00	25km		E	13s	2.40um			SNG	40.43	135 eP	26 52.20 -1.6		
DASM	28.16	251	eP	25	07.70	-0.6				sP	26 43.00		ZST	40.66	301 eP	26 56.20 0.8		
KVT	28.32	285	iP	25	10.40	0.9		GZR	37.25	296 ePd	26 30.00	2.9			e	27 15.70	81kmX	
KMI	28.56	111	Pd	25	12.00	-0.1		MMB	37.31	290 iPd	26 29.00	1.3	KSP	40.82	306 eP	26 56.30 -0.4		
	2.0s		0.10nm		2.2mb X		NJ2	37.42	87 Pc	26 30.00	1.4		0.8s	25.00nm		5.0mb		
XAN	28.96	89	Pd	25	15.60	0.2			Z	14s	3.60um		5.3MszX		id	26 57.50	4kmX	
			3.50um					N	13s	1.70um				i	27 05.50			
			3.60um					E	14s	4.00um				e	28 29.50			
HHC	29.17	75	Pd	25	18.00	0.7				S	32 22.00		SOP	41.10	301 eP	26 59.40 0.4		
Z	13s		6.60um		5.4MszX		QIZ	37.49	112 eP	26 29.00	-0.4	MDJ	41.47	64 eP	27 02.50 0.4			
N	10s		2.00um					N	20s	6.90um			E	13s	3.50um			
E	12s		4.10um							eS	32 23.50				ePP	27 10.00	25km	
			S	30	10.00		SRS	37.52	289 ePc	26 30.00	0.6			ePP	28 48.00			
KOD	29.30	172	eP	25	19.00	0.2		GZH	37.60	104 P	26 31.20	1.1			S	33 16.00		
			eS	30	56.80				Z	18s	3.60um		5.2Msz		sS	33 29.00		
KAS	29.97	287	iPc	25	24.60	0.3			N	14s	1.70um			ZAG	41.85	298 eP	27 03.50 -1.7	
CHG	30.23	125	eP	25	25.00	-1.8			E	15s	3.80um			HFS	41.94	320 eP	27 04.90 -0.8	
	1.0s		13.75nm		4.7mb					eS	32 20.00				0.5s	47.70nm	5.5mb	
TIY	30.52	81	Pd	25	30.00	0.7		KKB	37.72	290 iPc	26 32.00	1.0		Z	18s	2.66um	5.2Msz	
Z	14s		6.40um		5.4MszX		PAIG	37.77	287 ePc	26 33.40	2.0				LR	42 56.00		
E	13s		3.90um				SNY	37.84	70 iPd	26 31.00	-1.0	PRU	42.04	305 eP	27 06.80 0.1			
			pP	25	36.50	23km			Z	18s	5.30um		5.4Msz		4.10um		5.4MszX	
			S	30	35.00				E	12s	3.40um				1.40um			
HRI	30.68	270	e(P)	25	32.00	1.3				pP	26 39.00	27km			1.90um			
GYA	30.69	105	P	25	31.40	0.5		SOD	37.92	333 iP	26 32.30	-0.1	BRG	42.29	306 iPd	27 09.80 1.0		
			2.30um		4.9MszX					eS	32 22.00			1.3s	46.00nm		5.0mb	
			2.60um				BZS	38.01	297 eP	26 34.00	0.6				i	27 17.60	26km	
			1.80um				KNT	38.02	289 ePc	26 34.00	0.4				i	28 53.40		
			S	30	35.00		VAY	38.22	290 iP	26 36.00	0.8				i	32 33.00		
			ScS	36	04.00			1.0s		0.08nm		2.5mb X	VBY	42.42	298 ePd	27 11.30 1.5		
BBTK	31.01	284	iPc	25	34.00	0.4				i	26 44.40	28km	LJU	42.79	299 ePd	27 14.10 1.2		
KMSA	31.13	241	eP+	25	33.10	-1.7		TDD	38.45	233 iP+	26 39.11	1.7	KHC	42.80	303 iPc	27 13.40 0.4		
SALJ	31.22	268	Pd	25	35.90	0.4		SPC	38.46	303 eP	26 37.30	-0.1		1.2s	45.00nm		5.1mb	
MKRJ	31.44	267	Pc	25	37.80	0.4		KRA	38.58	304 eP	26 37.70	-0.5		Z	16s	3.00um	5.3MszX	
BDT	31.45	127	eP	25	34.10	-3.3X			0.7s	85.00nm		5.6mb		N	16s	0.70um		
	0.8s		45.70nm		5.4mb					4.00um		5.3MszX		E	16s	2.10um		
DSI	31.64	268	eP	25	40.00	1.0			Z	16s						e	27 19.00	19km
GPA	32.75	286	eP	25	49.00	0.3		LIT	38.60	288 ePc	26 42.40	16km	CLL	42.82	307 iPd	27 13.70 0.7		
BJI	32.78	75	eP	25	49.50	0.6		HKC	38.67	104 eP	26 41.00	1.8		1.5s	52.00nm		5.0mb	
	1.0s		61.00nm		5.5mb		ARO	38.70	233 iP+	26 41.50	1.9	IPM	42.82	137 ePc	27 14.80 1.4			
	Z	16s	6.70um		5.4MszX		CN2	38.74	66 Pd	26 39.70	0.1		0.9s	82.00nm		5.5mb		
	N	12s	2.90um						Z	14s	7.40um		5.7MszX	CEY	42.93	298 eP	27 14.50 0.4	
			eS	31	00.00				N	14s	3.70um			ORI	43.04	290 P	27 16.00 1.0	
			eScP	32	15.00				E	14s	3.60um			ROI	43.11	289 P	27 21.70 6.1X	
MBH	32.81	265	eP	25	50.00	0.7				ePP	26 48.70	30km	NB2	43.19	321 P	27 14.90 -1.1		
LOE	33.05	123	eP	25	50.50	-1.0				PP	28 16.00			0.8s	48.40nm		5.3mb	
HRT	33.11	287	eP	25	53.00	1.1				eS	32 40.00		VOY	43.23	299 eP	27 16.70 0.1		
ALT	33.19	283	eP	25	52.00	-0.6				SS	35 26.00		TDS	43.25	289 Pd	27 17.80 1.1		
BADA	33.31	263	eP+	25	54.00	0.4		KEV	38.81	336 iP	26 39.80	0.0	RBL	43.35	300 P	27 17.00 -0.6		
WAJH	33.32	258	eP	25	54.30	0.6			1.0s	38.00nm		5.1mb	KBA	43.36	301 iPc	27 17.80 0.0		
NST	33.34	128	iPc	25	55.10	1.1		DAF	38.84	233 iP+	26 42.28	1.6		0.6s	11.80nm		4.8mb	
YLV	33.39	286	iP	25	51.70	-2.6		PSZ	38.84	301 iP	26 41.30	0.8			i	27 32.80	58kmX	
PPE	33.78	297	ePd	25	57.00	-0.6		SKO	38.88	291 iPc	26 41.50	0.7			i	28 18.40		
KHL	33.82	282	eP	25	57.00	-1.1			Z	14s	1.43um		4.9MszX		i	29 05.30		
CTT	33.96	288	iP	25	59.00	-0.2			N	15s	1.30um			TRI	43.39	299 iPc	27 17.00 -0.7	
ELL	33.99	279	eP	25	58.00	-1.6			E	17s	1.65um							
VRI	34.44	296	ePd	26	04.50	1.2												
TIA	34.55	81	Pd	26	05.40	1.0												



BHG	43.53	302	iPd	27	19.80	0.9	DOI	48.16	299	P	27	55.20	-0.6	GUD	57.40	298	eP	29	04.00	-0.7
	1.4s	56.00nm				5.2mb	STV	48.19	298	P	27	54.98	-1.1	TOL	57.67	297	iPd	29	06.00	-0.4
CZI	43.54	289	P	27	20.20	1.2	LPG	48.19	300	eP	27	56.20	-0.1		1.2s	93.75nm				5.7mb
SGO	43.72	291	Pd	27	20.00	-0.4		1.2s	62.50nm				5.5mb	EBAN	58.26	295	eP	29	10.00	-0.6
MOX	43.79	306	ePd	27	22.00	1.0	LPL	48.19	300	eP	27	56.10	-0.2	ASMO	58.61	295	iPc	29	12.00	-1.1
	1.6s	59.00nm				5.1mb		1.0s	50.00nm			5.5mb	APHE	58.76	294	iPc	29	13.50	-0.7	
FVI	43.85	300	Pd	27	21.60	0.2	SBF	48.23	298	eP	27	55.90	-0.5	AAPN	58.90	295	iPd	29	13.80	-1.3
DUI	43.99	293	P	27	23.50	0.7		1.0s	76.00nm			5.7mb	EPLA	58.97	298	eP	29	15.40	-0.2	
BSS	44.01	291	P	27	23.90	1.1	PZZ	48.26	299	P	27	55.19	-1.4	ALDJ	58.98	294	eP	29	14.00	-1.7
GRF	44.21	305	ePc	27	25.30	0.9	DOU	48.30	307	Pc	27	57.70	1.0	ATEJ	59.01	294	iPc	29	15.00	-1.0
	1.0s	67.00nm				5.4mb		e			49	34.80		EPRU	59.84	295	eP	29	19.00	-2.5
Z	25s	1.00um				4.6MsZ	RRL	48.34	299	P	27	56.32	-1.1	BCAO	60.35	249	iPc	30	10.60	45.4X
	e					27km	BNI	48.37	300	Pd	27	57.30	-0.2		0.6s	22.00nm				
	e						SNF	48.38	307	P	27	58.50	1.2	NKM	60.70	293	iPd	29	26.50	-0.9
	e						OCP	48.53	107	eP	27	46.50	-12.3X	IFR	61.46	291	iPd	29	33.00	0.2
ATN	44.39	288	Pd	27	26.40	0.4	FRF	48.87	298	eP	28	00.60	-0.6	AVE	63.21	292	iPd	29	44.50	0.3
SDI	44.44	293	P	27	28.00	1.6		1.0s	48.00nm			5.5mb		i				29	58.50	50kmX
FUR	44.49	303	eP	27	28.30	1.6	LRG	49.10	298	eP	28	02.50	-0.4	BRW	64.03	16	eP	29	48.50	-0.6
	1.0s	61.00nm				5.4mb		1.2s	71.40nm			5.6mb	TIO	64.34	290	iPd	29	51.00	-0.9	
ARV	44.53	296	P	27	27.00	-0.1	PGP	49.16	108	ePd	28	04.50	0.8		i			30	11.80	80kmX
AZI	44.62	293	Pd	27	29.00	1.3		0.8s	52.00nm			5.6mb	MBC	64.34	3	iPd	29	50.60	-0.5	
CTI	44.74	299	P	27	28.00	-0.8	LOR	49.56	303	eP	28	05.30	-1.2		0.9s	112.00nm				6.0mb
ASS	44.85	295	P	27	29.80	0.1		1.0s	16.00nm			5.0mb	ANM	66.66	24	ePd	30	05.80	-0.3	
MNS	45.04	294	Pd	27	32.00	0.8	LBF	49.57	303	eP	28	05.40	-1.2	IMA	68.81	19	ePd	30	18.60	-1.1
SFI	45.17	297	P	27	34.00	1.9		1.2s	19.35nm			5.0mb	TTA	70.67	22	eP	30	30.40	-0.7	
CRE	45.18	296	P	27	34.00	1.6	SMF	49.76	302	eP	28	07.30	-0.7	INK	70.74	10	iPd	30	30.80	-0.4
RMP	45.20	293	P	27	34.00	1.6		1.2s	47.60nm			5.4mb		1.0s	72.00nm					5.8mb
RDP	45.20	293	P	27	34.00	1.5	SSF	49.85	303	eP	28	07.80	-0.9	FBA	71.18	17	ePd	30	33.10	-0.9
PGD	45.27	297	P	27	35.00	1.8		1.0s	18.00nm			5.1mb		0.9s	33.30nm					5.5mb
OSS	45.59	301	eP	27	34.70	-1.0	AVF	50.04	303	eP	28	09.20	-0.9	BUL	72.45	224	iPd	31	24.90	42.6X
SAL	45.61	299	P	27	36.50	0.9		1.0s	58.00nm			5.6mb		0.9s	71.43nm					
PIP	45.89	103	ePd	27	41.00	3.0	MAT	50.28	72	iPd	28	11.20	-1.0	FRB	72.81	343	eP	30	43.00	-0.6
SAX	45.98	302	eP	27	38.70	-0.1		0.9s	52.10nm			5.5mb	PMR	73.64	20	eP	30	47.50	-1.0	
BDI	46.00	297	P	27	38.50	-0.3	Z	19s	1.39um			5.0MsZ	TOA	73.95	18	ePd	30	50.50	0.1	
VDL	46.09	301	eP	27	38.50	-1.1		eS			35	26.00			0.8s	78.80nm				5.8mb
MDI	46.12	300	P	27	45.00	5.4X	AGO	50.42	302	P	28	12.91	-0.1	MBL	74.33	135	eP	30	52.50	-0.5
PII	46.15	297	Pd	27	40.00	0.2	BGF	50.44	303	eP	28	12.20	-1.0	MTN	74.80	121	eP	30	55.00	-0.9
KBS	46.19	346	iP	27	40.30	0.5		0.9s	16.40nm			5.0mb	LKO	75.40	270	Pc	30	58.48	-1.0	
KGM	46.20	136	ePd	27	41.60	1.1	ASAJ	50.57	61	eP	28	13.40	-0.8		0.8s	37.00nm				5.5mb
LLS	46.30	301	eP	27	40.90	-0.4	PYM	50.60	301	P	28	14.35	-0.2	KNA	75.41	125	eP	30	59.00	-0.3
SLE	46.40	303	eP	27	42.00	0.1	LBL	50.61	301	P	28	14.91	0.4	KIC	76.72	267	Pc	31	06.16	-0.7
WTS	46.50	309	eP	27	44.00	1.5	MAF	50.73	302	eP	28	14.90	-0.5		0.9s	31.50nm				5.3mb
	0.7s	17.00nm				5.1mb		0.8s	26.85nm			5.3mb	TIC	76.76	268	Pc	31	06.42	-0.7	
	e					18km	TCF	50.95	302	eP	28	16.40	-0.7	LIC	77.03	267	Pc	31	07.64	-0.9
ABH	46.50	306	eP	27	43.15	0.5		1.1s	41.50nm			5.3mb		0.9s	31.00nm					5.3mb
ZLA	46.54	302	eP	27	43.30	0.3	KKM	50.95	119	ePc	28	18.50	1.0	Z	20s	1.02um				5.1MsZ
BOB	46.58	298	Pd	27	44.30	0.9	LSF	51.40	303	eP	28	19.40	-1.1	SLR	77.22	221	iPc	31	08.60	-0.9
TMA	46.59	300	eP	27	42.40	-1.2		1.0s	28.00nm			5.1mb		1.5s	116.67nm					5.7mb
GW	46.67	304	P	27	44.16	0.2	EKA	51.47	315	Pd	28	20.40	-0.5	KSR	78.03	222	iPd	31	13.90	-0.1
FEL	46.69	303	P	27	43.48	-0.8	CAF	51.50	301	eP	28	21.30	-0.1	MEKA	78.09	139	eP	31	18.00	3.9X
VAI	46.72	300	Pd	27	43.50	-0.9		1.0s	30.00nm			5.2mb	YKA	78.25	4	eP	31	14.10	-0.4	
RUP	46.85	305	eP	27	45.96	0.5	HOOU	51.63	63	eP	28	22.90	0.6		0.8s	25.00nm				5.3mb
WLS	46.98	304	P	27	45.56	-0.9	LDF	51.69	306	eP	28	21.60	-1.0	PRY	78.61	221	iPd	31	16.70	-0.4
CDF	47.03	304	P	27	46.18	-0.7		1.0s	38.00nm			5.3mb	BFS	78.93	221	iPd	31	10.00	-8.9X	
BAG	47.03	105	eP	27	48.50	1.1	RJF	51.74	301	eP	28	22.80	-0.3		1.0s	80.00nm				5.7mb
BBS	47.13	302	P	27	46.87	-0.7		1.2s	53.55nm			5.3mb	MRWA	79.03	143	eP	31	19.00	-0.2	
ECH	47.16	303	P	27	47.05	-0.8	FLN	51.86	306	eP	28	22.50	-1.4	SEK	79.68	220	iPc	31	23.00	0.1
CVP	47.17	103	eP	27	49.00	0.8		1.2s	26.80nm			5.0mb		0.7s	47.95nm					5.6mb
	1.0s	83.00nm				5.7mb	LPO	52.17	301	eP	28	26.10	-0.3	SCH	80.10	338	eP	31	24.00	-0.7
MMK	47.21	300	eP	27	48.40	-0.2		0.8s	14.80nm			5.0mb	BAL	80.53	143	eP	31	27.00	-0.2	
PCP	47.26	298	P	27	48.52	-0.2	KUSJ	52.34	61	eP	28	27.60	0.0	MUN	81.45	144	eP	31	31.00	-1.0
MOF	47.27	303	P	27	48.09	-0.7	MFF	52.37	303	eP	28	26.40	-1.4	WB5	82.04	124	eP	31	35.00	-0.3
MEM	47.30	307	P	27	50.10	1.3		0.9s	19.65nm			5.0mb		e				34	21.30	
ENN	47.31	307	eP	27	50.00	1.1	LFF	52.38	301	eP	28	27.50	-0.4	WRA	82.07	124	Pd	31	36.40	0.9
	0.8s	8.00nm				4.8mb		0.8s	32.25nm			5.3mb		0.9s	32.10nm					5.4mb
	e					91kmX	LPF	52.45	305	eP	28	27.00	-1.4	NWAO	82.71	144	eP	31	38.00	-0.5
	e							1.0s	12.00nm			4.8mb	COOL	82.89	140	eP	31	39.00	-0.6	
ORX	47.32	300	P	27	46.99	-2.3	NAI	52.48	228	iPc	28	29.90	0.7	ASPA	84.50	127	iPc	31	46.80	-1.1
ORO	47.32	300	P	27	51.00	1.7	DAG	52.48	343	iP	28	27.00	-1.3		1.2s	34.00nm				5.5mb
CKI	47.48	298	P	27	57.00	6.6X		0.9s	54.62nm			5.5mb		eS				42	08.90	
BSF	47.49	303	P	27	49.84	-0.8	EPF	53.36	299	eP	28	33.90	-1.4	OIS	85.96	121	eP	31	55.00	-0.2
PGF	47.57	296	eP	27	50.50	-0.8		1.2s	22.30nm			5.0mb	FFC	86.15	357	eP	31	55.00	-0.7	
	1.2s	44.65nm				5.4mb	TSM	53.53	119	eP	28	36.00	-0.7		1.1s	43.00nm				5.6mb
DIX	47.57	301	eP	27	51.40	-0.1	DLE	53.98	313	eP	28	41.20	1.6	EDM	87.57	4	iPd	32	02.90	0.2
FIN	47.59	298	P	27	49.86	-1.5		0.8s	27.00nm			5.3mb		0.9s	61.00nm					5.9mb
LOMF	47.60	302	P	27	50.37	-1.1	EBR	54.13	297	eP	28	41.00	0.2	RSON	89.39	352	P	32	10.00	-1.4
HAU	47.74	303	eP	27	51.90	-0.5	ECP	54.26	312	eP	28	41.20	-0.4	</						



29d 16h

RMW 92.48 10 P 32 26.00 0.1  
 LON 93.17 10 P 32 29.00 0.0  
 LRM 95.00 4 eP 32 37.30 -0.4  
 RMO 96.12 119 eP 32 43.00 0.4  
 SPA 129.22 180 ePKP 38 19.90 -2.6X  
 1.1s 5.95nm

ZOBO 139.24 293 PKP 38 44.00 0.5X  
 Z 24s 0.34um 5.0mszX  
 LR 30 36.00  
 S.D. = 1.0 on 312 of 334 obs.

? MAR 29, 1990 16h 24m 09.31 ± 7.16s  
 39.395 N ± 11.8km 25.961 E ± 68.1km  
 DEPTH = 10.0km (geophysicist)  
 AEGEAN SEA (365)

EZN 0.51 33 iPg 24 19.00 -0.7  
 IZM 1.42 134 ePn 24 35.00 -0.2  
 KGT 1.48 44 iPn 24 36.20 0.3  
 EDC 1.75 56 ePn 24 42.00 2.2  
 BNT 1.79 57 ePn 24 39.00 -1.4  
 DST 2.07 83 ePn 24 44.50 -0.1  
 S.D. = 1.6 on 6 of 6 obs.

MAR 29, 1990 16h 36m 05.78 ± 0.44s  
 55.660 N ± 5.0km 158.893 W ± 4.0km  
 DEPTH = 56.1 ± 4.7 km  
 4.4mb ( 8 obs.)  
 ALASKA PENINSULA (12)

IVF 0.43 304 iPd 36 17.72 0.9  
 SCB 0.89 263 eP 36 22.78 0.4  
 eS 36 35.29  
 SASA 0.97 251 iPd 36 23.14 -0.2  
 eS 36 36.15  
 SDN 0.97 251 iP 36 23.10 -0.2  
 PVV 1.67 261 ePd 36 32.80 -0.3  
 eS 36 32.70  
 DLG 1.76 254 eP 36 34.04 -0.3  
 SNKA 2.53 244 eP 36 44.56 -0.6  
 eS 37 12.89  
 KDC 4.10 57 eP 37 06.50 -0.9  
 SVW 5.73 16 eP 37 31.10 0.8  
 TTA 7.44 10 eP 37 54.20 0.0  
 PMR 7.83 37 eP 37 59.70 0.3  
 TOA 9.21 40 eP 38 18.50 -0.1  
 ANM 9.49 343 eP 38 22.10 -0.3  
 IMA 10.74 11 eP 38 40.30 0.8  
 FBA 10.76 26 eP 38 38.50 -1.1  
 ADK 11.18 258 P 38 40.00 -5.3X  
 INK 17.21 33 eP 40 03.00 -0.3  
 YKA 23.35 55 eP 41 09.30 -0.1  
 0.5s 2.40nm 3.9mb

PNT 24.48 88 eP 41 22.00 1.5  
 0.6s 9.00nm 4.5mb  
 LON 24.62 96 P 41 23.50 1.6  
 MBC 25.23 21 eP 41 27.50 0.2  
 0.7s 7.00nm 4.3mb  
 NEW 26.44 89 P 41 39.00 0.1  
 0.7s 5.00nm 4.2mb  
 KVN 31.68 104 P 42 25.40 -0.5  
 FFC 31.73 68 eP 42 25.00 -1.0  
 0.6s 6.00nm 4.6mb

MSU 35.34 99 P 42 57.70 0.1  
 RSSD 36.24 85 P 43 04.00 -1.2  
 RSON 38.00 69 P 43 21.00 1.4  
 GOL 38.36 92 P 43 23.00 -0.1  
 FRB 42.57 41 eP 43 56.00 -1.1  
 SUF 61.89 357 eP 46 20.70 -0.3  
 NB2 63.38 5 P 46 30.60 -0.4  
 0.8s 2.90nm 4.4mb

NUR 64.14 358 iP 46 35.00 -0.8  
 i 46 54.50  
 HFS 64.40 4 eP 46 36.50 -1.1  
 0.4s 1.70nm 4.4mb  
 EKA 67.61 15 P 46 59.00 1.0  
 1.1s 12.60nm 4.8mb

GUN 80.22 306 P 48 13.00 1.1  
 KKN 80.60 306 PKP 48 14.60 0.8  
 GKN 80.71 307 P 48 15.00 0.7  
 PKI 80.72 306 PKP 48 14.40 -0.2  
 DMN 80.83 306 PKP 48 15.20 0.1  
 SPA 145.48 180 iPKPd 55 36.80 -0.8  
 1.0s 15.00nm

SLR 149.65 347 ePKP 55 49.00 3.5X  
 S.D. = 0.8 on 39 of 41 obs.

\* MAR 29, 1990 16h 44m 19.97 ± 1.05s  
 50.308 N ± 14.6km 18.892 E ± 7.1km  
 DEPTH = 10.0km (geophysicist)

POLAND (548)  
 ML 3.8 (KBA), 3.3 (VKA), 3.5 (KRA).

KRA 0.72 110 ePg 44 34.30 0.2  
 iSg 44 44.10  
 iPn 44 45.80 -0.2  
 i(Sg) 45 06.60

KSP 1.74 289 ePn 44 50.20 -0.2  
 0.8s 120.00nm  
 iPg 44 53.50  
 iS 45 16.90

ZST 2.42 210 e(Pn) 44 59.90 -0.2  
 i 45 08.00  
 i(Sn) 45 42.30

PSZ 2.48 164 iP 45 08.00 6.9X  
 SRO 2.53 189 iPn 45 09.20 7.5X  
 i 45 59.90

VKA 2.65 220 iPg 45 11.70 8.2X  
 i(Sg) 45 41.60  
 ePn 45 05.50 -0.3

PRU 2.82 265 Pg 45 13.20  
 Sg 45 49.80  
 iPg 45 19.00 7.7X

BRG 3.20 282 iPg 46 05.00  
 iSg 46 18.30 0.7  
 e 45 27.50

KHC 3.64 253 P 45 18.30 0.7  
 e 45 27.50  
 ePg 45 33.00 12.3X

CLL 3.87 287 ePg 46 27.20  
 iSg 46 27.20  
 ePn 45 45.40 15.7X

HOF 4.50 273 ePn 45 45.40 15.7X  
 MOX 4.66 277 e(P) 45 49.00 17.0X  
 eSg 46 50.00

BHG 4.73 239 iPd 45 49.30 16.3X  
 KBA 4.89 231 iPnc 45 42.40 7.0X  
 e 46 18.00  
 i 46 48.20

GRF 4.99 266 e(Pn) 45 44.00 7.4X  
 e(Pg) 45 53.50  
 e(Sn) 46 34.00

TRI 5.74 219 eP 46 16.00 28.7X  
 eSg 47 00.00  
 e 48 20.00

S.D. = 0.5 on 6 of 17 obs.

? MAR 29, 1990 17h 17m 56.67 ± 4.20s  
 31.219 S ± 21.6km 178.106 W ± 24.2km  
 DEPTH = 87.7 ± 32.6 km  
 4.7mb ( 4 obs.)  
 KERMADEC ISLANDS REGION (177)

PUZ 7.46 203 eP 19 45.90 1.1  
 eS 21 18.60  
 MNG 10.72 207 eP 20 27.60 -1.4

THZ 12.76 212 eP 21 03.10 7.1X  
 DZM 16.53 300 iPc 21 44.30 -0.2  
 BR5 25.64 271 eP 23 22.20 2.4

RMO 29.34 271 eP 23 54.00 0.7  
 CTA 33.85 280 iPc 24 32.70 -0.1  
 0.9s 50.42nm 5.4mb

ASPA 42.98 268 eP 25 49.30 0.4  
 1.1s 16.00nm 4.8mb  
 Z 19s 0.57um 4.5msz

WRA 44.04 273 Pc 25 55.40 -2.1  
 0.7s 9.50nm 4.7mb  
 WB5 44.04 273 eP 25 56.50 -1.1

SPA 58.95 180 eP 27 54.50 5.5X  
 1.0s 6.00nm 4.7mb  
 SOD 140.96 345 ePKP 37 17.00 -0.3

SUF 144.85 341 ePKP 37 17.50 -6.6X  
 0.4s 2.60nm  
 NUR 147.05 339 iPKP 37 25.00 -2.8X

0.8s 19.10nm  
 BCAO 149.10 214 iPKPc 37 33.00 0.4  
 0.7s 15.00nm

ic 37 43.20  
 UPP 149.48 344 iPKP 37 35.10 3.5X  
 NB2 149.54 351 PKP 37 31.40 -0.4

0.5s 3.10nm  
 HFS 150.02 348 ePKP 37 33.20 0.7  
 0.5s 1.50nm

HRI 151.37 283 ePKP 37 41.00 5.5X  
 MBH 151.60 276 e(PKP) 37 41.00 5.2X  
 PRNI 151.60 277 ePKP 37 41.00 5.1X  
 S.D. = 1.3 on 13 of 21 obs.

MAR 29, 1990 18h 26m 39.29 ± 0.57s  
 45.833 N ± 5.6km 14.633 E ± 4.5km  
 DEPTH = 10.0km (geophysicist)

YUGOSLAVIA (383)  
 MD 2.5 (LJU), 2.3 (TRI).

CEY 0.17 237 ePg 26 43.50 0.3  
 eSg 26 46.00  
 LJU 0.22 342 ePg 26 43.70 -0.4

eSg 26 47.00  
 RIY 0.52 200 ePg 26 49.50 -0.3  
 iSg 26 57.40

VOY 0.55 291 ePg 26 50.60 0.0  
 eSg 26 59.30  
 TRI 0.62 259 ePg 26 51.60 -0.2

iSg 27 01.20  
 PTJ 0.93 85 iPg 26 56.50 -0.6  
 eSg 27 10.80

ZAG 0.94 90 i(Pg) 26 58.00 0.7  
 iSg 27 12.80  
 RBL 0.96 310 P 26 58.00 0.4

eSg 27 16.00  
 S.D. = 0.5 on 8 of 8 obs.

MAR 29, 1990 18h 50m 04.71 ± 0.83s  
 45.810 N ± 6.5km 14.667 E ± 6.5km  
 DEPTH = 10.0km (geophysicist)

YUGOSLAVIA (383)  
 MD 2.5 (LJU), 2.3 (TRI).

CEY 0.18 247 ePg 50 09.00 0.2  
 eSg 50 11.90  
 LJU 0.25 338 ePg 50 09.40 -0.7

eSg 50 13.00  
 RIY 0.51 203 ePg 50 14.90 -0.1  
 iSg 50 23.40

VOY 0.58 293 iPg 50 15.90 -0.7  
 eSg 50 24.50  
 TRI 0.64 261 ePg 50 17.30 -0.2

iSg 50 27.10  
 PTJ 0.91 84 ePg 50 22.20 0.1  
 eSg 50 36.40

RBL 0.99 310 P 50 25.00 1.4  
 eSg 50 38.00

S.D. = 0.9 on 7 of 7 obs.

MAR 29, 1990 19h 51m 25.55 ± 0.67s  
 51.595 N ± 4.8km 16.235 E ± 5.4km  
 DEPTH = 19.2 ± 4.1 km

POLAND (548)  
 ML 3.1 (KRA), 4.0 (VKA), 3.6 (KBA).

KSP 0.75 177 iPd 51 38.00 -1.9  
 0.8s 245.00nm  
 iS 51 46.20

BRG 1.61 244 iPn 51 53.00 -0.1  
 iPg 51 54.40  
 iSg 52 53.20

PRU 1.93 214 ePn 51 56.60 -1.2  
 Pg 51 59.20  
 Sn 52 16.50

Sg 52 22.00  
 BRL 2.02 297 eP 52 05.50 6.5X  
 CLL 2.04 263 iPn 51 59.40 0.0

iPg 52 03.10  
 iSg 52 28.00  
 BRN 2.05 295 eP 52 06.00 6.6X

KRA 2.81 122 eP 52 18.30 8.0X  
 iS 52 55.30  
 KHC 3.00 216 Pn 52 12.50 -0.5

Pg 52 19.00  
 Sn 53 01.00  
 Sg 53 13.50

HOF 3.04 247 ePn 52 13.50 -0.1  
 MOX 3.06 254 ePn 52 14.00 0.1  
 iPg 52 22.00

iSg 53 02.00  
 WET 3.26 223 iPnc 52 16.30 -0.4  
 VKA 3.33 179 ePn 52 17.50 -0.3

iPg 52 26.50  
 iSg 53 10.00



ZST	3.45	170	ePn	52	20.70	1.3	VKA	3.06	177	iPg	56	35.60	9.0X	S.D. = 1.1 on 17 of 30 obs.
	1.0s	0.06nm								iSg	57	18.80		? MAR 29, 1990 21h 49m 16.21±14.93s
			i	52	28.20		ZST	3.19	168	eP	56	56.00	27.5X	9.856 N ± 77.4km 59.185 W ± 97.2km
			i	52	46.40		GRF	3.50	244	ePn	56	32.30	-0.6	DEPTH = 33.0km (normal)
			e	53	09.80					e(Pg)	56	46.50		NORTH ATLANTIC OCEAN (402)
			i	53	15.40		BHG	4.16	211	eP	56	56.60	14.4X	MD 3.8 (TRN).
			i(Sg)	53	23.20			S.D. = 0.9 on 5 of 10 obs.						
SPC	3.52	132	e(P)	52	21.00	0.4								
			i	52	30.90									
			e	53	13.30									
			e	56	34.80									
			i	57	16.20									
			i	57	35.70									
GRF	3.72	241	ePnc	52	23.30	0.1								
			ePg	52	35.30									
			eSg	53	20.30									
KMR	3.79	202	iPn+	52	24.50	0.2								
			iPg	52	34.80									
			iSg	53	22.70									
SOP	3.92	177	eP	52	27.10	1.0								
SRO	4.02	160	eP	52	41.30	13.9X								
	1.0s	0.14nm												
			i	53	26.80									
			i	53	47.20									
			i	57	44.60									
			e	58	35.10									
			Lg	58	43.00									
BHG	4.45	211	eP	52	33.40	-0.2								
BUD	4.50	155	eP	53	33.50	59.2X								
COP	4.68	333	iPc	53	04.00	27.2X								
	0.9s	110.92nm												
FUR	4.70	225	eP	52	36.60	-0.5								
KBA	4.90	204	iPnc	52	39.40	-0.7								
			i	52	46.80									
			i	53	05.40									
			iSg	53	51.80									
			i	54	00.20									
TNS	5.11	257	ePnc	52	42.10	-0.9								
			eSn	54	07.40									
TOD	5.13	250	ePg	52	01.47	-41.8X								
LJU	5.67	192	e(Pn)	52	51.00	0.1								
			eSn	54	20.00									
ABH	5.78	256	ePg	52	51.96	-0.4								
VOY	5.78	196	e(Pn)	52	57.30	4.9X								
			eSn	54	17.90									
OGA	5.83	218	iPd	52	53.20	-0.1								
WTS	5.86	278	e(Pn)	52	56.00	2.5								
			e(Pg)	53	20.00									
			e(Sg)	54	44.00									
CEY	5.98	192	eP	53	16.50	21.3X								
			e(Sn)	54	36.50									
VBY	6.13	186	e(Pn)	52	56.90	-0.4								
			e(Sn)	54	40.00									
RUP	6.14	256	ePg	52	56.53	-0.9								
MEM	6.52	265	iPc	53	02.70	-0.1								
			e	54	55.70									
ENN	6.54	267	ePn	53	10.00	7.0X								
			e	54	49.00									
DOU	7.52	263	P	53	17.10	0.3								
HFS	8.68	352	eP	53	33.20	0.3								
	0.5s	2.70nm				4.8mb X								
NRA0	9.53	346	Pn	53	43.20	-1.4								
			Sn	55	28.00									
	S.D. = 0.9 on 28 of 38 obs.													
? MAR 29, 1990 19h 55m 37.32± 8.45s														
51.316 N ± 59.8km 16.084 E ± 47.8km														
DEPTH = 10.0km (geophysicist)														
POLAND (548)														
ML 3.5 (VKA).														
KSP	0.49	164	iPd	55	47.30	0.0								
	0.5s	89.00nm												
			iS	55	55.50									
PRU	1.65	217	Pn	56	06.50	0.0								
			Pg	56	08.00									
			Sn	56	25.30									
			Sg	56	29.50									
KHC	2.72	217	ePg	56	28.00	6.2X								
			Sn	57	09.00									
			Sg	57	21.80									
KRA	2.76	116	eP	56	29.90	7.5X								
			eS	57	06.40									
HOF	2.85	251	ePn	56	24.70	1.0								
MOX	2.90	258	ePn	56	24.00	-0.4								
			ePg	56	31.50									
			iSg	57	12.00									



29d 23h

KCT 0.56 310 iPg 48 06.30 -0.3  
 YLV 0.76 27 iPg 48 10.30 0.1  
 BNT 0.89 302 iPg 48 13.30 0.9  
 EDC 0.93 300 iPg 48 13.50 0.5  
 HRT 1.09 31 ePn 48 14.90 -0.9  
 GPA 1.14 69 ePn 48 17.00 0.4  
 ISK 1.18 5 ePn 48 16.90 -0.3  
 ALT 1.24 132 ePn 48 18.50 0.1  
 KHL 1.63 163 ePn 48 25.00 0.8

S.D. = 0.8 on 10 of 10 obs.

? MAR 30, 1990 00h 31m 40.19±1.21s  
 5.089 S ±20.4km 129.350 E ±37.5km  
 DEPTH = 33.0km (normal)  
 4.7mb ( 2 obs.)

BANDA SEA (280)

WB5 15.49 162 eP 35 16.70 -1.3  
 e 38 51.90  
 WRA 15.54 162 P 35 20.00 1.3  
 0.2s 0.40nm 3.3mb X  
 GBA 54.77 290 Pd 41 18.90 9.5X  
 0.4s 3.40nm 4.7mb  
 HYB 54.91 295 eP 41 10.50 0.0  
 INK 97.34 22 eP 45 11.00 0.0  
 SUF 100.54 333 ePd 45 18.40 -7.2X  
 YKA 106.33 26 ePd 45 56.50 5.2X  
 0.6s 0.50nm 4.7mb  
 S.D. = 1.9 on 4 of 7 obs.

MAR 30, 1990 00h 42m 06.96±0.30s  
 20.231 N ±2.1km 122.038 E ±2.7km  
 DEPTH = 123.9 ±2.6 km  
 5.5mb ( 91 obs.)

