UNITED STATES DEPARTMENT OF THE INTERIOR

GEOLOGICAL SURVEY

EARTHQUAKE DATA REPORT

DECEMBER 1989

by

U.S. Geological Survey

NATIONAL EARTHQUAKE INFORMATION CENTER[1]

Open-File Report 89-612-A

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1USGS, Denver, Colorado

The following description is for New Publications of the U.S. Geological Survey:

Earthquake Data Report for _____December_____, 19_89__

The Earthquake Data Report (EDR) is a bulletin produced by the National Earthquake Information Center (NEIC) containing all information used to calculate the locations and magnitudes of events published in the Preliminary Determination of Epicenters (PDE) Monthly Listing for the corresponding month. The EDR is a technical data file intended for users who are familiar with basic seismological practice. Potential users who are unfamiliar with such practice or who desire simply a bulletin of earthquake locations are advised to obtain the PDE Monthly Listing (available from the U.S. Government Printing Office) instead of the EDR. A machine-readable summary of the PDE Monthly Listing is available from the NEIC.

The EDR data are written on 1.2 megabyte, high density, 5 1/4 inch diskettes and are readable by IBM PC or compatible computers running DOS version 2.0 or higher. All files are ASCII and the documentation is given in file AAREADME.DAT on the first disk. Succeeding disks are a continuation of the data file which starts on the first disk. Each disk contains a title page file, named AATPAGEn.DAT, and a data file, OFEDRmmn.DAT, where n is the disk number and mm is a two-character code for the month (JA, FE, MR, etc.).

EDR No. 12-89
Part 1 of 2
P. 1-146

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 Baysian 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 Δ 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

$20° \leq \Delta \leq 160°$, 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 $\Delta \leq 5°$. Amplitude values stated in this report are in nanometers (nm) for body-waves and micrometers (μm) 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.

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 η 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 (°) appears as "`".

References

Bolt, Bruce A. (1968), Estimation of PKP Travel Times, *Bull. Seis. Soc. Am.*, **58**, pp. 1305–1324.

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.

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* DEC 01, 1989 00h 34m 33.93± 0.73s
45.671 N ±13.3km 149.855 E ±13.3km
DEPTH = 33.0km (normal)
4.8mb (20 obs.)
KURIL ISLANDS (221)

KUSJ	4.50	237	P	35	48.20	6.7X
			S	36	35.30	
ASAJ	5.35	256	eP	36	05.00	11.4X
HOOJ	5.76	238	eP	36	06.90	7.6X
			S	37	09.40	
LZH	35.65	271	eP	41	32.00	1.1
	1.0s	33.00nm			5 2mb	
INK	43.77	32	eP	42	39.00	1.6
KKN	53.32	274	P	43	52.60	0.3
	0.7s	18.00nm			5.2mb	
PKI	53.36	274	P	43	52.60	-0.1
	0.6s	9.00nm			4.9mb	
DMN	53.55	274	P	43	54.20	0.2
	0.5s	10.00nm			5.1mb	
GKN	53.64	275	P	43	54.60	0.1
NUR	65.19	334	eP	45	27.00	13.4X
WB2	66.80	196	eP	45	23.80	-0.5
NB2	68.49	340	P	45	33.10	-1.4
	0.6s	1.50nm			4.3mb	
KBA	80.05	331	eP	46	41.50	-0.1
	0.7s	3.90nm			4.5mb	
FLN	82.45	341	eP	46	53.00	-0.9
LOR	82.75	337	eP	46	55.10	-0.5
	0.4s	1.70nm			4.5mb	
GRR	82.89	341	eP	46	56.10	-0.1
	0.4s	6.80nm			5.1mb	
LBF	82.98	337	eP	46	56.10	-0.7
	0.4s	1.30nm			4.4mb	
SSF	83.03	338	eP	46	56.60	-0.4
AVF	83.32	338	eP	46	58.10	-0.4
	0.5s	2.10nm			4.5mb	
SMF	83.33	337	eP	46	58.40	-0.1
	0.6s	4.80nm			4.8mb	
LPG	83.54	335	eP	47	00.40	0.4
	0.6s	3.60nm			4.7mb	
BGF	83.67	338	eP	47	00.60	0.3
	0.6s	3.60nm			4.7mb	
MAF	84.06	338	eP	47	02.70	0.4
	0.6s	6.30nm			5.0mb	
TCF	84.09	338	eP	47	02.20	-0.2
	0 4s	1.70nm			4.6mb	
LSF	84.30	339	eP	47	03.40	-0.1
	0.8s	9.40nm			5.0mb	
MFF	84.39	340	eP	47	03.80	-0.1
	0.4s	4.50nm			5.0mb	
CAF	85.39	338	eP	47	09.80	0.8
	0.6s	4.50nm			4.9mb	
LFF	85.73	339	eP	47	11.00	0.4
	0.6s	7.20nm			5.1mb	
LPO	85.85	338	eP	47	11.40	0.2
	0.6s	3.60nm			4.8mb	

S.D. = 0.7 on 25 of 29 obs.

? DEC 01, 1989 01h 05m 55.61± 4.35s
32 537 S ±27.5km 71.545 W ±19.5km
DEPTH = 10.3 ± 5.1 km
NEAR COAST OF CENTRAL CHILE (135)

ROCH	0.63	134	iPd	06	09.00	0.7
			iS	06	21.50	
JACH	0.82	100	iPd	06	11.20	-0.3
			iS	06	26.00	
LCCH	0.94	181	iPc	06	12.70	-0.7
			iS	06	28.40	
SAN	1.18	141	eP	06	17.00	-0.6
			iS	06	37.50	
TACH	1.22	156	iPd	06	18.60	0.2
			iS	06	40.00	
FCH	1.32	127	iPc	06	19.60	-0.6
			iS	06	42.00	
PCH	1.39	142	iPd	06	21.60	0.6
			iS	06	43.50	
LNV	1.42	175	iPc	06	21.60	0.2
			iS	06	44.00	
CHCH	1.58	152	iP	06	24.20	0.5
			iS	06	50.60	

S.D. = 0.7 on 9 of 9 obs.

DEC 01, 1989 01h 45m 06.42± 0.72s
38.840 N ± 6.8km 21.886 E ± 6.7km
DEPTH = 10.0km (geophysicist)
GREECE (364)
ML 3.2 (ATH).

AGG	0.39	62	ePgc	45	13.80	-0.6
NEO	1.14	65	ePb	45	27.60	-0.2
VLS	1.21	237	ePb	45	26.40	-2.6
LIT	1.34	20	ePbc	45	31.20	0.0
			eSb	45	51.10	
IGT	1.39	300	ePn	45	34.10	2.2
			eSn	45	57.70	
KZN	1.47	357	ePb	45	33.10	0.1
LSK	1.64	323	iPnd	45	36.00	0.5
ATH	1.68	121	ePn	45	37.50	1.6
KEK	1.84	299	ePg	45	42.00	3.7X
PLG	1.95	38	ePn	45	38.30	-1.6
THE	1.97	25	ePn	45	40.20	0.0
TPE	2.05	316	ePn	45	45.10	3.7X
VLI	2.28	158	ePb	45	45.40	0.8
OHR	2.42	340	ePn	46	15.00	28.3X
KNT	2.45	18	ePnd	45	46.80	-0.2
			eSn	46	16.90	
VAY	2.53	12	ePn	45	52.00	3.8X
SKO	3.15	354	ePn	45	57.00	0.1

S.D. = 1.4 on 13 of 17 obs.

? DEC 01, 1989 01h 57m 24.41±15.06s
51.923 N ±73.3km 16.893 E ±99.4km
DEPTH = 10.0km (geophysicist)
POLAND (548)
ML 3.5 (VKA), 3.3 (KBA), 2.6 (KRA).

KSP	1.14	199	iP	57	46.10	0.3
			iS	57	54.20	
			eLR	57	58.00	
BRG	2.12	242	ePg	58	01.00	0.6
			iSg	58	21.00	
PRU	2.44	218	Pn	58	04.50	-0.4
			Pg	58	07.20	
			Sg	58	30.50	
CLL	2.50	257	iPn	58	06.00	0.2
			iPg	58	09.30	
			iSg	58	35.00	
KRA	2.68	133	eP	58	27.50	19.1X
			iS	59	05.30	
KHC	3.51	218	iPn	58	20.00	-0.1
			Pg	58	26.20	
			Sn	58	56.00	
			Sg	59	05.00	
HOF	3.55	245	iPnc	58	20.00	-0.6
MOX	3.55	251	ePg	58	29.00	8.3X
			iSg	59	08.00	
VKA	3.68	186	iPgd	58	34.30	11.7X
			ic	58	35.20	
			iSg	59	19.00	
ZST	3.73	178	eP	58	52.50	29.2X
			i(Sn)	59	22.70	
			e	07	19.10	
SOP	4.25	183	eP	58	46.00	15.4X
KBA	5.37	207	iPnc	58	46.70	0.0
			e	00	07.00	

S.D. = 0.5 on 7 of 12 obs.

? DEC 01, 1989 02h 42m 39.71± 4.61s
32.547 S ±26.1km 71.823 W ±24.3km
DEPTH = 10.0km (geophysicist)
NEAR COAST OF CENTRAL CHILE (135)

ROCH	0.80	122	iPd	42	56.00	0.5
			iS	43	07.50	
LCCH	0.95	167	iPc	42	57.90	0.1
			iS	43	10.50	
JACH	1.05	98	iPd	42	59.60	0.1
			iS	43	13.50	
SAN	1.33	133	iPd	43	04.20	-0.1
			iS	43	22.90	
TACH	1.33	146	iPc	43	04.00	-0.3
			iS	43	20.50	
LNV	1.45	166	iPc	43	06.10	0.2
			iS	43	22.80	
FCH	1.51	122	iPc	43	07.10	0.0
			iS	43	26.50	
CHCH	1.70	145	iPc	43	10 10	0.6
			iS	43	33 50	

S.D. = 0.3 on 8 of 8 obs.

% DEC 01, 1989 03h 29m 16.43± 1.86s
10.982 N ± 8.9km 61.925 W ±22.3km
DEPTH = 33.0km (normal)
TRINIDAD (98)
MD 2.7 (TRN).

TCE	0.33	149	eP	29	24.59	0.0
			eS	29	34.73	
TRN	0.61	123	iP	29	28.13	-0.5
			iS	29	40.25	
TPP	0.81	145	eP	29	31.64	0.3
			eS	29	44.11	
BOT	1.20	81	eP	29	37.17	0.2
GRW	1.20	12	iP	29	36.95	-0.1
			eS	29	54.72	

S.D. = 0.4 on 5 of 5 obs.

DEC 01, 1989 04h 46m 32.06± 1.08s
1.249 N ± 5.7km 122.974 E ± 7.4km
DEPTH = 37.4 ± 11.4 km
4.7mb (7 obs.) 4.7Msz (3 obs.)
MINAHASSA PENINSULA (265)

MNI	1.87	84	ePc	47	01.50	-0.8
			eS	47	23.00	
TSM	5.72	301	ePd	47	58.20	1.4
DAV	6.35	24	eP	48	05.40	-0.4
AAI	7.16	133	ePd	48	23.30	6.2X
			eS	48	54.00	
MKS	7.32	209	ePd	48	25.00	5.7X
			e	52	00.00	
KKM	8.26	305	eP	48	32.00	-0.5
BAG	15.25	351	eP	50	07.00	0.3
KNA	17.83	161	eP	50	40.30	1.1
IPM	22.17	279	ePc	51	38.90	12.3X
	0.9s	24.90nm				
MBL	22.48	188	eP	51	29.00	-0.7
WB2	23.84	153	eP	51	42.20	-0.7
OZH	23.93	350	eP	51	45.50	1.8
Z	16s	1.40um			4.5MszX	
			eS	55	56.00	
NANU	24.76	197	eP	51	51.00	-0.7
	0.4s	8.00nm			4.6mb	
GUMO	24 89	59	e(P)	52	04.00	10.9X
Z	23s	0.74um			4.1MszX	
PMG	26.31	114	eP	52	06.00	-0.3
ASPA	26.95	157	iPc	52	11.80	-0.4
	0.8s	13.00nm			4.6mb	
			epP	52	53.30	208kmX
QIS	27.11	144	eP	52	13.00	-0.7
WARB	27.50	173	eP	52	27.00	9.8X
	0.4s	4.00nm			4.4mb	
FORR	32.29	172	iPd	52	58.00	-1.7
	0.5s	25.00nm			5.3mb	
TIA	35.21	352	eP	53	24.70	-0.1
			S	58	55.00	
TIY	37.56	346	eP	53	44.50	-0.3
Z	18s	2.00um			5.0Msz	
N	16s	1.60um				
			S	59	31.50	
			sS	59	51.00	
ADE	38.92	159	iPc	53	57.50	1.3
	0.8s	28.36nm			5.1mb	
LZH	38.94	335	eP	53	59.50	3.0X
	1.5s	29.00nm			4.8mb	
Z	18s	1.10um			4.7Msz	
E	15s	0.80um				
			S	59	56.00	
BJI	39.10	352	eP	53	56.00	-1.5
Z	22s	0.49um			4.3Msz	
			eS	59	48.00	
SNY	40.40	1	eP	54	07.50	-0.7
HHC	40.75	347	eP	54	12.00	0.7
BWA	42.77	148	eP	54	30.10	2.3
			e	54	39.20	
GTA	43.46	334	eP	54	34.80	1.3
Z	16s	0.90um			4.8MszX	
			S	01	00.00	
CAN	43.76	149	eP	54	37.30	1.4
			e	54	46.00	
PKI	44.48	309	P	54	42.00	-0.2
KKN	44.69	310	P	54	43.60	-0.2
DMN	44.74	309	P	54	43.60	-0.6
GKN	45.29	309	P	54	47.60	-0.9
HYB	46.52	293	eP	54	56.50	-1.6
GBA	46.69	288	Pc	54	59.00	-0.4
	1.1s	8.10nm			4 6mb	

01d 04h

MSZ 60.68 145 P 56 41.90 0.0
MAIO 68.08 309 eP 57 32.00 1.5
S.D. = 1.1 on 31 of 37 obs.

DEC 01, 1989 04h 55m 09.52± 1.08s
1.366 N ± 7.6km 123.198 E ± 9.7km
DEPTH = 66.9 ± 13.5 km
4.5mb (3 obs.)
MINAHASSA PENINSULA (265)

MNI	1.64	87	ePd	55 36.00 -0.8
			eS	55 57.70
DAV	6.16	23	eP	56 40.50 0.5
AAI	7.08	135	eP	56 58.50 5.7X
MKS	7.53	210	e(P)c	57 00.00 1.1
			e	59 36.50
KKM	8.37	304	ePc	57 10.50 -0.3
KNA	17.87	162	eP	59 15.50 0.2
MBL	22.63	188	eP	00 04.00 -1.8
WB2	23.84	153	eP	00 17.20 -0.4
ASPA	26.97	158	iPc	00 48.50 1.5
	0.9s	12.00nm		4.5mb
QIS	27.07	144	eP	00 48.00 0.1
WHN	30.21	345	P	01 15.50 -0.4
	0.5s	0.04nm		2.4mb X
FORR	32.38	172	eP	01 32.70 -2.2
	0.4s	12.00nm		5.1mb
XAN	35.14	339	iPd	01 53.40 -5.4X
BJI	39.02	351	eP	02 22.50 -8.7X
BWA	42.75	149	eP	03 05.10 3.0X
GTA	43.46	333	iPd	03 01.20 -6.7X
CAN	43.75	149	eP	03 12.10 2.0
PKI	44.58	309	P	03 17.60 0.2
GKN	45.39	309	P	03 23.80 0.2
GBA	46.87	287	Pc	03 35.10 -0.1
	0.7s	2.40nm		4.2mb
S.D. = 1.2 on 15 of 20 obs.				

DEC 01, 1989 04h 57m 18.42± 0.15s
30.838 N ± 3.2km 137.167 E ± 3.1km
DEPTH = 488.3km (2 depth phases)
4.9mb (42 obs.)
SOUTH OF HONSHU, JAPAN (211)
mb 4.8 (BRK).

MAT	5.75	8	iPc	58 52.40 -0.4
	0.8s	220.15nm		5.3mb
			iS	00 05.60
SSE	13.72	275	eP	00 15.00 -1.1
ANP	14.92	252	eP	00 11.50 -17.1X
MDJ	14.99	339	eP	00 29.50 0.4
DL2	15.07	306	eP	00 28.00 -1.9
Z	16s	0.60um		
SNY	15.48	319	iPc	00 35.00 1.0
	1.4s	0.20nm		2.5mb X
			S	03 15.00
NJ2	15.68	279	Pd	00 36.40 0.3
CN2	15.93	328	iPd	00 40.00 1.5
	1.0s	0.10nm		2.4mb X
			eS	03 25.00
TIA	17.54	293	P	00 55.30 0.8
GUMO	18.58	156	eP	01 05.60 1.0
	0.8s	333.82nm		6.0mb X
PJG	18.58	156	eP	01 05.40 0.8
GUA	18.64	156	eP	01 05.40 0.1
	0.8s	459.70nm		6.1mb X
BJI	19.38	304	eP	01 12.50 0.3
Z	19s	0.59um		
			eS	04 26.00
TIY	21.52	295	iPc	01 33.40 0.9
HHC	22.96	303	Pc	01 46.40 0.7
GYA	27.08	268	iPd	02 22.00 -0.6
LZH	28.20	290	eP	02 32.30 -0.1
	1.5s	75.00nm		5.0mb
CD2	28.62	279	eP	02 35.40 -0.5
KMI	30.85	268	Pc	02 56.00 0.5
CHG	36.53	260	iPd	03 43.90 1.0
	0.9s	38.24nm		4.9mb
CHTO	36.53	260	iPd	03 43.80 1.0
	1.4s	113.94nm		5.2mb
			pP	05 05.90 428kmX
NST	37.03	254	eP	03 49.00 2.1
BDT	37.20	258	eP	03 49.90 1.6
	0.7s	90.30nm		5.4mb
WMQ	40.84	303	P	04 18.50 0.6
			S	09 53.50
IPM	42.87	240	ePd	04 35.00 0.8
	0.9s	61.40nm		5.1mb
KHKI	44.12	211	ePc	04 43.20 -0.8
			e	06 48.00
PKI	44.97	279	P	04 51.30 0.3
KKN	45.02	280	P	04 51.80 0.6
DMN	45.22	280	P	04 53.20 0.4
GKN	45.50	280	P	04 55.30 0.4
KLI	47.05	227	eP	05 06.00 -0.6
WB2	50.56	183	eP	05 31.20 -1.6
QIS	51.15	177	iPc	05 36.00 -1.1
NDI	51.54	284	iPd	05 40.00 -0.1
	1.0s	90.00nm		5.1mb
			eS	12 22.00
SVW	52.58	34	eP	05 47.80 0.6
BRW	53.47	22	eP	05 54.00 0.6
IMA	53.80	28	eP	05 56.10 0.0
	1.2s	8.30nm		3.9mb
			e	06 54.50
KDC	54.15	39	eP	05 57.70 -0.7
ASPA	54.28	184	eP	05 59.20 -0.5
			eS	12 58.30
MBL	54.31	200	eP	05 59.10 -0.9
PMR	55.71	34	eP	06 08.30 -1.0
	0.9s	10.00nm		4.1mb
FBA	56.22	30	eP	06 12.90 0.1
TOA	57.08	33	eP	06 19.20 0.3
GBA	57.26	267	P	06 20.40 -0.3
POO	58.16	274	iPd	06 26.60 -0.2
	0.8s	49.25nm		4.9mb
KOD	58.86	263	eP	06 32.30 0.4
OUE	59.52	289	eP	06 36.00 0.1
DZM	59.64	148	iPd	06 37.00 0.3
INK	61.49	25	ePd	06 47.70 -0.5
FORR	61.95	189	eP	06 50.50 -1.0
MBC	63.43	15	iPd	07 00.60 0.0
	0.5s	24.00nm		5.0mb
BWA	65.77	170	eP	07 16.30 0.4
CAN	66.74	169	eP	07 21.80 -0.1
KEV	67.98	339	iP	07 29.20 0.2
	0.7s	24.00nm		4.9mb
SOD	69.30	337	iP	07 37.00 0.0
SUF	71.91	333	iP	07 52.00 -0.4
	0.5s	30.30nm		5.1mb
NUR	73.72	332	iP	08 02.50 -0.3
	0.6s	18.30nm		4.8mb
UPP	76.92	333	iP	08 19.80 -0.6
WDC	77.68	50	ePc	08 24.80 -0.2
HFS	78.22	335	eP	08 26.60 -0.9
	0.5s	43.00nm		5.2mb
NB2	78.48	336	P	08 28.30 -0.6
	0.7s	24.20nm		4.8mb
ORV	78.88	51	eP	08 31.50 0.1
BRK	79.23	52	e(P)	08 33.10 -0.1
BKS	79.24	52	ePc	08 34.00 0.7
	0.8s	25.00nm		4.7mb
PCC	79.33	53	ePc	08 34.30 0.5
MHC	79.92	53	eP	08 37.00 0.0
SAO	80.35	53	eP	08 39.50 0.4
CMB	80.41	51	ePc	08 40.30 0.8
			epP	10 28.80 493km
PRS	80.63	53	eP	08 41.10 0.5
FFC	80.82	30	iPd	08 41.00 -0.1
	0.8s	20.00nm		4.7mb
LRM	81.08	42	eP	08 44.20 1.2
VRI	81.08	38	eP	08 43.00 0.3
PRI	81.21	53	ePc	08 45.00 1.3
KVN	81.39	50	eP	08 45.80 1.1
			pP	10 32.80 483km
FRI	81.42	52	ePc	08 45.20 0.6
MLR	81.75	319	eP	08 47.00 0.7
COP	81.79	332	iP	08 46.00 -0.1
KRA	82.17	325	eP	08 48.00 -0.1
	0.8s	33.00nm		4.9mb
			e	08 58.50
KSP	83.42	327	iPd	08 54.40 0.0
	0.7s	24.00nm		4.9mb
BRG	84.49	328	iP	08 59.30 -0.4
	0.8s	10.00nm		4.5mb
CLL	84.61	329	iPc	09 00.10 -0.2
PRU	84.82	327	eP	09 01.50 0.1
KHC	85.87	327	eP	09 06.50 0.0
KBA	87.41	325	eP	09 13.00 -1.1
	0.8s	4.50nm		4.3mb
CDF	89.27	329	iPd	09 22.10 -0.5
	0.8s	8.00nm		4.6mb
BSF	89.92	329	eP	09 24.90 -0.7
	0.8s	5.30nm		4.5mb
ALQ	91.32	47	eP	09 33.50 1.0
	1.0s	4.75nm		4.4mb
LOR	91.62	330	iPd	09 32.70 -0.7
	1.0s	10.00nm		4.8mb
LPG	91.70	328	iPd	09 33.60 -0.5
	0.6s	6.30nm		4.8mb
LBF	91.79	330	iPd	09 33.40 -0.8
	0.8s	5.30nm		4.6mb
SSF	91.93	330	iPd	09 34.20 -0.6
	0.8s	8.00nm		4.8mb
SMF	92.12	330	iPd	09 35.00 -0.6
	0.8s	26.80nm		5.3mb
LDF	92.19	333	iPd	09 35.10 -0.8
	0.6s	9.70nm		5.0mb
FLN	92.19	334	iPd	09 35.00 -0.9
	0.6s	7.20nm		4.9mb
AVF	92.21	330	iPd	09 35.20 -0.8
	0.8s	29.50nm		5.4mb
BGF	92.61	330	eP	09 37.30 -0.6
	0.8s	8.50nm		4.8mb
GRR	92.64	333	iPd	09 37.50 -0.5
	0.8s	19.80nm		5.2mb
MAF	92.99	330	eP	09 39.40 -0.3
	0.6s	5.40nm		4.8mb
LPF	93.00	333	iPd	09 39.40 -0.3
	0.8s	16.10nm		5.1mb
TCF	93.09	331	iPd	09 39.70 -0.5
	0.8s	8.00nm		4.8mb
LSF	93.41	331	iPd	09 41.20 -0.4
MFF	93.81	332	iPd	09 43.30 -0.1
	0.8s	11.80nm		5.1mb
RJF	94.17	330	eP	09 44.90 -0.2
	0.8s	10.70nm		5.0mb
CAF	94.24	330	eP	09 45.40 -0.1
	0.8s	6.70nm		4.8mb
LFF	94.79	331	eP	09 47.80 -0.1
	0.8s	13.40nm		5.1mb
LKO	126.25	312	PKP	15 26.82 0.0
S.D. = 0.7 on 105 of 106 obs.				

DEC 01, 1989 05h 06m 12.10± 0.11s
51.631 N ± 3.0km 178.102 W ± 1.8km
DEPTH = 43.1km (17 depth phases)
5.6mb (87 obs.) 5.0Msz (18 obs.)
ANDREANOF ISLANDS, ALEUTIAN IS. (7)
ML 5.7 (PMR). Ms 5.1 (BRK). Felt (IV) on Adok and Amchitka.
CENTROID, MOMENT TENSOR (HRV)
Data Used: GDSN
L.P.B.: 17S, 42C
Centroid Locotion:
Origin Time 05:06:16.6 0.3
Lat 51.90N 0.04 Lon 177.98W 0.06
Dep 39.7 3.7 Half-durotion 2.4
Moment Tensor; Scale 10**17 Nm
Mrr= 2.02 0.09 Mtt=-1.32 0.13
Mff=-0.70 0.10 Mrt= 1.37 0.22
Mrf= 1.14 0.21 Mtf=-1.42 0.13
Principal Axes:

	Val=	Plg=	Azm=
T	2.64	71	319
N	0.45	0	51
P	-3.09	19	141

Best Double Couple:Mo=2.9*10**17
NP1:Strike=232 Dip=26 Slip= 91
NP2: 51 64 89

ADK	0.92	73	iPc	06 31.30 2.6
SMY	4.92	286	iPc	07 27.00 1.6
SDN	11.12	64	eP	08 51.90 0.6
SVW	15.58	44	ePc	09 53.50 3.4X
KDC	15.96	57	eP	09 52.90 -2.0
TTA	16.35	38	ePc	10 03.20 3.3X
PMS	18.33	47	eP	10 24.10 -0.4
PMR	18.64	46	eP	10 27.60 -0.6
	0.6s	81.30nm		5.1mb
IMA	19.01	31	iPc	10 34.20 1.4
	1.0s	235.00nm		5.4mb
MID	19.44	54	ePd	10 38.90 1.4
HIN	19.55	51	eP	10 38.92 0.2
CVA	19.94	51	eP	10 42.55 -0.3
TOA	20.13	46	ePd	10 44.60 -0.3
SGAM	20.20	51	eP	10 47.32 1.8
RAGM	20.43	52	eP	10 50.53 2.5
FBA	20.48	38	eP	10 47.00 -1.4
SNH	21.30	53	eP	11 01.34 4.5X
WAX	21.34	52	eP	10 58.31 1.1
CYK	21.47	53	eP	11 03.65 5.2X

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BRW     21.96   18 iPc    11 05.10    1.8
BCPM    22.88   54 eP     11 13.32    0.9
HON     23.23   55 eP     11 16.65    0.8
DWY     23.60   43 Pc     11 20.00    0.6
SIT     25.19   61 eP     11 38.20    3.5X
        0.7s     37.10nm          5.1mb
KUSJ    26.35  266 P      11 44.70   -0.9
INK     27.00   35 iPc    11 50.90   -0.4
        0.6s     79.00nm          5.5mb
ASAJ    27.12  270 P      11 53.80    1.2
HOOJ    27.62  266 P      11 57.10   -0.1
MRRJ    28.98  268 P      12 08.90   -0.5
MBC     33.21   22 iPc    12 47.50    1.2
        0.5s     42.00nm          5.6mb
KAKJ    33.27  259 iP+    12 47.60    0.4
NIIJ    33.32  261 iP+    12 48.50    0.8
HON     34.06  145 P      13 00.00    5.8X
     Z  20s       2.13um          4.9Msz
CHJJ    34.09  260 iP+    12 55.00    0.6
MAT     34.26  261 iPc    12 56.40    0.6
        1.1s    455.70nm          6.3mb
     Z  20s       1.77um          4.8Msz
                   (S)    19 00.00
PGC     34.47   73 ePc    12 58.50    1.0
        0.8s     88.00nm          5.7mb
MTMJ    34.48  262 iP+    12 58.30    0.5
MDJ     34.96  280 eP     13 00.50   -1.3
IIDJ    35.13  260 iP+    13 04.30    1.0
TSRJ    36.28  262 iP+    13 13.80    0.8
LON     36.33   75 eP     13 14.30    0.9
PNT     36.44   70 iPc    13 14.60    0.4
WKYJ    37.39  261 iP+    13 23.90    1.5
CN2     37.93  281 Pc     13 22.00   -4.8X
        4.0s      0.60nm          2.8mb X
     Z  20s       2.80um          5.1Msz
     N  16s       0.80um
     E  16s       1.00um
                   PP     14 54.00
                   PcP    15 40.00
                   eS     19 14.00
                   eSS    21 55.00
YONJ    38.06  264 P      13 29.20    1.2
FHC     38.15   85 eP     13 30.50    1.7
        1.2s    228.07nm          5.9mb
EDM     38.31   61 iPc    13 29.40   -0.5
        0.5s    153.00nm          6.1mb
TKSJ    38.50  262 P      13 33.30    1.7
SHK     38.98  264 iPc    13 36.60    0.9
        0.9s    181.51nm          5.9mb
LBFM    39.14   82 eP     13 39.00    1.8
WDC     39.18   84 iPc    13 38.90    1.6
                   ipP    13 50.70   43km
                   esP    13 58.20
                   ePcP   15 45.20
                   epPcP  15 57.50
                   eScP   19 26.80
                   e      19 32.90
LTCM    39.65   84 eP     13 42.40    1.2
MIN     39.89   84 iPc    13 44.20    0.8
                   ipP    13 56.30   44km
                   esP    14 03.60
                   ePcP   15 47.70
SNY     40.16  280 Pd     13 45.90    0.5
        1.2s      0.30nm          3.0mb X
     Z  28s       2.50um          4.9MszX
     N  30s       2.20um
     E  30s       1.60um
                   sS     20 08.00
SHNJ    40.22  264 iP+    13 47.30    1.4
NWRM    40.23   87 eP     13 46.60    0.7
ORV     40.43   84 iPc    13 48.10    0.5
                   ipP    14 00.30   45km
                   esP    14 07.70
                   ePcP   15 49.50
SES     40.86   64 iPc    13 49.80   -1.2
        0.6s     83.00nm          5.7mb
BRK     40.97   87 iPc    13 53.00    1.0
                   ePcP   15 51.40
BKS     40.99   87 ePc    13 53.10    0.9
        0.7s    206.00nm          6.0mb
     Z  20s       2.30um          5.0Msz
     N  20s       1.00um
     E  20s       2.30um
                   eS     20 04.00
                   eLQ    23 34.00
                   e      24 00.00
                   eLR    25 30.00
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PCC     41.13   88 ePc    13 53.80    0.5
                   ePcP   15 51.70
GCC     41.66   88 ePc    13 58.40    0.7
                   epP    14 10.20   43km
                   ePcP   15 53.70
MHC     41.69   87 iPc    13 59.00    0.9
                   epP    14 11.10   44km
                   esP    14 18.60
                   ePcP   15 54.30
                   epPcP  16 06.70
ARN     41.75   87 eP     13 59.50    1.0
                   epP    14 12.00   46km
CMB     42.04   85 eP     14 02.00    1.1
        1.3s    117.49nm          5.5mb
                   epP    14 14.50   46km
SAO     42.17   88 ePc    14 02.60    0.7
LRM     42.38   71 iPc    14 04.00    0.2
PRS     42.49   88 iPc    14 05.50    0.9
                   epP    14 17.60   44km
                   ePcP   15 55.80
LLA     42.58   88 iPc    14 06.60    1.3
                   ipP    14 18.60   44km
                   ePcP   15 57.10
                   epPcP  16 09.50
KVN     42.84   83 iPc    14 08.60    1.0
PRI     43.05   88 iPc    14 10.50    1.2
                   ePcP   15 59.10
DL2     43.09  277 eP     14 09.00   -0.4
     Z  30s       1.50um          4.7MszX
FRI     43.11   86 ePc    14 10.30    0.7
                   epP    14 22.30   43km
                   esP    14 29.70
                   ePcP   15 57.80
                   epPcP  16 11.80
                   eScP   19 43.80
FFC     43.64   55 iPc    14 12.40   -1.3
        0.5s     11.00nm          4.9mb
TNP     43.98   83 iPc    14 15.70   -1.1
BCH     44.03   88 eP     14 18.20    1.0
SYP     44.52   89 eP     14 22.00    0.8
ISA     44.72   87 eP     14 22.00   -0.8
ABL     44.78   88 eP     14 23.80    0.4
CLC     45 17   86 iP+    14 27.00    0.7
                   e      16 05.00  530kmX
BJI     45.75  282 Pc     14 31.50    0.8
        1.0s    198.00nm          6.0mb
     Z  22s       2.77um          5.2Msz
                   epP    14 48.00   65kmX
                   ePcP   16 08.00
                   esS    20 01.00
                   eS     21 10.00
                   esS    21 35.00
                   eScS   24 20.00
SBB     45.76   87 iP+    14 31.50    0.5
                   e      16 08.00  517kmX
BW06    45.81   73 eP     14 31.30   -0.2
        0 8s    198.21nm          6.1mb
MWC     45.92   88 eP     14 32.00   -0.4
                   e      16 21.00  617kmX
GSC     46.00   86 eP     14 34.10    1.3
RVR     46.50   88 eP     14 36.00   -0.7
                   e      16 09.00  489kmX
PEC     46.70   88 eP     14 38.00   -0.3
                   epP    14 50.50   46km
PLM     47.24   88 iP+    14 43.00    0.2
TPC     47.25   87 eP     14 42.00   -0.7
                   e      16 13.00  472kmX
TIA     47.56  278 Pc     14 45.00   -0.1
     Z  35s       1.60um          4.7MszX
                   eS     21 35.00
BAR     47.81   88 eP     14 47.00   -0.1
                   e      16 13.00  438kmX
HHC     48.04  286 iPc    14 50.00    1.1
        1.2s      0.60nm          3.5mb X
GUMO    48.21  232 eP     14 47.00   -3.3X
PJG     48.21  232 eP     14 47 80   -2.5
GUA     48.23  232 eP     14 47.80   -2.7
        0.7s     87.67nm          5.9mb
SSE     48.44  269 iPd    14 52.50    0.6
        1.0s    423.00nm          6.4mb
     Z  20s       0.90um          4.8Msz
                   pP     15 03.00   36km
                   i      15 08.00
                   PcP    16 17.40
                   S      21 50.00
GLA     48.71   87 iP+    14 54.00   -0.1
BTO     49.12  287 iPc    14 58.00    0.8
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                   pP     15 09.00   38km
                   sP     15 15.00
                   PP     16 55.00
                   iS     22 04.00
NJ2     49.24  272 iPc    14 57.60   -0.5
        0.8s      0.30nm          3.4mb X
     Z  24s       1.30um          4.8MszX
                   PP     16 50.60
KBS     49.57  357 eP     15 00.50    0.4
RSON    49.95   55 eP     15 01.60   -1.7
        0.6s     92.09nm          6.0mb
     Z  20s       1.47um          5.0Msz
GOL     50.19   74 eP     15 06.10    0.5
        1.2s    590.16nm          6.5mb
     Z  20s       1.25um          4.9Msz
GLD     50.25   73 eP     15 06.00    0.0
     Z  20s       2.00um          5.1Msz
FRB     52.58   32 ePc    15 21.30   -1.7
        0.8s     51.00nm          5.6mb
ALQ     52.62   79 eP     15 23.80   -0.2
        1.0s     70.00nm          5.6mb
                   epP    15 36.00   43km
WHN     53.07  274 iPc    15 27.00   -0.1
        1.0s      0.45nm          3.4mb X
     Z  20s       0.75um          4.7Msz
     N  20s       2.83um
                   sP     15 46.00
                   S      22 55.00
                   sS     23 15.00
XAN     54.04  281 iPc    15 34.00   -0.2
QZH     54.40  266 Pc     15 36.50   -0.4
LZH     55.73  286 iPc    15 47.00    0.3
        1.5s    643.00nm          6.4mb
     Z  20s       2.90um          5.4Msz
     E  20s       2.70um
                   e      15 59.00   42km
                   PcP    16 45.80
                   S      23 30.00
                   sS     23 52.80
GTA     55.88  292 iPc    15 46.80   -0.9
     Z  20s       1.90um          5.2Msz
     E  14s       0.80um
                   sP     16 06.00
                   PcP    16 45.20
                   S      23 30.00
                   sS     23 53.00
MEO     57.49   74 iPc    15 58.30   -0.8
KEV     57.55  350 eP     16 00.00    1.1
GZH     59.02  269 iPd    16 10.00    0.2
CD2     59.35  282 iPc    16 11.60   -0.5
        1.0s      0.30nm          3.4mb X
                   pP     16 24.00   44km
                   sS     24 39.50
BAG     59.56  258 eP     16 12.00   -1.8
SCH     59.57   39 ePc    16 11.00   -2.3
WMQ     59.57  303 P      16 12.50   -1.0
     Z  22s       2.60um          5.3Msz
                   pP     16 27.50   55kmX
                   S      24 14.00
SOD     59.87  349 iP     16 14.30   -0.8
FVM     60.05   66 eP     16 15.00   -1.8
UYO     60.37   71 iPd    16 17.60   -1.4
GYA     60.73  276 iPc    16 21.00   -0.7
POW     60.89   68 eP     16 20.40   -2.1
OLY     61.19   68 eP     16 22.60   -1.9
                   epP    16 34.90   43km
ELF     61.35   56 P      16 24.50   -1.1
DLA     61.45   56 P      16 25.70   -0.5
LDN     61.53   56 P      16 25.50   -1.2
CLE     62.45   57 iP     16 31.80   -1.1
RSNY    63.76   51 eP     16 40.00   -1.5
        1.0s     21.69nm          5.2mb
     Z  20s       1.13um          5.0Msz
KMI     64.12  278 iPc+   16 44.00   -0.4
        3.0s      1.20nm          3.4mb X
                   pP     17 16.50  134kmX
                   sP     17 39.00
                   S      25 21.50
QIZ     64.21  268 eP     16 44.80    0.1
SUF     64.40  348 eP     16 44.30   -1.1
        0.4s     19.40nm          5.5mb
RSCP    64.48   64 eP     16 44.80   -1.5
        1.0s   1149.68nm          6.9mb X
HBVT    64.60   50 eP     16 44.50   -2.5
CBM     64.94   45 eP     16 46.80   -2.3
RGS     65.49  356 eP     16 52.50    0.1
CVL     66.63   58 eP     16 59.30   -0.7
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01d  05h

NUR     66.73 348 iP     16 59.00  -1.3
        0.9s   40.60nm           5.5mb
MRX     66.73  87 iPc    17 01.50   0.6
CBN     67.03  57 eP     17 02.00  -0.6
PRM     67.39  63 eP     17 04.40  -0.5
NB2     67.43 355 P      17 03.40  -1.4
        0.6s   15.00nm           5.2mb
LSA     67.77 290 iPc    17 08.80   0.9
PMG     67.77 217 eP     17 07.00  -0.4
JSC     67.86  63 eP     17 07.10  -0.7
CRX     67.89  86 iPc    17 08.50  -0.2
LHS     67.96  62 eP     17 07.30  -1.2
UPP     68.14 352 iP     17 07.60  -1.6
                  i      17 23.50  58kmX
HFS     68.18 354 eP     17 07.10  -2.4
        0.5s   32.30nm           5.6mb
    Z  18s    0.47um             4.8Msz
                  LR     40 58.00
KSH     68.74 307 eP     17 13.00  -0.4
III     68.80  87 iPc    17 12.50  -1.6
PPM     68.80  86 iPd    17 14.00  -0.5
SGS     69.08  63 eP     17 15.50   0.1
IISM    69.64  85 iPd    17 19.00   0.0
SHL     70.40 287 iP     17 24.00   0.2
                  eS     26 31.00
LOE     70.48 274 eP     17 23.00  -1.2
TSM     70.65 252 ePc    17 26.10   1.0
CHG     71.15 277 iPc    17 28.30   0.1
        1.2s  136.33nm           5.8mb
PMO     71.38 149 iP     17 29.10  -0.3
        0.8s   15.00nm           5.0mb
TPT     71.45 149 iP     17 29.40  -0.4
        0 8s   20.00nm           5.1mb
VAH     71.68 149 iP     17 30.80  -0.4
        0.8s   20.00nm           5.1mb
RUV     71.71 149 iP     17 31.20  -0.2
        0 8s   15.00nm           5.0mb
EDR     71.75   3 eP     17 30.60  -0.6
EDU     72.11   3 ePd    17 32.80  -0.5
        0 4s   26.00nm           5.5mb
BDT     72.30 275 eP     17 35.00   0.0
        1 0s  103.50nm           5.7mb
EBH     72.39   3 iPd    17 34.50  -0.5
        0.5s   35.00nm           5.6mb
EAB     72.42   4 iPd    17 35.10  -0.1
KKN     72.60 293 P      17 37.00   0.0
PKI     72.69 293 P      17 37.80   0.1
ESY     72.75   3 eP     17 36.70  -0.5
NST     72.79 274 eP     17 38.10   0.2
EAU     72.80   3 eP     17 36.60  -0.8
        0.4s   34.00nm           5.7mb
GKN     72.81 293 P      17 38.00  -0.1
DMN     72.84 293 P      17 38.60   0.1
AFR     73.19 152 iP     17 39.60  -0.4
        0.8s   25.00nm           5.2mb
EKA     73.32   3 Pc     17 40.00  -0.5
        0.9s   33.70nm           5.3mb
DZM     74.63 195 iPc    17 49.00   0.5
DLE     75.22   5 eP     17 51.30  -0.1
        0.6s   39.00nm           5.5mb
NNT     75.39 272 iPc    17 53.00   0.0
ETA     75.82   5 iPd    17 55.20   0.3
        0.8s  158.00nm           6.0mb
WIT     75.85 357 eP     17 58.00   3.0
ECP     76.33   5 eP     17 57.60  -0.1
        0 6s   70.00nm           5.8mb
NDI     76.43 299 eP     17 59.00   0.2
WTS     76.67 357 eP     18 00.00   0.4
        0.9s   27.00nm           5.3mb
                  e      18 27.50 107kmX
CLL     77.01 353 eP     18 00.00  -1.5
        1 8s   55.00nm           5.3mb
KSP     77.18 351 ePd    18 02.20  -0.3
                  e      20 37.50
BRG     77.36 352 iP     18 02.70  -0.8
        1.2s   29.00nm           5.2mb
                  i      18 40.00 150kmX
KRA     77.53 348 eP     18 05.00   0.5
        0 7s   30.00nm           5.4mb
    N  22s    2.20um
MOX     77.77 354 ePc    18 05.50  -0.3
        1.2s   37.00nm           5.3mb
ENN     77.92 357 ePc    18 06.50  -0.1
        0.8s   46.00nm           5.6mb
                  e      18 10.50  13kmX
CTA     77.93 214 iPc    18 06.50  -0.5
        1.1s  139.24nm           5.9mb

PRU     78.19 352 P      18 07.50  -0.6
    Z  21s    1.10um             5.2Msz
    N  21s    1.00um
    E  20s    0.70um
MAIO    78.98 316 iPc    18 13.00   0.2
IAS     79 12 342 eP     18 15.00   1.8
KHC     79.12 352 iPc    18 13.20  -0.1
        1.0s   18.00nm           5.0mb
    Z  19s    1.00um             5.2Msz
    N  20s    0 60um
    E  19s    0.60um
ZST     79.70 350 iP     18 16.60   0.2
SRO     79.94 349 iP     18 17.90   0.3
FLN     79.97   2 iPc    18 17.30  -0.4
        1.2s   71.40nm           5.5mb
LDF     80.14   1 iPc    18 18.20  -0.5
        0.8s   48.30nm           5.5mb
BUD     80.18 348 eP     18 19.50   0.6
CDF     80.23 356 iPc    18 19.10  -0.2
        0.9s   13.10nm           4.9mb
SOP     80.27 350 eP     18 20.80   1.4
GRR     80.33   2 iPc    18 19.70   0.0
        0.8s   61.70nm           5.6mb
VRI     80.55 343 eP     18 21.50   0.6
QUE     80.58 307 eP     18 22.00   0.4
HAU     80.67 357 iPc    18 21.50   0.0
        1.0s   20.00nm           5.0mb
LPF     80.69   2 iPc    18 21.80   0.3
        1.2s   95.20nm           5.6mb
IPM     80.76 266 ePc    18 22.80   0.3
        0.8s   87.50nm           5.8mb
BSF     80.83 357 iPc    18 22.30  -0.2
        1 0s   20.00nm           5.0mb
OIS     80.85 220 iPc    18 21.50  -1.2
MLR     81.06 343 iPc    18 24.50   0.7
KBA     81.18 352 iPc    18 24.60   0.2
        0.8s   65.80nm           5.7mb
                  e(PP)  21 35.50
KGM     81.33 262 eP     18 26.30   0.8
KNA     81 42 231 eP     18 25.50  -0.2
CMP     81.44 344 iPd    18 35.00   9.4X
LOR     81.47 359 iPc    18 25.90   0.2
        1.1s   46.30nm           5 4mb
OGA     81.57 354 iPc    18 26.90   0.4
BZS     81.65 346 eP     18 26.50  -0.1
SSF     81.68 359 iPc    18 26.90   0.1
        1.2s   53.50nm           5 4mb
FVI     81.71 352 Pc     18 27.20   0.3
LBF     81.75 359 iPc    18 27.20   0.0
        0.8s   13.40nm           5.0mb
AVF     81.95 359 iPc    18 28.40   0.2
        1.0s   34 00nm           5 3mb
SMF     82 09 359 iPc    18 29.00   0.1
        1.1s   65.90nm           5.6mb
PTJ     82.10 350 e(P)   18 28.40  -0.7
MFF     82.13   1 iPc    18 29.40   0.3
        1.0s   45.60nm           5.5mb
BGF     82 19 359 iPc    18 29.50   0.1
        1.0s   22.00nm           5.1mb
KHKI    82.24 246 ePc    18 28.00  -2.1
                  e      21 12.10
CTI     82 34 353 P      18 30.20  -0.2
PSN     82 37 341 iP     18 32.00   1.6
TCF     82.46 360 iPc    18 30.90   0.0
        0.8s   13.40nm           5.0mb
WB2     82.49 224 iPc    18 30.50  -0.8
LSF     82.50   0 iPc    18 31.10   0.0
MAF     82.53 360 iPc    18 31.40   0.2
        1.2s   57.70nm           5 5mb
VBY     82 56 351 ePd    18 31.90   0.5
BEO     82 60 347 i(P)   18 31.80   0.2
VAI     82 70 355 Pc     18 32.00  -0.1
SAL     82 86 354 P      18 32.50  -0.4
ORX     82 98 356 P      18 33.78   0.1
ORO     82.98 356 P      18 34.00   0.3
RMO     83.06 210 iPc    18 34.70   0.6
LPG     83.16 357 eP     18 35.70   0.8
        1.0s   18.00nm           5.1mb
LSD     83.19 356 P      18 35 73   0.8
PVL     83.37 343 iPd    18 37.00   1.4
TRT     83.42 249 iPc    18 36.00  -0.2
RJF     83.45   0 iPc    18 36.00   0.0
        1.2s   83.30nm           5 7mb
RSP     83 49 356 P      18 36 45   0.1
BNI     83 61 357 P      18 38.60   1 6
RRL     83.74 357 P      18 38.81   1.0
BOB     83 76 355 P      18 38 30   0 6

LFF     83.81   1 iPc    18 38.10   0.3
        1.0s  120.00nm           5.9mb
CAF     83.82 360 iPc    18 38.20   0.3
        1.2s   95.20nm           5.7mb
JMB     83.86 342 eP     18 39.00   0.9
PCP     84.04 355 P      18 39.01   0.0
LPO     84.07   1 iPc    18 39 40   0 3
        1.2s  133.20nm           5.9mb
DOI     84.13 356 P      18 39.20  -0 4
PZZ     84.14 356 P      18 39.52  -0.2
CKI     84.17 355 P      18 39.80   0.2
PGB     84.22 344 iP     18 41.00   1.0
MME     84.25 354 P      18 41.50   1 1
ROB     84.32 356 P      18 39.83  -0.6
VTS     84.35 344 iPc    18 41.00   0.2
RSM     84.38 352 P      18 42.10   1.4
FIN     84.38 355 P      18 40.04  -0.7
STV     84.39 356 P      18 39.93  -0.9
ENR     84.40 356 P      18 39.42  -1.5
SFI     84.44 353 P      18 42.80   1.8
PGD     84.49 353 Pc     18 42.50   1.0
HYB     84.53 291 iPc    18 42.00   0.1
        1.0s  275.00nm           6.3mb
PLD     84.56 343 eP     18 42.00   0.4
OLP     84.62 213 ePc    18 42.70   0.8
IMI     84.70 356 P      18 40.55  -1.8
CRE     84.72 353 Pc     18 43.60   1.0
HVAR    84.73 349 iP     18 42.60   0.1
PII     84.73 354 P      18 42.60   0.2
SBF     84.77 356 eP     18 42.80   0.1
        1.0s   80.00nm           5.8mb
ARV     84.77 352 Pc     18 43.80   1.1
KDZ     84.87 343 eP     18 43.00  -0 2
RZN     84.96 343 eP     18 44.00   0.1
EMON    84.98   7 eP     18 43.80   0.0
BBTK    85.01 337 eP     18 44.00  -0.1
CIO     85.05 352 eP     18 44.50   0.3
BCI     85.06 347 iP     18 44.10   0.0
KKB     85.08 344 eP     18 45.00   0.7
FRF     85.10 357 eP     18 44.30   0.0
        1.1s   68.30nm           5.7mb
SLY     85.10 326 iPd    18 44.50   0.1
MSL     85.20 328 iPd    18 45.00   0.1
LRG     85.22 357 eP     18 45.30   0.4
        0 8s   19.80nm           5.3mb
ASS     85.22 352 Pc     18 45.20   0.2
MMB     85.23 344 iPd    18 46.00   0.9
SKO     85.24 346 iPc    18 45.40   0.3
        1.2s  159.00nm           6.1mb
LMR     85.33 357 eP     18 45.80   0.3
        0.8s   34.90nm           5.6mb
ALP     85.42 351 ePc    18 46.39   0.2
STS     85.43   8 eP     18 46.20   0.2
PHP     85.67 346 iPc    18 46.00  -1.2
VAY     85.69 345 eP     18 47.60   0.3
EPF     85.71   1 iPc    18 46.80  -0.6
        1 2s   35.70nm           5.5mb
SRS     85.72 344 eP     18 47.80   0.3
KLI     85.79 257 eP     18 47.00  -1.1
                  e      19 21.00 133kmX
KNT     85 79 344 ePc    18 48.20   0.4
MNS     85.90 352 Pc     18 47.60  -0.8
ASPA    85.97 223 iPc    18 49.20   0.4
        1.0s  127.00nm           6.1mb
COO     86.00 206 iPd    18 50.60   1 8
        1.2s   98.00nm           5.9mb
OHR     86.18 346 eP     18 49.50  -0 3
        1.3s    0.08nm           2.8mb X
POO     86.34 295 iPc    18 50.80  -0 1
        0 8s  201.49nm           6 4mb
SDI     86.47 351 P      18 50.80  -0 4
KBN     86.65 346 eP     18 49.90  -2.1
LIT     86.90 344 ePc    18 52.90  -0 4
TPE     87.10 346 eP     18 55.50   1.3
LSK     87.15 346 iPd    18 55.10   0 5
SRN     87.51 346 iP     18 56.40   0.2
IGT     87.80 346 eP     18 57.00  -0.6
MGR     87.84 350 P      18 57.30  -0.5
ETOR    87.86   3 eP     18 57.50  -0 5
GUD     87.95   5 eP     18 58.20  -0.3
CSI     88.11 349 P      18 58.90  -0.2
GBA     88.20 290 P      18 59.20  -0.6
TDS     88.22 349 P      18 59.40  -0.2
ROI     88.27 349 P      19 00.10   0.1
UPA     88.31  78 eP     19 00.50   0.1
LRS     88.32  62 P      19 01.00   0.5
EPLA    88.42   6 eP     19 00.50  -0.1
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CMS    88.63 210 eP     19 02.30   0.9
PORP   88.63  62 P      19 02.30   0.4
CZI    88.68 349 P      19 01.10  -0.7
TOL    88.72   5 iP     19 01.60  -0.5
       1.2s   125.00nm          6.1mb
SJG    88.85  62 iP     19 03.50   0.5
CPD    89.04  62 P      19 04.60   0.7
KRP    89.35 185 P      19 04.50  -0.1
EVIA   90.03   3 eP     19 08.20  -0.1
EBAN   90.44   4 eP     19 10.00  -0.2
MBL    90.46 236 iPc    19 10.10  -0.1
       0.7s    38.00nm          5.9mb
BWA    90.59 207 iPc    19 11.20   0.6
EHOR   90.71   6 eP     19 11.00  -0.3
KOD    90.85 288 iPc    19 13.00   0.3
       1.2s   109.38nm          6.1mb
CNB    91.16 206 eP     19 14.50   1.3
CAN    91.27 206 iPc    19 14.40   0.7
AFC    91.36   4 eP     19 14.00  -0.6
WARB   91.37 228 iPc    19 15.20   0.8
       0.5s     9.00nm          5.4mb
EJIF   92.05   6 eP     19 18.00   0.4
BPA    92.05  59 iP     19 17.97   0.1
PAG    92.99  60 eP     19 21.50  -0.7
SLB    95.15  60 eP     19 32.24   0.1
SVV    95.47  61 iP     19 33.96   0.3
GRW    96.18  62 eP     19 48.93  12.0X
TRN    97.57  62 iPd    19 42.62  -0.4
ZOBO  114.98  85 ePKP   24 49.00  -1.7
LPB   115.19  85 (PKP)  25 00.00   9.1X
CNCB  115.48  85 PKP    24 51.20  -0.4
CCH   117.05  84 ePKP   25 01.00   6.7X
LKO   118.73   8 PKPc   24 57.16   0.0
       0.6s    36.50nm
TIC   121.65   8 PKPc   25 02.02  -0.7
NAI   121.89 318 iPKP   25 04.50   1.0
       1.0s    31.00nm
KIC   121.96   8 PKP    25 02.58  -0.7
LIC   122.07   8 PKPc   25 02.80  -0.7
       0.7s    45.50nm
    Z  22s     0.43um          5.0Msz
BCAO  122.37 340 iPKPc  25 03.10  -1.0
       0.8s    86.00nm
               ic       25 56.00
               ic       26 37.00
KUK   122.38   3 ePKP   25 06.50   2.4
KOGH  122.48   3 ePKP   25 04.00  -0.4
SHGH  122.64   2 ePKP   25 04.00  -0.6
LEGH  122.92   2 ePKP   25 05.00  -0.1
TEGH  122.93   2 ePKP   25 06.00   0.9
LWI   125.86 326 iPKPc  25 10.90  -0.3
BAO   126.61  67 ePKP   25 11.50  -0.9
ITB1  129.72  80 ePKP   25 15.90  -2.0
ITB   129.94  80 e(PKP) 25 15.40  -3.0
MZZ   134.05 322 iPKPd  25 27.00   0.4
               i        28 50.00
               i        29 15.00
PTZ   135.85 317 iPKPd  25 30.00   0.0
               i        25 43.40
               i        28 56.00
KMZ   137.31 324 iPKP   25 32.50  -0.3
LSZ   138.08 320 iPKP   25 27.00  -7.2X
               i        25 33.90
KRI   138.89 317 iPKPc  25 55.00  19.3X
               iSKP     29 16.00
SPA   141.44 180 ePKPc  25 31.70  -7.1X
       1.0s    20.00nm
               e        26 04 90
BUL   142.26 316 iPKPc  25 50.10   8.5X
       0.9s    17.65nm
AIA   144.62 138 ePKP   25 42 10  -2.0
MAW   146.95 218 ePKP   25 47.00  -0.9
       1.0s   280 00nm
KSR   148.02 314 iPKPd  25 50.00  -1.1
       0.9s   207.69nm
               i        25 53.20
PRY   148.67 312 ePKP   25 51.30  -0.8
       0.9s   318.46nm
               i        25 55.60
SEK   149.78 311 iPKPc  25 54.00   0.2
               i        25 59.00
BLF   151.12 312 ePKP   25 56.00   0.2
               i        26 02.00
FRS   152.06 312 ePKP   25 56.00  -0.9
               i        26 05.00
HVD   152.70 311 iPKPc  25 50.50  -7.5X
       0.9s   151.26nm
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GRM   154.39 306 iPKPc 26 11.00  10.9X
       1.0s     90.00nm
CER   157.79 319 iPKPd 26 04.00  -0.5
       0.7s     18.00nm
      S.D. = 0.9  on 362 of 380 obs.
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   DEC 01, 1989  05h 32m 53.41± 0.24s
   59.099 N ± 3.4km  142.528 W ± 3.4km
   DEPTH =  10.0km  (geophysicist)
   4.6mb ( 20 obs.)
 GULF OF ALASKA                 ( 15)
      ML 4.4 (PMR). Felt slightly at
      Yakutat.

CYK    0.99   1 iP     33 14.45   2.3
                eS     33 29.04
SNH    1.10 352 iP     33 16.08   2.1
YAH    1.33  17 iP     33 19.29   1.2
WAX    1.37 353 iP     33 19.44   0.9
YKU    1.51  71 iPd    33 21.10   0.7
HMT    1.52 325 eP     33 26.51   5.8X
PCA    1.53  48 iP     33 21.34   0.5
RAGM   1.69 321 eP     33 24.13   1.0
BCPM   1.71  59 iP     33 23.28  -0.1
HON    1.91  78 eP     33 25.31  -1.0
                eS     33 51.42
SGAM   1.95 317 eP     33 28.29   1.4
MID    1.98 281 ePc    33 27.80   0.5
CVA    2.18 313 eP     33 30.97   0.8
HIN    2.40 305 eP     33 33.88   0.6
                eS     34 00.74
HYT    3.06  53 Pd     33 42.80   0.0
TOA    3.51 331 eP     33 50.50   1.3
PMS    4.12 304 iPc    33 57.70  -0.1
PMR    4.12 310 iPc    33 58.20   0.4
SIT    4.34 115 ePd    33 57.50  -3.3X
DWY    5.19  15 P      34 12.80  -0.1
KDC    5.41 260 eP     34 14.90  -1.1
FBA    6.33 339 iPd    34 28.30  -0.6
SVW    6.85 293 Pc     34 35.20  -1.1
TTA    7.59 306 eP     34 45.00  -1.7
IMA    8.67 328 eP     35 00.00  -1.8
INK   10.05  19 eP     35 18.00  -2.8
SDN   10.44 257 eP     35 25.10  -0.9
BRW   13.56 340 e(P)   36 09.70   1.7
PGC   15.30 125 eP     36 32.00   1.2
PNT   16.51 116 eP     36 48.00   1.6
       1.0s     29.00nm          4.4mb
EDM   17.19  97 ePd    36 53.30  -1.6
       1.0s     48.00nm          4.6mb
LON   17.48 126 eP     37 00.00   1.4
MBC   19.06  17 eP     37 17.50  -0.2
       0.9s     16.00nm          4.3mb
SES   19.98 102 eP     37 27.00  -1.5
FHC   21.72 139 eP     37 46.20  -0.2
       1.0s    108.00nm          5.2mb
LBFM  21.98 135 eP     37 50.50   1.3
FFC   22.31  84 eP     37 52.00  -0.1
       0.9s     14.00nm          4.4mb
FFC   22.31  84 eP     38 02.00   9.9X
       1.2s     45.00nm          4.8mb
LRM   22.39 113 eP     37 53.30   0.0
WDC   22.42 137 iPc    37 55.00   1.7
MIN   22.96 136 ePc    38 00.00   1.2
ORV   23.69 136 ePc    38 06.30   0.5
BRK   24.94 139 eP     38 18.40   0.6
BKS   24.94 139 ePd    38 19.20   1.3
PCC   25.24 140 ePc    38 21.70   1.1
KVN   25.40 131 eP     38 22.70   0.2
CMB   25.44 136 eP     38 22.60  -0.1
       1.1s     15.69nm          4.6mb
MHC   25.63 139 ePc    38 25.20   0.7
ARN   25.66 139 eP     38 24.70   0.0
TNP   26.59 131 eP     38 33.40  -0.1
       0.8s     11.76nm          4.6mb
FRI   26.62 136 eP     38 37.00   3.6X
PRS   26.63 139 ePc    38 34.00   0.3
PRI   27.04 138 ePc    38 38.60   1.1
CLC   28.43 134 eP     38 50.00  -0.1
RSON  28.61  85 eP     38 50.40  -1.1
       1.0s     32.27nm          5.1mb
GSC   29.18 133 eP     38 56.00  -0.9
TPC   30.53 133 eP     39 09.00   0.2
PLM   30.90 135 eP     39 11.00  -1.2
GLA   31.93 132 eP     39 20.00  -1.1
ALQ   33.79 120 eP     39 37.30  -0.2
BLA   44.88  91 eP     41 07.80  -1.7
```

```
       0.7s     3.06nm          4.3mb
JSC    46.72  94 eP     41 23.00  -0.9
                epP     41 33.80  37kmX
LHS    46.79  93 eP     41 24.20  -0.3
                epP     41 34.50  35kmX
EKA    61.37  25 P      43 11.00  -0.2
       0.9s     4.10nm          4.6mb
BRG    68.72  16 e(P)   44 10.00  11.3X
KHC    70.37  16 P      44 18.10   9.2X
LOR    70.46  24 eP     44 08.90  -0.5
       0.6s     3.60nm          4.7mb
SSF    70.58  24 eP     44 09.80  -0.3
       0.6s     3.60nm          4.7mb
LBF    70.75  24 eP     44 10.30  -1.0
       0.6s     1.80nm          4.4mb
AVF    70.81  24 eP     44 10.70  -0.8
       0.6s     3.60nm          4.7mb
BGF    70.92  25 eP     44 11.50  -0.7
       0.6s     4.50nm          4.8mb
LSF    70.93  26 eP     44 11.50  -0.8
TCF    71.04  25 eP     44 12.30  -0.7
       0.6s     4.50nm          4.8mb
SMF    71.05  24 eP     44 12.30  -0.7
       0.7s     3.30nm          4.6mb
MAF    71.18  25 eP     44 13.60  -0.2
       0.6s     2.70nm          4.5mb
KBA    72.34  17 iPc    44 20.80  -0.1
       0.6s     4.20nm          4.7mb
KSR   145.97  17 ePKP   52 33.00  -0.9
POF   147.95  30 ePKP   52 36.50  -0.2
SEK   148.49  17 iPKPd  52 40.50   2.7X
       0.7s     8.22nm
BLF   149.03  19 ePKP   52 42.00   3.4X
FRS   149.50  21 iPKPd  52 43.50   4.4X
       0.9s    21.01nm
      S.D. = 1.1  on  72 of  81 obs.
-------------------------------------
*  DEC 01, 1989  06h 30m 53.65± 0.61s
   51.392 N ±13.5km  175.165 W ± 5.6km
   DEPTH =  33.0km  (normol)
   4.6mb (  9 obs.)
 ANDREANOF ISLANDS, ALEUTIAN IS. (  7)
      Felt on Adok.

ADK    1.07 298 iPd    31 13.60   1.3
SMY    6.75 286 eP     32 34.40   1.5
SDN    9.62  60 e(P)   33 13.60   0.9
SVW   14.52  40 eP     34 22.10   3.6X
KDC   14.57  55 eP     34 22.20   3.2X
TTA   15.46  34 eP     34 35.00   4.3X
PMS   17.17  45 eP     34 53.30   0.9
IMA   18.30  28 eP     35 07.00   0.6
       0.8s     7.30nm          3.9mb
TOA   18.99  44 eP     35 14.70  -0.1
FBA   19.57  36 eP     35 18.50  -2.8X
       0.8s    34.20nm          4.7mb
INK   26.16  34 eP     36 24.50  -1.7
MBC   32.75  21 eP     37 24.00  -1.0
       0.5s     2.00nm          4.3mb
LON   34.61  76 eP     37 43.40   2.0
PNT   34.79  71 eP     37 46.00   3.1X
       0.5s     5.00nm          4.7mb
EDM   36.80  62 iPd    38 00.30   0.4
LRM   40.71  72 eP     38 32.80   0.0
KVN   41.04  84 eP     38 36.00   0.5
BW06  44.12  74 eP     39 01.40   0.8
       0.6s     1.86nm          4.1mb
PLM   45.41  90 eP     39 12.00   1.0
GOL   48.48  75 eP     39 36.00   0.8
       0.6s     7.72nm          4.9mb
RSON  48.56  57 eP     39 34.00  -1.3
       0.5s     4.05nm          4.7mb
FVM   58.46  67 eP     40 47.00  -1.5
NAV   64.38  62 eP     41 27.80  -0.6
BLA   64.66  62 eP     41 29.80  -0.5
       0.8s    13.42nm          5.1mb
CVL   65.18  60 eP     41 33.20  -0.3
JSC   66.32  64 eP     41 40.00  -0.8
HFS   68.60 355 (P)    41 50.80  -4.0X
       0.4s     1.60nm          4.5mb
KKN   74.38 295 P      42 29.40  -0.7
PKI   74.47 295 P      42 30.50  -0.3
GKN   74.58 295 P      42 30.20  -1.0
DMN   74.61 295 P      42 31.00  -0.5
BCAO  123.17 344 iPKPd 49 48.00  -0.5
       0.4s     8.00nm
SEK   151.29 315 iPKPd 50 45.00   6.1X
```

01d 06h

1.0s 35.00nm
S.D. = 1.0 on 26 of 33 obs.

? DEC 01, 1989 08h 11m 27.94± 1.56s
34.263 N ±22.5km 25.693 E ±11.8km
DEPTH = 10.0km (geophysicist)
3.7mb (1 obs.)
CRETE (370)

ELL	4.24	53	ePn	12 34.00	-0.1
BCK	5.10	50	ePn	12 51.00	4.8X
HLW	6.50	131	eP	14 09.00	63.0X
DSI	8.57	106	eP	13 35.00	0.0
			eS	15 08.00	
CZI	9.13	306	P	13 42.40	-0.2
NB2	28.38	345	P	17 24.40	0.3

0.5s 0.70nm 3.7mb
S.D. = 0.4 on 4 of 6 obs.

& DEC 01, 1989 08h 15m 29.76s
53.791 N 164.166 W
DEPTH = 2.5km
UNIMAK ISLAND REGION (10)
<PAL>.

SNKA	1.07	50	eP	15 48.60	-1.9
			eS	16 02.37	
DRRA	1.58	43	eP	15 56.61	-2.2
			eS	16 15.39	
PVV	2.10	40	eP	16 05.66	-0.7
			eS	16 32.01	
NGI	2.70	61	eP	16 13.44	-1.5
			eS	16 44.59	
IVF	3.41	50	eP	16 23.11	-1.9

5 obs ossociated

DEC 01, 1989 08h 42m 39.78± 0.35s
40.759 N ± 4.4km 27.483 E ± 3.3km
DEPTH = 10.0km (geophysicist)
TURKEY (366)
MD 3.5 (ATH).

MFT	0.16	280	iPg	42 43.70	0.2
EDC	0.50	145	iPg	42 49.50	-0.5
BNT	0.52	140	iPg	42 50.20	-0.2
CTT	0.82	61	ePg	42 55.70	0.1
DMK	1.08	11	iPg	43 01.00	0.9
			iSg	43 15.00	
ISK	1.23	75	iPn	43 02.60	-0.1
EZN	1.29	224	iPn	43 02.80	-0.8
			iSg	43 17.80	
DST	1.45	142	iPn	43 07.10	1.0
YLV	1.45	97	iPn	43 05.20	-0.9
RDO	1.52	285	ePn	43 07.50	0.5
HRT	1.66	87	iPn	43 07.90	-1.2
PRK	1.77	212	ePn	43 12.00	1.3
			eSn	43 37.00	
KDZ	1.80	300	iPc	43 12.00	1.0
JMB	1.83	339	iPc	43 16.00	4.4X
GPA	2.21	101	ePn	43 18.00	1.0
RZN	2.28	295	iPd	43 19.00	0.7
			iSg	43 52.00	
PLD	2.49	304	eP	43 19.00	-1.9
KHL	2.90	146	ePn	43 31.00	4.1X
PVL	2.93	328	eP	43 26.00	-1.2
MMB	2.95	288	eP	43 27.00	-0.6
			iSg	44 12.00	
SRS	2.97	278	ePn	43 35.50	7.7X
			eSn	44 14.50	
PGB	3.06	307	iP	43 29.00	-0.1
			iSg	44 17.00	
KKB	3.49	290	iP	43 35.00	-0.3
			iSg	44 31.00	
VTS	3.69	301	eP	43 38.00	-0.2
			iSg	44 37.00	
MLR	4.86	347	eP	43 56.00	1.2

S.D. = 0.9 on 22 of 25 obs.

* DEC 01, 1989 08h 48m 52.78± 0.95s
38.634 N ± 9.2km 15.180 E ±20.0km
DEPTH = 30.1 ± 14.2 km
4.4mb (1 obs.)
SICILY (398)

ATN	0.52	155	Pc	49 03.90	0.3
			eSg	49 12.40	
MNO	0.80	209	P	49 07.10	-1.0
			eSg	49 19.20	
CZI	0.94	52	P	49 10.30	0.4
TDS	1.36	41	Pd	49 15.20	-0.7
			eSg	49 35.70	
CSI	1.43	37	P	49 17.00	0.1
ROI	1.43	49	P	49 15.90	-1.0
MGR	1.53	11	Pc	49 19.20	0.9
			eSg	49 39.60	
BRT	2.73	34	P	50 02.10	26.6X
BCAO	34.18	174	ePd	55 38.50	0.9

0 6s 3.00nm 4.4mb
S.D. = 1.0 on 8 of 9 obs.

DEC 01, 1989 09h 30m 05.38± 0.70s
41.908 N ± 8.2km 32.554 E ± 6.5km
DEPTH = 10.0km (geophysicist)
TURKEY (366)

KAS	1.06	120	iPgc	30 24.00	-1.3
			iSg	30 37.00	
BBTK	2.07	176	ePg	30 42.00	1.3
			eSg	31 09.00	
GPA	2.34	227	ePn	30 44.00	-0.6
HRT	2.43	244	ePn	30 46.90	1.1
YLV	2.75	242	ePn	30 50.70	0.3
KVT	2.75	106	iPn	30 51.00	0.6
ISK	2.76	253	ePn	30 49.10	-1.3
DMK	3.58	270	iPn	31 01.10	-1.0
CFR	4.58	317	iPc	31 16.00	-0.2
VRI	5.78	315	ePn	31 33.00	-0.2
MLR	5.98	309	ePc	31 37.50	1.3

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

& DEC 01, 1989 11h 16m 50.30s
36.678 N 121.352 W
DEPTH = 6.0km
CENTRAL CALIFORNIA (39)
<BRK>. ML 3.4 (BRK).
Mo=4.2*10**14 Nm (BRK) Felt
(IV) ot Cormel Valley and (III)
ot Chuolor.

SAO	0.11	319	iPc	16 52.70	-0.1
			eS	16 54.25	
LLA	0.33	100	iPc	16 56.90	-0.2
PRS	0.35	182	eP	16 57.10	-0.2
GCC	0.63	304	iPc	17 02.00	-0.8
ARN	0.69	348	iPd	17 03.80	-0.2
MHC	0.70	341	iPd	17 04.25	-0.1
			eS	17 15.40	
PRI	0.77	134	iPd	17 05.00	-0.8
PHAM	1.14	137	eP	17 10.80	-1.2
PCC	1.16	315	eP	17 10.90	-1.5
PKEM	1.18	121	eP	17 13.00	0.4
FRI	1.36	76	ePc	17 13.90	-1.8
			iS	17 31.20	
BKS	1.39	330	ePd	17 13.30	-2.9
			eS	17 29.00	
BRK	1.40	329	eP	17 14.10	-2.2
CMB	1.56	29	eP	17 17.20	-1.4
BCH	1.81	145	eP	17 20.00	-2.4
NWRM	2.15	326	eP	17 25.00	-2.2
BLP	2.25	160	eP	17 25.50	-3.1
ABL	2.52	136	eP	17 30.00	-2.6
ORV	2.88	358	eP	17 36.30	-1.2
KVN	3.50	46	eP	17 45.50	-1.0
TNP	3.58	66	eP	17 47.50	-0.2
PEC	4.41	128	eP	17 57.50	-1.9
PLM	4.96	131	eP	18 04.60	-2.6

23 obs. ossociated

& DEC 01, 1989 11h 26m 22.40s
36.675 N 121.345 W
DEPTH = 6.0km
CENTRAL CALIFORNIA (39)
<BRK>. ML 3.2 (BRK). Double
shock. (BRK).

SAO	0.12	318	iPc	26 24.90	-0.1
			eS	26 26.30	
LLA	0.33	100	iPc	26 29.00	-0.1
PRS	0.34	183	iPd	26 29.20	-0.1
GCC	0.63	304	eP	26 34.00	-1.0
ARN	0.69	347	iPd	26 36.00	-0.2
MHC	0.71	340	iPd	26 36.38	-0.2
			iS	26 47.95	
PRI	0.76	134	iPd	26 36.90	-0.8
PHAM	1.13	137	eP	26 42.70	-1.3
PCC	1.17	315	iPd	26 43.10	-1.5
PKEM	1.17	121	eP	26 44.80	0.2
FRI	1.35	76	eP	26 46.00	-1.7
BKS	1.39	330	ePd	26 47.10	-1.3
			e(S)	27 06.00	
BRK	1.40	329	eP	26 46.20	-2.3
			eS	27 05.00	
CMB	1.56	29	eP	26 49.30	-1.4
BCH	1.80	145	eP	26 52.00	-2.4
NWRM	2.16	326	eP	26 57.30	-2.1
ABL	2.51	136	eP	27 02.50	-2.1
ORV	2.88	358	eP	27 08.70	-1.0
KVN	3.50	46	eP	27 18.20	-0.4
TNP	3.57	66	eP	27 19.80	0.1
PLM	4.95	131	eP	27 36.70	-2.5

21 obs. ossociated

& DEC 01, 1989 11h 26m 30.00s
36.683 N 121.350 W
DEPTH = 6.0km
CENTRAL CALIFORNIA (39)
<BRK>. ML 3.3 (BRK). Second
event of double shock, epicenter
assumed from previous event.
(BRK).

SAO	0.11	317	eP	26 32.90	0.4
			iS	26 34.35	
GCC	0.62	304	eP	26 42.80	0.3
MHC	0.70	341	eP	26 44.60	0.6
			iS	26 54.20	
PRI	0.77	134	e(P)	26 45.50	0.0
PCC	1.16	315	eP	26 51.80	-0.2
BKS	1.38	330	eP	26 57.60	1.8

6 obs. ossociated

? DEC 01, 1989 11h 36m 23.57± 5.94s
14.014 N ±52.5km 92.066 W ±24.5km
DEPTH = 57.8 ± 26.2 km
4.5mb (1 obs.)
NEAR COAST OF CHIAPAS, MEXICO (69)

TPX	0.91	348	iP	36 41.00	0.6
			iS	37 08.00	
SCX	2.76	349	iP	37 12.00	5.7X
			iS	37 46.00	
PPM	8.05	309	eP	38 20.00	-0.9
			(S)	39 55.00	
UYO	20.18	354	iPd	40 54.40	-1.6
MEO	21.50	345	iPc	41 09.50	0.1
ALQ	24.55	331	eP	41 40.70	1.2
LRM	36.07	336	eP	43 23.00	1.2
PNT	41.83	333	eP	44 12.00	2.7X
INK	60.41	344	eP	46 28.50	-0.4
EKA	77.99	36	P	48 17.00	-0.1

1.2s 6.10nm 4.5mb
S.D. = 1.3 on 8 of 10 obs.

DEC 01, 1989 12h 12m 02.98± 0.54s
41.864 N ± 5.8km 19.758 E ± 4.7km
DEPTH = 10.0km (geophysicist)
ALBANIA (391)
ML 2.6 (TTG).

PUK	0.21	29	iPgd	12 06.50	-0.9
SDA	0.25	308	iPgc	12 08.80	0.6
ULC	0.39	285	ePg	12 11.10	0.1
			eSg	12 18.00	
TIR	0.52	171	iPgc	12 14.20	0.6
PHP	0.54	109	iPgd	12 12.40	-1.5
BCI	0.55	25	ePg	12 15.50	1.3
TTG	0.68	327	ePg	12 15.60	-0.8
			iSg	12 26.30	
BDV	0.81	302	ePg	12 18.40	-0.3
			eSg	12 30.50	
OHR	1.09	134	ePg	12 24.00	0.6
			iSg	12 40.00	
HCY	1.10	302	ePg	12 23.20	-0.5
			eSg	12 40.50	
SKO	1.26	85	ePn	12 28.00	1.6
			iSn	12 44.00	
			iSg	12 45.50	
BRY	1.37	319	ePg	12 28.40	0.1
			eSg	12 50.20	
VAY	2.18	103	ePn	12 38.40	-1.4

S.D. = 1.1 on 13 of 13 obs.

% DEC 01, 1989 12h 33m 51.01± 0.51s
40.839 N ± 4.1km 28.031 E ± 4.5km
DEPTH = 10.0km (geophysicist)
TURKEY (366)

CTT	0.43	44	ePg	34 00.00	0.2
BNT	0.49	190	iPg	34 01.00	0.0
			iSg	34 07.00	
EDC	0.51	195	iPg	34 01.50	0.2
			eSg	34 10.10	
MFT	0.57	265	iPg	34 02.50	-0.2
			eSg	34 10.50	
ISK	0.81	73	ePg	34 06.30	-0.4
			eSg	34 18.50	
DMK	1.00	348	iPg	34 10.10	0.1
			iSg	34 23.10	
YLV	1.06	104	iPn	34 11.00	0.0
HRT	1.24	90	ePn	34 14.30	0.2
DST	1.31	159	ePn	34 15.20	-0.1
EZN	1.65	233	ePn	34 15.00	-5.1X

S.D. = 0.2 on 9 of 10 obs.

& DEC 01, 1989 12h 37m 43.50s
36.677 N 121.350 W
DEPTH = 6.0km
CENTRAL CALIFORNIA (39)
<BRK>. ML 4.4 (BRK).
Mo=6.8*10**15 Nm (BRK). Felt (IV) at Monterey. Felt in Monterey, Son Benito ond Santo Cruz Counties.

SAO	0.12	319	iPc	37 45.85	-0.2
LLA	0.33	100	iPc	37 50.10	-0.1
PRS	0.35	183	iPc	37 50.30	-0.2
GCC	0.63	304	iPc	37 55.10	-1.0
ARN	0.69	348	iPd	37 57.00	-0.3
MHC	0.70	341	iPd	37 57.30	-0.3
			iS	38 08.75	
PRI	0.77	134	iPd	37 58.20	-0.7
PHAM	1.14	137	eP	38 04.00	-1.2
PCC	1.16	315	iPc	38 04.00	-1.6
PKEM	1.17	121	eP	38 05.60	-0.2
FRI	1.35	76	iPc	38 06.80	-2.0
BKS	1.39	330	iPc	38 07.10	-2.3
			i	38 09.80	
			eS	38 25.80	
BRK	1.40	329	iPc	38 07.20	-2.3
CMB	1.56	29	iPd	38 10.50	-1.3
BCH	1.81	145	eP	38 13.30	-2.2
BLP	2.25	160	eP	38 19.70	-2.1
ABL	2.51	136	eP	38 23.20	-2.6
ORV	2.88	358	eP	38 28.20	-2.5
KVN	3.50	46	eP	38 38.30	-1.4
TNP	3.58	66	eP	38 40.00	-0.9
PEC	4.41	128	eP	38 49.60	-3.0
FHC	4.60	334	eP	38 52.50	-2.8
PLM	4.96	131	eP	38 57.50	-2.9
LRM	11.32	33	eP	40 36.40	7.4
ALQ	12.22	94	eP	40 45.00	3.8
	1.2s		5.08nm		4.7mb
EDM	17.47	16	eP	41 49.50	0.3

26 obs. associated

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* DEC 01, 1989 13h 12m 29.27± 2.35s
40.143 N ± 6.8km 19.612 E ±21.2km
DEPTH = 10.0km (geophysicist)
ALBANIA (391)
MD 3.0 (ATH).

TPE	0.34	63	iPgc	12 35.40	-0.9
SRN	0.40	131	iPg	12 36.40	-1.0
KEK	0.45	161	ePg	12 38.40	-0.1
			eSg	12 45.50	
BERA	0.62	25	ePg	12 40.00	-1.6
TIR	1.22	9	e(Pn)	13 00.50	8.6X
OHR	1.32	43	ePn	12 54.00	0.3
KZN	1.66	84	ePb	12 59.20	0.6
VLS	2.10	159	ePg	13 11.00	6.0X
LIT	2.21	90	eP	13 08.00	1.5
SKO	2.29	36	ePn	13 09.00	1.3
			iSg	13 42.80	
VAY	2.54	61	ePn	13 16.00	4.9X

S.D. = 1.3 on 8 of 11 obs.

? DEC 01, 1989 13h 21m 59.79± 1.08s
42.376 N ±10.2km 24.171 E ±16.6km
DEPTH = 10.0km (geophysicist)
BULGARIA (359)

SRS	1.33	199	eP	22 23.50	-0.8
			eS	22 51.00	
KNT	1.54	219	eP	22 31.00	3.6X
			eS	22 54.50	
SKO	2.07	260	ePn	22 41.50	6.5X
			i	23 07.50	
OHR	2.82	245	ePn	22 47.00	1.2
MLR	3.37	22	ePc	22 54.00	0.4
BZS	3.73	331	ePc	22 57.50	-1.1
VRI	3.95	27	eP	23 02.00	0.3

S.D. = 1.3 on 5 of 7 obs.

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* DEC 01, 1989 16h 25m 05.47± 0.67s
65.233 N ± 7.3km 12.028 E ±16.9km
DEPTH = 10.0km (geophysicist)
NORTHERN NORWAY (646)
ML 2.8 (NAO). MD 3.0 (BER).
Felt.

NSS	0.71	182	iPg	25 19.00	-0.4
			eSg	25 29.12	
LOF	2.97	11	iP	25 52.96	-0.5
			eS	26 25.32	
MOL	3.33	219	iP	25 59.00	0.5
			iS	26 37.90	
NB2	4.23	185	P	26 11.40	0.0
NRA0	4.52	183	iPc	26 15.40	-0.1
			iPg	26 27.50	
			iSg	27 26.80	
TRO	5.15	28	eP	26 24.31	-0.1
			eS	27 19.50	
KEV	7.31	45	iP	26 55.30	0.6

S.D. = 0.5 on 7 of 7 obs.

? DEC 01, 1989 17h 32m 42.54± 0.65s
40.700 N ± 8.1km 79.218 E ±13.2km
DEPTH = 10.0km (geophysicist)
4.7mb (5 obs.)
SOUTHERN XINJIANG, CHINA (321)

NDI	12.10	188	eP	35 37.50	-0.4
			eS	37 46.00	
GKN	13.43	159	P	35 55.70	-0.1
KKN	13.81	157	P	36 00.60	-0.3
	0.5s		9.00nm		4.9mb
DMN	13.93	158	P	36 01.40	-1.1
PKI	14.06	157	P	36 03.00	-1.2
	0.5s		10.00nm		4.8mb
QUE	14.47	227	eP	36 09.00	-0.6
HYB	23.21	182	eP	37 53.00	2.4
GBA	27.04	184	P	38 28.00	1.2
CHTO	27.61	136	e(P)	38 32.90	0.9
SUF	38.09	323	eP	40 02.70	0.0
NUR	38.50	320	eP	40 14.40	8.2X
NB2	45.09	320	P	40 59.60	-0.6
	0.8s		1.80nm		4.1mb
EKA	53.79	315	P	42 07.00	-0.1
	1.0s		4.50nm		4.4mb
MBC	62.73	5	eP	43 09.50	0.1
	0.6s		5.00nm		4.9mb

S.D. = 1.1 on 13 of 14 obs.

% DEC 01, 1989 17h 55m 48.66± 0.51s
60.109 N ± 4.3km 6.475 E ± 6.3km
DEPTH = 10.0km (geophysicist)
SOUTHERN NORWAY (535)
MD 2.0 (BER).

ODD1	0.21	159	iPg	55 53.06	-0.2
			iSg	55 56.09	
ASK	0.74	301	eP	56 03.14	0.0
			eS	56 14.11	
BLS1	0.74	166	iP	56 03.04	-0.2
			eS	56 10.50	
HYA	1.07	353	iP	56 08.56	-0.2
			eS	56 24.29	
KMY	1.09	215	iP	56 09.58	0.4
			iS	56 25.20	
SUE	1.27	319	iP	56 12.21	0.0
			eS	56 28.70	
MOL	2.52	11	eP	56 30.27	0.0
			eS	57 00 16	
NRA0	2.59	74	eP	56 31 70	0.4
			eSg	57 07.40	

S.D. = 0.3 on 8 of 8 obs.

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* DEC 01, 1989 18h 44m 42.23± 0.79s
6.223 S ±18.9km 108.230 E ±14.7km
DEPTH = 286.8 ± 10.0 km
4.0mb (4 obs.)
JAVA (277)

KLI	3.62	292	ePd	45 44.50	0.5
			eS	46 32.50	
			e	46 49.00	
TRT	4.61	109	ePd	45 55.60	0.4
KHKI	7.62	107	eP	46 30.50	-1.2
			eS	47 52.00	
MBL	18.62	144	iPd	48 41.10	0.1
	0.4s		9.00nm		4.5mb
CHTO	26.51	340	eP	49 57.10	1.2
	0.9s		2.77nm		3.7mb
WB2	28.80	121	eP	50 15.80	-0.6
GBA	36.37	303	Pd	51 19.90	-1.4
	0.6s		2.60nm		3.9mb
PKI	40.19	328	P	51 53.00	-0.1
DMN	40.38	327	P	51 54.50	-0.1
KKN	40.44	328	P	51 54.90	-0.1
GKN	40.95	327	P	51 58.90	-0.2
BRS	47.21	122	iPd	52 50.50	1.7
	0.5s		6.00nm		4.2mb

S.D. = 1.0 on 12 of 12 obs.

DEC 01, 1989 18h 59m 12.33± 0.69s
14.457 S ± 3.9km 167.271 E ± 3.2km
DEPTH = 216.2 ± 6.4 km
5.1mb (29 obs.)
VANUATU ISLANDS (186)
CENTROID, MOMENT TENSOR (HRV)
Data Used: GDSN
L.P.B.: 14S, 28C
Centroid Locotion:
Origin Time 18:59:18.7 0.6
Lot 14.20S 0.07 Lon 166.65E 0.04
Dep 186.7 1.7 Half-durotion 2.2
Moment Tensor; Scole 10**17 Nm
Mrr= 1.64 0.08 Mtt=-0.11 0.12
Mff=-1.53 0.12 Mrt=-1.23 0.08
Mrf= 0.26 0.08 Mtf= 0.54 0.13
Principal Axes:

T	Vol= 2.27	Plg=63	Azm=180
N	-0.42	24	329
P	-1.86	12	64

Best Double Couple:Mo=2.1*10**17
NP1:Strike=182 Dip=39 Slip= 130
NP2: 315 61 63

PVC	3.41	163	iP	00 09.70	1.6
			iS	00 45.00	
DZM	7.61	186	iPc	00 59.20	-2.3
			iS	02 23.70	
HNR	8.73	304	eP-	01 15.00	-1.0
			eS	02 55.00	
RAB	18.04	303	eP	03 11.00	0.9
BRS	18.66	224	iPc	03 17.00	0.5
	1.0s		18.00nm		4.5mb
			i(PP)	03 30.50	
			i(PPP)	03 42.00	
			e	04 00.00	
			iS	06 40.00	
			e(SS)	07 13.00	
PMG	20.31	282	eP	03 34.00	0.9
AFI	20.32	91	eP	03 36.00	2.6
			e	07 00.00	
CTA	20.83	251	iPd	03 38.80	0.5
	0.9s		52.10nm		5.1mb
			iPPP	04 08.20	
			i	04 15.30	
			i	04 33.00	
			iS	07 16.00	
RMQ	21.04	232	iPc	03 42.00	1.6
			e	03 43.50	
			e	04 30.00	
LAT	21.37	289	eP	03 47.00	3.4X
COO	21.39	219	iPc	03 45.40	1.6
MNDI	24.63	287	eP	04 18.00	2.9
OLP	24.67	237	iPc	04 15.60	0.5
CMS	25.94	226	iPc	04 27.20	0.6
BWA	26.18	217	iPc	04 27.30	-1.5
			ePP	05 05.50	

01d 19h

			iScP	08	50.20					S	18	30.00			DMN	89.84	298	Pc	11	49.00	0.6
CNB	26.28	215	eP	04	30.00	0.2		IPM	68.33	281	ePc	09	52.80	0.1	PNT	90.20	39	eP	11	50.00	0.8
			e	05	06.00				1.1s		116.90nm			5.5mb	GKN	90.35	299	Pc	11	50.60	0.0
CAN	26.49	215	iPc	04	31.70	0.1		SNY	68.98	326	eP	09	54.20	-1.9	MSU	91.67	51	P	11	57.00	0.5
			ePP	05	07.70			TIA	69.14	318	Pc	09	56.10	-1.1	WMQ	92.54	315	P	12	01.00	0.8
			eScP	07	51.20			CN2	69.41	329	iPc	09	58.40	-0.3		1.2s		0.10nm			2.8mb X
MNG	27.03	166	P	04	34.10	-2.3			1.0s		0.10nm			2.5mb X	HYB	93.04	287	ePc	12	02.50	-0.5
QIS	27 05	253	iPc	04	35.80	-1.0					pP	10	43.00	187kmX		1.4s		100.00nm			5.7mb
			e	05	25.00						eS	18	54.00		GBA	93.17	283	P	12	04.00	0.5
STK	29.18	229	iPc	04	56.20	0.5		GYA	71.56	305	iPc	10	12.00	-0.2	ZOBO	117.34	117	PKP	17	35.00	-0.2
TOO	30.07	216	eP	05	04.00	0.5		LOE	71.99	294	iPc	10	15.00	0.4		Z 20s		0.09um			4.4Msz
MSZ	30.12	179	P	05	02.90	-0.8		BJI	72.05	321	eP	10	14.50	-0.1				LR	30	32.00	
WB2	31.88	255	iPc	05	17.80	-1.7			1.5s		90.00nm			5.3mb	KEV	119.46	345	ePKP	17	36.00	-0.9
			ePP	06	31.00						eS	19	16.00			0.7s		25.40nm			
			iScP	10	11.50						esS	20	26.00		SOD	121.24	343	iPKP	17	40.30	0.0
ASPA	32.77	249	iPc	05	25.80	-1.4		NST	72.79	292	eP	10	21.10	1.8	SEK	122.26	222	e(PKP)	17	44.00	0.3
			iS	10	25.00			TIY	73.06	317	Pc	10	21.00	0.4	BLF	122.65	221	iPKPd	17	44.50	0.1
ADE	32.83	226	eP	05	27.60	0.0					pP	11	04.00	178kmX	TAB	123.06	306	ePKP	17	46.00	1.1
	1.0s		96.00nm			5.4mb					S	19	35.00		KSR	124.38	224	ePKP	17	47.00	-0.9
GUMO	35.61	320	eP	05	47.30	-4.0X		XAN	73.51	313	Pc	10	23.50	0.3	SUF	124.59	339	ePKP	17	46.90	0.0
KNA	37.16	263	iPc	06	03.70	-0.6		KMI	74.16	302	iPc	10	28.50	1.0		0.5s		46.70nm			
	0.5s		96.00nm			5.7mb			1.5s		0.30nm			2.8mb X	POF	126.20	216	iPKPd	17	52.00	0.9
WARB	39.69	246	iPc	06	25.10	-0.1					PcP	10	40.00			0.4s		14.41nm			
	0.3s		16.00nm			5.0mb					e	11	13.00		NUR	126.62	338	iPKP	17	51.30	0.4
AFR	41.34	100	iP	06	38.60	-0.2					eS	19	45.00			0.9s		108.10nm			
	0.7s		20.00nm			4.7mb					S	19	49.00		BUL	126.76	231	iPKPc	18	06.80	14.2X
PAE	41.52	100	iP	06	40.00	-0.3					sS	21	01.00			0.8s		11.19nm			
	0.7s		35.00nm			5.0mb		BDT	74.35	293	eP	10	30.00	1.7	UPP	129.50	341	iPKP	17	55.90	-0.5
TBI	41.75	109	iP	06	43.20	1.2		CHG	74.97	294	iPc	10	33.00	1.1	NB2	130.36	345	PKP	17	57.20	-0.9
	1.0s		105.00nm			5.3mb			1.2s		93.75nm			5.4mb		0.9s		21.60nm			
TVO	41.83	101	iP	06	42.90	0.0					e	11	21.00		HFS	130.46	343	ePKP	17	58.00	-0.2
	0.7s		100.00nm			5.4mb		CHTO	74.97	294	iPc	10	32.90	1.0		0.8s		12.60nm			
PMO	43.31	97	iP	06	55.20	0.4			1.3s		187.09nm			5.7mb	HRI	132.34	302	ePKP	18	04.00	1.2
	0.7s		40.00nm			5.0mb		HHC	75.38	320	iPc	10	34.80	0.9	BBTK	132.94	311	ePKP	18	03.00	-0.8
VAH	43.54	97	iP	06	56.80	0.2		SPA	75.64	180	iPc	10	34.50	-0.5	PRNI	133.47	298	e(PKP)	18	05.00	0.0
	0.7s		25.00nm			4.8mb			0.9s		85.45nm			5.5mb	MBH	133.66	297	ePKP	18	05.00	-0.3
TPT	43.57	97	iP	06	57.20	0.3		CD2	75.85	307	P	10	37.40	0.7	BAO	134.08	129	ePKP	18	01.00	-5.6X
	0.7s		25.00nm			4.8mb		BTO	76.22	319	Pc	10	39.50	0.9	VRI	134.44	322	ePKPc	18	07.00	0.7
RUV	43.78	97	iP	06	58.80	0.2		LZH	78.14	312	iPc	10	50.80	1.5	MLR	135.10	321	ePKPd	18	08.00	0.3
	0.7s		25.00nm			4.8mb			1.5s		187.00nm			5.6mb	KRA	135.67	330	ePKP	18	09.40	1.0
MNI	44.88	287	ePd	07	07.30	0.0					sP	11	35.00		KHL	135.82	311	ePKP	18	09.00	-0.3
COOL	45.26	241	eP	07	09.00	-1.1		MAW	82.14	202	eP	11	10.00	0.3	SPC	136.09	329	ePKP	18	10.60	1.0
MBL	45.52	254	iPc	07	12.30	0.0		TTA	82.26	16	P	11	10.00	-0.4	DEV	136.68	324	ePKPc	18	11.00	0.5
	0.3s		15.00nm			4.9mb			1.0s		10.00nm			4.5mb	KSP	136.79	333	ePKP	18	00.50	-10.1X
MEKA	46.96	247	eP	07	23.50	-0.1		GTA	82.48	314	iPc	11	13.40	1.3				id	18	11.30	
	0.4s		24.00nm			4.9mb			1.2s		0.10nm			2.4mb X				ic	18	13.50	
KLB	48.23	240	eP	07	33.00	-0.3		PMR	83.24	19	P	11	15.00	-0.3	PSZ	137.09	328	ePKP	18	07.00	-4.3X
PCI	48.77	282	ePd	07	41.00	3.4X			1.0s		22.50nm			4.9mb	ALN	137.25	316	ePKP	18	10.60	-1.1
BAL	48.99	242	eP	07	38.00	-1.1		SHL	83.44	298	iP	11	18.40	1.1	BZS	137.57	324	ePKP	18	06.00	-6.2X
RKG	49.28	237	eP	07	42.00	0.7					eS	21	21.00		BRG	137.76	335	ePKP	18	05.20	-7.2X
MRWA	49.44	244	eP	07	41.50	-1.1		PRS	84.05	50	eP	11	20.10	0.2		1.3s		58.00nm			
	0.3s		3.00nm			4.3mb					e	12	16.20					i	18	13.40	
NANU	49.52	253	iPc	07	43.40	0.1		ARN	84.32	49	P	11	21.00	-0.3				e	18	23.00	
MUN	49.60	240	iPd	07	43.10	-0.6		SYP	84.42	52	eP	11	23.00	1.0				e	21	30.00	
KHKI	50.92	271	ePc	07	52.90	-1.1		PRI	84.50	51	eP	11	22.80	0.5	CLL	137.81	336	iPKP	18	12.40	0.0
			e	10	44.50			WDC	84.88	46	eP	11	23.70	-0.3		1.1s		52.00nm			
TRT	53.93	271	iPc	08	16.20	-0.1					e	12	10.20					iSKP	21	30.90	
KKM	54.58	288	ePc	08	20.50	-0.5		ORV	85.20	47	eP	11	25.20	-0.4	SRO	137.96	329	ePKP	18	07.70	-5.1X
	1.2s		228.30nm			5.7mb		IMA	85.39	15	P	11	25.50	-0.7	PRU	138.18	334	PKP	18	13.50	0.3
			e	09	03.50			LSA	85.42	302	iPc	11	29.40	1.9	ZST	138.30	330	ePKP	18	13.30	-0.2
KAKJ	56.52	334	P	08	33.90	-0.4		CMB	85.42	49	eP	11	26.50	-0.3				e	21	32.30	
CHJJ	56.90	333	P	08	36.30	-0.7					e	12	12.50		VKA	138.63	331	ePKPc	18	14.00	-0.1
IIDJ	56.92	331	P	08	36.10	-1.1		FRI	85.53	50	eP	11	27.00	-0.3		1.5s		67.20nm			
MAT	57.66	332	iPc	08	41.00	-1.4					e	12	13.10		BEO	138.70	324	e(PKP)	18	13.00	-1.3
	1.2s		156.25nm			5.6mb		MWC	85.80	53	eP	11	29.00	0.1	WIT	138.75	342	e(PKP)	18	15.00	0.9
MTMJ	57.88	332	P	08	43 10	-0.9		ISA	85.98	52	eP	11	29.00	-0.6	MOX	138.87	336	ePKP	18	15.00	0.6
TSRJ	57.88	330	P	08	43.80	0.0					e	12	15.00			1.4s		52.00nm			
NIIJ	57.90	333	P	08	43.60	-0.3		FBA	86.09	18	P	11	27.70	-1.8	KNT	139.22	318	ePKP	18	07.30	-8.1X
YAMJ	58.25	335	P	08	46.70	0.3			0.8s		17.24nm			4.9mb	KHC	139.24	334	PKP	18	09.70	-5.5X
OFUJ	58.38	337	P	08	46.70	-0.6		SBB	86.14	53	eP	11	30.00	-0.4				i	18	16.00	
HOOJ	60.71	340	eP	09	03.20	0.1					e	12	17.00		WTS	139.42	341	ePKP	18	11.00	-4.3X
KUSJ	60.90	341	eP	09	03.10	-1.2		RVR	86.25	54	eP	11	30.00	-0.9		1.0s		29.00nm			
MRRJ	61.52	338	eP	09	07.80	-0.7					e	12	16.00					e	18	15.50	
OZH	61.53	309	Pc	09	09.50	0.6		BAR	86.36	55	eP	11	32.00	0.5				e	18	18.50	
KLI	62.10	272	ePc	09	11.00	-1.9		PLM	86.43	54	eP	11	31.00	-1.0	GRG	139.64	318	ePKP	18	08.50	-7.7X
			e	09	12.00						e	12	18.00		SKO	139.73	320	ePKP	18	08.70	-7.6X
ASAJ	62.47	340	eP	09	15.40	0.6		CLC	86.70	52	eP	11	33.00	-0.1		1.2s		104.00nm			
SSE	63.33	316	Pc	09	20.00	-0.6					e	12	19.00					i	18	16.60	
	1.2s		37.00nm			5.1mb		GSC	87.13	53	eP	11	35.00	-0.2				i	21	35.00	
			i	10	03.00						e	12	24.00					i	21	49.00	
SBA	63.41	180	(P)	09	20.90	0.4		TPC	87.32	54	eP	11	36.00	-0.1	LIT	140.02	316	ePKP	18	09.40	-7.5X
KGM	65.39	279	eP	09	34.50	0.3					e	12	22.00		PTJ	140.45	328	e(PKP)	18	05.50	-12.0X
NJ2	65.48	316	Pc	09	34.20	-0.2		KVN	87.46	49	P	11	35.00	-1.8	OHR	140.60	319	ePKP	18	10.80	-7.1X
	1.2s		0.10nm			2.5mb X					pP	12	22.00	190kmX		1.3s		0.17nm			
WHN	67.76	312	Pc	09	48.70	-0.1		LON	87.84	41	P	11	38.00	-0.3	ENN	140.76	341	ePKP	18	13.00	-4.8X
	0.8s		0.03nm			2.1mb X		PKI	89.57	299	Pc	11	47.60	0.4		1.0s		20.00nm			
MDJ	68.04	332	eP	09	50.00	-0.3		KKN	89.74	299	Pc	11	48.30	0.4				e	18	17.50	

		e	18	21.50		
KBA	140.88	332	iPKPd	18	12.00	-6.4X
	1.0s	39.40nm				
		id	18	14.00		
		i	18	20.90		
FVI	141.50	332	PKP	18	18.50	-0.7
TRI	141.68	330	ePKP	18	22.60	3.0X
ECP	142.03	354	ePKP	18	16.70	-3.3X
OGA	142.08	333	iPKPd	18	17.40	-3.2X
CDF	142.32	338	ePKP	18	17.20	-3.6X
CTI	142.43	332	PKP	18	17.20	-3.9X
BSF	142.99	338	ePKP	18	19.10	-2.8X
HAU	143.00	339	ePKP	18	19.10	-2.8X
SAL	143.27	332	PKP	18	20.50	-1.8
SSO	143.56	327	e(PKP)	18	23.09	0.2
ARV	143.66	328	PKPc	18	21.80	-1.3
CIO	143.77	327	ePKPc	18	21.99	-1.4
ALP	143.83	326	ePKP	18	21.90	-1.7
VAI	143.83	334	PKPc	18	21.60	-1.6
SFI	143.91	329	PKP	18	23.30	-0.1
PGD	144.01	329	PKPc	18	23.70	-0.2
CRE	144.07	329	PKP	18	23.00	-0.9
ASS	144.11	328	PKPc	18	22.70	-1.2
ROI	144.13	320	PKP	18	22.90	-1.2
CSI	144.19	320	PKP	18	23.20	-0.9
TDS	144.23	320	PKPc	18	23.70	-0.5
MMN	144.30	321	PKP	18	22.80	-1.4
FIR	144.31	330	iPKPc	18	24.00	-0.1
SGO	144.31	322	PKPc	18	23.20	-1.0
FLN	144.33	346	iPKPc	18	23.00	-1.0
ORX	144.35	335	PKP	18	23.09	-1.3
ORO	144.35	335	PKPc	18	23.10	-1.2
BOB	144.40	332	PKPc	18	24.10	-0.3
LDF	144.41	346	iPKPc	18	23.20	-1.0
BDI	144.41	331	PKPc	18	22.90	-1.5
MGR	144.42	321	PKPc	18	23.00	-1.5
SDI	144.42	325	PKPc	18	23.60	-0.9
LOR	144.48	340	iPKPc	18	24.20	-0.2
ACI	144.49	320	PKP	18	24.30	-0.3
MNS	144.58	327	PKPc	18	23.80	-0.9
CZI	144.61	320	PKP	18	24.30	-0.5
LBF	144.69	340	iPKPc	18	24.70	-0.1
PII	144.70	330	PKP	18	24.10	-0.7
GRR	144.77	346	iPKPc	18	25.00	0.2
SSF	144.78	341	iPKPc	18	25.20	0.3
LSD	144.83	335	PKP	18	26.10	0.7
LPG	144.95	336	iPKPc	18	26.60	1.0
RMP	144.96	326	PKPc	18	25.50	0.1
PCP	144.98	333	PKP	18	25.66	0.3
RDP	144.99	326	PKPc	18	25.80	0.3
RSP	145.04	335	PKP	18	25.36	-0.2
SMF	145.04	340	iPKPc	18	26.00	0.7
AVF	145.07	341	iPKPc	18	26.00	0.6
LPF	145.15	346	iPKPc	18	26.30	0.9
CKI	145.19	333	PKPc	18	25.90	0.2
BNI	145.35	336	PKPc	18	26.30	0.2
FIN	145.39	333	PKP	18	26.27	0.2
RRL	145.42	335	PKP	18	27.58	1.2
BGF	145.44	341	iPKPc	18	27.20	1.2
ROB	145.47	334	PKP	18	26.58	0.4
DOI	145.57	334	PKPc	18	25.80	-0.6
PZZ	145.63	335	PKP	18	26.45	-0.1
ATN	145.66	319	PKP	18	25.80	-0.9
ENR	145.72	334	PKP	18	26.40	-0.3
FOUF	145.74	335	ePKP	18	27.71	1.2
STV	145.74	334	PKP	18	26.36	-0.3
IMI	145.77	333	PKP	18	27.36	0.6
MAF	145.82	341	iPKPc	18	28.60	1.9
TCF	145.88	341	iPKPc	18	28.70	1.9
SBF	146.00	334	iPKPc	18	28.80	1.7
LSF	146.12	342	iPKPc	18	29.10	1.9
MFF	146.26	344	iPKPc	18	28.00	0.7
MNO	146.28	319	PKP	18	29.50	1.5
FRF	146.58	334	iPKPc	18	30.40	2.4X
LRG	146.79	334	iPKPc	18	31.40	3.1X
LMR	146.83	334	iPKPc	18	31.40	3.1X
RJF	146.97	341	iPKPc	18	31.80	3.3X
CAF	147.14	340	iPKPc	18	32.50	3.6X
LFF	147.54	342	iPKPc	18	33.20	3.8X
LPO	147.63	341	iPKPc	18	33.60	4.0X
BCAO	147.64	255	iPKPc	18	29.50	-1.1
	0.5s	134.00nm				
		ic	18	33.70		
		id	19	21.50		
ETER	149.16	337	ePKP	18	37.80	5.7X
EPF	149.39	341	iPKPc	18	38.00	5.5X
ECRI	150.59	345	ePKP	18	41.80	7.5X
EMON	150.75	352	ePKP	18	41.00	6.5X
ESEL	151.30	334	ePKP	18	43.00	7.6X
EBR	151.31	339	iPKPc	18	43.00	7.7X
EROQ	151.34	339	e(PKP)	18	43.00	7.6X
STS	151.44	354	ePKP	18	43.00	7.5X
ERUA	151.75	351	ePKP	18	44.00	8.0X
ETOR	152.13	342	ePKP	18	45.00	8.3X
GUD	152.86	346	ePKP	18	47.00	9.2X
ECHE	152.91	340	ePKP	18	47.00	9.2X
TOL	153.55	345	ePKP	18	40.00	1.4
EVIA	154.28	341	ePKP	18	50.00	10.3X
EALH	154.62	339	ePKP	18	50.60	10.5X
ASMO	155.83	342	iPKPd	18	43.50	1.6
ALOJ	156.17	343	ePKP	18	44.00	1.6
APHE	156.19	342	iPKPc	18	43.50	1.1
ATEJ	156.32	342	ePKP	18	43.50	0.9
TAF	157.70	337	iPKP	18	47.00	2.7X
NKM	158.09	344	ePKP	18	45.00	0.4
			i	18	56.00	
TIO	162.85	344	iPKPd	18	51.00	1.1
KIC	168.76	225	PKP	18	55.02	0.1
LIC	168.85	224	PKP	18	54.76	-0.2
LKO	171.48	236	PKPc	18	57.50	1.2
	1.2s	42.00nm				
	S.D. = 0.9 on 226 of 275 obs.					

DEC 01, 1989 19h 31m 30.98± 0.22s
44.501 N ± 2.1km 6.522 E ± 1.9km
DEPTH = 9.9 ± 1.8 km
FRANCE (538)
ML 3.0 (LDG).

FOUF	0.19	81	ePg	31	35.58	0.4
			eSg	31	39.51	
PZZ	0.41	89	P	31	39.41	-0.1
			S	31	46.53	
RRL	0.46	24	P	31	40.37	0.0
			S	31	47.80	
DOI	0.52	90	P	31	41.30	-0.2
			eSg	31	50.80	
BNI	0.56	11	P	31	42.10	-0.4
			eSg	31	56.00	
STV	0.63	114	P	31	42.84	-0.9
			S	31	51.96	
ENR	0.70	113	P	31	44.04	-0.8
			S	31	54.40	
RSP	0.83	39	P	31	47.35	0.2
			S	31	59.76	
SBF	0.92	134	Pg	31	48.40	-0.1
			Sg	32	03.20	
FRF	0.94	174	Pg	31	50.20	1.2
			Sg	32	02.60	
ROB	0.99	102	P	31	49.51	-0.3
			S	32	03.46	
LPG	1.01	9	Pg	31	50.80	0.5
			Sg	32	07.80	
LPL	1.03	8	Pg	31	50.70	0.2
			Sg	32	08.40	
LRG	1.05	186	Pn	31	51.20	0.4
			Pg	31	52.00	
			Sg	32	06.40	
LSD	1.06	25	P	31	51.06	0.0
			S	32	05.30	
IMI	1.15	121	P	31	52.22	-0.3
			S	32	06.99	
LMR	1.17	180	Pg	31	53.00	0.2
			Sg	32	08.80	
FIN	1.24	103	P	31	53.94	-0.2
			S	32	09.76	
CKI	1.26	93	P	31	54.50	0.1
			eSg	32	11.50	
PCP	1.45	88	P	31	57.45	0.2
			S	32	15.30	
ORO	1.53	42	P	31	59.80	1.4
ORX	1.53	42	P	31	58.28	-0.2
VAI	2.10	49	P	32	07.20	0.7
BOB	2.11	82	P	32	06.60	-0.2
SMF	2.85	320	Pn	32	17.60	0.2
			Pg	32	25.60	
			Sn	32	49.00	
LBF	3.06	325	Pn	32	20.20	0.0
			Sg	33	11.50	
AVF	3.19	317	Pn	32	22.20	0.1
			Sg	33	14 00	
CAF	3.21	279	Pn	32	21.60	-0.8
			Sn	32	59.00	
MAF	3.28	303	Pn	32	23.60	0.2
			Sg	33	14.60	
BGF	3.30	310	Pn	32	23.60	-0.2
			Sg	33	16.60	
SSF	3.32	322	Pn	32	24.40	0.4
			Sg	33	18.20	
LOR	3.33	327	Pn	32	23.80	-0.4
			Sg	33	16.40	
HAU	3.51	358	Pn	32	26.60	0.0
			Sn	33	08.00	
TCF	3.52	302	Pn	32	26.50	-0.4
			Sg	33	23.00	
LSF	3.93	298	Pn	32	32.40	-0.2
			Sg	33	36.40	
CDF	3.95	7	Pn	32	32.40	-0.6
	S.D. = 0.5 on 36 of 36 obs.					

& DEC 01, 1989 19h 36m 21.32s
60.713 N 147.480 W
DEPTH = 7.4km
SOUTHERN ALASKA (2)
<AGS-P>.

HIN	0.58	123	iP	36	32.80	-0.1
			iS	36	41.75	
CVA	0.87	100	eP	36	37.23	-1.0
			eS	36	49.53	
SGAM	1.14	100	eP	36	41.45	-1.5
			eS	36	57.17	
SLKM	1.37	263	eP	36	44.80	-2.0
RAGM	1.42	102	eP	36	45.25	-2.4
			eS	37	04.41	
WAX	2.30	95	eP	36	57.76	-2.5
	6 obs. associated					

• DEC 01, 1989 20h 09m 16.83± 1.77s
52.350 N ±16.4km 4.813 E ± 6.4km
DEPTH = 10.0km (geophysicist)
NETHERLANDS (540)
ML 3.1 (LDG).

WTS	1.28	105	iPnc	09	40.50	0.0
	0.7s	16.00nm				
			iPg	09	42.50	
			iSn	09	58.30	
ENN	1.73	156	iPn	09	53.40	6.3X
	0.5s	5.00nm				
			iPg	09	57.60	
			iSn	10	16.80	
			iSg	10	22.30	
CDF	4.25	157	Pn	10	23.20	0.1
LDF	4.91	222	Pn	10	32.60	0.3
FLN	4.93	225	Pn	10	32.40	-0.2
			Sn	11	29.70	
LOR	5.12	187	Pn	10	35.20	-0.3
			Sn	11	32.80	
SSF	5.36	190	Pn	10	39.30	0.5
GRR	5.37	225	Pn	10	39.00	0.0
			Sn	11	40.00	
LBF	5.40	186	Pn	10	39.40	0.0
			Sn	11	40.20	
SMF	5.75	187	Pn	10	44.00	-0.2
BGF	5.94	193	Pn	10	47.00	0.1
			Sn	11	52.40	
MAF	6.31	194	Pn	10	51.80	-0.3
	S.D. = 0.3 on 11 of 12 obs.					

? DEC 01, 1989 20h 12m 46.07±15.18s
51.680 N ±76.1km 16.615 E ±102.km
DEPTH = 10.0km (geophysicist)
POLAND (548)
ML 3.4 (VKA), 3.4 (KBA).

KSP	0.86	194	iPd	13	02.60	-0.1
	0.7s	111.00nm				
			iS	13	11.20	
BRG	1.86	245	ePn	13	17.50	-0.7
			iPg	13	19.50	
			iSg	13	39.00	
PRU	2.14	219	Pn	13	22.00	-0.4
			Pg	13	24.00	
			Sn	13	40.10	
			eSg	13	47.00	
CLL	2.29	262	ePn	13	24.00	-0.4
			iPg	13	27.20	
			eSg	13	54.00	
KRA	2.66	126	eP	13	44.50	14.8X
			eS	14	19.10	

01d 20h

KHC 3.21 218 iPn 13 38.00 0.5
Pg 13 44.00
Sn 14 11.00
Sg 14 21.80
HOF 3.29 247 ePn 13 46.00 7.3X
MOX 3.31 254 ePn 13 40.00 1.0
ePg 13 47.00
iSg 14 27.00
VKA 3.42 183 iPgc 13 50.50 9.9X
iSg 14 33.80
ZST 3.50 175 eP 14 12.30 30.7X
e 14 33.70
i(Sn) 14 39.30
i 14 49.40
KBA 5.08 206 ePn 14 04.00 -0.2
i 15 27.00
S.D. = 0.7 on 7 of 11 obs.

% DEC 02, 1989 00h 59m 33.83± 1.25s
47.028 N ± 7.2km 7.261 E ±15.1km
DEPTH = 10.0km (geophysicist)
SWITZERLAND (544)
ML 2.6 (LDG).

BSF 0.87 339 Pg 59 05.30 -45.3X
Sg 00 01.60
HAU 1.16 328 Pg 59 54.10 -1.4
Sg 00 08.80
CDF 1.39 0 Pg 00 00.20 0.9
Sg 00 18.80
LPL 1.56 194 Pg 00 01.50 -0.3
Sg 00 21.60
LPG 1.57 193 Pg 00 01.80 -0.3
Sg 00 23.00
LBF 2.25 270 Pg 00 12.00 0.3
Sg 00 36.40
SMF 2.38 262 Pg 00 14.20 0.7
Sg 00 41.20
BGF 3.07 263 Pn 00 18.80 -4.4X
Pg 00 27.00
Sg 01 02.00
MAF 3.33 258 Pg 00 31.00 3.9X
S.D. = 1.1 on 6 of 9 obs.

? DEC 02, 1989 01h 43m 33.13±11.68s
33.094 S ±28.2km 72.430 W ±94.2km
DEPTH = 33.0km (normal)
OFF COAST OF CENTRAL CHILE (134)

IHA 0.67 84 iPc 43 46.20 0.1
iS 43 52.70
LCCH 0.82 118 iPc 43 47.90 -0.3
iS 43 55.60
LNV 1.21 136 iPd 43 53.90 0.1
iS 44 06.00
JACH 1.60 76 iPd 43 59.40 -0.2
iS 44 16.00
CHCH 1.70 120 iPd 44 01.00 0.0
iS 44 19.00
FCH 1.81 98 iP 44 03.00 0.2
iS 44 22.80
S.D. = 0 2 on 6 of 6 obs.

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* DEC 02, 1989 02h 25m 47.82± 0.97s
6.244 S ±10.1km 151.949 E ±16.8km
DEPTH = 33.0km (normal)
4.2mb (2 obs.)
NEW BRITAIN REGION (192)

RAB 2.05 6 iPc 26 20 70 0.0
iS 26 49 00
PMG 5.70 236 eP 27 13 00 0 6
0.9s 65 55nm 5.2mb X
RMQ 20.36 188 eP 30 24.00 -0.4
BRS 21.05 178 iPc 30 32.20 0.7
0.9s 2.00nm 3.5mb
e 30 42.00
e(ScS) 41 25.00
MTN 21.54 251 eP 30 37.00 0.5
WB2 21.86 230 eP 30 38.10 -1.5
ASPA 24.52 223 eP 31 05.80 0.1
0.5s 17.00nm i 4.9mb
e 31 17.50
S D. = 1.0 on 7 of 7 obs.

% DEC 02, 1989 02h 27m 24.35± 1.26s
10.350 N ±13.0km 61.446 W ±11.5km
DEPTH = 33.0km (normal)
TRINIDAD (98)
MD 2.8 (TRN).

TPP 0.03 188 eP 27 30.09 0.2
eS 27 35.92
TRN 0.30 8 eP 27 30.52 -1.6
eS 27 36.35
TBH 0.40 70 eP 27 33.06 -0.4
eS 27 38.49
TCE 0.46 319 eP 27 34.12 -0.2
eS 27 42.12
BOT 1.08 41 eP 27 44.00 0.8
eS 27 57.81
GRW 1.81 353 eP 27 55.00 1.2
eS 28 16.17
S.D. = 1.3 on 6 of 6 obs.

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* DEC 02, 1989 02h 50m 48.81± 2.91s
49.035 N ± 9.5km 128.567 W ±24.5km
DEPTH = 10.0km (geophysicist)
VANCOUVER ISLAND REGION (25)

EDB 1.26 4B P 51 12.40 0.1
ETB 1.37 75 P 51 14.91 1.0
PHC 1.83 23 P 51 21.00 0.5
S 51 43.50
OZB 2.03 91 P 51 23.31 -0.1
S 51 50.77
BTB 2.04 77 P 51 24.18 0.4
MCW 3.80 93 eP 51 48.30 -0.4
BMW 4.42 123 eP 51 57.00 -0.5
LON 5.09 114 eP 52 07.80 0.9
PNT 5.88 84 iP 52 18.00 0.0
0.5s 9.00nm 4.7mb X
EDM 10.44 61 eP 53 20.50 -1.0
SES 11.43 77 eP 53 35.00 -0.1
FFC 17.32 61 eP 54 51.00 -0 9
0.9s 11.00nm 4.0mb X
FFC 17.32 61 eP 54 55.50 3.6X
0.6s 20.00nm 4.4mb
INK 19.49 354 eP 55 36.00 17.5X
S.D. = 0.7 on 12 of 14 obs.

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* DEC 02, 1989 04h 24m 54.54± 1.70s
9.501 S ± 7.9km 125.046 E ±12.1km
DEPTH = 56.6 ± 20.1 km
4.6mb (7 obs.) 4.6Msz (2 obs.)
TIMOR (289)

MTN 6.83 120 eP 26 35.00 0.5
eS 27 47.00
KNA 7.19 150 iPc 26 39.30 -0.3
0.3s 67.00nm 5.9mb X
eS 27 58.00
PCI 9.99 328 ePd 27 18.50 0.4
e(S) 27 58.00
MBL 12.63 203 eP 27 51.80 -1.8
0.3s 4.00nm 4.8mb
WB2 13.73 140 eP 28 04.20 -4.0X
eS 30 30.00
TSM 15.30 333 eP 28 32.00 3.4X
ASPA 16.43 150 iPc 28 41.80 -1.2
0.7s 32.00nm 4.6mb
Z 19s 1.61um
eS 31 32.40
LR 35 49.50
WARB 16.66 175 eP 28 45.00 -0.8
0.4s 13.00nm 4.4mb
KKM 17.77 330 ePc 29 01.00 1.2
OIS 17.83 130 iPc 29 00.20 -0.2
e 29 02.00
e 32 12.50
MEKA 18.10 199 eP 29 06.00 2.3
MRWA 21.37 202 eP 29 40.00 0.7
PMG 21 81 92 eP 29 49.00 5.3X
BAL 22.39 199 eP 29 51.00 1.6
CTA 23.02 120 iPc 30 01.10 5.5X
0.9s 15.97nm 4.5mb
iS 34 19.00
MUN 23.82 199 eP 29 53.00 -10.3X
eS 34 30.00
STK 27.04 148 eP 30 37.00 3.5X
e 30 46.00
CHG 38.14 318 eP 32 09.00 -1.2
CHTO 38.14 318 eP 32 08.20 -2.0
GYA 39.96 334 P 32 23.20 -2.2

WHN 41.12 346 eP 32 38.20 3.5X
NJ2 41.74 352 Pd 32 38.80 -0.9
CD2 45.07 334 eP 33 11.80 4.9X
XAN 45.93 341 eP 33 12.00 -1.6
MAT 47.44 14 eP 33 26.00 0.5
1.4s 53.49nm 5.3mb
SHL 47.51 318 eP 33 27.00 0.6
TIY 48.43 347 eP 33 35.10 1.9
LZH 49.55 337 eP 33 44.00 2.0
1.5s 42.00nm 5.2mb
Z 20s 0.40um 4.4Msz
BJI 49.97 351 eP 33 46.50 1.6
LSA 50.83 321 eP 33 50.60 -1.6
HHC 51.62 347 P 34 01.40 3.8X
GBA 52.53 295 P 34 06.00 1.3
0.3s 1.10nm 4.4mb
CN2 53.05 0 eP 34 09.80 1.8
GTA 54.01 336 eP 34 13.40 -2.0
MDJ 54.02 4 eP 34 15.00 -0.1
WMQ 62.97 330 P 35 17.00 -0.7
BUL 92.73 249 eP 38 19.00 16.4X
YJA 146.87 162 ePKP 44 37.80 6.2X
ARE 149.45 147 ePKP 44 50.00 14.4X
CNCB 150.86 154 PKP 44 48.00 10.0X
LPB 151.05 153 PKP 44 52.00 13.9X
ZOBO 151.27 153 PKP 44 51.00 12.4X
1.2s 13.51nm
Z 20s 0.15um 4.8Msz
LR 38 40.00
S.D. = 1.5 on 27 of 42 obs.

DEC 02, 1989 04h 51m 56.59± 0.47s
38.640 N ± 7.9km 45.373 E ± 6.5km
DEPTH = 10.0km (geophysicist)
4 6mb (6 obs.)
N.W. IRAN-USSR BORDER REGION (344)

TAB 0.94 127 iPd 52 13.60 -1 1
MSL 2.87 219 ePnc 52 44.50 1.3
iSn 53 30.50
SLY 3.04 178 iPnc 52 45.50 0.0
iP* 52 48.50
iPg 52 53.00
iSn 53 18.00
iS* 53 23.00
iSg 53 2B.50
KER 4.50 161 eP 53 16.00 9.5X
BHD 5.41 189 ePnd 53 29.00 9.7X
eP* 53 47.00
i 54 38.00
iSn 54 55.00
iSg 55 37.00
TEH 5.61 119 e(P) 53 40.00 17.8X
KSP 23.82 310 ePc 57 14.50 4.2X
PRU 24.63 307 eP 57 22.00 3.8X
KBA 24.81 300 e(P) 57 21.00 0.9
1.2s 15.70nm 4.6mb
i 57 24.70
KHC 25.03 305 P 57 21.40 -0.7
NUR 25.47 336 eP 57 30.00 4.0X
0.7s 9.30nm 4.6mb
CLL 25.94 310 eP 57 36.00 5.5X
2.7s 73.00nm 4.9mb
NB2 30.84 328 P 58 13.70 -1.0
0.9s 3.10nm 4.2mb
GKN 34.25 96 P 58 45.40 0.5
DMN 34.80 96 P 58 51.10 1.3
KKN 34.85 96 P 58 50.00 -0.2
PKI 35.06 96 P 58 52.40 0.3
EKA 36.23 314 Pd 59 01.80 0.5
0.9s 7.70nm 4.5mb
BCAO 41.89 222 iPd 59 47.50 -1.2
0.8s 17.00nm 4.8mb
TIC 55.43 248 P 01 33.70 0.0
LIC 55.72 248 P 01 35.00 -0.7
S.D. = 0.9 on 14 of 21 obs.

DEC 02, 1989 05h 36m 32.68± 0.59s
4.715 N ± 8.6km 96.201 E ± 7.7km
DEPTH = 33.0km (normal)
4 9mb (3 obs.)
NORTHERN SUMATERA (706)

IPM 4.81 91 ePc 37 44.50 -0.2
0.4s 72.70nm
e 38 37.50
SNG 5.03 61 eP 37 47.20 -0.6

```
NNT      8.57  24 eP     38 36.30  -1.1
CHG     14.27  11 eP     40 02.20   7.7X
GBA     20.51 297 P      41 10.30  -0.5
SHL     21.14 349 iP     41 17.20  -0.3
HYB     21.40 308 iPd    41 19.50  -0.5
        1.0s    25.00nm          4.6mb
GYA     23.82  24 P      41 45.40   1.5
LSA     25.31 350 eP     41 58.60   0.1
CD2     27.01  14 eP     42 17.40   3.6X
GTA     34.69   5 eP     43 23.40   1.7
BJI     39.52  24 eP     44 05.50   3.5X
COOL    42.67 148 eP     44 29.00   0.8
WB2     44.80 124 eP     44 44.80  -0.7
ASPA    46.34 129 iPd    44 57.70   0.0
        0.5s    10.00nm          5.0mb
BCAO    77.38 273 iPc    48 26.40  -0.3
        0.5s     8.00nm          5.0mb
     S.D. = 0.9  on  13 of  16 obs.
------------------------------------
? DEC  02, 1989  06h 09m 10.08± 0.88s
   42.713 N ± 8.4km     7.692 W ± 7.2km
   DEPTH =  10.0km  (geophysicist)
 SPAIN                            (377)
     mbLg 2.7 (MDD).

ERUA     0.52 128 ePg    09 20.50  -0.1
                  eSg    09 28.00
STS      0.66 286 ePg    09 23.00  -0.1
                  eSg    09 32.00
EMON     0.77  20 ePg    09 25.20   0.1
                  eSg    09 34.50
EZAM     0.93 233 ePg    09 28.00   0.1
                  eSg    09 40.20
     S.D. = 0.2  on   4 of   4 obs.
------------------------------------
• DEC  02, 1989  07h 06m 25.88± 0.97s
   44.788 N ±21.5km   148.397 E ±14.8km
   DEPTH =  50.7km  (  2 depth phases)
   4.5mb ( 13 obs.)
 KURIL ISLANDS                    (221)

KUSJ     3.15 239 P      07 12.00  -2.2X
                  S      07 45.40
ASAJ     4.17 263 eP     07 31.10   2.5
HOOJ     4.42 239 P      07 32.30   0.2
                  S      08 21.70
MAT     11.29 227 iPd    09 03.00  -4.3X
        0.5s    12.68nm          5.3mb
FBA     39.73  37 eP     13 56.10   1.5
        1.0s     0.30nm          3.1mb X
                  pP     14 10.00  53km
INK     45.05  31 eP     14 38.00   0.1
CHTO    48.43 254 eP     15 04.00  -1.0
        0.9s     4.48nm          4.5mb
LRM     65.00  50 eP     17 03.20   0.3
                  e      17 18.20
KVN     66.01  58 eP     17 09.90   0.5
                  pP     17 23.60  48km
GBA     67.05 266 Pd     17 13.80  -2.2
        0.7s     2.10nm          4.3mb
N82     68.95 339 P      17 26.00  -1.3
        0.5s     1.00nm          4.0mb
EKA     77.38 344 Pc     18 16.40  -0.2
        0.5s     1.50nm          4.3mb
KBA     80.32 331 e(P)   18 33.00   0.1
        1.2s     7.10nm          4.5mb
LBF     83.38 336 eP     18 48.50  -0.2
        0.8s     3.20nm          4.4mb
SMF     83.73 336 eP     18 50.40   0.0
        0.8s     4.00nm          4.5mb
AVF     83.74 337 eP     18 50.40   0.0
        0.8s     4.00nm          4.5mb
MAF     84.48 337 eP     18 54.50   0.3
        0.7s     4.40nm          4.6mb
MFF     84.85 339 eP     18 55.70  -0.3
        0.8s     6.40nm          4.8mb
CAF     85.81 337 eP     19 00.80  -0.1
        0.8s     5.30nm          4.8mb
LFF     86.16 338 eP     19 02.50  -0.1
        0.8s     8.00nm          5.0mb
     S.D. = 1.1  on  18 of  20 obs.
------------------------------------
  DEC  02, 1989  07h 09m 06.82± 0.40s
  31.925 S ± 6.4km    69.513 W ± 6.1km
  DEPTH = 121.8 ±  7.9 km
  4.0mb (  1 obs.)
 SAN JUAN PROVINCE, ARGENTINA     (137)
ZON      0.81  62 iPd    09 27.00  -0.6
CFA      1.13  74 iPd    09 30.80   0.1
JACH     1.19 230 iPc    09 31.50   0.2
                  iS     09 50.50
FCH      1.54 205 iPc    09 36.80   1.2
                  iS     10 00.00
ROCH     1.64 230 iP     09 36.50  -0.1
                  iS     09 59.50
SAN      1.81 212 iPc    09 39.10   0.7
                  iS     10 03.00
PCH      1.89 206 iP     09 40.20   0.7
                  iS     10 06.50
IHA      2.11 238 eP     09 41.50  -0.7
                  iS     10 06.50
CHCH     2.22 205 iPc    09 44.40   0.7
                  iS     10 13.00
LCCH     2.32 228 iPc    09 44.10  -0.8
                  iS     10 14.00
LNV      2.58 218 iPc    09 46.60  -1.6
                  iS     10 16.10
RFA      2.97 163 iPc    09 53.60   0.1
MRA      3.26 100 ePc    09 57.80   0.5
TCA      4.24  83 iPc    10 09.50  -1.1
CYA      4.73  44 ePc    10 09.80  -7.4X
CNCB    15.11   6 Pd     12 36.80   1.1
LPB     15.38   5 P      12 39.00   0.1
ZOBO    15.64   5 P      12 42.00  -0.3
        1.0s    10.00nm          4.0mb
GBA    144.69 113 PKPc   28 30.90  -0.2
        0.5s     2.60nm
     S.D. = 0.8  on  18 of  19 obs.
------------------------------------
   DEC  02, 1989  07h 52m 18.18± 0.70s
    0.406 N ± 3.4km  121.642 E ± 5.4km
   DEPTH = 124.4 ±  7.0 km
   5.3mb ( 25 obs.)
 MINAHASSA PENINSULA              (265)
      CENTROID, MOMENT TENSOR     (HRV)
      Data Used: GDSN
      L.P.B.: 12S, 22C
      Centroid Location:
      Origin Time        07:52:19.4 1.5
      Lat  0.90N 0.12 Lon 122.15E 0.15
      Dep  94.4 6.2 Half-duration  1.6
      Moment Tensor;   Scale 10**16 Nm
        Mrr= 2.97 0.82  Mtt=-2.08 0.93
        Mff=-0.89 1.56  Mrt=-3.95 0.64
        Mrf=-0.48 0.56  Mtf=-5.26 0.98
       Principal Axes:
        T  Val=  6.08   Plg=44  Azm=214
        N        1.73       40       67
        P       -7.81       17      322
      Best Double Couple:Mo=6.9*10**16
       NP1:Strike=  9 Dip=45 Slip=  23
       NP2:       262      74      133