PHILIPPINE ISLANDS REGION (240)

CENTROID, MOMENT TENSOR (HRV)

Data Used: GDSN

L.P.B.: 10S, 22C

Centroid Location:

Origin Time 00:42: 7.0 0.4

Lat 20.10N 0.05 Lon 121.64E 0.05

Dep 70.6 5.5 Half-duration 2.3

Moment Tensor: Scale 10\*\*17 Nm

Mrr=-1.10 0.08 Mtt= 0.05 0.14

Mff=-1.15 0.15 Mrt= 0.32 0.11

Mrf=-2.05 0.10 Mtf= 1.11 0.14

Principal Axes:

T Vol= 2.35 Plg=57 Azm=105

N 0.46 18 345

P -2.81 27 246

Best Double Couple: Mo=2.6\*10\*\*17

NP1: Strike=299 Dip=24 Slip= 41

NP2: 170 75 109

PIP 2.32 215 ePd 42 45.00 -0.1

eS 43 12.00

CVP 2.52 185 ePc 42 49.00 1.3

iS 43 05.00

TWG 2.73 341 iPc 42 49.50 -0.9

eS 43 15.40

TWF1 3.18 348 ePc 42 56.20 -0.2

eS 43 26.50

TWD 3.85 354 ePc 43 05.10 -0.3

BAG 4.04 200 iPd- 43 08.00 -0.2

TWQ 4.18 345 ePc 43 09.70 -0.1

TWC 4.36 358 ePd 43 13.10 0.8

TWZ 4.86 355 eP 43 20.00 0.9

ANP 4.95 355 eP 43 20.80 0.4

QCP 5.64 190 iP 43 32.50 2.8X

QZH 5.67 326 iPc 43 28.50 -1.6

HKC 7.62 287 eP 43 57.10 0.4

iS 45 16.90

GZH 8.57 291 Pd 44 08.30 -1.3

Z 18s 1.60um

SSE 10.85 356 Pd 44 38.50 -1.3

Z 16s 1.90um

PPR 10.87 198 iPc 44 42.00 1.7

1.0s 82.00nm 5.4mb

QIZ 11.55 266 Pd 44 48.60 -0.7

N 13s 5.40um

S 46 53.20

NJ2 12.11 347 Pc 44 55.00 -1.5

Z 14s 1.20um

N 11s 1.30um

E 10s 1.50um

S 47 04.40

WHN 12.39 327 iPd 45 00.50 0.4

Z 18s 1.80um  
 DAV 13.51 165 eP 45 13.00 -1.8  
 KKM 15.19 203 ePd 45 38.00 1.6  
 1.3s 681.00nm 5.8mb  
 GYA 15.41 297 P 45 40.00 0.9

N 12s 1.70um  
 E 12s 2.10um  
 S 48 28.00  
 ScP 53 57.80  
 PcS 54 11.20  
 ScS 57 35.60

TSM 16.37 194 ePc 45 52.50 1.5  
 TIA 16.49 346 P 45 52.10 -0.2

Z 16s 1.60um  
 N 14s 1.30um  
 E 11s 1.40um

S 48 57.00  
 XAN 18.01 322 Pd 46 10.60 -0.3  
 1.0s 100.00nm 5.0mb

KMI 18.46 289 Pd 46 17.50 1.4  
 1.8s 0.30nm 2.3mb X  
 Z 14s 1.90um 5.2MsZ

N 11s 1.50um  
 E 11s 0.90um

pP 46 30.00  
 PP 46 36.00  
 PcP 50 41.00

DL2 18.61 359 P 46 16.60 -0.8  
 1.0s 300.00nm 5.6mb

Z 16s 1.00um 4.5MsZ  
 E 10s 1.10um

eS 49 40.00  
 MNI 18.87 171 iPc 46 18.90 -1.5  
 TIY 19.32 336 P 46 25.20 0.2

0.8s 600.00nm 6.0mb  
 Z 15s 2.60um 4.7MsZ

N 10s 2.10um  
 S 49 56.00

LOE 19.43 265 iPd 46 26.50 0.4  
 CD2 19.59 306 iPd 46 28.00 0.1

1.2s 400.00nm 5.7mb  
 Z 16s 2.10um 5.6MsZ

pP 46 51.90 143kmX  
 eS 49 59.90

BJI 20.37 347 P 46 35.00 -0.7  
 1.0s 0.16nm 2.4mb X

Z 16s 1.17um 4.3MsZ  
 E 12s 0.82um

eS 50 12.00  
 NST 21.32 261 iPd 46 48.50 3.2X

MAT 21.55 38 eP 46 48.00 0.5  
 1.2s 335.94nm 5.6mb

eS 50 39.00  
 SNY 21.57 3 iPc 46 46.00 -1.6

1.0s 200.00nm 5.4mb  
 Z 16s 1.80um 4.6MsZ

N 16s 1.40um  
 pP 47 11.00 125kmX

PP 47 19.00  
 S 50 35.00

sS 51 23.00  
 CHG 21.81 270 iPd 46 52.20 2.0

1.0s 222.50nm 5.5mb  
 eS 50 48.00

BDT 22.01 266 iPd 46 51.50 -0.6  
 0.5s 118.00nm 5.5mb

HHC 22.41 339 iPd 46 57.00 1.0  
 Z 17s 1.80um 4.6MsZ

N 12s 1.60um  
 E 12s 0.80um

PP 47 24.00  
 S 50 49.00

LZH 22.45 319 iPd 46 58.50 2.0  
 1.3s 107.00nm 5.1mb

Z 14s 1.50um 4.6MsZ

BTO 22.75 336 iPc 47 00.00 0.7  
 N 13s 1.00um  
 E 13s 1.20um

PP 47 28.00  
 S 50 52.00

GUA 22.86 103 eP 47 00.00 -0.4  
 1.1s 1731.00nm 6.3mb

CN2 23.67 6 Pc 47 07.50 -0.6  
 4.0s 800.00nm 5.5mb X

Z 16s 1.00um 4.6MsZ  
 N 12s 0.60um

E 12s 0.50um  
 PcP 50 48.80

eS 51 14.00  
 SNG 24.48 241 iPd 47 08.00 -8.1X

1.2s 400.00nm 5.8mb  
 eS 51 18.80

AAI 24.53 165 ePd 47 17.50 1.1  
 MDJ 25.11 13 Pc 47 21.70 0.0

E 14s 1.00um  
 sS 52 21.00

IPM 25.69 236 ePd 47 29.00 1.6  
 0.9s 291.70nm 5.8mb

e 48 41.10  
 KGM 25.73 228 ePc 47 28.20 0.6

GTA 27.02 320 iPd 47 40.20 0.8  
 Z 12s 0.90um 4.6MsZ

S 52 08.00  
 SHL 28.25 287 iP 47 50.00 -0.6

eS 52 26.00  
 LSA 29.47 295 eP 48 02.00 0.1

S 52 48.00  
 GUN 33.79 290 Pd 48 40.40 0.9

MTN 34.06 164 iPc 48 39.00 -2.4  
 0.6s 182.00nm 6.0mb

e 54 49.00  
 PKI 34.18 289 Pd 48 43.00 0.2

KKN 34.31 290 Pd 48 44.20 0.4  
 DMN 34.45 290 Pd 48 45.40 0.3

GKN 34.90 290 Pd 48 49.00 0.3  
 LAT 36.28 135 iPc 49 01.50 1.3

KNA 36.36 169 iPc 48 59.40 -1.4  
 0.8s 169.00nm 5.9mb

WMO 37.02 317 P 49 10.00 3.7X  
 Z 16s 0.90um 4.7MsZ

PMG 38.45 138 iP 49 18.00 -0.4  
 0.9s 235.29nm 6.0mb

HYB 41.17 274 iPd 49 41.50 0.6  
 1.0s 75.00nm 5.4mb

e 50 03.50  
 MBL 41.19 183 eP 49 40.20 -0.7

0.5s 14.00nm 5.0mb  
 NDI 41.46 291 iPd 49 43.00 -0.2

0.7s 37.67nm 5.2mb  
 eS 55 16.00

WB5 41.65 162 iPc 49 43.70 -1.0  
 iPcP 51 39.50

eScP 55 17.10  
 iS 55 46.90

WRA 41.71 162 Pc 49 43.80 -1.4  
 0.9s 111.30nm 5.6mb

GBA 43.08 268 Pd 49 56.60 0.2  
 0.6s 19.30nm 5.0mb

KSH 43.77 306 P 50 04.50 2.5  
 KOD 44.02 264 eP 50 05.10 0.6

OIS 44.03 156 iPc 50 03.20 -0.9

0.6s 96.00nm 5.7mb

e 55 26.00

e 56 23.00

POO 45.36 276 iPd 50 14.00 -0.8

BOM 46.26 277 iPd 50 21.40 -0.4

eS 57 00.60

CTA 46.56 148 iPc 50 24.40 0.3

0.9s 472.27nm 6.2mb

i 50 36.50

iS 57 05.00

MEKA 46.69 184 iPc 50 28.30 3.3X

0.6s 56.00nm 5.5mb

HNR 47.54 125 eP 50 33.00 1.1

MRWA 49.50 187 eP 50 49.40 2.6X

QUE 50.41 293 eP 50 54.40 0.4

eS 00 31.70

BAL 50.80 186 eP 50 56.00 -0.6

COOL 50.83 181 eP 50 55.00 -1.8

KLB 51.69 185 eP 51 03.00 -0.3



MUN	52.21	186	eP	51	06.00	-1.2	MTUR	80.64	315	eP	54	07.50	0.0	KBA	87.41	320	iPc	54	40.90	-0.7
RMO	53.18	150	iPc	51	14.10	-0.4	CMP	80.64	315	ePc	54	08.00	0.6		0.5s	8.30nm				5.0mb
	1.2s	221.00nm			6.0mb		HLW	80.77	298	eP	54	10.00	1.7				i	54	42.80	
RKG	54.21	185	iPc	51	25.20	3.3X	PVL	81.12	313	iPc	54	11.00	1.2				e	54	45.40	
	0.6s	87.00nm			5.9mb		DIM	81.36	312	eP	54	12.00	0.8				e	55	10.00	
MHI	56.47	301	iPc	51	40.00	1.5	ALN	81.38	310	eP	54	11.10	-0.2				e	55	15.00	
ADK	56.67	41	eP	51	38.60	-0.8	HFS	81.39	331	eP	54	09.80	-1.1	GRF	87.44	323	ePc	54	41.90	0.4
	1.3s	339.60nm			6.2mb			0.5s	9.50nm			4.8mb			0.8s	12.00nm				4.9mb
ADE	57.13	164	iPc	51	42.50	-0.4	Z	17s	0.49um			4.9MsZ			Z	18s	0.30um			4.7MsZ
	1.0s	240.00nm			6.1mb		KDZ	81.58	311	iPc	54	12.00	-0.3				e	55	10.40	
COO	58.10	150	eP	51	50.00	0.3	DEV	81.85	316	ePc	54	15.00	1.4				e	55	30.60	
TOO	61.59	159	iPc	52	13.30	-0.2	RZN	82.06	311	iPc	54	15.00	-0.1	RBL	87.56	319	Pd	54	41.00	-1.2
IR2	63.47	301	eP	52	26.00	-0.2	NB2	82.08	333	P	54	13.30	-1.3	TRI	87.77	318	P	54	43.00	-0.1
IR4	63.51	300	eP	52	29.00	2.5		0.9s	32.60nm			5.1mb	FVI	87.97	319	P	54	44.00	-0.1	
IR7	63.70	301	eP	52	28.00	0.3	PGB	82.15	312	iPc	54	16.00	0.7	FUR	88.14	321	eP	54	45.50	0.6
IR5	63.78	300	eP	52	26.50	-1.8	KRA	82.19	320	iPc	54	15.70	0.4	WIT	88.34	327	eP	54	47.00	1.3
SDN	66.51	37	eP	52	43.80	-1.4		0.9s	80.00nm			5.5mb	ORI	88.47	312	P	54	47.00	0.3	
TAB	66.80	304	eP	52	48.00	0.4			e	54	20.10		WTS	88.70	326	ePc	54	47.00	-0.4	
SLY	67.83	301	ePd	52	53.00	-0.9			e	54	44.70			0.7s	14.00nm				5.1mb	
		eS	01	19.00			SPC	82.33	320	iP	54	15.80	-0.5	TDS	88.72	312	Pd	54	47.80	0.0
BRW	68.18	20	iPc	52	56.50	1.1	MMB	82.79	312	eP	54	18.00	-0.7	TOD	88.85	323	eP	54	50.20	1.9
TTA	68.54	29	iPc	52	58.70	0.8	VTs	82.80	313	iPc	54	19.00	0.2	OGA	88.91	320	iPc	54	48.50	-0.4
BHD	69.15	299	ePd	53	03.50	1.5	PSZ	83.02	319	iP	54	20.00	0.2		1.0s	40.00nm				5.4mb
		eS	01	58.00			OUR	83.05	310	eP	54	19.70	-0.2	CTI	88.92	319	P	54	48.00	-0.8
		e	02	48.00			SRS	83.05	311	eP	54	19.30	-0.7	SGO	89.04	313	Pd	54	50.00	0.7
IMA	69.39	26	iPc	53	03.80	0.7	KKB	83.14	312	iPc	54	20.00	-0.4	DUI	89.13	314	P	54	51.00	1.1
	1.1s	90.60nm			5.5mb		SOH	83.32	311	eP	54	20.80	-0.6	ARV	89.30	317	P	54	51.00	0.5
		i	53	08.20			PAIG	83.41	310	eP	54	21.20	-0.6	KTD	89.40	323	eP	54	50.75	-0.2
MSL	69.57	302	ePd	53	04.50	-0.1	KNT	83.53	311	eP	54	22.00	-0.4	ABH	89.41	324	eP	54	50.90	0.0
		eS	02	02.00			THE	83.67	311	eP	54	22.30	-0.7	AQU	89.52	315	P	54	50.60	-1.0
KDC	70.74	34	iP	53	11.30	0.1	VAY	83.70	312	iPc	54	22.70	-0.5	OSS	89.53	320	ePc	54	52.00	0.3
		e	53	20.00				1.0s	0.17nm			2.9mb X	SDI	89.54	315	P	54	51.00	-0.8	
PMR	71.88	30	iPc	53	17.50	-0.4			i	54	50.40		AZI	89.67	315	Pd	54	52.00	-0.2	
	1.2s	210.90nm			5.8mb		BUD	83.73	318	iP	54	29.80	6.6X	ASS	89.68	316	P	54	51.40	-1.0
FBA	71.96	27	iPc	53	18.40	0.0	KSP	84.01	322	iPc	54	25.10	0.5	SAX	89.72	321	ePc	54	52.60	-0.2
KMSA	72.00	286	eP+	53	18.70	-0.8		0.8s	150.00nm			5.9mb	RUP	89.77	324	eP	54	52.72	0.1	
KEV	72.93	339	iP	53	24.00	0.0			e	54	50.30		SAL	89.82	319	P	54	53.00	0.2	
	1.0s	110.00nm			5.6mb		SRO	84.04	319	iP	54	25.10	0.3	ENN	89.82	325	iPc	54	52.70	-0.1
TOA	73.17	29	iPc	53	26.60	1.0		1.0s	70.00nm			5.5mb	MEM	89.86	325	iPc	54	52.66	-0.3	
SOD	73.58	336	iP	53	27.70	-0.1	LIT	84.20	311	eP	54	25.00	-0.8	CRE	89.88	317	P	54	54.00	0.7
KVT	74.06	308	iP	53	31.70	0.5	SKO	84.25	313	iPc	54	26.00	0.0	SLE	89.96	322	ePc	54	52.80	-0.7
SUF	74.89	332	iP	53	34.90	-0.5		1.0s	143.00nm			5.8mb	MNS	89.99	316	P	54	53.20	-0.6	
	0.5s	30.50nm			5.3mb			i	54	29.40		VDL	90.03	320	ePc	54	54.20	0.1		
KAS	75.66	309	iPc	53	40.80	0.4			i	54	54.00		LLS	90.12	321	ePc	54	54.30	-0.2	
NUR	76.17	330	iP	53	42.50	-0.2	ZST	84.63	320	iP	54	28.60	0.9	FEL	90.18	322	eP	54	53.98	-0.7
	1.2s	115.60nm			5.5mb			0.8s	18.00nm			5.0mb	MDI	90.24	320	P	54	54.00	-0.7	
HRI	76.20	301	eP	53	44.00	0.4	FNA	84.74	311	eP	54	27.50	-1.0	RMP	90.24	315	P	54	55.00	0.1
INK	76.58	22	eP	53	44.00	-0.9	OHR	85.02	312	iPc	54	29.00	-0.9	FIR	90.25	317	eP	54	55.00	0.2
	0.6s	35.00nm			5.3mb			1.2s	0.09nm			2.5mb X	RDP	90.25	315	P	54	54.00	-1.0	
BBTK	76.79	308	iPc	53	47.00	0.2			i	55	06.20		CDF	90.33	323	iPc	54	55.30	0.0	
MBC	76.93	12	ePc	53	46.20	-0.5	PHP	85.04	313	iPc	54	28.80	-1.1		0.9s	19.65nm				5.2mb
	0.7s	32.00nm			5.2mb		VKA	85.08	320	iPc	54	30.70	0.7	BDI	90.53	318	P	54	55.80	-0.5
DSI	76.95	299	eP	53	48.00	0.4		1.0s	97.00nm			5.6mb	TMA	90.58	320	ePc	54	55.90	-0.7	
MSZ	76.96	148	P	53	48.10	0.9			i	54	59.00		UCC	90.64	326	iP	54	57.70	1.2	
WAJH	77.44	293	eP+	53	51.70	1.3			i	55	07.00		PII	90.74	318	P	54	56.00	-1.1	
THZ	77.57	144	P	53	50.40	-0.4			i	55	11.20		VAI	90.76	320	Pd	54	56.60	-0.5	
CSS	77.67	303	eP	53	51.50	-0.1	SOP	85.18	319	iPc	54	30.80	0.3	SNF	90.84	326	iPd	54	57.51	0.1
HOL	77.86	297	eP	53	53.30	0.6	KBN	85.19	311	iPc	54	30.00	-0.7	BOB	90.90	319	P	54	58.00	0.0
MBH	77.86	297	eP	53	53.00	0.3	BRG	85.34	323	iPc	54	31.70	0.5	DOU	90.90	325	Pc	54	57.70	0.0
LTZ	77.90	145	eP	53	53.20	0.6		1.4s	60.00nm			5.3mb		0.8s	31.70nm					5.5mb
TCW	77.98	142	eP	53	52.60	-0.4			i	55	00.20		BSF	90.91	322	eP	54	57.60	-0.4	
BADA	78.11	296	eP	53	54.70	0.6	PRU	85.39	322	Pc	54	31.80	0.3		1.0s	10.00nm				4.9mb
KIW	78.12	142	eP	53	53.50	-0.3		1.4s	42.00nm			5.1mb	GMW	91.02	38	P	55	00.00	1.6	
MRW	78.24	142	eP	53	53.80	-0.6			e	55	00.00		HAU	91.07	323	eP	54	58.40	-0.2	
MNG	78.30	141	eP	53	53.10	-1.7	LSK	85.52	311	eP	54	31.80	-0.7		1.0s	16.00nm				5.2mb
KHZ	78.36	144	P	53	54.70	-0.3	SDA	85.57	313	iPc	54	32.50	0.0	MMK	91.15	321	ePc	54	59.60	0.3
	0.7s	22.00nm			5.0mb		TTG	85.57	314	eP	54	31.50	-1.0	ORX	91.36	320	P	54	58.59	-1.5
PUZ	78.41	138	eP	53	57.00	1.6	LACI	85.57	313	iPc	54	32.00	-0.5	ORO	91.36	320	P	54	59.50	-0.6
GPA	78.48	309	eP	53	55.00	-0.9	TIR	85.57	312	eP	54	32.50	-0.1	DIX	91.47	321	ePc	55	01.00	0.2
PPE	78.63	315	eP	53	56.50	-0.1	CLL	85.68	323	iPc	54	32.40	-0.5	EKA	91.56	332	Pd	55	00.60	-0.1
MTW	78.65	142	eP	53	56.30	-0.4		1.6s	67.00nm			5.3mb		1.8s	77.80nm					5.6mb
CLI	78.75	315	ePc	53	57.50	0.2			e	55	01.00		PCP	91.57	319	P	55	00.23	-0.8	
PGZ	78.76	141	eP	53	57.00	-0.2	TPE	85.88	311	eP	54	32.60	-1.5	RMW	91.63	38	P	55	02.80	1.5
	0.7s	109.00nm			5.7mb		NAI	85.96	267	iPc	54	38.00	2.7X	EMS	91.76	321	ePc	55	01.80	-0.2
ALT	78.98	308	eP	53	58.00	-0.8	YKA	86.29	23	eP	54	36.10	0.4	PNT	91.82	35	ePc	55	03.00	0.9
BRD	79.22	315	eP	54	01.50	1.7		0.8s	73.20nm			5.7mb		1.2s	56.00nm					5.7mb
VRI	79.33	315	ePd	54	01.00	0.6	PTJ	86.31	318	eP	54	35								



0.9s	78.60nm	6.0mb	UPA	144.04	38 iPKPc	01 27.50	-2.8X	TNP	39.34	90 P	20 30.00	0.1
IMI	92.30 319 P	55 03.21 -1.2		1.0s	360.00nm				0.7s	5.93nm		4.5mb
BNI	92.44 320 P	55 06.00 0.8	FISA	146.76	21 ePKP	01 31.10	-3.8X	FFC	39.38	58 iPd	20 29.80	0.2
RRL	92.45 320 P	55 05.16 -0.1	MORO	147.46	19 ePKP	01 33.80	-2.3		0.6s	9.00nm		4.7mb
SBF	92.60 319 eP	55 05.40 -0.4	TOV	147.98	22 ePKP	01 37.60	0.7	IMW	39.70	78 P	20 33.50	0.6
	0.8s	29.55nm	CAR	148.21	17 ePKP	01 36.00	-1.3	ISA	40.13	93 eP	20 37.00	0.8
EDM	92.64 30 iPc	55 06.80 1.0	OLLA	148.71	17 ePKP	01 34.00	-4.1X	CLC	40.57	93 eP	20 40.00	0.2
LOR	92.88 323 iPc	55 06.60 -0.4	GUAN	149.06	15 ePKP	01 31.80	-6.9X	BW06	41.17	78 P	20 44.70	-0.2
	1.2s	32.75nm	GGP	151.62	48 ePKP	01 44.30	1.1	SBB	41.18	94 eP	20 45.00	0.2
LBF	92.97 323 iPc	55 07.20 -0.2	CAYA	151.86	47 ePKP	01 45.00	1.6	MWC	41.35	95 eP	20 45.00	-1.3
	1.0s	36.00nm	VC1	152.09	48 ePKP	01 45.50	1.7	GSC	41.39	93 eP	20 47.00	0.4
SSF	93.20 323 iPc	55 08.20 -0.2	TUNG	152.61	49 ePKP	01 53.00	8.7X	RVR	41.92	94 eP	20 51.00	0.2
	1.0s	18.00nm	BAO	169.47	294 ePKP	02 02.40	1.2	TPC	42.66	93 eP	20 57.00	0.1
SMF	93.24 323 iPc	55 08.30 -0.3	ZOBO	169.57	69 PKPc	02 03.60	1.8	PLM	42.67	95 eP	20 57.00	-0.2
	1.0s	36.00nm		1.5s	64.52nm			BAR	43.25	95 eP	21 02.00	0.3
FRF	93.25 319 eP	55 08.40 -0.3			S	03 17.00		RSSD	43.67	73 P	21 04.00	-1.2
	0.8s	16.10nm	LPB	169.70	71 PKP	02 04.00	2.3	GLA	44.12	93 eP	21 09.00	0.2
AVF	93.44 323 iPc	55 09.30 -0.2	CCH	171.75	71 ePKP	02 04.00	1.5	GOL	45.54	79 P	21 20.00	-0.4
	1.0s	32.00nm			S.D. = 0.9 on 317 of 333 obs.				0.8s	29.76nm		5.3mb
LMR	93.45 319 eP	55 09.60 0.0						ANMO	47.96	85 P	21 39.00	-0.4
	1.0s	20.00nm							1.0s	6.00nm		4.6mb
LRG	93.48 319 eP	55 10.10 0.4	% MAR 30, 1990 00h 53m 55.62±0.89s					ALQ	47.96	85 eP	21 39.00	-0.4
	0.8s	21.50nm	39.066 N ± 7.0km 27.156 E ± 9.4km						1.0s	7.50nm		4.7mb
FHC	93.78 44 e(P)	55 12.70 1.4	DEPTH = 10.0km (geophysicist)									
NEW	93.78 35 P	55 11.80 0.7	TURKEY (366)					FRB	49.40	35 eP	21 49.00	-0.8
	1.0s	26.25nm						SSE	53.00	274 P	22 18.00	0.5
BGF	93.86 323 iPc	55 11.00 -0.5	IZM	0.67 173 iPg	54 08.90 -0.1			TIY	53.73	287 eP	22 21.40	-1.5
	1.0s	17.00nm	EZN	0.99 320 iPg	54 14.80 0.4			TUL	53.75	76 eP	22 21.70	-1.3
MAF	94.21 323 iPc	55 13.20 0.1	DST	1.26 64 iPn	54 19.50 0.4				1.0s	11.70nm		4.9mb
	0.9s	24.55nm	EDC	1.39 23 ePn	54 20.50 -0.5			SCH	55.98	43 eP	22 38.00	-1.0
LDF	94.29 326 eP	55 12.90 -0.5	BNT	1.42 24 iPn	54 20.70 -0.7			SOD	59.83	352 iP	23 06.00	0.2
	0.8s	8.05nm	KCT	1.50 38 iPn	54 23.20 0.6			WNY	60.07	55 P	23 06.00	-1.8
TCF	94.37 323 iPc	55 14.00 0.1			S.D. = 0.7 on 6 of 6 obs.			CD2	63.60	287 eP	23 32.00	0.3
	1.0s	16.00nm						SUF	64.44	352 eP	23 36.00	-0.7
FLN	94.38 326 eP	55 12.90 -0.9	& MAR 30, 1990 01h 54m 09.00s						0.6s	2.40nm		4.5mb
	1.0s	12.00nm	47.280 N 68.230 W					NUR	66.76	352 eP	23 48.00	-3.5X
LSF	94.78 323 eP	55 15.40 -0.3	DEPTH = 18.0km (geophysicist)					NB2	66.88	359 P	23 51.70	-0.7
	1.0s	9.00nm	GASPE PENINSULA (448)						0.8s	3.10nm		4.5mb
GRR	94.80 326 eP	55 15.10 -0.6	<OTT-P>. mbLg 3.5 (OTT).					HFS	67.75	358 eP	23 56.00	-1.8
	1.0s	16.00nm							0.4s	4.60nm		4.9mb
WDC	94.84 44 eP	55 16.70 0.6	CBM	0.36 168 P	54 15.00 -1.5			GUN	76.00	297 P	24 47.40	-0.4
LPF	95.12 326 eP	55 16.80 -0.4	MIM	2.11 198 P	54 44.00 0.0				0.4s	5.00nm		4.9mb
	1.0s	16.00nm	EMM	2.59 166 P	54 50.00 -0.8			GKN	76.60	298 P	24 50.40	-0.5
CAF	95.24 322 eP	55 17.20 -0.7	BNH	3.42 219 P	55 00.00 -2.5				0.4s	2.00nm		4.5mb
	1.0s	12.00nm	HBVT	4.46 231 P	55 15.00 -2.4			KBA	80.82	357 iPc	25 14.80	1.2
RJF	95.34 322 eP	55 18.60 0.3	WNY	4.88 236 P	55 22.00 -1.3				1.0s	8.10nm		4.7mb
	0.8s	24.20nm	RSNY	5.18 240 P	55 25.00 -2.4					i	25 18.90	
MFF	95.50 324 eP	55 19.00 0.0	SCH	7.60 6 P	55 58.00 -3.5			WB5	86.35	231 eP	25 40.50	-1.3
	1.0s	14.00nm		8 obs. associated				WRA	86.41	231 Pd	25 40.70	-1.4
SES	95.56 31 eP	55 19.00 -0.3							0.7s	1.40nm		4.3mb
MIN	95.56 43 eP	55 19.00 0.2	MAR 30, 1990 02h 13m 01.96±0.30s					ASPA	89.82	229 iPd	25 57.00	-1.4
FRB	95.89 5 eP	55 19.00 -1.4	52.418 N ± 6.9km 170.669 W ± 4.1km						0.8s	6.00nm		4.9mb
ORV	96.05 44 eP	55 21.80 0.1	DEPTH = 33.0km (normal)									
FFC	96.42 24 iPc	55 22.90 -0.1	4.7mb (18 obs.)							S.D. = 1.0 on 57 of 62 obs.		
	0.9s	29.00nm	FOX ISLANDS, ALEUTIAN ISLANDS ( 9)					? MAR 30, 1990 02h 15m 01.12±8.17s				
MHC	97.14 46 eP	55 27.50 0.7						39.836 N ±43.1km 24.044 E ±39.9km				
CMB	97.61 45 eP	55 29.40 0.6	ADK	3.74 264 iPc	14 02.00 3.3			DEPTH = 10.0km (geophysicist)				
LRM	97.80 35 eP	55 30.50 0.8						AEGEAN SEA (365)				
PRS	97.85 47 eP	55 30.60 0.8	SDN	6.69 60 eP	14 41.10 0.8			ML 2.3 (THE).				
PRI	98.44 47 eP	55 33.90 1.3	KDC	11.69 56 eP	15 46.40 -2.8X			PAIG	0.30 288 ePgc	15 06.90 -0.4		
KVN	98.53 43 P	55 33.50 0.4	SVW	11.97 37 eP	16 00.70 7.6X			OUR	0.50 355 ePg	15 11.60 0.3		
FRI	98.63 46 eP	55 33.80 0.5	TTA	13.09 31 eP	16 12.80 4.7X					eSg	15 16.30	
CLC	100.69 46 ePd	55 43.00 0.3X	PMS	14.48 44 eP	16 25.60 -0.7			SOH	1.12 332 ePb	15 21.40 -0.7		
		e 59 56.00	IMA	16.12 25 e(P)	16 54.10 6.6X					eSb	15 34.80	
BCAO	101.08 279 ePd	55 44.50 -0.3	TOA	16.31 44 e(P)	16 49.90 0.0			THE	1.15 314 ePb	15 23.20 0.6		
	1.2s	14.00nm	FBA	17.12 34 P	17 02.00 2.0					eSb	15 36.00	
		id 56 34.20	BRW	19.95 13 e(P)	17 35.10 1.5			LIT	1.22 283 ePb	15 24.10 0.2		
SBB	101.17 47 ePd	55 45.00 0.1	INK	23.75 34 eP	18 11.00 -0.6					eSb	15 39.20	
		e 59 55.00	MBC	30.78 21 eP	19 16.50 0.5			SRS	1.33 345 ePbc	15 25.40 -0.2		
GSC	101.52 46 ePd	55 48.00 1.6	YKA	30.81 49 eP	19 15.80 -0.6					eSb	15 41.80	
		e 59 51.00		0.7s	1.30nm			KNT	1.59 327 ePb	15 29.30 0.0		
SLR	101.77 247 iPd	55 47.00 -0.8	PNT	31.82 75 ePd	19 26.00 0.5					eSb	15 48.00	
	1.0s	10.00nm		0.6s	9.00nm							
TPC	102.71 46 ePd	55 53.00 1.3	NEW	33.77 75 P	19 42.50 0.0					S.D. = 0.6 on 7 of 7 obs.		
PRY	102.80 246 ePd	55 46.00 -6.4X	EDM	33.85 65 iPd	19 43.20 0.1							
ALQ	108.38 40 ePKP	00 23.00 0.2		0.6s	23.00nm			MAR 30, 1990 02h 16m 42.67±0.64s				
SIO	113.53 33 e(PKP)	00 32.00 -0.3	WDC	34.55 91 eP	19 50.40 1.2			62.778 N ±10.9km 17.129 E ± 5.5km				
TUL	113.66 33 ePKP	00 32.00 -0.6	ORV	35.81 91 eP	20 00.20 0.3			DEPTH = 10.0km (geophysicist)				
	0.8s	10.80nm	SES	36.33 69 ePd	20 04.00 -0.3			SWEDEN (536)				
LKO	120.59 295 PKP	00 44.74 -1.7	CMB	37.43 92 eP	20 14.50 0.8			MD 2.9 (BER).				
	0.8s	21.50nm	LRM	37.75 76 eP	20 16.60 0.1			NSS	2.90 310 eP	17 30.00 0.4		
KIC	121.40 291 PKPc	00 47.02 -0.9	PRS	37.93 95 eP	20 18.50 0.7					eS	18 04.00	
	0.8s	18.00nm	KVN	38.20 89 P	20 20.80 0.5			HFS	3.12 213 eP	17 32.10 -0.7		
TIC	121.51 292 PKP	00 47.28 -0.9	PRI	38.48 95 eP	20 23.60 1.0				0.3s	2.50nm		
	0.8s	16.00nm	FRI	38.51 93 eP	20 23.10 0.5			KEF	3.65 96 iP	17 38.90 -1.4		
LIC	121.71 291 PKPc	00 47.64 -0.9	MAT	38.90 267 (P)	20 27.00 1.0					iSg	18 23.00	
	0.8s	16.00nm		0.9s	23.53nm							



	N	10's	0.30um	eS	05 35.00	
TIA	32.29	313		eP	00 27.30	0.1
RJL	34.94	318		eP	00 19.00	-1.1

TNP	85.20	52 P	06 35.00	0.7
	0.6s	7.10nm		5.1mb
SES	85.48	39 ePd	06 35.20	0.0

GKN	57.65	293	P	07	50.50	-2.7
GBA	66.24	278	P <sub>c</sub>	08	51.10	0.4



30d 04h

0.7s 1.80nm 4.3mb  
 POO 68.64 284 eP 09 07.00 1.2  
 INK 71.16 23 eP 09 20.00 -0.3  
 MBC 75.12 14 eP 09 48.00 4.6X  
 YKA 79.65 28 eP 10 07.80 -0.9  
 0.7s 2.00nm 4.2mb  
 PNT 80.29 41 eP 10 24.00 11.6X  
 SES 85.28 39 eP 10 39.00 0.9  
 LRM 85.94 43 eP 10 46.70 4.9X  
 ZOBO 147.03 95 ePKP 17 51.00 7.3X

S.D. = 1.6 on 15 of 20 obs.

MAR 30, 1990 04h 22m 48.11±1.26s  
 39.895 N ± 8.7km 23.989 E ± 8.4km  
 DEPTH = 10.0km (geophysicist)

AEGEAN SEA (365)  
 ML 2.6 (THE).

PAIG 0.24 278 ePg 22 52.90 -0.3  
 OUR 0.44 359 ePg 22 57.70 0.6  
 SOH 1.05 333 ePb 23 07.60 -0.3  
 0.8s 2.00nm 4.2mb  
 THE 1.08 314 ePb 23 08.00 -0.3  
 0.8s 2.00nm 4.2mb  
 LIT 1.17 281 ePb 23 09.80 -0.2  
 0.8s 2.00nm 4.2mb  
 SRS 1.26 346 ePb 23 11.60 0.1  
 0.8s 2.00nm 4.2mb  
 KNT 1.51 327 ePb 23 15.90 0.6  
 0.8s 2.00nm 4.2mb  
 AGG 1.55 236 ePb 23 16.10 0.3  
 0.8s 2.00nm 4.2mb  
 MMB 1.70 353 eP 23 16.00 -2.0  
 VAY 1.79 323 ePn 23 20.40 1.2  
 RZN 1.87 17 iPc 23 21.00 0.3  
 KDZ 2.06 31 eP 23 23.00 -0.2  
 KKB 2.09 341 iPc 23 23.00 -0.6  
 VTS 2.76 348 iP 23 34.00 0.7

S.D. = 0.8 on 14 of 14 obs.

\* MAR 30, 1990 05h 20m 30.26±0.82s  
 23.641 S ± 7.9km 179.194 E ± 12.9km  
 DEPTH = 529.6 ± 11.0 km  
 4.7mb (10 obs.)

SOUTH OF FIJI ISLANDS (171)

SVA 5.54 353 eP 22 05.00 0.6  
 0.8s 2.00nm 4.2mb  
 VUN 5.65 353 eP 22 06.10 0.7  
 HBZ 13.93 183 eP 23 29.00 -0.1  
 0.3s 28.00nm 5.2mb  
 PUZ 14.41 183 eP 23 32.10 -1.8  
 WLZ 14.49 191 eP 23 37.00 2.3  
 NOZ 14.96 184 eP 23 39.70 0.3  
 MNG 17.21 190 eP 24 00.40 -1.1  
 0.2s 7.00nm 4.9mb  
 WEL 17.98 191 eP 24 10.50 1.6  
 0.8s 2.00nm 4.2mb  
 THZ 18.82 195 P 24 17.70 0.6  
 KHZ 19.31 193 eP 24 21.10 -0.5  
 0.2s 7.00nm 4.9mb  
 LTZ 19.94 195 eP 24 26.50 -1.1  
 CTA 30.74 270 ePd 26 03.90 0.2  
 PMG 33.71 289 eP 26 28.00 -0.8  
 ASPA 41.35 261 iPd 27 30.70 -0.6  
 0.8s 14.00nm 4.5mb  
 0.8s 14.00nm 4.5mb  
 WB5 41.68 266 iPd 27 32.80 -1.1  
 0.8s 14.00nm 4.5mb  
 WRA 41.69 266 Pc 27 33.00 -0.9  
 0.7s 4.60nm 4.1mb  
 FORR 45.67 249 iPc 28 03.80 -1.1  
 0.4s 37.00nm 5.3mb  
 SPA 66.50 180 iPd 30 28.90 0.1  
 1.1s 36.31nm 4.9mb  
 PLM 83.17 49 eP 32 01.00 -0.8  
 KVN 85.57 44 iP 32 12.00 -1.5  
 TNP 85.58 45 iP 32 12.00 -1.6  
 1.0s 5.25nm 4.2mb  
 PNT 90.70 35 eP 32 37.00 0.0  
 0.5s 3.00nm 4.5mb  
 ALO 91.38 52 eP 32 39.00 -1.7  
 1.0s 4.25nm 4.4mb  
 NB2 141.71 351 PKP 38 55.00 -7.2X

0.9s 4.30nm  
 HFS 142.15 348 ePKP 38 56.10 -6.8X  
 0.4s 3.40nm  
 DSI 147.09 292 e(PKP) 39 14.00 2.0  
 PRNI 147.50 290 ePKP 39 15.00 2.2  
 MBH 147.63 289 ePKP 39 15.00 2.1  
 EKA 148.30 3 PKPd 39 15.10 1.9  
 0.7s 3.90nm  
 CLL 150.39 342 iPKPd 39 21.00 4.5X  
 1.1s 32.00nm  
 BRG 150.50 341 iPKP 39 21.00 4.3X  
 0.9s 24.00nm

S.D. = 1.4 on 27 of 31 obs.

\* MAR 30, 1990 05h 44m 26.10s  
 38.635 N 122.278 W  
 DEPTH = 2.0km

NORTHERN CALIFORNIA (36)  
 <BRK>. ML 3.3 (BRK).

NWRM 0.51 250 eP 44 34.50 -1.8  
 ZSP 0.69 179 ePc 44 38.90 -1.0  
 0.8s 2.00nm 4.2mb  
 BKS 0.76 177 ePd 44 40.60 -0.6  
 0.8s 2.00nm 4.2mb  
 BRK 0.76 179 eP 44 40.70 -0.6  
 0.8s 2.00nm 4.2mb  
 ORV 1.10 33 eP 44 47.00 -0.5  
 PCC 1.14 184 eP 44 46.40 -1.7  
 MHC 1.39 159 eP 44 50.50 -2.0  
 ARN 1.41 155 eP 44 50.30 -2.5  
 CMB 1.60 111 eP 44 53.20 -2.4  
 GCC 1.62 172 eP 44 53.10 -2.6  
 MIN 1.79 17 eP 44 55.10 -3.2  
 WDC 1.95 354 e(P) 44 55.10 -5.5  
 KVN 3.29 81 eP 45 17.10 -2.8

13 obs. associated

MAR 30, 1990 07h 08m 00.04±0.67s  
 36.426 N ± 5.2km 70.534 E ± 4.3km  
 DEPTH = 210.4 ± 7.8 km  
 4.5mb (33 obs.)

HINDU KUSH REGION (718)

KSH 5.26 53 eP 09 19.00 0.2  
 0.8s 2.00nm 4.2mb  
 QUE 6.91 207 iPd 09 40.90 0.9  
 0.8s 2.00nm 4.2mb  
 MAIO 8.91 272 ePn 10 05.00 -1.0  
 0.8s 2.00nm 4.2mb  
 NDI 9.56 142 iPc 10 13.60 -0.7  
 0.5s 63.38nm 5.2mb  
 GKN 14.58 121 P 11 16.80 -1.2  
 WMO 15.05 55 iPd 11 29.50 5.9X  
 DMN 15.15 121 P 11 24.60 -0.5  
 KKN 15.16 120 P 11 24.20 -1.0  
 PKI 15.39 121 P 11 27.20 -0.9  
 GUN 15.51 119 P 11 28.60 -1.0  
 POO 18.06 170 eP 12 02.00 3.6X  
 LSA 18.52 105 eP 12 05.40 1.9  
 HYB 20.22 157 eP 12 21.50 1.1  
 SHL 21.22 115 eP 12 31.40 1.1  
 0.8s 2.00nm 4.2mb  
 GTA 23.25 74 P 12 51.80 2.0  
 GBA 23.55 163 Pc 12 54.20 1.5  
 0.9s 6.90nm 4.3mb  
 RYD 23.61 247 iP+ 12 55.00 1.7  
 KOD 26.82 165 eP 13 24.70 1.6  
 KMSA 27.81 242 eP 13 31.60 -0.1  
 NUR 37.67 324 iP 14 56.80 0.7  
 0.6s 23.50nm 5.0mb  
 SUF 37.79 328 iP 14 57.80 0.7  
 0.6s 29.00nm 5.1mb  
 SOD 39.65 335 iP 15 13.00 0.7  
 KEV 40.73 338 iP 15 22.00 0.8  
 0.8s 35.20nm 4.9mb  
 UPP 40.90 322 iP 15 22.50 -0.2  
 HFS 42.89 322 eP 15 38.80 -0.1  
 0.7s 31.60nm 4.9mb  
 GRF 44.20 307 eP 15 52.00 2.4  
 NB2 44.21 323 P 15 49.60 0.0  
 0.8s 24.90nm 4.7mb  
 CDF 46.95 305 eP 16 11.10 -0.3  
 PGF 46.97 297 eP 16 11.20 -0.4  
 0.8s 8.05nm 4.2mb

BSF 47.37 305 eP 16 14.70 0.1  
 0.6s 7.20nm 4.3mb  
 HAU 47.63 305 eP 16 16.80 0.3  
 0.8s 5.35nm 4.0mb  
 SBF 47.76 299 eP 16 17.70 0.0  
 0.8s 16.10nm 4.5mb  
 LPG 47.87 302 eP 16 18.90 0.2  
 0.8s 10.75nm 4.3mb  
 LPL 47.88 302 eP 16 19.00 0.3  
 0.8s 10.05nm 4.3mb  
 LBF 49.41 304 eP 16 29.80 -0.4  
 0.9s 6.55nm 4.1mb  
 SMF 49.58 304 eP 16 31.40 -0.1  
 0.8s 13.45nm 4.5mb  
 SSF 49.71 304 eP 16 32.20 -0.2  
 0.8s 3.35nm 3.9mb  
 AVF 49.88 304 eP 16 33.60 -0.1  
 0.8s 12.10nm 4.4mb  
 MAF 50.54 304 eP 16 39.00 0.2  
 0.8s 6.70nm 4.2mb  
 TCF 50.76 304 eP 16 40.60 0.1  
 0.8s 7.40nm 4.2mb  
 LSF 51.23 304 eP 16 43.50 -0.5  
 0.6s 5.40nm 4.3mb  
 RJF 51.49 303 eP 16 46.20 0.3  
 0.8s 5.35nm 4.1mb  
 FLN 51.91 307 eP 16 48.20 -0.8  
 0.8s 8.05nm 4.4mb  
 EKA 52.08 316 Pc 16 49.30 -0.8  
 1.7s 24.10nm 4.5mb  
 GRR 52.25 307 eP 16 50.60 -0.8  
 0.8s 8.05nm 4.4mb  
 DAG 54.72 344 eP 17 08.60 -0.6  
 BCAA 57.28 249 iPc 17 24.70 -3.4X  
 0.6s 19.00nm 5.0mb  
 MBC 67.43 3 ePc 18 33.50 -0.7  
 0.5s 9.00nm 4.8mb  
 LKO 73.25 270 P 19 09.46 -0.7  
 0.4s 8.00nm 4.8mb  
 INK 74.04 9 eP 19 14.00 0.2  
 KIC 74.41 266 P 19 15.78 -1.0  
 0.4s 11.00nm 4.9mb  
 TIC 74.46 267 P 19 16.46 -0.7  
 0.4s 6.00nm 4.6mb  
 LIC 74.72 266 P 19 17.40 -1.1  
 FRB 75.02 342 eP 19 19.00 -0.4  
 YKA 81.34 2 eP 19 53.90 0.3  
 0.6s 5.60nm 4.5mb  
 WB5 82.25 122 eP 19 58.00 -1.1  
 WRA 82.27 122 Pc 19 58.10 -1.1  
 0.9s 8.40nm 4.5mb  
 ASPA 84.52 125 iPc 20 09.60 -0.9  
 0.6s 11.00nm 4.8mb  
 FFC 88.99 356 eP 20 32.00 0.3  
 1.2s 23.00nm 5.0mb  
 SPA 126.24 180 iPKPd 26 37.80 -0.3  
 0.8s 4.17nm

S.D. = 0.9 on 57 of 60 obs.

\* MAR 30, 1990 07h 29m 54.60±3.39s  
 17.633 N ± 27.1km 61.905 W ± 11.3km  
 DEPTH = 17.0 ± 9.7 km

LEEWARD ISLANDS (92)  
 ML 3.0 (FDF).

BPA 0.59 175 eP 30 06.40 0.4  
 0.8s 2.00nm 4.2mb  
 NEV 0.81 232 eP 30 09.70 -0.1  
 0.8s 2.00nm 4.2mb  
 SKI 0.85 250 eP 30 10.66 0.1  
 0.8s 2.00nm 4.2mb  
 MGH 0.96 198 eP 30 11.89 -0.5  
 0.8s 2.00nm 4.2mb  
 SEG 1.28 163 eP 30 18.18 0.5  
 SFG 1.53 154 eP 30 20.50 -0.7  
 PAG 1.61 172 eP 30 22.60 0.2  
 0.8s 2.00nm 4.2mb  
 DOG 1.62 170 eP 30 22.50 0.0  
 0.8s 2.00nm 4.2mb

S.D. = 0.5 on 8 of 8 obs.

\* MAR 30, 1990 07h 41m 53.10±0.71s  
 16.525 N ± 10.7km 146.013 E ± 25.6km  
 DEPTH = 33.0km (normal)  
 4.4mb (3 obs.)

MARIANA ISLANDS (216)  
 GUMO 3.12 201 eP 42 41.50 0.3



30d 07h

PJG 3.12 201 eP 42 41.30 0.1  
 GUA 3.15 200 eP 42 42.20 0.6  
 BJI 34.92 318 eP 48 44.00 0.2  
 1.5s 26.00nm 4.9mb  
 WRA 38.01 198 Pc 49 08.50 -1.6  
 0.8s 2.30nm 4.1mb  
 INK 71.25 23 eP 53 10.00 -0.7  
 YKA 79.76 28 eP 53 58.90 -0.2  
 0.8s 2.70nm 4.3mb  
 SES 85.43 39 eP 54 30.00 1.3  
 ZOBO 147.27 94 PKP 01 38.00 4.0X  
 S.D. = 1.0 on 8 of 9 obs.

MAR 30, 1990 07h 43m 34.73±0.28s  
 16.507 N ± 5.2km 145.937 E ± 5.5km  
 DEPTH = 33.0km (normal)  
 5.1mb (19 obs.) 4.2msz (2 obs.)

MARIANA ISLANDS (216)

GUMO 3.08 200 eP 44 21.70 -0.5  
 PJG 3.08 200 eP 44 21.70 -0.5  
 GUA 3.11 199 eP 44 22.70 0.0  
 MAT 21.10 342 eP 48 17.00 -1.0  
 (S) 52 00.00  
 MN1 25.61 236 e(P) 49 03.70 0.8  
 PMG 25.78 177 eP 49 02.00 -2.5  
 SSE 26.82 307 P 49 12.50 -1.4  
 Z 20s 0.50um 4.1msz  
 PPR 27.30 259 eP 49 20.00 1.5  
 NJ2 29.02 307 Pd 49 33.20 -0.7  
 DL2 30.82 321 eP 49 49.50 -0.3  
 1.0s 100.00nm 5.6mb  
 TIA 32.24 313 eP 50 01.30 -1.0  
 BJI 34.89 318 eP 50 24.50 -0.7  
 1.2s 0.12nm 2.7mb X  
 TIY 36.25 312 eP 50 36.90 0.0  
 Z 20s 0.50um 4.3msz  
 N 15s 0.30um

XAN 37.50 305 P 50 47.10 -0.3  
 GYA 37.73 292 P 50 51.00 1.5  
 WB5 37.90 198 eP 50 46.20 -4.6X  
 WRA 37.97 198 Pc 50 50.20 -1.2  
 1.2s 9.00nm 4.5mb  
 HHC 38.31 316 P 50 55.00 0.8  
 BTO 39.23 315 eP 51 02.00 0.1  
 CD2 40.94 298 eP 51 15.70 -0.4  
 KMI 41.13 289 eP 51 19.50 1.6  
 ASPA 41.62 197 eP 51 20.70 -0.9  
 0.7s 5.00nm 4.4mb  
 Z 23s 0.17um 3.9msz X  
 LR 06 23.30

LZH 42.08 306 iPd 51 26.50 1.0  
 2.0s 94.00nm 5.2mb

NST 43.95 276 eP 51 43.20 2.6  
 CHG 44.74 280 iPd 51 48.00 0.9  
 1.0s 12.50nm 4.7mb

NNT 44.82 271 eP 51 44.20 -3.6X  
 SNG 45.22 264 eP 51 43.10 -7.9X  
 GTA 46.08 309 iPd 51 58.40 0.8  
 BWA 50.70 177 eP 52 40.00 6.7X  
 CAN 51.62 177 eP 52 41.00 0.7  
 LSA 51.65 295 P 52 41.60 0.4  
 GUN 56.27 293 P 53 15.10 -0.1  
 PKI 56.70 292 P 53 17.80 -0.4  
 0.9s 52.00nm 5.6mb

KKN 56.81 293 P 53 18.60 -0.2  
 0.9s 51.00nm 5.6mb

DMN 56.97 292 P 53 19.80 -0.2  
 1.0s 85.00nm 5.7mb

GKN 57.37 293 P 53 22.50 -0.2  
 TTA 61.10 26 P 53 46.00 -1.8  
 0.8s 10.34nm 5.0mb

IMA 63.18 23 P 54 00.00 -1.7  
 1.0s 10.00nm 4.9mb

PMR 63.74 29 P 54 03.50 -1.8  
 0.8s 19.83nm 5.3mb

HYB 64.14 282 ePd 54 08.00 -0.7  
 1.4s 112.50nm 5.8mb

FBA 65.16 25 P 54 12.00 -2.5  
 GBA 65.93 278 Pd 54 19.30 -0.9  
 1.1s 19.80nm 5.1mb

KOD 66.65 274 eP 54 25.20 0.0  
 POO 68.34 284 iP 54 35.00 -0.4  
 INK 71.29 23 ePd 54 50.60 -2.0

MBC 75.21 14 eP 55 14.50 -0.9  
 1.0s 6.00nm 4.5mb  
 GMW 78.86 44 P 55 38.00 1.8  
 RMW 79.53 44 P 55 41.00 1.0  
 PNT 80.51 41 eP 55 46.00 0.9  
 WDC 80.59 51 eP 55 48.60 3.0X  
 MIN 81.34 51 eP 55 50.20 0.4  
 ORV 81.61 51 eP 55 52.00 1.0  
 NEW 82.38 42 P 55 55.00 0.1  
 0.9s 18.64nm 5.1mb

PRS 82.52 54 e(P) 55 57.40 1.6  
 CMB 82.84 53 eP 55 58.50 1.0  
 EDM 83.20 37 P 55 45.00 -14.0X  
 FRI 83.64 53 eP 56 02.60 1.1  
 KVN 84.29 51 P 56 06.00 1.0  
 TNP 85.23 52 P 56 10.50 0.7  
 0.7s 3.33nm 4.7mb

SES 85.49 39 ePd 56 10.80 0.2  
 0.7s 32.00nm 5.6mb

LRM 86.17 43 eP 56 15.00 0.6  
 IMW 87.84 45 P 56 23.40 0.8  
 FFC 88.81 33 eP 56 15.00 -11.6X  
 FFC 88.81 33 eP 56 26.00 -0.6  
 0.5s 8.00nm 5.3mb

GOL 93.30 47 P 56 49.00 0.9  
 ALQ 94.44 52 eP 56 54.00 0.7  
 1.0s 3.00nm 4.7mb

ARE 144.14 95 ePKP 03 10.00 -0.1  
 ZOBO 147.34 95 ePKP 03 16.00 0.3  
 1.1s 23.20nm

LPB 147.39 95 PKP 03 19.70  
 CCH 149.32 96 PKP 03 23.60 5.1X  
 S.D. = 1.1 on 61 of 70 obs.

\* MAR 30, 1990 08h 11m 32.25±2.72s  
 24.303 S ± 21.9km 179.846 E ± 9.5km  
 DEPTH = 628.1 ± 40.7 km  
 4.9mb (6 obs.)

SOUTH OF FIJI ISLANDS (171)

PUZ 13.79 185 P 14 28.30 0.2  
 NOZ 14.35 186 P 14 32.80 -0.7  
 PGZ 16.54 190 eP 14 53.30 -1.1  
 MNG 16.68 192 P 14 54.10 -1.6  
 THZ 18.35 197 eP 15 11.10 -0.1  
 KHZ 18.81 195 eP 15 17.30 1.9  
 LTZ 19.47 197 P 15 22.60 1.1  
 BRS 24.54 257 iPd 16 13.00 5.9X  
 0.7s 20 04.00

RMQ 28.14 259 eP 16 39.00 0.6  
 CAN 28.82 240 eP 16 45.30 1.1  
 BWA 29.08 242 eP 16 45.80 -0.6  
 CTA 31.34 271 iPd 17 05.80 0.3  
 0.6s 73.33nm 5.5mb

PMG 34.50 290 iPd 17 31.50 -0.4  
 ASPA 41.83 261 iPd 18 31.70 0.5  
 0.5s 32.00nm 5.0mb

iScP 23 17.80  
 iS 24 11.20

WB5 42.23 267 iPd 18 34.30 0.0  
 WRA 42.24 267 Pd 18 34.00 -0.4  
 0.4s 19.00nm 4.9mb

FORR 46.00 250 iPd 19 02.50 -0.6  
 0.4s 69.00nm 5.5mb

MTN 47.35 275 eP 19 12.00 -1.6  
 MBL 55.07 260 eP 20 10.50 1.3  
 PLM 83.15 49 P 22 56.00 0.7  
 CMB 83.59 43 P 22 57.00 -0.2  
 TNP 85.63 45 P 23 07.00 -0.2  
 0.8s 3.53nm 4.1mb

KVN 85.63 44 P 23 07.00 -0.2  
 RMW 88.61 35 P 23 21.50 0.7  
 MSU 89.16 47 P 23 25.00 1.2  
 ALQ 91.31 52 eP 23 33.00 -0.7  
 1.0s 2.00nm 4.1mb

ANMO 91.32 52 P 23 43.50 9.8X  
 HFS 142.91 349 ePKP 29 55.10 -1.5  
 0.4s 2.90nm

S.D. = 1.0 on 26 of 28 obs.

MAR 30, 1990 08h 27m 19.29±0.30s  
 16.479 N ± 5.4km 145.956 E ± 6.7km  
 DEPTH = 33.0km (normal)  
 4.8mb (13 obs.)

MARIANA ISLANDS (216)

GUMO 3.06 200 eP 28 06.50 0.0  
 PJG 3.06 200 eP 28 06.60 0.1  
 GUA 3.09 199 eP 28 07.50 0.5  
 eS 28 43.70  
 MAT 21.13 342 (P) 31 58.00 -5.7X  
 0.8s 9.70nm 4.3mb  
 PMG 25.75 177 eP 32 48.00 -0.8  
 SSE 26.85 307 eP 32 58.00 -0.8  
 pP 33 03.80 20kmX  
 BJI 34.92 318 eP 34 10.00 0.0  
 1.4s 44.00nm 5.2mb

XAN 37.53 305 P 34 32.00 -0.2  
 GYA 37.76 292 P 34 36.40 2.1  
 WB5 37.88 198 eP 34 34.20 -1.0  
 WRA 37.95 198 Pd 34 34.60 -1.2  
 0.9s 3.80nm 4.3mb

BTO 39.26 315 eP 34 48.00 1.3  
 CD2 40.97 298 eP 35 01.20 0.3  
 ASPA 41.60 197 eP 35 05.30 -0.7  
 0.5s 3.00nm 4.3mb

LZH 42.11 306 P 35 11.50 1.2  
 1.8s 21.00nm 4.6mb

pP 35 16.50 17kmX  
 BRS 44.11 171 iP 35 27.40 1.0  
 CHG 44.76 280 eP 35 32.00 0.1  
 NNT 44.84 271 eP 35 29.20 -3.3X  
 GTA 46.11 309 eP 35 43.40 1.0  
 WMO 55.95 312 iPd 37 01.00 4.2X  
 GUN 56.30 293 P 36 59.90 0.0  
 1.0s 46.00nm 5.5mb

PKI 56.73 292 P 37 02.40 -0.6  
 0.8s 16.00nm 5.1mb

KKN 56.84 293 P 37 03.20 -0.4  
 DMN 57.00 292 P 37 04.50 -0.3  
 GKN 57.40 293 P 37 07.20 -0.3  
 1.1s 81.00nm 5.7mb

TTA 61.11 26 P 37 31.50 -1.0  
 IMA 63.20 23 P 37 44.00 -2.4  
 PMR 63.76 29 P 37 48.00 -2.0  
 0.6s 6.16nm 4.9mb

HYB 64.16 282 eP 37 53.00 -0.4  
 FBA 65.18 25 P 37 57.00 -2.2  
 GBA 65.95 278 Pd 38 04.10 -0.8  
 1.1s 8.60nm 4.8mb

POO 68.36 284 iP 38 20.00 -0.2  
 INK 71.31 23 ePd 38 35.80 -1.4  
 MBC 75.23 14 eP 38 59.00 -1.1  
 YKA 79.83 28 eP 39 25.00 -0.7  
 0.7s 7.00nm 4.8mb

PNT 80.52 41 eP 39 31.00 1.3  
 WDC 80.59 51 e(P) 39 33.40 3.2X  
 NEW 82.39 42 P 39 40.00 0.5  
 1.0s 10.00nm 4.8mb

PRS 82.52 54 eP 39 42.20 1.8  
 CMB 82.84 53 eP 39 43.50 1.4  
 EDM 83.21 37 ePd 39 44.10 0.4  
 FRI 83.64 53 eP 39 47.20 1.1  
 KVN 84.29 51 P 39 50.60 1.0  
 TNP 85.23 52 P 39 55.50 1.1  
 0.7s 2.22nm 4.5mb

SES 85.50 39 ePd 39 55.60 0.4  
 LRM 86.18 43 eP 40 00.00 1.0  
 ARE 144.12 95 ePKP 46 55.00 0.4  
 ZOBO 147.32 95 ePKP 46 50.00 -10.2X  
 1.0s 10.50nm

i 47 04.20  
 LPB 147.37 95 PKP 47 04.00 3.9X  
 S.D. = 1.1 on 43 of 49 obs.

\* MAR 30, 1990 10h 26m 29.88±1.26s  
 40.428 N ± 12.6km 137.722 E ± 13.6km  
 DEPTH = 299.9 ± 14.1 km  
 4.2mb (5 obs.)

EASTERN SEA OF JAPAN (223)

MAT 3.90 174 iPd 27 35.40 0.0  
 0.9s 40.34nm

GUN 44.10 270 P 34 10.60 -0.4  
 0.4s 6.00nm 4.3mb

KKN 44.62 270 P 34 14.60 -0.3  
 PKI 44.63 270 P 34 15.70 0.6  
 GKN 45.00 271 P 34 18.60 0.8  
 0.4s 8.00nm 4.4mb

MAIO 59.56 293 eP 36 19.00 14.4X  
 WB5 60.08 184 eP 36 07.90 0.0  
 WRA 60.14 184 Pc 36 08.20 -0.2  
 0.4s 1.50nm 3.9mb



30d 10h

YKA 62.32 30 eP 36 23.10 0.7  
0.4s 0.10nm 2.8mb X  
SUF 63.64 331 iP 36 30.70 -0.3  
0.3s 2.30nm 4.3mb  
NB2 69.92 335 P 37 09.50 -0.8  
0.8s 2.30nm 4.0mb  
S.D. = 0.6 on 10 of 11 obs.

MAR 30, 1990 10h 43m 57.82±0.54s  
34.820 N ± 6.9km 29.042 E ± 5.4km  
DEPTH = 33.0km (normal)  
EASTERN MEDITERRANEAN SEA (371)  
MD 3.9 (ATH), 4.0 (HLW), ML 4.1  
(CSS).

KSL 1.37 19 ePn 44 21.20 0.4  
ARG 1.58 332 ePn 44 24.30 0.5  
KAP 1.69 296 ePn 44 25.80 0.3  
ELL 2.05 20 ePn 44 30.90 0.2  
NPS 2.85 280 ePn 44 43.20 1.2  
BCK 2.92 25 iPn 44 42.20 -0.8  
SMG 3.39 329 ePb 44 55.70 6.1X  
CSS 3.53 86 eP 44 52.70 1.0  
eSn 45 31.30

VAM 4.01 280 ePn 44 58.80 0.3  
VLI 5.31 293 ePn 45 14.70 -2.2  
KOT 5.42 153 ePn 45 19.00 0.7  
eSn 46 17.50

HRI 5.77 104 eP 45 23.00 -0.5  
eS 46 26.00  
DSI 6.22 120 eP 45 30.00 0.3  
eS 46 38.00  
NOH 6.47 128 eP 45 32.00 -1.3  
eS 46 42.00  
S.D. = 1.1 on 13 of 14 obs.

MAR 30, 1990 11h 35m 39.94±0.79s  
61.450 N ± 10.5km 150.943 W ± 5.6km  
DEPTH = 33.0km (normal)  
SOUTHERN ALASKA (2)  
ML 3.0 (PMR).

PWA 0.55 68 iPc 35 52.10 0.9  
PMS 0.70 107 iPc 35 53.50 0.1  
PMR 0.88 80 iPc 35 55.50 -0.4  
iS 36 07.80  
SVW 2.29 263 iPc 36 16.20 0.1  
TOA 2.36 72 eP 36 16.50 -0.8  
TTA 2.80 304 eP 36 23.60 0.1  
FBA 3.75 21 iPc 36 37.40 0.6  
IMA 4.79 347 eP 36 51.10 -0.7  
S.D. = 0.7 on 8 of 8 obs.

MAR 30, 1990 11h 35m 41.78±0.43s  
16.600 N ± 8.2km 145.948 E ± 8.3km  
DEPTH = 33.0km (normal)  
4.6mb (9 obs.)

MARIANA ISLANDS (216)

GUMO 3.17 199 eP 36 29.20 -1.3  
eS 37 08.00

PJG 3.17 199 eP 36 29.00 -1.5  
SSE 26.77 307 eP 41 20.00 -0.6  
pP 41 25.70 20kmX

BJI 34.83 318 eP 42 31.50 -0.2  
1.4s 27.00nm 5.0mb

GYA 37.71 292 eP 42 58.40 2.0  
WRA 38.06 198 P 43 02.00 2.8  
1.0s 5.10nm 4.3mb

BTO 39.17 315 eP 43 09.50 1.0  
CD2 40.91 298 eP 43 22.20 -0.6  
CHTO 44.73 280 eP 43 54.00 -0.1  
0.9s 1.71nm 3.9mb

GTA 46.03 309 eP 44 04.80 0.5  
GUN 56.25 293 P 45 22.40 0.4  
PKI 56.68 292 P 45 24.90 -0.2

KKN 56.78 293 P 45 25.80 0.1  
DMN 56.94 292 P 45 27.00 0.1  
GKN 57.34 293 P 45 29.40 -0.2  
1.1s 44.00nm 5.4mb

IMA 63.09 23 P 46 07.00 -1.2  
1.0s 3.75nm 4.5mb

PMR 63.66 29 P 46 09.70 -2.1  
FBA 65.07 26 P 46 19.50 -1.5  
POO 68.32 284 iP 46 41.50 -0.9

INK 71.20 23 eP 46 58.00 -1.1  
MBC 75.11 14 eP 47 21.00 -0.9

YKA 79.72 28 eP 47 46.40 -1.2  
0.8s 3.80nm 4.4mb  
PNT 80.44 41 eP 47 53.00 1.3  
NEW 82.30 42 P 48 01.70 0.1  
0.9s 5.70nm 4.6mb

CMB 82.77 53 eP 48 05.70 1.5  
FRI 83.57 53 eP 48 09.90 1.7  
KVN 84.22 51 P 48 12.80 1.0  
TNP 85.16 52 P 48 17.00 0.5  
0.7s 1.11nm 4.2mb

SES 85.41 39 eP 48 17.00 -0.3  
LRM 86.09 43 eP 48 22.00 0.9  
FFC 88.73 33 eP 48 33.00 -0.2  
0.8s 8.00nm 5.1mb

S.D. = 1.2 on 31 of 31 obs.

% MAR 30, 1990 12h 44m 38.44±1.12s  
40.101 N ± 8.9km 28.087 E ± 8.3km  
DEPTH = 10.0km (geophysicist)

TURKEY (366)

KCT 0.25 54 iPg 44 44.10 0.3  
BNT 0.28 333 iPg 44 44.60 0.2  
iSg 44 48.60

EDC 0.30 325 iPg 44 44.50 -0.2  
iSg 44 49.50

DST 0.65 140 iPg 44 51.50 0.1  
iSg 45 00.50

YLV 1.09 64 iPn 44 58.60 -0.3  
S.D. = 0.4 on 5 of 5 obs.

? MAR 30, 1990 13h 22m 23.28±13.81s  
32.910 S ± 52.6km 72.402 W ± 93.7km  
DEPTH = 10.0km (geophysicist)

OFF COAST OF CENTRAL CHILE (134)

IHA 0.65 100 eP 22 36.50 0.2  
iS 22 44.20

LNv 1.33 142 iPc 22 47.70 -0.1  
iS 23 05.00

TACH 1.43 122 iPd 22 49.30 0.0  
iS 23 06.70

SAN 1.56 111 iPc 22 48.50 -2.6  
iS 23 10.10

PCH 1.73 115 iPc 22 54.30 0.6  
iS 23 16.00

CHCH 1.78 125 iPc 22 55.30 0.9  
iS 23 16.00

FCH 1.82 104 iPc 22 56.20 1.0  
iS 23 18.40

S.D. = 1.5 on 7 of 7 obs.

MAR 30, 1990 13h 48m 21.24±0.56s  
39.514 N ± 5.1km 28.472 E ± 5.8km  
DEPTH = 10.0km (geophysicist)

TURKEY (366)

DST 0.15 53 iPg 48 24.50 -0.3  
KCT 0.74 353 iPg 48 35.60 -0.2

BNT 0.94 333 iPg 48 38.60 -0.6  
iSg 48 50.10

EDC 0.95 331 iPg 48 38.50 -0.9  
iSg 48 49.50

YLV 1.26 33 iPg 48 44.10 -0.6  
ALT 1.35 109 iPn 48 45.80 -0.4

KHL 1.44 145 iPn 48 47.20 -0.3  
IZM 1.46 221 iPn 48 46.20 -1.5

GBZT 1.48 30 ePg 48 49.00 1.2  
iSg 49 00.20

MFT 1.56 325 iPn 48 50.60 1.4  
HRT 1.60 35 ePn 48 48.20 -1.4

GPA 1.61 61 iPn 48 51.10 1.3  
ISK 1.61 16 ePn 48 49.00 -0.8

EZN 1.69 281 iPn 48 50.60 -0.3  
CIN 1.93 189 ePn 48 56.00 1.5

DMK 2.37 347 ePn 49 02.60 1.9  
S.D. = 1.2 on 16 of 16 obs.

? MAR 30, 1990 14h 05m 59.79±2.07s  
31.401 N ± 25.3km 51.245 E ± 24.3km  
DEPTH = 33.0km (normal)

4.1mb (3 obs.)

IRAN (348)

IR4 3.84 356 iPd 07 07.00 8.9X  
IR5 3.84 352 eP 07 09.00 10.8X

IR2 4.26 356 iPd 07 03.00 -1.1  
IR7 4.32 353 P 07 06.50 1.5  
KER 4.56 311 eP 08 07.00 58.6X  
TAB 7.78 330 eP 07 53.00 -0.8  
MAIO 8.44 52 ePn 07 49.00 -13.6X  
0.7s 14.29nm eSn 08 59.00

GKN 29.14 88 P 12 00.00 -0.2  
CLL 34.40 317 eP 12 57.00 11.2X  
1.1s 12.00nm

LPG 37.10 305 eP 13 28.60 19.4X  
0.7s 3.85nm

LPL 37.12 305 eP 13 29.20 20.0X  
0.8s 6.70nm

HFS 37.99 330 eP 13 15.20 -0.8  
0.5s 2.80nm 4.4mb

NB2 39.50 331 P 13 30.10 1.4  
0.8s 2.90nm 4.1mb

AVF 39.59 307 eP 13 45.50 15.9X  
0.4s 4.00nm

EKA 44.77 319 P 14 23.00 11.2X  
0.5s 2.80nm

YKA 85.74 353 eP 18 40.90 4.5X  
0.9s 0.90nm 4.0mb

S.D. = 1.5 on 6 of 16 obs.

? MAR 30, 1990 14h 57m 00.82±5.45s  
31.450 S ± 45.0km 70.595 W ± 35.6km  
DEPTH = 33.0km (normal)

CHILE-ARGENTINA BORDER REGION (127)

ZON 1.64 94 iPd 57 28.50 0.7  
eS 57 46.00

RTCV 1.80 104 iPc 57 29.30 -0.8  
FCH 1.89 172 iPd 57 32.30 0.6  
iS 57 53.10

CFA 2.02 95 eP 58 01.90 28.6X  
(S) 58 18.50

PCH 2.17 178 eP 57 35.50 0.1  
iS 57 59.50

TACH 2.22 187 iP 57 36.00 0.0  
iS 58 00.00

CHCH 2.48 181 iPc 57 39.20 -0.6  
iS 58 05.50

LNv 2.59 195 iPd 57 41.20 -0.1  
iS 58 09.70

S.D. = 0.7 on 7 of 8 obs.

MAR 30, 1990 15h 07m 28.73±0.49s  
16.349 N ± 7.7km 145.933 E ± 8.9km  
DEPTH = 33.0km (normal)

4.8mb (6 obs.)

MARIANA ISLANDS (216)

GUA 2.96 200 eP 08 13.30 -1.3  
eS 08 51.80

MAT 21.25 343 (P) 12 10.00 -4.3X  
eS 13 17.00

SSE 26.91 307 eP 13 04.50 -4.3X  
BJI 35.00 318 eP 14 19.50 -0.7  
1.5s 39.00nm 5.1mb

TIY 36.36 312 eP 14 28.80 -3.0  
XAN 37.58 305 P 14 42.00 -0.1

WB5 37.75 198 eP 14 44.10 0.6  
GYA 37.79 292 P 14 45.40 1.4

WRA 37.82 198 P 14 44.50 0.4  
1.3s 6.30nm 4.3mb

BTO 39.34 315 eP 14 57.00 0.2  
CD2 41.02 298 eP 15 10.70 0.0

LZH 42.17 306 P 15 21.00 0.8  
2.0s 47.00nm 4.9mb

CHG 44.76 280 eP 15 28.50 25kmX  
pP 15 42.00 0.7

GTA 46.18 309 eP 15 53.00 0.6  
LSA 51.71 295 eP 16 36.20 0.5

WMQ 56.03 312 iPc 17 07.20 0.4  
GUN 56.33 293 P 17 09.60 0.0

PKI 56.76 292 P 17 12.00 -0.6  
KKN 56.87 293 P 17 13.10 -0.1  
0.8s 9.00nm 4.9mb

DMN 57.03 293 P 17 14.60 0.2  
GKN 57.43 293 P 17 17.00 -0.1  
1.2s 62.00nm 5.5mb

HYB 64.17 282 eP 18 03.00 0.2  
FBA 65.30 25 eP 18 10.00 0.6

POO 68.37 284 eP 18 35.00 5.3X  
INK 71.44 23 eP 18 46.00 -1.5



YKA	79.95	28	eP	19 35.00	-0.8	OUR	1.14	285	eP	40 23.90	0.2	KBN	2.53	287	iPnd	38 49.30	-9.1X
	0.7s		3.90nm		4.5mb				S	40 38.90		KGT	2.58	77	iPn	38 58.90	-0.3
PNT	80.63	41	eP	19 47.00	7.3X	COTA	1.21	311	P	40 25.40	0.4	MFT	2.65	70	iPn	38 59.90	-0.3
KVN	84.39	51	eP	20 01.00	1.5	TUNG	1.39	227	eP	40 27.80	0.1	OHR	2.71	297	iPn	39 01.50	0.4
SES	85.62	39	eP	20 05.00	-0.3				eS	40 45.80			1.3s		0.77nm		
LRM	86.29	43	eP	20 09.30	0.3										iSn	39 33.00	
			e	20 15.90											Lg	39 40.70	
ZOBO	147.33	95	PKP	27 14.00	4.3X							VTS	2.72	348	iPc	39 02.00	0.7
	S.D. = 1.0	on		26 of 31 obs.								SKO	2.81	317	iPnc	39 02.60	0.1
															iPb	39 06.20	
% MAR 30, 1990	15h	09m	13.30±1.73s												iPg	39 10.60	
	11.423 N ± 5.9km		61.902 W ± 28.6km												i	39 16.60	
	DEPTH = 10.0km		(geophysicist)												iSn	39 38.00	
	WINDWARD ISLANDS		(95)												i(Sg)	39 49.50	
															i	39 50.50	
															e	40 00.50	
TCE	0.74	169	eP	09 27.69	-0.1										iPn	39 02.90	-1.7
			eS	09 40.52											iPn	39 05.50	0.6
GRW	0.77	18	eP	09 36.46	8.1X										iPn	39 06.40	0.8
			eS	09 50.17											ePn	39 08.90	2.8X
			e	09 51.75											TPE	3.08 278	1.3
TRN	0.91	148	iP	09 31.34	0.6										ePn	39 07.50	1.3
			eS	09 46.41											SMG	3.14 134	0.7
TPP	1.19	158	eP	09 35.21	-0.2										ePn	39 09.40	1.6
			eS	09 51.82											ITM	3.19 211	1.3
TBH	1.24	139	eP	09 36.02	-0.4										eP	39 08.00	0.2
			eS	09 56.97											PHP	3.22 304	0.6
SVB	1.94	19	eP	09 46.97	0.3										ePn	39 10.00	1.4
			eS	10 32.59											VLI	3.32 195	0.8
SVV	2.00	20	eP	09 47.24	-0.3										iPn	39 10.90	0.7
			eS	10 33.89											DMK	3.42 55	-0.3
	S.D. = 0.5	on		6 of 7 obs.											TIR	3.45 296	2.6
															ePn	39 14.00	2.6
															KKS	3.46 309	1.4
															VLO	3.49 280	3.2X
MAR 30, 1990	18h	35m	42.00±0.67s												DST	3.58 94	1.1
	36.490 N ± 7.1km		25.470 E ± 6.9km												CTT	3.59 69	-1.0
	DEPTH = 10.0km		(geophysicist)												LACI	3.68 299	3.3X
	DODECANESE ISLANDS		(369)												BCI	3.84 311	1.4
	MD 3.6 (ATH).														CIN	3.95 125	0.9
															SDA	3.99 303	2.9X
APE	0.58	5	ePg	35 52.40	-1.4										ITU	4.00 71	-0.2
NPS	1.23	175	ePg	36 04.90	0.0												
VAM	1.49	224	ePb	36 08.70	-0.2												
SMG	1.64	42	ePg	36 12.60	1.7												
KAP	1.67	124	ePb	36 11.40	0.0												
VLI	2.05	277	ePn	36 16.60	-0.3												
ARG	2.16	96	ePn	36 18.30	-0.2												
IZM	2.38	36	ePn	36 26.30	4.6X												
ITM	2.92	285	ePn	36 30.80	1.4												
	S.D. = 1.2	on		8 of 9 obs.													
* MAR 30, 1990	19h	26m	46.59±0.80s														
	38.454 N ± 8.1km		28.206 E ± 7.4km														
	DEPTH = 10.0km		(geophysicist)														
	TURKEY		(366)														
IZM	0.74	266	iPg	27 01.30	0.1												
			iSg	27 10.80													
CIN	0.86	186	ePg	27 03.00	-0.1												
			iSg	27 14.00													
KHL	1.04	97	ePn	27 05.90	-0.4												
DST	1.20	16	iPn	27 08.50	-0.4												
ALT	1.61	67	ePn	27 16.00	0.8												
	S.D. = 0.7	on		5 of 5 obs.													
? MAR 30, 1990	19h	41m	37.21±9.82s														
	0.887 S ± 19.1km		79.518 W ± 85.4km														
	DEPTH = 33.0km		(normal)														
	ECUADOR		(107)														
VC1	1.14	78	iPd	41 57.80	0.4												
TUNG	1.19	116	P	41 57.90	-0.1												
			S	42 15.00													
OUR	1.22	54	iPd	41 59.00	0.6												
			S	42 16.80													
COTA	1.69	44	P	42 05.30	-0.1												
			S	42 28.50													
CAYA	1.81	58	eP	42 06.00	-1.1												
	S.D. = 0.9	on		5 of 5 obs.													
? MAR 30, 1990	21h	40m	02.05±4.20s														
	0.471 S ± 10.0km		77.428 W ± 33.5km														
	DEPTH = 10.0km		(geophysicist)														
	ECUADOR		(107)														
CAYA	0.78	315	iPd	40 17.10	-0.5												
			S	40 25.50													
VC1	0.99	260	iPd	40 20.90	-0.2												
			S	40 34.10													