PCI      2.23 234 iPd    52 54.40  -0.8
TSM      5.21 317 iPc    53 35.10   0.1
                  iS     54 33.00
DAV      7.71  30 eP     54 09.50   0.3
                  eS     55 35.50
KKM      7.79 316 ePd    54 09.20  -1.2
        0.8s   539.80nm          6.2mb
KHKI    10.59 214 ePc    54 49.00   1.3
                  e      59 05.00
QCP     14.15 358 eP     55 17.00 -17.2X
BAG     15.94 356 eP     55 57.00   0.1
MTN     16.18 145 eP     56 00.00   0.2
IPM     21.01 282 ePd    56 54.00   0.6
        1.0s    90.70nm          5.1mb
                  e      57 28.90
MBL     21.51 185 iPc    56 58.30  -0.1
        0.5s    39.00nm          5.0mb
QIZ     21.83 329 eP     57 00.30  -1.3
                  S      00 56.00
                  sS     01 32.00
NANU    23.59 194 iPc    57 19.40   0.7
        0.5s   144.00nm          5.7mb
WB2     23.75 149 iPc    57 19.20  -1.1
                  eS     01 23.00
GZH     23.94 341 eP     57 20.40  -1.7
QZH     24.57 353 Pc     57 28.00   0.0
NNT     24.87 300 iPc    57 32.20   1.3
LOE     25.87 312 eP     57 40.00  -0.2
NST     26.09 307 iPc    57 44 00   1.8
WARB    26.87 170 iPc    57 48.20  -1.0
        0.4s    30.00nm          5.2mb
MEKA    27.03 186 iPd    57 50.40  -0.2
        0.4s    75.00nm          5.6mb
QIS     27.26 141 iPc    57 51.90  -0.9
        0.7s    72.00nm          5.4mb
                  e      58 19.00
BDT     27.87 308 eP     57 59.80   1.6
        0.8s    57.10nm          5.3mb
CHG     28.82 311 iPd    58 06.50  -0.4
        1.0s    57.50nm          5.2mb
CHTO    28.82 311 iP     58 07.70   0.8
        1.3s    93.55nm          5.3mb
                  pP     58 32.90 116kmX
                  sP     58 44.30
GYA     29.65 332 iPd    58 14.80   0.5
MRWA    29.95 190 eP     58 16.20  -0.5
        0.4s     6.00nm          4.7mb
SSE     30.52 359 P      58 21.50  -0.2
        1.0s    12.00nm          4.6mb
                  sP     58 47.50
                  eS     03 16.00
KMI     30.62 325 Pd     58 24.50   1.5
                  pP     58 48.00 105kmX
WHN     30.76 348 eP     58 24.50   0.7
COOL    31.12 181 eP     58 25.00  -2.0
BAL     31.20 188 eP     58 27.00  -0.7
CTA     31.56 132 iPc    58 30.80  -0.2
        1.2s    70.31nm          5.3mb
KLB     32.04 186 eP     58 34.00  -1.0
MUN     32.62 189 eP     58 39.00  -1.0
NWAO    33.41 187 iPc    58 46.60  -0.3
        0.8s    87.00nm          5.6mb
RKG     34.57 187 eP     59 01.50   4.7X
CD2     34.76 332 eP     58 57.80  -0.8
XAN     35.52 342 Pd     59 04.50  -0.5
TIA     35.87 354 Pd     59 07.00  -0.8
STK     37.25 151 iPc    59 09.80  -9.7X
RMQ     37.38 138 eP     59 20.00  -0.7
TIY     38.08 348 Pd     59 26.50   0.0
      Z  16s     0.72um          4.6MszX
      E  14s     0.50um
SHL     38.08 313 iP     59 27.30   0.5
                  iS     05 15.30
ADE     38.64 157 iPc    59 31.70   0.6
        0.8s   116.42nm          5.7mb
MAT     39.10  21 iPd    59 22.50 -12.4X
CMS     39.14 146 iPc    59 35.90   0.7
        1.0s    68.00nm          5.4mb
LZH     39.16 337 iPd    59 36.70   1.1
        1.2s     0.07nm          2.3mb X
      Z  35s     0.70um          4.2MszX
                  pP     59 59.50  97kmX
BJI     39.76 353 eP     59 40.00  -0.2
BRS     40.73 135 iPc    59 48.20  -0.2
        1.0s     4.00nm          4.1mb X
LSA     41.13 318 P      59 54.20   2.0
SNY     41.27   2 Pd     59 51.20  -1.3
HHC     41.28 348 Pc     59 53.60   0.7
BTO     41.38 347 eP     59 54.00   0.4
BFD     42.10 155 eP     59 59.00  -0.5
COO     42.15 140 iPd    00 01.80   1.8
BWA     42.78 147 iPc    00 07.20   2.1
GTA     43.65 335 iPd    00 13.20   1.0
TOO     43.74 152 eP     00 14.00   1.1
CAN     43.76 147 iPc    00 13.90   0.9
CNB     43.96 147 iPc    00 15.80   1.1
        0.9s    92.00nm          5.5mb
PKI     44.01 311 P      00 15.80   0.3
        0.6s    29.00nm          5.2mb
KKN     44.22 311 P      00 17.40   0.3
        0.8s    41.00nm          5.2mb
DMN     44.25 311 P      00 18.00   0.6
        0.8s    56.00nm          5.3mb
MDJ     44.58   8 eP     00 18.50  -0.9
                  epP    00 45.50 117kmX
GKN     44.81 311 P      00 22.20   0.5
KOD     44.99 284 eP     00 23.30  -0.2
HYB     45.63 294 iPc    00 23.50  -4.6X
        1.0s    55.00nm          5.2mb
                  e      00 53.50
GBA     45.68 289 P      00 28.60   0.1
DZM     49.04 120 iPc    00 55.90   1.1
POO     50.24 294 iPd    01 03.70  -0.2
        0.8s    32.84nm          5.3mb
NDI     50.89 308 eP     01 07.50  -1.2
        0.5s    35.21nm          5.5mb
WMQ     52.75 329 P      01 23.20   0.8
                  pP     01 47.50 100kmX
```

02d 08h

MAIO	67.57	309	eP	03	03.00	-0.6
			e	03	30.00	
DRV	68.19	172	eP	03	06.00	-0.7
PRNI	86.90	300	eP	04	50.00	-0.6
MBH	86.99	300	eP	04	50.00	-0.9
SUF	92.17	333	eP	05	12.80	-1.7
	0.6s		5.40nm		5.0mb	
NUR	93.10	331	eP	05	16.90	-1.9
INK	95.09	21	eP	05	27.00	-0.9
			pP	05	55.00	105kmX
NB2	99.42	332	P	05	45.50	-2.2
	0.7s		2.80nm		5.0mb	
ALQ	123.00	47	PKP	11	02.10	0.0
	1.0s		7.50nm			
KIC	126.07	278	PKP	11	08.00	-0.4
TIC	126.32	279	PKP	11	08.60	-0.3
LIC	126.37	278	PKP	11	08.60	-0.4
LKO	126.55	282	PKPc	11	08.62	-0.7
	0.9s		10.00nm			
CNCB	161.14	150	PKP	12	08.00	1.8
LPB	161.32	150	PKP	12	08.00	1.8
ZOBO	161.53	149	PKP	12	07.20	0.6
S.D. = 1.0 on 83 of 88 obs.						

DEC 02, 1989 08h 56m 30.90± 0.29s
44.742 N ± 2.3km 7.258 E ± 3.2km
DEPTH = 10.0km (geophysicist)
NORTHERN ITALY (545)
ML 3.1 (LDG), 2.9 (GEN).

DOI	0.24	182	Pc	56	36.20	0.2
			eSg	56	39.20	
PZZ	0.26	205	P	56	36.40	-0.1
			S	56	39.79	
RRL	0.38	298	P	56	38.56	-0.2
			S	56	43.27	
FOUF	0.40	238	ePg	56	38.54	-0.6
			e(Sg)	56	42.78	
RSP	0.41	360	P	56	39.58	0.3
			S	56	46.04	
STV	0.50	175	P	56	40.30	-0.8
			S	56	46.66	
BNI	0.52	307	Pd	56	41.20	-0.2
			eSg	56	47.20	
ENR	0.53	167	P	56	40.71	-0.9
			S	56	47.17	
ROB	0.63	135	P	56	43.38	-0.2
			S	56	51.68	
LSD	0.72	354	P	56	45.43	0.2
			S	56	54.76	
CKI	0.80	113	P	56	47.50	1.1
			eSg	56	58.50	
LPG	0.84	335	Pg	56	47.60	0.3
			Sg	56	57.80	
LPL	0.86	335	Pg	56	47.80	0.2
			Sg	56	58.00	
FIN	0.86	128	P	56	47.68	0.1
			S	56	59.17	
SBF	0.89	172	Pg	56	47.70	-0.3
			Sg	56	59.20	
PCP	0.94	102	P	56	49.22	0.4
			S	57	02.15	
IMI	0.95	151	P	56	48.40	-0 6
			S	57	00.81	
ORX	1.03	30	P	56	49.02	-1.4
			S	57	02.79	
FRF	1.26	201	Pg	56	55.00	0.7
			Sg	57	10.70	
LRG	1.44	207	Pg	56	58 00	1.0
			Sg	57	17.20	
LMR	1.51	201	Pg	56	58.70	0.8
			Sg	57	18 00	
LBF	3.21	316	Pn	57	22.40	0 1
S.D. = 0.6 on 22 of 22 obs.						

* DEC 02, 1989 09h 27m 42.30± 1.09s
38.997 N ± 9.9km 21.968 E ± 9.8km
DEPTH = 10.0km (geophysicist)
GREECE (364)
MD 3.0 (ATH).

AGG	0.28	85	ePgd	27	48.00	-0.3
			iSg	27	53.90	
LIT	1.17	20	ePbc	28	03.70	-0.5
			eSb	28	23.50	
KZN	1.32	353	ePn	28	06.00	-0.7
			eSb	28	25.50	
VLS	1.36	233	ePb	28	07.20	0.0
KNT	2.28	18	ePn	28	22.00	1.5
S.D. = 1.2 on 5 of 5 obs.						

DEC 02, 1989 11h 20m 12.11± 1.40s
35.352 N ±12.6km 22 939 E ± 9.5km
DEPTH = 70.0 ± 8.1 km
3.8mb (2 obs.)
MEDITERRANEAN SEA (400)
MD 3.9 (ATH).

VAM	1.03	87	ePn	20	31.10	-0.2
			eSn	20	50.20	
VLI	1.36	360	ePn	20	37.40	1.8
ITM	2.00	336	ePb	20	51.00	6.7X
NPS	2.19	92	ePn	20	47.50	0.5
ATH	2.69	13	ePb	21	03.10	9.2X
APE	2.71	50	ePn	20	55.00	0.8
VLS	3.39	327	ePn	21	03.90	0.1
KAP	3.46	85	ePn	21	03.50	-1.3
NEO	3.95	3	ePn	21	12.40	0.8
IGT	4.66	334	eP	21	20.90	-0.7
LIT	4.75	356	eP	21	23.50	0.6
KEK	5.02	331	ePn	21	27.60	1.0
PLG	5.03	4	ePn	21	26.90	0.1
KZN	5.03	350	ePn	21	26.90	0.1
OUR	5.04	9	eP	21	27.10	0.2
THE	5.27	0	eP	21	29.40	-0.7
GRG	5.61	356	eP	21	33.40	-1.5
KNT	5.80	360	eP	21	37.00	-0.5
ELL	5.82	74	iPn	21	37.00	-0.9
OHR	5.99	344	iPn	21	39.00	-1.2
KHL	6.06	59	ePn	21	41.80	0.7
SKO	6.71	350	ePn	21	49.00	-1.1
KHC	15.40	336	P	23	52.80	6.3X
NUR	25.20	2	eP	25	40.00	7.7X
HFS	25.51	349	ePKP	25	35.70	0.4
	0.4s		2.10nm		4.0mb	
NB2	26.78	347	P	25	47.40	0.4
	0.7s		1.20nm		3.5mb	
GKN	52.29	80	P	29	19.40	0.6
DMN	52.83	80	P	29	22.70	-0.3
KKN	52.89	80	P	29	23.20	-0.2
PKI	53.09	80	P	29	25.40	0.4
S.D. = 0.9 on 26 of 30 obs.						

% DEC 02, 1989 12h 12m 46.46± 0.91s
60.400 N ± 5.0km 4.999 E ± 8.7km
DEPTH = 10.0km (geophysicist)
SOUTHERN NORWAY (535)
MD 1.5 (BER).

ASK	0.13	49	iPg	12	49.50	0.0
			eSg	12	51.57	
BER	0.17	96	iPgc	12	50.29	0.0
			eSg	12	52.94	
SUE	0.67	350	iP	12	59.79	0.1
			eS	13	08.47	
ODD1	0.95	120	iP	13	04.86	0.3
			iS	13	18.73	
HYA	0.96	37	iP	13	04.90	0.1
			iSg	13	17.80	
KMY	1.20	174	iP	13	08.65	-0.1
			iS	13	24.71	
BLS1	1.37	137	eP	13	11.77	0.1
			eS	13	31.65	
NRA0	3.25	81	iPc	13	38.00	-0.4
			ePg	13	43.00	
			eSg	14	30.00	
S.D. = 0.2 on 8 of 8 obs.						

DEC 02, 1989 12h 15m 17.84± 1.46s
39.536 N ± 7.0km 143.089 E ± 6.2km
DEPTH = 34.5 ± 12.2 km
4.9mb (28 obs.) 5.5Msz (8 obs.)
OFF EAST COAST OF HONSHU, JAPAN (229)
CENTROID, MOMENT TENSOR (HRV)
Data Used: GDSN
L.P.B.: 11S, 17C
Centroid Location:
Origin Time 12.15:21.3 0.5
Lat 39 17N 0 08 Lon 143.06E 0.08
Dep 15 0 FIX Half-duration 2.2
Moment Tensor, Scale 10**17 Nm
Mrr= 1 10 0 09 Mtt= 0.08 0.13
Mff=-1.18 0.11 Mrt= 1.49 0.28
Mrf= 2.38 0.29 Mtf=-0.46 0.10

Principal Axes:

	Val=	Plg=	Azm=
T	2.99	56	310
N	0.15	6	210
P	-3.14	33	116

Best Double Couple: Mo=3.1*10**17
NP1: Strike=181 Dip=13 Slip= 60
NP2: 31 79 97

OFUJ	1.19	248	iP+	15	39.90	1.6
			eS	16	01.10	
MAT	4.88	234	iPc	16	32.10	1.3
	0.6s		340.00nm			
			(S)	17	41.00	
MDJ	11.24	301	eP	18	00.00	0.9
Z	16s		47.90um			
E	14s		21.70um			
			esP	18	07.00	
			S	20	06.00	
			sS	20	17.00	
CN2	13.85	294	eP	18	33.00	-1.0
	8.0s		1.20nm			2.7mb X
Z	16s		21.30um			
N	13s		10.20um			
			eS	21	12.00	
SNY	14.98	285	Pc	18	46.00	-2.7
Z	16s		30.00um			
N	13s		6.30um			
E	14s		15.40um			
			sP	18	57.00	
			sS	21	40.00	
DL2	16.64	275	P	19	10.00	0.0
	7.0s		1.80nm			2.3mb X
Z	18s		10.40um			
N	14s		11.80um			
E	16s		11.40um			
			eS	22	18.00	
SSE	19.72	251	Pc	19	46.00	-1.4
	1.2s		47.00nm			4.7mb
Z	20s		5.20um			
N	12s		4.80um			
E	13s		7.70um			
			pP	19	53.50	29kmX
			PP	20	05.80	
			S	23	22.00	
			sS	23	37.00	
			SS	23	51.00	
			i	23	59.50	
BJI	20.67	280	eP	19	54.00	-3.1X
	1.5s		47.00nm			4.6mb
Z	16s		18.60um			5.5MszX
N	12s		2.90um			
E	14s		10.90um			
			eS	23	40.00	
TIA	20.74	269	eP	19	55.50	-2.5
Z	14s		21.20um			5.7MszX
N	13s		6.90um			
E	13s		15.30um			
			eS	23	39.00	
NJ2	20.99	257	Pc	19	58.00	-2.5
Z	18s		13.40um			5.4Msz
N	13s		5.80um			
E	11s		2.20um			
			sS	24	00.00	
ANP	23.09	238	eP	20	24.00	2.5
TIY	23.97	275	eP	20	28.40	-1.6
Z	18s		13.90um			5.5Msz
N	14s		8.20um			
			PcP	24	08.00	
			sS	24	51.00	
HHC	24.05	283	eP	20	28.60	-2.2
N	13s		4.30um			
E	15s		14.60um			
			S	24	46.50	
WHN	25.10	258	Pc	20	41.50	0.7
	1.0s		0.10nm			2.4mb X
Z	18s		7.29um			5.2Msz
N	14s		5.28um			
E	16s		11.90um			
			pP	20	50.50	32kmX
			S	25	03.00	
BTO	25.25	283	P	20	42.00	-0.3
Z	15s		22.70um			5.8MszX
N	13s		4.00um			
E	15s		22.80um			
			pP	20	47.00	18kmX
			eS	25	07.00	
XAN	27.80	269	eP	21	04.70	-1.0

N 14s 7.20um
E 12s 3.60um
HKC 29.99 244 eP 21 27.00 1.6
e(S) 26 26.00
BAG 30.27 227 eP 21 30.00 1.9
LZH 31.03 276 eP 21 34.50 -0.2
6.0s 680.00nm 5.6mb X
Z 15s 18.40um 5.9MszX
N 13s 5.70um
E 14s 16.30um
pP 21 41.50 24kmX
i 21 56.60
PP 22 42.50
eS 26 51.00
eSS 28 51.00
GYA 32.99 258 iPc 21 51.80 0.0
Z 20s 3.20um 5.0Msz
N 16s 3.10um
E 16s 6.90um
S 27 08.00
CD2 33.05 267 P 21 51.40 -0.9
Z 14s 10.20um 5.7MszX
N 12s 9.20um
GTA 33.17 284 Pc 21 53.40 0.1
6.0s 0.70nm 2.7mb X
Z 16s 21.90um 6.0MszX
E 16s 17.30um
sS 27 25.00
KMI 36.68 259 Pc 22 23.50 -0.1
5.0s 0.70nm 2.8mb X
Z 20s 9.80um 5.6Msz
N 13s 5.00um
E 15s 4.90um
sP 22 37.50
pP 23 37.50 376kmX
PP 23 51.00
eS 28 02.00
S 28 05.00
sS 28 27.00
SS 30 41.00
WMO 40.94 295 P 23 00.00 1.3
Z 14s 4.20um 5.5MszX
N 13s 2.20um
E 13s 4.00um
sS 29 20.00
LOE 42.04 250 eP 23 07.60 -0.2
CHG 43.21 254 eP 23 18.00 0.6
CHTO 43.21 254 iP 23 17.90 0.5
1.0s 9.25nm 4.5mb
LSA 43.34 273 eP 23 21.20 2.3
N 15s 1.80um
E 15s 1.80um
eS 29 50.50
IMA 43.87 32 eP 23 21.70 -0.6
1.2s 6.20nm 4.3mb
BDT 44.14 253 eP 23 26.50 1.6
SHL 44.79 268 iP 23 30.20 -0.1
iS 30 06.00
FBA 46.29 33 P 23 41.60 0.1
1.0s 11.50nm 4.8mb
NNT 46.67 247 eP 23 42.20 -2.8
KKN 48.77 275 P 24 02.40 0.7
PKI 48.78 274 P 24 02.30 0.4
DMN 49.00 274 P 24 04.00 0.5
GKN 49.16 275 P 24 05.00 0.4
SNG 49.86 241 eP 24 16.00 6.2X
eS 31 23.50
KSH 50.64 293 eP 24 17.40 1.7
N 12s 2.10um
INK 51.56 28 eP 24 21.50 -0.6
MTN 53.29 195 eP 24 35.00 -0.6
MBC 53.75 17 eP 24 38.00 -0.4
1.0s 8.00nm 4.7mb
NDI 54.52 280 eP 24 44.50 -0.1
0.5s 14.08nm 5.2mb
eS 32 32.00
HYB 59.60 268 ePc 25 19.50 -1.4
e 25 35.50
WB2 59.73 190 eP 25 19.70 -1.8
POO 62.59 272 iP 25 40.80 -0.3
GBA 62.73 265 P 25 41.00 -0.9
SOD 63.17 337 iP 25 43.50 -0.7
BOM 63.18 273 eP 25 43.50 -1.4
eS 34 14.50
ASPA 63.46 189 eP 25 45.60 -0.9
Z 22s 0.78um 4.8MszX
LR 52 18.30

MAIO 63.68 296 eP 25 47.00 -1.1
eS 34 32.00
KOD 64.78 262 eP 26 06.00 10.2X
PNT 65.47 46 eP 26 06.00 6.5X
0.8s 6.00nm 4.7mb
SUF 66.34 333 eP 26 04.30 -0.5
0.6s 7.10nm 4.9mb
EDM 66.58 40 eP 26 07.50 1.0
WARB 67.16 196 eP 26 10.00 -0.3
0.6s 4.00nm 4.7mb
NUR 68.36 332 iP 26 16.90 -0.6
0.7s 10.70nm 5.0mb
WDC 68.54 55 eP 26 20.30 1.3
SES 69.40 41 eP 26 23.00 -1.2
ORV 69.77 55 eP 26 25.50 -1.1
FFC 70.89 34 eP 26 32.00 -1.1
0.7s 7.00nm 4.8mb
CMB 71.36 56 eP 26 36.10 -0.2
LRM 71.45 46 eP 26 36.60 -0.3
KVN 72.21 54 P 26 41.00 -0.5
HFS 72.35 336 eP 26 41.00 -0.7
0.5s 8.70nm 5.0mb
Z 18s 2.08um 5.4Msz
LR 58 49.00
NB2 72.38 338 P 26 41.20 -0.8
0.7s 9.40nm 4.9mb
TNP 73.34 54 P 26 47.70 -0.5
0.8s 4.41nm 4.5mb
ISA 74.00 57 eP 26 50.00 -1.9
FRB 74.04 14 eP 26 50.00 -1.4
CLC 74.48 56 eP 27 03.00 8.4X
SBB 75.02 57 eP 27 03.00 5.2X
MSU 76.18 51 P 27 05.40 0.9
KRA 77.75 326 eP 27 11.20 -1.5
0.8s 24.00nm 5.3mb
Z 18s 4.40um 5.8Msz
N 16s 5.10um
e 27 13.50
e 27 35.50
BBTK 78.60 313 eP 27 18.00 0.3
KSP 78.66 329 ePc 27 18.00 0.3
i 27 42.80
e 30 14.50
PSZ 79.38 325 eP 27 22.20 0.5
BRG 79.56 330 eP 27 26.90 4.4X
e 30 33.00
CLL 79.57 331 iPc 27 22.70 0.1
1.0s 14.00nm 4.9mb
i 28 00.50
PRU 80.03 329 P 27 26.10 1.0
Z 17s 3.80um 5.8MszX
N 16s 2.50um
E 20s 2.00um
e 27 49.60
ZST 80.38 327 eP 27 32.90 5.9X
MOX 80.63 331 e(P) 27 29.00 0.7
Z 16s 2.60um 5.7MszX
N 14s 1.60um
E 14s 1.90um
SOP 81.01 327 eP 27 32.60 2.3
KHC 81.09 329 iPd 27 32.00 1.2
Z 18s 4.70um 5.9Msz
N 16s 2.50um
E 16s 2.50um
EKA 81.20 341 Pd 27 32.00 0.8
0.9s 4.80nm 4.5mb
ALQ 81.98 51 eP 27 37.70 1.8
1.0s 7.50nm 4.7mb
KBA 82.82 328 eP 27 41.00 1.0
1.2s 25.00nm 5.2mb
i 27 42.90
i 28 04.20
SKO 83.12 320 eP 27 42 00 0.6
2.0s 155.00nm 5.8mb
Z 17s 2.75um 5.7MszX
N 16s 3.30um
E 17s 1.72um
i 28 03.20
i 28 10.00
LR 09 03.50
PRNI 83.62 304 ePc 27 45.00 0.8
DLE 83.89 342 eP 27 46.10 1.0
OHR 84.08 320 eP 27 46.50 0.1
MBH 84.08 304 eP 27 48.00 1.5
VAI 85.64 330 Pd 27 54.20 0.3
LOR 86.25 334 eP 27 57.50 0.5
0.8s 10.70nm 5.1mb

LBF 86.45 333 eP 27 58.40 0.3
1.0s 8.00nm 4.9mb
SSF 86.55 334 eP 27 59.10 0.6
0.8s 5.30nm 4.8mb
LPG 86.72 331 eP 28 00.60 0.9
1.0s 8.00nm 4.9mb
SMF 86.79 333 eP 28 00.40 0.7
0.8s 5.30nm 4.8mb
AVF 86.84 334 eP 28 00.70 0.8
0.7s 8.80nm 5.1mb
LSF 87.93 334 eP 28 06.20 1.0
1.0s 14.00nm 5.2mb
GMB 88.77 321 P 27 53.80 -15.7X
LPB 144.47 59 PKP 35 08.00 14.9X
CNCB 144.75 59 PKP 34 53.00 -0.7
S.D. = 1.2 on 92 of 102 obs.

DEC 02, 1989 12h 19m 11.70± 0.64s
39.462 N ± 7.9km 143.296 E ± 9.4km
DEPTH = 33.0km (normol)
4.1mb (2 obs.)
OFF EAST COAST OF HONSHU, JAPAN (229)

OFUJ 1.32 254 P 19 33.30 -0.6
S 19 55.20
YAMJ 2.85 244 iPd 19 55.60 -0.3
HOOJ 2.92 360 eP 19 55.70 -1.1
S 20 28.80
MRRJ 3.41 331 eP 20 03.70 0.0
eS 20 44.80
KUSJ 3.79 16 P 20 05.50 -3.6X
S 20 47.80
NIIJ 4.04 238 eP 20 13.40 0.6
KAKJ 4.08 218 eP 20 12.10 -1.3
MAT 4.96 236 (P) 20 26.00 0.1
CHTO 43.34 255 e(P) 27 12.90 0.4
pP 27 21.20 28kmX
FBA 46.26 33 eP 27 36.00 0.7
1.0s 1.60nm 3.9mb
KKN 48.94 275 P 27 57.80 0.8
PKI 48.95 274 P 28 00.20 3.0X
DMN 49.16 275 P 27 59.50 0.7
GKN 49.33 275 P 28 00.40 0.5
INK 51.55 28 eP 28 16.00 -0.1
WB2 59.68 190 eP 29 23.00 7.8X
KVN 72.12 54 e(P) 30 34.90 -0.1
NB2 72.51 338 P 30 36.50 -0.3
0.7s 2.20nm 4.3mb
S.D. = 0.7 on 15 of 18 obs.

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* DEC 02, 1989 12h 20m 16.84± 0.96s
39.798 N ±17.4km 142.828 E ±14.6km
DEPTH = 33.0km (normol)
4.7mb (5 obs.) 5.4Msz (1 obs.)
NEAR EAST COAST OF HONSHU, JAPAN(228)

MAT 4.88 230 iPc 21 29.60 -0.2
(S) 22 35.00
MDJ 10.93 300 eP 23 00.50 6.5X
BJI 20.42 279 eP 24 53.00 -0.8
TIA 20.55 268 eP 24 55.10 0.0
WHN 24.96 257 iPd 25 39.00 0.4
0.8s 0.06nm 2.2mb X
pP 25 46.50 27kmX
GYA 32.85 257 iPc 26 49.00 -0.8
KMI 36.54 259 eP 27 21.00 -0.5
WMO 40.65 294 P 27 57.50 2.1
CHTO 43.09 254 eP 28 15.90 0.4
0.7s 3.02nm 4.1mb
LSA 43.12 273 P 28 16.80 0.5
WB2 59.95 189 eP 30 26.00 3.8X
GBA 62.55 265 P 30 40.00 0.1
SUF 66.02 333 iP 31 02.00 0.1
0.6s 5.60nm 4.8mb
NUR 68.04 332 eP 31 12.90 -1.7
CMB 71.38 56 e(P) 31 37.50 1.9
LRM 71.41 46 eP 31 34.10 -1.8
HFS 72.03 336 eP 31 38.40 -0.6
0.6s 7.70nm 4.9mb
Z 18s 2.08um 5.4Msz
LR 58 42.00
NB2 72.07 338 P 31 39.20 -0.1
0.7s 6.90nm 4.8mb
ALQ 81.97 51 eP 32 39.00 4.0X
KBA 82.50 328 e(P) 32 38.50 1.0
0.7s 2.60nm 4.4mb
e 02 26.50

02d 12h

e 02 34.00
S.D. = 1.1 on 17 of 20 obs.

DEC 02, 1989 12h 23m 46.76± 0.70s
39.365 N ± 6.9km 143.558 E ± 9.8km
DEPTH = 33.0km (normal)
4.0mb (2 obs.)
OFF EAST COAST OF HONSHU, JAPAN (229)

OFUJ	1.50	260	P	24	10.90	-0.7
YAMJ	3.00	248	P	24	33.00	-0.1
HOOJ	3.02	356	P	24	33.20	-0.1
MRRJ	3.59	329	eP	24	42.50	1.1
KUSJ	3.83	13	P	24	43.30	-1.5
KAKJ	4.14	221	P	24	48.30	-0.9
NIIJ	4.17	241	P	24	49.70	0.1
ASAJ	4.80	352	P	24	58.30	-0.2
CHJJ	4.90	229	P	24	59.50	-0.6
			eS	25	52.70	
MAT	5.08	238	iPc	25	03.10	0.5
MTMJ	5.33	240	eP	25	06.30	0.2
IIDJ	5.94	231	P	25	15.40	0.7
CHTO	43.51	255	eP	31	49.30	0.4
	0.9s		1.71nm			3.8mb
INK	51.54	28	eP	32	52.00	0.9
KVN	72.01	54	eP	35	09.90	0.4
NB2	72.68	338	P	35	12.60	-0.2
	0.7s		1.60nm			4.1mb

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

? DEC 02, 1989 12h 45m 29.98± 7.80s
5.965 S ±73.8km 147.152 E ±65.2km
DEPTH = 164.2 ± 21.3 km
4.4mb (1 obs.)
EAST PAPUA NEW GUINEA REGION (207)

LAT	0.70	192	eP	45	54.00	-0.2
			eS	46	15.00	
PMG	3.42	180	eP	46	24.00	0.2
MNDI	3.48	267	eP	46	25.00	0.2
WB2	18.65	221	eP	49	36.80	-1.2
ASPA	21.73	215	iPd	50	10.00	0.9
	0.5s		8.00nm			4.4mb

S.D. = 1.5 on 5 of 5 obs.

DEC 02, 1989 12h 50m 02.85± 0.45s
39.378 N ±10.1km 143.321 E ± 6.7km
DEPTH = 22.6km (3 depth phases)
4.6mb (8 obs.) 4.3Msz (2 obs.)
OFF EAST COAST OF HONSHU, JAPAN (229)

MAT	4.93	237	iPc	51	18.90	1.4
	0.6s		88.00nm			
			(S)	52	25.00	
MDJ	11.47	302	eP	52	49.00	0.6
SSE	19.84	252	Pc	54	34.50	-0.5
	1.2s		27.00nm			4.4mb
			i	54	42.20	30km
			i	54	56.00	
BJI	20.87	281	eP	54	41.50	-4.2X
	Z 16s		0.93um			4.3MszX
	E 14s		0.99um			
TIA	20.92	270	eP	54	42.70	-3.5X
TIY	24.16	276	eP	55	18.80	0 5
	Z 18s		1.30um			4.5Msz
HHC	24.27	284	eP	55	20.60	1.2
WHN	25.24	259	Pc	55	28.50	-0.1
	1.0s		0.05nm			2.1mb X
	Z 20s		0.75um			4.2Msz
	E 13s		0.56um			
			pP	55	35.50	25km
BTO	25.46	283	eP	55	29.80	-1.0
LZH	31.22	277	eP	56	22.00	-0.9
	1.5s		50.00nm			5.2mb
	Z 14s		1.10um			4.7MszX
	E 12s		0.60um			
GYA	33.13	258	iPc	56	39.00	-0.6
GTA	33.38	284	P	56	41.00	-0.7
WMQ	41.17	295	P	57	47.20	0.1
CHG	43.34	255	eP	58	05.90	0.9
CHTO	43.34	255	eP	58	05.30	0.3
	1.0s		2.75nm			4.0mb
LSA	43.53	274	eP	58	09.20	2.2
KKN	48.97	275	P	58	49.30	-0.5
PKI	48.97	274	P	58	50.00	0.0
DMN	49.19	275	P	58	51.80	0.3
GKN	49.36	275	P	58	52.50	-0.2
INK	51.62	28	eP	59	09.00	-0.2
MBC	53.85	17	eP	59	25.50	-0.2
	1.1s		6.00nm			4.5mb
WB2	59.60	190	eP	00	05.50	-1.8
GBA	62.90	265	Pd	00	28.80	-0.9
	0.8s		3.30nm			4.5mb
SUF	66.57	333	iP	00	51.80	-1.0
	0.5s		2.40nm			4.6mb
WDC	68.48	55	eP	01	06.40	1.1
CMB	71.30	56	eP	01	23.30	0.7
LRM	71.43	46	eP	01	24.40	0.9
KVN	72.16	54	eP	01	28.90	1.0
			pP	01	33.10	13km
HFS	72.56	336	eP	01	28.50	-1.2
	0.4s		3.60nm			4.8mb
NB2	72.60	338	P	01	28.10	-1.8
	0.7s		4.40nm			4.6mb
KSP	78.89	329	eP	02	06.00	0.4
PRU	80.25	329	eP	02	20.50	7.5X
KHC	81.32	329	P	02	19.50	0.8
CPD	116.68	31	Pdiff	05	15.10	13.0X
ZOBO	144.20	59	PKP	09	38.00	-1.6
	Z 23s		0.46um			5.2MszX
			LR	24	08.00	
LPB	144.40	59	(PKP)	09	40.00	0.3
			eLR	25	30.00	
CNCB	144.68	59	PKP	09	41.00	0.6

S.D. = 1.0 on 34 of 38 obs.

? DEC 02, 1989 13h 30m 08.84± 4.08s
15.203 N ±38.4km 98.164 W ±14.4km
DEPTH = 33.0km (normal)
3.9mb (2 obs.)
OFF COAST OF GUERRERO, MEXICO (65)

ACX	2.32	316	eP	30	45.00	-0.6
			(S)	31	07.00	
OXX	2.33	36	iPd	30	45.30	-0.5
			iS	31	15.50	
III	3.39	339	eP	31	04.00	3.0X
IIT	3.80	358	eP	31	07.00	0.3
			(S)	32	04.00	
PPM	3.87	354	eP	31	08.00	0.1
			iS	31	58.00	
LVVM	4.80	20	eP	31	17.50	-3.1X
			(S)	32	39.00	
ALQ	21.02	341	eP	34	52.30	-0.1
	1.0s		3.00nm			3.6mb
GOL	25.21	347	eP	35	34.20	0.8
	1.0s		5.00nm			4.1mb

S.D. = 0.6 on 6 of 8 obs.

DEC 02, 1989 13h 31m 45.25± 0.66s
36.004 N ± 6.9km 83.855 W ± 5.3km
DEPTH = 5.0km (geophysicist)
TENNESSEE (506)
mbLg 2.9 (NEIS). Felt (IV) at Knoxville and (III) at Mascot.

TKL	0.35	169	iPc	31	52.50	0.2
			e(S)	31	56.50	
GBTN	0.44	221	eP	31	54.10	-0.1
			e(S)	32	00.00	
RSCP	1.46	255	eP	32	11.80	-0.6
PRM	2.27	147	eP	32	24.20	0.2
JSC	2.74	128	eP	32	30.30	-0.3
NAV	2.79	61	eP	32	31.80	0.4
BLA	3.01	65	eP	32	34.30	-0.3
PWLA	3.58	255	eP	32	43.20	0.6

S.D. = 0.5 on 8 of 8 obs.

DEC 02, 1989 13h 36m 07.32± 0.54s
39.499 N ± 8.4km 143.290 E ± 7.4km
DEPTH = 20.4km (4 depth phases)
4.5mb (6 obs.)
OFF EAST COAST OF HONSHU, JAPAN (229)

OFUJ	1.33	252	iP+	36	32.00	1.3
			S	36	50.70	
YAMJ	2.86	244	iP+	36	54.00	1.2
HOOJ	2.88	360	eP	36	53.20	0.3
			eS	37	25.50	
MAT	4.98	235	iPc	37	24.10	1.3
	1.7s		534.62nm			
			(S)	38	27.00	
MDJ	11.39	301	eP	38	52.50	0.6
CN2	14.01	294	eP	39	32.00	5.2X
	Z 16s		1.20um			4.5Msz
SSE	19.86	252	P	40	39.00	-0.9
	1.1s		25.00nm			4.4mb
	Z 12s		0.90um			
	N 12s		0.40um			
			i	40	46.50	
			i	40	58.50	
BJI	20.83	280	eP	40	46.00	-3.9X
	1.5s		0.03nm			1.4mb X
	Z 14s		0.88um			4.3MszX
TIY	24.12	276	eP	41	21.40	-1.3
	Z 17s		1.20um			4.4MszX
	N 13s		0.70um			
HHC	24.21	283	eP	41	21.60	-2.0
WHN	25.24	258	iPd	41	34.00	0.6
	1.0s		0.06nm			2.2mb X
			pP	41	40.20	22km
			PP	42	07.50	
BTO	25.41	283	eP	41	35.00	-0.1
	N 15s		0.60um			
	E 15s		0.50um			
XAN	27.96	270	P	41	58.50	0.1
LZH	31.19	276	eP	42	26.70	-0.7
	1.5s		33.00nm			5.0mb
	Z 14s		0.70um			4.5MszX
	E 12s		0.50um			
GYA	33.13	258	P	42	43.60	-0.8
GTA	33.33	284	P	42	46.00	0.0
	Z 16s		1.20um			4.7MszX
	E 15s		0.80um			
KMI	36.83	259	Pd	43	16.20	0.1
			pP	43	22.50	21km
WMQ	41.10	295	P	43	52.00	0.7
CHG	43.35	255	eP	44	10.20	0.3
CHTO	43.35	255	eP	44	10.00	0.2
	0.8s		2.38nm			4.0mb
			pP	44	16.80	23km
LSA	43.49	274	P	44	14.80	3.3X
KKN	48.93	275	P	44	54.40	0.1
PKI	48.94	274	P	44	54.40	-0.1
DMN	49.15	275	P	44	56.20	0.2
GKN	49.32	275	P	44	57.20	0.0
	0.8s		29.00nm			5.4mb X
INK	51.52	28	eP	45	13.00	-0.2
WB2	59.72	190	eP	46	11.00	-1.8
GBA	62.88	265	P	46	33.00	-1.4
WDC	68.43	55	e(P)	47	14.70	4.9X
NUR	68.47	332	eP	47	15.00	5.4X
LRM	71.36	46	eP	47	28.10	0.2
KVN	72.10	54	eP	47	32.90	0.5
	0.9s		1.00nm			3.9mb
			pP	47	37.80	16km
HFS	72.44	336	eP	47	32.90	-0.8
	0.5s		3.90nm			4.7mb
NB2	72.48	338	P	47	33.30	-0.7
	0.8s		6.00nm			4.7mb
CLL	79.68	331	eP	48	15.00	0.3
KHC	81.20	329	P	48	24.00	1.1
ALQ	81.89	51	eP	48	28.50	1.6

S.D. = 0.9 on 32 of 37 obs.

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* DEC 02, 1989 14h 46m 35.73± 0.95s
15.995 N ± 8.6km 61.201 W ±12.2km
DEPTH = 33.0km (normal)
LEEWARD ISLANDS (92)
ML 2.8 (FDF).

MGG	0.14	236	iPd	46	44.16	2.4
			S	46	53.60	
DEG	0.34	23	iPd	46	43.80	-0.3
			S	46	53.00	
PAG	0.46	274	eP	46	44.56	-1.3
			S	46	54.40	
BBL	0.54	210	iPd	46	47.24	0.3
			S	46	57.20	
FDF	1.26	178	iPd	46	56.52	-0.6
			S	47	15.20	
CRM	1.26	167	eP	46	56.77	-0.4
MVM	1.46	168	eP	46	59.90	-0.2
BIM	1.47	175	eP	47	00.29	0.0

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

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* DEC 02, 1989 14h 56m 41.42± 0.80s
33.418 S ±10.3km 70.402 W ± 8.7km
DEPTH = 128.1 ± 8.5 km
CHILE-ARGENTINA BORDER REGION (127)

FCH	0.13	46	iPd	56	58.00	-1.7
SAN	0.22	261	iPd	56	58.80	-0.7
			iS	57	09.70	
PCH	0.22	205	iPd	56	58.50	-1.1
TACH	0.51	242	iPc	57	00.50	-0.1
CHCH	0.56	202	iPd	57	00.70	-0.2
			iS	57	13.20	
ROCH	0.68	311	iPd	57	02.50	0.5
			iS	57	16.50	
JACH	0.75	348	iP	57	02.60	0.2
			iS	57	16.10	
LCCH	0.98	266	iPc	57	05.60	1.4
			iS	57	21.50	
LNV	1.00	237	iPc	57	05.00	0.6
			iS	57	20.00	
RFA	2.10	131	ePc	57	17.80	0.8
ZON	2.37	38	eP	57	20.00	-0.4
			eS	57	52.00	
CFA	2.57	46	ePc	57	24.30	1.3
			S	57	55.50	
MRA	4.07	77	ePc	57	43.20	0.3
FRB	96.84	1	eP	09	57.00	-1.0

S.D. = 1.0 on 14 of 14 obs.

DEC 02, 1989 16h 05m 44.38± 0.41s
39.526 N ± 8.0km 143.169 E ± 5.9km
DEPTH = 26.5km (5 depth phases)
4.9mb (21 obs.) 4.3Msz (2 obs.)
OFF EAST COAST OF HONSHU, JAPAN (229)

OFUJ	1.25	250	iP+	06	07.70	1.6
			eS	06	27.20	
MAT	4.92	234	iPc	06	59.80	1.3
	0.8s	182.84nm				
			(S)	08	03.00	
MDJ	11.30	301	eP	08	27.80	0.7
	Z 16s	3.00um				
	E 14s	1.70um				
			epP	08	33.50	
			S	10	36.00	
CN2	13.92	294	P	09	02.80	0.8
SNY	15.04	285	Pc	09	17.40	0.6
	Z 17s	2.00um				
	E 17s	1.50um				
			sS	12	19.00	
SSE	19.78	252	Pd	10	14.60	-0.8
	1.0s	26.00nm			4.5mb	
	Z 14s	0.90um				
	N 12s	0.50um				
	E 12s	0.50um				
			pP	10	21.50	27km
			sP	10	27.00	
			eS	15	12.00	
			i	16	56.00	
BJI	20.73	280	eP	10	22.50	-2.7
	1.5s	39.00nm			4.6mb	
	Z 15s	1.20um			4.4MszX	
TIA	20.80	269	eP	10	23.30	-2.8
	Z 16s	1.60um			4.5MszX	
	N 14s	0.50um				
	E 14s	1.50um				
NJ2	21.05	257	Pc	10	26.80	-1.8
	Z 18s	0.60um			4.0Msz	
TIY	24.03	275	eP	10	57.40	-0.7
	Z 18s	1.50um			4.5Msz	
	N 15s	0.90um				
HHC	24.12	283	P	10	57.60	-1.4
WHN	25.16	258	Pc	11	09.00	0.1
	1.0s	0.12nm			2.5mb X	
	E 13s	0.84um				
			pP	11	16.00	25km
			eS	15	34.00	
BTO	25.32	283	eP	11	10.00	-0.4
	Z 14s	1.30um			4.6MszX	
	N 13s	0.40um				
	E 14s	1.40um				
XAN	27.86	269	P	11	33.00	-0.8
LZH	31.09	276	eP	12	02.50	-0.3
	2.0s	56.00nm			5.1mb	
	Z 14s	1.20um			4.7MszX	
	E 14s	1.00um				
GYA	33.05	258	iPc	12	19.40	-0.5
			S	17	39.00	
CD2	33.11	267	P	12	19.40	-0.9
GTA	33.23	284	eP	12	21.30	-0.1
	Z 17s	1.50um			4.8MszX	
	E 15s	1.20um				

KMI	36.74	259	Pc	12	51.50	-0.1
			pP	12	58.50	24km
WMQ	41.00	295	P	13	27.50	0.8
CHG	43.26	255	eP	13	46.00	0.6
CHTO	43.26	255	iP	13	45.90	0.5
	0.7s	5.56nm			4.4mb	
			pP	13	52.70	23km
LSA	43.40	273	P	13	50.80	3.8X
SHL	44.85	268	eP	14	01.00	2.6
FBA	46.26	33	eP	14	21.10	12.2X
	0.9s	0.70nm				
KKN	48.84	275	P	14	32.20	2.4
	0.8s	42.00nm			5.5mb	
PKI	48.84	274	P	14	30.20	0.2
DMN	49.06	274	P	14	32.00	0.5
GKN	49.23	275	P	14	33.00	0.3
INK	51.54	28	eP	14	49.00	-0.6
MBC	53.74	17	eP	15	05.50	-0.4
	1.0s	5.00nm			4.5mb	
HYB	59.66	268	eP	15	47.50	-1.4
			e	15	58.00	35km
WB2	59.73	190	eP	15	46.90	-2.2
GBA	62.79	265	P	16	09.40	-0.6
SOD	63.21	337	iP	16	11.60	-0.5
ASPA	63.46	190	eP	16	16.00	1.9
SUF	66.38	333	eP	16	32.10	-0.5
	0.5s	7.70nm			5.1mb	
NUR	68.40	332	eP	16	45.00	-0.4
FFC	70.87	34	eP	17	00.00	-0.6
	0.8s	8.00nm			4.9mb	
CMB	71.32	56	eP	17	03.50	-0.2
LRM	71.41	46	eP	17	04.00	-0.4
KVN	72.16	54	eP	17	09.60	0.7
HFS	72.38	336	eP	17	08.70	-0.8
	0.4s	9.50nm			5.2mb	
	Z 16s	0.16um			4.4MszX	
			LR	48	12.00	
NB2	72.42	338	P	17	09.30	-0.5
	0.7s	10.20nm			5.0mb	
TNP	73.30	54	eP	17	15.90	0.3
	0.6s	1.20nm			4.1mb	
FRB	74.03	14	ePc	17	18.10	-0.9
KSP	78.70	329	eP	17	46.00	0.4
CLL	79.61	331	iP	17	50.70	0.2
			e	18	12.00	79kmX
			iSg	24	46.50	
PRU	80.07	329	P	17	53.50	0.6
			e	23	31.50	
			Sg	24	08.50	
KHC	81.13	329	iPc	17	59.50	0.9
EKA	81.23	341	P	18	00.00	1.0
	0.8s	3.00nm			4.4mb	
KBA	82.87	328	ePc	18	09.00	1.1
	1.1s	9.30nm			4.8mb	
			e	25	04.00	
			e(Sg)	25	17.00	
SKO	83.16	320	eP	18	10.00	0.7
PRNI	83.68	304	ePc	18	13.00	0.8
VAI	85.68	330	Pd	18	21.50	-0.3
LOR	86.29	334	eP	18	25.10	0.2
	1.0s	12.00nm			5.1mb	
LBF	86.49	333	eP	18	26.00	0.1
	0.6s	2.70nm			4.7mb	
SSF	86.59	334	eP	18	26.60	0.2
	0.6s	3.60nm			4.8mb	
LPG	86.76	331	eP	18	28.30	0.7
	1.1s	14.60nm			5.1mb	
AVF	86.87	334	eP	18	28.30	0.6
	1.0s	14.00nm			5.1mb	
MAF	87.64	334	eP	18	31.40	-0.1
	0.8s	5.90nm			4.9mb	
TCF	87.70	334	eP	18	32.60	0.8
	1.2s	8.90nm			4.9mb	
LSF	87.96	334	eP	18	32.90	-0.1
	1.0s	14.00nm			5.2mb	
ZOBO	144.22	59	ePKP	25	14.00	-6.6X
			e	25	21.00	
LPB	144.43	59	ePKP	25	26.00	5.3X
CNCB	144.70	59	PKP	25	21.00	-0.4

S.D. = 1.0 on 62 of 66 obs.

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* DEC 02, 1989 16h 09m 47.36± 1.26s
25.853 S ±11.5km 179.572 E ± 6.5km
DEPTH = 530 8 ± 19.3 km
4.8mb (7 obs.)
SOUTH OF FIJI ISLANDS (171)

HBZ	11.76	185	eP	12	23.90	-0.1
KRP	12.51	195	P	12	32.80	1.1
DZM	12.58	285	iPc	12	32.80	0.2
PGZ	14.98	190	eP	12	54.20	-2.4
WEL	15.90	193	P	13	06.00	0.3
			S	15	51.00	
BRS	23.99	260	e(P)	14	23.00	1.3
			e	16	42.00	
HNR	24.77	308	ePc	14	27.00	-1.7
RMQ	27.64	262	ePd	14	54.90	1.0
CAN	27.87	243	eP	14	56.90	1.1
BWA	28.18	245	eP	14	57.30	-1.3
TVO	29.98	81	iP	15	13.80	-0.5
	0.9s	30.00nm			4.9mb	
CMS	30.06	251	eP	15	15.00	0.2
CTA	31.15	274	iPd	15	24.10	-0.1
	0.9s	32.77nm			4.9mb	
PMO	32.25	77	iP	15	33.70	0.2
	0.9s	10.00nm			4.4mb	
TPT	32.51	77	iP	15	35.80	0.2
	0.9s	15.00nm			4.6mb	
RUV	32.63	78	iP	15	36.70	0.1
	0.9s	10.00nm			4.4mb	
STK	33.68	251	iPc	15	46.40	1.1
	0.5s	16.00nm			4.9mb	
PMG	34.82	292	eP	15	55.00	0.0
QIS	37.01	270	eP	16	13.00	-0.1
ASPA	41.37	263	iPd	16	48.70	0.2
	0.4s	73.00nm			5.6mb	
	Z 22s	0.23um			4.0Msz	
			iS	22	25.80	
			LR	32	32.70	
WB2	41.91	268	iPd	16	52.60	-0.2
MTN	47.25	276	eP	17	33.00	-1.2
KVN	86.92	44	eP	21	39.00	2.1
NUR	141.32	340	ePKP	28	34.00	15.6X
UPP	143.78	345	iPKP	28	21.30	-1.3
NB2	143.94	350	PKP	28	22.50	-0.4
	0.7s	3.10nm				
HFS	144.37	348	ePKP	28	23.60	0.0
	0.4s	4.30nm				
BCAO	152.00	224	iPKPc	28	45.40	8.4X
	0.5s	9.00nm				
			id	28	57.10	

S.D. = 1.1 on 26 of 28 obs.

DEC 02, 1989 16h 17m 49.25± 0.93s
6.419 S ± 6.4km 154.904 E ± 6.9km
DEPTH = 86.4 ± 8.5 km
4.9mb (5 obs.)
SOLOMON ISLANDS (193)

RAB	3.51	309	eP	18	42.50	-0.1
			iS	19	37.00	
HNR	5.82	121	iP	19	15.00	0.2
			iS	20	23.00	
LAT	7.86	268	eP	19	42.00	-0.8
PMG	8.23	248	eP	19	48.00	0.0
CTA	15.97	211	iPc	21	33.00	2.7
	1.2s	81.25nm			4.8mb	
DZM	19.14	146	iPc	22	08.00	-0.6
QIS	20.44	225	iPc	22	20.70	-1.3
			i	22	24.50	
RMQ	20.80	196	eP	22	25.00	-0.7
BRS	20.96	185	iPc	22	27.00	-0.2
WB2	24.06	234	iPc	22	58.10	0.3
MTN	24.28	253	iPd	23	00.30	0.4
ASPA	26.49	227	iPc	23	19.50	-1.0
WARB	33.35	231	eP	24	21.00	-0.4
	0.4s	7.00nm			4.9mb	
MBL	36.96	243	eP	24	51.20	-0.8
MEKA	40.02	236	eP	25	18.00	0.5
LOE	57.61	295	eP	27	33.00	0.1
XAN	59.23	316	P	27	43.00	-1.0
KMI	59.62	304	Pd	27	47.50	0.4
CHG	60.57	296	iPc	27	53.50	0.1
	1.0s	17.50nm			5.1mb	
CHTO	60.57	296	iPc	27	53.60	0.2
	1.2s	22.92nm			5.2mb	
			pP	28	07.20	49kmX
GTA	68.26	317	P	28	43.00	-0.2
PKI	75.05	301	P	29	24.40	0.2
KKN	75.22	301	P	29	25.40	0.4
DMN	75.32	301	P	29	26.30	0.7
GKN	75.83	301	P	29	28.60	0.3
GBA	79.41	285	Pd	29	48.30	0.3
	0.9s	8.70nm			4.6mb	

02d 16h

S.D. = 0.8 on 26 of 26 obs.

? DEC 02, 1989 17h 16m 49.76± 2.57s
31.410 S ±23.1km 68.329 W ±17.2km
DEPTH = 97.3 ± 29.1 km
SAN JUAN PROVINCE, ARGENTINA (137)

RTLL	0.14	304	iPc	17	04.00	0.0
CFA	0.21	159	iPd	17	04.20	0.0
			S	17	15.50	
RTCB	0.41	259	iPd	17	04.80	-0.2
			S	17	17.00	
RTCV	0.48	201	iPd	17	05.50	0.1
			S	17	16.00	
RTRS	1.57	321	iPd	17	17.20	0.0
			S	17	37.50	
TCA	3.20	90	iPc	17	39.00	0.0

S.D. = 0.1 on 6 of 6 obs.

? DEC 02, 1989 17h 44m 01.38± 1.17s
32.390 N ±10.1km 6.164 W ±13.9km
DEPTH = 5.0km (geophysicist)
MOROCCO (395)

AVE	1.39	311	iPgd	44	27.20	-0.2
			iSg	44	46.50	
IFR	1.42	38	iPg	44	28.00	-0.1
			iSg	44	48.00	
RBA	1.71	341	iPn	44	32.20	0.2
			iSn	44	54.20	
			i	44	57.00	
TIO	1.73	213	iPn	44	32.50	0.0
			iSn	44	56.50	
			i	44	57.80	

S.D. = 0.3 on 4 of 4 obs.

* DEC 02, 1989 19h 39m 25.14± 2.28s
39.193 N ±15.2km 23.493 E ±12.6km
DEPTH = 10.0km (geophysicist)
AEGEAN SEA (365)
MD 3.1 (ATH).

NEO	0.24	299	ePg	39	30.60	0.4
			eSg	39	33.30	
AGG	0.92	260	ePbc	39	42.60	-0.2
			eSb	39	56.60	
PLG	1.18	358	ePb	39	46.60	-0.6
			eSb	40	02.60	
LIT	1.19	320	ePbc	39	47.40	0.0
			eSb	40	05.30	
OUR	1.20	18	ePb	39	47.90	0.4
THE	1.49	344	ePn	39	52.30	0.3
KZN	1.73	311	ePb	39	55.60	0.1
			eSb	40	22.70	
GRG	1.95	335	ePn	39	58.20	-0.4
			eSn	40	22.00	
KNT	2.02	347	ePn	39	59.60	0.0
			eSn	40	22.90	
OHR	2.82	314	e(Pn)	40	16.00	4.9X

S.D. = 0.4 on 9 of 10 obs.

DEC 02, 1989 19h 42m 28.40± 0.73s
43.005 N ± 8.1km 0.983 W ± 9.6km
DEPTH = 5.0km (geophysicist)
PYRENEES (378)
ML 2.8 (LDG). mbLg 3.0 (MDD).

EPF	0.97	88	Pg	42	44.90	-2.5
			Sn	42	58.80	
ECRI	1.19	251	eP	42	49.60	-1.5
			eS	43	06.00	
LPO	2.30	42	Pn	43	08.00	0.5
			Sn	43	36.40	
LFF	2.30	32	Pn	43	08.70	1.2
			Sn	43	38.70	
ETOR	2.33	200	eP	43	09.00	1.0
			eS	43	34.00	
EROQ	2.41	154	eP	43	10.40	1.2
			eS	43	36.00	
RJF	2.92	37	Pn	43	17.60	1.2
			Sn	43	52.00	
CAF	2.92	48	Pn	43	16.20	-0.2
			Sn	43	50.60	
GUD	3.34	226	eP	43	18.00	-4.5X
			eS	43	55.80	
LSF	3.71	28	Pn	43	27.60	0.0
			Sn	44	12.50	
TCF	4.00	34	Pn	43	32.00	0.4
			Sn	44	18.00	
MAF	4.09	37	Pn	43	33.00	0.0
			Sn	44	20.40	
BGF	4.48	36	Pn	43	37.20	-1.3
			Sn	44	31.00	

S.D. = 1.3 on 12 of 13 obs.

DEC 02, 1989 19h 44m 26.77± 0.15s
21.240 N ± 3.5km 93.790 E ± 2.9km
DEPTH = 48.4km (11 depth phases)
5.2mb (53 obs.) 4.6Msz (3 obs.)
BURMA (296)
CENTROID, MOMENT TENSOR (HRV)
Data Used: GDSN
L.P.B.: 11S, 19C
Centroid Location:
Origin Time 19:44:33.4 0.7
Lat 21.62N 0.10 Lon 93.89E 0.05
Dep 44.6 6.2 Half-duration 1.7
Moment Tensor; Scale 10**17 Nm
Mrr=-0.86 0.07 Mtt=-0.23 0.12
Mff= 1.10 0.09 Mrt= 0.46 0.14
Mrf=-0.24 0.17 Mtf=-0.20 0.09
Principal Axes:

	Val=	Plg=	Azm=
T	1.17	9	79
N	-0.06	25	344
P	-1.11	63	187

Best Double Couple:Mo=1.1*10**17
NP1:Strike=196 Dip=42 Slip= -50
NP2: 328 59 -120

SHL	4.65	338	iP	45	38.00	1.6
			iS	46	31.00	
CHG	5.41	116	iPn	45	47.90	0.8
			iSg	46	48.00	
CHTO	5.41	116	iPnc	45	47.80	0.7
BDT	6.33	128	ePg	46	00.00	0.1
			eS	47	13.00	
NST	8.18	132	ePn	46	25.80	0.2
			ePg	46	45.00	
			eSg	47	55.00	
LOE	8.41	116	iPn	46	29.40	0.5
			e	46	36.50	
LSA	8.76	345	iPc	46	35.00	1.0
KMI	9.09	63	Pc	46	42.50	3.9X
	5.0s		0.90nm			3.1mb X
Z	15s		9.70um			4.3MszX
N	10s		7.40um			
			pP	46	56.50	
			sP	47	05.00	
			S	48	28.00	
			iS	48	30.00	
PKI	9.90	311	P	46	48.00	-1.7
KKN	10.12	312	P	46	50.00	-2.6
DMN	10.14	310	P	46	51.00	-1.9
NNT	10.31	146	eP	46	54.20	-0.8
			e	48	48.20	
GKN	10.70	311	P	46	58.00	-2.5
GYA	12.87	64	iPc	47	33.00	3.4X
Z	16s		2.40um			
N	10s		4.50um			
E	10s		3.30um			
			pP	47	43.00	
			S	49	57.00	
			ScS	00	06.80	
CD2	13.14	41	P	47	32.50	-0.5
Z	10s		1.60um			
			sS	50	17.40	
HYB	14.87	258	ePd	47	53.50	-2.3
	0.8s		42.30nm			4.8mb
			eS	50	25.50	
QIZ	15.24	95	eP	48	04.20	3.8X
E	10s		4.10um			
			eS	50	46.00	
NDI	16.75	300	eP	48	17.40	-2.2
	0.6s		40.00nm			4.7mb
			eS	51	10.00	
LZH	17.21	29	eP	48	24.50	-0.9
LZH	17.21	29	P	48	27.80	2.4X
	1.5s		145.00nm			4.9mb
Z	26s		2.20um			4.0Msz
E	10s		1.80um			
			pP	48	40.00	
			eS	51	40.00	
			sS	51	50.00	
			i	52	25.30	
			Lg	53	30.00	
GBA	17.34	247	P	48	29.00	1.9
			S	51	15.00	
IPM	17.99	156	ePd	48	34.50	-0.6
GZH	18.21	81	eP	48	38.60	0.9
			eS	51	53.00	
XAN	18.47	43	Pc	48	38.80	-2.1
N	10s		1.10um			
E	12s		1.60um			
			S	51	58.00	
GTA	18.83	15	Pd	48	44.20	-1.3
Z	18s		2.10um			
E	10s		1.80um			
			sS	52	28.00	
			SS	52	41.00	
POO	18.94	265	eP	48	46.00	-0.8
HKC	18.96	83	ePd	48	47.00	0.1
			eS	52	23.00	
BOM	19.84	267	iPc	48	56.80	0.3
			iS	52	23.80	
WHN	20.66	59	Pc	49	03.70	-1.3
	7.0s		1.03nm			2.3mb X
			pP	49	20.00	76kmX
			S	52	52.00	
KGM	21.24	153	eP	49	10.30	-0.7
TIY	23.01	40	eP	49	29.00	0.5
Z	19s		2.80um			4.7Msz
			pP	49	44.00	64kmX
			S	53	34.00	
			SS	54	17.00	
WMQ	23.08	349	P	49	30.70	1.6
Z	24s		2.30um			4.5MszX
KSH	23.71	324	P	49	39.40	4.1X
			pP	49	51.00	46km
BTO	23.72	32	P	49	35.00	-0.3
Z	11s		1.40um			4.7MszX
N	11s		1.60um			
E	13s		1.30um			
HHC	24.69	34	Pd	49	45.40	0.7
N	10s		0.80um			
			S	54	03.50	
TIA	25.23	49	eP	49	49.00	-0.8
Z	18s		1.90um			4.7Msz
E	13s		1.30um			
			eS	54	05.50	
QUE	25.72	296	eP	49	55.20	0.5
			eS	54	42.50	
SSE	26.41	63	Pc	50	00.80	0.0
	0.5s		9.00nm			4.6mb
Z	12s		1.60um			4.8MszX
			pP	50	30.00	139kmX
			eS	54	40.00	
			sS	55	05.00	
			SS	56	10.00	
BJI	26.75	41	eP	50	03.00	-0.7
Z	18s		1.17um			4.5Msz
			eS	54	32.00	
SNY	32.39	44	eP	50	53.20	-0.8
Z	28s		1.40um			4.5MszX
N	22s		2.00um			
E	25s		2.00um			
MAIO	33.40	304	eP	51	04.00	1.0
			eS	56	28.00	
PCI	33.65	128	ePd	51	24.30	19.0X
CN2	34.58	42	eP	51	11.00	-1.9
Z	16s		0.70um			4.5MszX
E	10s		0.50um			
			sP	51	36.20	
			ScP	57	26.00	
MAT	41.40	58	(P)	52	10.00	-0.1
KER	42.96	298	eP	52	25.00	1.9
TAB	44.03	303	eP	52	34.00	2.3
SLY	44.39	300	ePd	52	31.00	-3.4X
			eS	59	08.00	
BHD	45.15	296	ePd	52	41.00	0.4
			iS	59	16.00	
KMSA	45.94	278	eP	52	46.70	-0.3
QASM	46.06	286	eP	52	48.60	0.7
MSL	46.36	300	eP	52	51.00	0.9
GUMO	49.16	90	eP	53	08.30	-3.9X
MBL	49.22	147	eP	53	11.30	-1.2
	0.4s		40.00nm			5.8mb
MTN	49.92	129	iPc	53	16.30	-1.7
			e	56	51.00	
KVT	52.26	306	iP	53	36.80	1.3
HRI	52.39	296	eP	53	38.00	1.3
DSI	52.79	294	eP	53	40.00	0.5

PRNI 53.21 293 iPc 53 43.00 0.3
MEKA 53.27 152 eP 53 42.20 -0.8
0.3s 20.00nm 5.6mb
BADA 53.38 290 ePc 53 42.20 -1.7
BBTK 54.71 304 eP 53 54.00 0.3
BAL 56.06 156 eP 54 02.00 -1.2
WARB 56.90 144 iPd 54 08.80 -0.6
0.4s 16.00nm 5.4mb
ELL 57.02 301 eP 54 09.90 -0.5
MUN 57.11 157 eP 54 09.00 -1.7
KHL 57.25 303 eP 54 11.10 -0.8
KSL 57.31 300 eP 54 12.10 -0.2
DST 57.90 304 iP 54 15.30 -1.1
COOL 58.10 152 eP 54 16.00 -1.7
NWAO 58.33 157 eP 54 18.00 -1.3
VRI 59.23 312 ePd 54 26.50 1.0
RKG 59.28 158 eP 54 27.50 1.7
ASPA 59.31 137 iPd 54 25.50 -0.8
0.5s 27.00nm 5.6mb
KAP 59.31 299 eP 54 25.60 -0.6
SMG 59.40 302 eP 54 26.50 -0.3
MLR 59.77 311 iPc 54 30.50 1.1
PMG 60.61 115 eP 54 35.00 -0.2
QIS 61.08 130 iPd 54 37.70 -0.7
0.3s 22 00nm 5.8mb
SUF 61.11 331 eP 54 37.50 -0.5
0.6s 58.50nm 5.9mb
NUR 61.49 328 iP 54 39.80 -0.8
0.7s 34.70nm 5.6mb
SRS 61.66 306 eP 54 43.50 1.3
VAM 61.74 300 eP 54 42.10 -0.7
SOD 61.82 336 iP 54 41.80 -1.0
PLG 61.83 305 eP 54 42.50 -0.9
KNT 62.18 306 ePd 54 44.40 -1.2
VAY 62.41 306 eP 54 47.00 -0.1
GRG 62.57 306 eP 54 47.20 -1.1
KZN 63.11 305 eP 54 51.00 -0.9
SKO 63.20 307 iP 54 51.80 -0.6
i 54 57.10 17kmX
i 55 05.10
i 55 10.00
SPC 63.57 315 eP 54 56.80 1.9
OHR 63.76 306 eP 54 54.20 -2.0
0.9s 0.07nm 2.7mb X
PSZ 63.86 314 eP 54 58.20 1.5
SRO 64.93 314 eP 55 03.30 -0.2
UPP 64.94 327 iP 55 02.80 -0.6
i 55 17.30 52km
ZST 65.71 314 iP 55 08.30 -0.2
CTA 65.72 125 iPd 55 09.90 1.0
1.0s 20.00nm 5.1mb
iS 03 50.00
KSP 66.01 317 iPc 55 10.70 0.3
0.8s 30.00nm 5.4mb
i 55 24.70 50km
SOP 66.12 314 eP 55 13.90 2.7
ZAG 66.72 312 e(P) 55 16.00 1.0
HVAR 66.73 309 iPc 55 14.20 -0.9
PTJ 66.73 312 e(P) 55 14.80 -0.4
PRU 67.21 317 P 55 18.60 0.5
0.9s 26.60nm 5.3mb
e 55 32.50 49km
VBY 67.27 312 eP 55 19.10 0.6
BRG 67.49 318 iP 55 20.10 0.3
0.9s 27.00nm 5.3mb
i 55 34.00 49km
CEY 67.81 312 eP 55 22.20 0.2
KHC 67.93 316 P 55 23.10 0.4
i 55 37.40 51km
CLL 68.03 318 iPc 55 23.80 0.6
1.4s 29.00nm 5.1mb
i 55 36.90 45km
NB2 68.08 329 P 55 21.90 -1.5
0.7s 19.00nm 5.2mb
VOY 68.14 312 iP 55 24.20 0.1
TRI 68.27 312 ePc 55 24.10 -0.7
HOF 68.87 317 iPc 55 28.90 0.5
MOX 68.99 317 eP 55 30.00 0.9
1.2s 32.00nm 5.1mb
i 55 44.00 49km
CTI 69.68 313 P 55 33.00 -0.6
STK 69.89 138 eP 55 34 00 -0.8
OGA 69.96 314 iPd 55 34.90 -0.5
0.9s 41.00nm 5.4mb
ADE 70.30 142 eP 55 37.00 -0.3
FIR 70.36 310 eP 55 39.00 1.4
RMQ 71.32 129 iPd 55 44.60 0.9

e 56 04.00 73kmX
WIT 71.66 320 eP 55 48.00 2.8
e 56 01.00 45km
VAI 71.69 313 P 55 45.00 -0.5
HNR 71.73 108 P 55 49.00 2.7
WTS 71.73 319 iPc 55 46.50 0.8
0.8s 22.00nm 5.1mb
e 56 00.00 47km
PCP 72.12 312 P 55 47.89 -0.4
CDF 72.16 316 eP 55 47.90 -0.6
0.8s 16.10nm 5.0mb
ORX 72.27 313 P 55 47.68 -1.6
CMS 72.36 135 eP 55 50.00 0.3
FIN 72.43 311 P 55 49.53 -0.5
BSF 72.60 315 eP 55 51.00 -0.1
1.0s 8.00nm 4.6mb
ROB 72.64 311 P 55 51.58 0.2
IMI 72.72 311 P 55 52.09 0.3
HAU 72.85 315 eP 55 52.40 -0.1
0.8s 16.10nm 5.0mb
RSP 72.88 312 P 55 52.30 -0.5
LSD 72.88 313 P 55 53.02 0.0
ENR 72.97 311 P 55 52.91 -0.5
STV 73.04 311 P 55 52.81 -0.9
SBF 73.05 311 eP 55 53.30 -0.5
0.8s 37.60nm 5.4mb
LPG 73.15 313 eP 55 54.70 0.1
0.8s 25.50nm 5.2mb
RRL 73.26 312 P 55 57.22 2.0
BNI 73.30 312 P 55 55.50 0.2
FRF 73.67 311 eP 55 57.10 -0.2
LMR 73.83 311 eP 55 58.30 0.1
0.8s 29.50nm 5.3mb
LRG 73.90 311 eP 55 58.80 0.2
0.8s 46.70nm 5.5mb
LBF 74.66 315 eP 56 02.40 -0.6
0.8s 25.50nm 5.2mb
LOR 74.66 315 eP 56 02.70 -0.3
0.8s 12.00nm 4.9mb
BCAO 74.67 269 iPd 56 02.10 -1.5
0.5s 46.00nm 5.7mb
ic 56 24.30 84kmX
id 57 27.00
BRS 74.78 128 iPc 56 04.60 0.7
i 56 10.50 19kmX
SMF 74.83 314 eP 56 03.60 -0.4
0.8s 28.20nm 5.3mb
SSF 74.95 315 eP 56 04.40 -0.2
0.8s 36.80nm 5.4mb
AVF 75.12 315 eP 56 05.30 -0.3
0.8s 16.10nm 5.0mb
BGF 75.52 315 eP 56 07.60 -0.3
0.6s 9.90nm 4.9mb
MAF 75.80 314 eP 56 09.80 0.3
0.9s 21.20nm 5.1mb
BUL 75.84 242 iPc 56 24.20 13.9X
BWA 75.89 136 iPd 56 11.00 0.8
COO 75.95 131 iPc 56 12.00 1.5
TCF 76.02 314 eP 56 11.00 0.2
0.8s 30.80nm 5.3mb
TOO 76.07 140 iPc 56 12.00 0.9
BRW 76.07 18 eP 56 10.90 0.4
LSF 76.48 315 eP 56 13.50 0.2
0.8s 12.00nm 4.9mb
CAF 76.50 313 eP 56 14.00 0.5
0.8s 12.00nm 4.9mb
EKA 76.64 324 Pd 56 14.40 0.4
0.7s 23.00nm 5.3mb
RJF 76.76 314 eP 56 15.70 0.8
0.8s 18.80nm 5.1mb
CAN 76.82 136 iPd 56 15.20 -0.1
LDF 76.88 317 eP 56 15.20 -0.2
0.8s 29.50nm 5.4mb
FLN 77.05 317 eP 56 16.10 -0.3
0.8s 8.00nm 4.8mb
LPO 77.16 313 eP 56 17.50 0.4
0.8s 24.10nm 5.3mb
LFF 77.39 313 eP 56 19.00 0.6
0.8s 18.80nm 5.2mb
GRR 77.40 317 eP 56 18.10 -0.3
0.6s 12.60nm 5.1mb
MFF 77.48 315 eP 56 19.00 0.2
0.6s 7.20nm 4.9mb
LPF 77.63 317 eP 56 19.80 0.2
0.7s 22.00nm 5.3mb
SLR 78.85 237 iPd 56 26.00 -0.9
0.5s 119 72nm 6.1mb

EROQ 78.89 309 e(P) 56 28.00 1.3
DLE 79.19 323 eP 56 28.70 0.7
IMA 79.46 23 eP 56 29.60 0.2
0.7s 4.60nm 4.5mb
id 56 44.20 51km
KSR 80.00 237 iPd 56 32.40 -0.7
0.6s 23.21nm 5.3mb
ECRI 80.37 312 eP 56 36.60 1.9
MBC 80.63 8 eP 56 35.00 -0.4
0.6s 8.00nm 4.8mb
SEK 80.66 235 iPc 56 36.00 -0.5
0.7s 27.40nm 5.3mb
SVW 81.05 27 eP 56 39.60 1.7
VAL 81.79 323 eP 56 43.00 1.2
FBA 82.16 22 eP 56 43.10 -0.4
GUD 82.21 310 eP 56 45.50 1.0
FRS 83.11 235 iPc 56 48.50 -0.5
0.5s 52.82nm 5.8mb
HVD 83.39 234 iPc 56 37.00 -13.7X
1.2s 31.25nm
PMR 83.50 25 eP 56 49.80 -0.7
INK 84.31 16 eP 56 54.00 -0.4
TOA 84.36 24 eP 56 55.70 0.7
LKO 95.20 282 P 57 49.12 2.1
KIC 95.62 279 P 57 50.00 1.1
BAO 143.38 272 ePKP 03 55.00 -3.5X
ZOBO 162.18 283 PKP 04 26.00 0.8
1.0s 6.25nm
LR 04 14.00
CNCB 162.21 281 PKP 04 27.00 1.8
LPB 162.24 282 ePKP 04 27.00 1.9
S.D. = 1.1 on 181 of 192 obs.

? DEC 02, 1989 19h 55m 09.20± 9.33s
15.918 N ±16.4km 60.618 W ±65.3km
DEPTH = 10.0km (geophysicist)
LEEWARD ISLANDS (92)
ML 2.3 (FDF).

DEG 0.58 313 ePc 55 21.14 0.2
S 55 28.30
MGG 0.67 270 eP 55 23.13 0.6
BBL 0.92 245 eP 55 26.71 0.0
S 55 37.20
SEG 0.98 300 eP 55 27.44 -0.3
S 55 39.00
PAG 1.03 276 eP 55 28.20 -0.5
S 55 40.20
S.D. = 0.6 on 5 of 5 obs.

& DEC 02, 1989 20h 02m 00.80s
37.208 N 122.045 W
DEPTH = 11.0km
CENTRAL CALIFORNIA (39)
<BRK>. ML 4.0 (BRK).
Mo=9.8*10**14 Nm (BRK). Felt (IV) at Boulder Creek, Los Gatos and Saratoga. Felt (III) at Campbell, Lo Honda and Monte Serono. Also felt at Mountain View, Santa Cruz and Sunnyvale.

MHC 0.35 67 iPd 02 08.00 -0.1
iS 02 13.35
ARN 0.43 71 iPd 02 09.10 -0.6
SAO 0.65 132 ePc 02 14.15 0.4
e 02 14.60
i(S) 02 25.40
BKS 0.68 347 iPd 02 13.50 -0.8
iS 02 22.50
ZSP 0.75 347 iPd 02 14.90 -0 5
PRI 1.54 133 ePd 02 27.80 -0.5
CMB 1.56 57 eP 02 27.40 -1.1
PHAM 1.91 135 eP 02 32.10 -1.4
ORV 2.38 10 eP 02 38.20 -2.2
BCH 2.57 141 eP 02 41.00 -2.1
ABL 3.28 135 eP 02 50.70 -2.7
KVN 3.61 58 eP 02 57.00 -1.1
TNP 3.93 76 eP 03 02.00 -0.5
13 obs. ossocioted

DEC 02, 1989 21h 00m 02.59± 0.42s
36.246 N ± 7.2km 70.659 E ± 6.7km
DEPTH = 33.0km (normal)
4.5mb (11 obs.)
HINDU KUSH REGION (718)

02d 21h

```
QUE      6.79 208 eP    01 43.50    0.8
MAIO     9.02 274 ePn   02 12.00   -1.6
                  eSn   03 44.00
NDI      9.35 142 eP    02 18.50    0.4
        0.5s    31.69nm          5.8mb X
                  iS    03 56.50
GKN     14.40 121 P     03 25.40   -0.8
        0.4s    16.00nm          4.9mb
DMN     14.97 121 P     03 33.20   -0.6
        0.6s    22.00nm          4.6mb
KKN     14.98 120 P     03 33.00   -0.8
        0.6s    18.00nm          4.6mb
PKI     15.21 121 P     03 36.00   -0.9
        0.4s    11.00nm          4.5mb
POO     17.87 170 eP    04 28.00   17.7X
HYB     20.02 157 eP    04 35.00   -0.5
        1.0s    25.00nm          4.5mb
                  eS    08 05.00
SHL     21.05 114 iP    04 47.20    0.9
                  iS    08 30.20
GBA     23.35 163 P     05 10.00    1.1
                  S     09 30.00
CHTO    30.35 117 eP    06 14.60    1.0
        0.6s     0.56nm          3.5mb
SUF     37.99 328 eP    07 20.00    1.2
HFS     43.10 322 eP    08 00.60   -0.3
        0.5s    3.90nm           4.4mb
NB2     44.42 323 P     08 11.50   -0.2
        0.6s    2.10nm           4.2mb
BCAO    57.31 249 iPd   09 46.00   -3.9X
        0.6s    4.00nm           4.6mb
                  id    10 09.60
MBC     67.60   3 ePd   10 58.00    0.5
        1.0s    7.00nm           4.7mb
                  pP    11 30.00 131kmX
INK     74.20   9 eP    11 37.00   -0.3
FBA     74.79  16 eP    11 40.90    0.1
        0.6s    1.00nm           4.0mb
     S.D. = 0.9  on  17 of  19 obs.
-----------------------------------------
   DEC  02, 1989  21h 39m 48.74± 0.43s
   40.865 N ± 5.0km   27.514 E ± 3 6km
   DEPTH =  10.0km  (geophysicist)
 TURKEY                            (366)

MFT      0.19 246 iPg   39 52.90   -0.2
EDC      0.58 153 iPg   39 59.50   -1.0
                  iSg   40 05.50
BNT      0.60 149 iPg   40 00.40   -0.4
CTT      0.75  68 iPg   40 03.40    0.0
                  eSg   40 15.40
DMK      0.97  11 iPg   40 08.00    0.8
                  iSg   40 22.00
ISK      1.19  80 iPn   40 10.90    0.0
EZN      1.38 222 iPn   40 13.40   -0.6
YLV      1.44 101 iPn   40 14.40   -0.6
DST      1.52 146 iPn   40 16.40    0.4
RDO      1.52 281 eP    40 16.20    0.2
                  eS    40 37.00
HRT      1.63  91 ePn   40 17.40   -0.3
PRK      1.88 211 eP    40 22.00    0.9
                  eS    40 47.40
IZM      2.47 185 ePn   40 32 00    2.3
ALT      2.69 131 ePn   40 39.00    6 0X
OUR      2.74 260 eP    40 32.70   -0.9
KHL      2.98 148 ePn   40 45.00    8.1X
SRS      2.98 276 eP    40 44.40    7.5X
PLG      3.14 262 eP    40 38.70   -0.4
KNT      3.51 276 eP    40 44.20   -0.2
VAY      3.76 279 ePn   41 01.00   12.9X
MLR      4.76 347 eP    41 07.00    4.6X
VRI      5.04 354 ePc   41 16.00    9.9X
     S.D. = 0.9  on  16 of  22 obs.
-----------------------------------------
%  DEC  02, 1989  21h 59m 05.25± 1.87s
   50.226 N ±15.6km    4.286 E ± 8.3km
   DEPTH =  10.0km  (geophysicist)
 BELGIUM                           (541)
     ML 3.1 (LDG).

HAU      2.60 148 Pg    59 54.00    5.9X
                  Sg    00 26.90
CDF      2.67 132 Pn    59 49.00   -0.1
                  Sg    00 28.40
LOR      2.97 186 Pn    59 52.70   -0.7
                  Pg    00 01.40
                  Sn    00 27.60
                  Sg    00 40.00
SSF      3.21 190 Pn    59 57.60    0.9
                  Pg    00 06.50
                  Sn    00 31.90
                  Sg    00 48.40
LBF      3.25 184 Pn    59 58.20    0.8
                  Pg    00 07.20
                  Sg    00 50.00
LDF      3.31 242 Pn    59 58.40    0.3
                  Sg    00 52.80
FLN      3.44 247 Pn    00 00.40    0.5
                  Sg    00 56.00
AVF      3.49 191 Pn    00 01.00    0.3
                  Pg    00 12.60
                  Sg    00 58.40
SMF      3.60 185 Pn    00 02.00   -0.2
                  Pg    00 13.80
                  Sg    00 59.80
BGF      3.79 195 Pn    00 04.80   -0.2
                  Pg    00 18.40
                  Sn    00 48.00
                  Sg    01 05.20
GRR      3.84 243 Pn    00 04.90   -0.7
MAF      4.17 197 Pn    00 09.80   -0.5
                  Sg    01 18.60
TCF      4.18 200 Pn    00 10.30   -0.1
LSF      4.38 206 Pn    00 13.00   -0.4
LPG      5.01 160 Pn    00 19.00   -3.5X
     S.D. = 0.6  on  13 of  15 obs.
-----------------------------------------
?  DEC  02, 1989  22h 16m 43.80± 3.76s
   37.309 N ±17.3km   142.144 E ±35.8km
   DEPTH =  33.0km  (normol)
 OFF EAST COAST OF HONSHU, JAPAN (229)

OFUJ     1.81 348 P     17 13.10    0.0
                  S     17 36.60
YAMJ     1.88 298 P     17 14.30    0 1
KAKJ     1.93 236 P     17 14.40   -0.5
                  S     17 36.60
NIIJ     2.51 269 P     17 22.70   -0.4
                  eS    17 54.50
CHJJ     2.83 245 P     17 25.80   -1.8
                  S     18 00.10
MAT      3.24 258 (P)   17 34.00    0.4
                  (S)   18 17.00
MTMJ     3.55 260 P     17 41.50    3.5X
IIDJ     3.87 243 P     17 44.70    2.2
     S.D. = 1.5  on   7 of   8 obs.
-----------------------------------------
*  DEC  02, 1989  22h 28m 56.94± 1.08s
   19.706 S ± 9.1km    69.562 W ±15.9km
   DEPTH = 149.3 ± 22.9 km
 NORTHERN CHILE                    (123)

CNCB     3.25  28 Pc    29 48.70    0.1
LP8      3 45  24 P     29 52.00    0.9
        1.0s   160.00nm
ZOBO     3.68  22 iPc   29 54.00   -0.3
ARE      3.71 330 eP    29 54.00   -0.4
                  eS    30 39.00
ANT      4.06 191 e(P)  29 59.00    0.4
YJA      4.52 124 ePc   30 03.60   -1.6
ITB1    14.89 112 eP    32 23.10    2.0
ITB     15.09 112 e(P)  32 29.40    5.7X
BAO     20.94  82 eP    33 28.50   -1.1
     S.D. = 1.5  on   8 of   9 obs.
-----------------------------------------
%  DEC  02, 1989  22h 35m 30.87± 0.68s
   40.791 N ± 6.0km    29.141 E ± 5.6km
   DEPTH =  10.0km  (geophysicist)
 TURKEY                            (366)

ISK      0.28 347 ePg   35 37.40    0.6
YLV      0.29 142 iPg   35 36.40   -0.5
                  iSg   35 45.40
HRT      0.40  85 ePg   35 38.90   -0.2
                  eSg   35 45.40
CTT      0.65 304 ePg   35 43.40   -0.4
BNT      1.03 245 iPn   35 49.90   -0.4
EDC      1.07 246 ePn   35 50.50   -0.5
DST      1.25 199 ePn   35 55.40    1.3
     S.D. = 0.9  on   7 of   7 obs.
-----------------------------------------
   DEC  02, 1989  22h 47m 59.01± 1.05s
   15.756 N ± 3.5km   147.154 E ± 5.5km
   DEPTH =  41.0 ±  9.2 km

    5.0mb ( 11 obs.)  4.3Msz (  2 obs.)
 MARIANA ISLANDS REGION            (215)

GUMO     3.09 226 eP    48 46.90    0.4
                  e     51 58.20
PJG      3.09 226 eP    48 47.00    0.5
GUA      3.09 225 eP    48 46.60    0.0
        0.3s   166.23nm
                  e(S)  49 25.70
JAY     19.24 200 ePd   52 23.00    0.0
                  e     54 01.00
KAKJ    21.30 344 P     52 43.70   -0.6
IIDJ    21.31 339 P     52 42.80   -1.8
CHJJ    21.48 342 P     52 46.30    0.1
MAT     22.18 341 (P)   52 51.00   -2.2
                  eS    55 56.00
MTMJ    22.35 340 P     52 54.10   -0.9
NIIJ    22.59 343 P     52 58.00    0.9
PMG     25.00 180 eP    53 21.00    0.3
        1.0s    90.00nm          5.3mb
SSE     28.20 307 eP    53 47.00   -3.0X
      Z  16s     0.40um          4.1MszX
                  eS    58 52.00
WHN     33.41 302 eP    54 36.00   -0.1
CN2     33.50 331 eP    54 37.00    0.4
      Z  16s     1.20um          4.7MszX
CTA     35.63 181 iPd   54 54.80   -0.3
        1.0s    25.00nm          5.1mb
BJI     36.22 318 eP    54 55.50   -4.5X
      Z  24s     0.32um          4.0MszX
                  eS    00 56.00
QIS     36.84 192 iPc   55 04.80   -0.5
TIY     37.62 312 eP    55 14.60    2.7X
      Z  18s     0.50um          4.4Msz
WB2     37.64 200 eP    55 10.00   -2.1
XAN     38.88 305 P     55 22.20   -0.3
GYA     39.10 293 iPc   55 26.00    1.6
KHKI    39.38 235 ePc   55 26.30   -0.4
                  e     58 51.50
HHC     39.66 316 eP    55 25.60   -3.3X
ASPA    41.27 199 iPc   55 41.00   -1.1
        1.4s    14.00nm          4.5mb
                  e     57 14.50
RMQ     42.02 178 iPd   55 47.90   -0.3
DZM     42.08 153 iPc   55 48.90    0.0
CD2     42.33 299 P     55 51.00    0.1
KMI     42.49 290 Pc    55 53.50    1.1
BRS     43.23 173 ePc   55 58.20    0.0
                  i     56 04.50
LZH     43.47 306 P     56 00.00   -0.2
        1.5s    71.00nm          5.2mb
      Z  20s     0.30um          4.2Msz
                  pP    56 16.50  65kmX
LOE     43.49 279 eP    56 00.10   -0.3
NST     45.19 277 eP    56 16.00    1.9
MBL     45.44 217 eP    56 16.00    0.1
CHG     46.03 281 eP    56 21.50    0.8
CHTO    46.03 281 iP    56 21.30    0.6
        0.7s    3.49nm           4.4mb
WARB    46.22 206 iPc   56 22.80    0.8
        0.5s    7.00nm           4.9mb
CMS     46.99 182 iPc   56 27.50   -0.5
GTA     47.46 309 eP    56 31.80   -0.1
STK     47.66 186 iPc   56 32.80   -0.6
BWA     49.91 179 eP    56 50.80    0.1
CAN     50.82 178 eP    56 57.90    0.3
ADE     51.08 189 eP    56 50.80   -8.8X
TOO     53.06 182 eP    57 15.00    0.6
WMQ     57.29 312 iPc   57 45.20    0.0
PKI     58.07 293 P     57 50.80   -0.4
KKN     58.18 293 P     57 51.40   -0.4
DMN     58.34 293 P     57 52.80   -0.2
GKN     58.74 293 P     57 55.40   -0.3
TTA     61.25  26 eP    58 12.10   -0.2
IMA     63.40  23 eP    58 26.50   -0.1
        1.2s    10.40nm          4.8mb
PMR     63.84  29 eP    58 28.10   -1.2
        1.0s    11.80nm          4.9mb
NDI     65.22 295 iPc   58 38.00   -0.9
        1.0s    25.00nm          5.2mb
HYB     65.44 282 eP    58 40.00   -0.4
KSH     65.71 306 eP    58 43.00    1.0
INK     71.53  23 iPc   59 17.10   -0.2
QUE     73.93 297 eP    59 32.20   -0.2
MBC     75.64  14 eP    59 42.00    0.8
        1.0s    9.00nm           4.7mb
MAIO    79.00 305 eP    00 02.00    1.3
```

PNT	80.30	42	eP	00	08.00	0.7
ORV	81.16	51	eP	00	12.20	0.2
CMB	82.36	53	eP	00	19.00	0.6
EDM	83.10	37	iPc	00	23.00	1.1
FRI	83.14	54	eP	00	22.80	0.5
SES	85.34	39	eP	00	34.00	0.8
LRM	85.91	44	eP	00	37.10	0.7
FFC	88.81	33	eP	00	50.00	0.1
	1.2s	28.00nm			5.5mb	
KIC	144.54	306	PKPc	07	32.62	-1.1
	1.0s	36.00nm				
TIC	144.58	307	PKPc	07	32.66	-1.1
	0.9s	23.50nm				
LIC	144.85	306	PKPc	07	33.58	-0.7
	0.9s	52.00nm				
ZOBO	146.11	96	PKPc	07	38.30	1.3
	1.0s	17.50nm				
LPB	146.15	96	(PKP)	07	48.00	11.1X
CNCB	146.28	97	iPKPc	07	40.70	3.4X
	S.D. = 0.8	on	65 of	72	obs.	

& DEC 02, 1989 23h 16m 47.80s
33.650 N 116.740 W
DEPTH = 14.0km
4.0mb (1 obs.)
SOUTHERN CALIFORNIA (43)
<PAS-P>. ML 4.2 (PAS). Felt (V) at Hemet; (IV) at Anza, Escondido, Lokeview, San Diego, Miro Lomo and March Air Force Base; (III) at Aguanga, Beaumont, Mission Viejo, Moreno Valley, North Palm Springs, Palm Springs, Rialto and Yucoipa.

PLM	0.31	199	iPd	16	54.20	-0.4
PEC	0.43	305	iPd	16	55.90	-0.7
RVR	0.63	303	iPd	16	59.20	-0.9
TPC	0.73	51	iPd	17	01.50	-0.4
CPE	0.83	202	iPd	17	02.10	-1.3
BAR	0.97	177	iPd	17	04.90	-1.0
MWC	1.24	298	iPc	17	09.70	-0.8
SBB	1.37	319	iPd	17	12.30	-0.2
CIS	1.41	261	iPc	17	11.50	-1.5
GSC	1.65	358	iPd	17	16.00	-0.5
SCI	1.65	247	iPc	17	15.40	-1.1
GLA	1.71	110	eP	17	16.10	-1.2
CLC	2.27	342	iPd	17	24.50	-1.0
ABL	2.38	301	eP	17	26.20	-1.0
SYP	2.83	289	iPc	17	31.90	-1.5
BCH	3.16	300	eP	17	37.00	-1.1
BLP	3.17	288	eP	17	36.40	-1.8
PKEM	3.67	312	eP	17	44.50	-0.8
PHAM	3.72	307	eP	17	44.40	-1.6
PRI	4.07	309	ePc	17	49.10	-2.0
			eS	18	50.00	
FRI	4.12	325	ePc	17	50.70	-1.0
			iS	18	53.90	
TNP	4.44	355	iPd	17	55.90	-0.5
LLA	4.54	312	ePc	17	55.90	-1.8
PRS	4.65	306	ePd	17	56.30	-2.9
CMB	5.28	327	eP	18	06.90	-1.3
			eS	19	28.80	
ARN	5.38	315	eP	18	07.10	-2.4
KVN	5.50	349	ePd	18	10.80	-0.6
MSU	6.10	36	eP	18	18.80	-1.1
BKS	6.14	315	ePc	18	16.50	-3.7
EDM	19.71	6	eP	21	20.50	0.8
IMA	39.15	337	eP	24	20.00	3.6
	1.0s	3.75nm			4.0mb	
	31 obs. ossociated					

DEC 03, 1989 01h 11m 38.70± 0.59s
19.698 N ± 4.2km 144.616 E ± 4.4km
DEPTH = 370.6 ± 6.6 km
4.7mb (28 obs.)
MARIANA ISLANDS (216)

GUMO	6.08	178	eP	13	11.90	0.1
	0.7s	193.14nm			5.2mb	
PJG	6.08	178	eP	13	11.80	0.0
GUA	6.13	177	eP	13	12.20	-0.2
	0.5s	84.51nm			5.0mb	
			eS	14	22.50	
IIDJ	16.80	341	P	15	16.70	3.1X
KAGJ	16.85	315	eP	15	14.90	0.8
KAKJ	16.90	348	P	15	14.10	-0.5
			S	18	10.10	
CHJJ	17.02	344	P	15	14.60	-1.2
			S	18	10.70	
MAT	17.70	343	eP	15	21.00	-1.7
	0.8s	78.36nm			5.1mb	
			(S)	18	23.00	
KUMJ	17.77	319	P	15	24.50	1.1
MTMJ	17.85	342	P	15	23.00	-1.3
NIIJ	18.15	345	P	15	26.90	-0.3
SHNJ	18.72	323	eP	15	32.00	-0.8
YAMJ	18.83	349	iP+	15	36.20	2.2
OFUJ	19.48	353	eP	15	41.90	1.6
SSE	23.96	303	Pd	16	22.50	-0.2
	0.5s	19.00nm			4.7mb	
SNY	28.38	326	eP	17	01.00	-1.1
CN2	28.90	331	Pc	17	06.60	-0.1
BJI	31.71	316	eP	17	31.00	-0.1
	1.2s	32.00nm			4.5mb	
TIY	33.23	310	eP	17	43.70	-0.5
Z	14s	0.70um			4.5MszX	
XAN	34.70	302	P	17	57.00	0.3
GYA	35.46	288	P	18	05.00	1.8
			PcP	20	24.00	
CD2	38.39	295	P	18	28.40	1.0
LZH	39.24	303	Pd	18	35.70	1.3
	1.0s	36.00nm			4.6mb	
QIS	40.31	187	iPd	18	42.50	-0.5
			e	20	38.00	
WB2	40.66	195	iPd	18	45.00	-0.9
			iPcP	20	39.50	
			eS	24	26.20	
CHG	43.03	277	eP	19	07.00	1.9
CHTO	43.03	277	eP	19	06.00	0.9
	1.0s	9.00nm			4.0mb	
			pP	20	48.00	572kmX
ADK	44.05	34	P	19	12.50	-0.2
	0.5s	35.54nm			4.9mb	
ASPA	44.35	194	iPd	19	14.70	-0.7
	0.6s	13.00nm			4.4mb	
			ePcP	20	52.20	
			iS	25	18.00	
WARB	48.83	202	iPc	19	50.00	0.0
	0.3s	4.00nm			4.2mb	
STK	51.37	183	iPc	20	08.00	-0.8
FORR	52.70	198	iPc	20	17.40	-1.3
	0.4s	22.00nm			4.8mb	
WMQ	52.89	310	P	20	20.60	0.5
BWA	53.94	176	eP	20	33.50	5.9X
PKI	54.38	290	P	20	31.60	0.2
KKN	54.47	291	P	20	32.60	0.7
DMN	54.64	290	P	20	33.60	0.4
CAN	54.87	176	eP	20	27.20	-7.1X
GKN	55.02	291	P	20	36.20	0.5
TTA	58.83	27	P	21	00.60	-0.9
	0.6s	7.14nm			4.3mb	
IMA	60.78	24	P	21	14.30	-0.4
	0.7s	7.85nm			4.3mb	
NDI	61.44	293	iPc	21	19.50	0.1
	0.5s	31.69nm			5.1mb	
PMR	61.59	30	P	21	17.80	-2.0
	0.6s	18.35nm			4.8mb	
BRW	61.62	18	P	21	20.10	0.2
FBA	62.85	26	P	21	26.50	-1 6
	0.6s	14.04nm			4.8mb	
GBA	64.30	276	P	21	38.00	-0.1
INK	68.86	23	ePc	22	04.00	-1 6
OUE	70.01	296	eP	22	13.00	-0 5
MBC	72.44	14	eP	22	26.50	-0.2
	0.5s	9.00nm			4.7mb	
MAIO	74.80	303	iPd	22	41.30	0.2
	0.7s	6.99nm			4.5mb	
BMW	77.43	45	P	22	56.00	0.6
GMW	77.44	44	P	22	56.30	1.0
RMW	78.10	44	P	23	00.00	1 0
LON	78.29	44	P	23	00.60	0.6
PNT	78.97	42	ePd	23	04.00	0.5
	0.9s	18.00nm			4.9mb	
WDC	79.54	51	ePd	23	07.30	0.6
LBFM	79.79	50	P	23	08.80	0.5
MIN	80.29	51	eP	23	10.60	-0.2
DPW	80.30	43	P	23	11.10	0.5
BKS	80.57	53	iPc	23	12.90	0.8
	0.7s	33.00nm			5.2mb	
PCC	80.57	54	eP	23	12.30	0.2
ORV	80 61	51	ePd	23	12.40	0.1
MHC	81.18	54	eP	23	16.00	0.5
ARN	81.26	54	P	23	16 40	0.6
EDM	81.40	36	iPd	23	16.30	0.2
PRS	81.70	54	eP	23	18.30	0.3
CMB	81.91	53	ePd	23	19.50	0.4
SOD	82.08	340	eP	23	19.00	-0.3
FRI	82.75	53	ePd	23	23.50	0.2
BCH	83.06	55	P	23	25.90	0.8
KVN	83.27	51	P	23	26.50	0.3
SYP	83.35	56	eP	23	28.00	1.4
SES	83.80	39	ePd	23	28.60	0.2
	0.7s	40.00nm			5.3mb	
ISA	84.14	54	eP	23	30.00	-0.4
TNP	84.25	52	P	23	31.60	0.5
	0.6s	6.48nm			4.6mb	
CLC	84.75	54	eP	23	33.00	-0.5
SUF	84.81	336	iP	23	32.00	-1.1
	0.4s	8.20nm			4.9mb	
SBB	84.97	55	eP	23	34.00	-0.6
GSC	85.54	54	eP	23	38.00	0.6
PEC	85.76	56	P	23	38.10	-0.3
TPC	86.55	55	eP	23	42.00	-0.2
BAR	86.58	57	eP	23	29.00	-13.3X
DUG	86.66	48	P	23	43.00	0.3
	0.6s	6.58nm			4.7mb	
NUR	86.66	335	iP	23	40.80	-1.3
FFC	86.80	32	iPd	23	43.00	0.1
	0.7s	21.00nm			5.1mb	
DAU	87.66	48	P	23	48.00	0.2
MSU	87.77	50	P	23	49.30	1.1
BW06	87.85	45	P	23	48.30	-0.2
GLA	87.89	56	eP	23	49.00	0.4
UPP	89.82	336	iP	23	55.30	-1.6
HFS	91.08	338	ePKP	24	00.50	-2.3
	0.3s	2.30nm			4.6mb	
NB2	91.28	339	P	24	01.80	-2.0
	0.7s	2.50nm			4.3mb	
GOL	92.04	47	P	24	08.90	0.9
	0.8s	5.95nm			4.6mb	
FRB	92.91	14	eP	24	10.00	-1.1
LSZ	119.50	263	iPKPc	29	47.00	-0.1
BCAO	121.84	288	iPKPc	29	50.80	-0.7
	0.8s	6.00nm				
ZOBO	148.70	89	PKP	30	41.50	0.3
LPB	148.77	90	PKP	30	46.00	4.9X
CNCB	148.94	90	PKP	30	42.70	1.2
			i	30	47.00	
CCH	150.77	91	PKP	30	51.50	7.5X
	S.D. = 0.9	on	94 of	100	obs.	

? DEC 03, 1989 02h 15m 48.79± 2.54s
13.087 N ±38.1km 90.851 W ±26.6km
DEPTH = 33.0km (normal)
3.8mb (2 obs.)
NEAR COAST OF GUATEMALA (71)

TPX	2.27	323	iPd	16	23.50	-1.2
			iS	16	39.50	
SCX	4.02	335	eP	16	50.50	1.0
			iS	17	27.50	
OXX	6.92	306	iPc	17	36.00	5.2X
			iS	18	38.00	
IISM	8.59	314	eP	17	53.00	-0.8
			iS	19	22.00	
PPM	9.55	310	eP	18	08.50	0.9
TNP	34.20	321	eP	22	33.20	-0.4
	0.7s	0.44nm			3.5mb	
KVN	35.35	322	eP	22	44.30	0.8
INK	61.63	343	eP	26	06.00	0.7
MBC	64.95	353	eP	26	26.00	-1.0
	0.7s	1.00nm			4.0mb	
GBA	151.05	24	PKP	35	47.00	12.2X
	0 6s	2.30nm				
	S.D. = 1.1	on	8 of	10	obs.	

? DEC 03, 1989 02h 26m 28.23±11.74s
32.549 S ±82.0km 68.923 W ±13.3km
DEPTH = 10.0km (geophysicist)
MENDOZA PROVINCE, ARGENTINA (139)

RTCV	0.76	26	iP	26	43.20	0.1
RTBS	0.99	333	e(P)	26	47.00	0.0
			S	27	05.00	
ZON	1.02	12	eP	26	47.00	-0.6
			eS	27	03.00	
RTCB	1.06	6	iPd	26	48.80	0.5
			S	27	05.50	
CFA	1.10	32	ePd	26	49.00	0.0
			S	27	06.00	

03d 02h

```
RTLL    1.27  18 iPd   26 52.00   0.1
                 S     27 12.00
      S.D. = 0.4  on   6 of   6 obs.
-------------------------------------
?  DEC 03, 1989  02h 36m 04.44± 3.48s
   2.965 N ±34.1km  126.841 E ±41.5km
   DEPTH =  33.0km  (normol)
   4.4mb (  2 obs.)
 MOLUCCA PASSAGE                (266)

MTN    16.28 165 eP    39 52.50   0.2
KNA    18.69 174 eP    40 22.30  -0.1
WB2    23.93 162 eP    41 16.50  -0.1
                 i     41 24.80
QIS    26.52 152 iPc   41 41.20   0.2
ASPA   27.35 166 iPd   41 48.00  -0.6
       0.6s      6.00nm          4.4mb
WARB   28.98 180 iPc   42 03.70   0.4
       0.4s      4.00nm          4.5mb
STK    37.38 159 eP    43 16.00  -0.1
BRS    39.19 142 iPd   43 31.50   0.1
     S.D. = 0.4  on   8 of   8 obs.
-------------------------------------
   DEC 03, 1989  03h 38m 02.05± 1.25s
   43.157 N ± 5.5km   13.652 E ±10.7km
   DEPTH =  10.0km  (geophysicist)
 CENTRAL ITALY                  (381)
     MD 2.5 (SSO).

CIO    0.37 276 iPg    38 10.14   0.4
                 iSg   38 17.22
ALP    0.38 188 iPg    38 10.15   0.3
                 iSg   38 17.40
AOI    0.39 355 iPg    38 10.16   0.0
                 iSg   38 17.31
ARV    0.62 304 Pc     38 14.40  -0.2
                 eSg   38 24.40
ASS    0.73 264 Pc     38 16.40   0.0
                 eSg   38 29.00
MNS    1.05 223 P      38 21.50  -0.4
                 eSg   38 37.60
     S.D. = 0.4  on   6 of   6 obs.
-------------------------------------
%  DEC 03, 1989  04h 12m 52.00± 1.32s
   33.351 S ± 6.8km   71.326 W ±13.0km
   DEPTH =  33.0km  (normol)
 NEAR COAST OF CENTRAL CHILE    (135)

TACH   0.44 133 iP      13 02.50   0.7
                 iS    13 10.00
ROCH   0.46  35 iPc     13 02.80   0.5
                 iS    13 11.50
SAN    0.57 101 iPc     13 03.70   0.1
                 iS    13 13.00
LNV    0.61 187 iPd     13 03.90  -0.2
                 iS    13 13.00
PCH    0.73 112 iPc     13 05.70  -0.2
                 iS    13 17.00
CHCH   0.81 136 iPc     13 06.90  -0.1
                 iS    13 19.00
FCH    0.87  89 iPc     13 07.70  -0.4
                 iS    13 20.00
JACH   0.91  43 iPd     13 08.10  -0.4
                 iS    13 20.00
     S.D. = 0.5  on   8 of   8 obs.
-------------------------------------
?  DEC 03, 1989  05h 14m 50.78± 1.60s
   45.000 N ±27.0km  147.858 E ±28.2km
   DEPTH =  33.0km  (normol)
   4.1mb (  2 obs.)
 KURIL ISLANDS                  (221)

KUSJ   2.96 231 P       15 36.50   0.0
                 S     16 08.10
ASAJ   3.83 259 eP      15 56.00   7 2X
HOOJ   4.22 233 P       15 56.60   2.2X
                 S     16 43.60
MRRJ   5.55 245 eP      16 16.70   3.5X
                 eS    17 20.80
OFUJ   7.50 220 eP      16 36.90  -3.6X
                 eS    17 54.00
INK   45.07  31 eP      23 05.00   0.2
CHTO  48.12 254 e(P)    23 29.10  -0.4
       0.8s      1.46nm          4.1mb
KKN   51.95 273 P       23 59.40   0.4
PKI   51.99 273 P       23 59.80   0.4
DMN   52.18 273 P       24 00.60  -0.2

NB2    68.62 339 P      25 51.80  -0.4
       0.6s      1.20nm          4.1mb
     S.D. = 0.4  on   7 of  11 obs.
-------------------------------------
   DEC 03, 1989  05h 19m 09.28± 0.84s
   42.721 N ± 5.3km   32.494 E ± 6.6km
   DEPTH =  56.0 ± 18.2 km
 BLACK SEA                      (360)

KAS    1.65 144 ePg    19 36.00  -0.4
                 iSg   19 53.00
HRT    2.84 229 ePn    19 53.20   0.0
BBTK   2.88 176 ePg    20 00.00   6.1X
                 eSg   20 40.00
GPA    2.93 215 ePn    19 55.00   0.5
ISK    3.05 238 ePn    19 56.70   0.6
PSN    3.29 288 iPc    20 01.00   1.4
CTT    3.42 244 ePn    20 01.70   0.4
DMK    3.63 257 iPn    20 04.10  -0.2
TLB    3.74 301 iPd    20 05.50  -0.3
CFR    3.99 310 iPc    20 09.00  -0.3
ALT    4.08 207 ePn    20 11.20   0.4
BNT    4.17 237 iPn    20 10.70  -1.1
EDC    4.21 237 ePn    20 12.50   0.1
DST    4.27 224 ePn    20 12.60  -0.7
JMB    4.37 269 iPc    20 15.00   0.3
VRI    5.20 309 ePd    20 34.00   7.6X
PVL    5.28 278 iPd    20 28.00   0.5
KDZ    5.37 261 iP     20 29.00   0.3
BCK    5.45 196 eP     20 30.60   0.6
MLR    5.47 303 ePc    20 30.00  -0.3
EZN    5.47 240 ePn    20 29.60  -0.6
PLD    5.80 267 iP     20 34.00  -0.8
RZN    5.87 262 iPd    20 35.00  -0.9
IZM    5.87 224 ePn    21 19.00  43.1X
PGB    6.14 271 iPd    20 39.00  -0.7
MMB    6.61 263 eP     20 47.00   0.8
SUF   20.38 352 eP      23 43.60   0.1
     S.D. = 0.7  on  24 of  27 obs.
-------------------------------------
   DEC 03, 1989  05h 26m 41.01± 1.38s
   15.761 N ± 6.4km  147.089 E ± 9.8km
   DEPTH =  42.1 ± 12.0 km
   4.8mb (  7 obs.)
 MARIANA ISLANDS REGION         (215)

GUMO   3.05 225 eP      27 28.00   0.1
                 e     30 43.50
PJG    3.05 225 eP      27 28.00   0.1
GUA    3.05 224 eP      27 27.80  -0.2
       0.3s     51.95nm
                 eS    28 04 80
KAKJ  21.27 344 P       31 25.40  -0.6
IIDJ  21.29 339 P       31 25.90  -0.3
CHJJ  21.46 342 eP      31 27.10  -0.7
MAT   22.15 341 (P)     31 36.00   1.2
       1 0s     17.00nm          4.4mb
MTMJ  22.32 340 eP      31 35.40  -1.2
NIIJ  22.56 343 P       31 39.50   0.7
PMG   25.01 180 eP      32 02.00  -0.6
WB2   37.63 200 eP      33 54.30   0.5
XAN   38.83 305 P       34 03.50  -0.4
GYA   39.04 293 P       34 07.80   2.0
CD2   42.27 299 P       34 32.60   0 3
LZH   43.41 306 eP      34 42.50   0.8
CHG   45.96 281 eP      35 02.90   0.8
CHTO  45.96 281 eP      35 03.00   0.9
       0.7s      1.75nm          4 1mb
GTA   47.41 309 eP      35 13 40   0 0
PKI   58.01 293 P       36 32.00  -0.7
       0 4s      6.00nm          5.0mb
KKN   58.12 293 P       36 33 60   0.3
DMN   58.28 293 P       36 33.00  -1.5
       0.4s     13.00nm          5.4mb
GKN   58.68 293 P       36 36 20  -0.9
       0.4s     11 00nm          5.3mb
INK   71.55  23 eP      37 59.00  -0.3
MBC   75.65  14 eP      38 23.50   0.4
       0.5s      1.00nm          4.0mb
EDM   83.14  37 eP      39 05.00   1.1
LRM   85.95  44 eP      39 18.50   0.0
FFC   88.84  33 eP      39 32.00   0.1
       0.9s      6.00nm          4.9mb
KIC  144.49 306 PKP     46 14 04  -1.4
       0.7s      5 00nm
TIC  144.52 307 PKP     46 14.20  -1.4
LIC  144.79 306 PKP     46 15.02  -1.0

       0.5s      7.00nm
ZOBO  146.17  96 PKP     46 20.00   1.0
LPB   146.22  96 (PKP)   46 20.00   1.2
CNCB  146.35  97 PKP     46 22.00   2.8X
CCH   148.13  98 ePKP    46 29.00   7.3X
     S.D. = 0.9  on  32 of  34 obs.
-------------------------------------
*  DEC 03, 1989  06h 30m 25.11± 0.94s
   21.197 S ± 8.4km   68.780 W ±12.2km
   DEPTH =  33.0km  (normol)
 CHILE-BOLIVIA BORDER REGION    (124)

ANT    2.92 211 eP      31 09.50  -0.7
                 eS    31 44.50
YJA    3.20 108 ePc     31 15.50   0.8
CNCB   4.43  10 P       31 31.80  -0.5
CCH    4.54  34 P       31 33.40  -0.2
LPB    4.68   8 P       31 36.00   0.3
ZOBO   4.94   7 P       31 38.00  -1.5
ARE    5.36 331 eP      31 47.00   1.7
                 eS    32 41.00
     S.D. = 1.3  on   7 of   7 obs.
-------------------------------------
?  DEC 03, 1989  06h 42m 35.55± 3.45s
   31.328 S ±18.1km   71.915 W ±30.7km
   DEPTH =  10.0km  (geophysicist)
 NEAR COAST OF CENTRAL CHILE    (135)

JACH   1.76 141 iP      43 05.50  -0.8
                 iS    43 25.00
ROCH   1.81 155 iP      43 06.30  -0.9
LCCH   2.16 172 ePc     43 11.10  -1.0
                 iS    43 34.10
SAN    2.37 154 eP      43 15.00  -0.1
                 iS    43 43.60
FCH    2.42 146 iPd     43 16.20   0.1
                 iS    43 44.50
TACH   2.46 161 eP      43 16.00  -0.4
                 iS    43 46.50
LNV    2.65 171 eP      43 21.00   1.9
ZON    2.78  95 eP      43 22.00   1.1
CHCH   2.81 158 eP      43 21.70   0.3
                 iS    43 52.50
CYA    6.04  63 e(P)    44 06.50  -0.6
     S.D. = 1.1  on  10 of  10 obs.
-------------------------------------
   DEC 03, 1989  07h 39m 06.63± 0.25s
   38.315 N ± 5.4km   45.216 E ± 3.8km
   DEPTH =  10.0km  (geophysicist)
   4.7mb ( 32 obs.) 4.2Msz (  1 obs.)
 N.W. IRAN-USSR BORDER REGION   (344)
      Felt in the Tobriz-Orumiyeh
      orea, Iran. Felt (III) at Goris,
      USSR.

TAB    0.91 105 iPd     39 24.50   0.4
MSL    2.54 221 ePnd    39 53.50   5.0X
                 iPg   39 56.00
                 iSn   40 14.00
SLY    2.72 175 iPnc    39 56.50   5.4X
                 iP*   40 00.00
                 iPg   40 03.50
                 iSn   40 29.50
                 iS*   40 36.00
                 iSg   40 38.00
KER    4.24 158 eP      40 25.00  12.2X
BHD    5.08 188 ePnd    40 26.00   1.5
                 eP*   40 41.00
                 iPg   40 52.00
                 iSn   41 31.00
                 iS*   41 49.00
                 iSg   42 05.00
TEH    5.57 116 eP      40 50.00  18 3X
BBTK   9.81 283 eP      41 38.00   7.2X
MAIO  11.55  96 eP      41 54.00  -0.6
       0.8s     14.64nm          5.3mb
                 eS    45 20.00
ELL   12.26 267 eP      42 13.00   8.8X
OASM  12.27 187 iPc     42 04.30  -0.1
RYD   13.61 175 eP      42 19.80  -2.3
VRI   15.64 305 ePd     42 56.50   7.8X
MLR   16.02 303 ePc     43 02.50   8.9X
SKO   18.53 289 eP      43 29.00   4.1X
       1.6s     45.00nm          4.4mb
     Z 10s      1.12um          4.5MszX
                 i     43 33.50
                 LR    51 55.00
```

OHR 18.98 286 eP 43 30.00 -0.5
QUE 19.68 108 eP 43 40.00 1.0
eS 50 06.00
PSZ 20.75 306 eP 43 53.20 3.3X
SPC 20.96 309 eP 43 57.30 5.0X
SRO 21.73 305 eP 44 03.50 3.7X
ZST 22.62 305 eP 44 14.30 5.7X
SOP 22.84 303 eP 44 15.20 4.3X
KSH 23.92 78 P 44 23.50 1.9
KSP 23.94 311 eP 44 24.30 2.8
e 44 36.30
PRU 24.73 308 P 44 34.00 4.8X
e 44 46.00
KBA 24.87 301 eP 44 31.00 0.3
1.0s 31.20nm 4.9mb
id 44 32.30
i 44 35.10
i 44 41.40
KHC 25.12 306 Pd 44 34.20 1.3
1.0s 14.00nm 4.6mb
BRG 25.35 310 iP 44 40.60 5.5X
1.4s 19.00nm 4.6mb
e 44 55.50
e 46 18.00
NUR 25.71 336 iP 44 38.50 0.2
0.9s 52.40nm 5.2mb
CLL 26.05 310 eP 44 45.00 3.4X
FIR 26.07 293 eP 44 40.00 -1.8
MOX 26.71 308 eP 44 51.00 3.3X
SUF 27.06 341 iP 44 49.80 -0.9
UPP 27.76 330 iP 44 55.80 -1.3
NDI 28.24 100 eP 45 02.00 0.2
LPG 29.30 297 eP 45 12.10 0.6
0.8s 8.00nm 4.6mb
HFS 29.53 328 eP 45 11.60 -1.4
0.5s 6.70nm 4.7mb
Z 17s 0.35um 4.1MszX
LR 56 22.00
WTS 29.96 310 eP 45 19.00 2.0
0.8s 6.00nm 4.5mb
ENN 30.28 307 e(P) 45 22.00 2.1
SOD 30.92 346 iP 45 25.20 -0.1
NB2 31.05 328 P 45 25.00 -1.5
0.8s 7.50nm 4.6mb
LBF 31.24 300 eP 45 28.80 0.4
0.8s 4.00nm 4.4mb
LOR 31.33 300 eP 45 29.10 0.0
0.8s 4.00nm 4.4mb
SMF 31.33 299 eP 45 29.80 0.6
0.6s 4.50nm 4.5mb
SSF 31.56 300 eP 45 31.70 0.5
1.0s 8.00nm 4.6mb
AVF 31.67 299 eP 45 32.30 0.2
0.6s 2.70nm 4.3mb
WMQ 32.23 66 P 45 37.10 0.0
TCF 32.46 298 eP 45 39.00 -0.1
0.8s 5.30nm 4.5mb
KEV 32.97 348 eP 45 44.00 0.8
MFF 34.08 299 eP 45 53.20 0.1
0.8s 8.00nm 4.7mb
GKN 34.34 96 P 45 56.20 0.4
0.8s 36.00nm 5.3mb
GRR 34.51 302 eP 45 56.10 -0.7
0.6s 16.20nm 5.1mb
LPF 34.64 301 eP 45 57 10 -0.8
0.8s 8.00nm 4.7mb
DMN 34.89 96 P 46 01.20 0.6
KKN 34.94 95 P 46 01.40 0.4
1.0s 38.00nm 5.2mb
PKI 35.15 96 P 46 02.40 -0.5
1.4s 113.00nm 5.5mb
HYB 35.79 116 iPd 46 09.00 0.9
1.4s 75.00nm 5.4mb
EKA 36.36 314 P 46 12.00 -0.5
0.9s 26.00nm 5.1mb
GBA 37.69 122 Pc 46 28.40 4.5X
0.8s 4.70nm 4.3mb
SHL 41.19 94 iP 46 53.50 0.3
GTA 41.97 71 eP 46 59.80 0.3
LZH 46.07 74 eP 47 32.60 0.0
1.5s 25.00nm 5.0mb
Z 20s 0.30um 4.2Msz
KMI 49.94 88 Pc 48 02.50 -0.5
HHC 50.08 65 eP 48 05.90 2.2
CHG 50.30 97 ePc 48 05.00 -0.5
1.0s 12.00nm 4.8mb
CHTO 50.30 97 eP 48 05.00 -0.5
1.0s 11.75nm 4.8mb
XAN 50.70 74 P 48 07.00 -1.4
GYA 52.36 84 iPc 48 20.40 -0.8
BJI 53.65 64 eP 48 30.50 0.1
KIC 55.18 248 P 48 41.20 -0.7
0.9s 29.00nm 5.3mb
LIC 55.48 248 P 48 43.32 -0.8
0.9s 27.50nm 5.3mb
LSZ 55.65 200 iP 48 47.60 2.3
WHN 56.36 76 eP 48 50.20 -0.1
CN2 58.50 57 eP 49 04.40 -0.8
NJ2 59.05 72 Pd 49 07.20 -2.0
BUL 60.20 198 eP 49 31.30 14.0X
0.9s 12.18nm
MDJ 60.84 54 eP 49 26.00 4.7X
SSE 61.26 72 eP 49 17.50 -6.8X
i 49 24.00
MBC 65.29 356 eP 49 50.50 0.2
0.5s 2.00nm 4.6mb
FRB 65.67 333 eP 49 52.00 -0.8
HVD 70.99 198 eP 50 17.50 -9.0X
POF 71.37 203 eP 50 27.00 -1.5
INK 73.69 360 eP 50 41.00 -0.8
FBA 76.61 6 iPc 50 59.10 0.5
0.6s 2.90nm 4.5mb
EDM 86.96 347 eP 51 53.00 0.0
SES 89.22 345 eP 52 03.00 -0.9
S.D. = 1.1 on 62 of 85 obs.

& DEC 03, 1989 07h 39m 51.80s
40.300 N 121.400 W
DEPTH = 8.0km
NORTHERN CALIFORNIA (36)
<BRK>. ML 2.8 (BRK).

MIN 0.16 286 iPc 39 54.60 -0.9
LTCM 0.56 261 eP 40 02.00 -1.1
eS 40 10.00
ORV 0.75 186 iPd 40 04.90 -1.8
iS 40 15.30
WDC 0.91 288 iPc 40 07.00 -2.5
eS 40 18.20
LBFM 1.11 341 eP 40 12.00 -1.0
CMB 2.40 160 eP 40 31.80 -0.2
KVN 2.84 115 eP 40 38.50 0.1
ARN 2.95 182 eP 40 40.20 0.4
8 obs. associated

? DEC 03, 1989 09h 41m 22.61± 0.90s
21.554 S ± 8.3km 68.413 W ±12.0km
DEPTH = 33.0km (normal)
CHILE-BOLIVIA BORDER REGION (124)

YJA 2.77 103 e(P) 42 06.00 -0.1
e 42 06.70
ANT 2.83 220 e(P) 42 06.50 0.0
CCH 4.67 28 P 42 33.20 0.3
CNCB 4.74 5 P 42 34.00 -0.1
LPB 5.00 3 eP 42 39.00 1.2
ZOBO 5.26 3 P 42 40.30 -1.3
S.D. = 1.0 on 6 of 6 obs.

DEC 03, 1989 09h 45m 21.11± 1.22s
23.691 N ± 4.6km 142.479 E ± 4.7km
DEPTH = 125.1 ± 11.7 km
5.0mb (25 obs.)
VOLCANO ISLANDS REGION (213)
CENTROID, MOMENT TENSOR (HRV)
Data Used: GDSN
L.P.B.: 8S, 12C
Centroid Location:
Origin Time 09:45:36.6 1.7
Lat 24.38N 0.14 Lon 142.82E 0.10
Dep 156.5 5.3 Half-duration 1.7
Moment Tensor; Scale 10**16 Nm
Mrr= 6.48 0.94 Mtt=-9.20 1.43
Mff= 2.72 1.25 Mrt=-5.28 1.14
Mrf=-2.95 0.96 Mtf= 3.97 1.28
Principal Axes:
T Val= 10.30 Plg=55 Azm=123
N 1.16 32 274
P -11.46 14 13
Best Double Couple:Mo=1.1*10**17
NP1:Strike=138 Dip=42 Slip= 142
NP2: 258 66 55

GUMO 10.30 167 eP 47 48.30 1 5
1.0s 472.00nm 6.2mb X
eS 49 44.00
PJG 10.30 167 eP 47 48.50 1.7
TT 57 03.50
GUA 10.36 167 eP 47 49.30 1.7
0.9s 221.85nm 5.9mb
MAT 13.33 345 eP 48 19.00 -7.4X
0.7s 114.38nm 5.4mb
eS 50 35.00
SHK 13.78 324 iP 48 30.00 -2.2
0.9s 100.84nm 5.2mb
SSE 20.27 296 Pc 49 48.00 -0.8
0.5s 47.00nm 5.1mb
Z 20s 0.50um 3.9Msz
pP 49 57.50 37kmX
sP 50 04.00
S 53 34.00
SS 54 01.00
NJ2 22.45 297 Pd 50 10.30 0.0
Z 18s 0.30um 3.8Msz
MDJ 23.38 336 eP 50 18.60 -0.7
Z 20s 0.90um 4.2Msz
SNY 23.99 323 iPc 50 23.00 -2.1
0.8s 0.10nm 2.3mb X
Z 28s 0.40um 3.7MszX
N 28s 0.80um
eS 54 30.00
CN2 24.46 329 Pc 50 28.50 -1.1
Z 18s 0.40um 4.0Msz
pP 50 59.00 150kmX
TIA 25.18 306 Pd 50 35.10 -1.4
WHN 25.91 291 Pc 50 44.00 0.9
N 22s 2.56um
BJI 27.51 313 P 50 54.00 -3.6X
TIY 29.23 306 eP 51 13.00 -0.2
Z 14s 0.60um 4.4MszX
N 12s 0.40um
HHC 31.03 311 eP 51 26.00 -3.1X
GYA 32.49 282 P 51 42.80 0.8
PMG 33.21 172 eP 51 46.00 -2.1
CD2 35.02 290 P 52 03.40 -0.2
LZH 35.48 299 eP 52 07.50 -0.1
Z 28s 0.60um 4.2MszX
sP 52 28.00
KMI 36.13 281 eP 52 15.00 1.8
pP 52 34.00 78kmX
MTN 37.97 198 iPd 52 27.20 -1.2
0.5s 50.00nm 5.6mb
GTA 39.21 304 eP 52 37.80 -0.9
CHG 40.75 272 eP 52 53.00 1.6
CHTO 40.75 272 eP 52 52.90 1.5
1.0s 5.25nm 4.2mb
pP 53 13.00 83kmX
BDT 41.11 269 eP 52 57.00 2.6
CTA 43.67 175 iPc 53 14.70 -0.4
0.9s 25.21nm 4.9mb
QIS 44.07 184 eP 53 16.00 -2.3
WB2 44.09 191 iPc 53 16.40 -2.1
i 55 02.20
eS 59 41.50
ASPA 47.81 191 iPd 53 46.20 -1.6
0.6s 53.00nm 5.5mb
iS 00 34.90
WMQ 48.83 308 P 53 55.40 -0.2
DZM 51.11 151 iPc 54 12.10 -1.1
PKI 51.22 287 P 54 15.00 0.6
KKN 51.30 287 P 54 15.60 0.8
DMN 51.48 287 P 54 17.00 0.7
BRS 51.75 168 iPc 54 16.50 -1.3
0.6s 3.50nm 4.4mb
i 55 30.50
GKN 51.83 288 P 54 19.00 0.3
WARB 51.89 198 eP 54 18.00 -1.0
0.4s 9.00nm 5.0mb
STK 55.26 181 iPd 54 41.90 -1.6
IMA 58.02 26 P 55 01.80 -1.1
0.9s 5.21nm 4.5mb
BWA 58.07 174 eP 55 02.70 -0.7
CAN 59.01 174 eP 55 09.10 -0.8
PMR 59.18 31 P 55 08.80 -2.0
0.8s 24.14nm 5.3mb
HYB 59.77 277 eP 55 15.50 0.0
FBA 60.21 27 P 55 16.90 -0.9
0.8s 5.34nm 4.6mb
GBA 62.00 273 P 55 31.00 0.5
POO 63.69 280 eP 55 42.50 0.8
INK 66.01 24 iPd 55 54.80 -1.0

03d 09h

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MBC     69.10  15 ePd    56 14.80   -0.2
        0.9s     18.00nm          4.9mb
KEV     76.27 341 eP     56 58.00    0.9
PNT     77.31  42 eP     57 03.00   -0.3
SOD     77.66 339 iP     57 05.70    0.9
AFR     77.78 115 iP     57 07.20    0.9
        0.6s     15.00nm          4.9mb
PMO     78.13 112 iP     57 08.80    0.6
        0.6s      5.00nm          4.5mb
TPT     78.36 112 iP     57 09.90    0.4
        0.6s      5.00nm          4.5mb
VAH     78.47 112 iP     57 10.40    0.3
WDC     78.56  51 eP     57 10 60    0.3
RUV     78.66 112 iP     57 10.80   -0.3
LBFM    78.74  50 P      57 11.40   -0.2
LTCM    79.00  51 P      57 12.50   -0.2
NWRM    79.09  53 P      57 13.60    0.4
MIN     79.31  51 eP     57 14.20   -0.4
EDM     79.38  36 iPd    57 14.90    0.4
        0.5s     19.00nm          5.1mb
ORV     79.68  51 eP     57 16.20   -0.2
BKS     79.78  53 ePc    57 18.00    1.1
        0.8s     28.00nm          5.1mb
SUF     80.37 335 iP     57 19.90    0.4
        0.5s     33.80nm          5.4mb
MHC     80.42  54 e(P)   57 20.80    0.3
ARN     80.49  53 P      57 21.50    0.7
PRS     81.00  54 eP     57 23.70    0.3
CMB     81.07  52 eP     57 24.20    0.4
SES     81.92  38 eP     57 28.00    0.1
        0.8s     39.00nm          5.2mb
FRI     81.98  53 eP     57 28.70    0.3
NUR     82.22 334 iP     57 29.40    0.2
        0.7s     17.40nm          5.0mb
KVN     82.31  51 P      57 30.70    0.3
BCH     82.42  55 P      57 31.80    0.9
SYP     82.76  56 eP     57 32.00   -0.7
LRM     83.17  43 eP     57 35.30    0.5
TNP     83.34  51 P      57 35.20   -0.5
        0.8s      6.86nm          4.6mb
ISA     83.42  54 eP     57 37.00    1.0
CLC     84.01  54 eP     57 39.00    0.0
SBB     84.31  55 eP     57 40.00   -0.5
FFC     84.48  32 iPd    57 41.70    0.9
        0.7s     25.00nm          5.2mb
GSC     84.81  54 eP     57 44.00    1.0
RVR     84.94  55 eP     57 53.00    9.4X
PLM     85.60  56 eP     57 39.00   -8.1X
TPC     85.89  55 eP     57 49.00    0.7
BAR     86.03  56 eP     57 49.00   -0.1
NB2     86.86 339 P      57 51 90   -0.7
        0.7s      6.60nm          4.7mb
FRB     89.52  13 eP     58 05.00   -0.1
KSP     91.96 329 iPc    58 17.10    0.5
KHC     94.41 329 eP     58 28.50    0.5
ARE    147.35  84 e(PKP) 04 55.00    5.0X
ZOBO   150.35  81 ePKP   04 57.00    2.0X
        0.8s     25.96nm
LPB    150.46  82 (PKP)  04 56.00    1.0
CNCB   150.66  82 PKP    04 57.00    1.6
                  i      05 03.00
CCH    152.50  82 ePKP   05 10.00   12.2X
     S.D. = 1.0  on  87 of  95 obs.
-------------------------------------
?  DEC  03,  1989   09h 51m 55.62± 0.85s
   39.933 N ±12.3km   72.580 E ±14.7km
   DEPTH =  33.0km  (normal)
   4.5mb (  4 obs.)
 KIRGHIZ SSR                        (716)
      Felt (IV) at Iski-Naukat, Sufi-
      Kurgan and Osh.

MAIO    10.93 255 eP     54 32.00   -0.8
                eS       56 28.00
NDI     11.86 160 iPd    54 45.20   -0.1
        0.7s     12.33nm          5.2mb
                eS       56 11.00
GBA     26.57 169 P      57 36.00    3.5X
        0.7s      5.40nm          4.3mb
NB2     42.45 321 P      59 48.80    0.1
        0.6s      1.90nm          4.0mb
MBC     63.85   3 eP     02 26.00   -0.5
        0.5s      3.00nm          4.7mb
INK     70.32  10 eP     03 07.00   -0.3
                pP       03 19.00   40kmX
KIC     76.23 267 P      03 44.40    1.7
     S.D. = 1.1  on   6 of   7 obs.
-------------------------------------
    DEC  03,  1989   10h 58m 18 08± 0.63s
    21.218 N ± 5.8km   93.710 E ± 5.7km
    DEPTH =  43.0 ±  6.2 km
    4.7mb ( 22 obs.)
 BURMA                              (296)
SHL     4.64 339 iP     59 30.00    2.3
                iS      00 21.00
CHG     5.47 115 ePn    59 39.10   -0.2
                eSg     00 54.00
CHTO    5.47 115 iP     59 39.40    0.1
BDT     6.37 127 eP     59 53.00    1.1
                eSg     01 04.00
NST     8.22 131 eP     00 18.50    0.8
                e       17 39.00
                e       24 27.60
LOE     8.47 115 ePn    00 21.30    0.1
                e       00 25.00
                e       00 59.00
LSA     8.76 345 iPd    00 26.20    0.7
KMI     9.17  63 Pd     00 36.00    4.9X
      Z  15s      1.00um          4.2Msz
                pP      00 45.00
                sP      00 55.50
                S       02 24.00
PKI     9.86 312 P      00 39.40   -1.2
KKN    10.08 312 P      00 42.00   -1.6
DMN    10.09 311 P      00 40.00   -3.8X
NNT    10.33 145 eP     00 46.30   -0.5
                e       02 32.00
GKN    10.66 311 P      00 50.20   -1.2
HYB    14.80 258 eP     01 46.00   -0.3
                e       01 54.00
                eS      04 10.00
LZH    17.26  29 Pd     02 32.00   14.3X
       1.5s     42.00nm
GBA    17.27 247 P      02 22.00    4.2X
       0.5s      2.30nm          3.6mb X
XAN    18.54  43 eP     02 33.00   -0.4
GTA    18.87  15 eP     02 36.40   -1.2
WHN    20.74  59 eP     03 02.20    4.7X
                pP      03 11.00   33kmX
WMO    23.09 349 P      03 22.60    1.6
KSH    23.68 324 eP     03 30.50    3.7X
MBL    49.25 147 iPd    07 04.70    0.1
WB2    57.04 133 iPd    08 00.20   -2.2
VRI    59.18 312 ePd    08 18.00    0.9
ASPA   59.34 137 iPd    08 17.10   -1.3
       0.7s      9.00nm          5.0mb
MLR    59.73 311 iPd    08 21.50    0.4
SUF    61.09 331 iP     08 29.60   -0.2
       0.5s     19.90nm          5.5mb
NUR    61.47 328 eP     08 32.00   -0.4
SOD    61.81 336 eP     08 34.00   -0.7
OHR    63.71 306 e(P)   08 47.70   -0.1
UPP    64.92 327 iP     08 54.70   -0.4
KSP    65.98 317 eP     09 02.00   -0.1
HFS    66.89 328 eP     09 06.40   -1.4
       0.5s     13.90nm          5.3mb
PRU    67.17 317 Pc     09 10.60    0.8
BRG    67.46 318 iP     09 11.80    0.3
       1.0s     20.00nm          5.1mb
KHC    67.89 316 Pc     09 14.80    0.4
CLL    68.00 318 eP     09 15.00    0.1
NB2    68.06 329 P      09 13.90   -1 3
       0.7s      6.90nm          4.8mb
KBA    68.32 314 iPd    09 16.70   -0.6
       0 7s      2.60nm          4.4mb
MOX    68.95 317 eP     09 21.00    0.1
FIR    70.32 310 eP     09 30 50    1.2
RMO    71.37 129 iPc    09 36.60    0.7
CDF    72.12 316 eP     09 40.20    0.0
       0.8s      6.40nm          4.6mb
HAU    72.82 315 eP     09 44.20    0.0
       0.8s      5.30nm          4.5mb
LPG    73.11 313 eP     09 47.70    1.4
       1.0s     10.80nm          4.8mb
LBF    74.62 315 eP     09 54.70    0.0
       0.8s      9.40nm          4.8mb
LOR    74.63 315 eP     09 54.70    0.0
       0 8s      5.30nm          4.5mb
SMF    74.80 314 iPd    09 55.80    0.1
       0 8s      9.40nm          4.8mb
BRS    74.82 128 iPd    09 56.20    0 1
       1.0s      2.20nm          4.1mb
SSF    74.91 315 eP     09 56.60    0.2
       0.8s     13.40nm          5.0mb
AVF    75.08 315 iPd    09 57.40    0.1
       0.8s      6.70nm          4.7mb
BGF    75.48 315 eP     09 59.90    0.3
       0.6s      2.70nm          4.4mb
MAF    75.76 314 eP     10 01.80    0.6
       1.0s     10.00nm          4.7mb
BUL    75.76 242 iPc    10 15.00   13.2X
       0.9s      5.04nm
TCF    75.98 314 eP     10 03.10    0.6
       0.8s      9.40nm          4.8mb
LSF    76.44 314 eP     10 05.40    0.3
       0.8s      5.30nm          4.6mb
EKA    76.61 324 Pc     10 06.40    0.6
       0.8s      8.70nm          4.8mb
MBC    80.67   8 eP     10 27.00   -0.5
       0.5s      2.00nm          4.3mb
FBA    82.21  22 eP     10 35.10   -0.7
       0.9s      0.80nm          3.8mb
INK    84.35  16 ePd    10 45.30   -1.3
ZOBO  162.11 283 (PKP)  18 02.00  -15.1X
CNCB  162.14 281 ePKP   18 19.00    1.9
     S.D. = 0.9  on  54 of  62 obs.
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   DEC  03,  1989   11h 11m 56.39± 0.47s
    8.828 S ± 4.7km   113.418 E ± 5.5km
   DEPTH =  95.0 ±  4.1 km
   5.6mb ( 46 obs.)
 JAVA                               (277)
      FAULT PLANE SOLUTION: P-Waves
       NP1:Strike=248 Dip=70 Slip= -60
       NP2:          9      36      -144
       Principal Axes:
        T                 Plg=19  Azm=316
        P                   55       196
      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.
      CENTROID, MOMENT TENSOR     (HRV)
      Data Used: GDSN
      L.P.B.: 11S, 24C
      Centroid Location:
      Origin Time        11:11:54.4 1.0
      Lat  9.47S 0.10 Lon 113.26E 0.12
      Dep 100.9 4.8 Half-duration  1.7
      Moment Tensor;   Scale 10**16 Nm
        Mrr=-4.68 0.95  Mtt=-0.41 0.94
        Mff= 5.09 1.56  Mrt= 4.48 0.64
        Mrf=-1.32 0.70  Mtf= 8.23 1.24
       Principal Axes:
        T  Val= 11.18  Plg= 6  Azm=307
        N       -1.14      50       44
        P      -10.04      39      212
      Best Double Couple:Mo=1.1*10**17
       NP1:Strike=358 Dip=59 Slip=-154
       NP2:         253      68      -34

TRT     1.36 325 iPd    12 22.10    1.1
                iS      13 17.00
PCI    10.14  39 iPd    14 29.00    8.2X
                iS      14 59.00
MBL    13.73 154 iPd    14 59.80   -8.5X
                eS      17 15.00
TSM    13.77  20 ePc    15 13.50    4.7X
NANU   13.81 172 eP     15 01.00   -8.2X
KGM    14.74 316 ePc    15 24.20    2.8
KLM    16.68 315 eP     15 47.00    1.3
MTN    17.85 104 iP     15 59.50   -0.6
                e       19 03.00
                e       21 42.00
IPM    18.17 317 ePd    16 03.40   -0.6
       0.9s     85.10nm          5.0mb
                e       16 20.00
MEKA   18.34 165 eP     16 03.00   -3.2X
       0.3s    102.00nm          5.6mb
                eS      19 10.00
MRWA   20.43 174 eP     16 26.40   -1.8
       0.3s     11.00nm          4.7mb
                eS      19 56.00
WARB   21.34 146 iPd    16 36.20   -1.3
       0.4s     52.00nm          5.2mb
                eS      20 23.00
BAL    21.88 172 iPd    16 41.00   -1.8
                eS      20 34.00
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KLB     23.01 170 eP     16 53.00  -0.8
                  eS     21 02.00
WB2     23.06 121 iPd    16 53.80  -0.6
                  iPcP   20 42.50
                  eS     21 02.50
COOL    23.10 163 iPd    16 53.30  -1.4
                  e      17 05.00
                  eS     20 56.00
MUN     23.18 174 iPd    16 54.50  -0.9
                  eS     21 07.00
NWAO    24.24 172 iPd    17 04.80  -0.9
                  eS     21 30.00
ASPA    24.53 129 iPd    17 08.00  -0.6
        0.6s    518.00nm        6.1mb
                  e      17 28.60
                  iPcP   20 45.60
                  eS     21 29.50
                  eScS   28 03.10
NNT     25.25 327 eP     17 16.20   0.9
RKG     25.34 173 iPd    17 19.90   3.9X
        0.6s    279.00nm        5.9mb
                  eS     22 03.00
QIS     27.83 118 iPd    17 38.20  -0.8
        0.3s     30.00nm        5.4mb
                  e      17 55.00
                  e      20 53.00
QIZ     27.90 353 eP     17 40.20   0.7
                  PcP    20 54.70
LOE     28.51 336 eP     17 44.00  -1.0
                  e      24 29.00
MNDI    30.09  87 eP     18 01.00   1.5
CHG     30.96 333 eP     18 07.00   0.3
        1.1s     48.10nm        5.1mb
                  e      21 21.90
                  e      24 37.00
CHTO    30.96 333 eP     18 07.10   0.4
PMG     33.31  94 eP     18 27.00  -0.3
        1.0s     60.00nm        5.4mb
LAT     33.34  89 eP     18 40.00  12.4X
CTA     33.64 113 iPd    18 30.00  -0.2
        1.3s    406.73nm        6.1mb
                  i      18 48.00
                  iS     23 49.00
QZH     33.94   8 eP     18 33.60   1.0
QLP     34.11 125 iPd    18 34.60   0.4
                  e      21 11.00
STK     34.78 135 iPd    18 39.80   0.0
        0.5s    124.00nm        6.1mb
                  e      18 58.00
                  e      19 54.00
                  e      21 11.00
                  e      21 32.00
                  e      25 30.00
ADE     34.83 142 iPd    18 40.00  -0.2
        1.0s    122.00nm        5.8mb
KMI     35.31 343 Pd     18 47.00   2.4
GYA     35.68 350 iPc    18 48.60   1.0
                  PcP    21 15.60
                  S      24 20.00
                  ScP    24 54.60
                  ScS    24 58.20
CMS     37.62 131 iPd    19 04.40   0.7
                  e      20 31.00
RMQ     37.80 122 iPd    19 06.80   1.5
        0.9s    345.00nm        6.3mb
                  e      19 26.00
GUMO    38.35  55 eP     19 08.80  -1.2
        0.6s    103.25nm        5.9mb
PJG     38.35  55 eP     19 08.90  -1.1
GUA     38.36  55 eP     19 09.10  -1.0
        0.4s     88.14nm        6.0mb
BFD     38.62 141 iPd    19 12.40   0.4
        1.2s    267.00nm        6.0mb
                  e      27 15.00
WHN     39.15   1 Pd     19 18.00   1.6
        0.7s      0.02nm        2.1mb X
                  sP     19 44.00
                  PcP    21 25.20
                  ScP    25 06.20
                  eS     25 16.00
SHL     40.10 329 iP     19 25.00   0.4
                  eS     25 10.20
SSE     40.39  10 Pd     19 26.00  -0.6
        0.8s     27.00nm        5.1mb
                  sP     19 44.50
                  PP     21 29.00
                  i      21 48.80
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                  eS     25 30.00
KOD     40.48 297 eP     19 27.20  -0.8
CD2     40.58 347 iPc    19 28.80   0.5
                  iS     25 31.00
TOO     40.71 140 iPd    19 31.10   1.8
        0.8s    139.00nm        5.8mb
                  e      19 51.00
BWA     40.97 134 iPd    19 33.80   2.3
                  ePcP   21 32.00
NJ2     40.98   7 iPc    19 33.00   1.6
      Z  26s      0.04um        3.2MszX
                  pP     19 51.50  76kmX
                  ScP    25 13.50
                  S      25 40.00
BRS     41.48 122 iPc    19 37.50   1.8
        1.0s     79.00nm        5.5mb
                  ipP    19 52.50  58kmX
                  e      20 38.50
                  e(S)   25 28.00
CAN     41.84 134 iPd    19 39.20   0.6
                  iPcP   21 33.90
COO     41.89 127 iPd    19 41.30   2.2
CNB     42.09 134 iPc    19 41.50   0.8
        1.0s    120.00nm        5.7mb
GBA     42.10 302 P      19 38.00  -2.9
XAN     42.84 355 Pc     19 46.70   0.0
HYB     43.21 307 iPc    19 49.50  -0.4
        1.0s     90.00nm        5.6mb
LSA     43.90 332 Pd     19 56.80   1.0
TIA     44.93   4 eP     20 02.60  -0.9
PKI     45.22 324 PKP    20 09.00   2.7
DMN     45.43 324 PKP    20 07.00  -0.8
KKN     45.46 324 PKP    20 07.20  -0.9
LZH     45.57 349 eP     20 09.50   0.7
        1.0s     95.00nm        5.6mb
      Z  30s      0.90um        4.5MszX
      E  25s      1.90um
                  sP     20 27.00
                  S      26 45.00
                  eSS    30 20.00
HNR     45.92  95 ePd    20 13.00   1.4
GKN     45.99 324 PKP    20 10.20  -2.0
TIY     46.31 359 eP     20 14.00  -0.4
POO     47.57 305 iPc    20 23.20  -1.5
        0.7s     56.16nm        5.5mb
BJI     48.69   3 eP     20 32.50  -0.3
        1.0s     24.00nm        5.1mb
                  PcP    22 16.00
                  eScP   25 45.00
TSRJ    48.99  25 eP     20 34.00  -1.3
BTO     49.28 357 P      20 37.00  -0.5
      N  14s      0.50um
      E  14s      0.70um
                  pP     20 55.00  72kmX
                  eS     27 35.00
HHC     49.46 358 eP     20 39.00   0.1
GTA     49.63 346 iPc    20 41.00   0.7
                  PcP    22 01.20
                  ScP    25 49.00
                  S      27 42.60
                  ScS    30 21.20
IIDJ    49.76  26 eP     20 40.00  -1.3
MTMJ    50.65  25 eP     20 46.10  -2.0
CHJJ    50.72  27 eP     20 46.50  -2.0
MAT     50.79  26 iPd    20 47.00  -2.0
        0.7s     39.73nm        5.6mb
NDI     51.10 318 iPd    20 48.00  -3.5X
        0.5s    154.93nm        6.3mb
                  eS     27 53.00
SNY     51.26  10 Pd     20 50.80  -1.7
        0.6s      0.10nm        3.0mb X
      Z  28s      0.40um        4.3MszX
                  S      28 00.00
KAKJ    51.38  28 eP     20 50.70  -2.8
NIIJ    51.72  26 eP     20 54.70  -1.3
DZM     52.53 111 iPd    21 03.60   1.1
CN2     53.51  11 Pc     21 08.00  -1.1
                  ScP    26 05.60
MDJ     55.17  14 eP     21 20.20  -1.1
WMQ     57.37 338 iPc    21 36.50  -0.6
        1.2s      0.10nm        2.7mb X
      Z  28s      0.60um        4.6MszX
                  pP     21 57.50  83kmX
                  S      29 25.20
                  ScS    31 15.00
MSZ     58.91 137 P      21 47.80   0.0
OUE     59.13 313 eP     21 47.00  -2.8
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                  eS     29 44.00
KSH     59.27 327 eP     21 50.20  -0.2
DRV     60.53 168 eP     21 57.20  -1.3
KHZ     62.16 133 P      22 07.90  -2.0
        0.7s     51.00nm        5.7mb
TCW     62.41 132 P      22 10.80  -0.7
                  e      22 30.60
KRP     62.69 128 P      22 14.80   1.3
        0.6s     55.00nm        5.7mb
MRW     62.73 132 eP     22 12.60  -1.0
WEL     62.79 132 P      22 13.40  -0.6
KIW     62.80 131 P      22 13.70  -0.5
                  e      22 32.50
WDW     62.95 132 P      22 14.10  -1.0
CAW     62.97 132 P      22 14.60  -0.7
                  e      22 33.50
MNG     63.17 131 P      22 16.20  -0.4
        0.3s     26.00nm        5.7mb
MOW     63.17 132 P      22 15.70  -0.9
MTW     63.30 132 P      22 17.00  -0.5
BLW     63.32 132 P      22 17.60   0.0
PGZ     63.76 131 P      22 20.20  -0.3
        0.4s     49.00nm        5.8mb
HBZ     64.80 127 P      22 27.40   0.2
        0.4s    195.00nm        6.4mb
MAW     67.57 199 eP     22 43.00  -1.4
MAIO    67.65 315 iPc    22 43.50  -2.0
BJA     70.12 302 eP     22 57.60  -3.2X
        0.5s    140.00nm        6.1mb
BEE     70.20 302 eP     22 58.10  -3.2X
        0.8s    308.00nm        6.2mb
RYD     73.11 299 eP     23 17.50  -1.2
SBA     74.10 170 iPd    23 24.20   0.8
KER     75.94 309 eP     23 28.00  -6.9X
                  e      33 03.50
QASM    76.17 300 eP     23 35.30  -1.0
SLY     77.62 309 ePc    23 42.00  -2.0
BHD     77.70 307 ePc    23 43.00  -1.5
TAB     77.88 312 e(P)   23 39.00  -6.6X
MSL     79.68 309 ePc    23 54.00  -1.2
                  e      24 11.00
SPA     81.23 180 iPd    24 03.30   0.3
        0.9s     51.36nm        5.4mb
                  i      24 35.30
SLR     81.87 245 iPd    24 07.00  -0.2
        0.8s     70.90nm        5.6mb
BUL     82.17 251 iPc    24 23.20  14.4X
        1.0s     45.00nm
                  ipP    24 42.90  72kmX
SEK     82.19 243 iPd    24 09.00   0.2
        1.0s    115.00nm        5.7mb
WAJH    82.24 298 eP     24 09.00   0.2
PRY     82.47 244 iPc    24 10.70   0.4
        0.8s     35.63nm        5.3mb
KSR     83.10 245 iPd    24 13.00  -0.6
        1.0s     45.00nm        5.4mb
LSZ     83.15 256 iP     24 14.60   0.7
        0.6s    115.50nm        6.0mb
                  iPP    24 34.00
AYN     83.36 300 iPd    24 15.30   0.7
LWI     84.34 269 iPd    24 21.20   1.0
MBH     84.52 301 eP     24 21.00   0.6
DSI     84.52 303 eP     24 21.00   0.7
HRI     84.64 305 eP     24 23.00   2.0
ADK     84.78  36 P      24 20.80  -0.4
        0.5s     59.92nm        5.8mb
AMAN    84.95 295 iPd    24 23.50   0.9
AGRW    85.00 295 iPd    24 24.50   1.6
AKRL    85.10 295 iPd    24 24.50   1.2
KOT     87.14 301 eP     24 34.00   0.7
KAS     88.10 312 eP     24 38.50   0 8
BBTK    88.50 311 eP     24 40.00   0.2
POF     88.73 241 iPd    24 43.00   2.1
        0.3s     84.42nm        6.3mb
ELL     90.06 307 eP     24 46 00  -1.2
KHL     90.66 309 eP     24 50.00   0.2
HON     91.84  69 P      25 18.60  23.2X
IZM     92.42 308 eP     24 57.00  -0.9
VRI     93.97 316 ePc    25 05.00   0.2
MLR     94.46 315 iPc    25 07 00  -0.2
LIT     96.32 309 ePd    25 09.50  -6.2X
SUF     96.52 332 iP     25 15.90  -0.2
        0.7s     14.70nm        5.6mb
NUR     97.01 330 eP     25 24.00   5.8X
OHR     97.70 310 e(P)   25 14.80  -7.1X
TTA     98.05  28 P      25 24.10   1.0
        0.9s     13.54nm        5.5mb
```

03d 11h

			pP	25	43.00	67kmX
IMA	99.19	24	P	25	29.40	1.2
	1.0s		5.00nm			5.1mb
			pP	25	48.40	68kmX
PMR	101.26	29	Pdiff	25	37.00	-0.4
	0.7s		5.81nm			5.3mb
			pP	25	55.90	
KSP	101.28	320	ePdiff	25	37.50	-0.4
			id	25	57.40	
KHC	103.06	318	ePdiff	26	05.40	19.6X
NB2	103.58	331	Pdiff	25	47.40	-0.5
	1.1s		6.50nm			5.4mb
INK	106.59	21	ePdiff	26	00.00	-1.0
INK	106.59	21	ePKP	30	12.00	0.7
LBF	109.65	317	ePKP	30	17.30	-0.5
	0.8s		2.60nm			
LOR	109.69	317	ePKP	30	17.20	-0.7
	1.0s		4.80nm			
SSF	109.96	317	ePKP	30	18.80	0.4
	0.8s		4.00nm			
BGF	110.49	316	ePKP	30	19.80	0.4
	0.8s		6.70nm			
FLN	112.29	319	ePKP	30	22.00	-0.7
MFF	112.51	317	ePKP	30	26.60	3.4X
	0.6s		3.60nm			
LPF	112.81	318	ePKP	30	23.10	-0.6
KIC	118.71	272	PKPd	30	35.48	-0.5
	0.7s		14.00nm			
LIC	118.98	272	PKPc	30	35.84	-0.7
	0.6s		19.50nm			
TIC	119.02	273	PKP	30	36.12	-0.5
LKO	119.86	276	PKPd	30	38.80	0.6
	0.6s		46.00nm			
FHC	120.23	48	ePKP	30	40.00	1.8
PNT	120.28	37	ePKP	30	39.00	1.0
WDC	121.35	48	ePKP	30	41.10	0.8
LBFM	121.59	47	PKP	30	42.60	1.6
			pP	31	01.90	
EDM	121.93	31	iPKPd	30	41.50	0.5
	0.7s		53.00nm			
			pP	31	02.00	
MIN	122.10	48	ePKP	30	42.30	0.4
PCC	122.29	51	ePKP	30	43.40	1.3
BKS	122.31	51	iPKPd	30	43.60	1.4
	0.7s		22.00nm			
ORV	122.40	49	ePKP	30	43.10	0.8
MHC	122.90	51	ePKP	30	44.90	1.4
ARN	122.98	51	PKP	30	44.20	0.6
PRS	123.37	52	ePKP	30	45.90	1.6
CMB	123.67	50	ePKP	30	45.90	1.0
PRI	123.97	52	ePKP	30	47.50	1.8X
PHAM	124.26	53	PKP	30	48.40	2.3X
PKEM	124.43	52	PKP	30	48.90	2.5X
FRI	124.48	51	ePKP	30	47.70	1.3
SES	124.65	33	ePKPc	30	46.60	0.2
			pP	31	06.00	
BCH	124.68	53	PKP	30	48.80	1.8X
SYP	124.93	54	ePKP	30	49.00	1.4
			e	31	10.00	
KVN	125.07	48	PKP	30	48.30	0.5
FRB	125.16	1	ePKP	30	47.00	0.2
ABL	125.45	53	PKP	30	50.70	2.0X
ISA	125.82	52	ePKP	30	50.00	0.8
			e	31	10.00	
TNP	126.04	49	PKP	30	50.40	0.6
LRM	126.17	38	ePKP	30	50.90	1.1
			e	31	10.90	
FFC	126.27	25	iPKPc	30	50.20	0.8
	0.6s		15.00nm			
CLC	126.45	52	ePKP	30	52.00	1.6
			e	31	12.00	
MWC	126.54	54	ePKP	30	52.00	1.2
			e	31	12.00	
SBB	126.60	53	ePKP	30	52.00	1.3
			e	31	12.00	
RVR	127.15	54	ePKP	30	53.00	1.3
GSC	127.22	52	ePKP	30	53.00	1.1
			e	31	14.00	
PLM	127.74	54	ePKP	30	55.00	1.9
			e	31	15.00	
BAR	128.07	55	ePKP	30	55.00	1.5
			e	31	16.00	
TPC	128.17	53	ePKP	30	55.00	1.3
GLA	129.46	54	ePKP	30	58.00	1.8
RSON	132.49	23	PKP	31	01.40	0.1
SCH	134.14	0	ePKP	31	06.00	1.7
MIM	143.66	3	PKP	31	20.40	-1.5
RSNY	143.75	10	PKP	31	20.60	-1.5
FVM	143.88	33	PKP	31	19.80	-2.8X
UYO	144.06	41	iPKPd	31	21.20	-1.8
BNH	144.14	6	PKP	31	21.80	-1.0
ITB7	144.16	199	ePKP	31	20.90	-2.5X
EMM	144.22	1	PKP	31	21.70	-1.2
DHN	144.64	15	PKP	31	23.20	-0.5X
ITB1	144.67	199	PKPc	31	22.80	-1.5
POW	144.77	36	PKP	31	23.40	-0.7
CLE	144.89	20	iPKP	31	23.90	-0.3
ELC	145.03	32	PKP	31	24.40	-0.1
OLY	145.05	37	PKP	31	24.30	-0.3
LST	145.32	34	PKP	31	25.40	0.4
SLA	146.63	182	ePKPd	31	29.00	1.2
TBR	147.11	11	PKP	31	30.00	2.2X
PPM	147.33	68	iPKPc	31	32.50	3.0X
PNJ	147.35	11	e(PKP)	31	16.50	-11.7
			i	31	31.90	
			i(pP)	31	51.60	
PWLA	147.37	34	PKP	31	28.80	0.4
PRIN	147.77	12	PKP	31	30.80	1.9X
RSCP	148.20	30	PKP	31	33.00	3.2X
GBTN	148.81	28	PKP	31	31.70	0.9
YJA	149.18	182	ePKPd	31	34.40	2.1X
BAO	149.51	217	ePKP	31	33.50	1.0
OXX	149.54	71	(PKP)	31	40.00	7.4X
PRM	150.97	28	PKP	31	36.00	2.0X
LHS	151.32	25	PKP	31	41.70	7.2X
CCH	153.95	181	iPKPc	31	41.40	2.3X
ARE	154.41	169	ePKP	31	42.00	2.3X
CNCB	154.49	177	PKP	31	42.90	2.7X
LPB	154.76	177	PKP	31	42.00	1.7
ZOBO	155.02	176	PKPd	31	43.00	2.1
	1.0s		58.75nm			

S.D. = 1.4 on 196 of 234 obs.

DEC 03, 1989 12h 43m 24.66± 1.03s
39.129 N ± 8.3km 17.458 E ± 6.3km
DEPTH = 83.5 ± 23.7 km
SOUTHERN ITALY (390)

ROI	0.82	303	P	43	40.70	-1.4
ACI	1.00	283	P	43	44.70	0.5
TDS	1.02	302	P	43	43.80	-0.6
CZI	1.03	275	P	43	44.20	-0.3
CSI	1.11	306	P	43	46.10	0.5
			eSg	44	12.20	
LCI	1.26	17	P	43	47.20	-0.2
			eSg	44	05.60	
MMN	1.37	304	P	43	50.50	1.8
BRT	1.76	354	Pd	43	53.80	-0.1
			eSn	44	15.70	
MGR	1.78	305	P	43	54.80	0.5
ATN	1.84	239	P	43	54.40	-0.6
BAI	2.04	347	P	43	57.00	-0.7
SRN	2.11	68	ePn	44	00.20	1.6
SGO	2.19	311	P	44	00.50	0.8
TIR	2.88	39	ePn	44	09.70	0.4
KBN	2.98	59	ePn	44	25.50	14.8X
OHR	3.24	51	ePn	44	23.30	9.0X
SDA	3.28	28	ePn	44	14.40	-0.3
AGG	3.79	90	eP	44	22.00	0.0
LIT	4.01	74	eP	44	24.00	-0.9
HVAR	4.12	350	iPnc	44	25.50	-0.9
SKO	4.16	46	ePn	45	17.00	50.0X

S.D. = 0.9 on 18 of 21 obs.

? DEC 03, 1989 13h 33m 33.53± 4.88s
43.888 N ±26.5km 8.621 E ±24.0km
DEPTH = 10.0km (geophysicist)
CORSICA (380)
ML 2.5 (GEN)

FIN	0.44	317	P	33	42.44	0.0
			S	33	49.52	
IMI	0.53	273	P	33	43.98	-0.3
			S	33	51.87	
PCP	0.66	355	P	33	46.03	-0.6
			S	33	55.36	
ROB	0.68	307	P	33	46.44	-0.6
			S	33	55.98	
ENR	0.93	292	P	33	51.77	0.4
STV	1.00	291	P	33	52.39	-0.2
PZZ	1.26	300	P	33	56.69	-0.3
			S	34	11.15	
RSP	1.60	323	P	34	03.15	1.2

S.D. = 0.7 on 8 of 8 obs

? DEC 03, 1989 13h 56m 03.64± 2.17s
42.278 N ±20.8km 19.029 E ± 9.1km
DEPTH = 10.0km (geophysicist)
YUGOSLAVIA (383)
ML 2.0 (TTG).

BDV	0.15	272	iPgc	56	07.20	0.1
			iSg	56	09.20	
TTG	0.23	49	iPgd	56	08.50	0.0
			eSg	56	11.90	
HCY	0.43	293	ePg	56	12.20	-0.2
			eSg	56	19.20	
BRY	0.72	330	ePg	56	18.00	0.1
			eSg	56	27.30	

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

DEC 03, 1989 14h 16m 48.79± 0.11s
7.631 S ± 2.1km 74.459 W ± 3.0km
DEPTH = 153.0km (geophysicist)
5.9mb (66 obs.)
PERU-BRAZIL BORDER REGION (112)
mb 6.2 (PAS), 5.6 (BRK).
Mo=1.3*10**19 Nm (PPT). Felt (III) at Chimbote and (II) at Chicloyo, Peru. Also felt at Limo, Peru. Two events about 3.8 seconds apart. Depth from broadband displacement seismograms, based on first event.
FAULT PLANE SOLUTION: P-Waves
NP1:Strike= 13 Dip=63 Slip= -90
NP2: 193 27 -90
Principol Axes:
T Plg=18 Azm=103
P 72 283
Comment: The focol mechonism is poorly controlled ond corresponds to normol foulting. The preferred foult plone is NP1.
RADIATED ENERGY
No. of sto: 4 Focol mech. F
Energy 1.8±0.7*10**13 Nm
MOMENT TENSOR SOLUTION
Dep 156 No. of sto: 15
Moment Tensor; Scale 10**18 Nm
Mrr=-7.03 Mtt= 0.12
Mff= 6.91 Mrt=-1.47
Mrf= 4.72 Mtf= 3.70
Principol axes:
T Val= 9.43 Plg=14 Azm=290
N -0.24 21 194
P -9.18 65 50
Best Double Couple:Mo=9.3*10**18
NP1:Strike= 46 Dip=36 Slip= -53
NP2: 182 62 -114
CENTROID, MOMENT TENSOR (HRV)
Doto Used: GDSN
L.P.B.: 15S, 37C M.W.: 7S, 19C
Centroid Locotion:
Origin Time 14:16:58.9 0.2
Lot 7.37S 0.02 Lon 74.27W 0.02
Dep 150.9 0.9 Holf-durotion 7.2
Moment Tensor; Scale 10**18 Nm
Mrr=-6.40 0.09 Mtt=-1.10 0.08
Mff= 7.50 0.09 Mrt= 1.36 0.07
Mrf=-1.67 0.08 Mtf=-0.12 0.09
Principal Axes:
T Val= 7.71 Plg= 7 Azm= 88
N -0.80 13 357
P -6.90 76 206
Best Double Couple:Mo=7.3*10**18
NP1:Strike=192 Dip=40 Slip= -70
NP2: 347 53 -106

PT08	4.77	205	iP	18	00.80	0.4
NNA	4.92	208	iPc	18	03.00	0.9
	0.7s		513.70nm			
			i	18	05.00	
			e(S)	18	58.00	
PT10	5.06	209	eP	18	08.00	4.1X
			e(S)	19	03.00	
PT10	5.06	209	eP	18	03.00	-0.9
			e(S)	19	03.00	
PT06	6.43	196	eP	18	21.40	-0.9

CAYA	8.43	335	Pg	18	50.20	0.6	TACH	26.10	173	iPd	22	10.60	0.5	MWC	58.60	318	eP	26	32.00	-0.2
QUR	8.45	331	eP	18	50.10	0.4	PCH	26.12	173	iPd	22	11.00	0.6				e	27	10.00	
			eS	20	04.20		DTMT	26.17	30	eP	22	08.11	-2.8	PAS	58.63	318	ePd	26	31.74	-0.5
COTA	8.81	334	Pn	18	55.70	1.1	DPMT	26.17	30	eP	22	08.78	-2.1				ec	26	36.04	
			Pg	18	58.30		LNV	26.35	174	iPd	22	12.00	-0.3				epPc	27	09.15	160kmX
PSO	9.22	342	eP	18	59.00	-0.9	BBL	26.36	29	eP	22	10.09	-2.5				esP	27	22.22	
ARE	9.24	162	eP	19	00.00	-0.2	CHCH	26.41	173	iPc	22	13.00	0.0				ePPP	29	38.17	
PURC	10.07	349	eP	19	10.79	-0.5	PORP	26.66	17	P	22	14.30	-1.0				e	31	01.37	
ZOBO	10.59	145	Pd	19	16.60	-1.5	PAG	26.70	28	eP	22	14.02	-1.7				epPcS	32	00.00	
SALC	10.77	348	eP	19	19.85	-0.2	DOG	26.73	28	eP	22	14.10	-1.9				eS	34	27.68	
LPB	10.81	145	Pd	19	20.50	-0.4	MGG	26.77	29	eP	22	13.74	-2.6				esS	35	27.27	
DIAC	10.99	351	ePd	19	24.07	1.1	LRS	26.83	16	P	22	15.70	-1.2				eSS	38	42.00	
CNCB	11.10	146	P	19	23.80	-1.1	SJG	26.86	18	eP	22	16.20	-1.0				esSS	39	30.00	
HOQC	11.24	349	ePd	19	26.38	0.0	CPD	26.86	18	P	22	18.50	1.3				eSSS	41	32.00	
ANCC	11.33	348	ePd	19	28.19	0.8	BAO	27.09	109	eP	22	18.00	-1.4	SBB	58.73	319	eP	26	31.00	-1.9
CLMC	11.63	350	eP	19	32.33	1.0	LPR	27.13	18	P	22	20.50	0.9				e	27	10.00	
HOBC	12.02	352	iPd	19	37.59	1.1	BDF	27.18	109	ePc	22	20.01	-0.2	CLC	59.27	320	eP	26	35.00	-1.6
BOG	12.18	2	iP	19	42.00	3.3X	DEG	27.24	29	eP	22	16.85	-3.7X				e	27	15.00	
FUQ	13.03	3	iP	19	53.00	3.2X	SKI	27.38	25	eP	22	15.55	-6.2X	DUG	59.29	326	P	26	36.00	-0.8
ANT	16.45	167	iP	20	32.50	0.3	BPA	27.50	27	eP	22	18.39	-4.6X	BW06	59.48	331	P	26	36.40	-1.7
YJA	16.84	150	ePc	20	34.80	-2.6	RFA	27.57	169	ePd	22	23.20	-0.3				pP	27	02.00	104kmX
SDV	16.84	13	eP	20	37.00	-0.3	ANG	27.61	27	eP	22	18.69	-5.2X	ISA	59.74	319	eP	26	40.00	0.2
UPA	17.26	343	iP-	20	44.40	2.3	TPX	28.51	322	(P)	22	35.50	3.5X				e	27	19.00	
	1.0s	300.00nm			5.6mb		BAA	30.60	154	P	22	50.00	-0.3	ABL	59.75	318	P	26	40.80	0.7
			i	24	06.00					S	27	40.00		RKT	59.95	248	iP	26	42.00	0.6
TOV	17.92	15	eP	20	50.00	0.2	OXX	32.98	318	(P)	23	13.50	2.0		1.2s	575.00nm			6.4mb	
SLA	19.04	154	ePc	21	02.20	0.4	IISM	34.79	320	(P)	23	30.00	3.3X				epP	27	25.00	186kmX
OLLA	19.12	24	iPd	21	02.00	-0.6	IIT	35.41	319	(P)	23	35.50	3.2X	SYP	60.06	317	eP	26	44.00	1.8
MORO	19.37	18	eP	21	05.00	-0.2	PPM	35.66	318	(P)	23	37.50	2.9				e	27	21.00	
BUS	19.43	331	eP	21	06.20	0.0	III	35.73	317	(P)	23	37.50	2.6	BLP	60.37	317	P	26	43.10	-0.9
FISA	19.45	15	iP	21	05.20	-0.8	CRX	36.59	318	(P)	23	46.00	3.7X	BCH	60.52	318	P	26	44.50	-0.7
CAR	19.52	23	eP	21	06.00	-0.7	PRM	42.16	350	P	24	27.00	-0.7	RSON	60.59	346	P	26	42.20	-3.0X
LLAV	19.53	23	eP	21	08.00	1.1	GBTN	44.03	349	P	24	41.00	-1.9		0.8s	324.52nm			6.3mb	
SJS	19.90	331	ePd	21	12.10	1.4	RSCP	44.26	347	P	24	43.00	-1.8				pP	27	20.00	160kmX
SRA	20.21	330	eP	21	15.20	1.3		0.8s	621.79nm			6.3mb		FRI	61.33	320	eP	26	47.70	-2.8
CUM	20.69	30	iP	21	18.20	-0.3				pP	25	20.00	168kmX				e	26	55.40	
			iS	25	04.60		PWLA	44.29	344	P	24	42.30	-2.6	PRI	61.46	318	eP	26	50.00	-1.5
TPP	22.04	36	eP	21	33.87	2.1	BLA	44.95	353	P	24	49.60	-0.6	KVN	61.59	322	P	26	50.60	-1.9
			eS	25	32.18		CVL	45.53	356	P	24	54.20	-0.5	PRS	62.03	318	eP	26	54.00	-1.2
TCE	22.17	35	eP	21	34.76	1.7	NA2	45.62	356	P	24	55.30	-0.1	CMB	62.38	320	eP	26	56.10	-1.5
			eS	25	32.76		UYO	45.68	337	iPd	24	55.20	-0.8				epP	27	36.50	172kmX
CYA	22.26	159	ePc	21	34.20	0.3	OLY	45.80	341	P	24	54.20	-2.7				eP'P'	56	07.00	
TRN	22.33	36	eP	21	35.55	1.0	PRIN	47.76	360	P	25	16.20	4.1X	SCH	62.55	5	iPc	26	56.70	-1.6
			eS	25	35.00		PNJ	48.30	0	iP	25	18.40	2.2		0.8s	292.00nm			6.3mb	
TBH	22.40	37	eP	21	37.92	2.7				(pP)	25	51.80	147kmX	GCC	62.84	318	eP	26	59.40	-1.1
			eS	25	37.78		CLE	49.31	353	iP	25	24.50	0.5	BKS	63.48	319	iPc	27	04.20	-0.5
RTRS	22.91	169	iPd	21	42.00	1.9	ACO	49.81	334	iPc	25	27.70	-0.3		0.9s	87.00nm			5.7mb	
PIG	23.07	36	eP	21	43.71	2.0	DHN	50.33	356	P	25	30.80	-1.0				e	27	09.20	
			eS	25	47.21		DLA	50.66	353	P	25	33.95	-0.4	BKS	63.48	319	ePd	27	12.50	7.8X
BOT	23.14	36	eP	21	43.86	1.4	LDN	50.80	354	P	25	32.80	-2.5				eS	35	35.00	
			eS	25	49.70		ELF	50.96	354	P	25	35.10	-1.5				e	36	41.50	
GRW	23.42	33	eP	21	45.05	-0.2	HBVT	51.76	1	P	25	42.70	0.1				eScS	37	17.50	
			eS	25	49.00		RSNY	51.94	360	P	25	44.80	0.9	BRK	63.49	319	eP	27	03.50	-1.3
RTLL	24.23	167	iPc	21	53.00	0.1				pP	26	20.00	153kmX	ORV	63.99	321	eP	27	06.20	-1.8
RTCB	24.32	168	iPd	21	53.80	0.0	ANMO	52.02	326	iPd	25	44.61	-0.3				eP'P'	56	01.20	
RTBS	24.36	170	ePc	21	55.50	1.5				e	25	48.41		CVVD	64.97	55	P	27	14.00	-0.6
ZON	24.40	168	eP	21	54.00	-0.5				epPc	26	21.52	162kmX	WDC	65.23	321	eP	27	12.90	-3.1X
CFA	24.55	167	ePd	21	55.80	-0.1				esP	26	35.76					epP	27	56.80	187kmX
SVB	24.56	32	eP	21	54.98	-1.1				e	28	37.81					eP'P'	55	58.60	
			eS	26	05.53					eS	32	57.79		TBT	65.34	54	P	27	16.00	-0.9
SVV	24.62	32	eP	21	55.01	-1.6				esS	33	56.39					e	27	53.20	
			eS	26	06.12					eSS	36	27.18		SES	65.91	335	iPd	27	18.80	-1.4
SSV	24 64	32	eP	21	55.30	-1.6	BNH	52.06	3	P	25	45.00	0.2		0.8s	392.00nm			6.4mb	
			eS	26	06.20		EMM	52.50	6	P	25	48.40	0.4				pP	27	57.00	160kmX
SOA	24.70	32	eP	21	58.60	1.3	MIM	52.86	5	P	26	00.80	10.2X	FHC	66.26	321	eP	27	21.90	-0.7
			eS	26	08.30		GLD	55.06	331	P	26	06.90	-0.2	FFC	66.26	343	iPd	27	20.70	-1.6
RTCV	24.73	168	ePd	21	58.50	0.9		1.2s	252.53nm			5.9mb			0.7s	132.00nm			5.9mb	
SLB	25.14	32	eP	21	59.31	-2.1				pP	26	46.10	171kmX				pP	28	03.00	179kmX
			eS	26	17.61		GOL	55.10	331	P	26	06.30	-1.2	CTFE	66.59	55	P	27	24.90	0.0
JACH	25.18	172	iPc	22	03.10	1.3		1.0s	207.50nm			5.9mb		GGC	66.96	55	P	27	29.00	1.7
TCA	25.32	160	iPc	22	01.00	-2.1				pP	26	48.00	183kmX	DPW	67.38	330	P	27	29.40	-0.2
BDH	25.43	36	eP	22	05.70	1.6	GLA	55.76	319	eP	26	11.00	-1.1	CFTV	68.34	55	P	27	35.00	-0.8
ITB1	25.59	134	eP	22	03.30	-2.2	IKP	56.35	318	eP	26	22.60	6.2X				e	28	13.50	
MDZ	25.66	169	eP	22	05.00	-1.2	BAR	56.75	317	eP	26	19.00	-0.1	EDM	68.99	336	iPd	27	37.70	-1.7
			i	22	46.30		BAR	56.75	317	eP	26	24.90	5.8X				pP	28	16.00	159kmX
BIM	25.70	31	eP	22	05.64	-1.0	CPE	57.16	317	eP	26	27.90	6.0X	PNT	69.04	330	ePd	27	39.00	-0.7
ITB	25.81	134	eP	22	04.90	-2.6	TPC	57.21	319	eP	26	21.00	-1.3	PGC	70.57	328	ePc	27	50.20	1.2
MVM	25.82	31	eP	22	04.62	-3.1X				e	27	02.00			1.0s	436.00nm			6.2mb	
FDF	25.84	31	eP	22	05.04	-2.9	TPC	57.21	319	eP	26	28.50	6.2X	LIC	70.61	81	P	27	47.80	-2.1
	0.3s	8.30nm			4.8mb X		PLM	57.28	318	eP	26	22.80	-1.0	LKO	70.69	77	Pc	27	49.38	-1.0
			S	26	43.50		PEC	57.81	318	P	26	25.80	-0.7	TIC	70.69	80	P	27	48.46	-2.0
LCCH	25.86	174	iPc	22	08.00	0.2	AIA	57.97	175	eP	26	22.00	-5.1X		0.9s	455.50nm			6.3mb	
FCH	25.86	172	iPd	22	08.90	0.6	RVR	58.01	318	eP	26	27.00	-0.9	KIC	70.91	81	Pc	27	49.82	-1.9
SAN	25.93	173	eP	22	09.00	0.4				e	27	10.00					S	36	51.00	
MRA	25.96	163	ePd	22	08.00	-0.8	RVR	58.01	318	eP	26	33.70	5.8X	FRB	71.32	3	eP	27	51.00	-2.1
CRM	25.98	31	eP	22	05.93	-3.2X	GSC	58.44	320	eP	26	29.00	-2.0		0.7s	228 00nm			6.1mb	
ITB7	26.03	134	eP	22	06.70	-2.9				e	27	08.00		RUV	71.62	257	iP	27	56.00	0.2

03d 14h

	1.3s	770.00nm		6.3mb		ECHE	82.30	48	eP	28	56.50	1.8		RSP	89.55	44	P	29	30.14	-0.1
		ipP	28	38.20	175kmX	ACU	82.42	50	eP	28	56.20	0.9		DBN	89.65	37	eP-	29	32.00	1.7
VAH	71.85	256 iP	27	57.40	0.2	SPA	82.42	180	iPd	28	55.40	0.4					epP	30	09.00	145kmX
	1.3s	440.00nm		6.0mb			1.1s	245.24nm			5.9mb						iS	39	48.00	
		ipP	28	39.30	174kmX	Z	20s	3.11um			5.7Msz						e	40	15.00	
TPT	71.86	257 iP	27	57.50	0.2	ECP	82.89	35	eP	28	57.70	0.4		IMI	89.76	46	P	29	30.55	-0.6
	1.3s	770.00nm		6.3mb		ETA	83.17	35	eP	28	59.40	0.6		BSF	89.76	42	eP	29	30.80	-0.3
		ipP	28	39.60	175kmX	DLE	83.21	34	eP	28	58.50	-0.4			1.1s	63.40nm			5.6mb	
PMO	72.12	257 iP	27	59.10	0.3		0.5s	65.00nm			5.7mb			ENN	89.81	39	ePc	29	31.00	-0.1
	1.3s	770.00nm		6.3mb		DLE	83.21	34	eP	29	06.40	7.5X			0.9s	188.00nm			6.1mb	
		ipP	28	41.30	175kmX		0.4s	42.00nm			5.6mb						epP	30	10.50	156kmX
TVO	73.27	254 iP	28	06.20	0.6	EROQ	83.66	47	eP	29	02.50	1.0					e	40	12.00	
	1.3s	455.00nm		6.0mb		EBR	83.72	48	eP	29	04.00	2.2		ROB	89.82	45	P	29	31.48	0.1
		ipP	28	48.20	174kmX				e	32	51.00			COL	89.89	336	eP	29	30.91	-0.3
TBI	73.28	248 eP	28	18.00	12.5X				iS	39	12.00						e	29	34.56	
	1.1s	270.00nm				AKU	83.84	20	iP	29	04.00	2.1					epPc	30	10.81	157kmX
		epP	28	57.00	160kmX		1.4s	623.26nm			6.2mb						ePP	32	54.01	
PPN	73.46	254 iP	28	06.80	0.2				e	29	41.80						epPP	33	44.77	
	1.3s	225.00nm		5.7mb		EPF	84.21	45	eP	29	04.80	0.5					esPP	34	02.15	
PAE	73.59	254 iP	28	07.80	0.4		1.2s	325.40nm			6.0mb						eS	40	11.55	
	1.3s	525.00nm		6.1mb		LPF	84.72	40	eP	29	06.10	-0.5					esS	41	13.90	
		ipP	28	49.60	172kmX	MFF	84.88	42	eP	29	07.30	-0.2					e	42	19.72	
PPT	73.59	254 iP	28	08.10	0.7	GRR	84.94	40	eP	29	07.60	-0.1		FBA	89.89	336	P	29	30.50	-0.7
	1.3s	580.00nm		6.1mb		LFF	85.01	44	eP	29	08.10	-0.1			0.9s	233.33nm			6.2mb	
		ipP	28	50.00	173kmX	ESEL	85.23	49	eP	29	10.00	0.6		DAG	89.98	11	iP-	29	33.00	1.6
AFR	73.79	254 iP	28	08.90	0.4	LPO	85.25	44	eP	29	09.30	-0.1		FIN	90.04	46	P	29	30.64	-1.7
		ipP	28	50.90	173kmX	FLN	85.29	40	eP	29	09.10	-0.4		KDC	90.06	328	P	29	33.40	1.3
TIO	74.77	55 iP	28	15.00	0.8		1.2s	185.90nm			5.8mb			POF	90.12	120	iPd	29	34.00	0.9
		i	28	54.50		EAB	85.46	32	ePc	29	10.60	0.4			0.5s	28.17nm			5.6mb	
WIGH	74.78	82 eP	28	12.50	-1.9	LDF	85.47	40	eP	29	09.80	-0.6		CKI	90.13	45	Pc	29	32.80	0.0
		e	37	34.70		RJF	85.64	43	eP	29	11.20	-0.1					epP	30	09.20	142kmX
WEGH	75.11	82 eP	28	14.00	-2.2	ESK	85.76	33	ePd	29	12.00	0.3		ORO	90.14	44	P	29	32.50	-0.4
		e	37	38.30			1.0s	80.00nm			5.5mb			ORX	90.14	44	P	29	32.40	-0.5
KUK	75.16	82 eP	28	14.50	-2.1	EKA	85.79	33	Pc	29	10.90	-0.9		CDF	90.20	41	eP	29	32.20	-0.9
		e	37	34.00			1.3s	114.00nm			5.5mb				1.0s	92.00nm			5.8mb	
LEGH	75.26	82 eP	28	15.00	-2.1	EAU	85.81	32	eP	29	12.10	0.2		PCP	90.34	45	P	29	33.83	0.1
KOGH	75.27	82 eP	28	16.00	-1.2		0.6s	67.00nm			5.6mb			WTS	90.61	38	ePc	29	34.50	-0.2
		e	37	37.00		ETER	85.81	47	eP	29	14.00	1.8			0.9s	200.00nm			6.2mb	
AVE	75.42	53 iP	28	17.80	0.1	ELO	85.89	32	ePd	29	12.20	-0.1					epP	30	12.50	149kmX
TEGH	75.44	82 eP	28	17.00	-1.1	LSF	85.90	42	eP	29	12.50	-0.1					e	40	41.00	
		e	37	42.70		CAF	85.91	44	eP	29	12.60	-0.1		WIT	90.69	37	eP	29	37.00	1.9
SHGH	75.44	82 eP	28	17.00	-1.1	EBH	85.92	32	eP	29	10.60	-1.8					epP	30	15.00	149kmX
		e	37	42.60		EBL	86.00	32	ePd	29	13.20	0.3					e	40	42.00	
IFR	77.30	53 iP	28	30.00	1.7	INK	86.16	341	iPd	29	12.20	-1.2		VAI	90.73	44	P	29	35.60	0.2
EVAL	77.38	49 eP	28	30.00	1.6		0.7s	178.00nm			6 0mb						epP	30	15.00	155kmX
EZAM	77.62	44 eP	28	30.00	0.3				pP	29	53.00	162kmX		BOB	91.01	45	P	29	37.50	0.6
STS	78.00	43 eP	28	31.50	-0.2	DWY	86.21	336	P	29	13.10	-0.7		STU	91.51	41	ePc	29	38.00	-1.0
GDH	78.07	7 ePd	28	33.00	1.5	EDU	86.28	32	iPd	29	14.20	0.0			1.2s	62.50nm			5.6mb	
	0.6s	33.33nm		5.2mb		ESY	86.28	32	ePd	29	14.60	0.4			Z 20s	4.26um			5.9Msz	
		i	28	36.00			0.7s	73.00nm			5.6mb			PII	91.60	46	P	29	39.90	0.4
		i	29	10.00		TCF	86.36	43	eP	29	14.50	-0.4					epP	30	19.90	157kmX
		i	29	14.00			1.2s	90.40nm			5.5mb			BDI	91.71	46	Pc	29	38.80	-1.3
		iS	38	10.00		MAF	86.58	43	eP	29	15.80	-0.1		SAL	91.90	44	P	29	40.50	-0.3
		i	38	55.00		EDR	86.65	31	eP	29	16.30	0.3		FIR	92.14	46	eP	29	42.00	0.0
		i	43	30.00		BGF	86.86	42	eP	29	17.10	-0.1					eS	40	12.00	
EHOR	78.58	49 eP	28	35.00	0.0	AVF	87.25	42	eP	29	18.70	-0.4		OGA	92.43	43	iPKPd	29	44.10	0.5
EPLA	78.71	47 e(P)	28	36.00	0.2		1.0s	46.00nm			5.4mb			PGD	92.48	46	P	29	43.60	-0.2
ERUA	78.78	44 eP	28	36.80	0.8	SSF	87.42	42	eP	29	19.50	-0.4		IMA	92.57	336	P	29	42.90	-0.8
EMON	79.03	43 eP	28	37.00	-0.4		1.2s	60.60nm			5.4mb			SFI	92.58	46	P	29	44.00	0.0
ALOJ	79.21	50 iPd	28	39.50	0.8	SMF	87.54	42	eP	29	20.10	-0.4		CRE	92.62	47	P	29	43.50	-0.8
ATEJ	79.22	50 iPc	28	39.50	0.8	MBC	87.71	350	ePd	29	21.00	0.3		CTI	92.74	44	Pc	29	44.20	-0.7
ACHM	79.42	50 iPc	28	40.40	0.7		0.8s	137.00nm			6.0mb						epP	30	23.40	154kmX
APHE	79.48	50 iPc	28	40.50	0.4				pP	30	00.50	156kmX		TTA	92.90	333	P	29	45.50	0.3
ASMO	79.56	50 iPc	28	40.60	0.1	LBF	87.71	42	eP	29	20.80	-0.6		RMP	92.92	48	P	29	46.50	0.8
AFC	79.68	50 eP	28	41.50	0.3		1.0s	44.00nm			5.4mb			RDP	92.92	48	P	29	46.80	1.1
EBAN	79.78	49 eP	28	42.50	1.0	SBA	88.41	191	Pc-	29	25.80	1.6		MNS	92.98	48	P	29	46.40	0.4
TAF	79.84	53 iP	28	44.00	2 0	LRG	88.58	46	eP	29	25.70	0.2					epP	30	25.50	153kmX
		i	29	20.00			0.8s	41.90nm			5 5mb			ARV	93.31	47	Pc	29	49.00	1.6
TOL	80.13	47 eP	28	43.21	-0.1	LMR	88.66	46	eP	29	25.90	0.0		MOX	93.36	40	ePc	29	48.50	1.0
	1.2s	500.00nm		6.1mb			0.8s	68.20nm			5.7mb				1.9s	142.00nm			5.9mb	
		epPc	29	20.63	150kmX	FRF	88.81	46	eP	29	26.10	-0.5			Z 16s	2.00um			5.7MszX	
		e	32	29.98			0.8s	70.90nm			5.7mb				N 18s	2.10um				
		iS	38	37.24		BNI	89.13	44	P	29	29.30	1.0			E 18s	1.90um				
		ePS	39	33 00		RRL	89.18	45	P	29	29.32	0 7					epP	30	27.00	151kmX
		isS	39	40.00		LPG	89.27	44	eP	29	29.20	0.1					iSKS	40	10.00	
		eSS	42	55.00			1.0s	168.70nm			6.0mb						eS	40	45.00	
GUD	80.29	47 eP	28	45.00	0.7	PZZ	89.32	45	P	29	28.81	-0.4		BCAO	93.54	86	eP	29	48.16	-1.0
VAL	80.60	34 iP	28	46.00	0.6	DOI	89.42	45	P	29	30.00	0.4					e	29	51.96	
		S	38	32.00					epP	30	10.00	158kmX					epPc	30	26.56	150kmX
ENIJ	80.61	51 eP	28	46.00	0.1	STV	89.42	45	P	29	30.04	0.4					ePP	33	46.84	
SIT	81.19	331 P	28	47.80	-0.6	SBF	89.43	46	eP	29	29.20	-0.4					epPP	34	21.05	
	1.0s	70.00nm		5.3mb		PMR	89.46	333	P	29	28.20	-1.0		FVI	93.59	44	P	29	49.30	0.7
EALH	81.47	50 eP	28	51.00	0.6		0.9s	158.33nm			6.0mb						epP	30	24.80	138kmX
REY	81.62	21 iP	28	52.80	2.3	ENR	89.49	45	P	29	29.63	-0.3		MNO	93.97	52	P	29	51.60	0.8
		i	29	31.00		HAU	89.51	42	eP	29	29.60	-0.2		KBA	94.03	43	iPd	29	51.10	0.2
ETOR	81.86	47 eP	28	53.00	0.5		1 0s	41 60nm			5 4mb				1.5s	128.00nm			5.9mb	
ECRI	82.08	45 eP	28	55.00	1.5	LSD	89.54	44	P	29	30.45	0.1					i	29	57.40	

			ipP	30 35.10	175kmX
			i	33 39.60	
			eSKS	40 18.00	
			eS	41 04.00	
TRI	94.16	45	eP	29 52.50	1.3
			e	30 50.00	
			ePP	33 46.00	
			e(SKS)	40 13.00	
			e(SS)	47 43.00	
			e	51 24.00	
			eLR	01 42.00	
VOY	94.29	44	eP	29 51.70	-0.3
CLL	94.31	39	iPd	29 52.90	1.1
	2.2s		135.00nm		5.8mb
Z	18s		2.50um		5.7Msz
			epP	30 29.00	140kmX
			eSKS	40 15.00	
			PKKP	46 57.00	
KHC	94.43	41	iPc	29 54.00	1.5
	1.5s		44.50nm		5.5mb
Z	16s		1.80um		5.6MszX
N	16s		1.30um		
E	16s		1.50um		
			e	30 31.00	
			S	40 14.00	
NB2	94.52	29	P	29 52.60	-0.1
	0.9s		62.70nm		5.9mb
CEY	94.63	45	eP	29 54.50	1.0
HVD	94.64	122	iPc	29 40.00	-14.1X
	1.0s		120.00nm		
KMR	94.67	42	iP-	29 55.00	1.4
			i	30 24.00	
			i	33 30.90	
SGO	94.73	50	P	29 54.50	0.6
LJU	94.73	44	eP	29 55.00	1.1
BRG	94.85	39	eP	29 55.40	1.1
	2.0s		110.00nm		5.8mb
N	20s		4.50um		
E	20s		2.50um		
			e	30 23.10	
			ipP	30 35.60	158kmX
			iSKS	40 18.00	
			eS	41 00.00	
			i	42 09.00	
			i	46 16.00	
			ePKKP	46 51.00	
			e	46 56.20	
			e	47 29.00	
MGR	94.87	50	P	29 55.00	0.3
PRU	95.14	40	P	29 57.00	1.3
Z	17s		2.10um		5.7MszX
			e	30 33.50	
			PP	33 00.00	
			S	40 18.00	
VBY	95.18	45	eP	29 57.20	1.2
AFI	95.23	255	e(P)	30 05.00	8.2X
			e	41 12.00	
			e	44 20.00	
CSI	95.40	51	P	29 57.20	0.1
TDS	95.42	51	P	29 57.10	-0.1
			epP	30 40.20	171kmX
ROI	95.59	51	P	29 57.80	-0.3
HFS	95.64	30	eP	29 58.00	0.3
	0.7s		33.90nm		5.8mb
Z	18s		1.61um		5.5Msz
			LR	04 42.00	
PTJ	95.71	45	eP	29 59.60	1.1
ZAG	95.72	45	eP	30 01.00	2.6
			iS	40 22.00	
HVAR	95.82	47	eP	29 59.10	0.2
VKA	96.15	42	iPc	30 01.40	1.1
	3.5s		392.00nm		6.2mb X
			ipP	30 40.50	153kmX
			LR	07 56.00	
SOP	96.27	43	iP	30 02.90	2.1
KSP	96.33	40	iPc	30 02.60	1.5
	1.0s		33.00nm		5.7mb
			ic	30 42.00	
			e	33 13.50	
ZST	96.67	42	iP	30 02.60	0.0
			i	30 04.90	
			i	30 43.60	
KBS	96.74	11	eP	30 08.60	6.2X
KSR	96.81	117	iPc	30 03.20	-0.8
	1.0s		35.00nm		5.7mb
			i	33 58.50	
SEK	96.93	120	iPc	30 04.30	-0.2

	1.0s		50.00nm		5.9mb
PRY	97.10	118	iPd	30 05.30	0.0
	0.9s		11.54nm		5.3mb
			i	34 01.50	
SRO	97.46	43	eP	30 06.40	0.2
UPP	97.59	31	iP	30 08.50	2.0
	1.5s		200.00nm		6.4mb
			i	30 45.30	
			iS	40 28.00	
BUD	97.92	43	eP	30 09.00	0.7
SLR	98.06	117	iPd	30 09.10	-0.5
	1.0s		40.00nm		5.9mb
Z	18s		7.56um		6.2Msz
PSZ	98.52	43	eP	30 11.00	-0.1
SPC	98.79	41	eP	30 14.60	2.1
BEO	98.81	46	eP	30 13.80	1.5
			iS	40 37.80	
OHR	98.92	50	ePDIF	30 14.30	1.2
	1.6s		0.10nm		3.1mb X
			e	30 23.70	
			eSKS	40 37.20	
MAW	99.06	165	eP	30 13.00	-0.2
SKO	99.43	49	ePDIF	30 15.50	0.2
			i	40 55.00	
BUL	99.53	112	iPd	30 31.20	14.8X
	1.0s		8.50nm		
			iPP	34 33.50	
			iS	41 00.20	
			e	53 11.00	
LSZ	100.07	107	iPdiff	30 20.40	1.4
			i	31 06.00	
			i	34 24.20	
VAY	100.26	49	ePdiff	30 22.00	2.9X
			iSKS	40 43.40	
SNZO	100.30	226	Pdiff	30 24.00	4.7X
			PP	34 28.00	
			SKS	40 52.00	
			SKS	41 52.00	
			SP	43 28.00	
KEV	101.08	20	ePdiff	30 23.00	0.9
NUR	101.09	30	ePdiff	30 27.00	4.7X
SOD	101.27	23	iPdiff	30 23.40	0.5
SUF	101.61	28	ePdiff	30 25.40	0.9
MLR	102.69	45	ePdiff	30 31.50	1.5
LWI	102.83	94	ePdiff	30 34.00	2.6X
VRI	103.22	45	ePdiff	30 18.50	-13.7X
ITU	105.13	50	ePdiff	30 44.00	3.3X
ELL	106.03	54	ePKP	34 42.00	-14.7X
ALT	106.08	52	ePKP	34 55.00	-1.7
BBTK	108.07	51	ePKP	35 00.00	-0.4
AYN	111.55	62	ePKP	35 08.70	1.6
MSL	116.65	53	ePKP	35 13.50	-3.2X
			epP	37 01.00	
			eS	41 57.00	
BHD	118.21	56	ePKPc	35 20.00	0.3
			eS	42 03.00	
			esS	43 17.00	
QASM	118.43	65	ePKP	35 21.70	1.2
SLY	118.68	54	ePKPc	35 20.00	-0.6
			epP	36 03.00	
			esP	37 12.00	
			eS	42 02.50	
			esS	43 21.00	
			eLg	46 02.00	
TAB	118.78	51	e(PKP)	35 38.00	17.1X
CNB	120.60	221	iPKPc	35 25.80	1.4
CAN	120.83	221	ePKP	35 25.60	0.8
			e	36 12.00	
RYD	121.34	66	ePKPc	35 27.00	1.0
COO	121.55	227	ePKP	35 27.00	0.7
TOO	121.58	217	ePKP	35 26.00	-0.1
			e	35 27.00	
BWA	121.75	221	ePKP	35 26.10	-0.4
BRS	122.55	231	iPKPc	35 29.00	0.7
	1.0s		5.50nm		
			i	36 11.00	
BFD	123.57	215	ePKP	35 30.00	0.1
CMS	125.27	223	iPKPc	35 34.00	0.6
	0.8s		44.00nm		
			e	35 39.00	
			e	36 16.50	
RMO	126 08	229	ePKP	35 35.00	-0.2
			e	35 36.50	
			e	36 18.00	
ADE	127.32	214	iPKPc	35 37 10	-0.2
	1.0s		86.00nm		
STK	127.77	219	ePKP	35 37.70	-0.5

			i	35 39.20	
			e	35 44.60	
			e	36 19.00	
MAIO	129.31	49	ePKP	35 41.00	-0.1
			i	36 24.00	
			i	38 49.00	
			e	48 34.00	
QLP	129.35	226	ePKP	35 41.00	-0.3
KUSJ	130.75	322	ePKP	35 43.10	-0.4
ASAJ	131.37	325	PKP	35 45.70	1.1
CTA	131.39	235	iPKPc	35 44.80	-0.6
	1.2s		225.00nm		
			i	36 28.30	
			i	38 03.80	
			i	38 44.90	
			i	39 13.00	
			i	39 54.60	
			iS	46 00.00	
HOOJ	132.02	322	ePKP	35 46.90	1.0
RAB	132.02	257	ePKP	35 46.00	-0.8
MRRJ	133.31	324	ePKP	35 48.70	0.4
OFUJ	134.91	320	PKP	35 50.60	-0.9
PMG	135.22	248	ePKP	35 53.00	0.2
FORR	136.05	208	ePKP	35 42.00	-11.9X
QIS	136.34	229	e(PKP)	35 44.00	-10.8X
			i	35 54.10	
			i	36 37.00	
YAMJ	136.48	320	PKP	35 47.10	-7.4X
HIA	136.82	346	ePKPd	35 54.91	0.0
			epPKP	36 35.96	
			ePP	38 34.80	
			iSKP	39 13.21	
RKG	137.13	194	ePKP	35 51.00	-4.9X
KAKJ	137.50	317	ePKP	35 50.80	-5.7X
NWAO	138.16	195	ePKP	35 50.00	-7.9X
ASPA	138.34	221	ePKP	35 45.00	-13.5X
	0.9s		173.00nm		
			e	36 41.20	
			ePKS	39 32.60	
			e	40 14.10	
CHJJ	138.38	318	ePKP	35 49.90	-8.3X
MAT	138.61	319	ePKP	35 47.00	-11.6X
Z	20s		1.77um		5.8Msz
MTMJ	138.85	319	ePKP	35 49.20	-9.9X
COOL	138.89	201	ePKP	35 50.00	-9.3X
MUN	139.32	194	ePKP	35 51.00	-9.0X
IIDJ	139.42	318	ePKP	35 53.80	-6.3X
BAL	140.50	195	ePKP	35 54.00	-8.2X
WB2	140.57	226	ePKP	35 54.70	-7.9X
			e	35 56.00	
			iPP	36 45.00	
			eSKP	39 03.50	
WARB	140.63	211	ePKP	35 55.00	-7.6X
	0.5s		19.00nm		
GUMO	140.93	282	ePKP	35 53.00	-10.3X
WKYJ	141.70	318	PKP	35 58.30	-6.0X
MRWA	142.01	195	ePKP	35 59.00	-5.9X
YONJ	142.47	321	PKP	36 01.90	-3.6X
TKSJ	142.86	319	PKP	36 02.40	-3.8X
SHK	143.39	321	ePKP	36 04.10	-3.0X
	0.5s		112.68nm		
MEKA	143.70	200	ePKP	36 04.00	-3.9X
	0.3s		29.00nm		
DL2	145.65	337	iPKPd	36 10.00	-0.8
Z	44s		3.90um		5.8MszX
			pPKP	36 50.00	
			ePP	39 33.00	
NDI	146.07	48	iPKPc	36 12.00	0.2
	0.7s		219.18nm		
			eS	46 11.00	
BOM	146.30	67	ePKPd	36 12.10	-0.3
			eS	46 06.10	
BJI	146.35	345	PKP	36 13.10	1.2
	1.4s		360.00nm		
Z	56s		9.00um		6.1MszX
			epPKP	36 53.16	
			ePP	39 35.28	
			epPP	40 14.85	
			eSS	58 00.00	
HHC	146.49	352	ePKP	36 12.80	0.5
			pPKP	36 57.00	
BTO	146.93	354	ePKP	36 13.00	0.1
Z	20s		3.40um		6.1Msz
N	20s		2.02um		
E	18s		1.10um		
			e	36 18.00	
			pPKP	36 50.00	

03d 14h

			PP	39 42.00		
			SS	58 27.50		
POO	147.34	67	iPKPc	36 15.60	1.5	
	0.8s	132.84nm				
MTN	147.44	232	iPKPc	36 14.80	0.5	
			e	36 18.00		
			e	37 03.00		
GTA	147.94	8	ePKP	36 14.40	-0.2	
	Z 25s	3.20um			6.0MszX	
	E 16s	1.10um				
			e	36 24.00		
			pPKP	36 56.00		
			PP	39 50.00		
			SKKS	46 40.00		
MBL	148.13	206	iPKPd	36 15.70	0.4	
	0.4s	84.00nm				
NANU	148.44	198	ePKP	36 17.00	1.3	
	0.4s	87.00nm				
TIY	149.41	349	ePKP	36 16.50	-0.4	
	Z 13s	2.60um			6.2MszX	
	N 17s	2.10um				
TIA	149.65	341	ePKP	36 17.00	-0.2	
	Z 44s	5.10um			6.0MszX	
	N 18s	1.20um				
	E 17s	1.10um				
			pPKP	37 02.00		
			PP	39 51.60		
LZH	151.63	3	ePKP	36 21.61	1.2	
			e	36 33.86		
			ePP	40 05.07		
			epPP	40 44.52		
GKN	151.69	42	PKP	36 20.80	0.1	
GBA	151.76	75	PKP	36 21.00	0.1	
HYB	151.95	67	iPKPc	36 21.00	-0.2	
	1.0s	110.00nm				
			i	37 06.00		
KKN	152.26	41	PKP	36 21.40	-0.2	
DMN	152.26	42	PKP	36 22.40	0.7	
SSE	152.45	330	PKP-	36 21.00	-0.5	
	1.3s	101.00nm				
			pPKP	36 29.40		
			sPKP	36 35.00		
SSE	152.45	330	PKP	36 38.60	17.1X	
	Z 22s	2.10um			5.9Msz	
	E 14s	1.30um				
			i	37 09.50		
			PKS	40 00.00		
			PP	40 11.00		
			i	40 52.00		
			eSKS	43 18.00		
			PPP	43 30.00		
			SS	59 32.00		
PKI	152.49	41	PKP	36 21.80	-0.3	
NJ2	152.72	335	PKPc	36 21.40	-0.4	
	Z 24s	2.30um			5.9MszX	
	N 11s	0.70um				
	E 12s	0.90um				
			PP	40 11.00		
XAN	153.54	354	PKP	36 23.00	0.0	
			PP	40 17.00		
			SKKS	46 52.00		
LSA	154.21	30	iPKPc	36 27.00	2.4X	
	N 12s	1.00um				
	E 10s	1.00um				
WHN	155.76	341	PKPd	36 26.80	0.8	
	9.0s	1.09nm				
	Z 28s	2.56um			5.9MszX	
	E 22s	2.56um				
			e	36 54.00		
			PP	40 27.00		
CD2	156.78	4	PKP	36 28.50	1.0	
			e	37 04.00		
			PP	40 36.00		
			SKKS	47 09.00		
			SS	00 10.00		
ANP	156.82	321	ePKP	36 29.00	1.3	
SHL	157.91	35	ePKP	36 29.00	-0.1	
OZH	158.74	326	PKPd	36 28.00	-1.8	
	8.0s	2.50nm				
	N 20s	9.10um				
			e	37 06.00		
			PP	40 50.00		
			SS	00 31.00		
DAV	160.12	270	ePKP	36 15.00	-16.6X	
GYA	161.25	357	PKP	36 33.40	0.8	
	Z 40s	1.70um				
			pPKP	37 15.00		
			e	37 18.00		
			PP	40 58.00		
			SKKS	47 34.00		
			SS	00 54.00		
KMI	162.40	8	PKPd-	36 35 00	1.1	
	5.0s	1 30nm				
	N 20s	5.00um				
			pPKP	37 19.50		
			sPKP	38 02.00		
			PP	41 05.00		
			SKKS	47 31.00		
GZH	162.90	335	PKP	36 34.00	-0.1	
			PP	41 08.00		
BAG	162.91	302	ePKPd	-36 35.50	1.0	
TSM	167.09	256	ePKPd	36 40.00	2.0X	
CHG	167.17	29	ePKPd	36 38.00	0.0	
	1.3s	75.00nm				
			e	38 25.00		
			eS	48 04.00		
QIZ	167.92	340	ePKP	36 39.20	0.8	
	E 21s	6.30um				
			pPKP	37 17.50		
			e	37 47.00		
			PP	41 32.00		
			SS	02 08.00		
BDT	168.51	33	ePKP	36 40.00	1.2	
	0.5s	29.90nm				
LOE	169.60	21	ePKP	36 40.00	0.5	
			e	38 37.00		
NST	170.41	33	ePKP	36 41.00	1.1	
NNT	172.45	49	ePKP	36 39.20	-1.7	
IPM	174.58	124	ePKPd	36 42.10	0.3	
	1.3s	74.80nm				
			e	37 24.90		
			e	38 19.00		
	S.D. = 1.1	on 411 of 477 obs.				

? DEC 03, 1989 15h 36m 37.92± 1.95s
16.912 S ±23.9km 173.795 W ±35.5km
DEPTH = 192.2 ± 47.0 km
4.5mb (2 obs.)
TONGA ISLANDS (173)

AFI	3.56	33	P	37 34.60	0.0	
			S	38 15.00		
DZM	19.32	251	iPc	40 50.80	0.1	
KRP	22.94	202	eP	41 26.20	0.0	
BRS	32.58	245	iPc	42 53.00	-0.2	
	0.9s	3 00nm			3.9mb	
CTA	37.96	259	iP	43 38.70	-0.1	
WB2	49.13	258	iPd	45 08.20	-0.1	
ASPA	49.30	253	iPc	45 09.80	0.3	
	0.8s	49.00nm			5.1mb	
	S.D. = 0.2	on 7 of 7 obs.				

% DEC 03, 1989 16h 29m 29.66± 0.72s
37.995 N ± 6.5km 1.503 W ± 8.4km
DEPTH = 10.0km (geophysicist)
SPAIN (377)
mbLg 3.2 (MDD). Felt (III) at Alhama Murcia

EALH	0.15	155	iPgd	29 33.50	0.3	
			eSg	29 36.00		
ACU	1.00	59	ePg	29 48.50	-0.2	
			eSg	30 02.00		
ENIJ	1.17	209	ePg	29 51.20	-0.3	
			eSg	30 06.00		
ECHE	1.65	14	ePn	30 00.80	2.0	
			eSn	30 20.50		
EBAN	1 81	276	ePn	30 01 50	0 4	
TOL	2 74	314	ePg	30 20 00	5.6X	
			eSg	30 59 50		
ETOR	2.85	352	ePn	30 16.20	0.1	
			eSn	30 50.00		
EROO	3.19	27	ePn	30 19.20	-1.6	
GUD	3.35	323	ePn	30 22 50	-0.7	
	S.D. = 1.2	on 8 of 9 obs.				

DEC 03, 1989 16h 37m 20.91± 0.69s
43.825 N ± 5.7km 8.650 E ± 4.4km
DEPTH = 11.5 ± 3.2 km
CORSICA (380)
ML 2.7 (GEN). 2 6 (LDG)

FIN	0.50	320	P	37 31 27	0.2	
			S	37 38 25		
IMI	0.56	279	P	37 32.50	0.3	
			S	37 40.81		
CKI	0.66	336	P	37 33.40	-0.5	
			eSg	37 42.90		
PCP	0.72	354	P	37 34.35	-0.7	
			S	37 43.41		
ROB	0.73	310	P	37 35.27	0.1	
			S	37 44.91		
SBF	0.88	273	Pn	37 38.80	1.1	
			Sn	37 50.80		
ENR	0.97	295	P	37 39.78	0.4	
			S	37 52.53		
STV	1.04	294	P	37 40.91	0 4	
			S	37 54.45		
BOB	1.10	31	Pd	37 41.60	0.1	
			eSg	37 56.10		
DOI	1.22	304	P	37 43.90	0.4	
			eSg	37 59.00		
PZZ	1.31	302	P	37 44.60	-0.4	
			S	38 00.94		
BDI	1.43	80	Pc	37 47.30	0.6	
			eSg	38 05.30		
FRF	1.48	260	Pn	37 46.60	-0.8	
			Sn	38 05.00		
LMR	1.63	253	Pn	37 48.60	-1.0	
			Sn	38 08.20		
RSP	1.66	324	P	37 49.17	-0.9	
LRG	1.70	258	Pn	37 50.40	-0.2	
			Sn	38 10.20		
RRL	1.73	310	P	37 51.17	-0.1	
BNI	1.87	312	P	37 53.80	0.6	
			eSg	38 16.00		
LPL	2.18	322	Pn	37 58.00	0.3	
	S.D. = 0.6	on 19 of 19 obs.				

% DEC 03, 1989 17h 06m 16.31± 1.06s
39.262 N ±10.0km 28.811 E ±12.8km
DEPTH = 10.0km (geophysicist)
TURKEY (366)

DST	0.37	338	iPg	06 24.00	0.0	
			eSg	06 31.00		
ALT	1.03	101	ePg	06 35.60	-0.3	
			iSg	06 49.60		
KHL	1.09	149	ePg	06 37.00	0.1	
			eSg	06 50.00		
BNT	1.29	328	ePn	06 40.00	-0.2	
YLV	1.37	18	iPn	06 41.80	0.3	
	S.D. = 0.3	on 5 of 5 obs.				

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* DEC 03, 1989 17h 07m 42.73± 1.76s
9.421 N ±12.0km 84.012 W ±16.9km
DEPTH = 33.0km (normal)
COSTA RICA (78)
MD 4.0 (SJR). Felt (II) at San Jose and Toponti.

BUS	0.28	62	iPd	07 51.08	0.3	
LCR2	0.32	2	iPd	07 51.20	0.2	
SJS	0.52	355	iPd	07 53.40	-0.3	
			S	08 01.90		
LIO	1.12	59	iPd	08 02.20	0.0	
ACR	1.13	133	iP	08 02.40	0.1	
UPA	4.44	95	ePd	08 49.20	-0.4	
	S.D. = 0.4	on 6 of 6 obs.				

& DEC 03, 1989 17h 34m 53.00s
39.707 N 110.702 W
DEPTH = 3.4km
UTAH (478)
<SLC-P>. MD 2.8 (SLC).

EMUT	0.14	321	P	34 56.32	0 4	
CMU	0.54	173	P	35 03.69	-0.1	
DAU	0.82	329	eP	35 09.20	-0.2	
MSU	1.65	224	eP	35 22.40	-0.8	
DUG	1.69	287	eP	35 24.20	0.5	
PV09	1.72	134	eP	35 24.50	0.3	
BW06	3.19	15	eP	35 46.30	1.2	
GOL	4.11	88	eP	36 00.50	2.2	
TNP	5.34	254	eP	36 27.00	11.3	
KVN	5.77	266	eP	36 18.00	-3.8	
	10 obs. associated					

& DEC 03, 1989 18h 24m 03.26s
59.399 N 144.752 W
DEPTH = 10.0km (geophysicist)

GULF OF ALASKA (15)
<AGS-P>.

RAGM	0.99	2	iP	24 18.40	-3.7
			eS	24 32.00	
SGAM	1.13	348	eP	24 20.60	-3.8
			eS	24 34.94	
SNH	1.25	50	eP	24 22.42	-4.0
			eS	24 38.93	
CVA	1.26	337	iP	24 22.23	-4.3
			eS	24 38.70	
HIN	1.33	319	iP	24 23.63	-4.2
			eS	24 39.56	
WAX	1.42	41	iP	24 24.70	-4.5
			eS	24 41.51	
BALM	2.04	35	iP	24 32.80	-5.3
			eS	24 54.80	

7 obs. associated

? DEC 03, 1989 18h 29m 28.54± 5.11s
16.478 S ±79.6km 73.813 W ±42.0km
DEPTH = 10.0km (geophysicist)
NEAR COAST OF PERU (115)

PT06	3.58	317	iPd	30 24.80	-0.5
			eS	31 00.50	
PT08	5.22	329	iP	30 48.80	0.0
			iS	31 50.80	
NNA	5.34	326	eP	30 51.00	0.6
	0.5s	11.97nm		4.8mb X	
			i	30 52.60	
			eS	31 48.50	
ZOBO	5.46	89	P	30 51.50	-1.1
LPB	5.48	91	P	30 53.00	0.3
CNCB	5.60	94	P	30 55.20	0.7

S.D. = 0.9 on 6 of 6 obs.

DEC 03, 1989 19h 11m 37.04± 0.61s
38.747 N ± 5.5km 26.259 E ± 5.9km
DEPTH = 10.0km (geophysicist)
AEGEAN SEA (365)
ML 3.6 (ATH).

PRK	0.50	1	iPbc	11 47.60	0.5
			eSn	11 58.40	
IZM	0.86	114	iPg	11 54.70	1.1
			eSg	12 07.20	
EZN	1.08	3	iPg	11 58.40	1.1
SMG	1.13	156	ePb	11 55.30	-2.9
APE	1.77	199	ePn	12 03.10	-4.9X
EDC	2.02	37	iPn	12 11.50	-0.1
DST	2.03	64	iPn	12 11.10	-0.6
BNT	2.06	38	iPn	12 10.80	-1.3
ATH	2.14	250	ePn	12 14.50	1.2
MFT	2.18	21	ePn	12 12.80	-1.2
YER	2.27	135	ePn	12 17.00	1.8
NEO	2.43	284	ePb	12 23.10	5.7X
RDO	2.46	347	ePn	12 16.70	-1.1
KHL	2.59	98	iPn	12 19.60	-0.2
PLG	2.71	308	ePb	12 29.00	7.5X
CTT	2.92	34	ePn	12 24.80	0.4
KDZ	2.97	348	iP	12 24.00	-1.1
YLV	3.01	52	ePn	12 28.30	2.6
ALT	3.02	83	iPn	12 25.70	-0.2
SRS	3.13	320	eP	12 29.10	1.8
ISK	3.16	42	ePn	12 34.40	6.6X
RZN	3.17	339	eP	12 27.00	-1.0
DMK	3.28	20	iPn	12 29.40	-0.1
DIM	3.35	351	eP	12 30.00	-0.4
MMB	3.44	326	eP	12 34.00	2.3
ELL	3.51	123	ePn	12 33.00	0.1
KNT	3.53	314	eP	12 32.30	-0.8
PLD	3.56	341	eP	12 33.00	-0.4
JMB	3.72	4	eP	12 37.00	1.2
VAY	3.82	313	ePn	12 45.30	8.1X
KKB	3.95	323	eP	12 38.00	-1.0
VTS	4.49	330	eP	12 47.00	0.3
PVL	4.52	351	eP	12 45.00	-2.0

S.D. = 1.3 on 28 of 33 obs.

DEC 03, 1989 19h 55m 06.19± 1.51s
7.412 S ± 5.3km 128.627 E ± 7.3km
DEPTH = 101.6 ± 15.0 km
4.9mb (13 obs.)
BANDA SEA (280)

MTN	5.94	156	iPc	56 33.90	0.7
PCI	10.89	306	ePd	57 52.50	12.1X
JAY	12.98	69	ePd	58 12.20	4.2X
			e	59 51.50	
WB2	13.64	157	iPc	58 12.00	-4.6X
MNDI	14.98	86	eP	58 18.00	-16.1X
			eS	58 36.00	
MBL	16.10	211	iPc	58 48.00	0.1
	0.3s	19.00nm		4.8mb	
			e	58 53.00	
			eS	01 32.00	
QIS	16.84	142	iPd	58 55.70	-1.5
			e	58 59.00	
			eS	01 49.00	
ASPA	16.94	163	eP	58 56.00	-2.4
	0.4s	83.00nm		5.3mb	
	Z 18s	0.32um		4.3MszX	
			eS	01 47.20	
			LR	05 51.80	
PMG	18.43	97	eP	59 19.00	2.4
	0.9s	127.73nm		5.2mb	
WARB	18.76	186	iPd	59 20.40	0.2
	0.3s	21.00nm		4.9mb	
			iS	02 38.40	
CTA	21.23	128	iPd	59 45.90	0.3
	1.0s	50.00nm		4.8mb	
MEKA	21.37	205	eP	59 48.50	1.5
	0.3s	15.00nm		4.8mb	
			eS	03 39.00	
FORR	23.32	181	eP	00 06.30	0.3
QLP	24.16	144	eP	00 14.00	-0.2
			e	00 16.00	
COOL	24.38	196	eP	00 16.00	-0.3
MRWA	24.74	207	eP	00 20.00	0 3
			e	00 42.00	
			eS	04 56.00	
BAL	25.64	204	eP	00 28.00	0.0
KLB	26.11	201	eP	00 33.00	0.7
			eS	05 30.00	
RMQ	26.95	137	iPc	00 40.80	0.7
			e	05 35.00	
MUN	27.04	204	eP	00 40.00	-0.8
			e	01 17.00	
			eS	05 47.00	
STK	27.18	155	eP	00 41.00	-1.1
			e	01 08.00	
			e	05 55.00	
NWAO	27.50	201	eP	00 44.00	-1.0
			eS	06 04.00	
RKG	28.62	200	eP	01 00.00	5.0X
CMS	28.84	148	iPd	00 56.20	-0.8
			e	01 28.00	
			e	06 35.00	
ADE	28.95	163	eP	00 59.50	1.4
BRS	30.31	134	iPc	01 09.00	-1.2
	0.6s	2.00nm		4.0mb	
			e	02 06.00	
QIZ	32.14	325	P	01 27.00	0.8
BFD	32.22	159	iPd	01 26.70	-0.1
BWA	32.49	149	eP	01 30.00	0.8
CAN	33.48	149	eP	01 37.80	0.0
QZH	33.61	343	eP	01 38.20	-0.7
TOO	33.70	155	iPc	01 40.40	0.7
NNT	34.92	305	eP	01 51.20	0.9
LOE	36.26	313	iPd	02 02.00	0.5
BDT	38.18	310	eP	02 19.30	1.7
SSE	38.95	350	eP	02 24 00	0 1
CHG	39.19	312	ePc	02 27.00	0 9
	1.0s	27 00nm		5.0mb	
CHTO	39.19	312	eP	02 27.00	0.9
	1.0s	25.75nm		5.0mb	
GYA	39.85	328	iPd	02 32.80	1.2
			PcP	04 36.00	
WHN	40.15	341	eP	02 30.00	-3.8X
KMI	41.00	323	Pc	02 42.50	1.3
MAT	44.64	11	eP	03 09.00	-1.3
	0.9s	15.13nm		4.8mb	
CD2	44.94	329	P	03 12.60	-0.2
XAN	45.26	337	Pc	03 14.20	-1.1
TIY	47.37	343	Pd	03 30.80	-1.2
	0.5s	0.03nm		2.4mb X	
BJI	48.60	347	eP	03 40.00	-1.2
LZH	49.14	333	Pc	03 46.00	0.2
	1.2s	124.00nm		5.7mb	
LSA	51.57	317	Pd	04 05 40	0 7
GTA	53.69	332	iPc	04 19.00	-0 8
	0.8s	0 05nm		2.6mb X	
PKI	54.37	312	P	04 14.20	-11.1X
KKN	54.58	312	P	04 15.80	-10.9X
DMN	54.61	311	P	04 16.20	-10.8X
GBA	54.94	292	Pc	04 27.10	-2.1
	1.0s	7.40nm		4.7mb	
GKN	55.18	312	P	04 20.00	-10.9X
HYB	55.28	297	eP	04 30.00	-1.7
NDI	61.16	308	ePd	05 10.00	-2.5
	0.5s	28.17nm		5.5mb	
WMQ	63.00	328	P	05 24.60	0.0
KSH	67.37	318	P	05 54.20	1.4
MAIO	77.89	309	iPd	06 55.30	0.7
VAI	115.89	318	PKP	13 37.20	-1.5
			eSg	13 50.30	
ORO	116.49	318	PKP	13 35.90	-4.1X
			eSg	13 44.30	
BNI	117.54	317	PKP	13 50.10	8.0X
LOR	118.62	320	ePKP	13 43.60	-0.3
	0.8s	4.50nm			
BGF	119.53	320	ePKP	13 44.80	-0.8
	0.6s	5.70nm			
ITB7	147.55	175	ePKP	14 38.80	0.8
ITB	147.87	175	PKPd	14 40.60	2.1X
ITB1	148.00	175	e(PKP)	14 41.00	2.3X
NNA	148.17	127	iPKPd	14 43.10	3.8X
	1.0s	19.00nm			
ARE	149.03	140	ePKP	14 45.00	4.0X
CNCB	150.86	146	PKP	14 46.00	2.0
LPB	151.02	145	PKP	14 44.00	-0.1
			i	14 51.00	
ZOBO	151.22	145	PKP	14 45.00	0.4
	1.0s	37.50nm			

S.D. = 1.1 on 56 of 72 obs.

DEC 03, 1989 20h 13m 21.78± 0.84s
46.230 N ± 4.8km 7.662 E ±13.0km
DEPTH = 10.0km (geophysicist)
SWITZERLAND (544)

ORX	0.64	159	P	13 34.93	0.3
			S	13 44.05	
LSD	0.85	205	P	13 37.79	-0.6
			S	13 48.83	
LPL	0.96	223	Pg	13 40.00	-0.3
			Sg	13 55.00	
LPG	0.97	221	Pg	13 40.10	-0.3
			Sg	13 54.80	
RSP	1.12	195	P	13 42.94	0.2
			S	13 56.87	
RRL	1.45	206	P	13 48.63	0.4
			S	14 07.66	
BSF	1.71	340	Pg	13 52.00	0.1
			Sg	14 12.00	
PZZ	1.77	193	P	13 53.05	0.3
			S	14 12.98	
HAU	1.99	334	Pg	13 57.60	1.7
			Sg	14 20.20	
CDF	2.20	353	Pn	13 57.20	-1.8
			Sg	14 27.20	
LBF	2.65	288	Pg	14 09.60	4.3X
			Sg	14 41.60	

S.D. = 1.0 on 10 of 11 obs.

DEC 03, 1989 21h 32m 20.78± 0.34s
57.655 S ± 5.8km 148.211 E ± 8.6km
DEPTH = 10.0km (geophysicist)
5.2mb (8 obs.) 5.9Msz (7 obs.)
WEST OF MACQUARIE ISLAND (701)
CENTROID, MOMENT TENSOR (HRV)
Dato Used: GDSN
L.P.B.: 15S, 39C
Centroid Locotion:
Origin Time 21:32:30.9 0.4
Lot 57.52S 0.05 Lon 147.88E 0.06
Dep 15.0 FIX Holf-durotion 3.7
Moment Tensor; Scole 10**17 Nm
Mrr=-0.14 0.24 Mtt= 5.22 0.35
Mff=-5.08 0.31 Mrt=-0.38 0.85
Mrf=-0.45 0.88 Mtf=-8.10 0.25
Principol Axes:

T	Vol= 9.67	Plg= 1	Azm=209
N	-0.10	86	108
P	-9.57	4	299

Best Double Couple:Mo=9.6*10**17
NP1:Strike=344 Dip=87 Slip= -2
NP2: 74 88 -177

MCQ	6.79	67	eP	34 01.00	-1.9

03d 21h

		eS	35 30.00			
DRV	9.81	199 eP	34 45.80	1.0		
MSZ	17.84	52 P	36 31.10	0.7		
TOO	20.18	354 iPc	36 57.40	-0.5		
		e	37 00.00			
BFD	20.83	347 eP	37 04.00	-0.7		
		e	37 09.00			
CAN	22.35	2 eP	37 20.10	0.0		
CNB	22.36	2 eP	37 21.00	0.8		
BWA	23.24	0 eP	37 29.00	0.2		
WEL	23.56	57 P	37 34.00	2.2		
		S	41 46.00			
ADE	23.58	340 iPd	37 34.00	1.9		
	1.0s	90.00nm		5.3mb		
RIV	23.91	6 eP+	37 36.00	0.8		
		eS	42 04.00			
		e	43 16.00			
STK	26.17	347 eP	37 57.00	0.2		
CMS	26.22	355 eP	37 57.00	-0.2		
BRS	30.42	8 iPc	38 34.50	-0.8		
	0.7s	7.00nm		4.6mb		
	Z 20s	90.00um		6.4Msz		
		i	38 43.00			
		i	38 47.00			
		i	39 57.50			
		iS	43 38.00			
RMO	31.15	1 eP	38 41.00	-0.6		
		e	39 54.00			
SPA	32.52	180 eP	38 53.50	-0.1		
	1.2s	56.34nm		5.4mb		
	Z 20s	18.47um		5.8Msz		
WARB	34.99	325 eP	39 14.00	-1.0		
	0.5s	9.00nm		4.9mb		
ASPA	35.49	337 iPd	39 18.50	-0.9		
MAW	37.29	219 eP	39 34.00	0.0		
DZM	37.94	28 iPc	39 39.50	-0.6		
WB2	39.02	339 eP	39 48.00	-1.0		
		e	40 03.20			
		e	44 09.30			
MBL	41.92	318 eP	40 12.40	-0.5		
	0.5s	23.00nm		5.2mb		
KLM	71.11	310 eP	43 41.50	0.4		
IPM	72.70	310 ePd	43 50.20	-0.4		
FRS	80.65	228 eP	44 35.50	0.6		
PRY	82.27	231 eP	44 42.20	-1.5		
SLR	82.98	232 eP	44 45.00	-2.4		
	0.7s	10.27nm		5.1mb		
	Z 18s	14.43um		6.4Msz		
POF	83.05	224 eP	44 46.00	-1.4		
KSR	83.45	231 eP	44 46.00	-3.8X		
OZH	85.95	333 eP	45 06 50	4.7X		
	N 26s	1.40um				
		S	55 30.00			
CHTO	86.45	314 eP	45 05.10	0.6		
	1.4s	42.79nm		5.5mb		
KOD	88.53	292 eP	45 23.00	8.0X		
GYA	90.74	324 P	45 30.60	5.7X		
	Z 40s	2.10um		5.3MszX		
		sS	56 28.00			
KMI	90.82	320 Pd	45 27.00	1.6		
	Z 25s	6.80um		6.0MszX		
		sP	46 31.00			
		SKS	56 00.00			
		S	56 28.00			
SSE	91.29	337 eP	45 32.00	4.9X		
SSE	91.29	337 eP	45 35.10	8.0X		
	Z 20s	1.90um		5.5Msz		
	N 20s	1.80um				
		SKS	56 02.00			
		sS	56 26.00			
		SS	02 24.00			
GBA	91.43	293 P	45 28.00	-0.1		
LSZ	92.22	237 eP	45 31.00	-1.1		
WHN	92.36	331 eP	45 31.50	-0.5		
	Z 30s	1.70um		5.3MszX		
	N 24s	5.56um				
		SKS	56 04.00			
		eS	56 32.00			
		SS	02 44.00			
HYB	94.15	296 eP	45 43.00	2.4		
MAT	94.21	352 eP	45 46.00	5.5X		
	1.5s	33.33nm		5.5mb		
	Z 20s	1.06um		5.3Msz		
		eS	56 57.00			
LSA	99.28	312 P	46 00.00	-4.2X		
PKI	99.79	307 P	46 07.60	1.1		
DMN	99.96	307 P	46 06.20	-0.9		
KKN	100.04	307 Pdiff	46 06.60	-1.0		
ZOBO	100.44	145 ePdiff	46 13.00	3.0X		
GKN	100.50	306 Pdiff	46 04.20	-5.3X		
KSH	114.00	306 Pdiff	47 25.20	15.9X		
TAB	127.24	284 ePKP	51 32.00	5.5X		
PRNI	127.38	269 e(PKP)	51 35.00	8.2X		
LKO	127.93	214 PKP	51 28.00	-0.3		
FFC	142.42	63 ePKP	51 53.00	-1.1		
	0.8s	7.00nm				
VRI	143.07	277 ePKPc	51 52.50	-3.0X		
MLR	143.25	276 ePKP	51 53.00	-3.0X		
SKO	143.30	268 ePKP	51 52.50	-3.5X		
	Z 17s	0.86um		5.6MszX		
	E 17s	1.03um				
		i	51 56.50			
		i	52 06.70			
		i	52 31.50			
CMP	143.59	275 ePKPc	51 58.00	1.6		
MNO	143 98	257 PKP	52 02.40	4.8X		
MCT	144.31	256 PKPd	51 58.40	0.3		
TDS	144.39	261 PKPd	51 56.70	-1.2		
BRT	144.80	263 PKP	52 02.20	3.6X		
DEV	145.13	274 ePKPc	52 00.00	1.0		
MGR	145.15	261 PKP	51 59.50	0.3		
MBC	145.50	25 ePKP	51 57.50	-1.3		
	1.1s	80.00nm				
SGO	145.59	261 PKP	51 59.10	-0.8		
BEO	145.75	271 ePKP	52 00.00	-0.1		
HVAR	146.81	265 ePKP	52 03.10	1.2		
DUI	146.82	261 PKP	52 04.00	2.0X		
SDI	147.19	261 PKPd	52 04.30	1.7		
RDP	147.81	260 PKP	52 08.70	5.1X		
RMP	147.86	260 PKPd	52 11.00	7.4X		
PSZ	148.01	275 ePKP	52 05.70	2.0		
BUD	148.21	274 ePKP	52 06.50	2.6X		
MNS	148.27	261 PKPd	52 06.60	2.3X		
TIO	148.38	223 iPKP	52 10.00	5.1X		
		i	52 23.00			
SPC	148.58	277 ePKP	52 07.50	2.7X		
SRO	148.79	274 ePKP	52 08.10	3.2X		
ZAG	148.80	269 ePKP	52 09.50	4.6X		
PTJ	148.87	269 ePKP	52 08.40	3.2X		
ARV	148.90	263 PKP	52 12.80	7.6X		
VBY	148.99	268 ePKP	52 11.40	6.1X		
KRA	149.24	278 ePKP	52 09.60	4.1X		
	1.4s	100.00nm				
		i	52 14.50			
		i	52 18.30			
RSM	149.45	263 PKP	52 10.80	4.8X		
CRE	149.52	262 PKP	52 12.00	5.7X		
CEY	149.59	267 e(PKP)	52 11.50	5.3X		
SOP	149.66	272 ePKP	52 12.80	6.6X		
ZST	149.67	273 ePKP	52 09.90	3.7X		
		i	52 18.10			
LJU	149.72	268 e(PKP)	52 10.50	4.1X		
SFI	149.77	262 PKP	52 12.10	5.7X		
PGD	149.81	262 PKP	52 15.80	9.0X		
IFR	149 86	228 ePKP	52 03.00	-4.2X		
		i	52 26.00			
TRI	149.92	267 ePKP	52 19.40	12.8X		
FIR	149.99	261 ePKP	52 10.00	3.2X		
VOY	150.06	267 ePKP	52 11.00	4.0X		
VKA	150.13	273 ePKP	52 17.00	10.1X		
PII	150.34	260 PKPd	52 15.20	7.9X		
BDI	150.53	261 PKP	52 13.70	6.0X		
MME	150.56	261 PKP	52 14.90	6.9X		
VVI	150.82	266 PKP	52 22.40	14.4X		
KBA	151.01	268 iPKPd	52 13.40	4.9X		
	1.3s	77.20nm				
		i	52 17.10			
		i	52 21.60			
		i	52 26.60			
		e	54 32.50			
FVI	151.01	267 PKPd	52 13.80	5.6X		
KMR	151.19	271 ePKP	52 17.00	8.5X		
		i	52 24.80			
CTI	151.27	265 PKP	52 13.00	4.2X		
SAL	151.59	263 PKPd	52 24.10	15.0X		
BOB	151.61	261 PKP	52 18.40	9.0X		
KSP	151.62	277 ePKP	52 15.80	6.7X		
		ic	52 20.00			
NUR	151.62	300 iPKP	52 15.60	6.9X		
	0.8s	27.90nm				
		i	52 24.60			
SUF	151.62	305 ePKP	52 15 50	6.8X		
	0.7s	5.60nm				
CKI	152.00	259 PKPd	52 18.40	8.6X		
PRU	152.08	274 ePKP	52 18.50	8.7X		
	Z 20s	1.70um		5.9Msz		
KHC	152.11	272 ePKP	52 17.30	7.4X		
	Z 20s	2.10um		5.9Msz		
	N 20s	1.10um				
	E 1Bs	1.30um				
		i	52 24.80			
APHE	152.20	234 iPKPc	52 07.00	-3.6X		
ATEJ	152.31	233 ePKP	52 07.50	-3.2X		
SOD	152.43	315 iPKP	52 19.00	9.3X		
ALOJ	152.51	234 iPKPc	52 08.50	-2.5X		
KEV	152.55	320 ePKP	52 19.00	9.2X		
ASMO	152.57	234 iPKPc	52 07.00	-4.0X		
VAI	152.70	262 PKP	52 17.30	6.6X		
BRG	152.89	275 ePKP	52 18.40	7.6X		
	1.5s	56.00nm				
EBR	153.38	245 (PKP)	52 20.00	8.2X		
		(PP)	56 40.00			
LPG	153.53	259 ePKP	52 15.50	3.2X		
	1.0s	6.00nm				
CLL	153.62	276 ePKP	52 20.00	8.1X		
	1.4s	33.00nm				
		i	52 27.80			
MOX	154.01	273 ePKP	52 25.00	12.5X		
	1.4s	36.00nm				
CAF	155.59	253 ePKP	52 31.70	16.9X		
	1.4s	13.00nm				
LBF	155.96	259 ePKP	52 22.50	7.2X		
	1.0s	6.00nm				
LOR	156.20	260 ePKP	52 21.80	6.3X		
	1.0s	4.80nm				
SSF	156.25	259 ePKP	52 24.30	8.7X		
BGF	156.28	257 ePKP	52 25.90	10.3X		
	1.0s	6.00nm				
TCF	156.43	256 ePKP	52 27.90	12.0X		
	1.2s	8.90nm				

S.D. = 1.1 on 50 of 128 obs.

DEC 03, 1989 21h 35m 03.37± 0.92s
5.128 S ± 5.8km 152.299 E ± 6.3km
DEPTH = 57.1 ± 8.7 km
5.1mb (11 obs.)
NEW BRITAIN REGION (192)

RAB	0.94	352 iPd-	35 21.00	0.4		
LAT	5.48	254 eP	36 32.00	7.5X		
PMG	6.64	230 iPd	36 42.00	1.3		
	1.0s	140.00nm		5.5mb		
		eS	37 54.00			
HNR	8.71	120 eP	37 08.00	-1.3		
		eS	38 38.00			
CTA	15.99	201 iPd	38 46.20	0.0		
	1.6s	113.33nm		4.8mb		
	Z 18s	26.46um				
		i	39 36.20			
		i	41 06.00			
		iS	45 30.00			
		i	48 24.00			
OIS	19.68	218 iP	39 30.00	-0.8		
GUA	19.94	338 eP	39 52.00	18.5X		
	1.0s	160.00nm				
PVC	20.06	130 iPd	39 35.00	0.3		
MTN	22.26	248 iPc	39 57.20	0.3		
ASPA	25.57	222 eP	40 29.30	0.4		
	1.1s	82.00nm		5.2mb		
		eS	44 56.40			
WARB	32.25	227 eP	41 29.00	0.3		
	0.3s	3.00nm		4.6mb		
PCI	32.68	276 e(P)d	41 36.50	3.9X		
MBL	35.29	240 eP	41 54.00	-1.0		
MEKA	38.66	233 eP	42 22.00	-1.3		
WHN	50.75	317 eP	43 58.00	-1.8		
LOE	54.72	295 eP	44 29.00	-0.6		
NNT	55.12	289 eP	44 35.10	2.6		
NST	55.62	293 eP	44 50.00	13.9X		
XAN	56.52	317 P	44 41.20	-1.1		
KMI	56.76	304 eP	44 45.00	0.6		
BDT	57.13	294 eP	45 00.00	13.2X		
	0.5s	23.90nm				
CHG	57.68	296 eP	44 50.30	-0.4		
CHTO	57.68	296 eP	44 50.70	0.0		
	1.1s	3.53nm		4.4mb		
CD2	58.57	311 eP	45 01.20	4.4X		
	Z 24s	1.40um		5.0MszX		
BTO	59.76	324 eP	45 04.00	-1.0		
LZH	61.12	316 eP	45 14.50	0.1		
	1.0s	16.00nm		5.1mb		

```
      Z  26s      2.40um          5.2MszX
      N  21s      1.10um
      E  23s      1.80um
                  i      45 33.50
                  S      56 51.00
                  sS     57 51.00
                  PS     59 10.00
                  SS     04 40.00
GTA     65.56 318 eP     45 43.40   -0.1
      Z  24s      1.50um          5.1MszX
WMQ     75.64 318 P      46 44.30   -0.1
KDC     76.71  27 P      46 49.80   -0.1
        0.6s     14.78nm          5.1mb
TTA     78.26  22 P      46 58.80    0.3
        1.1s     50.00nm          5.4mb
PMR     80.19  24 P      47 08.30   -0.5
        1.1s     53.91nm          5.4mb
IMA     80.93  20 P      47 12.50   -0.4
        1.0s     20.00nm          5.0mb
BOM     81.75 290 eP     46 51.30  -26.5X
FBA     82.37  22 P      47 19.30   -0.9
INK     88.94  21 eP     47 53.00    0.4
KVN     92.88  51 P      48 13.00    1.3
MBC     94.55  14 eP     48 19.00    0.6
        1.0s     9.00nm           5.2mb
EDM     96.68  37 eP     48 30.00    1.4
CNCB   134.61 120 ePKP   54 21.00    2.2X
LPB    134.63 119 ePKP   54 20.00    1.4
                  LR     19 16.00
ZOBO   134.71 119 ePKP   54 19.00    0.0
                  LR     19 16.00
BAO    151.20 136 ePKP   54 52.00    5.2X
KUK    152.78 274 ePKP   54 54.00   5 0X
     S.D. = 1.0  on  33 of  43 obs.
--------------------------------------
   DEC  03, 1989  22h 59m 46.52± 1.03s
   22.067 N ± 7.9km  121.147 E ± 8.6km
   DEPTH =  51.3 ± 11.1 km
   5.0mb (  4 obs.)
 TAIWAN REGION                    (243)

TWG     0.75 355 iPd     00 00.50   -0.6
                  eS     00 08.80
TWM1    1.01 319 ePc     00 05.90    1.3
TWF1    1.29   6 eP     00 08.40    0.0
                  eS     00 22.10
TWK     1.34 333 ePc     00 09.20    0.0
TWD     2.05  12 eP     00 19.50    0.4
TWO     2.22 353 ePd     00 21.30   -0.3
TWC     2.61  14 ePc     00 27.40    0.3
TWZ     3.04   7 eP     00 33.20   -0.1
ANP     3.12   6 iPd    00 35.50    1.0
      0.9s   537.82nm
                  eS     01 15.00
OZH     3.70 321 ePn     00 40.00   -2.6
HKC     6.47 273 iP      01 21.50    0.0
                  S      02 26.80
GZH     7.28 279 eP      01 31.50   -1.4
SSE     8.99   0 eP      02 03.50    7.0X
                  Lg     04 28.40
QIZ    11 01 256 eP      02 25.40    1.2
XAN    16.07 321 P       03 36.50    5.9X
TIY    17.31 336 eP      03 47.20    1.0
     N  18s      1.50um
BJI    18.41 348 eP      03 59.00   -0.6
HHC    20.41 339 eP      04 21.70   -0.2
BTO    20 74 335 eP      04 27.60    2.3
WB2    43.70 162 eP      07 47.80   -0.6
QIS    46.04 156 iPd     08 07.30    0.3
       0.5s     15 00nm          5.2mb
ASPA   47.12 164 iPc     08 15.00   -0.6
       0.6s      9.00nm          4.9mb
WARB   48.26 173 iPd     08 25.50    1.1
       0.4s      7.00nm          5.0mb
INK    75.19  22 eP      11 23.00   -2.0
NB2    80.07 332 P       11 52.40    0.3
       0.8s      2.30nm          4.2mb
     S.D. = 1.2  on  23 of  25 obs.
--------------------------------------
?  DEC  04, 1989  02h 54m 15.96± 6.17s
   14.142 S ±55.1km   76.589 W ±72.9km
   DEPTH =  10.0km  (geophysicist)
 NEAR COAST OF PERU               (115)

PT10    2.09 350 eP      54 51.00   -0.5
                  eS     56 21.00
NNA     2.16 353 eP      54 52.30   -0.2
       0.6s      5.33nm
                  eS     55 19.00
PT08    2.17   1 iP      54 53.70    0.7
                  eS     55 12.20
ARE     5.43 116 eP      55 40.00    0.7
                  eS     56 40.00
ZOBO    8.44 106 P       56 21.00   -0.8
     S.D. = 1.0  on   5 of   5 obs.
--------------------------------------
   DEC  04, 1989  03h 05m 57.75± 0.96s
   7.465 S ± 4.1km  128.213 E ± 7.2km
   DEPTH = 136.8 ± 10.6 km
   5.0mb ( 15 obs.)
 BANDA SEA                        (280)

TLE     4.86  68 ePd     07 10.50    0.5
                  iS     07 57.50
MTN     6.07 152 iPc     07 26.50    0.1
KNA     8.25 176 iPd     07 54.50   -1.4
       0.3s    213.00nm          6.3mb X
                  eS     09 18.00
WB2    13.76 155 eP      09 04.00   -4.3X
DAV    14.69 350 eP      09 27.50    7.4X
MBL    15.84 210 eP      09 34.00   -0.5
       0.3s     17.00nm          4.8mb
                  eS     12 20.00
ASPA   17.01 162 iPc     09 47.50   -1.4
       0.7s    348.00nm          5.8mb
     Z  19s      0.41um          4.4MszX
                  iS     12 49.30
                  LR     16 42.30
QIS    17.06 141 eP      09 48.00   -1.5
                  eS     12 48.00
KKM    17.98 318 ePd     10 03.20    2.5
WARB   18.68 184 eP      10 08.50    0.5
       0.3s     34.00nm          5.1mb
                  eS     13 28.00
PMG    18.84  97 eP      10 14.00    4.3X
NANU   19.35 218 iPd     10 16.00    0.9
       0.3s     36.00nm          5.2mb
                  eS     13 50.00
MEKA   21.15 205 eP      10 34.00    0.7
       0.3s     17.00nm          4.9mb
                  eS     14 21.00
CTA    21.52 127 iPd     10 38.00    0.9
       0.9s     15.55nm          4.4mb
                  iS     14 27.20
QCP    23.07 342 eP      10 39.00  -13.1X
FORR   23.26 180 eP      10 54.20    0.3
COOL   24.22 195 eP      11 03.00   -0.2
QLP    24.36 143 eP      11 05.00    0.5
                  e      15 41.00
MRWA   24.51 206 eP      11 06.40    0.5
       0.3s      7.00nm          4.6mb
                  e      11 33.00
                  eS     15 43.00
BAG    24.90 342 eP      11 10.50    0.7
BAL    25.42 204 eP      11 17.00    2.7
KLB    25.91 201 eP      11 19.00    0.2
MUN    26.83 203 eP      11 27.00   -0.2
                  eS     16 36.00
STK    27.31 155 iPd     11 31.00   -0.5
                  e      11 35.00
                  e      12 04.00
                  e      16 48.00
NWAO   27.31 200 iPd     11 30.90   -0.6
RKG    28.42 200 eP      11 46.30    4.7X
CMS    29.01 148 eP      11 46.00   -0.8
                  e      17 20.00
ADE    29.02 162 e(P)    11 47.00    0.0
QIZ    31.95 326 eP      12 13.00    0.2
BFD    32.32 158 eP      12 16.00    0.2
                  e      13 18.00
                  e      18 55.00
QZH    33.55 344 Pd      12 25.70   -0.8
CAN    33.65 148 eP      12 28.00    0.6
TOO    33.83 155 eP      12 30.00    1.1
CHTO   38.92 313 iP      13 12.90    1.0
       1.0s     17.50nm          4.8mb
SSE    38.93 350 P       13 11.80    0.0
       0.6s      9.00nm          4.7mb
GYA    39.68 329 P       13 19 20    1.0
WHN    40.06 341 Pc      13 22.50    1.4
       1.5s      0.09nm          2.3mb X
KMI    40.80 323 Pc      13 29 00    1.5
MAT    44.77  11 (P)     13 56.00   -3.3X
       0.8s     14.93nm          4.7mb
XAN    45.15 337 Pc      14 01.50   -0.9
TIY    47.30 343 eP      14 17.80   -1.5
BJI    48.56 348 eP      14 28.50   -0.4
       1.5s     52.00nm          5.1mb
LZH    49.01 334 Pc      14 32.50   -0.1
       1.8s     97.00nm          5.3mb
LSA    51.33 318 iPc     14 51.20    0.4
GTA    53.55 333 iPc     15 06.40   -0.2
PKI    54.10 312 P       15 10.00   -1.2
KKN    54.31 312 P       15 11.60   -1.0
DMN    54.34 312 P       15 12.00   -0.9
       0.6s     36.00nm          5.4mb
GBA    54.58 292 Pc      15 12.10   -2.3
       0.8s      5.20nm          4.5mb
GKN    54.90 312 P       15 15.80   -1.0
HYB    54.94 297 iPd     15 15.70   -1.3
       1.2s     71.40nm          5.4mb
WMQ    62.83 328 P       16 10.80   -0.3
MAIO   77.60 310 iPc     17 40.30   -0.3
EKA   118.71 331 PKP     24 31.00    0.0
       0.6s      1.80nm
LIC   133.57 271 PKP     25 00.10   -0.5
CNCB  151.05 147 PKP     25 33.00    1.5
                  i      25 38.30
LPB   151.21 146 PKP     25 38.50    7.0X
ZOBO  151.41 146 PKP     25 32.00    0.0
     S.D. = 1.0  on  51 of  58 obs.
--------------------------------------
&  DEC  04, 1989  03h 32m 37.78s
   61.310 N          151.204 W
   DEPTH =  63.3km
 SOUTHERN ALASKA                  (  2)
     <AGS-P>.

SUA     0.27  55 iP      32 48.30    0.0
SPU     0.43 253 iP      32 49.19   -0.4
CRP     0.46 265 iP      32 49.75   -0.2
NCG     0.47 282 eP      32 49.25   -0.8
CKL     0.56 259 iP      32 50.49   -0.5
BGL     0.57 266 eP      32 50.56   -0.6
SKT     0.69 347 iP      32 51.55   -0.8
PWA     0.72  61 iP      32 52.45   -0.2
PMS     0.80  94 iP      32 53.28   -0.4
SLKM    0.94 149 iP      32 54.54   -0.9
RDT     0.94 219 iP      32 54.82   -0.7
                  eS     33 08.88
PME     1.09  72 eP      32 56.57   -0.8
RED     1.18 221 iP      32 58.05   -0.6
GHO     1.19  66 iP      32 57.97   -0.8
                  eS     33 14.00
SEW     1.49 144 eP      33 01.65   -1.1
ILIM    1.51 216 iP      33 02.41   -0.7
                  eS     33 21.66
SVW     2.15 267 iP      33 10.43   -1.6
                  eS     33 35.68
KTH     2.26   3 eP      33 12.18   -1.4
DWY     6.08  58 P       34 03.90   -3.2
INK    10.26  39 eP      35 01.00   -3.6
     20 obs. associated
--------------------------------------
*  DEC  04, 1989  05h 14m 13.13± 0.69s
   17.993 S ±33.2km  178.433 W ±17.9km
   DEPTH = 570.0km  (geophysicist)
   4.5mb (  6 obs.)
 FIJI ISLANDS REGION              (181)

WB2    44.58 260 eP      21 36.70   -0.3
ASPA   44.75 254 iPc     21 38.60    0.4
       0.5s     37.00nm          5.2mb
                  iS     27 41.40
FORR   49.92 245 eP      22 17.10    0.0
       0.4s     16.00nm          4.9mb
PRS    76.31  44 eP      25 05.20   -0.1
BCH    76.53  46 P       25 06.80    0.1
BRK    76.61  43 eP      25 05.40   -1.5
PRI    76.67  45 eP      25 07.60    0.1
MHC    76.70  43 ePd     25 07.70    0.1
FRI    77.78  44 eP      25 12.80   -0.4
PLM    77.81  49 P       25 13.50   -0.2
PEC    77.87  48 P       25 13.00   -0.9
CMB    77.92  43 ePd     25 13.70   -0.3
WDC    78.02  40 eP      25 15.80    1.3
ORV    78.07  41 eP      25 15.20    0.4
MIN    78.46  41 e(P)    25 17.00    0.0
GLA    79.13  50 P       25 20.50    0.0
KVN    79.97  43 P       25 24.70   -0.2
TNP    80.03  45 P       25 25.20   -0.1
```

04d 05h

0.8s 3.19nm 3.8mb
MSU 83.67 46 P 25 44.50 0.8
PNT 84.82 34 eP 25 49.00 0.2
0.7s 6.00nm 4.3mb
PV09 85.78 47 eP 25 54.90 0.9
FBA 85.90 13 P 25 53.80 0.2
0.9s 10.00nm 4.5mb
BW06 87.43 43 P 26 01.60 -0.1
CHTO 89.01 290 e(P) 26 08.70 -0.4
1.0s 2.75nm 4.1mb
INK 91.97 15 eP 26 22.00 0.3
CLL 145.54 347 ePKP 32 51.00 3.1X
S.D. = 0.6 on 25 of 26 obs.

? DEC 04, 1989 05h 35m 13.22± 1.10s
42.024 N ± 8.4km 19.232 E ±13.2km
DEPTH = 10.0km (geophysicist)
YUGOSLAVIA (383)
ML 2.1 (TTG).

ULC 0.06 168 ePg 35 15.50 0.0
eSg 35 17.50
BDV 0.40 311 ePg 35 21.50 0.2
eSg 35 29.00
TTG 0.41 3 ePg 35 21.50 0.0
eSg 35 28.80
HCY 0.69 308 ePg 35 26.70 -0.2
eSg 35 38.10
S.D. = 0.2 on 4 of 4 obs.

? DEC 04, 1989 06h 08m 38.53± 2.95s
44.661 N ±13.8km 7.411 E ±21.8km
DEPTH = 10.0km (geophysicist)
NORTHERN ITALY (545)
ML 2.2 (GEN).

PZZ 0.27 235 P 08 44.32 0.0
S 08 48.62
STV 0.42 188 P 08 47.08 -0.1
S 08 52.52
ENR 0.43 179 eP 08 47.49 0.1
S 08 52.93
RRL 0.52 300 P 08 49.03 0.0
S 08 56.62
S.D. = 0.1 on 4 of 4 obs.

DEC 04, 1989 06h 40m 55.44± 0.38s
39.653 N ± 4.1km 26.166 E ± 3.7km
DEPTH = 14.9 ± 2.8 km
TURKEY (366)
MD 3.6 (ATH).

EZN 0.21 35 iPg 40 58.80 -1.6
PRK 0.41 169 iPbc 41 03.40 -0.5
MFT 1.42 37 iPn 41 22.00 1.3
EDC 1.48 61 iPn 41 21.50 0.1
IZM 1.52 145 iPn 41 22.10 0.0
BNT 1.52 62 iPn 41 22.50 0.4
RDO 1.57 342 ePb 41 22.90 0.2
DST 1.90 91 iPn 41 27.50 -0.2
SMG 2.01 165 ePb 41 28.00 -1.2
KDZ 2.08 344 iPc 41 30 00 -0.1
PLG 2.21 290 ePn 41 31.20 -0.9
eSn 42 04 00
CTT 2.28 48 ePn 41 39.50 6.4X
NEO 2.30 262 ePn 41 35.20 1.8
RZN 2.31 332 iPc 41 33.00 -0.7
DIM 2.44 349 ePg 41 39 00 3.7X
SRS 2.45 307 ePnc 41 38.00 2.5
eSn 42 11.00
DMK 2.48 29 iPn 41 34.90 -1.0
ISK 2.62 57 ePn 41 40.00 2.1
YLV 2.62 69 ePn 41 38.50 0.5
APE 2.63 191 ePn 41 37.00 -1.1
MMB 2.68 317 eP 41 38.00 -0.8
PLD 2.69 336 eP 41 39.00 0.1
iSg 42 21.00
JMB 2.83 6 eP 41 48.00 7.2X
LIT 2.86 280 ePn 41 42.50 1.1
KNT 2.92 302 ePn 41 41.20 -0.9
eSn 42 25.30
HRT 2.92 65 ePn 41 41.90 -0.3
KHL 2.93 116 iPn 41 42.60 0.2
AGG 3.04 259 ePn 41 44.00 0.1
ALT 3.12 100 ePn 41 45.60 0.6
VAY 3.21 302 ePn 41 53.20 6.9X
KKB 3.22 314 iP 41 46.00 -0.5
PGB 3.27 333 eP 41 46.00 -1.1
PVL 3.62 350 eP 41 50.00 -2.0
VTS 3.69 324 iP 41 54.00 0.7
VRI 6.23 4 eP 42 29.00 0.1
S.D. = 1.1 on 31 of 35 obs.

DEC 04, 1989 06h 42m 31.21± 0.19s
15.471 S ± 6.1km 173.156 W ± 4.8km
DEPTH = 76 1km (22 depth phases)
5.4mb (31 obs.)
TONGA ISLANDS (173)
CENTROID, MOMENT TENSOR (HRV)
Data Used: GDSN
L.P.B.: 16S, 36C
Centroid Location:
Origin Time 06:42:35.9 0.4
Lat 15.30S 0.05 Lon 173.23W 0.04
Dep 41 2 3.3 Half-duration 2.9
Moment Tensor; Scale 10**17 Nm
Mrr=-2 64 0.13 Mtt= 0.39 0.28
Mff= 2.25 0.26 Mrt=-4.74 0.34
Mrf= 0.67 0.22 Mtf=-1.54 0.14
Principal Axes:
T Vol= 4.88 Plg=29 Azm=217
N 1.24 20 115
P -6.12 53 356
Best Double Couple:Mo=5.5*10**17
NP1:Strike=350 Dip=24 Slip= -33
NP2: 111 77 -111

AFI 2.05 41 iPc 42 56.00 -8.3X
SVA 8.45 251 ePc 44 36.90 3.7X
eS 46 21.90
RAR 13.93 116 P 45 44.00 -2.4
S 48 14.00
PVC 17.90 260 iPc 46 39.50 2.8
DZM 20.39 248 iPc 47 03.90 -0.5
HBZ 23 30 197 P 47 36.80 3.8X
0.7s 44.00nm 5.0mb
PMO 24 37 92 iP 47 44.40 0.8
1.2s 120.00nm 5.2mb
KRP 24.50 202 P 47 48.20 3.6X
0.6s 137 00nm 5.6mb
VAH 24.61 93 iP 47 44.90 -1.0
1.2s 75.00nm 5.0mb
TPT 24.64 92 iP 47 46.50 0.3
1.2s 105.00nm 5.1mb
RUV 24.85 93 iP 47 48.30 0.1
1.2s 80.00nm 5.0mb
PGZ 26.69 198 eP 48 04.60 -0.4
0.7s 102 00nm 5.5mb
HNR 26 93 280 P 48 06.00 -1.3
MNG 26 94 199 eP 48 07.50 0.3
SNZO 27.81 200 eP 48 16.00 0.9
S 53 00.00
KHZ 29 19 200 eP 48 28.00 0.5
MSZ 33.22 205 P 49 03.80 0.9
BRS 33.75 244 iPd 49 07.00 -0.7
0.8s 5.60nm 4.5mb
Z 19s 39.50um 6.2Msz
e 49 16.00 31kmX
e(S) 54 24.00
COO 35 34 239 eP 49 20.00 -1.3
RMO 37 09 246 eP 49 35.00 -1.0
CNB 38.89 232 iPc 49 51.20 0.0
CAN 39 17 233 eP 49 53.00 -0.5
PMG 39.18 274 eP 49 53 00 -0.6
BWA 39.32 234 eP 49 52.20 -2.5
HON 39 47 23 P 50 00 00 4.1X
Z 22s 5.00um 5.3Msz
CMS 40.60 239 eP 50 03 00 -2.1
i 50 04 90 6kmX
TOO 42.60 231 eP 50 21.00 -0.6
STK 44.21 240 eP 50 33.60 -1.0
BFD 44.71 232 eP 50 37.00 -1.6
QIS 45.09 256 eP 50 39.60 -2.2
ADE 47.18 237 iPc 50 57.70 -0.5
0.9s 40.34nm 5.3mb
WB2 50 04 257 eP 51 16.70 -3.7X
ASPA 50.31 252 iPc 51 19.90 -2.6
0.9s 76.00nm 5.7mb
Z 22s 12.97um 5.9MszX
LR 10 27.30
GUMO 50 57 303 eP 51 21 80 -2.6
MTN 53 96 265 iPc 51 47 80 -2.0
FORR 55 56 243 eP 51 59.00 -2.2
0.4s 53 00nm 5.9mb
WARB 56.85 249 iPc 52 09.30 -1.3
0.7s 31.00nm 5.5mb
DRV 59.61 200 eP 52 29.00 -0.1
COOL 61.54 243 eP 52 41.00 -2.0
SBA 63.20 185 (P) 52 57.20 4.1X
MBL 63.47 254 eP 52 55.00 -0.8
NWAO 64.79 241 eP 53 04.00 -0.3
BAL 65.37 243 eP 53 08.00 0.0
MUN 65.71 242 eP 53 11.00 0.9
NANU 67.25 252 eP 53 20.00 -0.1
0.4s 5.00nm 4.8mb
CHJJ 68.34 320 P 53 26.10 -0.5
MAT 69.14 320 eP 53 31.00 -0.5
1.3s 53.85nm 5.3mb
Z 20s 1.42um 5.2Msz
eS 02 33.00
PRS 71.02 42 eP 53 42.20 -0.7
epP 54 03.20 80km
GCC 71.04 41 e(P) 53 42.10 -0.9
epP 54 03.40 81km
PCC 71.08 41 eP 53 41.50 -1.7
BCH 71.19 44 P 53 44.30 0.2
pP 54 04.30 75km
PRI 71.36 43 eP 53 44.80 -0.4
epP 54 05.90 80km
BRK 71.38 40 eP 53 44.20 -0.9
epP 54 05.40 80km
MHC 71.45 41 eP 53 44.90 -0.8
epP 54 05.80 79km
LLA 71.46 42 e(P) 53 45.00 -0.6
ARN 71.52 41 P 53 45.80 -0.2
MWC 72.02 46 eP 53 49.00 -0.2
e 54 09.00 75km
BAR 72.15 48 eP 53 49.00 -0.8
RVR 72.36 46 eP 53 50.00 -1.0
e 54 10.00 75km
PLM 72.37 47 eP 53 51.00 -0.3
e 54 11.00 75km
SBB 72.43 45 eP 53 51.00 -0.5
PEC 72.46 46 P 53 51.00 -0.6
FRI 72.48 42 eP 53 50.60 -1.0
epP 54 11.70 80km
esP 54 17.50
ISA 72.54 44 eP 53 52.00 -0.1
e 54 12.00 75km
BAG 72.66 293 eP 53 52.00 -1.2
CMB 72.66 41 eP 53 51.80 -1.0
epP 54 12.60 78km
esP 54 19.20
ORV 72.88 39 eP 53 52.60 -1.3
WDC 72.89 38 eP 53 52.90 -1.0
epP 54 14.30 81km
esP 54 20.70
KKM 73.12 281 ePc 54 12.50 16.6X
CLC 73.21 44 eP 53 56.00 0.0
MIN 73.30 39 ePc 53 54.90 -1.7
epP 54 16.00 80km
TPC 73.35 47 eP 53 57.00 0.2
e 54 16.00 71km
GSC 73.47 45 eP 53 57.00 -0.6
e 54 18.00 79km
GLA 73.66 48 eP 53 59.00 0.3
LBFM 73.75 38 P 53 59.40 0.2
SPA 74.63 180 iPc 54 05.40 1.5
0.9s 35.00nm 5.3mb
Z 21s 2.21um 5.4Msz
KVN 74 71 41 P 54 03.00 -1.8
TNP 74 73 43 P 54 03.40 -1.6
1.2s 41.67nm 5.2mb
KDC 74.93 11 P 54 05.00 -0.4
0.8s 36.55nm 5.4mb
BMW 76.27 33 P 54 12.50 -0.8
QZH 77.69 300 eP 54 24.00 2.4
SSE 78.19 307 P 54 24.00 -0.1
Z 24s 1.50um 5.2MszX
sP 54 47.40
S 04 19.00
MSU 78.31 44 P 54 25.40 0.4
DUG 78.75 43 P 54 26.80 -0.5
1.2s 25.63nm 5.0mb
PMR 79.14 11 P 54 27.00 -1.7
1.2s 87.88nm 5.6mb
Z 20s 1.50um 5.3Msz
TTA 79.29 8 P 54 29.00 -0 6
1.2s 99.62nm 5.6mb
DPW 79.82 34 P 54 32.00 -0.7
pP 54 52.80 77km

DAU 79.89 43 P 54 33.60 0.0
PNT 79.95 32 iPc 54 34.20 0.8
0.8s 56.00nm 5.5mb
NJ2 80.39 307 eP 54 36.30 0.2
Z 26s 1.40um 5.2MszX
ALQ 80.66 50 P 54 37.20 -0.5
1.0s 37.50nm 5.3mb
CN2 81.29 320 Pd 54 41.00 0.5
4.0s 0.70nm 2.9mb X
Z 24s 2.00um 5.4MszX
ipP 54 55.00 48kmX
iPP 57 46.00
DL2 81.40 314 Pd 54 42.00 0.9
4.0s 0.70nm 2.9mb X
Z 24s 1.00um 5.1MszX
pP 55 00.00 65kmX
SNY 81.49 318 iPd 54 42.00 0.5
Z 26s 1.50um 5.2MszX
N 24s 1.20um
E 24s 0.90um
pP 55 00.00 65kmX
LRM 81.93 38 eP 54 44.20 0.1
BW06 82.17 42 P 54 45.00 -0.4
1.4s 39.45nm 5.1mb
FBA 82.42 11 P 54 43.20 -2.7
WHN 83.33 304 ePd 54 50.00 -1.3
6.0s 0.69nm 2.8mb X
Z 24s 0.96um 5.1MszX
N 20s 1.32um
pP 55 07.70 64kmX
TIA 83.43 310 eP 54 52.30 0.5
Z 31s 0.90um 5.0MszX
pP 55 11.00 68km
GOL 83.53 46 P 54 52.60 0.0
Z 20s 2.50um 5.6Msz
GLD 83.66 46 P 54 53.20 0.1
1.0s 85.00nm 5.7mb
SES 85.13 35 ePd 54 59.30 -0.7
1.5s 443.00nm 6.3mb
pP 55 18.00 67km
EDM 85.42 31 ePd 55 00.60 -0.8
1.5s 278.00nm 6.1mb
BJI 85.69 313 eP 55 04.00 1.1
2.0s 139.00nm 5.6mb
Z 28s 1.38um 5.2MszX
epP 55 24.00 73km
eSKS 05 26.00
eS 05 38.00
MEO 86.52 53 iPc 55 07.70 0.5
ACO 86.80 51 iPd 55 10.90 2.3
IPM 87.19 276 ePc 55 12.50 1.6
TIY 87.48 310 Pd 55 12.50 0.7
Z 26s 1.70um 5.3MszX
E 20s 1.60um
pP 55 32.50 72km
MAW 87.80 199 eP 55 15.00 2.2
e 57 57.00
INK 88.28 14 iPc 55 14.80 -0.1
1.2s 69.00nm 5.7mb
pP 55 35.00 73km
GYA 88.28 298 P 55 18.60 2.6
XAN 88.86 306 P 55 19.50 1.0
HHC 89.25 313 Pc 55 20.00 -0.3
1.0s 0.20nm 3.3mb X
BTO 90.26 312 P 55 26.00 1.0
KMI 91.27 296 eP 55 32.50 2.4
Z 32s 1.60um 5.3MszX
pP 55 47.00 49kmX
sP 55 56.00
SKS 06 00.00
S 06 27.00
iS 06 32.00
FFC 92.03 33 iPc 55 32.60 0.0
1.4s 46.00nm 5.7mb
LZH 93.45 306 eP 55 40.50 0.6
2.0s 33.00nm 5.4mb
Z 35s 2.00um 5.3MszX
E 12s 0.20um
sP 56 03.00
eSKS 06 12.00
eS 06 48.00
PS 08 12.00
SS 13 00.00
MBC 96.95 11 eP 55 55.00 0.2
1.5s 36.00nm 5.7mb
GTA 97.41 309 eP 55 58.60 0.8
Z 25s 1.30um 5.3MszX

LPB 99.51 110 P 56 25.00 16.9X
ZOBO 99.58 110 eP 56 28.00 19.4X
LR 28 04.00
SOD 126.55 351 ePKP 01 38.00 11.4X
MAIO 128.96 304 ePKP 01 33.00 0.7
SUF 130.89 348 ePKP 01 36.20 1.2
0.9s 11.40nm
NUR 133.20 348 ePKP 01 41.00 1.6
SLR 134.03 207 ePKP 01 46.50 4.2X
NB2 134.39 357 PKP 01 43.40 1.6
1.2s 12.90nm
TAB 138.60 311 ePKP 01 51.00 0.4
SLY 140.11 307 ePKPd 01 53.00 -0.1
MSL 141.59 310 ePKPd 02 05.00 9.2X
BHD 141.74 304 ePKPd 02 05.00 8.9X
WIT 142.74 0 e(PKP)02 01.00 3.8X
LSZ 142.88 216 ePKP 01 57.00 -1.7X
WTS 143.56 0 ePKP 02 00.00 1.4
1.0s 13.00nm
KRA 143.90 346 ePKP 01 57.10 -2.2X
KSP 143.90 350 ePKP 01 57.20 -2.1X
1.3s 41.00nm
CLL 143.91 353 iPKP 01 57.40 -1.9X
e 02 16.00
BRG 144.23 352 ePKP 02 01.00 1.2
i 02 22.50
e 04 16.70
MOX 144.70 355 ePKPc 02 00.00 -0.7
1.4s 26.00nm
Z 24s 2.10um 5.8MszX
ENN 144.79 1 ePKPc 02 00.00 -0.8
0.8s 25.00nm
PRU 145.01 351 PKPc 02 01.10 -0.1
Z 20s 1.10um 5.6Msz
e 02 20.50
KAS 145.25 323 iPKPc 02 03.60 1.6
CFR 145.36 333 ePKPc 02 02.50 0.6
VRI 145.41 335 ePKPc 02 02.50 0.5
TLB 145.88 333 ePKPc 02 05.00 2.2
PSZ 145.89 344 iPKP 02 04.00 1.1
KHC 145.98 352 PKPd 02 04.00 1.0
1.0s 60.50nm
e 02 20.00
MLR 146.03 336 ePKPc 02 04.50 1.2
NAI 146.03 243 iPKP 02 08.00 3.7X
1.0s 25.00nm
ISR 146.08 335 ePKPc 02 05.50 2.2
FLN 146.26 9 ePKP 02 04.00 0.7
ZST 146.29 348 ePKP 02 05.40 2.0X
i 02 20.80
VKA 146.38 349 ePKPd 02 06.00 2.4X
5.0s 1940.00nm
i 02 22.80
SRO 146.38 346 iPKP 02 05.20 1.6
LDF 146.48 8 ePKP 02 04.80 1.1
GRR 146.57 9 ePKP 02 06.10 2.3
CMP 146.57 336 ePKPc 02 07.00 3.0X
STU 146.74 357 ePKPd 02 06.00 1.9
1.3s 76.92nm
Z 20s 2.13um 5.9Msz
BBTK 146.81 322 ePKP 02 04.00 -0.7
LPF 146.88 10 ePKP 02 07.00 2.7X
KMR 146.95 351 iPKP+ 02 06.30 1.8
i 02 08.70
i 02 27.80
CDF 147.15 359 ePKP 02 08.10 3.2X
HAU 147.56 1 ePKP 02 09.20 3.7X
BSF 147.73 0 ePKP 02 09.50 3.6X
GPA 147.92 325 ePKP 02 10.00 3.7X
KBA 148.02 352 iPKPc 02 04.80 -1.7
0.5s 20.30nm
i 02 08 20
i 02 19.10
PVL 148.15 334 ePKP 02 11 00 4.5X
JMB 148.20 332 ePKP 02 12.00 5.4X
LOR 148.20 4 ePKP 02 10.90 4.4X
YLV 148.24 326 iPKP 02 11.50 4.6X
SSF 148.38 4 ePKP 02 11.60 4.8X
MFF 148.42 9 ePKP 02 11.70 4.8X
HRI 148.43 309 ePKP 02 13.00 5.5X
LBF 148.49 4 ePKP 02 11.80 4.8X
OGA 148.50 355 iPKPc 02 12.30 5.0X
BEO 148.56 341 ePKP 02 11.50 4.4X
FVI 148.58 352 PKPd 02 11.00 3.9X
AVF 148.64 5 ePKP 02 11.80 4.6X
PTJ 148.71 348 ePKP 02 08.80 1.3
ZAG 148.79 348 ePKP 02 10.50 3.0X

SMF 148.82 4 ePKP 02 11.00 3.5X
BGF 148.83 5 ePKP 02 12.50 5.0X
LJU 148.85 350 ePKP 02 12.20 4.6X
ALT 148.88 323 ePKP 02 02.60 -5.4X
VOY 148.96 350 ePKP 02 09.80 1.9X
e 02 22.30
LSF 148.99 7 ePKP 02 12.80 5.0X
DIM 149.00 332 ePKP 02 14.00 6.1X
SALJ 149.03 307 PKP 02 14.90 6.5X
TCF 149.03 6 ePKP 02 13.20 5.3X
MAF 149.13 6 ePKP 02 13.40 5.4X
BNT 149.15 328 iPKP 02 13.50 5.3X
CEY 149.16 350 ePKP 02 10.50 2.4X
PGB 149.18 335 ePKP 02 13.00 4.7X
EDC 149.19 328 ePKP 02 12.50 4.2X
VVI 149.22 352 PKP 02 13.10 4.9X
VBY 149.23 348 ePKP 02 09.80 1.6
i 02 14.00
CTI 149.25 353 PKPd 02 13.00 4.7X
TRI 149.30 350 ePKP 02 11.00 2.8X
CSS 149.32 314 ePKP 02 14.00 5.3X
KDZ 149.37 332 iPKP 02 13.00 4.5X
DSI 149.45 307 ePKP 02 15.00 6.1X
RIY 149.55 349 iPKPd 02 13.70 5.1X
EMON 149.61 21 e(PKP)02 15.00 6.1X
RZN 149.65 333 ePKP 02 15.00 5.8X
VAI 149.66 357 PKPd 02 12.50 3.8X
STS 149.66 23 e(PKP)02 15.00 6.1X
MDI 149.69 356 PKP 02 13.40 4.6X
KHL 149.71 323 ePKP 02 14.60 5.4X
SAL 149.80 355 PKP 02 14.20 5.2X
ORX 149.92 358 PKP 02 14.24 4.9X
RJF 149.92 8 ePKP 02 15.60 6.4X
ORO 149.92 358 PKP 02 14.40 5.0X
AYN 149.98 301 ePKP 02 16.90 7.1X
LPG 150.07 0 ePKP 02 17.20 7.4X
LSD 150.11 360 PKP 02 16.40 6.6X
MMB 150.16 334 ePKPd 02 15.00 5.3X
LFF 150.18 9 ePKP 02 15.90 6.3X
KKB 150.20 335 ePKP 02 07.00 -2.8X
EZN 150.36 329 iPKP 02 14.90 4.9X
CAF 150.36 7 ePKP 02 16.80 6.9X
RSP 150.41 359 PKP 02 15.47 5.3X
LPO 150.49 8 ePKP 02 16.90 6.8X
BNI 150.51 0 PKPd 02 18.30 8.0X
ELL 150.51 320 ePKP 02 17.40 6.8X
MBH 150.57 304 ePKP 02 18.00 7.4X
SRS 150.61 334 ePKPc 02 17.60 7.2X
HOL 150.62 303 ePKP 02 18.20 7.5X
RRL 150.64 0 PKP 02 17.94 7.3X
BOB 150.71 356 PKP 02 17.30 6.8X
SKO 150.74 337 iPKPc 02 17.40 6.8X
1.2s 114.00nm
i 02 22.60
i 02 30.60
i 02 35.00
i 02 39.20
i 05 54.00
i 06 10.00
KNT 150.86 335 ePKPc 02 17.10 6.3X
VAY 150.86 335 ePKP 02 17.80 7.1X
BCI 150.88 340 ePKP 02 13.00 2.3X
IZM 150.93 326 ePKP 02 16.00 5.0X
PCP 150.99 357 PKP 02 16.91 6.0X
KKS 151.02 339 ePKP 02 19.00 8.1X
DOI 151.06 359 PKP 02 18.20 7.1X
PZZ 151.06 360 PKP 02 17.83 6.7X
OUR 151.08 332 ePKP 02 16.30 5.2X
CKI 151.11 358 PKPd 02 17.80 6.8X
MME 151.18 354 PKP 02 19.00 7.5X
HVAR 151.19 345 iPKPc 02 17.40 6.2X
GRG 151.24 335 ePKP 02 18.00 6.6X
ROB 151.26 358 PKP 02 17.32 6.0X
STV 151.32 359 PKP 02 18.35 6.9X
BDI 151.32 354 PKPd 02 18.60 7.1X
SFI 151.32 352 PKPd 02 19.60 8.3X
FIN 151.33 358 PKP 02 16.91 5.5X
ENR 151.33 359 PKP 02 17.94 6.4X
PHP 151.35 338 iPKPc 02 13.00 1.6
PGD 151.39 353 PKP 02 18.90 7.2X
FIR 151.54 353 ePKP 02 19.00 7.4X
ARV 151.58 351 PKP 02 19.80 8.0X
CRE 151.60 352 PKP 02 16.40 4.5X
IMI 151.64 358 PKP 02 17.83 5.9X
PII 151.67 354 PKP 02 17.50 5.7X
OHR 151.73 337 iPKP 02 18.40 6.3X
1.3s 0.31nm

04d 07h

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                    i      02 24.00
                    i      02 31.50
ECRI   151.78   15 e(PKP)02 20.00    7.8X
CIO    151.85  350 ePKP   02 19.80    7.5X
TIR    151.86  339 ePKP   02 20.20    8.0X
LIT    151.92  334 ePKPc  02 19.50    7.1X
ASS    152.05  351 PKP    02 20.00    7.5X
LWI    152.05  233 iPKPc  02 20.60    7.0X
KBN    152.15  337 ePKP   02 20.00    7.4X
MNS    152.71  351 PKP    02 19.70    6.2X
TPE    152.73  338 ePKP   02 16.70    3.2X
AGG    152.88  333 ePKP   02 21.60    7.8X
SRN    153.10  337 ePKP   02 24.50   10.5X
GUD    153.16   19 e(PKP)02 17.00    2.7X
SDI    153.17  348 PKP    02 21.40    7.2X
RDP    153.32  350 PKP    02 18.40    4.0X
LCI    153.40  341 PKP    02 25.60   11.2X
SGO    153.94  345 PKP    02 24.60    9.5X
EBR    154.15   11 (PKP)  02 10.00   -5.4X
                   (PP)   06 32.00
MGR    154.28  344 PKP    02 24.00    8.3X
TDS    154.51  343 PKP    02 27.40   11.4X
AVE    158.05   33 ePKP   02 22.00    1.3
                    e      02 31.00
TIO    159.91   38 iPKP   02 34.00   10.9X
                    i      03 23.50
BCAO   164.11  228 iPKPc  02 29.20    1.6
        0.9s    27.00nm
                    i      02 41.50
                    i      03 51.00
                    i      07 30.60
LIC    165.16  127 PKP    02 29 80    1.4
TIC    165.43  126 PKP    02 29 90    1.2
KIC    165.47  127 PKP    02 29.80    1.1
KUK    168.37  142 ePKP   02 40.00    9.1X
     S.D. = 1.2  on 146 of 283 obs.
-------------------------------------
%  DEC  04, 1989  06h 48m 16.98± 0.89s
   40.194 N ±10.0km   27.545 E ± 7.7km
   DEPTH =  10.0km  (geophysicist)
 TURKEY                          (366)

EDC      0 29  58 iPg    48 22 50   -0.5
                 iSg    48 26.50
BNT      0.33  61 iPg    48 23.00   -0.8
EZN      1.01 249 iPg    48 35.80   -0.2
                 iSg    48 50.80
DST      1.02 125 iPn    48 36.50    0.2
CTT      1.17  35 iPn    48 39.50    0.7
HRT      1.74  68 ePn    48 48.00    0.6
     S.D. = 0.8  on   6 of   6 obs.
-------------------------------------
%  DEC  04, 1989  06h 54m 18.47± 1.09s
   40.189 N ±21.7km   27.583 E ±12.9km
   DEPTH =  10.0km  (geophysicist)
 TURKEY                          (366)

EDC      0.27  54 iPg    54 23.50   -0.6
                 iSg    54 27.50
BNT      0.31  57 iPg    54 24.50   -0.4
EZN      1.03 250 iPg    54 37.80   -0.1
                 iSg    54 51.80
CTT      1.15  34 iPn    54 40.50    0.5
YLV      1.42  74 iPn    54 45.00    0.6
     S.D. = 0.8  on   5 of   5 obs.
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&  DEC  04, 1989  07h 01m 50.10s
   39 398 N          121.245 W
   DEPTH =  19.0km
 NORTHERN CALIFORNIA             ( 36)
      <BRK>. ML 3.4 (BRK). Felt (IV)
      at Bongor, Brownsville, Penn
      Valley and Rackerby; (III) at
      Browns Valley, Comptonville,
      Challenge, Dobbins, Nevada City,
      North Son Juon and Smartville.
      Also felt at Chico.

ORV      0.25 309 iPc    01 55.30   -0.7
                 iS     01 59.20
MIN      0.99 344 iPd    02 07.60   -0.9
                 iS     02 21.00
LTCM     1.06 320 eP     02 09.70    0.2
CMB      1 52 153 eP     02 16.40    0.0
                 eS     02 36 10
WDC      1.54 320 eP     02 16.00   -0.7
NWRM     1.59 234 eP     02 17.30   -0.1
ZSP      1.65 209 ePc    02 18.00   -0.3
                    e      02 38.10
                    eS     02 40.00
BKS      1.71 207 ePc    02 18.50   -0.6
                    iS     02 39.50
BRK      1.72 208 eP     02 18.40   -0.8
                    e      02 37.00
                    eS     02 40.70
LBFM     2.01 346 eP     02 25.00    1.3
ARN      2.06 186 eP     02 24.30    0.0
MHC      2.08 189 eP     02 25.30    0.7
PCC      2.09 206 e(P)   02 24.50   -0.2
KVN      2.47  97 ePc    02 29.20   -1.0
SAO      2.63 183 eP     02 32.50    0.1
FRI      2.69 153 eP     02 33.30    0.1
PRS      3.06 182 eP     02 38.80    0.3
TNP      3.41 111 e(P)   02 43.00   -0.6
        18 obs. ossociated
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*  DEC  04, 1989  09h 18m 37.13± 1.22s
   39.809 N ±12.0km  143.073 E ±14.5km
   DEPTH =  32.9 ±  6.5 km
   4.3mb (  5 obs.)
 OFF EAST COAST OF HONSHU, JAPAN (229)

OFUJ     1.31 237 iP+    18 59.90    0.7
                    S      19 20.60
HOOJ     2.58   4 P      19 17.20   -0.2
                    eS     19 48.90
YAMJ     2.88 236 P      19 22.20    0.5
MRRJ     3.02 331 P      19 23.90    0.2
                    eS     20 01.50
KUSJ     3 51  20 P      19 27.30   -3.3X
                    S      20 06.30
NIIJ     4.10 233 P      19 39.40    0.4
KAKJ     4.27 213 P      19 37.30   -4.1X
                    S      20 25.80
MAT      5.03 231 eP     19 50.00   -2.3
        0.7s    42.47nm          5.0mb X
                   (S)     20 55.00
WHN     25.14 257 P      23 59.50   -1.2
GYA     33.04 257 P      25 11.00   -0.7
WMQ     40.82 294 P      26 18.20    1.1
CHTO    43.27 254 eP     26 37 20   -0.1
        0.8s    1.28nm           3.7mb
KKN     48.74 274 P      27 20.80   -0.1
        0.5s   11.00nm           5.1mb
PKI     48.75 274 P      27 24.00    2.9
DMN     48.96 274 P      27 23.60    0.9
GKN     49.13 275 P      27 23.60   -0.2
INK     51.33  28 eP     27 38.00   -1.8
KVN     72.06  54 P      30 01.00    0.9
HFS     72.09 336 eP     29 58.30   -1.4
        0.4s    1.60nm           4.4mb
NB2     72.13 338 P      29 58.70   -1.2
        1.0s    4.20nm           4.4mb
TNP     73.19  54 P      30 08.50    1.7
        0.7s    1.89nm           4.2mb
     S.D. = 1.4  on  19 of  21 obs.
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&  DEC  04, 1989  10h 33m 57.98s
   62.797 N          148.209 W
   DEPTH =  44.8km
 CENTRAL ALASKA                  (  1)
      <AGS-P>. ML 3 2 (PMR).

RND      0.68 335 iP     34 11 40    0.0
                    eS     34 21.33
HUR      0 68 286 eP     34 11 61    0.3
                    eS     34 22.50
MCK      0.99 341 eP     34 15.68   -0.1
CUT      1.03 248 eP     34 15.86   -0 3
NCA      1.03 141 eP     34 16.10   -0.2
GHO      1.08 198 eP     34 16.60   -0.4
TOA      1.17 125 iP     34 18.50    0.2
PME      1.23 199 eP     34 19.01   -0.1
SDG      1.26 101 eP     34 19.45    0.0
                    eS     34 35.62
PAX      1.27  81 eP     34 19.07   -0.6
                    eS     34 35.28
KTH      1.45 303 eP     34 22.02   -0.1
DDM      1.45  46 eP     34 22.90    0.6
WRH      1.68   2 eP     34 24.03   -1.4
DMW      1 69  40 eP     34 25.60    0.1
KLU      1 69 140 eP     34 25.30   -0.4
HDA      1.71  19 eP     34 25.07   -0.8
SKT      1 75 244 eP     34 26 41    0.0
SUA      1.79 223 eP     34 27.32    0.2
NEA      1.83 348 eP     34 25.89   -1.6
CCB      1.87   5 eP     34 26.47   -1.5
VLZ      1.89 151 eP     34 27.49   -0.9
GLI      2.00 164 eP     34 29.14   -0.7
RDS      2.04   1 eP     34 29.00   -1.5
DOT      2.06  64 eP     34 30.10   -0.8
FBA      2.12   5 eP     34 30.15   -1.5
FID      2.21 157 eP     34 32.33   -0.6
GLM      2.23   9 eP     34 31.65   -1.6
CGLM     2.33 232 eP     34 35.11    0.4
GLB      2.47 121 P      34 36.33   -0.4
SLKM     2.49 204 eP     34 37.00    0.0
NKA      2.51 216 eP     34 40.58    3.3
RDT      3.00 224 eP     34 43.94   -0.3
NNL      3.14 210 eP     34 46.74    0.6
TGL      3.27 126 eP     34 46.34   -1.9
BALM     3.29 120 eP     34 46.80   -1.6
ILIM     3.55 222 eP     34 52.05    0.0
CNPM     3.60 205 eP     34 52.02   -0.6
DWY      4.14  68 P      34 58.20   -2.1
INK      8.21  41 eP     35 54.00   -3.2
        39 obs. ossociated
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    DEC  04, 1989  10h 38m 47.49± 0.79s
    39.588 N ± 6.2km   26.124 E ± 8.4km
    DEPTH =  10.0km  (geophysicist)
 TURKEY                          (366)
      MD 3.2 (ATH).

EZN      0.28  33 iPg    38 54.00    0.6
PRK      0.36 161 ePg    38 53.50   -1.4
IZM      1.48 143 ePn    39 22.60    8.3X
EDC      1.54  60 iPn    39 14.50   -0.5
BNT      1.58  60 iPn    39 15.40   -0.2
RDO      1.62 344 ePb    39 16.10    0.0
DST      1.93  89 iPn    39 19.60   -1.2
SMG      1.96 163 ePg    39 23.50    2.5
KDZ      2.13 346 iPd    39 24.00    0.4
PLG      2.20 292 ePb    39 29.00    4.3X
CTT      2.35  48 ePn    39 27.90    1.1
SRS      2.46 309 eP     39 33.30    4.9X
DMK      2.55  29 iPn    39 29.10   -0.5
KNT      2.92 304 eP     39 34.00   -0.9
ALT      3.14  99 ePn    39 44.00    6.0X
     S.D. = 1.2  on  11 of  15 obs.
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    DEC  04, 1989  11h 24m 39.98± 0.32s
    40.525 N ± 3.8km   27.179 E ± 3.2km
    DEPTH =   9.9 ±  2.6 km
 TURKEY                          (366)
      MD 3.6 (ATH).

EDC      0.55 109 iPg    24 52.00    0.8
BNT      0.59 106 iPg    24 52.40    0.5
EZN      0.96 223 iPg    24 59.10    0.9
CTT      1.13  56 iPg    25 01.40    0.2
DMK      1.37  18 iPn    25 04.10   -1.0
RDO      1.39 297 ePg    25 31.00   25.6X
DST      1.44 129 iPn    25 06.60    0.4
PRK      1.46 209 ePg    25 07.00    0.7
ITU      1.51  67 ePn    26 07.00   59.9X
                    iSg    26 26.00
ISK      1.53  69 ePn    25 07.30    0.0
KDZ      1.74 311 iPc    25 12.00    1.5
GBZT     1.74  81 ePn    25 09.80   -0.7
DIM      1.96 321 eP     25 14.00    0.3
JMB      1.99 347 eP     25 12.00   -2.0
IZM      2.13 178 iPn    25 16.60    0.5
RZN      2.19 303 iPc    25 18.00    0.8
GPA      2.40  95 ePn    25 20.00    0.0
ALT      2.69 122 ePn    25 22.30   -1.9
SRS      2.79 283 ePc    25 25.00   -0.5
                    eS     26 08.00
MMB      2.82 293 ePc    25 26.00    0.0
SMG      2.82 186 ePn    25 25.50   -0.5
KHL      2.85 140 iPn    25 26.90    0.4
PLG      2.85 268 ePb    25 26.00   -0.4
KNT      3.31 282 ePc    25 32.00   -0.9
                    eS     26 03.60
KKB      3.37 295 iPc    25 34.00    0.3
VAY      3.58 284 iPn    25 37.00    0.3
LIT      3.61 265 eP     25 35.00   -2.2
VTS      3.63 306 iP     25 38.00    0.5
                    iS     26 20.00
APE      3.68 201 ePg    25 37.50   -0.8
AGG      4.03 250 eP     25 52.00    9.0X
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TLB	4.11	9	eP	25	57.00	12.9X
SKO	4.56	290	ePn	25	53.50	2.8X
			i	26	10.50	
			i	27	04.50	
CFR	4.71	8	eP	26	09.00	16.2X
OHR	4.88	279	ePn	25	50.50	-4.7X
MLR	5.05	350	ePc	25	59.00	1.4
KAS	5.06	78	ePn	26	03.00	5.2X
VRI	5.35	357	ePc	26	02.50	0.7

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

% DEC 04, 1989 12h 19m 47.03± 0.74s
41.141 N ± 9.1km 28.462 E ± 6.0km
DEPTH = 10.0km (geophysicist)
TURKEY (366)

CTT	0.03	285	iPg	19	48.90	-0.1
ISK	0.46	99	ePg	19	56.00	-0.3
DMK	0.86	322	iPg	20	03.70	0.1
EDC	0.91	210	ePg	20	04.50	0.0
			eSg	20	17.50	
HRT	0.97	109	ePg	20	05.80	0.4
			eSg	20	20.00	

S.D. = 0.4 on 5 of 5 obs.

DEC 04, 1989 12h 45m 01.28± 0.81s
39.790 N ± 6.0km 30.330 E ± 8.9km
DEPTH = 5.0km (geophysicist)
TURKEY (366)

GPA	0.50	358	iPg	45	09.50	-1.8
ALT	0.75	193	iPg	45	15.80	-0.7
			iSg	45	26.30	
HRT	1.15	334	ePn	45	22.80	-0.5
GBZT	1.21	326	ePg	45	26.00	1.8
			iSg	45	42.00	
DST	1.33	263	iPn	45	25.60	-0.7
KHL	1.59	203	iPn	45	30.60	0.3
ISK	1.60	323	ePn	45	30.00	-0.3
BBTK	1.87	88	ePg	45	35.00	0.6
			eSg	46	00.00	
BNT	1.93	288	iPn	45	38.40	3.2X
EDC	1.97	287	ePn	45	38.50	2.8X
CTT	1.99	314	ePn	45	37.00	1.1

S.D. = 1.3 on 9 of 11 obs.

DEC 04, 1989 13h 22m 36.16± 0.86s
42.936 N ± 4.3km 13.689 E ± 9.0km
DEPTH = 10.0km (geophysicist)
CENTRAL ITALY (381)
ML 3.2 (KBA). MD 3.3 (SSO).

ALP	0.18	208	iPgc	22	40.15	-0.1
			iSg	22	44.20	
CIO	0.48	303	iPgd	22	45.50	-0.3
			iSg	22	53.20	
AOI	0.62	354	iPg	22	47.50	-1.1
			iSg	22	59.00	
ASS	0.77	280	P	22	50.30	-0.9
			eSg	23	02.70	
ARV	0.78	316	P	22	50.60	-0.8
			eSg	23	04.60	
MNS	0.93	234	P	22	53.10	-0.8
			eSg	23	07.10	
SDI	1.23	176	P	22	58.80	-0.3
			eSg	23	17.00	
RSM	1.34	318	Pd	23	01.90	1.1
RMP	1.34	213	P	23	01.60	0.7
RDP	1.38	212	P	23	01.80	0.3
			eSn	23	19.80	
CRE	1.44	299	P	23	02.80	0.3
			eSn	23	20.80	
SFI	1.66	307	Pc	23	05.40	0.0
PGD	1.71	304	P	23	07.40	1.0
TRI	2.77	1	eP	23	27.80	6.4X
			e	23	45.10	
VBY	2.80	23	e(Pg)	23	52.50	30.7X
			iSg	24	10.40	
			iSn	24	12.00	
CEY	2.85	10	eP	23	35.00	12.4X
			e(Sn)	23	56.00	
			eSg	24	09.50	
VOY	3.10	3	e(Pn)	23	24.30	-1.8
			eSn	24	00.80	
			eSg	24	09.80	
LJU	3.16	11	eP	23	32.00	5.1X
			e	23	40.50	
			eSn	24	02.20	
PTJ	3.38	28	ePn	23	36.50	6.4X
			eSn	24	24.10	
BOB	3.57	302	P	23	32.90	0.1
KBA	4.15	357	ePg	23	43.50	2.4
			iSn	24	20.30	
			i	24	30.10	
			iSg	24	47.30	

S.D. = 1.1 on 16 of 21 obs.

DEC 04, 1989 15h 36m 29.62± 1.42s
32.480 N ± 6.3km 141.510 E ± 8.4km
DEPTH = 55.2 ± 13.0 km
4.9mb (10 obs.) 4.2Msz (1 obs.)
SOUTH OF HONSHU, JAPAN (211)

MAT	4.88	327	iPc	37	41.40	-0.9
			eS	38	33.00	
MDJ	15.27	326	eP	40	02.30	-0.8
CN2	16.92	317	eP	40	23.20	-0.8
Z	12s		0.50um			
SNY	17.04	308	Pc	40	27.00	1.5
Z	14s		0.80um			
N	14s		0.90um			
E	14s		0.60um			
SSE	17.34	271	P	40	30.00	0.8
	1.2s		20.00nm		4.1mb	
GUMO	19.05	170	eP	40	51.00	0.7
	1.0s		144.00nm		5.2mb	
PJG	19.05	170	eP	40	51.00	0.7
GUA	19.11	170	eP	40	51.30	0.4
	0.8s		167.16nm		5.3mb	
BJI	21.73	297	eP	41	20.00	2.2
WHN	23.21	272	eP	41	33.00	0.5
TIY	24.30	291	eP	41	43.00	-0.1
E	15s		1.20um			
HHC	25.34	298	eP	41	53.40	0.4
8TO	26.46	297	eP	42	03.00	-0.3
N	15s		0.70um			
E	15s		0.60um			
XAN	27.24	282	Pd	42	08.20	-2.2
LZH	31.20	287	eP	42	45.00	-1.0
Z	20s		0.50um		4.2Msz	
E	15s		0.40um			
CD2	32.05	277	eP	42	52.40	-0.9
GTA	34.22	294	eP	43	11.50	-0.7
CHTO	40.45	261	eP	44	04.00	-0.5
	0.9s		1.71nm		3.9mb X	
WMO	43.12	301	Pd	44	28.00	1.8
PKI	48.35	280	P	45	08.40	0.2
KKN	48.39	280	P	45	08.80	0.5
	0.9s		29.00nm		5.3mb	
DMN	48.59	280	P	45	10.20	0.2
GKN	48.85	280	P	45	12.40	0.6
	0.9s		19.00nm		5.1mb	
WB2	52.57	188	eP	45	37.70	-2.2
			i	45	50.20	
NDI	54.74	284	eP	45	56.00	0.2
ASPA	56.30	188	iPd	46	05.70	-1.3
	0.5s		7.00nm		5.0mb	
HYB	58.27	271	eP	46	21.00	-0.2
INK	58.42	26	eP	46	20.00	-1.5
			pP	46	33.00	46kmX
WARB	60.03	195	iPd	46	32.80	-0.2
	0.7s		11.00nm		5.1mb	
MBC	60.87	16	eP	46	38.00	-0.2
	0.8s		3.00nm		4.5mb	
GBA	61.04	268	P	46	40.00	-0.2
FORR	64.25	193	eP	46	59.20	-1.9
MAIO	65.80	299	eP	47	11.00	-0.3
BWA	66.87	174	eP	47	20.40	2.5
LRM	77.37	44	eP	48	21.00	0.6
FFC	77.50	32	eP	48	21.00	0.4
	0.6s		5.00nm		4.7mb	
NB2	78.42	338	P	48	25.40	-0.2
	1.0s		6.60nm		4.6mb	
KSP	84.01	329	ePd	48	56.80	1.6
CLL	85.08	330	eP	49	01.00	0.5
ZOBO	148.69	66	PKP	56	12.70	3.2X
LPB	148.87	66	(PKP)	56	15.00	5.4X
CNCB	149.12	67	PKP	56	16.00	5.8X

S.D. = 1.1 on 39 of 42 obs.

% DEC 04, 1989 16h 04m 05.65± 1.13s
40.599 N ± 9.5km 27.497 E ± 7.8km
DEPTH = 10.0km (geophysicist)
TURKEY (366)

EDC	0.38	132	iPg	04	13.50	0.1
			eSg	04	18.50	
BNT	0.40	127	iPg	04	13.60	-0.3
			eSg	04	19.60	
CTT	0.89	52	ePg	04	22.60	-0.2
			eSg	04	35.60	
EZN	1.18	230	iPn	04	27.70	0.0
YLV	1.43	91	iPn	04	32.10	0.4

S.D. = 0.4 on 5 of 5 obs.

DEC 04, 1989 16h 39m 47.91± 0.59s
34.128 N ± 7.9km 26.334 E ± 4.4km
DEPTH = 94.3 ± 17.5 km
CRETE (370)

NPS	1.28	332	eP	40	11.10	-0.4
KAP	1.58	26	eP	40	15.20	-0.1
VAM	2.17	307	eP	40	24.50	1.4
APE	3.01	348	eP	40	33.90	-0.6
KSL	3.32	52	eP	40	38.90	0.2
YER	3.39	27	ePn	40	39.00	-0.8
SMG	3.60	6	eP	40	41.50	-1.0
VLI	3.79	314	eP	40	44.50	-0.7
ELL	3.92	47	ePn	40	48.00	0.9
ITM	4.71	312	eP	40	57.50	-0.4
BCK	4.80	45	ePn	41	00.10	0.9
NEO	5.74	335	eP	41	13.00	0.8
CSS	5.83	80	eP	41	13.00	-0.5
AGG	5.85	328	eP	41	15.00	1.2
VLS	6.16	313	eP	41	17.50	-0.5
LIT	6.71	334	eP	41	25.50	0.0
DSI	8.03	106	iPc	41	43.00	-0.6
			eS	43	08.00	
SALJ	8.13	102	P	41	45.00	-0.1
MASJ	8.24	104	P	41	46.90	0.3
PRNI	8.25	115	eP	41	46.50	-0.2
MBH	8.46	119	eP	41	50.00	0.5
MEU	9.75	291	Pd	42	06.70	-0.4
			eSg	42	07.80	

S.D. = 0.7 on 22 of 22 obs.

? DEC 04, 1989 18h 39m 32.78± 5.12s
3.730 S ±68.2km 152.851 E ±17.6km
DEPTH = 68.2 ± 13.7 km
4.3mb (1 obs.)
NEW IRELAND REGION (190)

RAB	0.82	236	iPd	39	49.00	-0.2
PMG	7.99	225	eP	41	29.00	0.4
HNR	9.04	129	P	41	50.00	7.0X
			(S)	43	23.00	
QIS	21.12	217	eP	44	13.00	-1.1
DZM	22.50	145	iPc	44	28.00	0.2
WB2	24.19	227	eP	44	44.90	0.7
ASPA	26.98	221	eP	45	10.50	0.3
	0.4s		4.00nm		4.3mb	
FORR	35.67	218	eP	46	26.00	-0.4

S.D. = 0.8 on 7 of 8 obs.

? DEC 04, 1989 19h 17m 33.38± 1.66s
31.050 S ± 9.5km 69.655 W ±20.2km
DEPTH = 33.0km (normol)
SAN JUAN PROVINCE, ARGENTINA (137)

RTBS	0.63	164	e(P)	17	46.00	0.2
			S	18	00.00	
RTCB	0.85	121	iPd	17	49.50	0.4
			S	18	07.50	
RTRS	0.89	11	iPd	17	49.50	0.0
			S	18	07.00	
RTLL	1.05	106	iPc	17	52.00	0.1
			S	18	11.00	
RTCV	1.25	131	e(P)	17	54.00	-0.7
			S	18	15.00	

S.D. = 0.6 on 5 of 5 obs.

DEC 04, 1989 19h 27m 14.83± 0.66s
39.811 N ± 4.9km 30.417 E ± 7.0km
DEPTH = 5.0km (geophysicist)
TURKEY (366)

GPA	0.48	350	iPg	27	23.50	-1.0
ALT	0.79	198	iPg	27	30.20	-0.5
			iSg	27	39.60	
YLV	1.10	314	iPn	27	35.50	-0.5
GBZT	1.23	323	ePn	27	38.80	0.7
			iSg	27	57.30	

04d 19h

DST	1.40	262	iPn	27 40.00	-1.0
ISK	1.63	321	ePn	27 44.00	-0.2
KHL	1.64	205	iPn	27 44.50	0.0
BBTK	1.80	88	ePg	27 47.00	0.1
			eSg	28 14.00	
BNT	1.99	287	iPn	27 50.50	1.0
CTT	2.02	312	ePn	27 51.00	1.1
EDC	2.03	286	ePn	27 52.50	2.4
BCK	2.35	177	ePn	27 54.70	-0.1
IZM	2.83	241	ePn	28 05.00	3.4X
DMK	2.85	316	ePn	27 57.00	-4.8X
KAS	2.99	57	iPnd	28 09.40	5.6X
			iSg	28 57.00	
ELL	3.08	188	ePn	28 06.00	0.8
EZN	3.15	272	iPn	28 04.30	-1.7
JMB	3.93	314	eP	28 29.00	11.9X
KDZ	4.22	297	iP	28 21.00	-0.2
RZN	4.72	295	eP	28 27.00	-1.5
PVL	5.11	313	eP	28 51.00	17.1X
MMB	5.39	291	eP	28 38.00	0.2
KKB	5.93	293	eP	28 46.00	0.6

S.D. = 1.1 on 18 of 23 obs.

DEC 04, 1989 20h 42m 36.52± 0.95s
44.337 N ± 7.7km 7.481 E ± 6.5km
DEPTH = 10.0km (geophysicist)
NORTHERN ITALY (545)
ML 2.2 (LDG), 2.0 (GEN).

ENR	0.12	202	P	42 38.92	-0.7
			S	42 40.45	
STV	0.15	231	P	42 39.53	-0.5
			S	42 41.27	
ROB	0.28	99	P	42 42.71	0.2
			S	42 47.02	
PZZ	0.32	302	P	42 43.02	-0.2
			S	42 47.73	
SBF	0.48	184	Pg	42 45.70	-0.5
			Sg	42 52.30	
LRG	1.20	223	Pg	42 59.90	1.1
			Sg	43 16.00	
LMR	1.23	215	Pg	42 59.80	0.5
			Sg	43 15.70	

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

? DEC 04, 1989 21h 03m 36.58± 1.06s
32.764 S ± 9.8km 70.674 W ± 9.2km
DEPTH = 33.0km (normal)
CHILE-ARGENTINA BORDER REGION (127)

JACH	0.11	40	iPd	03 42.50	-0.1
			iS	03 52.50	
ROCH	0.35	234	iPd	03 45.60	0.4
			iS	03 59.00	
PEL	0.38	181	eP	03 46.20	0.7
			iS	03 59.50	
FCH	0.65	150	iPd	03 49.50	-0.1
			iS	04 05.20	
PCH	0.86	171	iPd	03 52.20	-0.2
			iS	04 11.00	
TACH	0.91	194	iPd	03 52.90	-0.2
			iS	04 11.40	
LCCH	1.03	226	ePc	03 55.00	0.2
			iS	04 12.50	
CHCH	1.17	179	eP	03 57.00	0.3
LNV	1.34	207	iPd	03 58.00	-1.1
			iS	04 19.50	

S.D. = 0.6 on 9 of 9 obs.

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* DEC 04, 1989 23h 21m 57.04± 0.97s
15.554 S ±16.4km 71.236 W ±11.7km
DEPTH = 212.7 ± 13.5 km
SOUTHERN PERU (117)

ARE	0.94	195	eP	22 28.00	-0.4
ZOBO	3.08	104	iPd	22 47.90	-1.4
Z	16s		0.31um		
			LR	23 34.00	
LPB	3.17	108	Pc	22 50.00	-0.2
			S	23 35.00	
CNCB	3.37	112	iPc	22 53.00	0.3
			eS	23 38.00	
CCH	5.21	111	iPd	23 16.00	0.6
PT10	6.55	301	eP	23 33.00	0.6
ANT	8.15	175	e(P)	23 51.70	-1.4
			i	23 56.50	
YJA	8.53	141	ePc	24 01.00	2.4
KIC	69.34	77	P	32 43.40	-0.5
GBA	149.63	90	PKPc	41 23.90	5.3X
	0.9s		15.10nm		
HYB	150.98	82	ePKP	41 31.00	10.3X

S.D. = 1.5 on 9 of 11 obs.

DEC 04, 1989 23h 36m 14.66± 0.64s
45 942 N ± 8.4km 15.094 E ± 4.8km
DEPTH = 10.0km (geophysicist)
YUGOSLAVIA (383)
ML 2.4 (K8A), MD 2.9 (LJU), 2.3 (TRI). Felt at Makronog.

LJU	0.40	285	iPgc	36 22.50	-0.4
			iSg	36 28.00	
VBY	0.45	165	ePg	36 25.00	1.1
			iSg	36 29.80	
CEY	0.51	247	ePgc	36 24.50	-0.5
			eSg	36 31.00	
PTJ	0.60	94	iPgc	36 26.00	-0.9
			iSg	36 36.00	
ZAG	0.63	101	iPg	36 27.20	-0.2
			iSg	36 37.80	
RIY	0.78	220	ePg	36 23.80	-6.0X
			iSg	36 39.40	
VOY	0.84	277	ePg	36 30.20	-0.8
			eSg	36 43.60	
TRI	0.96	256	ePg	36 32.30	-0.6
			iSg	36 45.90	
KBA	1.66	314	iPnd	36 45.10	1.0
			iPgd	36 47.40	
			iSg	37 09.40	
FVI	1.73	293	P	36 46.30	1.4
			eSn	37 10.20	
VVI	1.86	272	P	36 46.70	-0.2
			eSn	37 10.60	

S.D. = 1.0 on 10 of 11 obs.

% DEC 05, 1989 00h 31m 49.75± 0.98s
40.438 N ± 5.5km 29.706 E ± 9.5km
DEPTH = 10.0km (geophysicist)
TURKEY (366)

YLV	0.28	297	iPg	31 55.90	0.1
			iSg	31 58.90	
HRT	0.38	356	ePg	31 57.20	-0.4
ISK	0.80	322	ePg	32 05.40	0.2
DST	1.17	225	iPn	32 11.10	-0.6
CTT	1.20	307	ePn	32 12.40	0.3
BNT	1.37	267	iPn	32 14.90	0.1
ALT	1.42	167	ePn	32 16.00	0.4

S.D. = 0.5 on 7 of 7 obs

& DEC 05, 1989 00h 40m 36.31s
63.002 N 150.970 W
DEPTH = 122.8km
CENTRAL ALASKA (1)
<AGS-P>.

KTH	0.55	2	eP	40 54.98	-0.3
			eS	41 08.39	
HUR	0.61	92	eP	40 55.06	-0.5
			eS	41 09.19	
CUT	0.68	151	eP	40 55.81	-0.2
SKT	1 06	194	eP	40 59.02	-0.5
			eS	41 16.40	
PWA	1 45	159	eP	41 03.39	-0.3
GHO	1 56	141	iP	41 04.84	-0.2
			eS	41 26.35	
PME	1 65	146	eP	41 05.28	-0.7
			eS	41 27.48	
PLRM	1 66	148	eP	41 05.20	-0.9
NCG	1 70	200	eP	41 06.22	-0.5
PMS	1.88	159	eP	41 08.32	-0.6
			eS	41 32.27	

10 obs. associated

DEC 05, 1989 01h 42m 56.34± 0.48s
20.829 S ± 5.2km 178.504 W ± 3.5km
DEPTH = 580.0 ± 6.2 km
5.2mb (40 obs.)
FIJI ISLANDS REGION (181)

SVA	3 94	313	iPc	44 21.20	0.8
			eS	45 33.20	
AFI	9.41	44	eP	45 08.00	-1.5
DZM	14.07	262	iPc	45 57.20	1.4
			iS	48 31.00	
KRP	17.80	196	P	46 33.90	2.2
KHZ	22.54	196	P	47 12.80	-2.4
HNR	23.65	295	eP	47 24.00	-1.4
TBI	27.01	101	iP	47 55.40	0.5
	0.4s		20.00nm		5.1mb
AFR	27.31	88	iP	47 57.10	-0.4
	1.2s		160.00nm		5.5mb
PAE	27.47	88	iP	47 58.60	-0.3
	1.2s		115.00nm		5.4mb
PPT	27.49	88	iP	47 58.80	-0.4
	1.2s		180.00nm		5.6mb
PPN	27.64	88	iP	47 59.90	-0.5
	1.2s		55.00nm		5.1mb
TVO	27.76	89	iP	48 01.20	-0.3
	1.2s		90.00nm		5.3mb
PMO	29.66	84	iP	48 17.50	-0.4
	1.2s		95.00nm		5.3mb
VAH	29.85	84	iP	48 18.70	-0.7
	1.2s		90.00nm		5.3mb
TPT	29.93	84	iP	48 19.80	-0.3
	1.2s		145.00nm		5.5mb
RUV	30.09	84	iP	48 21.20	-0.3
	1.2s		170.00nm		5.6mb
RMO	30.46	253	iPd	48 25.80	1.2
	0.5s		34.00nm		5.2mb
CAN	31.94	236	eP	48 37.70	0.7
			e	50 14.90	
BWA	32.13	238	eP	48 37.30	-1.3
			e	50 13.90	
			e	54 00.30	
CTA	32.99	265	iPd	48 46.20	0.3
	0.9s		126.05nm		5.5mb
			iPcP	51 12.70	
			iS	53 23.00	
			iScP	54 04.20	
			iScS	58 07.00	
CMS	33.59	244	iPd	48 51.70	0.8
	0.5s		38.00nm		5.3mb
OLP	34.51	253	eP	48 59.00	0.4
PMG	34.96	284	iPd	49 03.00	0.6
TOO	35.32	234	iPd	49 06.20	1.0
	0.8s		56.00nm		5.2mb
LAT	36.24	288	eP	49 14.00	1.1
STK	37.22	244	iPd	49 22.00	1.2
QIS	39.11	263	iPd	49 35.60	-0.7
	0.5s		16.00nm		4.8mb
			e	54 27.00	
ADE	40.05	240	iPd	49 44.00	0.2
	0.6s		33.33nm		5.1mb
ASPA	43.99	257	iPd	50 14.90	-0.1
	0.7s		191.00nm		5.7mb
			iPcP	51 47.60	
			iScP	54 46.40	
			iS	56 03.10	
			iScS	59 10.60	
WB2	44.08	262	iPd	50 15.00	-0.6
			eS	56 02.30	
MTN	48.70	271	iPd	50 49.60	-1.2
GUA	49.59	310	ePd	50 57.10	-0.2
	0.8s		358.21nm		6.0mb
GUMO	49.65	310	eP	50 57.30	-0.5
	0.6s		125.70nm		5.6mb
PJG	49.65	310	eP	50 57.60	-0.2
WARB	50.28	253	iPd	51 01.80	-0.6
	0.4s		30.00nm		5.1mb
COOL	54.66	246	iPd	51 32.50	-1.2
	0.4s		16.00nm		4.7mb
MBL	57.23	258	iPd	51 50.50	-1.0
	0.5s		94.00nm		5.3mb
MEKA	57.44	251	eP	51 51.90	-1.0
	0.5s		18.00nm		4.6mb
KLB	57.49	245	iPd	51 52.20	-0.9
	0.3s		15.00nm		4.7mb
NWAO	57.80	244	eP	51 54.50	-0.7
	0.6s		30.00nm		4.7mb
RKG	57.89	242	eP	51 55.40	-0.4
	0.5s		74.00nm		5.2mb
BAL	58.49	246	iPd	51 59.00	-0.9
	0.6s		49.00nm		5.0mb
MUN	58.76	245	eP	52 00.50	-1.2
MRWA	59.29	248	eP	52 04.50	-0.7
NANU	60.86	255	iPd	52 15.50	-0.1
	0.4s		21.00nm		4.8mb
TRT	67.58	270	ePd	52 58.10	0.1
KAKJ	68.88	325	P	53 05.20	-0.1
SPA	69.30	180	iPc	53 09.10	1.4

0.8s 19.58nm 4.7mb
KKM 69.39 285 ePd 53 09.10 0.2
0.8s 102.10nm 5.4mb
CHJJ 69.40 324 P 53 07.70 -0.8
IIDJ 69.59 323 P 53 09.10 -0.5
WKYJ 70.03 321 eP 53 12.10 -0.2
MAT 70.19 324 iPd 53 12.60 -0.5
0.5s 49.30nm 5.3mb
OFUJ 70.29 328 eP 53 13.30 -0.3
YAMJ 70.43 326 eP 53 14.70 0.3
MTMJ 70.45 324 P 53 14.60 -0.1
TSRJ 70.73 322 P 53 16.50 0.3
TKSJ 70.79 320 eP 53 16.30 -0.3
YONJ 71.97 320 eP 53 22.80 -0.6
ADK 72.41 1 eP 53 24.60 -1.0
0.7s 131.40nm 5.6mb
SHNJ 72.70 318 eP 53 27.00 -0.6
QZH 76.20 304 Pd 53 47.50 0.2
0.8s 0.10nm 2.3mb X
SDN 77.40 10 eP 53 52.40 -0.7
SSE 77.54 310 P 53 54.00 -0.4
0.8s 29.00nm 4.8mb
i 54 08.00
ARN 78.88 43 P 54 03.30 1.9
KGM 79.68 276 ePd 54 07.10 1.1
PLM 79.72 48 P 54 08.00 1.9
CMB 80.02 43 P 54 08.80 1.4
0.5s 4.52nm 4.2mb X
MDJ 80.52 325 Pd 54 10.60 0.9
QIZ 80.56 294 eP 54 11.20 0.8
AIA 80.85 157 eP 54 12.40 1.3
L8FM 81.09 40 P 54 14.70 1.7
KDC 81.23 14 ePd 54 13.40 0.4
KVN 82.07 43 P 54 18.60 0.6
SNY 82.16 320 eP 54 17.60 -0.4
WHN 82.26 307 Pd 54 20.00 1.2
1.0s 0.05nm 2.0mb X
CN2 82.27 323 iPd 54 19.00 0.4
1.2s 0.10nm 2.2mb X
sP 57 29.00
IPM 82.74 278 ePd 54 22.40 0.8
0.8s 114.60nm 5.5mb
TIA 83.15 313 Pd 54 23.60 0.4
SVW 83.71 11 ePd 54 25.30 -0.2
SHW 83.88 36 P 54 27.70 1.0
TTA 85.35 10 ePd 54 33.60 0.2
PMR 85.45 14 ePd 54 33.70 -0.1
0.8s 20.50nm 4.9mb
BJI 85.79 316 Pd 54 36.50 0.6
1.2s 49.00nm 5.1mb
GYA 86.40 300 iPd 54 40.40 1.1
TOA 86.57 15 ePd 54 40.20 0.9
TIY 87.15 312 Pd 54 42.50 0.0
PNT 87.19 34 ePd 54 44.00 1.6
0.7s 10.00nm 4.7mb
IMA 88.65 10 ePd 54 49.10 0.1
0.8s 13.70nm 4.9mb
FBA 88.66 13 iPd 54 48.40 -0.5
KMI 89.08 297 Pd 54 53.50 1.6
BW06 89.53 43 P 54 54.20 0.5
CHTO 89.91 290 iPd 54 57.50 1.9
0.7s 52.41nm 5.6mb
pP 56 52.00 512kmX
CD2 90.57 303 eP 54 56.80 -1.7
LZH 92.59 308 Pd 55 08.50 0.7
1.5s 58.00nm 5.4mb
INK 94.71 15 eP 55 16.00 -0.5
GTA 96.82 309 P 55 27.00 0.2
SUF 134.87 344 ePKP 01 02.00 -8.8X
NUR 137.12 343 iPKP 01 04.50 -10.6X
0.7s 17.40nm
i 01 14.50
NB2 139.25 353 PKP 01 09.20 -9.8X
0.7s 6.80nm
HFS 139.79 351 ePKP 01 11.00 -8.9X
0.5s 12.90nm
EDR 143.84 4 ePKPd 01 25.30 -1.8
EDU 144.17 4 ePKPd 01 26.40 -1.2
ELO 144.20 5 ePKP 01 26.50 -1.2
0.6s 30.00nm
EAB 144.42 6 ePKPd 01 27.40 -0.7
0.6s 44.00nm
EBH 144.43 5 ePKP 01 27.20 -0.9
0.7s 61.00nm
LWI 144.77 233 iPKPd 01 31.20 0.9
ESY 144.83 4 ePKP 01 28.10 -0.7
EAU 144.84 5 ePKP 01 28.60 -0.2

0.8s 71.00nm
EKA 145.37 5 PKPc 01 28.60 -1.1
1.0s 30.40nm
CLI 146.84 327 ePKPd 01 35.50 3.1X
DLE 147.01 9 ePKP 01 34.80 2.4X
0.6s 38.00nm
HLBJ 147.02 297 PKP 01 37.50 4.3X
HRI 147.23 299 ePKP 01 38.00 4.5X
CFR 147.26 324 ePKPd 01 36.50 3.5X
BBTK 147.27 312 ePKP 01 32.00 -1.4
KRA 147.38 338 ePKPd 01 35.90 2.8X
0.5s 59.00nm
e 01 40.40
SALJ 147.55 297 PKP 01 39.10 5.1X
MASJ 147.58 297 PKP 01 39.00 4.9X
VRI 147.58 326 ePKPd 01 37.00 3.4X
TLB 147.70 323 ePKPd 01 37.50 3.8X
WIT 147.82 354 ePKP 01 39.00 5.3X
KSP 147.86 342 iPKPd 01 38.20 4.3X
0.9s 61.00nm
ic 01 43.10
e 03 57.00
DSI 147.89 296 iPKPd 01 39.00 4.5X
ISR 148.16 325 ePKP 01 37.50 2.9X
PSN 148.17 322 iPKPd 01 39.00 4.5X
MLR 148.24 326 ePKPd 01 38.50 3.7X
CLL 148.27 346 ePKP 01 34.00 -0.5
i 01 38.60
i 01 43.60
BRG 148.46 345 ePKP 01 34.70 -0.1
i 01 39.20
i 01 44.50
ipPKP 03 59.00
WTS 148.62 354 ePKP 01 35.00 0.1
1.0s 8.00nm
WTS 148.62 354 iPKP 01 39.60 4.7X
0.9s 89.00nm
i 01 45.00
MBH 148.62 293 iPKPd 01 40.50 4.9X
CMP 148.86 327 ePKPc 01 34.00 -1.6
HRT 148.87 316 ePKP 01 40.00 4.2X
PRU 149.12 344 PKPd 01 41.30 5.5X
1.0s 43.40nm
e 01 48.20
MOX 149.19 347 ePKP 01 36.00 0.1
1.2s 48.00nm
i 01 41.00
e 01 48.00
YLV 149.20 316 iPKP 01 40.90 4.6X
ALT 149.45 313 ePKP 01 42.00 5.2X
HOF 149.45 347 iPKPd 01 41.80 5.5X
BCK 149.83 310 iPKP 01 42.30 4.9X
JMB 149.84 321 ePKPd 01 42.00 4.9X
SRO 149.85 337 iPKP 01 42.00 5.1X
i 01 51.50
ENN 149.92 354 ePKP 01 43.00 6.1X
0.9s 74.00nm
i 01 51.00
ZST 149.94 339 iPKP 01 42.30 5.2X
i 01 50.60
PVL 150.08 324 iPKPd 01 44.00 6.6X
VKA 150.14 340 e(PKP) 01 43.50 6.1X
e 01 52.00
KHC 150.15 344 PKP 01 38.00 0.6
i 01 43.90
i 01 53.00
KHL 150.20 312 iPKP 01 43.40 5.5X
BNT 150.25 317 iPKP 01 33.40 -4.4X
SOP 150.57 339 iPKP 01 45.60 7.6X
ELL 150.62 309 iPKP 01 45.50 6.8X
DIM 150.71 322 ePKP 01 45.00 6.6X
KDZ 151.03 321 iPKPd 01 46.00 7.0X
BEO 151.40 331 ePKP 01 46.00 6.7X
RZN 151.41 322 iPKPd 01 46.00 6.2X
VTS 151.66 325 iPKP 01 47.00 7.0X
MMB 152.04 323 ePKPd 01 48.00 7.5X
FLN 152.08 3 ePKP 01 47.40 7.2X
CDF 152.09 352 ePKP 01 47.70 7.3X
KBA 152.10 343 ePKPd 01 46.50 6.0X
0.7s 10.30nm
i 02 01.00
i 02 04.20
KKB 152.22 324 iPKPd 01 48.00 7.3X
LDF 152.27 2 ePKP 01 47.70 7.2X
PTJ 152.32 338 ePKP 01 40.60 -0.2
ZAG 152.38 338 ePKP 01 48.50 7.8X
SRS 152.43 322 ePKP 01 47.30 6.3X

GRR 152.44 3 ePKP 01 48.30 7.6X
HAU 152.61 353 ePKP 01 48.80 7.8X
LJU 152.67 340 e(PKP) 01 41.00 -0.2
i 01 48.60
e 02 02.00
FVI 152.70 343 PKPc 01 48.00 6.9X
epP 02 01.80
BSF 152.72 352 ePKP 01 49.00 7.7X
LPF 152.78 4 ePKP 01 49.10 7.9X
KNT 152.79 323 ePKPd 01 46.00 4.5X
VAY 152.87 324 iPKP 01 48.80 7.3X
1.1s 0.09nm
i 02 04.00
VOY 152.88 341 ePKP 01 42.90 1.3
i 01 48.80
e 02 03.00
OGA 152.89 346 ePKP 01 42.20 0.5
VBY 152.91 338 iPKPd 01 49.60 8.1X
e 02 03.80
SKO 153.03 326 ePKP 01 41.50 -0.3
i 01 49.50
i 02 05.00
THE 153.10 322 ePKP 01 48.60 6.7X
RIY 153.34 339 iPKP 01 49.80 7.8X
CTI 153.50 344 PKP 01 49.60 7.2X
ipP 02 05.60
LOR 153.56 356 ePKP 01 51.00 8.7X
LIT 153.73 322 ePKPc 01 49.00 6.2X
SSF 153.78 357 ePKP 01 51.60 9.0X
LBF 153.83 356 ePKP 01 51.40 8.7X
OHR 153.98 325 ePKP 01 51.20 8.1X
1.2s 0.06nm
MFF 154.26 3 ePKP 01 52.40 9.2X
VAI 154.32 348 PKP 01 43.40 0.1
ipP 02 09.10
AGG 154.51 320 ePKP 01 59.20 15.3X
TCF 154.60 359 ePKP 01 53.00 9.2X
LSF 154.64 360 ePKP 01 53.10 9.3X
FIR 155.71 343 ePKP 01 55.00 9.7X
e 02 16.00
BCAO 156.76 228 iPKPc 01 47.40 -0.2
0.5s 20.00nm
i 02 21.20
KIC 164.40 156 PKP 01 55.60 0.2
S.D. = 0.9 on 121 of 193 obs

% DEC 05, 1989 02h 48m 03.46± 2.45s
40.413 N ± 9.1km 29.714 E ±19.6km
DEPTH = 10.0km (geophysicist)
TURKEY (366)

YLV 0.30 301 iPg 48 09.90 0.1
iSg 48 12.90
HRT 0.41 355 ePg 48 11.60 -0.2
ISK 0.82 323 ePg 48 20.40 1.1
DST 1.16 226 iPn 48 25.10 -0.1
CTT 1.22 307 ePn 48 25.00 -1.2
BNT 1.37 268 iPn 48 28.90 0.3
S.D. = 0.9 on 6 of 6 obs.

DEC 05, 1989 03h 58m 48.30± 0.21s
5.790 S ± 3.6km 133.707 E ± 4.8km
DEPTH = 33.0km (normal)
5.1mb (18 obs.) 4.4Msz (4 obs.)
AROE ISLANDS REGION (204)
CENTROID, MOMENT TENSOR (HRV)
Data Used: GDSN
L.P.B.: 14S, 28C
Centroid Location:
Origin Time 03:58:51.7 0.6
Lat 5.25S 0.12 Lon 134.06E 0.12
Dep 42.5 7.9 Half-duration 1.6
Moment Tensor; Scale 10**16 Nm
Mrr=-4.41 0.87 Mtt= 0.68 0.53
Mff= 3.73 1.01 Mrt=-0.47 1.01
Mrf= 3.07 0.91 Mtf= 1.92 0.96
Principal Axes:
T Val= 5.37 Plg=16 Azm=290
N 0.25 16 196
P -5.62 68 63
Best Double Couple:Mo=5.5*10**16
NP1:Strike= 42 Dip=32 Slip= -60
NP2: 187 62 -108

MTN 7.46 200 eP 00 37.00 -0.6
MNDI 9.90 93 eP 01 10.00 -1.7
KUG 10.92 246 ePd 01 29.00 3.6X

05d 04h

		eS	03 27.50			
KNA	11.02	206 eP	01 24.70	-2.1		
	0.3s	123.00nm		6.6mb X		
		eS	03 21.00			
MNI	11.40	309 ePc	01 29.20	-2.8		
LAT	13.24	94 eP	02 05.00	8.4X		
PMG	13.80	106 eP	02 03.00	-1.0		
	1.1s	268.35nm		6.0mb		
WB2	14.08	178 eP	02 02.00	-5.7X		
QIS	15.76	159 iPc	02 24.90	-4.6X		
		e	02 34.00			
		eS	05 12.00			
ASPA	17.77	179 iPd	02 51.10	-3.9X		
	0.6s	134.00nm		5.2mb		
Z	19s	3.42um		4.7MszX		
		eS	05 56.90			
		LR	09 53.50			
TSM	18.51	302 ePc	03 05.70	1.6		
CTA	18.73	141 iPd	03 06.30	-0.4		
	1.0s	81.50nm		4.9mb		
		iS	06 42.00			
MBL	20.35	220 eP	03 24.20	-0.6		
	0.3s	7.00nm		4.5mb		
TRT	21.01	264 ePc	03 27.80	-3.8X		
KKM	21.05	304 ePc	03 31.70	-0.4		
	0.7s	86.30nm		5.3mb		
WARB	21.37	198 iPd	03 35.60	0.3		
	0.4s	25.00nm		5.0mb		
GUA	22.19	30 eP	03 43.70	0.2		
GUMO	22.21	30 eP	03 44.70	1.0		
PJG	22.21	30 eP	03 44.60	0.9		
QLP	22.99	155 ePd	03 53.20	2.0		
NANU	24.21	225 eP	04 04.50	1.4		
	0.4s	14.00nm		4.9mb		
		eS	08 28.00			
RMQ	25.10	147 eP	04 12.00	0.3		
		e	04 14.00			
		e	10 00.40			
BAG	25.60	330 eP	04 15.60	-1.0		
HNR	26.25	100 eP	04 20.00	-2.5		
STK	26.99	165 iPd	04 29.30	0.2		
	0.6s	69.00nm		5.5mb		
		e	04 45.00			
		e	09 50.00			
COOL	27.61	204 eP	04 34.10	-0.7		
BRS	28.12	142 iPd	04 38.50	-0.9		
	0.5s	4.00nm		4.4mb		
Z	18s	26.50um		5.9MszX		
		i	04 43.00			
		e(S)	10 00.00			
ADE	29.40	172 iPd	04 51.30	0.4		
	0.9s	55.46nm		5.3mb		
BAL	29.41	211 eP	04 50.50	-0.5		
BWA	31.58	156 eP	05 11.20	1.0		
		e	05 28.20			
BFD	32.27	167 ePd	05 16.70	0.6		
CAN	32.59	156 eP	05 19.10	0.1		
TOO	33.41	163 iPd	05 27.50	1.4		
	0.7s	34.00nm		5.4mb		
		e	05 43.00			
QZH	33.90	335 Pd	05 29.00	-1.4		
	0.8s	0.03nm		2.3mb X		
QIZ	34.07	317 eP	05 30.80	-1.2		
IPM	34.22	287 ePc	05 32.90	-0.5		
	0.9s	54.70nm		5.5mb		
DZM	35.53	120 iPd	05 45.00	0.4		
SSE	38.58	343 P	06 10.50	0.5		
	1.0s	24.00nm		5.0mb		
Z	20s	0.50um		4.3Msz		
		pP	06 25.50	59kmX		
		eS	12 06.00			
NJ2	40.20	340 Pd	06 24.20	0 8		
WHN	40.61	334 P	06 28.00	1.3		
		sP	06 43.00			
TSRJ	41.16	3 eP	06 31.90	0.7		
IIDJ	41.24	5 eP	06 44.00	12.1X		
GYA	41.41	322 iPc	06 33.60	0.0		
		sP	06 48.60			
CHJJ	41.91	6 eP	06 38.60	1.2		
CHTO	42.09	306 eP	06 39.10	0.0		
	1.4s	161.78nm		5.6mb		
		pP	06 44.20	17kmX		
		sP	06 54.30			
KAKJ	42.21	8 eP	06 38.00	-1.8		
MAT	42.32	5 (P)	06 39.00	-1.8		
	1.0s	15.00nm		4.7mb		
Z	20s	0.71um		4.5Msz		

MTMJ	42.33	5 P	06 40.10	-0.8		
KMI	43.02	317 Pc	06 47.00	0.0		
		sP	07 02.50			
NIIJ	43.09	6 eP	06 47.50	0.5		
TIA	44.58	341 eP	06 58.50	-0.6		
XAN	46.03	331 P	07 10.20	-0.5		
CD2	46.39	324 eP	07 13.00	-0.6		
TIY	47.60	337 eP	07 22.50	-0.6		
Z	14s	0.50um		4.6MszX		
SNY	48.28	350 eP	07 29.80	1.6		
BJI	48.38	342 eP	07 29.00	0.0		
CN2	49.92	352 Pc	07 45.00	4.2X		
Z	20s	0.60um		4.6Msz		
		sP	07 55.00			
LZH	50.20	328 eP	07 43.50	0.2		
	1.5s	33.00nm		5.1mb		
Z	20s	0.30um		4.3Msz		
		pP	07 48.00	15kmX		
MDJ	50.31	356 eP	07 44.50	0.7		
HHC	50.67	338 eP	07 47.50	0.8		
LSA	53.97	313 P	08 13.00	1.0		
GTA	54.80	328 eP	08 17.80	0.2		
PKI	57.22	308 P	08 34.60	-0.8		
KKN	57.42	308 P	08 36.00	-0.7		
GKN	58.02	308 P	08 40.20	-0.6		
KOD	58.23	286 eP	08 46.00	3.4X		
GBA	59.09	290 P	08 47.00	-1.2		
DRV	60.93	177 eP	09 01.00	1.0		
WMQ	64.47	325 P	09 24.80	0.8		
		sP	09 39.20			
KSH	69.64	316 eP	09 59.00	2.2		
MAIO	80.82	308 eP	11 03.00	2.4		
SVW	85.85	27 eP	11 26.70	0.9		
TTA	86.30	26 eP	11 28.60	0.6		
PMR	88.98	28 eP	11 40.50	-0.3		
	1.0s	10.00nm		5.1mb		
INK	96.37	22 eP	12 14.00	-0.7		
MBC	99.59	13 eP	12 28.50	-0.7		
	0.9s	7.00nm		5.2mb		
BCAO	115.44	272 ePKPd	17 34.60	5.0X		
	1.0s	5.00nm				
LPG	119.47	320 ePKP	17 36.10	-0.6		
	0.6s	2.70nm				
LBF	120.56	322 ePKP	17 38.50	0.1		
	0.6s	2.70nm				
SSF	120.81	323 ePKP	17 39.40	0.6		
	0.6s	2.70nm				
AVF	121.03	322 ePKP	17 39.20	0.0		
	0.8s	5.90nm				
BGF	121.45	322 ePKP	17 40.30	0.2		
	0.6s	4.80nm				
TCF	121.96	322 ePKP	17 41.30	0.2		
	0.6s	2.70nm				
LSF	122.39	322 ePKP	17 42.00	0.1		
	0.6s	2.70nm				
MFF	123.22	324 ePKP	17 43.70	0.3		
	0.6s	4.30nm				
YJA	146.44	147 ePKP	18 30.00	2.3X		
ARE	146.68	132 ePKP	18 30.00	2.0X		
CNCB	148.95	137 PKP	18 34.70	2.7X		
LPB	149.06	136 PKP	18 38.00	6.0X		
ZOBO	149.23	136 PKP	18 34.90	2.5X		
	1.2s	44.59nm				
CCH	149.76	140 PKP	18 40.00	7.2X		
	S.D. = 1.1	on 75 of 91 obs.				

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* DEC 05, 1989 04h 40m 35.14± 0.62s
15.453 S ±26.0km 172.976 W ±19.7km
DEPTH = 10.0km (geophysicist)
4 9mb (6 obs.) 4.5Msz (1 obs.)
SAMOA ISLANDS REGION (169)

AFI	1.92	37 iPc	41 04.50	-3.8		
		S	41 27.00			
		eTT	42 47.00			
DZM	20.56	248 iPc	45 15.70	-1.1		
CMS	40.75	240 iPc	48 16.40	-1.7		
STK	44.37	240 eP	48 46.00	-1.6		
WB2	50.22	257 eP	49 52.00	18.4X		
ASPA	50.49	252 iPd	49 33.40	-2.3		
	0.7s	23.00nm		5.2mb		
Z	20s	0 51um		4 5Msz		
		LR	09 03.50			
PRI	71.23	43 e(P)	52 00.00	3.2X		
FRI	72.35	42 eP	52 02.60	-0.7		
CMB	72.53	41 ePc	52 03.60	-0.8		
ORV	72.76	39 eP	52 04.80	-0.8		

WDC	72.77	38 eP	52 05.50	-0.1		
MIN	73.18	39 eP	52 07.10	-1.2		
GLA	73.52	48 P	52 11.00	0.7		
LBFM	73.63	38 P	52 14.80	3.9X		
KVN	74.58	41 P	52 16.20	-0.3		
TNP	74.60	43 P	52 16.30	-0.3		
	0.8s	6.18nm		4.7mb		
MSU	78.18	44 P	52 37.30	0.5		
TTA	79.25	8 P	52 42.50	0.6		
	1.2s	22.73nm		5.1mb		
DAU	79.76	43 P	52 45 40	-0.1		
PNT	79.84	32 eP	52 46.00	0.7		
ALQ	80.52	50 P	52 49.80	0.3		
LRM	81.81	38 eP	52 56.10	0.1		
FBA	82.37	11 P	52 58.50	0.2		
	0.9s	41.67nm		5.6mb		
		pP	53 07.60	29kmX		
IMA	82.56	8 P	53 00.60	1.2		
	0.8s	3.66nm		4.6mb		
GOL	83.40	46 P	53 04.30	-0.1		
GLD	83.52	46 P	53 05.10	0.1		
SES	85.01	35 ePc	53 12.20	0.2		
EDM	85.32	31 eP	53 13.50	0.0		
BJI	85.80	313 eP	53 17.00	0.9		
INK	88.22	14 eP	53 28.00	0.7		
CHTO	93.11	289 eP	53 53.00	2.0		
	0.8s	0.92nm		4.3mb		
PRU	145.02	352 PKP	00 14.10	-0.2		
KAS	145.33	323 ePKP	00 17.00	1.8		
KHC	145.99	352 iPKPc	00 18.50	2.5X		
	1.0s	9.50nm				
NAI	146.19	243 iPKP	00 22.00	4.4X		
	1.0s	26.00nm				
FLN	146.22	9 ePKP	00 17.10	0.8		
	0.8s	11.80nm				
ZST	146.31	348 e(PKP)	00 28.30	11.8X		
SRO	146.41	346 ePKP	00 28.70	12.1X		
		e	00 54.80			
LDF	146.43	9 ePKP	00 18.40	1.7		
	0.8s	10.70nm				
GRR	146.52	10 ePKP	00 17.50	0.7		
	0.8s	10.70nm				
LPF	146.84	10 ePKP	00 19.10	1.8		
	0.8s	17.10nm				
BBTK	146.91	322 ePKP	00 21.00	3.1X		
CDF	147.13	360 ePKP	00 20.30	2.4X		
	0.6s	3.60nm				
HAU	147.54	1 ePKP	00 21.60	3.1X		
	0.8s	10.70nm				
BSF	147.71	0 ePKP	00 21.90	3.0X		
LOR	148.17	4 ePKP	00 23.30	3.8X		
	0.8s	9.40nm				
SSF	148.35	5 ePKP	00 23.80	4.0X		
	0.8s	6.70nm				
LBF	148.46	4 ePKP	00 24.00	4.0X		
	0.8s	5.30nm				
HRI	148.55	310 ePKP	00 26.00	5.3X		
AVF	148.61	5 ePKP	00 24.00	3.8X		
	0.6s	3.60nm				
SMF	148.79	4 ePKP	00 24.60	4.1X		
BGF	148.79	6 ePKP	00 24.60	4.1X		
	0.8s	8.00nm				
LSF	148.95	7 ePKP	00 24.80	4.0X		
	0.8s	10.70nm				
VOY	148.98	351 ePKP	00 25.00	4.0X		
TCF	149.00	6 ePKP	00 25.10	4 2X		
	0.8s	4.00nm				
MAF	149.10	6 ePKP	00 25.60	4.6X		
	1.0s	10.00nm				
VBY	149.25	349 e(PKP)	00 27.00	5.7X		
LPG	150.05	0 ePKP	00 27.10	4.2X		
	1.0s	14.00nm				
LFF	150.13	9 ePKP	00 28.10	5.5X		
	1.0s	20.00nm				
PRNI	150.38	305 ePKP	00 30.00	6.5X		
MBH	150.70	304 e(PKP)	00 30.00	6.1X		
SKO	150.79	338 e(PKP)	00 23.50	-0.2		
		i	00 30.00			
OHR	151.78	338 e(PKP)	00 32.20	6.9X		
BCAO	164.25	227 ePKPc	00 41.20	0.4		
	0.6s	8.00nm				
		i	01 35.00			
	S.D. = 1.2	on 36 of 64 obs.				

? DEC 05, 1989 05h 02m 08.47± 0.78s
15.882 S ±28.1km 173.281 W ±19.6km
DEPTH = 10.0km (geophysicist)

4.9mb (6 obs.) 4.7Msz (1 obs.)
TONGA ISLANDS (173)

AFI	2.44	37	eP	02	47.00	-2.1
			S	03	17.00	
			e	05	13.00	
DZM	20.13	249	iPc	06	53.80	8.1X
WB2	49.83	257	eP	11	04.30	0.3
ASPA	50.07	252	iPc	11	04.30	-1.6
	0.8s	16.00nm			5.0mb	
	Z 18s	0.65um			4.7Msz	
			LR	31	25.40	
PLM	72.74	47	P	13	40.70	1.5
CMB	73.05	41	ePc	13	40.60	-0.1
			e	13	52.20	
MIN	73.70	39	eP	13	44.50	-0.1
KVN	75.10	41	P	13	52.60	-0.2
TNP	75.11	43	P	13	52.50	-0.4
	0.9s	23.44nm			5.2mb	
BMW	76.68	33	P	14	02.10	0.7
MSU	78.69	44	P	14	13.10	0.2
DUG	79.13	43	P	14	15.00	-0.2
PMR	79.57	11	P	14	17.00	0.2
TTA	79.71	8	P	14	19.60	1.9
	1.0s	8.75nm			4.7mb	
PNT	80.36	32	ePc	14	22.00	0.6
	0.6s	4.00nm			4.6mb	
ALQ	81.02	50	P	14	25.00	-0.5
LRM	82.32	38	eP	14	39.50	7.4X
BW06	82.55	42	P	14	32.80	-0.5
FBA	82.84	11	P	14	34.80	0.8
	0.8s	14.66nm			5.2mb	
GOL	83.90	46	P	14	39.90	-0.4
SES	85.53	35	ePc	14	47.50	-0.4
INK	88.71	14	eP	15	04.00	1.1
CHTO	92.97	289	e(P)	15	22.70	-1.0
	0.7s	1.27nm			4.5mb	
PKI	107.02	294	Pdiff	16	43.80	16.4X
	0.4s	3.00nm				
KKN	107.17	295	Pdiff	16	44.30	16.4X
	0.6s	8.00nm				
GKN	107.76	295	Pdiff	16	48.80	18.3X
	0.4s	5.00nm				
SPC	144.99	344	ePKP	21	48.00	0.2
PRU	145.39	351	ePKP	21	48.50	0.3
			e	21	59.00	
KHC	146.37	352	PKP	21	53.00	3.0X
ZST	146.66	347	ePKP	22	05.90	15.5X
SRO	146.75	346	ePKP	22	04.40	13.9X
LOR	148.61	4	ePKP	22	08.70	15.1X
	1.2s	11.90nm				
SSF	148.80	4	ePKP	22	09.10	15.3X
	1.2s	8.90nm				
LBF	148.90	4	ePKP	22	09.50	15.4X
	1.2s	11.90nm				
BGF	149.25	5	ePKP	22	09.70	15.1X
	1.0s	8.80nm				
LSF	149.41	7	ePKP	22	09.70	14.9X
TCF	149.45	6	ePKP	22	09.20	14.3X
	1.2s	17.80nm				
MAF	149.55	6	ePKP	22	10.40	15.4X
	1.2s	19.00nm				

S.D. = 0.9 on 23 of 38 obs.

DEC 05, 1989 05h 07m 57.86± 0.63s
24.139 N ± 9.3km 141.844 E ± 6.9km
DEPTH = 134.0km (2 depth phases)
4.9mb (10 obs.)
VOLCANO ISLANDS REGION (213)

IIDJ	11.80	344	eP	10	44.50	1.4
KAKJ	12.11	354	eP	10	46.30	-0.7
			eS	13	00.30	
CHJJ	12.12	349	P	10	46.70	-0.5
			S	12	59.60	
TSRJ	12.44	337	eP	10	54.80	3.5X
MAT	12.75	347	(P)	10	55.00	-0.4
	0.8s	9.70nm			4.4mb	
			eS	13	13.00	
MTMJ	12.88	345	eP	10	58.30	1.1
NIIJ	13.28	350	eP	11	00.90	-1.4
			S	13	26.80	
SSE	19.56	295	Pd	12	18.00	0.6
	0.8s	97.00nm			5.2mb	
OZH	21.17	277	eP	12	33.00	-0.7
NJ2	21.73	296	iPc	12	40.00	0.7
SNY	23.28	324	eP	12	54.80	0.5
TIA	24.45	305	Pc	13	05.60	0.0
WHN	25.20	291	P	13	13.00	0.4
TIY	28.49	305	eP	13	42.60	0.0
XAN	30.30	297	P	13	58.40	-0.2
LZH	34.75	299	eP	14	37.40	0.1
CHTO	40.16	271	eP	15	23.50	1.1
	0.6s	0.98nm			3.7mb	X
WB2	44.42	190	eP	15	48.50	-8.5X
			e	16	18.30	131km
ASPA	48.14	190	iPc	16	18.20	-8.0X
	0.6s	11.00nm			4.8mb	
			epP	16	49.60	137km
SDN	52.20	38	ePc	16	56.30	-0.4
SVW	55.94	31	ePc	17	25.20	1.2
TTA	56.16	29	ePc	17	26.30	0.7
KDC	56.97	36	eP	17	31.20	0.0
IMA	57.87	26	ePc	17	38.60	1.0
	0.7s	9.30nm			4.9mb	
PMR	59.10	31	ePc	17	45.60	-0.4
	0.7s	17.10nm			5.2mb	
FBA	60.08	28	eP	17	52.50	-0.2
INK	65.84	24	iPc	18	30.30	-0.2
	0.5s	26.00nm			5.4mb	
MBC	68.81	15	ePc	18	49.50	0.5
	0.5s	28.00nm			5.4mb	
SOD	77.03	339	eP	19	50.00	12.9X
SUF	79.72	335	eP	19	51.00	-0.8
	0.6s	6.50nm			4.6mb	
NUR	81.56	334	eP	19	58.70	-2.7
SES	81.93	38	eP	20	04.40	0.7
FFC	84.41	32	iPd	20	16.80	0.7
	1.0s	16.00nm			4.8mb	
NB2	86.23	338	P	20	23.20	-2.0
	1.1s	4.30nm			4.3mb	
BCAO	117.97	289	iPdiff	23	05.00	15.5X
	0.7s	7.00nm				
ZOBO	150.85	80	PKP	27	35.00	3.6X
	Z 20s	0.15um			4.8Msz	
			LR	49	26.00	
LPB	150.97	81	PKP	27	31.00	-0.4
CNCB	151.17	81	PKP	27	36.80	5.0X
CCH	153.01	81	ePKP	27	20.00	-14.2X

S.D. = 1.0 on 31 of 39 obs.

% DEC 05, 1989 06h 07m 17.54± 0.95s
45.673 N ± 8.4km 26.312 E ± 9.3km
DEPTH = 10.0km (geophysicist)
ROMANIA (358)

MLR	0.32	235	iPc	07	24.00	-0.2
VRI	0.35	56	iPc	07	24.00	-0.8
ISR	0.56	163	ePc	07	29.00	0.1
CLI	1.11	37	ePd	07	39.00	0.7
TLB	1.63	131	eP	07	46.50	0.2

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

DEC 05, 1989 06h 26m 28.15± 0.50s
39.631 N ± 4.4km 26.240 E ± 5.7km
DEPTH = 10.0km (geophysicist)
TURKEY (366)
MD 3.3 (ATH).

EZN	0.20	19	iPg	26	32.80	0.2
			iSg	26	45.80	
PRK	0.39	176	ePb	26	36.80	0.7
EDC	1.44	60	iPn	26	54.50	0.3
IZM	1.47	147	ePn	26	54.00	-0.7
BNT	1.48	60	iPn	26	55.90	1.1
RDO	1.61	341	ePb	26	55.80	-0.8
			eSn	27	15.40	
DST	1.84	90	ePn	26	59.30	-0.8
SMG	1.98	166	ePn	27	01.50	-0.5
KDZ	2.11	343	iP	27	04.00	0.0
PLG	2.27	290	ePn	27	07.20	0.9
RZN	2.36	331	iP	27	07.00	-0.7
SRS	2.51	307	eP	27	23.00	13.4X
			eS	27	43.50	
YLV	2.58	68	ePn	27	11.00	0.3
ISK	2.59	55	ePn	27	20.00	9.3X
HRT	2.88	65	ePn	27	22.00	7.0X
KNT	2.98	302	eP	27	26.00	9.7X
			eS	28	01.00	

S.D. = 0.8 on 12 of 16 obs.

% DEC 05, 1989 07h 04m 27.09± 0.58s
39.277 N ± 5.2km 28.207 E ± 5.6km
DEPTH = 10.0km (geophysicist)
TURKEY (366)

DST	0.46	45	iPg	04	36.40	-0.1
			eSg	04	43.40	
BNT	1.10	349	iPn	04	48.20	0.4
EDC	1.10	346	iPn	04	47.50	-0.3
IZM	1.15	220	iPn	04	49.00	0.4
KHL	1.40	132	ePn	04	52.00	-0.8
ALT	1.50	98	ePn	04	54.00	-0.1
EZN	1.55	291	iPn	04	54.80	0.0
YLV	1.57	34	iPn	04	55.80	0.7
CTT	1.88	5	ePn	04	58.00	-1.5
ISK	1.90	20	ePn	05	00.00	0.2
GPA	1.91	57	ePn	05	01.00	1.0

S.D. = 0.8 on 11 of 11 obs.

? DEC 05, 1989 07h 18m 24.46±13.39s
18.749 N ±93.1km 65.814 W ±65.6km
DEPTH = 33.0km (normal)
PUERTO RICO REGION (90)

LPR	0.44	187	P	18	34.10	-0.1
SJG	0.71	207	iP	18	38.10	0.0
			S	18	47.20	
CPD	0.71	188	P	18	38.20	0.1
			S	18	47.90	
PORP	1.04	229	P	18	42.80	0.0
LRS	1.08	245	P	18	43.30	0.0
			S	18	55.30	

S.D. = 0.1 on 5 of 5 obs.

? DEC 05, 1989 08h 21m 24.16± 4.86s
32.845 S ±19.9km 72.350 W ±33.5km
DEPTH = 10.0 ± 4.1 km
OFF COAST OF CENTRAL CHILE (134)

IHA	0.62	107	eP	21	37.00	0.3
			iS	21	43.20	
LCCH	0.91	134	iPd	21	41.00	-0.5
			iS	21	51.10	
ROCH	1.13	97	iPd	21	45.00	-0.5
			iS	21	57.50	
LNV	1.36	145	iPd	21	49.00	-0.1
			iS	22	04.90	
PEL	1.43	102	iPc	21	50.50	0.3
			iS	22	07.00	
TACH	1.43	125	iPc	21	49.50	-0.7
			iS	22	06.50	
JACH	1.49	84	iPc	21	50.50	-0.6
			iS	22	08.00	
SAN	1.54	114	iPd	21	52.40	0.7
			iS	22	10.00	
PCH	1.72	117	iPc	21	54.90	0.5
			iS	22	15.50	
CHCH	1.79	128	iP	21	55.50	0.2
			iS	22	17.80	
FCH	1.79	106	iPc	21	56.10	0.4
			iS	22	17.50	

S.D. = 0.6 on 11 of 11 obs.

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* DEC 05, 1989 08h 23m 38.16± 3.51s
32.904 S ±13.7km 72.200 W ±23.4km
DEPTH = 10.0km (geophysicist)
OFF COAST OF CENTRAL CHILE (134)

IHA	0.49	105	eP	23	48.50	0.5
			iS	23	54.90	
LCCH	0.78	137	iPc	23	53.20	-0.1
			iS	24	03.10	
ROCH	1.00	94	iPd	23	56.60	-0.7
			iS	24	09.50	
LNV	1.24	148	iPd	24	00.60	-0.6
			iS	24	16.50	
PEL	1.29	101	iPc	24	02.10	-0.1
			iS	24	18.50	
TACH	1.29	126	iP	24	01.50	-0.7
			iS	24	19.00	
JACH	1.37	81	iPd	24	03.00	-0.4
			iS	24	19.10	
SAN	1.40	113	iPd	24	04.20	0.4
			iS	24	21.50	
PCH	1.58	117	iPc	24	06.70	0.3
			iS	24	27.10	
CHCH	1.65	129	iPc	24	08.20	0.8
			iS	24	29.60	
FCH	1.66	105	iPc	24	08.00	0.3
			iS	24	29.50	

05d 08h

S.D. = 0.6 on 11 of 11 obs.

% DEC 05, 1989 08h 38m 02.88± 1.24s
16.909 N ±15.3km 99.726 W ±11.9km
DEPTH = 10.0km (geophysicist)
NEAR COAST OF GUERRERO, MEXICO (58)

ACX	0.13	253	iPd	38 06.00	-0.1
			iS	38 09.50	
III	1.48	10	iPd	38 25.00	-4.7X
			iS	38 49.50	
PPM	2.39	26	iP	38 41.50	-1.6
UNM	2.46	12	(P)	38 45.00	1.0
IIT	2.50	33	eP	38 45.00	0.6
			(S)	39 20.00	
OXX	2.88	86	eP	38 50.00	0.1
			iS	39 28.50	
IISM	3.05	47	iP	38 48.25	-3.7X

S.D. = 1.4 on 5 of 7 obs.

% DEC 05, 1989 08h 52m 08.51± 2.53s
41.386 N ±16.5km 29.491 E ±17.9km
DEPTH = 10.0km (geophysicist)
TURKEY (366)

HRT	0.58	167	ePg	52 20.20	-0.1
GBZT	0.60	183	eP	52 20.50	-0.1
YLV	0.82	186	iPn	52 24.90	0.4
CTT	0.84	254	ePn	52 24.90	0.3
DMK	1.37	289	iPn	52 33.70	0.0
BNT	1.57	230	ePn	52 36.00	-0.5

S.D. = 0.4 on 6 of 6 obs.

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* DEC 05, 1989 08h 53m 58.86± 0.90s
39.024 N ± 9.6km 27.528 E ± 8.0km
DEPTH = 10.0km (geophysicist)
TURKEY (366)

IZM	0.66	198	ePn	54 12.00	0.0
DST	1.03	55	iPn	54 18.40	0.0
LSK	5.47	284	ePg	55 40.60	18.1X
TPE	5.94	285	iPgc	55 28.70	-0.2
BERA	6.07	288	iPgd	55 30.30	-0.4
VLO	6.36	286	iPg	55 35.50	0.7

S.D. = 0.6 on 5 of 6 obs.

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* DEC 05, 1989 09h 04m 13.70± 1.05s
6.359 S ±14.9km 148.024 E ±11.4km
DEPTH = 33.0km (normol)
4.3mb (2 obs.)
NEW BRITAIN REGION (192)
ML 4.5 (PMG).

LAT	1.06	254	iPd	04 33.00	0.8
PMG	3.15	196	iPd	05 45.00	42.9X
	1.1s	106.33nm			
			eS	05 51.00	
MNDI	4.34	272	eP	05 26.00	6.6X
RAB	4.66	63	eP	05 23.50	-0.1
WB2	18.94	223	eP	08 19.90	-14.8X
RMO	20.03	178	iPd	08 47.30	0.5
OLP	20.43	190	ePc	08 51.20	0.2
BRS	21.40	168	iPd	09 01.50	0.6
	1.0s	2.00nm			3.5mb
ASPA	21.92	217	iPd	09 04.60	-1.6
	0.4s	35.00nm			5.1mb
			eS	13 06.10	
STK	26.09	193	eP	09 46.00	-0.3

S.D. = 1.0 on 7 of 10 obs.

? DEC 05, 1989 09h 29m 37 52± 1.03s
8.886 S ±15.6km 113.206 E ±24.6km
DEPTH = 33.0km (normol)
4.3mb (2 obs.)
JAVA (277)

TRT	1.30	334	ePc	29 59.60	0.1
			iS	30 19.40	
MBL	13.77	153	eP	32 57.50	4.7X
	0.3s	7.00nm			5.0mb X
			eS	35 34.00	
NANU	13.78	171	eP	32 53.00	0.1
	0.3s	9.00nm			5.1mb X
MTN	18.03	104	iP	33 53.00	5.6X
MEKA	18.34	165	eP	33 54.00	2.8X
			eS	37 17.00	
WB2	23.21	121	eP	34 43.90	1.2
ASPA	24.66	129	iPd	34 56.60	-0.2
	0.5s	15.00nm			4.8mb
			eS	40 04.50	
BRS	41.62	121	iPc	37 23.30	-1.2
	0.8s	1.30nm			3.7mb

S.D. = 1.2 on 5 of 8 obs.

% DEC 05, 1989 10h 16m 35.84± 1.58s
44.588 N ±14.6km 8.309 E ± 6.3km
DEPTH = 10.0km (geophysicist)
NORTHERN ITALY (545)
ML 1.9 (GEN).

PCP	0.17	105	P	16 39.80	0.0
			S	16 42.38	
FIN	0.39	191	P	16 43.66	-0.1
			S	16 49.07	
ROB	0.43	227	P	16 44.46	-0.2
			S	16 50.22	
ENR	0.73	241	P	16 50.12	-0.2
IMI	0.74	204	P	16 50.74	0.3
STV	0.79	244	P	16 51.38	0.2
PZZ	0.87	265	P	16 42.41	-10.2X
			S	17 03.81	

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

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* DEC 05, 1989 10h 40m 16.93± 3.28s
33.100 S ± 9.2km 71.800 W ±23.9km
DEPTH = 10.0km (geophysicist)
NEAR COAST OF CENTRAL CHILE (135)

IHA	0.15	61	eP	40 21.30	0.8
			iS	40 27.80	
LCCH	0.42	153	iPd	40 26.10	0.6
			iS	40 36.00	
ROCH	0.68	79	iPc	40 29.90	-0.6
			iS	40 42.40	
TACH	0.91	128	iPc	40 34.50	0.2
			iS	40 51.50	
LNV	0.91	159	iPd	40 33.60	-0.8
			iS	40 49.60	
PEL	0.94	93	iPc	40 35.00	0.2
			iS	40 51.50	
SAN	1.02	111	iPd	40 37.30	1.1
			iS	40 54.50	
JACH	1.10	68	iPc	40 35.60	-2.0
			iS	40 51.30	
PCH	1.20	116	eP	40 39.20	-0.1
			i	40 39.50	
			iS	41 00.00	
CHCH	1.27	131	iPc	40 40.10	-0.4
			iS	41 02.50	
FCH	1.29	101	iPc	40 40.50	-0.5
			iS	41 02.50	
CFA	3.36	65	eP	41 12.00	1.4
			S	42 04.00	

S.D. = 1.0 on 12 of 12 obs.

? DEC 05, 1989 10h 51m 57.38± 5.15s
32.862 S ±17.6km 72.283 W ±36.6km
DEPTH = 10.0km (geophysicist)
OFF COAST OF CENTRAL CHILE (134)

IHA	0.56	107	eP	52 09.00	0.2
			iS	52 14.80	
LCCH	0.86	136	iPc	52 13.50	-0.4
			iS	52 23.50	
ROCH	1.08	96	iPd	52 17.10	-0.7
			iS	52 29.70	
LNV	1.31	146	iPc	52 21.10	-0.5
			iS	52 36.00	
PEL	1.37	102	iPd	52 22.50	-0.1
			iS	52 38.90	
TACH	1.38	125	iPc	52 22.00	-0.6
			iS	52 38.50	
			i	52 49.20	
JACH	1.43	83	iPd	52 23.10	-0.4
			iS	52 40.10	
SAN	1.48	114	eP	52 24.50	0.4
			iS	52 42.00	
PCH	1.66	118	iPd	52 27.60	0.8
			iS	52 47.50	
CHCH	1.73	129	iPc	52 28.50	0.7
			iS	52 48.90	
FCH	1.74	106	iPd	52 28.50	0.4
			iS	52 48.70	

S.D. = 0.6 on 11 of 11 obs.

DEC 05, 1989 10h 54m 10.99± 0.85s
5.724 S ± 4.3km 150.959 E ± 4.6km
DEPTH = 69.9 ± 7.9 km
5.0mb (19 obs.)
NEW BRITAIN REGION (192)
CENTROID, MOMENT TENSOR (HRV)
Data Used: GDSN
L.P.B.: 10S, 20C
Centroid Location:
Origin Time 10:54:12.0 1.3
Lat 5.97S 0.13 Lon 151.66E 0.15
Dep 66.0 FIX Half-duration 1.5
Moment Tensor; Scale 10**16 Nm
Mrr= 1.17 0.52 Mtt=-1.90 0.82
Mff= 0.73 0.86 Mrt= 0.68 0.80
Mrf=-1.27 0.78 Mtf=-3.92 0.60
Principal Axes:

	Val=	Plg=	Azm=
T	4.22	25	54
N	0.51	65	230
P	-4.73	2	323

Best Double Couple:Mo=4.5*10**16
NP1:Strike= 96 Dip=71 Slip= 163
NP2: 192 74 19

RAB	1.94	38	iPc+	54 41.00	-1.4
LAT	4.04	257	eP	55 19.00	7.2X
			eS	56 16.00	
PMG	5.26	226	iPc	55 29.00	0.2
	0.7s	284.93nm			5.6mb
			eS	56 31.00	
MNDI	7.27	266	eP	56 23.00	25.9X
HNR	9.64	113	eP	56 30.00	0.6
			eS	58 15.00	
CTA	14.99	197	eP	57 40.00	-0.4
	1.1s	53.16nm			4.7mb
QIS	18.41	216	iPc	58 23.40	0.3
GUA	20.06	343	eP	58 42.50	1.2
	1.0s	560.00nm			5.8mb
			e	58 54.50	
GUMO	20.12	343	eP	58 42.70	0.8
	1.0s	256.00nm			5.5mb
PJG	20.12	343	eP	58 43.00	1.1
RMO	20.76	186	iPd	58 48.40	0.0
			e	58 51.00	
MTN	20.80	249	iPd	58 48.80	0.0
WB2	21.46	227	eP	58 55.10	-0.4
			iPP	59 03.90	
			eS	02 50.00	
BRS	21.62	176	iPc	58 56.30	-0.8
	1.0s	3.50nm			3.7mb X
	Z 18s	10.00um			5.3Msz
			i(pP)	59 04.00	28kmX
			e(sP)	59 12.00	
			eS	02 56.00	
DZM	22.10	139	iPc	59 03.00	1.1
ASPA	24.25	221	iPc	59 23.90	1.1
	0.9s	35.00nm			4.8mb
			ipP	59 34.20	38kmX
			eS	03 39.20	
STK	27.46	197	eP	59 52.00	-0.5
FORR	32.95	218	eP	00 40.00	-1.1
	0.4s	11.00nm			5.0mb
COOL	37.55	225	eP	01 20.10	-0.2
NANU	38.07	240	iPd	01 25.10	0.4
	0.4s	8.00nm			5.0mb
KLB	40.34	226	eP	01 43.70	0.2
MRWA	40.45	231	eP	01 44.00	-0.4
BAL	40.59	228	eP	01 45.70	0.1
MUN	41.66	227	eP	01 54.40	0.1
	1.0s	64.00nm			5.4mb
MAT	43.71	345	eP	02 12.00	1.1
	0.7s	10.27nm			4.7mb
QZH	43.83	315	iPd	02 15.20	3.2X
SSE	46.37	324	eP	02 33.00	0.9
QIZ	47.38	302	eP	02 41.60	1.2
NJ2	48.44	323	Pc	02 49.50	1.2
WHN	50.28	318	Pc	03 03.50	1.0
	0.7s	0.03nm			2.4mb X
			pP	03 15.70	44kmX
GYA	53.52	309	P	03 28.00	1.0
SNY	53.52	335	eP	03 26.20	-0.3
BJI	55.67	328	eP	03 54.50	12.2X
XAN	56.05	318	P	03 44.60	-0.6
TIY	56.15	324	eP	03 43.40	-2.5
	Z 20s	0.50um			4.6Msz
CHTO	56.75	297	eP	03 50.80	0.4

	0.7s	0.64nm			3.8mb	X
HHC	58.75	326	P	04	04.00	-0.2
BTO	59.46	325	eP	04	09.60	0.5
LZH	60.63	317	eP	04	17.30	0.0
	1.0s	30.00nm			5.4mb	
			pP	04	29.70	43kmX
GTA	65.10	318	eP	04	46.40	-0.4
PKI	71.34	301	PKP	05	26.60	0.5
	0.6s	8.00nm			4.8mb	
KKN	71.51	302	PKP	05	26.20	-0.8
	0.6s	9.00nm			4.9mb	
DMN	71.61	301	PKP	05	27.10	-0.5
	0.5s	8.00nm			4.9mb	
GKN	72.12	302	PKP	05	29.50	-1.0
	0.6s	8.00nm			4.8mb	
WMQ	75.19	318	eP	05	45.80	-2.1
TTA	79.30	22	P	06	08.40	-1.9
	0.5s	3.62nm			4.6mb	
PMR	81.28	25	P	06	18.70	-2.0
IMA	81.94	20	P	06	22.90	-1.3
FBA	83.42	22	P	06	29.60	-2.1
	0.6s	9.85nm			5.0mb	
INK	89.97	21	eP	07	03.00	-0.5
WDC	91.03	49	ePd	07	09.40	0.4
BMW	91.23	44	P	07	10.00	0.1
MHC	91.37	53	e(P)	07	14.70	3.9X
ARN	91.45	53	P	07	11.20	0.1
LBFM	91.60	49	P	07	12.30	0.4
GMW	91.65	43	P	07	11.70	0.0
ORV	91.71	51	e(P)	07	11.80	-0.4
MIN	91.71	50	eP	07	11.90	-0.5
PRI	92.03	54	eP	07	16.40	2.5
BLP	92.09	56	P	07	15.30	1.3
CMB	92.43	52	ePd	07	16.00	0.4
FRI	92.87	53	ePd	07	18.00	0.5
ISA	93.76	55	eP	07	22.00	0.2
PNT	93.92	41	eP	07	23.00	0.8
	0.5s	2.00nm			4.8mb	
MWC	93.99	56	eP	07	24.00	1.0
SBB	94.22	56	eP	07	24.00	0.1
KVN	94.29	51	P	07	24.50	0.2
CLC	94.48	55	eP	07	25.00	-0.1
RVR	94.54	56	eP	07	26.00	0.7
PEC	94.71	57	P	07	26.80	0.6
TNP	94.92	52	P	07	26.60	-0.7
	1.0s	8.75nm			5.1mb	
PLM	94.93	57	eP	07	27.00	-0.4
GSC	95.09	55	eP	07	29.00	1.0
MBC	95.44	14	eP	07	27.50	-1.1
	1.0s	6.00nm			5.0mb	
TPC	95.65	56	eP	07	31.00	0.5
MSU	98.90	52	P	07	41.20	-4.1X
BW06	100.82	48	Pdiff	07	52.40	-1.6
NB2	117.14	339	PKP	12	48.20	-1.3
	0.7s	1.70nm				
ODD1	119.53	340	iPKPc	12	35.58	-18.5X
			eSg	12	49.41	
KHC	123.76	328	ePKP	13	04.00	1.5
BCAO	132.60	271	ePKPd	13	14.00	-6.4X
	1.0s	10.00nm				
			id	13	20.00	
			ic	16	43.20	
CNCB	135.47	121	PKP	13	23.00	-3.5X
LPB	135.49	120	(PKP)	13	23.00	-3.3X
ZOBO	135.58	120	PKP	13	18.00	-8.7X
CCH	136.76	123	ePKP	13	20.00	-8.6X
SHGH	151.15	272	ePKP	13	58.00	5.4X
LEGH	151.28	271	ePKP	13	59.00	6.2X
KOGH	151.35	272	ePKP	13	59.00	6.0X
KUK	151.48	272	ePKP	13	59.30	6.1X
KIC	155.83	273	PKP	13	59.00	-0.2
LIC	156.11	272	PKP	13	59.30	-0.3
S.D. = 1.0		on	75	of	91	obs.

& DEC 05, 1989 10h 56m 13.61s
59.400 N 153.003 W
DEPTH = 85.1km
SOUTHERN ALASKA (2)
<AGS-P>.

AUE	0.19	258	eP	56	25.50	0.9
CDD	0.58	215	iP	56	27.96	-0.8
			eS	56	39.07	
XLV	0.66	85	eP	56	28.89	-0.6
			eS	56	40.51	
CNPM	0.91	81	eP	56	31.49	-0.7
			eS	56	45.39	
RED	1.03	6	eP	56	33.07	-0.6
			eS	56	46.76	
RDT	1.22	14	iP	56	35.09	-0.9
			eS	56	51.52	
CKL	1.83	10	eP	56	43.63	-0.4
7 obs. associated						

% DEC 05, 1989 11h 12m 14.95± 1.87s
59.850 N ± 7.5km 4.510 E ±19.0km
DEPTH = 10.0km (geophysicist)
SOUTHERN NORWAY (535)
MD 2.1 (BER).

ASK	0.72	28	eP	12	29.12	0.0
			eSg	12	38.89	
KMY	0.74	149	iP	12	29.40	-0.1
			eS	12	39.20	
SUE	1.22	6	iP	12	37.64	0.1
			eS	12	53.15	
BLS1	1.26	110	iP	12	38.83	0.3
			eS	12	55.85	
HYA	1.56	31	iP	12	43.54	0.8
			iS	13	02.00	
MOL	3.10	27	eP	13	04.07	-0.7
			eS	13	37.70	
NRA0	3.61	73	iPd	13	11.60	-0.5
			iSg	14	11.20	
S.D. = 0.6		on	7	of	7	obs.

% DEC 05, 1989 11h 17m 31.86± 1.77s
59.820 N ± 7.5km 4.481 E ±16.6km
DEPTH = 10.0km (geophysicist)
SOUTHERN NORWAY (535)
MD 2.3 (BER).

KMY	0.72	147	iP	17	45.89	-0.2
			eS	17	58.01	
ASK	0.76	28	eP	17	46.12	-0.5
			eSg	17	55.90	
ODD1	1.09	84	iP	17	52.33	0.0
			eS	18	06.86	
SUE	1.25	6	iP	17	54.96	-0.1
			eS	18	09.84	
BLS1	1.27	109	iP	17	55.47	0.0
			eS	18	12.17	
HYA	1.59	31	eP	17	59.64	-0.5
			iS	18	21.98	
MOL	3.13	27	iP	18	23.00	0.9
			eS	18	56.00	
NRA0	3.63	72	eP	18	25.40	-3.9X
			iSg	19	27.60	
S.D. = 0.5		on	7	of	8	obs.

? DEC 05, 1989 12h 45m 36.87± 3.84s
58.809 N ±31.8km 6.086 E ±10.3km
DEPTH = 10.0km (geophysicist)
SOUTHERN NORWAY (535)
MD 1.8 (BER).

KMY	0.59	313	ePg	45	48.55	-0.3
			iSg	45	56.87	
BLS1	0.70	33	iP	45	50.54	-0.2
			eS	45	59.09	
ODD1	1.14	14	eP	45	57.84	-0.4
			eS	46	12.65	
HYA	2.37	1	eP	46	17.20	0.9
			eS	46	40.80	
NRA0	3.37	53	eP	46	30.50	0.0
			eSg	47	20.20	
S.D. = 0.7		on	5	of	5	obs.

% DEC 05, 1989 12h 50m 31.64± 1.52s
61.577 N ±12.9km 10.459 E ±12.5km
DEPTH = 10.0km (geophysicist)
SOUTHERN NORWAY (535)
MD 2.0 (BER).