ORI	5.80	274	P	39	44.90	0.1	FUR	12.30	316	iPc	41	28.70	14.1X	OUR	0.42	15	ePgc	40	03.60	0.4	
TDS	5.91	270	P	39	45.90	-0.4	GRC1	12.70	320	e(P)	41	20.00	0.1	THE	0.97	317	iPbd	40	13.10	0.1	
CSI	5.94	271	P	39	46.60	-0.1	Z	17s	0.80um								iSb	40	26.10		
BZS	5.95	344	iPc	39	45.00	-1.7			e	41	35.70			LIT	1.05	280	iPbd	40	14.90	0.5	
GR1	5.98	262	P	39	46.79	-0.5	BRG	13.01	331	eP	41	37.50	13.5X	SRS	1.20	351	iPbc	40	17.20	0.2	
DEV	6.00	353	ePc	39	47.00	-0.5	CLL	13.72	330	eP	41	45.00	11.7X				iSb	40	32.70		
BRD	6.02	21	eP	39	50.00	2.3	MOX	13.79	325	e(P)	41	44.00	9.7X	KNT	1.43	330	iPbc	40	20.70	0.2	
CFR	6.08	29	eP	39	45.00	-3.6	Z	10s	2.30um								iSb	40	40.20		
			e	50	25.00		N	11s	1.80um					AGG	1.47	233	iPbd	40	21.00	-0.2	
CZ1	6.12	266	P	39	48.90	-0.3			e	43	21.00						iSb	40	40.60		
TIM	6.15	342	eP	40	34.00	44.4X			e	46	08.00			VAY	1.69	326	iPn	40	24.00	-0.3	
VRI	6.26	18	ePd	39	51.50	0.2	LPG	13.84	299	eP	41	36.20	0.8	ALN	1.95	59	ePn	40	28.50	0.5	
MGR	6.49	275	P	39	54.30	-0.2			1.0s	10.00nm				NB2	22.53	344	P	44	53.70	-2.0	
			eSn	41	05.30		LPL	13.86	299	eP	41	36.40	0.9		1.0s	14.70nm			4.4mb		
GMB	6.57	257	P	39	54.81	-1.1			0.8s	6.70nm					S.D. = 0.9	on	10	of	10	obs.	
SGO	6.68	278	P	39	56.70	-0.5	TNS	15.02	318	eP	41	57.00	6.5X								
			eSn	41	10.70		SMF	16.12	301	eP	42	07.60	2.9X								
BBTK	6.74	88	eP	39	58.00	-0.1			1.0s	13.00nm				? MAR 31, 1990	01h	46m	31.78±	9.62s			
PPE	6.82	22	ePc	40	00.00	1.0	LBF	16.13	302	eP	42	07.90	3.0X				35.514 N ± 26.5km	52.321 E ± 68.5km			
BIR	6.86	22	eP	40	00.00	0.3			1.0s	11.00nm				DEPTH = 10.0km			(geophysicist)				
ATN	6.88	258	P	39	58.20	-1.8	LOR	16.30	303	eP	42	11.10	4.0X	IRAN				(348)			
			eSn	41	12.50				0.8s	10.75nm				TEH	0.79	287	eP	46	47.00	-0.3	
CLI	7.03	19	iPd	40	01.50	-0.6	SSF	16.46	302	eP	42	11.80	2.7X	IR2	1.17	278	eP	46	54.00	0.3	
BSS	7.07	280	P	40	02.10	-0.6			1.0s	14.00nm				IR4	1.19	257	P	46	54.50	0.4	
PTT	7.21	13	eP	40	05.00	0.4	AVF	16.48	301	eP	42	11.10	1.8	IR7	1.41	278	eP	46	58.50	0.9	
DUI	7.44	286	P	40	08.20	0.2			0.8s	10.75nm				IR5	1.45	259	eP	46	58.00	-0.2	
MEU	7.65	251	P	40	07.30	-3.6X	ENN	16.65	317	eP	42	15.00	3.6X		S.D. = 0.7	on	5	of	5	obs.	
			eSn	41	28.30				1.0s	14.00nm											
PZI	7.69	251	P	40	06.50	-4.9X	BGF	16.75	300	eP	42	13.10	0.4				MAR 31, 1990	01h	48m	40.23±	0.40s
IAS	7.70	18	eP	40	09.00	-2.4			1.0s	16.00nm							39.943 N ± 4.6km	24.050 E ± 3.1km			
CEI	7.83	352	eP	39	25.00	-48.2X	MAF	16.85	299	eP	42	15.40	1.4				DEPTH = 12.9 ± 2.8 km				
SDI	7.93	286	P	40	13.00	-1.7			1.0s	8.00nm							4.0mb ( 1 obs.)				
			eSn	41	41.00		WTS	16.93	321	eP	42	21.00	6.2X	AEGEAN SEA				(365)			
AZI	8.26	288	P	40	19.50	0.3			1.0s	13.00nm							ML 3.7 (THE), 3.7 (ATH).				
ZAG	8.32	318	e(P)	40	23.50	3.4	DOU	17.03	313	P	42	21.50	5.4X	PAIG	0.28	267	iPg	48	44.80	-1.6	
AQU	8.36	290	P	40	21.00	0.3			0.9s	17.50nm				THE	1.08	310	iPbd	48	59.90	-0.3	
BUD	8.36	336	eP	40	28.00	7.3X			e	49	08.00						iSb	49	13.50		
PTJ	8.39	318	eP	40	19.20	-1.9	TCF	17.11	299	eP	42	19.20	2.0				iSb	49	13.50		
FAI	8.51	255	P	40	19.50	-3.3			1.0s	9.00nm				LIT	1.21	278	iPbd	49	02.00	-0.5	
VBY	8.51	314	eP	40	22.60	-0.1	LSF	17.56	298	eP	42	22.10	-0.7				iSb	49	18.70		
PSZ	8.52	341	eP	40	29.80	6.9X			1.0s	8.00nm				KNT	1.50	325	iPbc	49	07.60	0.8	
SRO	8.88	334	eP	40	23.70	-4.1X	LDF	19.26	305	eP	42	44.20	0.4				iSb	49	26.40		
			e	40	53.00				1.0s	18.00nm				AGG	1.62	236	iPbd	49	09.90	1.4	
			e	42	38.30		GRR	19.67	304	eP	42	46.00	-2.5	RDO	1.65	43	ePb	49	12.70	3.7X	
ARV	9.00	297	P	40	30.20	0.6			1.2s	41.65nm				EZN	1.75	93	ePn	49	12.00	1.5	
ASS	9.07	294	P	40	30.50	-0.1	NUR	20.60	1	eP	42	56.50	-1.6	VAY	1.78	321	ePn	48	25.30	-45.5X	
CEY	9.11	313	eP	40	29.40	-1.7	HFS	21.23	346	eP	43	02.40	-2.1	VAY	1.78	321	iPn	49	10.60	-0.2	
			eS	42	15.00				0.6s	3.60nm				KZN	1.78	282	ePn	49	11.00	0.0	
LJU	9.24	314	eP	40	31.00	-1.8	Z	15s	0.59um					ALN	1.80	57	ePn	49	15.50	4.4X	
			e(S)	42	22.00				LR	51	37.00						eSn	49	43.30		
SOP	9.43	328	eP	40	34.60	-0.8	NB2	22.56	344	P	43	14.70	-3.2X	PRK	1.85	111	ePb	49	15.80	3.9X	
TRI	9.48	311	ePnd	40	36.20	0.1			1.0s	15.00nm				ATH	1.98	188	ePb	49	13.40	-0.4	
			eSn	42	23.70		SUF	22.86	3	iP	43	20.00	-0.7	FNA	2.21	293	ePn	49	16.90	-0.3	
			e	43	30.60				0.7s	4.50nm				PLD	2.22	13	eP	49	18.00	0.8	
VOY	9.59	313	eP	40	36.00	-1.7	EKA	23.71	320	P	43	29.00	0.0	KBN	2.57	286	ePn	49	21.50	-0.7	
ZST	9.63	331	eP	40	38.40	0.2			2.7s	160.70nm				MFT	2.61	70	iPn	49	22.90	0.0	
			e	40	46.50		DLE	24.65	313	eP	43	45.30	7.1X	LSK	2.66	276	ePn	49	24.10	0.5	
			e	41	30.30		DCN	25.08	313	eP	43	46.10	3.8X	OHR	2.74	296	ePn	49	23.80	-0.9	
VKA	9.99	329	eP	40	41.00	-2.1	MA10	28.05	86	eP	44	11.00	1.1		1.1s	0.11nm					
			e	42	21.00		BCAO	35.68	189	iPc	45	16.30	-0.6				eSn	49	58.00		
			e	43	51.00				0.8s	14.00nm							Lg	50	03.00		
			i	44	41.20				id	45	20.20			SKO	2.83	317	ePn	49	25.30	-0.7	
			LR	45	01.00		WMQ	46.55	63	eP	46	47.20	1.3				iPg	49	33.50		
FIR	10.25	296	e(Pn)	40	41.00	-5.8X	SHL	57.60	82	iP	48	07.60	-1.5				iSg	50	14.50		
			e(Sn)	42	40.00		SCH	58.98	318	eP	48	17.00	-1.3	IZM	2.94	121	ePn	49	28.40	1.0	
KRA	10.52	346	eP	40	52.60	2.2	MBC	61.77	351	eP	48	39.50	2.5	EDC	2.95	81	ePn	49	25.00	-2.6	
			e	40	59.10				1.0s	6.00nm				BNT	2.99	81	ePn	49	23.40	-4.8X	
KBA	10.53	316	iPd	40	50.70	0.0	CD2	63.62	71	eP	48	49.40	-0.5	SRN	3.11	270	ePn	49	31.50	1.6	
	1.4s	41.70nm				5.6mb X	XAN	65.62	65	P	49	02.70	-0.2	TPE	3.12	278	ePn	49	29.50	-0.5	
			i	40	52.60		CHG	66.79	84	eP	49	09.50	-1.0	JMB	3.16	36	eP	49	32.00	1.4	
			i	40	57.00		CN2	70.70	49	eP	49	34.00	-0.3	ITM	3.22	212	ePn	49	31.30	-0.2	
			i	40	58.40		YKA	72.64	341	eP	49	43.90	-1.7	BERA	3.23	285	ePn	49	33.40	1.9	
			i	41	15.80				0.9s	0.90nm				PHP	3.25	304	ePn	49	33.80	2.0	
			e	42	26.00		TUL	86.38	315	eP	51	02.30	2.2	VLI	3.34	196	ePn	49	32.00	-1.1	
			i	44	29.10				0.9s	9.90nm				DMK	3.38	55	ePn	49	33.70	0.0	
			e	51	13.00		WRA	117.92	93	Pdiffd	53	41.30	18.2X	TIR	3.48	295	ePn	49	37.70	2.6X	
OGA	11.70	311	eP	41	06.50	-0.3			0.5s	2.90nm				VLO	3.53	280	ePn	49	37.80	2.0	
KHC	11.82	325	P	41	05.70	-2.4			S.D. = 1.2	on 149 of 183 obs.			DST	3.54	94	ePn	49	29.50	-6.6X		
	Z	10s	3.00um										CTT	3.55	69	ePn	49	35.00	-1.1		
	N	10s	1.50um										BCI	3.86	310	ePn	49	42.40	1.9		
	E	10s	1.40um										CIN	3.93	125	eP	49	42.00	0.5		
			e	41	15.00								ISK	3.98	72	eP	49	59.00	16.8X		
PRU	12.07	330	eP	41	11.00	-0.5							SDA	4.02	302	ePn	49	44.80</			



GPA 4.81 84 eP 49 55.00 0.9  
 PSN 4.85 38 eP 49 54.00 -0.5  
 BRT 5.31 282 P 50 02.40 1.3  
 MTUR 5.33 8 ePd 50 00.50 -1.0  
 ISR 5.51 19 ePd 50 03.50 -0.4  
 BEO 5.55 333 ePn 50 15.00 10.5X  
 i(Sg) 51 42.00  
 TNR 5.71 2 ePc 50 08.00 1.3  
 MLR 5.72 13 iPc 50 06.00 -1.0  
 BZS 5.95 343 ePc 50 07.50 -2.5X  
 TDS 5.95 270 P 50 09.90 -0.1  
 CSI 5.97 271 P 50 11.10 0.6  
 CZI 6.16 266 P 50 11.20 -1.8  
 MGR 6.52 274 P 50 17.40 -0.8  
 eSn 51 32.00

BBTK 6.70 88 eP 50 50.00 29.2X  
 SGO 6.72 278 P 50 19.70 -1.2  
 ATN 6.92 258 P 50 22.80 -0.9  
 eSn 51 34.70  
 CLI 7.01 19 ePd 50 24.00 -1.1  
 BSS 7.11 280 P 50 25.50 -0.9  
 MEU 7.69 251 P 50 30.40 -4.3X  
 eSn 51 53.90  
 NB2 22.56 344 P 53 38.40 -2.8  
 0.9s 4.50nm 4.0mb  
 S.D. = 1.3 on 48 of 63 obs.

MAR 31, 1990 01h 53m 29.99±0.77s  
 39.962 N ± 6.4km 23.874 E ± 6.0km  
 DEPTH = 10.0km (geophysicist)  
 AEGEAN SEA (365)  
 ML 3.0 (THE). MD 3.2 (ATH).

PAIG 0.15 257 iPg 53 33.70 0.1  
 iSg 53 36.80  
 OUR 0.38 12 iPg 53 37.50 -0.3  
 PLG 0.53 322 ePb 53 39.50 -1.2  
 NEO 0.82 218 ePn 53 45.20 -0.8  
 THE 0.97 314 iPbd 53 48.80 0.5  
 iSb 54 03.50  
 LIT 1.07 278 iPbd 53 50.70 0.5  
 iSb 54 06.80  
 KZN 1.65 283 ePb 53 59.60 0.4  
 VAY 1.68 324 ePn 54 01.30 1.7  
 RDO 1.73 46 ePn 54 01.20 0.9  
 RZN 1.84 20 iPc 54 01.00 -1.0  
 ALN 1.90 60 ePn 54 03.60 0.8  
 EVR 1.91 238 ePn 54 02.10 -0.9  
 PRK 1.99 110 ePb 54 07.70 3.7X  
 KKB 2.00 343 iPc 54 03.00 -1.1  
 KDZ 2.05 34 iP 54 02.00 -3.0X  
 FNA 2.08 294 ePn 54 06.60 1.2  
 eSn 54 33.20  
 PGB 2.60 5 iPc 54 59.00 46.2X  
 VTS 2.68 349 iP 54 13.00 -1.0  
 S.D. = 1.0 on 15 of 18 obs.

MAR 31, 1990 02h 03m 33.72±1.34s  
 39.977 N ± 11.2km 23.930 E ± 7.5km  
 DEPTH = 10.0km (geophysicist)  
 AEGEAN SEA (365)  
 ML 2.8 (THE).

PAIG 0.20 255 iPg 03 37.40 -0.7  
 iSg 03 40.60  
 OUR 0.36 6 iPg 03 41.30 0.2  
 THE 0.99 312 iPbc 03 52.30 -0.1  
 iSb 04 05.40  
 LIT 1.11 277 iPbd 03 54.30 -0.3  
 iSb 04 10.70  
 SRS 1.17 347 ePbd 03 55.80 0.3  
 iSb 04 12.30  
 KNT 1.42 327 ePbc 04 00.10 0.5  
 eSb 04 19.40  
 VAY 1.69 323 ePn 04 05.00 1.5  
 RZN 1.81 19 iPc 04 05.00 -0.3  
 ALN 1.86 60 ePn 04 07.60 1.8  
 eSn 04 34.60  
 KKB 1.99 341 iPc 04 07.00 -0.8  
 KDZ 2.02 34 iP 04 06.00 -2.2  
 FNA 2.11 293 ePn 04 10.30 0.7  
 VTS 2.67 348 iP 04 17.00 -0.6  
 S.D. = 1.1 on 13 of 13 obs.

MAR 31, 1990 02h 06m 32.37±1.29s  
 40.010 N ± 10.6km 23.826 E ± 9.2km  
 DEPTH = 10.0km (geophysicist)

GREECE (364)  
 ML 2.5 (THE).

PAIG 0.14 234 iPg 06 34.90 -0.7  
 iSg 06 38.20  
 OUR 0.35 20 iPg 06 38.80 -0.7  
 iSg 06 42.20  
 THE 0.91 314 ePbd 06 48.20 -1.5  
 eSb 07 03.30  
 LIT 1.03 275 iPb 06 52.60 0.8  
 iSb 07 08.30  
 SRS 1.12 351 ePbc 06 53.30 -0.1  
 eSb 07 09.80  
 KNT 1.35 329 ePbc 06 56.90 -0.3  
 eSb 07 16.60  
 VAY 1.62 324 ePn 07 03.20 2.2  
 ALN 1.91 62 ePn 07 05.70 0.4  
 eSn 07 32.30  
 S.D. = 1.3 on 8 of 8 obs.

MAR 31, 1990 02h 11m 02.58±0.82s  
 37.375 N ± 6.0km 23.251 E ± 7.3km  
 DEPTH = 126.7 ± 14.9 km  
 SOUTHERN GREECE (368)

VLI 0.70 201 eP 11 21.50 -1.4  
 ITM 1.07 260 eP 11 27.00 0.8  
 EVR 1.91 324 eP 11 36.60 0.8  
 VAM 2.11 158 eP 11 38.30 0.1  
 PAIG 2.57 7 iPg 11 43.00 -1.1  
 LIT 2.79 348 iPg 11 47.90 1.0  
 NPS 2.84 137 eP 11 48.50 0.8  
 THE 3.26 356 ePbd 11 54.00 0.9  
 eSb 12 04.40  
 FNA 3.70 337 ePn 12 00.30 1.2  
 eSn 12 22.20  
 SRS 3.75 4 ePb 11 55.00 -4.7X  
 KNT 3.79 356 ePbc 11 58.00 -2.3  
 ALN 4.13 31 ePn 12 11.90 7.0X  
 OHR 4.19 334 ePn 12 06.00 0.3  
 LCI 5.08 307 P 12 15.90 -1.8  
 eSn 13 09.30  
 ROI 5.68 295 P 12 26.50 0.5  
 BRT 5.86 309 P 12 28.50 0.1  
 TDS 5.88 295 P 12 28.80 0.1  
 eSn 13 26.00  
 CZI 5.89 290 P 12 29.50 0.7  
 ORI 5.96 299 P 12 29.80 0.1  
 CSI 5.96 296 P 12 29.90 0.2  
 ATN 6.22 280 P 12 33.30 0.0  
 eSn 13 34.50  
 MGR 6.62 297 P 12 38.60 -0.1  
 MEU 6.64 270 P 12 38.10 -1.1  
 eSn 13 47.30  
 SGO 6.96 300 P 12 43.50 0.2  
 BSS 7.40 300 P 12 49.10 -0.2  
 S.D. = 1.0 on 23 of 25 obs.

MAR 31, 1990 02h 58m 38.78±1.25s  
 39.982 N ± 10.1km 23.877 E ± 7.8km  
 DEPTH = 10.0km (geophysicist)  
 AEGEAN SEA (365)  
 ML 2.5 (THE).

PAIG 0.16 250 iPg 58 41.50 -1.0  
 iSg 58 44.60  
 OUR 0.36 13 iPg 58 45.70 -0.5  
 THE 0.95 313 iPbc 58 56.70 -0.2  
 LIT 1.07 277 iPbd 58 59.40 0.4  
 iSb 59 15.10  
 SRS 1.15 349 ePbc 59 00.10 -0.3  
 eSb 59 17.30  
 KNT 1.39 328 ePbc 59 04.10 -0.2  
 eSb 59 24.00  
 ALN 1.89 60 ePn 59 11.80 0.4  
 FNA 2.07 294 ePn 59 15.30 1.2  
 S.D. = 0.8 on 8 of 8 obs.

MAR 31, 1990 03h 10m 49.57±11.03s  
 51.511 N ± 66.1km 16.309 E ± 72.4km  
 DEPTH = 10.0km (geophysicist)  
 POLAND (548)

KSP 0.67 181 iP 11 02.50 -0.4  
 BRG 1.62 248 iPg 11 17.00 -1.2  
 iSg 11 37.20  
 PRU 1.89 217 Pg 11 23.80 1.6X

e 11 27.00  
 Sn 11 40.00  
 Sg 11 47.00  
 i 11 53.50  
 CLL 2.08 266 iPg 11 25.40 0.5  
 eSg 11 52.00  
 KHC 2.96 217 ePn 11 38.50 1.1  
 ePg 11 44.50  
 Sn 12 15.20  
 Sg 12 22.00  
 MOX 3.08 256 ePg 11 45.00 5.8X  
 eSg 12 26.00  
 S.D. = 1.7 on 4 of 6 obs.

MAR 31, 1990 03h 15m 59.58±2.15s  
 39.935 N ± 11.6km 23.921 E ± 16.0km  
 DEPTH = 10.0km (geophysicist)  
 AEGEAN SEA (365)  
 ML 2.3 (THE).

PAIG 0.19 268 iPg 16 03.60 -0.1  
 iSg 16 07.20  
 OUR 0.40 7 iPg 16 07.40 -0.4  
 THE 1.01 314 iPbc 16 17.50 -1.2  
 iSb 16 32.10  
 LIT 1.11 279 ePb 16 21.20 0.8  
 eSb 16 36.90  
 SRS 1.21 348 ePb 16 22.90 0.8  
 eSb 16 37.80  
 KNT 1.45 328 ePbc 16 26.10 0.2  
 eSb 16 45.50  
 AGG 1.53 234 ePb 16 26.80 -0.2  
 S.D. = 0.9 on 7 of 7 obs.

MAR 31, 1990 03h 50m 10.02±0.53s  
 40.024 N ± 4.4km 23.833 E ± 5.1km  
 DEPTH = 10.0km (geophysicist)  
 GREECE (364)  
 ML 3.0 (THE), 3.1 (ATH).

OUR 0.33 20 iPg 50 16.70 -0.2  
 PLG 0.46 320 ePg 50 18.80 -0.6  
 NEO 0.86 213 ePg 50 24.70 -1.8  
 eSg 50 36.00  
 THE 0.90 313 iPbd 50 27.10 -0.1  
 iSb 50 44.20  
 LIT 1.03 275 iPbc 50 29.60 0.0  
 iSb 50 46.70  
 SRS 1.11 351 ePbc 50 30.60 -0.2  
 eSb 50 48.40  
 KNT 1.34 328 ePbc 50 35.30 0.6  
 AGG 1.53 230 ePb 50 38.10 0.6  
 KZN 1.61 281 ePb 50 39.20 0.6  
 VAY 1.61 324 iPn 50 38.40 -0.2  
 RDO 1.72 49 ePb 50 40.70 0.6  
 ALN 1.90 62 ePb 50 39.00 -3.8X  
 eSb 51 02.20  
 PRK 2.04 112 ePb 50 45.50 0.8  
 ATH 2.05 183 ePb 50 45.00 0.1  
 OHR 2.55 296 ePn 50 53.50 1.3  
 SKO 2.66 318 ePn 50 59.00 5.3X  
 DST 3.72 95 ePn 51 45.50 36.7X  
 MLR 5.68 15 eP 51 35.00 -1.6  
 S.D. = 0.9 on 15 of 18 obs.

MAR 31, 1990 03h 59m 20.66±0.74s  
 39.957 N ± 5.8km 22.468 E ± 6.8km  
 DEPTH = 10.0km (geophysicist)  
 GREECE (364)  
 ML 2.1 (THE).

LIT 0.14 7 iPg 59 23.70 -0.4  
 iSg 59 26.40  
 THE 0.77 29 ePg 59 36.50 0.8  
 PAIG 0.93 91 ePbd 59 38.30 -0.1  
 AGG 0.94 187 ePb 59 38.70 0.1  
 eSb 59 53.00  
 FNA 1.17 315 ePb 59 42.60 0.0  
 eSb 00 00.00  
 OUR 1.22 72 ePb 59 43.20 -0.2  
 KNT 1.25 15 ePb 59 43.60 -0.2  
 eSb 00 01.40  
 S.D. = 0.5 on 7 of 7 obs.

MAR 31, 1990 04h 21m 39.23±0.42s  
 39.986 N ± 4.9km 24.021 E ± 3.6km  
 DEPTH = 10.0km (geophysicist)



31d 04h

AEGEAN SEA (365)  
ML 3.5 (THE), 3.5 (ATH).

PLG 0.59 312 ePn 21 50.10 -1.0  
NEO 0.92 222 ePn 21 56.20 -0.6  
THE 1.03 309 iPbc 21 58.50 -0.2  
iSb 22 13.00  
SRS 1.18 344 ePbc 22 01.80 0.6  
iSb 22 20.00  
LIT 1.18 276 ePb 22 01.00 -0.3  
RDO 1.64 44 ePb 22 08.50 0.4  
VAY 1.73 321 iPn 22 09.20 -0.3  
i 22 12.40  
KZN 1.75 281 ePn 22 10.00 0.1  
EZN 1.78 94 iPn 22 10.90 0.7  
PRK 1.89 112 ePn 22 11.50 -0.3  
ATH 2.02 187 ePn 22 13.60 -0.2  
KBN 2.53 286 ePn 22 21.80 0.8  
LSK 2.63 275 iPnd 22 23.50 1.0  
OHR 2.70 296 ePn 22 24.30 0.8

0.8s 0.05nm  
eSg 23 03.00  
Lg 23 06.30

SKO 2.78 316 iPn 22 24.70 0.0  
i 23 08.50  
i(Sg) 23 12.00

TPE 3.09 277 ePn 22 23.00 -5.9X  
DMK 3.37 56 eP 22 45.00 12.0X  
TIR 3.44 295 ePn 22 37.00 3.1X  
CTT 3.55 70 ePn 22 33.00 -2.6  
DST 3.57 95 iPn 22 36.50 0.7  
SDA 3.98 302 ePn 22 46.60 5.1X  
DRA 4.69 2 eP 23 19.00 27.3X  
ALT 4.80 99 eP 22 54.00 0.6  
ISR 5.48 19 eP 23 15.00 12.2X  
MLR 5.68 14 eP 23 06.00 0.2  
BZS 5.90 343 ePc 23 07.00 -1.7  
VRI 6.21 18 ePd 23 14.50 1.4

S.D. = 1.0 on 21 of 27 obs.

? MAR 31, 1990 04h 27m 16.88±4.34s  
16.456 S ±141.1km 176.831 W ±97.5km  
DEPTH = 432.0 ±14.7 km  
4.0mb ( 2 obs.)

FIJI ISLANDS REGION (181)

VUN 4.75 250 eP 28 38.70 0.0  
WB5 46.37 258 iPd 35 04.10 -0.3  
WRA 46.39 258 Pd 35 04.10 -0.4  
0.5s 11.00nm 4.5mb  
ASPA 46.65 253 iPd 35 06.80 0.3  
0.4s 101.00nm 5.6mb X  
iS 41 23.60  
KNA 52.14 263 eP 35 48.10 0.4  
FBA 84.08 12 eP 39 01.30 0.0  
YKA 92.39 24 eP 39 40.40 -0.1  
0.8s 0.50nm 3.6mb  
POO 112.96 283 ePKP 45 08.00 2.0X  
S.D. = 0.4 on 7 of 8 obs.

? MAR 31, 1990 04h 52m 01.62±1.08s  
24.003 S ±19.8km 179.907 W ±54.0km  
DEPTH = 499.4 ±50.5 km  
4.6mb ( 2 obs.)

SOUTH OF FIJI ISLANDS (171)

MBU 7.11 349 iPd 53 50.00 0.0  
PUZ 14.11 186 P 55 03.70 0.6  
NOZ 14.67 186 P 55 10.20 1.4  
PGZ 16.88 190 P 55 30.60 -0.1  
MNG 17.01 192 P 55 30.50 -1.6  
S 58 25.20  
KIW 17.37 193 P 55 34.90 -0.6  
MTW 17.53 192 P 55 36.80 -0.3  
CAW 17.57 193 P 55 37.70 0.2  
WDW 17.74 193 P 55 38.80 -0.3  
MRW 17.76 193 P 55 39.40 0.1  
MOW 17.84 192 P 55 41.10 1.0  
TCW 17.84 194 P 55 39.90 -0.2  
THZ 18.70 197 P 55 49.10 0.6  
KHZ 19.15 195 P 55 52.00 -0.8  
LTZ 19.82 197 P 55 58.60 -0.6  
CAN 29.16 240 eP 57 24.50 1.3  
BWA 29.42 242 eP 57 24.90 -0.6  
ASPA 42.10 261 iPd 59 10.80 0.2  
0.6s 15.00nm 4.7mb  
eS 04 52.70

WB5 42.47 266 iPd 59 13.10 -0.5  
WRA 42.48 266 Pd 59 13.00 -0.6  
0.5s 7.30nm 4.5mb  
MRWA 56.93 250 iPc 01 01.60 1.0  
HFS 142.66 349 ePKP 10 32.80 -5.4X  
0.3s 2.80nm  
S.D. = 0.8 on 21 of 22 obs.

MAR 31, 1990 05h 18m 49.69±0.37s  
13.100 N ±6.2km 70.215 W ±4.8km  
DEPTH = 10.0km (geophysicist)  
4.5mb ( 8 obs.) 4.7msz ( 1 obs.)

CARIBBEAN SEA (94)

PORP 6.01 35 P 20 20.80 0.0  
SJG 6.34 38 iP 20 24.90 -0.6  
CPD 6.42 40 P 20 25.20 -1.5  
LPR 6.66 38 P 20 29.50 -0.5  
NEV 8.40 61 eP 20 55.00 0.6  
S 22 26.00  
TCE 8.62 105 eP 21 02.62 5.2X  
PAG 8.76 70 eP 20 58.50 -1.0  
S 22 30.00  
BBL 8.80 73 eP 21 04.00 4.0X  
TRN 8.96 105 eP 21 03.42 1.3  
BPA 8.97 63 eP 20 56.00 -6.4X  
TPP 9.02 107 eP 21 04.30 1.4  
UPA 10.02 247 eP 21 17.50 0.7  
PWLA 27.12 326 P 24 40.00 5.3X  
ZOBO 29.25 176 P 24 52.80 -2.1

Z 18s 1.50um 4.7msz  
S 30 36.00  
LR 33 36.00

LPB 29.52 176 P 24 55.00 -2.1  
SIV 30.29 162 P 25 00.00 -3.5X  
TUL 32.33 319 eP 25 21.80 0.5  
1.2s 8.60nm 4.6mb  
BAO 36.03 142 eP 25 53.50 0.0  
ALO 39.29 310 eP 26 22.00 1.2  
1.0s 3.25nm 4.0mb  
ANMO 39.29 310 P 26 22.00 1.2  
SCH 41.71 3 eP 26 43.00 2.8X  
MSU 44.92 312 P 27 00.00 1.1  
BW06 44.99 319 P 27 06.00 -1.4  
PLM 46.92 304 P 27 22.50 -0.1  
FFC 48.40 336 eP 27 34.00 0.3  
0.9s 10.00nm 4.9mb

TNP 48.50 310 P 27 35.70 0.7  
1.0s 2.92nm 4.3mb  
KVN 49.45 311 P 27 41.50 -0.8  
FRB 50.59 1 eP 27 51.00 0.7  
NEW 52.24 322 P 28 03.00 -0.2  
0.8s 3.91nm 4.4mb  
EDM 52.59 329 eP 28 05.00 -0.8  
YKA 58.48 338 eP 28 46.70 -1.4  
0.8s 1.90nm 4.2mb  
LKO 63.33 86 P 29 22.20 0.4  
1.0s 28.00nm 5.4mb  
LIC 64.48 89 P 29 30.00 0.6  
KIC 64.74 89 Pd 29 31.60 0.6  
INK 68.17 339 eP 29 51.00 -0.9  
MBC 68.21 349 eP 29 53.00 0.9  
IMA 75.47 335 P 30 36.00 0.3  
KHC 76.17 42 eP 30 44.50 4.7X  
BCAO 87.79 86 iPd 31 42.00 1.0  
0.6s 8.00nm 5.2mb

S.D. = 1.0 on 32 of 39 obs.

? MAR 31, 1990 06h 19m 28.13±1.81s  
39.557 N ±12.4km 23.601 E ±13.6km  
DEPTH = 10.0km (geophysicist)

AEGEAN SEA (365)

ML 2.6 (THE).

PAIG 0.37 9 ePgd 19 35.50 -0.3  
eSg 19 42.70  
OUR 0.83 21 ePgc 19 43.90 -0.2  
eSg 19 57.70  
LIT 1.01 303 ePb 19 47.30 0.0  
eSb 20 02.00  
AGG 1.12 242 ePb 19 49.10 -0.1  
eSb 20 05.40  
THE 1.18 336 ePbd 19 50.00 -0.1  
eSb 20 07.60  
SRS 1.56 360 ePb 19 56.70 0.8  
eSb 20 19.90  
KNT 1.69 342 ePb 20 00.30 2.5X

S.D. = 0.5 on 6 of 7 obs.

? MAR 31, 1990 06h 34m 02.80±6.22s  
39.801 N ±34.7km 24.127 E ±30.0km  
DEPTH = 10.0km (geophysicist)

AEGEAN SEA (365)

ML 2.3 (THE).

PAIG 0.37 290 iPgd 34 09.60 -0.7  
iSg 34 12.90  
OUR 0.54 348 iPgc 34 13.60 -0.2  
iSg 34 17.20  
THE 1.22 313 ePb 34 26.20 0.8  
eSb 34 38.80  
LIT 1.29 284 ePb 34 27.00 0.2  
eSb 34 42.70  
SRS 1.38 343 ePb 34 27.60 -0.4  
S 34 44.50  
KNT 1.65 326 ePbc 34 32.30 0.4  
eSb 34 51.70

S.D. = 0.7 on 6 of 6 obs.

MAR 31, 1990 06h 35m 53.69±0.27s  
16.495 N ±5.1km 145.892 E ±5.7km  
DEPTH = 33.0km (normal)  
4.7mb ( 10 obs.) 4.1msz ( 1 obs.)

MARIANA ISLANDS (216)

PJG 3.06 199 eP 36 40.30 -0.5  
GUMO 3.06 199 eP 36 40.30 -0.5  
GUA 3.09 198 eP 36 41.20 -0.1  
e 36 43.20  
eS 37 15.30  
SSE 26.79 307 eP 41 31.50 -1.2  
Z 20s 0.50um 4.1msz  
sP 41 42.50  
BJI 34.87 318 eP 42 44.00 0.0  
1.3s 23.00nm 4.9mb  
TIY 36.23 312 eP 42 56.20 0.5  
XAN 37.47 305 P 43 05.00 -1.1  
GYA 37.70 292 P 43 11.80 3.6X  
WB5 37.88 198 eP 43 10.00 0.4  
WRA 37.95 198 Pc 43 09.80 -0.3  
1.0s 3.50nm 4.2mb  
BTO 39.21 315 eP 43 21.30 0.6  
CD2 40.91 298 eP 43 35.50 0.7  
LZH 42.05 306 Pd 43 45.30 1.1  
pP 43 51.00 19kmX  
CHTO 44.70 280 eP 44 06.00 0.3  
0.6s 1.82nm 4.1mb  
GTA 46.05 309 eP 44 17.00 0.6  
WMO 55.90 312 P 45 31.20 0.4  
GUN 56.24 293 P 45 34.40 0.5  
0.9s 25.00nm 5.2mb  
PKI 56.67 292 P 45 36.70 -0.2  
KKK 56.77 293 P 45 37.60 0.1  
DMN 56.93 292 P 45 38.80 0.1  
GKN 57.33 293 P 45 41.70 0.3  
1.0s 200.00nm 6.1mb X

TTA 61.13 26 P 46 05.80 -1.2  
IMA 63.21 23 P 46 19.40 -1.5  
PMR 63.78 29 P 46 22.70 -1.8  
0.8s 11.21nm 5.0mb

GBA 65.89 278 Pc 46 38.50 -0.4  
0.5s 1.30nm 4.3mb

KOD 66.61 274 eP 46 28.00 -15.9X  
INK 71.32 23 eP 47 10.00 -1.7  
MBC 75.23 14 eP 47 33.00 -1.5

GMW 78.90 44 P 47 56.50 1.1  
RMW 79.57 44 P 47 59.50 0.4  
YKA 79.84 28 eP 47 59.00 -1.1

0.7s 5.90nm 4.7mb  
PNT 80.55 41 eP 48 05.00 0.8  
MIN 81.38 51 e(P) 48 09.80 0.8

NEW 82.42 42 P 48 14.50 0.4  
0.8s 4.17nm 4.5mb

PRS 82.56 54 eP 48 16.40 1.4  
CMB 82.88 53 eP 48 17.70 1.0  
FRI 83.68 53 eP 48 21.70 1.0

KVN 84.33 51 P 48 25.00 0.8  
TNP 85.27 52 P 48 29.50 0.5  
0.7s 2.31nm 4.5mb

SES 85.53 39 ePd 48 29.60 -0.2  
LRM 86.21 43 eP 48 33.70 0.2  
FFC 88.84 33 eP 48 45.00 -0.7

0.7s 6.00nm 5.0mb  
ZOBO 147.39 95 PKP 55 38.00 3.3X



1.2s 12.16nm  
LPB 147.43 95 PKP 55 40.00 5.4X  
S.D. = 0.9 on 40 of 44 obs.

% MAR 31, 1990 07h 08m 56.90±2.39s  
47.402 N ±11.2km 1.019 W ±34.0km  
DEPTH = 10.0km (geophysicist)

FRANCE (538)  
ML 2.4 (LDG).

LPF 0.63 359 Pg 09 10.00 0.4

Sg 09 18.60

GRR 0.99 6 Pg 09 15.20 -0.5

Sg 09 29.50

MFF 1.00 143 Pg 09 15.80 0.0

Sg 09 30.50

LDF 1.34 26 Pn 09 21.80 0.3

Pg 09 22.50

Sg 09 40.60

FLN 1.41 15 Pn 09 22.30 -0.3

Pg 09 23.50

Sg 09 42.00

S.D. = 0.6 on 5 of 5 obs.

& MAR 31, 1990 08h 19m 22.68s

59.838 N 151.766 W

DEPTH = 64.5km

2.7mb (1 obs.)

KENAI PENINSULA, ALASKA (14)

<AGS-P>.

NNL 0.31 49 eP 19 34.03 0.5

XLV 0.39 177 eP 19 33.17 -0.9

CNPM 0.41 139 eP 19 33.86 -0.5

eS 19 42.70

BRK 0.45 99 eP 19 34.34 -0.4

RDT 0.80 337 iP 19 38.01 -0.8

NKA 0.95 16 eP 19 41.84 1.4

AUE 0.95 240 eP 19 39.76 -0.7

AUL 0.96 242 eP 19 40.08 -0.6

SLKM 1.02 48 eP 19 40.87 -0.7

SEW 1.20 76 eP 19 42.93 -0.8

PDB 1.23 269 eP 19 42.91 -1.3

CDD 1.32 227 eP 19 44.41 -1.1

SPU 1.36 354 eP 19 45.55 -0.4

CKL 1.39 349 eP 19 46.20 -0.3

CRP 1.45 353 eP 19 47.28 0.0

BGL 1.46 348 eP 19 47.37 -0.1

NCG 1.58 353 eP 19 49.15 0.0

SUA 1.71 17 eP 19 50.87 0.0

PMS 1.78 37 eP 19 51.82 0.0

BGM 1.82 257 eP 19 50.26 -2.0

PWA 2.04 26 eP 19 54.97 -0.4

SKT 2.15 3 eP 19 56.84 -0.1

PLRM 2.19 35 eP 19 56.42 -0.9

GHO 2.39 34 eP 19 59.54 -0.8

GLI 2.55 64 eP 19 59.97 -2.5

VZV 2.86 62 eP 20 04.81 -2.1

YKA 17.95 65 eP 23 27.10 -1.9

0.4s 0.20nm 2.7mb

27 obs. associated

MAR 31, 1990 08h 29m 30.77±0.29s

45.114 N ±2.3km 7.387 E ±3.0km

DEPTH = 5.0km (geophysicist)

NORTHERN ITALY (545)

ML 2.6 (GEN), 2.4 (LDG).

RSP 0.10 292 P 29 33.11 0.1

S 29 34.84

LSD 0.38 335 P 29 38.14 -0.3

S 29 42.86

RRL 0.47 246 P 29 40.50 0.3

S 29 46.66

BNI 0.51 263 Pd 29 40.80 -0.2

eSg 29 47.20

LPG 0.59 311 Pg 29 42.00 -0.6

Sg 29 48.80

LPL 0.61 311 Pg 29 42.50 -0.6

Sg 29 49.50

DOI 0.62 189 P 29 43.10 -0.1

eSg 29 50.90

PZZ 0.64 199 P 29 43.88 0.3

S 29 51.47

ORX 0.67 39 P 29 43.64 -0.5

S 29 51.69

STV 0.87 183 P 29 47.06 -1.0

ENR 0.89 178 P 29 58.35

S 29 47.57 -0.8

ROB 0.89 157 P 29 58.90

S 29 48.84 0.5

CKI 0.94 137 P 30 00.12

S 29 50.30 1.2

eSg 30 02.00

DIX 0.97 1 eP 29 49.30 -0.5

PCP 1.00 124 P 29 51.06 0.8

S 30 03.92

EMS 1.01 342 eP 29 50.30 -0.2

MMK 1.02 23 eP 29 50.10 -0.6

FIN 1.08 147 P 29 51.42 -0.1

S 30 04.87

IMI 1.26 163 P 29 53.32 -1.3

TMA 1.44 46 eP 29 58.00 0.3

FRF 1.64 199 Pg 30 03.00 2.6X

Sg 30 22.80

LRG 1.82 204 Pn 30 04.50 1.6X

Pg 30 06.70

Sg 30 08.20

LMR 1.89 200 Pg 30 07.30 3.3X

Sg 30 32.00

SMF 2.91 303 Pn 30 19.80 1.2

HAU 2.98 346 Pn 30 20.60 1.0

AVF 3.28 302 Pn 30 24.20 0.4

BGF 3.49 296 Pn 30 27.40 0.6

S.D. = 0.7 on 24 of 27 obs.