NRA0	0.99	148	iPc	50	50.40	-0.1
			iPg	50	53.00	
			iS	51	04.10	
			iSg	51	08.70	
MOL	1.69	307	iP	51	01.58	0.2
			eS	51	19.71	
HYA	2.10	261	iPd	51	06.58	-0.6
			eS	51	31.56	
ODD1	2.52	230	iP	51	13.80	0.6
			eS	51	44.50	
BLS1	2.84	221	iP	51	17.86	0.0
			iS	51	53.46	
S.D. = 0.6		on	5	of	5	obs.

? DEC 05, 1989 12h 58m 27.88± 1.45s
42.821 N ±21.0km 0.486 W ±11.4km
DEPTH = 10.0km (geophysicist)
PYRENEES (378)
ML 3.0 (LDG). Felt (III) ot Arette, Fronce.

EPF	0.64	71	Pg	58	40.80	0.0
			Sg	58	52.50	
ECRI	1.51	263	eP	58	55.00	0.0
			eS	59	14.20	
EROQ	2.11	161	eP	59	14.00	10.4X
			eS	59	41.50	
LPO	2.22	33	Pg	59	05.20	-0.1
			Sg	59	32.50	
LFF	2.30	22	Pg	59	06.40	0.1
			Sg	59	33.20	
CAF	2.80	40	Pn	59	09.60	-3.9X
			Pg	59	17.20	
			Sg	59	50.00	
RJF	2.87	29	Pg	59	18.00	3.5X
			Sg	59	51.00	
MFF	3.79	4	Pg	59	31.80	4.3X
			Sg	00	17.00	
TCF	3.97	28	Pg	59	37.70	7.7X
			Sg	00	25.20	
MAF	4.04	32	Pg	59	39.90	8.8X
			Sg	00	28.00	
S.D. = 0.1		on	4	of	10	obs.

? DEC 05, 1989 13h 24m 18.41± 1.14s
38.602 S ± 6.8km 175.796 E ±25.3km
DEPTH = 33.0km (normal)
NORTH ISLAND, NEW ZEALAND (159)

KRP	0.71	343	eP	24	31.90	0.0
MNG	2.03	187	eP	24	52.00	1.1
PGZ	2.05	170	P	24	51.00	-0.2
KIW	2.36	197	eP	24	57.00	1.4
MTW	2.56	185	P	24	58.00	-0.5
CAW	2.57	192	P	24	58.90	0.3
WDW	2.73	193	eP	24	59.90	-1.0
MRW	2.76	197	eP	25	00.60	-0.6
BLW	2.77	185	eP	25	01.50	0.0
WEL	2.80	196	eP	25	01.60	-0.1
TCW	2.86	204	eP	25	02.30	-0.3
S.D. = 0.8		on	11	of	11	obs.

& DEC 05, 1989 13h 36m 02.06s
60.403 N 150.808 W
DEPTH = 37.7km
KENAI PENINSULA, ALASKA (14)
<AGS-P>. ML 3.0 (PMR).

SLKM	0.31	70	iP	36	09.98	-0.3
NKA	0.40	328	iP	36	12.93	1.6
NNL	0.44	214	iP	36	12.54	0.7
BRLK	0.64	184	eP	36	14.33	-0.4
			eS	36	23.63	
SEW	0.74	113	iP	36	14.88	-1.2
RDT	0.81	283	iP	36	16.58	-0.6
CNPM	0.91	194	eP	36	17.76	-0.7
SPU	0.99	323	iP	36	19.10	-0.6
			eS	36	32.82	
PMS	1.04	35	ePc	36	19.60	-0.8
XLV	1.06	206	eP	36	20.07	-0.5
SUA	1.07	2	eP	36	20.10	-0.7
PWA	1.33	19	eP	36	24.00	-0.5
PMR	1.45	34	iPd	36	25.10	-1.0
SKT	1.62	348	eP	36	28.55	-0.1
GHO	1.65	33	eP	36	28.04	-1.1
AUE	1.66	232	eP	36	29.16	-0.1
GLI	1.89	74	eP	36	29.73	-2.8
CUT	2.03	7	eP	36	33.29	-1.1
CDD	2.06	225	eP	36	35.67	0.6
FID	2.17	79	eP	36	33.00	-3.5
SVW	2.47	289	iPc	36	39.20	-1.6
NCA	2.50	49	eP	36	39.76	-1.5
KLU	2.62	63	eP	36	40.74	-2.3
KDC	2.80	199	eP	36	46.20	0.7
TOA	2.82	51	iPd	36	44.80	-1.0
KTH	3.16	359	eP	36	50.29	-0.4
TTA	3.55	318	eP	36	54.80	-1.4

05d 13h

PAX	3.62	42	eP	36	55.69	-1.5
TGL	3.95	81	eP	36	58.69	-3.3
FBA	4.72	16	eP	37	10.00	-2.8

30 obs. associated

& DEC 05, 1989 14h 54m 03.80s
37.500 N 118.900 W
DEPTH = 4.0km
CALIFORNIA-NEVADA BORDER REGION (40)
<BRK>. ML 2.8 (BRK).

FRI	0.82	232	iPc	54	19.10	-1.1
			iS	54	30.30	
CMB	1.29	295	ePc	54	27.50	-0.8
			eS	54	44.30	
TNP	1.45	66	eP	54	30.00	-1.1
KVN	1.67	22	eP	54	33.60	-0.6
LLA	1.86	242	ePc	54	37.00	0.3
PRI	1.96	227	eP	54	39.90	1.6
ARN	2.10	267	eP	54	40.90	0.6
SAO	2.16	251	eP	54	43.10	2.0
MHC	2.19	267	e(P)	54	42.90	1.3

9 obs. associated

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* DEC 05, 1989 15h 08m 49.57± 1.77s
39.692 N ±11.2km 16.875 E ±12.9km
DEPTH = 10.0km (geophysicist)
SOUTHERN ITALY (390)

ROI	0.26	243	P	08	55.50	0.3
TDS	0.42	266	P	08	58.40	0.3
			eSg	09	04.00	
CSI	0.46	281	P	08	59.50	0.6
MMN	0.71	286	P	09	02.40	-1.1
CZI	0.74	231	P	09	03.80	-0.3
BRT	1.21	12	Pc	09	12.30	0.2
			eSg	09	29.40	

S.D = 0.8 on 6 of 6 obs.

? DEC 05, 1989 15h 12m 03.10± 1.25s
54.507 N ±26.0km 160.841 E ±23.1km
DEPTH = 33.0km (normal)
4.5mb (5 obs.)
NEAR EAST COAST OF KAMCHATKA (218)

MAT	23.78	230	(P)	17	12.00	-1.4
	0.8s		10.45nm			4.4mb
IMA	24.70	44	eP	17	21.00	-1.2
FBA	27.12	47	eP	17	46.00	1.5
	1.0s		0.20nm			2.7mb X
SOD	53.72	340	eP	21	15.00	-8.5X
SUF	57.86	337	eP	21	53.70	0.4
	0.5s		4.10nm			4.7mb
CHTO	58.63	258	eP	22	00.70	1.5
	0.8s		2.20nm			4.3mb
NB2	62.31	344	P	22	23.40	-0.5
	0.8s		5.30nm			4.7mb
HFS	62.74	342	(P)	22	25.50	-1.2
	0.5s		1.50nm			4.4mb
GBA	75.23	273	P	23	45.00	0.8

S.D. = 1.4 on 8 of 9 obs.

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* DEC 05, 1989 15h 27m 12.01± 0.94s
29.157 S ±10.0km 67.213 W ±12.8km
DEPTH = 161.5 ± 21.4 km
LA RIOJA PROVINCE, ARGENTINA (138)

CYA	1.43	61	iPd	27	41.30	-0.8
RTRS	2.20	242	iPc	27	51.00	0 5
			S	28	15.00	
CFA	2.60	200	iPc	27	55.30	-0.1
			S	28	27.00	
RTCB	2.70	210	iPc	27	57.00	0.3
ZON	2.70	208	eP	27	51.00	-5.6X
			eS	28	23.00	
RTCV	2.93	203	iPd	27	59.80	0.3
			S	28	35.00	
TCA	3.14	134	iPc	28	02.80	0.6
RTBS	3.16	217	ePd	27	03.00	-59.3X
JACH	4.56	219	iPc	28	21.20	0.6
FCH	4.92	212	iPd	28	27.50	1.8
			iS	29	25.40	
PEL	4.96	216	ePd	28	25.50	-0.5
			i	29	18.50	
			iS	29	22.20	
ROCH	5.01	220	iPd	28	30.80	4.1X
PCH	5.27	212	iPd	28	30.80	0.8
			iS	29	31.50	
TACH	5.50	214	iP	28	32.10	-0.9
CHCH	5.59	211	iPd	28	34.00	-0.3
			iS	29	37.00	
RFA	5.70	190	ePc	28	58.00	22.3X
LNV	5.98	216	iP	28	36.60	-2.7
			iS	29	21.70	
ZOBO	12.85	356	eP	30	11.00	0.4

S.D. = 1.2 on 14 of 18 obs.

? DEC 05, 1989 15h 34m 32.87± 1.12s
11.346 S ±12.0km 118.543 E ±12.1km
DEPTH = 33.0km (normal)
4.3mb (3 obs.)
SOUTH OF SUMBAWA ISLAND (291)

TRT	6.86	301	ePd	36	13.60	-0.2
	0.7s		97.50nm			5.8mb X
MBL	9.84	173	eP	36	53.70	-1.4
	0.2s		6.00nm			5.5mb X
			eS	38	32.00	
NANU	11.52	194	eP	37	17.00	-1.1
	0.3s		4.00nm			5.1mb X
			eS	39	15.00	
MTN	12.40	98	iP	37	29.80	-0.2
			eS	39	38.00	
WARB	16.62	154	eP	38	25.00	-0.1
	0.4s		18.00nm			4.6mb
MRWA	17.94	187	eP	38	43.00	1.5
	0.3s		5.00nm			4.1mb
			eS	41	42.00	
COOL	19.59	173	eP	39	03.00	1.6
			eS	42	20.00	
KLB	20.16	182	eP	39	12.10	4.8X
	0.2s		3.00nm			4.3mb
			eS	42	35.00	
MUN	20.65	186	eP	39	18.50	6.2X
			eS	42	45.00	
NWAO	21.51	183	eP	39	21.00	-0.1
			eS	43	07.00	

S.D. = 1.3 on 8 of 10 obs.

DEC 05, 1989 16h 17m 16.86± 1.10s
38.154 N ±10.2km 20.642 E ± 6.5km
DEPTH = 33.0km (normal)
3.9mb (2 obs.)
GREECE (364)
ML 3.7 (ATH).

AGG	1.58	56	eP	17	42.80	-0.2
KEK	1.69	337	ePn	17	45.70	1.2
SRN	1 79	344	iPn	17	47.80	1.8
LSK	1.99	359	iPnc	17	50.80	1.8
TPE	2.19	347	iPnc	17	54.00	2.3
KZN	2.32	22	ePn	17	55.20	1.6
VLI	2.32	127	ePn	17	55.70	2.2
LIT	2.42	36	ePc	17	55.00	0.0
			eS	18	39.80	
ATH	2.43	93	ePn	17	54.70	-0.4
KBN	2.47	3	iPnc	17	57.50	1.9
VLO	2.48	339	ePn	17	56.50	0.8
BERA	2.60	348	iPnd	17	58.80	1.3
OHR	2.96	2	iPn	18	03.70	1.1
THE	3.06	35	eP	18	03.00	-1.0
PLG	3.11	44	ePn	18	04.00	-0.7
KNT	3.47	29	eP	18	09.80	-0.1
ROI	3.48	295	P	18	17.60	7.5X
VAY	3.49	25	iPn	18	10.30	0.1
CZI	3.68	288	P	18	13.40	0.6
SRS	3.73	37	eP	18	13.30	-0.3
CSI	3.76	297	P	18	19.80	5.8X
SKO	3.86	9	iPn	18	15.50	0 1
			i	18	28.70	
			i	19	01.50	
MMN	4.02	297	P	18	22.20	4.6X
KKB	4.15	26	iP	18	19.00	-0.5
MMB	4.17	34	eP	18	19.00	-0.8
RZN	4.72	40	iP	18	27.00	-0.7
RDO	4.82	50	ePn	18	28.00	-0.9
VTS	4.85	23	iP	18	30.00	0.5
KDZ	5.07	45	eP	18	30.00	-2.5
HVAR	5.95	329	iPn	18	43.70	-1.2
MLR	8.33	27	eP	19	20.00	1.7
VBY	8.37	333	iPn	19	17.90	-0.9
			e(Sn)	20	54.10	
RIY	8.57	329	iP	19	19.30	-2.2
CEY	8.88	331	ePn	19	24.00	-1.8
			e	21	10.50	
VRI	8.94	28	ePd	19	23.50	-3.1X
VOY	9.33	330	eP	19	29.50	-2.6
			eS	21	11.40	
UPP	21.81	356	iP	22	06.10	-1.6
HFS	22.44	351	eP	22	12.80	-1.2
	0.4s		2.60nm			4.0mb
NUR	22.52	5	eP	22	17.00	2.3
NB2	23.66	349	P	22	25.20	-0.7
	0.6s		1.80nm			3.8mb
SUF	24.82	6	eP	22	36.10	-1.0

S.D. = 1.4 on 37 of 41 obs.

% DEC 05, 1989 17h 11m 10.79± 2.62s
16.136 S ±25.0km 178.333 E ± 8.9km
DEPTH = 33.0km (normal)
FIJI ISLANDS (182)
ML 4.2 (SVA).

MBU	0.91	156	iPc	11	27.10	-0.2
YSA	0.92	232	iPc	11	27.30	0.0
NDE	1.05	115	iPc	11	29.30	0.0
SGE	1.50	195	iPc	11	35.50	-0.2
			eS	11	56.50	
KRO	1.55	139	iPc	11	36.40	0.0
SVA	1.97	177	ePc	11	42.90	0.4

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

? DEC 05, 1989 17h 16m 16.92± 6.18s
32.326 S ±37.9km 71.788 W ±28.7km
DEPTH = 10.0km (geophysicist)
NEAR COAST OF CENTRAL CHILE (135)

ROCH	0.92	135	iPd	16	34.50	-0.1
JACH	1.07	110	iPc	16	37.00	-0.1
			iS	16	51.80	
LCCH	1.16	171	iPc	16	38.40	-0.2
			iS	16	54.20	
PEL	1.24	132	iPd	16	40.10	0.2
			iS	16	57.10	
SAN	1.47	140	eP	16	43.70	0.2
			iS	17	04.30	
			i	17	05.30	
TACH	1.50	152	iPc	16	43.70	-0.2
			iS	17	03.30	
FCH	1.61	129	iPd	16	45.50	-0.2
			iS	17	07.90	
PCH	1.68	141	iPd	16	46.80	0.3
			i	17	10.00	
			iS	17	13.00	
CHCH	1.86	150	iPc	16	49.50	0.3
			i	17	17.00	

S.D. = 0.3 on 9 of 9 obs.

DEC 05, 1989 18h 13m 03.76± 0.87s
15.834 S ± 6.1km 167.617 E ± 6.6km
DEPTH = 169.3 ± 7.5 km
4.7mb (10 obs.)
VANUATU ISLANDS (186)

PVC	2.01	161	iP	13	39.50	-1.1
			iS	14	07.30	
DZM	6.30	190	iPc	14	35.40	-0.2
			iS	15	48.00	
HNR	9.82	309	eP	15	24.00	1.9
			eS	17	15.00	
BRS	17.94	228	iPc	17	04.90	1.1
	0.7s		15.00nm			4.5mb
			i	17	08.90	
			i	17	31.40	
			i	24	52.00	
RMO	20.51	236	iPd	17	31.70	1.4
	0.8s		64.00nm			5.1mb
			e	17	34.00	
COO	20.56	222	iPc	17	32.70	1.9
CTA	20.75	255	iPd	17	33.90	1.2
	0.8s		43.28nm			5.0mb
PMG	20.95	285	eP	17	36.00	1.3
CMS	25.24	228	iPd	18	16.20	0.4
BWA	25.31	219	eP	18	15.30	-1.1
CAN	25.58	217	eP	18	19.00	0.1
OIS	27.00	256	ePd	18	31.60	-0.3
STK	28.56	231	iPd	18	46.40	0.6
	0.6s		36.00nm			5.3mb
TOO	29.18	218	iPc	18	51.20	-0.1
WB2	31.89	258	eP	19	13.20	-2.0
WARB	39.47	248	iPd	20	19.50	0.3

	0.5s	9.00nm			4.7mb	
COOL	44.89	242	eP	21	02.60	-0.6
	0.4s	9.00nm			4.7mb	
MBL	45.49	256	eP	21	07.50	-0.5
KLB	47.86	242	eP	21	25.70	-0.8
NWAO	48.48	240	eP	21	30.70	-0.5
	0.7s	22.00nm			4.9mb	
MRWA	49.15	245	eP	21	36.00	-0.4
MUN	49.22	241	eP	21	36.00	-0.9
TRT	54.30	272	ePd	22	13.30	-1.8
NJ2	66.70	316	Pc	23	37.90	-0.7
WHN	68.93	312	eP	23	52.00	-0.4
DL2	69.38	323	eP	23	54.80	-0.2
MDJ	69.41	332	eP	23	54.00	-1.1
CN2	70.76	329	Pd	24	02.40	-0.9
GYA	72.61	305	P	24	14.40	-0.4
BJI	73.33	321	eP	24	17.50	-1.0
	0.8s	10.00nm			4.6mb	
SPA	74.27	180	iPd	24	23.70	-0.1
	1.0s	14.00nm			4.6mb	
TIY	74.29	317	Pc	24	23.60	-0.7
			e	24	24.00	
XAN	74.68	313	eP	24	25.70	-0.8
KMI	75.17	302	Pd	24	30.00	0.2
CHTO	75.84	294	iP	24	34.00	0.7
	0.9s	6.18nm			4.3mb	
GTA	83.67	314	eP	25	15.20	0.4
SHL	84.38	298	iP	25	19.00	0.3
PKI	90.51	298	P	25	47.40	-0.9
KKN	90.69	299	P	25	48.50	-0.5
DMN	90.78	298	P	25	49.20	-0.3
GKN	91.30	299	P	25	50.60	-1.1
OGA	143.45	333	iPKPc	32	17.60	-2.3X
	1.0s	20.00nm				
CDF	143.72	338	ePKP	32	17.10	-3.1X
BSF	144.38	338	ePKP	32	19.30	-2.1
HAU	144.40	338	ePKP	32	19.30	-2.0
SAL	144.64	332	PKP	32	20.40	-1.3
ARV	145.00	327	PKP	32	22.00	-0.4
VAI	145.21	334	PKP	32	21.80	-0.8
SFI	145.25	329	PKP	32	23.50	0.7
PGD	145.35	329	PKP	32	23.80	0.6
CRE	145.41	328	PKP	32	23.00	-0.2
TDS	145.49	319	PKP	32	23.00	-0.3
SGO	145.59	321	PKPc	32	23.50	0.1
MME	145.62	330	PKPc	32	24.00	0.2
FIR	145.65	329	ePKP	32	24.00	0.5
ORX	145.73	334	PKP	32	23.10	-0.6
SDI	145.73	324	PKP	32	23.00	-0.8
FLN	145.74	346	ePKP	32	23.20	-0.3
BDI	145.77	330	PKPc	32	22.90	-0.9
BOB	145.77	332	PKP	32	23.70	-0.1
LDF	145.81	345	ePKP	32	23.50	-0.1
LOR	145.88	340	ePKP	32	24.30	0.5
MNS	145.90	326	PKPc	32	24.30	0.3
PII	146.06	330	PKP	32	23.50	-0.6
LBF	146.09	340	ePKP	32	24.80	0.6
GRR	146.18	346	ePKP	32	24.90	0.7
SSF	146.18	340	ePKP	32	25.20	0.9
LSD	146.21	335	PKP	32	25.87	1.2
RMP	146.28	325	PKP	32	25.20	0.6
LPG	146.34	335	ePKP	32	26.10	1.1
PCP	146.35	333	PKP	32	25.56	0.9
RSP	146.42	335	PKP	32	25.26	0.4
SMF	146.44	340	ePKP	32	25.50	0.8
AVF	146.47	340	ePKP	32	25.30	0.6
LPF	146.56	346	ePKP	32	26.10	1.3
BNI	146.74	335	PKPc	32	27.30	1.9X
FIN	146.76	333	PKP	32	25.67	0.3
RRL	146.80	335	PKP	32	27.20	1.6
BGF	146.84	341	ePKP	32	26.80	1.5
ROB	146.84	333	PKP	32	26.28	0.8
PZZ	147.00	334	PKP	32	26.49	0.6
ENR	147.09	333	PKP	32	26.18	0.2
STV	147.12	333	PKP	32	26.38	0.4
IMI	147.14	333	PKP	32	26.79	0.8
MAF	147.23	341	ePKP	32	28.10	2.1X
TCF	147.28	341	ePKP	32	28.20	2.1X
SBF	147.38	333	ePKP	32	28.40	2.0X
LSF	147.52	342	ePKP	32	28.60	2.1X
BCAO	147.58	253	iPKPd	32	29.70	2.2X
	0.3s	48.00nm				
			ic	33	14.90	
MFF	147.67	344	ePKP	32	29.10	2.4X
FRF	147.96	333	ePKP	32	29.80	2.6X
LRG	148.17	334	ePKP	32	30.80	3.3X
LMR	148.20	333	ePKP	32	30.80	3.2X
RJF	148.38	341	ePKP	32	31.30	3.5X
CAF	148.54	340	ePKP	32	32.00	3.8X
LFF	148.94	342	ePKP	32	32.70	4.0X
LPO	149.04	341	ePKP	32	32.90	4.0X
EPF	150.79	341	ePKP	32	37.40	5.7X
	S.D. = 0.9	on	81	of	98	obs.

DEC 05, 1989 18h 23m 28.41± 1.16s
5.610 S ± 5.5km 149.324 E ±10.0km
DEPTH = 159.0 ± 10.9 km
4.8mb (10 obs.)
NEW BRITAIN REGION (192)

LAT	2.53	246	eP	24	10.00	-0.8
			eS	24	51.00	
PMG	4.35	210	iPd	24	34.00	-0.1
	0.7s	260.27nm				
			eS	25	26.00	
MNDI	5.66	264	eP	24	56.00	4.2X
CTA	14.70	191	iPd	26	51.10	1.2
	1.0s	55.00nm			4.9mb	
QIS	17.60	212	eP	27	25.00	-0.5
MTN	19.33	247	iPc	27	43.60	-0.3
	0.6s	29.00nm			4.8mb	
WB2	20.37	224	eP	27	54.10	-0.3
			eS	31	34.10	
RMQ	20.77	181	eP	27	59.00	0.6
BRS	21.91	172	iPd	28	09.90	0.3
DZM	23.28	136	iPd	28	23.00	0.0
WARB	29.80	224	eP	29	23.00	0.5
	0.3s	5.00nm			4.7mb	
FORR	32.06	216	eP	29	41.60	-0.6
MBL	32.49	239	iPd	29	45.60	-0.5
	0.5s	10.00nm			4.8mb	
MEKA	36.03	231	eP	30	17.00	0.8
MRWA	39.28	229	eP	30	43.80	0.5
IIDJ	42.26	346	P	31	07.80	0.2
CHJJ	42.56	348	P	31	09.20	-0.8
QZH	42.62	317	Pc	31	11.60	1.0
TSRJ	42.81	344	P	31	12.50	0.5
MAT	43.20	347	iPc	31	14.40	-0.8
	0.8s	22.39nm			4.8mb	
MTMJ	43.34	346	P	31	16.70	0.3
NIIJ	43.70	348	P	31	19.50	0.3
SSE	45.33	325	Pd	31	33.20	0.9
	1.0s	26.00nm			4.8mb	
NJ2	47.38	324	iPc	31	49.70	1.3
WHN	49.12	319	Pc	32	03.50	1.7
	0.9s	0.02nm			1.8mb	X
TIA	51.39	327	eP	32	18.80	-0.2
GYA	52.19	310	P	32	27.00	1.7
SNY	52.74	336	eP	32	28.80	0.0
MDJ	53.05	342	eP	32	31.50	0.4
CN2	53.70	339	P	32	35.80	-0.1
KMI	54.61	306	eP	32	45.00	1.8
BJI	54.72	329	eP	32	42.00	-1.4
XAN	54.88	319	P	32	45.40	0.6
TIY	55.10	325	eP	32	45.50	-0.8
CHTO	55.25	297	eP	32	45.90	-1.7
	0.8s	2.20nm			4.0mb	
HHC	57.75	327	eP	33	06.00	1.0
LZH	59.45	318	eP	33	18.00	1.0
GTA	63.94	319	eP	33	47.20	0.3
PKI	69.89	302	P	34	23.00	-1.7
	0.6s	19.00nm			5.1mb	
KKN	70.07	302	P	34	24.00	-1.7
	0.6s	27.00nm			5.2mb	
DMN	70.16	302	P	34	24.80	-1.5
GKN	70.68	302	P	34	27.70	-1.6
WMQ	74.02	319	P	34	49.00	0.5
INK	90.45	21	eP	36	11.00	-1.7
MBC	95.72	14	eP	36	36.50	-0.3
	1.0s	6.00nm			4.9mb	
RFA	126.33	141	ePKPc	42	11.50	-2.9X
	S.D. = 1.0	on	44	of	46	obs.

% DEC 05, 1989 18h 47m 28.94± 0.81s
38.977 N ± 7.6km 27.960 E ± 9.8km
DEPTH = 10.0km (geophysicist)
TURKEY (366)

IZM	0.80	224	iPg	47	44.00	-0.4
			eSg	47	56.00	
DST	0.81	39	iPg	47	43.70	-1.0
EDC	1.37	357	ePn	47	54.50	0.4
BNT	1.38	359	iPn	47	54.70	0.5
KHL	1.39	118	ePn	47	55.00	0.6
YLV	1.93	34	ePn	48	02.00	-0.1
	S.D. = 0.8	on	6	of	6	obs.

DEC 05, 1989 19h 57m 12.04± 0.65s
43.066 N ± 5.2km 13.129 E ± 6.2km
DEPTH = 10.0km (geophysicist)
CENTRAL ITALY (381)
MD 2.2 (SSO).

CIO	0.13	5	iPg	57	15.29	0.0
			iSg	57	17.51	
ASS	0.34	271	P	57	19.30	0.2
			eSg	57	24.70	
ALP	0.44	131	ePg	57	21.06	0.1
			eSg	57	28.52	
ARV	0.45	343	Pc	57	21.20	-0.1
			eSg	57	28.40	
AOI	0.59	35	e(Pg)	57	24.06	0.0
			eSg	57	34.09	
MNS	0.76	206	P	57	26.70	-0.2
			eSg	57	38.00	
	S.D. = 0.2	on	6	of	6	obs.

* DEC 05, 1989 21h 13m 42.20± 1.10s
42.237 N ± 7.0km 13.530 E ±12.1km
DEPTH = 10.0km (geophysicist)
CENTRAL ITALY (381)

SDI	0.57	158	Pd	13	53.50	-0.3
			eSg	14	02.30	
MNS	0.65	283	P	13	53.70	-1.5
			eSg	14	04.80	
RDP	0.77	232	P	13	58.30	1.0
			eSg	14	09.70	
CIO	1.00	344	iPg	14	00.87	-0.3
			iSg	14	16.35	
ASS	1.05	323	P	14	03.00	0.9
			eSg	14	17.20	
ARV	1.33	341	P	14	07.00	0.2
			eSg	14	24.60	
	S.D. = 1.2	on	6	of	6	obs.

DEC 05, 1989 21h 21m 14.46± 0.83s
20.866 S ±10.3km 178.653 W ± 8.1km
DEPTH = 614.9 ± 9.5 km
4.7mb (8 obs.)
FIJI ISLANDS REGION (181)

SGE	4.59	315	iPc	22	45.20	-0.5
DZM	13.93	262	iPc	24	14.00	2.0
KRP	17.73	195	eP	24	49.10	1.0
CTA	32.85	265	iPd	27	01.30	0.2
PMG	34.84	284	eP	27	17.50	-0.1
QIS	38.97	263	iPd	27	50.70	-0.6
WB2	43.93	263	iPd	28	29.80	-0.7
FORR	48.55	247	iPc	29	05.00	-0.4
	0.3s	18.00nm			5.0mb	
WARB	50.14	253	iPd	29	16.40	-0.8
	0.3s	6.00nm			4.5mb	
COOL	54.52	246	eP	29	47.10	-1.3
MBL	57.08	258	iPd	30	05.10	-1.0
	0.4s	12.00nm			4.5mb	
MEKA	57.30	251	eP	30	06.40	-1.1
BAL	58.35	246	eP	30	14.00	-0.6
MUN	58.62	245	eP	30	16.30	0.0
MAT	70.14	324	iPd	31	27.00	-1.2
	1.1s	25.32nm			4.6mb	
OFUJ	70.25	328	eP	31	16.00	-12.7X
QZH	76.10	304	eP	32	02.00	0.0
PRI	78.85	44	eP	32	16.70	0.1
BRK	78.86	42	eP	32	16.00	-0.4
NJ2	79.64	310	Pc	32	21.50	0.9
FRI	79.97	44	ePd	32	22.30	0.1
CMB	80.15	43	ePd	32	23.30	0.1
WDC	80.35	40	eP	32	24.70	0.6
ORV	80.35	41	eP	32	24.50	0.3
MDJ	80.47	325	eP	32	25.50	0.9
SNY	82.10	320	Pc	32	33.40	0.5
WHN	82.17	307	Pd	32	34.50	1.0
KVN	82.19	43	P	32	33.60	-0.2
TNP	82.22	44	P	32	34.00	0.1
TIA	83.07	313	eP	32	38.10	0.2
SVW	83.77	11	eP	32	40.10	-0.8
PMR	85.51	14	eP	32	48.50	-0.7
	1.3s	23.60nm			4.7mb	
BJI	85.72	316	eP	32	50.00	-0.7
GYA	86.30	300	P	32	55.00	1.0

05d 21h

TIY	87.07	312	eP	32 57.00	-0.3
PNT	87.30	34	eP	32 59.00	1.0
	0.8s	13.00nm		4.7mb	
XAN	87.87	308	P	33 01.60	0.5
IMA	88.71	10	eP	33 03.60	-0.8
	0.8s	5.10nm		4.4mb	
FBA	88.73	13	ePd	33 03.00	-1.3
KMI	88.97	297	Pd	33 08.00	1.4
BW06	89.65	43	P	33 09.00	-0.3
CHTO	89.79	290	eP	33 12.00	1.9
	0.7s	11.12nm		4.9mb	
SUF	134.87	344	ePKP	39 25.50	0.0
	0.4s	1.80nm			
NUR	137.11	343	ePKP	39 27.50	-2.3X
NB2	139.27	353	PKP	39 24.10	-9.7X
	0.9s	4.50nm			
HFS	139.80	350	ePKP	39 25.60	-9.1X
	0.4s	4.00nm			
EKA	145.42	5	PKPc	39 45.00	0.5
	0.8s	8.70nm			
DLE	147.07	9	ePKP	39 49.60	2.4X
BBTK	147.19	312	ePKP	39 51.00	3.0X
KRA	147.36	338	ePKP	39 51.30	3.5X
VRI	147.53	326	ePKPc	39 51.50	3.2X
WIT	147.85	354	e(PKP)	39 53.50	5.0X
KSP	147.85	342	iPKPd	39 52.50	3.9X
			ic	39 57.30	
SPC	147.97	336	ePKP	39 53.60	4.5X
MLR	148.19	326	ePKPd	39 53.00	3.5X
CLL	148.27	346	iPKPd	39 53.30	4.1X
	0.9s	30.00nm			
			i	39 58.40	
BRG	148.45	345	iPKPd	39 53.60	4.1X
	1.0s	20.00nm			
			i	39 59.20	
WTS	148.64	354	ePKP	39 54.00	4.3X
	0.8s	25.00nm			
PRU	149.11	343	PKPd	39 55.50	5.0X
	1.0s	14.50nm			
			e	40 01.00	
MOX	149.20	347	ePKPd	39 55.00	4.3X
SRO	149.82	337	ePKP	39 57.80	6.1X
			i	40 05.60	
ZST	149.93	339	ePKP	39 58.00	6.2X
			e	40 05.90	
KHL	150.12	312	ePKP	39 57.90	5.3X
KHC	150.15	344	PKP	39 58.80	6.6X
			i	40 07.50	
KBA	152.09	342	ePKP	40 01.00	5.7X
	0.8s	3.80nm			
CDF	152.11	352	ePKP	40 02.60	7.5X
	0.6s	5.40nm			
FLN	152.13	3	ePKP	40 02.40	7.4X
	0.4s	3.40nm			
LDF	152.31	2	ePKP	40 02.00	6.7X
	0.4s	2.20nm			
GRR	152.48	3	ePKP	40 03.10	7.6X
	0.4s	2.20nm			
HAU	152.62	353	ePKP	40 03.10	7.3X
BSF	152.74	352	ePKP	40 03.70	7.6X
VAY	152.82	323	iPKP	40 03.30	7.1X
			i	40 18.90	
LPF	152.83	4	ePKP	40 03.60	7.6X
	0.6s	9.70nm			
VOY	152.87	341	ePKP	40 04.00	7.7X
VBY	152.89	338	e(PKP)	40 04.60	8.4X
LOR	153.58	356	ePKP	40 05.50	8.4X
	0.4s	1.30nm			
SSF	153.81	357	ePKP	40 06.40	9 0X
	0.4s	1.10nm			
LBF	153.86	356	ePKP	40 05.80	8.3X
	0.4s	1.30nm			
OHR	153.93	325	ePKP	40 06.00	8.2X
S.D. = 0.9 on 43 of 79 obs.					

& DEC 05, 1989 22h 00m 02.70s
36.905 N 121.682 W
DEPTH = 5.0km
CENTRAL CALIFORNIA (39)
<BRK>. ML 2.5 (BRK).

SAO	0.24	126	iPd	00 07.20	-0.3
GCC	0.28	296	iPc	00 08.40	0.0
			iS	00 12.30	
MHC	0.44	4	iPd	00 11.70	0.2
			iS	00 18.70	
PRS	0.62	156	iPd	00 14.50	-0.7
			iS	00 25.00	
LLA	0.66	116	iPc	00 15.20	-0.7
			eS	00 25.00	
PCC	0.82	317	ePc	00 17.70	-1.3
			eS	00 29.30	
BKS	1.07	336	ePc	00 22.20	-1.0
			eS	00 37.90	
BRK	1.07	335	ePc	00 23.60	0.3
PRI	1.12	133	ePc	00 23.20	-1.0
ZSP	1.13	336	eP	00 24.10	-0.3
CMB	1.53	42	eP	00 31.30	0.6
			eS	00 47.20	
FRI	1.58	86	ePd	00 30.80	-0.7
			eS	00 51.70	
12 obs. associated					

DEC 05, 1989 22h 16m 58.62± 0.50s
21.633 N ± 6.4km 157.323 W ± 4.6km
DEPTH = 10.0km (geophysicist)
4.0mb (1 obs.)
HAWAII (613)
ML 4.6 (HON). MD 4.2 (HVO). Felt (IV) at Kaneohe; (III) at Hawaii Kai, Koiluo and Waimanalo, Oohu. Also felt at Diamond Head, Waikiki and in the downtown area of Honolulu. Felt (III) at Hoolehua, Molokai and Kahului, Maui.

DHH	0.58	231	P	17 11.00	0.7
OPA	0.64	275	P	17 11.00	-0.5
HON	0.71	244	P	17 12.50	-0.1
HKL	1.35	132	P	17 24.50	0.6
MHA	1.96	137	P	17 32.50	0.3
KOH	2.08	136	ePc	17 33.69	-0.4
			eS	17 58.40	
KKH	2.31	148	P	17 36.00	-1.3X
WKH	2.35	138	ePc	17 37.51	-0.6
HUH	2.38	144	ePc	17 38.11	-0.5
CPH	2.51	148	ePc	17 38.89	-1.2X
			eS	18 07.99	
HPU	2.54	136	ePc	17 39.95	-1.0X
			eS	18 09.77	
KKU	2.54	133	iPc	17 40.02	-0.7X
			iS	18 10.39	
KIH	2.57	145	iPc	17 40.51	-0.7X
			eS	18 09.77	
WOB	2.65	142	iPc	17 41.45	-1.0X
HMH	2.65	139	ePc	17 41.62	-0.8X
MWH	2.68	143	iPc	17 41.50	-1.2X
WIH	2.70	143	ePc	17 41.81	-1.6X
KUH	2.72	150	iPc	17 42.05	-1.2X
PLL	2.72	140	iPc	17 42.38	-1.2X
DAH	2.75	145	iPc	17 42.50	-1.4X
TRH	2.76	143	iPc	17 42.63	-1.5X
MLH	2.79	139	iPc	17 43.26	-1.2X
HIL	2.83	132	iPc	17 44.16	-0.5X
			eS	18 16.66	
KFH	2.83	141	iPc	17 43.81	-1.1X
AIN	2.84	142	iPc	17 43.73	-1.4X
MLX	2.85	139	iPc	17 44 00	-1.1X
KHU	2.86	146	iPc	17 43.98	-1.4X
NGH	2.88	131	iPc	17 44.65	-0.8X
CPK	2.91	140	iPc	17 44.64	-1.3X
DES	2.92	141	iPc	17 44.56	-1.4X
NPH	2.92	139	iPc	17 44.58	-1.5X
WOH	2.92	144	iPc	17 44.36	-1.7X
RIM	2.94	139	iPc	17 44.94	-1.4X
OUT	2.94	139	iPc	17 45.10	-1.2X
ESR	2.95	138	iPc	17 45.25	-1.3X
AHA	2.96	139	iPc	17 45.23	-1.4X
KNH	2.98	140	iPc	17 45.46	-1.4X
HTC	2.99	143	ePc	17 45.56	-1.4X
PUH	2.99	138	ePc	17 45.42	-1.6X
HLP	2.99	141	iPc	17 45.72	-1.3X
MVH	3.00	135	iPc	17 46.20	-0.8X
PPL	3.02	144	iPd	17 45.90	-1.4X
HPO	3.03	146	P	17 46.00	-1.4X
MKA	3.03	138	ePc	17 46.12	-1.5X
PWH	3.06	140	iPd	17 46.68	-1.2X
SPT	3.06	149	iPc	17 46.20	-1.8X
PFH	3.08	133	P	17 47.00	-1.2X
HBH	3.09	132	iPc	17 47.32	-1.0X
KAE	3.11	138	iPc	17 47.65	-0.9X
HUL	3.11	135	iPd	17 47.74	-0.9X
PKL	3 12	133	iPd	17 47.81	-1.0X
WHA	3.13	137	iPd	17 47.90	-1.0X
KPO	3.15	132	iPc	17 48.01	-1.2X
POH	3.17	133	iPc	17 48.30	-1.2X
KVN	37.70	54	P	24 17.00	0.7
INK	48.95	11	eP	25 46.50	-0.1
MBC	57.90	10	eP	26 52.50	-0.2
	0.6s	1.00nm		4.0mb	
S.D. = 0.6 on 11 of 57 obs.					

% DEC 05, 1989 22h 49m 42.46± 1.50s
21.219 S ±14.9km 118.838 E ± 9.4km
DEPTH = 10.0km (geophysicist)
WESTERN AUSTRALIA (590)

MBL	0.93	87	iPd	50 00.20	0.0
NANU	3.35	246	eP	50 36.00	0.1
MEKA	5.38	183	eP	51 08.70	4.0X
	0.3s	18.00nm		5.2mb X	
			eS	52 17.00	
MRWA	8.37	197	eP	51 46.80	0.1
	0.2s	9.00nm		5.7mb X	
			iS	53 24.50	
WARB	8.69	126	eP	51 48.30	-2.9X
	0.2s	3.00nm		5.3mb X	
			eS	53 28.00	
BAL	9.54	191	eP	52 03.30	0.4
	0.3s	4.00nm		5.4mb X	
			eS	53 54.00	
COOL	9.84	168	eP	52 07.50	0.4
	0.3s	3.00nm		5.3mb X	
			iS	53 58.40	
KLB	10.38	185	eP	52 14.70	0.3
	0.3s	7.00nm		5.6mb X	
			iS	54 12.20	
MUN	10.97	192	eP	52 20.00	-2.5X
			eS	54 27.00	
NWAO	11.75	187	eP	52 31.80	-1.3
	0.3s	4.00nm		5.2mb X	
			eS	54 44.00	
FORR	12.69	141	eP	52 42.00	-3.8X
	0.3s	6.00nm		5.3mb X	
			eS	55 02.00	
RKG	12.90	187	eP	52 56.10	7.5X
	0.3s	7.00nm		5.3mb X	
			eS	55 23.00	
ASPA	14.14	103	eP	52 55.30	-9.7X
			eS	55 29.40	
S.D. = 0.7 on 7 of 13 obs.					

DEC 05, 1989 23h 24m 07.08± 0.75s
15.172 N ± 4.3km 60.911 W ± 7.7km
DEPTH = 13.2 ± 5.3 km
LEEWARD ISLANDS (92)
ML 2.9 (FDF). MD 3.3 (TRN).

CRM	0.42	181	iPd	24 15.92	0.2
DTMT	0.43	278	eP	24 15.95	0.0
			eS	24 21.60	
DSVT	0.45	277	eP	24 16.15	-0.1
			eS	24 22.09	
DPMT	0.47	281	eP	24 16.35	-0.2
			eS	24 22.68	
FDF	0.49	208	iPd	24 16.83	-0.3
	0.1s	3.40nm			
			S	24 22.80	
MVM	0.61	179	iPd	24 19.25	0.1
			S	24 27.30	
BBL	0.65	303	ePd	24 19.97	0.2
			S	24 27.00	
BIM	0.67	193	iPd	24 20.00	-0.1
			S	24 28.50	
MGG	0.84	332	eP	24 23.33	0.4
			S	24 33.40	
DOG	1.09	322	eP	24 27.45	0.1
PAG	1.13	319	eP	24 28.17	0.2
			S	24 43.50	
DEG	1.14	353	ePd	24 27.63	-0.6
			S	24 40.00	
SLB	1.34	185	eP	24 31.61	0.1
			eS	24 49.17	
S.D. = 0.3 on 13 of 13 obs.					

DEC 06, 1989 00h 48m 23.85± 0.60s
46.847 N ± 4.1km 25.430 E ± 4.0km
DEPTH = 27.7 ± 5.4 km
4.3mb (15 obs.)
ROMANIA (358)

PTT 0.66 82 iPd 48 37.00 0.2
VRI 1.33 137 ePd 48 48.50 1.9
MLR 1.40 165 iPc 48 49.00 1.1
IAS 1.50 76 iP 48 53.00 3.9X
BMR 1.55 303 iPc 48 51.00 1.1
CMP 1.60 190 iPc 48 35.00 -15.7X
ISR 1.88 155 ePc 48 58.00 3.3X
DEV 2.00 242 iPd 48 57.00 0.6
CEI 2.19 294 iPd 49 08.00 8.9X
DRA 2.32 201 ePd 49 03.00 2.1
BUC 2.48 169 eP 49 15.00 11.8X
CFR 2.52 130 ePc 49 06.00 2.2
BUC1 2.54 170 eP 49 08.00 4.0X
TLB 2.90 140 ePd 49 10.00 0.9
TIM 3.12 251 iPc 49 18.00 5.7X
SSR 3.25 234 iPd 49 16.00 1.8
PVL 3.63 181 iPc 49 21.00 1.4
PSN 3.71 147 eP 49 23.00 2.3
PSZ 3.91 288 iP 49 22.10 -1.5
BEO 4.02 242 iPn 49 25.00 -0.1
i(Pg) 49 36.80
i 50 35.80
SPC 4.19 306 eP 49 27.70 0.0
i 49 44.30
i 50 52.80
PGB 4.39 192 iP 49 30.00 -0.4
BUD 4.42 281 iPd 49 29.00 -1.7
JMB 4.46 169 iP 49 31.00 -0.3
VTS 4.54 201 iPd 49 32.00 -0.7
PLD 4.77 187 eP 49 34.00 -1.7
DIM 4.80 179 iPc 49 36.00 -0.1
KRA 4.86 313 ePd 49 37.80 0.8
e 49 46.20
SRO 4.93 284 eP 49 36.40 -1.6
i 49 44.80
RZN 5.18 186 iP 49 41.00 -0.8
KDZ 5.20 180 iPd 49 42.00 0.2
KKB 5.26 200 iPd 49 42.00 -0.6
DMK 5.29 161 eP 49 41.00 -2.1
SKO 5.65 212 ePn 49 51.70 3.6X
Z 10s 0.90um
iPg 50 09.70
iSn 50 48.00
i 50 57.20
i 51 09.80
i(Sg) 51 18.00
Lg 51 35.00
LR 52 15.00
ZST 5.80 286 eP 49 49.00 -1.2
e 49 55.00
i 50 03.40
i 19 38.10
SRS 5.88 194 eP 49 50.50 -0.9
VAY 5.90 201 iPn 49 49.50 -2.1
KNT 5.97 199 ePc 49 51.50 -1.2
CTT 6.09 158 eP 49 53.00 -1.4
SOP 6.10 281 iPd 49 53.80 -0.6
THE 6.46 197 eP 50 02.00 2.4
PTJ 6.62 265 ePKP 50 02.90 1.0
ZAG 6.62 264 ePKP 50 03.00 1.2
OHR 6.63 212 eP 50 01.30 -0.8
EDC 6.73 164 iP 50 02.50 -0.9
BNT 6.74 164 iP 50 02.10 -1.3
YLV 6.90 154 eP 50 05.00 -0.7
EZN 7.05 174 iP 50 05.20 -2.6
VBY 7.19 263 eP 50 50.90 41.1X
KSP 7.23 307 iP 50 10.00 -0.4
1.0s 32.00nm 5.3mb
i 50 19.20
e 51 31.50
LJU 7.57 268 e(P) 50 13.00 -2.1
e 50 27.00
CEY 7.70 266 e(P) 50 16.50 -0.5
PRU 7.90 297 P 50 19.30 -0.4
e 50 35.90
VOY 8.01 268 e(P) 50 22.50 1.1
e 50 53.80
KAS 8.12 129 iPd 50 21.00 -1.8
TRI 8.16 266 eP 50 25.50 2.1
KBA 8.27 276 iPd 50 24.50 -0.6
1.2s 32.90nm 5.4mb X
i 50 32.40
e 51 09.50
KHC 8.27 290 eP 50 24.20 -0.8
e 50 25.80
BRG 8.58 302 eP 50 31.00 1.9
1.2s 15.00nm 5.1mb
e 51 13.50
FVI 8.70 273 P 50 32.60 1.9
CLL 9.30 303 eP 50 38.00 -1.0
e 52 53.00
DUI 9.42 241 Pc 50 41.00 0.1
CTI 9.55 270 P 50 42.00 -0.6
KVT 9.58 123 eP 50 44.00 1.0
SGO 9.65 233 Pc 50 49.20 5.3X
SDI 9.78 243 Pc 50 45.80 0.0
ASS 9.81 252 P 50 47.40 1.3
MOX 9.88 298 eP 50 46.00 -1.1
GRF 9.89 292 eP 50 46.50 -0.8
MNS 10.12 248 P 50 49.70 -0.8
RMP 10.41 246 P 50 54.50 0.1
LPG 13.02 271 eP 51 30.40 0.6
1.2s 29.70nm 5.3mb
NUR 13.70 358 iP 51 34.50 -3.8X
0.6s 7.80nm 4.7mb
e 51 40.00
iS 54 02.10
UPP 13.83 343 iPn 51 39.00 -1.0
iSn 54 06.50
SUF 15.91 1 eP 52 02.40 -4.8X
0.7s 12.30nm 4.2mb
eS 54 51.30
CAF 16.37 272 eP 52 18.00 4.8X
1.1s 13.10nm 4.0mb
NB2 16.44 335 P 52 08.70 -5.2X
0.8s 10.20nm 4.0mb
LSF 16.44 277 eP 52 18.20 4.1X
1.1s 24.40nm 4.2mb
RJF 16.65 273 eP 52 20.80 4.1X
1.0s 17.60nm 4.1mb
LPO 17.04 272 eP 52 25.60 4.0X
1.3s 43.30nm 4 4mb
LFF 17.28 273 eP 52 27.90 3.4X
1.3s 43.30nm 4.4mb
EPF 18.14 267 eP 52 37.30 2.0
1.1s 21.90nm 4.2mb
EKA 19.75 306 P 52 53.00 -1.2
0.8s 5.80nm 3.9mb
SOD 20.59 1 iP 53 03.20 0.4
KEV 22.99 1 eP 53 32.00 5.2X
BCAO 42.67 190 ePc 56 19.30 -0.5
0.8s 7.00nm 4.4mb
LKO 45.57 225 P 56 44.14 0.9
CHG 65.32 88 eP 59 11.00 5.3X
CHTO 65.32 88 eP 59 05.90 0.2
0.9s 1.71nm 4.2mb
SES 76.10 333 eP 00 12.00 1.6
MEO 84.44 317 eP 01 03.50 8.5X
ISA 91.69 331 eP 01 44.00 14.1X
TPC 92.28 329 eP 01 44.00 11.4X
SBB 92.36 330 eP 01 53.00 20.0X
RVR 92.84 330 eP 01 51.00 15.9X
PLM 93.24 329 eP 01 46.00 8.8X
S.D. = 1.3 on 70 of 96 obs.

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* DEC 06, 1989 00h 57m 21.79± 1.38s
19.280 N ± 8.7km 102.701 W ±10.7km
DEPTH = 62.7 ± 13.3 km
4.8mb (6 obs.) 4.1Msz (1 obs.)
MICHOACAN, MEXICO (57)
Felt along the coasts of Jalisco and Colima.

MRX 1.49 73 iPd 57 45.56 -1.2
iS 58 06.13
CRX 2 86 87 iP 58 04.50 -1.7
iS 58 48.54
III 3 19 106 iPd 58 12.17 1.3
(S) 58 39.00
IIC 3.28 81 eP 58 18.34 6.0X
(S) 00 57.66
UNM 3.32 89 eP 58 15.00 2.2
iS 59 09.50
ACX 3.61 131 iPd 58 15.50 -1.1
iS 59 08.50
PPM 3.86 92 iP 58 19.50 -1.0
iS 59 05.00
IIT 4.16 93 iP 58 32.00 7.4X
LVVM 5.92 85 iP 58 50.50 1.6
UYO 16.54 25 iPd 01 12.90 1.8
SIO 17.35 18 eP 01 21.50 0.3
GLA 17.49 324 eP 01 23.00 0.0
ACO 17.63 9 e(P) 01 23.50 -1.2
TUL 17.65 19 eP 01 25.00 0.1
0.8s 58.50nm 4.8mb
e 01 29.90
OLY 18.96 29 P 01 40.00 -0.8
PV09 19.95 345 P 01 51.60 -0.1
GSC 20.25 325 eP 01 54.00 -0.7
GOL 20.48 354 P 01 58.00 0.8
GLD 20.52 354 P 01 59.50 2.0
1.4s 81.08nm 4.9mb
CLC 21.07 324 eP 02 03.00 0.1
FVM 21.49 27 P 02 05.80 -1.2
1.0s 40.00nm 4.8mb
RSCP 22.19 39 P 02 14.50 0.4
1.5s 69.12nm 4.9mb
TNP 22.60 329 P 02 20.00 1.7
PRM 23.34 47 P 02 25.10 -0.1
KVN 23.79 329 P 02 29.60 -0.2
BW06 24.13 348 P 02 33.00 -0.2
BLA 26.43 43 P 02 54.00 -0.6
0.7s 8.89nm 4.4mb
EDM 34.87 349 eP 04 07.50 -1.5
FFC 35.39 1 eP 04 12.00 -1.3
1.0s 17.00nm 4.9mb
ZOBO 49.03 134 P 06 03.50 -1.8
Z 20s 0.20um 4.1Msz
LR 21 16.00
LPB 49.24 134 P 06 07.00 0.3
CNCB 49.51 134 P 06 11.00 2.0
MID 50.84 333 eP 06 35.00 17.2X
S.D. = 1.3 on 30 of 33 obs.

& DEC 06, 1989 01h 06m 23.08s
59.237 N 145.025 W
DEPTH = 10.0km (geophysicist)
GULF OF ALASKA (15)
<AGS-P>. ML 3.8 (PMR).

TGL 1.88 35 iP 06 50.77 -4.9
GLI 1.95 329 eP 06 51.58 -4.9
VZW 1.98 338 iP 06 52.12 -4.9
VLZ 2.01 342 iP 06 52.30 -5.1
BALM 2.25 35 iP 06 56.00 -5.0
eS 07 22.00
KLU 2.31 349 iP 06 56.62 -5.2
eS 07 24.80
PCA 2.57 68 eP 07 00.78 -4.7
eS 07 29.73
NCA 2.90 343 eP 07 05.13 -5.1
SLKM 2.91 298 eP 07 04.63 -5.7
eS 07 38.00
TOA 2.93 349 ePc 07 05.80 -4.8
PMR 3.12 321 eP 07 08.70 -4.5
GHO 3.19 325 eP 07 09.80 -4.5
RDT 3.95 293 eP 07 18.00 -7.1
eS 08 00.00
SPU 4.01 302 eP 07 19.20 -6.7
CUT 4.09 323 eP 07 22.22 -4.6
HYT 4.10 64 P 07 22.50 -4.7
KDC 4.19 252 eP 07 24.30 -4.1
DWY 5.52 26 P 07 41.50 -5.7
FBA 5.83 348 ePd 07 44.50 -7.1
TTA 6.49 309 eP 07 55.70 -5.3
IMA 7.92 334 P 08 14.50 -6.6
INK 10.41 24 eP 08 47.00 -8.2
SES 21.27 100 eP 11 09.00 -2.5
23 obs. associated

% DEC 06, 1989 01h 30m 01.66± 0.71s
39.066 N ± 6.2km 28.692 E ± 7.0km
DEPTH = 10.0km (geophysicist)
TURKEY (366)

DST 0.54 355 iPg 30 12.00 -0.6
KHL 0.99 138 iPg 30 20.00 -0.4
ALT 1.10 90 iPn 30 22.70 0.2
IZM 1.30 240 ePn 30 26.00 0.2
BNT 1.42 335 iPn 30 26.60 -0.9
EDC 1.43 334 iPn 30 28.50 0.9
YLV 1.59 19 iPn 30 30.60 0.7
S.D. = 0.8 on 7 of 7 obs.

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* DEC 06, 1989 01h 54m 51.69± 1.35s
5.836 S ±14.6km 107.546 E ±16.9km
DEPTH = 312.9 ± 16.4 km
4.5mb (6 obs.)
JAVA (277)

TRT 5.38 110 ePd 56 13.80 -0.9

06d 01h

		eS	57	14.20	
IPM	12.22	328 ePc	57	39.40	1.5
	0.9s	96.60nm			5.1mb
SNG	14.66	332 eP	58	07.30	0.2
NANU	18.33	156 eP	58	47.00	1.3
	0.4s	8.00nm			4.5mb
		e	59	06.00	
		eS	02	17.00	
CHG	25.92	341 eP	59	58.10	0.1
	0.9s	12.60nm			4.3mb
CHTO	25.92	341 iPc	59	58.30	0.3
	0.8s	11.71nm			4.3mb
WB2	29.59	121 eP	00	29.80	-0.8
ASPA	30.94	128 iPd	00	41.00	-1.4
	0.5s	22.00nm			4.9mb
		eS	05	21.80	
GBA	35.59	303 P	01	20.00	-2.0
HYB	36.80	309 eP	01	30.50	-1.6
ADE	40.82	139 iPd	02	05.90	0.8
STK	41.03	133 iPd	02	07.40	0.7
	0.6s	16.00nm			4.4mb
BJI	46.34	9 eP	02	49.50	0.7
CAN	48.09	133 eP	03	03.00	0.4
LSZ	78.24	256 iP	06	20.00	0.7
	S.D. = 1.2	on 15 of 15 obs.			

? DEC 06, 1989 02h 04m 26.97± 3.31s
29.249 S ±31.2km 69.570 W ±25.5km
DEPTH = 33.0km (normal)
CHILE-ARGENTINA BORDER REGION (127)

CYA	3.41	77 ePc	05	19.40	0.2
JACH	3.53	194 iPc	05	23.00	2.0
PEL	4.00	194 eP	05	27.00	-0.5
		e	06	03.80	
		i	06	13.50	
FCH	4.11	188 eP	05	31.00	1.6
		iS	06	18.50	
TACH	4.54	195 eP	05	34.00	-1.2
		e	06	24.50	
LCCH	4.55	202 iPc	05	33.70	-1.6
MRA	4.58	134 e(P)	05	35.00	-0.7
CHCH	4.76	191 eP	05	38.50	0.2
	S.D. = 1.5	on 8 of 8 obs.			

DEC 06, 1989 03h 27m 05.38± 0.45s
6.836 N ± 5.6km 123.647 E ± 7 0km
DEPTH = 617.1 ± 7.3 km
5.1mb (18 obs.)
MINDANAO, PHILIPPINE ISLANDS (259)

DAV	1.93	82 eP	28	21.10	-1.4
	0.7s	547.95nm			
TSM	6.13	245 ePd	28	50.20	1.3
	1.0s	663.70nm			5.6mb
KKM	7.43	264 ePc	29	00.10	-0.4
	0.9s	334.20nm			5.4mb
QIZ	18.09	313 Pd	30	42.70	0.3
QZH	18.64	346 P	30	48.00	0.5
MTN	20.92	159 ePc	31	07.00	-1.4
SNG	22.86	272 eP	31	26.00	0.1
KNA	23.01	167 eP	31	26.00	-1.2
LOE	23.83	298 eP	31	34.00	-0.5
NNT	24.24	285 iPd	31	33.80	-4.3X
NST	24.65	293 iPd	31	43.00	1.3
PSI	24.97	262 ePd	31	43.70	-0.9
	0.6s	43.60nm			5.3mb
WHN	25.15	341 P	31	46.70	0.8
GYA	25.35	322 iPd	31	48.60	0.7
CHG	26.82	299 ePd	32	01.00	0.3
	1.0s	95.00nm			5.4mb
CHTO	26.82	299 eP	32	01.00	0.3
	0.6s	12.07nm			4.7mb
WB2	28.62	159 iPc	32	14.90	-1.3
		iScP	36	28.20	
		e	37	50.00	
TIA	29.84	349 eP	32	25.80	-0.7
XAN	30.30	335 iPd	32	30.30	-0.1
CD2	30.34	325 P	32	31.00	0.2
QIS	31.42	150 iPc	32	39.70	-0.2
ASPA	31.93	162 iPc	32	47.50	3.3X
	0.5s	103.00nm			5.7mb
		eS	37	14.60	
		eScS	41	58.50	
TIY	32.38	343 iPd	32	47.10	-0.8
WARB	32.95	175 iPc	32	52.60	-0.1
	0.5s	76.00nm			5.6mb
LZH	34.30	331 Pd	33	05.50	1.5
	1.5s	79.00nm			5.1mb
CTA	34.79	141 iPc	33	09.00	1.0
	0.8s	47.01nm			5.1mb
HHC	35.55	344 eP	33	15.00	0.9
LSA	38.10	311 Pd	33	37.00	1.4
RMO	41.12	145 eP	33	59.60	0.4
		e	38	37.00	
STK	42.14	157 iPc	34	07.90	0.7
	0.5s	36.00nm			5.1mb
ADE	43.94	162 iPc	34	21.60	0.4
	0.7s	87.67nm			5.4mb
BRS	44.18	142 iPd	34	23.60	0.4
	0.8s	9.50nm			4.3mb
		i	38	39.00	
		i	40	14.00	
		i	40	22.00	
HYB	45.22	288 iPd	34	31.20	-0.1
	1.0s	70.00nm			5.1mb
KOD	45.76	278 eP	34	36.00	0.2
GBA	45.91	282 P	34	36.50	-0.1
BFD	47.22	159 eP	34	46.00	-0.1
BWA	47.25	152 eP	34	48.10	1.6
CAN	48.26	152 eP	34	54.30	0.2
CNB	48.43	152 iPc	34	56.20	0.9
WMQ	48.44	325 P	34	55.20	-0.2
NDI	48.87	302 iPd	34	57.00	-1.6
	0.7s	42.47nm			5.0mb
POO	49.80	288 iPd	35	05.30	-0.3
	0.7s	28.77nm			4.9mb
DZM	50.83	126 iPc	35	14.00	0.8
MAIO	65.20	307 eP	36	49.00	-0.5
	1.0s	12.50nm			4.3mb
SUF	87.41	333 eP	38	48.70	-0.5
NUR	88.51	331 eP	38	53.90	-0.4
HFS	93.85	332 ePKP	39	17.30	-1.7
	0.4s	1.50nm			4.5mb
Z	15s	0.28um			4.8MszX
		LR	20	30.00	
NB2	94.65	333 P	39	21.30	-1.3
	0.8s	2.30nm			4.4mb
	S.D. = 0.9	on 46 of 48 obs.			

DEC 06, 1989 04h 09m 25.18± 0.26s
58.030 N ± 8.2km 32.200 W ± 3.8km
DEPTH = 10.0km (geophysicist)
4.8mb (33 obs.) 4.0Msz (1 obs.)
NORTH ATLANTIC OCEAN (402)

REY	7.89	35 eP	11	22.70	0.1
AKU	10.14	35 eP	11	57.40	3.7X
	1.0s	40.00nm			5.8mb X
DLE	15.19	97 eP	13	07.80	6.7X
	1.0s	116.00nm			5.2mb
EKA	16.12	87 P	13	20.00	6.8X
	1.2s	35.00nm			4.4mb
FRB	18.39	303 eP	13	44.00	2.6
FLN	20.88	103 eP	14	08.50	-1.1
	1.0s	49.60nm			4.8mb
GRR	20.92	104 eP	14	08.80	-1.2
	0.9s	55.60nm			4.9mb
LPF	21.05	105 eP	14	09.70	-1.6
	1.1s	43.90nm			4.7mb
LDF	21.17	103 eP	14	10.90	-1.6
	0.8s	17.10nm			4.5mb
NB2	21.91	64 P	14	20.60	0.6
	1.3s	29.50nm			4.6mb
WIT	22.43	87 eP	14	31.00	5.9X
MFF	22.45	107 eP	14	24.80	-0.6
	1.1s	24.40nm			4.6mb
WTS	22.91	88 eP	14	33.00	3.2X
	1.0s	30.00nm			4.8mb
ENN	23.09	92 eP	14	33.00	1.4
	1.0s	29.00nm			4.8mb
LSF	23.55	105 eP	14	35.40	-0.7
	1.0s	18.00nm			4.6mb
TCF	23.87	104 eP	14	39.30	0.0
	1.1s	17.00nm			4.5mb
BGF	24.02	103 eP	14	40.90	0.2
	1.1s	43.90nm			5.0mb
SSF	24.04	102 eP	14	42.20	1.4
	0.8s	8.50nm			4.4mb
LFF	24.05	109 eP	14	41.00	0.1
LOR	24.09	101 eP	14	42.90	1.6
	0.8s	8.00nm			4.4mb
MAF	24.10	104 eP	14	40.90	-0.6
	1.0s	16.00nm			4.6mb
AVF	24.13	102 eP	14	41.70	0.0
	0.9s	13.10nm			4.5mb
RJF	24.19	107 eP	14	42.90	0.6
	0.9s	7.80nm			4.3mb
LBF	24.33	101 eP	14	44.00	0.3
LPO	24.46	109 eP	14	46.00	1.1
	1.0s	14.80nm			4.6mb
SMF	24.48	102 eP	14	45.70	0.5
HAU	24.93	97 eP	14	50.10	0.6
	1.2s	23.80nm			4.8mb
CDF	25.17	95 eP	14	53.30	1.4
	1.2s	23.80nm			4.8mb
EPF	25.23	112 eP	14	50.10	-2.3
BSF	25.27	97 eP	14	52.50	-0.3
	1.1s	21.40nm			4.7mb
TOL	25.61	123 eP	15	00.00	4.0X
MOX	26.19	87 eP	15	05.00	3.8X
	1.2s	23.00nm			4.7mb
GRF	26.51	89 eP	15	04.60	0.3
	1.4s	39.00nm			4.9mb
Z	22s	0.50um			4.0Msz
CLL	26.56	85 eP	15	04.00	-0.6
	2.2s	57.00nm			4.9mb
BRG	27.30	85 e(P)	15	18.40	7.0X
		e	16	08.80	
SOD	27.46	46 eP	15	13.00	0.3
KHC	28.09	88 P	15	26.80	8.1X
NUR	28.39	61 eP	15	26.00	4.9X
KSP	28.56	83 eP	15	22.50	-0.3
KBA	29.22	92 eP	15	36.00	7.0X
SRO	31.40	87 eP	15	50.80	2.7
SKO	36.93	92 eP	16	36.50	0.8
		i	16	42.00	
FFC	37.22	296 eP	16	41.00	3.1X
	1.0s	20.00nm			4.8mb
PRM	40.96	256 P	17	12.50	3.2X
INK	41.65	327 eP	17	13.00	-1.5
FVM	42.24	268 P	17	19.00	-0.8
	0.8s	21.21nm			4.9mb
EDM	43.47	300 eP	17	29.50	-0.2
SES	44.24	296 eP	17	36.00	0.1
OLY	44.65	266 P	17	40.00	0.6
TUL	46.65	270 eP	17	56.50	1.3
	1.2s	17.30nm			5.0mb
Z	17s	0.27um			4.3MszX
		LR	32	00.00	
SIO	47.04	271 eP	18	00.20	1.9
UYO	47.26	268 iPd	18	03.30	3.2X
LRM	48.07	292 eP	18	06.20	-0.4
FBA	48.10	329 P	18	06.00	-0.3
	0.7s	12.50nm			5.1mb
NEW	48.59	297 P	18	10.00	-0.4
IMA	48.72	332 e(P)	18	06.10	-5.1X
GLD	48.77	281 P	18	11.50	-0.5
BW06	48.80	287 P	18	10.20	-2.1
	0.8s	10.71nm			4.9mb
GOL	48.89	281 P	18	12.70	-0.3
	0.6s	5.56nm			4.8mb
MEO	48.98	272 eP	18	13.70	0.2
PNT	49.01	300 eP	18	14.00	0.5
	0.9s	16.00nm			5.0mb
PMR	51.07	327 e(P)	18	30.10	1.1
TTA	51.87	331 e(P)	18	34.40	-0 8
DSI	52.10	90 eP	18	50.00	12.8X
PRNI	52.85	91 e(P)	18	39.00	-4.0X
ALQ	53.03	278 P	18	44.70	0.2
KVN	55.88	290 P	19	03.80	-1.4
TNP	56.18	289 P	19	06.00	-1 4
WDC	56.89	295 eP	19	13.50	1.3
CMB	57.80	291 eP	19	18.70	0 0
FRI	58.28	290 eP	19	21.70	-0.3
BCAO	66.37	123 iPd	20	14.70	-1.5
	0.4s	5.00nm			5.1mb
MDJ	76.60	13 eP	21	15.50	-1.6
BTO	76.78	29 eP	21	18.40	0.2
HHC	76.93	27 P	21	19.40	0.3
BJI	78.77	24 eP	21	29.00	0.0
LZH	79.26	35 eP	21	33.00	1.0
	2.0s	0.02nm			1.8mb X
ZOBO	79.74	215 eP	21	28.00	-7.2X
Z	24s	0.06um			3.9MszX
		LR	50	16.00	
TIY	80.12	28 Pc	21	35.50	-1.0
CCH	80.21	213 P	21	38.90	1 5
TIA	82.65	25 Pc	21	49.60	-0.1
XAN	82.66	32 P	21	48.80	-1.0
BRS	149.18	351 e(PKP)	29	15.00	4.4X

S.D. = 1.1 on 64 of 83 obs.

DEC 06, 1989 05h 19m 48.55± 0.13s
6.192 S ± 2.8km 130.455 E ± 3.5km
DEPTH = 119.8km (2 depth phases)
5.7mb (32 obs.)
BANDA SEA (280)

FAULT PLANE SOLUTION: P-Woves
NP1:Strike= 70 Dip=50 Slip= 42
NP2: 310 59 132
Principal Axes:
T Plg=55 Azm=274
P 5 12

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

RADIATED ENERGY
No. of sta: 5 Focal mech. F
Energy 2.9±1.1*10**13 Nm

MOMENT TENSOR SOLUTION
Dep 115 No. of sta: 6
Moment Tensor; Scale 10**17 Nm
Mrr= 0.86 Mtt=-2.02
Mff= 1.16 Mrt= 0.80
Mrf= 1.54 Mtf= 1.83
Principal axes:
T Val= 3.25 Plg=36 Azm=295
N -0.40 54 112
P -2.85 2 204
Best Double Couple:Mo=3.0*10**17
NP1:Strike=333 Dip=64 Slip= 154
NP2: 75 67 28

CENTROID, MOMENT TENSOR (HRV)
Data Used: GDSN
L.P.B.: 15S, 35C
Centroid Locotion:
Origin Time 05:19:51.3 0.4
Lot 6.40S 0.04 Lon 129.98E 0.05
Dep 129.2 1.4 Half-duration 2.5
Moment Tensor; Scale 10**17 Nm
Mrr= 2.26 0.09 Mtt=-2.19 0.14
Mff=-0.06 0.16 Mrt= 0.09 0.08
Mrf= 1.36 0.10 Mtf= 0.26 0.13
Principal Axes:
T Val= 2.89 Plg=65 Azm=275
N -0.66 25 98
P -2.23 1 7
Best Double Couple:Mo=2.6*10**17
NP1:Strike= 74 Dip=49 Slip= 56
NP2: 300 51 123

AAI	3.36	318	iPd	20	43.60		3.3X
			eS	21	04.00		
MTN	6.65	174	iPd	21	23.00		-2.2
KNA	9.64	190	iPd	22	02.40		-3.3X
			eS	23	40.00		
MNDI	13.13	91	eP	22	51.00		-0.8
DAV	14.06	340	eP	23	04.00		0.3
			eS	25	51.20		
WB2	14.19	165	iPd	22	58.20		-7.1X
TSM	16.12	310	ePd	23	34.50		4.9X
	0.9s	431.00nm			5.7mb		
LAT	16.45	93	eP	23	35.00		1.3
QIS	16.81	149	iPd	23	34.60		-3.6X
KDB	16.87	102	eP	23	37.50		-1.3
ASPA	17.69	170	ePd	23	45.10		-3.8X
	1.5s	2513.00nm			6.3mb		
			eS	26	55.30		
			i	27	15.90		
TRT	17.75	264	iPd	23	49.30		-0.4
	0.8s	276.10nm			5.6mb		
MBL	18.09	214	iPd	23	52.10		-1.6
	0.4s	98.00nm			5.4mb		
			eS	26	58.00		
KKM	18.70	310	ePc	24	00.70		0.1
	0.9s	619.80nm			5.9mb		
WARB	20.21	190	iPd	24	16.10		-0.1
	0.4s	74.00nm			5.4mb		
			eS	27	54.00		
CTA	20.65	133	iPd-	24	20.70		0.1
	1.0s	465.00nm			5.8mb		
			iS	28	03.00		
RAB	21.72	86	eP	24	31.00		-0.3
NANU	21.73	220	iPc	24	32.40		1.1
	0.4s	77.00nm			5.4mb		
			eS	28	30.00		
OCP	22.69	336	eP	24	48.00		7.3X
MEKA	23.27	208	eP	24	47.60		1.3
	0.3s	31.00nm			5.2mb		
			eS	29	07.00		
QLP	24.16	149	iPc	24	55.70		0.8
			e	25	08.00		
			e	29	23.00		
GUA	24.30	36	eP	24	57.00		0.7
	0.7s	208.22nm			5.7mb		
GUMO	24.31	36	eP	24	56.80		0.4
	0.7s	167.73nm			5.6mb		
PJG	24.31	36	eP	24	56.90		0.5
BAG	24.49	337	eP	24	58.00		-0.3
	1.4s	1279.07nm			6.2mb		
			e	29	04.00		
COOL	26.07	198	iPc	25	12.10		-0.6
MRWA	26.67	209	eP	25	17.70		-0.4
	0.3s	20.00nm			5.2mb		
			e	25	48.00		
			eS	30	20.00		
RMQ	26.68	141	iPd	25	17.60		-0.7
			e	25	45.00		
			e	30	12.00		
BAL	27.51	206	eP	25	26.00		0.3
			e	26	01.00		
			eS	30	43.00		
STK	27.60	159	iPd	25	24.20		-2.3
			e	25	26.00		
			e	25	48.00		
			e	30	59.00		
KLB	27.92	204	iPc	25	29.10		-0.3
			e	26	08.00		
			eS	30	52.00		
KGM	28.30	286	eP	25	33.00		0.0
MUN	28.90	206	eP	25	38.00		-0.3
			e	26	22.00		
			eS	31	10.00		
CMS	28.99	152	iPc	25	38.60		-0.4
			e	26	23.00		
			e	31	16.00		
NWAO	29.31	203	iPc	25	41.70		-0.2
			e	26	25.00		
HNR	29.39	98	eP	25	40.00		-2.8
ADE	29.63	166	iPd	25	44.50		-0.3
	0.4s	100.00nm			5.9mb		
BRS	29.91	137	iPc	25	45.80		-1.5
	0.8s	52.00nm			5.3mb		
			ipP	26	12.00	120km	
			e(PP)	26	43.00		
			eS	30	30.00		
			i(ScP)	32	17.90		
RKG	30.41	202	iPc	25	56.20		4.7X
	0.4s	59.00nm			5.7mb		
IPM	31.27	289	ePd	25	58.10		-1.3
	0.6s	37.30nm			5.3mb		
COO	31.53	143	eP	26	02.00		0.5
			e	26	56.00		
QIZ	32.26	321	Pc	26	07.50		-0.4
			eS	31	08.40		
			sS	31	55.00		
SNG	32.60	294	eP	26	10.20		-0.7
			e	27	25.00		
			e	28	55.60		
BWA	32.64	152	iPd	26	12.10		1.0
			i	33	14.00		
			i	36	58.30		
PSI	32.70	285	ePc	26	10.00		-1.8
	1.0s	138.00nm			5.7mb		
BFD	32.75	162	iPc	26	12.30		0.3
			e	26	59.00		
			e	32	48.70		
QZH	33.03	340	Pc	26	14.00		-0.5
			S	31	20.00		
TSI	33.27	286	eP	26	14.00		-2.7
GZH	33.57	331	iPc	26	18.50		-0.6
	1.8s	0.30nm			2.8mb	X	
			pP	26	45.00	119km	
			S	31	28.00		
			ScP	32	30.20		
CAN	33.64	152	iPd	26	19.80		0.0
			iPcP	28	57.80		
			eScP	33	21.30		
			e	33	48.00		
			iScS	37	02.80		
CNB	33.81	152	iPd	26	21.80		0.6
			eS	33	33.00		
TOO	34.11	158	iPd	26	24.80		1.1
	0.6s	45.00nm			5.4mb		
			eS	33	17.00		
NNT	35.78	301	iPc	26	38.30		0.2
LOE	36.81	310	eP	26	46.50		-0.3
BSI	36.97	288	eP	26	46.00		-2.1
NST	37.06	306	iPc	26	49.50		0.6
KAGJ	37.17	1	P	26	50.60		1.1
SSE	38.12	347	P+	26	56.00		-1.5
	2.0s	0.50nm			3.0mb	X	
Z	20s	0.50um			4.3Msz		
E	10s	0.40um					
			S	32	38.00		
			sS	33	02.00		
DZM	38.16	118	iPc	26	58.00		-0.2
			i	29	12.90		
KUMJ	38.51	1	P	27	00.90		0.1
BDT	38.84	307	eP	27	05.00		1.3
NJ2	39.61	344	iPc	27	10.50		0.7
	3.0s	0.90nm			3.0mb	X	
			ScP	32	52.00		
			iS	33	03.00		
WHN	39.65	338	iPc	27	11.50		1.2
	1.4s	0.85nm			3.3mb	X	
			ScP	32	52.00		
			iS	33	03.00		
CHG	39.78	309	iPc	27	12.00		0.5
	1.0s	262.50nm			6.0mb		
			eS	33	04.80		
CHTO	39.78	309	eP	27	12.20		0.7
			pP	27	28.70		66kmX
			sP	27	38.80		
			PcP	29	17.30		
GYA	39.82	326	iPc	27	12.20		0.3
			PcP	29	16.60		
			ScP	32	53.20		
			S	33	02.00		
			sS	33	54.00		
			ScS	37	05.00		
TKSJ	40.10	5	eP	27	14.80		0.9
SHNJ	40.10	1	P	27	14.20		0.3
WKYJ	40.48	7	eP	27	17.80		0.7
SHK	40.56	3	iP	27	18.50		0.9
	1.0s	352.00nm			6.1mb		
KMI	41.18	320	iPc	27	24.27		1.1
	3.0s	0.70nm			2.9mb	X	
Z	20s	1.80um			4.9Msz		
			e	27	50.76		
			e	29	21.46		
			ePPP	29	41.32		
			iS	33	26.47		
			e	34	13.15		
			eSS	36	38.49		
YONJ	41.25	4	P	27	24.40		1.0
TSRJ	41.83	7	eP	27	28.10		0.1
IIDJ	42.04	9	P	27	29.80		0.0
CHJJ	42.77	10	P	27	34.50		-1.3
MTMJ	43.10	9	P	27	37.90		-0.7
KAKJ	43.15	12	P	27	38.10		-0.6
NIIJ	43.94	10	P	27	44.50		-0.7
TIA	44.00	344	Pc	27	45.10		-0.6
			ScP	33	08.60		
CD2	44.87	327	iPc	27	52.00		-0.8
			S	34	14.00		
XAN	44.90	334	iPc	27	52.30		-0.7
	1.5s	0.50nm			3.0mb	X	
			pP	28	16.50	103kmX	
			ScP	33	12.80		
YAMJ	45.03	11	P	27	55.00		1.1
OFUJ	46.23	12	P	28	03.50		0.2
TIY	46.80	340	iPc	28	06.50		-1.5
	1.0s	0.20nm			2.8mb	X	
Z	20s	0.75um			4.6Msz		
N	14s	0.60um					
			PcP	29	38.50		
			PP	30	02.00		
			S	34	45.00		
			ScS	37	44.00		
BJI	47.85	345	iPc	28	15.20		-0.8
	1.0s	254.00nm			6.0mb		
			ePcP	29	43.50		
			eScP	33	24.00		
SNY	48.20	353	iPc	28	18.00		-0.6
	1.0s	0.20nm			2.9mb	X	
Z	24s	1.00um			4.7MszX		
N	20s	1.00um					

06d 05h

			sP	28	55.00				1.2s	51.56nm		5.7mb				e	42	14.00				
LZH	48.91	331	iPc	28	24.09	-0.4	HRI	97.29	303	eP	33	10.50	0.9	FVM	131.27	43	PKP	38	47.00	-1.5			
			iS	35	15.79		DSI	97.52	301	e(P)	33	10.00	-0.5	OLY	131.72	47	PKP	38	49.20	-0.2			
SHL	49.00	312	iP	28	25.50	0.2	MBH	97.87	299	eP	33	13.00	0.9	IISM	131.78	70	(PKP)	38	52.50	2.6X			
			eS	35	20.00		INK	97.95	22	eP	33	11.00	-0.6	OXX	132.66	73	(PKP)	38	54.50	2.5X			
MRRJ	49.34	10	eP	28	27.50	0.1	SEK	98.28	240	iPd	33	14.50	0.2	KIC	135.48	273	PKP	38	43.14	-14.0X			
HOOJ	49.74	12	eP	28	31.20	0.8				i	37	13.00		LIC	135.75	273	PKP	38	43.50	-14.2X			
HHC	49.92	341	iPc	28	32.20	0.1	KRI	98.53	252	iPc	33	34.00	18.5X	TIC	135.76	273	PKP	38	43.88	-13.9X			
	1.2s	0.30nm			3.1mb X		PRY	98.69	242	eP	33	16.00	-0.1	RSCP	135.83	43	PKP	38	53.50	-3.8X			
CN2	49.96	355	iPc	28	31.40	-0.8	BUL	98.92	249	iPd	33	31.10	13.9X	LKO	136.35	277	PKP	38	45.08	-13.8X			
	0.6s	0.10nm			2.9mb X			1.0s	9.50nm					PRM	138.87	43	PKP	38	53.70	-9.3X			
Z	20s	1.00um			4.8Msz		BLF	99.36	239	eP	33	20.00	0.9	ANT	143.97	146	iPKPc	39	11.30	-0.9			
		sP	29	06.50						e	37	37.00		SLA	145.56	154	ePKPc	39	15.70	0.6			
		iPcP	29	50.40			KSR	99.41	243	iPd	33	18.00	-1.5	SJS	145.64	81	ePKPc	39	12.00	-3.5X			
		ScP	33	32.60						e	37	21.70		LCR2	145.70	82	iPKPd	39	17.00	1.3			
		eS	35	28.00			KEV	100.42	340	ePdiff	33	24.00	1.2	ICR	145.86	81	ePKP	39	18.00	1.8			
		ScS	38	06.00			SOD	101.00	337	iPdiff	33	24.60	-0.8	BUS	145.96	82	iPKPd	39	17.20	0.8			
		SS	39	00.00			SUF	102.02	333	ePdiff	33	28.40	-1.6	PT08	147.65	124	iPKPd	39	20.50	1.5			
BTO	50.21	340	P	28	33.00	-1.3		0.7s	33.00nm			6.2mb		YJA	147.77	151	ePKPc	39	20.30	1.2			
MSZ	50.34	146	P	28	35.00	-0.1	NUR	103.13	331	iPdiff	33	34.20	-0.8	ITB7	148.55	172	ePKP	39	22.40	2.6X			
MDJ	50.58	359	Pc	28	36.60	-0.2		0.9s	27.00nm			6.1mb		ARE	148.73	136	ePKP	39	22.00	1.4			
KUSJ	50.74	13	eP	28	37.80	-0.2	MLR	104.56	315	ePdiff	33	42.50	0.6	ITB	148.87	172	ePKP	39	23.90	3.7X			
ASAJ	51.27	11	P	28	41.80	-0.3	WDC	106.91	50	ePKP	37	58.30	-3.6X	ITB1	148.99	171	ePKP	39	24.40	4.0X			
KRP	51.63	134	P	28	45.80	0.8	BRK	107.41	52	ePKP	37	55.60	-7.3X	UPA	150.15	83	ePKPd	39	22.10	-0.3			
LSA	51.94	316	iPc	28	47.60	-0.3	VAY	107.49	311	ePdiff	33	53.70	-1.1				i	39	27.50				
	3.5s	1.30nm			3.3mb X		SSR	107.59	315	iPdiff	34	11.00	15.8X	TUNG	150.17	104	(PKP)	39	25.50	2.5X			
		iS	35	59.00			PNT	107.62	40	ePKP	38	02.00	-1.0	QUR	150.39	101	ePKP	39	25.50	2.1X			
KHZ	52.43	140	eP	28	49.60	-1.3	KRA	107.85	321	ePdiff	33	56.20	0.0	COTA	150.68	100	(PKP)	39	25.00	1.0			
MNG	52.81	137	P	28	53.00	-0.8	HFS	108.47	332	ePdiff	33	57.50	-1.2	CNCB	150.77	142	PKP	39	25.80	1.8			
GTA	53.49	331	iPc	28	59.00	0.2		0.8s	7.60nm			5.9mb		LPB	150.90	141	PKPc	39	25.50	1.5			
	2.0s	1.60nm			3.6mb X		PRI	108.86	54	ePKP	38	03.60	-2.3X		1.2s	875.00nm							
		PcP	30	04.60			CMB	108.87	52	ePKP	38	05.80	0.0	CAYA	150.98	101	(PKP)	39	26.00	1.6			
		S	36	18.80			BUD	108.97	318	iPdiff	34	15.20	13.9X	ZOBO	151.08	141	PKPc	39	25.80	1.3			
		ScS	38	33.80			NB2	109.27	333	Pdiff	34	01.30	-1.0		1.5s	258.06nm							
KOD	55.24	287	eP	29	11.00	-1.2		1.0s	16.10nm								LR	03	16.00				
HIA	56.01	352	iPc	29	16.27	-0.6	FRI	109.53	53	ePKPc	38	07.00	0.1	CCH	151.41	145	(PKP)	39	27.00	2.4X			
		ePcP	30	13.55			KEK	109.80	310	ePdiff	34	20.50	15.3X	PSO	151.84	99	ePKP	39	27.50	2.0X			
		eS	36	55.41			EDM	110.46	35	ePKP	38	08.00	-0.3	BOG	155.54	92	ePKP	39	31.50	1.0			
GBA	56.19	291	P	29	17.10	-1.5	KVN	110.50	51	PKP	38	09.80	0.8		S.D. = 1.1		on 189 of 240 obs.						
HYB	56.37	296	iPc	29	18.50	-1.5	SOP	110.56	319	iPdiff	34	16.10	7.8X	----------									
	1.0s	250.00nm			6.2mb		TNP	111.34	52	PKP	38	11.00	0.4		DEC 06, 1989 05h 33m 12.26± 0.18s								
		e	29	57.00			BRG	111.35	323	i(Pdif	34	12.40	0.6		43.646 N ± 2.5km 16.869 E ± 2.0km								
		iS	36	56.00				1.0s	20.00nm						DEPTH = 10.0km (geophysicist)								
DRV	60.73	176	eP	29	47.10	-2.2	BCAO	112.23	272	iPKP	38	12.00	-0.7		4.9mb (9 obs.)								
POO	60.96	295	iPc	29	50 70	-1.0		1.6s	52.00nm					YUGOSLAVIA (383)									
	0.9s	115.97nm			5.9mb					id	38	56.80			ML 4.9 (KBA), 4.8 (TTG). MD 4.8								
NDI	61.86	307	iPc	29	55.00	-2.5				id	40	44.10			(FIR), 4.7 (TRI), 4.4 (SSO).								
	0.6s	100.00nm			6.0mb		ROI	112.28	310	Pdiff	34	15.30	-0.9		Felt (VII) in the Livno oreo.								
WMO	62.97	327	iPc	30	05.11	0.4	CSI	112.45	310	Pdiff	34	12.30	-4.7X		Felt throughout Dalmotia, in								
Z	12s	0.40um			4.8MszX		ACI	112.60	310	Pdiff	34	20.10	2.5X		southern Bosnio ond in ports of								
		sP	30	40.50			MMN	112.66	311	Pdiff	34	12.40	-5.4X		Hercegovino.								
		S	38	24.00						eSn	34	58.40											
KSH	67.70	317	iPd	30	36.00	0.8	CZI	112.68	310	Pdiff	34	21.10	3.2X	HVAR	0.56	213	iPgd	33	24.80	1.2			
QUE	70.70	305	eP	30	49.50	-4.4X	SES	112.71	38	ePKPd	38	12.00	-0.6	BLY	1.13	12	Pn	33	33.70	0.4			
		eS	38	46.50						pP	39	08.00					Sn	33	49.20				
ADK	73.26	31	eP	31	08.00	-0.3	LRM	113.16	43	ePKP	38	14.30	0.4	BRY	1.43	121	iPgd	33	37.10	-1.3			
	0.9s	74.40nm			5.5mb		BW06	116.00	45	PKP	38	18.50	-1.0				eSg	33	59.50				
SBA	74.07	173	P	31	13.80	1.2	FFC	116.03	31	ePKP	38	18.00	-0.8	HCY	1.69	135	iPnd	33	41.80	-0.2			
MAW	75.86	201	eP	31	23.00	0.0		1.0s	14.00nm								eSn	34	07.50				
MAIO	78.53	309	iPc	31	39.00	0.5	PCP	116.79	317	Pdiff	34	43.17	7.0X	PLE	1.87	99	iPnd	33	46.00	1.4			
	0.9s	58.82nm			5.4mb		ORX	116.80	318	Pdiff	34	50.22	13.9X				eSn	34	12.00				
		eS	41	26.00			ORO	116.81	318	Pdiffc	34	50.00	13.7X	BDV	1.98	133	iPnd	33	47.00	0.8			
KHI	78.61	307	eP	31	40.00	0.9	ROB	117.33	317	Pdiff	34	49.56	11.0X				eSn	34	14.00				
SDN	83.39	32	ePc	32	03.50	0.1	LSD	117.41	318	Pdiff	34	57.05	17.9X	TTG	2.13	124	iPnd	33	49.90	1.5			
SPA	83.85	180	iPc	32	05.90	0.1	IMI	117.44	317	Pdiff	34	45.96	6.9X				eSn	34	17.50				
	0.8s	95.00nm			5.7mb		IMI	117.44	317	Pdiff	34	49.40	10.3X	VBY	2.19	329	iPn	33	51.50	2.4			
Z	21s	1.42um			5.3Msz		RSP	117.45	318	Pdiff	34	54.48	15.3X	ZAG	2.26	344	iPnd	33	51.30	1.1			
SPA	83.85	180	iPc	32	06 00	0.2	PV09	117.47	50	PKP	38	23.00	0.5				iPb	33	54.00				
TTA	88.07	26	ePc	32	25.30	-1.1	ENR	117.65	317	Pdiff	34	54.50	14.4X				iSg	34	24.40				
TTA	88.07	26	ePc	32	26.50	0.1	STV	117.71	317	Pdiff	34	55 16	14.8X	IVA	2.34	108	iPnd	33	53.50	2.0			
KDC	88.34	32	ePc	32	27 30	-0.3	PZZ	117.77	318	Pdiff	34	56.45	15.8X				eSn	34	25.00				
ATA	88.53	282	eP+	32	31 47	2.0	RRL	117.84	318	Pdiff	34	59.47	18.4X	PTJ	2.34	344	iPnd	33	52.10	0.6			
TDD	88.86	282	eP+	32	33.47	2.4	GOL	119.94	47	PKP	38	26.80	-0.3				iPg	33	57.00				
ARO	88.89	282	iP+	32	32.00	0.7	GLD	120.03	47	PKP	38	20.00	-7.2X				iSn	34	20.50				
SGH	89.08	282	eP+	32	34.54	2.3	ALQ	120.46	53	PKP	38	30.10	1.9	AOI	2.37	269	iPg	33	54.15	2.3			
TAB	89.17	308	iPc+	32	33.00	0.7		1.0s	25.00nm					ULC	2.43	133	ePn	33	53.70	1.1			
DAF	89.21	282	eP+	32	35.15	2.5	Z	20s	0.89um			5.4Msz					eSn	34	25.80				
KSU	89.28	282	eP+	32	35.61	2.6	FRB	120.93	10	ePKP	38	27.00	-0.8	RIY	2.46	315	iPnc	33	55.40	2.4			
HLD	89.30	282	eP+	32	35.45	2.4	MEO	126.68	51	iPKPd	38	39.90	0.0				i	33	57.70				
SLY	89.48	306	ePd	32	33.00	-0.5	SIO	128.05	49	ePKP	38	42.60	0.1				iSg	34	29.80				
IMA	89.93	23	ePc	32	35.00	-0.2	TUL	128.37	48	ePKP	38	43.60	0.5	PVY	2.50	114	ePn	33	56.40	2.6			
BHD	90.08	303	iPd	32	37.00	0.6		1.3s	63.10nm								eSn	34	27.10				
PMR	90.85	28	eP	32	37.60	-1.7	UYO	130.07	50	iPKPd	38	47.30	1.0	BAI	2.52	180	Pd	33	53.40	-0.5			
MSL	91.47	306	iPd	32	43.00	0.3	SHGH	130 79	272	ePKP	38	48.00	-0.3	SDA	2.53	129	iPnd	33	55.50	1.5			
FBA	92.07	25	eP	32	43.50	-1.4	LEGH	130 91	272	ePKP	38	49 00	0.5	SSO	2.54	263	ePg	33	56.67	2.6			
TOA	92.33	28	eP	32	46.20	0.0	KOGH	131.00	273	ePKP	38	49.00	0.3	ALP	2.56	251	iPg	33	57.78	3.2X			
NAI	93.49	268	iP	32	55.60	2.8	KUK	131.13	273	ePKP	38	48 50	-0.4	DUI	2.66	223	Pd	33	57.60	1.5			

BCI	2.67	117	iPnc	33 59.10	3.0X
CEY	2.72	321	iPnc	33 59.60	2.8
PUK	2.74	125	iPnd	33 58.70	1.6
CIO	2.75	262	iPg	33 59.50	2.2
BRT	2.78	175	Pd	33 57.00	-0.6
			eSn	34 31.10	
BEO	2.83	64	iPn	33 56.50	-1.9
	2.0s		3.25nm		
			iPg	34 04.30	
			iSg	34 42.50	
ARV	2.86	268	P	34 00.70	2.0
LACI	2.90	133	iPnd	34 00.50	1.2
LJU	2.92	326	iPnc	34 01.90	2.4
			i	34 06.50	
			eSn	34 38.00	
			eSg	34 52.00	
SDI	2.97	230	P	34 01.70	1.3
TRI	3.03	314	iPnc	34 02.50	1.5
			iPg	34 07.40	
			i	34 30.00	
			iSb	34 45.00	
			iSg	34 48.50	
			i	34 56.00	
KKS	3.04	120	iPn	34 04.50	3.3X
ASS	3.12	261	P	34 04.60	2.1
VOY	3.19	319	iPnc	34 05.50	2.0
TIR	3.19	135	iPnc	34 04.50	1.1
RSM	3.21	277	Pc	34 05.90	2.2
			eSn	34 45.80	
PHP	3.28	125	iPnd	34 05.40	0.7
SGO	3.30	201	P	34 04.70	-0.2
MNS	3.32	249	P	34 07.40	2.1
LCI	3.41	166	P	34 06.30	-0.2
CRE	3.57	271	P	34 11.60	2.7
RMP	3.58	241	P	34 10.90	2.0
RDP	3.59	240	P	34 11.10	1.9
SFI	3.64	276	P	34 12.50	2.7
BERA	3.73	141	iPnd	34 10.30	-0.8
VLO	3.73	147	iPn	34 10.70	-0.4
PGD	3.74	275	P	34 13.40	2.0
TIM	3.74	55	iPc	34 25.00	13.7X
SKO	3.76	115	iPn	34 12.00	0.5
	3.0s		*******nm		
			iPb	34 19.50	
			iSn	34 54.00	
			iSg	35 08.20	
			Lg	35 23.00	
OHR	3.86	130	iPnd	34 14.10	1.1
VVI	3.93	308	Pc	34 15.20	1.2
TDS	4.00	186	P	34 14.60	-0.4
FIR	4.07	274	iPnc	34 19.00	3.1X
			iSn	35 10.00	
TPE	4.09	144	ePn	34 17.00	0.9
FVI	4.13	317	P	34 17.70	1.0
KBN	4.21	134	iPnd	34 17.80	-0.1
KBA	4.24	325	ePnd	34 19.00	0.6
			id	34 20.60	
			iSn	35 09.60	
			i	35 23.40	
			iSg	35 32.30	
SRO	4.29	13	iPn	34 18.70	-0.3
			i	34 22.70	
			e	34 42.30	
			i	35 04.50	
			i	44 08.70	
			i	46 53.00	
CTI	4.42	305	Pc	34 21.50	0.5
			eSn	35 11.90	
SRN	4.43	147	iPn	34 20.40	-0.6
LSK	4.47	140	iPnd	34 20.20	-1.4
MME	4.49	279	P	34 24.10	2.0
ZST	4.55	2	iPn	34 22.20	-0.5
			i(Pb)	34 27.00	
			e	34 37.20	
			i	35 11.20	
			e	46 52.30	
BDI	4.55	277	P	34 23.60	0.7
GZR	4.57	65	ePc	34 25.00	1.9
PII	4.60	273	P	34 24.80	1.4
VTS	4.76	101	iPd	34 26.00	0.1
PSZ	4.77	25	iP	34 24.10	-1.8
KMR	4.81	338	iPn+	34 27.40	1.0
			i	34 43.60	
			i	35 29.30	
			iSg	35 52.50	
VAY	4.81	117	iPn	34 26.00	-0.5
DEV	4.84	60	iPd	34 25.50	-1.4

KKB	4.91	109	iPc	34 29.00	1.2
SAL	4.93	296	P	34 28.30	0.2
KZN	4.95	131	eP	34 27.50	-0.9
KNT	5.11	117	ePc	34 31.00	0.4
			eS	35 48.50	
OGA	5.23	310	iPnc	34 33.60	1.0
LPI	5.36	196	P	34 33.61	-0.6
DRA	5.41	76	eP	34 40.00	5.0X
THE	5.44	122	ePc	34 34.50	-0.8
			eS	35 59.80	
BOB	5.45	284	Pc	34 36.70	1.1
PGB	5.45	99	iPd	34 36.00	0.4
MMB	5.46	110	eP	34 37.00	1.3
LIT	5.49	128	ePc	34 34.80	-1.3
MDI	5.53	295	Pd	34 36.20	-0.4
MSI	5.53	191	P	34 34.90	-1.7
ATN	5.58	191	P	34 35.20	-2.2
CEI	5.63	42	eP	35 09.00	31.1X
PLG	5.89	121	eP	34 41.00	-0.7
KHC	5.94	339	iPn	34 43.00	0.7
			iPg	34 48.00	
			iSn	35 50.00	
			eSg	36 31.80	
			eSg	48 18.90	
MNO	5.94	197	Pc	34 42.60	0.0
PLD	5.96	102	eP	34 44.00	1.4
SPC	6.01	22	ePn	34 42.90	-0.6
			i	34 54.90	
			i	35 19.30	
			i	35 51.80	
GIB	6.05	202	P	34 44.58	0.6
CMP	6.07	72	ePc	34 29.00	-15.2X
RZN	6.11	106	iPd	34 45.00	0.1
BMR	6.15	47	ePd	34 52.00	6.8X
VLS	6.15	151	iP	34 42.20	-3.1X
VAI	6.18	294	Pc	34 44.80	-0.9
PVL	6.18	91	iPd	34 45.00	-0.7
AGG	6.18	136	ePc	34 44.00	-1.8
			eS	35 57.60	
CKI	6.24	280	Pc	34 45.70	-0.9
NEO	6.45	130	eP	34 48.50	-1.1
MCT	6.49	203	P	34 50.30	-0.1
PRU	6.54	347	Pn	34 52.00	1.2
			e	36 49.20	
			eSg	48 43.50	
DIM	6.57	101	eP	34 52.00	0.8
KDZ	6.61	105	iPd	34 51.00	-0.9
BUC1	6.65	81	eP	35 00.00	7.7X
BUC	6.70	80	eP	35 22.00	29.0X
MEU	6.70	193	Pc	34 51.90	-1.4
CVT	6.72	209	P	34 52.60	-0.7
MLR	6.74	71	ePd	34 55.50	1.7
KRA	6.75	17	eP	34 53.50	-0.2
	0.8s		94.00nm		5.9mb X
Z	10s		4.30um		
N	10s		4.30um		
			i	34 58.10	
			i	35 03.80	
			iS	36 07.30	
PZI	6.77	193	P	34 52.20	-2.0
FAI	6.81	202	P	34 54.90	0.2
SBF	6.84	275	Pn	34 54.40	-0.7
			Sn	36 10.80	
RDO	6.89	108	eP	34 55.80	0.1
DOI	6.98	280	P	34 55.40	-1.8
GRF	7.19	329	iPc	34 58.70	-1.2
			e(S)	36 21.30	
KSP	7.21	357	eP	35 00.70	0.5
			i	35 06.50	
JMB	7.21	96	iP	35 00.00	-0.3
FOUF	7.32	280	e(Pn)	34 59.95	-1.7
			e(Sn)	36 19.85	
VRI	7.36	69	eP	34 58.00	-4.3X
FRF	7.42	273	Pn	35 02.50	-0.7
			Sn	36 24.00	
BNI	7.44	284	P	35 01.60	-2.0
LPG	7.46	288	Pn	35 01.90	-2.1
PTT	7.47	61	eP	35 40.00	36.1X
LPL	7.48	288	Pn	35 02.10	-2.1
HOF	7.49	335	iPd	35 03.10	-1.0
BRG	7.50	346	ePn	35 04.00	-0.2
			iPg	35 35.00	
			i	36 34.00	
			iSg	37 15.00	
LMR	7.54	271	Pn	35 04.50	-0.4
			Sn	36 28.50	
LRG	7.64	272	Pn	35 06.10	-0.1

			Sn	36 31.00	
ATH	7.69	135	eP	35 06.50	-0.4
MOX	7.86	335	ePn	35 08.00	-1.3
Z	12s		6.60um		
N	12s		5.40um		
E	12s		3.90um		
EZN	8.03	115	iP	35 11.90	0.2
TLB	8.09	79	eP	34 57.50	-15.0X
CLL	8.10	343	ePn	35 15.00	2.4
	1.5s		58.00nm		5.6mb X
			i(Sn)	36 38.80	
			eSg	37 40.00	
BSF	8.20	304	Pn	35 13.10	-1.0
			Sn	36 41.80	
CDF	8.20	309	Pn	35 12.50	-1.7
			Sn	36 42.20	
PSN	8.21	86	eP	35 12.00	-2.1
DMK	8.22	99	eP	35 00.00	-14.4X
CFR	8.22	75	ePc	34 29.00	-45.4X
MFT	8.24	107	iP	35 15.00	0.3
IAS	8.32	61	eP	34 25.00	-50.7X
PRK	8.32	119	eP	35 15.00	-0.7
VLI	8.33	144	eP	35 12.00	-3.9X
HAU	8.54	304	Pn	35 17.80	-1.1
			Sn	36 50.60	
EDC	8.83	108	iP	35 23.50	0.7
BNT	8.86	108	eP	35 22.00	-1.3
APE	9.32	132	eP	35 26.30	-3.3X
IZM	9.44	120	eP	35 27.00	-4.3X
LBF	9.68	295	Pn	35 32.40	-2.1
			Sn	37 19.00	
SMF	9.68	293	Pn	35 32.00	-2.6
			Sn	37 19.00	
DST	9.69	111	eP	35 30.10	-4.6X
YLV	9.79	104	eP	35 34.00	-2.1
LOR	9.83	296	Pn	35 34.60	-2.1
			Sn	37 22.00	
SSF	10.01	295	Pn	35 36.80	-2.3
			Sn	37 28.00	
AVF	10.04	293	Pn	35 36.80	-2.7
			Sn	37 26.50	
ENN	10.30	318	eP	35 43.00	0.0
	0.7s		29.00nm		5.8mb X
			e	37 38.00	
BGF	10.33	291	Pn	35 41.40	-2.1
			Sn	37 35.00	
MAF	10.46	289	Pn	35 43.40	-2.0
			Sn	37 38.00	
CAF	10.69	282	Pn	35 47.00	-1.5
TCF	10.72	289	Pn	35 46.20	-2.6
WTS	10.74	325	iP	35 53.80	4.8X
	1.0s		40.00nm		5.7mb X
			e	36 12.00	
KHL	10.94	115	eP	35 55.00	3.1X
ALT	10.96	110	eP	35 54.00	1.8
RJF	11.10	284	Pn	35 52.00	-2.0
WIT	11.41	327	e(P)	36 06.50	8.4X
			e	36 12.50	
LFF	11.63	282	Pn	35 59.70	-1.6
EPF	12.06	273	Pn	36 07.20	0.2
ELL	12.11	120	eP	36 11.00	3.1X
BCK	12.12	116	eP	36 13.20	5.3X
MFF	12.38	290	Pn	36 10.50	-0.8
			Sn	38 24.50	
BBTK	12.46	102	eP	36 08.00	-4.6X
			e	36 26.00	
EBR	12.46	263	eP	36 29.00	16.6X
FLN	13.05	299	Pn	36 20.00	-0.3
GRR	13.19	297	Pn	36 21.50	-0.7
ECRI	14.19	272	e(P)	36 42.50	7.1X
ETOR	14.30	265	eP	36 41.50	4.6X
EVIA	15.42	258	e(P)	37 02.00	10.5X
GUD	15.88	266	eP	37 02.00	4.6X
TOL	16.05	264	iPc	37 04.50	5.0X
	1.2s		125.00nm		4.9mb
UPP	16.24	1	iP	37 04.20	2.4
HFS	16.63	354	eP	37 08.20	1.5
	0.6s		8.70nm		4.1mb X
AFC	16.78	255	eP	37 08.50	-0.5
ASMO	16.87	255	iPc	37 09.50	-0.5
APHE	17.03	254	iPc	37 16.50	4.5X
ACHM	17.05	255	iPd	37 11.50	-0.8
ALOJ	17.24	255	iPd	37 15.50	0.8
ATEJ	17.27	254	eP	37 16.20	1.1
EKA	17.42	319	P	37 19.00	2.3
	1.4s		24.80nm		4.1mb
NUR	17.53	13	iP	37 15.20	-2.8

06d 05h

	1.1s	55.20nm			4.6mb	
		i	37	19.00		
		e	44	32.00		
NB2	17.75	351 P	37	16.80	-4.0X	
	1.6s	134.00nm			4.8mb	
DLE	18.20	310 eP	37	33.40	7.0X	
BURJ	18.73	121 Pd	37	37.00	3.8X	
SALJ	18.82	122 Pd	37	33.90	-0.3	
SUF	19.86	13 eP	37	42.20	-3.8X	
SOD	24.35	9 iP	38	31.50	0.6	
FFC	69.08	327 iPc	44	18.70	-1.3	
	0.7s	12.00nm			5.2mb	
BJI	69.48	54 eP	44	18.00	-4.7X	
IMA	70.38	356 ePc	44	27.30	-0.6	
	0.9s	25.00nm			5.3mb	
FBA	71.13	353 ePc	44	30.80	-1.5	
PMR	74.50	353 ePc	44	50.50	-1.7	
	0.8s	9.10nm			4.9mb	
SES	75.94	329 eP	44	59.00	-1.7	
PNT	79.89	333 eP	45	22.00	-0.4	
	0.8s	11.00nm			4.9mb	
NEW	79.93	331 P	45	21.70	-1.0	
LRM	80.21	327 eP	45	24.30	-0.2	
BW06	81.49	323 P	45	30.00	-1.2	
GLD	81.91	319 P	45	32.00	-1.4	
GOL	82.02	319 P	45	32.90	-1.2	
	1.1s	11.54nm			4.9mb	
PV09	84.75	320 P	45	48.00	-0.1	
KVN	88.16	327 P	46	03.70	-1.0	

S.D. = 1.4 on 171 of 211 obs.

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* DEC 06, 1989 05h 41m 11.69± 1.24s
43.594 N ± 5.6km 17.062 E ±14.9km
DEPTH = 10.0km (geophysicist)
YUGOSLAVIA (383)
ML 3.4 (ZAG), 3.1 (KBA), 2.7 (LJU).

HVAR	0.61	227 i(Pg)	41	23.10	-0.9	
		iSg	41	32.50		
BLY	1.16	4 Pn	41	28.90	-4.4X	
		Sn	41	44.40		
VBY	2.31	327 iPn	41	50.80	0.5	
		i(Sn)	42	18.50		
ZAG	2.35	341 i(Pn)	41	50.00	-0.9	
		iSn	42	18.50		
		iSg	42	23.50		
PTJ	2.44	342 ePn	41	50.90	-1.3	
		eSn	52	18.50		
RIY	2.59	313 iPn	41	56.20	1.8	
		iSg	42	29.50		
ALP	2.68	253 ePn	41	55.97	0.2	
		eSn	42	31.12		
CEY	2.85	320 e(Pn)	41	59.00	0.9	
		eSn	42	34.00		
CIO	2.88	263 ePn	41	57.72	-0.9	
		iSn	43	35.17		
LJU	3.04	325 ePn	41	48.40	-12.3X	
		eSn	42	19.50		
TRI	3.16	313 eP	42	06.20	3.8X	
		i	42	44.90		
VOY	3.32	318 ePn	42	04.50	-0.3	
		eSn	42	46.50		
SKO	3.61	115 ePn	42	14.50	5.7X	
OHR	3.72	131 e(Pn)	42	22.50	12 1X	
CSI	3.86	189 P	42	12.20	-0.2	
		eSn	42	57.40		
KBA	4.36	324 ePn	42	39.00	19 4X	
		iSn	43	07.50		
CZI	4.43	189 P	42	21.40	1 0	
LPG	7.61	288 Pn	43	01.00	-4.5X	
LPL	7.62	288 Pn	43	01.40	-4.3X	

S.D. = 1.1 on 11 of 19 obs.

DEC 06, 1989 05h 42m 59.47± 0.59s
43.607 N ± 5.5km 16.902 E ± 6.7km
DEPTH = 10.0km (geophysicist)
YUGOSLAVIA (383)
ML 3.3 (TTG).

HVAR	0.54	218 iPg	43	10.30	-0.1	
		iSg	43	20.30		
BLY	1.16	10 Pn	43	20.40	-0.7	
		eSn	43	35.40		
BRY	1.39	120 ePg	43	23.80	-1.2	
		eSg	43	44.50		
HCY	1.65	134 ePg	43	28.40	-0.1	
		eSg	43	53.00		
PLE	1.84	98 ePn	43	32.00	0.6	
		eSn	43	57.00		
BDV	1.94	132 ePn	43	32.90	0.1	
		eSn	44	00.00		
TTG	2.09	123 ePn	43	35.80	0.8	
		eSn	44	04.00		
VBY	2.23	329 iPn	43	37.00	0.0	
		iSn	44	05.90		
ZAG	2.30	344 e(Pn)	43	30.00	-8.0X	
PTJ	2.39	344 eP	43	40.00	0.7	
		eSn	44	09.00		

S.D. = 0.8 on 9 of 10 obs.

DEC 06, 1989 05h 45m 42.39± 0.45s
43.617 N ± 4.6km 16.801 E ± 5.9km
DEPTH = 10.0km (geophysicist)
YUGOSLAVIA (383)
ML 3.5 (KBA), 3.4 (TTG), 3.0 (LJU).

HVAR	0.51	211 iPg	45	53.60	0.9	
		iSg	46	04.00		
BLY	1.16	14 Pn	46	03.90	-0.2	
		Sn	46	17.90		
BRY	1.46	119 iPgd	46	06.80	-2.1	
		eSg	46	29.00		
HCY	1.71	133 iPgd	46	11.50	-0.8	
		eSg	46	36.00		
PLE	1.91	98 ePn	46	15.20	-0.2	
		eSn	46	42.50		
BDV	2.00	131 ePn	46	16.40	-0.2	
		eSn	46	44.00		
TTG	2.16	123 ePn	46	19.20	0.3	
		eSn	46	48.00		
VBY	2.19	330 e(Pn)	46	19.20	-0.1	
		iSn	46	48.90		
ZAG	2.28	345 e(Pn)	46	18.50	-2.0	
		iSn	46	47.50		
		iSg	46	53.00		
AOI	2.33	269 ePn	46	25.45	4.1X	
PTJ	2.36	346 ePn	46	21.40	-0.5	
		eSn	46	49.20		
IVA	2.38	107 ePn	46	23.50	1.3	
		eSn	46	53.50		
RIY	2.44	316 iPn	46	26.30	3.4X	
		iSg	46	59.10		
		i	47	00.80		
ULC	2.45	132 ePn	46	24.20	1.2	
		eSn	46	55.00		
PVY	2.54	113 ePn	46	26.00	1.6	
		eSn	46	58.00		
CEY	2.71	322 ePn	46	29.00	2.1X	
		eSn	47	04.50		
LJU	2.91	327 ePn	46	30.20	0.6	
		eSn	47	06.20		
TRI	3.01	315 eP	46	38.60	7.6X	
		i	47	14.90		
VOY	3.18	320 ePn	46	34.80	1.3	
		ePg	46	41.90		
		eSn	47	15.30		
		eSg	47	31.50		
CSI	3.86	186 P	46	42.60	-0.5	
		eSn	47	28.20		
OHR	3.88	129 ePn	46	43.80	0.4	
ROI	4.05	183 P	46	43.80	-1.9	
KBA	4.23	326 iPnc	46	49.20	0.7	
		iSn	47	39.50		
CZI	4.42	187 P	46	51.20	0.2	
VAY	4.84	116 ePn	46	37.00	-20.0X	
LPG	7.42	288 Pn	47	26.00	-7.6X	
LPL	7.44	288 Pn	47	26.30	-7.5X	
NUR	17.57	13 eP	49	41.00	-7.6X	

S.D. = 1.2 on 20 of 28 obs.

& DEC 06, 1989 06h 07m 10.20s
40.745 N 123.938 W
DEPTH = 26.0km
NORTHERN CALIFORNIA (36)
<BRK>. ML 3.2 (BRK). Felt from Arcoto to Fortuno.

FHC	0.07	328 iPd	07	14.50	-0.4	
		iS	07	17.00		
		e	07	18.80		
		i	07	22.30		
WDC	1.08	98 iPc	07	27.70	-1.9	
		i(S)	07	41.60		
LTCM	1.48	111 P	07	34.10	-1.3	
LBFM	1.66	68 P	07	37.70	-0.5	
MIN	1.82	102 ePc	07	38.20	-2.3	
		iS	08	01.70		
ORV	2.21	122 eP	07	44.80	-1.2	
		e(S)	08	09.70		
		i	08	11.80		
NWRM	2.42	160 P	07	46.60	-2.3	
MHC	3.84	152 e(P)	08	08.10	-1.0	
ARN	3.87	150 P	08	08.00	-1.5	
SAO	4.43	153 eP	08	14.50	-2.9	
KVN	4.80	109 P	08	20.40	-2.4	

11 obs. associated

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* DEC 06, 1989 06h 43m 11.15± 1.26s
43.629 N ±14.8km 16.963 E ±15.7km
DEPTH = 10.0km (geophysicist)
YUGOSLAVIA (383)
ML 3.1 (KBA), 3.0 (ZAG), 2.6 (LJU).

BLY	1.13	8 ePn	43	32.00	-0.3	
		Sn	43	45.00		
VBY	2.24	328 ePn	43	48.40	-0.4	
		iSn	44	17.60		
ZAG	2.30	343 iPb	43	51.80	2.2	
		iSn	44	16.50		
		iSg	44	21.70		
PTJ	2.38	343 ePn	43	49.40	-1.5	
		iSn	44	17.00		
RIY	2.52	314 ePn	43	52.30	-0.4	
		iSg	44	28.30		
CEY	2.78	320 eP	43	58.00	1.5	
		eSn	44	33.00		
LJU	2.97	325 ePn	44	00.60	1.4	
		e(Sn)	44	35.00		
TRI	3.09	313 eP	44	04.50	3.7X	
		i	44	47.60		
VOY	3.25	319 ePn	44	02.30	-0.9	
		eSn	44	38.50		
OHR	3.80	130 e(Pn)	44	11.00	0 0	
KBA	4.29	325 iPnc	44	16.50	-1.6	
		iPg	44	30.20		
		iSn	45	05.40		

S.D. = 1.5 on 10 of 11 obs.

DEC 06, 1989 08h 05m 45.47± 0.80s
43.505 N ± 7.9km 16.906 E ± 8.4km
DEPTH = 10.0km (geophysicist)
YUGOSLAVIA (383)
ML 2.8 (TTG).

HVAR	0.47	226 iPg	05	54.70	-0.3	
		iSg	06	04.50		
BLY	1.26	9 ePn	06	07.40	-1.5	
		Sn	06	21.20		
BRY	1.34	116 ePg	06	08.30	-2.0	
		eSg	06	30.00		
HCY	1.58	132 ePn	06	13.50	0.0	
		eSn	06	38.00		
PLE	1.82	95 ePn	06	18.00	0.8	
		eSn	06	43.50		
BDV	1.87	130 ePn	06	18.50	0.8	
		eSn	06	47.00		
TTG	2.04	121 ePn	06	21.00	0.9	
		eSn	06	50.00		
VBY	2.32	330 ePn	06	27.10	2.8X	
		iSn	06	53.00		
PVY	2.43	111 ePn	06	28.40	2.5X	
		eSn	07	00.80		
PTJ	2.49	345 e(Pn)	06	29.00	2.3	
		eSn	06	57.10		
RIY	2.58	316 e(Pn)	06	31.30	3.4X	
		iSg	07	06.30		
TRI	3.14	316 eP	07	25.80	49.9X	
VOY	3.31	321 ePn	06	37.50	-1.0	
		e(Sn)	07	17.30		
OHR	3.75	128 e(Pn)	06	51.00	6.3X	

S.D. = 1.5 on 9 of 14 obs.

& DEC 06, 1989 08h 23m 21.94s
62.374 N 151.203 W
DEPTH = 77.9km
CENTRAL ALASKA (1)
<AGS-P>.

CUT	0.44	86	iP	23	34.53	-0.6
SUA	0.94	166	eP	23	39.77	-0.7
			eS	23	54.49	
HUR	0.94	49	iP	23	39.48	-1.0
			eS	23	53.10	
PWA	0.96	139	eP	23	40.02	-0.6
NCG	1.07	205	eP	23	41.06	-1.1
KTH	1.19	6	iP	23	42.68	-0.9
			eS	23	58.30	
CRP	1.20	203	eP	23	42.86	-0.9
			eS	24	00.17	
GHO	1.23	118	eP	23	43.40	-0.7
BGL	1.25	207	eP	23	43.89	-0.5
PLRM	1.25	128	eP	23	43.40	-0.9
			eS	24	01.08	
PMS	1.38	145	eP	23	45.04	-0.9
			eS	24	04.18	
RND	1.49	45	eP	23	46.18	-1.4
NKA	1.64	181	eP	23	50.67	1.3
MCK	1.71	36	eP	23	49.33	-1.1
RDT	1.90	198	eP	23	52.18	-0.8
			eS	24	14.49	
SLKM	1.93	165	eP	23	51.88	-1.6
NCA	2.09	99	eP	23	54.09	-1.5
NNL	2.34	181	eP	23	59.90	0.9
TOA	2.37	94	eP	23	58.33	-1.2
SEW	2.43	159	eP	23	58.76	-1.5
VLZ	2.63	116	eP	24	00.52	-2.5
KLU	2.65	107	eP	24	00.65	-2.7
PAX	2.71	75	eP	24	02.73	-1.5
CCB	2.74	32	eP	24	02.13	-2.4
FID	2.79	124	eP	24	02.25	-2.9
CNPM	2.86	180	eP	24	05.51	-0.7
GLB	3.62	102	eP	24	14.27	-2.5

27 obs. associated

DEC 06, 1989 08h 41m 07.80± 0.23s
32.382 N ± 4.8km 141.532 E ± 4.3km
DEPTH = 33.0km (normal)
5.2mb (20 obs.) 4.8Msz (5 obs.)
SOUTH OF HONSHU, JAPAN (211)
CENTROID, MOMENT TENSOR (HRV)
Data Used: GDSN
L.P.B.: 8S, 15C
Centroid Location:
Origin Time 08:41: 4.9 1.7
Lat 31.71N 0.23 Lon 141.60E 0.19
Dep 15.0 FIX Half-duration 1.5
Moment Tensor; Scale 10**16 Nm
Mrr= 4.44 1.03 Mtt= 0.74 1.86
Mff=-5.19 1.00 Mrt= 1.22 2.46
Mrf= 0.57 3.85 Mtf=-1.20 0.65
Principal Axes:

	Val=	Plg=	Azm=
T	4.81	73	356
N	0.67	16	193
P	-5.49	5	102

Best Double Couple:Mo=5.2*10**16
NP1:Strike=175 Dip=43 Slip= 66
NP2: 26 52 111

MAT	4.97	327	iPc	42	21.80	-0.4
	0.8s	125.37nm				
			eS	43	19.00	
MDJ	15.36	326	eP	44	43.00	-0.6
Z	20s	2.70um				
			esS	47	44.00	
CN2	17.00	317	eP	45	04.00	-0.6
Z	16s	2.40um				
N	13s	1.50um				
E	13s	1.30um				
			pP	45	12.00	
			eS	48	14.00	
SNY	17.12	308	iPc	45	08.20	2.2
Z	16s	3.30um				
N	14s	2.60um				
E	14s	1.50um				
			S	48	15.00	
SSE	17.36	271	eP	45	11.00	1.9
Z	18s	0.90um				
N	13s	0.90um				
E	12s	1.00um				
			eS	48	48.00	
DL2	17.42	297	eP	45	14.00	4.2X
Z	15s	2.40um				
N	13s	2.70um				
E	16s	2.50um				
			sS	48	34.00	

ANP	18.94	253	eP	45	30.00	1.3
GUMO	18.96	170	eP	45	29.50	0.6
	1.0s	304.00nm			5.5mb	
Z	17s	1.50um			4.3MszX	
			eS	49	00.00	
PJG	18.95	170	eP	45	29.50	0.6
GUA	19.01	170	eP	45	29.60	0.1
	0.8s	304.48nm			5.6mb	
NJ2	19.19	275	Pd	45	31.50	0.0
Z	16s	1.20um				
			sS	49	20.00	
TIA	20.51	287	eP	45	45.00	-0.7
Z	18s	3.60um			4.8Msz	
N	15s	1.70um				
E	15s	3.70um				
BJI	21.79	298	eP	45	58.00	-0.6
Z	16s	1.75um			4.6MszX	
N	14s	0.95um				
E	14s	0.89um				
			eS	49	57.00	
WHN	23.24	273	Pc	46	12.00	-1.0
Z	16s	0.71um			4.2MszX	
N	14s	1.55um				
E	15s	1.24um				
			sP	46	28.00	
TIY	24.36	291	eP	46	23.40	-0.5
Z	16s	5.01um			5.1MszX	
N	14s	2.50um				
E	15s	3.60um				
			S	50	46.00	
BAG	24.76	235	eP	46	24.00	-4.1X
HHC	25.40	298	P	46	35.00	1.1
Z	14s	1.90um			4.8MszX	
N	12s	0.60um				
E	12s	0.60um				
BTO	26.52	297	eP	46	44.00	-0.3
N	15s	2.00um				
E	16s	2.50um				
			sS	51	29.00	
XAN	27.28	282	P	46	49.50	-1.6
N	14s	0.80um				
LZH	31.25	287	eP	47	26.00	-0.8
	1.5s	26.00nm			4.8mb	
Z	18s	1.50um			4.7Msz	
N	15s	1.30um				
E	16s	1.40um				
CD2	32.08	278	eP	47	33.00	-1.0
Z	16s	1.50um			4.8MszX	
N	13s	1.50um				
GTA	34.28	294	eP	47	51.40	-1.7
Z	15s	1.20um			4.8MszX	
E	13s	0.70um				
KMI	34.63	268	eP	47	57.00	0.6
Z	18s	1.80um			4.9Msz	
			eS	53	19.00	
CHG	40.45	261	eP	48	45.20	0.2
CHTO	40.45	261	eP	48	44.80	-0.2
	0.7s	2.54nm			4.1mb X	
NNT	43.01	253	eP	49	06.20	0.2
WMQ	43.19	301	P	49	08.00	0.8
	2.0s	0.10nm			2.2mb X	
Z	16s	0.80um			4.7MszX	
			sP	49	22.80	
			sS	55	45.00	
SHL	43.65	274	eP	49	11.00	-0.3
PMR	52.35	34	P	50	17.00	-1.4
	1.0s	14.00nm			4.9mb	
WB2	52.48	189	iPc	50	17.80	-2.0
OIS	52.67	182	eP	50	19.70	-1.5
FBA	53.02	30	P	50	21.20	-2.2
	0.7s	5.81nm			4.7mb	
NDI	54.78	284	eP	50	36.50	-0.3
ASPA	56.21	188	eP	50	45.40	-1.6
	0.6s	26.00nm			5.4mb	
Z	21s	0.46um			4.5Msz	
			LR	12	31.70	
HYB	58.29	271	Pd	51	01.50	-0.5
INK	58.50	26	eP	51	01.00	-1.7
WARB	59.94	195	iPc	51	12.90	-0.2
	0.6s	28.00nm			5.6mb	
BRS	60.40	168	iPc	51	15.50	-0.7
MBC	60.96	16	eP	51	18.50	-1.0
	1.0s	18.00nm			5.2mb	
GBA	61.06	268	P	51	20.30	-0.7
POO	61.76	275	eP	51	25.50	-0.3
QUE	62.52	290	eP	51	30.50	-0.3
KOD	62.72	265	eP	51	33.00	0.5

MAIO	65.87	299	iPd	51	53.80	1.3
BWA	66.77	174	eP	51	58.30	0.3
CAN	67.71	173	eP	52	04.90	1.0
SOD	69.29	338	eP	52	14.00	0.6
PNT	71.47	43	eP	52	27.00	0.1
EDM	72.95	37	eP	52	35.50	-0.2
WDC	73.81	52	eP	52	42.20	1.4
NUR	74.10	333	eP	52	42.00	-0.1
BRK	75.32	54	eP	52	52.00	2.4
SES	75.68	39	eP	52	50.00	-1.5
CMB	76.52	54	eP	52	55.80	-0.7
PRS	76.70	55	eP	52	58.00	0.6
LRM	77.42	44	eP	53	01.10	-0.5
			e	53	14.50	
FRI	77.52	54	eP	53	03.00	1.1
KVN	77.53	52	P	53	01.20	-1.0
FFC	77.57	32	iPd	53	01.20	-0.6
	0.7s	12.00nm			5.0mb	
HFS	78.37	336	eP	53	04.70	-1.4
	0.5s	2.00nm			4.4mb	
NB2	78.51	338	P	53	06.00	-1.0
	1.0s	16.20nm			5.0mb	
TNP	78.63	52	P	53	08.00	-0.3
	1.3s	17.35nm			4.9mb	
ISA	79.06	55	eP	53	10.00	-0.5
CLC	79.58	54	eP	53	15.00	1.7
SBB	80.03	55	eP	53	13.00	-2.7
GSC	80.40	54	eP	53	14.00	-3.7X
FRB	81.27	13	eP	53	22.00	0.4
TPC	81.58	55	eP	53	24.00	0.1
BAR	81.92	56	eP	53	16.00	-9.6X
CFR	81.99	319	ePd	53	37.00	11.3X
VRI	82.34	320	ePd	53	29.00	1.4
BBTK	82.50	313	eP	53	29.00	0.3
MLR	83.01	320	ePc	53	33.00	1.8
KRA	83.01	326	eP	53	31.90	1.0
			e	53	39.60	
GLA	83.01	55	eP	53	33.00	1.7
CMP	83.64	321	ePd	53	37.00	2.7
PV09	83.65	48	P	53	34.50	-0.3
KSP	84.11	329	eP	53	37.00	0.5
ALT	84.62	313	eP	53	40.00	0.6
BRG	85.10	330	iP	53	41.60	0.1
	1.2s	26.00nm			5.3mb	
			e	53	57.00	
CLL	85.18	330	iP	53	42.40	0.6
	1.3s	33.00nm			5.4mb	
			e	53	54.00	
GOL	85.24	45	P	53	43.80	1.1
	1.2s	16.39nm			5.1mb	
GLD	85.30	45	P	53	45.00	2.1
SRO	85.34	326	iP	53	43.30	0.6
ZST	85.64	326	eP	53	44.70	0.5
MOX	86.25	331	eP	53	48.50	1.3
EKA	87.54	341	P	53	55.00	1.6
	1.4s	19.40nm			5.2mb	
ORX	91.68	329	P	54	12.56	-0.6
LSD	92.17	330	P	54	16.15	0.6
LPG	92.31	330	eP	54	15.00	-1.3
	0.7s	9.90nm			5.4mb	
SSF	92.36	333	eP	54	16.40	0.3
	0.9s	8.10nm			5.2mb	
SMF	92.57	332	eP	54	17.30	0.2
AVF	92.64	333	eP	54	17.10	-0.3
	0.9s	16.30nm			5.5mb	
FIN	92.70	328	P	54	16.15	-1.6
RRL	92.76	330	P	54	17.59	-0.7
ROB	92.78	329	P	54	17.38	-0.8
PZZ	92.95	329	P	54	17.07	-2.0
IMI	93.08	328	P	54	18.82	-0.7
MAF	93.41	333	eP	54	20.80	-0.2
TCF	93.50	333	eP	54	21.00	-0.4
RJF	94.58	333	eP	54	26.40	0.0
CAF	94.69	332	eP	54	28.20	1.3
	1.2s	20.80nm			5.4mb	
ARE	146.18	70	e(PKP)	00	48.00	1.8
ZOBO	148.72	66	PKP	00	54.00	3.4X
Z	20s	0.18um			4.8Msz	
			LR	51	36.00	
LPB	148.89	67	PKP	00	55.00	4.3X
CNCB	149.14	67	ePKP	00	52.00	0.8
			i	00	56.00	
CCH	150.90	66	ePKP	01	03.00	9.5X

S.D. = 1.1 on 99 of 107 obs.

DEC 06, 1989 09h 14m 41.00± 0.48s
43.623 N ± 5.5km 16.854 E ± 5.7km

06d 09h

DEPTH = 10.0km (geophysicist)
YUGOSLAVIA (383)
ML 3.1 (TTG), 3.1 (ZAG), 3.0 (KBA), 2.6 (LJU).

HVAR	0.53	214	iPg	14 50.10	-1.7
			iSg	15 00.40	
BLY	1.15	12	Pn	15 00.50	-2.0
			Sn	15 15.30	
BRY	1.43	120	ePg	15 03.60	-3.5X
			eSg	15 25.00	
HCY	1.68	134	ePn	15 09.00	-1.6
			eSn	15 33.40	
PLE	1.87	98	ePn	15 13.50	0.0
			eSn	15 38.20	
BDV	1.97	132	ePn	15 14.00	-0.8
			eSn	15 40.50	
TTG	2.13	123	ePn	15 17.50	0.4
			eSn	15 45.50	
VBY	2.20	329	ePn	15 18.20	0.1
			iSn	15 46.90	
ZAG	2.28	345	ePn	15 19.50	0.3
			iSn	15 46.50	
			iSg	15 51.70	
PTJ	2.36	345	ePn	15 20.20	-0.3
			iSn	15 48.50	
RIY	2.47	315	ePn	15 23.60	1.8
			iSg	15 57.90	
PVY	2.50	113	ePn	15 24.20	1.7
			eSn	15 55.00	
ALP	2.54	252	e(Pn)	15 23.45	0.4
			e(Sn)	15 55.69	
LJU	2.93	327	e(Pn)	15 28.00	-0.5
			eSn	16 03.00	
TRI	3.03	314	eP	15 34.80	4.9X
			i	16 17.50	
VOY	3.20	320	ePn	15 32.50	0.1
			eSn	16 12.50	
CRE	3.56	272	P	15 38.40	0.9
			eSg	15 45.00	
OHR	3.85	129	ePn	15 43.20	1.6
KBA	4.25	326	e(Pn)	15 47.00	-0.4
			iSn	16 35.00	

S.D. = 1.2 on 17 of 19 obs.

DEC 06, 1989 09h 54m 23.20± 0.50s
43.620 N ± 6.0km 16.932 E ± 6.0km
DEPTH = 10.0km (geophysicist)
YUGOSLAVIA (383)
ML 3.0 (TTG), 3.0 (KBA), 2.6 (LJU).

HVAR	0.57	219	iPgd	54 33.10	-1.6
			iSg	54 43.70	
BLY	1.14	9	Pn	54 43.20	-1.4
			Sn	54 58.10	
BRY	1.38	121	ePg	54 46.70	-1.9
			eSg	55 08.50	
HCY	1.64	135	ePn	54 51.00	-1.2
			eSn	55 16.00	
PLE	1.82	98	ePn	54 56.00	1.2
			eSn	55 22.50	
BDV	1.93	133	ePn	54 57.00	0.6
			eSn	55 24.00	
TTG	2.08	124	ePn	54 59.00	0.5
			eSn	55 27.00	
VBY	2.23	328	iPnd	55 01.30	0.5
			iSn	55 29.30	
ZAG	2.30	343	iPn	55 00.50	-1.2
			iSn	55 28.50	
			iSg	55 33.50	
PTJ	2.38	343	ePn	55 01.90	-1.1
			eSn	55 29.50	
PVY	2.45	114	ePn	55 06.00	2.0
			eSn	55 40.00	
RIY	2.51	314	ePn	55 05.70	1.1
			iSg	55 39.60	
ALP	2.59	252	e(Pn)	55 06.89	0.9
			eSn	55 39.16	
CEY	2.77	321	ePn	55 08.80	0.3
			eSn	55 45.50	
CIO	2.79	263	ePn	55 08.78	-0.1
			eSn	55 43.78	
LJU	2.96	326	e(Pn)	55 11.00	-0.1
			e	55 15.50	
			e(Sn)	55 45.00	
TRI	3.08	314	e(P)	55 15.20	2.5
			e	55 58.60	
VOY	3.24	319	ePn	55 14.60	-0.5
			eSn	55 55.60	
OHR	3.81	130	ePn	55 35.00	11.8X
KBA	4.28	325	iPnd	55 29.50	-0.6
			eSn	56 19.00	

S.D. = 1.3 on 19 of 20 obs.

? DEC 06, 1989 10h 28m 18.74± 2.24s
31.251 S ±19.0km 68.640 W ±14.2km
DEPTH = 104.5 ± 26.0 km
SAN JUAN PROVINCE, ARGENTINA (137)

RTLL	0.17	118	iPc	28 34.00	0.1
ZON	0.30	186	iPd	28 34.00	-0.1
			eS	28 45.00	
RTBS	0.81	239	iPd	28 37.80	0.0
			S	28 40.00	
RTRS	1.29	327	iPd	28 43.00	0.0
			S	28 58.00	
TCA	3.47	92	iPc	29 11.80	0.0
RFA	3.51	178	ePc	29 33.00	20.6X

S.D. = 0.2 on 5 of 6 obs.

? DEC 06, 1989 11h 19m 17.11± 4.28s
43.473 N ±20.7km 17.263 E ±35.8km
DEPTH = 10.0km (geophysicist)
YUGOSLAVIA (383)
ML 2.7 (KBA), 2.3 (LJU).

HVAR	0.66	244	iPgd	19 30.30	0.0
			iSg	19 39.80	
BLY	1.28	357	ePn	19 40.80	0.0
			Sn	19 54.80	
VBY	2.49	325	ePn	19 58.20	-0.1
			eSn	20 24.80	
PTJ	2.60	339	ePn	20 00.10	0.1
			eSn	20 29.60	
RIY	2.78	313	i(Pn)	20 03.30	0.8
			iSg	20 37.30	
CEY	3.04	319	eP	20 12.50	6.4X
			eSn	20 42.50	
TRI	3.35	313	e(P)	20 21.40	10.8X
			e	20 52.20	
VOY	3.51	318	ePn	20 12.00	-0.9
			eSn	20 51.70	
OHR	3.53	131	e(Pn)	20 27.00	13.9X
KBA	4.54	324	iPnd	20 34.60	7.0X
			iSn	21 23.20	

S.D. = 0.7 on 6 of 10 obs.

DEC 06, 1989 11h 29m 49.77± 0.45s
15 583 N ± 4.6km 92.847 W ± 4.3km
DEPTH = 36.7 ± 4.9 km
5.1mb (16 obs.) 3.9Msz (2 obs.)
MEXICO-GUATEMALA BORDER REGION (62)
Felt (I) at Guatemala City and in parts of western Guatemala. Also felt in Chiapas, Mexico.

TPX	0.88	140	iP	30 04.00	-1.8
			iS	30 18.69	
SBG	0.89	120	iPc	30 03.50	-2.7
SCX	1.16	10	iP	30 10.50	0.7
			iS	30 22.00	
CR3	1.23	355	(P)	30 09.20	-1.7
CR5	1.25	348	(P)	30 10.60	-0.6
			(S)	30 45.40	
CR6	1.41	345	(P)	30 12.00	-1.6
SOG2	1.50	125	ePd	30 13.00	-1.9
CR7	1.67	349	(P)	30 17.00	-0.3
ITG	2.17	117	iPd	30 25.50	1.0
FUG	2.24	120	ePc	30 26.20	0.8
MMG	2.34	116	iPc	30 29.00	2.1
GCG	2.45	114	eP	30 32.00	3.6X
			S	31 39.00	
REC	2.52	117	ePd	30 31.00	1.6
PSG2	2.55	129	ePc	30 31.20	1.6
			S	31 37.00	
SLP	2.61	108	iPc	30 31.50	0.8
CMG2	3.10	107	ePc	30 37.50	-0.1
VHO	4.07	294	eP	30 52.00	0.5
LVVM	5.37	321	iPd	31 07.80	-1.8
			eS	32 06.27	
IISM	5 49	309	iP	31 10 50	-0.8
PPM	6.52	303	iP	31 27.00	0.7
			iS	32 09 00	

ACX	6.85	282	eP	31 30.50	-0.1
			eS	32 44.00	
III	6.92	295	eP	31 33.00	1.4
			(S)	32 43.64	
UNM	7.10	303	eP	31 42.70	8.4X
CRX	7.55	301	eP	31 45.25	4.7X
UYO	18.56	356	iPd	34 05.30	-0.5
PWLA	19.79	12	P	34 19.00	-0.9
MEO	19.80	346	iPc	34 18.60	-1.5
OLY	19.87	3	P	34 20.40	-0.4
SIO	20.32	352	eP	34 25.30	-0.2
TUL	20.41	353	ePd	34 26.80	0.3
			1.0s	14.70nm	4.3mb
	Z	21s		0.41um	3.8Msz
			eS	38 16.00	
			LR	41 00.00	
LNO	20.42	353	eP	34 26.70	0.3
POW	20.54	4	P	34 27.20	-0.5
PRM	20.71	25	P	34 30.60	1.1
RSCP	20.97	17	P	34 31.70	-0.5
			1.4s	451.87nm	5.7mb
LST	21.04	7	P	34 33.70	0.9
JSC	21.34	27	P	34 37.50	1.6
GBTN	21.44	20	P	34 37.20	0.3
LHS	21.71	28	P	34 41.80	2.2
ACO	21.76	346	eP	34 40.50	0.3
ELC	21.85	8	P	34 40.70	-0.3
ALQ	22.82	330	iPc	34 51.80	0.9
			0.8s	31.72nm	4.8mb
			pP	40 25.60	
NAV	24.14	24	P	35 04.80	1.3
BLA	24.20	25	P	35 06.00	1.9
			1.0s	75.00nm	5.2mb
CBN	26.35	28	eP	35 25.00	0.8
			1.0s	60.00nm	5.1mb
GLD	26.40	338	P	35 25.80	0.9
			1.2s	35.35nm	4.8mb
GOL	26.41	338	P	35 25.20	0.1
			0.9s	35.98nm	5.0mb
GLA	26.43	315	eP	35 26.00	0.8
BAR	27.51	312	eP	35 35.00	0.0
			e	38 52.00	
TPC	27.88	316	eP	35 39.00	0.7
			e	38 53.00	
PLM	28.01	314	eP	35 40.00	0.3
			e	38 54.00	
MSU	28.48	327	P	35 44.30	0.4
PEC	28.51	314	P	35 45.20	1.1
RVR	28.72	314	eP	35 46.00	0.2
			e	38 55.00	
GSC	29.08	317	eP	35 50.00	0.8
			e	38 56.00	
PRIN	29.31	29	P	35 54.00	3.0X
SBB	29.41	315	eP	35 52.00	-0.2
			e	38 57.00	
DAU	29.47	331	P	35 53.30	0.3
CLC	29.91	317	eP	35 57.00	0.4
			e	38 58.00	
DUG	30.07	329	P	35 58.40	0.4
			1.2s	16.81nm	4.7mb
ISA	30.40	316	eP	36 02.00	1.1
			e	39 04.00	
BW06	30.66	335	P	36 02.00	-1.3
TNP	31.05	321	P	36 07.60	0.8
			0.9s	13.02nm	4.7mb
PHAM	31.80	315	P	36 14.80	1.6
FRI	31.97	317	ePc	36 14.30	-0.3
PRI	32.15	315	eP	36 16.40	0.1
KVN	32.20	321	P	36 17.90	1.0
LLA	32.59	315	ePc	36 20.00	-0.1
PRS	32.73	315	ePc	36 21.60	0.3
RSNY	32.78	25	P	36 20.50	-1.1
			1.1s	66.25nm	5.4mb
CMB	33.01	318	ePc	36 24.20	0.5
			ePcP	39 06.10	
ARN	33.38	316	P	36 27.90	0.9
MHC	33.45	316	ePc	36 28.70	1.0
GCC	33.53	315	eP	36 28.20	0.0
LRM	34.34	335	ePc	36 35.40	0.0
			e	36 40.40	
ORV	34.60	319	ePc	36 38.50	1.1
MIN	35.13	320	ePc	36 42.30	0.2
RSON	35.19	359	P	36 39.50	-2.8X
			1.3s	92.91nm	5.6mb
WDC	35.84	320	ePc	36 46.20	-1.8
			ePcP	39 13.50	
LBFM	35.90	321	P	36 49.30	0.6

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FHC     36.87 319 ePc   36 58.20   1.5
SES     37.71 341 ePc   37 02.60  -1.0
DPW     38.40 332 P     37 09.30  -0.1
FFC     39.70 352 eP    37 19.00  -1.1
        1.3s     32.00nm          4.9mb
BMW     39.87 327 P     37 21.80   0.1
ZOBO    39.97 141 Pc    37 22.00  -1.4
     Z  22s      0.26um          4.0Msz
                LR      46 44.00
PNT     40.10 333 ePc   37 24.00   0.5
        1.0s     67.00nm          5.4mb
LPB     40.19 142 P     37 26.00   1.0
GMW     40.35 329 P     37 25.00  -0.6
CNCB    40.47 142 P     37 27.00  -0.5
                  i     39 31.00
EDM     40.88 341 iPc   37 28.70  -1.2
MCW     41.14 330 P     37 32.20   0.2
CCH     42.03 140 P     37 38.80  -1.2
BAO     54.08 123 e(P)  39 09.50  -4.1X
INK     58.70 344 eP    39 43.50  -2.3
TOA     59.58 334 eP    39 53.00   0.9
PMR     60.64 333 eP    39 58.10  -1.1
        0.6s     11.70nm          5.2mb
FBA     61.47 337 eP    40 03.00  -1.9
MBC     62.25 353 ePc   40 07.90  -2.0
        1.0s     35.00nm          5.4mb
SVW     63.42 331 ePc   40 16.20  -1.7
TTA     64.12 333 eP    40 20.60  -1.9
EKA     77.17  36 P     41 41.00  -0.3
        1.3s     16.00nm          4.9mb
WB2    134.95 257 ePKP  49 07.00  -0.6
CHG    143.90 341 ePKP  49 20.00  -3.8X
LOE    144.21 336 ePKP  49 21.00  -3.3X
NNT    149.36 335 ePKP  49 36.70   3.9X
GBA    149.45  19 PKP   49 32.00  -0.9
     S.D. = 1.1  on  97 of 106 obs.
-----------------------------------------
*  DEC  06, 1989  12h 53m 51.71± 1.10s
   30.237 N ± 7.0km  103.475 E ±11.7km
   DEPTH =  51.6 ± 15.1 km
   4.2mb (  3 obs.)
 SICHUAN PROVINCE, CHINA          (307)

CD2      0.71  20 iPgd  54 07.40   1.5
                  Sg    54 16.50
GYA      4.70 142 Pn    55 03.00   1.1
                  Pg    55 24.40
                  Sn    56 00.60
KMI      5.14 187 Pnd   55 08.50   0.3
                  Sn    56 06.50
LZH      5.84   3 eP    55 19.00   0.9
        1.0s     30.00nm          4.6mb X
     Z  20s      1.20um          4.7Msz
                  i     55 42.00
                  Lg    56 57.00
XAN      5.98  49 Pn    55 19.10  -0.7
                  Sn    56 26.30
                  Sg    56 53.40
WHN      9.40  85 eP    56 05.50  -1.7
     Z  16s      0.71um
                  sP    56 20.00
                  S     57 49.50
TIY     10.53  43 eP    56 20.80  -2.0
                  S     58 15.00
SHL     11.26 248 eP    56 25.50  -7.3X
                  eS    58 28.40
GZH     11.34 127 P     56 32.80  -0.8
                  S     58 43.70
BTO     11.63  25 eP    56 36.00  -1.7
     N  11s      0.70um
     E  10s      0.30um
CHTO    12.09 201 eP    56 43.00  -0.9
        0.6s     0.42nm          3.6mb
HHC     12.46  30 eP    56 48.00  -0.8
     N  12s      0.20um
     E  11s      0.20um
                  S     59 02.40
TIA     12.88  59 eP    56 55.10   0.9
     Z  16s      0.80um          4.6MszX
     E  12s      0.60um
NJ2     13.30  78 eP    57 01.40   1.7
     Z  16s      0.60um          4.2MszX
BJI     14.26  43 eP    57 12.00  -0.2
     Z  18s      0.59um          5.1MszX
                 eLg    01 19.50
SNY     19.90  49 eP    58 25.50   3.9X
CN2     22.08  46 eP    58 46.00   2.3
     Z  20s      0.50um          3.9Msz
                  pP    58 50.80  17kmX
NDI     22.90 273 eP    58 43.00  -8.9X
MDJ     25.09  48 eP    59 16.50   3.6X
SOD     57.44 333 eP    03 36.00  -1.1
NUR     58.77 325 eP    03 28.00 -18.5X
ASPA    61.04 148 iPc   04 10.00   7.5X
NB2     65.10 328 P     04 26.00  -2.9X
        0.8s     2.80nm          4.3mb
FBA     70.45  25 eP    05 03.60   1.4
        0.9s     3.30nm          4.3mb
                  pP    05 13.10  30kmX
                  sP    05 18.90
     S.D. = 1.5  on  17 of  24 obs.
-----------------------------------------
?  DEC  06, 1989  12h 54m 07.60± 1.13s
   29.722 N ±11.7km  102.801 E ±25.2km
   DEPTH =  33.0km  (normal)
   4.5mb (  2 obs.)
 SICHUAN PROVINCE, CHINA          (307)
      Some damage in Giongloi and
      Pujiang Counties. Felt widely in
      the Chengdu area.

CHG     11.41 199 eP    56 51.80   0.4
        1.0s     12.00nm          5.0mb X
                  e     08 12.00
CHTO    11.41 199 eP    56 52.00   0.6
LOE     12.30 185 eP    57 02.00  -1.3
BDT     12.90 196 eP    57 12.00   0.7
NST     14.20 191 iPc   57 34.20   5.8X
HYB     25.32 246 eP    59 33.00   0.0
FBA     71.16  25 eP    05 25.20   0.6
        0.9s     2.50nm          4.3mb
BUL     86.91 245 iPd   06 49.80  -1.1
        0.9s     4.20nm          4.7mb
     S.D. = 1.0  on   7 of   8 obs.
-----------------------------------------
&  DEC  06, 1989  12h 56m 01.49s
   63.121 N        149.778 W
   DEPTH = 102.5km
   4.8mb ( 16 obs.)
 CENTRAL ALASKA                   (  1)
      <AGS-P>. Felt (V) at Trapper
      Creek; (IV) at Cantwell and
      Chickaloon; (III) at Anchorage,
      Palmer, Skwentna and Sutton.

HUR      0.16 156 iP    56 15.58   1.3
RND      0.51  55 iP    56 17.59  -0.3
KTH      0.67 311 eP    56 19.00  -0.2
MCK      0.72  31 eP    56 19.34  -0.3
CUT      0.75 198 iP    56 19.58  -0.3
SKT      1.40 216 iP    56 26.60  -0.5
                  eS    56 45.60
GHO      1.41 163 eP    56 27.29   0.0
PWA      1.48 182 iPd   56 27.80  -0.1
NEA      1.49  12 iP    56 27.58  -0.6
WRH      1.55  28 iP    56 28.31  -0.5
PMR      1.56 169 iPd   56 28.60  -0.4
SUA      1.72 196 eP    56 30.85  -0.4
CCB      1.76  29 iP    56 30.87  -0.7
NCA      1.78 128 eP    56 31.70  -0.1
HDA      1.80  43 iP    56 31.53  -0.5
RDS      1.86  22 iP    56 32.29  -0.5
DDM      1.88  67 eP    56 33.33   0.1
PMS      1.89 177 iPd   56 32.60  -0.6
TOA      1.95 120 iPc   56 34.50   0.4
PAX      1.97  92 eP    56 34.37   0.0
FBA      1.99  25 iPd   56 34.00  -0.5
SDG      2.03 105 eP    56 35.06  -0.1
DMW      2.04  61 eP    56 34.53  -0.6
CGLM     2.10 211 eP    56 35.11  -0.9
GLM      2.15  28 iP    56 36.10  -0.6
GLM      2.15  28 eP    56 37.46   0.8
KLU      2.43 130 eP    56 39.42  -1.0
NKA      2.48 197 eP    56 43.12   2.1
VZW      2.57 142 eP    56 40.72  -1.5
GLI      2.58 149 iP    56 40.98  -1.4
DOT      2.63  76 eP    56 42.39  -0.6
SLKM     2.63 185 eP    56 42.45  -0.6
RDT      2.84 207 eP    56 44.81  -1.2
FID      2.84 145 eP    56 44.49  -1.5
TTA      2.85 269 iPc   56 45.40  -0.7
SEW      3.03 177 eP    56 47.12  -1.3
NNL      3.17 194 eP    56 51.03   0.6
IMA      3.40 332 iPd   56 52.90  -0.8
SVW      3.41 236 iPd   56 52.70  -1.0
BRLK     3.41 189 eP    56 53.04  -0.6
CNPM     3.68 192 eP    56 56.37  -0.9
XLV      3.80 195 eP    56 57.91  -1.0
TGL      4.05 123 eP    57 00.66  -1.8
MID      4.06 154 eP    57 01.70  -0.8
AUE      4.15 206 eP    57 03.53  -0.3
CDD      4.61 206 eP    57 08.99  -1.1
DWY      4.72  74 P     57 10.00  -1.5
KDC      5.56 195 eP    57 20.00  -3.1
HYT      6.23 106 P     57 30.50  -2.0
INK      8.46  45 iPc   58 01.70  -1.2
        1.0s    504.00nm          6.2mb X
                  pP    59 37.00
SIT      9.42 124 eP    58 13.70  -2.2
MBC     16.53  25 eP    59 47.50  -0.5
        0.9s     46.00nm          4.7mb
                  pP    00 00.50
ADK     18.15 244 P     00 06.00  -1.9
        1.1s    175.00nm          5.2mb
EDM     21.31 101 ePc   00 41.00   0.0
        0.7s     33.00nm          4.8mb
PNT     21.46 116 eP    00 45.00   2.5
        0.7s     10.00nm          4.3mb
LON     22.67 123 P     00 56.50   2.1
                  pP    01 16.40  92kmX
VGB     24.09 123 P     01 09.50   1.3
SES     24.31 103 eP    01 11.00   0.7
FFC     25.49  87 iPd   01 21.10  -0.1
        0.7s     9.00nm          4.4mb
LRM     27.19 112 eP    01 37.80   0.6
WDC     27.75 132 eP    01 42.80   0.9
                  e     02 04.30
MIN     28.28 130 eP    01 46.50  -0.4
                  e     02 09.90
                 eScP   08 27.90
KVN     30.67 127 P     02 08.00  -0.2
CMB     30.77 131 e(P)  02 08.70  -0.2
                  e     02 31.70
                 eScP   08 36.20
BW06    30.88 112 P     02 10.00   0.0
                  pP    02 32.00  97kmX
TNP     31.85 126 P     02 18.80   0.3
                  pP    02 41.00  98kmX
RSSD    32.18 104 P     02 21.20  -0.1
PHAM    32.75 133 P     02 28.80   2.6
MSU     33.40 120 P     02 32.80   0.8
MWC     35.01 131 eP    02 48.00   2.2
GOL     35.19 110 P     02 48.70   1.3
        1.0s     8.13nm          4.6mb
                  pP    03 10.60  92kmX
GLD     35.21 110 P     02 51.70   4.2
        0.8s     6.62nm          4.6mb
BAR     36.89 130 eP    03 01.00  -0.4
GLA     37.21 127 P     03 05.70   1.6
ALO     38.78 116 eP    03 19.00   1.5
        1.0s     7.50nm          4.5mb
ACO     40.38 106 eP    03 31.50   1.1
SCH     40.67  62 eP    03 31.50  -1.1
RSCP    47.35  94 P     04 25.00  -1.5
        0.8s    16.03nm          4.9mb
KEV     47.39   2 eP    04 24.00  -2.2
        0.8s    24.90nm          5.1mb
MDJ     47.44 287 eP    04 22.30  -4.7
     Z  15s      1.30um          5.0MszX
BLA     48.37  88 P     04 33.50  -0.8
        0.6s     5.45nm          4.6mb
SOD     49.78   2 iP    04 42.70  -1.9
CN2     49.88 289 Pc    04 43.60  -2.2
PRM     50.08  92 P     04 46.60  -0.8
                  pP    05 10.00  97kmX
MAT     50.13 274 (P)   04 46.00  -1.8
        1.0s    29.00nm          5.2mb
SNY     52.29 289 Pc    05 01.60  -2.4
SUF     54.44   2 eP    05 16.80  -2.7
        0.8s    20.90nm          5.2mb
NB2     55.32  11 P     05 22.70  -3.3
        0.8s     6.40nm          4.7mb
DL2     55.54 289 P     05 26.20  -1.6
EKA     59.06  22 P     05 50.00  -2.4
        0.8s    11.60nm          5.1mb
NJ2     62.54 287 Pd    06 14.00  -2.1
GTA     63.87 306 Pc    06 23.00  -2.0
WMO     64.04 317 P     06 24.60  -1.4
CLL     65.11  12 eP    06 28.00  -4.6
BRG     65.63  11 i(P)  06 33.50  -2.4
PRU     66.56  11 eP    06 39.70  -2.2
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06d 13h

KHC	67.32	12	P	06	45.40	-1.4
KBA	69.33	12	iPd	06	58.00	-1.4
	0.7s	8.20nm			4.7mb	
BEO	72.12	7	eP	07	26.00	10.0
GYA	72.59	294	iPc	07	17.80	-1.4
MAIO	78.19	336	iPc	07	50.00	-0.7
SEK	145.16	4	iPKPc	15	25.50	-2.4
	0.8s	33.58nm				
	102 obs. associated					

DEC 06, 1989 13h 05m 14.65± 0.42s
42.022 N ± 4.4km 24.833 E ± 3.5km
DEPTH = 8.6 ± 3.5 km
BULGARIA (359)

PLD	0.13	311	iPgd	05	17.00	-0.6
RZN	0.35	195	iPd	05	22.00	0.2
DIM	0.52	87	Pg	05	25.00	-0.2
KDZ	0.57	130	ePg	05	25.00	-1.2
MMB	0.93	243	iPg	05	32.00	-0.6
PVL	1.25	17	iPc	05	35.00	-3.0X
SRS	1.30	226	ePd	05	39.20	0.4
			eS	05	56.00	
VTS	1.33	296	iPg	05	38.00	-1.5
KNT	1.69	240	ePd	05	45.00	0.5
			eS	06	10.50	
VAY	1.83	248	iPn	05	47.00	0.4
THE	1.98	226	eP	05	51.20	2.5X
			eS	06	19.30	
DMK	2.19	94	iPn	05	51.00	-0.8
MFT	2.22	123	ePn	05	52.80	0.5
EZN	2.47	152	ePn	05	45.00	-10.7X
SKO	2.53	270	iPn	06	03.20	6.6X
LIT	2.61	223	eP	05	59.20	1.4
DRA	2.69	351	eP	06	06.00	7.1X
EDC	2.83	125	ePn	06	00.50	-0.5
BNT	2.86	125	ePn	06	02.00	0.6
KZN	2.88	234	ePb	06	07.00	5.3X
NEO	2.98	205	ePb	06	02.00	-1.0
OHR	3.16	255	ePn	05	02.80	-62.8X
CMP	3.25	3	ePc	06	26.00	19.2X
ISR	3.35	21	eP	06	17.50	9.1X
TLB	3.47	41	eP	06	16.50	6.6X
AGG	3.55	213	eP	06	11.60	0.4
MLR	3.56	13	ePc	06	13.00	1.7
HRT	3.83	107	ePn	06	14.80	-0.3
CFR	3.98	36	ePc	06	26.00	8.9X
VRI	4.08	19	ePd	06	20.00	1.4
BZS	4.28	328	ePc	06	20.00	-1.4
ALT	4.99	125	iP	06	31.60	-0.1
S.D. = 1.0 on 21 of 32 obs.						

? DEC 06, 1989 13h 31m 35.57± 6.62s
23.313 S ±70.8km 176.714 W ±37.5km
DEPTH = 235.4 ± 54.2 km
4.2mb (4 obs.)
SOUTH OF FIJI ISLANDS (171)

DZM	15.59	271	iPc	35	05.30	0.4
BRS	27.83	255	eP	37	07.00	1.6
			e	43	48.00	
CTA	34.50	268	iPc	38	02.90	-0.5
	1.0s	40.00nm			5.0mb	
ASPA	45.11	259	eP	39	29.00	-1.4
	1.0s	13.00nm			4.2mb	
WB2	45.45	264	eP	39	31.20	-1.9
FRI	80.50	43	eP	43	22.40	-0.3
CMB	80.73	42	ePc	43	23.80	-0.2
ORV	81.03	40	e(P)	43	25.30	-0.1
WDC	81.09	39	ePc	43	26.00	0.3
KVN	82.77	42	eP	43	34.30	-0.4
ALQ	88.24	51	iPc	44	02 00	0.4
	1.0s	2.75nm			4.1mb	
PNT	88.32	33	eP	44	02.00	0 6
FBA	90.73	12	eP	44	11.10	-1.1
	0.8s	1.10nm			3.9mb	
CHTO	92.31	289	eP	44	23.00	2.5
CLL	151.06	347	iPKPc	51	02.80	7.4X
	0.9s	12.00nm				
BRG	151.27	346	iPKPc	51	03.20	7.5X
	0.8s	16.00nm				
S.D. = 1.3 on 14 of 16 obs.						

* DEC 06, 1989 13h 33m 07.35± 1.42s
9.384 S ±11.5km 150.828 E ±19.9km
DEPTH = 33.0km (normal)
4.2mb (1 obs.)

EAST PAPUA NEW GUINEA REGION (207)

KDB	3.62	268	eP	34	02.50	0.0
LAT	4.66	305	eP	34	18.00	0.7
			eS	35	10.00	
RMQ	17.13	186	eP	37	06.00	0.1
			i	37	38.40	
WB2	19.07	235	eP	37	28.00	-1.9
ASPA	21.53	227	eP	37	57.80	1.9
	0.8s	8.00nm			4.2mb	
Z	22s	0.34um			3.7MszX	
		LR	45	13.60		
WHN	52.94	320	Pd	42	23.50	0.6
XAN	58.69	320	P	43	02.30	-2.0
LZH	63.24	318	eP	43	35.50	0.3
	1.5s	38.00nm			5.3mb X	
WMQ	77.82	319	P	45	03.50	0.2
S.D. = 1.4 on 9 of 9 obs.						

DEC 06, 1989 13h 55m 41.44± 0.21s
43.660 N ± 2.7km 16.884 E ± 2.4km
DEPTH = 10.0km (geophysicist)
YUGOSLAVIA (383)
ML 4.3 (ZAG), 4.2 (KBA), 4.1 (ROM), 4.0 (LJU). MD 4.4 (TRI), 4.2 (TTG), 3.9 (FIR).

HVAR	0.58	214	iPgd	55	53.00	-0.1
			i(Sg)	56	00.30	
BLY	1.11	11	Pn	56	02.80	0.6
			Sn	56	17.60	
BRY	1.43	121	iPgc	56	06.20	-1.4
			eSg	56	29.00	
HCY	1.69	135	iPnc	56	10.80	-0.4
			eSn	56	36.00	
PLE	1.86	99	iPnc	56	14.90	1.2
			eSn	56	39.20	
BDV	1.98	133	iPnd	56	16.10	0.7
			eSn	56	42.60	
TTG	2.13	124	iPnc	56	18.80	1.3
			eSn	56	47.20	
VBY	2.18	328	iPnc	56	20.80	2.6X
			iSn	56	48.50	
ZAG	2.25	344	iPnc	56	20.00	0.8
			iPg	56	23.60	
			iSn	56	48.30	
			iSb	56	52.50	
PTJ	2.33	344	iPnc	56	20.50	0.0
			iSn	56	48.10	
IVA	2.34	109	ePn	56	22.50	1.9
			eSn	56	52.00	
ULC	2.43	133	ePn	56	22.60	0.8
			eSn	56	57.00	
RIY	2.46	314	iPnc	56	23.70	1.6
			iPg	56	28.50	
			iSg	56	59.60	
PVY	2.50	114	ePn	56	24.50	1.6
			eSn	57	00.00	
SDA	2.53	130	ePn	56	24.60	1.4
BAI	2.54	180	P	56	22.00	-1.3
ALP	2.57	251	iPn	56	25.48	1.5
			iSn	57	01.71	
BCI	2.67	118	iPnd	56	27.70	2.5
DUI	2.68	223	P	56	26.50	1.0
			eSn	56	58.70	
CEY	2.72	321	iPnc	56	27.90	1.9
			eSn	57	04.50	
PUK	2.74	125	ePn	56	27.10	0.9
CIO	2.76	262	iPn	56	27.36	0.7
			iSn	57	03.19	
BRT	2 79	175	Pd	56	25.40	-1.6
ARV	2.87	268	P	56	29.30	1.2
LACI	2.90	133	ePn	56	29.00	0.5
LJU	2.91	326	ePnc	56	30.10	1.5
			i	56	35.00	
			e(Sn)	57	03.80	
			eSg	57	17.50	
SDI	2.99	230	P	56	30.90	1.1
			eSn	57	07.10	
TRI	3.02	314	Pd	56	31.20	1.0
KKS	3.04	120	iPn	56	33.00	2.6
ASS	3.13	261	P	56	33.10	1 2
			eSn	57	13.30	
VOY	3.19	319	iPnc	56	34.00	1 4
			eSn	57	12.50	
RFI	3.19	223	P	56	35.65	3 1X
TIR	3.20	135	ePn	56	32.20	-0 5

RSM	3.22	276	P	56	34.40	1.4
			eSn	57	13.90	
PHP	3.28	126	iPn	56	35.40	1.5
SGO	3.31	201	P	56	33.50	-0.8
			eSn	57	12.50	
MNS	3.34	249	P	56	35.90	1.2
			eSn	57	16.20	
RDP	3.61	240	P	56	40.50	1.9
SFI	3.65	276	P	56	41.10	1.9
MGR	3.66	196	P	56	38.90	-0.4
BERA	3.73	141	ePn	56	39.80	-0.5
VLO	3.74	148	ePn	56	39.00	-1.3
PGD	3.75	275	P	56	42.10	1.4
SKO	3.75	115	ePn	56	40.60	0.0
	1.1s	356.00nm				
			i	56	47.20	
			i	56	51.00	
			iSn	57	26.20	
			i	57	32.40	
			i	57	37.50	
			i	57	40.20	
			Lg	57	53.50	
MMN	3.83	190	P	56	42.40	0.8
			eSn	57	26.20	
OHR	3.86	130	iPn	56	41.70	-0.5
BZS	3.90	58	ePc	56	40.00	-2.7
			e	05	28.00	
CSI	3.91	187	P	56	41.90	-0.9
			eSn	57	27.20	
VVI	3.93	308	P	56	43.60	0.4
TDS	4.02	186	P	56	44.10	-0.3
SOP	4.03	357	iP	56	45.00	0.5
FIR	4.08	274	ePn	56	50.00	4.8X
			eSn	57	38.00	
TPE	4.09	144	ePn	56	47.60	2.2
ROI	4.09	183	P	56	43.20	-2.2
BUD	4.11	21	eP	56	43.50	-2.1
FVI	4.13	317	P	56	46.00	0.2
KBN	4.21	135	ePn	56	46.50	-0.6
KBA	4.23	325	iPnc	56	49.60	2.1
			i(Sn)	57	37.30	
			iSg	58	02.30	
SRO	4.27	13	iPn	56	47.40	-0.5
			i	56	50.90	
			i	57	15.50	
			i	57	43.30	
			e	58	04.80	
CTI	4.42	304	P	56	50.10	-0.1
LSK	4.47	140	iPnd	56	50.20	-0.7
CZI	4.47	187	P	56	50.70	-0.1
MME	4.50	279	P	56	52.90	1.5
KEK	4.51	150	eP	56	49.60	-1.7
ZST	4.54	2	iPn	56	50.80	-0.9
			i	56	56.30	
			i	57	04.80	
			e	57	36.70	
			e	05	31.20	
GZR	4.56	66	ePd	57	05.00	12.9X
BDI	4.56	277	P	56	53.30	1.1
PSZ	4.75	25	iP	56	52.90	-2.0
VTS	4.75	101	iPd	56	55.00	0.1
KMR	4.80	337	iPg+	57	14.10	18.7X
			iSg	58	20.80	
VAY	4.81	117	iPn	56	53.60	-2.0
DEV	4.83	61	ePc	56	45.00	-10.9X
KKB	4.90	109	eP	56	58.00	1.1
SAL	4.94	295	P	56	56.90	-0.5
KZN	4 95	131	eP	56	54.20	-3.4X
KNT	5.10	117	eP	56	59.30	-0.5
OGA	5.23	310	iPnc	57	01.80	0.0
MMB	5.46	110	eP	57	06.00	1.2
BOB	5.46	284	P	57	05.30	0 4
LIT	5.49	128	ePc	57	03.00	-2.3
SRS	5.58	115	eP	57	06.20	-0.3
ATN	5.60	192	P	57	04.80	-2.0
PLG	5.89	122	eP	57	10.00	-0.8
KHC	5.93	338	Pn	57	11.00	-0.4
			ePg	57	18.00	
			eSg	58	17.20	
SPC	6.00	22	eP	57	12.60	0.1
CMP	6.05	72	ePc	57	24.00	10.8X
PCP	6.07	281	P	57	13.59	0.2
RZN	6.10	106	eP	57	15.00	1.0
BMR	6.13	47	ePd	57	50.00	35.8X
VLS	6.15	152	eP	57	11.00	-3.6X
PVL	6.17	91	eP	57	10.00	-4.7X
VAI	6.18	294	P	57	13.60	-1.3

AGG	6.19	137	eP	57	13.20	-1.8
FIN	6.29	278	P	57	14.79	-1.7
IMI	6.52	275	P	57	18.82	-1.0
PRU	6.53	347	ePn	57	24.00	4.1X
			e	57	31.00	
ROB	6.53	279	P	57	18.72	-1.3
KDZ	6.60	105	eP	57	26.00	5.0X
ORX	6.65	290	P	57	18.31	-3.4X
MLR	6.72	71	eP	57	24.00	1.2
KRA	6.73	17	eP	57	22.50	-0.2
			e	57	26.70	
			iS	58	36.00	
SBF	6.85	275	Pn	57	22.80	-1.6
ENR	6.86	278	P	57	23.23	-1.3
STV	6.92	278	P	57	23.74	-1.8
RSP	7.05	286	P	57	23.15	-4.2X
PZZ	7.10	280	P	57	24.97	-3.0X
LSD	7.18	288	P	57	25.56	-3.7X
GRF	7.18	329	eP	57	28.00	-1.0
			e(S)	58	53.00	
KSP	7.20	357	eP	57	34.70	5.5X
			e	58	27.50	
RRL	7.36	283	P	57	28.25	-3.4X
LPG	7.46	288	Pn	57	30.20	-3.1X
			Sn	58	53.80	
LPL	7.48	288	Pn	57	30.40	-3.0X
			Sn	58	54.40	
HOF	7.48	335	eP	57	32.70	-0.5
BRG	7.49	346	e(Pn)	57	34.00	0.7
			e	58	20.00	
			e	58	29.00	
			e	58	50.00	
			e	59	15.00	
			eSg	59	41.00	
FEL	7.50	307	eP	57	31.92	-1.6
LRG	7.65	272	Pn	57	35.00	-0.5
MOX	7.85	335	ePn	57	37.00	-1.4
CLL	8.09	342	e(Pn)	57	51.00	9.3X
			eSn	59	04.00	
TOD	8.14	320	eP	57	42.70	0.3
BSF	8.20	304	Pn	57	41.90	-1.4
CDF	8.20	309	Pn	57	41.80	-1.5
CFR	8.21	75	ePc	57	24.00	-19.4X
HAU	8.54	304	Pn	57	46.50	-1.6
			Sn	59	18.90	
ABH	8.93	317	eP	57	52.12	-1.2
LBF	9.68	295	Pn	58	00.70	-3.1X
			Sn	59	47.00	
SMF	9.69	292	Pn	58	00.70	-3.1X
			Sn	59	46.20	
LOR	9.84	296	Pn	58	03.00	-2.9X
			Sn	59	50.30	
AVF	10.05	293	Pn	58	06.30	-2.5X
MAF	10.47	289	Pn	58	12.00	-2.6X
			Sn	00	06.60	

S.D. = 1.3 on 101 of 129 obs.

DEC 06, 1989 14h 02m 13.23± 0.59s
43.574 N ± 6.3km 16.958 E ± 7.3km
DEPTH = 10.0km (geophysicist)
YUGOSLAVIA (383)
ML 2.9 (TTG), 2.8 (KBA).

HVAR	0.54	223	iPg	02	23.70	-0.5
			iSg	02	34.00	
BLY	1.19	8	Pn	02	35.00	-0.3
			Sn	02	48.50	
BRY	1.34	120	ePg	02	36.70	-1.3
			eSg	02	59.00	
HCY	1.59	134	ePn	02	41.00	-0.5
			eSn	03	06.00	
BDV	1.88	133	ePn	02	47.00	1.2
			eSn	03	14.00	
TTG	2.04	123	ePn	02	49.00	1.0
			eSn	03	18.00	
VBY	2.28	328	ePn	02	51.30	-0.2
			eSn	03	17.70	
PTJ	2.43	343	ePn	02	53.50	-0.2
			iSn	03	31.50	
RIY	2.55	315	e(Pn)	02	57.00	1.7
			iS	03	31.40	
CEY	2.82	321	e(Pn)	03	03.50	4.3X
			eSn	03	36.00	
LJU	3.01	326	e(Pn)	03	05.50	3.7X
			e(Sn)	03	41.50	
TRI	3.12	314	eP	03	49.70	46.3X
VOY	3.29	319	ePn	03	05.00	-0.9
			eSn	03	45.30	
OHR	3.76	130	e(Pn)	03	20.00	7.4X
KBA	4.33	325	i(Pn)	03	45.00	24.2X
			eSn	04	36.00	

S.D. = 1.1 on 10 of 15 obs.

DEC 06, 1989 14h 04m 18.15± 0.49s
43.576 N ± 5.0km 17.021 E ± 5.5km
DEPTH = 10.0km (geophysicist)
YUGOSLAVIA (383)
ML 3.2 (TTG), 3.0 (KBA), 2.7 (LJU). MD 3.6 (TRI).

HVAR	0.58	227	iPg	04	28.30	-1.5
			iSg	04	38.00	
BLY	1.18	6	Pn	04	39.00	-1.1
			Sn	05	04.00	
BRY	1.30	121	ePg	04	41.50	-0.8
			eSg	05	04.50	
HCY	1.56	136	ePn	04	46.50	0.5
			eSn	05	12.00	
PLE	1.75	97	ePn	04	50.00	1.2
			eSn	05	16.80	
BDV	1.85	134	ePn	04	51.60	1.4
			eSn	05	18.50	
TTG	2.00	124	ePn	04	54.00	1.6
			eSn	05	23.40	
ULC	2.30	134	ePn	04	58.00	1.3
			eSn	05	30.00	
VBY	2.30	327	ePn	04	55.60	-1.1
			iSn	05	22.40	
PVY	2.37	113	ePn	05	01.00	3.1X
			eSn	05	34.00	
PTJ	2.44	342	ePn	04	57.70	-1.1
			iSn	05	25.90	
RIY	2.59	314	ePn	05	02.00	1.3
			iSg	05	37.40	
ALP	2.64	254	e(Pn)	05	03.45	1.8
			eSn	05	35.17	
DUI	2.69	226	P	05	05.50	3.2X
BRT	2.70	177	P	05	00.60	-1.8
			eSn	05	34.60	
CEY	2.85	320	ePn	05	04.50	0.0
			eSn	05	40.00	
CIO	2.85	264	e(Pn)	05	03.65	-1.0
ARV	2.97	270	P	05	07.60	1.4
SDI	3.01	233	P	05	08.60	1.7
LJU	3.04	325	e(Pn)	05	10.80	3.7X
			e(Sn)	05	45.00	
TRI	3.15	314	e(Pn)	05	13.10	4.3X
			e(Pg)	05	17.80	
			i(Sg)	05	54.70	
ASS	3.22	262	P	05	11.60	1.8
SGO	3.27	204	P	05	10.20	-0.3
			eSn	05	49.20	
VOY	3.31	319	ePn	05	09.90	-1.3
			eSn	05	48.50	
MNS	3.40	251	P	05	15.60	3.3X
MGR	3.61	198	Pd	05	14.70	-0.5
SKO	3.63	115	e(Pn)	05	30.50	15.0X
OHR	3.73	130	e(Pn)	05	23.70	6.6X
CSI	3.84	188	P	05	17.50	-1.0
PGD	3.85	276	P	05	20.00	1.1
TDS	3.95	188	P	05	17.80	-2.3
ROI	4.02	185	P	05	29.50	8.4X
FVI	4.26	317	P	05	24.10	-0.3
KBA	4.36	325	ePn	05	24.00	-2.1
			iSn	06	12.10	
CZI	4.40	189	P	05	25.30	-1.2
CTI	4.55	305	P	05	31.00	2.3

S.D. = 1.4 on 28 of 36 obs.

DEC 06, 1989 14h 26m 45.59± 0.42s
31.970 S ± 5.7km 69.756 W ± 7.1km
DEPTH = 122.6 ± 7.2 km
SAN JUAN PROVINCE, ARGENTINA (137)

RTBS	0.40	40	e(P)	27	03.20	-0.3
RTCB	0.95	60	iPd	27	07.80	0.1
JACH	1.00	225	iPd	27	08.00	-0.3
			iS	27	24.70	
ZON	1.01	66	iPc	27	08.00	-0.3
			eS	27	23.00	
RTLL	1.27	60	iPc	26	42.20	-28.8X
			S	26	49.20	
PEL	1.41	214	iPd	27	12.50	-0.1
			iS	27	32.20	
FCH	1.43	198	iPd	27	13.90	0.8
			iS	27	35.10	
ROCH	1.46	226	eP	27	12.70	-0.6
			iS	27	32.80	
SAN	1.66	207	eP	27	16.00	0.5
			iS	27	38.20	
PCH	1.77	201	iPc	27	17.50	0.7
			iS	27	41.50	
RTRS	1.81	8	iPd	27	18.50	1.2
TACH	1.95	210	iPc	27	18.60	-0.4
			iS	27	44.80	
CHCH	2.10	201	iPd	27	21.20	0.3
			iS	27	48.80	
LCCH	2.14	225	iPd	27	21.20	-0.2
			i	27	48.80	
LNV	2.42	215	iPd	27	23.90	-1.1
			iS	27	51.60	
RFA	2.99	159	iPc	27	33.20	0.6
MRA	3.46	98	ePd	27	39.00	0.3
TCA	4.45	83	iPd	27	52.00	-0.2
CYA	4.91	45	ePd	27	57.00	-1.4
CNCB	15.18	7	P	30	17.00	1.8
LPB	15.44	6	(P)	30	16.00	-2.4
ZOBO	15.70	6	P	30	23.00	1.2
GBA	144.86	114	PKP	46	10.00	-0.1

S.D. = 1.0 on 22 of 23 obs.

? DEC 06, 1989 14h 34m 11.16± 0.88s
42.798 N ± 7.6km 23.290 E ±19.4km
DEPTH = 10.0km (geophysicist)
BULGARIA (359)

VAY	1.57	200	eP	34	38.00	-1.1
KNT	1.66	190	ePd	34	40.50	0.1
			eS	35	05.50	
SRS	1.69	172	eP	34	42.00	1.1
			eS	35	08.40	
BZS	3.06	337	ePc	35	01.00	0 5
MLR	3.30	34	eP	35	03.50	-0.5

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

DEC 06, 1989 14h 39m 53.54± 0.68s
41.938 N ± 5.5km 23.195 E ± 7.2km
DEPTH = 10.0km (geophysicist)
GREECE-BULGARIA BORDER REGION (363)
ML 1.5 (SKO).

KKB	0.11	229	iPgd	39	57.00	0.6
MMB	0.53	131	iPgc	40	05.00	0.7
VTS	0.65	1	iPgc	40	07.00	0.3
VAY	0.77	217	ePg	40	08.40	-0.2
			eSg	40	18.40	
KNT	0.81	196	ePc	40	08.60	-0.6
SRS	0.87	160	ePc	40	10.10	-0.2
			eS	40	22.90	
PGB	0.95	49	ePg	40	11.00	-0.6
KDZ	1.69	99	ePg	40	30.00	6.8X

S.D. = 0.7 on 7 of 8 obs.

? DEC 06, 1989 15h 37m 06.30± 6.37s
43.421 N ±30.1km 17.423 E ±48.6km
DEPTH = 10.0km (geophysicist)
YUGOSLAVIA (383)
MG 2.9 (BLY).

HVAR	0.75	251	iPgd	37	21.00	0.0
			iSg	37	30.90	
BLY	1.34	353	ePn	37	31.10	0.2
			Sn	37	45.10	
VBY	2.60	324	ePn	37	49.60	0.6
			iSn	38	17.20	
PTJ	2.69	338	e(Pn)	37	50.00	-0.5
			eSn	38	18.60	
RIY	2.90	312	ePn	37	53.60	0.2
			iSg	38	28.00	
CEY	3.15	318	e(Pn)	37	57.90	0.9
			eSn	38	32.50	
LJU	3.33	323	e(Pn)	37	55.50	-4.0X
			e(Sn)	38	31.00	
OHR	3.41	132	e(Pn)	38	16.00	15.4X
TRI	3.47	312	eP	38	47.60	46.2X
VOY	3.62	317	ePn	38	02.30	-1.4
			eSn	38	41.80	

S.D. = 0.9 on 7 of 10 obs.

DEC 06, 1989 16h 22m 54.07± 1.41s
33.003 S ± 7.6km 70.140 W ± 9.0km

06d 16h

DEPTH = 118.7 ± 18.0 km
CHILE-ARGENTINA BORDER REGION (127)

FCH	0.35	201	iPc	23 11.50	-0.2
			iS	23 22.70	
PEL	0.48	253	iPc	23 12.00	-0.1
			iS	23 24.50	
JACH	0.50	310	iPc	23 12.00	-0.2
			iS	23 25.00	
SAN	0.63	224	iPc	23 12.70	-0.3
			iS	23 26.50	
PCH	0.69	207	iPc	23 13.90	0.3
			iS	23 28.00	
ROCH	0.73	272	iPc	23 14.00	-0.1
			i	23 25.50	
			iS	23 28.50	
TACH	0.93	226	iPc	23 15.60	0.0
			iS	23 31.00	
CHCH	1.02	205	iPd	23 16.70	0.1
			iS	23 33.70	
LCCH	1.29	248	iPc	23 19.60	0.3
			iS	23 37.50	
LNV	1.42	228	iP	23 20.60	-0.3
			iS	23 40.50	
ZON	1.91	41	iPd	23 27.50	0.7
			eS	23 53.00	
CFA	2.13	50	iPd	23 30.00	0.4
			S	23 57.00	
RFA	2.25	142	ePc	23 31.80	0.6
MRA	3.78	82	iPc	23 50.30	-1.2
			S	24 30.00	

S.D. = 0.5 on 14 of 14 obs.

DEC 06, 1989 17h 09m 03.13± 0.44s
32.373 N ± 7.2km 141.472 E ± 7.6km
DEPTH = 48.8km (2 depth phases)
5.0mb (6 obs.) 4.1Msz (3 obs.)
SOUTH OF HONSHU, JAPAN (211)

MAT	4.96	328	eP	10 16.00	-1.0
			eS	11 15.00	
CN2	16.98	317	Pd	13 00.80	2.2
Z	13s		0.80um		
N	13s		0.60um		
			eS	16 10.00	
SNY	17.08	309	Pc	13 02.00	2.1
SSE	17.31	271	eP	13 03.40	0.6
Z	18s		0.50um		
N	12s		0.50um		
			sP	13 22.40	
			e(S)	16 32.00	
DL2	17.38	298	eP	13 08.00	4.3X
Z	14s		0.60um		
N	12s		1.00um		
			eS	16 08.00	
GUMO	18.95	170	eP	13 25.10	2.0
	1.0s	344.00nm		5.5mb	
			pP	13 36.60	
PJG	18.95	170	eP	13 25.00	1.9
GUA	19.01	170	eP	13 25.10	1.3
	0.8s	405.97nm		5.7mb	
NJ2	19.14	275	eP	13 24.00	-1.2
Z	16s		0.30um		
TIA	20.46	287	eP	13 41.00	1.8
Z	18s		1.20um	4.3Msz	
N	16s		0.80um		
E	16s		1.00um		
BJI	21.75	298	eP	13 51.00	-1.1
Z	22s		0.55um	3.9Msz	
WHN	23.19	273	P	14 05.00	-1.3
N	15s		0.83um		
E	15s		0.83um		
TIY	24.31	291	eP	14 16.90	-0.4
Z	27s		2.77um	4.6MszX	
E	17s		0.80um		
			eS	18 36.50	
HHC	25.36	298	eP	14 27.40	0.1
BTO	26.48	297	eP	14 36.00	-1.7
N	15s		1.10um		
E	16s		1.10um		
XAN	27.23	282	P	14 43.80	-0.7
CD2	32.04	278	eP	15 26.00	-1.3
GTA	34.24	294	eP	15 45.80	-0.7
CHG	40.40	261	eP	16 37.00	-1.3
CHTO	40.40	261	eP	16 36.80	-1.5
	1.0s	1.50nm		3.7mb X	
			pP	16 51.00	55km
WMO	43.15	301	P	17 02.00	1.4
Z	16s		0.40um	4.4MszX	
WB2	52.46	188	iPc	18 11.70	-1.6
			i	18 25.50	
KSH	52.48	297	eP	18 15.50	2.0
ASPA	56.19	188	iPd	18 39.80	-0.7
Z	22s		0.16um	4.1Msz	
			epP	18 52.10	43km
			LR	40 56.50	
HYB	58.24	271	eP	18 55.00	-0.2
INK	58.53	26	eP	18 56.00	-0.5
WARB	59.92	195	eP	19 07.00	0.5
BRS	60.40	168	e(P)	18 57.00	-12.8X
			i	19 13.50	
			i	19 23.00	
			e	25 33.00	
			e	26 16.00	
MBC	60.98	16	eP	19 12.50	-0.7
	1.0s	8.00nm		4.8mb	
MAIO	65.83	299	eP	19 47.00	1.3
BWA	66.76	174	eP	19 54.70	3.2X
			i	20 06.30	
CAN	67.71	173	eP	19 54.70	-2.7
			i	20 06.30	
PNT	71.51	43	eP	20 20.00	-0.7
	0.6s	4.00nm		4.5mb	
SUF	72.17	334	eP	20 26.60	2.3
EDM	72.99	37	eP	20 29.00	-0.4
NUR	74.09	333	eP	20 24.00	-11.5X
SES	75.72	39	eP	20 44.00	-1.2
CMB	76.57	53	eP	20 49.90	-0.3
LRM	77.47	44	eP	20 55.30	0.1
FFC	77.61	32	iPc	20 55.20	-0.3
	0.7s	12.00nm		5.0mb	
NB2	78.50	338	P	21 00.80	0.4
	1.1s	6.70nm		4.5mb	
KSP	84.09	329	eP	21 31.00	1.2
BRG	85.09	330	e(P)	21 43.80	9 0X
CLL	85.16	330	e(P)	21 31.00	-4.1X
ZOBO	148.77	66	PKP	28 51.00	7.0X
LPB	148.94	67	PKP	28 53.00	9.0X
CNCB	149.19	67	PKP	28 49.50	4.9X
CCH	150.95	66	(PKP)	28 49.00	2.1X

S.D. = 1.4 on 38 of 48 obs.

DEC 06, 1989 17h 39m 45.07± 0.42s
43.556 N ± 4.8km 16.927 E ± 5.1km
DEPTH = 14.6 ± 3.6 km
YUGOSLAVIA (383)
ML 3.5 (KBA), 3.4 (ZAG), 3.0 (LJU). MD 3.5 (TTG).

HVAR	0.51	223	iPgd	39 54.40	-0.9
			iSg	40 03.90	
BRY	1.35	118	ePg	40 07.50	-2.0
			eSg	40 29.00	
HCY	1.60	133	ePg	40 12.30	-0.6
			eSg	40 37.60	
PLE	1.81	96	ePn	40 16.60	0.5
			eSn	40 40.20	
BDV	1.89	132	ePn	40 17.50	0.4
			eSn	40 46.50	
TTG	2.05	123	ePn	40 20.40	1.0
			eSn	40 49.30	
IVA	2.28	106	ePn	40 25.50	2.7
			eSn	40 58.50	
VBY	2.29	329	ePn	40 22.30	-0.5
			iSn	40 51.20	
ULC	2.34	132	ePn	40 24.80	1.2
			eSn	41 00.00	
ZAG	2.36	344	iPb	40 24.20	0.4
			iSn	40 50.20	
			iSg	40 55.00	
PVY	2.43	112	ePn	40 27.20	2.2
			eSn	41 01.00	
BAI	2.43	181	P	40 32.00	7.1X
PTJ	2.44	344	ePn	40 23.10	-2.0
			iSn	40 50.80	
RIY	2.55	315	iPnc	40 28.30	1.8
			iSg	41 02.30	
ALP	2.57	254	e(Pn)	40 28.18	1.2
			iSn	41 01.56	
DUI	2.63	225	P	40 30.50	2.7
BRT	2.68	176	P	40 26.50	-2.0
			eSn	41 00.70	
CIO	2.78	264	ePn	40 29.22	-0.7
			iSn	41 04.64	
CEY	2.82	322	ePn	40 30.40	0.0
			i	40 35.00	
			eSn	41 07.00	
BEO	2.84	62	ePn	40 41.00	10.4X
ARV	2.90	270	P	40 31.10	-0.4
			eSn	41 09.80	
SDI	2.95	232	P	40 33.20	1.0
LJU	3.01	326	e(Pn)	40 35.00	1.9
			e	40 37.00	
			eSn	41 09.00	
ASS	3.15	263	P	40 36.50	1.4
			eSn	41 14.20	
VOY	3.28	320	ePn	40 36.10	-1.0
			e	40 41.60	
			eSn	41 18.00	
MNS	3.33	251	P	40 39.00	1.3
SKO	3.68	114	e(Pn)	40 50.50	7.8X
MMN	3.73	191	P	40 37.80	-5.5X
OHR	3.77	129	e(Pn)	40 43.50	-0.5
PGD	3.79	277	P	40 45.80	1.5
CSI	3.81	187	P	40 43.50	-1.0
TDS	3.92	187	P	40 45.50	-0.5
BZS	3.93	57	eP	40 55.00	8.8X
ROI	3.99	184	P	40 45.90	-1.1
FVI	4.22	317	P	40 48.80	-1.5
KBA	4.33	326	iPnd	40 50.70	-1.4
			iSn	41 39.30	
SRO	4.37	12	iP	40 53.70	1.4
			e	42 21.80	
CZI	4.37	188	P	40 57.80	5.4X
CTI	4.51	305	P	40 52.00	-2.4
			eSn	41 43.40	
ZST	4.64	1	eP	40 57.20	0.9
VAY	4.74	116	ePn	40 56.00	-1.6
OGA	5.32	311	eP	41 09.40	3.3X
KHC	6.04	339	eP	41 22.40	6.4X

S.D. = 1.5 on 35 of 43 obs.

& DEC 06, 1989 19h 15m 23.40s
33.810 N 117.040 W
DEPTH = 15.0km
SOUTHERN CALIFORNIA (43)
<PAS-P>. ML 3.4 (PAS). Felt (V) at San Jacinto; (IV) at Anza; (III) at Lakeview, Mountain Center and North Palm Springs. Also felt in the Riverside area.

PEC	0.13	309	iPc	15 27.10	-0.1
RVR	0.33	303	iPd	15 30.00	-0.5
			eS	15 34.80	
PLM	0.48	162	iPc	15 32.70	-0.4
TPC	0.88	70	iPd	15 39.40	-0.4
CPE	0.93	183	iPd	15 39.70	-1.0
MWC	0.94	296	iPd	15 40.50	-0.5
GLA	2.00	112	eP	15 55.50	-1.5
ABL	2.08	301	eP	15 57.60	-0.8
BCH	2.86	299	eP	16 10.00	0.6
BLP	2.88	286	eP	16 08.10	-1.5
TNP	4.27	358	eP	16 39.00	9.6
CMB	5.01	328	e(P)	16 50.00	10.2
KVN	5.30	351	eP	16 43.80	-0.3
ALQ	8.82	80	eP	18 08.50	35.1
	1.0s	3.00nm			
	14 obs. associated				

DEC 06, 1989 21h 31m 06.49± 0.54s
40.674 N ± 5.0km 23.316 E ± 5.4km
DEPTH = 10.0km (geophysicist)
GREECE (364)
MD 2.8 (ATH). ML 2.5 (SKO).

THE	0.27	261	e(P)	31 12.70	0.5
PLG	0.32	162	iPgc	31 12.60	-0.5
SRS	0.49	25	ePc	31 02.30	-14.1X
			iS	31 12.50	
KNT	0.58	327	ePd	31 04.90	-13.4X
			eS	31 21.00	
LIT	0.85	228	ePc	31 11.70	-11.2X
			eS	31 26.60	
VAY	0.86	319	iPg	31 22.50	-0.5
			i	31 28.00	
			iSg	31 34.40	
MMB	0.97	19	iPgc	31 23.00	-1.9
KKB	1.20	352	iPgd	31 28.00	-0.9
KZN	1.23	253	ePg	31 30.20	0.7
NEO	1.37	183	ePb	31 31.50	-0.1

RZN	1.46	46	iPgc	31 33.00	-0.1
RDO	1.75	74	ePb	31 36.30	-0.7
			eSb	32 00.80	
PLD	1.77	36	eP	31 39.00	1.7
AGG	1.82	205	eP	31 26.70	-11.4X
KDZ	1.86	58	eP	31 36.00	-2.7X
SKO	1.92	313	ePn	31 45.50	6.0X
VTS	1.92	358	iP	31 40.00	0.4
OHR	1.96	284	ePn	31 39.30	-0.8
PGB	1.98	19	eP	31 42.00	1.6
DIM	2.16	50	eP	31 46.00	3.0X
PVL	2.95	30	eP	31 55.00	0.8

S.D. = 1.1 on 14 of 21 obs.

? DEC 06, 1989 22h 15m 22.16± 5.84s
43.360 N ±31.1km 17.458 E ±41.7km
DEPTH = 10.0km (geophysicist)
YUGOSLAVIA (383)
ML 2.8 (KBA), 2.8 (ZAG). MD 3.0 (BLY).

HVAR	0.76	256	iPgd	15 37.00	0.0
			iSg	15 47.50	
BLY	1.40	352	Pn	15 48.00	0.3
			Sn	16 02.00	
VBY	2.66	324	ePn	16 06.50	0.7
			iSn	16 34.20	
ZAG	2.67	337	ePn	16 05.00	-1.0
			iSn	16 33.50	
			iSg	16 39.30	
PTJ	2.76	338	iPb	16 10.30	3.0X
			iSn	16 35.40	
RIY	2.96	313	ePn	16 10.50	0.4
			iSg	16 45.10	
CEY	3.22	319	eP	16 23.50	9.8X
			eSn	16 49.50	
SKO	3.25	114	ePn	16 56.00	41.8X
OHR	3.35	131	ePn	16 26.50	10.9X
TRI	3.53	313	eP	16 16.60	-1.6
			e	17 04.80	
VOY	3.69	318	ePn	16 21.60	1.1
			eSn	16 59.70	
KBA	4.72	323	e(Pn)	16 40.00	4.8X
			e(Sn)	17 29.50	

S.D. = 1.2 on 7 of 12 obs.

DEC 06, 1989 22h 34m 41.41± 0.66s
40.489 N ± 5.8km 20.933 E ± 6.8km
DEPTH = 10.0km (geophysicist)
GREECE-ALBANIA BORDER REGION (392)
ML 3.6 (SKO). MD 3.4 (ATH).

KBN	0.16	326	iPgc	34 44.30	-0.8
LSK	0.42	217	ePg	34 49.00	-1.1
OHR	0.63	351	iPgc	34 53.50	-0.6
			iSg	35 03.60	
KZN	0.67	106	ePg	34 52.90	-1.8
BERA	0.78	286	ePg	34 54.50	-2.1X
KEK	1.17	229	ePb	35 07.30	4.1X
TIR	1.18	317	ePn	35 07.00	3.6X
LIT	1.25	108	ePc	34 51.00	-13.7X
			eS	35 11.60	
PHP	1.25	343	iPgc	35 05.40	0.7
LACI	1.47	321	ePn	35 11.00	3.1X
VAY	1.49	56	iPn	35 08.30	0.0
SKO	1.53	14	iPn	35 09.50	0.7
	0.5s	267.00nm			
			iSn	35 31.40	
			Lg	35 34.10	
THE	1.55	84	eP	35 10.00	0.9
			eS	35 34.60	
KKS	1.63	346	ePn	35 14.50	4.3X
KNT	1.64	65	eP	34 58.90	-11.4X
			eS	35 24.30	
PUK	1.74	334	ePn	35 14.90	3.1X
PLG	1.92	93	ePb	35 15.00	0.5
BCI	1.99	341	ePn	35 19.10	3.8X
NEO	2.12	123	ePb	35 16.70	-0.7
VLS	2.32	187	ePb	35 22.50	2.2

S.D. = 1.3 on 11 of 20 obs.

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* DEC 06, 1989 23h 24m 09.50± 1.77s
10.271 N ±15.6km 125.404 E ±21.4km
DEPTH = 77.1 ± 15.5 km
3.9mb (2 obs.)
LEYTE, PHILIPPINE ISLANDS (256)

DAV	3.17	177	eP	24 59.00	1.0
OCP	6.06	316	eP	26 08.00	29.6X
BAG	7.70	323	eP	26 00.10	-1.2
MTN	23.66	166	eP	29 14.00	-0.9
CHG	26.95	291	eP	29 46.60	0.7
CHTO	26.95	291	eP	29 46.90	1.1
	0.9s	1.07nm		3.4mb	
WB2	31.29	164	eP	30 21.00	-3.5X
ASPA	34.74	166	eP	30 53.70	-0.7
WARB	36.25	178	eP	31 06.00	-1.2
HYB	45.95	284	eP	32 27.00	0.2
GBA	46.99	279	Pc	32 34.20	-0.9
	0.7s	3.10nm		4.3mb	
DZM	51.51	129	iPc	33 11.00	1.2
MAIO	64.60	305	eP	34 42.00	0.7

S.D. = 1.2 on 11 of 13 obs.

? DEC 06, 1989 23h 32m 49.62± 1.98s
17.154 N ±10.2km 47.051 W ±48.5km
DEPTH = 10.0km (geophysicist)
4.7mb (5 obs.)
NORTH ATLANTIC RIDGE (403)

ZOBO	39.17	213	P	40 20.00	-0.3
	1.2s	13.51nm		4.5mb	
	Z 24s	0.23um		3.9MszX	
			LR	52 08.00	
LPB	39.38	213	P	40 22.00	0.2
CNCB	39.55	213	P	40 28.00	4.6X
FFC	56.12	325	eP	42 31.00	-0.4
	1.0s	12.00nm		4.9mb	
BW06	58.44	310	eP	42 48.00	-0.4
	1.3s	9.43nm		4.7mb	
			pP	42 55.80	26kmX
SES	60.42	319	eP	43 02.00	0.3
EDM	62.27	322	eP	43 14.00	-0.1
PLM	64.11	299	eP	43 36.00	9.2X
NEW	64.16	316	eP	43 26.30	-0.4
	1.1s	2.78nm		4.4mb	
			pP	43 34.50	26kmX
KVN	64.81	306	eP	43 31.70	0.5
			pP	43 38.90	23kmX
PNT	65.85	317	eP	43 38.00	0.5
MBC	69.26	346	eP	43 58.50	0.0
	1.4s	13.00nm		4.9mb	

S.D. = 0.4 on 10 of 12 obs.

? DEC 07, 1989 01h 11m 44.62± 1.03s
2.272 N ±16.2km 128.357 E ±34.8km
DEPTH = 33.0km (normol)
4.6mb (2 obs.)
HALMAHERA (267)

WB2	22.85	165	eP	16 57.80	11.5X
ASPA	26.34	168	eP	17 20.10	0.5
	0.6s	4.00nm		4.2mb	
XAN	36.45	332	Pc	18 48.80	0.4
CD2	36.77	323	P	18 52.60	1.4
TIY	38.18	339	eP	19 02.50	-0.5
BJI	39.19	345	eP	19 11.50	0.2
GTA	45.18	329	iPc	20 01.00	0.6
HYB	51.14	291	eP	20 46.50	-0.4
MAIO	71.68	307	eP	23 05.00	-0.6
SUF	93.58	333	eP	24 56.80	-1.6
NB2	100.80	334	Pdiff	25 28.60	-2.7X
	0.9s	4.00nm		5.0mb	

S.D. = 1.0 on 9 of 11 obs.

& DEC 07, 1989 01h 15m 49.44s
38.171 N 115.949 W
DEPTH = 4 2km
NEVADA (37)
<GLD>. ML 2.5 (GLD).

BLT	0.70	191	P	16 03.80	0.3
MTI	0.73	132	P	16 04.10	0.1
SRG	0.75	112	P	16 05.20	0.7
GMR	0.85	170	P	16 06.60	0.3
NPN	0.95	123	P	16 08.50	0.2
GLR	0.97	183	P	16 08.50	0.0
TNP	1.00	265	P	16 09.60	0.4
PRN	1.04	137	P	16 10.50	0.7
DLM	1.11	120	P	16 11.40	0.4
BGB	1.15	191	P	16 11.70	0.0
TMBR	1.19	197	P	16 12.90	0.7
YMT5	1.33	198	P	16 15.30	0.6
MGM	1.43	240	P	16 17.30	0.9
YMT3	1.43	195	P	16 17.00	0.7
LSM	1.45	190	P	16 16.70	0.1
SGV	1.47	216	P	16 16.70	-0.1
LCH	1.64	236	P	16 18.00	-1.3
FMT	1.67	204	P	16 21.00	1.4
MCA	1.85	215	P	16 22.80	0.6
KVN	1.90	298	P	16 23.50	0.4
QSM	2.32	199	P	16 32.90	3.9
MSU	2.99	82	P	16 38.80	0.1
DUG	3.17	49	P	16 46.00	4.9
CMB	3.50	269	P	16 42.30	-3.5

24 obs. ossocioted

DEC 07, 1989 04h 09m 39.49± 0.80s
43.595 N ± 5.8km 16.923 E ± 8.1km
DEPTH = 9.2 ± 4.4 km
YUGOSLAVIA (383)
ML 3.0 (KBA), 2.3 (LJU).

HVAR	0.54	220	iPgd	09 49.70	-0.7
			iSg	09 59.40	
BLY	1.17	9	ePn	10 00.50	-0.9
			Sn	10 14.00	
VBY	2.25	329	ePn	10 18.80	1.4
			iSn	10 49.00	
ZAG	2.32	344	eP	10 17.00	-1.4
			i(Sn)	10 45.00	
RIY	2.52	315	ePn	10 23.00	1.8
			iSg	10 57.70	
ALP	2.58	253	e(Pn)	10 22.83	0.6
			e(Sn)	10 55.29	
CEY	2.79	321	eP	10 25.50	0.4
			eSn	11 04.50	
SDI	2.97	232	P	10 27.80	0.1
			eSn	10 57.50	
LJU	2.98	326	e(Pn)	10 22.50	-5.3X
			e	10 29.50	
			e(Sg)	11 12.00	
ASS	3.15	262	P	10 29.70	-0.6
VOY	3.25	320	ePn	10 31.40	-0.3
			eSn	11 12.00	
MNS	3.34	250	P	10 32.50	-0.4
			eSn	11 02.20	
SKO	3.70	114	ePn	11 00.00	22.0X
OHR	3.80	130	ePn	10 40.00	0.6
FVI	4.19	317	P	10 43.90	-1.0
KBA	4.30	325	iPnd	10 46.00	-0.7
			iSn	11 34.80	

S.D. = 1.1 on 14 of 16 obs.

? DEC 07, 1989 04h 49m 52.78± 5.13s
15.555 N ±16.9km 60.514 W ±40.1km
DEPTH = 10.0km (geophysicist)
LEEWARD ISLANDS (92)
ML 2.6 (FDF).

MGG	0.85	295	eP	50 09.70	0.5
BBL	0.93	268	eP	50 10.50	0.0
FDF	1.02	217	eP	50 12.22	0.1
	0.1s	0.30nm			
			S	50 25.20	
MVM	1.06	200	eP	50 12.63	-0.1
			S	50 25.60	
BIM	1.16	208	eP	50 14.64	0.1
			S	50 28.90	
PAG	1.22	293	eP	50 15.00	-0.5
			S	50 31.00	

S.D. = 0.4 on 6 of 6 obs.

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* DEC 07, 1989 05h 30m 12.15± 0.81s
37.173 N ± 9.7km 28.184 E ± 8.6km
DEPTH = 10.0km (geophysicist)
TURKEY (366)

YER	0.09	116	iPg	30 13.00	-1.8
SMG	1.20	297	ePb	30 34.40	-0.1
IZM	1.42	329	iPn	30 37.00	-1.1
ELL	1.44	107	ePn	30 38.10	-0.4
KSL	1.54	133	ePb	30 40.60	0.9
KAP	1.81	207	ePn	30 44.40	0.8
BCK	1.94	81	ePn	30 43.00	-2.5X
ALT	2.42	38	ePn	30 54.00	1.6
DST	2.45	8	ePn	30 55.90	3.0X

S.D. = 1.4 on 7 of 9 obs.

DEC 07, 1989 06h 13m 53.81± 0.37s
36.669 N ± 6.1km 26.944 E ± 4.6km

07d 06h

DEPTH = 158.9 ± 6.1 km
4.2mb (8 obs.)
DODECANESE ISLANDS (369)

SMG	1.04	355	eP	14 20.00	0.0
KAP	1.13	170	eP	14 21.40	0.6
YER	1.17	66	iPg	14 21.50	0.3
APE	1.20	290	iPd	14 22.20	0.7
IZM	1.74	8	iPn	14 27.30	0.3
NPS	1.77	218	iPd	14 27.90	0.6
			eS	14 51.80	
KSL	2.20	104	eP	14 30.50	-1.7
			eS	14 55.80	
ELL	2.38	87	ePn	14 22.10	-12.4X
VAM	2.56	241	eP	14 37.40	0.9
			eS	15 09.30	
PRK	2.63	349	iPd	14 37.60	0.3
BCK	3.02	74	iPn	14 27.50	-14.9X
EZN	3.19	351	iPn	14 43.40	-1.0
DST	3.22	24	iPn	14 45.00	0.1
VLI	3.22	272	eP	14 45.80	1.0
ALT	3.46	45	ePn	14 40.00	-8.0X
BNT	3.76	11	iPn	14 52.20	0.4
VLS	5.28	288	eP	15 11.70	-0.1
CSS	5.46	106	eP	15 13.00	-1.3
KEK	6.40	301	eP	15 28.50	1.7
SHMJ	8.26	116	P	15 53.00	1.3
BURJ	8.54	119	P	15 57.00	1.4
ROI	8.67	293	P	15 56.00	-1.2
BRT	8.69	302	P	15 56.80	-0.6
TDS	8.87	293	P	15 59.80	0.0
CZI	8.91	290	P	15 58.90	-1.4
			eSn	17 27.50	
CSI	8.94	294	P	16 00.80	0.1
MMN	9.19	294	P	16 04.40	0.4
PRNI	9.22	131	eP	16 03.00	-1.4
ATN	9.26	283	P	16 03.30	-1.6
MBH	9.56	134	ePd	16 08.50	-0.4
MEU	9.64	276	P	16 09.90	-0.1
MNO	9.84	281	P	16 10.00	-2.8
SBF	16.51	302	eP	17 37.00	-0.6
	0.7s	13.20nm		4.4mb	
CDF	18.59	315	eP	18 00.80	-0.5
	0.8s	5.30nm		3.9mb	
HAU	18.91	313	eP	18 04.00	-0.6
	0.6s	3.60nm		3.9mb	
LBF	19.91	308	eP	18 17.30	2.4
	0.9s	6.50nm		4.1mb	
SSF	20.24	308	eP	18 20.60	2.5
	0.7s	5.90nm		4.1mb	
LSF	21.24	305	eP	18 29.80	1.7
	0.8s	5.90nm		4.1mb	
FLN	23.36	310	eP	18 47.90	-0.8
	0.7s	8.80nm		4.4mb	
LPF	23.46	308	eP	18 49.50	-0.2
GRR	23.46	309	eP	18 49.20	-0.5
	0.5s	8.70nm		4.5mb	
S.D. = 1.2		on 38 of 41 obs.			

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* DEC 07, 1989 07h 08m 00.22± 1.48s
5 368 S ± 9.4km 152.250 E ±13.7km
DEPTH = 45.1 ± 13.6 km
4.7mb (5 obs.)
NEW BRITAIN REGION (192)

RAB	1.17	356	iPc+	08 21.00	0.6
PMG	6.45	231	eP	09 34 00	-1.2
CTA	15.75	201	iP	11 45 00	4.3X
	1.0s	19.00nm		4.2mb	
QIS	19.46	218	eP	12 25.00	-1.3
DZM	21.55	142	iPc	12 48.20	0.3
BRS	21.91	179	eP	12 43.00	-8.4X
			e	12 54.00	
MTN	22.12	249	eP	12 54.00	0.4
WB2	22.65	229	eP	12 59.80	1.0
			e	17 03.00	
ASPA	25.37	222	iPd	13 26.70	1.7
	1.1s	16.00nm		4.5mb	
Z	22s	0.14um		3.4MszX	
		LR		22 45.10	
SVW	77.55	23	eP	19 53.70	0.8
TTA	78.49	22	ePc	19 58.20	0.1
PMR	80.43	24	eP	20 08.10	-0.3
IMA	81.17	20	ePc	20 12.20	-0.2
	1.0s	23.10nm		5.1mb	
TOA	81.90	25	eP	20 16.70	0.5
FBA	82.61	22	ePc	20 18.50	-1.3
INK	89.18	21	ePc	20 50.90	-1.2
GMW	90.52	42	P	20 59.40	0.6
LON	91.09	43	P	21 00.00	-1.5
KVN	93.07	51	P	21 11.60	0.7
TNP	93.69	52	P	21 14.50	0.7
	0.8s	2.08nm		4.6mb	
MBC	94.79	14	eP	21 17.50	-0.4
	0.9s	5.00nm		4.9mb	
GOL	102.93	51	Pdiff	21 58.60	2.9X
S.D. = 1.0		on 19 of 22 obs.			

? DEC 07, 1989 07h 34m 19.39± 4.15s
2.963 S ±45.0km 139.049 E ±19.0km
DEPTH = 33.0km (normal)
4.6mb (1 obs.) 3.7Msz (1 obs.)
NEAR N. COAST OF WEST IRIAN (197)

MTN	12.56	218	eP	37 19.00	0.3
			eS	39 19.00	
WB2	17.49	195	eP	38 22.00	-0.5
QIS	17.50	178	eP	38 23.00	0.4
			e	41 32.00	
ASPA	21.18	193	iPc	39 04.20	-0.2
	0.8s	20.00nm		4.6mb	
Z	18s	0.27um		3.7Msz	
			eS	43 08.90	
			LR	47 52.00	
WARB	25.98	206	eP	39 51.00	0.0
BRS	27.61	153	eP	40 06.00	0.0
S.D. = 0.4		on 6 of 6 obs.			

& DEC 07, 1989 08h 08m 15.44s
59.226 N 150.954 W
DEPTH = 36.9km
KENAI PENINSULA, ALASKA (14)
<AGS-P>. ML 3.9 (PMR). Felt (III) at Homer.

CNPM	0.33	334	iP	08 23.27	-0.6
			eS	08 30.17	
XLV	0.46	301	iP	08 24.43	-1.0
BRLK	0.54	4	iP	08 26.12	-0.6
			eS	08 34.66	
NNL	0.84	348	iP	08 31.14	0.3
SEW	1.17	40	iP	08 34.43	-1.0
AUE	1.25	277	eP	08 35.88	-0.8
AUL	1.28	278	eP	08 36.66	-0.5
SLKM	1.34	16	iP	08 37.45	-0.6
CDD	1.42	259	iP	08 38.01	-1.2
RED	1.51	323	eP	08 39.38	-1.1
NKA	1.53	355	iP	08 41.82	1.1
RDT	1.54	332	eP	08 40.06	-0.9
			eS	08 59.27	
KDC	1.69	209	eP	08 40.70	-2.3
SPU	2.04	345	iP	08 47.14	-0.9
CKL	2.09	341	eP	08 47.91	-1.0
CRP	2.13	344	eP	08 48.87	-0.6
PMS	2.14	18	eP	08 48.80	-0.7
BGL	2.17	341	eP	08 49.24	-0.7
SUA	2.25	3	eP	08 50.32	-0.8
PLRM	2.54	20	eP	08 53.76	-1.4
PMR	2.54	20	eP	08 53.80	-1.3
GLI	2.55	48	iP	08 53.11	-2.2
PME	2.59	21	eP	08 54.89	-1.0
FID	2.72	54	eP	08 55.00	-2.7
GHO	2.75	21	eP	08 57.06	-1.1
SKT	2.78	354	eP	08 58.08	-0.5
VLZ	3.00	48	eP	08 59.64	-2.0
SVW	3.00	311	eP	09 01.90	0.1
KLU	3.38	46	iP	09 05.40	-1.7
TOA	3.72	37	eP	09 11.20	-0.9
TGL	4.36	66	eP	09 17.86	-3.2
TTA	4.45	329	eP	09 21.50	-0.9
FBA	5.88	13	eP	09 40.40	-2.1
IMA	6.98	351	P	09 56.30	-1.7
	0.7s	5.45nm		4.5mb X	
34 obs. associated					

? DEC 07, 1989 08h 25m 52.61± 5.37s
16.957 S ±65.7km 73.939 W ±38.8km
DEPTH = 10.0km (geophysicist)
NEAR COAST OF PERU (115)

ARE	2.40	78	eP	26 32.00	-0.8
PT06	3.87	323	iPc	27 19.30	25 8X
			iS	28 09.40	
PT08	5.57	333	iP	27 18.00	0.0
			e(S)	28 48.40	
LPB	5.61	87	P	27 19.00	0.4
	1.0s	220.00nm		5.8mb X	
ZOBO	5.62	84	Pc	27 19.30	0.5
PT10	5.67	328	eP	27 55.00	36.0X
			eS	28 16.00	
NNA	5.68	330	eP	27 48.00	28.7X
	0.7s	4.79nm			
			eS	28 50.80	
CNCB	5.71	89	Pc	27 20.70	0.7
			S	28 35.00	
CCH	7.46	94	P	27 43.70	-0.8
S.D. = 0.9		on 6 of 9 obs.			

? DEC 07, 1989 08h 27m 30.17± 1.99s
35.847 N ±17.0km 139.123 E ±27.3km
DEPTH = 85.8 ± 20.1 km
4.4mb (3 obs.)
NEAR S. COAST OF HONSHU, JAPAN (230)

MAT	1.01	313	iPd	27 50.00	0.0
			(S)	28 07.00	
BJI	18.56	290	eP	32 05.00	22.2X
FBA	51.09	32	P	36 25.60	0.2
	0.7s	9.30nm		4.9mb	
WB2	55.67	185	eP	36 59.70	0.0
HFS	74.39	335	eP	39 00.00	0.0
	0.4s	1.70nm		4.3mb	
CMB	76.06	53	P	39 08.70	-1.3
LRM	76.28	43	eP	39 11.80	0.5
KVN	76.94	51	P	39 15.50	0.4
TNP	78.07	52	P	39 22.00	0.7
	0.7s	2.22nm		4.2mb	
BW06	79.80	44	P	39 31.00	0.3
RSSD	81.94	40	P	39 41.00	-0.8
ZOBO	148.88	58	PKP	47 11.60	5.2X
LPB	149.08	59	ePKP	47 12.00	5.5X
CNCB	149.35	59	PKP	47 14.00	6.9X
CCH	151.01	57	ePKP	47 04.00	-5.3X
S.D. = 0.7		on 10 of 15 obs.			

DEC 07, 1989 08h 50m 11.13± 0.33s
41.786 N ± 2.7km 19.669 E ± 3.6km
DEPTH = 10.0km (geophysicist)
ALBANIA (391)
ML 2.7 (TTG).

LACI	0.15	169	iPgc	50 14.90	0.2
SDA	0.26	331	iPgd	50 17.80	1.1
PUK	0.31	33	iPgd	50 17.30	-0.2
ULC	0.36	300	ePg	50 17.80	-0.8
			eSg	50 24.00	
TIR	0.46	161	iPgc	50 19.70	-0.8
PHP	0.59	99	iPgd	50 22.10	-0.9
BCI	0.65	27	iPgd	50 24.00	-0.1
TTG	0.71	335	ePg	50 25.00	-0.1
			eSg	50 38.00	
BDV	0.80	309	ePg	50 26.80	0.1
			eSg	50 39.50	
PVY	0.84	16	ePg	50 27.00	-0.4
			eSg	50 41.00	
HCY	1.09	308	ePg	50 31.40	-0.3
			eSg	50 47.50	
IVA	1.10	9	iPgc	50 31.60	-0.2
			eSg	50 49.70	
BERA	1.10	169	ePg	50 31.50	-0.3
VLO	1.32	186	ePn	50 36.00	0.5
SKO	1.33	81	iPn	50 37.00	1.3
			iSn	50 55.20	
			Lg	50 57.80	
BRY	1.39	324	ePg	50 36.90	0.2
			eSg	50 57.00	
TPE	1.51	170	ePn	50 38.90	0.7
VAY	2.23	101	ePn	50 48.60	0.0
S.D. = 0.6		on 18 of 18 obs.			

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* DEC 07, 1989 12h 18m 45.12± 2.11s
39.616 N ±15.3km 24.447 E ±15.1km
DEPTH = 10.0km (geophysicist)
AEGEAN SEA (365)

THE	1.52	312	eP	19 13.50	1.1
			eS	19 31.50	
LIT	1.58	288	eP	19 13.00	-0.3
			eS	19 30.00	
SRS	1.64	337	eP	19 14.00	0.0
			eS	19 35.70	

```
AGG      1.75 251 eP    19 15.50  -0.2
KNT      1.95 323 ePc   19 19.30   0.8
                  eS    19 37.00
MMB      2.05 345 ePd   19 19.00  -1.0
RZN      2.08   6 eP    19 21.00   0.4
KDZ      2.16  20 iP    19 22.00   0.3
VAY      2.22 321 ePn   19 26.00   3.4X
KKB      2.48 336 eP    19 25.00  -1.1
PVL      3.66  10 eP    19 53.00  10.1X
     S.D. = 0.9  on   9 of  11 obs.
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*  DEC  07, 1989  12h 27m 15.29± 1.00s
   39.715 N ± 8.2km   30.685 E ± 9.7km
   DEPTH =   5.0km  (geophysicist)
 TURKEY                          (366)

GPA      0.64 333 iPg   27 26.50  -1.6
ALT      0.80 214 ePg   27 30.00  -1.3
                  iSg   27 41.70
GBZT     1.43 319 ePn   27 42.00   0.1
                  iSg   28 03.00
DST      1.59 267 ePn   27 45.10   0.9
BBTK     1.60  85 ePg   27 45.00   0.5
                  eSg   28 11.00
KHL      1.66 213 ePn   27 45.00  -0.2
BNT      2.22 288 ePn   27 55.00   1.7
     S.D. = 1.4  on   7 of   7 obs.
-----------------------------------------
   DEC  07, 1989  12h 59m 33.56± 0.17s
   25.917 N ± 4.3km   58.971 E ± 2.5km
   DEPTH =  15.6km  (  6 depth phases)
   5.7mb ( 69 obs.)  5.7Msz ( 25 obs.)
 SOUTHERN IRAN                   (353)
      CENTROID, MOMENT TENSOR    (HRV)
      Data Used: GDSN
      L.P.B.: 15S, 38C
      Centroid Location:
      Origin Time        12:59:37.1 0.3
      Lat 25.59N 0.04 Lon  58.86E 0.03
      Dep  15.0 BDY Half-duration  3.5
      Moment Tensor;   Scale 10**17 Nm
        Mrr= 9.06 0.24   Mtt=-4.74 0.33
        Mff=-4.32 0.29   Mrt=-2.90 1.02
        Mrf= 0.85 0.95   Mtf= 4.78 0.25
       Principal Axes:
        T  Val=  9.65   Plg=78   Azm=177
        N        0.05      8        311
        P       -9.70      8         43
      Best Double Couple:Mo=9.7*10**17
       NP1:Strike=142 Dip=37 Slip= 103
       NP2:       305     54       80

BRF      7.55 273 (Pn)  01 24.60  -1.0
BEE      7.61 273 ePn   01 25.40  -1.0
                  (Sn)  02 51.50
QUE      8.23  57 eP    01 33.50  -1.9
MAIO    10.36   2 iPd   02 05.30   0.7
        1.0s    65.00nm        6.0mb
                  eS    03 59.00
RYD     11.25 267 eP    02 12.00  -4.7X
                  iS    04 11.00
TEH     11.75 328 eP    02 25.00   1.3
KER     13.26 312 eP    02 42.00  -1.8
OASM    13.89 274 eP    02 48.70  -3.3X
KMSA    14.41 250 eP    02 54.70  -4.2X
BHD     14.64 303 ePc   02 58.50  -3.4X
                  iPPP  03 22.00
                  i     03 52.50
                  iS    05 29.00
                  iSS   05 39.00
                  i     07 06.00
                  i     08 08.00
SLY     15.06 313 ePc   03 04.00  -3.3X
                  iPP   03 16.00
                  iPPP  03 29.50
                  iS    05 53.00
                  iSS   06 16.50
                  iPcP  07 55.00
                  iLR   08 15.50
POO     15.61 115 iPc   03 14.20  -0.3
        1.0s   362.00nm        5.6mb
                  iS    08 03.00
TAB     16.16 322 iP+   03 23.00   1.3
NDI     16.45  76 iPc   03 23.00  -2.3
        1.0s   340.00nm        5.4mb
MSL     17.07 311 ePd   03 29.50  -3.6X
                  i     03 32.50
                  iPP   03 37.00
                  iPPP  03 44.50
                  eS    06 31.50
                  eSS   06 50.00
                  ePcP  08 12.00
                  eLQ   08 50.50
                  eLR   09 22.50
TAIF    17.67 259 eP    03 41.30   0.5
KSH     19.63  42 Pd    04 02.00  -2.6
      Z  12s     70.00um        3.9Msz
      N  12s     45.70um
                  S     07 36.00
HYB     20.05 111 iPc   04 08.00  -1.0
        1.0s   400.00nm        5.7mb
                  e     04 23.00  73kmX
                  iS    07 46.00
WAJH    20.14 276 eP    04 10.70   0.9
AYN     20.60 283 eP    04 15.30   0.7
ARO     20.89 230 eP    04 18.50   0.7
GBA     21.23 122 P     04 21.00  -0.1
GLH     21.40 294 e(P)  04 24.00   1.3
DSI     21.42 291 ePc   04 24.00   1.1
HOL     21.45 284 eP    04 23.70   0.4
PRNI    21.58 287 eP    04 25.70   1.0
GAZ     21.62 307 iPn   04 27.00   2.0
MBH     21.63 286 iPc   04 25.00  -0.1
ADI     21.84 295 ePc   04 28.20   1.0
KOD     23.45 128 iPc   04 47.00   3.5X
        1.0s   150.00nm        5.5mb
                  eS    09 04.00
AMAN    23.68 271 iPc   04 50.00   4.7X
CSS     23.82 298 eP    04 50.50   3.8X
AGRW    23.85 270 iPd   04 49.50   2.6
AKRL    23.94 270 iPd   04 52.50   4.7X
AGMR    24.11 270 iPd   04 53.00   3.5X
KVT     24.27 314 iP    04 51.90   0.9
HLW     24.71 285 eP+   04 56.00   0.7
                  e     05 09.00  53kmX
                  e     05 15.00
                  ePP   06 27.00
                  e     06 36.00
                  eS    09 24.00
AAE     25.50 232 eP    05 03.00  -0.2
KAS     25.91 313 iPc   05 10.10   3.5X
BBTK    25.91 309 eP    05 08.00   1.3
BCK     26.65 303 iP    05 15.10   1.6
KSL     27.07 299 eP    05 16.90  -0.3
ALT     27.52 306 eP    05 22.00   0.6
KHL     27.72 304 iP    05 23.10  -0.1
GPA     27.81 308 eP    05 25.00   1.0
YER     28.33 301 iP    05 29.00   0.2
GBZT    28.61 309 eP    05 30.00  -1.2
LSA     28.66  75 P     05 33.00   0.7
      N  11s      8.08um
                  S     10 23.00
DST     28.78 306 eP    05 32.20  -0.6
KAP     28.86 297 eP    05 35.20   1.7
ITU     29.03 309 iPc   05 36.00   1.1
WMQ     29.36  45 P     05 38.60   0.6
        4.0s     4.20nm        3.6mb X
      Z  18s    16.90um        5.7Msz
      N  16s    19.10um
                  sS    10 37.00
IZM     29.44 303 eP    05 37.00  -1.7
BNT     29.54 307 iP    05 40.50   0.9
EDC     29.58 307 iP    05 40.50   0.6
SMG     29.59 301 eP    05 41.20   1.2
NPS     30.07 296 eP    05 45.00   0.6
PRK     30.41 304 eP    05 48.00   0.7
APE     30.46 300 eP    05 48.40   0.6
JMB     31.23 310 eP    05 55.00   0.6
VAM     31.24 296 eP    05 56.00   1.4
RDO     31.51 307 eP    05 58.00   1.1
KDZ     31.76 308 eP    06 02.00   2.8
DIM     31.81 309 iP    06 02.00   2.4
RZN     32.27 308 iPd   06 04.00   0.2
BUC     32.30 313 ePc   06 05.30   1.5
BUC1    32.32 313 ePc   06 06.00   2.0
PVL     32.36 311 iPc   06 06.00   1.7
PLD     32.41 309 eP    06 06.00   1 2
VLI     32.44 298 eP    06 04.40  -0.7
VRI     32.52 316 ePc   06 08.00   2.2
NEO     32.72 303 eP    06 08.20   0.6
PLG     32.81 305 eP    06 08.80   0.4
MLR     32.85 315 ePd   06 11.50   2 7
SRS     32.91 306 eP    06 09.50   0.3
PGB     32.93 309 iPd   06 10.00   0.6
MMB     32.95 307 ePd   06 09.00  -0.5
ITM     33.31 299 eP    06 11.70  -1.1
AGG     33.33 302 ePd   06 12.00  -0.9
CMP     33.34 314 ePc   06 17.00   4.1X
KNT     33.42 306 eP    06 14.00   0.3
LIT     33.45 304 ePc   06 13.30  -0.7
KKB     33.49 307 iPc   06 13.00  -1.2
VTS     33.62 309 iPc   06 12.00  -3.5X
VAY     33.70 306 iP    06 16.00  -0.1
        2.0s      0.70nm        3.2mb X
KZN     34.04 304 eP    06 19.20   0.1
NAI     34.49 222 eP    06 26.00   2.7
        2.0s    135.29nm        5.5mb
VLS     34.52 300 eP    06 21.70  -1.5
SKO     34.70 307 eP    06 23.00  -1.6
        1.5s    859.00nm        6.4mb
      Z  17s     15.80um        5.8MszX
      N  17s      7.98um
      E  17s     16.83um
                  i     06 24.50
                  ipP   06 48.00 111kmX
                  i(PP) 07 50.00
                  iS    11 56.00
                  i     12 19.00
                  iSS   14 20.00
                  i(SSS)14 40.00
                  i     15 52.00
                  i     16 42.00
                  LR    26 03.00
KBN     34.82 305 iPd   06 25.30  -0.4
LSK     34.88 304 iPc   06 26.90   0.6
SRN     35.27 303 iP    06 29.70   0.1
BMR     35.31 317 ePd   06 31.00   1.2
PHP     35.34 306 iPc   06 29.30  -0.8
TPE     35.35 304 eP    06 31.00   0.8
KEK     35.39 303 eP    06 29.90  -0.7
BERA    35.48 304 eP    06 30.00  -1.3
TIR     35.68 305 eP    06 32.50  -0.5
BZS     35.70 313 eP    06 33.00  -0.1
VLO     35.77 304 eP    06 33.10  -0.7
BCI     35.78 307 eP    06 34.10   0.3
LACI    35.86 306 eP    06 33.90  -0.7
BEO     36.21 311 eP    06 38.00   0.6
ULC     36.27 306 eP    06 37.00  -1.1
PLE     36.51 309 eP    06 40.00  -0.1
GTA     36.62  58 iPc   06 41.80   0.7
        6.0s     2.40nm        3.2mb X
      Z  18s    18.50um        5.9Msz
      E  14s    12.40um
                  PP    08 06.00
BDV     36.65 307 eP    06 40.40  -0.8
BRY     37.00 308 eP    06 44.00  -0.3
CHG     37.53  93 ePc   06 48.80   0.0
        1.1s     96.52nm        5.5mb
CHTO    37.53  93 iPc   06 48.70  -0.1
        1.3s    126.63nm        5.6mb
BRT     37.56 304 P     06 49.40   0.6
PSZ     37.63 316 eP    06 49.80   0.3
ROI     37.83 302 P     06 54.20   3.0X
TDS     38.02 302 P     06 53.90   1.2
CSI     38.07 302 P     06 53.40   0.2
BDT     38.09  95 eP    06 54.80   1.3
        1.0s     92.50nm        5.5mb
CZI     38.12 301 P     06 54.30   0.8
MMN     38.32 302 P     06 56.40   1.2
KRA     38.44 319 ePd   06 55.80  -0.3
        0.8s    141.00nm        5.8mb
      Z  22s      7 10um        5.4Msz
      N  18s      8.00um
                  i     07 00.00  14km
                  i     07 05.60
MSI     38.45 299 P     06 58.40   2.0
ATN     38.52 299 P     06 57.80   0.8
SRO     38.59 315 eP    06 58.90   1.5
MGR     38.68 303 P     06 58.70   0.4
MEU     38.86 298 P     06 57.90  -2.0
PZI     38.87 298 P     07 01.36   1.4
        0.9s    247.00nm        5.9mb
SGO     38.93 303 P     07 01.40   1.1
LPI     38.97 300 P     07 01.70   0.9
MNO     39.11 299 P     07 03.40   1.3
KMI     39.37  81 Pc    07 04.50   0.0
        6.0s     3.00nm        3.2mb X
      Z  18s     1.50um        4.9Msz
      E  15s     3.80um
                  pP    07 30.00 111kmX
                  sP    07 41 50
```

07d 13h

PP 08 37.50
PPP 09 12.00
iS 13 07.00
sS 13 48.00
LZH 39.48 64 Pc 07 06.50 1.3
Z 20s 16.20um 5.9Msz
N 11s 5.30um
E 11s 4.90um
sP 07 23.00
PP 08 40.00
S 13 05.00
sS 13 28.00
SS 15 46.00
ZST 39.49 315 eP 07 05.10 0.2
CD2 39.51 72 eP 07 05.00 -0.3
Z 18s 18.60um 6.0Msz
E 15s 17.50um
PP 08 42.00
S 13 06.00
ZAG 39.52 311 iPd 07 07.00 1.8
PTJ 39.56 312 eP 07 07.70 2.1
NST 39.66 97 iPc 07 08.90 2.2
SOP 39.67 314 iPd 07 08.00 1.6
DUI 39.73 305 P 07 08.70 1.6
FAI 39.87 298 P 07 12.60 4.4X
MCT 39.92 298 P 07 12.30 3.4X
VBY 39.93 311 eP 07 11.00 2.4
VKA 40.01 315 ePc 07 09.00 -0.2
4.0s 1254.00nm 6.0mb X
Z 18s 6.90um 5.5Msz
iPP 08 42.50
LR 27 36.00
RFI 40.03 304 P 07 11.72 2.3
1.4s 958.50nm 6.3mb
SDI 40.21 305 P 07 10.80 -0.2
USI 40.36 300 P 07 13.90 1.7
LWI 40.44 231 ePc 07 14.50 1.2
LOE 40.49 93 iPc 07 13.60 0.1
RIY 40.49 310 eP 07 15.20 2.0
NNT 40.53 101 iPd 07 14.40 0.6
CEY 40.55 311 eP 07 14.50 0.7
LJU 40.55 311 eP 07 15.00 1.3
e 08 58.00 593kmX
eS 13 09.50
ALP 40.56 306 eP 07 16.03 2.1
AOI 40.67 307 eP 07 15.83 1.1
SSO 40.76 307 e(P) 07 16.89 1.5
KSP 40.89 319 eP 07 16.00 -0.4
1.7s 149.00nm 5.4mb
CIO 40.94 307 eP 07 19.03 2.0
LVI 40.97 299 P 07 16.00 -1.2
VOY 40.98 311 eP 07 18.40 1.0
TRI 41.00 311 e(P) 07 18.50 1.2
e 08 58.00 559kmX
e 13 32.00
e(SP) 16 12.00
e(SS) 19 18.00
e(SSS)22 02.00
eLR 24 28.00
RDP 41.03 305 P 07 18.60 0.8
RMP 41.05 305 P 07 18.20 0.3
ARV 41.13 307 P 07 19.30 0.8
MNS 41.15 306 P 07 18.60 -0.1
ASS 41.27 307 P 07 19.90 0.2
KMR 41.34 314 iP+ 07 19.30 -0.9
i 08 41.90 431kmX
RSM 41.56 308 P 07 23.40 1 5
KBA 41.60 313 ePc 07 21.00 -1.5
1.1s 72.10nm 5.3mb
i 07 24.70 12km
i 07 28.30
PRU 41.66 317 eP 07 23 00 0 3
Z 18s 6.10um 5.5Msz
E 18s 6.10um
e 07 26.30 11km
S 13 54.00
NUR 41.77 335 iP 07 24.00 0.5
1.0s 204.00nm 5.8mb
e 09 08.00 595kmX
e 13 44.00
e 16 44.00
FVI 41.86 312 P 07 24.20 -0.2
VVI 41.97 311 P 07 25.10 -0.3
SFI 41.98 308 P 07 26.90 1 5
KHC 42.00 316 iPd 07 25.10 -0.5
1.3s 78.50nm 5.3mb
Z 20s 5.90um 5.5Msz

N 18s 4.60um
E 20s 4.80um
S 13 44.00
PGD 42.07 308 P 07 27.60 1.2
BRG 42.30 318 iP 07 29.50 1.5
2.1s 130.00nm 5.3mb
eS 14 02.00
e 18 16.00
FIR 42.39 307 iPc 07 30.00 1.3
iPP 09 05.00
iS 13 54.00
CTI 42.51 311 P 07 30.60 0.7
GYA 42.60 78 iPc 07 30.60 -0.3
1.4s 0.10nm 2.4mb X
Z 20s 4.60um 5.4Msz
N 14s 9.30um
E 14s 2.30um
PP 09 10.00
S 13 53.00
SUF 42.73 338 eP 07 31.50 0.2
MME 42.85 308 P 07 33.90 1.0
BDI 42.90 308 P 07 31.80 -1.3
PII 42.90 307 P 07 31.80 -1.2
CLL 43.00 319 iPc 07 34.10 0.4
2.0s 410.00nm 5.8mb
eS 14 12.00
OGA 43.10 312 iPd 07 34.80 -0.1
SAL 43.20 310 P 07 35.60 0.2
GRF 43.63 316 eP 07 39.10 0.2
2.4s 755.00nm 6.1mb
Z 20s 5.00um 5.4Msz
e 09 28.70 638kmX
MOX 43.64 317 eP 07 39.00 0.1
2.0s 123.00nm 5.4mb
Z 13s 7.70um 5.8MszX
N 15s 2.70um
E 13s 4.90um
e 09 30.00 652kmX
OSS 43.66 311 ePd 07 39.00 -0.3
XAN 43.66 67 iPc 07 39.50 0.1
4.0s 2.70nm 3.4mb X
N 16s 12.00um
E 17s 4.00um
PP 09 28.00
S 14 14.00
MDI 43.79 310 P 07 40.00 -0.2
BOB 43.82 309 P 07 40.00 -0.5
VDL 44.08 311 ePd 07 41.80 -1.0
BCAO 44.21 248 iPc 07 42.70 -1.2
1.2s 177.00nm 5.8mb
i 07 53.50 37kmX
i 09 04.20
UPP 44.23 331 iP 07 44.00 0.5
iS 14 18.00
SAX 44.30 312 ePd 07 43.60 -1.1
TMA 44.42 310 ePd 07 45.30 -0.2
PCP 44.43 308 P 07 43.75 -1.7
VAI 44.46 310 P 07 44.10 -1.4
LLS 44.47 311 ePd 07 44.60 -1.3
BTO 44.53 58 P 07 47.50 1.1
N 16s 9.50um
E 15s 8.30um
PP 09 37.00
sS 14 30.00
CKI 44.60 308 P 07 46.40 -0.4
FIN 44.63 308 P 07 44.46 -2.6
IMI 44.82 307 P 07 47.85 -0.8
ROB 44.88 308 P 07 46.21 -2.9
SLE 44.97 313 ePd 07 49.40 -0.3
ORO 44.97 310 P 07 48.10 -1.8
ORX 44.97 310 P 07 47.95 -1.9
ZLA 44.99 312 ePd 07 49.00 -0.9
MMK 45.04 310 ePd 07 50.40 -0.2
TOD 45.14 315 eP 07 49.82 -1.2
SBF 45.14 307 eP 07 49.60 -1.6
ENR 45.19 307 P 07 51.13 -0.5
STV 45.26 307 P 07 51.23 -0.9
FEL 45.31 313 eP 07 49.68 -2.8
DOI 45.35 308 P 07 50.90 -1.9
RSP 45.41 309 P 07 50.82 -2.6
DIX 45.43 310 ePd 07 52.60 -1.1
PZZ 45.45 308 P 07 52.16 -1.6
IPM 45.49 111 ePc 07 53.40 -0.8
1.1s 127 80nm 5.8mb
LSD 45.52 309 P 07 52.36 -2.1
FOUF 45.68 308 e(P) 07 54.62 -0.7
FRF 45.68 306 eP 07 53.80 -1.6

1.1s 78.10nm 5.6mb
HHC 45.71 57 Pc 07 57.00 1.2
5.0s 2.30nm 3.4mb X
Z 16s 10.90um 5.9MszX
N 12s 6.10um
E 12s 2.70um
PP 09 48.00
S 14 39.00
RRL 45.72 308 P 07 54.92 -1.0
EMS 45.76 310 ePd 07 55.00 -1.2
LMR 45.76 306 eP 07 54.90 -1.1
1.0s 36.00nm 5.3mb
BNI 45.81 309 P 07 55.20 -1.4
LRG 45.88 306 eP 07 55.50 -1.4
1.1s 68.30nm 5.5mb
CDF 45.89 313 eP 07 54.60 -2.4
0.9s 13.10nm 4.9mb
SOD 45.95 343 iP 07 57.30 0.1
ABH 45.99 315 eP 07 57.27 -0.5
HFS 46.09 330 eP 07 59.60 1.3
0.9s 130.90nm 5.9mb
Z 17s 4.48um 5.5MszX
LR 29 26.00
BSF 46.11 312 eP 07 56.70 -2.1
1.1s 45.90nm 5.4mb
RUP 46.27 315 eP 07 59.56 -0.4
TIY 46.37 62 Pc 08 00.60 -0.4
1.0s 0.30nm 3.3mb X
Z 18s 11.80um 5.9Msz
E 16s 11.80um
PcP 09 37.50
S 14 51.50
SS 18 04.00
HAU 46.43 313 eP 07 58.80 -2.5
1.0s 33.60nm 5.3mb
WTS 46.90 318 eP 08 06.00 1.1
1.0s 92.00nm 5.8mb
WIT 47.18 319 eP 08 09.50 2.5
ENN 47.19 316 eP 08 07.50 0.4
0.9s 53.00nm 5.6mb
QIZ 47.27 87 P 08 08.40 0.1
N 22s 6.80um
PP 10 01.50
S 15 05.00
CLK 47.48 212 iPd 08 10.00 0.1
NB2 47.59 331 P 08 08.50 -1.8
1.1s 114.90nm 5.9mb
KEV 47.67 346 eP 08 10.00 -0.7
1.1s 153.60nm 6.0mb
Z 16s 15.10um 6.1MszX
e 10 06.00 670kmX
e 18 38.00
LR 31 10.00
LBF 47.89 311 eP 08 10.80 -2.1
DBN 47.91 318 eP 08 16.00 3.2X
SMF 47.95 310 eP 08 11.10 -2.2
LOR 48.00 311 eP 08 11.40 -2.3
1.4s 128.00nm 5.8mb
SSF 48.22 311 eP 08 13.30 -2.0
AVF 48.30 311 eP 08 13.90 -2.0
WHN 48.61 71 Pc 08 19.00 0.5
1.0s 0.30nm 3.3mb X
Z 18s 6.07um 5.6Msz
N 14s 10.60um
E 16s 7.62um
pP 08 26.50 25km
PP 10 16.00
S 15 24.00
BGF 48.62 310 eP 08 16.50 -2.0
MAF 48.79 310 eP 08 18.20 -1.6
1.1s 79.10nm 5.7mb
TCF 49.04 310 eP 08 19.80 -1.9
CAF 49.06 308 eP 08 20.60 -1.3
BJI 49.23 58 eP 08 24.00 0.8
1.0s 91.00nm 5.8mb
Z 22s 15.10um 5.9Msz
N 14s 5.59um
PcP 09 46.50
ePP 10 20.00
eS 15 34.00
eSS 19 08.00
GZH 49.27 81 Pc 08 24.40 0.7
6.0s 3.20nm 3.5mb X
Z 18s 6.80um 5.7Msz
N 14s 2.40um
E 14s 5.20um
PP 10 18.00

				S	15	30.00						i	21	13.00						S	18	45.00	
RJF	49.47	308	eP		08	23.50	-1.5	BUL	54.45	216	iPc+		09	16.90	14.1X	DAV	65.91	94	eP		10	22.00	0.7
TRO	49.57	343	eP		08	28.00	2.7		0.9s		8.40nm					MAT	66.85	59	iPc		10	25.90	-1.1
LPO	49.67	308	eP		08	24.90	-1.7	Z	21s		31.54um			6.4Msz			1.2s		145.31nm			6.0mb	
	0.7s	33.00nm		5.4mb				N	21s		28.67um					Z	20s		3.55um			5.6Msz	
LFF	50.00	308	eP		08	27.70	-1.4	E	21s		27.24um								eS		19	23.00	
BER	50.02	329	eP		08	31.00	2.1	SNY	54.73	56	iPc		09	04.00	-0.4	NANU	72.97	126	eP		11	04.20	-0.2
EBR	50.18	303	iPd		08	31.50	1.1		7.0s		1.80nm			3.2mb	X	GDH	73.54	340	eP		11	07.00	-0.1
			ePP		10	28.00		Z	27s		13.70um			5.9MszX					i		20	46.00	
			iS		15	44.00		N	13s		3.40um								e		25	20.00	
HKC	50.21	82	P		08	31.00	0.1	E	13s		4.30um								i		28	26.00	
TIA	50.21	63	P		08	31.70	0.9				S	16	47.00			MBC	78.08	360	eP		11	32.50	-0.1
	6.5s	2.40nm		3.3mb	X	EHOR	54.86	299	eP		09	05.00	-0.4				0.9s		80.00nm			5.8mb	
Z	21s	12.20um		5.9Msz		ETA	54.90	318	eP		09	07.00	1.4	BAL	78.80	132	eP		11	37.00	-0.3		
N	17s	13.00um				EPRU	54.96	298	eP		09	05.50	-0.8	KNA	79.50	113	eP		11	41.00	-0.4		
			S	15	45.50			ECP	54.98	317	eP		09	05.60	-0.5		1.0s		98.00nm			5.8mb	
EROO	50.24	303	eP		08	31.20	0.2		0.9s		209.00nm			6.2mb		MTN	80.03	110	eP		11	44.00	-0.3
EPF	50.26	305	eP		08	30.10	-1.0	DLE	55.13	318	eP		09	06.60	-0.6	GUMO	80.55	79	eP		11	47.00	-0.1
	0.8s	16.60nm		5.1mb			1.0s		97.00nm			5.8mb							eS		21	54.00	
MFF	50.69	310	eP		08	31.80	-2.4	EJIF	55.22	298	eP		09	08.80	0.7	NWAO	80.60	134	eP		11	45.00	-2.0
	1.2s	89.20nm		5.6mb		EPLA	55.23	302	e(P)		09	08.00	-0.2	FRB	81.64	339	eP		11	51.00	-0.9		
LDF	50.79	313	eP		08	32.40	-2.6	NKM	55.33	296	iPc		09	03.00	-5.9X		1.0s		74.00nm			5.7mb	
	0.8s	64.40nm		5.6mb		IFR	55.42	294	iP		09	10.00	0.2	WARB	83.30	123	eP		12	01.00	-0.2		
FLN	51.04	313	eP		08	34.30	-2.6	EMON	55.84	306	eP		09	14.00	1.5	IMA	84.98	13	eP		12	08.80	-0.4
	0.8s	69.80nm		5.6mb		ANP	55.93	76	eP+		09	16.00	2.5	INK	85.61	5	eP		12	12.00	0.0		
KRI	51.20	217	iPc		08	55.40	16.9X				eS	17	10.00				0.8s		36.00nm			5.6mb	
GRR	51.26	312	eP		08	36.30	-2.3	CN2	55.94	53	Pd		09	13.00	-0.2	WB2	86.19	114	iPc		12	15.70	-0.1
	1.0s	81.60nm		5.6mb			5.0s		3.00nm			3.6mb	X	FBA	87.12	11	eP		12	19.10	-0.5		
ECHE	51.36	301	eP		08	41.00	1.5	Z	22s		13.70um			6.0Msz		TTA	87.20	15	eP		12	18.70	-1.4
LPF	51.37	312	eP		08	36.90	-2.5	N	14s		3.20um					ASPA	87.64	118	iPc		12	23.10	0.3
	1.0s	112.00nm		5.7mb		E	14s		4.90um								1.3s		187.00nm			6.2mb	
ETOR	52.11	303	eP		08	45.50	0.2				sP	09	24.80			SVW	88.86	16	eP		12	27.10	-1.0
NJ2	52.17	68	Pc		08	40.70	-5.0X				PcS	14	08.00			PMR	89.89	13	eP		12	33.80	0.9
	1.2s	0.10nm		2.6mb	X						S	17	02.00				0.9s		39.90nm			5.7mb	
Z	20s	9.20um		5.8Msz							ScS	19	02.00			TOA	89.99	12	eP		12	33.50	0.0
N	13s	7.60um				EVAL	56.07	299	eP		09	14.30	0.1	OIS	90.83	112	e(P)		12	35.00	-2.8		
E	11s	1.90um				STS	56.78	306	eP		09	19.50	0.2	PMG	92.43	99	eP		12	45.50	0.2		
			S	16	12.00			KBS	56.96	350	iP		09	20.00	-0.1	MAW	93.28	179	eP		12	49.00	1.0
ECRI	52.36	305	eP		08	48.00	0.9	AVE	57.34	294	iP		09	24.00	0.7	CTA	96.22	109	iPc		13	03.10	0.5
ENIJ	52.56	298	eP		08	49.00	0.4				i		09	38.00	51kmX		1.1s		40.51nm			5.8mb	
EVIA	52.62	300	eP		08	49.80	0.7				i		09	53.00					i		25	48.00	
TAF	52.99	295	iP		08	52.00	0.1				i		10	05.50		FFC	98.03	349	ePd		13	11.30	1.0
			i		08	56.00	13km	VAL	57.37	317	eP		09	23.00	-0.2		0.9s		16.00nm			5.6mb	
ESY	53.09	322	eP		08	50.60	-1.7				S		17	22.00		EDM	100.91	355	ePdiff		13	12.50	-10.7X
EDR	53.20	323	eP		08	52.60	-0.4	TIO	57.71	292	iP		09	26.40	0.3		0.5s		22.00nm				
EKA	53.32	321	Pc		08	53.20	-0.7	BAG	57.79	86	eP		09	27.00	0.1	SES	103.51	353	ePdiff		13	36.00	1.2
	1.0s	62.10nm		5.5mb			1.0s		200.00nm			6.1mb		PNT	105.10	359	ePKP		18	05.00	8.5X		
ESK	53.35	321	eP		08	54.00	-0.1				eS	17	30.00			RSSD	108.59	347	PKP		18	04.00	0.5
	1.0s	60.00nm		5.5mb		KKM	57.99	99	ePc		09	26.80	-1.5	BW06	110.83	351	PKP		18	07.40	-0.4		
EDU	53.40	322	ePc		08	53.50	-1.0		1.1s		100.20nm			5.8mb		WDC	113.83	1	ePKP		18	13.40	0.1
	0.9s	133.00nm		5.9mb		JNW	58.40	339	iP		09	35.30	5.1X						e		19	12.40	
OZH	53.43	77	Pc		08	55.50	0.4	MDJ	58.82	52	eP		09	33.50	0.0				ePKKP		28	49.50	
	4.0s	1.80nm		3.4mb	X	Z	20s		11.50um			6.0Msz		ACO	114.39	341	ePKPc		18	14.50	-0.1		
Z	16s	1.50um		5.1MszX		E	14s		6.00um					ORV	114.87	0	ePKP		18	16.80	1.4		
N	16s	2.40um									epP	09	39.00	18km					eP'P'		36	00.80	
			sS	16	31.50						esP	09	46.00			UYO	115.14	336	ePKP		18	16.00	0.0
DL2	53.51	60	Pc		08	57.00	1.5				S	17	30.00			KVN	115.31	357	PKP		18	16.50	0.0
	6.0s	2.10nm		3.3mb	X						sS	17	46.00			SPA	115.77	180	ePKP		18	16.40	0.0
Z	20s	9.40um		5.8Msz							SS	21	24.00				0.9s		16.82nm				
N	18s	6.30um				QCP	58.87	88	eP		09	31.90	-2.4	MEO	115.99	340	e(PKP)		18	17.50	-0.2		
E	14s	7.20um				SLR	59.28	212	iPc+		09	32.00	-5.1X	TNP	116.24	357	PKP		18	19.60	1.3		
			S	16	32.00				1.0s		23.00nm			5.3mb			0.9s		3.19nm				
AFC	53.58	298	eP		08	56.00	-0.3	Z	19s		21.53um			6.3Msz		CMB	116.38	359	ePKP		18	19.10	0.8
EBAN	53.67	300	eP		08	56.00	-0.7	SHGH	59.61	261	eP		09	39.00	-0.5				e		19	28.10	
TOL	53.70	302	iP+		08	57.00	0.1	TEGH	59.71	261	eP		09	40.00	-0.1				eP'P'		36	53.00	
			ePP		11	06.00		KOGH	59.72	262	eP		09	40.00	-0.3	ARN	117.07	0	PKP		18	20.00	0.3
			ePcS		13	56.00		KUK	59.79	262	eP		09	40.00	-0.7	FRI	117.42	359	ePKP		18	21.00	0.8
			iS		16	33.00		LEGH	59.86	261	eP		09	41 00	-0.2				e		19	35.00	
			eScS		18	32.00		WEGH	60.02	261	eP		09	43.00	0.8	ALQ	117.92	346	PKP		18	22.20	0.6
			iSS		20	25.00		KSR	60.07	214	eP		09	41.20	-1.3	CLC	118.52	357	ePKP		18	24.00	1.5
GUD	53.71	303	eP		08	57.00	-0.2	AKU	61.38	333	iP		09	51.70	1.0				e		19	39.00	
ASMO	53.73	299	iPd		08	55.50	-1.8		1.1s		141.77nm			6.0mb		GSC	118.98	356	ePKP		18	26.00	2.6X
APHE	53.73	298	iPc		08	57.40	0.0	SEK	61.78	211	iPc		09	53.50	-0.6				e		19	45.00	
ACHM	53.83	298	iPc		08	58.00	0.0		0.9s		33.61nm			5.5mb		SBB	119.65	357	ePKP		18	26.00	1.3
ATEJ	54.00	298	iPc		08	58.00	-1.3	DAG	62.16	345	iP+		09	55.00	-0.9	TPC	120.12	355	ePKP		18	27.00	1.4
ALOJ	54.05	298	iPd		08	58.00	-1.6	Z	20s		4.54um			5.6Msz					e		19	50.00	
SSE	54.30	69	iP+		09	01.00	-0.4	REY	63.05	331	eP		10	04.20	2.3	RVR	120.32	356	ePKP		18	30.00	4.1X
	1.2s	135.00nm		5.9mb		LKO	63.05	268	Pc		10	01.88	-0.9	PEC	120.41	356	PKP		18	27.30	1.2		
Z	20s	6.50um		5.7Msz			0.9s		97.50nm			6.0mb		PLM	120.93	356	ePKP		18	32.00	4.7X		
N	16s	5.40um				BLF	63.12	212	iPd		10	02.50	-0.4	BAR	121.58	356	ePKP		18	30.00	1.6		
E	16s	4.90um					1.0s		60.00nm			5.7mb		UPA	126.80	305	ePKPc		18	39.20	0.3		
			sP	09	45.00			KIC	63.62	264	P		10	04.94	-1.5		1.1s		30.38nm				
			ePP	11	08.00				0.9s		82.00nm			5.9mb					i		20	34.00	
			PPP	12	26.00			TIC	63.75	265	P		10	05.76	-1.6	CCH	128.59	268	PKP		18	44.50	1.9
			S	16	42.00				0.9s		61.00nm			5.8mb		YJA	129.46	262	ePKP		18	45.00	0.6
			sS	17	37.00			LIC	63.94	264	P		10	07.04	-1.5	ZOBO	129.99	270	PKP		18	46.00	0.4
			SS	20	30.00				1.0s		85.00nm			5.8mb			1.1s		33.35nm				

07d 13h

		LR	02 08.00			
CNCB	130.05 269	ePKP	18 45.00	-0.7		
		i	18 47.00			
LPB	130.06 270	PKP	18 47.00	1.4		
		PKS	22 20.00			
NNA	136.18 280	ePKP	18 59.00	2.2X		
	0.9s 22.69nm					
	S.D. = 1.2 on 365 of 395 obs.					

DEC 07, 1989 13h 15m 57.59± 0.46s
41.278 N ± 4.3km 20.052 E ± 5.0km
DEPTH = 10.0km (geophysicist)
ALBANIA (391)
ML 3.2 (SKO), 2.8 (TTG). MD 3.3 (ATH).

TIR	0.16 296	iPgc	16 00.50	-0.7	
LACI	0.44 324	iPgc	16 05.50	-1.1	
PHP	0.50 35	iPgd	16 06.30	-1.5	
BERA	0.58 188	ePg	16 07.00	-2.3	
OHR	0.59 106	iPgc	16 07.80	-1.7	
		iSg	16 17.40		
PUK	0.77 351	iPg	16 12.00	-0.6	
KKS	0.84 19	ePg	16 19.50	5.7X	
KBN	0.87 138	iPgd	16 12.10	-2.2	
ULC	0.91 319	ePg	16 14.00	-1.0	
		eSg	16 29.80		
VLO	0.91 208	ePg	16 15.50	0.5	
BCI	1.09 1	ePg	16 22.60	4.6X	
LSK	1.20 160	ePg	16 18.00	-2.0	
SKO	1.25 56	ePg	16 21.50	0.7	
		iSg	16 37.20		
TTG	1.29 333	ePg	16 21.50	0.0	
		eSg	16 41.70		
PVY	1.32 357	ePg	16 22.00	0.0	
		eSg	16 42.50		
BDV	1.36 318	ePg	16 23.00	0.4	
		eSg	16 45.00		
SRN	1.40 182	ePn	16 24.20	1.1	
KEK	1.57 187	ePn	16 27.90	2.3	
		eSn	16 51.70		
IVA	1.60 356	ePn	16 29.20	3.2X	
		eSn	16 53.20		
KZN	1.63 126	ePn	16 28.00	1.6	
HCY	1.65 316	ePn	16 27.50	0.8	
		eSn	16 51.70		
VAY	1.90 88	ePn	16 31.70	1.4	
BRY	1.97 326	ePn	16 33.50	2.0	
		eSn	17 03.80		
KNT	2.15 92	eP	16 35.00	1.0	
LIT	2.19 122	eP	16 34.70	0.0	
KK8	2.35 74	eP	16 33.00	-3.9X	
VTS	2.70 60	iPd	16 45.00	3.1X	
MMB	2.78 82	ePc	16 44.00	1.0	
AGG	2.85 141	eP	16 45.00	1.0	
RZN	3.53 82	eP	16 53.00	-0.7	
	S.D. = 1.4 on 25 of 30 obs.				

* DEC 07, 1989 13h 24m 42.37± 1.26s
18.272 N ± 6.7km 146.505 E ±12.1km
DEPTH = 73.4 ± 11.8 km
4.8mb (12 obs.)
MARIANA ISLANDS (216)

PJG	4.92 199	eP	25 56.10	0.7	
GUMO	4.92 199	eP	25 56.10	0.7	
	0.5s 93.88nm				
GUA	4.95 198	eP	25 55.30	-0.6	
	0.5s 118.31nm				
		eS	26 53.20		
MAT	19.62 340	(P)	29 06.00	-1.6	
	0.9s 33.61nm		4.6mb		
PMG	27.51 179	eP	30 23.00	-1.0	
OIS	39.18 190	eP	32 04.00	-0.9	
WB2	39.81 198	eP	32 08.70	-1.4	
ASPA	43.46 197	eP	32 39.30	-0.7	
	0.6s 13.00nm		4.9mb		
DZM	44.59 153	iPc	32 49.00	-0.2	
CHTO	44.99 279	eP	32 54.30	1.9	
	1.0s 1.75nm		3.8mb		
WARB	48.22 204	iPc	33 18.30	0.6	
	0.3s 5.00nm		4.9mb		
NANU	50.64 218	iPd	33 36.90	0.7	
	0.5s 13.00nm		5.2mb		
BWA	52.43 178	eP	33 49.50	-0.2	
CAN	53.35 177	eP	33 57.00	0.7	
FBA	63.34 26	P	35 05.00	-0.7	
	0.8s 4.14nm		4.5mb		
INK	69.46 23	eP	35 44.00	-0.4	
MBC	73.37 14	eP	36 08.00	0.3	
	1.0s 8.00nm		4.6mb		
ARN	80.66 54	P	36 49.00	0.0	
EDM	81.47 37	ePd	36 53.80	0.9	
KVN	82.76 51	P	37 00.30	0.2	
TNP	83.72 52	P	37 05.50	0.5	
	0.8s 2.45nm		4.3mb		
SES	83.78 39	ePc	37 05.20	0.3	
SOD	84.02 340	iP	37 06.20	0.5	
SUF	86.83 337	iP	37 18.70	-1.0	
	0.6s 6.60nm		4.9mb		
FFC	87.04 33	iPc	37 21.80	1.0	
	0.7s 9.00nm		5.0mb		
MSU	87.31 50	P	37 24.00	1.2	
GOL	91.71 47	P	37 44.50	1.0	
ALQ	92.93 52	P	37 47.00	-2.1	
HFS	93.06 338	eP	37 47.90	-1.0	
	0.4s 1.80nm		4.9mb		
NB2	93.24 340	P	37 49.60	-0.2	
	0.7s 2.60nm		4.8mb		
ZOBO	146.90 92	PKP	44 18.50	1.0	
LPB	146.96 92	ePKP	44 21.00	3.6X	
CNCB	147.11 93	ePKP	44 20.00	2.2X	
	S.D. = 1.0 on 31 of 33 obs.				

DEC 07, 1989 13h 38m 44.85± 0.08s
6.436 S ± 2.2km 146.383 E ± 2.5km
DEPTH = 104.4km (geophysicist)
6.0mb (48 obs.)
EAST PAPUA NEW GUINEA REGION (207)
mb 6 4 (PAS). Mo=6.0*10**18 Nm (PPT). Felt at Port Moresby.
Depth from broadband displacement seismograms.
FAULT PLANE SOLUTION: P-Waves
NP1:Strike=329 Dip=83 Slip= 8
NP2: 238 82 173
Principal Axes:
T Plg=11 Azm=194
P 1 103
Comment: The focal mechanism is moderately well controlled and corresponds to strike-slip faulting with a small reverse component. The preferred fault plane is not determined.
RADIATED ENERGY
No. of sta: 5 Focal mech. F
Energy 6.6±2.3*10**14 Nm
MOMENT TENSOR SOLUTION
Dep 111 No. of sta: 8
Moment Tensor; Scale 10**19 Nm
Mrr= 0.15 Mtt= 3.87
Mff=-4.02 Mrt=-0.04
Mrf=-0.36 Mtf=-1.61
Principal axes:
T Val= 4.18 Plg= 0 Azm= 11
N 0.18 85 107
P -4.36 5 281
Best Double Couple:Mo=4.3*10**19
NP1:Strike= 56 Dip=86 Slip=-177
NP2: 326 87 -4
CENTROID, MOMENT TENSOR (HRV)
Data Used: GDSN
L.P.B.: 17S, 45C M.W.: 11S, 26C
Centroid Location:
Origin Time 13:38:54.4 0.2
Lat 6.41S 0.02 Lon 146.48E 0.02
Dep 106.8 1 3 Half-duration 7.0
Moment Tensor; Scale 10**18 Nm
Mrr=-0 35 0 09 Mtt= 4.90 0.08
Mff=-4.55 0.08 Mrt=-2.92 0.07
Mrf= 2.80 0.07 Mtf=-1.38 0.09
Principal Axes.
T Val= 6.73 Plg=26 Azm=194
N -0.78 51 321
P -5.95 27 90
Best Double Couple:Mo=6.3*10**18
NP1:Strike=232 Dip=51 Slip=-180
NP2: 142 90 -39

LAT	0.65 109	iPd	39 04 10	1.6	
MNDI	2 72 276	eP	39 32.00	4.1X	
		eS	40 30.00		
PMG	3.05 166	iPc+	39 32.40	0.2	
RAB	6.18 69	iPc+	40 14.50	-0.7	
CTA	13.57 181	iPc+	41 55.00	0.7	
		iS	44 25.00		
HNR	13.76 103	iPd-	41 56.80	0.1	
		iS	44 43.00		
OIS	15.50 204	iPc	42 18.10	-0.9	
MTN	16.32 246	eP	42 29.50	0.2	
WB2	17.80 220	iPc	42 44.90	-2.6	
KNA	19.59 240	eP	43 05.00	-2.4	
	0.3s 293.00nm		6.1mb		
		eS	46 39.00		
GUA	19.90 356	eP	43 10.30	-0.3	
	0.8s 1343.28nm		6.3mb		
		eS	46 49.00		
GUMO	19.95 356	eP	43 10.30	-0.8	
	0.9s 1534.53nm		6.3mb		
		pP	43 43.50		
PJG	19.95 356	eP	43 10.80	-0.3	
RMO	20.07 174	iPc	43 11.90	-0.4	
		e	45 20.00		
		e	48 07.00		
OLP	20.14 186	iPc	43 12.80	-0.2	
ASPA	20.92 214	iPc	43 19.70	-1.2	
	0.6s 1365.00nm		6.5mb		
Z	19s 119.78um		6.3Msz		
		eS	47 09.50		
		LR	52 32.90		
BRS	21.71 164	iPd-	43 28.10	-0.7	
	0.5s 71.50nm		5.3mb		
		i	43 41.00		
		i(pP)	43 55.00	136kmX	
		iPP	44 04.00		
		e(sP)	44 29.00		
		iS	47 08.00		
		i	47 14.00		
		i	47 20.00		
		iSS	48 04.00		
		iScP	50 55.50		
		e(ScS)	54 14.00		
		i	54 41.00		
PVC	24.17 120	iPd	43 53.20	0.4	
COO	24.57 169	iPc	43 57.10	0.6	
DAV	24.73 303	eP	43 58.00	-0.1	
DZM	24.84 131	iPc	43 58.30	-0.9	
		iS	48 11.00		
		ScP	51 01.40		
CMS	24.93 181	iPc	43 59.40	-0.4	
STK	25.71 189	iPc	44 06.40	-0.6	
		e	44 56.00		
WARB	27.21 222	eP	44 21.20	0.4	
RIV	27.61 171	e(P)	44 34.00	9.7X	
Z	18s 39.11um		6.0Msz		
BWA	27.92 176	iPc	44 26.60	-0.5	
CAN	28.85 176	eP	44 34.50	-1.0	
CNB	28.87 175	iPc	44 35.70	-0.1	
	0.6s 177.00nm		5.9mb		
		e	45 19.00		
		e	45 31.00		
ADE	29.26 193	iPc	44 38.30	-1.0	
	0.8s 425.37nm		6.2mb		
MBL	29.57 238	iPc	44 41.80	-0.3	
	0.4s 9.00nm		4.8mb X		
TSM	30.18 290	ePd	44 49.90	2.4	
	1.1s 1006.40nm		6.5mb		
BFD	30.80 186	iPc	44 51.90	-0.8	
	0.7s 302.00nm		6.1mb		
		e	45 18.00		
TOO	31.00 181	iPc	44 54.20	-0.3	
	0.9s 357.00nm		6.1mb		
		e	45 21.00		
		e	45 35.00		
KKM	32.56 292	ePd	45 09.20	0.7	
	1.0s 374.00nm		6.1mb		
QCP	32.68 310	eP	45 13.00	3.6X	
SGE	32.72 113	ePc	45 10.00	0.1	
MEKA	33.25 230	eP	45 14.20	-0.1	
NANU	33.79 238	iPc	45 19.00	0.1	
	0.4s 67.00nm		5.8mb		
COOL	33.93 221	iPc	45 19.10	-1.0	
BAG	34.16 312	eP	45 22.00	-0.4	
	1.4s 1209.30nm		6.5mb		
		eS	50 35.00		
		e	55 30.00		
TAU	36.33 179	iPc	45 40.04	-0.2	
		iPP	47 08.05		
MRWA	36.54 228	eP	45 42.30	0.1	
	0.2s 55.00nm		6.1mb		

KLB 36.63 223 iPc 45 42.70 -0.2
BAL 36.79 225 iPc 45 44.00 -0.3
NWAO 37.80 222 iPc 45 52.50 -0.2
MUN 37.93 224 iPc 45 54.80 1.0
RKG 38.65 221 iPc 46 03.10 3.3X
0.5s 531.00nm 6.6mb
KRP 41.02 144 P 46 21.00 1.8
S 52 25.00
QZH 41.29 320 Pd 46 22.00 0.4
6.0s 2.30nm 3.2mb X
Z 20s 5.60um 5.4Msz
E 14s 5.10um
sP 47 00.00
S 52 28.00
sS 53 07.00
ScS 56 14.00
AFI 41.79 104 iPd 46 28.00 2.0
S 52 36.00
TAZ 41.79 144 P 46 27.70 2.1
HATZ 41.99 145 P 46 28.50 1.2
H8Z 42.47 142 P 46 32.30 1.2
0.5s 416.00nm 6.5mb
MSZ 42.47 157 P 46 31.10 0.0
HKC 42.55 313 iP 46 35.30 3.3X
S 52 53.00
TCW 42.63 149 P 46 32.90 0.5
KIW 42.71 148 P 46 33.90 0.8
MNG 42.84 147 P 46 34.40 0.2
0.4s 62.00nm 5.8mb
MRW 42.87 148 P 46 34.20 -0.1
MCO 42.89 312 eP 46 37.00 2.3
WEL 42.94 148 P 46 35.70 0.8
CAW 42.97 148 eP 46 35.30 0.1
WDW 43.04 148 P 46 35.60 -0.1
KHZ 43.15 150 P 46 36.00 -0.5
1.4s 29.00nm 4.9mb X
MTW 43.24 148 P 46 37.10 -0.2
PGZ 43.28 146 P 46 37.70 0.1
MOW 43.29 148 P 46 37.40 -0.4
MHZ 43.33 156 P 46 37.80 -0.4
BLW 43.37 148 P 46 38.40 0.0
MAJO 43.43 350 ePd 46 38.12 -0.8
MAT 43.43 350 (P) 46 38.00 -1.0
1.5s 763.89nm 6.3mb
Z 20s 5.32um 5.4Msz
eS 52 54.00
GZH 43.64 313 Pc 46 43.00 2.2
7.0s 3.00nm 3.2mb X
Z 22s 5.30um 5.4Msz
N 19s 25.80um
E 17s 15.30um
pP 47 09.00 112kmX
sP 47 17.50
S 53 06.00
KGM 43.80 280 ePc 46 43.20 0.9
OIZ 44.01 306 iPd 46 45.20 1.3
N 21s 8.00um
E 19s 5.70um
pP 47 10.50 109kmX
PP 48 29.00
S 53 08.00
SS 56 14.50
SSE 44.42 329 P 46 47.50 0.5
1.4s 280.00nm 5.9mb
Z 20s 4.20um 5.4Msz
N 12s 4.80um
E 14s 5.30um
pP 47 05.60 73kmX
sP 47 20.00
PP 49 12.00
S 53 12.00
sS 53 52.00
eSS 56 16.00
ScS 56 33.00
KLM 45.66 281 ePd 46 59.10 2.0
e 48 07.50
NJ2 46.41 327 Pd 47 03.00 0.3
7.0s 2.20nm 3.1mb X
ScP 52 20.80
S 53 44.00
sS 54 28.00
IPM 46.58 282 ePc 47 05.10 0.7
0.9s 232.10nm 6.0mb
e 47 33.90
e 52 24.00
WHN 47.89 322 Pd 47 15.60 1.2
8.0s 1.91nm 3.0mb X

sP 47 52.00
sS 54 48.00
MCQ 48.99 170 iPd 47 23.00 0.5
e 47 50.00
NNT 50.07 292 iPc 47 33.00 1.7
LOE 50.07 299 iPd 47 32.50 1.2
GYA 50.51 312 iPd 47 37.00 2.3
4.0s 2.10nm 3.5mb X
Z 22s 3.30um 5.3Msz
N 17s 6.90um
E 17s 3.90um
pP 48 04.60 117kmX
sP 48 14.00
PP 49 30.00
TIA 50.53 329 eP 47 32.80 -1.7
9.0s 2.10nm 3.1mb X
DL2 50.62 335 Pd 47 35.00 -0.1
Z 22s 5.90um 5.6Msz
N 21s 18.70um
E 22s 18.10um
NST 50.79 296 iPd 47 39.00 2.2
e 48 08.90
SNY 52.36 339 Pc 47 46.80 -1.4
Z 18s 13.60um 6.0Msz
N 16s 4.80um
E 18s 7.40um
pP 48 15.00 119kmX
BDT 52.39 297 eP 47 50.20 1.4
0.9s 260.30nm 6.2mb
KMI 52.78 308 iPd 47 53.84 2.0
Z 28s 9.60um 5.7MszX
E 15s 3.80um
pP 48 16.00 90kmX
esP 48 31.41
eS 55 16.43
esS 56 00.30
SS 58 59.00
MDJ 53.02 345 eP 47 50.50 -2.5
Z 25s 13.30um 5.9MszX
N 13s 2.50um
E 18s 5.50um
CHG 53.06 299 ePd 47 55.10 1.3
1.0s 262.50nm 6.2mb
eS 55 20.00
CN2 53.47 341 eP 47 55.60 -0.7
5.0s 1.40nm 3.2mb X
Z 20s 7.90um 5.8Msz
N 15s 2.90um
E 15s 7.50um
pP 48 25.00 125kmX
XAN 53.63 321 Pd 47 57.00 -0.7
1.1s 0.30nm 3.2mb X
N 18s 13.40um
E 18s 13.40um
BJI 53.98 331 ePd 47 59.45 -0.7
1.5s 260.00nm 6.0mb
Z 24s 8.90um 5.7MszX
E 17s 9.90um
esP 48 34.87
eS 55 40.00
esS 56 19.00
RAR 54.05 111 P 48 02.00 1.0
S 55 32.00
TIY 54.13 327 Pd 47 59.50 -1.9
Z 11s 6.92um 6.0MszX
E 16s 12.00um
CD2 55.14 315 iPd 48 08.80 -0.1
6.0s 2.40nm 3.4mb X
pP 48 33.50 101kmX
sP 48 46.00
S 55 46.00
sS 56 28.00
HHC 56.88 329 Pd 48 20.00 -1.2
Z 18s 10.50um 6.0Msz
N 15s 9.30um
E 16s 7.50um
S 56 04.00
BTO 57.51 328 iPd 48 25.50 -0.1
N 18s 5.50um
E 15s 4.00um
sP 49 02.00
sS 57 03.50
LZH 58.14 320 iPd 48 30.64 0.4
8.0s 2618.00nm 6.3mb X
Z 22s 5.20um 5.6Msz
N 12s 2.80um
E 20s 8.00um

i 48 49.00
pP 48 57.00 108kmX
esPc 49 07.22
eS 56 27.28
esS 57 07.01
HIA 60.15 340 iPd 48 42.88 -0.8
esP 49 18.31
eS 56 47.78
isS 57 32.81
eSS 01 25.86
DRV 60.29 183 eP 48 44.00 -0.3
HON 61.11 61 P 48 50.00 -0.6
Z 20s 4.79um 5.6Msz
OPA 61.24 61 P 48 51.00 -0.5
GTA 62.68 321 iPd 49 00.80 -0.2
1.0s 0.10nm 2.7mb X
Z 20s 3.60um 5.5Msz
E 15s 2.90um
S 57 25.00
AFR 63.17 106 iP 49 04.30 0.0
0.7s 70.00nm 5.7mb
ipP 49 35.50 129kmX
PAE 63.36 106 iP 49 05.50 -0.1
0.7s 55.00nm 5.6mb
ipP 49 36.90 129kmX
PPT 63.36 106 iP 49 05.60 0.0
0.7s 105.00nm 5.9mb
ipP 49 36.90 129kmX
SMY 63.47 18 eP 49 06.40 0.7
PPN 63.50 106 iP 49 06.50 0.0
0.7s 60.00nm 5.6mb
ipP 49 37.80 129kmX
TVO 63.68 107 iP 49 07.90 0.1
0.7s 110.00nm 5.9mb
ipP 49 39.20 129kmX
TBI 63.77 113 iP 49 08.50 0.3
1.0s 220.00nm 6.0mb
ipP 49 39.40 127kmX
LSA 64.01 307 iPd 49 11.70 1.4
3.0s 2.30nm 3.6mb X
sP 49 54.00
iS 57 39.50
isS 58 30.00
PMO 64.94 103 iP 49 17.20 1.3
0.7s 55.00nm 5.6mb
ipP 49 46.80 121kmX
VAH 65.20 104 iP 49 18.40 0.9
0.7s 45.00nm 5.5mb
ipP 49 47.90 120kmX
TPT 65.21 103 iP 49 18.60 1.0
0.7s 60.00nm 5.6mb
ipP 49 48.20 120kmX
RUV 65.44 104 iP 49 20.00 0.9
0.7s 45.00nm 5.5mb
ipP 49 49.60 120kmX
ADK 66.11 24 eP 49 23.20 0.5
1.1s 289.40nm 6.1mb
KOD 70.60 283 eP 49 53.10 1.5
HYB 71.04 291 iPc 49 54.00 0.1
1.0s 250.00nm 6.0mb
e 50 22.00
eS 59 02.00
GBA 71.27 287 P 49 56.00 0.7
SBA 72.17 176 Pc+ 50 00.80 1.2
WMO 72.72 320 iPd 50 04.26 0.7
8.0s 3.00nm 3.2mb X
Z 28s 4.70um 5.6MszX
epPd 50 31.58 107kmX
esP 50 41.18
eS 59 22.30
ScS 59 50.00
esS 00 00.21
NDI 75.08 302 iPd 50 17.50 0.1
0.8s 328.36nm 6.2mb
eS 59 44.00
SDN 75.56 28 eP 50 18.90 -0.6
POO 75.65 291 iPc 50 21.80 1.0
1.1s 265.82nm 6.0mb
iS 59 54.00
RKT 77.08 112 iP 50 28.80 0.2
1.2s 185.00nm 5.8mb
ipP 51 28.80 254kmX
KSH 79.19 312 Pc 50 42.00 1.9
E 10s 2.50um
sP 51 22.00
sS 01 26.00
KDC 80.60 28 eP 50 46.60 -0.4

07d 13h

SVW	80.88	25	ePd	50	49.00	0.5		Z	20s	2.13um		5.7Msz					i	57	59.40		
MAW	81.61	203	eP	50	52.00	-0.1	ALQ	107.72	55	iPKPd	57	02.40	0.3	KHC	121.84	325	iPKPc	57	28.50	0.2	
	1.0s	420.00nm			6.2mb			1.0s	10.00nm						1.0s	42.50nm					
TTA	81.69	23	ePd	50	52.50	-0.2		Z	20s	1.86um		5.6Msz			Z	18s	37.00um			7.1MszX	
SPA	83.61	180	eP	51	02.40	-0.3	GOL	108.11	50	Pdiff	52	56.50	0.3		N	18s	1.60um				
	1.2s	139.44nm			5.8mb		SUF	109.23	335	iPKP	57	03.70	-0.1		E	18s	2.70um				
	Z 20s	6.67um			6.0Msz			0.4s	5.20nm								e	58	01.50		
PMR	83.86	26	ePd	51	02.70	-1.1	NUR	110.82	333	iPKP	57	06.80	0.0	PTJ	121.99	321	ePKP	57	28.40	-0.3	
	0.7s	257.10nm			6.3mb			0.7s	22.70nm					ZAG	122.01	321	iPKP	57	30.00	1.4	
OUE	84.14	301	eP	51	08.00	1.9				i	57	12.20		KMR	122.06	324	iPKP-	57	29.00	0.3	
IMA	84.18	21	ePd	51	05.40	-0.1	KAS	111.16	312	ePKP	57	10.00	1.8				ipPKP	58	03.20		
	0.8s	171.20nm			6.0mb		SEK	111.65	236	ePKP	57	11.50	1.9				ipPP	59	42.50		
TOA	85.35	26	eP	51	11.50	0.2		1.0s	15.00nm					MOX	122.10	328	ePKPc	57	29.00	0.3	
FBA	85.82	23	ePd	51	11.80	-1.7	MBH	111.82	299	ePKP	57	16.00	6.3X		1.1s	44.00nm					
DWY	88.90	25	Pd	51	28.30	-0.1	SLR	111.97	239	iPKPc	57	11.30	1.0				e	58	02.00		
SIT	89.03	32	eP	51	30.10	1.1				i	57	46.00					e	59	36.00		
MAIO	91.26	306	eP	51	41.00	1.0	BBTK	112.19	310	ePKP	57	11.00	0.7	HOF	122.15	327	iPKPc	57	28.50	-0.3	
INK	92.28	22	eP	51	43.00	-0.9	PRY	112.26	238	ePKP	57	10.70	-0.1		1.0s	46.00nm					
	0.8s	117.00nm			6.2mb		BLF	112.55	235	ePKP	57	19.00	7.7X	VBY	122.60	321	ePKPd	57	29.90	0.1	
		pP		52	13.00	114kmX	KSR	113.10	239	ePKP	57	08.50	-4.0X				i	57	32.00		
FHC	93.88	50	eP	51	53.00	1.1	KRI	113.37	249	ePKP	57	23.30	10.1X				i	58	01.00		
PGC	94.89	42	eP	51	57.00	0.7				i	57	54.10		LJU	122.80	322	ePKPd	57	30.00	-0.2	
WDC	94.96	50	eP	51	56.60	-0.2	BUL	113.39	245	ePKP	57	28.00	14.8X				e	58	01.00		
		e		52	28.00					i	58	01.90					e	58	03.00		
		ePP		55	41.90		MEO	114.16	55	iPKPd	57	13.60	-0.6	GRF	122.84	327	ePKP	57	30.00	-0.2	
BKS	94.99	53	iPc	51	58.10	1.0	KHL	114.96	309	ePKP	57	16.00	0.4		Z 21s	4.00um				6.0Msz	
	1.1s	123.00nm			6.2mb		VRI	115.04	318	ePKPd	57	14.50	-0.9	HVAR	122.86	318	iPKP	57	29.60	-0.8	
GCC	95.12	53	eP	51	58.00	0.4	MLR	115.68	318	ePKPc	57	17.50	0.7	CEY	123.01	322	ePKPc	57	30.50	-0.1	
GMW	95.26	43	P	51	57.80	-0.3	HFS	115.70	336	ePKP	57	15.20	-1.0	KBA	123.01	323	iPKPc	57	29.50	-1.3	
MHC	95.43	53	e(P)	51	59.00	-0.2		0.7s	9.10nm						0.6s	29.80nm					
LBFM	95.50	49	P	51	59.80	0.2		Z 18s	1.74um			5.7Msz					i	57	31.90		
ARN	95.51	53	P	51	58.70	-0.8				LR	42	22.00					i	57	34.60		
PRS	95.58	54	eP	52	00.40	0.6	SIO	115.83	53	ePKP	57	17.50	0.2				e(PP)	59	42.00		
MIN	95.65	50	eP	51	59.90	-0.3	BUC1	115.97	316	ePKPc	57	24.00	6 8X				e	07	19.00		
ORV	95.68	51	eP	52	00.30	0.1	NB2	116.12	338	PKP	57	15.80	-1.3				e	10	07.00		
		e		52	30.80			0.9s	12.30nm					VOY	123.20	322	iPKPc	57	30.50	-0.6	
		ePP		55	50.60		TUL	116.21	53	ePKP	57	17.50	-0.5				i	58	03.10		
LON	95.88	44	P	51	59.00	-2.0		1.3s	77.10nm					RIY	123.22	321	iPKP	57	30.50	-0 5	
RMW	95.92	43	P	52	02.90	1.7		Z 20s	3.50um			6.0Msz		TRI	123.43	322	ePKPc	57	30.60	-0.8	
PRI	96.13	54	eP	52	03.20	0.8				LR	33	00.00		FUR	123.64	325	iPKPd	57	32.30	0.5	
CMB	96.46	53	eP	52	04.10	0.3	IZM	116.67	310	ePKP	57	19.00	0.2		1.0s	111.00nm					
		ePP		55	56.70		POF	117.44	232	ePKP	57	13.50	-6.9X	WTS	123.73	331	ePKP	57	32.00	0.2	
BCH	96.55	55	P	52	03.80	-0.5		1.0s	20.00nm						0.7s	32.00nm					
SYP	96.60	56	eP	52	05.00	0.4	FRB	117.52	17	ePKP	57	18.00	-1.5				e	58	05.50		
FRI	96.95	54	eP	52	05.70	-0.2	UYO	117.63	55	iPKPd	57	19.70	-1.0	TOD	124.18	328	ePKP	57	32.03	-0.8	
		ePP		56	04.00		KRA	117.75	324	iPKPc	57	20.80	0 4	ROI	124.23	314	PKP	57	32.90	-0.4	
MBC	97.23	14	eP	52	07.00	0.6		0.6s	33.00nm					CSI	124.35	314	PKP	57	33.60	0.1	
	0.9s	40.00nm			5.9mb					e	57	55.20		CTI	124.54	323	PKPd	57	32.70	-1.0	
PNT	97.44	41	iPc	52	09.00	1.1	BZS	118.49	319	ePKP	57	21.50	-0.5	ABH	124.67	329	ePKP	57	33.84	0.1	
	0.8s	46.00nm			6.1mb		PSZ	118.68	322	ePKP	57	22.50	0.1	CZI	124.67	314	PKP	57	33.50	-0.5	
ISA	97.89	55	eP	52	10.00	-0.3	VAY	119.33	314	ePKP	57	22.50	-1.2	SCH	124.91	23	ePKPc	57	33.70	-0.3	
		e		52	41.00		KSP	119.46	326	iPKP	57	23.30	-0.4		0.9s	38.00nm					
PAS	98.07	56	ePDIF	52	11.58	0.5		0.7s	32.00nm					ENN	124.94	330	ePKPc	57	34.50	0.4	
		epP		55	24.10					i	57	58.50			0.9s	72.00nm					
		ePP		56	07.57		BEO	119.55	319	ePKP	57	23.50	-0.5				e	57	37.50		
		esPP		56	58.00		SRO	119.69	322	iPKP	57	24.10	-0.1				e	58	09.00		
		eSKS		02	37.45		LIT	119.77	313	ePKP	57	23.30	-1.3	ARV	125.00	320	PKP	57	34.90	0.3	
		eS		03	24.00		AKU	119.86	353	iPKP	57	25.90	2.0	CIO	125.02	319	ePKP	57	34.00	-0.7	
		ePS		05	00.00			1.8s	163.64nm					RUP	125.03	329	ePKP	57	34.52	0.0	
		eScSP		05	30.00					e	59	38.10		OSS	125.09	324	ePKPc	57	34.70	-0.2	
		ePPS		07	00.00		SKO	119.91	315	iPKP	57	25.00	0.2	SAX	125.24	325	ePKPc	57	35.10	-0.2	
		eSSS		15	00.00		AGG	120.22	312	ePKP	57	24.50	-1.0	SDI	125.25	31B	PKP	57	34.10	-1.1	
		eLg		19	25.00		ZST	120.25	323	iPKP	57	25.30	0.1	ASS	125.39	319	PKPd	57	34.70	-0.7	
		eLR		23	24.00					e	11	03.70		SLE	125.42	326	ePKPc	57	34.40	-0.9	
MWC	98.17	56	eP	52	13.00	1.3	OHR	120.66	314	ePKP	57	26.30	0.0	SFI	125.49	321	PKPd	57	36.40	1 0	
		e		52	43.00			1.1s	0.11nm					EKA	125.51	339	PKPc	57	35.50	0.3	
KVN	98.29	52	P	52	12.00	-0.2	VKA	120.68	324	ePKPc	57	26.00	-0.1		1.2s	56.90nm					
SBB	98.38	56	eP	52	13.00	0.5		1.0s	97.00nm					ATN	125.57	313	PKPd	57	34.80	-1.1	
CLC	98 60	55	eP	52	14 00	0.5				ePP	59	31.00		VDL	125.59	325	ePKPc	57	35.30	-0.6	
RVR	98.73	57	eP	52	15.00	1.0	BRG	120.73	327	iPKP	57	25.50	-0.6	PGD	125.60	321	PKP	57	36.70	0.7	
TNP	98.96	53	P	52	15.00	-0.3		1.0s	70.00nm					FEL	125.62	327	ePKP	57	34.89	-0 9	
	0.7s	10.37nm			5.6mb			N 24s	5.00um					ZLA	125.64	326	ePKPc	57	35.90	0.1	
PLM	99.14	57	eP	52	15.00	-1.2		E 24s	5.50um					LLS	125.65	325	ePKPc	57	35.60	-0 4	
GSC	99.24	55	eP	52	17.00	0.6				i	57	48.00		MNS	125.70	319	PKP	57	35.20	-0.8	
BAR	99.28	58	eP	52	17.00	0.4				i	57	58.00		CDF	125.70	328	ePKP	57	34.60	-1.3	
TPC	99.83	57	eP	52	20.00	0.8				e	58	08.00			0.8s	24.10nm					
GLA	100.84	58	ePdiff	52	25.00	1.3				e	00	52.00		FIR	125.94	321	e(PKP)	57	37.00	0.7	
EDM	101.27	37	ePdiff	52	25.30	0.1				e	02	34.00		RMP	125.95	318	PKP	57	36.80	0.3	
EBM	101.27	37	ePdiff	52	28.00	2.8X				e	12	11.00		RDP	125.96	318	PKP	57	36.70	0.1	
TAB	101.85	307	ePdiff	52	28.00	-0.2	SOP	120.81	323	ePKP	57	28.10	1.8	MME	126.07	322	PKP	57	36.90	-0.1	
LRM	102.37	45	ePdiff	52	30.70	0.2	PRU	120.86	326	PKP	57	26 00	-0.3	TMA	126.14	324	ePKPc	57	36.50	-0.5	
SES	102.95	40	ePdiff	52	32.00	-0.7		0.9s	34.90nm					BDI	126.20	321	PKP	57	35.50	-1.5	
BHD	103.52	303	ePdiff	52	37.00	1.4				e	58	01.30		LNV	126.22	141	ePKP	57	37.00	-0.2	
MSL	104.44	306	ePdiff	52	39.50	-0.1	CLL	121 00	328	iPKP	57	26.30	-0.3	BSF	126.31	327	ePKP	57	35.90	-1.2	
FFC	107 66	34	ePdiff	52	53.00	-0.5		0 9s	72 00nm						1.0s	132.00nm					
	1.0s	14.00nm			6.1mb			Z 18s	2.00um			5.8Msz		VAI	126.34	324	PKP	57	36.00	-1.0	
ALQ	107.72	55	Pdiff	53	00.00	5.5X				i	57	49.20		PII	126.42	321	PKPd	57	35.90	-1.4	

HAU	126.44	328	ePKP	57	36.30	-1.0
MMK	126.70	325	ePKPc	57	38.00	-0.1
ORX	126.93	324	PKP	57	36.88	-1.5
ORO	126.93	324	PKP	57	37.20	-1.2
DIX	127.00	325	ePKPc	57	38.70	0.0
PCH	127.00	141	ePKP	57	39.00	0.1
SAN	127.02	141	ePKP	57	39.50	0.7
PCP	127.20	323	PKP	57	37.70	-1.2
PEL	127.21	141	iPKPc	57	39.00	-0.2
	0.4s	42.37nm				
EMS	127.28	325	ePKPc	57	39.00	-0.1
CKI	127.42	323	PKPd	57	37.90	-1.3
RFA	127.46	144	e(PKP)	57	39.60	-0.1
LSD	127.50	325	PKP	57	39.65	0.0
FIN	127.58	323	PKP	57	38.52	-1.0
ROB	127.74	323	PKP	57	38.93	-1.0
RSNY	127.94	36	PKP	57	39.00	-1.2
IMI	127.94	323	PKP	57	39.85	-0.5
DOI	127.99	324	PKPd	57	38.80	-1.6
BNI	128.01	324	PKPd	57	40.30	-0.2
RRL	128.03	324	PKP	57	39.55	-1.1
ENR	128.05	323	PKP	57	39.03	-1.5
BCAO	128.06	271	ePKPc	57	29.20	-12.1X
	0.9s	230.00nm				
		i		57	41.50	
		i		58	14.00	
		i		00	17.90	
		i		00	54.70	
PZZ	128.08	324	PKP	57	39.34	-1.3
STV	128.09	323	PKP	57	39.24	-1.4
LOR	128.22	328	ePKP	57	40.20	-0.5
	0.9s	34.30nm				
SBF	128.24	323	ePKP	57	39.70	-1.2
	0.6s	41.40nm				
FOUF	128.25	324	ePKPc	57	41.26	0.5
		i		57	42.05	
		e		58	14.24	
LBF	128.34	328	ePKP	57	40.20	-0.7
	0.7s	24.20nm				
DLE	128.34	340	ePKP	57	40.60	0.0
SSF	128.53	328	ePKP	57	40.60	-0.6
SMF	128.62	328	ePKP	57	40.70	-0.7
AVF	128.79	328	ePKP	57	40.80	-0.9
	0.7s	16.90nm				
FRF	128.88	323	ePKP	57	41.30	-0.7
	0.8s	53.70nm				
LMR	129.09	323	ePKP	57	41.70	-0.7
	0.9s	55.60nm				
LRG	129.11	323	ePKP	57	42.00	-0.4
	0.7s	56.00nm				
BGF	129.21	328	ePKP	57	42.00	-0.5
LDF	129.31	332	ePKP	57	41.60	-1.0
	1.0s	40.00nm				
CBN	129.35	45	ePKP	57	42.00	-1.0
FLN	129.36	332	ePKP	57	41.80	-0.9
	0.8s	40.20nm				
MAF	129.57	328	ePKP	57	42.80	-0.5
	1.1s	31.70nm				
TCF	129.72	328	ePKP	57	43.10	-0.4
GRR	129.80	332	ePKP	57	43.00	-0.6
	0 6s	36.00nm				
LPF	130.14	332	ePKP	57	43.70	-0.5
	0.6s	61.30nm				
CAF	130.68	327	ePKP	57	45.40	0.0
	1.0s	32.00nm				
MFF	130.71	330	ePKP	57	45.00	-0.4
	0.8s	40.20nm				
RJF	130.73	328	ePKP	57	45.20	-0.3
	0.9s	22.90nm				
MRA	130.75	144	e(PKP)	57	46.50	0.6
LPO	131.31	327	ePKP	57	46.60	0.0
	0.7s	47.10nm				
LFF	131.38	328	ePKP	57	46.70	0.0
EPF	132.86	326	ePKP	57	49.20	-0.4
	1.0s	38.00nm				
PT10	133.13	113	e(PKP)	57	45.00	-5.9X
NNA	133.28	113	ePKP	57	51.00	-0.2
	1.2s	59.38nm				
	Z 18s	0.69um			5.4Msz	
UPA	134.45	84	iPKPd	57	42.60	-10.8X
	Z 19s	2.01um			5.9Msz	
		i		00	22.00	
		i		01	14.50	
ECRI	134.69	328	e(PKP)	57	54.40	1.2
ETOR	135.66	325	e(PKP)	57	56.00	0.9
ECHE	135.83	323	e(PKP)	57	56.50	1.1
ARE	136.17	122	ePKP	57	44.00	-13.0X
EMON	136.50	332	e(PKP)	57	57.00	0.5
GUD	136.94	327	e(PKP)	57	59.00	1.4
EVIA	137.36	323	e(PKP)	57	59.00	0.6
TOL	137.41	326	ePKP	58	02.50	4.1X
STS	137.49	333	e(PKP)	57	59.60	1.2
YJA	137.77	133	ePKPc	57	48.00	-12.1X
ASMO	138.93	323	iPKPc	57	52.00	-9.4X
LPB	138.96	124	PKP	58	00.00	-2.3X
	1.0s	160.00nm				
ZOBO	139.07	124	ePKP	57	51.00	-11.7X
	1.0s	70.00nm				
			i	57	53.80	
ZOBO	139.07	124	ePKPc	57	55.23	-7.5X
			iSKP	01	28.86	
APHE	139.16	322	iPKPc	57	57.20	-4.6X
AAPN	139.19	323	iPKPc	57	52.50	-9.3X
ALOJ	139.31	323	ePKP	57	51.30	-10.8X
ATEJ	139.39	323	iPKPc	57	53.00	-9.2X
TAF	139.70	319	ePKP	57	58.00	-4.8X
			i	58	06.00	
			i	01	12.00	
BOG	139.71	90	ePKP	57	56.00	-7.7X
			ePP	01	12.00	
FUQ	140.09	89	ePKP	57	56.00	-8.4X
IFR	142.27	319	ePKP	58	05.00	-2.5X
ITB7	142.80	148	e(PKP)	58	02.70	-5.7X
ITB	143.04	148	e(PKP)	58	03.60	-5.2X
ITB1	143.07	148	e(PKP)	58	05.50	-3.3X
SDV	143.24	84	ePKP	58	05.90	-3.8X
TOV	144.05	82	iPKPd	58	08.60	-2.3X
FISA	144.40	80	ePKP	58	09.50	-2.0
TIO	145.30	318	ePKP	58	13.00	0.3
			i	58	59.40	
MORO	145.43	80	ePKP	58	12.50	-0.8
LRS	145.54	67	PKP	58	12.00	-1.3
PORP	145.80	67	PKP	58	13.00	-0.7
SJG	146.23	67	i(PKP)	58	14.20	-0.2
CPD	146.46	67	PKP	58	15.50	0.7
TEGH	146.56	270	ePKP	58	20.00	5.0X
SHGH	146.62	271	ePKP	58	17.00	1.9
LEGH	146.74	270	ePKP	58	18.00	2.7X
KOGH	146.83	271	ePKP	58	18.00	2.5X
WEGH	146.89	270	ePKP	58	18.00	2.4X
KUK	146.96	271	ePKP	58	16.70	1.0
OLLA	146.97	82	ePKP	58	16.00	0.2
PAG	150.91	68	ePKP	58	27.25	5.5X
BBL	151.23	69	ePKP	58	28.40	6.2X
MGG	151.27	69	ePKP	58	27.20	5.0X
KIC	151.30	271	PKP	58	22.76	0.4
CFTV	151.37	322	iPKPc	58	30.00	7.8X
			i	59	02.40	
DEG	151.40	68	ePKP	58	27.00	4.5X
LIC	151.59	271	PKP	58	23.12	0.3
	Z 20s	2.75um			6.1Msz	
TIC	151.59	272	PKP	58	23.22	0.4
GRW	151.76	76	ePKP	58	27.27	4.1X
LKO	152.08	278	PKP	58	25.00	1.4
TPP	152.20	80	ePKP	58	25.56	1.9
TRN	152.21	79	ePKP	58	23.85	0.2
	1.2s	1420.00nm				
TBH	152.56	80	ePKP	58	27.70	3.5X
PIG	152.70	78	ePKP	58	29.63	5.3X
BOT	152.82	78	ePKP	58	29.84	5.3X
TBT	153.35	328	ePKP	58	34.80	9.9X
BAO	153.85	147	iPKPc	58	27.20	1.1
BDF	153.88	147	ePKP	58	26.12	0.0

S.D. = 0.9 on 344 of 395 obs.

? DEC 07, 1989 14h 14m 37.97± 5.50s
58.223 N ±43.5km 6.303 E ±14.5km
DEPTH = 10.0km (geophysicist)
SOUTHERN NORWAY (535)
MD 2.4 (BER).

KMY	1.14	331	eP	14	59.25	0.1
			eS	15	14.67	
BLS1	1.20	13	iP	14	59.99	-0.5
			eS	15	15.62	
ODD1	1.70	6	iP	15	08.99	1.1
			eS	15	27.91	
ASK	2.34	346	eP	15	16.60	-0.4
			eS	15	44.86	
SUE	2.95	345	iP	15	25.26	-0.4
			iS	15	58.57	
HYA	2.95	359	iP	15	25.98	0.3
			eS	16	00.06	
NRA0	3.67	44	iPd	15	35.80	-0.2
			iS	16	17.60	
			iSg	16	29.70	

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

% DEC 07, 1989 14h 56m 48.41± 0.55s
60.720 N ± 4.6km 5.526 E ± 6.0km
DEPTH = 10.0km (geophysicist)
SOUTHERN NORWAY (535)
MD 1.8 (BER).

ASK	0.29	215	iPc	56	54.45	0.0
			eSg	56	57.69	
SUE	0.50	312	iP	56	58.37	-0.3
			eS	57	05.58	
HYA	0.55	35	iP	56	59.25	-0.3
			iS	57	08.71	
ODD1	0.98	145	iP	57	06.45	-0.6
			iS	57	19.20	
BLS1	1.48	153	iP	57	15.71	0.5
			eS	57	35.13	
KMY	1.52	185	eP	57	15.72	0.1
			eS	57	33.42	
MOL	2.09	27	eP	57	24.54	0.6
			eS	57	48.19	
NRA0	2.96	87	iPc	57	36.10	-0.1
			iPg	57	40.60	
			iSg	58	19.10	

S.D. = 0.5 on 8 of 8 obs.

% DEC 07, 1989 15h 08m 28.26± 0.62s
60.323 N ± 4.3km 5.320 E ± 7.5km
DEPTH = 10.0km (geophysicist)
SOUTHERN NORWAY (535)
MD 1.2 (BER).

BER	0.06	6	eP	08	30.53	0.0
			eSg	08	32.33	
ASK	0.17	339	iPgc	08	32.11	0.0
			iSg	15	08.04	
ODD1	0.77	122	eP	08	43.00	-0.4
			eS	08	54.21	
SUE	0.79	340	eP	08	43.54	0.0
			iS	08	55.09	
HYA	0.95	26	eP	08	46.41	0.1
			iS	09	01.15	
KMY	1.11	182	iPd	08	49.08	-0.1
			eS	09	02.99	
BLS1	1.20	140	iP	08	51.15	0.4
			iS	09	07.52	
MOL	2.50	24	eP	09	09.37	-0.1
			eS	09	37.85	
NRA0	3.10	80	eP	09	18.20	0.1
			eS	09	55.10	
			iSg	10	05.10	

S.D. = 0.2 on 9 of 9 obs.

? DEC 07, 1989 15h 13m 42.34± 3.45s
19.473 N ±18.6km 102.819 W ±31.2km
DEPTH = 33.0km (normal)
4.4mb (1 obs.)
MICHOACAN, MEXICO (57)

CRX	2.96	91	eP	14	30.39	1.9
III	3.35	108	ePd	14	31.73	-2.2X
			eS	15	13.56	
IIC	3.37	84	eP	14	38.24	4.0X
ACX	3.82	132	iP	14	40.50	0.1
			iS	15	18.89	
PPM	3.98	95	iPc	14	41.54	-1.6
			(S)	15	42.83	
IISM	5.16	94	ePd	14	59.19	-0.2
LVVM	6.01	86	ePc	15	11.08	-0.3
TUL	17.51	19	e(P)	17	45.50	0.0
	0.7s	21.70nm			4.4mb	

S.D. = 1.5 on 6 of 8 obs.

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* DEC 07, 1989 15h 14m 25.75± 0.85s
21.111 S ± 7.6km 67.802 W ±11.7km
DEPTH = 33.0km (normal)
CHILE-BOLIVIA BORDER REGION (124)

YJA	2.38	117	iPd	15	04.10	0.3
			S	15	32.30	
ANT	3.54	223	eP	15	19.50	-0.2
CCH	4.03	23	P	15	26.00	-1.0
CNCB	4.28	358	Pc	15	31.90	1.1
LPB	4.56	356	Pc	15	35.00	0.3

07d 15h

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ZOBO     4.83 356 iPc    15 38.00  -0.5
      S.D. = 0.9  on   6 of   6 obs.
-------------------------------------------
   DEC  07, 1989  15h 29m 14.65± 0.32s
   52.629 N ± 7.3km  167.943 W ± 3.8km
   DEPTH =  33.0km  (normol)
   4.8mb ( 21 obs.)  4.6Msz (  1 obs.)
 FOX ISLANDS, ALEUTIAN ISLANDS    ( 9)

ADK      5.42 266 eP     30 35.30   0.1
KDC     10.21  54 P      31 40.60  -1.2
SVW     10.83  33 eP     31 54.80   4.4X
TTA     12.11  27 eP     32 13.60   6.0X
PMR     13.55  41 P      32 26.00  -0.7
TOA     15.02  42 eP     32 45.10  -0.9
IMA     15.25  22 eP     32 53.60   4.6X
        1.2s    26.30nm          4.4mb
FBA     16.03  32 eP     32 58.10  -0.8
SIT     19.18  64 P      33 36.80  -1.1
        0.9s    33.33nm          4.6mb
INK     22.65  33 iPd    34 12.30  -1.3
MBC     29.98  21 eP     35 21.50  -0.1
        0.6s     4.00nm          4.4mb
LON     30.00  83 P      35 30.00   7.8X
EDM     32.24  67 ePc    35 41.50  -0.3
LBFM    32.84  91 eP     35 48.00   0.7
WDC     32.90  93 eP     35 48.30   0.7
ORV     34.15  94 eP     35 58.10  -0.4
SES     34.70  70 eP     36 03.00  -0.1
CMB     35.78  95 eP     36 13.40   0.9
PRS     36.30  98 eP     36 17.10   0.4
LLA     36.37  97 eP     36 17.90   0.6
KVN     36.54  92 eP     36 19.40   0.4
FRI     36.87  96 eP     36 22.20   0.7
TNP     37.68  92 eP     36 29.00   0.4
        1.2s    14.78nm          4.7mb
FFC     37.84  60 eP     36 29.00  -0.5
        0.8s     6.00nm          4.5mb
CLC     38.92  95 eP     36 39.00   0.1
BW06    39.49  80 P      36 42.40  -1.4
GSC     39.75  95 eP     36 46.00   0.3
DAU     39.87  85 P      36 47.70   0.7
MSU     40.48  88 P      36 52.00   0.0
MAT     40.58 269 eP     36 52.00  -0.5
        2.2s   200.00nm          5.5mb
TPC     41.01  96 eP     36 55.00  -1.1
PLM     41.03  97 eP     36 57.00   0.5
RSSD    42.01  75 P      37 03.00  -1.4
CN2     43.78 286 Pc     37 17.20  -1.3
                  pP     37 29.60  45kmX
GOL     43.86  81 P      37 18.40  -1.2
        0.8s    13.39nm          4.8mb
RSON    44.10  61 P      37 19.00  -2.0
ALQ     46.29  87 P      37 37.40  -1.5
FRB     48.26  36 eP     37 53.00  -0.7
BJI     51.53 288 eP     38 18.00  -1.1
     Z  20s     0.60um          4.6Msz
BTO     54.68 292 P      38 42.00  -0.6
     N  15s     0.60um
     E  15s     0.80um
TIY     55.25 288 eP     38 44.80  -2.0
WHN     59.15 281 eP     39 19.00   4.7X
SOD     59.82 354 iP     39 18.20  -0.3
XAN     59.85 288 P      39 18.00  -1.2
GTA     61.13 298 P      39 26.00  -2.0
LZH     61.30 293 eP     39 28.50  -0.7
        1.5s    19.00nm          5.0mb
WMQ     64.05 309 P      39 46.50  -0.7
SUF     64.46 353 iP     39 48.50  -1.0
        0.6s     7.70nm          5.0mb
CD2     65.12 289 eP     39 54.00  -0.2
NB2     66.68   0 P      40 02.60  -1.2
        0.8s     6.00nm          4.7mb
GYA     66.72 283 P      40 10.40   5.8X
NUR     66.76 353 iP     40 03.40  -0.8
        0.8s    26.40nm          5.4mb
HFS     67.58 359 eP     40 07.80  -1.6
        0.4s     4.30nm          4.9mb
KMI     70.04 285 Pc     40 24.50  -0.9
EKA     71.67   9 P      40 35.00   0.5
        0.8s     5.60nm          4.6mb
KSP     76.84 357 eP     41 04.70   0.3
MOX     77.10   0 eP     41 07.00   1.2
CHG     77.13 284 eP     41 05.90  -0.6
GRF     78.05   1 e(P)   41 13.00   1.9
KHC     78.61 359 iPd    41 15.50   1.3
        1.0s     7.00nm          4.6mb

CDF     79.25   3 eP     41 18.40   0.6
ZST     79.46 357 eP     41 19.70   0.9
                  e     12 49.50
                  e     14 08.00
HAU     79.63   4 eP     41 20.60   0.9
BSF     79.82   4 eP     41 21.40   0.6
LOR     80.24   6 eP     41 23.90   0.9
        1.0s     8.00nm          4.7mb
SSF     80.42   6 eP     41 24.80   0.9
        1.0s    10.00nm          4.8mb
LBF     80.53   6 eP     41 25.10   0.5
KBA     80.67 359 iPc    41 26.70   1.2
        1.3s    51.70nm          5.4mb
                  i     41 31.60
                  i     41 42.00
AVF     80.68   6 eP     41 26.10   0.8
SMF     80.85   6 eP     41 26.90   0.6
        1.1s    13.10nm          4.8mb
LSF     81.09   7 eP     41 28.30   0.8
TCF     81.10   7 eP     41 28.30   0.7
        1.0s     6.80nm          4.6mb
MAF     81.19   7 eP     41 29.10   1.1
RJF     82.03   7 eP     41 33.10   0.7
MAIO    82.29 323 eP     41 27.00  -7.0X
LFF     82.32   8 eP     41 35.20   1.3
CAF     82.45   7 eP     41 35.80   1.2
        1.0s    12.00nm          4.9mb
LPO     82.62   8 eP     41 36.40   0.9
SBF     83.80   3 eP     41 42.70   1.1
        0.9s    14.40nm          5.1mb
FIR     83.97   1 eP     41 45.00   2.7
EPF     84.18   9 eP     41 44.10   0.5
QUE     84.66 315 iPd    41 47.00   0.7
SKO     85.43 353 eP     41 50.00   0.3
HYB     89.79 299 eP     42 12.50   1.3
BUL    145.12 332 ePKP   49 03.90  13.6X
      S.D. = 1.0  on  77 of  85 obs.
-------------------------------------------
   DEC  07, 1989  15h 45m 24.60± 0.62s
   38.219 N ± 5.3km   22.736 E ± 8.5km
   DEPTH =  10.0km  (geophysicist)
 GREECE                          (364)
      ML 3.3 (ATH).

ATH      0.81 107 ePb    45 40.60   0.3
                  eSb    45 52.90
AGG      0.86 338 eP     45 40.50  -0.7
NEO      1.15  19 ePb    45 46.60   0.5
ITM      1.22 212 ePb    45 45.40  -1.9
VLI      1.51 174 ePb    45 51.50  -0.1
VLS      1.69 269 ePb    45 55.40   1.1
LIT      1.89 354 eP     45 57.00  -0.2
KZN      2.22 341 ePn    46 02.50   0.5
PLG      2.22  14 ePn    46 01.20  -0.8
APE      2.50 117 ePb    46 10.00   4.0X
KNT      2.94   2 eP     46 10.30  -1.9
VAM      3.04 157 ePn    46 14.90   1.3
VAY      3.10 358 ePn    46 14.30  -0.1
OHR      3.25 333 ePn    46 19.00   2.3
SKO      3.88 346 ePn    46 20.00  -5.5X
      S.D. = 1.3  on  13 of  15 obs.
-------------------------------------------
*  DEC  07, 1989  15h 50m 57.55± 1.06s
   17.781 S ±10.3km  168.397 E ±12.4km
   DEPTH =  88.5 ±  9.0 km
   4.7mb (  3 obs.)
 VANUATU ISLANDS                 (186)

PVC      0.09 297 iPd    51 11.00  -0.1
                  iS     51 21.00
DZM      4.65 203 iPd    52 06.60  -0.2
                  iS     52 57.00
HNR     11.67 314 eP     53 43.00   0.3
                  e(S)   55 45.00
BRS     17.29 234 iPc    54 56.80   2.0
        1.3s     3.00nm          3.4mb X
RMQ     20.13 241 eP     55 27.80   0.8
CTA     21.07 260 iPc    55 36.10  -0.4
        1.0s    20.00nm          4.4mb
MNG     23.57 166 P      56 01.50   0.7
        0.4s    11.00nm          4.6mb
PGZ     23.75 165 eP     56 03.40   0.8
BWA     24.35 223 eP     56 07.90  -0.6
                  e     56 29.50
                  e     56 38.80
CAN     24.54 221 eP     56 07.90  -2.5
                  e     56 29.50
                  e     56 38.80
KHZ     24.95 171 P      56 14.00   0.0
WB2     32.26 261 eP     57 16.30  -3.6X
ASPA    32.74 254 iPc    57 21.50  -2.6
        0.5s    28.00nm          5.3mb
CHTO    77.32 295 eP     02 45.70   1.2
CMB     86.79  48 eP     03 32.40  -0.9
FRI     86.83  50 eP     03 31.60  -1.9
BCAO   147.66 249 iPKPc  10 32.00   0.6
        0.8s    10.00nm
                  i     10 35.10
                  i     10 58.80
LOR    147.96 340 ePKP   10 32.30   1.4
        1.0s     6.00nm
SSF    148.26 340 ePKP   10 33.20   1.9X
        1.0s     6.00nm
LPG    148.41 335 ePKP   10 33.30   1.3
     S.D. = 1.4  on  18 of  20 obs.
-------------------------------------------
*  DEC  07, 1989  16h 00m 05.00± 1.26s
   40.276 N ± 9.4km   21.313 E ±12.1km
   DEPTH =  10.0km  (geophysicist)
 GREECE                          (364)
      ML 3.1 (SKO).

LIT      0.92 101 eP     00 22.00  -0.6
                  eS     00 36.70
OHR      0.92 335 iPg    00 22.20  -0.4
                  iSg    00 36.90
VAY      1.41  42 ePn    00 31.70   1.0
AGG      1.48 148 eP     00 32.00   0.3
KNT      1.49  53 eP     00 31.40  -0.5
                  e(S)   00 55.00
SKO      1.70   3 ePn    00 35.00   0.2
                  iSn    00 59.80
     S.D. = 0.8  on   6 of   6 obs.
-------------------------------------------
   DEC  07, 1989  16h 11m 42.26± 0.41s
   43.646 N ± 4.8km   16.905 E ± 4.7km
   DEPTH =  12.1 ±  3.4 km
 YUGOSLAVIA                      (383)
      ML 3.5 (ZAG), 3.3 (TTG), 3.3
      (KBA), 2.9 (LJU). MD 3.6 (TRI).