\* MAR 31, 1990 08h 54m 55.67±0.76s

23.539 S ±14.7km 114.988 W ±16.3km

DEPTH = 10.0km (geophysicist)

5.0mb (9 obs.) 4.9Msz (2 obs.)

EASTER ISLAND REGION (685)

LPB 44.45 90 P 03 09.00 -0.4

ZOBO 44.50 90 Pc 03 11.20 1.2

27.03nm 5.0mb

Z 24s 0.45um 4.3MszX

S 09 52.00

LR 16 08.00

CCH 46.00 92 eP 03 22.00 0.4

BAR 55.93 358 eP 04 38.00 1.8

GLA 56.27 0 eP 04 46.00 7.3X

PLM 56.60 358 P 04 40.00 -1.2

PLM 56.60 358 eP 04 27.00 -14.2X

RVR 57.26 358 eP 04 45.00 -0.6

TPC 57.33 359 eP 04 46.00 -0.2

MWC 57.52 357 eP 04 48.00 0.3

SBB 57.97 357 eP 04 53.00 2.3

GSC 58.54 358 eP 04 56.00 1.3

ALO 58.72 8 eP 04 55.00 -1.2

1.2s 6.25nm 4.6mb

Z 18s 0.34um 4.5Msz

ANMO 58.72 8 P 05 00.00 3.8X

ISA 58.97 357 eP 05 04.00 6.3X

CLC 59.08 358 eP 05 04.00 5.5X

FRI 60.37 356 e(P) 05 07.30 0.1

TNP 61.33 358 P 05 13.50 -0.5

1.5s 18.94nm 5.0mb

CMB 61.46 355 eP 05 15.40 0.7

MSU 61.78 3 P 05 18.00 0.9

TUL 61.85 18 eP 05 14.70 -2.6

1.3s 8.90nm 4.8mb

KVN 62.33 357 P 05 20.00 -0.7

BAO 63.13 96 eP 05 26.00 -0.4

GOL 63.55 8 P 05 28.50 -0.3

0.8s 7.07nm 4.9mb

BW06 66.17 4 P 05 44.00 -1.7

IMW 67.20 3 P 05 51.50 -0.9

RSSD 68.07 8 P 05 56.50 -1.2

LRM 69.07 2 eP 06 05.00 1.1

NEW 71.49 358 P 06 18.00 -0.3

1.4s 24.46nm 5.1mb

PNT 72.64 357 eP 06 27.00 1.9

SES 73.69 3 eP 06 31.00 -0.2

EDM 76.45 1 ePc 06 46.90 0.0

FFC 78.74 8 eP 07 02.00 2.4

1.5s 32.00nm 5.1mb

YKA 85.73 0 eP 07 34.40 -1.2

1.3s 8.80nm 4.8mb

PMR 89.17 344 P 07 52.00 -0.3

1.3s 23.58nm 5.3mb

INK 92.59 353 eP 08 08.00 0.1

BCAO 131.35 106 ePKPd 14 10.10 -0.7

1.0s 10.00nm

LZH 144.29 300 ePKP 14 34.50 0.4

Z 20s 0.40um 5.2Msz

CD2 144.91 291 ePKP 14 35.80 0.7

KMI 145.66 280 ePKP 14 34.00 -2.8X

GTA 146.61 307 ePKP 14 36.20 -1.6

ELL 147.10 58 ePKP 14 40.00 1.3

CHG 148.06 268 ePKP 14 40.00 -0.5

S.D. = 1.2 on 37 of 43 obs.

\* MAR 31, 1990 10h 02m 15.48±2.66s

2.779 S ±15.9km 79.403 W ±27.8km

DEPTH = 85.6 ±21.3 km

4.4mb (4 obs.)

NEAR COAST OF ECUADOR (105)

TUNG 1.66 35 iP 02 42.30 -1.5

eS 03 04.50

VC1 2.35 25 P 02 53.00 -0.4

OUR 2.73 19 eP 02 58.80 0.3

CAYA 3.17 27 eP 03 10.00 5.3X

COTA 3.27 19 eP 03 06.50 0.5

CUMC 4.02 22 eP 03 17.84 1.4

HOOC 6.79 24 eP 03 50.68 -4.1X

ZOBO 17.40 141 eP 06 16.00 1.1

Z 22s 0.16um

LR 13 48.00

LPB 17.62 142 P 06 21.00 3.6X

CCH 19.50 139 eP 06 38.00 -0.9

SIV 22.31 127 P 07 07.00 -0.1

TUL 41.43 340 e(P) 09 54.60 -0.6

1.0s 5.30nm 4.3mb

ALO 45.30 328 eP 10 27.30 0.5

0.7s 4.28nm 4.4mb

PNT 62.44 332 eP 12 32.00 0.3

0.5s 2.00nm 4.4mb

EDM 62.63 338 iPd 12 32.00 -1.0

YKA 70.35 343 eP 13 20.20 -1.5

0.6s 1.60nm 4.1mb

KIC 75.09 83 P 13 50.50 0.0

INK 80.04 342 ePd 14 17.30 0.6

pP 14 33.00 56kmX

MBC 82.15 351 eP 14 29.00 1.3

S.D. = 1.0 on 16 of 19 obs.

? MAR 31, 1990 10h 02m 33.28±0.97s

39.607 N ±9.9km 29.359 E ±9.3km

DEPTH = 10.0km (geophysicist)

TURKEY (366)

DST 0.56 270 ePg 02 44.50 -0.3

eSg 02 54.50

ALT 0.80 133 ePn 02 49.00 0.1

YLV 0.96 1 iPn 02 51.30 -0.3

KCT 1.00 310 iPn 02 52.80 0.5

S.D. = 0.6 on 4 of 4 obs.

% MAR 31, 1990 10h 33m 42.54±2.22s

40.010 N ±14.1km 23.889 E ±20.2km



31d 10h

TRI 1.70 259 iPd 57 24.60 0.5  
i 57 47.30  
KBA 2.20 299 ePn 57 30.00 -1.4  
i 57 31.30  
i 57 35.70  
i(Sg) 58 07.40  
ZST 2.24 16 eP 58 05.40 33.5X  
e 30 08.50  
i 30 19.00  
SRO 2.30 39 eP 58 34.90 62.1X  
KHC 3.54 331 Pn 57 51.00 0.6  
Sn 58 31.30  
Sg 58 48.50  
S.D. = 0.7 on 9 of 11 obs.

\* MAR 31, 1990 11h 01m 09.86±3.09s  
44.504 N ±12.2km 6.719 E ±23.7km  
DEPTH = 10.0km (geophysicist)  
FRANCE (538)  
ML 2.3 (GEN).

FOUF 0.05 61 iPg 01 12.25 0.2  
PZZ 0.27 90 P 01 15.54 -0.1  
S 01 19.04  
RRL 0.42 6 P 01 18.36 -0.1  
S 01 24.41  
STV 0.51 121 P 01 20.00 -0.1  
S 01 26.77  
ENR 0.57 119 P 01 21.74 0.2  
S 01 28.72  
RSP 0.75 30 P 01 24.69 0.0  
S 01 34.22  
S.D. = 0.2 on 6 of 6 obs.

% MAR 31, 1990 11h 26m 11.33±1.09s  
39.879 N ±8.2km 24.071 E ±7.2km  
DEPTH = 10.0km (geophysicist)  
AEGEAN SEA (365)  
ML 2.5 (THE).

PAIG 0.31 279 iPg 26 16.90 -0.8  
iSg 26 20.40  
OUR 0.46 351 iPg 26 20.50 -0.2  
THE 1.13 312 ePbc 26 32.90 0.4  
eSb 26 46.60  
LIT 1.24 281 ePbc 26 34.10 -0.2  
eSb 26 50.20  
SRS 1.29 344 ePb 26 35.10 -0.1  
eSb 26 52.40  
KNT 1.56 325 ePbc 26 40.00 0.8  
eSb 26 59.30  
AGG 1.60 238 ePb 26 40.10 0.4  
ALN 1.82 55 ePn 26 42.60 -0.3  
S.D. = 0.6 on 8 of 8 obs.

\* MAR 31, 1990 12h 12m 23.79±0.57s  
53.889 N ±12.0km 163.413 E ±10.3km  
DEPTH = 33.0km (normal)  
4.5mb (13 obs.)  
OFF EAST COAST OF KAMCHATKA (219)

TTA 22.72 50 P 17 24.00 0.4  
IMA 24.11 43 P 17 37.40 0.2  
0.7s 10.17nm 4.5mb  
BRW 24.56 30 P 17 42.50 1.2  
MAT 24.61 235 (P) 17 43.00 0.9  
1.0s 11.00nm 4.4mb  
FBA 26.45 46 P 17 59.00 0.0  
0.6s 24.01nm 5.0mb  
INK 32.02 39 ePd 18 48.60 -0.1  
MBC 35.52 24 eP 19 19.50 0.6  
0.7s 4.00nm 4.5mb  
YKA 41.22 44 eP 20 06.90 0.4  
0.5s 1.20nm 3.9mb  
PNT 45.83 63 eP 20 44.00 0.0  
0.6s 4.00nm 4.5mb  
KVN 53.29 72 P 21 41.40 -0.3  
TNP 54.46 72 P 21 49.90 -0.4  
0.7s 3.43nm 4.5mb  
FRB 55.97 25 eP 21 59.00 -1.6  
SUF 59.00 339 eP 22 22.30 0.3  
0.5s 3.20nm 4.7mb  
CHG 60.00 261 eP 22 36.50 7.1X  
NB2 63.31 345 P 22 50.60 -0.6  
0.9s 4.80nm 4.6mb  
HFS 63.77 344 eP 22 52.70 -1.5  
0.5s 3.50nm 4.7mb

EKA 70.58 352 P 23 38.00 1.0  
1.3s 7.10nm 4.6mb  
KHC 74.24 340 eP 24 05.20 6.4X  
GBA 76.78 275 Pc 24 19.70 6.1X  
0.3s 0.80nm 4.2mb  
WRA 77.68 208 P 24 18.00 -0.4  
1.2s 2.00nm 4.0mb  
S.D. = 0.8 on 17 of 20 obs.

? MAR 31, 1990 12h 14m 16.29±0.99s  
39.155 N ±8.7km 27.627 E ±15.9km  
DEPTH = 10.0km (geophysicist)  
TURKEY (366)

IZM 0.81 201 ePg 14 32.00 0.0  
eSg 14 43.00  
DST 0.90 60 ePn 14 33.50 0.0  
EDC 1.20 9 ePn 14 38.50 -0.2  
BNT 1.22 11 iPn 14 39.20 0.2  
S.D. = 0.3 on 4 of 4 obs.

\* MAR 31, 1990 12h 20m 14.79±1.40s  
8.196 N ±26.7km 126.428 E ±11.1km  
DEPTH = 33.0km (normal)  
4.5mb (8 obs.)  
MINDANAO, PHILIPPINE ISLANDS (259)

LOE 25.74 293 eP 25 45.00 0.8  
CHTO 28.69 294 eP 26 10.50 -0.6  
1.0s 5.25nm 4.2mb  
MAT 30.19 19 eP 26 25.00 0.6  
0.8s 9.70nm 4.7mb  
BJI 33.01 345 eP 26 48.50 -0.5  
1.0s 10.00nm 4.7mb  
GUN 42.98 302 P 28 13.80 0.6  
0.6s 21.00nm 5.0mb  
PKI 43.26 302 P 28 14.90 -0.6  
KKN 43.44 302 P 28 17.00 0.2  
DMN 43.53 302 P 28 17.80 0.2  
GKN 44.05 302 P 28 21.80 0.1  
GBA 48.34 281 Pc 28 56.00 0.4  
0.7s 3.00nm 4.4mb  
MAIO 66.62 306 eP 31 04.00 -0.6  
INK 86.14 22 eP 32 54.00 0.5  
MBC 87.69 13 eP 33 01.00 0.1  
0.8s 7.00nm 5.0mb  
HFS 93.95 332 eP 33 29.80 -0.5  
0.5s 0.70nm 4.3mb  
YKA 95.58 24 eP 33 37.40 -0.4  
0.7s 0.90nm 4.3mb  
S.D. = 0.5 on 15 of 15 obs.

? MAR 31, 1990 12h 58m 51.41±1.01s  
39.094 N ±9.2km 27.597 E ±17.1km  
DEPTH = 10.0km (geophysicist)  
TURKEY (366)

IZM 0.74 201 ePg 59 06.00 0.0  
eSg 59 18.00  
DST 0.95 57 ePn 59 09.50 0.0  
EDC 1.27 9 iPn 59 14.50 -0.4  
BNT 1.29 11 iPn 59 15.70 0.5  
S.D. = 0.6 on 4 of 4 obs.

& MAR 31, 1990 13h 28m 59.20s  
36.148 N 120.748 W  
DEPTH = 9.0km  
CENTRAL CALIFORNIA (39)  
<BRK>. ML 2.9 (BRK).

PRI 0.07 95 iPc 29 01.50 0.0  
PHAM 0.42 138 iPd 29 07.80 0.0  
LLA 0.49 341 iPd 29 09.00 -0.2  
PKEM 0.52 99 eP 29 10.20 0.4  
PRS 0.54 290 iPc 29 09.20 -0.8  
SAO 0.83 318 eP 29 14.10 -1.3  
BCH 1.10 150 eP 29 19.40 -0.7  
FRI 1.19 45 eP 29 20.10 -1.3  
eS 29 35.00  
GCC 1.34 312 eP 29 21.70 -2.2  
ARN 1.35 333 eP 29 22.60 -1.6  
MHC 1.39 329 eP 29 23.60 -1.3  
ABL 1.80 136 eP 29 29.20 -1.6  
CMB 1.91 9 eP 29 30.90 -1.3  
BKS 2.10 326 e(P) 29 33.30 -1.6  
TNP 3.42 55 eP 29 57.00 3.1  
KVN 3.58 35 eP 29 58.20 2.0

16 obs. associated

MAR 31, 1990 13h 48m 34.03±0.31s  
39.968 N ±3.6km 23.985 E ±2.7km  
DEPTH = 10.0km (geophysicist)  
3.7mb (1 obs.)  
AEGEAN SEA (365)  
ML 3.7 (THE), 3.5 (ATH).

PAIG 0.24 260 iPg 48 38.70 -0.4  
iSg 48 42.10  
OUR 0.37 360 iPg 48 42.60 1.1  
PLG 0.58 315 ePg 48 44.80 -1.0  
NEO 0.88 222 ePg 48 50.70 -0.3  
THE 1.02 311 ePbc 48 53.50 0.1  
iSb 49 08.10  
LIT 1.16 277 ePbc 48 55.50 -0.1  
iSb 49 12.58  
SRS 1.19 346 ePbc 48 56.50 0.3  
eSb 49 13.50  
KNT 1.45 326 ePbc 49 00.70 0.4  
eSb 49 21.20  
AGG 1.59 234 ePb 49 01.30 -1.0  
RDO 1.67 45 ePb 49 02.70 -0.7  
VAY 1.73 322 iPn 49 04.40 0.1  
KZN 1.73 282 ePb 49 04.50 0.1  
EZN 1.81 94 iPn 49 05.60 0.2  
ALN 1.83 59 ePn 49 05.10 -0.6  
eSn 49 28.10  
PRK 1.91 111 ePg 49 10.20 3.3X  
ATH 2.00 186 ePn 49 07.00 -1.3  
FNA 2.15 293 ePn 49 10.80 0.3  
MFT 2.65 71 iPn 49 18.20 0.6  
OHR 2.68 296 ePn 49 18.30 0.2  
SKO 2.78 317 iPn 49 19.20 -0.2  
IZM 2.99 121 ePn 49 23.00 0.6  
EDC 3.00 82 ePn 49 28.50 6.1X  
BNT 3.04 81 iPn 49 27.70 4.6X  
ITM 3.22 211 ePn 49 26.50 0.9  
KEK 3.23 267 ePn 49 27.80 2.0  
DMK 3.41 56 ePn 49 27.70 -0.6  
CTT 3.59 69 ePn 49 32.00 1.2  
DST 3.60 94 ePn 49 32.50 1.5  
YLV 4.17 80 ePn 49 37.00 -2.1  
DRA 4.71 2 ePd 49 46.00 -0.8  
ALT 4.82 99 eP 49 49.00 0.5  
CMP 5.35 8 ePc 49 53.00 -2.9X  
MLR 5.71 14 eP 50 00.00 -1.0  
BZS 5.91 344 ePc 50 01.00 -2.6X  
MGR 6.47 274 P 50 11.50 -0.2  
eSn 51 22.00  
NB2 22.52 344 P 53 35.10 0.0  
0.8s 2.40nm 3.7mb  
S.D. = 0.9 on 31 of 36 obs.

MAR 31, 1990 14h 08m 02.58±0.50s  
16.451 N ±5.9km 145.800 E ±10.3km  
DEPTH = 33.0km (normal)  
4.7mb (10 obs.) 3.8Msz (1 obs.)  
MARIANA ISLANDS (216)

GUMO 2.99 198 eP 08 49.10 0.4  
PJG 2.99 198 eP 08 48.60 -0.1  
GUA 3.02 197 eP 08 49.30 0.1  
e 08 54.30  
eS 09 24.00  
MAT 21.12 343 iPd 12 45.30 -1.5  
0.9s 8.40nm 4.1mb  
eS 16 27.00  
SSE 26.75 307 P 13 40.30 -0.8  
Z 20s 0.30um 3.8Msz  
N 10s 0.20um  
pP 13 46.00 20kmX  
eS 18 16.00  
BJI 34.84 318 eP 14 52.50 -0.1  
1.5s 66.00nm 5.3mb  
TIY 36.19 312 eP 15 05.40 1.1  
N 15s 0.40um  
E 26s 0.70um  
XAN 37.42 305 P 15 14.80 0.2  
GYA 37.63 292 eP 15 20.60 4.1X  
WB5 37.81 198 eP 15 17.80 -0.1  
WRA 37.88 198 Pd 15 16.80 -1.7  
1.1s 3.90nm 4.2mb  
HHC 38.26 316 eP 15 22.50 0.9  
BTO 39.18 315 eP 15 30.00 0.7  
LZH 42.01 306 eP 15 54.00 1.3



2.0s 56.00nm 4.9mb  
 CHTO 44.62 280 eP 15 59.60 19kmX  
 0.9s 4.48nm 4.3mb  
 GTA 46.01 309 P 16 26.00 1.1  
 LSA 51.55 295 eP 17 05.20 -3.2X  
 WMO 55.86 312 iP 17 40.00 0.5  
 GUN 56.17 293 P 17 42.00 -0.3  
 0.8s 21.00nm 5.2mb  
 PKI 56.60 292 P 17 44.40 -0.9  
 KKN 56.71 293 P 17 45.40 -0.6  
 GKN 57.27 293 P 17 49.40 -0.5  
 0.9s 34.00nm 5.4mb  
 HYB 64.02 282 eP 18 36.00 0.3  
 GBA 65.81 278 P 18 46.80 -0.4  
 0.8s 2.60nm 4.4mb  
 KOD 66.52 274 eP 18 52.50 0.3  
 POO 68.22 284 eP 19 01.50 -1.1  
 MBC 75.29 14 eP 19 42.00 -1.7  
 YKA 79.92 28 eP 20 08.00 -1.5  
 0.7s 3.70nm 4.5mb  
 PNT 80.64 41 eP 20 14.00 0.4  
 LRM 86.30 43 eP 20 42.50 -0.4  
 FFC 88.93 32 eP 20 56.00 1.0  
 0.8s 8.00nm 5.1mb  
 ZOBO 147.47 95 PKP 27 47.00 3.2  
 S.D. = 1.1 on 30 of 32 obs.

& MAR 31, 1990 14h 16m 16.41s  
 60.003 N 152.609 W  
 DEPTH = 83.7km  
 SOUTHERN ALASKA ( 2 )  
 <AGS-P>.

RED 0.43 349 eP 16 29.59 -0.6  
 RDT 0.58 10 iP 16 30.84 -0.7  
 eS 16 42.43  
 >NNL 0.66 86 iP 16 32.67 0.5  
 XLV 0.71 140 eP 16 31.90 -0.8  
 eS 16 45.07  
 AUL 0.75 214 eP 16 32.39 -0.7  
 eS 16 45.82  
 AUE 0.75 211 eP 16 32.20 -0.9  
 PDB 0.83 256 iP 16 32.95 -1.0  
 eS 16 45.94  
 CNPM 0.84 124 eP 16 33.53 -0.6  
 eS 16 47.27  
 BRK 0.90 105 eP 16 34.04 -0.8  
 eS 16 49.16  
 NKA 1.01 42 eP 16 37.29 1.3  
 CDD 1.20 207 eP 16 36.96 -1.5  
 CKL 1.21 6 iP 16 37.94 -0.7  
 BGL 1.27 5 iP 16 38.85 -0.5  
 CRP 1.29 10 eP 16 39.16 -0.5  
 SLKM 1.29 66 eP 16 38.86 -0.8  
 eS 16 57.30  
 BGM 1.46 246 eP 16 40.09 -1.7  
 SEW 1.59 85 eP 16 42.04 -1.4  
 SUA 1.73 31 eP 16 44.87 -0.6  
 SVW 1.86 308 iPd 16 45.20 -1.9  
 PMS 1.95 49 iP 16 47.70 -0.6  
 SKT 2.05 14 eP 16 48.59 -1.1  
 PWA 2.13 38 ePd 16 50.60 -2.0  
 KDC 2.26 178 iPd 16 49.90 0.6  
 PLRM 2.33 45 eP 16 52.01 -1.5  
 PMR 2.33 45 eP 16 51.90 -1.6  
 GHO 2.53 44 eP 16 54.67 -1.6  
 CUT 2.66 24 eP 16 57.13 -0.9  
 GLI 2.87 70 eP 16 57.90 -3.0  
 VZW 3.17 68 eP 17 02.49 -2.6  
 HUR 3.31 24 eP 17 06.24 -0.7  
 TTA 3.36 332 ePd 17 05.60 -2.1  
 NCA 3.45 52 eP 17 07.01 -2.0  
 KLU 3.61 63 eP 17 08.43 -2.7  
 KTH 3.65 12 eP 17 10.50 -1.3  
 TOA 3.77 53 iPd 17 11.80 -1.6  
 RND 3.85 26 eP 17 13.62 -1.0  
 MCK 4.13 23 eP 17 16.57 -1.8  
 PAX 4.54 46 eP 17 22.14 -2.0  
 GLB 4.56 68 eP 17 20.92 -3.5  
 TGL 4.91 77 eP 17 27.41 -2.0  
 HDA 5.15 28 eP 17 30.48 -2.1  
 CCB 5.17 24 eP 17 30.50 -2.3  
 FBA 5.40 22 eP 17 33.80 -2.2  
 IMA 6.11 356 iP 17 44.10 -1.9  
 PCA 6.19 84 eP 17 44.71 -2.4  
 INK 11.72 37 eP 19 01.00 -1.0

pP 19 20.00  
 46 obs. associated  
 MAR 31, 1990 16h 37m 13.96±0.96s  
 39.942 N ± 6.3km 23.877 E ± 7.6km  
 DEPTH = 10.0km (geophysicist)  
 AEGEAN SEA (365)  
 ML 3.0 (THE). MD 3.4 (ATH).  
 PAIG 0.15 264 iPg 37 17.60 0.1  
 iSg 37 20.90  
 OUR 0.40 12 iPg 37 21.60 -0.5  
 PLG 0.54 323 ePg 37 23.30 -1.7  
 NEO 0.81 219 ePg 37 29.40 -0.3  
 eSg 37 41.00  
 THE 0.98 315 ePb 37 32.90 0.3  
 eSb 37 47.20  
 LIT 1.08 279 ePbc 37 34.70 0.5  
 eSb 37 50.80  
 SRS 1.19 350 ePbc 37 35.90 -0.3  
 eSb 37 55.30  
 KNT 1.43 329 ePbd 37 40.00 0.1  
 eSb 38 00.20  
 AGG 1.51 233 ePbc 37 40.10 -1.0  
 KZN 1.66 283 ePn 37 43.00 -0.2  
 VAY 1.70 325 ePn 37 44.20 0.4  
 RDO 1.75 46 ePb 37 45.10 0.7  
 PRK 1.98 110 ePb 37 51.20 3.4X  
 FNA 2.09 295 ePn 37 51.50 2.0  
 eS 38 20.60  
 OHR 2.62 297 ePn 38 02.80 5.7X  
 SKO 2.74 318 ePn 38 06.50 7.7X  
 S.D. = 1.0 on 13 of 16 obs.

\* MAR 31, 1990 16h 54m 51.08±0.37s  
 16.006 S ± 11.5km 167.805 E ± 7.4km  
 DEPTH = 33.0km (normal)  
 4.8mb ( 6 obs.) 4.0msz ( 1 obs.)  
 VANUATU ISLANDS (186)  
 HNR 10.07 310 eP 57 19.00 2.4  
 RMO 20.57 236 eP 59 31.00 1.2  
 CTA 20.88 256 eP 59 34.00 0.9  
 iS 03 36.00  
 BWA 25.29 220 eP 00 15.10 -1.2  
 CAN 25.55 218 eP 00 22.10 3.4X  
 WB5 32.01 258 eP 01 16.30 -0.6  
 WRA 32.04 258 P 01 16.10 -1.0  
 0.8s 3.50nm 4.3mb  
 ASPA 32.73 251 iPd 01 22.40 -0.7  
 0.8s 61.00nm 5.6mb  
 Z 18s 0.31um 4.0msz  
 LR 13 15.40  
 MAT 59.27 332 eP 04 50.00 -1.9  
 0.9s 9.24nm 4.9mb  
 CN2 71.00 329 P 06 06.30 -1.2  
 BJI 73.58 321 eP 06 22.00 -0.8  
 TIY 74.54 317 P 06 28.90 0.3  
 XAN 74.93 313 P 06 30.40 -0.5  
 CHTO 76.07 294 eP 06 37.00 -0.6  
 PRS 84.64 50 eP 07 23.30 0.5  
 MHC 84.85 49 eP 07 24.40 0.3  
 PRI 85.08 50 eP 07 26.00 0.8  
 CMB 86.05 49 eP 07 30.00 0.1  
 FRI 86.13 50 eP 07 30.20 0.0  
 ISA 86.53 52 eP 07 32.00 -0.4  
 SBB 86.66 53 eP 07 33.00 0.0  
 RVR 86.75 53 eP 07 34.00 0.7  
 PLM 86.91 54 eP 07 34.00 -0.4  
 CLC 87.25 52 eP 07 36.00 0.2  
 FBA 87.41 17 eP 07 34.00 -1.9  
 0.9s 4.58nm 4.7mb  
 GSC 87.66 52 eP 07 44.00 6.1X  
 TPC 87.81 54 eP 07 39.00 0.4  
 KVN 88.09 49 eP 07 40.00 0.0  
 TNP 88.37 50 eP 07 41.10 -0.3  
 1.5s 15.15nm 5.1mb  
 GLA 88.40 55 eP 07 42.00 0.6  
 PNT 91.08 39 eP 07 54.00 0.5  
 YKA 98.44 27 eP 08 25.60 -1.1  
 0.8s 1.60nm 4.6mb  
 VAI 145.44 334 PKP 14 26.30 -1.0  
 PGD 145.59 329 PKP 14 34.50 6.5X  
 BOB 146.01 332 PKP 14 31.00 2.5  
 LOR 146.11 340 ePKP 14 28.30 -0.2  
 0.8s 4.05nm  
 LBF 146.32 340 ePKP 14 28.70 -0.2

1.0s 4.00nm  
 SSF 146.40 340 ePKP 14 29.20 0.2  
 0.8s 5.35nm  
 LPL 146.56 336 ePKP 14 33.00 3.4X  
 0.9s 4.90nm  
 LPG 146.57 336 ePKP 14 33.00 3.3X  
 0.6s 3.60nm  
 BNI 146.97 335 PKP 14 30.50 0.4  
 BAO 147.70 252 iPKPd 14 34.00 1.9  
 0.7s 9.00nm  
 id 14 38.90  
 LSF 147.74 342 ePKP 14 28.30 -2.8X  
 1.0s 8.00nm  
 S.D. = 1.0 on 37 of 43 obs.  
 \* MAR 31, 1990 16h 58m 45.44±1.21s  
 35.269 N ± 7.7km 4.541 W ± 14.6km  
 DEPTH = 10.0km (geophysicist)  
 STRAIT OF GIBRALTAR (385)  
 mbLg 2.5 (MDD).  
 NKM 0.73 284 iPg 59 00.00 0.2  
 iSg 59 08.00  
 EJIF 1.40 328 eP 59 11.20 0.2  
 IFR 1.81 196 iPg 59 18.50 1.4  
 iSg 59 39.00  
 EBAN 2.95 12 iP 59 33.00 -0.2  
 AVE 3.09 231 ePn 59 35.00 -0.1  
 iSn 00 04.00  
 TIO 4.90 209 iPn 59 59.50 -1.5  
 iSn 00 51.00  
 S.D. = 1.2 on 6 of 6 obs.

MAR 31, 1990 17h 42m 01.14±0.60s  
 36.229 N ± 6.7km 137.868 E ± 5.6km  
 DEPTH = 16.3 ± 6.2 km  
 4.4mb ( 4 obs.) 4.1msz ( 1 obs.)  
 HONSHU, JAPAN (227)  
 MTMJ 0.36 352 iP+ 42 07.00 -1.8  
 S 42 12.20  
 MAT 0.42 41 iPc 42 10.10 0.4  
 iS 42 17.30  
 IIDJ 0.75 177 iPd 42 14.70 -0.7  
 S 42 25.40  
 CHJJ 0.93 101 iP+ 42 19.90 1.5  
 S 42 35.00  
 NIJJ 1.36 42 iP+ 42 26.60 1.3  
 S 42 47.70  
 TSRJ 1.68 246 iP+ 42 29.20 -0.8  
 S 42 50.70  
 KAKJ 1.86 90 iPd 42 35.60 3.0X  
 S 43 02.30  
 WKYJ 2.74 224 P 42 44.70 -0.5  
 SHK 4.57 250 eP 43 11.00 -0.1  
 CN2 12.15 312 Pd 44 57.40 1.0  
 TIA 16.74 276 eP 45 56.80 0.4  
 BJI 17.48 289 eP 46 07.00 1.4  
 1.5s 26.00nm 4.1mb  
 TIY 20.36 282 eP 46 40.40 0.8  
 Z 20s 0.80um 4.1msz  
 N 15s 0.40um  
 WHN 20.42 261 eP 46 40.50 0.4  
 E 14s 0.70um  
 pP 46 45.00 17kmX  
 XAN 23.74 273 eP 47 14.10 0.8  
 INK 56.39 27 ePd 51 42.90 -0.6  
 MBC 58.09 16 eP 51 54.50 -0.9  
 1.0s 7.00nm 4.7mb  
 YKA 65.91 29 eP 52 46.60 -1.3  
 0.9s 1.40nm 4.1mb  
 FFC 75.90 31 eP 53 47.00 -1.2  
 1.2s 14.00nm 4.9mb  
 S.D. = 1.1 on 18 of 19 obs.  
 & MAR 31, 1990 17h 45m 05.63s  
 62.835 N 150.546 W  
 DEPTH = 83.4km  
 CENTRAL ALASKA ( 1 )  
 <AGS-P>.  
 HUR 0.44 71 iP 45 19.58 0.1  
 eS 45 29.85  
 CUT 0.45 163 iP 45 19.85 0.4  
 eS 45 30.53  
 KTH 0.74 347 iP 45 22.18 -0.1  
 iS 45 34.85







Z	16s	24.20um	6.0MszX	GUN	50.94	274	P	40	45.00	-0.1			LR	15	10.00					
E	15s	15.90um		KKN	51.44	274	P	40	48.60	-0.2	ARN	66.77	60	P	42	36.50	1.7			
		sP	38	52.00	FRU	51.44	296	iPc	40	48.00	-0.4	LRM	67.02	48	ePc	42	36.20	-0.3		
		PP	39	58.00				eS	48	06.00		CMB	67.09	59	eP	42	36.68	-0.1		
		S	44	02.00	PKI	51.47	274	P	40	48.70	-0.4				e	42	41.32	15kmX		
		eS	44	17.00	DMN	51.67	274	P	40	50.40	-0.2	GDH	67.15	8	iPd	42	34.90	-1.6		
OCP	35.88	226	eP	38	36.20	-7.0X	GKN	51.79	275	P	40	51.20	-0.2							
CD2	36.20	265	P	38	45.50	-0.3	PMG	52.05	180	eP	41	02.00	9.0X							
	5.0s	1600.00nm		6.2mb X	KSH	52.08	292	iPd	40	54.00	0.7				i	42	47.00	41kmX		
				5.7MszX		6.0s	2400.00nm		6.3mb X						i	51	26.00			
Z	14s	10.20um				16s	42.60um		6.6MszX		ASPA	67.31	193	iPd	42	38.90	0.8			
N	15s	25.90um				E	14s	27.90um				0.6s	13.00nm				5.3mb			
		PP	40	12.50				ePcP	42	06.00				eS	51	30.70				
GYA	36.59	257	iPc	38	49.20	-0.1		PP	42	57.00		PRS	67.49	61	eP	42	39.70	0.4		
	5.0s	1400.00nm		6.1mb X				S	48	18.00		KVN	67.89	57	iPc	42	42.00	0.0		
Z	20s	16.90um		5.8Msz	HNR	53.40	164	eP	41	03.00	-0.1	KOD	68.10	264	eP	42	43.30	-0.4		
N	18s	18.60um			SNG	54.02	243	eP	41	08.70	1.0	FRI	68.15	59	eP	42	43.50	0.2		
E	18s	27.50um						eS	48	47.20		RMQ	69.05	178	e(P)	42	50.00	1.2		
		pP	39	00.20	39kmX	KBS	55.62	350	iPc	41	16.50	-2.2			e	42	55.00	16kmX		
		PP	40	17.00		IPM	55.72	240	ePc	41	22.40	2.2	IMW	69.07	49	P	42	49.00	-0.3	
		S	44	24.40		YKA	56.59	33	eP	41	25.20	-0.7	UPP	69.49	335	iPc	42	49.60	-1.6	
		ScS	49	03.40			1.5s	46.60nm		5.3mb			1.5s	700.00nm				6.6mb		
TTA	38.18	38	eP	39	02.40	0.2	NDI	56.82	280	iPc	41	27.10	-0.9			iS	51	58.00		
QIZ	39.27	244	Pc	39	13.50	1.8		ePP	43	32.80		SYP	69.49	62	eP	42	52.00	0.1		
								eS	49	19.20		FRB	70.04	16	eP	42	52.50	-2.0		
E	17s	25.80um				MTN	57.33	198	eP	41	33.00	1.5		1.0s	154.00nm			6.1mb		
		sP	39	27.00		APA	59.14	336	iPd	41	42.30	-1.4	BRS	70.14	175	iP	43	03.00	7.5X	
		PP	40	49.00				eS	49	58.50				e(PP)	45	24.00				
		S	45	15.00		KEV	59.47	340	iP	41	55.00	9.0X			iS	52	09.00			
		SS	45	31.00										i(SS)	56	36.00				
BRW	39.33	25	eP	39	11.20	-0.4	Z	20s	1.80um		5.2Msz		CLC	70.21	59	eP	42	56.00	-0.1	
IMA	39.47	34	ePc	39	13.20	0.2			e	49	56.00				e	45	52.00			
	1.0s	155.00nm		5.7mb				e	51	38.00										
KDC	39.98	47	e(P)	39	16.20	-0.9			54	12.00		NB2	70.36	339	P	42	55.20	-1.3		
KMI	40.21	258	iPc	39	20.20	0.5			LR	12	22.00			1.2s	280.50nm			6.3mb		
							GMW	60.22	51	P	41	51.70	0.3	HFS	70.43	337	eP	42	55.20	-1.7
Z	20s	6.20um		5.5Msz		DAG	60.27	356	iPc	41	49.00	-2.4		0.5s	32.20nm			5.7mb		
N	14s	7.00um					1.5s	372.22nm		6.3mb		Z	17s	10.92um				6.2MszX		
E	14s	8.40um				Z	19s	7.08um		5.8Msz				LR	10	02.00				
		epP	39	27.32	24kmX							BW06	70.56	49	iPc	42	57.00	-1.4		
		ePP	40	53.07		RMW	60.83	51	P	41	55.50	-0.2			iPc	42	59.00	-0.2		
		eS	45	25.75		PNT	61.04	48	iP	41	57.00	0.0	IR2	70.71	301	iPc	42	59.00	-0.2	
DAV	40.34	214	eP	39	22.00	1.5		1.1s	58.00nm		5.6mb	SBB	70.78	60	eP	43	01.00	1.4		
PMR	41.39	41	eP	39	28.60	0.0						PAS	70.90	61	eP	43	01.00	0.8		
	2.0s	171.90nm		5.4mb		SOD	61.21	338	iP	41	55.90	-1.9	PAS	70.90	61	ePc	42	57.79	-2.4	
Z	20s	6.50um		5.5Msz		LON	61.21	52	ePc	41	57.47	-0.8			eP	43	04.24	21kmX		
COL	41.87	35	iPc	39	32.15	-0.4	TRO	61.53	342	eP	41	59.50	-0.5	MWC	70.92	61	eP	43	01.00	0.4
		e	39	35.30		EDM	62.13	42	ePc	42	03.00	-1.3			iPc	43	01.00	0.1		
		epP	39	38.94	23kmX	HYB	62.62	269	iPc	42	07.00	-1.0	GSC	71.04	59	eP	43	02.00	0.8	
		iS	45	50.52			1.4s	212.50nm		6.1mb				e	45	48.00				
		eHSS	49	05.85		CTA	62.67	181	eP	42	23.00	15.0X	DAU	71.13	52	P	43	02.00	0.0	
		iSS	49	07.09			1.6s	120.00nm				AKU	71.14	354	iP	43	01.90	0.8		
FBA	41.87	35	eP	39	32.80	0.3		iS	50	33.00			2.0s	635.29nm				6.4mb		
WMO	42.29	292	iPc	39	36.72	0.3	NEW	63.00	48	iPd	42	09.00	-1.2	IR5	71.20	301	eP	43	02.00	-0.2
							1.2s	75.76nm		5.7mb		RVR	71.51	61	eP	43	03.00	-0.9		
Z	17s	50.20um		6.5MszX		FHC	63.21	58	P	42	12.00	0.4	PEC	71.71	61	P	43	04.80	-0.4	
N	13s	12.10um					1.5s	233.33nm		6.1mb		MSU	71.82	54	P	43	06.50	0.5		
E	13s	40.70um				WB5	63.53	193	eP	42	13.00	-0.7	TAB	71.99	305	iP+	43	08.00	1.1	
		epP	39	42.85	21kmX	WRA	63.59	193	Pc	42	13.30	-0.9	PLM	72.24	61	eP	43	08.00	-0.5	
		eS	45	56.55			0.7s	16.30nm		5.3mb		TPC	72.28	60	eP	43	08.00	-0.6		
		eHSS	49	20.16		WDC	64.24	58	eP	42	18.70	0.3	BER	72.40	341	iPd	43	09.20	0.5	
LOE	45.92	251	iPc	40	06.00	0.3	SUF	64.64	334	eP	42	18.90	-1.7	RSSD	72.65	46	ePd	43	09.80	-1.0
LSA	46.09	272	P	40	07.00	-0.6		0.9s	53.90nm		5.7mb	RSON	72.76	35	ePd	43	09.00	-2.0		
						MAIO	64.79	297	iPc+	42	21.60	-0.5		1.4s	157.17nm			5.9mb		
		PP	41	55.00				eS	51	08.00		Z	20s	5.88um				5.9Msz		
		eS	46	51.00		SES	64.95	44	ePc	42	22.00	-0.9	BAR	72.80	61	eP	43	12.00	0.4	
TSM	46.27	222	eP	40	10.20	1.7		1.4s	168.00nm		6.0mb	GLA	73.74	60	eP	43	18.00	0.9		
CHG	46.92	255	iPc	40	14.80	1.1	MIN	64.96	57	e(P)	42	23.50	0.3	KER	73.93	302	iPc	43	18.70	0.4
	1.2s	72.27nm		5.6mb		PUL	65.29	330	iPd	42	25.00	0.2	SIM	74.05	317	eP	43	18.00	-0.6	
								eS	51	05.00				eS	52	46.00				
CHTO	46.92	255	iPc	40	14.59	0.9	POO	65.37	273	iPc	42	24.30	-1.7	SLY	74.10	304	iPd	43	19.50	0.4
		epPd	40	21.38	23kmX			iS	51	08.00				iPcP	43	39.00				
		eHPP	42	03.79		ORV	65.48	58	e(P)	42	26.50	0.1			eS	52	49.00			
		ePP	42	04.34		GBA	65.90	266	P	42	30.00	0.7			iScS	53	09.00			
HYT	47.07	40	P	40	15.70	1.2		0.9s	38.40nm		5.5mb	COP	74.52	335	iPc	43	20.40	-0.7		
RAB	47.10	173	e(P)	40	16.00	1.0	BOM	65.90	274	iP	42	28.90	-0.4		0.8s	143.28nm			6.1mb	
		iS	47	12.00				eS	51	13.50				iS	53	01.00				
INK	47.21	30	iPc	40	15.60	0.2	OBN	65.93	324	iPc	42	27.40	-1.5	GOL	74.96	50	P	43	24.00	-0.4
	1.0s	127.00nm		5.9mb			1.8s	1100.00nm		6.7mb			1.2s	25.61nm				5.1mb		
BDT	47.93	253	eP	40	20.00	-1.6	Z	18s	22.20um		6.4Msz		Z	18s	3.34um				5.7Msz	
NST	48.21	250	eP	40	26.00	2.2			iS	51	09.00		MSL	75.00	306	iPd	43	24.80	0.5	
SIT	49.20	45	e(P)	40	31.80	0.9	FFC	66.47	36	iPc	42	31.90	-0.6			ePcP	43	33.50		
MBC	49.67	18	ePd	40	33.80	-0.6		1.6s	231.00nm		6.1mb			eS	53	01.50				
	1.5s	259.00nm		6.0mb		MHC	66.71	60	eP	42	34.70	0.2			eScS	53	14.50			
HON	50.36	97	P	40	45.00	4.7X	NUR	66.74	333	iP	42	32.80	-1.3			e	53	18.50		
							1.1s	175.10nm		6.1mb				ePS	53	37.00				
Z	20s	11.44um		5.9Msz		Z	16s	17.10um		6.4MszX		GLD	75.01	49	P	43	24.00	-0.6		
NNT	50.65	248	iPc	40	53.20	10.7X			e	51	22.00		Z	18s	4.60um				5.8Msz	