HVAR     0.57 216 iPgd   11 52.70  -1.0
                  iSg    12 02.40
BLY      1.12  10 Pn     12 02.20  -0.9
                  Sn     12 16.70
BRY      1.41 121 ePg    12 06.00  -1.8
                  eSg    12 27.00
HCY      1.67 135 ePn    12 10.70  -0.7
                  eSn    12 35.50
PLE      1.84  99 ePn    12 15.40   1.4
                  eSn    12 42.00
BDV      1.96 133 ePn    12 15.50  -0.1
                  eSn    12 43.00
TTG      2.11 124 ePn    12 18.70   0.9
                  eSn    12 47.10
VBY      2.20 328 ePn    12 20.70   1.6
                  iSn    12 48.90
ZAG      2.27 343 iPn    12 19.70  -0.3
                  iSn    12 50.00
                  iSg    12 52.50
IVA      2.32 108 ePn    12 22.60   1.7
                  eSn    12 53.00
PTJ      2.35 344 ePn    12 20.80  -0.5
                  iSn    12 49.50
AOI      2.40 269 ePn    12 26.53   4.5X
RIY      2.48 314 iPn    12 25.60   2.6
                  iSg    12 59.20
PVY      2.48 114 ePn    12 25.80   2.6
                  eSn    13 00.00
SDA      2.51 130 ePn    12 26.70   3.3X
ALP      2.58 252 ePn    12 30.45   5.8X
BCI      2.65 118 ePn    12 29.10   3.6X
DUI      2.68 223 P      12 27.00   0.9
PUK      2.72 125 ePn    12 30.50   4.0X
CEY      2.74 321 ePn    12 28.00   1.2
                  e     12 32.50
                  eSn    13 04.10
BRT      2.78 175 P      12 25.30  -2.0
                  eSn    12 59.10
CIO      2.78 262 ePn    12 27.35  -0.1
LJU      2.93 326 ePn    12 30.00   0.5
                  eSg    13 16.20
SDI      2.99 231 Pd     12 28.90  -1.5
                  eSn    13 08.40
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TRI      3.05 314 iPnc   12 39.60    8.6X
                  iSn    13 14.40
                  iSg    13 17.70
ASS      3.15 261 P      12 34.40    1.8
TIR      3.17 135 ePn    12 33.70    0.8
VOY      3.21 319 iPnd   12 34.00    0.5
                  eSn    13 14.70
PHP      3.26 126 ePn    12 40.50    6.4X
MNS      3.35 249 P      12 35.30   -0.1
CRE      3.60 271 P      12 40.20    1.2
SKO      3.73 115 ePn    12 43.00    2.1
                  iSn    13 31.80
                  iSg    13 45.00
OHR      3.84 130 ePn    12 42.70    0.3
BZS      3.90  58 eP     12 41.50   -1.7
FVI      4.15 317 P      12 45.60   -1.1
                  eSn    13 33.50
KBA      4.25 325 iPnd   12 48.40    0.0
                  iSn    13 37.30
                  i      13 41.80
SRO      4.28  13 eP     12 47.40   -1.2
                  e      14 07.80
VAY      4.79 117 ePn    12 52.00   -3.9X
KHC      5.95 338 eP     13 20.00    7.8X
                  e      15 02.40
      S.D. = 1.4   on  30 of  39 obs.
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*  DEC 07, 1989  16h 38m 32.79± 0.81s
   4.276 S ± 7.6km   76.526 W ±14.5km
   DEPTH = 124.2 ±  8.8 km
   5.0mb (  5 obs.)
 NORTHERN PERU                    (111)

TUNG     3.42 326 P      39 24.60   -1.3
                  eS     39 50.80
QUR      4.54 334 Pd     39 42.60    1.6
                  eS     40 15.80
CAYA     4.56 341 P      39 51.50   10.0X
                  S      40 18.00
COTA     4.92 338 eP     39 47.60    1.3
                  S      40 25.70
PT08     7.63 180 iP     40 25.00    1.8
                  eS     41 43.80
PT10     7.76 183 iP     40 24.50    0.0
                  eS     41 47.00
BOG      9.17  16 eP     39 44.00  -59.9X
                  iS     40 55.00
PT06     9.49 179 iPd    40 48.00    0.2
                  eS     42 12.80
ZOBO    14.50 146 P      41 51.00   -2.8
LPB     14.72 146 P      42 00.00    3.4X
CNCB    15.02 147 P      41 58.00   -2.4
                  i      42 07.00
YJA     20.75 150 ePd    43 07.60    1.6
BAO     30.24 114 e(P)   44 35.50    1.3
RSCP    40.57 349 P      46 01.00   -0.6
TUL     43.86 337 e(P)   46 27.70   -0.7
        1.0s    11.00nm          4.5mb
TBR     45.25   2 P      46 39.50    0.2
ALQ     48.10 327 iPd    47 02.80    0.7
        1.0s    25.00nm          5.0mb
HBVT    48.52   3 P      47 05.00    0.1
GOL     51.18 331 P      47 25.30   -0.4
MSU     53.86 326 P      47 45.00   -0.5
                  pP     48 50.00  302kmX
RSSD    54.15 336 P      47 47.00   -0.5
BW06    55.56 331 P      47 56.80   -1.0
KVN     57.69 322 P      48 12.00   -0.9
LRM     59.22 331 eP     48 23.30   -0.1
SCH     59.44   7 ePd    48 24.00   -0.5
SES     62.03 336 ePd    48 41 80   -0.3
FFC     62.48 344 iPd    48 44.10   -0.9
        1.1s    28.00nm          5.1mb
LON     64.61 327 P      48 58.00   -1.1
PNT     65.13 330 eP     49 03.00    0.7
FRB     68.11   4 eP     49 20.00   -0.8
LKO     72.00  79 P      49 46.62    1.2
INK     82.34 342 ePd    50 41.70    0.1
MBC     84.08 351 ePd    50 52.00    1.7
        1.0s    39.00nm          5.2mb
FBA     86.01 336 P      51 00.00   -0.1
IMA     88.69 337 P      51 13.50    0.3
        1.0s     8.75nm          4.8mb
WB2    141.27 231 ePKP   57 47.10   -4.3X
GTA    144.87   5 PKPd   57 56.40   -0.8
TIY    145.73 347 PKPd   57 58.40   -0.2
LZH    148.34 359 PKPd   58 08.00    5.0X

SSE    148.54 330 PKP    58 07.50    4.3X
        1.0s    24.00nm
NJ2    148.83 334 PKP    58 08.00    4.4X
HYB    152.31  60 ePKP   58 27.00   17.7X
GBA    152.69  68 PKPc   58 11.50    1.7
        1.0s    4.90nm
CHG    164.89  17 ePKP   58 25.30    1.6
      S.D. = 1.2  on  36 of  44 obs.
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   DEC 07, 1989  18h 21m 50.54± 0.46s
   25.720 N ± 9.5km   58.754 E ± 5.0km
   DEPTH =  33.0km  (normal)
   4.5mb (  9 obs.)
 SOUTHERN IRAN                    (353)

QUE      8.50  57 eP     23 52.40   -2.2
MAIO    10.57   3 eP     24 22.00   -0.8
                  eS     27 43.00
RYD     11.04 267 eP     24 28.50   -0.8
                  eS     26 26.80
KER     13.25 313 eP     25 04.00    5.0X
QASM    13.71 275 eP     25 04.00   -1.0
KMSA    14.16 251 eP     25 09.70   -1.3
POO     15.70 114 eP     25 37.00    6.0X
NDI     16.69  76 eP     25 45.00    1.5
HYB     20.16 110 eP     26 24.50   -0.5
                  e      26 42.00
GBA     21.29 121 P      26 37.00    0.4
PRNI    21.46 288 iPd    26 42.00    3.8X
MBH     21.50 286 iPd    26 42.00    3.4X
BBTK    25.88 309 eP     27 25.00    3.8X
WMQ     29.63  45 eP     27 55.00   -0.2
AGG     33.27 303 eP     28 21.70   -5.4X
OHR     34.90 306 eP     28 42.00    0.9
        0.9s     0.45nm          3.4mb X
                  e      29 00.10
GTA     36.88  58 eP     28 58.40    0.4
CHTO    37.71  92 eP     29 04.10   -0.9
                  pP     29 22.00   73kmX
LZH     39.74  64 P      29 15.00   -7.0X
NUR     41.87 335 eP     29 46.00    7.1X
KHC     42.00 316 P      29 59.00   18.8X
SUF     42.84 339 eP     30 04.30   17.4X
        0.5s     4.10nm
XAN     43.92  67 P      29 56.30    0.2
8CAO    43.95 248 ePc    30 03.00    6.5X
        0.7s     6.00nm          4.5mb
                  i      30 25.90
SOD     46.08 343 iP     30 16.50    3.7X
HFS     46.17 331 (P)    30 15.30    1.8
        0.5s     1.10nm          4.1mb
TIY     46.64  62 eP     30 16.70   -1.0
NB2     47.67 331 P      30 24.80   -0.7
        0.8s     3.30nm          4.4mb
LBF     47.87 311 eP     30 27.60    0.3
        0.8s     3.20nm          4.4mb
SMF     47.93 311 eP     30 28.00    0.3
        0.8s     5.30nm          4.6mb
SSF     48.20 311 eP     30 30.20    0.4
        0.8s     4.00nm          4.5mb
AVF     48.28 311 eP     30 47.80   17.4X
BGF     48.60 310 eP     30 33.30    0.4
        0.7s     4.80nm          4.6mb
MAF     48.77 310 eP     30 34.90    0.7
TCF     49.02 310 eP     30 36.60    0.5
        0.8s     3.20nm          4.4mb
BJI     49.50  58 eP     30 57.50   17.7X
LDF     50.78 313 eP     31 06.70   17.2X
FLN     51.03 313 eP     31 08.60   17.2X
GRR     51.25 313 eP     31 10.40   17.3X
KIC     63.41 264 P      32 38.30   18.7X
ASPA    87.72 118 iPc    34 39.30    1.7
        0.9s     6.00nm          4.9mb
                  e      34 42.30
ASPA    87.72 118 iPd    34 56.40   18.8X
        0.7s    10.00nm
                  e      34 59.00
ZOBO   129.80 270 ePdiff38 15.00   27.3X
      S.D. = 1.0  on  23 of  43 obs.
-------------------------------------
?  DEC 07, 1989  18h 56m 00.70± 4.02s
   7.245 S ±32.4km  129.544 E ±30.3km
   DEPTH = 160.4 ± 46.4 km
   4.3mb (  3 obs.)
 BANDA SEA                        (280)

MTN      5.78 164 iPc    57 25.90    0.4

KNA      8.49 185 eP     58 01.00   -0.6
        0.2s    48.00nm          5.7mb X
                  eS     59 32.00
WB2     13.46 160 eP     59 03.60   -2.9X
                  eS     01 27.00
QIS     16.43 145 eP     59 43.00   -0.6
                  eS     02 34.00
ASPA    16.86 166 iPc    59 49.50    0.7
        0.4s    21.00nm          4.8mb
                  eS     02 48.20
WARB    19.04 188 eP     00 14.50    1.5X
        0.3s     4.00nm          4.3mb
CTA     20.63 130 eP     00 44.00   14.8X
CHG     39.76 311 eP     03 19.60    0.1
CHTO    39.76 311 eP     03 19.40   -0.1
        0.9s     2.56nm          3.9mb
      S.D. = 0.9  on  6 of  9 obs.
-------------------------------------
   DEC 07, 1989  23h 15m 28.85± 1.04s
   17.975 N ± 4.1km  146.470 E ± 6.0km
   DEPTH =  76.2 ±  9.8 km
   5.0mb ( 15 obs.)
 MARIANA ISLANDS                  (216)
      CENTROID, MOMENT TENSOR     (HRV)
      Data Used: GDSN
      L.P.B.:  9S, 17C
      Centroid Location:
      Origin Time        23:15:26.0 0.8
      Lat 18.18N  FIX;Lon 147.08E  FIX
      Dep  31.7 7.9 Half-duration  1.7
      Moment Tensor;    Scale 10**16 Nm
        Mrr= 4.37 1.10  Mtt= 3.76 1.17
        Mff=-8.13 0.81  Mrt= 0.49 1.42
        Mrf= 6.71 2.08  Mtf=-1.95 1.14
      Principal Axes:
        T  Val=  7.33  Plg=65  Azm=256
        N        3.98       8        5
        P       -11.31     23       98
      Best Double Couple:Mo=9.3*10**16
       NP1:Strike=205 Dip=23 Slip= 112
       NP2:          1     69       81

GUMO     4.63 200 eP     16 38.30    0.4
        0.7s   182.97nm
PJG      4.63 200 eP     16 38.50    0.7
GUA      4.66 199 eP     16 38.30    0.0
        0.7s   361.64nm
                  eS     17 32.10
KAKJ    18.99 344 eP     19 46.50   -0.7
IIDJ    19.02 338 P      19 48.30    0.7
CHJJ    19.18 341 P      19 48.00   -1.3
MAT     19.88 340 (P)    19 56.00   -0.6
        1.3s    57.69nm          4.7mb
                  eS     23 35.00
MTMJ    20.05 339 P      19 56.70   -1.8
NIIJ    20.29 343 P      20 00.20   -0.5
YAMJ    20.90 346 P      20 07.50    0.5
OFUJ    21.44 350 P      20 12.80    0.4
BAG     24.78 270 eP     20 42.90   -2.4
SSE     26.38 304 P      21 02.00    2.2
      Z  22s     0.60um          4.1Msz
                  sP     21 16.00
                  eS     25 46.00
                  e(sS)  26 01.00
PMG     27.22 179 eP     21 06.50   -1.1
CN2     31.26 330 eP     21 48.00    4.6X
      Z  24s     1.90um          4.7MszX
BJI     34.16 316 eP     22 08.00   -0.7
      Z  22s     0.92um          4.5Msz
QIZ     34.71 278 eP     22 16.40    2.8
XAN     37.11 303 eP     22 33.50   -0.3
CTA     37.83 180 iPd    22 39.90    0.1
        1.2s    30.47nm          5.1mb
QIS     38.88 190 eP     22 48.00   -0.6
WB2     39.51 198 eP     22 52.20   -1.7
CD2     40.72 297 eP     23 06.00    2.1
LZH     41.66 304 eP     23 12.00    0.4
ASPA    43.17 197 eP     23 23.30   -0.5
        0.9s    11.00nm          4.7mb
      Z  22s     0.69um          4.5MszX
                  eS     29 47.10
                  LR     40 47.10
RMQ     44.25 177 eP     23 31.00   -1.5
DZM     44.34 153 iPc    23 33.90    0.5
CHG     45.00 279 eP     23 39.00    0.3
CHTO    45.00 279 eP     23 39.70    1.0
BRS     45.51 172 iPc    23 42.80    0.3
```

07d 23h

WARB	47.94	204	eP	24	02.00	0.3
STK	49.79	185	eP	24	15.00	-0.8
			e	24	18.00	
NANU	50.39	218	iPd	24	20.80	0.3
	0.5s		12.00nm			5.2mb
BWA	52.14	178	eP	24	33.60	0.0
CAN	53.05	177	eP	24	36.30	-4.1X
ADE	53.16	188	iPc	24	41.30	0.1
	0.8s		34.33nm			5.4mb
WMO	55.34	311	P	24	56.00	-1.2
FBA	63.62	26	P	25	50.00	-3.7X
	0.7s		10.17nm			4.9mb
NDI	63.72	294	eP	25	54.00	-1.0
GBA	66.25	277	P	26	12.00	0.6
POO	68.49	283	eP	26	26.50	1.0
INK	69.75	23	eP	26	32.00	-0.3
MBC	73.67	14	ePc	26	56.20	0.7
	1.0s		57.00nm			5.5mb
MAIO	77.21	304	eP	27	17.00	0.4
			eS	37	16.00	
LON	78.28	45	P	27	20.00	-2.2
PNT	79.08	42	eP	27	28.00	1.6
	0 4s		7.00nm			4.9mb
WDC	79.27	51	eP	27	26.80	-0.8
MIN	80.02	51	eP	27	31.80	0.0
ORV	80.30	52	eP	27	33.30	0.1
NEW	80.96	42	P	27	36.20	-0.3
	0.5s		10.09nm			5.0mb
PRS	81.26	55	eP	27	39.00	0.7
CMB	81.55	53	eP	27	40.40	0.6
EDM	81.72	37	iPc	27	41.00	0.7
FRI	82.36	54	eP	27	44.50	0.6
BCH	82.58	56	P	27	45.80	0.5
KEV	82.84	342	iP	27	46.00	0.2
KVN	82.97	51	P	27	47.60	0.3
TNP	83.93	52	P	27	52.30	0.1
	0.5s		3.08nm			4.6mb
SES	84.03	39	ePc	27	52.60	0.3
SOD	84.29	340	iP	27	53.20	0.0
CLC	84.33	54	eP	27	54.00	-0.1
SBB	84.50	55	eP	27	55.00	0.0
LRM	84.76	44	eP	27	57.00	0.7
RVR	85.07	56	eP	27	51.00	-6.8X
GSC	85.11	55	eP	27	59.00	1.0
SUF	87.09	337	iP	28	06.20	-0.9
	0.6s		11.20nm			5.2mb
FFC	87.30	33	eP	28	09.00	0.7
	0.8s		26.00nm			5.4mb
BW06	87.80	46	P	28	10.00	-1.3
NUR	88.95	335	eP	28	14.60	-1.5
			e	28	29.00	
PV09	89.74	49	P	28	20.00	-0.6
RSSD	90.91	43	P	28	25.00	-0.8
GOL	91.93	47	P	28	30.50	-0.1
GLD	92.01	47	P	28	31.00	0.1
ALQ	93.13	52	iPd	28	37.90	1.7
	1.1s		63.29nm			6.0mb
HFS	93.32	338	eP	28	34.90	-1.4
	0.5s		3.00nm			5.0mb
NB2	93.50	340	P	28	35.90	-1.3
	0.7s		2.50nm			4.8mb
RSON	93.60	33	P	28	37.50	-0.2
BCAO	124.05	288	iPKPd	34	20.60	-0.4
	0.5s		7.00nm			
LKO	141.15	313	PKP	34	48.34	-4.9X
	0.7s		4.00nm			
KIC	142.69	308	PKP	34	52.60	-3.3X
LIC	142.99	308	PKP	34	52.50	-3.9X
PEL	143.45	122	iPKPc	34	51.00	-5.7X
	0.5s		14.08nm			
ZOBO	146.92	92	PKP	35	05.00	1.4
	1.1s		38.28nm			
	Z 24s		0.23um			4.9MszX
			LR	23	40.00	
LPB	146.98	93	PKP	35	06.00	2.5X
			S	59	44.00	
CNCB	147.13	93	PKPc	35	06.00	2.1X
CCH	148.94	94	PKP	35	12.50	6.0X
YJA	149.71	103	ePKPd	35	09.70	1.9
S.D. = 1.0 on 75 of 86 obs.						

DEC 08, 1989 00h 04m 25.45± 0.12s
21.184 N ± 3.1km 93.746 E ± 2.5km
DEPTH = 47.3km (23 depth phases)
5.6mb (75 obs.) 4 5Msz (5 obs.)
BURMA (296)
CENTROID, MOMENT TENSOR (HRV)

Data Used: GDSN
L.P.B.: 8S, 13C
Centroid Locotion:
Origin Time 00:04:33.0 0.6
Lat 21.54N 0.14 Lon 93.78E 0.07
Dep 15.0 FIX Half-duration 1.7
Moment Tensor; Scale 10**17 Nm
Mrr=-0.82 0.10 Mtt=-0.62 0.13
Mff= 1.45 0.10 Mrt= 0.74 0.27
Mrf=-0.81 0.36 Mtf=-0.04 0.11
Principal Axes:
T Val= 1.73 Plg=19 Azm= 83
N -0.15 32 340
P -1.58 51 199
Best Double Couple:Mo=1.7*10**17
NP1:Strike=213 Dip=38 Slip= -31
NP2: 328 71 -124

CHG	5.43	115	iPg	05	46.30	0.3
CHTO	5.43	115	iPc	05	46.70	0.7
BDT	6.33	127	ePn	05	58.60	0.0
			eSg	06	55.20	
NST	8.17	131	ePn	06	25.00	0.7
			ePg	06	47.00	
			eSg	07	59.00	
LOE	8.42	115	iPn	06	28.00	0.2
			ePg	06	29.00	
			eSg	08	07.50	
LSA	8.80	345	iPc	06	33.50	0.2
			S	08	10.00	
KMI	9.16	63	eP	06	41.00	2.9
			sP	06	54.00	
			S	08	31.00	
GYA	12.93	64	P	07	33.00	3.9X
	Z 12s		2.30um			
	N 10s		3.80um			
	E 10s		1.50um			
			sP	07	45.00	
			S	09	56.00	
CD2	13.21	41	eP	07	34.60	2.0
	Z 16s		2.50um			
			S	10	01.50	
HYB	14.82	258	ePc	07	51.40	-2.4
	0.8s		53.90nm			4.9mb
			i	08	00.00	
			iS	10	20.00	
QIZ	15.27	95	Pd	08	03.00	3.4X
	E 10s		1.40um			
			eS	10	48.30	
			SS	11	04.50	
NDI	16.74	300	eP	08	14.00	-4.2X
	0.8s		59.70nm			4.8mb
			eS	11	08.00	
LZH	17.27	29	eP	08	24.00	-1.0
	Z 30s		1.50um			4.1Msz
	N 10s		0.90um			
	E 10s		1.10um			
			pP	08	34.00	
			PP	08	40.00	
			sP	08	44.00	
			S	11	42.00	
			sS	11	59.00	
			ScS	19	15.00	
GBA	17.28	247	P	08	27.00	1.9
			S	11	20.00	
IPM	17.96	156	eP	08	46.00	12.5X
GZH	18.26	80	Pd	08	39.40	2.4
	7.0s		1.50nm			2.3mb X
	Z 12s		1.40um			6.3Msz
			sP	08	58.00	
			S	12	04.00	
XAN	18.54	43	iPd	08	37.20	-3.3X
	1.0s		0.10nm			2.0mb X
			S	12	05.00	
GTA	18.90	15	P	08	43.40	-1.6
	Z 16s		1.20um			
	E 11s		1.20um			
			pP	08	50.40	
			PP	09	01.20	
			S	12	12.00	
			sS	12	27.00	
			SS	12	40.00	
			ScP	16	40.00	
			PcS	16	46.00	
			ScS	20	20.60	
POO	18.90	265	iPd	08	45.70	0 7
			iS	12	02.20	

HKC	19.01	83	P	08	53.00	6.8X
			eS	12	21.00	
KOD	19.06	238	iPc	08	48.10	0.9
	0.Bs		74.63nm			5.0mb
			eS	12	24.00	
WHN	20.72	59	ePd	09	03.00	-1.4
	6.0s		1.53nm			2.5mb X
	Z 24s		2.18um			4.4MszX
			sP	09	23.50	
			S	12	48.00	
TIY	23.08	40	eP	09	30.00	2.1
	Z 23s		2.26um			4.6MszX
	N 10s		0.80um			
			pP	09	41.00	43km
			S	13	32.50	
WMO	23.13	349	iPd	09	29.50	1.2
	1.5s		0.20nm			2.3mb X
	Z 20s		1.90um			4.5Msz
	N 10s		0.50um			
			pP	09	41.00	45km
QZH	23.15	76	eP	09	34.50	5.9X
			pP	09	46.00	45km
KSH	23.73	324	Pc	09	37.00	2.8
			sP	09	54.00	
BTO	23.79	32	eP	09	34.70	-0.1
	N 11s		1.10um			
	E 12s		0.90um			
			S	13	48.00	
HHC	24.76	34	eP	09	44.00	-0.2
	Z 32s		2.40um			4.5MszX
			S	13	59.00	
NJ2	24.86	59	Pc	09	44.60	-0.5
	Z 18s		2.70um			4.8Msz
	N 10s		1.30um			
			S	14	05.00	
TIA	25.30	49	eP	09	48.00	-1.2
	E 14s		1.50um			
			S	14	16.00	
QUE	25.71	296	ePd	09	53.50	0.2
BAG	25.83	96	eP	10	01.00	6.6X
SSE	26.48	62	P	10	05.20	5.1X
	1.0s		47.00nm			5.0mb
	Z 20s		0.90um			4.3Msz
			pP	10	19.00	57km
			sP	10	26.40	
			eS	14	26.00	
			esS	14	46.00	
BJI	26.81	40	eP	10	02.50	-0.6
	Z 28s		1.04um			4.2MszX
	N 14s		0.86um			
			PcP	13	25.00	
			eS	14	37.00	
			eScP	17	00.00	
			eScS	20	51.00	
KLI	28.09	156	eP	10	11.00	-3.8X
TSM	29.03	122	ePd	10	21.00	-2.4
SNY	32.46	44	eP	10	50.00	-3.4X
	Z 26s		1.10um			4.4MszX
	N 20s		1.50um			
	E 22s		1.40um			
			eS	15	57.00	
MAIO	33.39	304	iPd	11	02.60	0.8
	0.7s		9.53nm			4.8mb
TRT	34.18	145	ePd	11	09.00	0.5
	1.2s		243.10nm			6.0mb
CN2	34.64	42	eP	11	12.40	0.1
	Z 13s		0.80um			4 6MszX
	E 10s		0.40um			
			PcP	13	44.80	
			ScP	17	24.80	
KER	42.95	298	eP	12	23.00	1.2
RYD	43.39	284	eP	12	26.00	0.7
TAB	44.03	303	eP	12	32.00	1.5
SLY	44.38	300	ePc	12	34.50	1.3
			e	12	47.50	48km
			eS	19	05.50	
BHD	45.14	296	ePc	12	41.00	1.7
			eS	19	15.00	
			ePS	19	38.50	
KMSA	45.90	278	eP	12	45.70	0.2
QASM	46.04	286	eP	12	47.40	0.9
MSL	46.35	300	iPc	12	49.00	0.2
NANU	48.39	153	iPd	13	04.90	0.0
	0.6s		104.00nm			6.0mb
MBL	49.20	147	iPd	13	10.80	-0.3
MTN	49.92	129	e(P)	13	15.00	-1.7
KNA	50.28	134	eP	13	17.80	-1.6

WAJH	52.26	287	eP	13	35.40	1.0	PTJ	66.73	312	iPKPd	15	13.80	-0.3	FEL	71.80	315	ePd	15	45.15	-0.1
SALJ	52.49	295	P	13	37.00	0.8	LOF	66.88	336	iPc	15	13.26	-1.2	RUP	72.05	317	ePd	15	46.91	0.4
KFNJ	52.50	294	P	13	37.10	0.9	ROI	67.17	305	P	15	18.20	1.3	PCP	72.12	312	P	15	46.34	-0.8
DSI	52.77	294	eP	13	39.00	0.8	PRU	67.22	317	iP	15	17.30	0.4	CDF	72.17	316	eP	15	46.80	-0.6
PRNI	53.19	293	ePd	13	42.00	0.6				e	15	30.50	46km		0.9s	52.40nm			5.5mb	
MEKA	53.24	152	eP	13	41.30	-0.3	VBY	67.27	312	iPd	15	18.00	0.6	MMK	72.20	313	ePd	15	47.80	0.0
	0.3s	17.00nm			5.5mb		TDS	67.33	305	Pd	15	18.20	0.4	ORX	72.28	313	P	15	46.14	-2.0
HOL	53.24	291	eP	13	41.70	0.0	CSI	67.35	305	P	15	17.40	-0.6	CMS	72.35	135	iPc	15	48.80	0.3
MBH	53.34	292	iPd	13	43.00	0.6	BRG	67.50	318	iPd	15	18.70	0.0		0.9s	78.00nm			5.6mb	
BADA	53.36	290	eP	13	43.00	0.5		1.3s	95.00nm			5.7mb		FIN	72.43	311	P	15	48.19	-0.7
BBTK	54.71	304	eP	13	53.00	0.5				i	15	31.80	45km	ENN	72.54	318	eP	15	49.50	0.2
BAL	56.02	156	eP	14	01.00	-0.8	MMN	67.56	306	P	15	19.60	0.4		1.0s	53.00nm			5.4mb	
BCK	56.43	302	eP	14	03.30	-1.6	CZI	67.56	305	P	15	19.70	0.5				e	16	03.00	47km
GPA	56.59	305	eP	14	05.00	-1.0	NSS	67.56	332	iPc	15	17.81	-1.0	DIX	72.57	313	ePd	15	50.50	0.5
ALT	56.76	303	eP	14	06.00	-1.3	LWI	67.61	258	iPd	15	20.20	0.0	BSF	72.61	315	eP	15	49.40	-0 6
WARB	56.88	144	iPd	14	07.60	-0.4	LJU	67.70	312	ePd	15	20.30	0.2		1.2s	59.50nm			5.4mb	
	0.5s	33.00nm			5.6mb					i	15	34.30	49km	ROB	72.65	311	P	15	49.73	-0.5
WB2	56.99	133	iPd	14	07.50	-1.4	CEY	67.82	312	ePd	15	21.00	0.2	IMI	72.72	311	P	15	50.65	0.0
			i	15	02.80	248kmX	KHC	67.94	316	iPd	15	21.70	0.1	HAU	72.86	315	eP	15	51.00	-0.4
ELL	57.01	301	iP	14	09.90	0.8		1.0s	28.50nm			5.3mb			0.9s	50.40nm			5.5mb	
MUN	57.07	157	iPc	14	08.50	-0.8				e	15	35.00	46km	RSP	72.88	312	P	15	49.42	-2.2
KHL	57.24	303	iP	14	09.50	-1.2	CLL	68.04	318	iPd	15	21.90	-0.2	LSD	72.89	313	P	15	51.98	0.1
KLB	57.30	156	eP	14	10.00	-0.9		1.4s	78.00nm			5.6mb		EMS	72.90	313	ePd	15	52.00	0.2
ISK	57.53	306	eP	14	12.00	-0.5				i	15	35.40	47km	ENR	72.98	311	P	15	51.16	-1.0
COOL	58.07	152	eP	14	15.00	-1.3	NB2	68.11	329	P	15	17.00	-5.3X	DOI	73.04	312	Pd	15	50.80	-1.7
NWAO	58.30	157	eP	14	15.00	-2.8		0.7s	45.80nm			5.6mb		STV	73.04	311	P	15	50.96	-1.6
BNT	58.41	305	iP	14	18.80	0.1	VOY	68.14	312	ePd	15	21.90	-1.0	SBF	73.05	311	eP	15	52.30	-0.3
CLI	58.86	312	ePd	14	22.00	0.3	QLP	68.17	132	iPd	15	23.70	0.5		0.8s	53.70nm			5.5mb	
VRI	59.23	312	iPd	14	25.00	0.7	ATN	68.26	304	eP	15	22.00	-1.7	PZZ	73.14	312	P	15	50.55	-2.6
RKG	59.24	158	eP	14	26.00	1.6	TRI	68.28	312	ePd	15	23.00	-0.6	LPG	73.15	313	eP	15	53.30	-0.2
ISR	59.35	311	ePd	14	30.00	4.8X	KBA	68.37	314	iPd	15	23.60	-0.8		0.9s	61.40nm			5.5mb	
JMB	59.36	308	iPd	14	26.00	0.8		0.7s	29.30nm			5.4mb		RRL	73.26	312	P	15	53.32	-0.7
MLR	59.78	311	iPc	14	28.50	0.2				i	15	37.00	47km	FRF	73.68	311	eP	15	56.20	0.0
DIM	60.15	307	eP	14	31.00	0.3				e	18	15.50		LMR	73.83	311	eP	15	57.20	0 2
PVL	60.26	308	iPc	14	32.00	0.7	AOI	68.73	310	eP	15	26.11	-0.4	LRG	73.91	311	eP	15	58.00	0.6
KDZ	60.26	307	iP	14	32.00	0.6	FVI	68.82	313	Pd	15	26.30	-0.7		0.9s	112.60nm			5.8mb	
PMG	60.62	115	eP	14	34.00	-0.2	ALP	68.87	309	eP	15	26.77	-0.8	BCAO	74.63	269	iPd	16	01.50	-0.7
KDB	60.66	115	eP	14	34.50	0.1	HOF	68.88	317	iPd	15	27.50	0.2		0.6s	85.00nm			5.9mb	
PLD	60.77	307	eP	14	38.00	3.1X		1.0s	59.00nm			5.5mb					i	16	22.10	77kmX
RZN	60.78	307	iPc	14	34.00	-1.2	PZI	68.89	303	P	15	27.76	0.1				i	17	28.10	
QIS	61.08	130	iPd	14	36.60	-0.6		1.3s	129.70nm			5.7mb		LBF	74.67	315	eP	16	01.40	-0.5
	0.8s	86.00nm			5.9mb		MNO	68.89	304	Pd	15	26.80	-1.1	LOR	74.67	315	eP	16	01.50	-0.4
SUF	61.14	331	iP	14	36.20	-0.8	SSO	68.90	310	e(P)	15	27.96	0.4		0.9s	36.00nm			5.3mb	
	0.6s	129.30nm			6.2mb		MOX	69.00	318	iPd	15	28.00	0.0	BRS	74.78	128	iPc	16	03.30	0.6
PGB	61.14	308	iPd	14	38.00	0.5		1.1s	77.00nm			5.6mb			0.5s	17.00nm			5.2mb	
NUR	61.51	328	iP	14	38.50	-1.1				i	15	42.00	49km	SMF	74.84	314	eP	16	02.40	-0.5
	0.8s	70.40nm			5.8mb		CIO	69.12	309	eP	15	28.61	-0.4	SSF	74.96	315	eP	16	03.30	-0.2
VTS	61.84	308	iPd	14	42.00	-0.4	ARV	69.21	310	Pd	15	29.60	0.1	AVF	75.13	315	eP	16	04.00	-0.5
SOD	61.86	336	iP	14	41.00	-0.8	GRF	69.39	317	ePd	15	31.20	0.8	BGF	75.53	315	eP	16	06.60	-0.2
KKB	61.99	307	iPd	14	42.00	-1.2		1.4s	150.00nm			5.8mb			1.2s	74.30nm			5.5mb	
THE	62.17	306	ePd	14	44.00	-0.4	Z	21s	0.30um			4.5Msz		MAF	75.81	314	eP	16	08.60	0.2
KEV	62.28	339	eP	14	43.00	-1.7				e(pP)	15	44.50	46km		1.1s	83.00nm			5.6mb	
	0.8s	32.30nm			5.5mb		FUR	69.59	315	iPd	15	32.00	0.3	EDR	75.85	326	ePd	16	08.50	0.1
LIT	62.58	305	ePd	14	46.00	-1.1		1.2s	56.00nm			5.4mb		BWA	75.88	136	eP	16	09.90	1.0
AGG	62.81	304	ePd	14	47.00	-1.7	MNS	69.59	309	Pd	15	30.90	-1.0	COO	75.94	131	eP	16	10.00	0.7
SKO	63.20	307	iPd	14	49.80	-1.4	CTI	69.69	313	Pd	15	32.00	-0.4	TCF	76.03	314	eP	16	09.70	0.1
	0.8s	95.00nm			6.0mb		MOL	69.69	330	iPc	15	24.91	-7.0X	BRW	76.14	18	e(P)	16	10.10	0.4
SPC	63.58	315	iPd	14	54 50	0.7	STK	69.88	138	iPd	15	33.60	0.0	ESY	76.19	325	ePd	16	10.30	0.0
BEO	63.68	310	i(P)	14	54.50	0.2		1.0s	108.00nm			5.8mb			0.9s	58.00nm			5.5mb	
KRA	63.74	316	eP	14	54.30	-0.3	SFI	69.91	310	Pd	15	34.70	1.0	EDU	76.21	326	eP	16	10.40	0.0
	1.0s	68.00nm			5.7mb		OGA	69.97	314	iPd	15	33.90	-0 4	EBL	76.46	325	ePd	16	12.00	0.2
			e	15	07.90	48km		0.8s	96.00nm			5.8mb		LSF	76.49	315	eP	16	12.00	-0.2
OHR	63.76	306	iP	14	53.30	-1.7	PGD	70.02	310	Pd	15	35.50	0.9		1.0s	50.00nm			5.5mb	
	1.2s	0.19nm			3.0mb X		ADE	70.28	142	iPd	15	36.00	0 0	EDI	76.49	325	ePd	16	12.00	0.1
			i	15	06.80	48km		1.0s	110.00nm			5.8mb		CAF	76.50	313	eP	16	12.60	0.3
KBN	63.80	306	eP	14	52.00	-3.1X	FIR	70.36	310	eP	15	38.00	1.6		1.1s	54.60nm			5.5mb	
PSZ	63.87	314	iP	14	55.10	-0.5	SAL	70.54	312	Pd	15	37.90	0.5	EBH	76.57	325	eP	16	12.40	0.0
PHP	63.97	307	iPd	14	55.00	-1.2	OSS	70.60	314	ePd	15	37.80	-0.3	ELO	76.61	326	eP	16	12.80	0 2
LSK	64.02	305	eP	14	55.50	-1.2	MME	70.68	311	Pd	15	39.50	0 8		0.8s	53.00nm			5.6mb	
TIR	64.44	307	eP	14	58.00	-1.3	BDI	70.78	311	Pd	15	38.60	-0.5	EKA	76.66	324	Pc	16	13.60	0.7
BERA	64.45	306	eP	14	58.00	-1.3	PII	70.90	310	Pd	15	38.80	-0.9		0.8s	63.00nm			5 7mb	
TPE	64.45	306	eP	14	48.50	-10.9X	TOD	70.95	317	ePd	15	40 02	0.1	EAU	76.66	325	eP	16	13.20	0.3
LACI	64.52	307	eP	14	58.50	-1.3	SAX	71.03	314	ePd	15	40.50	-0.3	ESK	76.69	324	ePd	16	13.70	0 6
SRO	64.94	314	iP	15	02.80	0.4	VDL	71.09	313	ePd	15	41.10	0.0		0.6s	84.00nm			5.9mb	
UPP	64.97	327	iPd	15	01.50	-0.8	RMQ	71.32	129	iPd	15	43.50	1.0	RJF	76.77	314	eP	16	14.10	0.3
			i	15	15.00	47km		0.9s	190.00nm			6.0mb			0.8s	42.90nm			5.5mb	
TRO	65.03	338	iP	15	01.66	-1.0	LLS	71.34	314	ePd	15	42.30	-0.3	CAN	76.81	136	eP	16	14.10	0.0
ZST	65.72	314	eP	15	06.60	-0.8	SLE	71.50	315	ePd	15	42.80	-0.5	LDF	76.89	317	eP	16	13.90	-0.4
CTA	65.72	125	iPd	15	07.10	-0.7	TMA	71.57	313	ePd	15	43.40	-0.6		0.8s	52.10nm			5.6mb	
	1.1s	66.46nm			5.6mb		ZLA	71.63	315	ePd	15	43.60	-0.5	CNB	77.04	136	iPd	16	15.90	0.5
			i	15	21.00	49km	WIT	71.68	320	eP	15	45.50	1.3		0.9s	51.00nm			5.6mb	
KSP	66.02	317	iPd	15	09.40	0.1	VAI	71.69	313	Pd	15	43.60	-0.8	FLN	77.07	317	eP	16	14.80	-0.5
	1.0s	86.00nm			5.7mb		ABH	71.70	317	ePd	15	44.50	0.0		1.3s	93.80nm			5.7mb	
			i	15	22.50	46km	WTS	71.75	319	ePd	15	45.00	0.4	LPO	77.17	313	eP	16	16.50	0.5
SOP	66.13	314	iPd	15	11.50	1.5		0.9s	68 00nm			5.6mb			0.9s	62.20nm			5.6mb	
ZAG	66.73	312	iPKPd	15	14.00	0.1				e	15	57.00	40km	ESEL	77.40	308	eP	16	19.20	1.9
HVAR	66.73	309	iPd	15	12.80	-1.2	HNR	71.76	108	ePc	15	45.00	-0.2	LFF	77.40	313	eP	16	17.70	0.5

08d 00h

	0.8s	38.60nm			5.5mb		
GRR	77.42	317 eP	16	17.10	-0.1		
	0.8s	29.50nm			5.4mb		
MFF	77.49	315 eP	16	17.70	0.0		
	1.2s	61.80nm			5.5mb		
LPF	77.64	317 eP	16	18.60	0.1		
	0.9s	68.70nm			5.7mb		
EPF	78.25	312 eP	16	21.40	-0.6		
	0.8s	6.70nm			4.7mb		
SLR	78.79	237 iPd	16	25.50	0.2		
	0.6s	123.33nm			6.0mb		
EBR	78.83	309 eP	16	25.00	-0.1		
EROQ	78.89	309 eP	16	26.00	0.5		
DLE	79.21	323 eP	16	27.80	0.9		
	0.7s	33.00nm			5.4mb		
IMA	79.52	23 eP	16	28.60	0.0		
	1.0s	27.50nm			5.2mb		
		e	16	42.90	50km		
KSR	79.94	237 iPd	16	30.50	-1.1		
	0.7s	90.00nm			5.8mb		
PRY	80.01	236 iPd	16	33.20	1.3		
	0.7s	5.00nm			4.6mb X		
TTA	80.11	26 eP	16	31.80	0.1		
		id	16	46.00	49km		
ECHE	80.29	309 eP	16	34.80	1.7		
ECRI	80.37	312 eP	16	35.00	1.5		
SEK	80.59	235 iPd	16	35.50	0.5		
	0.8s	85.82nm			5.7mb		
MBC	80.69	8 ePd	16	34.30	-0.2		
	0.7s	53.00nm			5.6mb		
EVIA	81.73	308 eP	16	42.20	1.4		
VAL	81.81	323 iP	16	42.20	1.5		
BLF	82.07	235 iPd	16	43.50	0.8		
	0.8s	156.25nm			6.1mb		
ENIJ	82.10	306 eP	16	43.50	0.9		
GUD	82.21	310 iP	16	44.50	1.2		
FBA	82.23	22 ePd	16	42.50	-0.2		
TOL	82.41	310 iPc	16	45.50	1.3		
	1.2s	109.38nm			5.8mb		
EBAN	82.84	308 eP	16	47.20	0.8		
DZM	82.92	117 iPc	16	49.00	1.9		
AFC	82.99	307 eP	16	47.00	-0.4		
TAF	83.01	304 iP	16	49.00	1.6		
ASMO	83.10	307 iPc	16	47.60	-0.3		
APHE	83.21	307 iPc	16	49.20	0.7		
ACHM	83.26	307 iPd	16	48.50	-0.2		
AAPN	83.40	307 iPc	16	49.00	-0.4		
ALOJ	83.46	307 eP	16	49.50	-0.3		
ATEJ	83.46	307 iPd	16	49.50	-0.3		
PMR	83.57	25 ePd	16	49.30	-0.3		
	0.7s	45.70nm			5.6mb		
		ed	17	03.70	50km		
EHOR	84.04	308 eP	16	53.50	1.0		
KDC	84.17	30 eP	16	52.50	-0.2		
INK	84.37	16 iPd	16	53.00	-0.6		
	0.9s	60.00nm			5.7mb		
TOA	84.43	24 ePd	16	54.80	0.7		
NKM	85.06	306 iPc	16	58.00	0.4		
AVE	87.42	305 eP	17	15.00	5.7X		
TIO	88.25	302 iPc	17	15.50	2.0		
LKO	95.17	282 P	17	46.80	1.1		
	1.1s	16.50nm			5.4mb		
KIC	95.59	279 PKPc	17	48.48	0.9		
	1.0s	27.50nm			5 7mb		
TIC	95.74	279 PKP	17	49 06	0.8		
	1.1s	20.50nm			5.5mb		
LIC	95.90	279 PKPc	17	49.68	0 7		
	1.2s	28.50nm			5 7mb		
Z	21s	0.20um			4.6Msz		
SES	105.44	16 ePKP	22	57.00	12.4X		
BW06	112.83	18 PKP	22	58.00	-1.1		
RSSD	113.00	14 PKP	22	59.00	-0.4		
KVN	113.07	27 PKP	23	00.10	0.4		
TNP	114.26	26 PKP	23	12.00	9.9X		
GOL	116.85	16 PKP	23	06.00	-1.0		
	0.8s	5.36nm					
PLM	118.40	29 PKP	23	10.10	0.1		
GLA	119.56	28 PKP	23	13.00	1.0		
ALQ	120.98	19 PKP	23	15.60	0.7		
	1.0s	20.00nm					
FVM	121.02	4 PKP	23	13.70	-0.9		
UYO	124.41	8 iPKPd	23	21.00	-0.3		
BAO	143.34	272 ePKP	23	50.30	-7.0X		
UPA	149.30	347 (PKP)	23	49.00	-17.9X		
		i	24	10.60			
YJA	160.69	263 ePKPd	24	24.00	1.7		
ZOBO	162.15	283 PKP	24	25.00	1.0		

	1.0s	15.00nm					
		LR	23	52.00			
CNCB	162.18	281 PKPc	24	26.10	2.1X		
		i	25	12.00			
LPB	162.21	282 PKP	24	25.00	1.1		
	S.D. = 0.9	an 282 of 305 obs.					
%	DEC 08, 1989	00h 13m 38.79± 1.78s					
	38.356 N ± 8.6km	27.561 E ±21.0km					
	DEPTH = 10.0km	(geophysicist)					
	TURKEY				(366)		
KAP	2.82	186 ePn	14	24.60	-0.1		
RDO	3.19	331 ePn	14	30.00	0.1		
NPS	3.46	207 ePn	14	33.70	-0.1		
PLG	3.77	304 ePn	14	41.70	3.4X		
VAM	3.99	223 ePn	14	41.70	0.4		
VLI	4.02	247 ePn	14	45.70	4.0X		
ITM	4.62	257 ePn	14	50.00	-0.2		
	S.D. = 0.3	an 5 of 7 obs.					
&	DEC 08, 1989	00h 31m 51.42s					
	61.363 N	148.458 W					
	DEPTH = 28.5km						
	SOUTHERN ALASKA				(2)		
	<AGS-P>.						
PME	0.38	314 iP	31	59.47	-0.5		
PLRM	0.40	306 iP	31	59.55	-0.6		
GHO	0.47	332 iP	32	00.69	-0.6		
		eS	32	08.45			
PMS	0.55	258 eP	32	01.80	-0.7		
		eS	32	09.82			
PWA	0.74	294 eP	32	04.59	-1.1		
GLI	0.82	126 eP	32	05.26	-1.7		
VZW	0.97	107 eP	32	07.86	-1.3		
NCA	1.00	50 eP	32	08.39	-1.2		
SUA	1.10	276 eP	32	10.00	-1.1		
FID	1.14	122 eP	32	09.90	-1.7		
SLKM	1.22	226 eP	32	11.51	-1.1		
KLU	1.23	83 eP	32	11.62	-1.2		
TOA	1.32	55 eP	32	13.99	-0.1		
CUT	1 35	321 eP	32	13.90	-0.6		
SEW	1.35	202 eP	32	13.56	-0.9		
		eS	32	31.86			
SKT	1.59	294 eP	32	17.49	-0.5		
		eS	32	38.26			
CGLM	1.71	270 eP	32	19.77	0.0		
HUR	1.71	342 eP	32	20.02	0.3		
RDT	2.08	249 eP	32	24.03	-1.1		
PAX	2.14	40 eP	32	25.99	0.0		
RED	2.31	248 eP	32	27.23	-1.2		
KTH	2.48	334 eP	32	29.64	-1.2		
	22 obs. associated						
&	DEC 08, 1989	00h 44m 06.82s					
	63.191 N	150.473 W					
	DEPTH = 119.1km						
	CENTRAL ALASKA				(1)		
	<AGS-P>.						
KTH	0.42	331 iP	44	24.25	-0.3		
		eS	44	36.82			
HUR	0.44	119 eP	44	24.17	-0.4		
RND	0.76	73 eP	44	26.40	-0.6		
		eS	44	41.44			
CUT	0.79	173 eP	44	26.73	-0.4		
MCK	0.88	51 iP	44	27.56	-0.4		
SKT	1.31	202 eP	44	31.64	-0.8		
NEA	1.52	23 eP	44	33.94	-0 9		
PWA	1.57	170 eP	44	36.06	0.7		
WRH	1.66	38 eP	44	35.81	-0.7		
SUA	1.74	184 eP	44	38.19	0.6		
CCB	1.88	38 eP	44	38.33	-0.8		
RDS	1.94	31 eP	44	39.15	-0.8		
NCG	1.96	204 eP	44	39.65	-0.6		
GLM	2.26	36 eP	44	43.30	-0.7		
TOA	2.27	117 eP	44	43.89	-0.3		
	15 obs. ossociated						
%	DEC 08, 1989	01h 08m 03.12± 1.04s					
	31.941 N ±10.1km	6.292 W ±12.4km					
	DEPTH = 5.0km	(geophysicist)					
	MOROCCO				(395)		
	MD 3.8 (RBA).						
TIO	1.31	220 iPnc	08	28.00	0.1		

		iSn	08	49.50			
		i	08	50.50			
AVE	1.65	325 iPnd	08	32.00	-0.9		
		iSn	08	53.50			
IFR	1.85	32 iPn	08	35.20	-0.8		
		iSn	08	59.00			
		i	09	00.00			
RBA	2.11	348 iPn	08	40.00	0.4		
		iSn	09	05.00			
NKM	3.57	12 ePn	09	01.50	1.2		
		eSn	09	40.00			
		e	09	50.00			
TAF	4.33	47 ePn	09	11.00	-0.2		
		eSn	10	10.00			
		i	10	22.00			
	S.D. = 1.0	an 6 of 6 obs.					
	DEC 08, 1989	02h 26m 03.32± 0.89s					
	19.199 N ± 6.6km	104.440 W ± 4.6km					
	DEPTH = 66.8 ± 6.5 km						
	5.3mb (29 obs.)						
	NEAR COAST OF JALISCO, MEXICO				(55)		
	Felt at Manzanillo.						
	CENTROID, MOMENT TENSOR				(HRV)		
	Data Used: GDSN						
	L.P.B.: 14S, 23C						
	Centroid Location:						
	Origin Time	02:26: 1.9 0.8					
	Lat 19.25N 0.08 Lan 105.14W 0.11						
	Dep 15.0 FIX Half-duration 1.7						
	Moment Tensor; Scale 10**17 Nm						
	Mrr= 0.52 0.06 Mtt= 0.31 0.10						
	Mff=-0.84 0.11 Mrt= 1.63 0.15						
	Mrf=-0.62 0.20 Mtf= 0.30 0.06						
	Principal Axes:						
	T Val= 2.07 Plg=48 Azm= 8						
	N -0.37 21 122						
	P -1.71 35 227						
	Best Double Couple:Mo=1.9*10**17						
	NP1:Strike= 13 Dip=22 Slip= 162						
	NP2: 120 83 69						
MRX	3.11	80 iP	26	51.50	0.5		
		iS	27	25.50			
MZX	4.39	335 eP	27	08.00	-1.0		
CRX	4.50	87 (P)	27	49.00	38.1X		
		(S)	28	41.00			
III	4.78	99 iP	27	18.50	3.8X		
		iS	28	21.00			
ACX	4.94	117 eP	27	09.00	-7.7X		
		(S)	28	35.00			
UNM	4.97	88 (P)	27	24.00	6.6X		
PPM	5.50	90 eP	27	25.00	-0.1		
		(S)	28	52.00			
IIT	5.80	91 eP	27	30.50	1.4		
		(S)	29	03.00			
IISM	6.68	91 (P)	27	19.50	-21.5X		
OXX	7.63	105 eP	27	53.50	-0.9		
ALQ	15.78	354 iPc	29	45.10	2.0		
	1.0s	34.00nm			4.5mb		
		pP	34	26.00			
ANMO	15.79	354 P	29	44.90	1.8		
MEO	16.37	17 iPd	29	49.80	-0.5		
GLA	16.64	328 eP	29	55.00	1.3		
BAR	17.33	323 eP	30	03.00	0.7		
UYO	17.35	29 iPd	30	02.80	0.3		
OCO	17.39	19 iPc	30	03.10	0.1		
PLM	17.94	324 eP	30	10.00	0.0		
SIO	17.98	22 eP	30	09.90	-0.3		
ACO	18.04	14 eP	30	10.50	-0.6		
TPC	18.09	327 eP	30	12.00	0.3		
TUL	18.31	23 ePc+	30	13.70	-0.6		
	1.3s	83.80nm			4.8mb		
Z	22s	5.24um			4.4MszX		
		eS	33	52.00			
		LR	35	00.00			
PEC	18.51	325 P	30	17.00	0.2		
RVR	18.70	325 eP	30	18.00	-1.0		
MWC	19.25	324 eP	30	25.00	-0.4		
PAS	19.26	323 eP	30	25.00	-0.3		
GSC	19.41	328 eP	30	27.00	0.0		
SBB	19.47	325 eP	30	27.00	-0.6		
OLY	19.88	33 P	30	30.80	-1.0		
CLC	20.22	328 eP	30	30.00	-5.4X		
MSU	20.39	342 P	30	37.60	0.3		
GOL	20.45	358 P	30	37.60	-0.4		
	1.1s	28.85nm			4.5mb		

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ISA     20.55 326 eP     30 39.00    0.1
SYP     20.58 321 eP     30 39.00   -0.2
PWLA    21.39  39 P      30 45.80   -1.5
TNP     21.86 332 P      30 52.50    0.3
        1.0s     33.33nm          4.7mb
DAU     21.94 346 P      30 52.80   -0.3
PRI     22.11 323 eP     30 55.50    0.9
FRI     22.21 326 eP     30 55.60    0.2
FVM     22.35  30 P      30 55.60   -1.1
PRS     22.65 322 ePc    31 00.50    0.8
KVN     23.05 332 P      31 05.50    1.7
RSCP    23.32  42 P      31 06.00   -0.3
        0.9s   171.93nm          5.5mb
CMB     23.35 327 iPc    31 07.40    0.9
ARN     23.46 324 P      31 08.70    1.1
GCC     23.50 323 eP     31 08.80    0.9
MHC     23.52 324 eP     31 09.10    0.9
BW06    23.90 351 P      31 11.00   -1.1
PRM     24.60  49 P      31 18.20   -0.5
RSSD    24.85   1 P      31 21.00   -0.2
ORV     25.07 328 eP     31 24.00    1.0
WDC     26.36 328 eP     31 33.60   -1.4
LRM     27.36 348 ePc    31 44.10   -0.3
BLA     27.62  44 P      31 41.70   -4.9X
LON     30.96 336 P      32 15.80   -0.4
RMW     31.55 337 P      32 21.80    0.3
SES     31.57 352 eP     32 20.00   -1.5
GMW     31.99 336 P      32 24.60   -0.6
PNT     32.43 341 eP     32 29.00    0.0
        0.8s     10.00nm          4.7mb
RSON    32.72  13 P      32 29.30   -2.2
        0.9s     30.20nm          5.1mb
FFC     35.51   2 iPc    32 53.80   -1.6
        0.9s     37.00nm          5.3mb
ZOBO    50.18 132 P      34 49.00   -6.2X
     Z  18s      0.35um           4.4Msz
              LR      52 16.00
LPB     50 38 132 P      34 55.00   -1.5
CNCB    50.65 133 P      34 57.50   -1.2
FRB     50.71  20 eP     34 57.00   -0.9
INK     52.37 347 eP     35 09.00   -1.4
        1.0s     52.00nm          5.5mb
PMR     52.53 335 eP     35 11.60   -0.1
        1.0s     32.50nm          5.3mb
FBA     53.93 339 eP     35 21.30   -0.7
TTA     55.99 334 eP     35 36.10   -0.9
IMA     56.62 338 eP     35 40.20   -1.5
        1.2s     23.40nm          5.1mb
MBC     57.59 356 ePc    35 47.20   -0.9
        1.0s     14.00nm          5.0mb
ADK     64.21 319 P      36 32.00   -1.2
        1.0s     90.00nm          5.7mb
BAO     65.44 118 Pc     36 41.50   -0.3
DLE     79.43  37 eP     38 04.80    1.1
EKA     80.64  35 Pc     38 09.50   -0.6
        1.1s     32.50nm          5.2mb
GRR     84.51  41 eP     38 31.50    1.3
        1.2s     61.80nm          5.5mb
LPF     84.53  41 eP     38 31.40    1.1
        1.1s     68.30nm          5.6mb
FLN     84.59  40 eP     38 31.90    1.3
        0.9s     42.50nm          5.5mb
LDF     84.88  40 eP     38 33.10    1.1
        1.1s     48.80nm          5.5mb
NB2     85.04  26 P      38 33.00    0.3
        0.9s      7.80nm          4.8mb
GUD     85.20  49 eP     38 35.50    1.5
AVE     85.31  57 iPc    38 36.00    1.5
TOL     85.55  49 iPd    38 36.00    0.4
        1.2s     62.50nm          5.6mb
MFF     85.65  42 eP     38 36.80    0.9
        1 3s     43.30nm          5 4mb
TIO     86.23  59 iP     38 40.50    1.1
AFC     86.88  52 eP     38 43.30    0.9
LFF     86.88  43 eP     38 42.30    0.3
        1.1s     34.10nm          5.4mb
EVIA    87.12  50 eP     38 35.60   -7.9X
RJF     87.24  43 eP     38 43.30   -0.4
        0.9s     16.30nm          5.2mb
LPO     87.28  43 eP     38 43.90   -0.1
EPF     87.39  45 eP     38 44.70    0.1
        1.1s     15.60nm          5.1mb
WTS     87.41  35 eP     38 45.00    0.6
        1.0s     15.00nm          5.1mb
                 e       38 53.50
ENN     87.50  37 eP     38 45.50    0.7
        1.0s     35.00nm          5.5mb
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                 e       38 50.50
SSF     87.74  41 eP     38 45.90   -0.2
LOR     87.86  40 eP     38 46.70    0.0
        0.9s     11.40nm          5.0mb
LBF     88.06  41 eP     38 47.40   -0.3
HAU     89.03  39 eP     38 51.20   -1.1
CDF     89.38  38 eP     38 52.80   -1.3
GRF     90.99  36 eP     39 02.70    1.4
        1.8s     80.00nm          5.8mb
     Z  19s      0.50um           5.0Msz
CLL     91.08  34 eP     39 01.00   -0.7
BRG     91.82  34 eP     39 05.50    0.4
        1.6s     19.00nm          5.3mb
KHC     92.59  35 eP     39 09.10    0.3
KBA     93.58  37 ePc    39 14.00    0.4
ZST     95.04  35 eP     39 20.70    0.7
PTJ     95.74  37 eP     39 24.40    1.0
ZAG     95.80  37 eP     39 25.00    1.5
SRO     95.92  35 iP     39 25.60    1.6
WB2    124.86 259 ePKP    44 56.90   -1.0
ASPA   125.82 254 ePKP    44 58.30   -1.5
GBA    147.35 357 PKP     45 42.00    2.8X
      S.D. = 1.0   on 100 of 110 obs.
-------------------------------------------
   DEC  08, 1989  02h 47m 52.69± 0.91s
   21.058 N ± 7.0km   93.658 E ± 6.7km
   DEPTH =  56.5 ± 14.1 km
   3.9mb (  1 obs.)
 BURMA                              (296)

SHL      4.77 340 iP     49 03.20   -0.8
                 iS      49 54.20
CHG      5.45 113 iPn    49 13.40    0.0
                 iSn     50 32.00
CHTO     5.45 113 iPnd   49 13.20   -0.2
BDT      6.32 126 ePg    49 25.70    0.3
                 eSg     50 35.00
NST      8.15 130 ePg    49 51.10    0.1
LSA      8.90 346 iPd    49 59.40   -2.2
KMI      9.29  62 eP     50 08.00    1.2
NNT     10.23 144 iPc    50 18.80   -0.7
                 e       52 11.20
CD2     13.36  41 eP     51 02.20    0.8
HYB     14.72 258 eP     51 18.50   -0.7
NDI     16.73 300 eP     51 47.00    2.2
                 iS      54 32.00
GBA     17.16 247 P      51 53.00    2.8X
                 S       54 47.00
LZH     17.42  29 (P)    51 54.00    0.5
XAN     18.69  43 P      52 04.50   -4.4X
POO     18.81 266 eP     52 11.50    1.0
                 iS      55 29.00
GTA     19.04  15 eP     52 16.50    3.3X
WARB    56.82 144 eP     57 34.00    0.2
WB2     56.97 133 eP     57 34.10   -0.9
NB2     68.17 329 P      58 34.80  -14.1X
        0.7s      1.90nm
BCAO    74.54 269 ePc    59 47.40   19.6X
        0.4s      2.00nm
LBF     74.70 315 eP     59 49.50   21.3X
        0.9s      4.90nm
LOR     74.70 315 eP     59 49.40   21.2X
SSF     74.99 315 eP     59 51.20   21.4X
        0.9s      5.50nm
AVF     75.16 315 eP     59 52.10   21.3X
TCF     76.05 314 eP     59 57.80   21.9X
MBC     80.83   8 eP     00 00.50   -0.8
        0.7s      1.00nm          3.9mb
     S.D. = 1.2   on  16 of  26 obs.
-------------------------------------------
?  DEC  08, 1989  04h 36m 20.17± 2.49s
    6.188 S ±29.8km  145.873 E ±54.8km
    DEPTH = 142.8 ± 52.6 km
 PAPUA NEW GUINEA                   (202)

LAT      1.21 112 eP     36 46.50    0.0
PMG      3.44 158 eP     37 13.50   -0.1
KDB      3.50 159 eP     37 14.50    0.1
WB2     17.67 218 eP     40 19.00    0.0
ASPA    20.85 212 iPd    40 52.30    0.0
     S.D. = 0.1   on   5 of   5 obs.
-------------------------------------------
%  DEC  08, 1989  04h 41m 05.54± 1.41s
   39.645 N ± 8.9km   27 500 E ±16.6km
   DEPTH =  10.0km  (geophysicist)
 TURKEY                             (366)
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```
EDC      0.75  22 ePg    41 19.50   -0.8
                 eSg     41 29.50
BNT      0.78  24 iPg    41 20.70    0.0
DST      0.87  92 iPg    41 21.50   -0.8
                 eSg     41 32.50
IZM      1.26 189 ePn    41 29.00    0.0
YLV      1.71  57 iPn    41 37.20    1.6
      S.D. = 1.4   on   5 of   5 obs.
-------------------------------------------
?  DEC  08, 1989  06h 58m 43.94± 2.46s
   25.024 S ±22.9km   69.061 W ±14.8km
   DEPTH =  33.0km  (normal)
 NORTHERN CHILE                     (123)

ANT      1.80 316 iPc    59 13.20    0.0
                 iS      00 32.00
SLA      3.25  86 iPd    59 34.00    0.0
                 S       00 00.50
YJA      4.33  50 ePd    59 40.90   -8.6X
CNCB     8.24   7 P      00 44.50   -0.1
LPB      8.50   6 eP     00 49.00    0.9
ZOBO     8.75   6 P      00 51.00   -0.8
      S.D. = 0.9   on   5 of   6 obs.
-------------------------------------------
   DEC  08, 1989  07h 49m 52.10± 0.90s
   34.103 S ± 9.5km   70.131 W ± 5.7km
   DEPTH =  10.0km  (geophysicist)
 CHILE-ARGENTINA BORDER REGION      (127)

CHCH     0.47 291 iPc    50 01.90    0.3
                 iS      50 09.30
FCH      0.79 350 iPc    50 06.60   -1.0
                 iS      50 17.50
SAN      0.79 326 iPc    50 06.90   -0.5
                 iS      50 18.40
TACH     0.81 304 iPc    50 07.70   -0.1
                 iS      50 19.90
PEL      1.06 334 iPd    50 12.00   -0.2
                 iS      50 26.10
ROCH     1.35 327 eP     50 17.00   -0.1
                 iS      50 35.50
LCCH     1.35 297 iPd    50 17.00    0.1
                 iS      50 35.00
JACH     1.47 345 iPc    50 18.50   -0.2
                 iS      50 37.60
RFA      1.53 116 ePd    50 19.20   -0.3
                 S       50 41.80
IHA      1.66 310 eP     50 22.00    0.7
                 iS      50 45.00
ZON      2.83  26 eP     50 43.00    4.8X
                 eS      51 24.00
CFA      2.95  33 ePc    50 42.00    2.0
                 S       51 24.50
MRA      4.07  67 ePd    50 55.00   -0.7
      S.D. = 0.9   on  12 of  13 obs.
-------------------------------------------
   DEC  08, 1989  08h 13m 28.93± 1.11s
   34.089 S ±11.0km   70.130 W ± 6.2km
   DEPTH =  10.0km  (geophysicist)
 CHILE-ARGENTINA BORDER REGION      (127)

CHCH     0.46 289 iPc    13 39.00    0.7
                 iS      13 46.50
FCH      0.77 350 iPc    13 43.00   -1.2
                 iS      13 53.70
SAN      0.77 325 iPc    13 43.50   -0.5
                 iS      13 55.10
TACH     0.80 303 iPc    13 44.50    0.0
                 iS      13 56.50
PEL      1.05 334 iPc    13 48.00   -0.8
                 iS      14 08.00
ROCH     1.34 326 iPc    13 53.50   -0.2
                 iS      14 12.00
LCCH     1.35 297 iPd    13 54.00    0.3
                 iS      14 10.00
JACH     1.46 344 iPc    13 54.50   -0.9
                 iS      14 13.50
RFA      1.53 117 ePc    13 55.80   -0.6
ZON      2.81  26 eP     14 19.00    4.1X
                 eS      14 59.00
CFA      2.94  33 eP     14 19.00    2.4
                 S       15 00.10
MRA      4.06  67 ePd    14 32.00   -0.4
CYA      6.74  35 ePd    15 09.00   -1.4
CCH     17.02  13 P      17 32.50    3.6X
CNCB    17.31   7 P      17 35.00    2.1
LPB     17.58   6 eP     17 40.00    4.0X
```

08d 08h

ZOBO 17.84 6 P 17 40.00 0.6
S D. = 1.2 on 14 of 17 obs.

% DEC 08, 1989 08h 21m 55.80± 0.95s
38.830 N ± 9.0km 27.756 E ±10.6km
DEPTH = 10.0km (geophysicist)
TURKEY (366)

IZM	0.58	222	iPg	22 07.70	0.1
			iSg	22 17.70	
DST	1.03	41	iPn	22 14.50	-0.8
KHL	1.47	110	ePn	22 21.00	-1.5
EDC	1.52	3	iPn	22 23.50	0.5
BNT	1.53	5	iPn	22 22.60	-0.6
ALT	1.85	82	ePn	22 30.00	2.1
YLV	2.14	35	iPn	22 32.10	0.1

S.D. = 1.4 on 7 of 7 obs.

DEC 08, 1989 09h 07m 07.04± 1.12s
34.114 S ±11.1km 70.133 W ± 6.3km
DEPTH = 10.0km (geophysicist)
CHILE-ARGENTINA BORDER REGION (127)

CHCH	0.47	293	iPc	07 17.00	0.4
			iS	07 24.50	
SAN	0.79	326	iPc	07 22.40	-0.1
			iS	07 33.60	
FCH	0.80	350	iPc	07 21.80	-0.9
			i	07 30.50	
			iS	07 33.00	
TACH	0.81	304	iPc	07 23.00	0.2
			iS	07 35.50	
PEL	1.07	334	iPc	07 26.60	-0.7
			iS	07 41.50	
LCCH	1.36	298	iPc	07 31.90	0.0
			iS	07 50.00	
ROCH	1.35	327	eP	07 32.00	-0.2
			iS	07 50.00	
JACH	1.48	345	iPc	07 32.20	-1.6
			iS	07 53.00	
RFA	1.53	116	ePd	07 34.10	-0.3
			S	07 50.00	
ZON	2.84	26	eP	07 58.00	4.7X
			eS	08 35.00	
CFA	2.97	33	ePd	07 57.00	2.0
			S	08 33.00	
MRA	4.08	67	ePd	08 10.10	-0.6
			S	09 10.00	
CYA	6.76	34	ePc	08 47.30	-1.5
CNCB	17.34	7	P	11 13.90	2.6
LPB	17.60	6	eP	11 15.00	0.5
ZOBO	17.86	6	P	11 18.00	0.1

S.D. = 1.2 on 15 of 16 obs.

DEC 08, 1989 10h 23m 12.56± 0.66s
10.094 N ± 3.5km 126.495 E ± 4.3km
DEPTH = 43.7 ± 6.0 km
5.7mb (42 obs.) 5.9Msz (27 obs.)
PHILIPPINE ISLANDS REGION (248)
Ms 5.5 (PAS).
CENTROID, MOMENT TENSOR (HRV)
Data Used: GDSN
L.P.B.: 12S, 29C
Centroid Location:
Origin Time 10.23:15.7 0.3
Lat 9.47N 0.04 Lon 126.13E 0.03
Dep 15.0 FIX Half-duration 4.1
Moment Tensor; Scale 10**18 Nm
Mrr= 1.34 0.03 Mtt= 0.31 0.04
Mff=-1.65 0.05 Mrt=-0.88 0.11
Mrf= 0.92 0.14 Mtf=-0.02 0.04
Principal Axes:

	Val=	Plg=	Azm=
T	2.03	60	206
N	-0.09	24	346
P	-1.94	17	84

Best Double Couple:Mo=2.0*10**18
NP1:Strike=205 Dip=35 Slip= 135
NP2: 335 66 64

DAV	3.12	197	iP+	24 02.00	1.5
OCP	6.96	311	eP	25 04.00	9.4X
BAG	8.52	318	eP+	25 12.00	-4.5X
			e	26 56.00	
TSM	10.19	236	ePc	25 46.20	6.9X
KKM	10.94	249	ePc	25 53.50	3.8X
	1.0s	80.30nm		5.8mb	
ANP	15.74	343	iP+	26 58.00	5.0X
			iS	29 52.00	
OZH	16.57	334	eP	27 03.70	0.3
	1.0s	0.30nm		2.4mb	X
Z	16s	52.90um		4.4MszX	
N	12s	16.60um			
E	12s	15.00um			
HKC	16.94	317	P	27 07.00	-1.1
			S	30 29.00	
GZH	18.03	317	iPd	27 21.00	-0.6
Z	18s	77.90um			
N	13s	10.60um			
E	14s	57.30um			
GUMO	18.31	77	eP	27 24.50	-0.7
	2.2s	3880.24nm		6.2mb	
PJG	18.31	77	eP	27 24.50	-0.7
			eTT	46 39.50	
GUA	18.35	77	eP	27 23.80	-1.8
	1.0s	176.00nm		5.2mb	
Z	19s	63.19um			
			eS	31 10.00	
QIZ	18.39	301	iPc	27 25.00	-1.1
	9.0s	7.40nm		2.9mb	X
N	16s	13.50um			
E	16s	17.60um			
			S	30 50.50	
KUG	20.33	188	eP	27 53.50	5.6X
SSE	21.47	347	Pc	27 59.00	-0.4
	1.2s	472.00nm		5.8mb	
Z	20s	19.20um		5.5Msz	
N	14s	15.50um			
E	13s	20.50um			
			pP	28 06.00	25kmX
			S	31 56.00	
			sS	32 07.00	
			SS	32 35.00	
TRT	22.43	218	ePc	28 12.20	3.1X
	0.8s	62.50nm		5.1mb	
NJ2	22.97	343	Pc	28 14.00	-0.2
	8.0s	6.30nm		3.1mb	X
Z	16s	18.00um		5.6MszX	
			pP	28 25.00	43kmX
			sP	28 31.00	
MTN	23.25	168	eP	28 16.50	-0.6
WHN	23.28	333	Pd	28 18.40	1.2
	8.0s	6.94nm		3.2mb	X
Z	20s	29.50um		5.7Msz	
N	13s	21.70um			
E	13s	27.60um			
			iS	32 29.00	
MNDI	23.51	133	eP	28 24.00	4.1X
KGM	24.39	252	eP	28 31.00	2.8X
GYA	24.83	314	iPc	28 34.00	1.5
	5.0s	26.00nm		4.0mb	X
Z	18s	30.70um		5.8Msz	
N	16s	31.10um			
E	16s	31.40um			
SHK	24.97	12	eP	28 36.00	2.4
KLM	25.63	256	eP	28 54.00	14.1X
SNG	25.75	266	eP	28 44.40	3.4X
			eS	33 13.20	
IPM	25.84	260	ePd	28 43.80	1.9
	1.0s	69.90nm		5.2mb	
			e	28 51.90	
			e	29 05.30	
NST	26.28	285	eP	28 46.40	0.5
LAT	26.34	128	eP	28 49.00	2.5
KBR	26.65	281	eP	28 52.00	2.7
KMI	27.06	307	P+	28 53.00	-0.3
	9 0s	1.90nm		2.7mb	X
Z	20s	35.10um		5.9Msz	
N	14s	28.60um			
			pP	29 08.00	62kmX
			PP	29 43.00	
			S	33 24.00	
TIA	27.36	343	P	28 54.50	-1.1
	9.0s	2.40nm		2.8mb	X
Z	18s	21.80um		5.8Msz	
E	13s	21.10um			
			S	33 32.00	
BDT	27.62	288	eP	28 59.00	0.8
CHG	28.02	291	iPd	29 00.80	-1.0
	1.1s	31.33nm		4.9mb	
			eS	33 48.00	
CHTO	28 02	291	eP	29 00.50	-1.3
KDB	28.30	133	eP	29 02.00	-2.3
XAN	28.77	329	Pc	29 06.80	-1.7
N	16s	19.70um			
E	14s	21.20um			
			S	33 57.00	
DL2	29.02	352	P	29 11.00	0.4
Z	20s	18.70um		5.7Msz	
N	13s	7.00um			
E	13s	16.90um			
			S	33 59.00	
CD2	29.59	318	eP	29 13.30	-2.6
Z	16s	52.50um		6.3MszX	
N	13s	35.10um			
			S	34 04.00	
TIY	30.27	338	eP	29 20.00	-1.9
Z	18s	28.00um		6.0Msz	
N	15s	30.90um			
			iS	34 20.00	
WB2	30.83	165	eP	29 23.90	-3.0X
			e	30 03.00	
			iPcP	32 39.50	
BJI	31.20	345	eP	29 28.00	-1.9
	2.0s	277.00nm		5.7mb	
Z	16s	23.00um		5.9MszX	
N	14s	15.50um			
			eS	34 34.00	
			eScP	36 07.00	
SNY	31.71	356	iPc	29 34.00	-0.4
	1.2s	0.10nm		2.5mb	X
Z	20s	23.40um		5.9Msz	
N	14s	7.40um			
E	10s	8.90um			
			pP	29 45.00	41kmX
			S	34 36.50	
MBL	31.74	192	eP	29 33.50	-1.3
	0.5s	42.00nm		5.5mb	
LZH	33.05	325	eP	29 45.50	-0.8
	9.0s	1843.00nm		5.9mb	X
Z	16s	45.10um		6.3MszX	
N	15s	16.60um			
E	13s	24.70um			
			sP	30 08.50	
			i	30 27.00	
			PP	30 55.00	
			PcP	32 30 00	
			S	35 09.00	
			sS	37 12.00	
QIS	33.08	157	iPc	29 45.10	-1.4
			e	29 54.00	
HHC	33.36	339	P	29 48.80	-0.1
Z	16s	27.00um		6.1MszX	
N	16s	18.30um			
E	14s	20.20um			
CN2	33.59	359.	eP	29 53.00	2.3
	7.0s	1.20nm		2.9mb	X
Z	18s	20.10um		5.9Msz	
N	12s	11.70um			
E	12s	6.60um			
			pP	29 57.00	14kmX
			sP	29 59.00	
			eS	35 08.00	
			ScP	36 16.00	
			iSS	37 11.00	
BTO	33.71	337	P	29 51.00	-0.9
N	16s	23.30um			
E	16s	17.50um			
			sP	30 08.50	
			iS	35 13.00	
NANU	34.19	198	iPc	29 55.40	-0.7
	0.5s	45.00nm		5.7mb	
ASPA	34.33	168	iPd	29 55.50	-1 8
	0.7s	71.00nm		5.7mb	
Z	20s	13.12um		5.6Msz	
			eS	35 19.40	
			LR	46 12.00	
MDJ	34.50	4	eP	29 58.00	-0.6
Z	20s	9.73um		5.5Msz	
N	12s	9.68um			
			iS	35 28.00	
CTA	35.75	147	iPd	30 08.90	-0.5
	1.2s	84.38nm		5.5mb	
			i	30 23.00	
			iPcP	32 47.50	
			iS	35 37.00	
			iScS	40 32.00	
WARB	36.06	180	iPc	30 11.80	-0.2
	0.3s	45.00nm		5.9mb	
SHL	36.22	300	iP	30 13.60	-0.1
			iS	35 55.20	
MEKA	37.30	192	eP	30 21.90	-0.5

08d 10h

0.3s 36.00nm 5.8mb
GTA 37.65 325 iPc 30 24.80 -0.6
Z 16s 43.10um 6.3MszX
E 15s 28.00um
PP 31 53.00
S 36 14.00
LSA 38.31 306 P 30 30.30 -1.2
N 16s 5.40um
E 14s 2.80um
PP 32 07.00
HNR 38.53 119 eP 30 36.00 3.1X
eS 36 23.00
YSS 39.29 18 eP 30 40.00 1.1
iS 36 24.00
OLP 40.33 155 eP 30 46.50 -1.1
MRWA 40.37 194 iPc 30 48.00 0.0
0.3s 17.00nm 5.3mb
BAL 41.54 193 iPd 30 57.60 0.0
RMO 42.31 150 eP 31 03.00 -0.9
e 32 48.00
e 36 48.00
MUN 42.97 193 iPd 31 09.40 0.1
NWAO 43.68 191 iPd 31 15.20 0.2
STK 44.17 161 iPc 31 18.40 -0.5
e 31 21.00
BRS 45.14 146 iPc+ 31 25.80 -1.1
0.8s 6.90nm 4.6mb X
Z 18s 89.00um 6.7Msz
i(pP) 31 30.80 17kmX
i 31 40.80
i(PP) 33 08.80
iS 38 12.00
i(ScS) 41 20.00
CMS 45.30 157 eP 31 28.00 -0.1
i 31 32.00
ADE 46.28 166 iPc 31 36.00 0.2
1.0s 250.00nm 6.1mb
HYB 47.03 284 eP 31 41.00 -1.0
1.0s 100.00nm 5.7mb
e 32 06.00
eS 38 32.00
COO 47.23 150 eP 31 44.00 0.6
WMO 47.50 322 Pd 31 45.00 -0.4
Z 20s 32.40um 6.3Msz
N 15s 18.50um
E 15s 14.20um
PP 33 40.00
S 38 40.00
GBA 48.08 279 P 31 49.30 -0.9
KOD 48.22 275 iPd 31 52.00 0.3
1.0s 110.00nm 5.8mb
iS 38 42.00
BWA 48.92 156 eP 31 57.80 1.4
NDI 49.64 299 eP 32 00.50 -1.6
0.4s 33.90nm 5.7mb
CAN 49.93 156 eP 32 04.50 0.3
i 32 09.20
PET 50.03 25 eP 32 08.00 3.4X
eS 39 18.00
CNB 50.07 156 iPc 32 06.30 1.0
e 32 10.00
e 32 20.00
DZM 50.56 130 iPc 32 09.50 0.2
TOO 50.65 160 eP 32 10.00 0.4
e 32 13.00
POO 51.55 286 iPd 32 15.70 -1.1
0.8s 31.34nm 5.4mb
iS 39 35.50
BOM 52.54 286 iP 32 21.00 -3.1X
iS 39 47.40
KSH 53.49 312 P 32 32.00 0.9
E 17s 35.80um
S 40 04.00
FRU 55.59 315 eP 32 47.00 0.7
eS 40 36.00
QUE 58.72 299 eP 33 07.00 -1.8
eS 41 10.00
TIK 61.51 1 eP 33 25.50 -1.4
eS 41 45.00
ADK 61.92 36 eP 33 29.20 -0.9
MAIO 65.58 305 iPc+ 33 53.00 -1.4
eS 42 40.00
MSZ 66.12 149 P 33 57.80 0.4
KRP 66.18 139 P 33 59.30 1.3
TCW 67.36 143 P 34 06.90 1.4
MRW 67.63 143 eP 34 06.20 -0.9
KHZ 67.67 144 P 34 06.70 -0.7

0.6s 36.00nm 5.6mb
WEL 67.70 143 P 34 08.00 0.4
S 43 02.00
CAW 67.77 142 P 34 07.20 -0.9
WDW 67.82 142 P 34 07.70 -0.7
MTW 68.06 142 eP 34 09.00 -0.9
BLW 68.17 142 P 34 10.00 -0.6
PGZ 68.21 141 eP 34 09.80 -1.0
SVE 68.47 327 ePc 34 11.00 -1.2
iS 43 12.00
SDN 72.10 35 eP 34 33.60 -0.6
i 34 37.60
HON 72.97 71 P 34 51.00 11.1X
Z 20s 6.38um 5.9Msz
DHR 73.43 294 eP 34 46.00 3.4X
TTA 75.38 27 eP 34 53.60 0.3
KER 75.65 303 eP 34 59.00 3.5X
TAB 76.14 307 eP+ 35 00.00 1.8
IMA 76.71 24 eP 35 01.20 0.4
1.0s 12.50nm 4.9mb
RYD 76.72 293 eP 35 01.00 -0.5
KDC 76.74 33 P 35 00.80 0.0
0.8s 32.41nm 5.4mb
KDC 76.74 33 eP 35 04.20 3.4X
SLY 76.91 304 eP 35 01.00 -1.3
e 36 41.00
eS 44 49.50
ePS 46 09.00
DRV 77.19 175 eP 35 07.60 4.5X
BHD 77.98 302 ePd 35 08.50 0.3
eS 45 05.00
PMR 78.52 29 eP 35 09.90 -0.7
1.0s 20.00nm 5.1mb
Z 20s 4.50um 5.8Msz
MSL 78.76 305 ePd 35 11.00 -1 5
e 35 36.00
eS 45 08.50
ePS 46 11.50
FBA 79.11 26 eP 35 13.50 -0.3
KMSA 79.12 289 eP 35 13.50 -1.3
TOA 79.91 29 eP 35 19.10 0.8
OBN 81.75 324 iPc 35 28.60 0.7
1.5s 80.00nm 5.5mb
Z 20s 13.00um 6.3Msz
iS 45 35.00
ARO 81.87 280 iP 35 30.00 0.5
APA 81.96 337 iPc 35 29.60 0.8
iS 45 42.00
RUWJ 82.71 302 Pd 35 35.10 1.5
KVT 83.79 310 iP 35 40.00 1.1
KEV 83.87 340 iP 35 39.20 0.5
1.0s 110.00nm 5.9mb
eS 46 00.00
INK 84.37 22 eP 35 41.00 -0.1
1.4s 120.00nm 5.8mb
PUL 84.46 330 eP 35 43.00 1.3
eS 46 19.00
KBS 84.74 350 eP 35 45.90 3.0X
MASJ 85.43 301 P+ 35 46.20 -1.1
MKRJ 85.52 301 P+ 35 46.90 -0.9
WAJH 85.56 296 eP 35 48.70 0.8
DSI 85.74 301 e(P) 35 49.00 0.3
MBC 85.83 13 eP 35 49.00 0.6
1.0s 56.00nm 5.7mb
PRNI 86.26 300 iPc 35 52.00 0.6
SRFA 86.33 299 eP 35 52.00 0.3
HQL 86.39 299 eP 35 52.50 0.5
MBH 86.45 299 iPc 35 52.50 0.2
BBTK 86.46 310 eP 35 36.00 -16.3X
e 35 53.00
CSS 86.87 305 eP 35 52.70 -1.6
NUR 87.06 331 eP 35 54.00 -0.6
0.7s 56.10nm 5.9mb
Z 16s 15.80um 6.5MszX
i 35 58.90
e 38 36.00
eS 46 32 00
LR 18 30.00
TVO 87.64 108 iP 36 05.50 7.2X
1.0s 75.00nm 5.9mb
ALT 88.63 309 eP 36 03.00 0.3
KHL 89.23 309 eP 36 05.00 -0.6
ELL 89.26 307 eP 36 07.00 1.2
HLW 89.46 300 eP+ 36 08 00 1 3
e 46 36.00
e 46 58.00
VRI 89.55 316 ePd 36 09.00 2.1

MAW 89.61 200 eP 36 10.00 3.5X
NAI 89.92 269 eP 36 14.00 4.5X
MLR 90.18 316 ePd 36 08.50 -1.4
BUC 90.34 315 eP 36 20.00 9.5X
BUC1 90.40 315 ePc 36 12.00 1.2
UPP 90.60 331 iP 36 05.60 -5.7X
iS 47 00.00
SBA 90.63 172 e(P) 36 13.20 2.1
CMP 90.85 316 ePc 36 05.00 -7.9X
IZM 90.94 309 eP 36 17.20 3.7X
DAG 90.97 352 eP 36 16.00 3.2X
Z 19s 3.89um 5.9Msz
N 18s 1.10um
E 19s 2.50um
WAR 91.39 324 eP 36 16.00 0.9
eS 46 48.00
KRA 92.74 322 eP 36 23.50 2.1
e 36 33.10
NB2 93.01 334 P 36 21.60 -1.0
0.7s 16.20nm 5.6mb
PSZ 93.46 320 eP 36 24.90 0.0
KNT 93.48 313 eP 36 24.50 -0.6
JNW 93.61 347 iP 36 27.00 1.9
VAY 93.67 313 eP 36 12.70 -13.2X
BEO 94.09 317 eP 36 30.00 2.2
BUD 94.16 320 eP 36 27.50 -0.5
SKO 94.29 314 eP 36 28.00 -0.8
Z 18s 3.48um 5.9Msz
N 18s 2.32um
E 18s 5.22um
i 36 53.00
iPP 40 21.00
iSKS 47 04.40
iS 47 40.00
iPS 48 57.00
i 49 25.00
iSS 54 00.00
iSSS 58 00.00
LR 24 12.00
SRO 94.50 320 eP 36 29.40 -0.2
KSP 94.64 323 eP 36 30.80 0.6
e 40 05.30
OHR 95.01 313 eP 36 30.50 -1.7
ZST 95.13 321 eP 36 32.30 -0.2
VKA 95.59 321 ePd 36 34.00 -0.6
2.5s 299.00nm 6.3mb
Z 17s 5.80um 6.1MszX
i 36 48.00
ePP 40 30.00
LR 26 00.00
SOP 95.66 320 eP 36 36.00 1.1
BRG 96.00 324 eP 36 37.00 0.6
2.0s 90.00nm 5.9mb
Z 17s 5.50um 6.1MszX
N 17s 3.50um
E 17s 4.50um
e 40 23.00
e 47 08.00
e 48 00.00
PRU 96.01 323 eP 36 37.00 0.5
Z 19s 4.90um 6.0Msz
E 18s 5.30um
e 36 49.00
SKS 47 16.00
CLL 96.36 325 ePc 36 37.00 -1.1
1.9s 50.00nm 5.7mb
Z 18s 5.50um 6 1Msz
i 36 51.10
eS 47 59.00
KHC 96.93 322 P 36 41.50 0.8
1.2s 15.00nm 5.4mb
Z 16s 7.00um 6 2MszX
N 17s 2.60um
E 18s 4.50um
e 40 39.00
KMR 97.02 321 iP+ 36 41.10 0.0
PNT 97.43 37 eP 36 46.00 3.0X
MOX 97.44 324 eP+ 36 42.00 -1.0
1.7s 41.00nm 5.7mb
Z 16s 4.10um 6.0MszX
E 18s 8.00um
KBA 97.90 321 eP 36 47.00 1.7
0.8s 12.20nm 5.5mb
i 37 05.90
e 41 06.00
LWI 97.96 269 eP+ 36 34.00 -12.3X
GRF 98.08 324 eP 36 46.70 0.8

08d 10h

1.5s 33.00nm 5.6mb
Z 18s 7.00um 6.2Msz
e 36 59.00
e 37 11.00
e 37 28.00
TRI 98.19 319 eP 36 50.00 3.6X
WDC 98.95 46 eP 36 55.20 5.3X
WTS 99.48 327 eP 36 56.50 4.4X
1.2s 48.00nm 5.9mb
ORV 100.07 47 ePdiff36 58.50 3.4X
ABH 100.11 325 ePdiff36 51.53 -3.5X
DBN 100.29 328 ePdiff36 57.00 1.3
e(S) 47 40.00
RUP 100.47 325 ePdiff36 57.56 0.9
ENN 100.58 326 ePdiff36 59.00 2.0
1.0s 19.00nm 5.6mb
FIR 100.61 318 ePdiff37 00.00 2.7X
iPP 41 10.00
FEL 100.80 323 ePdiff36 57.63 -0.7
CMB 101.45 48 ePdiff37 04.80 3.5X
SLR 101.66 246 iPdiff37 10.50 7.8X
Z 18s 13.06um 6.5Msz
SES 101.80 33 ePdiff37 06.00 3.4X
EKA 102.49 333 Pdiff 37 09.00 3.6X
1.7s 54.60nm 6.0mb
KVN 102.69 46 Pdiff 37 09.00 2.0
LRM 103.34 38 ePdiff37 13.70 3.9X
FFC 103.70 27 ePdiff37 14.00 3.1X
1.0s 12.00nm 5.6mb
GSC 105.17 49 ePKP 41 39.00 6.6X
RVR 105.27 51 ePKP 41 29.00 -3.5X
PLM 105.92 51 ePKP 41 42.00 8.0X
BAR 106.34 52 ePKP 41 51.00 16.4X
BCAO 106.82 278 ePKPd 41 42.00 6.0X
0.8s 7.00nm
ic 41 54.70
GOL 111.00 41 (PKP) 41 45.00 1.5
Z 22s 4.12um 6.0Msz
GLD 111.07 40 PKP 41 56.00 12.4X
Z 20s 3.70um 6.0Msz
MEO 118.26 41 e(PKP)42 01.30 4.1X
SIO 119.11 39 e(PKP)42 00.90 2.1
TUL 119.32 39 ePKP 42 03.50 4.3X
1.0s 16.70nm
Z 19s 4.90um 6.2Msz
LR 20 00.00
UYO 121.29 39 iPKPc 42 02.50 -0.5
KUK 124.66 285 ePKP 42 12.00 1.9
KIC 128.76 287 PKP 42 17.58 -0.4
LIC 129.07 287 PKP 42 17.04 -1.5
Z 20s 3.00um 6.0Msz
UPA 147.90 55 iPKPc+42 55.40 2.9X
1.1s 144.30nm
Z 20s 2.13um 5.9Msz
LRS 148.87 25 PKP 42 57.50 3.5X
PORP 149.17 25 PKP 42 58.00 3.6X
CPD 149.48 24 PKP 42 59.00 4.1X
CHCH 151.53 149 ePKP 43 05.00 7.4X
TACH 151.61 148 ePKP 43 09.00 11 3X
SAN 151.90 148 ePKP 43 04.00 5.9X
PEL 152.13 148 iPKPc 43 06.00 7 5X
0.4s 46.61nm
BOG 154.84 55 ePKP 43 06.00 2.9X
YJA 163.37 138 ePKPc 43 15.20 2.5X
LPB 164.43 116 PKP 43 16.60 2.8X
1.0s 76.00nm
Z 18s 3.44um
LR 40 08.00
ZOBO 164.50 115 PKPc 43 16.30 2.2X
1.5s 162.37nm
Z 20s 3.50um
LR 40 22.00
CCH 165.75 122 PKP 43 19.80 5.1X
BAO 172.30 224 e(PKP)43 19.00 0.5
S.D. = 1.1 on 161 of 227 obs

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* DEC 08, 1989 10h 50m 26.03± 1.28s
53.355 N ±15.6km 163.210 W ± 9.9km
DEPTH = 33.0km (normal)
UNIMAK ISLAND REGION (10)

SNKA 1.15 13 eP 50 45.21 -0.6
eS 50 59.57
DRRA 1.66 19 ePc 50 52.40 -0.9
BALA 1.86 7 eP 50 57.18 1.1
PVV 2.19 22 eP 51 00.94 0.2
eS 51 26.11
SQF 2.43 39 eP 51 04.52 0.3
eS 51 31.91
NGI 2.50 46 eP 51 04.92 -0.3
SASA 2.54 38 eP 51 06.25 0.4
eS 51 34.38
CNBA 2.59 54 eP 51 06.73 0.3
eS 51 36.16
IVF 3.33 39 ePc 51 17.15 0.2
eS 51 54.26
KDC 7.50 50 eP 52 26.00 10.2X
ADK 8.33 265 eP 52 27.70 0.3
IMA 13.60 17 eP 53 42.30 3.4X
KVN 33.73 97 eP 57 15.80 9.3X
HFS 66.84 2 eP 01 15.20 -0.9
0.4s 2.50nm 4.7mb
S.D. = 0.7 on 11 of 14 obs.

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* DEC 08, 1989 10h 53m 21.01± 2.63s
10.010 N ±13.7km 126.366 E ±18.5km
DEPTH = 95.2 ± 23.6 km
4.7mb (7 obs.)
PHILIPPINE ISLANDS REGION (248)

DAV 3.01 195 eP 54 08.00 0.4
SSE 21.53 348 Pc 58 03.40 -0.4
1.0s 24.00nm 4.5mb
i 58 17.20
NST 26.17 285 eP 58 50.20 1.7
CHTO 27.93 291 eP 59 02.30 -2.1
pP 59 14.20 46kmX
WB2 30.79 165 eP 59 27.10 -2.7
LZH 33.04 325 eP 59 49.00 -0.6
1.5s 19.00nm 4.7mb
ASPA 34.27 168 iPd 59 58.90 -1.2
0.8s 6.00nm 4.5mb
WARB 35.98 180 iPc 00 15.20 0.7
0.3s 6.00nm 5.0mb
SHL 36.15 300 eP 00 20.80 4.5X
HYB 46.93 284 eP 01 44.00 -0.2
GBA 47.97 279 P 01 52.60 0.3
KOD 48.10 275 eP 01 54.80 1.0
BWA 48.89 156 eP 02 00.20 1.0
CAN 49.91 156 eP 02 00.20 -6.8X
MSZ 66.11 149 P 04 01.50 1.5
MBC 85.94 13 eP 05 53.00 1.8
1.0s 7.00nm 4.6mb
HFS 92.32 332 eP 06 21.20 -0.4
0.5s 2.40nm 4.8mb
NB2 93.03 334 P 06 24.20 -0.7
0.9s 4.70nm 4.8mb
ZOBO 164.58 115 ePKP 13 19.00 3.0X
S.D. = 1.5 on 16 of 19 abs.

% DEC 08, 1989 11h 13m 27.82± 2.35s
46.259 N ± 8.3km 6.835 E ±19.5km
DEPTH = 10.0km (geophysicist)
SWITZERLAND (544)

EMS 0.20 161 ePd 13 32.50 0.2
DIX 0.44 114 ePc 13 36.00 -0.8
MMK 0.81 104 ePd 13 43.40 -0.3
TMA 1.42 95 ePd 13 53.50 -0.4
LLS 1.61 67 ePc 13 56.00 -0.6
VDL 1.84 82 ePc 14 00.60 0.7
SLE 1.89 36 ePc 13 59.50 -0.9
SAX 1.99 59 ePc 14 02.20 0.1
OSS 2.33 78 ePc 14 09.00 2.1
S.D. = 1.1 on 9 of 9 obs.

% DEC 08, 1989 12h 08m 37.70± 1.44s
40.474 N ±12.8km 30.120 E ±13.0km
DEPTH = 10.0km (geophysicist)
TURKEY (366)

GPA 0.23 142 iPg 08 42.60 -0.1
iSg 08 47.10
HRT 0.49 315 iPg 08 47.40 -0.2
YLV 0.58 279 iPg 08 49.00 -0.5
iSg 08 55.00
ALT 1.42 180 ePn 09 04.00 0.4
DST 1.44 233 iPn 09 02.70 -1.1
BNT 1.68 267 ePn 09 08.90 1.6
S.D. = 1.2 on 6 of 6 obs.

DEC 08, 1989 12h 12m 59.97± 0.60s
32.301 N ± 3.3km 140 880 E ± 2.9km
DEPTH = 58.9 ± 4.9 km

5.7mb (72 obs.)
SOUTH OF HONSHU, JAPAN (211)
CENTROID, MOMENT TENSOR (HRV)
Data Used: GDSN
L.P.B.: 10S, 17C
Centraid Lacation:
Origin Time 12:12:56.5 1.2
Lat 31.87N 0.13 Lan 141.15E 0.09
Dep 62.4 8.4 Half-duration 2.0
Mament Tensar; Scale 10**17 Nm
Mrr= 1.16 0.12 Mtt=-0.05 0.21
Mff=-1.10 0.18 Mrt= 0.58 0.17
Mrf=-0.67 0.16 Mtf=-0.28 0.17
Principal Axes:
T Val= 1.59 Plg=64 Azm= 36
N -0.29 22 181
P -1.30 14 276
Best Double Couple:Ma=1.5*10**17
NP1:Strike= 34 Dip=37 Slip= 129
NP2: 168 62 65

KAKJ 3.94 352 P 13 57.80 -1.4
S 14 46.80
IIDJ 4.02 323 iPd 14 02.00 1.6
CHJJ 4.05 338 iPd 14 00.20 -0.7
WKYJ 4.82 295 iPd 14 13.40 1.6
MTMJ 4.97 330 P 14 14.10 0.2
NIIJ 5.16 343 P 14 14.60 -1.9
TSRJ 5.19 310 iPd 14 18.30 1.3
YAMJ 5.90 354 iP+ 14 24.20 -2.6
TKSJ 5.97 288 iPd 14 29.50 1.7
OFUJ 6.79 5 iPd 14 34.50 -4.8X
eS 15 44.50
YONJ 6.82 297 P 14 41.60 2.0
SHK 7.21 290 iP 14 46.70 1.6
1.0s 440.00nm 6.1mb
SHNJ 8.39 285 eP 15 02.80 1.5
KUMJ 8.50 274 P 15 06.10 3.2X
KAGJ 8.58 265 eP 15 06.90 2.9
MRRJ 10.11 1 P 15 19.70 -5.2X
HOOJ 10.24 10 P 15 19.40 -7.4X
eS 17 03.90
KUSJ 11.20 15 P 15 33.10 -6.5X
eS 17 25.50
ASAJ 11.88 6 eP 15 42.20 -6.6X
MDJ 15.12 328 eP 16 29.00 -2.4
Z 20s 2.20um
S 19 20.00
CN2 16.69 318 iPd 16 50.80 -0.4
1.0s 0.10nm 1.9mb X
Z 20s 2.10um
N 11s 0.90um
SNY 16.74 309 iPc 16 53.10 1.3
1.0s 0.30nm 2.4mb X
Z 28s 2.30um 5.8Msz
N 12s 0.80um
E 12s 0.60um
sP 17 08.00
SSE 16.81 271 P 16 55.00 2.3
1.0s 59.00nm 4.7mb
Z 20s 1.40um 5.6Msz
N 12s 1.00um
E 12s 0.50um
pP 17 10.00
S 20 03.00
sS 20 27.00
DL2 16.97 298 P 16 55.00 0.2
NJ2 18.65 275 iPc 17 15.60 0.2
0.8s 0.30nm 2.6mb X
Z 26s 2.00um
sP 17 30.50
GUMO 18.98 168 ePd 17 20.00 0.5
1.1s 1762.07nm 6.2mb
GUA 19.04 168 ePd 17 20.30 0.1
1.0s 1104.00nm 6.0mb
TIA 20.01 288 P 17 29.30 -1.1
Z 20s 2.40um 4.5Msz
E 16s 2.60um
QZH 20.87 255 eP 17 40.00 0.7
BJI 21.34 298 eP 17 41.50 -2.4
1.0s 79.00nm 5.0mb
N 13s 0.74um
eS 21 36.00
eScS 29 00.00
WHN 22.69 273 Pc 17 56.70 -0.7
1.0s 0.22nm 2.5mb X
Z 24s 0.73um 4.0MszX

N 11s 0.74um
sP 18 15.00
S 21 56.00
sS 22 16.00
TIY 23.87 291 Pc 18 07.50 -1.4
0.9s 0.10nm 2.3mb X
Z 21s 2.30um 4.6Msz
E 16s 2.20um
sP 18 25.00
S 22 20.00
HHC 24.95 298 P 18 18.00 -1.3
Z 30s 3.10um 4.6MszX
E 13s 0.90um
PP 18 50.00
BTO 26.07 297 P 18 28.00 -1.7
N 19s 1.70um
E 19s 1.70um
sP 18 47.00
XAN 26.75 282 P 18 33.60 -2.4
0.8s 0.10nm 2.4mb X
sP 18 51.60
PP 19 19.00
S 23 00.00
GYA 30.29 268 iPc 19 05.60 -2.4
S 23 57.40
LZH 30.75 287 eP 19 10.00 -1.9
i 19 36.00
eS 24 21.00
ScP 25 46.00
ScS 29 42.00
QIZ 30.82 252 eP 19 11.80 -0.6
SMY 31.46 40 e(P) 19 18.10 0.3
CD2 31.55 278 iPc 19 16.70 -2.2
GTA 33.81 294 P 19 36.60 -1.9
ScP 25 55.00
KMI 34.07 268 eP 19 37.00 -4.1X
ADK 36.42 45 ePc 19 59.50 -0.9
CHG 39.90 261 iPd 20 28.90 -1.0
1.0s 47.50nm 5.3mb
NST 40.46 256 eP 20 34.50 0.0
BDT 40.60 259 eP 20 35.50 -0.1
0.7s 30.10nm 5.2mb
KDB 41.97 171 eP 20 46.50 -0.3
NNT 42.46 252 iPc 20 50.60 -0.3
e 22 45.80
e 26 19.20
WMQ 42.76 301 P 20 47.50 -5.7X
Z 28s 1.70um 4.8MszX
ScP 26 29.00
PcS 26 31.50
S 27 14.50
SHL 43.10 274 iP 20 54.90 -1.4
eS 27 32.00
SNG 44.99 245 eP 21 11.00 -0.4
MTN 45.85 193 iPd 21 16.90 -1.1
IPM 46.35 242 ePd 21 21.00 -1.1
0.9s 73.50nm 5.6mb
e 22 59 10
KGM 46.41 237 eP 21 22.00 -0.6
SDN 46.50 42 eP 21 21.10 -1.7
TTA 49.60 32 eP 21 46.80 -0.2
KLI 50.38 230 eP 21 53.00 -0.3
BRW 50.95 22 e(P) 21 57.50 0.5
IMA 51.02 29 ePc 21 57.30 -0.5
1.5s 52.10nm 5.3mb
KDC 51.02 39 eP 21 56.70 -1.0
KSH 52.07 297 Pc 22 06.00 -0.1
WB2 52.32 188 eP 22 05.90 -2.0
ipP 22 21.70 60kmX
iPcP 23 23.80
i 23 26.70
eScP 27 09.20
eS 29 22.00
QIS 52.57 182 iPc 22 08.60 -1.2
e 22 25.00
PMR 52.73 34 ePc 22 08.90 -1.6
1.2s 195.30nm 6.0mb
FBA 53.37 30 eP 22 14.50 -0.7
TOA 54.12 34 eP 22 20.80 0.0
NDI 54.26 284 iPd 22 20.50 -1.8
0.7s 184.93nm 6.2mb
ASPA 56.05 188 iPc 22 33.90 -1.3
0.6s 45.00nm 5.7mb
Z 23s 0.68um 4.7MszX
eS 30 14.80
LR 45 46.20
HYB 57.74 271 iP 22 45.70 -1.7

1.0s 100.00nm 5.9mb
INK 58.81 26 iPc 22 52.90 -1.2
0.5s 44.00nm 5.8mb
RMQ 58.94 172 e(P) 22 54.00 -1.4
DZM 59.34 152 iPc 22 59.00 0.6
WARB 59.72 195 eP 23 00.50 -0.3
0.4s 11.00nm 5.3mb
BRS 60.43 168 iPd 23 05.50 -0.2
i 23 09.00
e 23 23.00
GBA 60.50 268 P 23 05.30 -1.1
MBC 61.19 16 ePc 23 09.10 -1.2
1.0s 54.00nm 5.6mb
POO 61.21 275 iPc 23 10.40 -0.9
0.8s 101.49nm 6.0mb
QUE 62.03 290 eP 23 15.50 -1.3
eS 31 37.00
KOD 62.16 264 iPc 23 17.10 -1.0
0.7s 54.79nm 5.8mb
COO 63.40 169 eP 23 30.00 4.5X
e 23 43.00
CMS 63.61 175 eP 23 26.00 -0.8
i 23 43.20
STK 63.84 179 eP 23 28.00 -0.3
e 23 44.00
MAIO 65.42 299 iPd 23 38.80 0.0
BWA 66.75 173 eP 23 47.70 0.7
i 24 04.20
ADE 66.94 182 e(P) 23 46.70 -1.5
0.9s 78.99nm 5.7mb
CAN 67.70 173 eP 23 53.00 0.0
e 24 09.50
CNB 67.73 173 eP 24 10.00 16.7X
TOO 69.64 176 eP 24 22.00 17.0X
PGC 69.97 45 ePd 24 07.30 0.4
MCW 70.32 44 P 24 09.40 0.2
GMW 70.86 45 P 24 11.80 -0.6
BMW 71.08 47 P 24 14.40 0.6
RMW 71.49 45 P 24 16.40 0.1
LON 71.82 46 P 24 18.20 -0.1
SHW 71.82 47 P 24 19.00 0.6
PNT 71.90 43 iPc 24 18.50 -0.2
1.1s 159.00nm 5.9mb
SUF 72.02 334 iP 24 18.50 -0.5
0.6s 26.40nm 5.3mb
FHC 73.23 52 eP 24 27.70 1.1
DPW 73.43 44 P 24 27.80 0.1
NEW 73.86 43 P 24 30.00 -0.1
WDC 74.30 52 iPc 24 32.80 0.0
e 27 19.00
MIN 75.03 52 eP 24 36.50 -0.7
e 27 24.30
ORV 75.49 52 ePc 24 39.20 -0.5
BRK 75.82 54 eP 24 41.40 -0.1
BKS 75.83 54 iPc 24 41.80 0.2
1.1s 210.00nm 6.0mb
SLY 75.91 303 ePd 24 42.50 0.5
eS 34 18.00
PCC 75.92 55 eP 24 41.60 -0.5
SES 76.09 39 ePc 24 42.40 -0.5
1.5s 227.00nm 5.9mb
GCC 76.42 55 ePc 24 44.50 -0.4
MHC 76 51 54 eP 24 45.50 -0.1
ARN 76.58 54 P 24 45.90 0.1
SAO 76.93 55 eP 24 47.30 -0.5
KRP 76.97 153 P 24 49.00 1.3
UPP 77.01 334 iP 24 47.60 -0.1
CMB 77.01 53 iPc 24 48.40 0.1
e 27 28.50
MSL 77.17 305 eP 24 48.00 -1.1
PRS 77.21 55 ePc 24 49 40 0.1
LLA 77.36 55 ePc 24 50.30 0.2
PRI 77.79 55 ePc 24 53.10 0.4
LRM 77.86 43 iPc 24 53.20 0.2
BHD 77.87 302 ePc 24 53.50 0.6
eS 34 40.00
FFC 77.93 32 iPc 24 52.10 -0.8
1.0s 78.00nm 5.7mb
FRI 78.01 54 ePc 24 53.50 -0.2
KVN 78.02 51 P 24 54.20 0.2
pP 25 14.70 76kmX
PHAM 78.13 55 P 24 55.00 0.6
HFS 78.22 336 eP 24 53.40 -1.0
0.6s 52.20nm 5.7mb
PKEM 78.22 55 P 24 56 00 1.1
NB2 78.38 338 P 24 54.80 -0.5
0.7s 53.50nm 5 6mb

BCH 78.69 56 P 24 58.00 0.4
SYP 79.11 56 eP 25 01.00 1.1
TNP 79.12 52 P 25 00.00 0.0
KVT 79.38 312 iP 25 02.70 1.5
ISA 79.56 54 eP 25 01.00 -1.3
PTI 79.57 46 P 25 03.20 0.9
IMW 79.84 44 P 25 04.80 0.9
CLC 80.08 54 eP 25 05.00 0.0
MSZ 80.47 161 P 25 06.00 -0.6
SBB 80.53 55 eP 25 07.00 -0.4
RYD 80.57 293 eP 25 08.00 0.2
PAS 80.58 56 eP 25 07.00 -0.6
MWC 80.62 56 eP 25 08.00 -0.1
KAS 80.64 313 eP 25 09.50 1.6
DUG 80.81 48 P 25 09.40 0.5
GSC 80.90 54 eP 25 09.00 -0.4
AKU 80.98 351 iP 25 14.20 5.1X
0.9s 23.53nm 5.1mb
RVR 81.22 55 eP 25 10.00 -1.0
BW06 81.31 45 P 25 11.40 -0.2
pP 25 33.00 80kmX
CLI 81.32 320 ePd 25 12.50 1.2
PEC 81.42 55 P 25 11.90 -0.2
FRB 81.47 13 eP 25 10.80 -0.9
DAU 81.66 47 P 25 14.20 0.6
PLM 81.92 56 eP 25 14.00 -0.9
VRI 82.05 320 ePd 25 17.50 2.4
TPC 82.07 55 eP 25 15.00 -0.5
BBTK 82.15 312 eP 25 16.00 0.1
MSU 82.18 49 P 25 16.80 0.6
BAR 82.43 56 eP 25 17.00 -0.3
MLR 82.71 320 ePc 25 20.00 1.3
KRA 82.77 326 eP 25 19.20 0.5
0.8s 108.00nm 5.9mb
i 25 21.80
i 25 40.00
AFR 82.77 116 iP 25 21.50 2.3
1.0s 70.00nm 5.6mb
REY 82.93 352 eP 25 21.20 2.0
PPT 82.95 116 iP 25 21.40 1.3
1.0s 45.00nm 5.4mb
PPN 83.03 116 iP 25 22.80 2.3
1.0s 40.00nm 5.4mb
TVO 83.32 116 iP 25 23.80 1.7
1.0s 90.00nm 5.7mb
GLA 83.51 55 eP 25 23.00 0.1
RSSD 83.66 41 P 25 23.30 -0.4
YLV 83.80 315 iP 25 26.00 1.7
KSP 83.89 328 iPc 25 25.10 0.7
0.8s 108.00nm 5.9mb
e 28 37.20
RSON 84.24 31 P 25 25.20 -1.0
1.2s 94.75nm 5.7mb
pP 25 47.00 81kmX
PSZ 84.25 325 eP 25 27.20 0.8
HLBJ 84.25 304 P+ 25 22.30 -4.4X
SHMJ 84.26 305 P+ 25 28.60 1.9
ALT 84.27 313 eP 25 27.40 0.7
KMSA 84.51 290 eP 25 28.50 0.4
CSS 84.63 308 eP 25 29.00 0.5
SALJ 84.72 305 P+ 25 30.70 1.6
MASJ 84.86 304 P+ 25 31.00 1.2
BRG 84.89 329 iP 25 29.50 0.1
0.9s 80.00nm 5.8mb
i 25 32.90
e 25 48.00
e 28 46.00
BZS 84.94 322 eP 25 30.00 0.3
CLL 84.97 330 iPc 25 29.40 -0.4
1.0s 145.00nm 6.0mb
i 25 40.60
i 25 46.60
BUD 84.97 325 eP 25 31.00 1.1
KHL 85.08 313 eP 25 29.00 -1.7
SRO 85.09 325 iP 25 31.70 1.2
DSI 85.19 304 eP 25 32.00 0.7
PRU 85.28 329 Pc 25 31.80 0.4
1.5s 55.80nm 5.5mb
e 25 41.50
PPCY 85.33 309 eP 25 29.00 -2.9
ZST 85.40 326 eP 25 32.50 0.5
GOL 85.69 45 P 25 34.50 0.5
1.1s 89.74nm 5.8mb
GLD 85.75 45 P 25 35.20 1.0
1.3s 155.17nm 6.0mb
ELL 85.79 311 eP 25 36.10 1.7
RZN 85.83 318 eP 25 36.00 1.4

08d 12h

MOX	86.05	330	eP	25	35.00	-0.3
	1.5s	39.00nm			5.3mb	
EZN	86.09	315	eP	25	37.10	1.5
VTS	86.09	319	eP	25	49.00	13.2X
PRNI	86.16	304	iPc	25	36.50	0.3
AYN	86.29	302	eP	25	37.00	0.2
WIT	86.32	334	eP	25	38.00	1.5
KHC	86.34	328	Pd	25	37.30	0.6
	1.0s	14.50nm			5.1mb	
		e		28	59.80	
EDU	86.34	341	ePc	25	36.10	-0.5
MMB	86.46	318	eP	25	40.00	2.5
MBH	86.57	303	ePc	25	38.00	-0.2
ELO	86.60	341	eP	25	37.70	-0.2
	0.9s	58.00nm			5.8mb	
KKB	86.64	319	iP	25	41.00	2.7
HOL	86.74	303	eP	25	39.00	0.0
ESY	86.77	340	ePc	25	38.40	-0.3
	0.8s	50.00nm			5.8mb	
WTS	86.92	334	eP	25	40.00	0.6
	0.8s	21.00nm			5.4mb	
		e		25	56.00	
GRF	86.94	330	eP	25	39.90	0.3
	1.6s	86.00nm			5.7mb	
		e		25	44.20	
		e		25	56.70	
EAB	87.02	341	eP	25	39.80	-0.1
	0.9s	80.00nm			5.9mb	
EAU	87.07	341	eP	25	40.30	0.1
VAY	87.29	318	eP	25	43.30	1.9
EKA	87.44	340	Pd	25	42.10	0.2
	0.9s	26.50nm			5.4mb	
SKO	87.48	319	eP	25	32.00	-10.4X
		i		25	43.70	
PTJ	87.59	325	eP	25	44.60	1.7
ZAG	87.63	325	iP	25	43.00	0.0
KBA	87.96	327	eP	25	44.00	-0.8
	0.7s	18.00nm			5.4mb	
		ic		25	45.30	
		i		25	48.30	
		i		30	12.80	
ALQ	87.99	49	iPc	25	45.20	0.0
	1.0s	15.00nm			5.1mb	
LJU	88.17	326	eP	25	47.70	2.1
ENN	88.23	333	eP	25	46.00	0.2
	0.9s	30.00nm			5.5mb	
		e		25	59.00	
OHR	88.42	319	eP	25	47.70	0.7
	0.9s	0.04nm			2.7mb	X
		e		26	02.50	
VOY	88.48	326	eP	25	46.20	-1.0
		e		25	48.80	
CTI	89.51	327	Pd	25	50.90	-1.2
CDF	89.57	331	eP	25	51.90	-0.5
	0.8s	10.70nm			5.2mb	
SLE	89.58	330	ePc	25	52.40	0.1
SAX	89.61	329	ePd	25	55.20	2.4
OSS	89.70	329	ePd	25	53.10	0.0
LLS	90.06	329	ePc	25	55.00	0.2
VDL	90.15	329	ePc	25	55.60	0.4
BSF	90.23	331	eP	25	54.90	-0.5
	0.8s	5.30nm			4.9mb	
HAU	90.28	331	eP	25	55.10	-0.4
SAL	90.35	328	Pd	25	55.30	-0.6
TMA	90.71	329	ePd	25	57.30	-0.4
VAI	90.94	329	Pd	25	58.00	-0.5
PGD	91.11	326	Pd	26	00.50	0.9
MMK	91.14	329	ePd	26	00.00	0.2
MME	91.35	327	Pd	26	01.40	0.6
ACO	91.35	44	ePd	26	01.30	0.6
DIX	91.36	330	ePd	26	01.10	0.2
FIR	91.41	326	eP	26	03.00	2.3
ORX	91.47	329	P	26	00.45	-0.7
ORO	91.47	329	Pd	25	59.30	-1.9
BOB	91.49	328	Pd	26	01.30	0.1
EMS	91.57	330	ePd	26	01.60	-0.1
LOR	91.86	332	eP	26	02.40	-0.5
	0.8s	18.80nm			5.6mb	
LSD	91.96	329	P	26	03.74	0.1
LBF	92.05	332	eP	26	03.20	-0.5
	0.8s	22.80nm			5.7mb	
LPG	92.10	330	eP	26	04.10	-0.2
	0.7s	41.30nm			6.0mb	
RSP	92.16	329	P	26	05.48	1.1
SSF	92.17	332	eP	26	03.90	-0.3
	0.8s	32.20nm			5.8mb	
FLN	92.23	336	eP	26	03.80	-0.7
	0.8s	17.10nm			5.5mb	
LDF	92.25	335	eP	26	03.90	-0.7
	0.8s	17.10nm			5.5mb	
SMF	92.38	332	eP	26	04.90	-0.3
	0.8s	26.00nm			5.7mb	
AVF	92.46	332	eP	26	05.10	-0.4
FIN	92.48	328	P	26	05.79	0.0
BNI	92.49	329	Pd	26	05.80	-0.1
RRL	92.55	329	P	26	06.09	-0.2
ROB	92.56	328	P	26	06.20	0.0
GRR	92.68	336	eP	26	06.20	-0.4
	0.8s	44.00nm			5.9mb	
ENR	92.82	329	P	26	07.02	-0.4
BGF	92.85	332	eP	26	07.10	-0.3
	0.8s	21.40nm			5.6mb	
IMI	92.86	328	P	26	04.35	-3.2X
MEO	92.99	45	iPd	26	08.40	0.1
LPF	93.05	336	eP	26	08.20	-0.1
	0.8s	38.60nm			5.9mb	
SBF	93.10	328	eP	26	07.90	-0.7
	0.8s	45.60nm			6.0mb	
MAF	93.23	332	eP	26	09.20	0.0
	0.6s	12.60nm			5.5mb	
TCF	93.32	333	eP	26	09.30	-0.3
	0.7s	18.00nm			5.6mb	
LSF	93.61	333	eP	26	10.60	-0.3
SIO	93.67	43	eP	26	11.20	-0.2
TUL	93.85	43	eP	26	11.70	-0.5
	1.2s	54.50nm			5.9mb	
LRG	93.90	329	eP	26	10.90	-1.3
LMR	93.93	328	eP	26	11.60	-0.8
	0.8s	10.70nm			5.3mb	
MFF	93.94	334	eP	26	12.40	0.0
	0.8s	21.40nm			5.6mb	
RJF	94.40	333	eP	26	14.60	0.0
	0.8s	25.20nm			5.7mb	
CAF	94.50	332	eP	26	15.40	0.3
	0.9s	27.80nm			5.7mb	
LFF	95.01	333	eP	26	17.50	0.2
	0.7s	11.00nm			5.4mb	
LPO	95.05	332	eP	26	17.90	0.4
FVM	95.30	38	P	26	18.20	-0.6
EPF	96.77	332	eP	26	25.10	-0.4
	0.7s	4.40nm			5.1mb	
BCAO	114.26	292	ePKPc	31	36.30	1.1
	0.8s	16.00nm				
			ic	32	29.20	
SLR	121.54	258	iPKPc	31	48.00	-0.9
SPA	122.13	180	ePKP	31	48.70	0.0
	1.1s	13.69nm				
TIC	129.46	314	PKP	32	04.04	-0.2
KIC	129.51	313	PKP	32	04.22	-0.1
LIC	129.79	314	PKP	32	04.72	-0.1
ARE	146.73	69	e(PKP)	32	37.00	1.1
ZOBO	149.25	66	iPKPc	32	41.00	0.7
	0.9s	69.20nm				
LPB	149.43	66	PKP	32	42.00	1.7
	1.0s	204.00nm				
CNCB	149.68	66	PKPc	32	42.00	1.1
CCH	151.44	65	PKP	32	51.60	8.4X
PEL	153.48	100	iPKPd	32	54.00	8.6X
	0.5s	28.17nm				
SAN	153.53	101	ePKP	32	53.00	7.6X
CHCH	153.59	102	ePKP	32	54.50	9.0X
FCH	153.83	101	ePKP	32	56.50	10.3X
YJA	154.52	73	ePKPc	32	48.50	0.9
BAO	161.55	28	ePKP	33	04.00	8.5X

S.D = 1.0 on 272 of 294 obs.

DEC 08, 1989 12h 15m 01.90± 0.97s
54.276 N ±10.1km 161.362 W ± 6.0km
DEPTH = 33.0km (normal)
4.2mb (1 obs.)
ALASKA PENINSULA (12)

DRRA	0.84	321	iPd	15	17.03	-0.3
SNKA	0.85	284	ePd	15	18.05	0.6
DLG	0.91	343	ePd	15	17.66	-0.7
SOF	1.05	26	eP	15	21.10	0.7
			eS	15	33.62	
NGI	1.07	44	ePc	15	21.71	1.1
			eS	15	35.04	
PVV	1.13	347	iPd	15	21.46	0.1
			eS	15	34.34	
SASA	1.18	25	iPc	15	23.07	1.0
			eS	15	36.77	
SDN	1.18	25	iPd	15	23.40	1.3
BALA	1.24	319	eP	15	23.82	0.9
SGB	1.38	22	eP	15	25.92	0.9
			eS	15	42.04	
IVF	1.94	32	ePd	15	34.46	1.4
			eS	15	56.84	
KDC	6.07	51	e(P)	16	32.30	0.7
SVW	7.51	22	eP	16	51.40	-0.4
TTA	9.11	16	eP	17	12.40	-1.7
PMS	9.40	37	eP	17	17.00	-1.0
ADK	9.53	262	eP	17	19.50	-0.2
TOA	11.19	39	eP	17	41.20	-1.4
IMA	12.42	15	eP	17	59.00	-0.1
FBA	12.64	27	eP	18	00.00	-1.9
INK	19.14	32	eP	19	36.00	11.4X
MBC	27.03	21	eP	20	41.50	-0.8
	0.5s	3.00nm			4.2mb	
KVN	32.78	100	e(P)	21	34.00	0.0

S.D. = 1.1 on 21 of 22 obs.

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* DEC 08, 1989 13h 11m 15.45± 1.14s
41.130 N ± 7.6km 19.889 E ±11.1km
DEPTH = 10.0km (geophysicist)
ALBANIA (391)
ML 2.7 (SKO).

TIR	0.22	356	iPgc	11	19.80	-0.3
BERA	0.43	174	ePg	11	24.20	0.0
OHR	0.69	91	iPg	11	26.70	-2.4
			iSg	11	36.80	
PHP	0.70	36	iPgc	11	26.10	-3.1X
TPE	0.84	174	ePn	11	45.00	13.4X
PUK	0.91	0	ePg	11	32.40	-0.5
SDA	0.93	342	ePg	11	33.30	0.1
BCI	1.24	6	ePg	11	41.50	3.0X
SKO	1.44	54	iPg	11	42.80	1.3
			iSg	11	56.30	
VAY	2.03	84	ePn	11	50.60	0.5
KNT	2.27	88	eP	11	55.00	1.4
			eS	12	21.00	

S.D. = 1.4 on 8 of 11 obs.

& DEC 08, 1989 15h 00m 00.09s
37.231 N 116.409 W
DEPTH = 0.0km
5.5mb (61 obs.) 4.2Msz (1 obs.)
SOUTHERN NEVADA (41)
<DOE>. ML 5.2 (BRK). 37' 13' 51.93" N., 116' 24' 33.80" W., Surface Elev. 2003 m., Depth of Buriol 600 m., Shot Time 150000.087, "BARNWELL," Nevada Test Site (Dept. of Energy).

LSM	0.50	167	iP	00	10.30	0.2
FMT	0.66	207	iPc	00	13.30	0.0
MGM	0.89	284	iPc	00	17.70	-0.2
MCA	0.91	230	iPc	00	17.90	-0.3
LCH	0.99	271	iPc	00	19.10	-0.8
PANV	1.00	214	iP	00	19.60	-0.5
SVP	1.21	294	iPc	00	23.70	0.0
PPK	1.21	280	iPc	00	23.70	0.0
QSM	1.32	196	iPc	00	25.30	-0.1
CLC	1.71	214	iPc	00	30.90	-0.4
GSC	1.95	190	iPc	00	34.30	-0.6
KVN	2.25	324	P	00	38.80	-0.6
ISA	2.28	227	iPc	00	39.50	-0.2
FRI	2.65	266	iPc	00	44.40	-0.4
SBB	2.79	205	iPc	00	46.00	-0.9
TPC	3.13	175	iPc	00	50.80	-0.9
PKEM	3.20	250	P	00	53.40	0.8
CMB	3.26	285	iPc	00	52.70	-0.8
MWC	3.29	205	iPc	00	53.70	-0.4
ABL	3.29	225	P	00	53.60	-0.6
RVR	3.33	194	iPc	00	54.00	-0.4
PEC	3.39	191	P	00	55.10	-0.3
PAS	3.39	206	iPc	00	55.30	-0.1
PHAM	3.50	248	P	00	56.40	-0.6
HAY	3.57	170	iPd	00	57.00	-0.9
MSU	3.59	68	P	00	57.60	-0.8
PRI	3.59	254	iPc	00	57.60	-0.7
BCH	3.61	237	P	00	58.20	-0.3
LLA	3.68	262	iPc	01	00.20	0.6
PLM	3.89	186	iPc	01	02.10	-0.5
SYP	3.96	228	iPc	01	03.50	-0.1
SAO	4.06	265	eP	01	13.70	8.9
DUG	4.08	42	P	01	04.60	-0.7
PRS	4.08	259	iPc	01	14.20	9.0

ARN	4.09	273	P	01	04.60	-0.7	DLE	71.40	37	eP	11	21.40	-2.4	PRU	82.97	29	P	12	27.00	-1.1
CIS	4.15	204	iPc	01	05.20	-0.9	EKA	71.68	34	Pc	11	23.70	-1.7		1.5s	29.00nm			5.3mb	
MHC	4.17	273	iPc	01	06.20	-0.4		1.5s	53.60nm			5.5mb		BAO	83.02	115	Pc	12	29.20	0.2
GLA	4.37	162	iPc	01	08.00	-1.3	CCH	72.04	129	P	11	27.50	-0.9	EVIA	83.03	46	eP	12	28.50	-0.4
CPE	4.38	188	iPc	01	08.50	-0.9	NB2	73.19	24	P	11	32.20	-2.2	LPG	83.04	36	iPc	12	28.50	-0.5
BAR	4.55	183	iPc	01	10.70	-1.1		0.6s	11.40nm			5.2mb			1.1s	56.10nm			5.7mb	
IKP	4.58	177	iPc	01	11.60	-0.7	HFS	74.68	23	iPc	11	40.30	-2.6	LLS	83.05	34	ePd	12	28.80	-0.1
SCI	4.59	203	iPc	01	11.50	-0.9		0.6s	49.20nm			5.7mb		FUR	83.06	32	eP	12	28.50	-0.2
ORV	4.62	302	iPc	01	11.60	-1.3	SUF	75.96	17	iP	11	47.80	-2.3		1.2s	66.00nm			5.7mb	
BKS	4.67	280	iPc	01	12.50	-1.1		0.7s	10.60nm			5.1mb		EROQ	83.16	43	eP	12	28.40	-0.9
BRK	4.69	280	eP	01	12.70	-1.2	YJA	76.08	132	ePc	11	50.80	-1.2	MMK	83.20	35	ePd	12	30.10	0.4
PCC	4.77	275	eP	01	13.30	-1.6	FLN	77.25	38	iPc	11	56.20	-1.4	EBR	83.21	43	eP	12	29.50	-0.1
MIN	5.11	309	ePc	01	19.20	-0.8		1.1s	83.00nm			5.8mb		LSD	83.26	36	P	12	29.90	-0.2
DAU	5.13	50	P	01	21.20	0.9	GRR	77.31	38	iPc	11	56.80	-1.2	KHC	83.26	30	iP	12	29.00	-0.7
WDC	5.83	307	ePc	01	28.60	-1.4		1.0s	68.00nm			5.7mb			1.0s	17.50nm			5.2mb	
PTI	6.43	28	P	01	37.20	-1.3	LPF	77.46	38	iPc	11	57.50	-1.3	AFC	83.36	48	eP	12	30.00	-0.6
MCMT	8.05	18	ePc	02	03.90	2.6		1.0s	68.00nm			5.7mb		RRL	83.48	37	P	12	31.02	-0.2
BGMT	8.64	21	eP	02	12.20	2.6	NUR	77.51	19	eP	11	57.00	-1.8	ORX	83.52	36	P	12	30.61	-0.6
GOL	9.00	71	P	02	14.40	-0.2	LDF	77.54	38	iPc	11	57.80	-1.4	RSP	83.54	36	P	12	31.13	-0.2
LRM	9.08	18	eP	02	16.90	1.3		1.1s	65.40nm			5.7mb		VDL	83.55	34	ePd	12	31.70	0 2
GLD	9.13	71	P	02	17.20	0.9	WIT	77.62	31	eP	12	00.50	1.0	TMA	83.57	35	ePd	12	31.20	-0.4
BUT	9.23	17	eP	02	19.70	2.0	WTS	78.28	32	eP	12	02.50	-0.7	OSS	83.70	34	ePd	12	32.20	0.0
LCCM	9.24	20	ePc	02	19.70	1.9		1.1s	45.00nm			5.5mb		VAI	83.71	35	P	12	30.60	-1.4
SXM	9.72	22	eP	02	26.50	2.1	ENN	78.80	33	eP	12	05.00	-1.0	PZZ	83.94	37	P	12	32.87	-0.6
HRY	10.07	18	eP	02	29.00	-0.1		0.8s	37.00nm			5.5mb		OGA	83.95	33	eP	12	33.40	-0.1
PNT	12.30	350	eP	03	00.00	0.6	MFF	78.88	39	iPc	12	05.60	-1.0		1.2s	55.00nm			5.7mb	
	1.0s	99.00nm			6.1mb			1.0s	52.00nm			5.5mb		DOI	84.01	37	P	12	32.40	-1.3
PGC	12.52	338	eP	03	13.00	10.8	LSF	79.96	39	iPc	12	11.10	-1.4	STV	84.24	37	P	12	33.18	-1.7
SES	13.71	15	eP	03	18.00	-0.2		1.0s	38.00nm			5.3mb		ENR	84.30	37	P	12	33.18	-2.0
	1.1s	206.00nm			6.0mb		EPLA	80.01	47	eP	12	11.80	-1.1	LRG	84.36	38	eP	12	34.80	-0.5
		pP		03	26.00		TCF	80.27	38	iPc	12	12.70	-1.5	FRF	84.42	38	eP	12	34.80	-0.9
MEO	14.63	94	iPc	03	31.30	0.9		0.9s	37.60nm			5.3mb			1.2s	61.80nm			5.7mb	
	1.5s	515.60nm			5.9mb		ECRI	80.35	43	eP	12	14.00	-0.7	ROB	84.47	37	P	12	34.10	-1.9
SIO	16.24	89	eP	03	34.80	-16.4	SSF	80.36	37	iPc	12	13.30	-1.3	LMR	84.52	38	iPc	12	35.40	-0.8
TUL	16.62	88	ePc	03	56.30	0.3		1.2s	86.20nm			5.6mb			1.0s	52.00nm			5.7mb	
	1.0s	7.30nm			3.8mb	X	LOR	80.38	37	iPc	12	13.80	-0.9	SBF	84.58	37	eP	12	35.30	-1.3
Z	18s	0.75um			5.4Msz			1.1s	114.40nm			5.8mb			1.0s	48.00nm			5.7mb	
		LR		09	50.00		BGF	80 40	38	iPc	12	13.50	-1.3	FIN	84.69	36	P	12	35.33	-1.7
LNO	16.62	88	e(P)	03	54.90	-1.0		0.9s	44.80nm			5.4mb		IMI	84.76	37	P	12	34.61	-2.9
UYO	18.08	93	iPd	04	13.60	-0.8	AVF	80.48	37	iPc	12	13.70	-1.5	KBA	84.78	32	iPc	12	36.20	-1 5
FFC	20.10	25	iPc	04	35.90	-2.1		1.2s	65.40nm			5.5mb			1.0s	12.50nm			5.1mb	
	0.8s	411.00nm			5.8mb		LFF	80.48	40	iPc	12	14.20	-1.0	CTI	84.86	33	P	12	36.70	-1.3
FVM	20.58	80	P	04	42.40	-0.8		1.2s	89.20nm			5.6mb		KRA	84.93	27	iPd	12	37.20	-0.9
	1.0s	130.00nm			5.2mb		MAF	80.50	38	iPc	12	14.00	-1.4		1.2s	100.00nm			5.9mb	
RSON	21.15	43	P	04	46.30	-2.6		1.2s	86.20nm			5 6mb				e		45	27.50	
	1.0s	379.61nm			5.7mb		RJF	80.62	39	iPc	12	14.80	-1.2	ZST	85.41	29	eP	12	39.70	-0.8
PWLA	22.98	87	P	05	09.20	1.9		1.1s	58.60nm			5.5mb		VOY	85.84	32	eP	12	41.00	-1.9
CRX	23.01	136	iP	05	11.00	2.9	LBF	80.64	37	iPc	12	14.80	-1.3	SRO	86.19	29	iP	12	44.60	0.2
PPM	23.87	134	iPd	05	18.50	1.8		1.1s	53.70nm			5.5mb		FIR	86.44	35	e(P)	12	45.00	-0.7
IISM	24.66	132	iPd	05	26.00	2.3	GUD	80.74	46	eP	12	16.00	-0.9	VBY	86.84	32	eP	12	46.50	-1.1
GBTN	25.88	84	P	05	34.80	-0.5	SMF	80.81	37	iPc	12	15.50	-1.5	BJI	89.21	322	eP	12	57.00	-2.1
OXX	26.54	134	iPc	05	42.50	0.9		1.2s	83.30nm			5.6mb			1.5s	26.00nm			5.2mb	
PRM	27.75	86	P	05	51.90	-0.5	LPO	80.88	40	iPc	12	16.40	-1.0	HHC	90.74	326	Pd	13	06.20	-0.2
NAV	28.24	79	P	05	56.20	-0.6		1.0s	48.00nm			5.5mb		BTO	91.63	327	eP	13	10.00	-0.5
BLA	28.55	79	P	05	59.30	-0.4	HAU	81.00	35	iPc	12	17.00	-1.0	TIA	91.68	319	P	13	10.20	-0.5
	1.1s	97.50nm			5.5mb			1.1s	73.20nm			5.6mb		OHR	92.75	31	eP	13	04.50	-11.1
JSC	28.58	85	P	05	58.70	-1.2	CDF	81 12	34	iPc	12	17.70	-1.0	TIY	92.84	323	eP	13	14.50	-1.6
DHN	29.61	67	P	06	07.40	-1.7		1.1s	53.70nm			5.5mb		SSE	93.29	313	P	13	17.50	-0.6
CVL	29.94	77	P	06	11.20	-0.8	CAF	81.16	39	iPc	12	17.90	-1.0		1.2s	37.00nm			5.7mb	
NA2	30.47	76	P	06	15.90	-0.8		1.0s	60.00nm			5.6mb		GTA	96.77	333	eP	13	33.80	-0.4
CBN	30.74	76	eP	06	17.00	-2.1	MOX	81.28	30	eP	12	18.00	-1.4	WB2	116.85	265	ePKP	18	46.60	-2.0
PMR	31.76	331	P	06	23.90	-3.9		1.2s	37.00nm			5.3mb		ASPA	119.15	261	ePKP	18	50.80	-2.2
	1.0s	45.00nm			5.4mb				e		15	15.00			0.6s	14.00nm				
PTN	31.89	64	P	06	27.20	-1.9	TOL	81 31	46	iPc	12	19.00	-0.8	BCAO	121.06	55	iPKPd	18	55.00	-1.8
PRIN	32.43	71	P	06	34.90	1.0		1.3s	134.62nm			5.8mb			0 6s	7.00nm				
INK	32.56	348	eP	06	34.00	-0.7	CLL	81.32	29	iPc	12	18.00	-1.5	GBA	127.79	343	PKP	19	08.00	-1.7
HBVT	33.27	64	P	06	39.70	-1.5		1.1s	39.00nm			5 4mb		MZZ	139.42	59	ePKP	19	31.00	-0.9
FBA	33.33	336	P	06	40.70	-0.8	BSF	81.33	35	iPc	12	18.80	-1.1	LSZ	141.78	65	ePKP	19	30.00	-6.1
	1.1s	75.00nm			5.5mb			0.8s	56.40nm			5.7mb				i		19	38.80	
TTA	35.21	330	P	06	57.20	-0.6	EPF	81.59	41	iPc	12	20.10	-1.1	PTZ	143.31	60	iPKP	19	35.00	-3.7
	1.3s	42.45nm			5.1mb			1.1s	26.80nm			5 2mb				i		19	41.00	
IMA	35.99	335	P	07	02.80	-1.6	HOF	81.65	31	eP	12	20.30	-1.0	KSR	146.93	81	ePKP	19	35.20	-9.4
	1.1s	35.94nm			5.1mb			1.0s	29.00nm			5 3mb			0.8s	16.88nm				
SCH	37.76	46	iPc	07	18.00	-1.4	ETOR	81 81	44	eP	12	21.70	-0.7			i		19	44.70	
	0.8s	34.00nm			5.1mb		GRF	81.86	31	iPc	12	22.20	-0.2	BLF	147.82	87	iPKPd	19	48.00	2.1
FRB	38.95	32	ePc	07	28.30	-0.8		1.2s	48.00nm			5.5mb			1.0s	40.00nm				
	0.6s	63.00nm			5.4mb		Z	20s	0.10um			4.2Msz		PRY	147.89	82	iPKPc	19	47.40	1.3
MBC	39.13	359	ePc	07	30.00	-0.5	EHOR	81.97	48	eP	12	22.00	-1.2		0.8s	9.38nm				
	0.8s	43.00nm			5.1mb		BRG	82.03	29	iPc	12	22.40	-0.9	SLR	147.96	79	iPKPc	19	47.50	1.3
UPA	43.60	121	eP	08	06.20	-1.7		1.1s	32.00nm			5.4mb			1.2s	78.13nm				
KBS	60.31	10	eP	10	11.30	-1.1	SLE	82.15	34	ePd	12	23.20	-0.8	SEK	148.63	84	iPKPc	19	49.50	2.3
ARE	68.12	133	iPc	11	04.00	-0.5	ZLA	82.32	34	ePd	12	24.40	-0.5		1.0s	45.00nm				
ZOBO	69.98	130	Pc	11	14.20	-2.1	EBAN	82.61	47	eP	12	25.80	-0.7	MAW	149.57	179	ePKP	19	50.00	2.8
	1.0s	29.50nm			5.4mb		EMS	82 70	36	ePc	12	26.50	-0.6		213 obs. associated					
KEV	70.02	13	eP	11	35.00	19.9	DIX	82.92	36	ePd	12	28.20	-0.1							
LPB	70.20	130	P	11	16.00	-1.4	SAX	82.92	34	ePd	12	27.80	-0.5	?	DEC 08, 1989 15h 58m 52.43± 5.11s					
CNCB	70.48	131	Pc	11	18.00	-1.3	KSP	82.95	28	iPc	12	27.40	-0.7		21 406 S ±37.8km 178.227 W ±63.5km					

08d 15h

DEPTH = 474.1 ± 26.8 km
4.8mb (3 obs.)
FIJI ISLANDS REGION (181)

SGE	5.25	316	iPc	00 21.10	-0.3
DZM	14.26	265	iPc	01 58.00	1.6
CAN	31.84	237	eP	04 39.60	1.0
BWA	32.05	239	eP	04 39.20	-1.2
CTA	33.20	266	iPd	04 50.20	0.1
	0.5s	20.42nm		4.9mb	
ASPA	44.11	258	iPd	06 18.80	-0.4
	1.0s	26.00nm		4.7mb	
		eS		12 16.40	
WB2	44.26	263	eP	06 19.40	-0.9
MTN	48.97	271	iPc	06 55.10	-1.3
	0.5s	28.00nm		4.9mb	
CHTO	90.35	290	eP	11 04.70	1.4
	0.7s	0.79nm		3.8mb X	
HFS	140.39	351	ePKP	17 20.50	-7.2X
	0.3s	0.80nm			

S.D. = 1.4 on 9 of 10 obs.

? DEC 08, 1989 16h 27m 31.44±11.31s
18.207 N ±95.7km 62.097 W ±18.0km
DEPTH = 33.0km (normal)
LEEWARD ISLANDS (92)
ML 2.7 (FDF).

SKI	1.06	215	eP	27 50.09	0.0
			eS	27 55.89	
ANG	1.08	166	eP	27 50.01	-0.2
			eS	27 56.03	
BPA	1.18	169	eP	27 51.14	-0.5
			eS	27 57.35	
SEG	1.88	162	eP	28 02.20	0.3
DEG	2.13	152	eP	28 05.10	-0.3
PAG	2.20	170	eP	28 06.60	0.1
			S	28 25 40	
DOG	2.21	168	eP	28 06.50	-0.1
MGG	2.40	162	eP	28 09.90	0.7

S.D. = 0.5 on 8 of 8 obs.

? DEC 08, 1989 16h 37m 08.86± 4.03s
23.767 S ±31.9km 179.061 E ±38.7km
DEPTH = 594.2 ± 32.8 km
4.2mb (3 obs.)
SOUTH OF FIJI ISLANDS (171)

DZM	11.75	276	iPc	39 46.00	0.8
MNG	17.07	189	eP	40 35.40	-1.4
KHZ	19.16	193	eP	40 56.40	0.1
CAN	28.47	239	eP	42 20.70	1.3
BWA	28.70	241	eP	42 20.70	-0.7
CTA	30.61	270	iPd	42 37.70	0.0
	0.6s	23.33nm		5.0mb	
ASPA	41.21	261	eP	44 04.60	-0.2
WB2	41.54	266	eP	44 06.80	-0.6
SPA	66.38	180	iPc	47 03.10	1.6
	0.7s	5.47nm		4.1mb	
CHTO	88.83	291	e(P)	49 01.00	-0.8
	1.2s	1.04nm		3.6mb	
NB2	141.81	350	PKP	55 27.30	-7.4X
	0.7s	1.50nm			
HFS	142.24	348	ePKP	55 27.80	-7.5X
	0.4s	1.30nm			
BRG	150.58	341	iPKP	55 53.50	4.5X
	0.7s	10.00nm			

S.D. = 1.2 on 10 of 13 obs.

DEC 08, 1989 16h 52m 39.58± 0.68s
19.912 S ± 9.0km 133.748 E ± 6.7km
DEPTH = 10.0km (geophysicist)
NORTHERN TERRITORY, AUSTRALIA (591)

WB2	0.57	93	iPc	52 52.60	1.4
ASPA	3.74	178	iPd	53 45.20	6.6X
	0.4s	1167.00nm			
			eS	54 31.90	
OIS	5.54	98	eP	54 05.00	0.9
			e	54 25.00	
			eS	55 23.00	
KNA	6.30	310	eP	54 14.20	-0.6
			iS	55 23.40	
MTN	7.46	340	iPc	54 29.80	-1.3
QLP	11.70	127	eP	55 29.00	-0.6
			e	57 33.00	
CTA	11.76	93	eP	55 34.00	3.5X
MBL	13.10	262	eP	55 50.00	1.6
			eS	58 02.00	
STK	13.84	151	eP	55 58.00	-0.2
			e	58 28.00	
ADE	15.62	165	e(P)	56 20.60	-0.9
COOL	15.76	224	eP	56 22.00	-1.4
CMS	15.84	139	eP	56 23.00	-1.3
			e	59 10.00	
MRWA	18.60	237	eP	56 59.30	0.4
			eS	00 07.00	
BWA	19.44	141	eP	57 13.20	3.9X
MUN	19.79	229	eP	57 15.00	1.9
CAN	20.41	142	eP	57 13.20	-6.4X

S.D. = 1.3 on 12 of 16 obs.

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* DEC 08, 1989 17h 03m 59.17± 0.58s
9.256 S ± 9.1km 119.337 E ± 9.7km
DEPTH = 33.0km (normal)
4.5mb (3 obs.)
SUMBA ISLAND REGION (287)

KUG	4.29	102	eP	05 16.50	12.7X
KNA	11.24	126	eP	06 41.00	0.3
MBL	11.85	178	eP	06 47.50	-1.4
	0.3s	15.00nm		5.6mb X	
			eS	08 46.00	
MTN	12.11	108	eP	06 52.50	0.1
			e	08 57.00	
MEKA	17.28	182	eP	08 01.00	1.3
			eS	10 57.00	
WB2	17.98	128	eP	08 08.10	-0.3
			eS	11 15.50	
ASPA	19.98	138	iPd	08 32.50	0.7
	0.6s	19.00nm		4.6mb	
			eS	12 05.00	
MRWA	20.10	189	eP	08 36.00	2.9X
	0.3s	5.00nm		4.4mb	
			eS	12 00.00	
COOL	21.59	176	eP	08 48.00	-0.2
			eS	12 36.00	
OIS	22.55	122	eP	08 57.00	-0.9
MUN	22.80	187	eP	09 01.00	0.8
NWAO	23.64	184	eP	09 25.00	16.7X
			eS	13 25.00	
CHG	34.39	324	eP	10 46.60	1.0
CHTO	34.39	324	iP	10 46.60	1.0
	1.1s	7.95nm		4.6mb	
BRS	36.33	124	iPc	11 05.10	3.0X
GBA	47.39	298	P	12 31.00	-1.5
MAIO	72.16	313	eP	15 22.00	-0.9

S.D. = 1.0 on 13 of 17 obs.

DEC 08, 1989 17h 07m 48.65± 0.42s
37.301 N ± 4.2km 21.047 E ± 3.6km
DEPTH = 10.0km (geophysicist)
4.6mb (6 obs.)
SOUTHERN GREECE (368)
ML 4.1 (ATH).

ITM	0.71	100	iPgc	08 00.50	-2.2
VLS	0.95	338	ePg	08 06.00	-0.7
VLI	1.62	110	ePn	08 19.20	1.9
AGG	1.99	30	ePc	07 55.70	-27.1X
ATH	2.22	72	ePn	08 27.00	0.9
IGT	2.30	346	eP	08 28.20	1.0
KEK	2.60	338	ePb	08 33.50	2.1
NEO	2.63	40	ePn	08 32.00	0.0
SRN	2.70	343	ePn	08 34.60	1.7
LSK	2.87	353	ePn	08 36.20	0.9
LIT	3.01	22	ePc	08 37.30	0.0
KZN	3.05	10	ePn	08 38.50	0.6
TPE	3.10	345	ePn	08 40.80	2.4
VAM	3.17	126	ePn	08 39.50	0.0
KBN	3.32	357	ePn	08 42.10	0.4
BERA	3.50	346	ePn	08 46.20	2.0
APE	3.59	92	ePn	08 46.50	1.0
PLG	3.59	31	ePn	08 44.80	-0.8
THE	3.65	24	eP	08 46.10	-0.2
OUR	3.80	36	eP	08 49.00	0.6
GRG	3.80	16	eP	08 47.90	-0.6
			eS	09 32.30	
OHR	3.81	357	iPnc	08 47.70	-1.0
LCI	3.87	322	P	08 48.70	-0.8
KNT	4.11	20	ePd	08 52.20	-0.7
			eS	09 36.10	
TIR	4.14	348	ePn	08 54.70	1.4
ROI	4.18	304	P	09 01.70	7.7X
VAY	4.18	16	iPn	08 53.30	-0.6
NPS	4.21	118	ePb	09 02.00	7.7X
SRS	4.29	27	eP	08 54.90	-0.6
CZI	4.31	298	P	08 58.80	3.0X
TDS	4.38	304	P	08 57.40	0.7
			eSn	09 50.20	
PHP	4.41	354	ePn	08 56.90	-0.1
CSI	4.47	305	P	09 01.10	3.0X
ATN	4.51	283	P	08 58.90	0.4
PRK	4.55	63	ePn	09 01.50	2.5
SMG	4.62	83	ePn	09 01.60	1.5
BRT	4.66	321	Pd	09 00.40	-0.3
SKO	4.67	4	iPn	08 59.60	-1.3
			i	09 14.70	
			i	09 44.00	
			iSn	09 55.80	
			iSg	10 20.80	
			Lg	10 34.70	
			LR	11 01.00	
PUK	4.82	350	ePn	09 01.00	-1.9
KKB	4.82	18	eP	09 02.00	-1.0
EZN	4.84	57	eP	08 58.00	-5.3X
SDA	4.86	346	ePn	09 03.20	-0.2
MEU	4.89	270	Pd	09 03.70	-0.3
			eSn	09 59.10	
IZM	5.04	76	eP	09 06.50	0.4
MNO	5.08	279	P	09 06.90	0.0
BCI	5.11	352	ePn	09 06.50	-0.6
RDO	5.19	41	ePn	09 06.90	-1.2
RZN	5.22	32	iPd	09 08.00	-0.8
KAP	5.24	108	ePn	09 13.00	4.1X
SGO	5.53	308	P	09 13.90	0.9
VTS	5.54	17	iP	09 12.00	-1.3
PGB	5.76	24	eP	09 16.00	-0.3
DST	6.38	67	iP	09 23.80	-1.2
KHL	6.79	79	eP	09 31.00	0.2
KSL	6.96	97	ePn	09 32.50	-0.6
ELL	7.11	92	eP	09 38.00	2.6
YLV	7.26	61	eP	09 36.00	-1.4
BEO	7.53	357	e(Pn)	09 52.00	11.0X
BCK	7.60	86	eP	09 46.50	4.3X
BZS	8.32	3	eP	09 50.00	-2.1
			e	35 42.00	
CMP	8.51	19	ePc	10 51.00	56.2X
MLR	8.97	23	ePc	10 03.50	2.3
VBY	9.28	334	e(P)	10 13.00	7.7X
PTJ	9.40	338	e(P)	10 06.00	-1.1
VRI	9.56	25	ePc	10 11.50	2.3
VOY	10.23	331	eP	10 17.10	-1.5
			eS	12 08.80	
PSZ	10.65	356	eP	10 20.50	-3.7X
KBA	11.31	332	ePc	10 34.50	1.1
	1.2s	8.10nm		4.9mb	
KHC	13.01	338	P	11 05.00	8.9X
DSI	13.13	112	eP	10 56.00	-1.8
PRU	13.52	342	eP	11 04.50	1.7
			e	11 07.00	
GRF	14.27	333	e(P)	11 20.00	7.3X
Z	18s	0.14um		6.3Msz	
MOX	14.95	336	eP	11 34.00	12.4X
CLL	15.13	340	e(P)	11 32.00	8.1X
NUR	23.34	5	eP	12 56.20	-1.4
EKA	24.38	325	P	13 07.00	-0.8
	0.8s	6.30nm		4.3mb	
NB2	24.56	348	P	13 08.00	-1.5
	0.8s	3.10nm		4.0mb	
SUF	25.64	5	eP	13 17.80	-1.9
BCAO	32.79	185	iPc	14 23.90	-0.3
	0.5s	9.00nm		5.0mb	
		ic		14 29.00	
TIC	38.66	224	P	15 13.84	-0.3
KIC	38.73	224	P	15 14.52	-0.3
	0.8s	7.50nm		4.4mb	
LIC	39.01	224	P	15 16.94	-0.1
	0.6s	10.50nm		4.6mb	

S.D. = 1.3 on 66 of 82 obs.

DEC 08, 1989 17h 23m 30.24± 0.13s
36.552 N ± 3.2km 140.917 E ± 2.5km
DEPTH = 46.7km (47 depth phases)
5.4mb (61 obs.) 5.2Msz (10 obs.)
NEAR EAST COAST OF HONSHU, JAPAN(228)
Felt (IV JMA) at Mito and Choshi; (III JMA) at Tokyo.
CENTROID, MOMENT TENSOR (HRV)
Data Used: GDSN
L.P.B.: 12S, 27C

08d 17h

Centroid Location:
Origin Time 17:23:35.0 0.4
Lat 36.44N 0.04 Lon 140.86E 0.04
Dep 45.3 2.9 Half-durotion 2.4
Moment Tensor; Scale 10**17 Nm
Mrr= 1.98 0.09 Mtt= 0.50 0.12
Mff=-2.47 0.12 Mrt= 0.73 0.13
Mrf= 1.47 0.17 Mtf=-0.88 0.12
Principal Axes:
T Val= 2.52 Plg=71 Azm=315
N 0.69 9 200
P -3.22 17 107
Best Double Couple:Mo=2.9*10**17
NP1:Strike=183 Dip=29 Slip= 72
NP2: 24 63 100

KAKJ 0.69 240 iPd 23 45.80 2.0
S 23 56.00
CHJJ 1.63 253 iPd 23 59.20 2.2
NIIJ 1.68 295 iPd 24 00.00 2.3
S 24 21.10
YAMJ 1.76 337 iPd 24 00.00 1.2
MTMJ 2.51 272 iPd 24 12.70 3.2X
OFUJ 2.59 13 iPd 24 09.30 -1.4
eS 24 39.10
IIDJ 2.66 247 iPd 24 15.50 3.8X
eS 24 49.10
SHK 7.01 256 eP 25 15.00 2.1
MDJ 11.78 317 Pc 26 22.00 3.7X
Z 20s 6.20um
N 16s 5.10um
E 18s 3.40um
sS 28 38.00
SS 28 47.00
SNY 14.44 297 Pc 26 54.00 0.7
1.0s 0.10nm 2.3mb X
Z 18s 10.60um 4.7MszX
N 16s 4.50um
E 17s 5.30um
sP 27 06.00
sS 29 41.00
DL2 15.44 285 eP 27 08.00 1.5
Z 20s 6.90um
N 12s 1.40um
E 16s 6.30um
sS 30 08.00
SSE 17.27 257 P 27 29.20 -0.3
4.0s 1.20nm 2.4mb X
Z 20s 4.40um
N 15s 1.60um
E 14s 3.20um
i 27 32.50
pP 27 39.00
S 30 44.00
sS 30 56.00
SS 31 07.00
NJ2 18.76 263 Pd 27 46.50 -1.4
Z 18s 5.40um
N 13s 0.90um
E 14s 3.10um
pP 27 53.50
sP 27 58.50
sS 31 22.00
TIA 19.15 276 P 27 49.80 -2.8
Z 20s 4.60um
N 14s 1.60um
E 14s 3.10um
S 31 20.00
BJI 19.71 288 eP 27 55.00 -3.5X
1.0s 36.00nm 4.6mb
Z 20s 3.29um 5.5Msz
N 11s 1.16um
E 14s 1.49um
esP 28 12.00
eS 31 32.00
ANP 20.10 241 e(P) 28 04.00 1.2
QZH 22.35 245 eP 28 23.50 -1.9
Z 28s 3.00um 4.6MszX
N 14s 1.40um
E 14s 1.40um
TIY 22.71 282 Pd 28 25.80 -3.2X
Z 18s 9.61um 5.3Msz
E 15s 6.40um
PP 28 58.00
WHN 22.90 263 iPd 28 30.50 -0.3
0.7s 0.18nm 2.6mb X
Z 16s 3.57um 4.9MszX
N 14s 1.90um
E 16s 2.86um
sP 28 47.00
S 32 32.00
GUMO 23.14 170 eP 28 41.70 8.5X
0.9s 361.47nm 5.8mb
eS 32 46.00
PJG 23.14 170 eP 28 42.00 8.8X
GUA 23.20 170 eP 28 42.00 8.2X
0.9s 376.47nm 5.9mb
Z 23s 3.33um 4.7MszX
HHC 23.25 290 eP 28 32.00 -2.3
N 13s 1.20um
E 17s 2.30um
S 32 44.00
BTO 24.43 289 P 28 43.00 -2.7
N 17s 2.70um
E 17s 2.60um
PP 29 20.00
S 33 02.00
XAN 26.17 274 P 29 01.00 -1.1
N 15s 1.60um
E 17s 2.40um
S 33 26.40
BAG 26.98 227 eP 29 07.80 -2.0
GZH 27.32 248 iPc 29 14.10 1.6
Z 16s 4.00um 5.1MszX
N 14s 1.70um
E 13s 0.70um
LZH 29.76 280 eP 29 34.50 -0.2
1.0s 16.00nm 4.7mb
Z 16s 8.00um 5.4MszX
N 15s 2.40um
E 16s 4.80um
pP 29 49.00 59kmX
PP 30 36.00
eS 34 24.00
GYA 30.75 261 iPc 29 42.20 -1.2
1.2s 0.10nm 2.4mb X
Z 22s 2.10um 4.7MszX
N 14s 1.20um
E 14s 1.80um
pP 29 57.00 60kmX
S 34 40.00
CD2 31.28 271 P 29 47.00 -1.0
Z 20s 3.20um 5.0Msz
E 18s 4.10um
S 34 47.00
GTA 32.33 288 Pc 29 55.40 -1.8
Z 16s 2.16um 4.9MszX
E 16s 1.78um
PP 31 03.00
PcP 32 44.20
S 35 06.00
QIZ 32.37 246 eP 29 55.00 -2.5
N 17s 2.10um
S 35 12.00
ADK 33.50 49 P 30 08.50 1.5
1.0s 90.00nm 5.6mb
KMI 34.50 262 Pc 30 15.00 -1.2
Z 22s 5.30um 5.2Msz
E 16s 2.70um
sP 30 31.00
PPP 31 42.00
eS 35 26.00
sS 35 42.00
LOE 39.45 252 iPc 30 57 40 -0 3
WMQ 40.70 297 iPc 31 08.90 1.0
4.0s 1.50nm 3.1mb X
Z 20s 3.00um 5.1Msz
N 12s 0.80um
sP 31 24.00
S 37 18.00
CHG 40.79 256 iPc 31 09.50 0.8
0.9s 27.31nm 5.0mb
CHTO 40.79 256 iPc 31 09.10 0.4
0.8s 18.85nm 4.9mb
BDT 41.64 254 iPc 31 16.50 0.9
0.8s 51.90nm 5.3mb
NST 41.71 251 eP 31 18.40 2.2
LSA 41.86 275 P 31 19.30 1.4
E 16s 0.80um
eS 37 30.00
NNT 43.94 248 iPc 31 35.60 1.2
TTA 46 04 35 P 31 50.00 -0 8
1.0s 32.50nm 5.2mb
pP 32 03.00 48km
SVW 46.13 37 eP 31 52.20 0.8
ic 32 05.50 50km
KDB 46.15 171 eP 31 51.50 -0.5
SNG 46.92 241 eP 31 59.20 1.0
BRW 47.01 23 e(P) 31 58.50 0.3
IMA 47.30 30 eP 32 00.50 -0.3
0.9s 9.40nm 4.8mb
e 32 12.30 42km
KDC 47.78 42 e(P) 32 03.70 -0.7
i 32 16.50 47km
IPM 48.48 239 ePc 32 10.90 0.5
0.9s 120.90nm 5.9mb
KGM 48.83 234 ePc 32 13.90 0.9
HNR 49.12 155 eP 32 27.00 11.8X
PMR 49.25 36 eP 32 14.50 -1.2
1.0s 32.50nm 5.3mb
i 32 28.00 50km
FBA 49.72 32 eP 32 19.10 -0.2
MTN 49.99 193 iPd 32 21.70 -0.1
KSH 50.25 294 iPd 32 25.00 1.1
E 10s 3.00um
TOA 50.61 36 eP 32 26.40 0.2
KNA 53 27 195 eP 32 45.50 -1.0
NDI 53.37 281 iPc 32 47.00 -0.3
1.0s 66.00nm 5.6mb
eS 40 14.00
INK 55.00 27 iPc 32 57.70 -1.0
1.1s 49.00nm 5.4mb
WB2 56.53 187 iPc 33 08.80 -1.4
CTA 56.56 174 iPc 33 10.00 -0.4
1.2s 29.69nm 5.2mb
i 33 22.90 46km
QIS 56.81 181 iPc 33 11.00 -1.2
e 33 21.00 33kmX
MBC 57.10 16 ePc 33 12.60 -1.1
0.9s 57.00nm 5.6mb
HYB 57.79 268 iPc 33 19.00 -0.3
1.0s 90.00nm 5.8mb
e 33 36.50 67kmX
ASPA 60.26 187 iPc 33 35.30 -0.8
0.9s 34.00nm 5.5mb
MBL 60.76 203 eP 33 39.00 -0.5
GBA 60.78 265 P 33 40.00 0.1
POO 60.99 272 iPc 33 40.90 -0.5
0.8s 53.73nm 5.7mb
KBS 61.07 350 iP 33 40.30 -0.8
KOD 62.68 262 eP 33 53.20 0.1
QLP 62.87 177 eP 33 53.00 -0.6
DZM 63.10 153 iPc 33 58.70 3.4X
RMQ 63 14 172 iPd 33 55.50 0.1
0.8s 57.00nm 5.7mb
e 34 09.00 48km
MAIO 63.48 297 eP 33 58.00 0.2
eS 42 28.00
KEV 63 75 339 iP 33 58.00 -1.0
0.9s 33.80nm 5.4mb
BRS 64.57 168 iPd 34 05.80 1.0
1.0s 2.50nm 4.2mb X
i 34 18.00 42km
e 36 46.00
TRO 66.04 341 iP 34 13.00 -0.8
COO 67.57 170 eP 34 38.00 14.1X
CMS 67.84 175 eP 34 26.00 0.5
e 34 39.00 45km
GMW 67.89 47 P 34 26.00 0.1
STK 68 08 179 eP 34 27.00 0.0
e 34 41.00 49km
BMW 68.17 48 P 34 28.20 0.5
SUF 68.23 333 iP 34 26.80 -0.9
0.7s 90.60nm 5.9mb
PNT 68.80 44 eP 34 31.00 -0.5
0.9s 35.00nm 5.3mb
pP 34 44.00 45km
LON 68.87 47 P 34 34.00 2.0
COOL 69.60 198 eP 34 36.00 -0.4
EDM 69.97 38 iPc 34 37.90 -0.7
NUR 70.19 332 iP 34 38.90 -0.8
0.8s 57.20nm 5.6mb
FHC 70.63 53 e(P) 34 45.90 3.1X
epP 34 57.60 39km
NEW 70.75 44 P 34 44.40 0.9
BWA 70.96 173 eP 34 45.10 0.4
i 34 55.40 33kmX
i 34 58.80
LBFM 71 68 52 P 34 49.00 -0.4
pP 35 03.30 50km
WDC 71.68 53 eP 34 49.00 -0.1

08d 17h

			epP	35	03.30	50km	TPC	79.62	55	eP	35	35.00	0.8				i	36	04.20				
TAB	71.75	304	eP	34	49.00	-0.7				e	35	48.00	44km				e	36	18.20				
CAN	71.90	173	eP	34	45.10	-5.2X	RUWJ	79.96	303	P+	35	37.60	1.4				e	36	55.00				
			i	34	55.40	33kmX	BAR	80.06	57	eP	35	37.00	0.4	FUR	84.46	329	iPc	35	59.40	0.3			
			i	34	58.80					e	35	50.00	44km	ENN	84.46	333	iPc	35	58.80	-0.2			
MIN	72.41	53	e(P)	34	53.20	-0.4	CMP	80.12	320	ePc	35	37.00	0.3		1.0s		20.00nm			5.2mb			
			epP	35	07.10	49km	KSP	80.30	328	iPc	35	38.00	0.5				e	36	12.50	47km			
NWAO	72.58	201	eP	34	54.00	-0.3		1.0s		39.00nm			5.3mb	GRG	84.49	318	eP	35	58.60	-0.8			
SES	72.78	40	ePc	34	54 40	-1.1				e	38	34.50		BCI	84.72	320	eP	36	01.00	0.6			
ORV	72.91	53	eP	34	55.50	-0.9	QASM	80.43	295	eP	35	38.50	-0.2	VBY	84.75	325	e(P)	36	05.40	4.9X			
			epP	35	09.90	51km	RSSD	80.45	41	P	35	37.40	-1.3	CEY	84.96	326	e(P)	36	05.00	3.4X			
UPP	73.21	334	iP	34	55.90	-1.8	RSON	80.61	32	P	35	37.30	-1.8	VOY	84.98	326	eP	36	00.70	-1.1			
KER	73.22	300	eP	34	59.00	0.6	KRP	80 73	153	P	35	54.70	15.0X	PHP	85.01	320	iPc	36	00.90	-0.9			
BRK	73.33	55	eP	35	00.10	1.3	PSZ	80.82	324	iP	35	41.00	0.6	FVI	85.04	327	P	36	01.60	-0.3			
			epP	35	12.80	43km	GLA	81.06	55	eP	35	42.00	0.1	PUK	85.04	320	eP	36	02.90	0.9			
BKS	73.35	55	eP	35	00 10	1.1				e	35	56.00	4Bkm	LIT	85.04	317	ePc	36	01.80	-0.3			
	0.9s		44.00nm			5.4mb	BRG	81.26	329	iPc	35	42.50	0.0	ALQ	85.21	50	iPc	36	04.50	1.2			
			epP	35	13.10	45km		1.1s		42.00nm			5.3mb		1.0s		50.50nm			5.6mb			
SLY	73.64	302	ePd	35	01.00	0.4	Z	17s		1.50um			5.4MszX	OHR	85.23	319	iPc	36	03.00	-0.1			
GCC	73.97	56	e(P)	35	02.50	-0.1	N	17s		1.50um					0.9s		0.08nm			2.9mb X			
			epP	35	16.40	49km	E	17s		1.00um							i	36	15.50	41km			
MHC	74.04	55	eP	35	03.70	0.6				i	35	56.00	46km	SDA	85.26	320	eP	36	03.80	0.7			
			epP	35	17.10	46km	CLL	81.31	330	iPc	35	42.70	-0.1	WAJH	85.37	299	eP	36	04.30	0.4			
ARN	74.10	55	P	35	03.40	0.0		1.3s		52.00nm			5.3mb	TIR	85.55	320	eP	36	05.00	0.4			
			pP	35	17.00	47km				i	35	56.30	47km	KBN	85.57	319	eP	36	04.60	-0.1			
FFC	74.33	32	iPc	35	04.00	-0.3	ALT	81.41	313	eP	35	43.00	-0.7	OGA	85.58	328	eP	36	04.80	-0.1			
	0.9s		49.00nm			5.4mb	SRO	81.63	325	iP	35	44.90	0.4	CDF	85.88	331	eP	36	05.70	-0.5			
HFS	74.36	336	eP	35	03.10	-1.3	PRU	81.68	328	Pc	35	45.20	0.5		0.8s		18.80nm			5.4mb			
	1.0s		53.80nm			5.4mb		0.7s		21.10nm			5.3mb	SCH	85.93	16	ePc	36	06.00	-0.3			
Z	17s		1.13um			5.2MszX	Z	18s		1.40um			5.4Msz	CTI	85.96	327	P	36	20.70	14.0X			
			LR	07	54.00		N	18s		0.80um				BERA	85.98	319	eP	36	07.00	0.3			
CMB	74.48	54	eP	35	05.70	0.1	E	18s		0.50um				LSK	86.03	318	eP	36	07.40	0.3			
			epP	35	19.70	49km				e	35	58.80	46km	DLE	86.18	341	eP	36	07.80	0.3			
NB2	74.48	337	P	35	04.50	-0.6	ZST	81.90	326	eP	35	46.40	0.5	TPE	86.24	319	eP	36	08.60	0.6			
	0.8s		51.30nm			5.5mb	BCK	82.15	311	eP	35	47.00	-0.5	BSF	86.54	331	eP	36	08.90	-0.6			
LRM	74.77	44	eP	35	07.50	0.1	VKA	82.20	326	iPc	35	48.20	0.7	HAU	86.57	331	eP	36	08.90	-0.7			
PRS	74.78	56	eP	35	07.30	0.0		3.0s		269.00nm			5.8mb		0.7s		6.60nm			5.0mb			
			epP	35	21.40	49km	KHL	82.23	312	eP	35	47.90	-0.1	VAI	87.33	329	P	36	11.80	-1.4			
MSL	74.79	304	ePd	35	07.00	-0.3	SALJ	82.35	304	P+	35	47.90	-0.8	FIR	87.91	326	e(P)	36	30.00	14.0X			
LLA	74.91	56	eP	35	09.50	1.5	MOX	82.38	330	iPc	35	48.50	0.1	LOR	88.12	332	eP	36	16.80	-0.3			
			epP	35	22.20	43km		2.0s		78.00nm			5.4mb	LBF	88.32	332	eP	36	17.50	-0.5			
PRI	75.36	56	eP	35	11.00	0.2	Z	22s		1.20um			5.2Msz	FLN	88.38	336	eP	36	17.80	-0.5			
			epP	35	25.20	50km				e	36	02.00	46km	LDF	88.41	335	eP	36	17.80	-0.6			
KVN	75.37	52	P	35	10.50	-0.4				e	38	55.00		SSF	88.43	332	eP	36	18.40	-0.1			
FRI	75.51	55	eP	35	11.30	-0.1	PLD	82.45	318	eP	35	50.00	1.1		0.9s		9.80nm			5.1mb			
			epP	35	25.30	49km	MASJ	82.51	304	Pd	35	48.90	-0.6	LPG	88.46	330	eP	36	18.60	-0.5			
BHD	75.70	301	ePd	35	13.50	1.0	WIT	82.52	334	eP	35	50.00	1.0		0.7s		9.20nm			5.2mb			
BCH	76.29	56	P	35	16.40	0.4	SOP	82.53	326	eP	35	51.20	2.0	TDS	88.62	321	P	36	19.90	0.4			
			pP	35	30.00	47km	MKRJ	82.67	304	P+	35	49.70	-0.6	SMF	88.65	332	eP	36	19.50	-0.1			
TNP	76.49	53	P	35	17.50	0.2	GOL	82.68	45	P	35	51.00	0.5	AVF	88.71	332	eP	36	19.60	-0.3			
	1 0s		95.00nm			5.7mb		1.1s		57.69nm			5.5mb		0.8s		13.90nm			5.3mb			
SYP	76.74	57	eP	35	20.00	1.4				pP	36	01.60	34kmX	GRR	88.83	336	eP	36	20.10	-0.3			
			e	35	33.00	44km	KHC	82.74	328	iPc	35	50.80	0.5		0.8s		13.40nm			5.3mb			
AKU	76.79	351	iP	35	19.80	1.7		1.0s		18.00nm			5.1mb	LPF	89.20	336	eP	36	22.20	0.0			
	1.0s		28.00nm			5.2mb	Z	18s		1.70um			5.5Msz		1.0s		24.00nm			5.5mb			
ISA	77.09	55	eP	35	20.00	-0.4	N	18s		0.70um				MAF	89.48	333	eP	36	23.70	0.1			
			e	35	34.00	49km	E	18s		1.30um					1 0s		18.80nm			5.4mb			
FRB	77.33	13	eP	35	20.00	-1.1	DSI	82.83	304	eP	35	52.00	1.0	TCF	89.56	333	eP	36	23.90	-0.1			
	0.8s		48.00nm			5.6mb	VTS	82.92	319	iP	35	52.00	0.5		1.0s		8.80nm			5.0mb			
IAS	77.53	320	eP	35	24.00	1.5	ELL	83.03	311	eP	35	51.00	-1.2	MEO	89.98	45	e(P)	36	27.40	1.3			
CLC	77.58	55	eP	35	23.00	-0.1	WTS	83.14	333	eP	35	52.50	0.3	MFF	90.14	334	eP	36	26.40	-0.2			
			e	35	37.00	49km		0.8s		12.00nm			5.0mb		1.0s		24.00nm			5.5mb			
KAS	77.78	313	iPc	35	24.80	0.7				e	36	06.50	48km	SIO	90.56	43	eP	36	29.10	0.4			
DUG	77.97	49	P	35	25.80	0.5	GRF	83.29	330	iPc	35	54.00	0.9	RJF	90.65	333	eP	36	29.00	0.0			
SBB	78.09	56	eP	35	26.00	0.1		1.3s		65.00nm			5.5mb		0.7s		7.40nm			5.2mb			
			e	35	40.00	49km	Z	20s		1.00um			5.2Msz	TUL	90.72	43	eP	36	29.60	0.2			
CLI	78.09	320	ePc	35	25.50	-0.2				e	35	57.10			0.5s		33.10nm			6.0mb			
PAS	78.18	56	eP	35	40.00	13 7X				e(pP)	36	07.50	46km	Z	20s		0.30um			4.7Msz			
MWC	78.21	56	eP	35	27.00	0.3				e	36	12.60					i	36	44.70	52km			
			e	35	40.00	44km	KMR	83.33	327	eP	35	53.50	0.2				LR	07	00.00				
BW06	78.28	45	P	35	26.00	-1.1	MMB	83.33	318	iPd	35	55.00	1.5	CAF	90.77	332	eP	36	30.00	0.4			
GSC	78.40	55	eP	35	27 00	-0.7	EKA	83 45	340	P	35	54.00	0.2		0.9s		12.10nm			5.3mb			
			e	35	41.00	49km		0.8s		7.60nm			4.8mb	LFF	91.25	333	eP	36	32.00	0.3			
DAU	78.77	48	P	35	30.40	0.5	IZM	83.52	314	eP	35	54.50	0.0		0.8s		11.80nm			5.4mb			
			pP	35	47.60	62kmX	HITJ	83.65	302	P	35	54.20	-1.3	EPF	93.03	332	eP	36	39.40	-0.7			
RVR	78.80	56	eP	35	31.00	1.3	PRNI	83.85	303	iPc	35	57.00	0.7		0.9s		4.90nm			4.9mb			
			e	35	42.00	36kmX	OUR	84.06	317	eP	35	57.50	0.4	BCAO	112.61	294	ePKPd	42	03.00	-0.7			
VRI	78.83	319	ePc	35	30.00	0.3	KNT	84.08	318	ePc	35	57.30	0.0		0.7s		18.00nm						
RYD	78.95	292	iPc	35	30.20	-0.6	AYN	84.09	302	eP	35	58.30	0.8				id	42	50.00				
BMR	79.26	322	ePd	35	32.00	0.1	PTJ	84.13	325	eP	35	56.90	-0.6				id	43	53.20				
KRA	79.27	326	eP	35	32.10	0.1	VAY	84.14	318	iPc	35	57.80	0.2	KSR	123.54	261	ePKP	42	21.00	-3.5X			
	0.8s		47.00nm			5.5mb		0.9s		0.01nm			1.8mb X	PRY	123.58	259	ePKP	42	24.00	-0.5			
			e	35	47.10	53km	ZAG	84.18	325	ePc	35	57.70	0.0	SEK	124.09	258	ePKP	42	25.00	-0.5			
BBTK	79.33	312	eP	35	33.00	0.3	MBH	84.29	303	iPc	35	59.00	0.5				i	47	44.00				
MLR	79.49	320	ePc	35	33.50	0.0	KBA	84.42	327	iPc	35	58.60	-0 5	SPA	126.37	180	ePKP	42	29.20	0.5			
PLM	79.53	56	eP	35	35.00	1.1		1.2s		34.00nm			5.3mb		1.3s		24.17nm						
			e	35	47.00	40km				id	35	59.60	3kmX	TIC	126.48	316	PKP	42	29.68	-0.6			

	0.9s	6.50nm			
KIC	126.55	316 PKP	42	29.92	-0.5
	0.9s	10.00nm			
LIC	126.83	316 PKP	42	30.32	-0.6
	0.8s	9.50nm			
	Z 22s	0.61um			5.2Msz
SNA	140.94	199 ePKP	42	44.40	-11.4X
	0.9s	14.29nm			
ARE	145.01	64 ePKP	43	04.00	-0.8
ZOBO	147.27	60 PKP	43	09.00	0.2
	1.0s	75.00nm			
	Z 24s	0.53um			5.2MszX
		i	43	10.00	
		LR	33	42.00	
LPB	147.47	60 PKP	43	11.00	2.1X
	1.1s	258.23nm			
CNCB	147.74	60 PKP	43	11.00	1.4
CCH	149.41	59 PKP	43	16.00	4.2X
YJA	152.99	65 ePKPd	43	18.20	1.0
		e	43	24.90	
PEL	153.90	92 iPKPd	43	26.80	9.1X
BAO	157.71	23 ePKP	43	27.30	4.1X
	S.D. = 0.9	on 235 of 260 obs.			

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* DEC 08, 1989 18h 11m 04.20± 2.02s
3.193 S ± 7.5km 79.072 W ±42.4km
DEPTH = 10.0km (geophysicist)
NEAR COAST OF ECUADOR (105)

QUR	3.05	10 eP	11	54.50	0.7
		S	12	35.00	
CAYA	3.43	19 P	11	58.90	-0.4
COTA	3.58	12 P	12	01.00	-0.4
NNA	9.01	166 iP	13	17.30	-0.1
	0.6s	18.67nm			5.6mb X
		e	14	56.60	
ZOBO	16.88	141 P	15	03.00	0.2
CNCB	17.37	142 eP	15	09.00	0.0
	S.D. = 0.6	on 6 of 6 obs.			

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* DEC 08, 1989 18h 33m 25.26± 1.54s
37.720 N ±12.8km 20.981 E ±10.5km
DEPTH = 11.3 ± 4.2 km
IONIAN SEA (399)
MD 3.7 (ATH).

VLS	0.55	326 ePg	33	36.50	0.1
		eSg	33	51.00	
ITM	0.93	125 ePg	33	35.00	-7.8X
AGG	1.68	39 eP	33	57.10	2.4X
		eS	34	33.00	
VLI	1.85	122 ePg	33	57.60	0.4
IGT	1.88	345 eP	34	03.10	5.6X
SRN	2.29	341 ePn	34	10.60	7.2X
NEO	2.37	47 ePn	34	04.70	0.1
LSK	2.44	353 iPnc	34	07.50	1.8
LIT	2.65	26 eP	34	08.60	-0.1
		eS	35	04.70	
KZN	2.65	13 ePn	34	10.00	1.2
TPE	2.68	344 ePn	34	17.10	8.1X
KBN	2.90	357 ePn	34	14.10	2.0
PLG	3.27	35 ePn	34	18.00	0.5
OHR	3.39	358 ePn	34	19.70	0.6
GRG	3.41	18 eP	34	19.50	0.0
VAM	3.47	131 ePg	34	26.00	5.8X
OUR	3.50	41 eP	34	12.70	-8.0X
TIR	3.72	347 ePn	34	24.30	0.5
KNT	3.74	23 eP	34	24.50	0.3
VAY	3.80	18 ePn	34	21.60	-3.3X
PHP	3.98	354 ePn	34	26.40	-1.1
SKO	4.26	5 ePn	34	30.80	-0.7
MMB	4.41	28 eP	34	33.00	-0.6
SDA	4.44	346 ePn	34	32.60	-1.3
KKB	4.45	21 eP	34	36.00	1.9
RZN	4.90	35 iPd	34	40.00	-0.7
	S.D. = 1.1	on 18 of 26 obs.			

& DEC 08, 1989 18h 34m 06.46s
62.610 N 142.665 W
DEPTH = 1.1km
CENTRAL ALASKA (1)
<AGS-P>. ML 4.0 (PMR).

BALM	1.59	174 iP	34	34.00	-1.9
TOA	1.71	254 iPc	34	37.00	-0.6
KLU	1.90	235 iP	34	38.80	-1.6
DWY	2.06	44 P	34	44.70	2.1
WAX	2.17	182 eP	34	44.09	-0.2
		eS	35	13.99	
RAGM	2.43	204 eP	34	47.70	-0.3
		eS	35	19.71	
SNH	2.44	182 eP	34	47.97	-0.2
		eS	35	18.28	
SGAM	2.44	211 eP	34	47.46	-0.7
		eS	35	18.48	
CYK	2.54	178 eP	34	48.75	-0.7
		eS	35	20.97	
CVA	2.54	217 iP	34	49.19	-0.3
		eS	35	20.55	
PCA	2.78	154 eP	34	52.93	0.0
HIN	2.88	221 iP	34	53.50	-0.9
		eS	35	29.56	
HYT	3.04	124 P	34	55.60	-1.1
PMR	3.21	254 eP	35	00.20	1.3
FBA	3.24	318 eP	34	59.00	-0.4
		i	35	08.30	
PMS	3.54	250 eP	35	04.00	0.3
MID	3.66	211 e(P)	35	04.40	-0.9
IMA	5.91	311 eP	35	38.70	1.4
TTA	6.14	279 eP	35	41.20	0.7
SVW	6.31	262 eP	35	41.20	-1.8
SIT	6.68	143 P	35	46.60	-1.5
INK	6.86	30 eP	35	50.00	-0.6
	0.3s	22.80nm			5.8mb X
KDC	6.91	230 e(P)	35	48.70	-2.6
EDM	18.03	108 eP	38	21.50	1.9
KVN	27.89	136 e(P)	40	00.00	0.2
	25 obs.	ossocioted			

? DEC 08, 1989 18h 35m 10.12± 1.91s
16.315 N ±18.9km 61.309 W ±48.4km
DEPTH = 133.0 ± 11.3 km
LEEWARD ISLANDS (92)
MD 3.2 (TRN).

SEG	0.21	295 eP	35	26.30	-3.2
		S	35	34.40	
MGG	0.39	181 iPd	35	26.07	-3.1X
		S	35	34.00	
DOG	0.41	227 ePd	35	28.80	-0.5
PAG	0.46	232 ePd	35	29.45	-0.1
		S	35	40.40	
BBL	0.80	192 ePd	35	31.37	-0.5
		S	35	43.70	
BPA	0.90	324 eP	35	34.33	1.7
		eS	35	49.56	
ANG	0.97	329 eP	35	34.10	0.8
		eS	35	49.27	
DPMT	1.05	184 eP	35	35.18	1.1
		eS	35	52.01	
DTMT	1.08	182 eP	35	34.53	0.2
		eS	35	48.97	
DSVT	1.08	183 eP	35	34.64	0.3
		eS	35	50.89	
FDF	1.58	174 eP	35	39.93	0.2
	0.1s	0.45nm			
		S	35	59.20	
CRM	1.60	166 iPc	35	39.57	-0.3
		S	35	58.70	
SKI	1.70	307 eP	35	34.12	-7.0X
		eS	35	49.29	
MVM	1.80	167 iPc	35	42.66	0.4
		S	36	03.90	
BIM	1.80	173 eP	35	43.00	0.7
		S	36	06.10	
ZOBO	33.07	192 eP	41	35.00	-0.8
	S.D. = 1.3	on 14 of 16 obs.			

DEC 08, 1989 19h 27m 46.17± 1.53s
10.189 N ± 6.7km 126.303 E ±10.2km
DEPTH = 55.7 ± 15.7 km
4.7mb (2 obs.)
PHILIPPINE ISLANDS REGION (248)

DAV	3.16	193 eP	28	36.00	1.3
OCP	6.75	311 eP	29	20.00	-5.1X
BAG	8.32	319 eP	29	44.80	-2.2
GUMO	18.48	78 eP	32	00.00	0.0
SSE	21.34	348 P	32	32 00	1.4
	1.0s	24.00nm			4.5mb
		e(S)	36	34.00	
NJ2	22.82	344 eP	32	45.00	-0.3
WHN	23.11	333 eP	32	49.00	0.9
GYA	24.63	314 P	33	04.60	1.6
NNT	26.15	278 eP	33	19.00	1.8
TIA	27.21	344 eP	33	26.10	-0.6
CHTO	27.81	291 eP	33	31.10	-1.2
	1.1s	29.40nm			4.8mb
XAN	28.59	329 P	33	38.60	-0.6
WB2	30.97	165 eP	34	00.00	-0.5
BJI	31.06	345 eP	34	12.00	10.9X
LZH	32.86	325 P	34	17.50	0.4
OIS	33.24	157 eP	34	18.00	-2.3
WARB	36.15	179 eP	34	45.00	-0.1
GTA	37.47	325 iPc	34	56.40	0.2
MRWA	40.42	194 eP	35	20.20	-0.5
MUN	43.03	193 eP	35	42.00	0.0
HYB	46.83	284 eP	36	12.00	-0.7
WMO	47.31	322 eP	36	17.00	0.8
GBA	47.88	279 P	36	20.00	-0.9
BWA	49.08	156 eP	36	31.50	1.5
CAN	50.09	156 eP	36	31.50	-6.2X
MSZ	66.29	149 P	38	30.80	0.0
	S.D. = 1.2	on 23 of 26 obs.			

? DEC 08, 1989 19h 58m 07.55± 0.79s
10.154 N ±14.5km 126.497 E ±27.8km
DEPTH = 33.0km (normol)
5.0mb (4 obs.)
PHILIPPINE ISLANDS REGION (248)

WB2	30.89	165 eP	04	21.40	-2.1
WARB	36.12	180 iPd	05	09.50	0.9
	0.4s	7.00nm			4.9mb
MRWA	40.43	194 iPd	05	45.10	0.5
GBA	48.07	279 P	06	46.00	-0.3
MSZ	66.17	149 P	08	55.00	1.0
SUF	85.76	333 iP	10	45.00	0.5
	0.5s	4.70nm			5.0mb
NUR	87.01	331 eP	10	51.10	0.5
HFS	92.25	333 eP	11	14.80	-0.5
	0.4s	3.60nm			5.2mb
NB2	92.96	334 P	11	18.10	-0.5
	0.6s	1.20nm			4.5mb
	S.D. = 1.1	on 9 of 9 obs.			

DEC 08, 1989 20h 37m 46.00± 0.61s
45.494 N ± 5.9km 26.956 E ± 5.9km
DEPTH = 10.0km (geophysicist)
ROMANIA (358)

VRI	0.41	337 iPc	37	54.00	-0.4
MLR	0.71	270 iPc	38	00.00	-0.1
CFR	0.90	110 iPd	38	03.00	-0.2
CLI	1.08	12 ePc	38	06.50	0.2
TLB	1.18	139 ePd	38	08.50	0.4
CMP	1.37	261 ePc	38	12.00	0.8
PSN	2.01	154 eP	38	25.00	4.6X
		Sg	38	54.00	
JMB	3.04	185 eP	38	42.00	7.0X
RZN	4.14	204 eP	38	50.00	-0.8
	S.D. = 0.7	on 7 of 9 obs.			

DEC 08, 1989 22h 18m 49.21± 1.47s
9.991 N ± 6.0km 126.374 E ± 7.6km
DEPTH = 86.2 ± 15.2 km
5.1mb (5 obs.)
MINOANAO, PHILIPPINE ISLANDS (259)

DAV	2.99	195 eP	19	36.20	0.8
OCP	6.94	312 eP	20	47.00	16.9X
BAG	8.52	319 eP	20	47.00	-5.0X
OZH	16.61	335 eP	22	38.50	0.4
OIZ	18.34	301 eP	23	00.00	0.5
	E 11s	0.70um			
		PP	23	13.00	
GUMO	18.45	77 eP	23	01.00	0.2
GUA	18.49	77 eP	23	00.50	-0.7
SSE	21.55	348 P	23	32.00	-1.0
	E 14s	0.50um			
		pP	23	39.00	25kmX
		sP	23	42.00	
		PP	23	53.60	
		S	27	28.00	
		sS	27	38.00	
NJ2	23.03	343 Pd	23	47.80	0.3
	Z 14s	0.30um			3.9MszX
GYA	24.81	314 P	24	05.00	0.0
LOE	25.03	290 eP	24	08.40	1.0
IPM	25.70	260 ePd	24	14.70	1.5
	1 1s	50.10nm			4.9mb

08d 22h

NST	26.19	285	eP	24	19.50	1.9
TIA	27.42	344	eP	24	28.20	-0.5
CHG	27.94	291	eP	24	31.20	-2.4
CHTO	27.94	291	eP	24	31.40	-2.2
			pP	24	38.90	26kmX
			pP	24	42.90	
WB2	30.77	165	eP	24	56.00	-2.7
BJI	31.27	345	eP	25	08.00	5.1X
Z	16s	0.29um				4.0MszX
			eS	30	06.00	
			eScP	31	39.00	
MBL	31.62	192	eP	25	06.00	-0.1
QIS	33.03	157	eP	25	17.00	-1.5
NANU	34.05	198	eP	25	27.00	-0.3
ASPA	34.25	168	eP	25	27.90	-1.1
	0.4s	8.00nm			5.0mb	
CTA	35.73	147	iPd	25	41.40	-0.2
	1.0s	23.00nm			5.1mb	
WARB	35.96	180	iPd	25	44.10	0.6
	0.3s	8.00nm			5.1mb	
SHL	36.17	300	eP	25	44.50	-1.0
GTA	37.67	325	eP	25	57.00	-0.9
Z	15s	0.64um				4.5MszX
N	13s	0.43um				
LSA	38.27	306	P	26	03.40	-0.1
MRWA	40.25	194	eP	26	20.00	0.8
MUN	42.85	193	eP	26	41.00	0.5
BRS	45.12	146	iPc	26	58.80	-0.1
ADE	46.21	166	eP	27	08.20	0.8
WMQ	47.50	322	eP	27	18.00	0.4
Z	20s	0.40um				4.4Msz
GBA	47.98	279	P	27	20.00	-1.5
BWA	48.87	156	eP	27	30.10	1.9
CAN	49.89	156	eP	27	30.10	-5.9X
MAIO	65.54	305	eP	29	26.00	0.0
INK	84.51	22	eP	31	15.00	1.6
			pP	31	26.00	35kmX
SUF	85.85	333	eP	31	22.00	1.8
MBC	85.96	13	eP	31	22.00	1.4
	1.0s	43.00nm			5.4mb	
S.D. = 1.3 on 35 of 39 obs.						

DEC 08, 1989 23h 04m 51.40± 0.74s
39.754 N ± 8.9km 113.849 E ± 6.9km
DEPTH = 10.0km (geophysicist)
NORTHEASTERN CHINA (658)
ML 4.3 (BJI).

BJI	1.81	80	ePg	05	23.00	0.2
			Sg	05	47.00	
HHC	2.06	303	Pnc	05	26.20	-0.4
			Pgd	05	27.60	
			Sg	05	55.00	
TIY	2.32	209	Pnd	05	31.20	0.9
			Pgc	05	33.80	
			Sg	06	05.50	
BTO	3.05	287	Pn	05	42.60	1.9
			Pg	05	46.00	
			Sg	06	23.60	
TIA	4.38	143	Pn	06	00.00	0.5
			Sg	07	08.70	
XAN	6.94	216	Pn	06	36.00	0.4
			Sg	08	28.50	
NJ2	8.69	151	eP	06	59.00	-1.0
Z	14s	0.60um				
LZH	8.71	248	eP	07	00.00	-0.5
Z	16s	0.70um				
			Lg	09	44.00	
WHN	9.20	177	eP	07	02.50	-4.5X
E	11s	0.66um				
GTA	10.84	273	eP	07	28.00	-1.8
WMQ	19.89	290	P	09	25.90	0.1
CHTO	24.52	216	e(P)	10	11.90	-0.2
S.D. = 1.1 on 11 of 12 obs.						

DEC 09, 1989 01h 32m 43.96± 1.26s
42.875 N ± 5.1km 12.596 E ±13.4km
DEPTH = 10.0km (geophysicist)
CENTRAL ITALY (381)
MD 2.5 (SSO).