31d 19h

KVT	75.79	313	iP	43	28.90	0.1	ITU	79.41	317	iPc	43	48.00	-0.7	eSP	55	00.00				
BIR	76.20	321	eP	43	32.00	1.1	TIM	79.44	325	iPc	43	48.00	-0.7	eSS	59	48.00				
PPE	76.24	321	ePd	43	29.00	-2.1	DMK	79.49	318	eP	43	49.00	-0.1	eSSS	03	00.00				
BHD	76.34	303	iPd	43	33.50	1.6	KHC	79.65	331	iPc	43	50.10	0.2	eLR	11	20.00				
			iPcP	43	43.00		Z	16s	12.80um				6.4MsZx	OGA	82.48	331	eP	44	05.00	0.0
			iS	53	15.00		E	16s	10.00um					ECP	82.54	344	eP	44	05.70	0.8
			iScS	53	30.00				5.40um						1.4s	466.00nm				6.4mb
			ePS	54	10.00				i	43	59.80	31kmX		SLE	82.57	333	ePd	44	05.90	0.6
KRA	76.52	328	eP	43	32.40	-0.2			S	53	52.00			ECH	82.61	334	P	44	04.64	-0.8
	0.8s	118.00nm					CTT	79.67	318	eP	43	50.00	-0.1	FEL	82.63	334	P	44	05.18	-0.5
Z	20s	8.60um				6.1MsZ	SOP	79.75	328	iPc	43	51.80	1.4	BCI	82.63	323	ePn	44	07.30	1.7
E	20s	9.90um					DBN	79.77	337	iP+	43	50.00	-0.4	PLG	82.68	320	eP	44	01.80	-4.2X
			i	43	33.40	3kmX			e(S)	54	01.00		SAX	82.73	332	ePd	44	06.40	0.0	
			i	43	42.70		WET	79.88	331	iPc	43	51.40	0.3	SIO	82.79	47	ePd	44	07.70	1.1
			eS	53	14.00		GRF	79.99	333	iPc	43	52.00	0.3	ZLA	82.85	333	ePd	44	07.20	0.4
UZH	76.70	326	iPc	43	35.00	1.4		1.7s	352.00nm				6.1mb	JER	82.93	307	eP	44	08.00	0.6
			eS	53	20.00		Z	18s	9.00um				6.2MsZ		eS	54	28.00			
CFR	76.77	320	eP	43	34.00	-0.1			e	44	01.70	31kmX		MOF	82.94	334	P	44	06.27	-1.0
KAS	76.79	315	eP	43	36.00	1.6	NWAO	80.22	205	iPc	43	53.60	0.7	TUL	82.94	47	eP	44	07.80	0.5
VRI	76.91	322	ePd	43	35.50	0.6			epPd	43	59.06	17kmX			1.5s	64.60nm				5.5mb
BWA	76.96	179	eP	43	39.90	4.8X			esPc	44	03.20		OSS	82.94	332	ePd	44	08.00	0.6	
			e	43	42.90	10kmX	KMR	80.35	330	iP+	43	53.60	0.0	CTI	82.95	330	Pc	44	06.10	-1.3
BRN	77.01	333	ePc	43	35.50	0.2			iPp	44	06.10	42kmX	DSI	82.96	307	iPc	44	08.00	0.5	
BRD	77.03	321	eP	43	30.00	-5.6X	ALT	80.39	315	eP	43	53.90	-0.2	VITF	82.98	335	P	44	06.93	-0.3
SPC	77.09	327	iP	43	35.90	-0.2	TNS	80.44	334	ePc	43	53.60	-0.5	HAU	83.05	335	eP	44	07.60	-0.2
KSP	77.25	330	iP	43	36.00	-0.7	BEQ	80.49	325	e(P)	43	55.20	0.8		1.2s	26.80nm				5.3mb
	1.2s	103.00nm				5.7mb	MFT	80.51	318	iP	43	55.90	1.2	BSF	83.06	334	P	44	07.28	-0.6
			i	43	45.50	30kmX	EDC	80.56	317	eP	43	46.00	-8.8X	BBS	83.15	334	P	44	07.93	-0.4
ISR	77.55	321	ePd	43	40.00	1.5	RYD	80.69	295	eP+	43	55.50	-0.3	SDA	83.16	323	iPd	44	09.30	1.0
MLR	77.55	322	iPc	43	37.00	-1.6	DST	80.73	316	iP	43	56.50	0.6	LLS	83.18	332	ePd	44	09.00	0.3
ANMO	77.62	54	iPc	43	40.25	1.0	ENN	80.74	336	ePc	43	55.00	-0.6	OHR	83.31	322	iPc	44	09.10	-0.2
			epPd	43	45.38	16kmX		1.0s	65.00nm				5.6mb		1.6s	0.21nm				3.1mb X
ALO	77.62	54	ePc	43	42.00	2.7X			e	44	05.00	32kmX				iPp	44	21.60		42kmX
	1.4s	54.65nm				5.4mb	KGT	80.75	318	iP	43	57.90	2.0			eS	54	27.00		
Z	18s	3.32um				5.7MsZ	MEM	80.85	336	iPc	43	55.89	-0.3	VDL	83.35	332	ePd	44	10.00	0.5
ADE	77.85	187	e(P)	43	45.00	4.9X	TOD	80.86	334	eP	43	55.88	-0.5	LOMF	83.48	334	P	44	09.62	-0.4
CAN	77.86	178	eP	43	53.00	12.9X	ABH	81.02	335	eP	43	56.62	-0.6	VAL	83.51	346	eP	44	11.00	1.1
CLL	78.01	332	iPc	43	40.30	-0.5	RDO	81.08	319	eP	43	58.00	0.5			S	54	28.00		
	1.6s	180.00nm				5.9mb	BHG	81.09	331	eP	43	57.90	0.4	KZN	83.51	321	eP	44	10.80	0.5
Z	17s	9.00um				6.2MsZx		1.8s	259.00nm				6.0mb	TIR	83.54	323	eP	44	11.00	0.7
			i	43	52.00	39kmX	UCC	81.17	337	P	43	57.20	-0.6	NEO	83.62	320	eP	44	11.00	0.2
			eS	53	26.00		KHL	81.24	315	eP	43	58.00	-0.6	SAL	83.74	331	P	44	11.50	0.3
BRG	78.06	332	iPc	43	40.30	-0.8	RUP	81.33	335	eP	43	58.45	-0.4	MDI	83.88	331	P	44	11.00	-0.9
	2.0s	150.00nm				5.7mb	KTD	81.34	334	eP	43	58.45	-0.4	TMA	83.88	332	ePd	44	12.00	-0.2
			iPp	43	53.50	45kmX	SNF	81.45	337	Pc	43	59.10	-0.2	ELF	83.98	33	P	44	12.40	-0.1
			i	44	03.00		PTJ	81.45	328	eP	43	58.90	-0.6	BERA	84.02	322	eP	44	12.40	-0.3
			i	46	25.70		STU	81.46	333	ePc	43	58.80	-0.6	PRNI	84.08	306	iPc	44	14.00	0.7
			e	53	30.00			1.5s	66.67nm				5.5mb	FVM	84.11	42	ePc	44	13.00	-0.3
			e	02	52.00		Z	20s	3.33um				5.7MsZ	VAI	84.13	332	Pc	44	12.80	-0.4
CMP	78.13	322	ePd	43	43.00	1.3	ZAG	81.51	328	eP	44	01.00	1.3	LDN	84.16	33	P	44	13.20	-0.2
PSZ	78.24	327	eP	43	42.30	0.0	DLE	81.52	344	iPd	44	00.60	1.0	MMK	84.24	333	ePd	44	15.10	1.0
BUC	78.31	321	ePc	43	41.50	-1.1		0.9s	59.00nm				5.6mb	FLN	84.35	339	eP	44	14.20	-0.1
BBTK	78.42	314	iPc	43	44.00	0.5	DCN	81.62	345	iPd	44	01.20	1.1		1.6s	186.55nm				6.1mb
SCH	78.50	19	ePd	43	44.20	0.7		1.1s	116.00nm				5.8mb	DIX	84.40	333	ePd	44	16.10	1.1
	1.1s	68.00nm				5.6mb	EZN	81.71	318	iP	44	02.20	1.3	LDF	84.40	339	eP	44	14.70	0.1
PRU	78.59	331	Pc	43	43.80	-0.2	DOU	81.73	337	P+	44	01.50	0.7		1.6s	192.80nm				6.1mb
	1.3s	92.10nm				5.7mb	Z	18s	7.10um				6.1MsZ	RSM	84.46	329	P	44	16.00	1.1
Z	16s	10.50um				6.3MsZx			e	44	13.30	39kmX	LOR	84.48	336	eP	44	14.80	-0.2	
N	19s	7.60um							S	54	09.00			1.4s	69.70nm					5.7mb
E	22s	8.80um					GWF	81.79	334	P	44	00.92	-0.3	MBH	84.57	306	iPc	44	16.50	0.8
			e	43	53.50	31kmX	LJU	81.88	329	eP	44	01.00	-0.7	EMS	84.57	333	ePd	44	16.30	0.6
			ePP	46	32.00				eS	54	08.00		ORX	84.60	332	P	44	14.95	-0.8	
			eS	53	37.00		RBL	81.91	330	P	44	01.50	-0.4	ORO	84.61	332	P	44	15.00	-0.8
WIT	78.72	337	eP	43	45.50	0.8	VBY	82.06	328	eP	44	02.50	-0.1	ARV	84.64	328	Pc	44	16.00	0.1
			e	43	56.00	34kmX	FVI	82.08	330	P	44	02.50	-0.1	GRC	84.69	336	P	44	16.87	0.9
EKA	78.91	343	P	43	46.00	0.3	VOY	82.14	329	eP	44	02.80	-0.3	LBF	84.69	336	eP	44	16.00	-0.1
	0.8s	24.60nm				5.3mb	CEY	82.18	329	eP	44	02.40	-0.9		1.6s	99.50nm				5.8mb
BUD	78.94	327	iPc	43	46.80	0.8	ELL	82.22	314	eP	44	03.00	-0.7	SFI	84.70	329	P	44	18.10	2.1
SRO	78.96	328	iP	43	46.40	0.3	SKO	82.34	322	ePc	44	04.70	0.6	SSF	84.77	336	eP	44	16.60	0.2
MOX	79.04	333	ePc+	43	46.00	-0.6		1.8s	245.00nm				6.0mb		1.4s	69.70nm				5.7mb
	1.7s	144.00nm				5.7mb	Z	17s	14.56um				6.4MsZx	PGD	84.78	329	P	44	17.78	1.0
Z	16s	8.80um				6.2MsZx	N	17s	11.24um					GRR	84.79	339	eP	44	16.90	0.4
N	15s	6.60um					E	18s	11.32um						1.6s	236.30nm				6.2mb
E	15s	4.70um							i	44	05.50		BOB	84.85	331	Pc	44	17.10	0.2	
ZST	79.12	328	eP	43	47.40	0.4			i	44	15.00		CRE	84.91	329	P	44	18.00	0.7	
HOF	79.24	333	iPc	43	47.20	-0.4			iPp	44	18.00	45kmX	LSD	85.03	333	P	44	18.85	0.7	
VKA	79.36	329	iPc	43	47.10	-1.2			e	44	29.50		BDI	85.04	330	Pc	44	19.70	1.8	
	5.0s	1493.00nm				6.3mb X			e	45	13.00		SMF	85.04	335	eP	44	17.90	0.1	
Z	12s	4.90um				6.1MsZx			ePP	47	12.00		FIR	85.04	329	iPd	44	18.00	0.2	



	1.4 s	108.90nm		5.9mb	GBTN	88.94	39 P	44	37.00	0.0		i	24	30.10			
LPF	85.16	339 eP	44	18.90	0.5	BLA	89.36	36 P	44	39.00	0.0	LWI	40.60	333 eP	27	17.90	0.7
	1.6 s	279.85nm		6.2mb			1.2 s	51.52nm		5.7mb		SPA	50.22	180 eP	28	31.40	-1.9
LCI	85.21	323 P	44	19.50	0.8	EPF	89.37	336 eP	44	38.80	-0.2		1.0 s	50.00nm		5.4mb	
RSP	85.27	333 P	44	18.65	-0.5		1.8 s	69.05nm		5.6mb		Z	21 s	13.09um		5.9Msz	
CLE	85.31	34 iP	44	20.70	1.5	CVL	89.54	34 P	44	40.00	0.2			i	29	02.10	
PCP	85.36	332 P	44	19.57	0.1	CBN	89.79	33 eP	44	42.00	1.1	BCAO	50.80	324 ePc	28	37.60	-0.3
PIL	85.36	330 P	44	18.70	-0.7	PRM	91.10	39 P	44	48.00	0.9		1.0 s	40.00nm		5.3mb	
RSNY	85.38	28 P	44	19.00	-0.5	EBR	91.34	335 eP	44	50.00	2.0			ic	29	05.30	
	1.5 s	61.44nm		5.6mb				eS	55	48.00				ic	30	06.00	
Z	22 s	6.88um		6.0Msz		TOL	93.53	338 ePc	44	57.03	-1.2	MUN	56.22	106 eP	29	18.00	0.1
BADA	85.40	305 eP+	44	20.30	0.5		1.2 s	93.75nm		6.1mb		VNDA	56.56	166 e(P)	29	11.40	-8.5X
BGF	85.42	336 eP	44	19.90	0.2			ePP	48	42.74		SBA	57.21	168 e(P)	29	24.90	0.4
	1.8 s	181.25nm		6.0mb				ePP	50	46.00		BAL	57.27	104 eP	29	25.00	-0.5
AQU	85.43	327 Pc	44	21.40	1.5			iS	55	57.00		KLB	57.56	106 eP	29	34.00	6.5X
OLY	85.51	44 P	44	20.00	-0.3			ePS	57	05.00		KOD	57.94	38 eP	29	29.00	-1.6
BNJ	85.55	333 P	44	20.70	0.1			eSS	02	04.00		MEKA	60.72	101 eP	29	54.00	4.6X
CKI	85.56	332 P	44	19.90	-0.5	MAL	96.58	337 eP	45	12.00	-0.2	GBA	60.89	36 Pc	29	48.60	-1.9
DUI	85.59	326 P	44	21.60	0.9			iS	46	30.00			0.7 s	5.80nm		4.8mb	
RRL	85.63	333 P	44	21.52	0.4			iPP	49	12.00		HYB	64.75	35 eP	30	17.50	1.3
MNS	85.69	328 P	44	21.00	-0.1	LKO	122.11	328 PKP	50	36.38	-1.3	KIC	65.47	303 P	30	26.98	6.1X
AZI	85.72	327 P	44	22.00	0.8		0.8 s	19.50nm				LIC	65.55	302 P	30	27.54	6.1X
VLS	85.76	320 eP	44	21.60	0.0	TIC	124.51	326 PKP	50	42.74	0.4	TIC	65.86	302 P	30	29.70	6.3X
FIN	85.77	332 P	44	20.80	-0.7		0.9 s	13.50nm				IPM	67.29	63 ePd	30	34.00	1.4
AGO	85.79	336 P	44	22.04	0.5	KIC	124.65	325 PKPd	50	43.00	0.4	LKO	68.42	304 P	30	45.92	6.3X
MAF	85.81	336 eP	44	22.20	0.5		0.8 s	7.00nm					1.5 s	104.50nm		5.8mb	
SDI	85.81	327 P	44	21.50	-0.3	LIC	124.90	325 PKP	50	43.44	0.4	ADE	70.56	120 eP	30	53.20	0.6
ROB	85.81	332 P	44	21.11	-0.7		0.7 s	8.00nm				PRNI	70.67	350 eP	30	59.00	5.9X
TCF	85.85	336 eP	44	22.20	0.3	Z	20 s	8.00um		6.4Msz		NNT	72.36	56 eP	30	51.00	-12.5X
	1.7 s	191.15nm		6.0mb		KSR	128.76	269 ePKP	50	47.20	-3.2X	QUE	72.52	19 eP	31	04.70	0.3
PZZ	85.89	332 P	44	21.62	-0.6	SEK	129.61	266 ePKP	50	54.00	2.0	BHD	72.89	359 ePc	31	16.00	9.9X
ITM	85.93	319 eP	44	20.20	-2.2	WIN	133.97	280 ePKP	51	06.00	5.6X	ASPA	73.83	107 iPd	31	11.20	-0.9
ENR	86.03	332 P	44	21.72	-1.2	ZOBO	140.03	59 ePKP	51	12.00	-0.3		1.3 s	32.00nm		5.2mb	
STV	86.04	332 P	44	21.52	-1.4		Z	22 s	0.92um	5.5Msz		Z	22 s	5.45um		5.8MszX	
HBVT	86.05	28 P	44	22.50	-0.4			LR	39	22.00				LR	57	20.50	
ORI	86.08	324 Pc	44	23.80	0.7	LPB	140.24	60 PKP	51	15.00	2.5X	SLY	75.20	360 ePd	31	25.00	5.5X
LSF	86.08	337 eP	44	23.40	0.4	SIV	144.05	50 PKP	51	17.00	-1.7	MSL	76.02	358 eP	31	33.00	8.8X
PYM	86.10	336 P	44	23.74	0.5	RTRS	148.34	78 e(PKP)	51	30.00	4.7X	WRA	76.40	105 Pc	31	26.90	0.0
IMI	86.14	332 P	44	23.16	-0.3	LNV	148.86	86 ePKP	51	31.00	5.0X		1.4 s	58.20nm		5.5mb	
SCO	86.16	325 P	44	23.60	0.2	TACH	149.06	85 ePKP	51	33.00	6.6X	WB5	76.46	105 eP	31	25.00	-1.4
RMP	86.16	328 P	44	23.70	0.2	FCH	149.38	84 ePKP	51	31.00	3.6X	DMN	76.55	35 PKP	31	26.80	-0.9
SAOF	86.19	332 P	44	23.15	-0.5	RTLL	149.69	79 e(PKP)	51	32.50	5.0X		0.9 s	72.00nm		5.8mb	
RDP	86.20	328 P	44	23.00	-0.7	BDF	150.02	30 iPKPc	51	31.67	3.2X	CHG	76.62	51 eP	31	30.70	2.7X
AUTN	86.23	332 P	44	23.52	-0.5			e	51	35.48		CHTO	76.62	51 eP	31	28.00	0.0
MFF	86.24	338 eP	44	24.20	0.4								1.2 s	14.24nm		4.9mb	
	1.8 s	207.15nm		6.0mb								PKI	76.65	36 PKP	31	27.00	-1.4
KOT	86.24	308 eP	44	25.00	1.0								1.0 s	42.00nm		5.5mb	
TOUF	86.27	332 P	44	23.45	-0.8		MAR	31, 1990	20h	15m	25.66±0.75s	GKN	76.68	35 PKP	31	27.30	-1.0
SBF	86.34	332 eP	44	23.90	-0.5			39.982 N ±6.0km		23.798 E ±6.8km		KKN	76.78	35 PKP	31	28.00	-1.0
	1.4 s	122.00nm		5.9mb				DEPTH = 10.0km		(geophysicist)	(365)	MAIO	76.94	11 eP	31	30.00	0.5
AURF	86.36	332 P	44	23.62	-0.9			AEGEAN SEA				CAN	77.02	125 eP	31	33.80	3.6X
CSI	86.39	324 P	44	25.10	0.4			ML 2.4 (THE).				GUN	77.15	36 PKP	31	27.40	-3.8X
MGR	86.40	325 P	44	24.39	-0.3	PAIG	0.11	239 iPg d	15	28.70	0.3	BWA	77.23	124 eP	31	33.80	2.5
	1.9 s	379.70nm		6.3mb				iSg	15	30.10		TAB	77.66	0 eP	31	40.00	6.5X
MVIF	86.41	332 P	44	24.25	-0.6	OUR	0.38	22 iPg c	15	32.50	-0.9	QIS	79.90	108 eP	31	45.00	-1.1
MMN	86.42	324 P	44	24.70	0.0	PLG	0.48	32 ePb	15	34.80	-0.5	VAY	83.62	343 eP	32	10.50	5.7X
ROI	86.44	324 P	44	24.30	-0.6	NEO	0.81	214 ePb	15	40.60	-0.7	OHR	83.84	341 eP	32	07.80	1.7
BNH	86.45	26 P	44	25.00	0.1	THE	0.91	316 ePbc	15	44.40	1.4	SKO	84.50	342 eP	32	30.00	20.7X
TDS	86.47	324 P	44	25.50	0.5			eSb	15	57.30		BR5	84.66	121 e(P)	32	10.00	-0.7
REVF	86.47	332 P	44	23.73	-1.3	LIT	1.01	277 ePbd	15	46.10	1.3	CTA	85.00	112 iPc	32	14.10	1.7
LBL	86.49	335 P	44	25.80	0.8			eSb	16	02.50			1.0 s	55.00nm		5.7mb	
HLW	86.57	308 eP	44	27.00	1.3	SRS	1.15	352 ePbd	15	46.90	-0.2	MLR	86.92	346 eP	32	21.00	-0.4
		eS	54	54.00				eSb	16	06.10		VRI	87.15	347 ePd	32	22.00	-0.3
CALN	86.63	332 P	44	25.03	-0.9	KNT	1.36	330 ePbc	15	51.20	0.5	BEO	87.43	342 eP	32	29.50	5.9X
FRF	86.88	332 eP	44	26.50	-0.4			eSb	16	10.30		BUD	90.27	342 eP	32	43.00	5.9X
	1.4 s	95.85nm		5.8mb		AGG	1.49	230 ePb	15	51.80	-0.6	SRO	90.75	342 eP	32	43.90	4.7X
CZI	86.92	324 P	44	23.80	-3.4X			eSb	16	13.90		KBA	91.36	338 e(P)	32	48.00	5.6X
RJF	86.95	336 eP	44	27.70	0.4	VAY	1.63	325 ePn	15	52.70	-1.8		1.5 s	15.00nm		5.1mb	
	1.6 s	136.80nm		5.9mb		RDO	1.76	48 ePn	15	56.40	0.0			e	33	36.00	
LRG	87.07	332 eP	44	27.90	0.1	ALN	1.94	61 ePn	16	00.40	1.4	ZST	91.40	341 eP	32	48.50	6.3X
	1.4 s	139.40nm		6.0mb				eSn	16	26.60		SPC	91.60	344 eP	32	47.40	4.0X
LMR	87.12	332 eP	44	28.20	0.1							SIV	92.24	247 P	32	51.00	4.0X
	1.6 s	199.00nm		6.1mb								LPB	96.75	242 eP	33	16.00	7.8X
CAF	87.13	336 eP	44	29.10	0.9									eLR	42	20.00	
	1.6 s	211.45nm		6.1mb								ZOBO	96.95	242 P	33	07.00	-2.3
GRI	87.13	324 P	44	29.00	0.7							DAG	123.13	346 iPKPc	38	35.00	2.7X
	1.4 s	170.20nm		6.1mb									1.1 s	27.85nm			
SCP	87.38	32 iPc	44	30.03	0.6							FRB	135.55	325 ePKP	38	59.00	2.6X
SNZO	87.47	159 eP	44	44.00	14.5X							MBG	143.04	354 ePKP	39	12.00	2.3
		eS	54	32.00									1.5 s	65.00nm			
LFF	87.51	337 eP	44	30.50	0.6							OLY	146.14	276 PKP	39	20.00	3.8X
	1.6 s	199.00nm		6.1mb		PRY	20.01	305 eP	24	10.50	-0.7	POW	146.15	278 PKP	39	19.00	2.8X
LPO	87.61	336 eP	44	31.20	0.7		0.7 s	27.50nm		4.7mb		FVM	146.15	281 PKP	39	20.00	3.8X
	0.8 s	37.60nm		5.7mb		BFS	20.47	304 iPd	24	15.50	-0.5	BRW	146.57	13 PKP	39	20.00	4.2X
PWLA	87.64	42 P	44	31.00	0.2		1.0 s	190.00nm		5.4mb		TUL	149.59	275 e(PKP)	39	30.00	8.3X
RSCP	88.35	40 P	44	34.00	-0.2	KSR	21.13	306 eP	24	19.50	-3.4X		1.3 s	145.20nm			
							0.7 s	75.00nm		5.2mb		RSON	149.91	305 PK			



31d 20h

SIO	149.93	274	e(PKP)	39	26.30	4.1X
INK	151.60	359	ePKP	39	27.00	3.4X
	1.2s	81.00nm				
IMA	151.61	17	PKP	39	31.30	7.3X
	1.0s	41.25nm				
TTA	153.56	22	PKP	39	36.00	9.3X
FBA	153.81	13	ePKP	39	28.80	1.9
FFC	153.93	315	ePKP	39	31.00	3.6X
	1.5s	38.00nm				
YKA	154.53	339	ePKP	39	30.60	2.7
	1.3s	3.70nm				
PMR	156.50	18	PKP	39	34.00	3.4X
RSSD	157.27	290	PKP	39	35.00	2.5X
ALO	157.44	266	ePKP	39	37.00	4.1X
Z	20s	1.06um			5.7Msz	
ANMO	157.44	266	PKP	39	36.00	3.1X
	1.3s	14.42nm				
GOL	157.88	279	PKP	39	37.00	3.6X
	1.3s	15.63nm				
EDM	160.57	320	ePKP	39	39.50	3.9X
BW06	161.30	287	PKP	39	38.00	1.1
	1.5s	16.02nm				
IMW	162.26	290	PKP	39	41.00	3.1X
MSU	162.86	272	PKP	39	42.00	3.4X
GLA	162.97	252	ePKP	39	38.00	-0.6
LRM	163.03	297	ePKP	39	43.00	4.4X
TPC	164.36	254	ePKP	39	46.00	6.0X
NEW	165.21	310	PKP	39	42.00	1.8X
	1.3s	11.79nm				
RVR	165.28	251	ePKP	39	48.00	7.3X
GSC	165.44	257	ePKP	39	48.00	7.1X
SBB	165.94	253	ePKP	39	46.00	4.7X
PNT	166.05	317	ePKP	39	45.00	4.2X
CLC	166.24	258	ePKP	39	47.00	5.5X
FR1	168.25	260	ePKP	39	48.40	5.6X
CMB	169.06	264	ePKP	39	48.60	5.3X
WDC	171.05	278	ePKP	39	48.80	4.5X

S.D. = 1.3 on 36 of 96 obs.

MAR 31, 1990 20h 55m 34.26±0.41s  
 42.960 N ± 7.7km 146.980 E ± 6.4km  
 DEPTH = 41.3km ( 5 depth phases)  
 4.7mb ( 21 obs.) 5.0Msz ( 1 obs.)  
 OFF COAST OF HOKKAIDO, JAPAN (225)

MAT	9.31	229	iPc	57	46.10	-2.8
	0.7s	6.85nm			4.9mb	
MDJ	12.68	283	eP	58	33.00	-1.5
CN2	15.68	280	eP	59	09.40	-4.3X
SNY	17.32	274	eP	59	31.00	-3.4X
DL2	19.55	267	eP	00	01.60	0.3
BJ1	23.19	273	eP	00	37.00	-1.1
SSE	23.66	248	Pc	00	45.50	2.9X
		sP	01	01.00		
TIA	23.89	264	eP	00	44.90	0.0
NJ2	24.72	253	eP	00	54.20	1.3
TIY	26.73	270	eP	01	12.70	1.0
TIY	26.73	270	eP	01	13.50	1.8
BTO	27.52	278	eP	01	19.00	0.0
WHN	28.75	255	Pd	01	31.00	1.1
		pP	01	43.50	49km	
XAN	30.87	266	P	01	48.30	-0.6
GTA	35.31	281	eP	02	27.20	-0.2
CD2	36.21	265	eP	02	34.80	-0.2
GYA	36.61	257	P	02	38.60	0.1
BRW	39.27	25	e(P)	02	59.30	-0.8
IMA	39.41	34	eP	03	01.80	0.3
	0.8s	10.30nm			4.7mb	
KMI	40.23	258	eP	03	09.50	0.6
FBA	41.81	36	eP	03	22.00	0.9
	1.1s	15.63nm			4.7mb	
WMO	42.28	292	iPd	03	26.00	0.7
CHG	46.95	255	eP	04	04.00	1.1
INK	47.15	30	eP	04	04.00	0.2
GUN	50.94	274	P	04	34.10	0.1
	0.5s	22.00nm			5.4mb	
KKN	51.45	274	P	04	37.80	0.1
PKI	51.47	274	P	04	37.70	-0.4
DMN	51.67	274	P	04	39.50	0.0
	0.8s	17.00nm			5.1mb	
GKN	51.80	275	P	04	40.20	-0.1
YKA	56.53	33	eP	05	13.10	-1.2
	0.8s	1.50nm			4.1mb	
SOD	61.15	338	eP	05	45.00	-1.3
HYB	62.63	269	eP	05	56.50	-0.5
WB5	63.60	193	eP	06	02.20	-0.8
WRA	63.66	193	P	06	04.00	0.5

SUF	64.58	334	eP	06	08.10	-1.0
	0.6s	2.00nm			4.4mb	
FFC	66.41	36	eP	06	21.00	0.1
	1.1s	15.00nm			5.0mb	
NUR	66.68	333	eP	06	20.90	-1.6
LRM	66.97	48	eP	06	25.20	0.2
ASPA	67.38	193	eP	06	27.50	0.1
	0.8s	4.00nm			4.5mb	
FRB	69.97	16	eP	06	41.50	-1.4
NB2	70.30	339	P	06	43.90	-1.1
	1.0s	13.20nm			4.9mb	
HFS	70.37	337	eP	06	43.70	-1.7
	0.5s	3.60nm			4.6mb	
Z	18s	0.73um			5.0Msz	
		LR	21	48.00		
KRA	76.46	328	eP	07	21.50	0.4
CLL	77.96	332	iPd	07	29.40	0.1
	1.0s	11.00nm			4.8mb	
PRU	78.53	331	eP	07	33.00	0.5
		e	07	44.50	38km	
EKA	78.84	343	P	07	34.00	-0.1
	1.0s	5.40nm			4.5mb	
KHC	79.59	331	iP	07	38.70	0.3
		e	07	51.50	43km	
GRF	79.93	333	eP	07	40.80	0.7
	0.8s	6.00nm			4.6mb	
		e	07	52.00	36km	
KBA	81.41	330	iPd	07	49.50	1.3
	0.7s	4.10nm			4.5mb	
		i	08	01.60	40km	
		i	08	05.80		
SKO	82.29	322	eP	07	53.50	0.9
CDF	82.34	334	eP	07	53.50	0.4
LOR	84.42	336	eP	08	03.60	0.2
	0.6s	2.70nm			4.6mb	
SMF	84.98	335	eP	08	06.60	0.3
	0.8s	5.35nm			4.8mb	
LPL	85.07	333	eP	08	07.70	0.7
LPG	85.08	333	eP	08	07.70	0.6
	1.0s	6.00nm			4.7mb	
MAF	85.75	336	eP	08	11.00	0.9
	1.0s	11.00nm			5.0mb	
LSF	86.02	337	eP	08	12.20	0.7
	1.0s	8.00nm			4.9mb	

S.D. = 0.9 on 54 of 57 obs.

& MAR 31, 1990 21h 05m 46.83s						
61.624 N 151.945 W						
DEPTH = 110.8km						
SOUTHERN ALASKA ( 2 )						
<AGS-P>.						
CRP	0.37	196	eP	06	02.81	-0.7
SKT	0.41	29	iP	06	02.52	-1.0
BGL	0.42	211	iP	06	02.97	-0.7
SPU	0.45	187	iP	06	02.85	-0.9
		eS	06	16.63		
CKL	0.47	204	eP	06	03.17	-0.8
SUA	0.60	105	iP	06	04.63	-0.2
NKA	0.95	159	eP	06	09.00	1.2
PWA	0.99	88	iP	06	07.99	-0.2
RDT	1.08	192	eP	06	08.67	-0.6
		iS	06	26.12		
CUT	1.11	45	iP	06	08.69	-0.9
PMS	1.21	107	eP	06	10.10	-0.6
PLRM	1.35	90	eP	06	10.70	-1.5
SLKM	1.40	142	eP	06	11.99	-0.9
GHO	1.45	83	eP	06	12.38	-1.1
KNK	1.69	96	iP	06	14.95	-1.4
		iS	06	38.25		
SEW	1.95	140	eP	06	18.60	-1.1
PDB	2.15	212	iP	06	21.18	-1.1

17 obs. associated

MAR 31, 1990 21h 09m 23.55±0.35s						
42.792 N ± 6.7km 147.001 E ± 5.4km						
DEPTH = 34.8km ( 6 depth phases)						
4.7mb ( 28 obs.)						
OFF COAST OF HOKKAIDO, JAPAN (225)						
KUSJ	1.71	281	P	09	50.70	-0.8
		S	10	10.30		
NIJ	8.27	231	P	11	22.00	-1.2
KAKJ	8.43	221	P	11	24.60	-1.6
CHJJ	9.15	225	P	11	34.60	-1.6
MAT	9.21	230	eP	11	36.00	-1.1

	0.6s	12.00nm			5.2mb	
MTMJ	9.41	232	P	11	39.20	-0.7
MDJ	12.73	284	eP	12	23.50	-1.3
CN2	15.72	281	Pd	13	01.30	-2.7
SNY	17.35	275	iPc	13	26.20	1.8
BJ1	23.22	274	eP	14	27.50	-0.7
	1.5s	63.00nm			4.9mb	
SSE	23.61	249	Pc	14	35.50	3.5X
		pP	14	42.50	25km	
TIA	23.89	264	eP	14	35.40	0.6
NJ2	24.68	254	eP	14	44.50	2.0
HHC	26.37	278	P	14	58.80	0.5
TIY	26.74	271	eP	15	03.80	2.0
BTO	27.56	278	eP	15	10.00	0.8
WHN	28.72	256	Pd	15	21.00	1.4
		pP	15	31.20	37km	
XAN	30.87	266	P	15	38.50	-0.3
LZH	33.71	273	eP	16	04.00	0.3
	2.0s	28.00nm			4.8mb	
GTA	35.36	281	eP	16	18.00	0.2
CD2	36.21	265	eP	16	25.00	0.0
GYA	36.59	257	P	16	29.20	0.9
BRW	39.41	25	e(P)	16	50.10	-1.1
BRW	39.41	25	eP	16	50.50	-0.7
IMA	39.54	33	eP	16	53.00	0.5
	0.7s	8.60nm			4.6mb	
FBA	41.94	35	eP	17	12.70	0.6
WMO	42.35	292	P	17	16.00	0.1
CHG	46.92	255	eP	17	54.50	1.8
INK	47.29	30	eP	17	55.00	0.1
GUN	50.97	274	P	18	24.60	0.4
	0.7s	32.00nm			5.4mb	
KKN	51.47	274	P	18	28.40	0.5
	0.8s	17.00nm			5.1mb	
PKI	51.50	274	P	18	28.20	-0.1
DMN	51.70	274	P	18	30.00	0.3
	0.8s	18.00nm			5.1mb	
GKN	51.83	275	P	18	30.80	0.3
YKA	56.66	33	eP	19	04.50	-0.8
	0.9s	1.70nm			4.1mb	
PNT	61.09	48	eP	19	36.00	-0.3
	0.7s	4.00nm			4.7mb	
SOD	61.31	338	eP	19	55.00	17.6X
HYB	62.64	269	eP	19	47.50	0.4
NEW	63.05	48	P	19	49.00	-0.4
	0.8s	4.79nm			4.7mb	
WB5	63.44	193	eP	19	52.90	0.9
WRA	63.50	193	Pc	19	52.70	0.2
	0.7s	3.50nm			4.6mb	
SUF	64.74	334	eP	19	58.50	-1.6
	0.5s	2.20nm			4.5mb	
GBA	65.91	266	Pc	20	07.90	-0.4
	0.8s	3.20nm			4.5mb	
FFC	66.54	36	eP	20	11.00	-0.8
	0.9s	14.00nm			5.1mb	
NUR	66.84	333	iP	20	11.80	-1.8
	0.6s	9.10nm			5.0mb	
LRM	67.07	48	eP	20	16.40	0.7
KVN	67.93	57	P	20	21.70	0.6
TNP	69.07	57	P	20	28.80	0.6
	0.6s	2.13nm			4.4mb	
FRB	70.13	16	eP	20	32.00	-1.9
NB2	70.46	339	P	20	34.80	-1.2
	0.9s	8.30nm			4.8mb	
HFS	70.53	337	eP	20	34.70	-1.7
	0.5s	4.40nm			4.8mb	
BW06	70.61	49	P	20	37.00	-0.5
	0.7s	1.90nm			4.3mb	
KRA	76.61	328	eP	21	12.50	0.5
ALO	77.66	54	eP	21	21.50	3.2X
CLL	78.11	333	iPc	21	19.90	-0.3
	0.9s	11.00nm			4.9mb	
PRU	78.68	331	eP	21	23.50	0.1
		e	21	34.50	36km	
EKA	79.01	343	P	21	25.00	-0.1
	0.8s	2.90nm			4.3mb	
KHC	79.75	331	P	21	29.50	0.3
		e	21	41.00	38km	
GRF	80.09	333	eP	21	31.80	0.8
	0.9s	10.00nm			4.8mb	
		e	21	43.20	37km	
KBA	81.56	330	i(P)	21	39.80	0.8
	0.9s	6.20nm			4.6mb	
		i	21	51.10	37km	
		i	21	54.80		
SKO	82.43	322	eP	21	45.00	1.6
CDF	82.50	334	eP	21	44.20	0.4



LBF 84.79 336 eP 21 55.70 0.3  
0.6s 2.25nm 4.5mb  
SMF 85.14 336 eP 21 57.50 0.4  
0.8s 4.70nm 4.7mb  
AVF 85.16 336 eP 21 57.60 0.4  
0.6s 1.80nm 4.4mb  
LPL 85.22 333 eP 22 11.60 13.8X  
1.0s 4.00nm  
LPG 85.23 333 eP 22 11.80 13.8X  
0.8s 4.05nm  
MAF 85.91 336 eP 22 01.90 0.9  
0.8s 7.40nm 5.0mb  
LSF 86.18 337 eP 22 03.30 1.0  
0.8s 8.05nm 5.0mb  
S.D. = 1.0 on 64 of 69 obs.

MAR 31, 1990 21h 12m 34.35± 0.37s  
42.853 N ± 7.8km 146.973 E ± 5.9km  
DEPTH = 33.0km (normal)  
4.9mb ( 32 obs.) 4.5Msz ( 1 obs.)  
OFF COAST OF HOKKAIDO, JAPAN (225)

KUSJ 1.68 279 P 13 01.50 -0.3  
S 13 22.40  
HOOJ 2.76 261 P 13 19.50 2.3X  
eS 13 55.60  
NIIJ 8.29 230 P 14 33.80 -1.4  
KAKJ 8.46 221 P 14 34.40 -3.2X  
CHJJ 9.17 225 P 14 44.00 -3.4X  
MAT 9.23 230 eP 14 47.00 -1.2  
0.6s 15.33nm 5.4mb  
MTMJ 9.43 231 P 14 49.50 -1.6  
IIDJ 10.18 227 P 15 01.40 0.2  
TSRJ 11.22 233 P 15 16.10 0.7  
MDJ 12.70 284 Pc 15 34.20 -1.1  
CN2 15.69 281 P 16 11.40 -3.1X  
pP 16 19.00  
SNY 17.32 275 eP 16 32.80 -2.2  
PP 16 37.00  
DL2 19.54 267 eP 17 02.60 0.6  
BJI 23.19 274 eP 17 38.50 -0.4  
1.4s 93.00nm 5.1mb  
SSE 23.61 249 Pc 17 45.50 2.5X  
sP 17 56.30  
TIA 23.88 264 P 17 46.20 0.6  
NJ2 24.68 253 eP 17 54.20 0.8  
HMC 26.34 278 P 18 09.20 0.2  
TIY 26.72 271 eP 18 13.50 0.9  
BTO 27.53 278 eP 18 20.00 0.0  
WHN 28.72 255 eP 18 31.20 0.7  
pP 18 42.00 40kmX  
XAN 30.86 266 P 18 49.00 -0.7  
LZH 33.68 273 Pc 19 14.00 -0.5  
1.8s 34.00nm 5.0mb  
pP 19 20.00 21kmX  
GTA 35.33 281 eP 19 27.80 -0.7  
CD2 36.19 265 eP 19 35.70 -0.1  
GYA 36.58 257 P 19 39.60 0.4  
pP 19 50.00 36kmX  
TTA 38.21 38 P 20 02.00 9.6X  
BRW 39.37 25 P 20 01.00 -0.8  
IMA 39.50 33 P 20 03.00 -0.2  
0.6s 18.47nm 5.0mb  
KMI 40.20 258 Pd 20 10.60 1.0  
PMR 41.42 40 P 20 20.00 1.2  
FBA 41.90 35 eP 20 23.00 0.2  
1.0s 15.00nm 4.7mb  
WMO 42.31 292 iPc 20 26.50 0.0  
LSA 46.09 272 eP 20 55.00 -2.6X  
CHG 46.92 255 eP 21 04.50 0.9  
INK 47.25 30 eP 21 06.00 0.4  
0.6s 17.00nm 5.2mb  
MBC 49.71 18 eP 21 23.50 -1.1  
0.5s 4.00nm 4.7mb  
NNT 50.64 248 eP 21 36.20 3.8X  
GUN 50.94 274 P 21 35.00 -0.1  
KKN 51.45 274 P 21 38.90 0.1  
0.7s 23.00nm 5.2mb  
PKI 51.48 274 P 21 38.80 -0.3  
DMN 51.68 274 P 21 40.76 0.2  
0.6s 22.00nm 5.3mb  
GKN 51.80 275 P 21 41.20 -0.2  
0.6s 18.00nm 5.2mb  
KSH 52.10 292 eP 21 38.80 -4.6X  
YKA 56.62 33 eP 22 14.80 -1.2  
0.8s 2.80nm 4.3mb  
PNT 61.07 48 eP 22 46.00 -1.1

SOD 61.24 338 iP 22 46.40 -1.6  
EDM 62.15 42 eP 22 54.00 -0.4  
NEW 63.03 48 P 22 59.00 -1.2  
0.9s 7.13nm 4.8mb  
QUE 63.30 287 eP 23 00.00 -2.4  
WB5 63.49 193 eP 23 03.00 -0.4  
WRA 63.56 193 Pc 23 05.90 2.1  
0.9s 5.90nm 4.7mb  
WDC 64.26 58 eP 23 06.80 -1.6  
SUF 64.67 334 eP 23 09.10 -1.6  
0.4s 2.70nm 4.7mb  
MAJO 64.81 297 eP 23 24.00 11.8X  
SES 64.98 44 eP 23 12.00 -1.0  
ORV 65.50 58 e(P) 23 08.10 -8.3X  
GBA 65.90 266 Pc 23 18.70 -0.5  
1.3s 14.10nm 4.9mb  
FFC 66.50 36 eP 23 21.00 -1.5  
0.8s 9.00nm 4.9mb  
NUR 66.78 333 eP 23 22.50 -1.7  
LRM 67.04 48 eP 23 26.50 0.0  
CMB 67.11 59 e(P) 23 10.50 -16.3X  
KVN 67.91 57 P 23 31.70 -0.3  
KOD 68.10 264 eP 23 33.80 0.3  
TNP 69.05 57 P 23 38.80 -0.3  
0.7s 3.70nm 4.6mb  
FRB 70.08 16 eP 23 43.00 -1.6  
NB2 70.39 339 P 23 45.30 -1.4  
0.9s 16.00nm 5.1mb  
HFS 70.47 337 eP 23 45.20 -1.8  
0.6s 10.70nm 5.1mb  
Z 18s 0.23um 4.5Msz  
LR 53 16.00  
RSSD 72.68 46 P 23 59.00 -1.8  
KRA 76.55 328 eP 24 22.60 0.0  
0.9s 43.00nm 5.5mb  
KSP 77.28 330 eP 24 27.00 0.3  
i 24 39.20  
MLR 77.58 322 eP 24 27.00 -1.7  
ALO 77.64 54 eP 24 31.00 1.8  
0.9s 2.52nm 4.2mb  
CLL 78.05 332 iP 24 30.80 -0.1  
1.3s 15.00nm 4.9mb  
i 24 43.20  
BRG 78.09 332 e(P) 24 34.00 2.9X  
PRU 78.62 331 eP 24 34.00 -0.1  
e 24 46.80  
EKA 78.95 343 P 24 36.00 0.2  
2.4s 71.10nm 5.2mb  
SRO 78.98 328 e(P) 24 37.60 1.5  
MOX 79.08 333 e(P) 24 49.00 12.4X  
KHC 79.68 331 iP 24 40.40 0.5  
GRF 80.03 333 eP 24 42.30 0.6  
0.9s 9.00nm 4.8mb  
ec 24 55.20  
KBA 81.50 330 eP 24 50.00 0.3  
0.8s 8.30nm 4.8mb  
i 25 08.20  
DLE 81.56 344 eP 24 52.00 2.3  
DCN 81.65 345 eP 24 52.00 1.8  
SKO 82.37 322 eP 24 54.00 -0.1  
i 25 07.70  
VAY 82.37 321 eP 24 54.70 0.6  
OHR 83.35 322 eP 25 01.20 1.9  
LOR 84.51 336 eP 25 07.40 2.4  
0.8s 4.05nm 4.7mb  
SSF 84.80 336 eP 25 08.40 2.0  
0.6s 2.25nm 4.5mb  
SMF 85.08 335 eP 25 09.90 2.1  
0.8s 6.70nm 4.9mb  
AVF 85.09 336 eP 25 10.10 2.2  
0.8s 6.70nm 4.9mb  
LPL 85.16 333 eP 25 10.90 2.4  
LPG 85.17 333 eP 25 11.00 2.3  
0.8s 2.70nm 4.5mb  
MAF 85.84 336 eP 25 11.90 0.2  
0.8s 7.40nm 5.0mb  
LSF 86.12 337 eP 25 13.50 0.5  
0.8s 4.05nm 4.7mb  
SIV 144.07 50 PKP 32 09.40 0.9  
e 46 58.80  
S.D. = 1.2 on 82 of 96 obs.

MAR 31, 1990 21h 47m 58.21± 0.55s  
39.981 N ± 5.0km 23.841 E ± 5.2km  
DEPTH = 10.0km (geophysicist)  
AEGEAN SEA (365)  
ML 2.9 (THE), 3.2 (ATH).

PAIG 0.14 246 iPg 48 00.90 -0.5  
OUR 0.37 17 iPg 48 04.80 -1.0  
PLG 0.50 322 ePg 48 06.90 -1.4  
NEO 0.83 215 ePg 48 12.70 -1.5  
THE 0.93 314 ePbc 48 16.70 0.7  
eSb 48 30.70  
LIT 1.04 277 ePbd 48 17.90 0.0  
eSb 48 35.00  
SRS 1.15 351 ePbd 48 19.20 -0.5  
eSb 48 37.80  
KNT 1.38 329 ePbc 48 23.70 0.2  
eSb 48 43.90  
AGG 1.51 231 ePb 48 23.80 -1.6  
eSb 48 44.20  
KZN 1.62 282 ePn 48 27.40 0.4  
VAY 1.65 325 ePn 48 28.20 0.9  
RDO 1.74 47 ePb 48 28.00 -0.6  
ALN 1.92 61 ePn 48 27.40 -3.8X  
eSn 48 50.90  
EZN 1.92 94 iPn 48 30.30 -0.9  
ATH 2.01 183 ePb 48 34.00 1.5  
PRK 2.02 111 ePb 48 34.30 1.7  
OHR 2.58 297 ePn 48 42.20 1.5  
SKO 2.69 318 ePn 48 43.50 1.1  
S.D. = 1.2 on 17 of 18 obs.

& MAR 31, 1990 22h 59m 48.00s  
32.380 N 115.240 W  
DEPTH = 6.0km (geophysicist)  
3.4mb ( 2 obs.)  
CALIFORNIA-MEXICO BORDER REGION ( 45)  
<PAS>P>. ML 4.3 (PAS).  
GLA 0.76 27 iPd 00 01.60 -1.5  
BAR 1.25 284 iPd 00 09.90 -1.6  
HAY 1.37 346 eP 00 10.50 -3.1  
PLM 1.67 306 eP 00 15.30 -2.9  
PEC 2.21 314 eP 00 22.50 -3.2  
ABL 4.14 308 eP 00 52.00 -1.3  
BLP 4.83 298 e(P) 01 00.00 -3.0  
BCH 4.91 306 eP 01 00.50 -3.7  
PRI 5.85 311 e(P) 01 15.10 -2.4  
FRI 5.89 323 eP 01 15.30 -2.6  
TNP 5.91 345 P 01 15.00 -3.5  
PRS 6.42 310 e(P) 01 32.00 6.5  
MSU 6.61 21 eP 01 26.00 -2.3  
CMB 7.04 325 e(P) 01 38.10 3.9  
KVN 7.05 342 eP 01 31.00 -3.5  
ALO 7.75 68 eP 01 43.50 -0.8  
ANMO 7.76 68 e(P) 01 39.00 -5.3  
GOL 10.82 45 eP 02 24.00 -2.7  
NEW 15.93 355 eP 03 35.00 0.7  
1.0s 7.50nm 3.8mb  
EDM 20.88 3 ePc 04 32.00 -1.2  
YKA 30.13 1 eP 05 58.10 -2.4  
0.5s 0.10nm 2.9mb  
21 obs. associated







DATE	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31
BER	x		x		x		x					x									x				x	x		x	xx		x
BERA	x	x		x		xx	x	x	x		xx		xx	xxx	x		x		x		x	x						x		x	x
BFD		x		x	xx		xx	x	xx	x		xx		x	x		x	x			x	x	x	x							x
BFS	x	xx		xx	xx	xx	x		x	xxx	x	xx	xx	x	x		x	xxx	x		x	xx	x	x	x	xxx				x	x
BGF	xx	xx	xxxxxxxx	xxx	xxx	x		xxx	x	xxxxxxxxxx	xxx	xx	xx	xx		x	xxxx	x	x	xx	xx	xxx	xx	xxxxx	x	xxx	xxxxx	x	xxxxxx	xx	x
BGL		x		xx	x		xx		x	xx	x	x	x																		xx
BGM															x	x							x								xx
BHD	x	x		x	xx	xxxxx	xx	x	x		x	x	xx	xx	xx	xx	x	x		x	x	x	xxxx	x	x	x	x	x		x	x
BHG	x	xx	xx	xxx	x	xx	x	xxx		x		x	x	xx	x				x	x	x	x	xx		xx	xx	x		xx	xxx	x
BIM	x	x				x	x	x		x		x		xxx	xx	x			x	x	x	x	xx	x	x	xxx			x		x
BJI	xx																														



DATE	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31				
CKL	X		XX	X	XX			X	XX	X	X	X		XX												X	X	XXX	X	X		XXX			
CLC	XXXX	XXXXXXXXXX	XXXX			XXXXXX	X	X	XX	X	X	XXXX	X		XX	X	X									XXX	X			X	X	X	XXX		
CLE	X	X				X		X	XX				X	XX			X								XX							X			
CLI		X	XX	X	X	X	X					XX	X	X					X	XX	X	XXXX	X	X	XX	X	XXXX	X	XX	XX	X	X	X		
CLL	XXXXXXXXXXXXXXXXXXXXXX	XX	XXXXX	XX	XXXXXX	XX	XXXXXX	XX	XXXXXX	XX	XXXXXX	XX	XXXXXX	XX	X	XXXX	XXXXX	XXXXXX	X	XXXXXX	XXXXXX	X	XXXXXXXXXXXX	XX	XXXXXXXXXXXXXXXXXXXX	X							X		
CMB	XXXX	XXXXXXXXXX	XXXXXXXXXX	XXXX	X	XX			XX	XXXXXXXX	XXXX	XX	X	X	X	X	XXXXXXXXXXXXXXXXXXXX	X	XX	XX	XXXXXX	X	XX	XX	XXXXXXXXXX	XXXXXXXXXX	XX	XXXX	XX				XXX		
CMP	X	XX	XX	X	XX	XX	X	X	X	XX	X	XXXX	XX		X				X		XXXXXX			X	XX	X	X	XX	X	XX	X	XX			
CMS	X	X	X	XXX	X	XX			X		X		XX	X	XX						X	X													
CN2	XXXX	XXXX	XX	XXXXXXXXXXXXXXXXXXXX	XXXXXXXXXX				X	XXXXXXXXXX	XXX	XXXX	X	X	X	X	X	XX	XX	XXX	X	X	XX	X	X	XXX	XXX	XXX	XXXX	X	X	XX			
CNB	X	XX	X	XXX	X	XXX	X	X	X	X	X	X	X	X	XX						X	X	XX		XX	XXX	X	XX	X			X	XX		
CNPM			XX	X	XX			X	XX	X	XX	X	X	X	X	X	X	X	X	X	XX	XX	X		XX	X	XXX		X			XX			
COL			X		XX			X		X			X	X				X		X					X										
COO	XXXXXX	XX	XX	XXX	XXX	XX		X		XX	X	X	X	X	XX			X	X	X		X	X		XX	X	X	XX	XX	X					
COOL	X	XX		X	XX	XX	X	XX		X	X		XXXX	XX	X	X		X	X	X		X	X		XX	XXXX	XX	XXXX	X	XX					
COP			X	X	XX			X					X												X				X	XX	X	X			
COTA	XX	X	XX					X	X			X	XX					X	X	X		X	X		X	X		X			X	X	X		
CPD	X		X		X	X	X	XXX		XX	XX		XXX	XX	X	X		XX		X	X				XXX			X	X			X			
CRE	X																								X	X	XX		X			X			
CRM	X	X			X	X		X		X			XXX	XX	X			X	X	X	X	XX													
CRP	X		XX	X	XX		XX	XX	XX	X	X		X	X	X	XX	XX	X	X	X	XX	XXXX		XX	X	XXX		X	X			XXX			
CRX			XX		XX	X	X	X	X	XX	X	X	X	XX		X	X		XX	X	X	X	X	X	X	XXX									
CSI		X			X	X	XXX	X	X	X				X	XX	XXXX		X	XX	X	X	XX	XXX	X	XXX		X	X	X			X	X		
CSS		X	X	X	XXX	X		X	X					XX	X		X		X	X		X	X		X	X	X		XX	XX					
CTA	XXXXXXXXXXXXXXXXXXXXXX	XXXXXXXXXXXX	XXXXXXXXXXXX	XXXX	XXXX	X	XXX	XXXX	XXXX	XXXX	X	XXX		XX	XXXX	X	X		XX	XXXX	X	X		X	XXXXXXXX	XXXXXXXXXXXXXX	XX						XX		
CTI	X	XXX	X	XXXXXXXX	XXX	XX	X	XXXXXX	X	XXX	XXX	XXX	XXX	XXXXX	X	X	X	X	XX	XX	XXX	X		XXXX	XXXX	XXXXXXXX	XXXX	XXX	X	XXX			X		
CTT		XX				XX													XXX	XX	X	XXXXXXXX	X	XX	XXXX	XX	XXXXXXXXXX					X	XX		
CUT	X		XX	X		XX		X	XX	X	X	X	XX	X	XX	X	XX	X	XX	X	X	XX	XXX	XX	XX	X	XXXX	X	X			XX			
CVL	X	XX					X	XX					X	X	X	X			XX						X		X					X			
CVP		XXX	X	XXXXXXXXXX	XXXXXXXXXX		XXX	X	X	XXXXXXXXXXXXXXXXXX	XXXXXXXXXX	X	X	X	XXXXXXXX	X	X	X	XXXXXXXX	XX	XX	X	X	XX	XXX	XXXX	XX	X	XXXX	XX					
CZI	XXX		XX	X	X	XX	XXX	X	X	X	XX	XXXX	XX	XX	XXXXXX	XXXXX	X	XXXX	X	XXXX	XXXX	XXXXX	X	X	XXX						X	X	X		
DAG	XXXXXXXXXXXXXXXXXXXXXX	XXXXX	XXXXXXXX	XXX	XXXX													XXXX	X	XX	XXX	XX	XXX	XXXXXXXX	XX	X		XXX	XX			X			
DAU	XX	X	X	XX				X					X	XX	X				XX	X	X	X		X	X	X		X	X				X		
DAV	X	X		XX	XXX	XXX	X	X		X		XX	X	XX	X	X	X		X	X	XX	X	X	X	XX	XXXX			X	X			X		
DCN	X	X	X	XXXXX	X	XXX		XX	X	XX		X	X	X	X				X	XX	X	X		X		XX	XX	X	X	X			X	X	
DDM		X			X			X	X	X		X	X	XXX	XX	X	X	X	X		X	X	X	X		XX	X	XXX		X					
DEG	XXX	XX	XX	X	XX	XX	X	XXXX	X	X																									
DEV	X	X	X	X	XX	X		X	X	X			XXX																						
DHR			X	X	X	XX		X				X	X					X								X		X					XX	X	
DIM	X	X	X	X	XX	X	X	X	X	X		XX	X	XX	X			XX		X	X	X			X	X	X		X	X	X		X		
DIX	X	XX	XXXXX	XX	XX	X		X		X	X	X	X	XX	X	X	X		X	X	X	X			XX	X		X	XX	X	X		X	X	
DL2	XXX	XXX	X	XX	XX	XXX	XX	XX			X	XXXX	X		XX			XX	X	X	X		X		XX	XX		X	X	X	XX		X		
DLE	X	X		XXXXX	X	XXX	X	XX	X	X		X	X	X	X	X			X	XX	X	X		X	XX	XX	X	X	X			X	X		
DMK		X	XX	X	X	X									X										XX	XX	X	XXX		XXX			X	XX	
DMN	XXXXXXXXXXXXXXXXXXXXXX	XXXXXXXXXXXX	XXXXXXXXXXXX	XXXXXXXXXXXX	XXXXXXXXXXXX	XXXXXXXXXXXX	XXXXXXXXXXXX	XXXXXXXXXXXX	XXXXXXXXXXXX	XXXXXXXXXXXX	XXXXXXXXXXXX	XXXXXXXXXXXX	XXXXXXXXXXXX	XXXXXXXXXXXX	XXXXXXXXXXXX	X	X	XXXXXXXX	XXXXXXXXXXXX	XXXXXXXXXXXX	XXXXXXXXXXXX	XXXXXXXXXXXX	XXXXXXXXXXXX	XXXXXXXXXXXX	XXXXXXXXXXXX	XXXXXXXXXXXX	XXXXXXXXXXXX	XXXXXXXXXXXX	XXXXXXXXXXXX	XXXXXXXXXXXX	XXXXXXXXXXXX	XXXXXXXXXXXX	XXXXXXXXXXXX	XXXXXXXXXXXX	
DMU																									X	XX	XX								
DOG		XX			X	XX		XXX	X				X	X	X				X	X	X	X		X	X	X		X	X				X		
DOI	X	X	X	XX	X	XX	XX	X	XX		X	X	XX	XXX	XXX	X		X	X	X	XXXX		X	X	XXXX	X	X	XXXX		X				X	
DOU		XXX	XXXX	XXX	XXX	XX	XXXXX	X	XXXXX	X		XXX	XX	XX	XX	XXX	XXXX	XXXX	XXXX	XXXX	XXXX	XXXX	XXXX	XXXX	XXXX	XXXX	XXXX	XXXX	XXXX	XXXX	XXXX	XXXX	XXXX	XXXX	
DPMT	X	X	X	X			X						XX												X	XX	XX						X		
DRA		X	X			XX	X	X	X				X	XX											X				X					X	X
DRE	X		XX	X	XX		X	XX	X	X	XX	X		X	X	X		XX	X	X		X	X		X		XXX		X				XX		
DRV	X	XX	X		X	X	X	X	XX	X	X							XXX	X		XX	X		X	X	XX	X	XXX	XXX	X			X		
DSI			X	X	X	XX	X	X	X	X			X	X	XX				X		X				X	X	X	X	XX	X	XX		X		
DST	XXX	XXX	XX	XXXXXX	XXXX	XXX							XX	XXX	XX	XXXXXXXXXXXXXXXXXXXX	XXX	XXX	XXXXXXXXXXXXXXXXXXXX	XXXXXXXXXXXX	XXXXXXXXXXXX	XXXXXXXXXXXX	XXXXXXXXXXXX	XXXXXXXXXXXX	XXXXXXXXXXXX	XXXXXXXXXXXX	XXXXXXXXXXXX	XXXXXXXXXXXX	XXXXXXXXXXXX	XXXXXXXXXXXX	XXXXXXXXXXXX	XXXXXXXXXXXX	XXXXXXXXXXXX	XXXXXXXXXXXX	
DUG	XX	X	X		XX	X		X		XX		X	X	XX	X	X			XX	X	X			XXX	X	X		X	X						
DUI	X	X	X	X	XX	XX	X	X	XX	X	XX	X	XX	XXXX	XXXX	XX		X	XX	XXXX	XXXX	X	X	XXXXXX	XX	X	XXXX	XX	X	XX	X	X	X	X	
DWY			X	XX			X	XXXX	X	XX	X	X		X				XX						X			X								
DZM	XXXXXXXXXXXXXXXXXXXXXX	XXXXXXXXXXXXXXXXXXXXXX	XXXXXXXXXXXXXXXXXXXXXX	XXXXXXXXXXXXXXXXXXXXXX	XXXXXXXXXXXXXXXXXXXXXX	XXXXXXXXXXXXXXXXXXXXXX	XXXXXXXXXXXXXXXXXXXXXX	XXXXXXXXXXXXXXXXXXXXXX	XXXXXXXXXXXXXXXXXXXXXX	XXXXXXXXXXXXXXXXXXXXXX	XXXXXXXXXXXXXXXXXXXXXX	XXXXXXXXXXXXXXXXXXXXXX	XXXXXXXXXXXXXXXXXXXXXX	XXXXXXXXXXXXXXXXXXXXXX	XXXXXXXXXXXXXXXXXXXXXX	XXXXXXXXXXXXXXXXXXXXXX	XXXXXXXXXXXXXXXXXXXXXX	XXXXXXXXXXXXXXXXXXXXXX	XXXXXXXXXXXXXXXXXXXXXX	XXXXXXXXXXXXXXXXXXXXXX	XXXXXXXXXXXXXXXXXXXXXX	XXXXXXXXXXXXXXXXXXXXXX	XXXXXXXXXXXXXXXXXXXXXX	XXXXXXXXXXXXXXXXXXXXXX	XXXXXXXXXXXXXXXXXXXXXX	XXXXXXXXXXXXXXXXXXXXXX	XXXXXXXXXXXXXXXXXXXXXX	XXXXXXXXXXXXXXXXXXXXXX	XXXXXXXXXXXXXXXXXXXXXX	XXXXXXXXXXXXXXXXXXXXXX	XXXXXXXXXXXXXXXXXXXXXX	XXXXXXXXXXXXXXXXXXXXXX	XXXXXXXXXXXXXXXXXXXXXX		
EALH	X	X			XX		XX		X			X		X											X	X	X		X						
EBAN	X	X		X	X	XX	XX	X	XX	X	XX	X	X	X	X		X			X	XX	XXXXX	X	X	XX	X		X	X				X		
EBR	X	XX	X	X	X	XX	X	X	XXX	X	X		XXX	XX	X									X	X		X		X				X		
ECB	X		X	XXXXX	X	XXX		XX		X		X	X	X	X									X	X										
ECH		XX			X			X	X	X		X	X	X	X		X			X	X	X	XXX		X				X				X		
ECHE	X	X	X				XXX		X			XXX	X		X	X								X	XX	X		X							
ECP	X	X	X	XXXXX	X	XXX		XX		X		X	X	X	X		X							X										X	
ECRI		X	X	XX		XX	XX		XX		X		XXX	XX		X								X	X	X	XX		XX						
EDC	X	X	XXX	XX	X	XX	X	XX	XXX				XXX	X	X	X		X	XXX	X	XX	XXX	XXX	X	XX	XXXXXX	XXXXXXXX	XXXX	X	X	XX			XX	
EDM	XXXX	XXXXXXXX	X	XXX	XXX		XXXX	X	XXX	XX	X	XXXXXXXX	X	XXX	XXX	X	X	XXXX	XXXX	XXXX	XXXX	XXXX	XXXX	XXXX	XXXX	XXXX	XXXX	XXXX	XXXX	XXXX	XXXX	XXXX	XXXX	XXXX	
EHOR	X			XX	X		XX	X	X			X	X	X		XX							X	X		X									



DATE	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31		
ERK	X					X		XXX	X							X										X							
EROO	X	X	X	X	X	XX	X	XXX	X	X		XXX	XX		X	X			X			XX	X	X		XX	XX		X				
ERUA								XX	X			XX	X									X		X	X								
ESCF		X			X							X	XXX							X			X		XX		X						
ESEL		X	X					XX		X	XX	XXX	X		X	X								XX		X							
ETER		X	X			X		X		X			XX		X	X						X		X		XX	X						
ETOR	X	X	X	XX	XX	XX		XXX	X	X		XXX	XX		X	XXX			XX			XX	X	X		X	XX	XX		X	X		
EVAL					XX	X		XX	X	X		X	X		XX			X				X	X	X		X							
EVIA	X	X	X			XX		XXX	X			XXX	X		X	X	X	XX			X	XX	XXXXX		X	X		X		X			
EVR							X	XXXXX	X	X	XXXXXXXXXXXXX		X	XX	XX					XX	XXXXX	X	X	X	XXXXX	XX	X			X	X		
EZAM	X						XX		X												X	X		XX									
EZN	X	XX	X	X	XX	X	XXX	X	X	XXXX						XX	X	X	XX			X	XXX	XX	XX	XX	XX	XX	XX	XX	XX	XX	
FAI	X				X	XX	XX		X						X	XXX		XX				XX	X		X	X							
FBA	XXXX	XXX	XX	XXXXXXXX	X	X	XXXX	XXXXXXXX	XXXXXXXXXXXXXXXXXXXXX	XXX	XXX	X	XX	XXXXXXXXXXXXXXXXXXXXX	XXX	XXXXXXXX	XXXXXXXX	XXXXX	XXXXX	XXXX	XXXX	XXXX	XXXX	XXXX	XXXX	XXXX	XXXX	XXXX	XXXX	XXXX	XXXX		
FCH	X	XXXX	XXX	XX	XXX	XXXXXX	XX	XX	XXXXX	X	X	XXX	X		XX	X	XXXX	XXX	XXXXXXXXXXXXX	X	XX	XXXX	X	XX	XXXX	X	XX	XX	XX	XX	XX	X	
FDF	X	X		X	XX	X	X		X			XXX		X	X		X	X	X	X	XX	X	X	XX	X	X	XX	X					
FEL	XX	X	XXX	XX	XXX	X	XXX	X	XX	X	XXX	XX	X	X	XX	X	X	XX			X	XX			X	XX	XX	XX	XX	XX	XX	X	
FFC	XXXXX	XXXXX	XXX	XXX	XXX	XXXX	XXXXXXXXXX	X	XXXX	XXX	XXXX	XXXX	XXXX	XXXX	XXXX	XXXX	XXXX	XXXX	XXXX	XXXX	XXXX	XXXX	XXXX	XXXX	XXXX	XXXX	XXXX	XXXX	XXXX	XXXX	XXXX	XXXX	
FHC	X		X	X		X	XX				X	X	XX	X	X	X	X	XX			X	XX	X	XX	X	XX	XX		X	X	X	X	
FIN		X	XX	XX	X	XX		X	XX	X	XXX	X	X	XX	X	XX	XX	XXX	X	XX	XX	XX	X	X	X	XXXX	X	X	X	X	X	X	
FIR	X	X		X	XX	XX		X	X	X		X	X	X	X					X		X	XXX		X	XX	X						
FISA		X															X								X	XX							
FLN	XX	X	XXXXXXXX	XXX	XXX	XX	X	XXX	X	XXX	X	X	XXX	XX	X	X	X	XXX	X	X	XX	XX	XXX	X	XX	XXXX	XXX	XX	XX	XX	XXXX	X	X
FMW	X					X	XXX		X								X																
FNA	X	XX	X	X	XXX	XX	XX	XXXX	XXX	X											XXXXXX	XXXX	XX	XXXX	X	X	X		XX	XX	X	X	
FORR	XX				XX	X	XXX	XXXXXX	X	XX	X	XXXX	X	X	XX	XXXX	XXX	X	X	X	XX	X	XXX	X	XXX	XX	XX	XX	XXX	XX			
FOUF	XX	X	X	X	XX	XXX		X	X	X	XX	X	X							X	XXX				X	X							
FRB	XXXX	X	XXXX	XX	XXX	XX	X	XXX	X	XXXXXX	XX	X	XXX	XXXX	XXXX	X	XXXX	XXXX	XXXX	XXXX	XXXX	XXXX	XXXX	XXXX	XXXX	XXXX	XXXX	XXXX	XXXX	XXXX	XXXX	XXXX	
FRF	X	XX	X	XX	XXX	X	XXXX		XXX	X	X	XXX	X		X			XX	X		XX	XX	XXX	X	XXX	XXXX	XXXX	X	XX	X	X	X	X
FRI	XXXX	XXXXXXXXXXXX	XXXXXXXX	XX	XXX	X	X		XX	XXXX	XX	X	XX	X	X	X	XXXXXXXX	XX	XXX	X	XX	X	XXXX	X	XX	X	XXXX	X	X	XXXXXXXX	XX	XXX	
FUR	X	XX		X	X	XXX	X	X	X			XX	X			X		X	X	X	X	X	X	X	X	XX		X	X	XXX	X	X	
FVI	X	XX	X	XXXXXXXX	XXXXXXXX	XXXXXXXX	X	XXX	X	X	XXX	XXX	XXXX	X	X	X	X	XX	XX	XXX	XXXX	X	XXXX	XXXX	XXXX	XXXX	XXXX	XXXX	XXXX	XXXX	XXXX	XXXX	
FVM	X	XX	X		X		XX	X	XX	XX	X	X	XX	X	X		XXXX	XXX	X	X		XXXX	XXXX	XXXX	XXXX	XXXX	XXXX	XXXX	XXXX	XXXX	XXXX	XXXX	X
GBA	XXXXXXXX	XXXX	XXXXXXXXXXXX	XXXX	XXXX	XXXXXXXX	XXXX	XXXXXXXX	XXXXXXXXXXXXXXXXXXXXX	XXXXXXXXXXXXXXXXXXXXX	XXXXXXXXXXXXXXXXXXXXX	XXXXXXXXXXXXXXXXXXXXX	XXXXXXXXXXXXXXXXXXXXX	XXXXXXXXXXXXXXXXXXXXX	XXXXXXXXXXXXXXXXXXXXX	XXXXXXXXXXXXXXXXXXXXX	XXXXXXXXXXXXXXXXXXXXX	XXXXXXXXXXXXXXXXXXXXX	XXXXXXXXXXXXXXXXXXXXX	XXXXXXXXXXXXXXXXXXXXX	XXXXXXXXXXXXXXXXXXXXX	XXXXXXXXXXXXXXXXXXXXX	XXXXXXXXXXXXXXXXXXXXX	XXXXXXXXXXXXXXXXXXXXX	XXXXXXXXXXXXXXXXXXXXX	XXXXXXXXXXXXXXXXXXXXX	XXXXXXXXXXXXXXXXXXXXX	XXXXXXXXXXXXXXXXXXXXX	XXXXXXXXXXXXXXXXXXXXX	XXXXXXXXXXXXXXXXXXXXX	XXXXXXXXXXXXXXXXXXXXX	XXXXXXXXXXXXXXXXXXXXX	
GBTN	X						X	X				X	XX	X			XXXX							X	X	X		X					
GBZT	XX	X	X	XX		X	X	XX	XX	XX	XX	XX	XX	XX	XX	XX	XX	XX	XX	XX	XX	XX	XX	XX	XX	XX	XX	XX	XX	XX	XX	XX	XX
GCC	X	XX	XX	XX	XX	X	X	XX			X	X	XX	X	XX	X		X	X	XX	X	XX	X	XX	X	XX	X	X	XXXXXX	X			
GDH	X			X	X																												
GGP	XX	X	XX		X			X	XX			X	XX			XX	X	X	X							XX	X		X				
GHO	X		XX	X		XX		X	XX	X	X	X		XX	X	XXX	XX	X	XX	X	XX	X	XX	XXXX	XX	XX	X	XXXX	X	X			XXX
GIB	X		X		X	XX	X				X		X	X	XX	X	XXXX				XX	X	X	X	XX		XX	X					X
GKN	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX	
GLA	X	XX	XXXXXXXX	XX	XXX	XX	XXX	X	XXXX	X	XXXX	XX	XXX	X	XX	XXXX	XX	XX	XXXX	XX	XX	XXXX	X	XX	X	XX	X	X	X	X	X	X	XXX
GLB	X		X	X			X	X	X	XX	X		X	XXX	XX	X	X	XX		X	X	X	X		X	X	XXX	X	X				X
GLD	X	XXX	XXX	X	XXX					X		X	XX	X							XX	X				X	X		X	X			X
GLI	X		XX	X	XX		X	X	X	X		X	X	XXXX	XX	XX	X	XX	X	X	XX	XXX		XX	X	XXX	XX	X					XX
GLM		X			X		X	X	X		X	X	XXX	XX	X	X				X	X	XX	X		X	XX	X	XX					X
GMW	X	X		X	X	X	XXXX	X			X	X		X			X			X	X	X		X	X	X	X	X	X	X	X	X	X
GOL	XXXX	X	XXXX	X	XXX	X	XXXX	X	XXX	XXXX	XXX	XX	X	XXX	X			XX	X	XX	X	XX	X	XX	X	XX	XXXX	XX	XXXX	XX	X	X	X
GPA		X	X	X	XXXX	X						X				X				X	X	X	XX	X	XX	X	XX	X	XX	X	XXXX	XXXX	XXXX
GRC	X			XX	XXX		X	X	X	X	XXX	XX	X					X	X	X	X	X		X	X	X							X
GRF	XXXX	XXXXXXXXXXXX	XXXXXX	XXXX	XX	X	XXX	X	XXX	XXX	XXXX	X	X	X	XXX	X	XX	XXX			XXX	X	XX	XXX	XXX	X	X	XX	XX	X	XXXXXX	X	X
GRG																					XXXXXX	XX	X	XXXX		XXX	X						
GRR	XX	X	XXXXXXXX	XXX	XXX	XX	X	XXXXXX	X	XXX	X	X	XXX	XX	X	X	X	XXXX	X	X	XX	XX	XX	XX	XX	XX	XX	XX	XX	XX	XX	XX	XX
GRW	X	XX				X	X	XXX				XX	XX					X	X	X	XX	X	X	XX	X	X			X	X	X	X	X
GSC	X	XX	XXXXXXXX	XXX	X	XXXXXX	X	XXX				XX	X	X	XX	XXXX	X	XX	XXXX	X	XX	XXXX	X	XX	XXXX	XX	X	X	X	X	X	X	XXX
GTA	XXX	XXXX	XXX	XXXXXX	XXXXXX	XXXXXX	XXXXXX	XXXXXX	XXXXXX	XXXXXX	XXXXXX	XXXX	X	XX	XXXX	XX	XXXX	X	XX	XXXX	XX	XXXX	X	XX	X	XXXX	XXXX	XXXX	XXXX	XXXX	XXXX	XXXX	XXXX
GUA	XXXX	XXXXXX	X	XXX	XX	X	XX	XXXX	X	X	X	XXXX	X	X	X	XXXX	XX	XX	XXXX	XX	XX	XXXX	X	XX	X	XX	X	XX	X	XXXX	XXXX	XXXX	XXXX
GUAC	X																																
GUD	X	X	X	XX	XX	XX	X	XXX	X	X	X	X	XXX	XX	X	XX			XX				X	X	X	X	XX	XX	XX		X	X	
GUMO	XXXX	XX	X	XXX	XXXXXXXXXX	XX	X	XXXXXX	XXX	XX	XXXX	X	X	X	X	XX	X	XXX	X	X	XX	XX	XXXX	XXXX	XXXX	XXXX	XXXX	XXXX	XXXX	XXXX	XXXX	XXXX	XXXX
GUN	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XXX	
GWF	XX	XX	X	XX		X	X	X	X	X	X	X	X	X	X	X	X	XX			XX		X	XX		X	X						
GYA	X	XX	XXX	XX	XXX	XXXX	XXX	X	XXXX	X	XX	XXXXXXXX	XXXX	XXXX	X	X	XX	XXXX	XX	XXXX	XX	XXXX	XX	XXXX	XX	XXXX	XX	XXXX	XX	XXXX	XXXX	XXXX	XXXX
GZH			X	X	XX	XXXX	X	X				X	X	X	X																		
GZR					XX	XXXX	XXX	X			X	XX	XX																				
HAU	X	XXXXXXXXXX	XXX	XXX	XX	X	XXX	XX	X	XXXX	X	XX	XX	XXXX	X																		