ASS	0.20	14	P	32	48.50	0.1
			eSg	32	51.20	
MNS	0.49	173	P	32	53.70	-0.3
			eSg	33	01.50	
CIO	0.51	51	iPg	32	54.39	0.0
			iSg	33	02.87	
ARV	0.67	22	P	32	57.20	-0.1
			eSg	33	07.90	
ALP	0.73	97	ePg	32	58.12	-0.2
			iSg	33	08.37	
SDI	1.48	142	P	33	11.20	0.5
S.D. = 0.4 on 6 of 6 obs.						

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* DEC 09, 1989 01h 38m 13.53± 1.46s
24.696 N ±10.8km 121.104 E ±12.7km
DEPTH = 10.0km (geophysicist)
TAIWAN (244)

TWQ	0.49	210	iPd	38	32.30	8.9X
			eS	38	58.10	
TWZ	0.59	47	iPd	38	25.60	0.2
			eS	38	47.00	
ANP	0.61	38	eP	38	41.50	15.6X
TWC	0.68	97	iPc	38	26.40	-0.7
			eS	38	47.70	
TWD	0.76	144	ePc	38	29.60	1.2
TWF1	1.35	172	eP	38	37.40	-1.0
TWK	1.53	202	eP	38	41.50	0.5
TWM1	1.96	199	eP	38	46.90	-0.3
S.D. = 1.1 on 6 of 8 obs.						

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* DEC 09, 1989 01h 48m 58.01± 0.82s
4.195 S ±13.2km 152.823 E ± 6.2km
DEPTH = 10.0km (geophysicist)
4.7mb (1 obs.)
NEW BRITAIN REGION (192)

RAB	0.65	270	iPd-	49	11.00	0.0
KDB	7.69	227	eP	50	53.50	0.8
QIS	20.74	217	eP	53	40.50	-1.0
DZM	22.14	145	iPd	53	55.60	-0.2
BRS	23.07	180	iPc	54	11.10	6.3X
WB5	23.80	228	eP	54	11.90	-0.1
ASPA	26.61	222	iPc	54	38.70	0.1
TCW	41.58	155	P	56	48.10	0.5
MNG	41.61	154	eP	56	47.30	-0.5
	0.3s	5.00nm			4.7mb	
MRW	41.78	155	eP	56	49.50	0.3
CAW	41.83	155	eP	56	49.80	0.2
WDW	41.93	155	P	56	50.40	0.0
MTW	42.06	154	P	56	51.20	-0.3
BCAO	134.42	272	ePKPc	08	18.80	-0.5
	0.5s	3.00nm				
ZOBO	134.69	118	PKP	08	21.00	0.6
BAO	151.49	134	PKPd	08	55.80	7.2X
S.D. = 0.5 on 14 of 16 obs.						

% DEC 09, 1989 02h 45m 20.16± 0.77s
44.309 N ± 8.0km 7.415 E ± 5.9km
DEPTH = 10.0km (geophysicist)
NORTHERN ITALY (545)
ML 2.1 (GEN).

ENR	0.08	177	P	45	23.13	0.4
			S	45	25.07	
STV	0.09	225	P	45	23.13	0.3
			S	45	25.07	
PZZ	0.30	311	P	45	26.20	-0.2
			S	45	30.92	
ROB	0.33	92	P	45	27.52	0.5
			S	45	32.69	
IMI	0.53	139	P	45	30.10	-0.7
			S	45	37.11	
FIN	0.58	100	P	45	31.74	-0.2
			S	45	39.33	
S.D. = 0.6 on 6 of 6 obs.						

DEC 09, 1989 02h 58m 37.52± 0.88s
45.591 N ± 4.7km 111.221 W ± 7.5km
DEPTH = 5.0km (geophysicist)
MONTANA (456)
ML 3.1 (BUT).

LCCM	0.52	298	iPc	58	48.40	0.4
SXM	0.56	1	iPd	58	48.60	-0.1
BGMT	0.68	239	iPc	58	51.00	-0.1
LRM	0.89	285	iPc	58	55.00	-0.3
BUT	1.03	295	eP	58	57.60	0.0
			eS	59	11.20	
HRY	1.20	339	ePd	59	00.40	0.0
MCMT	1.38	237	ePc	59	03.60	-0.1
IMW	1.71	173	eP	59	08.50	0.1
			eS	59	31.20	
S.D. = 0.2 on 8 of 8 obs.						

& DEC 09, 1989 06h 14m 59.63s
53.029 N 160.710 W
DEPTH = 19.6km
SOUTH OF ALASKA (17)
<PAL>.

SNKA	1.90	321	eP	15	29.41	-1.9
DRRA	2.11	335	eP	15	33.00	-1.5
			S	15	56.88	
SOF	2.20	2	eP	15	33.82	-1.9
			eS	15	59.19	
SASA	2.32	3	eP	15	35.66	-1.7
			eS	16	01.96	
PVV	2.43	345	eP	15	37.76	-1.2
			eS	16	05.48	
SGB	2.53	3	eP	15	39.11	-1.2
			eS	16	07.79	
IVF	2.95	13	eP	15	44.91	-1.5
			eS	16	17.82	
INK	20.02	30	eP	19	32.00	-1.5
KVN	32.20	98	e(P)	21	30.00	1.5
TNP	33.35	99	e(P)	21	40.20	1.6
10 obs. associated						

? DEC 09, 1989 07h 01m 33.01± 1.66s
54.412 N ±19.8km 162.654 W ±13.7km
DEPTH = 69.3 ± 8.0 km
ALASKA PENINSULA (12)

SNKA	0.09	311	iPc	01	41.99	0.0
DRRA	0.56	23	eP	01	46.05	-0.5
PVV	1.09	27	ePc	01	53.82	1.0
			eS	02	09.26	
SOF	1.46	55	eP	01	57.85	0.1
			eS	02	16.23	
SASA	1.56	52	eP	01	59.32	0 3
			eS	02	19.07	
NGI	1.63	66	eP	01	59.30	-0.8
SGB	1.70	47	eP	02	01.43	0.3
			eS	02	22.73	
IVF	2.33	49	ePd	02	09.97	0.2
			eS	02	37.38	
TTA	9.21	19	eP	03	44.90	-0.6
INK	19.43	33	eP	05	55.00	-1.1
FRB	44.92	39	eP	09	43.00	1.1
S.D. = 0.8 on 11 of 11 obs.						

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* DEC 09, 1989 10h 28m 29.69± 1.90s
26.738 N ± 7 5km 126.343 E ±12.8km
DEPTH = 153.6 ± 19.7 km
4.5mb (8 obs.)
RYUKYU ISLANDS (238)

SSE	6.27	315	Pd	30	00.50	-0.4
	1.0s	0.02nm			1.4mb	X
			(S)	31	13.70	
			Lg	31	51.50	
NJ2	8.41	311	Pc	30	29.60	0.0
SNY	15.22	352	Pd	31	58.60	0.9
BJI	15.73	330	eP	32	05.00	0.9
	1.0s	7.00nm			4.0mb	
			eS	35	02.00	
TIY	16.05	316	P	32	06.00	-2.1
XAN	16.69	300	P	32	16.60	0.7
CN2	17.04	358	Pc	32	20.20	0.1
HHC	18.64	323	eP	32	39.00	0.7
LZH	21.30	301	eP	33	30.50	25.1X
GTA	25.47	306	Pd	33	44.50	-0.7
CHTO	26.43	258	eP	33	54.70	0.8
	0.7s	1.43nm			3.7mb	
WB5	46.99	170	iPc	36	46.10	-1.0
QIS	48.74	163	iPc	36	59.90	-0.7
	0.8s	26.00nm			5.0mb	
			e	37	33.00	
ASPA	50.64	171	iPc	37	14.80	-0.3
	0.6s	18.00nm			5.0mb	
			iPcP	38	30.00	
WARB	52.61	180	eP	37	30.20	0.4
ADE	62.47	169	iPd	38	38 90	0.2
	0.7s	16.44nm			5.1mb	
BWA	64.33	160	eP	38	52.50	1.6
FBA	64.39	28	eP	38	51.10	0.2
	0.6s	0.70nm			3.8mb	
CAN	65.33	160	eP	38	52.50	-4.8X
INK	69.09	23	eP	39	20.00	-0.4

```
MBC     69.73  13 eP     39 23.00  -1.2
        0.7s     2.00nm          4.0mb
FFC     88.88  26 iPc    41 08.00   0.5
        0.9s    10.00nm          4.8mb
      S.D. = 1.0  on  20 of  22 obs.
-------------------------------------
*  DEC 09, 1989  11h 15m 23.58± 1.86s
   38.808 N ±10.4km   16.328 E ±21.0km
   DEPTH =  10.0km  (geophysicist)
 SOUTHERN ITALY                 (390)

CZI     0.44 340 P      15 33.10   0.6
ACI     0.55 350 P      15 35.10   0.3
ROI     0.79  14 P      15 38.60  -0.3
TDS     0.85   1 P      15 39.70  -0.3
                eSg     15 52.40
ATN     0.94 227 P      15 41.70   0.2
                eSg     15 59.00
CSI     0.97 358 P      15 43.20   1.2
MMN     1.11 347 P      15 43.60  -0.8
                eSg     15 56.60
MGR     1.46 336 Pd     15 48.80  -1.1
                eSg     16 08.30
      S.D. = 0.9  on   8 of   8 obs.
-------------------------------------
   DEC 09, 1989  11h 32m 28.52± 0.64s
   22.872 N ± 4.3km   94.592 E ± 4.5km
   DEPTH = 115.4 ±  6.9 km
   4.8mb ( 12 obs.)
 BURMA                          (296)

SHL     3.65 318 iP     33 23.30  -1.0
                iS      33 59.80
CHG     5.73 134 iPn    33 52.50  -0.1
                iPg     34 08.80
                iSg     35 09.00
CHTO    5.73 134 ePn    33 51.20  -1.4
                ePg     34 09.70
BDT     6.97 143 eP     34 10.00   0.5
LSA     7.47 336 iPc    34 16.70   0.0
                eS      35 36.50
KMI     7.78  72 Pc     34 25.00   4.2X
LOE     8.63 128 eP     34 28.00  -4.1X
NST     8.87 143 eP     34 36.50   1.2
GYA    11.54  70 P      35 12.00   0.9
LZH    15.42  29 P      36 03.00   1.9
HYB    16.00 253 eP     36 07.00  -1.4
       1.0s    50.00nm          4.7mb
                i       36 11.00
                eS      39 49.50
NDI    16.68 294 iPd    36 15.80  -0.9
       0.5s    56.34nm          5.1mb
                iS      39 04.00
XAN    16.79  45 P      36 18.40   0.4
GTA    17.08  14 eP     36 19.40  -2.2
GBA    18.70 243 P      36 41.00   0.2
                S       39 51.00
WHN    19.22  62 eP     36 46.50   0.4
                sP      37 20.50
POO    19.87 261 iPd    36 55.20   2.2
                iS      40 23.40
KOD    20.64 235 eP     37 02.00   0.8
BOM    20.72 263 iPd    37 02.20   0.6
                eS      40 35.70
TIY    21.30  42 Pc     37 06.20  -1.2
WMQ    21.66 346 P      37 13.60   2.8
SSE    25.03  65 P      37 44.20   0.8
       0.9s    21.00nm          4.6mb
BJI    25 03  42 eP     37 43.50   0.2
QUE    25.74 292 eP     37 51.50   1.3
MAT    39.93  60 eP     39 52.00  -0.9
       0.8s    12.69nm          4.8mb
NANU   49.55 154 iPd    41 10.20   0.6
MBL    50.21 149 eP     41 15.00   0.4
KNA    50.91 136 iPc    41 20.00   0.0
       0.3s    34.00nm          5.8mb
MEKA   54.38 153 eP     41 46.00   0.3
BAL    57.25 157 eP     42 05.00  -1.2
WB5    57.56 134 iPc    42 08.20  -0.2
WARB   57.80 146 eP     42 10.20   0.1
MUN    58.33 158 eP     42 13.00  -0.7
KLB    58.53 157 eP     42 15.00   0.0
VRI    58.72 311 ePd    42 16.00  -0.3
COOL   59.21 153 eP     42 19.00  -0.8
MLR    59.28 310 ePc    42 21.50   1 2
NWAO   59.55 158 eP     42 21.00  -1.0
ASPA   60.00 138 iPc    42 25.50   0.2

       0.6s    28.00nm          5.5mb
SUF    60.06 330 eP     42 25.20   0.0
NUR    60.50 328 eP     42 26.00  -2.2
       0.8s    11.70nm          5.0mb
SOD    60.64 336 iP     42 29.20   0.1
KEV    61.01 338 eP     42 31.00  -0.6
HFS    65.95 327 eP     43 03.50  -0.5
       0.4s     4.70nm          4.8mb
CTA    66.06 126 iPc    43 05.80   0.5
       0.8s    17.16nm          5.0mb
NB2    67.08 328 P      43 10.50  -0.8
       0.6s     1.90nm          4.2mb
EKA    75.75 324 P      44 04.00   1.0
       1.1s     6.40nm          4.3mb
MBC    78.92   8 eP     44 20.00  -0.1
       0.5s     2.00nm          4.2mb
INK    82.54  16 eP     44 39.00  -0.3
BAO   144.02 275 PKPd   51 52.00  -0.9
ZOBO  162.45 289 PKP    52 19.00   0.3
      S.D. = 1.0  on  49 of  51 obs.
-------------------------------------
   DEC 09, 1989  13h 04m 22.07± 0.39s
   39.785 N ± 4.9km   25.443 E ± 3.6km
   DEPTH =   5.0km  (geophysicist)
 AEGEAN SEA                     (365)
      MD 3.3 (ATH).

EZN     0.68  86 iPg    04 34.70  -1.0
                iSg     04 41.20
PRK     0.84 130 ePn    04 38.00  -0.7
                eSn     04 49.50
OUR     1.25 297 eP     04 45.80   0.1
RDO     1.36   3 iPnc   04 47.00  -0.6
PLG     1.64 292 ePn    04 51.80   0.1
NEO     1.78 255 ePn    04 54.20   0.5
KDZ     1.86 359 iPc    04 54.00  -0.9
EDC     1.94  72 iPn    04 56.50   0.5
SRS     1.94 314 eP     04 56.90   0.9
                eS      05 26.00
RZN     1.98 344 eP     04 56.00  -0.8
IZM     1.98 134 ePn    04 56.00  -0.7
BNT     1.98  73 iPn    04 57.50   0.8
MMB     2.22 325 eP     04 59.00  -1.2
DIM     2.26   2 eP     05 00.00  -0.7
                eSg     05 38.00
SMG     2.34 152 ePn    05 01.00  -0.8
KNT     2.38 306 eP     05 02.90   0.5
                eS      05 39.30
DST     2.46  93 iPn    05 02.50  -1.1
AGG     2.53 253 eP     05 04.20  -0.3
GRG     2.60 298 eP     05 07.00   1.5
CTT     2.65  58 ePn    05 08.00   1.7
VAY     2.67 306 ePn    05 14.70   8.2X
KKB     2.74 320 iP     05 08.00   0.4
JMB     2.81  17 iP     05 14.00   5.5X
PGB     2.93 341 iP     05 10.00  -0.2
ISK     3.04  64 ePn    05 15.00   3.3X
YLV     3.11  74 ePn    05 15.50   2.7
VTS     3.27 330 eP     05 15.00  -0.2
                eSg     06 10.00
PVL     3.43 359 iPd    05 16.00  -1.2
KHL     3.50 113 ePn    05 19.00   0.7
ALT     3.69 100 ePn    05 21.00  -0.1
      S.D. = 1.0  on  27 of  30 obs.
-------------------------------------
   DEC 09, 1989  14h 33m 59.99± 1.16s
   10.215 N ± 4.1km  126.404 E ± 6.1km
   DEPTH =  42.0 ± 11.1 km
   5.0mb ( 10 obs )  4.4Msz (  6 obs.)
 PHILIPPINE ISLANDS REGION      (248)

DAV     3.21 195 eP     34 51 00   1.8
QCP     6 81 311 eP     36 17.00  37.0X
BAG     8.37 318 eP     36 00 60  -1.3
KKM    10.90 248 ePd    36 45.10   8.5X
QZH    16.42 334 eP     37 52.80   3.7X
       Z  18s     1.80um
       N  12s     0.80um
HKC    16.79 317 e(P)   37 59 00   5.3X
GZH    17.88 317 eP     38 04.00  -3.3X
       Z  18s     2.70um
GUMO   18.37  78 eP     38 13.50   0.0
       Z  20s     1.73um
GUA    18 41  78 eP     38 13 00  -0.9
       Z  17s     1.63um
SSE    21.34 348 P      38 44 00  -1.6
       N  12s     0.60um

       E  12s     0.90um
                pP      38 51.00   25kmX
                PPP     39 16.00
                S       42 40.00
                sS      42 49.00
NJ2    22.83 343 Pc     39 02.00   1.6
       Z  20s     1.20um          4.3Msz
WHN    23.13 333 Pc     39 04.00   0.6
       4.0s     0.74nm          2.5mb X
       Z  20s     1.00um          4.3Msz
       N  11s     0.69um
       E  15s     1.40um
                sP      39 18.50
                S       43 14.00
GYA    24.68 314 P      39 19.00   0.3
       Z  18s     1.50um          4.5Msz
       N  16s     2.30um
       E  16s     2.40um
LOE    24.99 289 eP     39 21.00  -0.5
IPM    25.77 259 ePd    39 31.40   2.5
TIA    27.22 343 eP     39 38.00  -3.9X
       E  12s     0.90um
                eS      44 15.00
CHTO   27.89 291 eP     39 48.00  -0.3
XAN    28.62 329 P      39 53.30  -1.4
       N  15s     1.20um
                S       44 44.00
TIY    30.13 338 eP     40 07.00  -1.2
       Z  22s     1.04um          4.4Msz
       N  16s     0.80um
       E  13s     0.80um
                S       45 06.00
WB5    30.92 165 eP     39 59.80 -15.4X
BJI    31.06 345 eP     40 16.00  -0.3
       Z  16s     0.89um          4.5MszX
       N  11s     0.29um
                eS      45 20.00
SNY    31.59 356 eP     40 25.40   4 6X
       Z  20s     1.10um          4.5Msz
       N  20s     1.11um
       E  16s     0.90um
                S       45 28.00
LZH    32.90 325 eP     40 32.00  -0.6
       Z  16s     1.60um          4.8MszX
       E  15s     1.20um
                S       45 48.00
HHC    33.21 339 eP     40 35.60   0.4
       N  20s     2.60um
       E  20s     2.80um
                S       45 56.00
QIS    33.22 157 eP     40 33.00  -2 4
CN2    33.47 359 eP     40 39.00   1.7
       Z  17s     9.00um          5.6MszX
       E  11s     1.10um
                pP      40 44.00   17kmX
                eS      45 53.00
BTO    33.56 337 P      40 39.00   0.8
       N  16s     1.00um
       E  14s     0.50um
                S       46 02.00
NANU   34.27 198 eP     40 44.00  -0.4
MDJ    34.39   4 eP     40 45.50   0.3
       Z  15s     0.90um          4.6MszX
                eS      46 13.00
ASPA   34.46 168 eP     40 43.80  -2.3
       0.6s     6.00nm          4.7mb
       Z  18s     0.55um          4.3Msz
                LR      57 25.70
CTA    35.90 147 iPd    40 59.20   0.9
                iS      46 36.00
WARB   36.18 180 eP     41 00.50  -0.1
MEKA   37.40 192 eP     41 11.00   0.2
       0.3s     6.00nm          5.0mb
GTA    37.50 325 iPc    41 11.20  -0.6
       Z  16s     1.20um          4.8MszX
       E  13s     0.60um
                S       47 03.00
LSA    38.17 306 P      41 17.30  -0.6
MRWA   40.47 194 eP     41 36.10  -0.3
COOL   41.17 187 eP     41 42.00  -0.2
BAL    41.64 193 eP     41 45.00  -1.0
MUN    43.07 193 eP     41 58.00   0.3
NWAO   43.78 191 eP     42 04.00   0.6
STK    44.31 161 eP     42 08.00   0.3
RKG    44.93 191 eP     42 17.00   4.3X
BRS    45.29 146 eP     42 15.50  -0.2
                i       44 00.00
```

09d 14h

ADE	46.42	166	eP	42 24.50	0.0
	0.7s	16.44nm			5.1mb
HYB	46.92	284	eP	42 28.50	-0.2
WMO	47.35	322	eP	42 31.00	-0.8
Z	16s	1.40um			5.0MszX
N	13s	0.50um			
E	15s	1.10um			
			PcP	44 02.00	
			ScS	52 24.00	
KOD	48.12	275	eP	42 38.50	-0.1
BWA	49.06	156	eP	42 45.90	0.8
CAN	50.08	156	eP	42 45.90	-7.0X
POO	51.43	286	eP	43 03.00	-0.5
MAIO	65.44	305	eP	44 36.00	-5.1X
MSZ	66.27	149	P	44 45.90	-0.1
IMA	76.63	24	eP	45 50.40	2.4
PMR	78.45	29	eP	45 58.00	0.1
	1.1s	12.50nm			4.8mb
KEV	83.73	340	eP	46 26.00	0.4
	0.7s	17.40nm			5.3mb
INK	84.29	22	eP	46 29.00	0.6
SOD	84.39	337	iP	46 30.40	1.5
SUF	85.66	333	eP	46 35.80	0.5
	0.6s	7.30nm			5.1mb
MBC	85.74	13	eP	46 36.00	0.5
	1.0s	7.00nm			4.8mb
PRNI	86.12	300	eP	46 39.00	0.6
MBH	86.31	299	eP	46 39.00	-0.2
NUR	86.91	331	iP	46 41.30	-0.2
	0.7s	12.00nm			5.2mb
HFS	92.16	332	eP	47 05.20	-1.0
	0.5s	3.80nm			5.1mb
NB2	92.87	334	P	47 08.50	-1.0
	0.8s	3.20nm			4.8mb
ZOBO	164.64	115	PKP	54 04.00	2.2X

S.D. = 1.0 on 53 of 65 obs.

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* DEC 09, 1989 14h 34m 50.14± 1.24s
32.737 S ± 8.5km 70.912 W ±12.1km
DEPTH = 78.3 ± 15.1 km
CHILE-ARGENTINA BORDER REGION (127)

ROCH	0.25	200	iP	35 02.50	0.1
JACH	0.27	78	iP	35 02.20	-0.2
			iS	35 11.00	
PEL	0.45	155	iPd	35 03.40	-0.1
			iS	35 13.50	
SAN	0.74	164	iPd	35 06.20	-0.2
			iS	35 18.20	
FCH	0.79	139	iPd	35 07.00	-0.2
			iS	35 19.20	
TACH	0.91	181	iPc	35 08.00	-0.3
			iS	35 20.70	
LCCH	0.92	217	iPd	35 09.20	0.8
			iS	35 23.00	
PCH	0.94	159	iPc	35 08.40	-0.3
			iS	35 21.80	
CHCH	1.21	170	iPd	35 11.50	-0.6
			iS	35 27.70	
LNV	1.28	199	iPd	35 13.50	0.6
			iS	35 30.00	
ZON	2.24	59	eP	35 27.00	1.2
RTLL	2.50	57	ePc	35 30.80	1.3
CFA	2.53	64	ePd	35 31.00	1.1
			S	36 02.00	
RTRS	2.84	26	eP	35 32.00	-2.2
MRA	4.41	87	e(P)	35 55.00	-1.0

S.D. = 1.0 on 15 of 15 obs.

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* DEC 09, 1989 15h 55m 43.58± 2.49s
6.781 S ±14.1km 129.702 E ±12.3km
DEPTH = 189.6 ± 31.0 km
4.7mb (1 obs.)
BANDA SEA (280)

KNA	8.96	186	eP	57 51.00	0.6
WB5	13.79	161	eP	58 51.10	-1.3
			e	58 55.00	
			eS	01 20.00	
MNDI	13.88	88	eP	58 54.30	0.4
OIS	16.72	146	eP	59 28.00	-0.6
			e	00 26.00	
ASPA	17.27	167	iPd	59 35.80	0.9
	0.6s	22.00nm			4.7mb
KDB	17.49	100	eP	59 37.00	-0.3
CTA	20.81	131	eP	00 12.00	0.5
CHTO	39.58	311	eP	02 57.80	-0.3

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

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* DEC 09, 1989 15h 56m 36.30± 0.67s
4.371 S ± 9.7km 135.087 E ±28.9km
DEPTH = 33.0km (normal)
5.2mb (3 obs.)
WEST IRIAN REGION (196)

KNA	12.90	208	eP	59 29.00	-11.1X
WB5	15.43	183	eP	00 13.80	0.5
			i	00 17.90	
			eS	03 07.00	
ASPA	19.22	183	iPd	00 59.30	-1.3
	0.6s	62.00nm			5.0mb
Z	20s	1.02um			
			eS	04 26.30	
			LR	08 32.90	
QLP	23.76	159	eP	01 46.00	-0.7
BWA	32.36	159	eP	03 06.70	1.6
WHN	39.98	332	P	04 12.00	2.4X
CHTO	42.40	304	eP	04 29.80	0.1
	1.0s	2.00nm			3.8mb X
XAN	45.49	329	P	04 53.20	-1.3
TIY	46.87	335	Pc	05 04.80	-0.5
BJI	47.49	340	eP	05 09.00	-1.1
	1.0s	24.00nm			5.2mb
CN2	48.73	351	eP	05 19.00	-0.7
			epP	05 23.50	15kmX
MDJ	49.01	355	eP	05 21.50	-0.3
LZH	49.75	327	eP	05 29.50	1.6
	1.0s	33.00nm			5.3mb
HHC	49.89	337	eP	05 30.00	1.2
BTO	50.31	335	eP	05 33.00	1.0

S.D. = 1.2 on 13 of 15 obs.

? DEC 09, 1989 17h 22m 52.06± 1.08s
21.128 S ±14.8km 68.818 W ±31.7km
DEPTH = 33.0km (normal)
CHILE-BOLIVIA BORDER REGION (124)

ANT	2.96	210	eP	23 37.80	0.0
CNCB	4.37	11	P	23 58.80	0.4
CCH	4.50	35	P	24 00.00	0.0
LPB	4.62	9	eP	24 02.00	0.2
ZOBO	4.88	8	P	24 05.00	-0.6

S.D. = 0.5 on 5 of 5 obs.

% DEC 09, 1989 18h 09m 04.04± 0.81s
26.386 S ± 6.1km 27.429 E ± 9.9km
DEPTH = 5.0km (geophysicist)
REPUBLIC OF SOUTH AFRICA (584)

PRY	0.54	176	iPd	09 14.40	-0.5
			S	09 20.40	
KSR	0.71	317	iPc	09 18.20	0.0
			S	09 27.40	
SLR	1.00	50	iPc	09 23.50	-0.1
	0.8s	320.90nm			
SEK	1.94	175	iPc	09 39.00	0.9
			S	10 02.50	
BLF	2.93	202	iPc	09 52.00	-0.3
			S	10 25.00	

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

DEC 09, 1989 19h 05m 10.76± 1.16s
32.688 S ± 5.3km 71.462 W ±10.0km
DEPTH = 10.0km (geophysicist)
NEAR COAST OF CENTRAL CHILE (135)

ROCH	0.47	127	iPd	05 22.00	1.6
JACH	0.73	90	iPd	05 25.20	0.0
			iS	05 35.50	
LCCH	0.79	187	iPd	05 26.30	0.2
			iS	05 38.00	
PEL	0.80	125	iPd	05 27.00	0.7
			iS	05 38.50	
SAN	1.02	139	iPd	05 30.20	0.2
			iS	05 45.80	
TACH	1.06	156	iPc	05 30.40	-0.3
			iS	05 46.00	
FCH	1.17	123	iPd	05 32.00	-0.9
			iS	05 48.00	
PCH	1.22	140	iPd	05 33.00	-0.6
			iS	05 51.00	
LNV	1.26	178	iPc	05 34.00	-0.2
			iS	05 50.50	
CHCH	1.42	152	iP	05 36.90	0.3
			iS	05 57.00	
RTCB	2.56	63	iPc	05 53.50	0.5
ZON	2.62	65	eP	05 54.00	0.1
RTLL	2.88	63	e(P)	05 58.50	0.9
CFA	2.94	69	ePd	05 58.00	-0.4
			S	06 39.20	
RTRS	3.04	35	i(P)	06 00.00	0.3
MRA	4.87	88	ePc	06 23.50	-2.2

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

DEC 09, 1989 19h 35m 33.96± 0.42s
3.698 N ± 5.3km 128.067 E ± 8.2km
DEPTH = 154.0km (2 depth phases)
5.4mb (4 obs.)
NORTH OF HALMAHERA (264)

MNI	3.93	235	ePc	36 34.00	0.0
TSM	9.99	273	ePc	37 57.00	2.2
KKM	12.04	282	ePc	38 22.00	0.2
MTN	16.72	170	iPd	39 19.80	-0.8
TRT	19.11	234	ePc	39 47.60	0.1
KNA	19.33	178	iPd	39 50.00	0.2
	0.4s	47.00nm			5.2mb
QZH	23.01	338	eP	40 26.20	0.0
WB5	24.23	165	iPc	40 38.20	0.1
			e	44 52.00	
MBL	25.99	198	eP	40 54.00	-0.2
QIS	26.63	155	iPc	40 59.60	-0.5
ASPA	27.79	168	iPc	41 10.50	-0.1
	0.6s	82.00nm			5.6mb
			iS	45 39.00	
CTA	29.63	144	iPd	41 09.00	-18.0X
	0.5s	9.86nm			
WHN	29.68	336	P	41 28.00	0.7
WARB	29.74	183	eP	41 28.20	0.3
MEKA	31.51	196	eP	41 42.70	-0.8
	0.3s	13.00nm			5.2mb
CHTO	32.19	300	eP	41 48.70	-0.8
	0.9s	2.13nm			3.9mb X
			pP	42 19.90	146km
MRWA	34.72	199	eP	42 10.10	-1.0
COOL	35.02	190	eP	42 13.00	-0.6
XAN	35.06	332	P	42 13.00	-1.0
BAL	35.80	197	eP	42 20.00	-0.2
KLB	36.44	195	eP	42 25.00	-0.6
MUN	37.23	197	eP	42 32.00	-0.2
STK	37.65	161	iPd	42 36.90	1.2
BJI	37.74	345	eP	42 35.00	-1.4
NWAO	37.84	195	eP	42 37.00	-0.3
RKG	38.99	195	eP	42 50.00	3.2X
BRS	39.03	144	iP	42 47.00	-0.3
LZH	39.22	328	eP	42 50.00	1.1
			pP	43 25.50	162km
ADE	39.74	166	iPc	42 54.50	1.4
	0.8s	82.09nm			5.5mb
SHL	40.97	306	iP	43 03.20	-0.3
			eS	48 37.00	
BWA	42.49	155	eP	43 17.70	2.1
CAN	43.50	155	eP	43 17.70	-6.1X
GTA	43.82	328	P	43 26.20	-0.2
GBA	50.92	284	P	44 20.00	-1.8
WMO	53.52	324	P	44 42.10	1.3
ZOBO	159.77	129	(PKP)	55 29.00	12.0X

S.D. = 1.0 on 32 of 36 obs.

DEC 09, 1989 20h 38m 08.59± 0.10s
0.141 N ± 3.0km 123.340 E ± 3.3km
DEPTH = 151.0km (geophysicist)
6.2mb (76 obs.)
MINAHASSA PENINSULA (265)
Mo=2.0*10**19 Nm (PPT). mb 6.8 (PAS). Depth from broadband displacement seismograms.
FAULT PLANE SOLUTION: P-Waves
NP1:Strike= 50 Dip=63 Slip= 110
NP2: 191 33 56
Principal Axes:
T Plg=66 Azm=356
P 16 125
Comment: The focal mechanism is poorly controlled and corresponds to reverse faulting with a moderate left-lateral strike-slip component. The preferred fault plane is NP2.
RADIATED ENERGY

No. of sto: 9 Focal mech. F
Energy 1.9±0.6*10**14 Nm
MOMENT TENSOR SOLUTION
Dep 159 No. of sto: 13
Moment Tensor; Scale 10**19 Nm
Mrr= 0.76 Mtt= 0.09
Mff=-0.85 Mrt= 0.63
Mrf= 0.59 Mtf=-0.26
Principal axes:
T Val= 1.21 Plg=61 Azm=337
N -0.01 18 210
P -1.21 22 112
Best Double Couple:Mo=1.2*10**19
NP1:Strike=172 Dip=29 Slip= 48
NP2: 37 69 110
CENTROID, MOMENT TENSOR (HRV)
Doto Used: GDSN
L.P.B.: 11S, 30C M.W.: 14S, 28C
Centroid Locotion:
Origin Time 20:38:12.9 0.2
Lat 0.00N 0.02 Lon 123.69E 0.02
Dep 144.6 0.8 Holf-durotion 8.4
Moment Tensor; Scale 10**19 Nm
Mrr= 1.02 0.01 Mtt=-0.22 0.01
Mff=-0.80 0.01 Mrt= 0.50 0.01
Mrf= 0.39 0.01 Mtf=-0.41 0.01
Principol Axes:
T Val= 1.23 Plg=71 Azm=338
N -0.06 11 214
P -1.16 15 121
Best Double Couple:Mo=1.2*10**19
NP1:Strike=196 Dip=31 Slip= 69
NP2: 40 61 102

TSM 6.64 308 ePc 39 50.00 5.0X
eS 41 07.20
DAV 7.25 18 ePc+ 39 56.20 3.0X
1.9s *******nm 7.2mb
KKM 9.22 310 ePd 40 23.70 4.2X
KUG 10.24 179 ePd 40 14.00 -18.8X
eS 41 55.50
eS 47 10.50
KUG 10.24 179 eP 40 42.00 9.2X
e(S) 41 30.00
TRT 13.22 234 iPd 41 15.60 4.0X
MTN 15.04 149 iPc 41 32.60 -2.1
BAG 16.39 351 iPc+ 41 53.00 1.3
KNA 16.67 161 iPd 41 54.00 -0.9
KLI 19.12 255 ePc 42 24.00 1.6
e(S) 44 10.00
KGM 20.10 275 ePd 42 36.20 3.6X
1.0s 997.80nm 6.2mb
e 46 16.40
MNDI 21.22 107 eP 42 45.00 1.0
MBL 21.45 189 iPc 42 46.30 0.3
0.5s 163.00nm 5.7mb
KLM 21.88 278 eP 42 53.50 3.2X
WB5 22.64 152 iPd 42 56.90 -0.7
IPM 22.72 282 ePc 43 01.20 2.8
e 43 30.00
e 44 11.90
QIZ 22.97 326 iPc 43 03.00 2.2
7.0s 49.60nm 4.1mb X
E 14s 73.40um
PP 43 39.00
SNG 23.72 288 iPc+ 43 10.40 2.4
0.8s 447.76nm 6.0mb
eS 47 17.00
HKC 23.77 339 iP 43 11.40 2.9
iS 47 21.00
NANU 23.81 198 eP 43 09.00 0.1
MCO 23.84 337 eP 43 13.00 3.8X
PSI 24.54 276 ePc 43 17.00 1.2
LAT 24.55 106 eP 43 16.00 0.0
GZH 24.79 338 iPc 43 19.50 1.4
8.0s 38.70nm 4.0mb X
Z 22s 64.90um 6.1Msz
N 10s 35.80um
pP 43 50.00 150kmX
sP 44 06.00
ANP 24.96 356 iP+ 43 18.00 -1.7
iS 47 52.00
QZH 25.08 350 iPc 43 21.50 0.7
8.0s 30.40nm 3.9mb X
Z 20s 42.40um 5.9Msz
N 14s 23.10um
sP 44 07.00
iS 47 32.00
sS 48 30.00
PJG 25.16 57 eP 43 20.20 -1.4
GUA 25.17 57 ePc+ 43 20.60 -1.2
1.0s 792.00nm 6.2mb
i 44 12.40
eS 47 30.00
ASPA 25.79 157 iPd 43 25.80 -1.6
0.7s 872.00nm 6.5mb
epP 43 56.00 146kmX
eS 47 42.20
esS 48 28.00
eScS 54 04.80
QIS 26.01 143 iPd 43 28.00 -1.4
WARB 26.36 173 eP 43 32.20 -0.4
NNT 26.48 299 iPc 43 35.10 1.4
MEKA 27.00 190 eP 43 37.60 -0.7
KBR 27.30 301 eP 43 48.00 6.9X
LOE 27.33 310 eP 43 42.00 0.6
NST 27.63 305 iPc 43 46.80 2.8
BSI 28.50 281 ePd 43 53.00 1.0
1.0s 721.00nm 6.4mb
BDT 29.38 307 eP 44 02.50 2.8
1.0s 766.00nm 6.4mb
MRWA 30.03 193 eP 44 04.30 -1.0
0.3s 45.00nm 5.7mb
CTA 30.13 133 iPd- 44 05.40 -1.0
1.0s 515.00nm 6.2mb
i 44 42.00
iS 48 44.00
CHG 30.30 309 iPc+ 44 09.60 1.7
1.0s 262.50nm 5.9mb
eS 49 06.00
CHTO 30.30 309 iPc 44 09.40 1.6
GYA 30.70 330 iPc 44 12.50 1.0
7.0s 17.40nm 3.9mb X
Z 22s 30.20um 5.9Msz
N 14s 36.10um
E 14s 35.80um
sP 45 02.00
PcP 47 08.60
S 49 00.00
SSE 30.85 356 iP+ 44 12.00 -0.5
1.5s 3109.00nm 6.8mb
Z 20s 21.00um 5.8Msz
N 12s 15.20um
E 11s 7.90um
sP 44 58.00
PP 45 20.00
PcP 47 09.00
S 49 02.00
sS 49 46.00
SS 50 40.00
COOL 30.92 184 iPd 44 12.00 -1.2
BAL 31.22 191 eP 44 15.00 -0.8
WHN 31.42 345 iPc 44 18.50 1.0
1.5s 2.44nm 3.8mb X
sP 45 08.00
KMI 31.84 323 iPc 44 23.64 2.1
7.0s 17.10nm 4.0mb X
Z 18s 50.40um 6.2Msz
N 18s 13.30um
E 12s 24.90um
epPc 44 56.25 154kmX
esPd 45 13.80
e 46 14.04
eS 49 26.40
KLB 32.00 189 iPd 44 22.30 -0.3
NJ2 32.02 353 iPc 44 23.00 0.3
6.0s 14.00nm 4.0mb X
sP 45 13.00
sS 50 22.00
MUN 32.65 191 iPd 44 27.90 -0.3
QLP 33.33 144 eP 44 34.00 -0.2
RKG 34.55 189 eP 44 49.00 4.5X
0.5s 531.00nm 6.5mb
CD2 35.80 330 P 44 55.60 0.4
E 12s 34.70um
pP 45 29.00 151kmX
sP 45 47.00
PP 46 22.50
S 50 22.00
sS 51 20.00
ScS 54 53.00
RMQ 36.06 139 iPc 44 57.10 -0.3
0.3s 99.00nm 6.0mb
STK 36.23 153 iPd 44 58.10 -0.6
i 44 59.00
e 45 35.00
e 46 22.00
e 47 21.00
e 50 53.00
XAN 36.33 340 P 44 59.00 -0.6
N 12s 16.20um
E 13s 39.90um
pP 45 34.00 159kmX
PP 46 26.00
S 50 36.00
TIA 36.35 352 Pc 44 58.40 -1.3
sP 45 49.00
PP 46 24.50
HNR 37.66 106 iP 45 10.50 -0.5
eS 50 45.00
ADE 37.77 159 iPd 45 12.40 0.8
CMS 37.99 148 eP 45 13.00 -0.5
e 45 45.00
e 45 52.00
e 46 37.00
DL2 38.61 358 iPc 45 17.00 -1.5
8.0s 8.00nm 3.5mb X
Z 48s 51.40um 6.0MszX
N 10s 5.70um
E 13s 15.40um
TIY 38.72 346 iPc 45 18.50 -1.1
0.8s 0.50nm 3.3mb X
Z 20s 50.20um 6.3Msz
N 12s 20.20um
sP 46 06.00
PcS 51 21.00
sS 52 02.00
MAJO 38.76 19 iPc 45 17.70 -2.1
epPd 45 51.64 155kmX
esPd 46 07.53
MAT 38.76 19 iPc 45 17.50 -2.3
Z 20s 22.34um 6.0Msz
iS 50 59.30
BRS 39.35 136 iPc 45 22.80 -2.1
0.6s 74.50nm 5.6mb
Z 18s 95.00um 6.7Msz
i 45 24.40
i 45 35.00
i(pP) 45 46.00 99kmX
iPP 46 55.00
iPcP 47 33.00
e 50 42.00
eS 51 04.00
SHL 39.51 312 iP 45 28.00 1.6
iS 51 06.80
LZH 40.09 335 iPc 45 32.43 1.4
1.8s 3713.00nm 6.8mb
N 15s 29.60um
E 16s 34.70um
pP 46 06.00 152kmX
esPd 46 22.26
PP 47 14.50
esPP 47 52.13
eS 51 24.48
isS 52 27.38
eSS 54 56.36
ScS 55 24.00
BJI 40.24 351 iPc 45 31.55 -0.4
1.0s 448.00nm 6.1mb
epP 46 20.00 230kmX
esPd 46 20.06
iPP 47 11.45
isPP 47 54.99
eS 51 20.24
esS 52 20.66
eSS 54 49.64
COO 40.86 141 eP 45 38.00 0.8
e 46 15.00
e 47 10.00
SNY 41.50 0 iPc 45 41.00 -1.2
Z 20s 42.30um 6.3Msz
N 19s 18.40um
E 14s 17.20um
BWA 41.64 148 eP 45 45.10 1.5
i 45 46.00
iScP 51 15.50
eS 51 54.00
HHC 41.91 347 iPc 45 46.00 0.2
8.0s 7.90nm 3.4mb X
Z 21s 47.20um 6.3Msz
N 16s 27.90um

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E 16s 16.20um
pP 46 20.00 153kmX
sP 46 40.00
sS 52 51.00
BTO 42.05 345 iPc 45 46.00 -1.0
N 20s 61.60um
E 12s 7.90um
sP 46 40.00
PP 47 32.00
S 51 52.00
sS 52 54.00
LSA 42.48 317 iPc 45 52.80 1.8
6.0s 12.80nm 3.7mb X
sP 46 45.00
iS 52 00.00
sS 53 06.00
ScS 55 35.50
CAN 42.63 148 eP 45 45.10 -6.6X
i 45 46.00
iScP 51 15.50
eS 51 54.00
RIV 42.70 145 eP 45 55.00 2.8
Z 20s 41.77um 6.3Msz
TOO 42.74 154 iPd 45 54.20 1.7
0.6s 172.00nm 5.9mb
e 46 23.00
e 46 32.00
e 51 21.00
CNB 42.82 148 iPd 45 54.80 1.6
0.7s 298.00nm 6.0mb
e 46 34.00
CN2 43.51 2 Pc 45 57.00 -1.6
8.0s 8.40nm 3.4mb X
Z 22s 27.50um 6.1Msz
N 13s 8.00um
E 13s 12.00um
pP 46 28.00 138kmX
iPP 47 40.00
PcP 47 44.00
ScP 51 20.00
iS 52 11.00
SS 55 26.00
ScS 55 42.00
GTA 44.61 334 iPc 46 08.40 0.7
6.0s 15.80nm 3.8mb X
Z 20s 21.60um 6.1Msz
E 12s 20.70um
sS 53 36.00
MDJ 44.63 6 Pc 46 07.00 -0.5
Z 30s 13.20um 5.7MszX
N 14s 7.90um
E 14s 4.40um
pP 46 40.00 147kmX
sP 46 55.00
S 52 28.00
sS 53 26.00
KOD 46.71 284 iPc 46 24.00 -0.8
0.7s 130.14nm 5.7mb
HYB 47.29 294 iPc 46 28.60 -0.4
1.0s 990.00nm 6.4mb
ipP 47 04.00 157kmX
isP 47 22.00
iS 53 08.00
GBA 47.38 288 P 46 29.00 -0.6
GBA 47.38 288 Pd 46 33.50 3.9X
0.6s 244.10nm 6.0mb
DZM 47.44 121 iPd 46 30.00 -0.2
PVC 47.66 114 iPc 46 33.00 1.2
TAU 47.96 156 ePd 46 34.37 0.7
HIA 49.03 357 iPc 46 41.33 -0.6
esPd 47 31.81
esPP 49 25.03
eS 53 32.72
esS 54 32.32
YSS 49.66 17 iPc 46 44.00 -2.7
iS 53 35.00
POO 51.90 294 iPc 47 03.20 -1.0
0.8s 258.21nm 6.0mb
iS 54 12.00
NDI 52.40 307 iPc 47 06.00 -1.7
0.9s 403.36nm 6.2mb
eS 54 18.00
BOM 52.94 294 iPc 47 09.60 -2.1
iS 54 16.10
WMQ 53.85 329 iPc 47 18.14 0.0
6.0s 19.50nm 4.1mb X
Z 28s 27.90um 6.2MszX

N 13s 10.30um
E 13s 16.60um
pP 47 59.00 180kmX
ePP 49 24.60
esPP 50 15.75
eS 54 41.03
isS 55 43.93
SGE 56.49 111 ePc 47 38.00 0.3
KSH 58.27 318 iPc 47 50.00 0.2
6.0s 16.00nm 4.1mb X
N 16s 33.00um
pP 48 28.00 163kmX
S 55 45.00
MSZ 59.57 144 P 47 58.10 -0.3
PcP 48 36.50
PET 60.33 24 iPc 48 03.00 -0.5
eS 56 04.00
MHZ 60.58 144 P 48 04.60 -0.9
e 48 37.20
FRU 60.86 321 iPc 48 07.50 0.1
KRP 61.10 134 P 48 09.40 0.4
PcP 48 44.20
pP 48 51.00 178kmX
QUE 61.28 305 eP 48 09.00 -1.6
eS 56 18.00
TCW 61.72 138 P 48 11.70 -1.4
KHZ 61.81 140 P 48 12.60 -1.1
0.4s 53.00nm 5.8mb
TAZ 61.93 134 eP 48 15.60 1.1
CCW 61.93 139 P 48 14.10 -0.4
KIW 61.98 138 eP 48 13.60 -1.2
MRW 62.01 138 eP 48 13.20 -1.8
e 48 55.20
WEL 62.08 138 eP 48 13.90 -1.5
e 48 55.60
CAW 62.20 138 P 48 15.00 -1.3
e 48 56.40
WDW 62.22 138 P 48 14.70 -1.7
MNG 62.25 137 P 48 15.40 -1.2
0.4s 51.00nm 5.8mb
MOW 62.46 138 P 48 16.90 -1.1
e 48 58.00
MTW 62.51 138 P 48 17.20 -1.1
BLW 62.59 138 P 48 17.60 -1.2
PGZ 62.79 137 P 48 18.90 -1.3
0.6s 148.00nm 6.1mb
HBZ 62.96 133 P 48 21.60 0.2
0.5s 258.00nm 6.4mb
AFI 65.69 105 iPc 48 39.84 0.4
ePP 50 41.00
iS 57 14.62
eSKS 58 25.80
SMY 67.26 31 P 48 49.00 0.4
Z 20s 4.60um 5.7Msz
DRV 67.70 173 iPd 48 51.80 0.6
MAIO 69.05 309 iPc+ 49 00.00 -0.2
eS 57 56.00
TIK 71.47 2 iPc 49 11.50 -2.5
eS 58 14.00
ADK 71.82 34 iPc 49 16.10 -0.3
i 49 52.20
BRF 74.47 297 (P) 49 34.50 2.1
0.6s 625.00nm 6.5mb
BEE 74.52 297 iP 49 34.90 2.2
0.5s 1113.00nm 6.8mb
BBU 74.61 297 iP 49 35.40 2.2
0.6s 640.00nm 6.5mb
DHR 74.90 297 iPc 49 34.50 -0.4
TEH 75.32 307 eP 49 38.00 0.7
RYD 77.89 295 iPc 49 50.50 -1.2
ILT 78.29 19 iPc 49 54.00 1.1
iS 59 35.00
KER 78.57 305 ePc 49 53.00 -2.3
MAW 79.24 200 eP 49 59.00 0.9
1.1s 370.00nm 6.0mb
HON 79.38 68 P 50 02.30 2.6
Z 20s 5.59um 5.9Msz
KIP 79.38 68 iPd 50 01.88 2.2
iS 59 52.79
OPA 79.40 68 P 50 02.20 2.4
KMSA 79.49 291 eP 49 59.00 -1.4
TAB 79.70 309 iPc+ 50 18.00 16.7X
SLY 80.03 306 iPd 50 02.00 -0.9
isP 50 39.00
eS 59 24.00
eScS 59 50.50
esS 00 24.50

ARO 80.66 282 iP+ 50 07.00 0.3
BHD 80.69 304 iPd 50 06.80 0.4
isP 50 44.00
iPP 53 04.00
eS 59 30.00
eScS 59 59.00
esS 00 39.00
eSS 04 24.00
QASM 80.78 296 iPc 50 10.50 3.3X
SBA 81.29 172 Pc+ 50 10.10 1.4
MSL 82.02 307 iPd 50 13.00 -0.3
esP 50 52.00
ePPP 55 20.50
eS 00 11.50
esPP 01 16.50
SDN 82.03 34 ePc 50 13.00 0.1
BKR 82.31 312 iPc 50 16.00 1.1
iS 00 13.00
TAIF 83.41 291 eP 50 23.00 2.0
AAE 84.62 279 iP 50 28.00 0.7
RUWJ 85.29 302 Pd 50 33.60 3.5X
TTA 85.61 27 iPc 50 31.50 0.5
NAI 86.54 269 iP 50 37.00 0.2
1.0s 225.00nm 6.0mb
BRW 86.63 19 iPc 50 37.00 1.3
KDC 86.76 32 eP 50 37.00 0.5
GAZ 86.82 307 iP 50 38.50 1.2
IMA 87.01 24 eP 50 37.60 -0.3
WAJH 87.04 296 eP 50 39.00 0.4
AFR 87.07 107 iP 50 42.00 3.2X
1.1s 165.00nm 5.9mb
PAE 87.26 108 iP 50 43.00 3.3X
1.1s 75.00nm 5.6mb
PPT 87.26 107 iP 50 43.00 3.2X
1.1s 185.00nm 5.9mb
PPN 87.40 107 iP 50 43.60 3.2X
1.1s 85.00nm 5.6mb
HLBJ 87.41 302 P 50 40.30 -0.1
TBI 87.48 113 iP 50 44.10 3.4X
1.1s 285.00nm 6.2mb
TVO 87.57 108 iP 50 44.90 3.6X
1.1s 155.00nm 5.9mb
AYN 87.60 299 iPc 50 42.00 0.8
HITJ 87.76 300 P 50 41.50 -0.7
KVT 87.86 311 iP 50 42.40 0.1
MASJ 87.90 302 P 50 42.30 -0.5
HRI 87.91 303 ePc 50 46.00 3.2X
OBN 88.01 325 iPc+ 50 41.80 -0.8
1.5s 1190.00nm 6.7mb
Z 20s 9.50um 6.2Msz
iS 01 07.00
DSI 88.19 301 ePc 50 44.00 0.0
CLK 88.46 254 iPc 50 46.10 0.4
i 51 41.80
MBH 88.59 300 eP 50 46.00 0.0
PMR 88.70 29 eP 50 45.00 -0.8
1.2s 585.90nm 6.5mb
Z 20s 3.50um 5.8Msz
e 51 13.30
PMO 88.84 105 iP 50 51.20 3.9X
1.1s 960.00nm 6.7mb
VAH 89.10 105 iP 50 52.20 3.7X
1.1s 590.00nm 6.5mb
TPT 89.11 105 iP 50 52.50 3.9X
1.1s 1035.00nm 6.8mb
RUV 89.34 105 iP 50 53.40 3.7X
1.1s 665.00nm 6.6mb
SIM 89.35 315 iPc 50 48.00 -1.2
FAM 89.38 305 eP 50 50.50 0.9
COL 89.39 25 iPc 50 48.01 -1.0
epPd 51 24.75 144kmX
iS 01 23.98
isS 02 26.34
FBA 89.39 25 iPc 50 47.90 -1.1
KAS 89.59 311 eP 50 50.50 0.0
APA 89.87 337 eP 50 50.00 -1.2
eS 01 40.00
CSS 89.93 305 eP 50 52.30 0.1
TOA 90.11 28 eP 50 52.40 -0.1
SPA 90.14 180 iPc 50 54.50 1.9
1.1s 320.24nm 6.3mb
Z 20s 11.80um 6.3Msz
i 51 32.80
AMAN 90.32 294 iPd 50 56.00 1.9
ANTO 90.33 310 iPc 50 53.04 -0.9
iPP 54 32.30
esPP 55 25.27

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BBTK	90.36	310	eP	50	52.00	-2.2		1.0s	125.00nm		6.2mb		BCI	99.70	313	eP	51	35.00	-1.6
AGRW	90.43	294	iPd	50	55.50	0.9	BUC1	95.14	314	ePc	51	14.00	-1.9	SRO	99.96	319	eP	51	36.50	-1.1
AKRL	90.52	294	iPd	50	56.00	1.0	PRY	95.30	243	iPc	51	18.20	1.0				e	52	22.00	
AGMR	90.68	293	iPd	50	56.00	0.3		0.6s	16.07nm		5.6mb						iPP	55	53.90	
PPCY	90.74	305	eP	50	54.50	-1.3	EZN	95.31	310	iP	51	15.50	-1.2	TIR	100.01	312	ePdiff	51	38.00	0.0
KOT	91.24	300	eP	50	58.50	0.3	PRK	95.39	309	eP	51	16.00	-1.2	BERA	100.05	311	ePdiff	51	37.40	-0.8
PUL	91.41	330	iPc	50	57.00	-1.3	DIM	95.71	312	eP	51	18.00	-0.6	SDA	100.17	313	ePdiff	51	38.00	-0.7
			eS	02	10.00		PVL	95.75	313	iPc	51	19.00	0.3	DAG	100.33	352	iPdiff	51	38.00	-0.7
HLW	91.67	300	eP	51	01.00	0.8	CMP	95.75	315	ePc	51	17.00	-1.7	NB2	100.44	333	Pdiff	51	37.50	-2.0
			ePP	51	40.00		RDO	95.79	311	eP	51	17.50	-1.4		0.9s	45.50nm			6.0mb	
			ePP	53	43.00		KDZ	95.84	312	eP	51	18.00	-1.2	KSP	100.60	322	iPdiff	51	40.00	-0.5
			e	54	43.00		KSR	95.86	244	iPd	51	20.50	0.7		1.3s	86.00nm			6.2mb	
			ePPP	55	08.00			1.2s	90.00nm		6.1mb						e	52	24.50	
			(S)	00	19.00		SIT	96.05	33	ePc	51	20.60	0.9				e	54	45.00	
PTZ	91.97	256	iPd	51	02.50	0.5	MDB	96.12	316	iPd	51	14.00	-6.3X				i	55	55.20	
	0.5s	76.70nm				6.1mb	APE	96.16	307	eP	51	18.50	-2.3	ZST	100.68	319	iPdiff	51	39.90	-0.9
			i	51	09.00		MBC	96.17	12	ePc	51	19.60	-0.4				ePP	55	53.10	
			i	51	40.00			0.7s	59.00nm		6.1mb			SOP	101.15	319	ePdiff	51	43.60	0.7
KEV	92.07	340	iP	50	59.70	-1.6	NPS	96.24	305	eP	51	20.50	-0.6	VKA	101.17	319	ePdiff	51	40.00	-3.1X
	0.7s	84.10nm				6.0mb	BLF	96.32	241	iPd	51	23.00	1.2		5.0s	4179.00nm			7.3mb X	
Z	20s	12.10um				6.3Msz		1.0s	80.00nm		6.1mb				Z 17s	5.40um			6.1MszX	
			ePP	54	44.00		RZN	96.36	312	eP	51	20.00	-1.7				e(PP)	55	32.00	
			e	55	30.00		BMR	96.53	318	ePd	51	23.00	0.9				e	55	56.00	
			ePPP	56	42.00		PGB	96.67	313	eP	51	22.00	-1.0				LR	39	33.00	
			eS	02	24.00		MMB	97.10	312	eP	51	24.00	-0.9	MOL	101.50	335	ePdiff	51	38.39	-5.7X
			ePS	03	16.00		LOF	97.16	339	iPc	51	23.03	-1.5	KONO	101.68	332	ePdiff	51	42.78	-2.2X
			ePPS	04	16.00		DEV	97.17	316	iPd	51	26.00	1.0	PRU	101.90	321	ePdiff	51	46.00	-0.2
			e	09	08.00		UZH	97.19	319	iPc	51	25.00	-0.1		2.1s	121.80nm			6.3mb	
			LR	33	36.00		SRS	97.26	311	eP	51	23.40	-2.2		Z 20s	8.50um			6.3Msz	
BCK	92.10	307	iP	51	00.90	-1.3	KMZ	97.33	257	iPd	51	26.30	-0.2		N 15s	4.50um				
GPA	92.23	310	eP	51	01.00	-1.6		0.8s	40.00nm		5.9mb				E 20s	8.50um				
ALT	92.43	309	eP	51	02.60	-1.1				i	51	29.00					e	52	30.50	
SOD	92.46	337	iP	51	01.60	-1.5				i	51	34.00		PTJ	101.94	317	ePdiff	51	47.50	0.9
			ePP	54	48.00					i	52	28.00		ZAG	101.94	317	ePdiff	51	45.50	-1.0
ELL	92.67	307	eP	51	03.80	-1.1	VAM	97.38	306	eP	51	26.00	-0.2	BRG	102.03	322	iPdiff	51	46.10	-0.7
KHL	92.92	308	eP	51	04.50	-1.4	WAR	97.43	323	eP+	51	24.00	-2.0		1.3s	100.00nm			6.4mb	
KSL	92.96	306	eP	51	04.40	-1.6				e	55	20.00			Z 20s	11.00um			6.4Msz	
DWY	93.05	26	P	51	06.80	0.9				e	00	24.00			N 20s	6.00um				
ISK	93.14	311	eP	51	07.00	0.2				e(S)	01	44.00			E 20s	11.00um				
ITU	93.18	311	iPc	51	04.00	-2.9X				e	02	56.00					epP	52	31.00	
SUF	93.18	333	iP	51	04.90	-1.6	PLG	97.45	311	eP	51	24.90	-1.6				esP	52	59.80	
	0.5s	61.00nm				6.1mb	ATH	97.51	308	eP	51	26.00	-0.7				eSKS	02	10.00	
DST	93.55	310	iP	51	07.70	-1.1	KKB	97.55	312	eP	51	26.00	-0.9				eS	03	21.00	
CFR	93.57	315	eP	51	08.00	-0.6	KNT	97.77	311	eP	51	26.70	-1.2				ePKKP	07	51.00	
KRI	93.61	253	iPc	51	28.00	18.5X	THE	97.79	311	eP	51	27.90	0.0				e	08	54.00	
PSN	93.64	314	eP	51	10.00	1.0	VAY	98.00	312	iP	51	26.70	-2.2				eP'P'	16	11.00	
KBS	93.91	350	eP	51	08.60	-1.0	BZS	98.10	316	ePc	51	28.50	-0.7				e	16	54.00	
BNT	94.05	310	iP	51	09.20	-1.8	GRG	98.17	311	eP	51	27.50	-2.2	JNW	102.45	346	ePdiff	51	48.30	0.1
EDC	94.09	310	iP	51	09.50	-1.7	LIT	98.21	310	eP	51	28.10	-1.8	CLL	102.49	323	iPdiff	51	48.00	-0.8
NUR	94.16	331	iP	51	09.60	-1.4	VLI	98.26	307	eP	51	29.70	-0.4		1.8s	90.00nm			6.2mb	
	0.9s	59.10nm				5.8mb	AGG	98.47	309	eP	51	20.10	-11.0X		Z 17s	5.50um			6.1MszX	
Z	20s	8.60um				6.2Msz	KRA	98.48	321	eP	51	29.90	-1.0				ipP	52	32.70	
			ePP	55	04.00			1.1s	115.00nm		6.3mb						eS	03	19.00	
			e	55	28.00			Z 20s	8.80um		6.3Msz						PKKP	07	50.90	
			ePP	57	06.00					e	51	32.60		VBY	102.51	317	iPdiff	51	48.30	-0.7
			eS	02	36.00					e	52	14.70		KMR	102.65	320	iPdiff	51	49.50	-0.1
			ePS	03	40.00					i	55	40.00					i	52	26.70	
			ePPS	04	30.00		KZN	98.73	311	eP	51	30.40	-1.9				iPP	54	53.60	
			e	09	36.00		SKO	98.75	312	iP	51	31.00	-1.3				i	56	03.50	
			LR	35	14.00			Z 20s	3.38um		5.8Msz						i	56	11.40	
HYT	94.35	29	P	51	12.30	0.2		N 20s	4.53um					LJU	102.87	317	ePdiff	51	49.00	-1.7
MZZ	94.41	259	iPd	51	14.00	0.7		E 20s	4.10um								e	55	10.00	
	0.5s	81.00nm				6.2mb				i	51	31.50		CEY	103.02	317	e(Pdif	51	51.00	-0.4
			i	51	25.00					i	52	09.00		BER	103.36	333	ePdiff	51	52.00	-0.4
			i	51	58.00					i	52	28.00		KBA	103.41	319	ePdiff	51	50.00	-3.3X
BUL	94.49	250	iPd	51	27.40	13.9X				iPP	55	21.00			2.5s	112.00nm			6.3mb	
			iS	01	48.90					iPSP	56	08.00					iPP	55	17.00	
VRI	94.52	316	ePc	51	13.00	0.0				iPPP	57	50.00					i	56	11.00	
LWI	94.54	268	iPc	50	59.70	-14.4X				iS	03	03.00					(PPP)	57	06.90	
SLR	94.62	244	iPc+	51	14.50	0.4				i	05	26.50					e	58	38.00	
	1.0s	180.00nm				6.3mb				i	06	05.00					eSKS	02	07.00	
Z	18s	11.00um				6.4Msz				iSS	09	50.00					iS	02	25.50	
PTT	94.66	317	eP	51	14.00	0.4				iSSS	13	45.00		TRI	103.48	317	ePdiff	51	54.20	0.9
IZM	94.69	308	eP	51	14.70	0.7				LR	38	32.00					ePP	55	58.90	
INK	94.72	21	eP	51	12.30	-1.2	PSZ	98.89	319	iP	51	32.20	-0.7				i	56	12.10	
	0.5s	167.00nm				6.6mb	NSS	98.94	336	iPc	51	30.57	-2.1				eSP	04	52.00	
TRO	94.87	340	iPc	51	12.52	-1.6	BEO	99.03	315	eP	51	34.00	0.5				e(SS)	10	15.00	
JMB	94.90	312	eP	51	14.00	-0.8				i	54	53.00					e(SSS)	14	00.00	
KAP	94.94	306	eP	51	14.90	-0.3	OHR	99.35	312	iP	51	29.00	-6.1X				e	20	04.00	
LSZ	95.01	255	iPd	51	16.20	0.2		1.2s	0.09nm		3.2mb X						eLR	26	12.00	
	0.4s	67.60nm				6.3mb	PHP	99.53	312	eP	51	32.80	-3.0X	MOX	103.52	323	ePdiff	51	52.50	-0.9
			i	51	31.00		BUD	99.55	318	iPc	51	35.00	-0.8		1.6s	77.00nm			6.3mb	
			i	52	04.00		HFS	99.56	331	eP	51	33.50	-2.1				epP	52	38.00	
			i	55	58.50			0.7s	66.90nm		6.3mb		GRF	104.04	322	ePdiff	51	55.70	-0.1
BUC	95.09	314	ePc	51	15.00	-0.6		Z 19s	5.88um		6.1Msz				2.2s	177.00nm			6.6mb	
MLR	95.10	316	ePc	51	15.50	-0.4				LR	33	07.00			Z 22s	13.00um			6.4Msz	
SEK	95.10	242	iPd	51	17.50	1.2	LSK	99.64	311	eP	51	34.60	-1.9				e(pP)	52	40.00	

09d 20h

Sta	Dist	Az	Phase	Time	Res
			e(PP)	55 01.60	
			e(pPP)	56 05.00	
			e(PKKP	07 46.80	
BCAO	104.75	275	iPdiff	51 58.43	-1.3X
	0.5s		15.00nm		6.3mb
			ic	52 12.60	
			ic	53 26.60	
			iPP	56 15.97	
OGA	105.00	319	iPdiff	52 00.80	0.5
			i	56 17.30	
MNS	105.06	314	PKP	56 16.20	1.6
GIB	105.06	309	PKP	56 20.50	5.7X
RMP	105.18	314	PKP	56 17.60	2.8X
RDP	105.18	313	PKP	56 17.80	2.9X
SFI	105.25	316	PKP	56 17.30	2.5X
CRE	105.26	316	PKP	56 14.50	-0.5
PGD	105.35	316	PKP	56 18.00	2.7X
MCW	105.42	39	Pdiff	52 03.40	1.4
TOD	105.56	322	ePdiff	51 56.60	-6.0X
OSS	105.63	319	ePdiff	52 03.00	-0.1
SAL	105.69	318	PKP	56 11.50	-4.1X
WIT	105.70	326	ePdiff	52 05.00	2.0X
WIT	105.70	326	e(PKP)	56 20.00	4.6X
			ePP	56 31.00	
			e	08 00.00	
FIR	105.70	316	ePdiff	52 05.00	1.8
			iPP	56 26.00	
GMW	105.81	40	Pdiff	52 05.10	1.4
BMW	105.85	41	Pdiff	52 05.30	1.4
WTS	105.92	325	ePdiff	52 05.50	1.5
	1.6s		56.00nm		6.4mb
			e	52 50.00	
WTS	105.92	325	e(PKP)	56 17.50	1.7
	2.5s		1044.00nm		
			ePP	56 33.50	
MME	105.97	316	PKP	56 19.00	2.4X
SAX	105.98	320	ePdiff	52 05.20	0.4
BDI	106.08	316	PKP	56 17.10	0.6
PII	106.23	316	PKP	56 33.90	17.2X
ABH	106.24	323	ePdiff	51 58.79	-6.8X
LLS	106.32	319	ePdiff	52 06.60	0.4
SLE	106.36	320	ePdiff	52 06.40	0.3
RMW	106.46	40	Pdiff	52 08.40	1.7
RUP	106.60	323	ePdiff	51 59.25	-7.9X
FEL	106.63	321	ePdiff	52 00.13	-7.3X
TMA	106.64	319	ePdiff	52 07.70	0.1
BOB	106.67	317	PKP	56 17.60	0.0
LON	106.69	41	ePdiff	52 06.08	-1.6
			ePP	56 32.40	
VAI	106.79	318	PKP	56 17.80	0.1
DBN	106.81	325	ePdiff	52 08.00	0.1
			e	52 46.00	
			e	53 02.00	
			e	55 22.00	
			ePP	56 35.00	
			e(sPP)	57 32.00	
			eSKKS	03 40.00	
			eSPP	06 44.00	
			e	07 40.00	
ENN	106.89	324	ePdiff	52 09.00	0.7
	1.5s		47.00nm		6.4mb
ENN	106.89	324	e(PKP)	56 17.00	-0.7
	2.5s		1167.00nm		
			ePP	56 39.50	
CDF	106.91	321	ePdiff	52 08.50	-0.2
	1.0s		12.00nm		6.0mb
FHC	106.92	47	ePKP	56 19.80	1.6
PNT	107.20	38	ePdiff	52 10 00	0.2
	1.1s		52.00nm		6.6mb
PNT	107.20	38	ePKP	56 20.00	1.6
	0.7s		23.00nm		
MMK	107.26	319	ePdiff	52 11 00	0.5
PCP	107.35	317	PKP	56 18.75	-0.2
ORX	107.38	318	PKP	56 19.06	0.0
ORO	107.39	318	PKP	56 19.00	0.0
BSF	107.42	321	ePdiff	52 10.80	-0.1
CKI	107.57	317	PKP	56 18.20	-1.0
DIX	107.61	319	ePdiff	52 12.60	0.5
HAU	107.64	321	ePdiff	52 11.90	0.1
FIN	107.68	317	PKP	56 20.91	1.4
ROB	107.89	317	PKP	56 20.50	0.6
EMS	107.93	319	ePdiff	52 13.70	0.3
LSD	107.99	318	PKP	56 21.11	0.8
IMI	107.99	317	PKP	56 20.60	0.4
RSP	108.02	318	PKP	56 20.70	0.5
WDC	108.04	47	ePdiff	52 10.20	-3.5X
WDC	108.04	47	ePKP	56 20.30	0.0

Sta	Dist	Az	Phase	Time	Res
			ePKKP	07 35.40	
			ePKKP	07 47.20	
ENR	108.21	317	PKP	56 20.39	-0.2
DOI	108.24	317	PKP	56 18.50	-2.1X
LPG	108.24	319	ePdiff	52 15.10	0.2
	0.7s		9.20nm		6.1mb
STV	108.27	317	PKP	56 20.50	-0.2
PZZ	108.34	317	PKP	56 20.60	-0.3
RRL	108.42	318	PKP	56 21.42	0.3
BNI	108.44	318	PKP	56 21.80	0.7
AKU	108.76	344	iPKP	56 24.20	3.4X
	1.3s		69.23nm		
			i	56 50.20	
MIN	108.79	47	ePKP	56 22.00	0.1
ORV	109.09	48	ePdiff	52 19.40	0.9
ORV	109.09	48	ePKP	56 22.90	0.6
			ePKKP	07 44.60	
EDM	109.16	32	ePdiff	52 19.30	0.8
	0.8s		28.00nm		
LOR	109.47	321	ePdiff	52 20.10	0.1
LBF	109.51	321	ePdiff	52 20.00	-0.2
	1.1s		13.10nm		
MHC	109.61	50	ePdiff	52 22.80	1.9
MHC	109.61	50	ePKP	56 24.80	1.3
ARN	109.69	50	Pdiff	52 22.60	1.4
SMF	109.72	320	ePdiff	52 21.10	0.0
	0.9s		6.50nm		
EKA	109.75	331	Pdiff	52 22.00	1.1
	1.1s		11.70nm		
ESK	109.78	331	ePdiff	52 20.36	-0.7
SAO	109.92	51	ePdiff	52 25.00	2.8X
SAO	109.92	51	ePKP	56 40.00	16.1X
			e	58 15.00	
			e	00 24.00	
			eSKS	03 49.00	
			e	04 23.00	
			eSP	06 13.00	
			eSPP	07 30.00	
			eSS	12 20.00	
			e	12 44.00	
			e	13 20.00	
			eSSS	16 23.00	
			eLQ	23 05.00	
AVF	109.98	321	ePdiff	52 22.30	0.1
PRS	110.09	51	ePdiff	52 25.00	2.0X
PRS	110.09	51	ePKP	56 25.50	1.2
			ePKKP	07 40.70	
LLA	110.34	51	ePdiff	52 27.40	3.3X
LLA	110.34	51	ePKP	56 25.80	1.0
			ePKKP	07 39.70	
CMB	110.37	49	ePKP	56 25.40	0.6
			ePKKP	07 28.30	
			ePKKP	07 39.50	
CMB	110.37	49	ePdiff	52 24.37	0.2X
			ePP	56 58.97	
			esSKS	03 42.77	
			iS	04 27.13	
			ePS	05 52.65	
			e	07 04.59	
PRI	110.69	51	ePKP	56 26.00	0.4
			ePKKP	07 28.60	
			ePKKP	07 38.00	
GDH	110.71	359	ePdiff	52 25.00	0.2
			i	57 04.00	
			i	07 21.00	
REY	110.99	344	ePKP	56 29.40	4.4X
FRI	111.19	50	ePdiff	52 29.30	1.5
FRI	111.19	50	ePKP	56 27.30	1.0
			ePKKP	07 25.00	
			ePKKP	07 34.70	
SYP	111.68	53	ePdiff	52 30.00	-0.2
			e	56 29.00	
			e	57 12.00	
KVN	111.76	47	Pdiff	52 31.80	1.2
SES	111.77	34	ePdiff	52 31.50	1.4
SES	111.77	34	ePKP	56 26.00	-1.0
DLE	112.52	330	ePKP	56 29.40	1.1
ISA	112.53	51	ePdiff	52 35.00	1.1
			e	56 30.00	
			e	57 15.00	
TNP	112.73	48	Pdiff	52 36.50	1.6
	1.3s		10.20nm		
LRM	113.04	39	ePdiff	52 46.70	10.5X
LRM	113.04	39	ePKP	56 30.10	0.2
			e	57 18.60	
CLC	113.17	51	ePdiff	52 38.00	1.3
			e	56 32.00	

Sta	Dist	Az	Phase	Time	Res
			e	57 15.00	
PAS	113.22	52	ePdiff	52 39.00	2.1X
			ePP	57 12.00	
			ePPP	58 37.00	
			eS	04 16.00	
			e	04 52.00	
			ePPS	06 36.00	
			eSS	11 46.00	
			eSKKP	12 56.00	
			eSSS	16 48.00	
			eLg	20 04.00	
			eLR	24 05.00	
PAS	113.22	52	ePKP	56 31.00	0.7
			e	57 18.00	
MWC	113.28	52	ePdiff	52 39.00	1.6
			e	56 32.00	
			e	57 17.00	
SBB	113.33	52	ePdiff	52 39.00	1.5
			e	56 32.00	
RVR	113.89	52	ePdiff	52 41.00	1.1
			e	56 32.00	
			e	57 23.00	
GSC	113.94	51	ePdiff	52 43.00	2.8X
			e	56 33.00	
			e	57 17.00	
FFC	113.95	27	ePdiff	52 40.00	0.4
	1.5s		50.00nm		
FFC	113.95	27	ePKP	56 30.00	-1.1
	0.6s		71.00nm		
PEC	114.09	52	Pdiff	52 42.70	1.9
EROQ	114.27	316	ePKP	56 32.50	0.4
PLM	114.49	53	ePdiff	52 44.00	1.2
			e	56 34.00	
			e	57 26.00	
BAR	114.85	54	ePdiff	52 46.00	1.8X
			e	56 35.00	
IMW	114.86	40	Pdiff	52 47.30	3.0X
TPC	114.91	52	ePdiff	52 47.00	2.5X
			e	56 35.00	
			e	57 20.00	
ECRI	115.51	318	ePKP	56 35.00	0.5
ECHE	115.72	315	ePKP	56 36.00	1.0
ETOR	115.98	317	ePKP	56 36.00	0.5
GLA	116.21	53	ePdiff	52 55.00	4.8X
			e	56 37.00	
			e	57 34.00	
EVIA	117.20	314	ePKP	56 38.50	0.6
GUD	117.49	317	iPKP	56 39.20	0.7
ENIJ	117.66	313	ePKP	56 38.30	-0.4
TOL	117.76	316	iPKP	56 40.00	1.2
	1.3s		115.38nm		
			iPP	57 50.00	
			ipPP	58 48.00	
			iSKS	03 32.00	
			iPS	07 45.00	
TOL	117.76	316	ePdiff	53 00.55	3.6X
			e	04 22.68	
			iS	05 32.01	
			iSP	07 41.32	
EMON	118.23	321	iPKPc	56 39.80	0.2
EBAN	118.31	314	ePKP	56 40.00	0.1
AFC	118.52	313	ePKP	56 39.50	-1.1
ASMO	118.62	314	iPKPc	56 40.00	-0.7
ERUA	118.64	320	ePKP	56 41.50	1.1
TAF	118.65	310	iPKP	56 43.00	2.3X
			i	57 52.00	
APHE	118.75	313	iPKPd	56 41.00	0.0
ACHM	118.79	313	iPKPd	56 40.00	-1 0
AAPN	118.91	314	iPKPd	56 40.50	-0.7
ALOJ	118.99	313	iPKPd	56 40.50	-0.9
ATEJ	119.00	313	ePKP	56 40.50	-1.0
EPLA	119.06	317	ePKP	56 43.00	1.7
STS	119.28	321	ePKP	56 42.00	0.4
EHOR	119.50	315	ePKP	56 42.50	0.3
EPRU	119.86	314	ePKP	56 43.20	0.3
EJIF	120.26	313	ePKP	56 45.00	1.3
GOL	120.50	42	PKP	56 50.00	5.6X
	Z 20s		3.50um		6.0Msz
GOL	120.50	42	ePKPd	56 44.30	-0.1
	Z 20s		3.50um		6.0Msz
IFR	121.22	310	iPKP	56 49.00	3.2X
ANMO	121.93	48	ePdiff	53 20.19	4.4X
			eSKS	03 26.46	
			iS	06 06.52	
			iPS	08 07.51	
AVE	123.05	311	iPKP	56 49.80	0.7
			i	57 52.00	

KUK 123.47 277 ePKP 56 50.00 -0.5
WEGH 123.47 277 ePKP 56 50.00 -0.5
TIO 123.92 308 iPKP 56 51.60 0.5
i 57 36.60
SCH 124.60 7 ePKPc 56 51.00 -0.4
1.7s 619.00nm
ACO 126.24 42 ePKPc 56 55.50 0.2
SIO 128.68 42 ePKP 57 02.00 2.1X
TUL 128.92 41 iPKP+ 57 01.90 1.6
1.3s 5.00nm
Z 21s 7.16um 6.3Msz
e 59 07.50
LR 31 00.00
LNO 128.92 41 ePKP 57 01.80 1.6
CFTV 130.35 309 iPKPc 57 05.20 1.9
i 57 49.80
i 00 14.00
UYO 130.83 42 iPKPc 57 19.00 15.0X
ELF 131.53 24 PKP 57 00.90 -4.2X
DLA 131.70 25 PKP 57 01.10 -4.3X
GGC 131.70 309 iPKP 57 08.00 2.1X
i 00 18.80
LDN 131.71 24 PKP 57 01.00 -4.4X
CTFE 132.01 310 ePKP 57 09.20 2.8X
RSNY 132.75 17 PKP 57 07.20 -0.2
TBT 133.17 311 iPKP 57 11.50 2.9X
i 00 23.70
PPM 134.62 63 iPKP 57 02.50 -9.8X
HRV 135.48 16 ePKP 57 12.77 0.2
ePP 59 45.93
eSKP 00 38.35
CBN 137.34 24 ePKP 57 05.00 -11.2X
e 57 18.00
e 00 37.00
LNV 143 63 159 ePKPd 57 26.00 -1.5
CHCH 143.91 160 iPKPc 57 26.50 -1.6
LCCH 144.00 159 iPKPd 57 25.60 -2.6X
PCH 144.24 160 iPKPd 57 27.90 -0.9
SAN 144.34 160 ePKP 57 27.60 -1.3
PEL 144.62 159 iPKPc 57 28.00 -1.4
SSS 144.97 66 iPKPc 57 29.70 -0.7
JACH 145.07 159 iPKPc 57 30.10 -0.1
MDZ 145.47 162 iPKP 57 32.30 1.5
i 58 08.00
ZON 146.76 161 ePKPd 57 33.00 0.0
RTCB 146.77 161 iPKPd 57 35.00 2.0X
MRA 146.79 166 ePKP 57 34.00 1.1
CFA 146.84 162 ePKPd 57 33.60 0.5
RTLL 147.02 161 ePKPd 57 34.20 0.8
RTRS 147.75 159 iPKPd 57 30.40 -4.1X
TCA 148.07 167 ePKPc 57 36.70 1.6
SRA 150.55 69 ePKP 57 38.00 -1.4
SJS 150.96 69 iPKPc 57 42.10 2.1X
LCR2 151.07 69 iPKPc 57 42.20 1.9
BUS 151.36 70 iPKPc 57 42.00 1.0
ANT 153.04 151 ePKP 57 44.50 1.9X
i 57 50.20
i 58 04.70
ITB7 155.05 185 e(PKP) 57 45.60 0.3
ITB 155.38 185 ePKP 57 42.10 -3.7X
UPA 155.48 68 iPKPc+ 57 46.10 0.0
1.6s 646.67nm
Z 20s 3.12um 6.1Msz
i 57 56.00
i 58 13.00
ITB1 155.54 185 (PKP) 57 42.00 -4.0X
YJA 156.47 159 ePKPc 57 49.70 1.8
NNA 156.77 121 iPKPc 57 48.50 0.6
1.1s 46.84nm
Z 20s 1.24um 5.7Msz
GGP 158.06 90 PKPd 57 52.80 2.5X
ARE 158.16 139 iPKPc 57 52.00 2.1X
TUNG 158.18 93 PKP 57 52.00 1.9X
COTA 158.32 89 PKP 57 53.00 2.5X
CAYA 158.68 89 PKP 57 53.40 2.6X
PSO 159.29 86 ePKP 57 52.50 1.2
SJG 159.60 27 iPKP 57 50.50 -0.6
CNCB 160.03 147 iPKPc 57 54.80 2.6X
i 02 48.00
LPB 160.19 146 iPKPc 57 54.00 1.8
1.8s 772 73nm
i 02 46.00
LR 23 16.00
ZOBO 160.39 145 iPKPc 57 53.50 0.9
CCH 160.49 152 PKP 57 56.60 4.2X
BOG 161.98 75 iPKPc 57 56.00 2.0X
ePP 02 28.00

FUQ 162.06 72 ePKP 57 38.00 -16.1X
FUQ 162.06 72 ePKP 57 58.00 3.9X
BDF 162.32 209 iPKP 57 55.04 1.1
e 58 34.93
BAO 162.39 209 iPKPc 57 56.00 2.0X
SEG 162.88 16 ePKP 57 54.50 0.2
FISA 163.06 48 iPKPd 57 55.80 1.1
DEG 163.08 15 ePKP 57 54.00 -0.6
PAG 163.19 17 ePKP 57 55.00 0.3
MGG 163.39 16 ePKP 57 55.00 0.2
SDV 163.44 57 iPKPd 57 56.30 1.1
TOV 163.63 53 ePKP 57 56.00 0.7
BBL 163.72 17 ePKP 57 55.50 0.3
MORO 164.06 46 iPKP 57 56.70 1.0
LLAV 165.40 43 iPKPd 57 58.00 1.1
CUM 167.08 35 iPKP 57 57.60 -0.5
TBH 168.57 22 ePKP 57 59.98 0.9
S.D. = 1.1 on 427 of 530 obs.

DEC 09, 1989 20h 59m 33.34± 0.87s
38.118 N ± 6.5km 74.960 E ± 7.4km
DEPTH = 104.4 ± 9.5 km
5.1mb (23 obs.)
TAJIK-XINJIANG BORDER REGION (719)

KSH 1.56 31 Pg 00 01.30 0.3
Sg 00 20.50
NDI 9.60 168 iPc 01 49.00 -1.1
0.6s 63.33nm 5.7mb
eS 03 27.40
WMQ 11.18 55 P 02 06.50 -4.9X
MAIO 12.47 266 eP 02 28.00 -0.3
eS 04 31.00
BOM 19.24 186 iPc 03 58.10 6.1X
eS 07 33.10
POO 19.54 183 iPc 03 59.00 3.8X
iS 07 30.20
HYB 20.86 170 eP 04 09.00 0.3
eS 07 54.00
LZH 23.09 86 eP 04 31.50 0.8
GBA 24.51 174 P 04 45.00 0.7
S 09 17.00
CHTO 28.40 126 eP 05 19.90 0.0
MLR 36.79 298 iPc 06 35.00 2.4
BZS 39.79 298 ePc 06 59.50 2.1
KRA 40.41 305 eP 07 03.10 0.7
KSP 42.66 307 iP 07 21.70 0.9
e 07 51.50
HFS 43.78 321 eP 07 29.20 -0.6
0.7s 29.90nm 5.2mb
PRU 43.88 306 P 07 31.70 1.0
BRG 44 13 307 iPc 07 33.50 0.8
0.9s 26.00nm 5.0mb
NB2 45.02 322 P 07 39.00 -0.8
0.7s 10.70nm 4.8mb
KBA 45.17 302 eP 07 41.50 0.2
0.8s 11.50nm 4.7mb
i 07 47.80
TRI 45.18 300 eP 07 41.90 0.8
FUR 46.31 304 eP 07 51.70 1.6
0.7s 18.00nm 5.0mb
FIR 47.40 298 eP 08 02.00 3.4X
CDF 48.86 305 eP 08 10.00 0 0
PCP 49.05 300 P 08 11.43 -0.1
BSF 49.32 304 eP 08 13.50 -0.1
0.9s 19.60nm 5.0mb
ROB 49.59 300 P 08 18.00 2.4
IMI 49.69 299 P 08 16 46 0.0
LSD 49.73 301 P 08 16.46 -0.5
RSP 49.75 301 P 08 14.92 -2.0
ENR 49.92 300 P 08 17.79 -0.4
STV 49.98 300 P 08 17.28 -1.3
LPG 49.99 301 eP 08 19.40 0.4
0.7s 14.70nm 5.1mb
SBF 50.02 299 eP 08 19.20 0.3
0.7s 24.20nm 5.3mb
RRL 50.14 301 P 08 20.25 0.2
FRF 50.65 299 eP 08 23.20 -0.5
0.7s 8.80nm 4.9mb
LOR 51.38 304 eP 08 28.30 -0.9
0.6s 4.50nm 4.6mb
SMF 51.58 304 eP 08 30.10 -0.6
0.9s 12 10nm 4 9mb
SSF 51.68 304 eP 08 30.70 -0.7

0.6s 4.80nm 4.7mb
AVF 51.86 304 eP 08 32.10 -0.6
1.0s 28.80nm 5.2mb
MAF 52.55 304 eP 08 37.70 -0.2
0.9s 15.30nm 5.0mb
TCF 52.76 304 eP 08 39.30 -0.2
1.0s 18.80nm 5.1mb
LSF 53.22 304 eP 08 42.00 -0.8
CAF 53.31 302 eP 08 43.70 0.2
1.0s 20.00nm 5.1mb
LDF 53.52 307 eP 08 44.10 -0.9
0.6s 11.50nm 5.1mb
LPO 53.98 302 eP 08 48.20 -0.2
GRR 54.05 307 eP 08 48.00 -0.9
0.7s 20.70nm 5.3mb
LFF 54.19 303 eP 08 49.90 0.0
1.0s 24.00nm 5.2mb
MFF 54.20 305 eP 08 49.10 -0.9
BCAO 61.18 251 iPd 09 39.00 -0.3
0.5s 43.00nm 5.7mb
MBC 65.55 4 eP 10 06.00 -1.1
0.8s 37.00nm 5.4mb
KIC 78.01 269 Pc 11 22.40 0.4
TIC 78.05 269 P 11 22.70 0.4
LIC 78.31 269 P 11 24.00 0.3
S.D. = 0.9 on 51 of 55 obs.

DEC 09, 1989 21h 05m 25.43± 0.79s
17.657 S ± 9.0km 122.394 E ± 7.4km
DEPTH = 10.0km (geophysicist)
4.8mb (1 obs.)
WESTERN AUSTRALIA (590)

MBL 4.24 214 iPd 06 34.10 2.6
KNA 6.39 74 eP 07 03.00 1.0
0.2s 55.00nm 6.1mb X
eS 08 10.00
NANU 8.09 232 eP 07 26.00 0.3
WARB 9.36 156 iPc 07 44.50 1.2
MEKA 9.60 201 eP 07 48.00 1.3
0.3s 30.00nm 6.2mb X
eS 09 28.00
MTN 9.69 62 eP 07 47.00 -1.0
WB5 11.56 103 eP 08 12.60 -1.0
ASPA 12.32 121 iPc 08 23.90 0.0
0.6s 49.00nm 5.9mb X
e 08 34.50
e 10 39.10
e 10 50.40
MRWA 12.91 206 eP 08 30.00 -1.7
0.2s 22.00nm 6.0mb X
eS 10 40.00
COOL 13.22 185 eP 08 35.00 -0.8
eS 10 53.00
TRT 13.72 315 ePd 08 42.50 0.0
BAL 13.89 201 eP 08 44.00 -0.7
eS 11 03.00
KLB 14.50 196 iPc 08 51.80 -0.8
eS 11 16.00
MUN 15.32 200 eP 09 03.00 -0.3
iS 11 41.50
NWAO 15.90 196 eP 09 10.00 -0.9
eS 11 53.00
QIS 16.52 103 eP 09 19.00 0.1
e 09 24.00
eS 12 11.00
RKG 17.04 195 eP 09 31.80 6.4X
eS 12 32.00
QLP 22.07 118 eP 10 25.00 2.6
STK 22.41 133 eP 10 28.50 2.8X
e 14 29.00
CTA 22.70 100 iPd 10 32.00 3.3X
1.1s 40.51nm 4.8mb
RMQ 25.92 114 e(P) 11 03.00 3.4X
BWA 28.61 131 eP 11 30.00 5.9X
CAN 29.46 132 eP 11 30.00 -1.8
GBA 54.16 302 Pd 15 04.40 11.0X
0.7s 6.00nm
HYB 55.47 307 eP 15 14.00 11.0X
S.D. = 1.4 on 18 of 25 obs.

DEC 09, 1989 21h 15m 06.02± 0.37s
1.097 N ±10.0km 30.315 W ± 8.3km
DEPTH = 10.0km (geophysicist)
4.9mb (15 obs.)
CENTRAL MID-ATLANTIC RIDGE (406)

09d 21h

BAO	24.12	226	Pc	20 22.00	-1.2
LIC	25.74	78	P	20 38.44	-0.1
TIC	25.82	77	P	20 39.08	-0.3
LKO	25.99	70	P	20 41.42	0.4
	1.2s	44.50nm		5.0mb	
KIC	26.04	78	P	20 41.52	0.1
	1.1s	26.00nm		4.8mb	
CCH	39.79	241	eP	22 43.00	1.4
ZOBO	41.12	244	P	22 52.50	-0.3
CNCB	41.18	243	P	22 53.60	0.2
LPB	41.19	243	P	22 53.00	-0.2
BCAO	48.90	85	iPd	23 53.50	-1.0
	0.7s	9.00nm		4.9mb	
EPF	49.94	29	eP	24 03.10	1.0
	1.2s	26.70nm		5.1mb	
LFF	51.56	28	eP	24 14.60	0.3
	1.2s	41.60nm		5.2mb	
LPO	51.58	28	eP	24 14.70	0.2
CAF	52.18	29	eP	24 18.90	-0.2
	1.2s	24.90nm		5.0mb	
MFF	52.43	26	eP	24 20.70	-0.2
MAF	53.37	28	eP	24 27.80	-0.1
	1.1s	15.60nm		4.9mb	
SBF	54.20	33	eP	24 33.90	-0.2
	1.2s	35.70nm		5.3mb	
SMF	54.28	28	eP	24 34.50	-0.1
	1.1s	8.30nm		4.7mb	
SSF	54.43	28	eP	24 34.90	-0.7
LBF	54.59	28	eP	24 36.50	-0.4
	0.9s	11.40nm		4.9mb	
LOR	54.74	28	eP	24 37.30	-0.7
	1.1s	12.20nm		4.8mb	
LPG	54.93	31	eP	24 40.10	0.4
	1.1s	15.60nm		5 0mb	
DIX	55.66	31	ePd	24 45.50	0.5
TMA	56.44	32	ePc	24 49.90	-0.6
HAU	56.45	29	eP	24 49.90	-0.4
	1.1s	11.70nm		4.8mb	
BSF	56.54	29	eP	24 50.50	-0.6
CDF	57.18	29	eP	24 54.80	-0.8
SLE	57.34	30	ePc	24 57.00	0.3
SAX	57.43	31	ePc	24 57.60	-0.1
KBA	59.45	33	e(P)	25 10.00	-1.6
	1.3s	8.60nm		4.7mb	
PTJ	60.25	36	e(P)	25 16.90	-0.1
SKO	61.69	42	iP	25 26.30	-0.5
ZST	62.17	34	eP	25 29.00	-0.9
BEO	62.40	38	eP	25 34.00	2.6
SRO	62.65	35	eP	25 35.30	2.3
PSZ	63.61	35	eP	25 38.90	-0.6
KRA	64.75	33	eP	25 46.90	0.1
MLR	66.16	40	ePc	25 56.50	0.4
NB2	67.61	20	P	26 04.40	-0.6
	1.1s	8.10nm		4.8mb	
EDM	84.95	323	ePd	27 42.60	-0.1
KVN	87.59	309	eP	27 51.60	-4.6X
MAIO	89.20	54	eP	28 06.00	2.2
CAN	145.94	179	ePKP	34 53.30	5.9X
BWA	146.82	178	ePKP	34 53.30	4.5X
S.D. = 0.9 on 41 of 44 obs.					

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* DEC 09, 1989 21h 33m 57.92± 0.99s
0 143 N ±10.0km 123.628 E ±12.8km
DEPTH = 189.3 ± 13.4 km
4.8mb (5 obs.)
MINAHASSA PENINSULA (265)

MNI	1.77	43	eP	34 32.70	-0.9
KKM	9.44	309	ePd	36 13.60	2.5
	0.7s	85.40nm		5 3mb	
KNA	16.59	162	eP	37 40.50	-0.8
WB5	22.51	153	iPc	38 43.00	0.5
			e	42 36.20	
NANU	23.91	199	eP	38 54.50	-1.3
ASPA	25.68	158	iPd	39 12.70	0.3
	0.6s	17.00nm		4.9mb	
QIS	25.84	144	iPc	39 14.50	0.7
WARB	26.33	174	eP	39 18.20	0.0
MEKA	27.05	190	iPd	39 23.60	-1.1
	0.3s	6.00nm		4 8mb	
LOE	27.55	310	eP	39 28.00	-1.2
BDT	29.61	306	eP	39 48.00	0.4
CHTO	30.52	309	eP	39 54.90	-0.7
	0.8s	10.07nm		4.6mb	
STK	36.10	154	iPd	40 44.80	1.5
MAT	38.66	19	(P)	41 04.00	-0.7
BRS	39.16	137	iP	41 10.00	1.0
BWA	41.49	148	eP	41 31.70	3.7X
CAN	42.48	149	eP	41 31.70	-4.4X
GBA	47.65	288	Pc	42 17.00	-0.2
	0.7s	2.40nm		3.8mb	
S.D. = 1.2 on 16 of 18 obs.					

DEC 09, 1989 21h 34m 20.26± 0.71s
35.870 N ± 7.8km 27.084 E ± 6.6km
DEPTH = 10.0km (geophysicist)
DODECANESE ISLANDS (369)
MD 3.5 (ATH).

KAP	0.33	167	ePg	34 27.20	0.2
NPS	1.34	244	ePb	34 45.00	0.0
			eSb	35 03.50	
APE	1.73	314	ePb	34 50.50	-0.1
KSL	2.04	82	ePn	34 54.20	-0.8
VAM	2.39	260	ePg	35 06.50	6.4X
ELL	2.44	68	ePn	35 00.90	-0.1
BCK	3.23	60	ePn	35 13.00	0.9
MBH	8.94	131	eP	36 28.00	-4.4X
S.D. = 0.7 on 6 of 8 obs.					

DEC 09, 1989 22h 06m 16.05± 0.27s
38.385 N ± 2.7km 25.034 E ± 2.3km
DEPTH = 42.8 ± 6.2 km
4.2mb (11 obs.)
AEGEAN SEA (365)

ATH	1.12	249	ePn	06 35.00	-0.5
PRK	1.29	48	ePn	06 38.00	0.1
APE	1.37	163	ePn	06 38.20	-0.9
SMG	1.58	115	ePn	06 41.60	-0.3
NEO	1.69	304	ePn	06 43.50	-0.1
IZM	1.75	89	iPn	06 45.10	0.6
EZN	1.75	35	iPn	06 44.60	0.1
AGG	2.21	288	eP	06 51.50	0.5
			eS	07 31.00	
PLG	2.34	329	ePn	06 53.90	1.1
VLI	2.36	226	ePn	06 51.60	-1.5
LIT	2.61	312	ePd	06 57.30	0.5
			eS	07 55.00	
ITM	2.74	245	ePn	06 59.00	0.4
THE	2.76	325	ePd	06 59.50	0.7
RDO	2.78	8	ePn	06 58.60	-0.6
YER	2.86	115	iPn	07 01.50	1.1
EDC	2.94	47	iPn	07 00.00	-1.4
SRS	2.95	338	eP	07 01.60	0.1
			eS	07 53.00	
BNT	2.98	48	iPn	07 01.70	-0.3
VAM	3.05	193	ePn	07 01.60	-1.3
DST	3.05	65	iPn	07 02.70	-0.4
NPS	3.15	171	ePn	07 03.00	-1.4
KZN	3.18	308	ePn	07 05.30	0.5
KNT	3.22	330	eP	07 06.00	0.6
KDZ	3.27	5	iP	07 06.00	-0.1
KAP	3.31	148	ePn	07 05.50	-1.1
RZN	3.31	356	iP	07 07.00	0.2
MMB	3.35	343	iP	07 06.00	-1.3
VAY	3.49	328	iPn	07 09.60	0.4
VLS	3.50	268	ePn	07 11.50	2.0
KHL	3.53	90	ePn	07 09.50	-0.4
DIM	3.68	6	iPd	07 12.00	0.1
LSK	3.87	298	ePn	07 16.10	1.5
KBN	3.96	306	iPnd	07 17.10	1.3
YLV	4.00	56	iPn	07 16.20	-0.3
ALT	4.03	79	ePn	07 17.10	0.2
ISK	4.10	48	ePn	07 17.90	0.1
GBZT	4 17	53	ePn	07 35.30	16.5X
SRN	4.19	292	iPn	07 21.70	2.6X
ELL	4.20	111	iPn	07 20.90	1.4
PGB	4.21	351	eP	07 19.00	-0.5
OHR	4.25	311	iPn	07 20.70	0.6
KSL	4.28	121	ePn	07 20.50	0.1
TPE	4.34	298	iPnd	07 24.50	3.3X
VTS	4.43	342	iPd	07 24.00	1.4
BCK	4.49	100	iPn	07 24.40	1.0
GPA	4.51	63	ePn	07 24.00	0.3
SKO	4.52	324	iPn	07 24.20	0.4
			eSn	08 22.00	
PHP	4.83	315	ePn	07 28.80	0.7
PVL	4.83	3	iPd	07 27.00	-1.1
TIR	4.95	308	ePn	07 32.50	2.6X
BCI	5.49	318	iPn	07 38.50	1.0
SDA	5.58	312	ePn	07 36.20	-2.5
LCI	5.82	292	Pc	07 40.40	-1.7
BUC1	6.00	7	eP	08 00.00	15.4X
BBTK	6.18	74	ePn	07 52.00	4.7X
			ePg	08 10.00	
			eSg	09 36.00	
DRA	6.31	355	eP	07 50.00	1.0
BRT	6.54	295	Pc	07 51.20	-1.0
ROI	6.70	283	P	07 53.80	-0.7
CMP	6.88	0	ePc	07 55.00	-1.9
TDS	6 89	283	Pc	07 57.30	0.2
CSI	6.94	284	P	07 57.20	-0.7
CZI	7.00	280	P	07 59.50	0.9
MLR	7.13	5	ePc	08 00.00	-0.6
CFR	7.18	18	eP	08 02.00	0.9
MMN	7.19	285	P	08 02.20	0.9
BEO	7.29	333	eP	08 49.00	46.4X
KAS	7.35	63	ePn	08 18.50	14.9X
			iSg	08 38.00	
MGR	7.56	286	P	08 06.50	0.0
VRI	7.58	9	ePc	08 08.50	1.7
DEV	7.66	349	ePd	08 07.50	-0.3
BZS	7.66	342	ePc	08 06.00	-1.8
MDB	7.77	357	iPc	08 08.00	-1.3
SGO	7.83	289	Pc	08 09.40	-0.8
DUI	8.75	295	Pc	08 24.20	1.2
SDI	9.22	295	P	08 29.70	0.2
PTJ	10.08	321	eP	08 35.70	-5.6X
KOT	10.14	144	eP	08 38.50	-3.5X
DSI	10.87	126	eP	08 54.00	2.0
MASJ	10.98	124	P	08 53.40	-0.2
PRNI	11.49	131	ePc	08 57.00	-3.4X
MBH	11.84	134	eP	09 01.00	-4.2X
KBA	12.21	319	eP	09 11.00	0.8
			i	09 21.80	
GRF	15.02	323	eP	09 53.00	6.1X
LPG	15.33	303	eP	09 51.80	0.5
	0.9s	21.20nm		4.4mb	
BSF	16.29	311	eP	10 03.10	-0.3
CDF	16.30	314	eP	10 02.00	-1.5
HAU	16.64	311	eP	10 05.60	-2.0
SMF	17.63	305	eP	10 21.80	1.8
	0.7s	4.80nm		3.7mb	
LBF	17.67	306	eP	10 20.80	0.3
	0.9s	5.50nm		3.7mb	
LOR	17.85	307	eP	10 22.60	-0.1
SSF	17.99	306	eP	10 24.70	0.2
AVF	18.00	305	eP	10 25.10	0.6
	0.9s	7.20nm		3.8mb	
BGF	18.25	304	eP	10 28.90	1.2
	0.7s	6.60nm		3.9mb	
MFF	20.24	302	eP	10 50.10	-0.1
LDF	20.82	307	eP	10 55.00	-1.1
	0.9s	9.80nm		4.2mb	
FLN	21.10	308	eP	10 57.20	-1.8
GRR	21.22	306	eP	10 58.60	-1.5
	0.9s	13.10nm		4.3mb	
LPF	21.22	305	eP	10 59.50	-0.7
	0.9s	13.10nm		4.3mb	
NUR	22.15	359	eP	11 23.00	13.7X
NB2	24.27	344	P	11 30.80	0.7
	0.9s	7.60nm		4.2mb	
SUF	24.37	1	eP	11 35.30	4.3X
EKA	25.41	321	Pd	11 45.20	4.3X
	1.2s	11.00nm		4.3mb	
SOD	29.05	1	eP	12 08.00	-6.0X
BCAO	34.31	192	iPd	13 01.40	0.8
	0.6s	11.00nm		5.0mb	
			ic	13 09.00	
KIC	41.75	228	P	14 03.50	0.7
LIC	42.03	228	P	14 05.90	0.8
S.D. = 1.0 on 89 of 106 obs.					

DEC 09, 1989 22h 32m 08.85± 0.55s
38.329 N ± 5.9km 24.971 E ± 5.8km
DEPTH = 10.0km (geophysicist)
AEGEAN SEA (365)
ML 3.2 (ATH).

ATH	1.05	251	ePb	32 29.50	0.8
			eSn	32 40.60	
APE	1.33	160	ePn	32 33.10	-0.4
SMG	1.60	112	ePb	32 38.50	1.3
NEO	1.68	306	ePn	32 38.00	-0.4
IZM	1.80	87	iPn	32 39.80	-0.4
AGG	2.18	289	eP	32 51.50	5.8X
			eS	33 25.00	
VLI	2.28	226	ePn	32 47.00	-0.1
PLG	2.36	330	ePn	32 47.80	-0.5
LIT	2.62	313	eP	33 01.00	9.1X

RDO 2.85 9 ePn 32 55.50 0.4
KAP 3.29 147 ePn 33 00.70 -0.7
S.D. = 0.8 on 9 of 11 obs.

& DEC 09, 1989 22h 47m 28.48s
59.961 N 147.436 W
DEPTH = 5.0km
GULF OF ALASKA (15)
<AGS-P>.

HIN 0.64 46 iP 47 41.29 0.0
iS 47 51.35
CVA 1.03 54 iP 47 47.03 -1.3
eS 48 01.59
SGAM 1.24 63 eP 47 50.32 -1.6
eS 48 07.49
RAGM 1.44 72 eP 47 53.48 -1.9
eS 48 13.95
SLKM 1.49 293 iP 47 54.40 -1.6
eS 48 14.20
SNH 2.32 83 eP 48 05.60 -2.3
WAX 2.34 76 eP 48 05.47 -2.8
eS 48 35.01
7 obs. associated

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* DEC 09, 1989 23h 03m 36.31± 1.07s
71.026 N ±15.8km 6.148 W ± 8.1km
DEPTH = 10.0km (geophysicist)
4.5mb (12 obs.)
JAN MAYEN ISLAND REGION (639)

JNE 0.70 268 iPgd 03 49.70 -0.5
JNW 0.75 271 iPgc 03 50.40 -0.5
JMI 0.85 265 iPgd 03 51.90 -0.8
eSg 04 01.70
SOD 12.10 92 iP 06 30.00 -1.4
i 06 37.00
NB2 12.19 137 P 06 29 80 -2.9
1.1s 5.70nm 4.8mb
HFS 13.56 134 eP 06 49.70 -1.2
0.4s 3.00nm 4.6mb
EKA 15.81 174 Pc 07 20.70 0.5
0.8s 9.30nm 4.0mb
NUR 16.21 115 eP 07 27.00 1.7
ENN 21.07 158 eP 08 21.50 -1.0
1.0s 29.00nm 4.6mb
e 08 29.00
CLL 21.63 146 eP 08 31.00 2.9
BRG 22.22 145 e(P) 08 42.00 7.9X
FLN 22.49 170 eP 08 38.50 1.7
LDF 22.68 170 eP 08 41.30 2.6
0.8s 18.80nm 4.6mb
KSP 22.71 141 eP 08 38.50 -0.4
GRF 22.88 150 eP 08 42.70 2.1
1.4s 17.00nm 4.4mb
LOR 24.31 163 eP 08 54.90 0.4
SSF 24.48 164 eP 08 56.10 -0.1
0.8s 7.20nm 4.4mb
LBF 24.60 163 eP 08 57.50 0.1
0.8s 10.70nm 4.5mb
BGF 24.92 165 eP 08 59.90 -0.5
0.7s 5.90nm 4.4mb
SMF 24.92 164 eP 09 00.70 0.2
TCF 25.14 166 eP 09 01.50 -1.0
MAF 25.23 166 eP 09 03.00 -0.4
0.7s 5.50nm 4.4mb
LPG 26.36 159 eP 09 13.00 -1.3
EPF 28.26 170 eP 09 29.40 -1.8
0.7s 5.50nm 4.5mb
FFC 41.37 299 eP 11 25.00 1.6
1.0s 11.00nm 4.5mb
S.D. = 1.5 on 24 of 25 obs.

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* DEC 10, 1989 00h 57m 36.88± 1.24s
17.528 S ±14.6km 122.461 E ±10.5km
DEPTH = 10.0km (geophysicist)
WESTERN AUSTRALIA (590)

MBL 4.38 214 eP 58 46.00 1.0
iS 59 30.50
KNA 6.30 75 eP 59 12.80 0.7
0.3s 8.00nm 5.1mb X
iS 00 18.70
NANU 8.22 231 iPd 59 37.90 -1.1
0.2s 12.00nm 5.8mb X
iS 01 00.50
WARB 9.45 156 iPd 59 55.80 -0.2
0.2s 6.00nm 5.6mb X
eS 01 33.00
MTN 9.57 62 eP 59 58.00 0.2
eS 01 39.00
MEKA 9.75 201 eP 00 00.50 0.3
eS 01 38.00
WB5 11.52 104 eP 00 22.90 -1.7
eS 02 23.30
ASPA 12.33 122 eP 00 36.30 0.8
eS 02 44.30
MRWA 13.06 206 eP 00 42.20 -2.9X
0.2s 5.00nm 5.3mb X
eS 02 51.00
COOL 13.35 185 eP 00 46.60 -2.4X
eS 03 03.00
BAL 14.04 201 eP 00 55.20 -2.8X
eS 03 17.00
KLB 14.64 196 eP 01 03.00 -2.9X
eS 03 31.00
AAI 14.86 23 ePc 01 24.50 15.6X
MUN 15.46 200 eP 01 14.00 -2.6X
eS 03 51.00
NWAO 16.04 196 eP 01 21.00 -3.2X
eS 04 04.00
S.D. = 1.1 on 8 of 15 obs.

? DEC 10, 1989 01h 02m 00.73± 1.37s
21.414 S ±17.5km 68.676 W ±35.4km
DEPTH = 33.0km (normal)
CHILE-BOLIVIA BORDER REGION (124)

ANT 2.79 215 eP 02 44.00 0.0
CNCB 4.63 8 eP 03 11.00 0.3
CCH 4.67 31 P 03 11.00 0.0
LPB 4.89 7 eP 03 15.00 0.8
ZOBO 5.14 6 P 03 17.00 -1.0
S.D. = 0.9 on 5 of 5 obs.

DEC 10, 1989 01h 05m 55.89± 0.88s
38.304 N ±10.2km 25.036 E ± 7.5km
DEPTH = 10.0km (geophysicist)
AEGEAN SEA (365)
ML 2.9 (ATH).

ATH 1.09 253 ePn 06 16.00 -0.4
eSn 06 31.00
APE 1.29 162 ePn 06 19.50 -0.4
eSn 06 37.00
PRK 1.35 45 ePn 06 21.00 0.3
SMG 1.54 112 ePb 06 24.50 1.1
IZM 1.75 86 ePn 06 25.40 -1.2
VLI 2.30 227 ePn 06 35.00 0.6
S.D. = 1.0 on 6 of 6 obs.

DEC 10, 1989 01h 18m 47.57± 1.45s
12.654 N ± 4.2km 125.060 E ± 5.8km
DEPTH = 57.8 ± 13.7 km
5.1mb (14 obs.) 4.4Msz (5 obs.)
SAMAR, PHILIPPINE ISLANDS (251)

QCP 4.34 297 eP 19 55.00 2.4
DAV 5.55 175 eP 20 20.00 10.3X
BAG 5.72 311 eP 20 08.00 -4.2X
ANP 12.90 345 e(P) 22 04.00 13.7X
SSE 18.70 350 P 23 02.50 -1.3
1.5s 67.00nm 4.6mb
Z 20s 0.70um 3.7MszX
E 16s 1.50um
eS 26 28.00
esS 26 34.00
GUMO 19.31 85 eP 23 12.70 1.8
1.5s 540.54nm 5.6mb
PJG 19.31 85 eP 23 12.70 1.8
TT 42 39.30
GUA 19.36 85 eP 23 12.30 0.9
NJ2 20.13 345 Pd 23 17.80 -1.7
Z 16s 4.40um 4.9MszX
WHN 20.37 333 Pc 23 22.00 0.0
WHN 20.37 333 iPd 23 22.20 0.2X
1.2s 0.08nm 1.9mb X
Z 14s 1.18um 4.4MszX
N 17s 1.76um
E 17s 1.85um
PP 23 47.00
TRT 23.70 212 ePc 23 56.50 1.4
0.4s 27.60nm 5.1mb
KGM 23.99 246 eP 23 53.00 -4.9X
KMI 24.44 304 Pc+ 24 02.50 -0.1
Z 16s 5.00um 5.1MszX
E 17s 2.30um
pP 24 12.50 37kmX
S 28 30.00
TIA 24.52 344 eP 24 01.40 -1.5
N 15s 0.60um
E 15s 0.70um
eS 28 19.50
SNG 24.68 260 eP 24 05.20 0.6
eS 28 35.30
IPM 25.06 253 ePc 24 08.90 0.6
0.8s 31.30nm 4.9mb
e 24 42.60
CHG 25.85 287 eP 24 14.00 -1.7
CHTO 25.85 287 eP 24 13.70 -1.9
XAN 25.86 328 Pc 24 14.20 -1.4
PP 24 48.50
S 28 40.00
MTN 26.04 166 iPc 24 16.60 -0.7
DL2 26.32 354 P 24 20.00 0.3
Z 14s 0.60um 4.3MszX
MAT 26.56 24 (P) 24 29.00 7.0X
Z 20s 1.06um 4.4Msz
CD2 26.77 316 iPd 24 23.80 -0.2
Z 18s 1.90um 4.7Msz
N 15s 2.00um
sS 29 08.00
TIY 27.39 338 Pd 24 28.00 -1.6
Z 20s 1.25um 4.5Msz
N 18s 1.30um
S 29 05.50
BJI 28.38 346 eP 24 36.50 -1.9
1.4s 33.00nm 4.8mb
Z 19s 0.59um 4.2Msz
eS 29 20.00
KNA 28.46 172 eP 24 38.00 -1.3
SNY 29.09 358 iPd 24 43.80 -1.0
1.0s 0.10nm 2.4mb X
Z 20s 0.60um 4.2Msz
N 18s 0.60um
E 16s 1.10um
pP 24 53.80 36kmX
sP 24 56.20
LZH 30.16 324 P 24 55.00 0.4
1.5s 94.00nm 5.3mb
Z 16s 2.00um 4.9MszX
N 16s 1.50um
E 16s 0.50um
pP 25 08.50 53kmX
i 25 28.50
HHC 30.48 340 Pd 24 57.40 0.1
BTO 30.81 337 eP 24 59.50 -0.7
N 16s 0.40um
E 16s 1.10um
pP 25 05.50 21kmX
eS 30 02.00
CN2 31.04 1 eP 25 00.70 -1.3
Z 16s 0.90um 4.5MszX
N 12s 0.40um
MDJ 32.09 6 eP 25 10.00 -1.2
Z 15s 0.90um 4.6MszX
eS 30 20.00
WB5 33.60 164 iPd 25 23.10 -1.5
GTA 34.76 325 iPc 25 34.20 -0.4
Z 16s 1.10um 4.7MszX
E 15s 0.40um
LSA 35.70 304 iPc 25 44.10 1.0
OIS 35.97 156 iPc 25 43.40 -1.4
NANU 36.22 195 eP 25 46.00 -0.9
ASPA 37.12 166 iPc 25 53.70 -0.8
0.9s 36.00nm 5.3mb
eS 31 37.90
WARB 38.63 178 iPd 26 08.80 1.7
0.5s 28.00nm 5.4mb
CTA 38.65 147 iPd 26 07.30 0.0
1.1s 22.78nm 5.0mb
i 28 20.00
MEKA 39.54 189 eP 26 14.00 -0.7
0.3s 55.00nm 5.9mb
MRWA 42.54 192 eP 26 38.20 -1.0
COOL 43.45 185 eP 26 45.30 -1.3
BAL 43.75 190 eP 26 48.00 -1.1
KLB 44.55 189 eP 26 54.00 -1.5
WMO 44.63 321 P 26 57.00 0 8
Z 16s 1.40um 5.0MszX
HYB 45.08 282 iPc 27 00.80 0.7

10d 01h

MUN	45.18	191	eP	26	59.00	-1.5
RMQ	45.22	150	e(P)	27	03.00	2.1
			e	28	42.50	
NWAO	45.94	189	eP	27	05.00	-1.5
GBA	46.33	277	P	27	10.00	0.1
KOD	46.66	272	eP	27	13.70	0.8
STK	47.03	161	eP	27	15.00	-0.2
RKG	47.09	189	eP	27	19.00	3.4X
BRS	48.04	146	iPd	27	23.20	0.0
	0.9s	6.50nm			4.6mb	
			i	27	28.80	
			i	27	32.80	
			i	27	55.00	
			e(S)	33	52.00	
CMS	48.20	156	eP	27	25.00	0.7
ADE	49.10	165	iPd	27	31.90	0.7
	0.9s	67.23nm			5.7mb	
POO	49.54	284	iPd	27	36.20	1.3
KSH	50.75	311	P	27	46.00	2.0
BWA	51.81	155	eP	27	53.40	1.4
			e	28	05.30	
CAN	52.83	155	eP	27	53.40	-6.1X
			e	28	05.30	
DZM	53.28	130	iPc	28	03.70	0.6
QUE	56.26	298	eP	28	24.50	-0.5
MAIO	62.97	304	iPc	29	11.00	0.2
KER	73.10	302	ePd	30	14.50	0.4
SLY	74.32	304	ePd	30	21.00	0.1
BHD	75.44	301	ePd	30	29.00	1.6
MSL	76.15	305	ePd	30	32.00	0.6
KEV	81.00	340	eP	30	57.00	-0.1
SOD	81.64	337	iP	31	00.80	0.3
INK	82.52	22	ePd	31	05.20	0.2
HRI	82.61	302	eP	31	08.00	1.6
SUF	82.90	333	eP	31	06.40	-0.7
DSI	83.22	301	e(P)	31	09.00	-0.4
MBC	83.66	13	ePd	31	11.00	0.2
	0.9s	21.00nm			5.2mb	
BBTK	83.76	309	iPc	31	13.00	0.9
MBH	83.98	299	ePc	31	15.00	1.8
NUR	84.15	331	eP	31	14.00	0.5
VRI	86.74	316	ePd	31	28.50	1.8
SKO	91.51	314	i(P)	31	50.00	0.8
KSP	91.76	323	eP	31	50.70	0.5
KBA	95.04	320	eP	32	05.00	-0.6
	1.1s	7.60nm			5.0mb	
BCAO	105.07	278	ePdiff	33	04.00	12.8X
	0.9s	9.00nm				
			id	35	08.30	
LPB	166.69	108	ePKP	38	51.00	2.2X
CNCB	166.73	110	PKP	38	52.00	3.0X
ZOBO	166.74	107	PKPd	38	51.10	2.1X

S.D. = 1.2 on 75 of 87 obs.

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* DEC 10, 1989 01h 44m 51.50± 1.45s
3.090 S ± 9.0km 78.843 W ±34.1km
DEPTH = 86.2 ± 16.5 km
PERU-ECUADOR BORDER REGION (110)

TUNG	1.71	13	P	45	20.20	-0.3
GGP	2.91	5	eP	45	37.30	0.2
OUR	2.92	6	Pd	45	37.40	0.3
			eS	46	20.00	
CAYA	3.26	15	eP	45	41.50	-0.5
COTA	3.44	8	P	45	44.70	0.3
NNA	9.06	167	eP	47	01.50	-0.1
	0.4s	5.93nm			4.8mb X	
			eS	48	31.50	
ZOBO	16.81	142	eP	48	29.00	-14.6X
LPB	17.03	142	eP	48	56.00	9.9X
CNCB	17.31	143	P	48	50.00	0.2
INK	80.51	342	eP	56	55.00	-0.1

S.D. = 0.4 on 8 of 10 obs.

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* DEC 10, 1989 02h 53m 59.85± 0.52s
12.752 N ±10.0km 125.207 E ±13.9km
DEPTH = 33.0km (normal)
4.7mb (4 obs.)
SAMAR, PHILIPPINE ISLANDS (251)

XAN	25.86	328	P	59	29.50	-0.8
CHTO	25.96	287	eP	59	32.80	1.4
	0.6s	0.98nm			3.6mb X	
CD2	26.80	316	eP	59	38.80	-0.2
TIY	27.35	338	Pd	59	42.50	-1.5
WB5	33.66	164	eP	00	38.10	-1.8
SHL	33.85	297	iP	00	41.00	-0.8
GTA	34.76	324	P	00	49.60	0.1
ASPA	37.18	167	iPc	01	09.40	-0.5
	0.6s	10.00nm			4.9mb	
			eS	06	58.60	
WARB	38.73	178	iPc	01	22.60	-0.2
	0.3s	4.00nm			4.7mb	
WMQ	44.64	321	P	02	12.20	1.0
HYB	45.20	282	eP	02	16.00	0.0
GBA	46.46	277	P	02	26.00	0.1
BRS	48.04	146	iPc	02	38.50	0.3
	0.6s	2.40nm			4.4mb	
BWA	51.84	156	eP	03	08.80	1.6
INK	82.37	22	eP	06	20.00	0.5
MBC	83.53	13	eP	06	26.00	0.6
	0.9s	6.00nm			4.7mb	

S.D. = 1.0 on 16 of 16 obs.

DEC 10, 1989 03h 15m 30.51± 0.36s
43.812 N ± 3.7km 12.498 E ± 3.2km
DEPTH = 33.0km (normal)
CENTRAL ITALY (381)
ML 4.0 (KBA), 4.0 (VKA), 3.9 (LDG), 3.4 (LJU). MD 3.9 (FIR), 3.7 (TRI).

RSM	0.12	344	P	15	39.30	2.9
			eSg	15	44.80	
CRE	0.44	245	P	15	42.70	2.4
ARV	0.45	134	Pc	15	40.30	-0.1
SFI	0.48	283	P	15	43.70	2.9
PGD	0.57	277	P	15	45.70	3.5X
			eSg	15	54.90	
ASS	0.75	171	P	15	45.00	0.3
FIR	0.90	268	iPgc	15	50.50	3.7X
			iSg	16	04.00	
MME	1.35	287	P	15	56.10	2.6
BDI	1.40	281	P	15	55.60	1.6
			eSg	16	14.00	
MNS	1.43	175	P	15	54.20	-0.3
PII	1.43	267	P	15	55.80	1.4
			eSg	16	14.20	
RMP	2.01	176	P	16	02.50	-0.2
RDP	2.06	175	P	16	02.90	-0.6
TRI	2.10	25	iPgc	16	03.30	-0.7
			iSg	16	28.10	
SAL	2.28	323	P	16	07.80	1.2
CTI	2.32	345	P	16	07.60	0.4
			eSg	16	34.20	
SDI	2.32	155	P	16	07.20	0.0
CEY	2.37	35	iPnc	16	07.40	-0.5
			iSn	16	35.00	
BOB	2.39	295	Pc	16	10.90	2.6
VOY	2.43	24	iPnc	16	08.20	-0.7
			eSn	16	37.00	
VBY	2.60	48	ePn	16	11.40	0.3
			iSn	16	40.00	
LJU	2.66	32	iPnc	16	11.80	-0.2
			i	16	20.50	
			iSn	16	42.30	
FVI	2.79	4	P	16	14.10	0.4
PCP	2.94	286	P	16	16.58	0.6
CKI	3.10	283	P	16	18.60	0.4
FIN	3.12	279	P	16	18.93	0.4
ZAG	3.19	50	iP	16	31.00	11.5X
			iSn	16	55.50	
PTJ	3.23	48	ePn	16	21.10	1.0
			eSn	16	56.20	
OGA	3.23	342	ePn	16	21.40	1.2
KBA	3.32	10	iPnc	16	22.10	0.6
	0.3s	69.00nm				
			e	16	40.30	
			iSn	17	00.20	
			iSg	17	14.50	
			i	17	17.70	
OSS	3.32	331	ePc	16	23.80	2.3
IMI	3.33	273	P	16	21.89	0.2
VAI	3.35	309	P	16	22.10	0.3
ROB	3.37	280	P	16	22.26	0.1
VDL	3.43	322	ePc	16	24.30	1.2
TMA	3.45	313	ePc	16	23.60	0.2
SBF	3.66	273	Pn	16	27.30	1.0
			Sn	17	06.20	
ENR	3.69	278	P	16	27.55	0.9
ORO	3.70	301	P	16	26.00	-0.8
ORX	3.70	301	P	16	25.94	-0.9
STV	3.76	278	P	16	28.31	0.7
DOI	3.84	282	P	16	29.50	0.7
MMK	3.92	306	ePd	16	29.30	-0.8
LLS	3.93	322	ePd	16	31.10	0.9
PZZ	3.95	282	P	16	30.01	-0.4
RSP	3.98	291	P	16	29.01	-1.9
LSD	4.15	295	P	16	31.41	-2.0
RRL	4.24	287	P	16	34.00	-0.7
FRF	4.25	269	Pn	16	34.60	0.0
			Sn	17	21.50	
DIX	4.26	304	ePd	16	35.50	0.5
BNI	4.35	289	P	16	35.80	-0.4
LMR	4.38	266	Pn	16	36.50	0.1
			Sn	17	24.60	
LPG	4.43	294	Pn	16	36.20	-1.3
LPL	4.45	295	Pn	16	36.40	-1.3
			Sn	17	23.80	
LRG	4.47	268	Pn	16	38.50	0.8
			Sn	17	25.60	
EMS	4.55	302	ePc	16	40.00	0.9
ZLA	4.67	323	ePc	16	41.30	0.8
SLE	4.85	326	ePd	16	42.60	-0.4
FEL	5.13	324	ePn	16	46.37	-0.8
VKA	5.19	29	ePg	16	49.00	1.2
			iSg	17	42.80	
KHC	5.37	8	Pn	16	50.00	-0.5
			Sg	17	48.00	
ZST	5.43	35	eP	17	38.30	47.1X
BSF	5.66	317	Pn	16	53.70	-0.9
			Sn	17	53.70	
CDF	5.86	324	Pn	16	56.70	-0.7
			Sn	17	58.20	
GRF	5.95	352	e(Pn)	17	00.00	1.4
			e	17	09.00	
			e	17	26.60	
			eSg	18	00.00	
HAU	6.00	316	Pn	16	58.20	-1.1
			Sn	18	01.00	
PRU	6.34	12	ePg	17	04.00	0.0
			eSg	18	08.00	
OHR	6.70	111	ePn	17	06.80	-2.5
SMF	6.74	298	Pn	17	07.90	-1 8
			Sn	18	19.40	
BZS	6.74	71	eP	17	10.00	0.3
LBF	6.79	301	Pn	17	08.70	-1.7
			Sn	18	19.30	
ABH	6.95	333	ePn	17	11.82	-0.9
RUP	6.97	330	ePn	17	12.71	-0.3
LOR	6.98	303	Pn	17	11.50	-1.6
			Sn	18	25.00	
AVF	7.10	298	Pn	17	12.70	-2.1
SSF	7.11	300	Pn	17	13.00	-1.9
			Sn	18	27.30	
BRG	7.13	7	e(P)	17	21.00	5.8X
			e	18	29.00	
BGF	7.35	295	Pn	17	16.10	-2.2
			Sn	18	32.80	
MAF	7.44	292	Pn	17	17.40	-2.1
			Sn	18	37.00	
CAF	7.56	282	Pn	17	20.40	-0.8
TCF	7.70	292	Pn	17	21.00	-2.1
			Sn	18	42.80	

S.D. = 1.3 on 76 of 81 obs.

DEC 10, 1989 03h 59m 31.58± 0.47s
4.505 S ± 6.5km 135.418 E ± 8.3km
DEPTH = 33.0km (normal)
4.8mb (5 obs.)
WEST IRIAN REGION (196)

MNDI	8.37	102	eP	01	34.00	0.2
MTN	9.31	207	iPd	01	47.40	0.8
			eS	03	41.50	
PMG	12.62	113	eP	02	32.00	0.3
KNA	12.95	210	eP	02	35.00	-1.0
			eS	04	55.00	
WB5	15.32	184	eP	03	05.00	-2.1X
			i	03	16.70	
			eS	05	50.00	
QIS	16.47	166	eP	03	21.00	-0.9
			e	03	26.00	
			e	06	05.00	
CTA	18.74	147	eP	03	54.00	3.8X
ASPA	19.11	184	eP	03	55 00	0.4
	0.7s	78.00nm			5.1mb	
	Z 21s	0.61um			4.3MszX	
			eS	07	19.50	
			LR	11	30.90	
WARB	23.14	200	eP	04	40.00	4.0X

0.4s 3.00nm 4.1mb
OLP 23.52 160 eP 04 44.50 4.8X
CHG 42.75 304 eP 07 28.70 0.9
CHTO 42.75 304 eP 07 28 10 0.3
1.0s 4.00nm 4.1mb
XAN 45.78 329 P 07 50.50 -1.5
TIY 47.13 335 eP 08 01.00 -1.7
BJI 47.73 340 eP 08 07.00 -0.3
1.0s 19.00nm 5.1mb
LZH 50.04 326 eP 08 26.50 1.1
1.2s 34.00nm 5.2mb
HHC 50.14 336 P 08 26.40 0.4
GTA 54.65 326 P 09 00.60 0.9
CNCB 148.64 133 ePKP 19 23.00 8.2X
LPB 148.73 132 ePKP 19 28.00 13.3X
ZOBO 148.88 132 PKP 19 28.00 12.8X
1.1s 7.25nm
S.D. = 1.0 on 14 of 21 obs.

? DEC 10, 1989 04h 09m 42.46± 14.25s
51.894 N ±70.2km 16.829 E ±93.6km
DEPTH = 10.0km (geophysicist)
POLAND (548)
ML 3.7 (VKA), 3.3 (GRF), 3.3 (KBA), 2.8 (KRA).

KSP 1.10 198 iPd 10 03.50 0.3
0.2s 134.00nm
iS 10 12.20
e 10 18.50
BRG 2.08 242 iPg 10 18.40 0.7
iSg 10 38.00
PRU 2.39 218 ePn 10 21.70 -0.6
Pg 10 23.60
eSn 10 40.50
eSg 10 46.00
CLL 2.46 258 iPn 10 23.20 0.0
ePg 10 26.00
eSg 10 52.00
KRA 2.69 132 eP 10 45.20 18.6X
eS 11 22.60
KHC 3.46 218 Pn 10 37.20 -0.2
Pg 10 43.00
Sn 11 10.90
Sg 11 21.20
MOX 3.50 251 ePn 10 38.00 -0.1
ePg 10 46.00
iSg 11 25.00
VKA 3.65 185 ePg 10 51.00 10.8X
iSg 11 34.30
ZST 3.71 177 eP 11 40.40 59.4X
GRF 4.18 240 ePn 10 47.50 -0.2
e(Pg) 11 00.70
eSg 11 44.90
KBA 5.33 207 iPnc 11 04.30 0.2
iSg 12 25.20
S.D. = 0.5 on 8 of 11 obs.

? DEC 10, 1989 04h 25m 00.53± 6.35s
33.990 S ±27.4km 72 175 W ±41 0km
DEPTH = 10.0km (geophysicist)
OFF COAST OF CENTRAL CHILE (134)

LNV 0.64 87 iPd 25 14 00 0.7
iS 25 23.90
LCCH 0.72 45 iPd 25 14.70 0.0
iS 25 25.00
TACH 1.08 72 iP 25 20.60 -0.3
iS 25 35.50
CHCH 1.27 88 iPd 25 24.10 0.0
iS 25 41.30
SAN 1.37 67 iP 25 25 30 -0.4
iS 25 43 50
ROCH 1.41 44 eP 25 26.40 0.0
PCH 1.43 76 ePd 25 26.20 -0.4
iS 25 45.20
PEL 1.50 56 iPc 25 27.30 -0.3
iS 25 47.60
FCH 1.70 68 iPd 25 30.70 -0.1
iS 25 54.00
i 25 56 50
JACH 1.86 46 iP 25 33 50 0.7
iS 26 01.50
S.D. = 0.5 on 10 of 10 obs

? DEC 10, 1989 04h 26m 22.44± 2 07s
24.102 S ±69.6km 174.056 W ±28 5km
DEPTH = 33 0km (normal)
5.0mb (5 obs.)
SOUTH OF TONGA ISLANDS (175)

DZM 18.06 273 iPc 30 33.10 0.5
CTA 36.91 268 iPd 33 29.20 -1.0
0.6s 11.33nm 4.9mb
ASPA 47.36 259 iPc 34 55.50 0.1
1.0s 12 00nm 4.9mb
WB5 47.80 264 eP 34 57.90 -1.0
KVN 81.75 41 e(P) 38 40.60 1.1
PNT 87.67 32 eP 39 08.00 -0.6
FBA 91.01 11 e(P) 39 22.60 -1.5
1.0s 0.90nm 4.1mb
CHG 94.87 288 eP 39 44.00 1.2
0.9s 10.50nm 5.3mb
CHTO 94.87 288 eP 39 43.80 1.1
0.7s 7.62nm 5.2mb
EKA 148.09 10 PKP 46 05.00 2.4X
0.9s 2.80nm
KRA 151.89 341 ePKP 46 14.50 6.0X
KSP 152.13 346 ePKPc 46 15.80 6.9X
CLL 152.30 350 iPKPd 46 16.30 7.2X
1.0s 19.00nm
BRG 152.56 349 iPKP 46 17.00 7.5X
1.0s 14.00nm
PRU 153.30 348 PKP 46 18.50 8.0X
MBH 153.63 289 ePKPc 46 22.00 10.4X
KHC 154.31 348 PKP 46 21.50 9.5X
S.D. = 1.2 on 9 of 17 obs.

? DEC 10, 1989 04h 50m 15.65± 5.45s
34.049 S ±22.9km 72 372 W ±37.0km
DEPTH = 10.0km (geophysicist)
NEAR COAST OF CENTRAL CHILE (135)

LNV 0.80 84 iPd 50 32.00 0.8
iS 50 42.00
LCCH 0.88 50 iPd 50 32.50 0.0
iS 50 42.40
TACH 1.26 72 iPd 50 38.50 -0.5
iS 50 53.50
CHCH 1.43 86 iPd 50 41.60 -0.1
SAN 1.54 68 iPc 50 43.30 0.0
iS 51 01.50
ROCH 1.56 47 iPc 50 43.70 0.0
PCH 1.60 75 iP 50 43.70 -0.5
iS 51 03.00
iS 51 06.40
FCH 1.88 68 iPd 50 48.50 0.1
iS 51 10.40
JACH 2.02 48 eP 50 50.60 0.4
iS 51 16.50
S.D. = 0.5 on 9 of 9 obs.

? DEC 10, 1989 04h 55m 33.04± 6.20s
34.176 S ±25.8km 72.614 W ±43.1km
DEPTH = 10.0km (geophysicist)
NEAR COAST OF CENTRAL CHILE (135)

LNV 1.02 78 iPd 55 52.50 0.2
iS 56 02.10
LCCH 1.12 52 iPd 55 53.90 0.0
iS 56 03.90
TACH 1.49 70 iPc 55 59.00 -0.8
iS 57 14.20
CHCH 1.65 82 iP 56 02.50 0.3
iS 56 20.00
SAN 1.78 67 iPd 56 04 50 0.4
ROCH 1 80 49 iP 56 04.80 0.3
iS 56 24 50
PCH 1 83 73 iPc 56 04 80 -0 1
iS 56 24 50
FCH 2.11 67 iPd 56 09 10 -0.1
iS 56 33.00
JACH 2.25 49 eP 56 11 00 0.0
S.D. = 0.4 on 9 of 9 obs.

% DEC 10, 1989 04h 56m 54.36± 1.98s
33.777 S ± 7.7km 71.613 W ±14.6km
DEPTH = 10.0km (geophysicist)
NEAR COAST OF CENTRAL CHILE (135)

LNV 0.24 137 iPd 56 59 70 0 2
iS 57 09 00
LCCH 0.30 7 iPd 57 00 60 -0 1
iS 57 11 10
TACH 0.58 78 iPc 57 06.40 0.3
iS 57 21 50
CHCH 0.81 101 iP 57 09.50 -0.7
SAN 0.86 68 ePd 57 11.60 0.7
iS 57 30.00
PCH 0.93 81 iPc 57 12.00 -0.2
iS 57 31.00
ROCH 0.95 32 iPd 57 12.00 -0.6
FCH 1.19 68 iPd 57 16.50 -0.3
iS 57 39.00
JACH 1.39 38 iP 57 20.40 0.6
iS 57 45.50
S.D. = 0.6 on 9 of 9 obs.

? DEC 10, 1989 04h 57m 26.66± 6.95
34.000 S ±2B.5km 72.254 W ±45.2k
DEPTH = 10.0km (geophysicist)
NEAR COAST OF CENTRAL CHILE (135

LNV 0.70 87 iPc 57 41.10 0.6
iS 57 50.50
LCCH 0.77 48 iPd 57 41.90 0.2
iS 57 52.10
TACH 1.15 73 iP 57 47.70 -0.5
iS 58 02.50
CHCH 1.33 88 iP 57 51.30 0.0
iS 58 08.70
SAN 1.43 68 iPd 57 53.00 0.3
iS 58 11.50
ROCH 1.46 46 eP 57 53.40 0.1
PCH 1.50 76 iP 57 53.20 -0.5
iS 58 13.00
FCH 1.77 68 iP 57 57.60 -0.2
iS 58 21.00
S.D. = 0.4 on 8 of 8 obs

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* DEC 10, 1989 07h 44m 32.31± 0.93s
0 219 N ±14.0km 123.782 E ±15.7kr
DEPTH = 182.7 ± 12.6 km
4.7mb (2 obs.)
MINAHASSA PENINSULA (265)

MNI 1.61 41 eP 45 05.50 -0.4
TSM 6.95 305 iPd 46 13.50 0.8
0.5s 397.40nm 6.0mb
KKM 9.51 308 iPc 46 48.40 1.9
0.6s 156.30nm 5.6mb
MTN 14.89 151 eP 47 53.50 -1.6
KNA 16.61 163 eP 48 15.40 -0.9
WB5 22.51 153 eP 49 17.20 -0.2
LAT 24.15 107 eP 48 23.00 -70.2
PMG 25.16 113 eP 48 44.00 -58.5
ASPA 25.70 158 eP 49 47.00 -0.4
0.6s 13.00nm 4.8mb
epP 50 24.00 185km
iS 54 06.20
eScS 00 24.90
OIS 25.81 144 iPd 49 48.90 0.5
e 49 51.40
e 50 25.00
LOE 27.62 309 eP 50 03.50 -1.3
NST 27.94 304 eP 50 09.00 1.2
BDT 29.69 306 eP 50 22.80 -0.5
CHG 30.59 309 eP 50 30.00 -1.3
0.8s 9.33nm 4.6mb
CHTO 30.59 309 eP 50 29.00 -2.2
ADE 37.68 160 eP 51 33.00 1.3
BRS 39.11 137 iP 51 44.00 0.4
BWA 41.48 149 eP 52 05.00 2.1
INK 94.48 21 eP 57 33.00 0.5
BUL 94.93 250 iPc 57 48.80 13.1X
S.D. = 1.4 on 17 of 20 obs.

% DEC 10, 1989 07h 56m 37.70± 2.32s
33.778 S ± 8.6km 71.626 W ±17.0km
DEPTH = 10.0km (geophysicist)
NEAR COAST OF CENTRAL CHILE (135)

LNV 0.25 135 iPd 56 43.10 0.1
iS 56 52.50
LCCH 0.31 9 iPd 56 44.10 0.0
iS 56 54.60
TACH 0.59 78 iPc 56 49.90 0.3
iS 57 04.90
CHCH 0.82 101 iPc 56 52.90 -0.8
iS 57 09.70
SAN 0.87 68 eP 56 54.50 0.1

10d 07h

			iS	57	14.50	
PCH	0.94	81	iPc	56	56.40	0.7
			iS	57	15.00	
ROCH	0.95	33	eP	56	55.00	-1.0
FCH	1.20	68	iPd	56	59.60	-0.7
			iS	57	26.00	
JACH	1.39	39	eP	57	04.00	0.7
			iS	57	28.00	

S.D. = 0.7 on 9 of 9 obs

& DEC 10, 1989 08h 42m 54.50s
36.978 N 121.660 W
DEPTH = 10.0km
CENTRAL CALIFORNIA (39)
<BRK>. ML 2.5 (BRK).

GCC	0.27	281	iPc	42	59.80	-0.5
			iS	43	04.00	
SAO	0.27	141	iPd	42	59.90	-0.4
MHC	0.36	2	eP	43	01.90	-0.1
ARN	0.38	15	iPc	43	02.20	-0.2
PRS	0.69	160	eP	43	07.30	-0.8
PCC	0.78	312	eP	43	08.70	-0.9
BKS	1.01	333	eP	43	13.00	-0.6
			eS	43	27.50	
KVN	3.49	53	eP	43	57.80	7.7

8 obs. ossocioted

DEC 10, 1989 08h 51m 57.23± 1.17s
25.092 S ± 7.3km 179.634 E ± 5.3km
DEPTH = 534.2 ± 15.7 km
4.8mb (13 obs.)
SOUTH OF FIJI ISLANDS (171)

DZM	12.46	281	iPd	54	42.10	0.8
HBZ	12.52	185	P	54	42.70	1.1
	0.3s		17.00nm			5.0mb
PGZ	15.74	189	P	55	14.40	0.5
MNG	15.87	192	P	55	13.50	-1.7
	0.3s		14.00nm			5.0mb
			eS	57	54.50	
MTW	16.39	191	eP	55	20.80	0.5
WDW	16.59	192	eP	55	21.50	-0.7
MRW	16.61	193	eP	55	22.10	-0.3
TCW	16.68	194	eP	55	22.60	-0.5
KHZ	18.00	195	P	55	36.00	0.1
BRS	24.19	259	iPd	56	33.60	0.4
	1.0s		5.20nm			4.1mb
HNR	24.36	306	ePc	56	33.00	-1.7
COO	25.10	251	eP	56	43.00	1.7
RMQ	27.81	260	iPd	57	06.40	1.4
	1.0s		76.00nm			5.2mb
BWA	28.56	244	eP	57	10.50	-1.1
CTA	31.17	272	iPd	57	34.70	0.7
	0.9s		73.11nm			5.3mb
			iS	02	05.30	
			iScP	03	11.00	
PMG	34.59	291	eP	58	02.00	-0.8
OIS	37.08	269	eP	58	23.00	-0.3
ASPA	41.53	262	iPd	58	59.70	0.3
	0.4s		26.00nm			5.1mb
			iS	04	37.40	
WB5	42.00	268	iPd	59	02.90	-0.2
			eScP	03	51 30	
			eS	04	43.90	
WARB	47.51	257	iPd	59	45.30	-0.4
	0.3s		12.00nm			4.9mb
KNA	48.33	271	eP	59	51.70	-0.3
COOL	51.48	250	eP	00	09.00	-6 1X
KLB	54.22	248	eP	00	34.40	-0.3
BAL	55.29	249	eP	00	41.40	-0.8
MUN	55.46	247	eP	00	43.20	-0.2
MRWA	56.17	251	eP	00	48.00	-0.3
NANU	58.20	258	eP	01	02.00	-0.2
SPA	65.06	180	iPc	01	46.70	0.3
	1.0s		19.50nm			4.6mb
SYP	82.42	46	eP	03	32.00	7.5X
PRS	82.62	44	eP	03	25.80	0.5
BCH	82.75	46	P	03	26.90	0.8
ARN	83.15	43	P	03	28.00	0.0
PAS	83.39	48	eP	03	29.00	-0.2
PLM	83.81	49	eP	03	32.00	0.4
RVR	83.83	48	eP	03	32.00	0.6
PEC	83.92	48	P	03	32.00	0.1
SBB	83.94	47	eP	03	32.00	0.0
FRI	84.08	45	eP	03	32.50	0.0
ISA	84.08	46	eP	03	33.00	0.3
CMB	84.29	43	eP	03	33 50	-0.1
ORV	84.55	42	eP	03	35.00	0.2
WDC	84.58	40	eP	03	35.10	0.2
CLC	84.75	47	eP	03	35.00	-0.9
TPC	84.80	49	eP	03	36.00	-0.2
GSC	84.97	47	eP	03	37.00	-0.1
GLA	85.04	50	eP	03	38.00	0.6
TNP	86.32	45	P	03	43.50	-0.1
	0.8s		7.11nm			4.4mb
KVN	86.33	44	P	03	43.40	-0.3
BMW	87.98	36	P	03	51.40	0.3
SHW	88.33	36	P	03	53.00	0.2
VGB	88.69	37	P	03	53.90	-0.5
GMW	88.91	35	P	03	55.00	-0.3
LON	88.91	36	P	03	55.20	-0.2
RMW	89.36	35	P	03	57.50	0.1
MCW	89.61	34	P	03	58.50	0.0
CHTO	89.79	291	eP	04	02.30	2.4
	0.6s		1.26nm			4.0mb
MSU	89.84	47	P	04	00.50	0.4
PMR	89.98	14	P	04	00.20	0.4
ALQ	91.95	52	P	04	10.50	0.7
	0.8s		3.73nm			4.5mb
FBA	93.18	13	P	04	12.20	-2.4
	0.7s		4.36nm			4.7mb
GOL	95.00	48	P	04	23.00	-0.7
	1.0s		11.25nm			5.0mb
NB2	143.20	351	PKP	10	28.10	-3.1X
	0.8s		9.60nm			
EKA	149.72	3	PKP	10	47.00	5.2X
	0.6s		3.40nm			
KRA	150.52	333	ePKP	10	49.10	5.9X
KSP	151.27	338	iPKPc	10	51.20	6.9X
CLL	151.89	342	iPKPc	10	52.40	7.2X
	0.9s		17.00nm			
BRG	152.00	341	iPKPc	10	52.80	7.4X
BCAO	152.58	225	iPKPd	10	55.00	7.7X
	0.8s		7.00nm			
			id	11	09.00	
WTS	152.58	350	ePKP	10	54.00	7.9X
	0.8s		11 00nm			

S.D. = 0.8 on 59 of 69 obs.

? DEC 10, 1989 10h 15m 37.69± 7.30s
9.254 S ±32.4km 153.429 E ±68.5km
DEPTH = 33.0km (normol)
4.4mb (1 obs.) 3.7Msz (1 obs.)
DENTRECASTEAUX ISLANDS REGION (194)

PMG	6.19	268	eP	17	10.00	0.7
			eS	18	02.00	
LAT	6.87	292	eP	17	18.00	-0.8
CTA	12.81	212	eP	18	45.00	4.7X
QIS	17.44	228	eP	19	39.00	-1.2
WB5	21.23	238	eP	20	24.20	0.9
MTN	22.17	259	eP	20	33.00	0.3
ASPA	23.54	230	iPc	20	52.70	6.7X
	1.0s		12.00nm			4.4mb
	Z 18s		0.22um			3.7Msz
			LR	28	04.70	
BWA	25.47	190	eP	21	24.20	19.7X
BAO	147.42	139	PKPc	35	52.50	34.2X

S.D. = 1.3 on 5 of 9 obs.

DEC 10, 1989 10h 30m 30.88± 0.72s
43.260 N ± 5.6km 19.455 E ± 6.8km
DEPTH = 10.0km (geophysicist)
YUGOSLAVIA (383)
ML 2.8 (TTG).

PLE	0.08	327	iPgc	30	33.20	-0.3
			iSg	30	34.70	
IVA	0.51	140	iPgc	30	41.40	0.2
			iSg	30	50.00	
BRY	0.76	242	ePg	30	45.40	-0.4
			eSg	30	58.00	
PVY	0.77	150	ePg	30	46.00	0.1
			eSg	30	58.00	
TTG	0.84	190	ePg	30	47.00	-0.1
			eSg	31	00.00	
BCI	1.00	153	iPgd	30	50.10	0.3
HCY	1.07	221	ePg	30	51.50	0.4
			eSg	31	11.00	
BDV	1.08	206	ePg	30	52 70	1.5
			eSg	31	12 00	
SDA	1.24	179	ePg	30	52 00	-2.0
BEO	1.72	24	ePn	31	05 00	4.0X
			e(Sg)	31	29.50	
PHP	1.73	155	ePn	31	04.20	3.0X
TIR	1.94	171	ePn	31	08.50	4.4X
SKO	1.95	131	ePn	31	08.70	4.3X
			eSn	31	34.50	
OHR	2.37	155	ePn	31	15.00	4.6X
BERA	2.58	172	ePn	31	18.80	5.4X
BZS	2.82	33	ePc	31	17.00	0.2
VBY	3.75	308	e(Pn)	31	36.20	6.1X

S.D. = 1.0 on 10 of 17 obs.

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* DEC 10, 1989 10h 41m 12.20± 1.06s
27.489 S ± 5.2km 71.806 W ±15 5km
DEPTH = 40.1 ± 12.3 km
4.8mb (1 obs.)
NEAR COAST OF NORTHERN CHILE (122)

ANT	3.97	19	iPc	42	12.40	0.2
ZON	4.88	147	eP	42	26.00	0.9
CFA	5.15	144	ePc	42	30.00	1.1
			S	43	24.00	
JACH	5.28	169	eP	42	32.50	1.7
FCH	5.96	168	eP	42	43.50	2.8X
			iS	43	51.50	
LCCH	5.97	178	iPd	42	40.00	-0.4
SAN	6.03	171	eP	42	41.70	0.4
TACH	6.19	173	ePc	42	43.80	0.3
			iS	43	48.50	
PCH	6.21	170	eP	42	44.00	0.1
SLA	6.31	66	ePd	42	45.90	0.6
LNV	6.45	177	iPc	42	45.90	-1.3
CHCH	6.50	171	eP	42	47.50	-0.4
			iS	43	57.00	
MRA	7.21	134	ePc	42	56.20	-1.6
YJA	7.80	49	ePd	42	05.00	-61.5X
RFA	7.80	159	ePc	43	05.00	-1.2
ARE	10.98	2	eP	43	55.00	4.9X
			eS	45	49.00	
CNCB	11.20	19	eP	43	54.00	0.6
ZOBO	11.68	18	Pc	43	58.80	-1.0
	Z 24s		0.15um			
			LR	47	48.00	
BAO	25.04	67	Pc	46	32.50	-1.9
LIC	72.62	73	P	52	38.80	1.0
TIC	72.84	73	P	52	39.60	0.4
KIC	72.93	73	Pc	52	40.20	0.5
	0.5s		5.50nm			4.8mb
GBA	148.17	109	PKP	00	58.10	5.5X

S.D. = 1.1 on 19 of 23 obs.

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* DEC 10, 1989 11h 58m 14.46± 0.67s
24.674 N ± 8.2km 70.992 E ±11.4km
DEPTH = 33.0km (normol)
4.7mb (9 obs.)
INDIA-PAKISTAN BORDER REG. (712)

BOM	5.99	163	iPnc	59	42.30	-0.9
QUE	6.56	328	eP	59	46.50	-4.9X
POO	6.66	156	iPc	59	53.50	0.8
	0.7s		65.75nm			5.6mb
			iS	01	06.50	
NDI	6.85	53	iPnd	59	53.50	-1.7
	0.9s		141.18nm			5.9mb X
HYB	10.10	134	eP	00	39.00	-1.3
			eS	02	26.50	
GBA	12.58	150	P	01	11.80	-2.1
			S	03	02.20	
MAIO	15.23	322	eP	01	46.00	-2.8
KSH	15.33	15	eP	01	48.80	-1.3
	N 10s		1.10um			
			eS	04	35.00	
KOD	15 63	156	eP	01	55 20	0.9
LSA	18.61	70	P	02	34.80	3.0X
RYD	22.15	275	eP	03	10.50	1.4
WMQ	23.49	31	P	03	23.20	1.1
	Z 16s		0.40um			4.0MszX
			pP	03	30.00	24kmX
CHG	26.58	97	eP	03	53.90	2.3X
	1.0s		48.00nm			5.1mb
CHTO	26.58	97	iPc	03	53.70	2.1
	1.1s		53.30nm			5.1mb
NNT	29.70	109	eP	04	18.20	-1.6
GYA	32.17	79	P	04	42.00	0.4
BTO	36.17	54	P	05	17.80	1.9
BJI	40.69	57	eP	05	55.00	1.6
LJU	49.61	310	eP	07	08.50	3.9X
			e(Sn)	07	47.00	

SOD	50.62	340	eP	07	10.00	-1.9
HFS	52.74	328	eP	07	29.80	1.7
	0.6s		2.70nm			4.4mb
Z	15s		0.07um			3.8MszX
			LR	32	04.00	
NB2	54.16	329	P	07	39.70	1.2
	0.7s		1.90nm			4.2mb
BCAO	54.22	257	iPc	07	42.10	2.5X
	0.6s		8.00nm			4.9mb
EKA	61.14	321	P	08	30.00	2.2X
	0.8s		3.30nm			4.5mb
WB5	75.91	120	eP	10	00.50	0.5
ASPA	77.63	123	iPc	10	09.60	0.1
	1.0s		5.00nm			4.5mb
MBC	79.11	3	eP	10	20.50	3.8X
	0.8s		3.00nm			4.3mb
INK	85.55	9	eP	10	39.00	-11.1X

S.D. = 1.6 on 20 of 28 obs.

? DEC 10, 1989 13h 08m 16.70± 3.22s
40.609 N ±36.1km 123.802 W ±21.7km
DEPTH = 10.0km (geophysicist)
NORTHERN CALIFORNIA (36)
ML 2.9 (BRK).

FHC	0.24	324	iPc	08	21.70	-0.1
			eS	08	27.60	
WDC	0.96	91	iPd	08	34.30	-0.7
			iS	08	49.80	
LBFM	1.62	62	eP	08	46.00	0.3
MIN	1.70	98	eP	08	47.10	0.4
			eS	09	12.90	
ORV	2.06	120	e(P)	08	53.20	1.5X
KVN	4.66	108	e(P)	09	25.00	-3.9X

S.D. = 0.9 on 4 of 6 obs.

? DEC 10, 1989 13h 21m 20.91± 3.95s
31.258 S ±47.3km 67.653 W ± 9.6km
DEPTH = 10.0km (geophysicist)
SAN JUAN PROVINCE, ARGENTINA (137)

CFA	0.61	235	iPd	21	33.00	-0.2
ZON	0.92	252	eP	21	38.00	-0.6
			eS	21	50.00	
MRA	2.02	125	ePd	21	55.20	-0.1
JACH	2.87	240	eP	22	08.90	1.2
			iS	22	43.40	
FCH	3.04	227	iPd	22	11.00	0.8
			iS	22	44.70	
PEL	3.18	233	eP	22	11.00	-1.0
			iS	22	50.50	
SAN	3.36	229	iPc	22	18.00	3.5X
PCH	3.38	225	eP	22	15.50	0.7
			i	22	16.80	
			iS	22	55.50	
TACH	3.66	228	iPc	22	16.50	-2.3
			i	23	03.90	
			iS	23	05.00	
CHCH	3.68	223	eP	22	19.00	-0.1
			iS	23	03.70	
LNV	4.16	229	eP	22	27.00	1.2
			iS	23	19.00	

S.D. = 1.2 on 10 of 11 obs.

& DEC 10, 1989 14h 09m 32.38s
61.379 N 151.423 W
DEPTH = 64.1km
SOUTHERN ALASKA (2)
<AGS-P>.

SUA	0.34	75	P	09	43.61	0.1
NCG	0.35	274	iP	09	43.11	-0.5
			eS	09	51.47	
SPU	0.36	237	iP	09	43.25	-0.4
CRP	0.37	253	iP	09	43.52	-0.3
CKL	0.48	248	iP	09	44.26	-0.5
BGL	0.48	256	iP	09	44.16	-0.6
SKT	0.61	355	iP	09	45.02	-1.0
			eS	09	55.59	
NKA	0.64	172	eP	09	47.90	1.5
PWA	0.79	69	eP	09	47.96	-0.2
			eS	10	01.07	
RDT	0.94	211	iP	09	49.56	-0.6
			eS	10	03.68	
SLKM	1.05	146	eP	09	50.65	-0.9
CUT	1.17	27	eP	09	52.31	-0.7
GHO	1.26	71	eP	09	53.51	-0.9
NNL	1.34	177	eP	09	56.29	0.9
SEW	1.61	142	eP	09	58.58	-0.4
HUR	1.81	27	eP	10	01.26	-0.6
CNPM	1.86	177	eP	10	01.97	-0.6
SVW	2.05	264	eP	10	03.64	-1.6
PDB	2.10	222	eP	10	04.50	-1.4
GLI	2.16	102	eP	10	04.04	-2.7
KTH	2.19	6	eP	10	06.08	-1.2
NCA	2.28	72	eP	10	06.76	-1.7
RND	2.36	29	eP	10	09.01	-0.6
FID	2.49	103	eP	10	08.16	-3.1
TOA	2.60	71	eP	10	11.52	-1.5
MCK	2.63	25	eP	10	12.96	-0.4
KLU	2.65	85	eP	10	10.95	-2.7
CDD	2.70	205	eP	10	13.42	-0.9
PAX	3.22	58	eP	10	19.82	-1.8
NEA	3.38	17	eP	10	21.66	-2.3
WRH	3.46	25	eP	10	22.71	-2.2
CCB	3.67	25	eP	10	26.01	-1.9
RDS	3.77	22	eP	10	27.35	-2.0
FBA	3.90	23	eP	10	28.07	-3.0
GLM	4.06	25	eP	10	31.56	-1.9
BALM	4.41	90	eP	10	34.78	-3.6
IMA	4.81	349	eP	10	41.02	-3.1
INK	10.27	40	eP	11	56.00	-3.4

38 obs. associated

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* DEC 10, 1989 14h 16m 44.70± 1.16s
18.546 N ± 6.4km 145.664 E ±13.5km
DEPTH = 151.6 ± 10.8 km
4.9mb (6 obs.)
MARIANA ISLANDS (216)

GUMO	4.99	189	eP	17	59.30	0.5
	0.6s		246.91nm			
PJG	4.99	189	eP	17	59.20	0.4
GUA	5.03	188	ePd	17	59.00	-0.4
	0.8s		328.36nm			5.6mb
			eS	18	56.00	
IIDJ	18.21	339	eP	20	56.80	7.9X
CHJJ	18.40	343	P	20	50.30	-0.6
MAT	19.09	341	eP	20	58.00	-0.1
			(S)	22	00.00	
MTMJ	19.26	341	eP	20	58.60	-1.3
SSE	25.42	304	P	22	03.60	3.7X
	1.0s		9.00nm			4.3mb
			i	22	33.50	
PMG	27.82	177	eP	22	19.00	-2.7
MTN	34.33	206	ePd	23	18.00	-0.8
ASPA	43.50	196	iPd	24	34.70	0.0
	0.5s		40.00nm			5.3mb
			eS	30	50.80	
NNT	44.55	269	eP	24	46.20	2.9
DZM	45.20	152	iPc	24	49.90	1.5
BRS	46.18	171	iPc	24	57.80	1.8
MBL	46.88	214	eP	25	02.00	0.5
WARB	48.15	203	eP	25	12.00	0.6
	0.3s		10.00nm			5.0mb
NANU	50.37	217	eP	25	29.00	0.6
BWA	52.74	177	eP	25	45.30	-0.7
CAN	53.66	177	eP	25	45.30	-7.4X
COOL	54.51	206	eP	25	58.00	-1.0
MRWA	55.45	212	eP	26	05.20	-0.6
BAL	56.25	210	eP	26	11.00	-0.5
MUN	57.63	210	eP	26	21.00	-0.1
NWAO	57.95	208	eP	26	23.00	-0.4
RKG	59.02	208	eP	26	34.10	3.4X
INK	69.53	23	eP	27	38.00	-0.4
			pP	28	14.00	148kmX
MBC	73.31	14	eP	28	01.00	0.2
	0.6s		2.00nm			4.0mb
CMB	81.82	53	eP	28	49.70	1.4
LRM	84.87	43	eP	29	05.00	1.1
FFC	87.24	32	eP	29	15.00	0.0
	0.9s		12.00nm			4.8mb
CHCH	144.22	123	ePKP	36	03.50	-1.0
PEL	144.40	121	iPKPc	36	04.10	-0.7
	0.2s		55.56nm			
ZOBO	147.71	91	ePKP	36	11.00	-0.4
			i	36	15.00	
LPB	147.77	92	ePKP	36	15.00	3.7X
CNCB	147.92	92	PKP	36	17.00	5.3X

S.D. = 1.1 on 29 of 35 obs.

? DEC 10, 1989 14h 51m 09.04± 6 77s
33.922 S ±24.3km 72.091 W ±43.0km
DEPTH = 10.0km (geophysicist)
OFF COAST OF CENTRAL CHILE (134)

LNV	0.57	94	iPd	51	21.20	0.7
			iS	51	30.50	
LCCH	0.62	44	iPd	51	22.00	0.4
			iS	51	32.10	
TACH	1.00	75	iP	51	27.70	-0.3
			iS	51	42.60	
CHCH	1.20	91	iP	51	31.20	-0.2
			iS	51	47.00	
SAN	1.28	69	iPd	51	33.00	0.2
			iS	51	50.90	
ROCH	1.31	44	eP	51	33.20	-0.2
PCH	1.35	78	iP	51	33.00	-0.9
			iS	51	54.00	
PEL	1.41	57	iPd	51	35.00	0.2
			iS	51	55.10	
FCH	1.61	69	iPd	51	27.70	-10.3X
			iS	51	42.60	
JACH	1.76	46	eP	51	40.00	0.1
			iS	52	06.00	

S.D. = 0.5 on 9 of 10 obs.

? DEC 10, 1989 15h 37m 13.94± 3.24s
40.600 N ±35.6km 123.801 W ±21.7km
DEPTH = 10.0km (geophysicist)
NORTHERN CALIFORNIA (36)
ML 2.8 (BRK).

FHC	0.25	325	iPc	37	19.10	-0.1
			iS	37	25.80	
WDC	0.96	91	iPd	37	31.70	-0.5
			iS	37	47.20	
LBFM	1.63	62	eP	37	43.20	0.3
MIN	1.69	98	eP	37	44.20	0.3
ORV	2.05	120	e(P)	37	50.50	1.6X
KVN	4.65	108	e(P)	38	30.00	3.9X

S.D. = 0.7 on 4 of 6 obs.

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* DEC 10, 1989 15h 38m 31.31± 0.92s
10.969 N ±12.2km 62.480 W ± 7.9km
DEPTH = 33.0km (normal)
NEAR COAST OF VENEZUELA (97)
MD 3.1 (TRN).

TCE	0.76	111	eP	38	46.83	1.2
			eS	38	59.04	
TRN	1.10	107	ePc	38	50.45	0.0
			eS	39	05.43	
TPP	1.20	123	eP	38	51.82	0.0
			eS	39	08.67	
GRW	1.43	34	eP	38	55.90	0.6
			eS	39	15.24	
PIG	1.62	83	eP	38	57.64	-0.3
			eS	39	18.13	
CUM	1.73	253	iPc	38	59.40	-0.2
			iS	39	21.20	
BOT	1.74	83	eP	38	58.34	-1.3
			eS	39	19.96	

S.D. = 1.0 on 7 of 7 obs.

& DEC 10, 1989 15h 46m 59.90s
62.417 N 148.140 W
DEPTH = 10.6km
CENTRAL ALASKA (1)
<AGS-P>.

GHO	0.75	210	eP	47	13.79	-0.7
NCA	0.75	124	eP	47	13.81	-0.7
HUR	0.89	310	eP	47	15.93	-1.0
			eS	47	28.42	
PME	0.90	208	eP	47	15.90	-1.1
			eS	47	27.63	
CUT	0.99	270	eP	47	17.43	-1 2
RND	1.05	342	eP	47	18.23	-1.4
PAX	1.35	65	eP	47	22.59	-2.2
			eS	47	40.24	
MCK	1.37	345	eP	47	23.15	-1.8
KLU	1.40	130	eP	47	22.88	-2.6
			eS	47	42.23	
VZW	1.56	150	eP	47	24.86	-2.8
SUA	1.56	233	eP	47	26.30	-1.4
GLI	1.62	162	iP	47	26.37	-2.2
			eS	47	48.03	
SKT	1.65	256	eP	47	27.09	-1.8
KTH	1.71	313	eP	47	27.81	-2.0
DDM	1.72	36	eP	47	29.78	-0.3

10d 15h

FID	1.85	154	eP	47 30.08	-1.8
WRH	2.06	1	eP	47 32.67	-2.2
HDA	2.07	14	eP	47 32.96	-2.0
CGLM	2.14	240	eP	47 34.70	-1.5
SLKM	2.16	208	eP	47 35.15	-1.2
NEA	2.21	349	eP	47 35.39	-1.7
DOT	2.23	55	eP	47 35.32	-2.1
CCB	2.24	4	eP	47 34.82	-2.7
SEW	2.41	196	eP	47 37.92	-1.9
RDS	2.42	360	eP	47 37.11	-2.9
FBA	2.50	3	eP	47 38.02	-3.1
GLM	2.60	7	eP	47 39.99	-2.7
RDT	2.76	230	eP	47 42.53	-2.4
TGL	3.04	121	eP	47 47.91	-1.0
BALM	3.09	114	eP	47 46.30	-3.3
CNPM	3.27	209	eP	47 49.64	-2.5
INK	8.48	40	eP	49 01.00	-4.4

32 obs. associated

? DEC 10, 1989 16h 30m 16.04± 5.22s
34.108 S ±23.1km 72.435 W ±35.0km
DEPTH = 10.0km (geophysicist)
NEAR COAST OF CENTRAL CHILE (135)

LNV	0.86	80	iPd	30 33.10	0.5
			iS	30 42.50	
LCCH	0.96	49	iPd	30 34.50	0.2
			iS	30 45.00	
TACH	1.33	70	iPc	30 40.00	-0.5
			iS	30 54.80	
CHCH	1.49	84	iPd	30 43.00	0.1
SAN	1.61	67	iPd	30 45.00	0.3
			iS	31 03.10	
ROCH	1.64	47	iP	30 45.00	-0.3
PCH	1.67	74	iPc	30 45.20	-0.4
			iS	31 04.50	
PEL	1.75	57	iPc	30 46.00	-0.6
			iS	31 06.90	
FCH	1.95	67	iPd	30 49.90	0.1
			i	31 14.00	
JACH	2.10	48	iPc	30 52.30	0.6
			iS	31 16.70	

S.D. = 0.5 on 10 of 10 obs.

? DEC 10, 1989 16h 35m 23.74± 2.61s
11.049 S ±22.9km 121.126 E ±22.1km
DEPTH = 33.0km (normal)
SOUTH OF TIMOR (293)

KUG	2.58	70	eP	36 03.50	-0.5
			eS	37 23.00	
KNA	8.78	123	eP	37 30.50	-0.9
			eS	39 20.00	
MTN	9.95	101	eP	37 39.00	-8.6X
			eS	39 39.00	
MBL	10.13	187	eP	37 49.50	-0.6
NANU	12.64	204	eP	38 18.00	-6.0X
ASPA	17.48	138	eP	39 27.50	0.8
			eS	42 55.40	
MRWA	18.70	194	eP	39 41.60	-0.2
			eS	43 14.00	
BRS	33.88	123	iPd	42 07.20	1.4

S.D. = 1.2 on 6 of 8 obs.

& DEC 10, 1989 17h 24m 18.20s
40.577 N 123.822 W
DEPTH = 8.0km
NORTHERN CALIFORNIA (36)
<BRK>. ML 3.3 (BRK). Felt (IV)
at Arcata and McKinleyville.

FHC	0.26	331	iPc	24 23.70	0.2
			iS	24 28.90	
WDC	0.98	89	iPd	24 36.30	-0.6
			iS	24 51.40	
LBFM	1.65	62	eP	24 47.80	0.0
MIN	1.71	97	iPc	24 49.10	0.5
			eS	25 14.80	
ORV	2.05	119	ePd	24 54.50	1.1
NWRM	2.24	161	eP	25 02.10	6.0
BRK	2.96	155	e(P)	25 08.60	2.3
PCC	3.27	159	e(P)	25 08.70	-2.1
MHC	3.65	152	eP	25 15.60	-0.7
CMB	3.68	132	e(P)	25 20.60	3.9
KVN	4.66	107	eP	25 32.40	1.7
VGB	5.42	23	eP	25 40.20	-1.0
TNP	5.69	114	eP	25 48.00	2.7
SHW	5.73	11	eP	25 44.00	-1.7
BMW	5.91	4	eP	25 45.70	-2.5
LON	6.34	13	eP	25 52.30	-2.0

16 obs. associated

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* DEC 10, 1989 18h 41m 28.34± 1.98s
16.090 N ±11.0km 61.014 W ±21.3km
DEPTH = 33.0km (normal)
LEEWARD ISLANDS (92)
ML 1.9 (FDF).