DATE	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	
HOQC	X		X						X					XX					X	X						X						
HQL					X	X	X	X		X	X	X	X	X	X		X	X		X	X	X		XX	XXX	XX		X	X	X	X	
HRI			X	XX				X	X					XX					X	X		XXX		X	X	XX	X	XX	X	XX	X	
HRT			X	XX	XXXXX										X				X	X	XX	XXX		X	XX	XXXXX	X	XX	XX	X	X	
HUR		X	XX	X				X		X	X	X		X	X	XX	X	X		X	X	XX	XX	X	X	X	XXXX	X	X		X	
HVAR			X	X	XX			X			XX			XX	XX	XX	X	X		XX		X	X	X								
HVD	X		XX	XX			XX	X											XX		X	X	X		X	X		X	X			
HYA		X												X	XX	X									X			X	X	XXX		
HYB	XXXX	X	XXXX	XXXXXXXXXXXX	XXXXX	XXXXX	XX	X	XXXXXX	X	XX	XXXX	X	XX	XXXX	X	XXXXXX	XXXX	XXXX	XXXX	XX	XXXXXX	XXXXXX	XXXXXX	XXXXXX	XXXXXX	XXXXXX	XXXXXX	XXXXXX	XXXXXX	XXXXXX	XXXX
HYT	X	X	XX	X				X	XX	X	X			X	XX				X	X					X	X					XX	XX
IFR	X	XXX	XXXXX	X	XXX	XXX	X		XX		XX	X	X	XX	XX	XX	XX	X		X	X	XXX	XXX	XX	X	XX		X	X	X		X
IGT				X				XX	X		XX	X												X	XXX	X	X					
IHA		XX	X		XX	X	XX	X	X					X	X					X	X	XX	X	X		X	XX	X	XX			X
IIC																									X	X	X	XX				
IIDJ		X	X	X			X	X	XX	XX	X			X	X	XX	X	X		XX	X	X			X	X		X	X	X		XX
III	XX	X	XX	XXXX	XX	XX	XX	X	XX	XXXXX	X	X	X	XXX		X	X		XXX	X	X	XX	XX	X	XX	XX	X	XXX		X		
IIJ	X	X	XX	X	XX	XX	X	XX	X	X	XXXX	X	X	X	XXX		X	X		XXX	X	X	X	XXX	XX	XX	X	XXXX		X		
IIT			XX	XX	X	XX				XX	X	X		XX		X	X		XX													
IMA	XXXX	XXX	X	XXXXXXXX	XXXX	XXXX	XXXX	XXXX	XXXX	X	XXXXXX	XXX	X	XXXXXXXX	XX	X			X	X	XX	XXXXXX		X	XXX	XXX	XXX	X	XXXXXX	XX	XXXX	
IMI	X	X	X	XX	X	XX	XXX	X	X	XX	XX	X	X	XXX	XXX	X	XX	X		XXX	X	XX	XX	X		X	XXXX	X	X		X	X
IMW		XX		X	X	XX		XX	X	XX		XX	X	X	X				XX	X	X			X	XX		X	X	XX	X		X
INK	XXXXXXXXXXXXXXXXXXXXXXXXXXXX	XXXXXXXXXXXXXXXXXXXXXXXXXXXX	XXXXXXXXXXXXXXXXXXXXXXXXXXXX	XXXXXXXXXXXXXXXXXXXXXXXXXXXX	XXXXXXXXXXXXXXXXXXXXXXXXXXXX	XXXXXXXXXXXXXXXXXXXXXXXXXXXX	XXXXXXXXXXXXXXXXXXXXXXXXXXXX	XXXXXXXXXXXXXXXXXXXXXXXXXXXX	XXXXXXXXXXXXXXXXXXXXXXXXXXXX	XXXXXXXXXXXXXXXXXXXXXXXXXXXX	XXXXXXXXXXXXXXXXXXXXXXXXXXXX	XXXXXXXXXXXXXXXXXXXXXXXXXXXX	XXXXXXXXXXXXXXXXXXXXXXXXXXXX	XXXXXXXXXXXXXXXXXXXXXXXXXXXX	XXXXXXXXXXXXXXXXXXXXXXXXXXXX	XXXXXXXXXXXXXXXXXXXXXXXXXXXX	XXXXXXXXXXXXXXXXXXXXXXXXXXXX	XXXXXXXXXXXXXXXXXXXXXXXXXXXX	XXXXXXXXXXXXXXXXXXXXXXXXXXXX	XXXXXXXXXXXXXXXXXXXXXXXXXXXX	XXXXXXXXXXXXXXXXXXXXXXXXXXXX	XXXXXXXXXXXXXXXXXXXXXXXXXXXX	XXXXXXXXXXXXXXXXXXXXXXXXXXXX	XXXXXXXXXXXXXXXXXXXXXXXXXXXX	XXXXXXXXXXXXXXXXXXXXXXXXXXXX	XXXXXXXXXXXXXXXXXXXXXXXXXXXX	XXXXXXXXXXXXXXXXXXXXXXXXXXXX	XXXXXXXXXXXXXXXXXXXXXXXXXXXX	XXXXXXXXXXXXXXXXXXXXXXXXXXXX	XXXXXXXXXXXXXXXXXXXXXXXXXXXX	XXXXXXXXXXXXXXXXXXXXXXXXXXXX	XXXXXXXXXXXXXXXXXXXXXXXXXXXX
IPM	X	XX	X	XX	XX	XX	XXX	X	X		X	XXX	XXXX	X	X	XX			XXXX	X	X	X	X	X	X	X	X	XXX	XXX	XX	XXX	X
IR1	XX	X	X	X	X	XXX	XX							X	X	XXX	X	X		X	X	XX	XX	XX		X	X					
IR2	XX	X	X	X	X	XXX	XX							X	X	XXX	X	X		X	X	XX	XX									
IR4	XX	X	X	X	X	XXX	XX																									
IR5																																
IR7	XX	X	X	X	X	XXX	XX							X	X	XXX	X	X		X	X	XX	XX	XX		X	X					
ISA	XXXX	XXXXX	XX	XX	X	XX	XXX	X	X	XXX		X	X	X	XX	XX	X	X		XXXX	X	XX	XXX	XX		X	X		X	X	X	XX
ISK		X	X		XX	XX	X													XX		X	X	X		XX	X		X	X	X	X
ISR		X	X	X	X	X	XX							X	X	XX	X	XX	X		X	X	X	X	X	XXXX	X					X
ISSF														X	XXX	X									XX	X		X				
ITM	X	XX	X		XXXXXXXX	XX	X	X	XXXX	X	XXXXXXXXXXXX	XX	XXXX	X	X				XXX	XX	XXXXXX	XX	XX	XXXXXX	XX	X	X		XX	XX		
ITU					XX	X	X							X	X										X	X						X
IYA					X	X	X	X	X																							
IYM	XXX	XXXXXX	XX	XXXX	XX	XXXX																										
JACH	X	XX			XX		X	X	XX	XX				X	X	X																
JARJ																																
JAY					X		XXX	X	X	XX		X	X											XX	XX	X	X	XX				
JCW	X					X		XXX	X																							
JMB	X		X	X	XX	X	X	XX	X		X	XX	X	X					XX		X	X			X	X	X	X		X		X
JNE		XXX			X	X																										
JNW		XXX			X			X		X	X	X	XX																			
JSC	XXX	X	X					XX	X	XXX				X	X	XX				XXXX					XX	X	XXX	X				
KAGJ																																
KAKJ		X	X	XXX	XX	X	XX	X						X	XXX	X	X	X							XX	X	XX					XX
KAP		XXX	XXX	XX	X		X	XXXX	X	X	XXXX	X	X	XXXX	X	X	XXX			XXXXXXXXXX	XX	XXX	XX	X	XX	XX	X		X	X	XX	
KAS		X	X	X	XX	XX	XXXX							X	X	XX				X	X	XX	X	XX	X	X		X	X	X		
KBA	XXXXXXXXXXXXXXXXXXXX	XXXXXXXXXXXXXXXXXXXX	XXXXXXXXXXXXXXXXXXXX	XXXXXXXXXXXXXXXXXXXX	XXXXXXXXXXXXXXXXXXXX	XXXXXXXXXXXXXXXXXXXX	XXXXXXXXXXXXXXXXXXXX	XXXXXXXXXXXXXXXXXXXX	XXXXXXXXXXXXXXXXXXXX	XXXXXXXXXXXXXXXXXXXX	XXXXXXXXXXXXXXXXXXXX	XXXXXXXXXXXXXXXXXXXX	XXXXXXXXXXXXXXXXXXXX	XXXXXXXXXXXXXXXXXXXX	XXXXXXXXXXXXXXXXXXXX	XXXXXXXXXXXXXXXXXXXX	XXXXXXXXXXXXXXXXXXXX	XXXXXXXXXXXXXXXXXXXX	XXXXXXXXXXXXXXXXXXXX	XXXXXXXXXXXXXXXXXXXX	XXXXXXXXXXXXXXXXXXXX	XXXXXXXXXXXXXXXXXXXX	XXXXXXXXXXXXXXXXXXXX	XXXXXXXXXXXXXXXXXXXX	XXXXXXXXXXXXXXXXXXXX	XXXXXXXXXXXXXXXXXXXX	XXXXXXXXXXXXXXXXXXXX	XXXXXXXXXXXXXXXXXXXX	XXXXXXXXXXXXXXXXXXXX	XXXXXXXXXXXXXXXXXXXX	XXXXXXXXXXXXXXXXXXXX	XXXXXXXXXXXXXXXXXXXX
KBN	X	X	X	X	X	XX	X	XXX						X	XX	XXX	X	X														
KBS																																
KCT	X	X	XX	X	X	X		XX																								
KDC	XXX	XX	X	XX	XXX		XXXX	X	XX	X	XXX	XXX	X	X	XX	XX																
KDZ	X	XX	XX	X	XX	XX	XXXXXX	X	X	XX	X	XX	XXX	XXXX	X				XXX	X	XXX	XX	XX	X	X	X		X	X	X		
KEK	X	X	XX	X	XXX	XX	XXXX		XXXX	XX	XXXX	XX	XXXX	X	XXX	X	X															
KER	X		XX		XX	XX	X							X	XX																	
KEV	X	X	X	XXXXXXXXXXXX	XXX	X	X	X	XXX	XX	X	XXX	X	XXX	X	X																
KFNJ																																
KGM	X	X	X	XXXXXXXX	X			XX																								
KHC	X		XXXXXXXXXXXX	XXXXXX	XXXXXXXXXX	X	XXXX	XX	XXXXXXXXXXXXXXXXXXXX	X	XX	XXXXXXXXXXXXXXXXXXXX	X	XX	XXXXXXXXXXXXXXXXXXXX	X	XX	XXXXXXXXXXXXXXXXXXXX	X	XX	XXXXXXXXXXXXXXXXXXXX	X	XX	XXXXXXXXXXXXXXXXXXXX	X	XX	XXXXXXXXXXXXXXXXXXXX	X	XX	XXXXXXXXXXXXXXXXXXXX	X	XX
KHKI	X	X	X	X	XXX	XX	X	XXXXXXXX	X	XX	X	X	XXX																			
KHL	XXXXXX	XX	XXXXXXXXXXXX																													
KHZ	XX	XX		X	XXXX	X																										
KIC	XXXX	XXXX	XXXXXXXX	XXX	XXX	XXXXXXXXXXXX	XXXXXXXXXXXX	XXXXXXXXXXXX	XXXXXXXXXXXX	XXXXXXXXXXXX	XXXXXXXXXXXX	XXXXXXXXXXXX	XXXXXXXXXXXX	XXXXXXXXXXXX	XXXXXXXXXXXX	XXXXXXXXXXXX	XXXXXXXXXXXX	XXXXXXXXXXXX	XXXXXXXXXXXX	XXXXXXXXXXXX	XXXXXXXXXXXX	XXXXXXXXXXXX	XXXXXXXXXXXX	XXXXXXXXXXXX	XXXXXXXXXXXX	XXXXXXXXXXXX	XXXXXXXXXXXX	XXXXXXXXXXXX	XXXXXXXXXXXX	XXXXXXXXXXXX	XXXXXXXXXXXX	XXXXXXXXXXXX
KIM	X	XX	XX	X	XX	X								X	XX	X																
KIW																																
KKB	X	XXX	X	X	XX	XX	XXXXXX	X	X	X	XX	X	XX	XXX	X	XX																
KKM																																
KKN	XXXXXXXXXXXXXXXXXXXX	XXXXXXXXXXXXXXXXXXXX	XXXXXXXXXXXXXXXXXXXX	XXXXXXXXXXXXXXXXXXXX	XXXXXXXXXXXXXXXXXXXX	XXXXXXXXXXXXXXXXXXXX	XXXXXXXXXXXXXXXXXXXX	XXXXXXXXXXXXXXXXXXXX	XXXXXXXXXXXXXXXXXXXX	XXXXXXXXXXXXXXXXXXXX	XXXXXXXXXXXXXXXXXXXX	XXXXXXXXXXXXXXXXXXXX	XXXXXXXXXXXXXXXXXXXX	XXXXXXXXXXXXXXXXXXXX	XXXXXXXXXXXXXXXXXXXX	XXXXXXXXXXXXXXXXXXXX	XXXXXXXXXXXXXXXXXXXX	XXXXXXXXXXXXXXXXXXXX	XXXXXXXXXXXXXXXXXXXX	XXXXXXXXXXXXXXXXXXXX	XXXXXXXXXXXXXXXXXXXX	XXXXXXXXXXXXXXXXXXXX	XXXXXXXXXXXXXXXXXXXX	XXXXXXXXXXXXXXXXXXXX	XXXXXXXXXXXXXXXXXXXX	XXXXXXXXXXXXXXXXXXXX	XXXXXXXXXXXXXXXXXXXX	XXXXXXXXXXXXXXXXXXXX	XXXXXXXXXXXXXXXXXXXX	XXXXXXXXXXXXXXXXXXXX	XXXXXXXXXXXXXXXXXXXX	XXXXXXXXXXXXXXXXXXXX
KKS	X	X	X																													
KLB	X	XX	XX	XXX	XX	X	X	X																								
KLI		XXXX																														
KLM	X		X	X	X																											
KLU	X		XXXX</																													



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DATE	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	
MDSJ			XX	X	XX	XX	XX	X			X		XX	XX	XX				X	X	X			XX	X	X	X	X				
MEKA	X	X		X	X	XX	XX	X			X	X	X	XX	X	X	X		XXXX	XX	XX	X	X	XX	XX	X	X	X	X	XX	X	
MEM	X	XX	X	XXXX	XXX	XXXXXX	X	XXXX	X	XXXX	XXX	XXX	XXX	XXXX	X	XXXXXX	X	XXXX	XXX	X	XXXX	XXX	X	XX	XX	XX	X	XXXXXX	X			
MEU			X			XX	X	XX	X	X				XX	XXXX				XX	X		X		XX	X	XX	X	X	X	X	X	
MFF	XX	X	XXXX	X	XXX	XX	XX	XXX	X	XXX	X	XX	XXX	XXX	X	X	XXXX		X	XXXX	XXX	X	XX	XX	X	XX	XXXX	X	XXXXXX	X	X	
MFT							X								X				XXXXXX	X	XX	XXX	X	X	XX	X	XXX	XX	X	X	XX	
MGG		XXX			X	X	X	X	X		X			XX					X	X	X	XX		X	X	X						
MGH																					XX					XX	X	X			X	
MGR	X	X	XXX	X	XX	XX	XXX	X	XXX	XXXXXX	XXX	XXX	XXXXXX	XXXX	XXXX	XXXX	XXXX	XXXXXX	XX	X	XX	XX	XXXX	XXXXXX				X			X	XX
MHC	X	XX	XX	X	XX	XX	X	X	XXX	X	XX	XX	X	X	XX	XX	X	X	XXX	XX	XX	XX	X	XX	XX	XXXX	X	X	XXXXXX	X		XX
MHI				XX																						XXXXXXXXXX	XXXX	X	X			
MHZ					X						X								XX		X	XX	X	XXXX	XX	XXXX	X	X				
MIN	X	XX	X	X	XXXXXX	XXXX	XX	XX	X	X			XXX	XXX	XX	X		XXX	XX	XXXXXX				XXXX	XX	XXXX	X	XX	XXXXXX	X	X	
MKRJ										X			X	X	X	XX			X	XXX	XXXX			XX	X	X	X	X	X			
MKS		X	X	X	XX	X	X	X	X					XXX	X											XXXX	X	XX	X		XX	
MLR	XXXX	XXXX	XXXXXX	XX	XXXXXXXXXXXXXX	X	X	XX	XX	XX	X	XX	X	XXXX	X	XXXXXXXX			XXXXXXXXXXXXXXXXXXXX	XXXX	XX	XXX	XXXXXX	XXXX	XXXXXX	XXXX	XXXXXX	XXXX	XXXXXX	XX		
MMB	X	X	X	X	X	XX	XX	X	XXXX	X	X	XXXX	X	XX	XXX	XXXX	XX		XXX		X	XXXX		XX	X	X	X	X	X	X	X	
MMCZ																					X	X	X	XXXX	XX	XXXX	X	X				
MME	X	X	X	X	XX	XXX	X	X	X	X	X	X	X	X	X	X			X	X	XX	X	X	XXXX	XX	XXXX	X	X				
MMK		XX	XXXX	XX	XX			X		X	X	X	XX	XX	X	X	X		X	X	X	X	X		XX	XXX	X	XX	X	X	X	
MMN																																
MNDI			XX	XXXX	X	X	X	XXX	XX	X	X			X	X	XXX			X	XX	X	X		X	X	X	X	X	X	X	XX	
MNG		XX	X	XX	XX	X	XXX	X	XXXXXX										XXX	XXX	X	X		XXXX	XX	X	XX	XXXX	X	XX	XX	
MNI	XXX	XXXX	XXXX	XX						X	XX			XXXXXX	X	X	XXXXXX	XXXX	XX	XX		XX		XXXXXXXXXXXXXXXXXXXX	XXXXXXXXXX	X						
MNO	X		X	X	XX	XX	XX	XX			XX	XX		XX	X	XXXX			XX	X	X	XX	X		XXX	X	XX	X				
MNS																							X	X	XXXX	XX	X	XXX	X			
MOF		X	XX	X	XX			X	X	X			X	XX	X	X	X		X	X	X	XXX		X	XX		X	X			X	
MOL			X										X	X	XX	X	XX								X	X	X	X	X			
MOW			X	XX	X	X	X	X	X	X																	X	XX	X			
MOX	XX	X	XXXXXXXX	X	XXXX	XX	XXX	X	XX	X	XXX			XXX	XXXX	XXX	XXX	X	X	XX	XX	XXX		XXXX	X	XX	XX	XXXXXX	XX	X		
MOZ																																
MRRJ		X	X		XXXX	XX	XX	X	X	X	X	X									X	X	X		XX	XX						
MRW		XX	XX	XX	X	X	XX	X	X												X	X	X	X	X	XX	X	X	X			
MRWA	X	X	XXX		X	XX	X	XX	X		X	X		XXXXXXXX	X	X	X	X	X	X	X	XX	XX	X	X	XXXX	XX	XXXX	XXXX	X		
MRX			XX			X	X	X	XXXX				X	X	XXX		X	X			X	X										
MSL	X	X	X	X	XXXXXX	XX	X	X	X	X	X	XX	XX	XX	XX	X	X		X	X	XXXX	X	XXXX	X	X	X	X	X	X	X	X	
MSU	X	XX	X	X	X				X	XX			XXX	XX	XXX	X			XXX	X	X	X	XX	XXXX		XX	X	X	XX	X		
MSZ	XX	X	XXXXXX	XX	X	X	X					XX	X	XX					X	XX	X	XX	X	XXXX	XXX		X	XX	XXXX	X		
MTMJ		X	XXX		X	X	XX	XXX	X				X	X	XX	X	X									X	X	X	X			
MTN	XXX	X	XXXXXX	XX	XXXXXXXXXXXXXX	XXXXXXXXXX	XXXXXXXXXX	XXXXXXXXXX	X	XXXXXXXXXXXX	XXXXXXXXXXXX	XXXXXXXXXXXX	XXXXXXXXXXXX	XXXXXXXXXXXX	XXXXXXXXXXXX	XXXXXXXXXXXX	XXXXXXXXXXXX	XXXXXXXXXXXX	XXXXXXXXXXXX	XXXXXXXXXXXX	XXXXXXXXXXXX	XXXXXXXXXXXX	XXXXXXXXXXXX	XXXXXXXXXXXX	XXXXXXXXXXXX	XXXXXXXXXXXX	XXXXXXXXXXXX	XXXXXXXXXXXX	XXXXXXXXXXXX	XXXXXXXXXXXX	XXXXXXXXXXXX	
MTUR																																
MTW		XX	XX	X	XX	X	XX	X		X											XX	XX	X	X	X	X	XX	X	X			
MUN		X	X	XXX	XX	XX	X	XX	X		XX	X	XXXXXXXX	X	X	X	X	X	XX	X	X	XX	X	XX	XX	XXX	XX	XXXX	XXXX	X		
MVIF			X			X			X	XX	X	X	X	XX	X	X					X	XX	XX	X	XXX	X		X				
MVM	X	X			X	X	X		X				XX	XX	X				X	X	X	XX	X	X	X		X					
MWC	XXXXXXXXXXXXXX	XX	XXX	X	X	XXX	X	X	X	XX	X	XXX		X	X	XX			X	X	XX	XXX	XX	X	XXXX		X	X	X	X	X	
MZX			X			X															X	X		X								
NA2		X																														
NAI				XXX	XX	X	XX	X	X	X	XX	X	XXXXXXXXXX	XXXXXXXXXX	XXXXXXXXXX	XXXXXXXXXX	XXXXXXXXXX	XXXXXXXXXX	XXXXXXXXXX	XXXXXXXXXX	XXXXXXXXXX	XXXXXXXXXX	XXXXXXXXXX	XXXXXXXXXX	XXXXXXXXXX	XXXXXXXXXX	XXXXXXXXXX	XXXXXXXXXX	XXXXXXXXXX	XXXXXXXXXX	XXXXXXXXXX	
NANU	X	X	XX	X	X	X	X	XX	X	X	X	X	XX	X	X				X	X	XXX	X	X	XXXXXXXXXXXX	XXXXXX							
NAV																																
NB2	XXXXXXXXXXXXXXXX	XXXXXXXX	X	XXXX	XXXXXXXXXXXX	XXXXXXXXXXXX	XXXXXXXXXXXX	XXXXXXXXXXXX	XXXXXXXXXXXX	XXXXXXXXXXXX	XXXXXXXXXXXX	XXXXXXXXXXXX	XXXXXXXXXXXX	XXXXXXXXXXXX	XXXXXXXXXXXX	XXXXXXXXXXXX	XXXXXXXXXXXX	XXXXXXXXXXXX	XXXXXXXXXXXX	XXXXXXXXXXXX	XXXXXXXXXXXX	XXXXXXXXXXXX	XXXXXXXXXXXX	XXXXXXXXXXXX	XXXXXXXXXXXX	XXXXXXXXXXXX	XXXXXXXXXXXX	XXXXXXXXXXXX	XXXXXXXXXXXX	XXXXXXXXXXXX	XXXXXXXXXXXX	
NCA		X	XX			X		X	X	X	X	X	X	XX	XX	XX			XX	X	X	XX	XX		X	XX	X	X	X			
NCG		X	XX	X	XX		X	XX	X	X	X	XX	X	XXXX	XX	XXXX	X	XX			X	X										
NDF			XXX	XX	X	X	X	X													X	X										
NDI	X	XX	X	XXXX	X	XXXXXXXXXX	XXXX	XXXX	XX	XXXX	XX	XXXX	XX	XXXX	X	XXXX	X	XXXXXX	XXXXXX	XXXXXX	X	X	XXXXXX	XXXX	XXXX	XXXX	XXXX	XXXX	XXXX	XXXX	X	X
NEA			X			X		X	X				X	X	XX	XX	X				X	X		XX	X		XX					
NEO	X	XX	X	XXX	X	X	X	X	XXXXXX	X	X	XXX	XXXX	XX	X	XX	XXXX		X	X	XX	X	X	XXXX	XXXX	XX	X	X	X	X	XX	
NEV																																
NEW	XXXX	XXX		X	X	X	XXXX	X	XXX	X	XXXX	XX	X	XX	XXX	XX			XXX	XX	X	XX	X	XXXX		X	XXXX	XX	XX	X		
NI1J		X	X	XXX		XXX	X	XX	X	X			X	X	XXX	X	X				XX	X	X	X	X	X	X	X	X		XX	
NJ2	X	XX	XX	XX	XX	XXXX	XX	X	XX	X	X	XXXXXXXX	XXX	X	XX	X	X		X	XX	XX	X	XX	XX	XX	X	X	X	X	XX	X	
NKA			XX	X																	X	X	X	XX								
NKM																																
NKY																																
NNA	X	X	XX	XX	XXX	XXXXXXXX	XXX		X	X	XXXX	XXX	XX	XX	XXXX				X	X	XXXX	XXX	X	X	XXXX							
NNL		X	XX	X	XX		X	XX	X	X	XX	X	X	X	X	XXXX	X	X			X	X	X		XXX							
NNT	XXXXXX		XXX		XX	XX	XX	X	XX	X	XX	XXXXXX	X	X	XX	XXXX	XXXX	XXXX	XXXX	XXXX	XXXX	XXXX	XXXX	XXXX	XXXX	XXXX	XXXX	XXXX	XXXX	XXXX	XXXX	
NOZ																																
NPA	X		X	X	XX	XX		X					X	XX		XX	X				XX	X	X	X	X	XX		X	X			
NPS			XXX	XXX		X	X	X	XXXX	X	X	X	XXXX	XXXX	X	X	XXX		X	XX	XXX	XXXXXX	XX	X	X	XXXX	X					
NRA0		X	X	X	X	XX	X																									
NSS						X	X																									
NST	XXX	X		XXX	XX	X	X	XX	X		X	X	X	XX	XXX	X	X	X	XX	X	XXXX	X	XXX	X	X	XX	XX	X				



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DATE	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31				
SHL	XXXXX	XX	XX	XXX		XXXXX	XXXXXX	XX		XXXXXXXX		X	XX	XXXXXXXX		XXXXXXXXXX	XXXXXX	XXXXXX	XXXXXX	XXXXXX	XXXXXX	XXXX	XX		XX	X			XXX	XXX	X				
SHMJ		X	X	X			XX		X		XX		XX	XX	XX		X	X		XX		XX		X	X	X	XX		X						
SHNJ		X				X		XX	X					X	X	X						X			X	X			X		X				
SIT			X			XX		X	X	XX	X		X	X		X						X		X					X		X				
SIV																																			
SJG		X				X		X	X		XX	XX	XX	XX	X		X	XX				X		X		XXX	X		X		X				
SKO	X	XX	XXXXXXXXXX	XX	XXXXXXXXXX	XXXXXX	XXXXXX	X	XX	XXXXXXXXXX	XXXXXX	XXXXXX	XXXXXX	XXXXXX	XXXXXX	XXXXXX	XXXXXX	XXXXXX	XXXXXX	XXXXXX	XXXXXX	XXXXXX	XXXXXX	XXXXXX	XXXXXX	XXXXXX	XXXXXX	XXXXXX	XXXXXX	XXXXXX	XXXXXX	XXXXXX			
SKT		X					XX	XX	XX	XX	X		XX	X	XX	XX	XXXX	X	X	XX	XXXX	XX	XXXX	XX	XXXX	XX	XXXX	XX	XXXX	X	X	XXXX			
SLB		X				XX	X	X	X	XX	X	X		XX	XX				X	X		X		X		XXXX						X			
SLE		X	XX	XXXXX	XX	XX		X		X	X	X	XX	X	X	X			X	X	X	X	X			XX		XX	X	XX	X	X			
SLKM		X		XX	X			X	XX	X	X	X		XX	X	XXXX	XX	XXXX	X	X	X	X	XX	XXXX		XX	X	XXXX	X	X			XXXX		
SLL	X			X	XXX			X	X	X				X	X		X	X								X									
SLR	X		X	X	XX	XXX	XX	XXX	X	X	XX	XXXXXXXX	X	XXXXXXXXXX	XX	X	XXXX	XXXX	XX	X	XXX	X	XXX	XXXX	XXXX	XX	X	X	XXX	X	XXXXXXXXXX				
SLY	XX	XX	X	XX	XXXXXX	XX		X	X	X		X	X	XX	XX	X				X	XXX		XX	XX	X	X	X	X	X	X	X	X			
SMF	XX	XX	XXXXXXXX	XX	XXX	XX	XXXXXX	X	XXXXXXXXXX	XXXX	XXX	XXX	XXXXXXXX	X	XXX	X	X	XXXXXX	XXX	X	XXXX	XXX	X	XX	XXXX	XXX	XXXX	XXX	XXXX	XXXX	XXXX	XXXX	XXXX		
SMG			XX	XXX	X	X	X	X	X	X	X			XX	XX		X	XX		X		XX	XX	XX	XX	X	X	X	X	XX		X	XX		
SML									X	X	X	X		XX	X	XXX	XX	XX	XX	X	X	XX	XXX	XX	XX	X	XXXX	X	X						
SMY	XXX		X	X		XX		X	X			X		X		X				X	X	XX	XXX	XX	XX	X	XXXX	X	X						
SNF		X	X	XXX	X	XXX	X	X	X	X	X		XXX	XX	X	X	X	X	X		XX	X	X	X	X	XXXX	X	X	XX	XXX					
SNG	X	XX	XXX		XXXX	XX	X	X	X	X	X	X	XXXXX	X	X	X	X	XX	X	X	XX			X	XX	X	XXXXXX	XXX	X		X	XXX			
SNY	XXXX	XXXXXX	XXX	XXXXXXXXXX	XXX	X	XX	XXX		X	XXXXXXXX	XX	XXX	X	X		XX	XX	XXXX	X	XX	X	XX	X	XX	XXXX	X	XXX	X	X					
SOD	XX	XXXXXXXXXXXXXX	XXX	XXXX	X	XX	XXXXXX	XX	X	XXXXXX	XXXX	X	XXXXX	XXXX	X	X		XX	X		X														
SOH	XXXXXX	XX	XX	XXXX	XX	XX	XXXXXX	XXX	X																										
SOI	X	X	XX	X	XX	XX	XXXX		XX	X	XX	XXX	XXX	XXX	X	XXXXXX		XX		XXXXXX	XXXX														
SOP	X	XX	X	XXX	X	XX	X	X	X	X	XXX	X	X	XX	X		X	X		X	XX	XXX				X	X			XX	XXX		X	XX	
SPA	XXX	XXX	XXXXXX	XXX	XXXXXX	X	X	XXXXXX	X	XXXXXX	X	XXXXXX	XXX	XX	XX	X		XXX	XX	XX	XX	XX	XX	XX	XX	XXXX	X	XXXXXXXXXX	XX	XXXX	XXXX	XX	XXXX		
SPC	XXXX	XXXXXXXXXX	XXX	XX	X	X	XXX	X	XXX	X	XX	XX	XX	XXX	X	X		X	XX	X	XXX	XXX	X	X	X	XXXX	X	X	XXXXXX	X	X	XXXX			
SPU	X	XX	X		XX		X	XX	X	X	X		XX	X	XXXX	XX	XXXX	X	XX	X	X	X	XXXX	XX	XX	X	XXXX	X	X						
SRN		X				X	X	X		XX		XX	XXX				X		X							X	XXX								
SRO	X	XX	XXXXXX	XXX	XX	XX	X	XXX	XX	X	XXX	X	XX	XX	XXX		X	X			XX	XX	XXX	X	X	XX	X	XXXX	X	X	XX	XXX	XX	XX	
SRS	X	XXX	XX	XX		X	X	XX	XXX	XXXXXX	X	X	X	X	X									XX	XX	XX	X	XXX	XXX	X	X	X	XXX	XX	XXXX
SSB		X		X	XX	XX						X														XX	X								
SSE	X	XX	XXXX	XXX	XXX	XXXXXXXXXX	X	XX	X	XXX	X	XXXXXX	XX	XXX	XXXX	X	XXX	XXX	XXX	XX	XXX	XXXX	X	XX	X	XXXX	XX	XX	X	X	X	XXX	XXXX	XXXX	
SSF	XX	XXXXXXXXXXXXXX	XXX	XXX	XX		XXXX	X	XXX	XXXX	XXX	XXX	XXX	XXX	XXX	X	X	X	XXXXXX	XXX	XX	XX	XXXX	XXX	XX	XXX	XXXXXX	XXX	XXX	XXXXXX	X	XX	XXXX		
SSV	X			X			X		X				XX						X				X	X	X	X	X								
STR			X		X	X		X						X													XX								
STS				XX	X			X		X	X		XX		X																				
STU				XX		XX																													
STV	X	X	XX	XX	X	XX	XXX	X	X	XX	XXXX	XXXX	XXX	XXX	X	XX	X	XX	XXX	XXXX	XX	XXXXXX		X	XXXX	XX	X		X	X		X	X	XX	
SUA		X		XX	X		XX		X	XX	X	X	X	XX	X	XXXX	XX	X	XX	X	X			X	XX	XX	X	XXXX	X	X	XX	XXX	XX	XXXX	
SUE		X		X				X					X	XX	X									X		X		X	X	XX					
SUF	XX																																		



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DATE	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31
ZSP	X						X	X					X	X	X				X	X	X	X						X	X	X	
ZST	XXXXXXXXXXXXXXXXXX	XXXXXX	XXXXXXXXXX	XXXXXX	XXXXXX	XXXXXX	XXXXXX	XXXXXX	XXXXXX	XXXXXX	XXXXXX	XXXXXX	XXXXXX	XXXXXX	XXXXXX	XXXXXX	XXXXXX	XXXXXX	XXXXXX	XXXXXX	XXXXXX	XXXXXX	XXXXXX	XXXXXX	XXXXXX	XXXXXX	XXXXXX	XXXXXX	XXXXXX	XXXXXX	XXXXXX

The following stations each reported less than 10 readings:

ABHA	ACR	ADH	AFAR	AGRW	AGX	AHA	AIN	AKSR	ALJ	ALPW	AMO	ANR	ANTO	APA	APM	APO	APW
AR6	ASR	ASW	ATA	AVN	AVOW	BAA	BBB	BCPM	BDF	BERF	BGB	BGMT	BHW	BIR	BJA	BKJ	BKR
BLH	BLN	BLS2	BNH	BOH	BPIL	BRF	BRN	BRVW	BST	BTB	BTG	BUGC	BUS	BUT	BVA	BVW	CALA
CAO	CBB	CBZ	CCW	CDFW	CDM	CHI	CHIE	CHOI	CIRL	CIW	CLMC	CMG2	CMW	CNIL	COLW	CPB	CPE
CPH	CPK	CPW	CRF	CROR	CSIL	CTAO	CTCR	CTFE	CUMC	CUSS	CVD	CVT	CZM	DAF	DAH	DBCT	DBN
DEK	DES	DGBT	DHW2	DIAC	DLA	DLG	DMW	DNP	DNZ	DOT	DPW	DR08	DRRA	DSH	DSVT	EAB	EAU
EBG	EBH	EBI	EBL	EDB	EDI	EDU	ELF	ELO	ELYF	EMEL	EPA	EPH	ERC	ESD	ESK	ESR	
ESY	ETB	ETW	FAM	FG2	FKO	FL2	FOO	FRU	FUO	FYU	GAL	GANF	GAZ	GBL	GBR	GBZ	GGC
GDR	GECU	GELF	GGC	GHW	GIBL	GL2	GLK	GLR	GMB	GMN	GMO	GMTN	GRB1	GRC1	GRFO	GRI	GROR
GRT	GSM	GUAN	GULW	HAY	HBF	HBH	HDC2	HDW	HIA	HIL	HITZ	HL0	HLP	HMH	HOBC	HOGG	HOR
HPI	HPU	HQN	HRV	HRY	HSR	HTC	HTW	HUH	HUL	HYF	IAS	IIA	ILT	IRK	IRZ2	ITB	ITB1
ITB7	ITG	IVF	JAU	JBO	JER	JLK	JMI	JTS	JUD	KAE	KAF	KAN	KEF	KETZ	KFH	KGT	KHU
KIH	KIP	KJN	KKU	KMOR	KNH	KOH	KOSW	KPO	KRO	KRW	KSI	KSU	KUG	KUH	KUL	LCCM	LCH
LCR2	LDN	LFU	LHS	LIJA	LIO	LIS	LMW	LNO	LOC	LOHW	LRDO	LSM	LTCM	LTMT	LVI	LVNJ	LVP
MAJO	MAVI	MBW	MCMT	MCO	MDB	MDW	MDZ	MEMT	MEO	MEW	MGM	MID	MIM	MKA	MKT	MLH	MLX
MMG	MOH	MOOW	MORO	MSI	MTMW	MTU	MUDI	MVH	MWH	MXC	MYT	NAB	NAC	NAH	NAO	NDE	NGH
NHIL	NLO	NLW	NMMO	NOH	NPH	OBC	OBH	OBN	OBO	OCM	OFK	OFUJ	OHW	QJEN	ONR	OOW	OPA
OSD	OSP	OTR	OUL	OUT	OVA	OZB	PACW	PATW	PBC	PCF	PCG	PCT	PEM	PET	PFH	PFO	PGO
PGW	PHC	PICO	PIG	PINI	PIO	PKK	PKL	PLAV	PLH	PLL	POA2	POH	PPD	PPK	PPL	PRAF	PRF
PRO	PTCR	PTI	PTS	PTT	PUH	PUL	PUYF	PVPS	PVV	PWH	PZI	QPS	QUTJ	QZA	QZG	RAMW	RAO
RAR	RATZ	RDS	REC	REDW	REM	REMW	RFI	RIM	RIN3	RIV	RKT	RPW	RSW	RWJ	RVC	RVW	SACA
SALC	SAP	SASA	SAW	SBG	SCI	SCP	SCY	SDD	SDG	SFTN	SGB	SGH	SHU	SHW	SILC	SIM	SIO
SJAS	SJS	SKI	SLKI	SLM	SLP	SLW	SMCN	SMW	SNKA	SNOW	SNZO	SOA	SOG	SONG	SOSW	SPT	SPW
SSR	SSS	STD	STEW	STH	STW	SUR	SVP	SWH	SXM	TARW	TATO	TAVF	TAZ	TBM	TCC	TCO	TDD
TDH	TDL	THI	TIK	TLG	TMBR	TME	TMP	TMW	TNR	TPAW	TPI	TREF	TRH	TRXW	TTH	TTP	TUH
TUTZ	TWL	TWM1	TWQ	TWW	TWZ	UTU	UWE	UYO	UZH	VACR	VBEM	VCR	VFP	VILF	VIPM	VLL	VLMM
VPD	VSS	VTG	VTHM	VTU	VVI	WAH2	WAM	WDIN	WHA	WHH	WIW	WKH	WLA	WLZ	WOB	WOH	WPW
WRD	WSI	WTV	YAH	YAKW	YEL	YER	YKU	YPE	YSA	YSS							