DEG	0.23	349	ePc	41 35.14	-0.1
MGG	0.34	240	ePd	41 36.25	-0.3
			S	41 39.80	
SEG	0.56	303	eP	41 40.20	0.3
			S	41 48.20	
PAG	0.64	265	eP	41 40.80	-0.2
			S	41 48.20	
BBL	0.72	218	ePd	41 42.40	0.3
			S	41 50.30	

S.D. = 0.5 on 5 of 5 obs.

& DEC 10, 1989 18h 51m 17.59s
60.215 N 153.579 W
DEPTH = 176.4km.
SOUTHERN ALASKA (2)
<AGS-P>.

RED	0.45	63	eP	51 41.34	0.8
PDB	0.53	216	eP	51 41.08	-1.2
RDT	0.68	58	eP	51 42.36	-0.9
AUL	0.84	175	eP	51 43.72	-0.4
NNL	1.16	98	eP	51 46.54	0.1
CKL	1.16	31	iP	51 45.96	-0.7
SPU	1.23	37	eP	51 46.09	-1.0
NKA	1.27	64	eP	51 47.86	0.4
CDD	1.29	181	eP	51 46.63	-1.0
CNPM	1.37	119	eP	51 47.83	-0.5
SLKM	1.69	79	eP	51 49.80	-1.8
SUA	1.87	47	eP	51 52.14	-1.4
SEW	2.07	91	eP	51 54.55	-0.9

13 obs. associated

? DEC 10, 1989 19h 55m 25.38± 0.94s
55.600 N ±13.1km 98.396 E ±14.2km
DEPTH = 33.0km (normal)
4.2mb (4 obs.)
CENTRAL USSR (326)

WMO	13.65	215	eP	58 40.00	1.1
			eS	01 03.00	
GTA	16.23	176	eP	59 11.00	-1.4
HHC	17.12	144	eP	59 24.80	1.2
BJI	19.52	135	eP	59 54.00	1.3
TIY	20.25	146	eP	59 57.00	-3.5X
	E 10s		0.40um		
			e	59 57.50	
CN2	20.95	113	Pc	00 11.20	3.6X
SNY	21.43	119	eP	00 11.40	-1.0
CHTO	36.73	179	eP	02 29.90	-1.3
	1.0s		0.75nm	3.5mb	
HFS	42.35	312	eP	03 17.00	-0.4
	0.5s		2.30nm	4.2mb	
NB2	42.88	314	P	03 22.20	0.5
	0.6s		4.80nm	4.4mb	
MBC	46.21	12	eP	03 53.00	4.8X
	0.5s		2.00nm	4.3mb	
INK	50.64	22	eP	04 27.00	4.4X

S.D. = 1.3 on 8 of 12 obs.

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* DEC 10, 1989 20h 15m 49.41± 1.70s
23.763 N ± 8.5km 121.854 E ±14.5km
DEPTH = 10.0km (geophysicist)
TAIWAN (244)

TWD	0.39	323	iPc	15 57.00	-0.5
			eS	16 03.40	
TWF1	0.65	231	iPc	16 02.30	-0.2
			eS	16 12.30	
TWC	0.84	360	iPc	16 05.70	0.1
			eS	16 17.70	
TWQ	1.06	299	ePc	16 09.90	0.5
			eS	16 25.00	
TWK	1.35	249	ePc	16 14.30	0 0
TWZ	1.35	349	eP	16 14 00	-0.3
ANP	1.45	348	eP	16 16 00	0.3
SSE	7.33	356	e(P)	17 46.80	7.8X
			eLg	20 03.60	

S.D. = 0.4 on 7 of 8 obs.

? DEC 10, 1989 21h 06m 55.54± 6.63s
18.386 N ±34.2km 67.011 W ±51.3km
DEPTH = 33.0km (normal)
MONA PASSAGE (89)

LRS	0.18	120	P	07 02.20	0.2
PORP	0.49	133	P	07 05.40	-0.6
SJG	0.86	108	iP	07 12.00	0.7
LPR	1.09	94	P	07 13.60	-0.9
CPD	1.10	108	P	07 15.30	0.6

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

? DEC 10, 1989 21h 14m 17.30± 1.30s
14.370 N ±24.9km 56.167 E ±11.4km
DEPTH = 10.0km (geophysicist)
4.6mb (7 obs.)
ARABIAN SEA (417)

POO	17.46	74	eP	18 24.50	1.9
BHD	21.65	332	ePd	19 10.00	0 1
HYB	21.74	79	eP	19 09.00	-2.0
MAIO	22.04	7	eP	19 15.00	1.1
SLY	23.21	337	eP	19 31.50	6.2X
			eS	23 48.00	
MBH	24.91	311	eP	19 44.00	2.1
BCAO	38.36	259	iPc	21 42.00	1.4
	0.6s		5.00nm	4.4mb	
LPG	51.78	317	eP	23 26.70	-1.0
	0.8s		5.90nm	4.6mb	
LBF	54.09	318	eP	23 43.60	-0.9
	0.8s		6.70nm	4.7mb	
LOR	54.26	318	eP	23 44.70	-1.0
	0.8s		5.90nm	4.7mb	
SSF	54.42	318	eP	23 45.90	-1.0
	0.8s		2.60nm	4.3mb	
BGF	54.69	317	eP	23 48.20	-0.7
	0.8s		6.70nm	4.7mb	
MBC	89.53	359	ePc	27 15.70	0.0
	0.9s		7.00nm	4.9mb	

S.D. = 1.5 on 12 of 13 obs.

? DEC 10, 1989 21h 29m 29.56± 2.51s
2.130 S ±16.1km 151.984 E ±26.1km
DEPTH = 68.7 ± 27.6 km
4.3mb (4 obs.) 3.6Msz (1 obs.)
NEW IRELAND REGION (190)

RAB	2.06	175	eP	30 01.00	-1.6
PMG	8.68	213	eP	31 37.00	2.1
CTA	18.71	197	iP	33 46.40	1.1
	0.8s		7.46nm	4.0mb	
WB5	24.65	223	iPd	34 46.00	0.7
ASPA	27.66	218	iPc	35 11.90	-1.2
	0.7s		6.00nm	4.3mb	
	Z 20s		0.15um	3.6Msz	
			LR	45 51.10	
WARB	34.13	223	eP	36 09.00	-1.1
	0.5s		8.00nm	4.9mb	
CN2	51.55	336	eP	38 31.60	1.0
GYA	52.15	306	P	38 35.80	0.1
TIY	53.94	321	eP	38 52.70	4.1X
XAN	54.15	316	P	38 48.80	-1.3
CHTO	56.13	294	eP	39 04.00	-0.7
	1.2s		3.82nm	4.3mb	
GTA	63.16	317	Pc	39 57.60	4.8X
WMO	73.24	317	P	40 55.50	0.1
GBA	75.51	285	Pc	41 08.20	-0.6
INK	86.27	21	eP	42 06.00	1.4

S.D. = 1 4 on 13 of 15 obs.

% DEC 10, 1989 22h 49m 03.13± 0.78s
38.094 N ± 7.9km 5.034 W ± 8.4km
DEPTH = 10.0km (geophysicist)
SPAIN (377)
mbLg 3.0 (MDD).

EHOR	0.32	212	iPgc	49 09.20	-0.6
			eSg	49 15.60	
EBAN	0.99	86	iPg	49 17.80	-4.1X
			eSg	49 30.40	
EPRU	1.14	188	ePn	49 25.50	1.1
			eSn	49 44.00	
EVAL	1.45	250	ePn	49 29.20	-0.2
			eSn	49 48.20	

AFC	1.45	125	ePn	49 29.00	-0.5
			eSn	49 49.20	
EVIA	2.06	74	ePg	49 38.30	0.0
			eSg	50 03.00	
GUD	2.64	15	ePg	49 46.80	0.2
			eSg	50 16.00	

S.D. = 0.8 on 6 of 7 obs.

? DEC 11, 1989 00h 14m 02.07± 8.24s
61.509 N ±40.3km 2.658 E ±55.2km
DEPTH = 10.0km (geophysicist)
NORWEGIAN SEA (642)
MD 2.1 (BER).

SUE	1.11	113	iP	14 21.96	-0.9
			iS	14 26.36	
ASK	1.61	129	eP	14 30.06	-0.5
			eS	14 39.28	
HYA	1.74	100	iPc	14 32.98	0.6
			eS	14 46.39	
ODD1	2.52	128	iP	14 45.41	1.6
			eS	15 01.36	
KMY	2.64	150	eP	14 44.04	-1.3
			eS	15 07.60	
BLS1	2.96	134	eP	14 51.00	0.9
			eS	15 13.86	
NRA0	4.38	96	iPc	15 09.00	-1.1
			eS	15 48.90	
			iSg	16 05.90	

S.D. = 1.4 on 7 of 7 obs.

? DEC 11, 1989 00h 57m 50.88± 1.03s
37.614 N ± 8.0km 2.580 W ±10.4km
DEPTH = 10.0km (geophysicist)
SPAIN (377)
MD 2.8 (BER).

ENIJ	0.70	156	ePg	58 04.60	-0.2
			eSg	58 14.00	
AFC	0.85	245	ePg	58 07.80	0.5
			eSg	58 18.20	
EVIA	1.02	3	iPg	58 10.60	0.3
			eSg	58 24.30	
EBAN	1.10	300	iPg	58 11.00	-0.6
			eSg	58 24.90	

S.D. = 0.8 on 4 of 4 obs.

DEC 11, 1989 02h 46m 16.70± 1.15s
35.965 N ± 6.5km 119.932 W ± 8.9km
DEPTH = 5.0km (geophysicist)
CENTRAL CALIFORNIA (39)
ML 2.5 (BRK).

PKEM	0.17	304	eP	46 21.50	1.2
PHAM	0.40	251	eP	46 25.00	0.3
PRI	0.62	287	ePc	46 29.40	0.3
			iS	46 39.30	
BCH	0.79	189	eP	46 32.70	0.1
FRI	1.04	10	eP	46 36.90	0.1
			iS	46 50.90	
LLA	1.04	309	eP	46 36.70	-0.2
PRS	1.22	288	eP	46 38.60	-1.3
SAO	1.46	304	eP	46 43.10	-0.6
KVN	3.41	25	eP	47 21.50	9.7X

S.D. = 0.9 on 8 of 9 obs.

DEC 11, 1989 03h 01m 17.69± 0.57s
28.659 N ± 5.9km 51.174 E ± 9.7km
DEPTH = 33.0km (normal)
4.2mb (3 obs.)
SOUTHERN IRAN (353)

BBU	2.52	195	ePn	01 57.60	0.5
			iSn	02 42.70	
BRF	2.63	192	(Pn)	01 58.00	-0.7
			eSn	02 42.60	
RYD	5.66	227	iPd	02 42.50	0.7
OASM	7.26	251	eP	03 04.20	0.0
BHD	7.42	310	eP	03 56.00	49.6X
			eS	05 23.00	
KMSA	10.25	218	eP	03 42.30	-3.3X
MSL	10.25	321	eP	03 46.00	0.4
MAIO	10.36	41	eP	03 48.00	0.8
			eS	05 36.00	
PRNI	14.19	281	eP	04 48.50	10.1X
MBH	14.28	278	eP	04 49.00	9.5X
BCAO	39.24	238	ePd	08 48.70	3.7X
	0.6s		4.00nm		4.4mb
HFS	40.35	332	eP	08 53.50	-0.1
	0.4s		2.20nm		4.3mb
SOD	41.47	346	eP	09 03.00	0 3
NB2	41.87	332	P	09 05.50	-0 6
	0.9s		2.50nm		3.9mb
LKO	56.38	262	P	11 05.30	6.8X
FRB	76.49	337	eP	13 05.00	-0.6
INK	83.27	2	eP	13 41.00	-0.8

S.D. = 0.7 on 11 of 17 obs.

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* DEC 11, 1989 03h 11m 16.23± 1.29s
46.554 N ±10.4km 14.407 E ± 9.7km
DEPTH = 10.0km (geophysicist)
YUGOSLAVIA (383)
ML 2.2 (KBA). MD 2.4 (LJU). Felt southeast of Klagenfurt, Austria.

LJU	0.52	170	ePg	11 25.50	-1.2
			eSg	11 32.00	
VOY	0.63	214	ePg	11 28.20	-0.8
			eSg	11 35.60	
KBA	0.90	306	iPgd	11 33.30	-0.3
			iSg	11 45.40	
TRI	0.96	208	e(P)	11 36.20	1.8
			i	11 46.70	
FVI	1.12	273	P	11 43.50	6.3X
			eSg	11 54.20	
VBY	1.20	150	e(Pg)	11 38.80	0.1
			e(Sg)	11 55.50	
PTJ	1.26	121	eP	11 40.10	0.4

S.D. = 1.4 on 6 of 7 obs.

& DEC 11, 1989 03h 42m 16.84s
59.232 N 152.051 W
DEPTH = 74.6km
SOUTHERN ALASKA (2)
<AGS-P>.

XLV	0.28	37	eP	42 27.53	-1.0
CNPM	0.51	54	eP	42 29.97	-0.4
			eS	42 39.73	
CDD	0.88	250	eP	42 33.41	-1.0
			eS	42 46.12	
NNL	0.90	25	eP	42 34.78	0.2
PDB	1.23	298	eP	42 37.47	-1.2
			eS	42 53.31	
RED	1.25	343	eP	42 38.27	-0.8
KDC	1.51	189	eP	42 40.31	-2.1
NKA	1.57	15	eP	42 44.22	1.0
SLKM	1.58	35	eP	42 42.60	-0.8
SEW	1.58	55	eP	42 42.40	-1.0
SPU	1.96	360	eP	42 47.80	-0.8
SUA	2.33	16	eP	42 52.97	-0.9
SKT	2.77	5	eP	42 58.89	-0.9
PME	2.83	31	eP	42 59.44	-1.2
GHO	2.98	30	eP	43 01.51	-1.3

15 obs. associated

? DEC 11, 1989 03h 48m 25.85± 5.63s
9.103 S ±46.1km 128.485 E ±16.4km
DEPTH = 163.8 ± 40.0 km
4.6mb (2 obs.)
TIMOR SEA (290)

MTN	4.54	145	iPd	49 33.80	-0.4
KNA	6.61	178	eP	50 03.50	1.8
			eS	51 27.00	
WB5	12.13	153	eP	51 13.10	-1.4
			eS	53 33.50	
MBL	14.60	214	eP	51 46.00	0.1
			eS	54 29.00	
ASPA	15.38	161	iPc	51 57.00	1.4
	0 6s		26.00nm		4.8mb
			eS	54 54.70	
QIS	15.65	138	eP	51 58.00	-0.9
			eS	54 53.00	
WARB	17.08	186	eP	52 20.00	3.6X
	0.3s		5.00nm		4.3mb
			eS	55 34.00	
NANU	18.27	221	eP	52 28.00	-1.7
			eS	55 55.00	
CTA	20.35	124	eP	52 57.00	5.7X
CNCB	149.54	148	PKPc	07 54.80	0.8
LPB	149.70	147	ePKP	07 54.00	-0.1
ZOBO	149.90	147	PKP	07 55 00	0.4
CCH	149.97	151	ePKP	07 57.00	2.7X

S.D. = 1.4 on 10 of 13 obs.

& DEC 11, 1989 04h 19m 57.42s
60.017 N 153.237 W
DEPTH = 125.8km
SOUTHERN ALASKA (2)
<AGS-P>.

RED	0.47	30	iP	20 15.50	-0.7
PDB	0.53	245	iP	20 15.46	-1.0
			eS	20 29.76	
AUL	0.64	189	eP	20 16.54	-0.7
RDT	0.70	36	iP	20 17.01	-0.7
			eS	20 32.51	
NNL	0.97	88	eP	20 20.26	0.3
CDD	1.11	191	iP	20 20.05	-1.3
CNPM	1.13	115	iP	20 20.62	-0.9
			eS	20 38.68	
NKA	1.23	53	eP	20 23.57	1.0
SPU	1.31	26	iP	20 22.99	-0.5
			eS	20 43.04	
SLKM	1.58	71	eP	20 25.35	-1.2
SUA	1.90	39	eP	20 29.72	-0.8
			eS	20 55.07	
SEW	1.90	86	eP	20 28.78	-1.6
			eS	20 53.54	
SKT	2.14	22	eP	20 32.34	-1.0
PMS	2.19	54	eP	20 33.66	-0.4
			eS	20 59.88	
GHO	2.75	48	eP	20 39.08	-2.2
CUT	2.79	30	eP	20 40.48	-1.3
KTH	3.72	16	eP	20 52.34	-1.8
KLU	3.88	64	eP	20 53.78	-2.6
RND	3.99	30	eP	20 55.78	-2.1
MCK	4.25	27	eP	20 59.67	-1.6
PAX	4.76	48	eP	21 06.04	-2.2
NEA	4.97	21	eP	21 08.51	-2.5
DDM	5.14	39	eP	21 12.21	-1.2
RDS	5.37	24	eP	21 13.81	-2.7

24 obs. associated

DEC 11, 1989 04h 46m 05.72± 0.93s
43.975 N ± 6.2km 139.722 E ± 4.3km
DEPTH = 227.9 ± 9.4 km
4.7mb (39 obs.)
EASTERN SEA OF JAPAN (223)

MDJ	7.30	279	eP	47 51.70	1.1
			S	49 17.00	
MAT	7.51	189	iPd	47 52.70	-0.7
	0.8s		253.73nm		5.4mb
			eS	49 15.00	
CN2	10.31	274	Pc	48 30.00	0.6
	1.0s		0.01nm		1.0mb X
SNY	12.04	265	eP	48 52.60	1.4
BJI	17.92	265	eP	50 00.00	-1.0
	1.0s		24.00nm		4.6mb
			eS	53 11.00	
TIA	18.91	254	eP	50 09.30	-2.0
HHC	20.98	271	P	50 31.60	-0.5
TIY	21.51	262	eP	50 37.00	-0.3
LZH	28.41	266	P	51 40.00	-1.2
GTA	29.94	275	Pd	51 54.20	-0.4
WMQ	36.97	288	P	52 55.00	0.4
CHG	42.30	247	eP	53 39.50	1.0
CHTO	42.30	247	iPd	53 39.80	1.3
	0.6s		9.25nm		4.4mb
			pP	54 30.70	242kmX
SHL	42.72	261	iP	53 42.80	0.7
			eS	58 58.50	
KSH	46.75	288	P	54 14.50	0.6
INK	48.89	30	ePd	54 28.70	-1.0
	0.4s		27.00nm		5.0mb
NDI	51.45	275	iPd	54 49.00	-0.7
	0.6s		30.00nm		5.0mb
KEV	56.52	337	iP	55 24.20	-1.7
	0.7s		26.70nm		5.0mb
SOD	58.10	335	iP	55 35 40	-1.5
TRO	58.75	339	eP	55 39.80	-1.6
GBA	60.78	260	P	55 55.00	-0.8
LOF	61.19	340	iP	55 55.76	-2.2
NUR	63.26	330	iP	56 10.80	-0.8
	0.7s		72.10nm		5.6mb
WB5	63.73	186	eP	56 13.60	-1.4
			e	56 48.90	
PNT	64.16	46	eP	56 17.00	-0.7

11d 04h

	0.8s	10.00nm		4.6mb		
NSS	64.36	338 eP	56 17.20	-1.5		
FHC	67.03	55 ePc	56 38.60	2.5		
MOL	67.12	338 iPc	56 35.53	-0.7		
HFS	67.26	334 eP	56 35.50	-1.7		
	0.6s	48.20nm		5.4mb		
NB2	67.32	336 P	56 36.20	-1.3		
	0.7s	36.30nm		5.2mb		
ASPA	67.52	186 iPc	56 38.90	-0.2		
	0.7s	11.00nm		4.7mb		
SES	67 70	41 iPc	56 39.80	-0.3		
WDC	68.02	54 ePc	56 42.30	0.1		
MIN	68.72	54 ePc	56 46.10	-0.5		
ORV	69.29	55 ePc	56 50.00	0.1		
AKU	69.33	350 iP	56 51.20	1.5		
	0.9s	20.17nm		4.9mb		
BRK	69.92	57 eP	56 53.90	0.1		
LRM	70.12	45 eP	56 55.70	0.5		
FRB	70.31	13 eP	56 55.00	-0.7		
	0.5s	30.00nm		5.3mb		
CMB	70.94	55 ePc	57 00.30	0.3		
PRS	71.47	57 ePc	57 03.20	0.1		
LLA	71.54	57 ePc	57 03.70	0.2		
BRS	72.02	168 iP	57 07.00	0.8		
PRI	72.02	57 ePc	57 07.10	0.6		
FRI	72.03	56 eP	57 06.10	-0.2		
KRA	72.67	324 iPd	57 10.10	0.3		
	0.8s	33.00nm		5.1mb		
SYP	73.51	58 eP	57 20.00	4.8X		
KSP	73.57	327 iPd	57 15.20	0.2		
CLC	74.08	56 eP	57 19.00	0.6		
BRG	74.46	328 iP	57 20.10	-0.1		
CLL	74.47	329 iPd	57 20.10	-0.1		
	0.9s	40 00nm		5.1mb		
SBB	74.71	57 eP	57 22.00	0.0		
PAS	74.87	57 eP	57 15.00	-7.8X		
MWC	74.89	57 eP	57 23.00	-0.1		
GSC	74.90	55 eP	57 23.00	-0.1		
PRU	74.93	327 eP	57 16.00	-6.9X		
		e	57 23.40			
SRO	75.08	323 e(P)	57 24.50	0.8		
BZS	75.28	320 eP	57 25.00	0.1		
RVR	75.46	57 eP	57 25.00	-1.1		
MOX	75.53	329 eP	57 27.00	0.8		
KHC	75.99	327 iPd	57 30.30	1.4		
	1.0s	14.00nm		4.6mb		
WTS	76.12	332 eP	57 30.00	0.6		
	0.9s	21.00nm		4.9mb		
TPC	76.18	56 eP	57 30.00	-0.2		
EKA	76.18	339 Pd	57 29.70	-0.1		
	0.7s	8.20nm		4.6mb		
PLM	76.21	57 eP	57 30.00	-0.6		
GRF	76.45	328 iPd	57 32.50	1.1		
	0.8s	27.00nm		5.0mb		
BAR	76.79	57 eP	57 34.00	0.5		
ENN	77.46	332 eP	57 37.00	0.2		
	0.8s	15.00nm		4.8mb		
DLE	78.88	340 eP	57 45.00	0.5		
CDF	78.97	330 eP	57 45.40	0.1		
	0.8s	6.40nm		4.4mb		
OHR	79.08	318 eP	57 45.00	-1.0		
PRNI	79.10	302 eP	57 47.00	0.8		
MBH	79.57	301 eP	57 49.00	0.4		
BSF	79.63	330 eP	57 48.70	-0.1		
HAU	79.65	330 eP	57 48.80	0.0		
	0.8s	5.30nm		4.3mb		
LOR	81 15	331 eP	57 56.70	0.0		
	0.6s	9.30nm		4.7mb		
FLN	81 27	335 eP	57 57.00	-0 2		
	0.6s	5.40nm		4.5mb		
LDF	81.31	334 eP	57 57.40	0.0		
	0.7s	5.20nm		4.4mb		
LBF	81.36	331 eP	57 57.60	-0.2		
	0.6s	6.30nm		4.5mb		
SSF	81.45	331 eP	57 58.30	0.1		
	0.8s	4.50nm		4.3mb		
LPG	81.62	329 eP	58 00.10	0.6		
	0.6s	7.20nm		4.6mb		
SMF	81.70	331 eP	57 59.60	0.1		
	0.8s	10.70nm		4.6mb		
GRR	81.72	335 eP	57 59.80	0.2		
	0.7s	13.20nm		4.8mb		
AVF	81.74	331 eP	57 59.80	0.1		
LPF	82.09	335 eP	58 01.90	0.4		
	0.8s	10.70nm		4.6mb		
MAF	82.51	332 eP	58 04.30	0.6		
	0.6s	10.80nm		4.8mb		

TCF	82.57	332 eP	58 04.50	0.4		
	0.8s	8.00nm		4.5mb		
LSF	82.83	332 eP	58 05.80	0.4		
	0.7s	12.50nm		4.8mb		
MFF	83.08	333 eP	58 07.20	0.6		
	0.6s	7.90nm		4.6mb		
CAF	83.81	331 eP	58 11.40	1.1		
	0.6s	3.00nm		4.2mb		
LFF	84.25	332 eP	58 13.50	1.0		
	0.6s	3.60nm		4.3mb		
LPO	84.32	332 eP	58 13.80	0.9		
	0.6s	5.40nm		4.5mb		
EPF	86.07	331 eP	58 22.00	0.4		
	0.6s	5.70nm		4.6mb		
ZOBO	143.68	49 ePKP	05 13.00	-2.8X		
LPB	143.91	49 PKP	05 19.00	3.0X		
CNCB	144.20	50 PKP	05 17.00	0.3		
CCH	145.67	48 PKP	05 20.90	2.1X		
	S.D. = 0.9	on 91 of 97 obs.				

% DEC 11, 1989 05h 32m 34.78± 0.72s
44.303 N ± 6.4km 7.359 E ± 5.9km
DEPTH = 11.4km (geophysicist)
NORTHERN ITALY (545)
ML 2.3 (GEN).

STV	0.06	203 P	32 37.27	-0.1		
		S	32 38.81			
ENR	0.09	150 P	32 37.78	0.1		
		S	32 39.73			
ROB	0.37	91 P	32 42.70	0.3		
		S	32 48.45			
IMI	0.55	136 P	32 45.88	0.0		
		S	32 53.68			
FIN	0.62	98 P	32 46.70	-0 4		
		S	32 55.93			
RRL	0.74	327 P	32 49.37	0.0		
		S	32 57.78			
PCP	0.88	74 P	32 51.62	0.0		
		S	33 04.13			
	S.D. = 0.3	on 7 of 7 obs.				

DEC 11, 1989 07h 07m 59.30± 0.74s
37.087 N ± 8.3km 27.951 E ± 6.5km
DEPTH = 10.0km (geophysicist)
TURKEY (366)

YER	0.27	80 iPg	08 03.50	-1.5		
		eSg	08 07.50			
SMG	1.08	305 ePb	08 20.00	0.4		
IZM	1.42	338 ePn	08 24.90	-0.2		
ELL	1.60	102 ePn	08 28.00	0.1		
KSL	1.63	126 ePb	08 28.90	0.8		
KAP	1.66	202 ePb	08 27.80	-0.7		
KHL	1.75	45 iPn	08 29.80	-0.2		
BCK	2.14	79 ePn	08 37.00	1.4		
	S.D. = 1.1	on 8 of 8 obs.				

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* DEC 11, 1989 07h 08m 11.27± 1.58s
31.301 S ±13.0km 68.480 W ±10.6km
DEPTH = 105.4 ± 16.4 km
SAN JUAN PROVINCE, ARGENTINA (137)

RTLL	0.03	163 iPc	08 25.80	-0.5		
ZON	0.30	215 iPd	08 26.50	-0.3		
		eS	08 37.00			
RTCB	0.33	236 e(P)	08 27.20	0.2		
RTRS	1 41	323 iPc	08 37.50	0.5		
FCH	2.54	217 eP	08 53.80	1 8		
		iS	09 26.20			
MRA	2 60	116 iPc	08 52.50	0.0		
PEL	2.62	225 iPd	08 53.00	0.2		
		iS	09 24.50			
ROCH	2.72	232 iPd	08 54.40	0.1		
		iS	09 29.70			
PCH	2.88	216 iPd	08 57.90	1 5		
		id	09 30.00			
		iS	09 33.90			
TACH	3.13	221 eP	08 59.30	-0 4		
		iS	09 38.00			
CHCH	3.20	214 iPd	09 01.00	0.3		
		iS	09 39.80			
LCCH	3.40	230 iPc	09 02.20	-1.1		
		i	09 33.90			
		iS	09 40.00			
LNV	3.62	222 iPd	09 04.10	-2.2		
		iS	09 38.10			

S.D. = 1.2 on 13 of 13 obs.

& DEC 11, 1989 07h 11m 50.83s
67.528 N 150.099 W
DEPTH = 10.0km (geophysicist)
ALASKA (676)
<AGS-P>.

IMA	2.04	226 eP	12 25.57	-0 1		
GLM	2.78	155 eP	12 35.55	-0.7		
FBA	2.80	159 eP	12 36.70	0.2		
RDS	2.83	163 eP	12 37.05	0.2		
NEA	2.99	172 eP	12 37.92	-1 2		
CCB	3.04	161 eP	12 39.43	-0.4		
WRH	3.18	164 eP	12 41.29	-0.5		
HDA	3.39	156 eP	12 44.30	-0.5		
DDM	4.15	153 eP	12 54.79	-0.8		
	9 obs. associated					

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* DEC 11, 1989 07h 38m 01.84± 1.58s
10.141 N ± 7.7km 126.229 E ±12.9km
DEPTH = 114.3 ± 16.9 km
4.3mb (3 obs.)
PHILIPPINE ISLANDS REGION (248)

DAV	3.10	192 eP	38 50.40	0.4		
BAG	8.31	319 eP	39 55.10	-6.2X		
		eS	42 20.00			
OZH	16.41	335 eP	41 46.50	-0.3		
GUMO	18.56	78 eP	42 12.00	-0.6		
SSE	21.37	348 Pc	42 41.20	-0.2		
	1.0s	28.00nm		4.6mb		
Z	20s	0.30um		3.7Msz		
		sP	42 54.00			
		eS	46 39.00			
		sS	46 44.00			
NJ2	22.85	344 Pc	42 57.00	1.1		
Z	16s	0.30um		3.8MszX		
CHTO	27.76	291 eP	43 42.10	0.2		
	0.8s	2.38nm		3.9mb		
XAN	28.59	329 P	43 47.70	-1.6		
TIY	30.13	338 eP	44 02.40	-0.6		
Z	16s	0.60um		4.3MszX		
WB5	30.89	165 eP	44 06.30	-3.4X		
HHC	33.22	339 P	44 31.10	1.1		
ASPA	34.43	167 iPc	44 37.70	-2.7		
CTA	35.93	147 eP	44 56.00	2.9		
GTA	37.46	325 eP	45 05.60	-0.4		
KLB	42.28	191 eP	45 45.00	-0.6		
MUN	42.96	193 eP	45 51.10	-0.1		
NWAO	43.68	191 eP	45 57.00	0.1		
RKG	44.83	191 eP	46 11.00	4.8X		
HYB	46.77	284 eP	46 22.00	0.2		
GBA	47.81	279 P	46 30.50	0.5		
INK	84.42	22 eP	50 32.00	9.7X		
HFS	92.14	332 (P)	51 00.20	0.9		
	0.5s	1.10nm		4.4mb		
	S.D. = 1.3	on 18 of 22 obs.				

DEC 11, 1989 08h 56m 39.26± 0.39s
38.372 N ± 3.9km 25.092 E ± 3.4km
DEPTH = 9.6 ± 2.3 km
AEGEAN SEA (365)
ML 3.9 (THE), 3.8 (ATH).

ATH	1.16	250 ePn	57 01.10	0.2		
PRK	1.27	46 ePb	57 04.00	1.2		
APE	1.35	165 ePn	57 03.60	-0.5		
SMG	1.53	115 ePn	57 06.80	0.2		
IZM	1.71	88 ePn	57 09.70	0.4		
NEO	1.73	303 ePn	57 09.20	-0.5		
EZN	1.74	33 iPn	57 09.50	-0 2		
PLG	2.37	328 ePn	57 19.00	0.1		
VLI	2.38	227 ePn	57 19.30	0.3		
LIT	2.66	311 eP	57 22.00	-1.0		
		eS	58 17.50			
RDO	2.79	7 ePn	57 24.50	-0.3		
THE	2.79	325 eP	57 25.50	0.7		
EDC	2.92	47 ePn	57 26.50	-0.1		
MFT	2.95	34 ePn	57 29.00	1.9		
SRS	2.98	338 eP	57 27.60	0.2		
DST	3.02	65 ePn	57 27.80	-0.3		
KZN	3.22	308 ePn	57 32.00	1.0		
KAP	3.27	149 ePn	57 31.00	-0.7		
KDZ	3.28	4 iPd	57 32.00	0.2		
		iSg	58 18.00			
GRG	3.31	322 eP	57 32.50	0.2		

RZN	3.32	355	iP	57 32.00	-0.6
MMB	3.38	342	ePc	57 32.00	-1.2
KHL	3.48	89	ePn	57 36.00	1.3
VAY	3.53	327	ePn	57 35.70	0.5
VLS	3.55	268	ePn	57 37.50	1.9
DIM	3.69	5	eP	57 38.00	0.4
PLD	3.74	356	eP	57 39.00	0.7
KKB	3.81	337	eP	57 40.00	0.6
YLV	3.97	55	ePn	57 44.00	2.4
ALT	3.98	79	ePn	57 43.00	1.2
DMK	4.01	30	iPn	57 40.80	-1.2
ISK	4.07	47	ePn	57 42.00	-1.0
PGB	4.23	351	eP	57 45.00	-0.3
OHR	4.29	311	ePn	57 49.00	2.8
VTS	4.45	342	iPc	57 49.00	0.5
GPA	4.48	63	ePn	58 04.00	15.2X
SKO	4.56	323	ePn	57 44.50	-5.3X
PVL	4.84	2	iPd	57 53.00	-0.9
BBTK	6.14	74	eP	58 40.00	27.6X
MLR	7.14	5	ePc	58 26.00	-0.4
VRI	7.59	9	eP	58 34.00	1.4
BZS	7.69	341	eP	58 32.50	-1.4

S.D. = 1.0 on 39 of 42 obs.

DEC 11, 1989 09h 40m 13.07± 0.72s
38.349 N ± 7.8km 25.102 E ± 6.7km
DEPTH = 10.0km (geophysicist)
AEGEAN SEA (365)
ML 3.1 (ATH).

ATH	1.16	251	ePn	40 35.10	0.5
			eSn	40 49.90	
PRK	1.28	45	ePn	40 36.00	-0.8
APE	1.32	165	ePn	40 37.10	-0.4
SMG	1.51	114	ePb	40 41.00	0.8
IZM	1.70	88	ePn	40 42.20	-0.7
NEO	1.75	304	ePn	40 43.00	-0.7
EZN	1.76	32	iPn	40 45.00	1.3

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

DEC 11, 1989 10h 04m 55.59± 1.44s
10.179 N ± 5.7km 126.324 E ± 8.6km
DEPTH = 69.5 ± 15.2 km
4.8mb (5 obs.)
PHILIPPINE ISLANDS REGION (248)

DAV	3.16	194	eP	05 46.00	2.0
BAG	8.34	319	eP	06 54.00	-2.4
GUMO	18.46	78	eP	09 08.00	-0.3
GUA	18.49	78	eP	09 08.80	0.0
	0.7s	60.27nm		4.9mb	
SSE	21.35	348	P	09 39.20	0.3
	1.0s	28.00nm		4.6mb	
Z	20s	0 40um		3.8Msz	
N	12s	0.30um			
		eS	13 36.00		
		esS	13 42.00		
NJ2	22.84	343	Pc	09 55.40	1.8
Z	16s	0.30um		3.8MszX	
WHN	23.13	333	eP	09 53.50	-2 9
N	18s	1.10um			
MTN	23.37	168	eP	10 00.00	1.2
LOE	24.92	289	eP	10 13.20	-0.7
TIA	27.23	344	eP	10 34.60	-0.4
CHTO	27.83	291	eP	10 41.00	0.4
	1.0s	1.75nm		3.6mb X	
XAN	28.61	329	P	10 47.20	-0 3
TIY	30.13	338	eP	11 01.40	0.3
Z	16s	0.60um		4.3MszX	
WB5	30.90	165	eP	11 05.80	-2.1
BJI	31.08	345	eP	11 11.00	1.7
HHC	33.22	339	P	11 30.60	2.5
ASPA	34.44	168	eP	11 37.10	-1.6
	0.6s	9.00nm		4.9mb	
CTA	35.91	147	eP	11 51.00	-0.2
WARB	36.14	180	iPc	11 53.30	0.2
	0.4s	12.00nm		5.2mb	
MEKA	37.35	192	iPd	12 03.30	0.1
GTA	37.49	325	eP	12 04.10	-0.3
Z	16s	0.40um		4.3MszX	
COOL	41.13	187	eP	12 34.00	-0.5
	0.4s	5.00nm		4.7mb	
BAL	41.59	193	eP	12 38.50	0.2
KLB	42.34	191	eP	12 44.00	-0.4
MUN	43.02	193	eP	12 50.10	0.1
NWAO	43.73	191	iPd	12 56.20	0 5
RKG	44.88	191	eP	13 10.00	5.0X
BRS	45.30	146	iPc	13 07.80	-0.7
GBA	47.90	279	P	13 28.90	-0.2
KOD	48.05	275	eP	13 32.00	1.4
POO	51.36	286	eP	13 55.00	-0.6
INK	84.35	22	eP	17 22.00	1.0

S.D. = 1.3 on 31 of 32 obs.

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* DEC 11, 1989 10h 47m 17.38± 1.77s
32.708 S ± 6.2km 71.772 W ±15.6km
DEPTH = 10.0km (geophysicist)
NEAR COAST OF CENTRAL CHILE (135)

ROCH	0.69	113	iPd	47 31.40	0.2
			iS	47 41.50	
LCCH	0.78	168	iPd	47 33.40	0.8
			iS	47 45.20	
PEL	1.01	116	iPd	47 36.60	0.0
			iS	47 52.00	
TACH	1.17	144	iP	47 40.00	0.7
			iS	47 56.00	
SAN	1.19	129	iPd	47 39.70	0.1
			iS	47 56.50	
LNV	1.28	166	iP	47 40.00	-1.1
FCH	1.39	117	iPd	47 42.60	-0.5
			iS	48 01.50	
PCH	1.39	131	iPd	47 42.60	-0.3
			iS	48 02.50	
CHCH	1.54	143	iP	47 45.50	0.5
			iS	48 07.00	
RTBS	2.23	63	ePc	47 56.50	1.7
ZON	2.87	67	eP	48 05.00	0.9
			eS	48 45.00	
RTLL	3.12	65	e(P)	48 08.00	0.4
CFA	3.19	71	ePd	48 08.00	-0.6
			S	48 53.00	
RTRS	3.21	39	e(P)	48 08.00	-0.8
MRA	5.13	88	e(P)	48 34.10	-1.9
			S	49 40.00	

S.D. = 1.0 on 15 of 15 obs.

? DEC 11, 1989 11h 12m 01.17± 6.57s
32.371 S ±43.4km 71.858 W ±27.5km
DEPTH = 10.0km (geophysicist)
NEAR COAST OF CENTRAL CHILE (135)

ROCH	0.93	130	iP	12 19.20	0.1
			iS	12 30.00	
LCCH	1.13	168	ePd	12 22.50	0.2
			iS	12 34.50	
PEL	1.25	128	iPd	12 24.30	-0.2
			iS	12 39.50	
TACH	1.49	149	eP	12 27.50	-0.6
			iS	12 43.50	
LNV	1.62	167	eP	12 29.80	-0.1
			iS	12 47.20	
FCH	1.63	126	iP	12 30.50	0.2
			iS	12 49.90	
PCH	1.68	138	eP	12 31.00	0.2
CHCH	1.86	147	eP	12 33.50	0.2
			iS	12 57.00	

S.D. = 0.3 on 8 of 8 obs.

DEC 11, 1989 11h 21m 44.57± 0.45s
38 807 N ± 4.5km 24.910 E ± 4.8km
DEPTH = 10.0km (geophysicist)
AEGEAN SEA (365)
ML 3 0 (ATH).

PRK	1 15	67	ePn	22 06.20	0.2
ATH	1.25	229	ePn	22 08.00	0.1
NEO	1 41	291	ePn	22 11 00	0.8
EZN	1.50	47	iPn	22 10.60	-0.8
APE	1.80	164	ePn	22 15.60	-0.4
SMG	1.87	125	ePn	22 17 30	0.4
IZM	1.89	102	ePn	22 17 30	0.1
PLG	1.93	325	ePn	22 18.70	0.9
VLI	2.61	217	ePn	22 26.50	-0.9
EDC	2.75	55	ePn	22 38.50	8.9X
KZN	2.85	303	ePb	22 44.00	13.0X
KDZ	2.87	8	iP	22 30.00	-1.2
RZN	2.88	357	iP	22 31.00	-0.5
			Sg	23 16.00	
MMB	2.92	342	ePd	22 32.00	0.0
			eS	23 18 00	
DST	3.00	73	ePn	22 43 00	10 0X
VAY	3.09	325	ePn	22 46.60	12.4X
KKB	3.36	336	iP	22 39 00	0 8
			iSg	23 32.00	
YLV	3.87	62	ePn	22 47.00	1.6
PVL	4.42	4	eP	22 52.00	-1.1

S.D. = 0.9 on 15 of 19 obs.

? DEC 11, 1989 11h 56m 40.65± 7.73s
32.292 S ±45.0km 71.957 W ±41.4km
DEPTH = 10.0km (geophysicist)
NEAR COAST OF CENTRAL CHILE (135)

ROCH	1.05	131	iPd	57 00.50	-0.1
			iS	57 11.00	
LCCH	1.22	165	iPc	57 03.60	0.2
			iS	57 14.50	
PEL	1.37	129	iPd	57 05.80	0.0
			iS	15 20.50	
SAN	1.59	137	eP	57 08.80	-0.1
			iS	57 25.80	
TACH	1.61	148	iPc	57 08.70	-0 4
			iS	57 25.00	
FCH	1.74	127	iPc	57 11.70	0.3
			iS	57 30.50	
PCH	1.80	138	iPc	57 12.00	0.0
			iS	57 31.30	
CHCH	1.97	147	iP	57 14.60	0.1
			iS	57 36.20	

S.D. = 0.3 on 8 of 8 obs.

% DEC 11, 1989 13h 35m 40.94± 1.32s
60.079 N ± 5.2km 4.512 E ±12.1km
DEPTH = 10.0km (geophysicist)
SOUTHERN NORWAY (535)
MD 2.2 (BER).

BER	0.51	53	eP	35 50.98	-0.3
			eS	35 58.76	
ASK	0.53	40	iP	35 51.72	0.1
			eS	35 59.66	
KMY	0.95	156	eP	35 58.69	-0.3
			eS	36 12.47	
SUE	0.99	7	eP	35 59.98	0.3
			iS	36 13.63	
ODD1	1.08	98	eP	36 01.64	0.4
			eS	36 16.71	
BLS1	1.36	119	iP	36 06.36	0.3
			iS	36 23.85	
HYA	1.37	36	eP	36 06.62	0.6
			eS	36 25.38	
MOL	2.90	29	iP	36 27.16	-0.7
			eS	37 00.23	
			e	37 17.40	
NRA0	3.55	76	iPc	36 36.70	-0.5
			iS	37 18.10	
			iSg	37 30.40	

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

% DEC 11, 1989 13h 51m 24.42± 1.51s
60.103 N ± 5.8km 4.483 E ±14.2km
DEPTH = 10.0km (geophysicist)
SOUTHERN NORWAY (535)
MD 1.6 (BER).

ASK	0.52	43	eP	51 34.54	-0.4
			eS	51 45.92	
SUE	0.97	8	eP	51 42.97	0.2
			iS	51 56.67	
KMY	0.97	156	iP	51 42.67	-0.2
			eS	51 55.18	
ODD1	1 09	99	eP	51 45.41	0.4
			eS	51 59.25	
HYA	1.36	37	iP	51 49.45	0.1
			eS	52 06.77	
BLS1	1 38	120	iP	51 49.93	0.1
			eS	52 10.00	
NRA0	3.56	77	iPc	52 20.60	-0.2
			iSg	53 18.00	

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

% DEC 11, 1989 13h 59m 50.05± 1.72s
60.108 N ± 6.5km 4.410 E ±16.2km
DEPTH = 10.0km (geophysicist)
SOUTHERN NORWAY (535)
MD 1.5 (BER).

ASK	0.54	46	eP	00 01.37	0.4
			eS	00 09.19	
SUE	0.97	10	eP	00 09.05	0.6

11d 14h

		iS	00 24.01		
KMY	0 99 154	iP	00 08.77	-0.1	
		iS	00 21.72		
ODD1	1.13 99	iPd	00 11.68	0.4	
		eSg	00 24.71		
HYA	1 38 39	iP	00 15.73	0.5	
		eS	00 33.57		
BLS1	1.42 119	iP	00 16.46	0.5	
		eS	00 33.61		
MOL	2.90 30	iP	00 35.78	-1.2	
		eS	01 09.91		
NRA0	3.59 77	eP	00 45.80	-1.1	
		eSg	01 44.40		

S.D. = 0.9 on 8 of 8 obs.

% DEC 11, 1989 14h 32m 26.15± 1.39s
60.541 N ± 6.9km 4.977 E ±14.3km
DEPTH = 10.0km (geophysicist)
SOUTHERN NORWAY (535)
MD 1.7 (BER).

ASK	0.12 118	iP	32 29.13	0.0	
		eS	32 31.13		
BER	0.24 132	iP	32 30.75	-0.5	
		eS	32 34.60		
SUE	0.53 349	iPg	32 36.84	0.0	
		iSg	32 44.81		
HYA	0.86 43	iPd	32 42.19	-0.5	
		eS	32 53.19		
ODD1	1.04 127	iP	32 45.69	-0.1	
		eS	33 00.27		
BLS1	1.48 140	eP	32 53.18	0.2	
		iSg	33 13.62		
MOL	2.38 30	iP	33 05.88	0.1	
		eS	33 32.69		
NRA0	3.24 84	iPc	33 18.80	0.8	
		iPg	33 23.20		
		iSg	34 05.80		

S.D. = 0.5 on 8 of 8 obs.

? DEC 11, 1989 14h 59m 57.34±14.50s
40.209 N ±25.4km 126.839 W ±123.km
DEPTH = 10.0km (geophysicist)
OFF COAST OF NORTHERN CALIFORNIA(34)
ML 3.5 (BRK).

FHC	2.26 74	eP	00 34.70	-0.6	
WDC	3.30 82	eP	00 50.40	0.2	
		eS	01 32.10		
LBFM	3.93 72	eP	00 59.50	0.3	
BRK	4.26 122	e(P)	01 03.00	-0.7	
BKS	4.27 122	eP	01 04.40	0.5	
PCC	4.41 126	eP	01 05.70	-0.1	
GCC	4.94 128	ePc	01 13.60	0.2	
MHC	4.97 124	e(P)	01 11.20	-2.7X	
ARN	5.03 123	eP	01 14.50	-0.2	
SAO	5.45 127	eP	01 20.70	0.1	
CMB	5.47 111	eP	01 23.00	2.1X	
PRS	5.79 130	e(P)	01 24.90	-0.4	
KVN	6.84 97	eP	01 48.50	8.1X	

S D. = 0.5 on 10 of 13 obs.

DEC 11, 1989 15h 23m 35.09± 0.33s
38.372 N ± 3.3km 25.058 E ± 2.8km
DEPTH = 16.5 ± 3.5 km
4.1mb (8 obs.)
AEGEAN SEA (365)
ML 4.4 (ATH), 3.9 (THE).

ATH	1.13 250	ePn	23 55.20	-0.6	
PRK	1.29 47	ePn	23 58.10	-0.2	
APE	1.35 164	ePn	23 58.00	-1.3	
SMG	1.55 115	iPnd	24 01.50	-0.5	
NEO	1.71 304	ePn	24 04.00	-0.4	
IZM	1.73 88	iPn	24 04.40	-0.3	
EZN	1.76 34	iPn	24 04.30	-0.7	
PLG	2.36 329	ePn	24 14.00	0.3	
VLI	2.36 226	ePn	24 12.50	-1.2	
LIT	2.64 312	eP	24 17.50	-0.2	
		eS	25 07.00		
ITM	2.75 245	ePn	24 19.50	0.2	
THE	2 78 325	eP	24 20.10	0.5	
		eS	24 54.00		
RDO	2 80 7	ePn	24 19.50	-0.4	
YER	2.84 115	iPn	24 20.50	-0.1	
EDC	2 94 47	iPn	24 21.50	-0.4	
SRS	2 97 338	eP	24 22.10	-0.2	
VAM	3.04 193	ePn	24 21.00	-2.3	
DST	3.04 65	ePn	24 25.00	1.6	
NPS	3.14 172	ePn	24 27.00	2.3	
KZN	3.20 308	ePn	24 26.00	0.3	
KNT	3.25 330	eP	24 26.60	0.3	
KDZ	3.29 5	iPd	24 26.00	-0.9	
		iS	25 02.00		
KAP	3.29 148	ePn	24 25.90	-1.0	
GRG	3.30 322	eP	24 27.40	0.4	
RZN	3.32 356	iP	24 28.00	0.5	
MMB	3.37 343	iPc	24 27.00	-1.1	
		Sg	25 22.00		
KHL	3.51 89	iPn	24 31.30	1.2	
VAY	3.51 328	iPn	24 29.60	-0.4	
VLS	3.52 268	ePn	24 31.00	0.8	
DIM	3.69 6	iP	24 33.00	0.4	
PLD	3.74 356	eP	24 32.00	-1.3	
KKB	3.80 337	eP	24 33.00	-1.2	
ALT	4.01 79	iPn	24 37.00	-0.2	
DMK	4.02 30	iPn	24 35.50	-1.7	
ISK	4.09 48	ePn	24 40.00	1.7	
ELL	4.18 111	ePn	24 43.00	3.3X	
PGB	4.23 351	iP	24 40.00	-0.3	
KSL	4.25 121	ePb	24 44.00	3.4X	
OHR	4.27 311	iPn	24 42.60	1.7	
VTS	4.44 342	iPd	24 44.00	0.6	
BCK	4.47 100	ePn	24 45.00	1.3	
GPA	4.50 63	ePn	24 46.00	1.9	
SKO	4.54 324	ePn	24 44.50	-0.1	
	Z 10s	2.58um			
	N 12s	2.45um			
	E 12s	3.28um			
		iPg	25 02.20		
		eSn	25 35.70		
		eSb	25 47.10		
		iSg	25 56.00		
		LQ	26 56.00		
PVL	4.84 2	iPd	24 47.00	-1.9	
BBTK	6.17 74	eP	25 36.00	28.2X	
DRA	6.33 355	eP	25 09.00	-0.9	
BRT	6.56 295	P	25 12.10	-1.1	
ROI	6.72 283	P	25 15.20	-0.3	
ISR	6.85 9	eP	25 16.00	-1.3	
TDS	6.91 283	P	25 18.40	0.3	
CSI	6.96 284	P	25 18.40	-0.5	
CZI	7.02 280	P	25 21.10	1.5	
MLR	7.14 5	ePc	25 20.50	-1.0	
CFR	7.19 18	eP	25 22.00	0.1	
MMN	7.21 285	P	25 23.20	0.9	
BEO	7.31 333	e(Pn)	26 10.00	46.4X	
VRI	7.59 9	ePd	25 29.00	1.4	
DEV	7 67 349	ePc	25 16.00	-12.7X	
BZS	7.68 342	ePc	25 27.00	-1.8	
MNO	8.18 270	P	25 34.60	-1.5	
SDI	9.24 295	P	25 50.70	0.1	
ZAG	10.03 321	iP	25 51.00	-10.4X	
KBA	12.23 319	e(P)	26 43.00	11.5X	
	1.0s	2.60nm			
KHC	13.57 326	P	26 54.50	5.4X	
PRU	13.83 330	eP	27 05.50	13.0X	
LPG	15.35 303	eP	27 19.10	6.3X	
	0.9s	23.50nm	4.5mb		
CLL	15.48 331	eP	27 21.00	7.0X	
SMF	17.66 305	eP	27 44.20	2.5	
	0.9s	5.50nm	3.7mb		
LOR	17.87 307	eP	27 44.70	0.3	
SSF	18.02 306	eP	27 47.20	1.0	
	0.7s	5.50nm	3.8mb		
AVF	18.02 305	eP	27 47.80	1.6	
BGF	18 27 304	eP	27 51.10	1.7	
	0 8s	8.50nm	4.0mb		
NUR	22 16 359	eP	28 27.90	-3.6X	
	0.2s	2.40nm	4.3mb		
NAO	24.18 343	P	28 50.60	-0.6	
	0.9s	4.50nm	4.1mb		
SUF	24.39 1	eP	28 56.00	2.8X	
	0.6s	2.10nm	3.9mb		
MAIO	27.37 84	eP	29 40.00	18.6X	
BCAO	34.30 192	ePc	30 21.50	-1.2	
	0.7s	9.00nm	4.8mb		
		id	30 35.10		

S.D. = 1.1 on 63 of 77 obs.

DEC 11, 1989 15h 33m 09.21± 0.46s
38.349 N ± 5.2km 25 007 E ± 4.5km
DEPTH = 10.0km (geophysicist)
AEGEAN SEA (365)
ML 3.5 (ATH).

ATH	1.08 250	ePn	33 30.00	0.4	
PRK	1.33 47	ePb	33 34.00	0.2	
APE	1.34 162	ePn	33 33.40	-0.6	
SMG	1.58 113	ePn	33 37.00	-0.3	
NEO	1.69 305	ePn	33 39.10	0.2	
IZM	1 77 88	iPn	33 39.40	-0.8	
EZN	1.80 34	iPn	33 40.30	-0.1	
VLI	2.31 226	ePn	33 48.00	0.0	
PLG	2.36 330	ePn	33 47.00	-1.6	
ITM	2.71 245	ePn	33 54 50	0.9	
RDO	2.82 8	ePn	33 56.00	0.9	
DST	3.09 65	ePn	34 00.30	1.4	
KZN	3.18 309	ePb	34 15.00	14.7X	
OHR	4.26 312	e(Pn)	34 15.00	-0.6	

S.D. = 0.9 on 13 of 14 obs.

DEC 11, 1989 15h 36m 38 90± 0.35s
38 367 N ± 3.4km 25.060 E ± 2.8km
DEPTH = 12.5 ± 2.4 km
4.1mb (4 obs.)
AEGEAN SEA (365)
ML 4.3 (ATH), 3.8 (THE).

ATH	1.13 250	ePn	37 00.00	0.2	
PRK	1.29 47	ePn	37 02.40	-0.2	
APE	1.35 164	iPnd	37 03.00	-0.5	
SMG	1.55 115	ePn	37 06.00	-0.2	
NEO	1.71 304	iPnd	37 09.00	0.3	
IZM	1.73 88	iPn	37 09.10	0.2	
EZN	1.76 34	ePn	37 08.80	-0.5	
AGG	2.23 288	eP	37 16.50	0.3	
VLI	2.36 226	ePn	37 16.70	-1.2	
PLG	2.36 329	ePn	37 18.00	0.0	
LIT	2.64 312	iP	37 21 80	-0.2	
ITM	2.75 245	ePn	37 24.00	0.4	
RDO	2 80 7	ePn	37 23.80	-0.4	
YER	2.84 115	iPn	37 24.50	-0.3	
EDC	2.94 47	iPn	37 26.50	0.3	
MFT	2.96 35	iPn	37 26.80	0.2	
SRS	2.97 338	eP	37 26.40	-0.2	
VAM	3.03 193	ePn	37 26.00	-1.5	
DST	3.04 65	ePn	37 28 00	0.3	
NPS	3 13 172	ePb	37 34.50	5.6X	
KZN	3.20 308	ePn	37 30.10	0.1	
KNT	3.25 330	iP	37 30 80	0.2	
KAP	3.28 148	ePn	37 30.00	-1.1	
KDZ	3.29 5	iP	37 27.00	-4.2X	
		iSg	38 02.00		
GRG	3.30 322	eP	37 31.70	0.3	
RZN	3 33 356	iP	37 32 00	0.1	
MMB	3.38 343	iPd	37 32.00	-0.4	
		iSg	38 25.00		
KHL	3.51 89	ePn	37 33 80	-0.6	
VAY	3.52 328	iPn	37 35 20	0.8	
VLS	3.52 268	ePn	37 36.00	1.5	
DIM	3.70 5	eP	37 36.00	-1.0	
		eSg	38 39.00		
KKB	3.81 337	iP	37 39.00	0.4	
ALT	4.01 79	iPn	37 41.00	-0.5	
ISK	4.10 48	ePn	37 50.00	7 4X	
ELL	4.18 111	ePn	37 46.70	2.8	
PGB	4.23 351	iP	37 45.00	0.4	
KSL	4.25 120	ePn	37 47.00	2.2	
OHR	4.28 311	ePn	37 47.10	1.8	
VTS	4.45 342	iPc	37 49.00	1.2	
BCK	4.47 100	ePn	37 49 00	1.1	
GPA	4.50 63	ePn	37 52.00	3.6X	
SKO	4.54 324	ePn	37 49.00	0.0	
	Z 11s	1.10um			
	E 11s	1.37um			
		LR	39 59.00		
PVL	4.85 2	iPd	37 51.00	-2.3	
LCI	5.85 292	P	38 05 30	-2.1	
BBTK	6.17 74	eP	38 32.00	20.0X	
		iS	40 03.00		
BRT	6.56 295	P	38 16.70	-0.8	
ROI	6.72 283	P	38 20.90	1.1	
TDS	6.91 283	P	38 23.50	1.1	
CSI	6.97 284	P	38 24.20	1.0	
CZI	7.02 280	P	38 24.40	0.5	
MLR	7.15 5	eP	38 24.00	-1.8	
MMN	7.21 285	P	38 27.60	1.0	
ATN	7.55 271	P	38 29.70	-1.7	
VRI	7.60 9	ePd	38 33.50	1.5	
DEV	7.68 349	eP	38 34.00	0.9	

BZS 7.68 342 ePd 38 31.50 -1.6
SGO 7.85 289 P 38 34.40 -1.2
SDI 9.25 295 P 38 54.90 -0.1
KHC 13.57 326 eP 40 02.00 8.5X
LPG 15.36 303 eP 40 22.20 5.0X
0.8s 13.40nm 4.3mb
SMF 17.66 305 eP 40 47.60 1.5
0.8s 6.70nm 3.8mb
AVF 18.03 305 eP 40 51.20 0.6
BGF 18.28 304 eP 40 54.10 0.4
NAO 24.19 343 P 41 53.60 -2.1
0.7s 2.80nm 4.0mb
BCAO 34.29 192 iPd 43 26.10 -1.0
0.4s 5.00nm 4.8mb
S.D. = 1.1 on 58 of 65 obs.

% DEC 11, 1989 15h 42m 25.37± 1.39s
43.939 N ±11.3km 7.703 E ± 6.1km
DEPTH = 10.0km (geophysicist)
NEAR SOUTH COAST OF FRANCE (379)
ML 2.3 (GEN).

IMI 0.14 102 P 42 28.90 0.2
S 42 30.92
ENR 0.35 325 P 42 32.84 0.2
S 42 37.82
ROB 0.38 19 P 42 33.51 0.4
S 42 38.61
STV 0.41 318 P 42 33.90 0.1
S 42 39.30
FIN 0.45 53 P 42 34.54 -0.1
S 42 40.46
PZZ 0.71 323 P 42 39.07 -0.4
S 42 48.10
PCP 0.85 45 P 42 41.46 -0.4
S 42 52.76
S.D. = 0.4 on 7 of 7 obs.

DEC 11, 1989 16h 00m 11.64± 0.11s
18.690 S ± 2.8km 168.989 E ± 2.7km
DEPTH = 200.0km (15 depth phases)
5.5mb (46 obs.)
VANUATU ISLANDS (186)
CENTROID, MOMENT TENSOR (HRV)
Data Used: GDSN
L.P.B.: 14S, 33C
Centroid Location:
Origin Time 16:00:17.4 0.6
Lat 18.67S 0.06 Lon 168.43E 0.03
Dep 196.0 1.3 Half-duration 3.2
Moment Tensor; Scale 10**17 Nm
Mrr=-1.65 0.15 Mtt= 4.74 0.22
Mff=-3.08 0.24 Mrt= 4.70 0.15
Mrf= 3.10 0.15 Mtf=-1.04 0.21
Principal Axes:
T Val= 7.26 Plg=29 Azm=356
N -0.36 33 245
P -6.89 43 117
Best Double Couple:Mo=7.1*10**17
NP1:Strike=138 Dip=34 Slip= -15
NP2: 240 82 -124

PVC 1.14 326 iPd 00 44.90 2.2
iS 01 10.50
DZM 4.12 215 iPc 01 17 00 1.4
iS 02 06.90
SVA 9.01 88 eP 02 20.10 1.2
eS 03 17.20
MBU 9.43 81 eP 02 26.50 2.1
HNR 12.71 315 ePc+ 03 08 00 1.5
eS 05 30 00
BRS 17.24 237 iPd- 04 03.30 1.2
0.7s 87.00nm 5.3mb
Z 18s 18.00um 4.5Msz
ipP 04 31 00
isP 04 54.00
i 05 07.00
e 07 00.00
eS 07 16.00
eSS 07 44 00
eScP 11 40.00
COO 19.50 229 iPd 04 27.40 1.7
HBZ 20.53 158 eP 04 34.20 -1.5
1.1s 598.00nm 6.0mb
TAZ 20.55 163 eP 04 38.10 2.2
CTA 21.49 263 iPd 04 46.70 1.3
0.9s 263.03nm 5.8mb

i 05 17.00
i 05 26.80
iS 08 33.30
iScP 12 00.00
iScS 15 44.00
RAB 21.86 309 eP 04 48.00 -1.0
RIV 21.92 223 eP 04 54.00 4.5X
MNG 22.56 167 Pc 04 55.70 0.1
0.4s 236.00nm 6.1mb
KIW 22.68 168 P 04 57.00 0.3
PGZ 22.73 166 P 04 57.00 -0.3
0.5s 478.00nm 6.4mb
TCW 22.90 170 P 04 59.80 0 9
CAW 22.94 168 P 04 59.30 0.0
MRW 22.99 169 eP 04 59.70 -0.1
WEL 23.06 169 Pc 05 01.00 0.6
1.3s 256.92nm 5.7mb
pP 05 10.00 32kmX
S 08 54.00
MTW 23.08 167 P 05 00.00 -0.6
PMG 23.08 291 iPc 05 01.80 1.0
0.8s 238.81nm 5.9mb
WDW 23.08 168 P 05 00.10 -0.5
BLW 23.27 168 P 05 02.10 -0.4
MOW 23.28 168 P 05 02.10 -0.5
CCW 23.41 170 eP 05 05.00 1.2
CNB 24.01 222 iPd 05 11.30 1.7
0.8s 196.00nm 5.8mb
BWA 24.10 225 eP 05 09.40 -1.0
OLP 24.13 247 ePc 05 12.00 1.3
CAN 24.25 223 eP 05 09.40 -2.4
CMS 24.48 234 ePd 05 14.50 0.5
0.5s 94.00nm 5.7mb
LAT 24.52 296 eP 05 15 50 1.0
MSZ 25.92 182 P 05 25.80 -1.2
MHZ 26.30 180 P 05 29.50 -1.1
OIS 27.72 261 iPd 05 43.50 0.0
e 12 17.00
e 16 08.00
TOO 27.86 223 iPc 05 45.40 0.8
STK 27.95 237 iPc 05 46.30 0.8
0.6s 72.00nm 5.6mb
i 08 55.50
ADE 31.35 233 iPd 06 15.30 -0.2
0.5s 88.73nm 5.7mb
WB5 32.67 262 eP 06 26.00 -1.0
i 09 07.10
eS 11 24.80
iScP 12 33.00
ASPA 33.04 255 iPd 06 29.50 -0.7
0.5s 1215.00nm 6.8mb X
Z 22s 2.33um 4.8Msz
iS 11 30.70
iScP 12 34.80
iScS 16 31.80
LR 19 01.90
KNA 38.48 268 iPc 07 15.80 -0.3
TBI 38.97 104 eP 07 22.00 2.0
0.8s 45.00nm 5.2mb
AFR 39.15 95 iP 07 20.40 -1.2
0.9s 30.00nm 4.9mb
PPT 39.33 95 iP 07 21.80 -1.3
0.9s 60.00nm 5.2mb
PPN 39.47 95 iP 07 23 80 -0.5
0.9s 30.00nm 4.9mb
TVO 39.61 96 iP 07 25.90 0.4
0.9s 50.00nm 5.1mb
WARB 39.71 251 iPd 07 26 50 0.3
0.4s 51.00nm 5.4mb
GUA 39.86 322 e(P) 07 27 50 0.1
0.9s 221.85nm 5.7mb
GUMO 39.93 322 e(P) 07 27 80 -0.1
0.9s 252.34nm 5.8mb
PJG 39.93 322 e(P) 07 23.80 -4.1X
PMO 41.36 92 iP 07 39.00 -0.7
0.9s 60.00nm 5.1mb
VAH 41.56 92 iP 07 40.30 -1.1
0.9s 40.00nm 4.9mb
TPT 41.62 92 iP 07 41.20 -0.7
0.9s 40.00nm 4.9mb
RUV 41.81 92 iP 07 42.50 -0.9
0.9s 70.00nm 5.2mb
COOL 44.79 245 eP 08 06.00 -1.3
0.3s 17.00nm 5.0mb
MBL 46.14 258 iPc 08 18 10 0 1
0.4s 30.00nm 5.1mb
MEKA 46.98 251 eP 08 24 00 -0 6

KLB 47.73 244 eP 08 29.10 -1.2
0.4s 26.00nm 5.0mb
NWAO 48.25 242 iPc 08 33.70 -0.6
0.4s 18.00nm 4.9mb
Z 20s 0.90um 4.7Msz
RKG 48.53 241 iPc 08 36.30 -0.1
0.4s 91.00nm 5.6mb
BAL 48.60 245 eP 08 36.00 -1.0
MUN 49.07 244 iPd 08 41.30 0.7
DAV 49.88 297 eP 08 46.90 -0.1
NANU 49.97 256 eP 08 48.00 0.5
HON 51.24 41 P 08 57.00 0.0
DRV 51.50 194 eP 08 58.20 -0.3
OPA 51.51 40 P 08 57.50 -1.6
RKT 52.27 105 iP 09 03.50 -1.3
1.0s 180.00nm 5.7mb
KKM 57.52 290 ePd 09 42.50 -0.3
QCP 57.65 302 eP 09 48.00 4.5X
BAG 59.04 303 eP 09 51.10 -2.2
eS 17 43.00
SBA 59.21 181 iPd 09 53.30 -0.1
KAKJ 61.03 334 eP 10 05.30 -0.9
CHJJ 61.40 333 eP 10 07.90 -0.8
IIDJ 61.41 331 eP 10 08.00 -0.9
WKYJ 61.48 329 eP 10 08.40 -1.0
KAGJ 61.63 323 P 10 10.30 0.0
TKSJ 62.06 327 eP 10 12.20 -0.9
MAT 62.16 332 iPc+ 10 12.70 -1.1
1.1s 178.48nm 5.8mb
eS 18 21.00
TSRJ 62.35 330 eP 10 14.80 -0.2
MTMJ 62.37 332 eP 10 14.50 -0.8
NIIJ 62.40 333 eP 10 14.90 -0.4
KUMJ 62.67 324 P 10 16.60 -0.6
YAMJ 62.76 335 eP 10 17.70 0.0
OFUJ 62.90 336 P 10 18.10 -0.5
YONJ 63.31 328 eP 10 20.40 -1.0
ANP 63.53 312 e(P) 10 21.00 -2.1
SHNJ 63.72 325 eP 10 22.80 -1.2
HOOJ 65.23 339 eP 10 35.20 1.6
KUSJ 65.41 341 eP 10 35.50 0.8
OZH 65.48 310 eP 10 34.00 -1.5
4.0s 0.60nm 2.7mb X
pP 11 22.00 205km
S 19 04.00
MRRJ 66.04 338 eP 10 39.20 0.5
ASAJ 66.99 340 eP 10 45.60 0.8
SSE 67.51 317 Pc 10 47.50 -0.7
1.2s 73.00nm 5.3mb
Z 20s 0.70um 4.9Msz
N 16s 0.50um
sP 11 31.00
eS 19 25.00
ScS 20 30.00
KGM 67.72 280 ePc 10 50.00 0.1
GZH 68.38 305 eP 10 53.30 -0.5
pP 11 36.30 181kmX
S 19 38.10
NJ2 69.65 316 Pd 11 01.40 0.1
1.2s 0.10nm 2.4mb X
pP 11 49.00 201km
S 19 54.00
IPM 70.78 282 ePc 11 07.90 -0.7
1.0s 42.20nm 5.1mb
SMY 71.26 3 e(P) 11 10.50 -0.1
ADK 71.38 9 eP 11 10.50 -0.8
1.1s 156.30nm 5.7mb
SPA 71.43 180 iPd 11 11.40 -0.4
0.7s 117.97nm 5.7mb
i 11 28.80
WHN 71.81 312 Pc 11 14.50 0.2
4.0s 1.36nm 3.0mb X
pP 12 00.00 190km
iS 20 18.00
MDJ 72.53 332 Pc 11 18.50 0.2
pP 12 08.00 208km
TIA 73.38 318 Pc 11 23.00 -0.4
pP 12 11.00 201km
S 20 34.00
SNY 73.40 326 Pd 11 20.00 -3.3X
pP 12 07 00 196km
iS 20 38.00
CN2 73.87 329 iPc 11 26.00 0.0
1.0s 0.40nm 3.1mb X
ipP 12 12.00 192km
iPP 14 09.00
eS 20 40.00

11d 16h

SS 25 21.00
NNT 75.00 289 eP 11 33.50 0.4
LOE 75.22 294 eP 11 34.80 0.5
e 26 16.50
GYA 75.31 305 P 11 34.80 -0.1
pP 12 23.00 201km
S 20 59.00
NST 75.89 292 eP 11 40.10 2.1
BJI 76.36 321 eP 11 40.50 0.2
1.0s 109.00nm 5.5mb
epP 12 24.00 179kmX
esP 12 42.00
eS 21 08.00
esS 22 24.00
eSS 26 08.00
TIY 77.27 317 Pc 11 44.60 -0.8
1.0s 0.10nm 2.5mb X
pP 12 33.00 201km
sP 12 55.00
iS 21 20.50
ScS 21 40.00
XAN 77.57 313 iPc 11 47.30 0.2
pP 12 37.00 206km
S 21 23.00
KMI 77.78 302 Pc 11 50.00 1.3
1.0s 0.30nm 3.0mb X
sP 12 38.00
S 21 27.00
SKS 21 45.00
SDN 78.16 17 eP 11 48.90 -0.9
CHG 78.21 295 iPc 11 51.90 1.0
1.0s 70.75nm 5.3mb
CHTO 78.21 295 iPc 11 52.00 1.1
1.0s 17.25nm 4.7mb
pP 12 40.00 198km
MAW 78.85 202 eP 11 54.00 0.5
0.9s 180.00nm 5.8mb
CD2 79.72 308 eP 11 59.50 0.7
pP 12 48.00 200km
S 21 46.00
ScS 21 59.00
BTO 80.47 319 eP 12 03.50 0.8
pP 12 51.50 197km
sS 23 17.50
LZH 82.19 312 Pc 12 12.50 0.7
1.4s 146.00nm 5.5mb
Z 35s 1.00um 4.9MszX
i 12 22.50
pP 13 02.50 205km
esP 13 22.00
S 22 13.00
i 22 54.00
i 23 16.00
i 23 28.00
KDC 82.60 20 eP 12 14.00 0.9
SVW 84.44 16 eP 12 23.50 1.0
PCC 85.32 48 eP 12 27.40 0.1
GCC 85.37 49 ePd 12 28.20 0.7
PRS 85.50 49 ePd 12 29.10 0.9
e 13 22.30
BRK 85.58 48 eP 12 29.10 0.6
BKS 85.59 48 eP 12 29.20 0.6
0.8s 97.00nm 5.6mb
SAO 85.65 49 ePd 12 29.20 0.3
SYP 85.72 52 eP 12 30.00 0.5
SYP 85.72 52 eP 12 31.60 2.1
MHC 85.77 48 ePd 12 30.30 0.6
FHC 85.78 44 eP 12 30.70 1.1
ARN 85.85 48 P 12 30.50 0.5
TTA 85.87 15 eP 12 30.00 0.4
PRI 85.93 50 ePd 12 31 40 0.9
BCH 85.93 51 P 12 31.00 0.5
LLA 85.94 49 ePd 12 31.00 0.6
GTA 86.58 313 iPc 12 34.30 0.7
0.8s 0.10nm 2.7mb X
SKS 22 30.50
WDC 86.64 45 iPd 12 34.20 0.5
e 13 26.70
PMR 86.69 19 eP 12 33.20 -0.2
1.0s 35.00nm 5.1mb
ORV 86.88 46 iPd 12 35.20 0.4
e 13 27.60
SHL 86.88 298 eP 12 37.00 1.6
iS 22 43.50
PAS 86.91 53 eP 12 35.00 -0.1
CMB 86.97 48 ePd 12 35.80 0.4
e 13 28.30

FRI 86.99 49 ePd 12 35.80 0.4
e 13 28.30
MWC 87.02 52 eP 12 36.00 0.1
e 13 30.00
AIA 87.12 160 eP 12 35.10 -0.5
MIN 87.17 46 e(P) 12 36.30 -0.1
ISA 87.32 51 eP 12 37.00 -0.1
e 13 30.00
SBB 87.39 52 eP 12 37.00 -0.5
SBB 87.39 52 eP 12 39.30 1.8
LBFM 87.44 45 P 12 38.00 0.2
BAR 87.44 54 eP 12 37.00 -0.7
PEC 87.56 53 P 12 38.00 -0.3
PLM 87.57 54 eP 12 38.00 -0.5
CLC 88.03 51 eP 12 40.00 -0.5
e 13 34.00
CLC 88.03 51 eP 12 41.80 1.3
GSC 88.41 52 eP 12 42.00 -0.4
e 13 37.00
TPC 88.49 53 eP 12 43.00 0.2
BMW 89.00 40 P 12 45.00 0.1
GLA 89.01 55 eP 12 45.00 -0.2
KVN 89.02 48 P 12 45.40 0.0
pP 13 40.00 223kmX
LSA 89.04 302 P 12 45.00 -1.0
pP 13 34.00 198km
SKS 22 55.50
IMA 89.05 14 eP 12 44.50 -0.3
1.0s 77.50nm 5.6mb
TNP 89.25 49 P 12 46.50 0.1
pP 13 40.00 218kmX
FBA 89.62 17 eP 12 45.10 -2.2
PGC 89.91 38 eP 12 49.50 0.6
0.9s 89.00nm 5.7mb
LON 89.99 40 P 12 49.40 -0.1
PNT 92.46 38 ePd 13 01.00 0.3
0.8s 51.00nm 5.7mb
MSU 93.07 50 P 13 04.50 0.4
LRM 95.52 44 eP 13 15.10 -0.1
GBA 95.71 282 P 13 17.00 0.8
IMW 95.85 46 P 13 16.00 -0.8
INK 96.10 18 eP 13 16.00 -0.9
1.0s 41.00nm 5.7mb
ALO 96.18 55 iPd 13 17.30 -1.0
1.0s 10.00nm 5.1mb
ANMO 96.18 55 P 13 17.30 -1.0
WMQ 96.66 314 P 13 20 00 -0.1
SKS 23 37.00
CNCB 113.79 119 PKP 18 29.20 -0.3
e 19 22.00
LPB 113.83 118 ePKP 18 27.00 -2.4X
ZOBO 113.93 118 PKP 18 28.80 -1.0
LR 28 50.00
MAIO 116.31 302 ePKP 18 33.00 -0.2
BLF 120.44 218 iPKPc 18 40.80 -0.6
0.7s 20.00nm
SLR 121.61 222 ePKP 18 42.50 -1.2
HBVT 122.72 49 PKP 18 42.50 -2.5X
KEV 123.96 345 iPKP 18 45.30 -1.4
0.8s 24.90nm
BUL 125.24 227 iPKPd 19 04.10 13.3X
SOD 125.74 343 ePKP 18 48.00 -2.2X
RYD 126.45 287 ePKP 18 53.00 0.0
KRI 126.68 231 iPKPd 19 05.00 11.3X
KMSA 127.87 282 ePKP 18 56.00 0.2
SUF 129.11 339 ePKP 18 54.80 -1.9
0.5s 8.80nm
NUR 131.14 337 ePKP 18 58.00 -2 7X
0.7s 18 70nm
iSKP 22 04.90
HFS 134.97 343 (PKP) 18 56.10 -11.9X
0.3s 1 90nm
NAO 135.14 345 PKP 19 06.00 -2.3X
0.8s 7.20nm
WAJH 135.60 289 ePKP 19 10.30 0.1
VRI 138.73 320 ePKPc 19 15.00 -0.5
MLR 139.40 319 ePKP 19 08.50 -8.4X
e 30 44.00
KSP 141.29 332 ePKP 19 13.30 -6.6X
1.1s 37.00nm
i 19 14.60
i 22 36.80
PSZ 141.52 326 ePKP 19 15.80 -4.7X
RDO 141.62 314 ePKP 19 17 00 -3.8X
BZS 141 92 322 ePKP 19 16 00 -5.2X
RZN 141.94 315 iPKP 19 18 00 -3.6X
BRG 142.27 334 iPKP 19 17 60 -4.1X

0.8s 20.00nm
i 20 22.10
i 23 38.60
CLL 142.32 335 iPKPd 19 18.10 -3.6X
1.1s 20.00nm
iSKP 22 39.20
SRO 142.41 327 iPKP 19 18.60 -3.4X
i 22 39.00
VTS 142.52 317 iPKP 19 19.00 -3.6X
MMB 142.65 315 ePKPc 19 18.00 -4.7X
ZST 142.76 329 ePKP 19 19.10 -3.5X
e 22 40.00
EKA 142.94 353 PKPd 19 19.30 -3.3X
1.0s 17.50nm
KKB 142.95 316 iPKP 19 20.00 -3.1X
SRS 142.96 315 ePKP 19 20.00 -3.2X
VKA 143.10 329 ePKP 19 20.00 -3.2X
0.9s 76.50nm
ic 19 21.10
WIT 143.26 342 ePKP 19 20.50 -2.7X
e 22 42.00
PLG 143.38 314 ePKP 19 20.00 -3.9X
MOX 143.39 336 iPKP 19 20.00 -3.6X
1.2s 113.00nm
e 20 15.00
VAY 143.55 315 iPKPd 19 20.60 -3.5X
1.0s 0.20nm
NPS 143.67 305 ePKP 19 22.50 -2.1
KHC 143.74 332 iPKPd 19 22.50 -1.8
1.0s 50.00nm
e 19 58.00
GRG 143.83 315 ePKP 19 10.00 -14.7X
WTS 143.93 341 ePKP 19 22.50 -1.9
0.9s 35.00nm
e 19 32.00
e 22 42.00
SKO 143.97 317 iPKPd 19 23.00 -1.8
0.8s 498.00nm
i 19 28.80
i 20 11.00
i 22 43.70
i 23 05.00
NEO 144.00 312 ePKP 19 22.00 -3.0X
LIT 144.16 314 ePKP 19 22.50 -2.7X
ATH 144.18 310 ePKP 19 23.00 -2.3X
GRF 144.30 335 iPKPd 19 24.20 -1.0
0.9s 236.00nm
Z 22s 0.20um 4.8Msz
KZN 144.56 314 ePKP 19 24.00 -2.0
VAM 144.72 305 ePKP 19 26.00 -0.3
OHR 144.82 316 iPKP 19 25.00 -1.4
0.9s 0.65nm
PTJ 144.88 327 iPKPd 19 26.10 -0.3
ZAG 144.92 326 iPKPd 19 26.40 0.1
VLI 145.23 308 ePKP 19 26.00 -1.1
ENN 145.28 341 ePKP 19 26.50 -0.2
1.0s 214.00nm
e 19 34.00
TOD 145.29 337 ePKPd 19 26.78 -0.1
DLE 145.30 355 iPKPc 19 26.30 -0.4
1.0s 174.00nm
KBA 145.36 330 ePKPc 19 25.00 -2.3X
1 0s 165.00nm
ic 19 26.30
i 19 28.60
ipP 20 28.90
iPP 22 46.00
e 30 44.50
FUR 145.47 333 iPKPd 19 27.60 0.4
0.8s 200.00nm
ABH 145.51 339 ePKPd 19 27.61 0.4
VBY 145.51 327 ePKP 19 27.20 -0.1
i 19 28.20
i 19 30.00
LJU 145.51 328 ePKPc 19 26.50 -0.8
e 20 29.00
e(PP) 22 46.50
CEY 145.78 328 ePKP 19 27.30 -0.5
ITM 145.80 309 ePKP 19 28.00 -0.1
RUP 145.83 339 ePKPd 19 28.62 0.8
VOY 145.84 328 ePKP 19 26.80 -1.2
e 22 46.70
ETA 145.86 355 ePKP 19 28.60 1.0
0.8s 158.00nm
FVI 145.98 330 PKPc 19 29.20 1.2
VLS 146.34 312 ePKP 19 30.00 1.0
ECP 146.38 355 iPKPc 19 29.60 1.1

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      0.7s    254.00nm
CTI   146.91 331 PKP    19 31.10    1.4
SLE   146.92 336 ePKPd  19 31.10    1.5
SAX   146.99 334 ePKPd  19 32.00    1.9
FEL   147.02 336 ePKPd  19 31.36    1.5
OSS   147.10 333 ePKPd  19 32.50    2.4X
ZLA   147.19 335 ePKPd  19 31.90    1.8
LLS   147.44 334 ePKPd  19 33.10    2.4X
BSF   147.51 337 ePKP   19 30.90    0.3
      0.8s     5.30nm
VDL   147.55 333 ePKPd  19 33.30    2.4X
AOI   147.70 325 ePKP   19 30.24   -0.7
BCAO  147.85 248 iPKPc  19 31.10   -1.0
      1.5s    185.00nm
                ic    19 34.60
                ic    20 28.00
SSO   147.97 325 ePKP   19 30.50   -0.9
RSM   148.05 327 PKP    19 35.80    4.4X
TMA   148.10 333 ePKPd  19 34.40    2.7X
CIO   148.19 325 ePKP   19 30.90   -0.9
ALP   148.23 324 ePKP   19 30.56   -1.4
VAI   148.33 333 PKP    19 34.80    3.0
SFI   148.36 328 PKPc   19 36.50    4.6X
ROI   148.38 317 PKP    19 36.10    3.9X
CSI   148.44 318 PKP    19 37.50    5.2X
DUI   148.45 322 PKP    19 36.00    3.7X
PGD   148.46 328 PKP    19 37.70    5.3X
TDS   148.48 317 PKPc   19 36.40    4.1X
MMK   148.52 334 ePKPd  19 36.30    3.8X
ASS   148.53 326 PKP    19 35.60    3.2X
MMN   148.57 318 PKP    19 36.00    3.6X
DIX   148.73 335 ePKPd  19 37.00    4.1X
MME   148.73 329 PKP    19 36.60    3.7X
FIR   148.76 328 ePKP   19 37.50    4.9X
SDI   148.79 323 PKP    19 36.20    3.4X
FLN   148.81 346 ePKP   19 32.90    0.4
CZI   148.85 317 PKP    19 38.60    5.8X
ORX   148.85 334 PKP    19 35.75    2.9X
ORO   148.86 334 PKP    19 36.00    3.1X
LDF   148.89 346 ePKP   19 33.70    1.1
BOB   148.89 331 PKP    19 36.50    3.6X
EMS   148.93 335 ePKPd  19 37.20    4.1X
LOR   149.00 340 ePKP   19 33.80    0.9
      0.8s     5.30nm
PII   149.17 329 PKPc   19 36.20    3.0X
SSF   149.30 340 ePKP   19 34.10    0.8
      1.1s    17.00nm
LSD   149.34 335 PKP    19 38.42    4.6X
RMP   149.36 324 PKPc   19 37.90    4.3X
RDP   149.38 324 PKP    19 38.40    4.7X
LPG   149.47 335 ePKP   19 34.10    0.1
      0.7s     2.60nm
PCP   149.47 332 PKP    19 37.29    3.5X
RSP   149.54 334 PKP    19 37.09    3.2X
SMF   149.56 340 ePKP   19 34.00    0.3
LPF   149.63 347 ePKP   19 34.20    0.5
      0.8s    10.70nm
CKI   149.68 332 PKPc   19 37.90    3.9X
BNI   149.86 335 PKPc   19 39.70    5.3X
FIN   149.89 332 PKP    19 37.91    3.6X
RRL   149.93 334 PKP    19 39.14    4.5X
BGF   149.95 341 ePKP   19 35.00    0.7
ROB   149.97 332 PKP    19 38.32    3.8X
DOI   150.07 333 PKP    19 37.80    3.1X
PZZ   150.13 333 PKP    19 38.42    3.6X
ENR   150.22 333 PKP    19 38.01    3.1X
STV   150.25 333 PKP    19 38.21    3.3X
FOUF  150.25 334 ePKP   19 40.60    5.8X
                i       19 40.76
IMI   150.26 332 PKP    19 39.14    4.2X
MAF   150.34 341 ePKP   19 35.70    0.8
TCF   150.39 341 ePKP   19 35.40    0 4
MNO   150.50 316 PKP    19 41.50    5.8X
LSF   150.63 342 ePKP   19 35.70    0.3
MFF   150.76 345 ePKP   19 36.30    0.8
      0.8s     8.00nm
MEU   150.79 314 PKP    19 43.90    7.9X
RJF   151.49 341 ePKP   19 37.80    1.1
LFF   152.05 342 ePKP   19 38.40    0.9
EPF   153.90 341 ePKP   19 40.20    0.0
      0.9s     9.80nm
KUK   163.81 221 ePKP   19 52.00   -0.3
                e       20 46.60
KIC   166.31 207 PKPc   19 54.00   -0.4
      1.1s    39.50nm
LIC   166.31 206 PKPc   19 54.02   -0.4
      1.1s    43.50nm
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TIC   166.68 207 PKPc   19 54.40   -0.3
TIO   167.35 345 ePKP   19 57.00    2.1X
LKO   169.50 211 PKP    19 56.80    0.3
        0.9s    54.00nm
      S.D. = 1.0  on 242 of 322 obs.
-------------------------------------
?  DEC  11, 1989  16h 19m 24.07± 1.54s
    2.905 S ±15.5km  130.983 E ±34.1km
   DEPTH =  33.0km  (normal)
   4.4mb (  5 obs.)
 CERAM                              (272)

MTN     9.88 179 iPd    21 45.80   -1.1
KNA    12.95 190 eP     22 23.60   -4.9X
                eS      24 42.00
WB5    17.19 169 eP     23 21.00   -2.5X
                eS      26 26.30
PMG    17.32 113 eP     23 35.00    9.9X
QIS    19.46 155 iPd    23 53.90    2.8X
                e       27 20.00
ASPA   20.83 172 iPc    24 06.40    0.8
       0.7s     86.00nm          5.2mb
                eS      27 52.50
CTA    22.67 140 iPd    24 30.40    6.5X
       0.9s     9.24nm           4.3mb
WARB   23.52 190 eP     24 33.00    0.8
       0.3s     3.00nm           4.3mb
IPM    30.84 284 ePd    25 40.20    0.5
BWA    35.31 155 eP     26 23.80    5.5X
                i       26 33.10
CHG    38.21 306 eP     26 44.10    1.3
CHTO   38.21 306 eP     26 43.10    0.3
       1.0s     8.25nm           4.5mb
                pP      26 48.80   19kmX
BJI    44.84 344 eP     27 36.50   -0.4
GBA    55.58 289 Pc     28 57.10   -2.1
       0.6s     1.80nm           4.3mb
INK    94.72  22 eP     32 37.00   -6.0X
CNCB  152.90 137 ePKP   39 27.00   13.4X
LPB   153.01 136 (PKP)  39 25.00   11.4X
ZOBO  153.17 136 PKP    39 27.00   13.0X
      S.D. = 1.4  on   8 of  18 obs.
-------------------------------------
?  DEC  11, 1989  16h 51m 04.54± 3.23s
   34.460 S ±27.6km   70.422 W ±14.6km
   DEPTH = 131.1 ± 24.2 km
 CHILE-ARGENTINA BOROER REGION    (127)

CHCH    0.56 340 iPc    51 24.20   -0.2
                iS      51 37.00
PCH     0.84 355 iPc    51 26.50    0.0
TACH    0 91 332 iPc    51 27.50    0.5
                iS      51 42.50
SAN     1.02 349 iPc    51 28.00   -0.1
                iS      51 43.20
FCH     1.13   6 iPc    51 29:60    0.1
                iS      51 46.50
PEL     1.33 350 iPc    51 31.10   -0.2
                iS      51 49.00
LCCH    1.37 316 iPc    51 31.50   -0.1
ROCH    1.56 342 iPc    51 34.00    0.0
                iS      51 54.00
CFA     3.38  33 ePc    51 57.00    0.0
                S       52 34.40
MRA     4.44  64 ePd    52 11.00    0.0
      S.D. = 0.2  on  10 of  10 obs.
-------------------------------------
   DEC  11, 1989  16h 59m 19.13± 0.41s
   38.396 N ± 4.2km   25.083 E ± 3.9km
   DEPTH =  10.0km  (geophysicist)
 AEGEAN SEA                         (365)
      ML 3.8 (ATH).

ATH     1.16 249 ePn    59 40.10   -0.6
PRK     1.26  47 ePb    59 43.30    0.8
APE     1.37 165 ePn    59 43.50   -0.8
SMG     1.55 116 ePb    59 47.20    0.5
IZM     1.71  89 iPn    59 49.70    0.5
NEO     1.71 303 ePn    59 49.00   -0.2
EZN     1.72  34 ePn    59 48.40   -0.9
PAIG    1.88 325 eP     00 09.20   17.7X
AGG     2.24 287 eP     59 07.00  -49.9X
PLG     2.35 328 ePn    59 59.00    0.6
VLI     2.39 226 ePn    59 57.60   -1.3
LIT     2.64 311 eP     00 02.60    0.1
RDO     2.77   7 ePn    00 04.00   -0.3
ITM     2.78 245 ePb    00 06.00    1.5
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EDC     2.90  47 ePn    00 05.50   -0.7
MFT     2.93  35 ePn    00 08.00    1.3
DST     3.01  65 ePn    00 10.00    2.2
KZN     3.20 308 ePb    00 14.00    3.5X
KNT     3.23 329 eP     00 11.50    0.6
KDZ     3.26   4 eP     00 09.00   -2.3
GRG     3.29 322 eP     00 12.60    0.9
KAP     3.30 149 ePn    00 11.00   -0.8
RZN     3.30 355 iP     00 12.00    0.0
MMB     3.35 342 eP     00 12.00   -0.7
KHL     3.49  90 ePn    00 18.00    3.4X
VAY     3.50 327 ePn    00 23.60    8.9X
VLS     3.54 268 ePn    00 16.00    0.7
KKB     3.79 337 iP     00 19.00    0.2
IGT     3.87 289 eP     59 42.40  -37.6X
ALT     3.99  79 ePn    00 22.00    0.3
DMK     3.99  30 iPn    00 21.10   -0.5
OHR     4.27 311 ePn    00 27.70    2.0
VTS     4.43 342 iP     00 27.00   -1.0
PVL     4.82   2 eP     00 32.00   -1.4
MLR     7.12   5 eP     01 05.50   -0.4
      S.D. = 1.1  on  29 of  35 obs.
-------------------------------------
%  DEC  11, 1989  17h 01m 10.53± 1.42s
   46.193 N ±14.4km    2.828 E ± 6.5km
   DEPTH =  10.0km  (geophysicist)
 FRANCE                             (538)
      ML 1.9 (LDG).

MAF     0.18 279 Pg     01 15.10    0.4
                Sg      01 18.10
BGF     0.37   2 Pg     01 18.10    0.1
                Sg      01 23.60
TCF     0.44 283 Pg     01 19.30   -0.2
                Sg      01 25.20
AVF     0.70  31 Pg     01 24.10   -0.2
                Sg      01 33.30
SMF     0.83  57 Pg     01 26.60   -0.1
                Sg      01 37.80
LSF     0.90 274 Pg     01 27.60   -0.2
                Sn      01 39.20
LBF     1.12  45 Pg     01 31.80    0.2
                Sg      01 46.60
      S.D. = 0.3  on   7 of   7 obs.
-------------------------------------
?  DEC  11, 1989  17h 28m 51.95± 1.17s
   15.581 S ±47.6km  173.079 W ±35.4km
   DEPTH =  33.0km  (normal)
   4.9mb (  6 obs.)  4.9Msz (  1 obs.)
 TONGA ISLANDS                      (173)

AFI     2.09  37 eP     29 25.00   -0.4
                S       30 05.00
                e       31 20.00
MBU     7.99 259 ePd    30 56.10    7.3X
DZM    20.42 248 iPc    33 31.60    2.4
CMS    40.60 240 iPd    36 27.80   -2.6
WB5    50.08 257 eP     37 44.20   -1.9
ASPA   50.35 252 iPc    37 44.60   -3.6X
       1.0s     19.00nm          5.1mb
     Z 19s      1.11um           4.9Msz
                LR      57 47.90
GUMO   50.69 303 eP     38 00.00    9.3X
CMB    72.70  41 ePd    40 19.40    0 7
WDC    72.93  38 e(P)   40 32.50   12.6X
KVN    74.74  41 P      40 30.50   -0.3
TNP    74.76  43 P      40 30.90    0.0
       0.9s     7.42nm           4.7mb
LON    77.24  33 P      40 44.70    0.2
PNT    80.00  32 eP     41 00.00    0.5
       0.5s     4.00nm           4.7mb
PV09   80.41  46 P      41 03.00    0.7
LRM    81.97  38 eP     41 13.30    3.1X
BW06   82.20  42 P      41 11.00   -0.5
FBA    82.52  11 P      41 10.00   -2.3
GOL    83.56  46 P      41 19.00    0.4
       0.8s     6.55nm           4.8mb
SES    85.17  35 eP     41 27.00    0.9
BJI    85.82 313 eP     41 33.00    3.5X
       1.5s    37.00nm           5.4mb
                eS      52 12.00
INK    88.37  14 eP     41 40.00   -1.3
CHTO   93.06 289 eP     42 06.90    2.8
       1.0s     5.00nm           4.9mb
                i       42 17.00
KSP   144.02 350 ePKP   48 24.50   -1.2
CLL   144.03 353 iPKPd  48 27.40    1.7
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11d 17h

MOX 144.82 355 ePKP 48 26.00 -1.1
1.6s 25.00nm
GRF 145.80 355 ePKP 48 31.70 2.9X
e 48 42.00
KHC 146.10 352 iPKPd 48 33.00 3.6X
1.4s 24.00nm
MLR 146.16 336 ePKPd 48 32.50 2.8X
ZST 146.41 348 iPKP 48 32.80 3.0X
SRO 146.51 346 ePKP 48 32.30 2.3X
BBTK 146.95 322 iPKPd 48 35.00 3.9X
CDF 147.26 360 ePKP 48 33.30 2.0X
HAU 147.66 1 ePKP 48 35.60 3.7X
KBA 148.14 352 e(PKP) 48 34.00 1.1
1.2s 7.10nm
LOR 148.30 4 ePKP 48 37.30 4.4X
1.1s 10.70nm
SSF 148.48 4 ePKP 48 37.80 4.6X
1.2s 17.80nm
LBF 148.59 4 ePKP 48 38.10 4.7X
AVF 148.74 5 ePKP 48 38.10 4.5X
LJU 148.97 350 e(PKP) 48 38.50 4.5X
VOY 149.08 351 ePKP 48 39.00 4.7X
MAF 149.24 6 ePKP 48 39.60 5.2X
1.3s 26.70nm
CEY 149.28 350 ePKP 48 39.50 5.0X
VBY 149.36 348 ePKPd 48 41.10 6.5X
TRI 149.42 351 ePKP 48 27.20 -7.4X
LPG 150.18 0 ePKP 48 42.90 6.7X
1.3s 21.60nm
SKO 150.87 337 ePKP 48 44.00 7.0X
OHR 151.86 337 ePKP 48 46.00 7.4X
S.D. = 1.5 on 20 of 47 obs.

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* DEC 11, 1989 18h 38m 45.88± 0.54s
4.538 S ± 7.2km 135.239 E ±10.6km
DEPTH = 33.0km (normal)
4.8mb (6 obs.) 4.7Msz (1 obs.)
WEST IRIAN REGION (196)

MNDI 8.53 101 eP 40 51.00 0.6
MTN 9.20 206 iPd 41 00.80 1.4
eS 42 41.00
PMG 12.78 113 eP 41 47.00 -1.0
KNA 12.83 209 eP 41 48.00 -0.7
eS 44 12.00
WB5 15.27 183 eP 42 19.00 -1.9
i 42 31.20
eS 45 02.00
QIS 16.48 165 eP 42 34.00 -2.3
eS 45 36.00
CTA 18.81 146 iPd 43 08.10 2.7
1.2s 26 56nm 4.3mb
ASPA 19.06 184 eP 43 09.50 1.2
0.6s 74.00nm 5.1mb
Z 21s 0.72um 4.3MszX
eS 46 32.30
LR 50 44.60
WARB 23.04 200 eP 43 53.00 3.6X
0.5s 7.00nm 4.4mb
OLP 23.55 159 eP 43 58.00 3.7X
CHTO 42.62 304 eP 46 40.90 -0.1
1.0s 4.50nm 4.2mb
XAN 45.71 329 P 47 05.60 -0.2
TIY 47.08 335 eP 47 16.00 -0.6
BJI 47.70 340 eP 47 20.00 -1.3
1.4s 33.00nm 5.2mb
CN2 48.92 351 P 47 30.00 -0.7
LZH 49.97 327 eP 47 39.00 -0.1
1.0s 38 00nm 5.4mb
HHC 50.10 337 eP 47 39.40 -0.6
BTO 50.52 335 eP 47 44.60 1.4
GTA 54.57 327 eP 48 13.80 0.3
WMO 64.35 324 P 49 23.00 2.1
CNCB 148.75 133 PKP 58 39.00 9.8X
LPB 148.84 133 (PKP) 58 41.00 11.8X
ZOBO 148.99 132 ePKP 58 36.00 6 4X
Z 22s 0.13um 4.7Msz
LR 15 52.00
CCH 149.67 136 PKP 58 40.00 9.7X
S.D. = 1.4 on 18 of 24 obs.

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* DEC 11, 1989 19h 30m 09.61± 0.84s
21.686 S ± 7.8km 68.980 W ±11.9km
DEPTH = 33.0km (normal)
CHILE-BOLIVIA BORDER REGION (124)

ANT 2.41 213 eP 30 47.50 0.0
iS 31 08.20
YJA 3.26 99 ePd 31 00.20 0.1
CNCB 4.94 11 P 31 25.00 1.0
CCH 5.05 32 P 31 25.00 -0.3
LPB 5.19 9 eP 31 27.00 -0.5
ZOBO 5.45 9 P 31 31.00 -0.2
ARE 5.71 335 iPc 31 40.10 5.4X
iS 32 34.40
S.D. = 0.7 on 6 of 7 obs.

DEC 11, 1989 19h 42m 51.29± 0.83s
22.156 S ± 7.3km 68.633 W ± 9.7km
DEPTH = 33.0km (normal)
NORTHERN CHILE (123)

ANT 2.25 226 eP 43 27.00 0.0
iS 43 51.50
YJA 2.90 91 ePc 43 37.00 0.4
SLA 3.86 132 ePc 43 49.30 -0.6
CCH 5.30 27 P 44 09.50 -1.0
CNCB 5.35 7 P 44 11.20 -0.3
i 44 30.00
LPB 5.62 5 P 44 17.00 1.9
ZOBO 5.88 5 Pc 44 18.00 -0.9
ITB1 13.31 103 Pc 46 01.00 0.5
S.D. = 1.1 on 8 of 8 obs.

DEC 11, 1989 20h 00m 40.77± 0.54s
38.388 N ± 6.0km 25.047 E ± 5.5km
DEPTH = 10.0km (geophysicist)
AEGEAN SEA (365)
ML 3.0 (ATH).

ATH 1.13 249 ePn 01 02.00 0.1
PRK 1.28 48 ePb 01 06.00 1.4
APE 1.37 164 ePn 01 05.50 -0.5
SMG 1.57 115 ePn 01 08.20 -0.5
NEO 1.69 303 ePn 01 10.80 0.2
IZM 1.74 89 iPn 01 10.80 -0.5
EZN 1.75 34 ePn 01 11.40 0.1
PLG 2.34 328 ePn 01 18.50 -1 4
VLI 2.36 226 ePb 01 21.20 1.0
RDO 2.78 8 ePn 01 26.00 -0.1
S.D. = 0.9 on 10 of 10 obs.

DEC 11, 1989 21h 34m 22.19± 0.43s
39.454 N ± 5.4km 20.454 E ± 3.7km
DEPTH = 5.0 ± 3.0 km
GREECE-ALBANIA BORDER REGION (392)
ML 3.0 (THE). MD 3.3 (ATH).

VLS 1.28 175 iPbd 34 45.00 -1.4
KZN 1.32 50 ePg 34 46.50 -0.7
AGG 1.52 106 iP 34 48.30 -1.8
eS 35 15.20
OHR 1.68 9 iPn 34 54.00 1.7
LIT 1.70 67 eP 34 52.80 0.2
eS 35 20.90
LCI 2.11 295 Pd 34 56.60 -2.0
eSn 35 28.30
GRG 2.12 44 eP 34 58.80 0.1
eS 35 33.52
NEO 2.15 93 ePn 34 59.00 -0.2
PLG 2.48 67 ePn 35 03.10 -0.8
KNT 2.53 47 eP 35 04.50 -0.1
ITM 2.55 153 ePb 35 07.00 2.1
SKO 2.62 16 ePn 35 06.20 0.3
iPg 35 11.50
iSn 35 38.00
iSb 35 43.00
iSg 35 46.00
Lg 35 49.00
BRT 2.87 301 P 35 08.80 -0.6
eSn 35 49.70
ATH 2.95 119 ePn 35 11.00 0.4
ROI 3.01 273 P 35 12.40 1.0
KKB 3.13 39 iP 35 13.00 -0.1
TDS 3.19 275 P 35 13.70 -0.2
CSI 3.23 277 P 35 15.70 1.1
MMB 3.28 48 eP 35 16.00 0.7
CZI 3.36 267 P 35 18.20 1.8
VLI 3.36 144 ePb 35 22 00 5 6X
MMN 3.47 279 P 35 21.20 3.2X
VTS 3.76 33 iP 35 23.00 0 7
RZN 3.94 54 iP 35 25.00 0 2
SGO 4.10 287 P 35 26.80 -0.1
MEU 4.94 243 P 35 34.90 -4.0X
SDI 5.53 296 P 35 46.50 -0.8
ALP 6.17 305 ePd 35 54.89 -1.4
S.D. = 1.1 on 25 of 28 obs.

& DEC 11, 1989 22h 31m 03.00s
35.792 N 121.387 W
DEPTH = 8.0km
CENTRAL CALIFORNIA (39)
<BRK>. ML 2.6 (BRK).

PRS 0.54 1 iPd 31 13.20 -0.6
iS 31 21.30
PRI 0.68 59 ePd 31 16.30 -0.5
iS 31 27.60
PHAM 0.80 87 eP 31 18.40 -0.4
LLA 0.90 23 ePc 31 20.40 0.0
iS 31 34.10
SAO 0.97 357 ePc 31 20.40 -1.3
PKEM 1.07 75 eP 31 23.50 0.1
BCH 1.22 119 eP 31 24.00 -2.0
GCC 1.33 338 e(P) 31 27.50 -0.2
eS 31 45.30
ARN 1.56 356 eP 31 30.00 -1.1
MHC 1.56 353 ePc 31 32.00 0.8
eS 31 53.30
FRI 1.81 48 e(P) 31 33.50 -1.1
e(S) 31 54.20
KVN 4.17 38 eP 32 12.50 3.9
12 obs. associated

DEC 11, 1989 23h 05m 20.49± 1.25s
40.693 N ± 5.9km 21.593 E ±11.9km
DEPTH = 10.0km (geophysicist)
GREECE (364)
ML 2.6 (THE).

KZN 0.41 161 ePg 05 28.00 -0.9
GRG 0.67 66 eP 05 33.50 -0 3
eS 05 41.30
OHR 0.73 305 iPg 05 36.90 2.0X
iSg 05 49.70
LIT 0.90 131 eP 05 37.50 -0.3
eS 05 51.50
VAY 0.97 49 ePn 05 40.40 1.5
THE 1.05 93 eP 05 39.10 -1.1
SKO 1.28 355 ePn 05 43.50 -0.8
i 05 48.00
eSn 06 05.00
PLG 1.45 102 ePb 05 47.00 0.2
eSb 06 07.70
AGG 1.76 161 eP 05 52 60 1.3
NEO 1.87 137 ePn 05 53.10 0 3
S.D. = 1.1 on 9 of 10 obs.

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* DEC 11, 1989 23h 23m 45.73± 0.81s
21.294 S ± 7.4km 67.264 W ±10.7km
DEPTH = 33.0km (normal)
CHILE-BOLIVIA BORDER REGION (124)

YJA 1.85 118 iPd 24 16.20 0.0
ANT 3.77 230 iP 24 43.00 0.0
iS 25 28.80
SLA 3.79 155 e(P) 24 38.00 -5 3X
CCH 4.03 15 P 24 47.00 0.0
S 25 35.50
CNCB 4.51 351 iPc 24 54.90 0 8
S 25 52.00
LPB 4.80 350 Pc 24 58.20 0 2
1.0s 80.00nm
ZOBO 5.06 351 Pc 25 01.00 -0.9
S 26 02.00
S.D. = 0.7 on 6 of 7 obs.

? DEC 11, 1989 23h 25m 05.90± 7.98s
9.246 N ±74.4km 62.200 W ±24.8km
DEPTH = 10.0km (geophysicist)
NEAR COAST OF VENEZUELA (97)

TPP 1.29 35 eP 25 30.79 0.9
eS 25 51.05
TCE 1.51 17 eP 25 32.38 -0.6
eS 25 54.61
TRN 1.60 29 ePc 25 33.43 -0.8
eS 25 57.95
TBH 1.66 42 eP 25 42.44 7.3X
eS 26 13.82
CUM 2.29 302 iP 25 44.40 0.1

		iS	26 19.40		
GRW	2.94	10 eP	25 54.02	0.4	
		eS	26 35.46		
SVB	4.11	13 eP	26 10.00	-0.1	
		eS	27 03.00		
S.D. = 0.8		on 6 of 7 obs.			

* DEC 11, 1989 23h 35m 24.38± 1.53s
35.148 N ±17.8km 26.482 E ± 6.4km
DEPTH = 10.0km (geophysicist)
CRETE (370)

KAP	0.69	54 ePn	35 39.10	1.0	
NPS	0.72	279 iPnc	35 38.00	-0.6	
VAM	1.89	279 ePb	35 58.00	1.1	
APE	2.07	338 ePn	35 59.20	-0.4	
YER	2.46	36 iPn	36 05.00	-0.2	
SMG	2.57	6 ePn	36 06.20	-0.5	
KSL	2.71	68 ePn	36 06.50	-2.2	
ELL	3.21	59 ePn	36 17.00	1.1	
VLI	3.28	300 ePn	36 15.20	-1.6	
IZM	3.30	11 iPn	36 17.10	-0.1	
KHL	4.00	37 ePn	36 28.00	0.9	
BCK	4.04	54 ePn	36 30.60	2.9X	
ITM	4.21	300 ePn	36 31.50	1.5	
S.D. = 1.3		on 12 of 13 obs.			

* DEC 11, 1989 23h 36m 59.55± 1.57s
34.062 N ±15.3km 26.696 E ±11.3km
DEPTH = 33.0km (normol)
CRETE (370)
MD 3.8 (ATH).

NPS	1.49	324 iPnc	37 25.00	0.7	
KAP	1.54	15 iPbc	37 26.10	1.2	
VAM	2.45	304 ePb	37 44.50	6.4X	
KSL	3.13	48 ePn	37 55.00	7.3X	
APE	3.15	343 ePn	37 45.70	-2.3	
YER	3.33	22 iPn	37 50.00	-0.6	
SMG	3.64	2 ePn	37 53.50	-1.4	
ELL	3.75	43 ePn	38 02.00	5.4X	
VLI	4.06	312 ePn	38 01.70	0.8	
BCK	4.64	42 ePn	38 15.00	5.8X	
KHL	4.83	27 ePn	38 13.00	1.2	
ALT	5.69	28 ePn	38 25.00	0.9	
NEO	5.93	333 ePn	38 26.00	-1.4	
KZN	7.37	329 ePn	38 49.00	1.4	
BURJ	7.85	101 Pd	38 52.60	-1.8	
MASJ	7.94	105 P+	38 56.80	1.2	
S.D. = 1.5		on 12 of 16 obs.			

DEC 12, 1989 00h 56m 21.77± 0.74s
44.484 N ± 8.6km 6.987 E ± 7.4km
DEPTH = 10.0km (geophysicist)
FRANCE (538)
ML 2.0 (GEN).

PZZ	0.08	75 P	56 24.71	0.3	
		S	56 26.25		
FOUF	0.15	287 iPg	56 25.31	0.0	
		e(Sg)	56 27.10		
STV	0.34	135 P	56 28.61	-0.2	
		S	56 33.63		
ENR	0.40	129 P	56 30.04	0.0	
		S	56 35.89		
RRL	0.46	342 P	56 30.86	-0.3	
		S	56 37.83		
ROB	0.66	106 P	56 34.86	-0.1	
		S	56 44.71		
S.D. = 0.3		on 6 of 6 obs.			

? DEC 12, 1989 01h 26m 53.51± 3 36s
36.447 N ±27.3km 70.675 E ±16.6km
DEPTH = 176.3 ± 41.5 km
4.6mb (3 obs)
HINDU KUSH REGION (718)

QUE	6.98	208 eP	28 34.50	0.1	
		eS	29 58.50		
NDI	9.50	143 iPc	29 07.40	-0.1	
	0.5s	28.17nm	5.0mb		
		eS	30 46.00		
NAO	44.43	323 P	34 47.80	-0.2	
	0.9s	3.20nm	3.9mb		
BCAO	57.40	249 ePc	36 25.80	-0.1	
	0.3s	4.00nm	4.7mb		
INK	74.00	9 eP	38 11.00	0.3	
S.D. = 0.4		on 5 of 5 obs.			

* DEC 12, 1989 02h 56m 07.50± 3.04s
15.161 N ±22.4km 60.972 W ±27.4km
DEPTH = 33.0km (normol)
LEEWARD ISLANDS (92)
ML 2.1 (FDF).

DTMT	0.37	281 eP	56 16.47	0.2	
		eS	56 22.17		
CRM	0.41	172 iPd	56 16.46	-0.3	
		S	56 21.80		
DPMT	0.41	284 eP	56 16.60	-0.2	
		eS	56 22.37		
FDF	0.46	202 iPc	56 17.39	-0.2	
	0.1s	0.50nm			
		S	56 23.40		
MVM	0.61	173 iPd	56 19.81	0.2	
		S	56 27.90		
BIM	0.65	189 iPd	56 20.52	0.3	
		S	56 28.00		
S.D. = 0.3		on 6 of 6 obs.			

* DEC 12, 1989 02h 57m 45.06± 1.31s
39.502 N ±10.8km 22.587 E ± 8.8km
DEPTH = 10.0km (geophysicist)
GREECE (364)
MD 3.0 (ATH).

NEO	0.53	111 ePn	57 55.90	0.1	
LIT	0.60	353 eP	57 57.50	0.2	
KZN	1.02	322 ePn	58 04.00	-0.4	
PLG	1.09	37 ePn	58 05.00	-0.6	
		eSn	58 18.50		
THE	1.17	14 eP	58 06.50	-0.3	
GRG	1.46	354 eP	58 12.50	1.0	
		eS	58 32.00		
VAY	1.82	360 ePn	58 17.00	0.4	
OHR	2.11	320 ePn	58 20.50	-0.4	
S.D. = 0.6		on 8 of 8 obs.			

? DEC 12, 1989 02h 59m 36.77±16.66s
40.289 N ±29.3km 127.343 W ±139.km
DEPTH = 10.0km (geophysicist)
OFF COAST OF NORTHERN CALIFORNIA(34)
ML 3.7 (BRK).

FHC	2.61	78 eP	00 18.90	-0.9	
		e(S)	00 47.80		
WDC	3.68	84 ePc	00 35.00	0.1	
LBFM	4.27	74 eP	00 44.20	0.7	
MIN	4.39	87 e(P)	00 40.30	-4.8X	
		e(S)	01 21.70		
BRK	4.63	120 e(P)	00 48.80	0.4	
BKS	4.65	120 eP	00 48.50	-0.2	
PCC	4.77	124 ePc	00 50.40	0.0	
GCC	5.30	126 ePc	00 58.40	0.5	
MHC	5.34	122 ePc	00 58.80	0.3	
		e(S)	01 58.40		
ARN	5.40	121 eP	00 59.20	-0.2	
SAO	5.81	125 eP	01 04.90	-0.2	
CMB	5.86	110 e(P)c	01 08.40	2.6X	
PRS	6.14	128 e(P)	01 09.10	-0.6	
KVN	7.24	97 eP	01 32.00	6.7X	
S.D. = 0.5		on 11 of 14 obs.			

& DEC 12, 1989 03h 52m 01.50s
37.148 N 121.998 W
DEPTH = 13.0km
CENTRAL CALIFORNIA (39)
<BRK>. ML 3.7 (BRK). Felt (IV) at Boulder Creek and (III) at Santo Cruz. Also felt at Aptos and San Jose.

GCC	0.12	179 iPd	52 04.10	-0.7	
MHC	0.34	56 iPd	52 08.65	-0.2	
		iS	52 13.85		
ARN	0.42	61 iPd	52 09.80	-0.5	
PCC	0.47	319 iPd	52 10.40	-0.6	
SAO	0.59	131 ePd	52 11.55	-1.5	
		iS	52 22.95		
BKS	0.75	346 iPc	52 15.20	-0.7	
		eS	52 26.15		
BRK	0.75	344 ePc	52 15.10	-0.8	
		i	52 16.10		
		iS	52 26.00		

ZSP	0.82	346 iPc	52 16.60	-0.5	
PRS	0.96	148 ePc	52 18.20	-1.3	
		i	52 18.50		
LLA	1.00	122 iPc	52 19.20	-1.0	
PRI	1.47	133 ePc	52 27.30	-0.5	
NWRM	1.48	332 eP	52 25.50	-2.3	
CMB	1.56	55 ePd	52 27.40	-1.6	
		iSg	52 52.50		
PHAM	1.84	135 eP	52 30.90	-2.1	
FRI	1.84	94 ePd	52 31.10	-1.9	
PKEM	1.87	125 e(P)	52 29.00	-4.4	
ORV	2.44	9 eP	52 40.00	-1.6	
BCH	2.50	141 eP	52 39.80	-2.7	
KVN	3.61	57 eP	52 57.40	-1.1	
TNP	3.91	75 eP	52 59.00	-3.7	
20 obs. ossociated					

* DEC 12, 1989 03h 55m 17.99± 0.87s
38.273 N ± 9.2km 25.069 E ± 9.0km
DEPTH = 10.0km (geophysicist)
AEGEAN SEA (365)
ML 3.0 (ATH).

ATH	1.11	255 ePb	55 39.00	0.2	
APE	1.26	163 ePb	55 41.00	-0.4	
PRK	1.35	44 ePb	55 43.50	0.7	
IZM	1.73	85 ePn	55 48.80	0.5	
EZN	1.83	32 ePn	55 48.70	-1.0	
S.D. = 1.0		on 5 of 5 obs.			

DEC 12, 1989 04h 27m 22.23± 0.37s
38.349 N ± 4.2km 25.063 E ± 3.2km
DEPTH = 10.0km (geophysicist)
3.9mb (1 obs.)
AEGEAN SEA (365)
ML 4.2 (ATH).

ATH	1.13	251 ePn	27 43.00	-0.3	
PRK	1.30	46 ePn	27 46.00	-0.3	
APE	1.33	164 ePn	27 46.00	-0.8	
SMG	1.54	114 ePn	27 49.30	-0.4	
NEO	1.73	304 ePn	27 51.80	-0.7	
IZM	1.73	88 iPn	27 52.30	-0.3	
EZN	1.77	33 iPn	27 51.20	-1.9	
VLI	2.35	227 ePn	28 00.30	-1.1	
PLG	2.38	329 ePn	28 01.00	-0.9	
LIT	2.66	312 eP	28 04.50	-1.4	
		eS	28 50.00		
ITM	2.75	246 ePn	28 06.90	-0.3	
THE	2.80	325 eP	28 08.50	0.7	
RDO	2.82	7 ePn	28 06.70	-1.4	
YER	2.83	114 ePn	28 09.00	0.7	
EDC	2.95	47 ePn	28 09.50	-0.5	
SRS	2.99	338 eP	28 13.00	2.5	
DST	3.05	65 ePn	28 13.40	2.0	
NPS	3.11	172 ePb	28 17.50	5.2X	
KZN	3.22	308 ePn	28 13.50	-0.3	
KAP	3.27	148 ePn	28 14.00	-0.5	
KDZ	3.31	5 iPd	28 14.00	-1.1	
GRG	3.32	323 eP	28 14.50	-0.7	
		eS	29 08.50		
RZN	3.35	356 iPc	28 15.00	-0.8	
MMB	3.39	343 eP	28 15.00	-1.3	
KHL	3.51	89 ePn	28 18.00	0.0	
VLS	3.53	269 ePb	28 21.00	2.8	
VAY	3.53	328 iPn	28 18.00	-0.2	
DIM	3.71	5 eP	28 20.00	-0.8	
PLD	3.76	356 eP	28 21.00	-0.5	
KKB	3.83	337 eP	28 21.00	-1.5	
YLV	4.00	55 ePn	28 25.00	0.0	
ALT	4.01	78 iPn	28 25.00	-0.1	
DMK	4.04	30 iPn	28 24.40	-1.0	
ISK	4.11	47 ePn	28 29.00	2.7	
GBZT	4.17	53 eP	28 42.50	15.2X	
PGB	4.25	351 eP	28 19.00	-9.5X	
OHR	4.29	311 ePn	28 30.70	1.6	
BCK	4.46	100 ePn	28 32.10	0.6	
VTS	4.47	342 iP	28 32.00	0.4	
SKO	4.56	324 ePn	28 28.00	-4.8X	
		i	28 33.50		
BBTK	6.17	74 eP	29 24.00	28.3X	
		eS	30 44.00		
BRT	6.57	295 P	29 00.30	-1.0	
ROI	6.73	283 P	29 04.00	0.4	
TDS	6.92	284 P	29 06.70	0.5	
CZI	7.03	280 P	29 08.60	0.9	
MLR	7.17	5 eP	29 12.00	2.3	

12d 04h

MMN	7.22	285	P	29 10.40	0.1
VRI	7.62	9	eP	29 20.00	4.1X
BZS	7.70	342	eP	29 17.50	0.5
SGO	7.86	289	P	29 18.00	-1.3
SDI	9.26	295	Pc	29 38.80	0.0
PTJ	10.13	321	eP	29 46.80	-3.9X
KHC	13.59	326	Pd	30 40.00	2.7
NAO	24.21	343	P	32 39.80	0.2
	0.8s		2.80nm		3.9mb
	S.D. = 1.2		on 47 of 54 obs.		

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* DEC 12, 1989 04h 40m 32.59± 1.52s
29.144 N ± 8.8km 52.514 E ±23.1km
DEPTH = 10.0km (geophysicist)
4.3mb (3 obs.)
SOUTHERN IRAN (353)

BBU	3.44	213	(P)	41 27.50	0.2
BRF	3.51	210	(P)	41 28.40	0.2
	0.7s		678.00nm		
DHR	3.53	217	eP	41 44.00	15.5X
RYD	6.87	231	eP	42 15.80	-0.1
BHD	8.09	303	ePd	43 23.00	50.2X
			e	44 18.00	
OASM	8.53	251	eP	42 39.30	0.2
MAIO	9.24	38	eP	43 11.00	22.0X
			eS	45 27.00	
KMSA	11.37	222	iPd	43 15.30	-2.8X
KBA	35.19	311	e(P)	47 29.00	0.0
HFS	40.48	331	eP	48 12.80	0.0
	0.4s		2.90nm		4.3mb
BCAO	40.49	239	iPd	48 13.30	-0.2
	0.4s		4.00nm		4.5mb
NAO	42.06	331	P	48 26.20	0.5
	0.7s		2.20nm		4.0mb
KIC	58.42	259	P	50 30.20	-0.9
	S.D. = 0.5		on 9 of 13 obs.		

& DEC 12, 1989 04h 43m 50.78s
64.478 N 146.911 W
DEPTH = 12.5km
CENTRAL ALASKA (1)
<AGS-P>. ML 3.4 (PMR).

HDA	0.07	194	iP	43 53.17	-0.4
CCB	0.42	294	iP	43 59.02	-0.5
WRH	0.51	270	iP	44 00.75	-0.4
GLM	0.55	338	iP	44 01.53	-0.3
FBA	0.57	319	iPc	44 01.60	-0.5
RDS	0.64	304	iP	44 03.08	-0.2
DMW	0.67	129	iP	44 03.43	-0.4
DDM	0.83	146	eP	44 06.88	0.2
			eS	44 17.15	
NEA	0.94	277	iP	44 08.43	-0.1
			eS	44 21.38	
MCK	1.16	231	iP	44 12.68	0.4
RND	1.38	219	iP	44 15.98	0.2
DOT	1.50	122	eP	44 17.02	-0.5
PAX	1.64	156	eP	44 19.40	-0.2
			eS	44 40.95	
KTH	2.00	244	eP	44 23.77	-0.9
SDG	2.05	162	eP	44 27.33	1.9
TMW	2.08	122	eP	44 29.28	3.4
TOA	2.41	172	eP	44 32.00	1.4
NCA	2.49	179	eP	44 33.65	1.9
GHO	2 87	200	eP	44 37.98	0 9
PMR	3.07	200	eP	44 42.40	2.6
IMA	3.26	302	eP	44 42.50	-0.3
DWY	3.29	94	P	44 42.00	-1.1
INK	6.60	48	eP	45 28.00	-1.8
	23 obs. associated				

% DEC 12, 1989 05h 29m 45.76± 2.01s
35.647 N ±22.3km 23.541 E ±17.8km
DEPTH = 5.0km (geophysicist)
CRETE (370)
MD 3.4 (ATH).

VAM	0.59	114	ePg	29 56.90	-0.6
VLI	1.17	336	ePb	30 06.50	-1.6
NPS	1.73	102	ePb	30 17.00	0.3
ITM	2.01	320	ePb	30 22.00	1.3
APE	2.14	48	ePg	30 23.40	0.7
	S.D. = 1.6		on 5 of 5 obs.		

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* DEC 12, 1989 06h 01m 11.88± 2.18s
5 253 N ±16.7km 94.521 E ±12.5km
DEPTH = 57.1 ± 23.7 km
4.9mb (2 obs.)
NORTHERN SUMATERA (706)

TSI	4.39	113	ePc	02 13.00	-4.6X
			iS	03 08.00	
SNG	6.35	72	eP	02 43.50	-1.6
	0.7s		68.49nm		5.3mb X
IPM	6.52	96	ePc	02 48.10	0.7
	0.6s		47.00nm		5.2mb X
			e	03 56.50	
NNT	8.92	35	eP	03 17.00	-3.8X
KGM	9.35	110	ePc	03 27.10	0.5
CHG	14.15	17	eP	04 33.40	2.4X
	0.9s		30.04nm		4.9mb
CHTO	14.15	17	eP	04 32.00	1.0
GBA	18.77	297	P	05 29.40	0.2
			S	08 39.40	
HYB	19.76	309	eP	05 39.50	-0.6
WB5	46.46	124	iPc	09 35.00	-0.3
ASPA	47.97	128	eP	09 47.30	0.1
	0.6s		8.00nm		4.9mb
BRS	64.90	123	eP	11 48.00	0.2
			e	15 04.00	
	S.D. = 1.0		on 9 of 12 obs.		

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* DEC 12, 1989 06h 39m 12.18± 0.88s
17.245 N ±13.0km 95.713 W ± 8.6km
DEPTH = 102.4 ± 11.3 km
4.3mb (1 obs.)
OAXACA, MEXICO (60)

OXX	0.98	261	iP	39 33.15	0.1
			iS	39 49.21	
IISM	2.35	318	iP	39 50.62	0.7
			iS	40 20.06	
LVVM	2.58	344	iP	39 51.74	-1.3
			iS	40 21.06	
SCX	2.99	99	iP	39 58.84	0.2
			iS	40 33.19	
IIT	3.03	306	(P)	40 04.46	5.0X
PPM	3.31	304	iP	40 06.28	2.8X
III	3.75	288	eP	40 10.49	1.3
ACX	3.98	265	(P)	40 11.00	-1.2
TPX	4.05	125	(P)	40 35.00	21.8X
CRX	4.34	300	(P)	40 12.00	-5.4X
SIO	18.44	358	eP	43 22.80	0.4
TUL	18.59	360	eP	43 24.00	-0.2
	0.7s		11.00nm		4.3mb
LNO	18.59	360	e(P)	43 23.50	-0.6
ACO	19.61	352	eP	43 36.00	1.0
INK	56.34	344	eP	48 44.00	-0.4
LKO	87.34	81	P	52 14.60	25.2X
	0.7s		6.00nm		
	S.D. = 1.0		on 11 of 16 obs.		

DEC 12, 1989 06h 50m 50.60± 0.40s
41.309 N ± 3.8km 23.348 E ± 4.0km
DEPTH = 10.0km (geophysicist)
GREECE-BULGARIA BORDER REGION (363)
MD 3.1 (ATH). ML 2.9 (THE), 2.6 (SKO).

SRS	0.27	136	eP	50 55.50	-0.7
MMB	0.40	45	iPgc	50 59.00	0.2
			Sg	51 04.00	
VAY	0.59	271	iPgd	51 02.80	0.4
			iSg	51 11.00	
KKB	0.59	341	iPgc	51 02.00	-0.6
THE	0.74	203	eP	51 05.50	0.5
			eS	51 15.50	
GRG	0.80	244	eP	51 07.00	0.9
			eS	51 18.00	
PLG	0.94	175	ePn	51 08.20	-0.3
RZN	1.10	69	iPgc	51 12.00	0.7
VTS	1.29	355	iPgc	51 16.00	1.5
LIT	1.37	209	eP	51 15.50	-0.3
PGB	1.38	26	iPgc	51 16.00	0.0
KZN	1.56	231	ePn	51 20.00	1.5
SKO	1.58	295	ePn	51 18.50	-0.2
			eSn	51 47.00	
KDZ	1.59	77	iPgd	51 19.00	0.1
RDO	1.66	95	iPnd	51 19.30	-0.5
DIM	1.80	65	ePg	51 25.00	3.2X
OHR	1 93	265	ePn	51 21.60	-2 3
NEO	2 00	183	ePn	51 25.00	0.1
BZS	4.49	344	ePc	51 59.00	-1.1
MLR	4.59	23	eP	52 04.50	2.8X
	S.D. = 1.0		on 18 of 20 obs.		

? DEC 12, 1989 06h 52m 50.60± 6.41s
32.096 S ±47.5km 71.332 W ±18.1km
DEPTH = 10.0km (geophysicist)
NEAR COAST OF CENTRAL CHILE (135)

JACH	0.86	133	iPc	53 07.50	0.3
			iS	53 19.60	
ROCH	0.91	163	iPd	53 08.20	0.0
			i	53 20.20	
			iS	53 21.50	
PEL	1.18	153	iPc	53 12.40	-0.2
			iS	53 28.00	
LCCH	1.39	188	eP	53 16.00	0.0
FCH	1.51	145	iPc	53 17.50	-0.5
			iS	53 37.00	
CHCH	1.92	163	eP	53 24.00	0.3
			iS	53 48.00	
	S.D. = 0.4		on 6 of 6 obs.		

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* DEC 12, 1989 06h 57m 02.53± 0.49s
10.322 N ± 9.3km 126.525 E ±11.3km
DEPTH = 33.0km (normol)
4.7mb (5 obs.)
PHILIPPINE ISLANDS REGION (248)

DAV	3.35	196	eP	58 04.90	11.1X
QCP	6.83	309	eP	59 02.00	18.9X
BAG	8.37	317	eP	59 04.50	-0.3
GUMO	18.23	78	e(P)	01 14.20	-0.7
Z	20s		0 43um		
PJG	18.23	78	e(P)	01 14.00	-0.9
SSE	21.26	347	P	01 49.50	1.3
	1.0s		28.00nm		4.6mb
			sP	02 00.50	
			eS	05 48.00	
NJ2	22.76	343	Pd	02 06.20	3.1X
WHN	23.09	332	P	02 08.50	2.1
			pP	02 18.80	39kmX
			iS	06 22.00	
WB5	30.99	166	eP	03 17.50	-1.8
BJI	30.99	344	eP	03 32.50	13.4X
LZH	32.88	325	P	03 35.50	-0 4
	1.2s		28.00nm		5.0mb
QIS	33.27	157	eP	03 39.00	-0.3
ASPA	34.54	168	eP	03 50.40	0.2
GTA	37.48	325	iPd	04 15.60	0.5
NWAO	43.91	191	eP	05 08.00	0.1
GBA	48.07	279	P	05 40.70	-0.6
BWA	49.11	156	eP	05 50.80	1.8
CAN	50.12	156	eP	05 58.90	2.1
KEV	83.67	340	eP	09 26.00	-2.9
			e	09 31.00	
INK	84.15	22	eP	09 33.00	1.7
SOD	84.34	337	eP	09 32.00	-0.3
MBC	85.61	13	eP	09 40.00	1.5
	1.0s		4.00nm		4.6mb
SUF	85.62	333	eP	09 39.00	0.2
NUR	86.88	331	iP	09 42.80	-2.2
			i	09 47.20	
HFS	92.12	333	eP	10 08 70	-1.0
	0.5s		1.80nm		4.8mb
NB2	92.82	334	P	10 12.80	-0.2
	0.8s		2.80nm		4.7mb
	S.D. = 1.4		on 22 of 26 obs.		

? DEC 12, 1989 07h 22m 22.42± 2.02s
43.735 N ±38.5km 148.015 E ±16.5km
DEPTH = 33.0km (normol)
4.6mb (5 obs.)
KURIL ISLANDS REGION (222)

IMA	38.34	34	P	29 41.70	0.1
	0.7s		7.99nm		4.7mb
FBA	40.74	36	P	30 02.10	0.8
	0.8s		8.97nm		4.6mb
INK	46.10	30	eP	30 44.00	-0.6
SOD	60.72	338	eP	32 32.00	-0.5
CMB	66.00	60	e(P)	33 07.80	0.0
KVN	66.80	58	P	33 12.90	-0.1
TNP	67.94	58	P	33 20.00	-0.3
	0.7s		3.06nm		4.5mb
NB2	69 84	339	P	33 31.00	-0.3
	0.8s		2.90nm		4.4mb
CLL	77.61	333	iPc	34 17.40	0.8

1.0s 13.00nm 4.9mb
S.D. = 0.6 on 9 of 9 obs.

DEC 12, 1989 07h 37m 36.32± 0.54s
38.206 N ± 4.5km 23.274 E ± 7.2km
DEPTH = 10.0km (geophysicist)
GREECE (364)
ML 2.3 (ATH).

ATH	0.42	124	ePb	37 45.10	0.2
AGG	1.10	318	iP	37 57.30	0.3
			eS	38 14.90	
NEO	1.10	358	ePb	37 57.50	0.5
ITM	1.48	227	ePn	38 02.70	-0.3
VLI	1.51	190	ePb	38 03.50	0.1
PAIG	1.75	10	eP	38 13.80	7.0X
LIT	1.99	342	eP	38 10.50	0.1
PLG	2.17	3	ePn	38 12.00	-1.0
OUR	2.20	14	eP	38 13.10	-0.2
KNT	2.97	355	eP	38 24.50	0.2

S.D. = 0.5 on 9 of 10 obs.

DEC 12, 1989 08h 33m 56.20± 0.16s
4.684 S ± 3.1km 130.827 E ± 4.2km
DEPTH = 74.2km (geophysicist)
5.8mb (36 obs.)
BANDA SEA (280)
Depth from broadband displacement seismograms.
FAULT PLANE SOLUTION: P-Waves
NP1:Strike=340 Dip=80 Slip= -15
NP2: 73 75 -170
Principal Axes:
T Plg= 3 Azm= 27
P 18 296
Comment: The focal mechanism is moderately well controlled and corresponds to strike-slip faulting with a small normal component. The preferred fault plane is not determined.
RADIATED ENERGY
No. of sta: 4 Focal mech. F
Energy 1.1±0.4*10**14 Nm
CENTROID, MOMENT TENSOR (HRV)
Data Used: GDSN
L.P.B.: 15S, 38C
Centroid Location.
Origin Time 08:33:58.4 0.2
Lat 4.58S 0.03 Lon 130.82E 0.04
Dep 72.3 1.7 Half-duration 4.1
Moment Tensor; Scale 10**18 Nm
Mrr= 0.46 0.03 Mtt= 0.30 0.04
Mff=-0.75 0.05 Mrt=-0.43 0.03
Mrf= 0.12 0.03 Mtf=-1.23 0.04
Principal Axes:

	Val=	Plg=	Azm=
T	1.32	26	212
N	0.26	63	42
P	-1.58	4	304

Best Double Couple:Mo=1.5*10**18
NP1:Strike=351 Dip=69 Slip= 16
NP2: 255 75 158

AAI	2.81	291	ePd	34 40.50	0.8
			eS	35 40.50	
MTN	8.12	178	iP	35 50.90	-2.7
KUPT	8.99	232	e(P)	36 13.50	8.0X
			eS	37 30.00	
KNA	11.18	190	eP	36 30.90	-4.4X
			eS	38 29.00	
DAV	12.81	336	eP-	36 55.00	-2.0
	2.2s	4307.69nm		6.8mb X	
MNDI	12.86	97	eP	36 54.00	-3.8X
WB5	15.49	167	iPc	37 24.80	-7.0X
TSM	15.51	305	ePd	37 34.00	2.0
	1.3s	4091.20nm		6.4mb	
LAT	16.21	98	iPc	37 41.00	0.1
PMG	16.87	107	iPd-	37 46.50	-2.6
OIS	17.94	152	iPd	37 57.80	-4.5X
KKM	18.07	306	ePc	38 04.00	0.0
			e	39 35 10	
			e	41 34 00	
TRT	18.33	260	ePd	38 06.30	-0.8
	0 8s	578.30nm		5.9mb	
ASPA	19.10	171	eP	38 12.90	-3.2X
	0.5s	1654.00nm		6.5mb	
Z	21s	17.45um		5.3Msz	
			eS	41 33.90	
			LR	47 40.80	
			eScS	49 44.50	
MBL	19.55	212	eP	38 17.50	-3.3X
	0.3s	80.00nm		5.5mb	
CTA	21.45	137	iPd-	38 39.80	-0.4
	1.4s	632.56nm		5.8mb	
			iS	42 31.00	
OCP	21.49	333	eP	38 38.00	-2.6
WARB	21.75	190	iPc	38 43.00	-0.2
GUA	22.88	38	eP	38 54.10	-0.2
	1.0s	232.00nm		5.6mb	
GUMO	22.89	37	eP	38 54.00	-0.4
	1.2s	344.44nm		5.7mb	
			e	39 12.90	86kmX
PJG	22.89	37	eP	38 54.20	-0.2
NANU	23.13	218	iPd	38 55.90	-0.8
BAG	23.28	334	ePd-	38 58.00	-0.4
			eS	43 04.00	
MEKA	24.77	207	eP	39 11.80	-0.8
	0.3s	41.00nm		5.4mb	
OLP	25.27	151	eP	39 17.50	0.3
COOL	27.61	198	iPc	39 36.70	-2.0
	0.4s	93.00nm		5.7mb	
RMO	27.64	144	iPd	39 39.20	0.2
			i	40 03.70	113kmX
KGM	28.28	283	ePc	39 45.10	0.3
STK	28.88	161	iPc	39 49.70	-0.3
	0.2s	49.00nm		5.8mb	
			e	40 06.00	68kmX
			e	45 26.00	
BAL	29.02	206	iPd	39 49.90	-1.4
	0.3s	37.00nm		5.5mb	
HNR	29.27	101	eP	39 51.00	-2.8
			eS	44 38.00	
KLB	29.45	203	iPd	39 53.70	-1.5
	0.3s	59.00nm		5.7mb	
CMS	30.16	154	eP	40 01.00	-0.4
			e	45 58.00	
MUN	30.42	205	iPd	40 02.10	-1.6
	0.5s	628.00nm		6.6mb	
BRS	30.78	140	iPd	40 05.70	-1.3
	0.6s	13.50nm		4.9mb	
			i	40 09.80	14kmX
			e	40 27.00	
			e	40 53.00	
			iPP	41 00.00	
			iS	45 00.00	
			iScP	46 41.00	
NWAO	30.83	203	iPc	40 06.00	-1.4
	0.5s	166.00nm		6.0mb	
Z	20s	6.70um		5.3Msz	
			eS	45 28.00	
ADE	31.00	167	iPc+	40 09.00	0.1
	0.7s	205.48nm		6.0mb	
ANP	31.04	343	eP	40 09.00	-0.3
IPM	31.16	287	ePd	40 09.10	-1.4
	1.0s	103 90nm		5.5mb	
OIZ	31.34	319	iPd	40 10.00	-2.0
	5.0s	2.00nm		3.1mb X	
N	14s	5.90um			
			pP	40 25.00	61kmX
			S	45 10.00	
HKC	31.38	329	P	40 12.00	-0.3
			S	45 13.00	
OZH	31.76	339	Pd	40 14.20	-1 3
	3.5s	1.50nm		3.2mb X	
Z	18s	2.30um		4.9Msz	
N	13s	2.00um			
			S	45 16.00	
RKG	31.93	202	eP	40 20.60	3.6X
	0.4s	228.00nm		6.3mb	
SNG	32.37	291	eP	40 21.10	0.1
	1.1s	151.90nm		5.7mb	
			eS	45 27.00	
GZH	32.46	329	P	40 20.90	-0.7
Z	24s	8.10um		5.3MszX	
N	15s	3.20um			
			pP	40 38.00	71kmX
COO	32.52	145	eP	40 23.00	0.8
			e	40 42.00	81kmX
			e	47 28.00	
BWA	33.80	153	eP	40 33.40	0.2
			e	46 34.70	
RIV	34 62	149	eP	40 40.00	-0.2
CAN	34.80	153	iPc	40 42.10	0.2
			e	41 05 80	104kmX
			i	41 23.70	
			i	41 47.70	
			i	43 19.10	
			e	46 53.00	
CNB	34.96	153	eP	40 44.00	0.7
			e	48 06.00	
NNT	35.34	299	iPd	40 46.20	-0.4
TOO	35.37	160	eP	40 48.00	1.3
	0.6s	69.00nm		5.8mb	
			e	41 05.00	68kmX
			e	48 11.00	
KAGJ	35.67	0	eP	40 48.50	-0.6
LOE	36.16	308	iPd	40 53.00	-0.5
NST	36.50	304	iPd	40 58.20	1.9
SSE	36.75	346	Pc	40 57.60	-0.6
	1.5s	215.00nm		5.9mb	
N	16s	1.20um			
E	13s	2.40um			
			sP	41 17.00	
			PPP	42 24.00	
			eS	46 10.00	
			sS	46 34.00	
KUMJ	37.01	0	eP	40 59.80	-0.6
BDT	38.24	306	eP	41 12.50	1.5
NJ2	38.27	343	iPd	41 11.00	0.0
	5.0s	1.80nm		3.3mb X	
N	12s	1.00um			
E	11s	1.50um			
			pP	41 23.50	47kmX
			sP	41 33.00	
			S	46 56.00	
WHN	38.41	337	iPd	41 13.50	1.3
	3.0s	2.26nm		3.6mb X	
Z	24s	3.41um		5.1MszX	
N	18s	3.47um			
			pP	41 32.00	76kmX
			iPP	42 46.00	
			iS	47 01.50	
			iScP	47 07.00	
DZM	38.57	120	iPc	41 13.60	-0.2
TKSJ	38.58	4	eP	41 12.60	-1.0
SHNJ	38.60	0	eP	41 12.50	-1.2
GYA	38.81	324	iPd	41 16.00	0.3
	3.0s	1.60nm		3.4mb X	
Z	22s	3.10um		5.1Msz	
N	16s	3.70um			
E	16s	2.50um			
			pP	41 34.00	74kmX
			sP	41 46.00	
			PP	42 50.00	
			S	47 06.00	
			ScS	51 17.00	
WKYJ	38.95	6	eP	41 18.30	1.5
SHK	39.04	2	eP	41 16.10	-1.3
CHG	39.13	308	ePc	41 17.20	-1.3
	1.0s	262.50nm		6.1mb	
			e	47 08.10	
YONJ	39.74	3	P	41 22.90	-0.3
KMI	40.28	319	iPd	41 29.24	1.1
	2.0s	2.20nm		3.7mb X	
			epP	41 46.45	69kmX
			iPP	43 08.47	
			iS	47 30.13	
			sS	49 25.50	
			ScS	50 50.50	
TSRJ	40.30	7	eP	41 30.90	3.1X
IIDJ	40.50	9	eP	41 27.90	-1.6
CHJJ	41.23	10	eP	41 36.10	0.6
MTMJ	41.57	8	P	41 36.70	-1.6
MAT	41.59	9	eP	41 38.00	-0.4
	2.0s	235.29nm		5.7mb	
Z	20s	3.19um		5.2Msz	
			eS	47 42.00	
KAKJ	41.61	11	eP	41 38.10	-0.4
NIIJ	42.40	10	eP	41 44.70	-0.3
TIA	42.66	344	Pd	41 45.90	-1.2
Z	26s	4.00um		5.2MszX	
N	14s	1.50um			
E	11s	0.60um			
			ScP	47 21.40	
			S	48 01.00	
YAMJ	43.49	11	eP	41 53.90	0.1
XAN	43.72	333	P	41 54.90	-0.9
N	13s	2.90um			
E	18s	2.70um			
			PP	43 40.00	
			S	48 17.50	

12d 08h

CD2 43.83 326 iPd 41 56.00 -0.8
Z 22s 5.40um 5.4Msz
E 12s 2.00um
pP 42 15.30 79kmX
sP 42 26.00
PP 43 42.00
PcP 43 46.50
S 48 17.00
SS 51 35.20
ScS 51 46.00
DL2 44.20 350 P 42 00.00 0.5
Z 26s 4.00um 5.2MszX
N 12s 1.50um
E 14s 3.90um
pP 42 20.00 82kmX
OFUJ 44.68 12 eP 42 11.80 8.3X
TIY 45.52 339 iPd 42 08.00 -2.2
1.1s 0 30nm 3.1mb X
Z 30s 3 90um 5.2MszX
sP 42 39.00
S 48 43.00
SS 51 59.50
BJI 46.50 344 iPd 42 17.60 -0.2
1.5s 576.00nm 6.3mb
Z 24s 4.73um 5.4MszX
N 13s 0.74um
E 13s 0.74um
e 42 38.96 88kmX
eS 48 57.47
esS 49 40.67
SS 52 12.00
SNY 46.76 353 iPd 42 19.00 -0.8
1.2s 0.20nm 2.9mb X
Z 20s 7.30um 5.6Msz
N 19s 5.10um
E 14s 1.20um
pP 42 41.00 92kmX
PP 44 09.50
iS 49 02.00
LZH 47.79 330 iPd 42 28.74 0.5
3.5s 2080.00nm 6.5mb X
Z 34s 10.50um 5.6MszX
N 20s 4.90um
E 20s 4.10um
epPd 42 46.95 73kmX
sP 42 55.00
PP 44 17.50
PPP 45 02.00
ScP 47 43.50
S 49 08.00
eS 49 11.36
esS 50 07.48
ScS 52 13.00
SS 52 40.00
HOOJ 48.19 12 eP 42 31.10 0.1
CN2 48.50 355 Pd 42 33.60 0.2
4.0s 0.80nm 3.1mb X
Z 20s 5.60um 5.5Msz
N 18s 2.00um
ipP 42 52.00 74kmX
iPP 44 28.00
ScP 47 47.20
S 49 25.00
ScS 52 17.00
HHC 48.63 341 Pd 42 34 60 0.0
Z 20s 2.70um 5.2Msz
N 15s 1.50um
E 16s 1.00um
sP 43 05 50
S 49 34.00
BTO 48.94 339 iPd 42 36 50 -0.5
Z 16s 1.80um 5.2MszX
N 16s 1.90um
E 14s 1.10um
S 49 34.00
eSS 52 59.00
MDJ 49.09 359 Pd 42 37.50 -0.4
Z 25s 3.30um 5.2MszX
E 13s 1.40um
pP 42 58.00 83kmX
S 49 36.00
sS 50 04.00
SS 53 03.00
KUSJ 49.19 13 P 42 37.70 -1.0
LSA 51.14 314 P 42 55.20 0.8
4.0s 1.80nm 3.5mb X
sP 43 25.00
iS 50 05.00
MSZ 51.38 147 P 42 55.70 0.3
GTA 52.37 330 iPd 43 02.50 -0.6
1.4s 0.30nm 3.1mb X
Z 28s 3.80um 5.3MszX
N 12s 0.80um
pP 43 21.50 75kmX
sP 43 33.50
S 50 21.00
KRP 52.42 135 P 43 04.20 0.8
TCW 53.19 140 P 43 08.10 -0.9
KHZ 53.36 141 P 43 09.50 -0.6
0.4s 41.00nm 5.8mb
KIW 53.43 139 P 43 11.60 0.9
CCW 53.43 140 P 43 10.10 -0.6
MRW 53.48 139 P 43 10.50 -0.5
SNZO 53.52 140 eP 43 12.00 0.7
S 50 40.00
ScS 52 24.00
MNG 53.68 138 P 43 11.50 -1.1
0.4s 18.00nm 5.5mb
WDW 53.68 139 P 43 11.50 -1.1
PGZ 54.20 138 P 43 16.00 -0.4
HIA 54.59 351 iPd 43 18.58 -0.6
epP 43 38.61 79kmX
iS 50 52.45
isS 51 34.82
KOD 55.17 286 eP 43 23.70 -0.5
GBA 56.02 290 P 43 28.50 -1.4
HYB 56.07 294 iPd 43 29.50 -0.9
1.2s 257.10nm 6.1mb
e 45 41.00 744kmX
eS 51 05.00
i 51 09.00
POO 60.68 294 iPd 44 02.00 -0.4
0.8s 61.19nm 5.8mb
NDI 61.26 306 iPd 44 04.50 -1.7
1.0s 105.00nm 5.9mb
WMQ 61.93 326 iPd 44 11.10 0.5
2.0s 2.10nm 3.9mb X
Z 30s 5.40um 5.5MszX
N 14s 0.60um
E 12s 1.00um
epP 44 30.14 73kmX
iS 52 27.61
DRV 62.20 176 iPc 44 11.80 0.0
KSH 66.86 316 iPd 44 44.00 1.3
E 15s 2.00um
pP 45 04.00 76kmX
PP 47 16.00
S 53 33.00
ScS 54 32.00
QUE 70.16 304 eP 45 03.00 -0.4
eS 54 09.00
SBA 75.51 173 Pc+ 45 34.10 0.4
MAW 77.39 201 eP 45 44.00 -0.4
1.2s 330.00nm 6.1mb
MAIO 77.88 308 iPd 45 49.00 1.2
1.0s 40.00nm 5.3mb
eS 55 36.00
DHR 83.74 297 eP 46 20.00 1.2
SPA 85.35 180 eP 46 27.10 0.8
1.2s 223.94nm 6.1mb
Z 19s 4.09um 5.8Msz
SVW 86.21 28 eP 46 32.10 1.6
TTA 86.56 26 eP 46 33.50 1.3
RYD 86.70 295 eP 46 35.00 1.4
KDC 86.87 32 eP 46 34.50 0.9
KMSA 88.18 290 eP 46 41.70 0.9
TAB 88.53 308 eP 46 44.00 1.7
SLY 88.90 306 ePd 46 45.50 1.6
ePP 50 18.00
eS 57 24.00
PMR 89.36 28 eP 46 46.30 0.8
1 1s 21.90nm 5.3mb
Z 20s 1.50um 5.4Msz
BHD 89.57 303 ePd 46 46.00 -1.1
iSKS 57 11.00
iS 57 33.00
iPS 58 46.00
QASM 89.61 296 eP 46 49.30 1.8
MSL 90.88 306 ePc 46 54.00 0.9
e 47 29.50 138kmX
e 48 11.50
eSKS 57 18.00
eSKKS 57 43.00
eS 58 15.00
NAI 93.91 268 iP 47 10.50 2.7X
1.0s 48.00nm 5.9mb
INK 96.42 22 eP 47 17.00 -0.9
KEV 99.14 340 eP 47 45.00 14.9X
e 58 10.00
e 00 32.00
MBC 99.18 13 eP 47 30.50 0.3
0.9s 17.00nm 5.6mb
KRI 99.34 252 eP 47 44.90 12.6X
PRY 99.73 242 eP 47 33.70 -0.3
SOD 99.75 338 iP 47 32.20 -0.8
BUL 99.81 249 iPc 47 49.10 14.7X
1.0s 8.00nm
KSR 100.43 243 iPdiff 47 37.00 -0.2
NUR 102.00 331 ePdiff 47 32.00 -11.1X
e 58 14.00
e 01 06.00
MLR 103.75 316 ePdiff 47 52.00 0.5
NB2 108.09 334 Pdiff 48 09.20 -1.1
1.2s 9.00nm 5.8mb
SRO 108.49 319 ePKP 52 29.00 11.0X
e 52 49.50
EDM 109.02 35 ePKP 52 20.00 1.1
SOP 109.67 319 ePKP 52 36.50 16.3X
PRU 110.30 322 ePKP 52 11.00 -10.3X
e 52 49.00
SES 111.29 37 ePKP 52 24.00 0.7
LJU 111.45 318 e(PKP) 52 40.50 16.8X
e 53 06.00
BCAO 112.53 273 iPKPd 52 27.20 0.5
1.2s 63.00nm
id 52 48.20
ic 53 27.40
FFC 114.56 31 ePKP 52 38.00 8.6X
1.0s 12.00nm
BSF 115.84 322 ePKP 52 31.80 -0.4
0.7s 4.40nm
LPG 116.77 319 ePKP 52 34.80 0.5
LOR 117.88 322 ePKP 52 36.20 0.3
LBF 117.93 322 ePKP 52 36.80 0.7
0.7s 4.40nm
SSF 118.19 322 ePKP 52 37.40 0.9
BGF 118.81 322 ePKP 52 38.70 1.0
0.6s 8.40nm
ALO 119.26 52 PKP 52 40.00 0.8
1.0s 8.00nm
MFF 120.62 323 ePKP 52 41.70 0.6
0.6s 6.10nm
ACO 124.30 48 ePKP 52 48.50 -0.1
MEO 125.44 50 ePKP 53 08.50 17.7X
SIO 126.78 48 e(PKP) 52 53.00 -0.4
TUL 127.09 48 e(PKP) 53 05.50 11.5X
1.2s 21.40nm
Z 19s 1.91um 5.8Msz
LR 34 00.00
LNO 127.09 48 e(PKP) 52 55.30 1.4
ASMO 127.33 314 ePKP 52 50.00 -4.5X
APHE 127.47 314 iPKPd 52 56.00 1.1
AAPN 127.62 315 iPKPc 52 55.50 0.4
ALOJ 127.70 314 ePKP 52 57.00 1.7
ATEJ 127.72 314 ePKP 52 58.00 2.6X
UYO 128.81 49 iPKPd 52 58.60 1.3
KUK 131.40 274 ePKP 53 03.00 0.2
e 56 21.80
LIC 136.04 274 PKP 52 58.30 -13.3X
Z 20s 0.56um 5.3Msz
LKO 136.51 279 PKP 53 02.62 -9.9X
MRA 139.90 158 e(PKP) 53 10.60 -7.6X
CYA 143.38 155 ePKP 53 22.00 -2.5
SRA 144.63 79 ePKP 53 29.80 2.7X
SJS 145.03 79 ePKP 53 30.00 2.2
LCR2 145.10 80 ePKP 53 29.00 1.0
BUS 145.36 80 ePKP 53 31.00 2.2
SLA 146.73 152 ePKPc 53 32.30 1.9
PT10 147.73 121 ePKP 53 36.50 4.5X
NNA 147.89 121 ePKP 53 36.00 3.7X
1.0s 35.00nm
YJA 148.89 150 ePKPd 53 36.40 2.1
ARE 149.53 134 e(PKP) 53 32.00 -3.2X
ITB7 149.98 171 ePKP 53 40.60 5.3X
GGP 150.22 99 e(PKP) 53 40.00 3.3X
GGP 150.22 99 e(PKP) 53 44.00 7.3X
ITB 150.29 171 ePKP 53 41.00 5.3X
ITB1 150.41 170 ePKP 53 41.70 5.8X
PSO 151.68 96 ePKP 53 41.00 2.4
CNCB 151.69 139 PKP 53 41 00 2.3
i 53 47.30

LPB 151.81 139 PKP 53 41.00 2.3
Z 25s 1.20um 5.6MszX
i 53 48.00
LR 45 53.00
ZOBO 151.98 138 PKPc 53 41.00 1.8
Z 25s 0.77um 5.4MszX
LR 46 00.00
CCH 152.40 143 PKP 53 49.20 9.8X
BDF 159.74 184 ePKP 53 50.77 2.2
S.D. = 1.2 on 158 of 195 obs.

& DEC 12, 1989 08h 42m 39.30s
58.171 N 151.281 W
DEPTH = 10.1km
KODIAK ISLAND REGION (13)
<AGS-P>. ML 3.9 (PMR).

KDC 0.77 237 iPc 42 53.40 -0.9
AUE 1.61 318 eP 43 06.12 -1.7
AUL 1.65 318 eP 43 06.64 -1.8
RED 2.38 342 eP 43 17.06 -2.0
eS 43 47.08
SLKM 2.41 13 eP 43 18.00 -1.4
RDT 2.48 347 eP 43 18.21 -2.2
SPU 3.05 353 eP 43 26.41 -2.0
CKL 3.08 350 eP 43 27.07 -1.9
CRP 3.14 352 eP 43 28.25 -1.6
BGL 3.15 350 eP 43 28.58 -1.4
CGLM 3.17 354 eP 43 28.52 -1.7
PWA 3.56 11 e(P) 43 35.00 -0.7
SVW 3.68 325 eP 43 34.00 -3.5
TOA 4.70 31 eP 43 51.90 -0.1
TTA 5.31 336 eP 43 57.70 -2.9
BALM 5.37 54 eP 44 00.80 -0.7
FBA 6.95 12 eP 44 20.80 -2.8
INK 12.87 31 eP 46 06.00 21.3X
18 obs. ossocioted

% DEC 12, 1989 08h 57m 48.69± 0.83s
46.493 N ± 8.8km 1.055 E ± 5.9km
DEPTH = 10.0km (geophysicist)
FRANCE (538)
ML 2.7 (LDG).

LSF 0.41 126 Pg 57 57.30 0.2
Sg 58 02.10
TCF 0.83 104 Pg 58 05.10 0.4
Sg 58 15.40
MFF 0.84 278 Pg 58 05.20 0.4
Sg 58 15.30
MAF 1.08 104 Pg 58 09.80 0.8
Sg 58 23.50
RJF 1.23 165 Pg 58 12.00 0.4
Sg 58 27.70
BGF 1.24 86 Pg 58 12.30 0.6
Sg 58 27.80
AVF 1.61 79 Pn 58 16.20 -1.0
Pg 58 19.40
Sg 58 38.80
CAF 1.72 155 Pn 58 17.60 -1.3
Pg 58 21.10
Sn 58 38.70
Sg 58 43.00
SMF 1.93 84 Pn 58 21.40 -0.5
Pg 58 25.20
Sg 58 48.80
LBF 2.07 75 Pg 58 27.30 3.4X
Sg 58 53.70
LOR 2.07 67 Pg 58 27.30 3.3X
Sg 58 53.80
S.D. = 0.8 on 9 of 11 obs.

% DEC 12, 1989 09h 46m 45.13± 1.50s
43.931 N ±12.4km 7.702 E ± 6.9km
DEPTH = 10.0km (geophysicist)
NEAR SOUTH COAST OF FRANCE (379)
ML 2.2 (GEN).

IMI 0.14 99 P 46 48.50 0.1
S 46 50.45
ENR 0.36 326 P 46 52.61 0.1
S 46 57.32
ROB 0.38 18 P 46 53.12 0.1
S 46 58.35
STV 0.41 319 P 46 53.53 -0.1
S 46 58.96
FIN 0.46 53 P 46 54.35 -0.1
S 47 00.19
PZZ 0.72 323 P 46 59.37 0.0
S 47 08.71
S.D. = 0.1 on 6 of 6 obs.

DEC 12, 1989 11h 02m 57.24± 0.33s
4.390 S ± 6.2km 135.351 E ± 7.6km
DEPTH = 33.0km (normal)
4.9mb (4 obs.) 4.5Msz (3 obs.)
WEST IRIAN REGION (196)

AAI 7.17 275 eP 04 40.00 -2.5
eS 06 00.00
MNDI 8.46 102 eP 05 04.00 3.3X
MTN 9.38 206 iPd 05 10.00 -3.2X
PMG 12.73 114 eP 05 58.00 -0.8
KNA 13.01 209 iPc 05 57.60 -4.9X
eS 08 18.00
WB5 15.43 183 eP 06 28.00 -6.2X
eS 09 12.00
OIS 16.59 166 eP 06 43.00 -6.1X
e 06 50.00
eS 09 43.00
CTA 18.87 147 iPd 07 16.20 -1.3
1.1s 70.89nm 4.8mb
iS 10 53.00
GUA 20.18 28 e(P) 07 27.50 -4.5X
GUMO 20.20 28 e(P) 07 32.50 0.3
Z 24s 1.37um 4.2MszX
KKM 21.74 298 eP 07 49.00 1.0
WARB 23.22 200 eP 08 03.00 0.5
0.5s 20.00nm 4.9mb
RMQ 25.44 151 eP 08 26.00 2.2
NANU 26.35 225 eP 08 31.20 -1.1
STK 27.97 169 eP 08 46.00 -0.9
e 08 51.00
e 14 32.00
BRS 28.27 146 iPd 08 50.00 0.2
i 09 18.30
e(S) 14 08.00
i 15 33.50
ADE 30.58 175 e(P) 09 11.30 0.9
BWA 32.25 159 eP 09 25.10 0.1
CAN 33.27 159 eP 09 32.90 -0.9
e 18 35.20
DZM 34.87 123 iPd 09 49.00 1.1
SSE 37.79 340 P 10 11.50 -0.7
1.2s 39.00nm 5.1mb
E 16s 0.60um
NNT 39.21 296 eP 10 24.40 0.0
NJ2 39.49 338 Pd 10 27.00 0.5
Z 20s 0.40um 4.3Msz
LOE 39.63 304 eP 10 28.00 0.1
NST 40.16 301 eP 10 34.00 1.8
MAT 40.81 4 eP 10 35.00 -2.3
Z 20s 0.71um 4.5Msz
eS 17 34.00
GYA 41.37 319 iPd 10 42.80 0.6
CHG 42.63 304 ePd 10 53.00 0.5
1.2s 26.95nm 4.9mb
KMI 43 18 314 Pc 10 57.00 -0.1
XAN 45.65 329 P 11 16.90 0.3
CD2 46.28 321 P 11 22.40 0.7
TIY 47.00 335 eP 11 20.00 -7.3X
E 16s 0.50um
S 18 16.00
BJI 47.60 340 eP 11 30.00 -1.9
1.5s 0.18nm 2.9mb X
Z 18s 0.59um 4.6Msz
LZH 49.91 326 P 11 48.50 -1.5
LZH 49.91 326 P 11 50.50 0.5
1.8s 198.00nm 5.8mb X
HHC 50.01 336 Pd 11 51.40 0.7
BTO 50.44 335 eP 11 54.50 0.6
GTA 54.51 326 iPd 12 25.40 1.0
1.2s 0.10nm 2.7mb X
WMO 64.30 324 Pd 13 32.20 0.3
MAIO 81.26 308 eP 15 13.00 1.1
IMA 86.38 23 eP 15 36.50 -0.8
CMB 103.92 52 e(Pdif 17 07.50 9.1X
KVN 105.60 51 ePdiff 16 57.60 -8.4X
UPA 145.07 81 ePKPc 22 34.00 0.0
YJA 146.64 143 ePKPd 22 39.80 2.8X
CNCB 148.77 133 PKP 22 47.20 6 6X
LPB 148.86 132 PKP 22 51 00 10.4X
ZOBO 149.01 132 PKP 22 47.00 6.0X
1.5s 48.39nm
CCH 149.69 136 PKP 22 49.60 7.9X
S.D. = 1.1 on 35 of 49 obs.

DEC 12, 1989 11h 58m 24.03± 0.80s
39.709 N ± 9.5km 120.170 W ± 7.8km
DEPTH = 10.0km (geophysicist)
NORTHERN CALIFORNIA (36)
ML 2.7 (BRK).

ORV 1.04 262 eP 58 42.40 -1.2
MIN 1.27 300 ePc 58 46.80 -1.0
iS 59 03.20
LTCM 1.58 289 eP 58 52.50 0.3
CMB 1.68 186 eP 58 54.20 0.6
KVN 1.73 112 eP 58 53.60 -1.0
LBFM 2.10 322 eP 59 01.30 1.5
ARN 2.59 205 eP 59 07.40 0.7
TNP 2.82 124 eP 59 10.20 0.0
S.D. = 1.1 on 8 of 8 obs.

DEC 12, 1989 12h 00m 34.17± 0.95s
31.870 S ± 8.5km 67.994 W ± 7.4km
DEPTH = 124.5 ± 15.7 km
SAN JUAN PROVINCE, ARGENTINA (137)

ZON 0.67 299 iPd 00 53.20 -0.9
RTLL 0.67 323 iPc 00 53.50 -0.6
RTCB 0.79 299 iPd 00 55.50 0.4
RTBS 1.26 279 e(P) 01 00.00 0.5
MRA 2.01 106 iPc 01 09.00 0.6
RTRS 2.11 323 iPd 01 11.00 1.3
S 01 36.50
JACH 2.35 249 iPc 01 12.60 -0.2
iS 01 43.10
FCH 2.42 233 iPc 01 14.70 0.7
iS 01 45.50
PEL 2.60 240 iPc 01 16.00 -0.1
i 01 47.50
iS 01 49.00
SAN 2.75 234 iPc 01 18.20 0.2
ROCH 2.78 246 eP 01 18.50 -0.1
CHCH 3.04 227 iPc 01 22.00 0.2
LCCH 3.41 241 iPd 01 25.50 -1.3
iS 01 57.70
CYA 3.91 30 ePc 01 32.70 -0.8
S.D. = 0.8 on 14 of 14 obs.

DEC 12, 1989 13h 39m 03.76± 0.36s
44.320 N ± 3.2km 7.232 E ± 3.5km
DEPTH = 10.0km (geophysicist)
NORTHERN ITALY (545)
ML 2.3 (LDG).

STV 0.10 139 P 39 06.31 -0.3
S 39 07.68
ENR 0.16 125 P 39 07.47 -0.1
S 39 09.78
DOI 0.18 3 Pd 39 08.10 0.2
eSg 39 11.00
PZZ 0.21 333 P 39 08.83 0.5
S 39 11.57
FOUF 0.38 303 e(Pg) 39 10.67 -1.0
e(Sg) 39 15.12
ROB 0.46 93 P 39 13.36 0.2
S 39 20.40
SBF 0.48 162 Pg 39 13.50 0.0
Sg 39 20.10
IMI 0.63 131 P 39 15.98 -0.4
S 39 24.92
RRL 0.68 332 P 39 17.14 -0.3
S 39 27.65
FIN 0.71 99 P 39 17.35 -0.4
S 39 27.55
PCP 0.97 76 P 39 22.71 0.5
S 39 35.96
LRG 1.07 216 Pg 39 24.60 0.7
Sg 39 39.20
LMR 1.12 208 Pg 39 24.90 0.2
Sg 39 40.00
LPL 1.25 344 Pg 39 27.30 0.2
S.D. = 0.5 on 14 of 14 obs.

? DEC 12, 1989 14h 20m 00.17± 3.81s
23.800 N ±14.3km 122.357 E ±30.4km
DEPTH = 10.0km (geophysicist)
TAIWAN REGION (243)

12d 14h

TWD	0.75	292	iPc	20	14.80	0.0
			eS	20	29.20	
TWC	0.93	330	iPc	20	17.10	-0.8
			eS	20	33.10	
TWF1	1.07	246	ePd	20	19.90	-0.4
TWO	1.47	289	ePc	20	27.50	0.8
TWZ	1.47	331	ePc	20	26.50	-0.2
ANP	1.58	331	eP	20	29.00	0.7
TWK	1.80	253	eP	20	31.50	0.0

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

DEC 12, 1989 14h 46m 04.18± 0.44s
38.341 N ± 4.7km 24.995 E ± 4.3km
DEPTH = 10.0km (geophysicist)
AEGEAN SEA (365)
ML 3.5 (ATH).

ATH	1.07	250	ePb	46	25.20	0.8
APE	1.34	161	ePn	46	27.70	-1.2
PRK	1.35	47	ePn	46	30.00	1.1
SMG	1.59	113	ePn	46	32.50	0.2
NEO	1.69	305	ePn	46	33.50	-0.4
IZM	1.78	87	ePn	46	35.60	0.3
EZN	1.81	35	ePn	46	35.10	-0.5
OUR	2.14	339	eP	46	39.50	-0.9
AGG	2.19	289	eP	46	41.50	0.3
VLI	2.30	226	ePn	46	43.20	0.4
PLG	2.36	330	ePn	46	42.70	-0.9
LIT	2.62	313	eP	46	46.60	-0.7
ITM	2.69	245	ePn	46	48.50	0.1
KNT	3.25	331	eP	46	57.60	1.4
GRG	3.29	323	eP	46	56.60	-0.2

S.D. = 0.8 on 15 of 15 obs.

DEC 12, 1989 15h 45m 15.63± 0.67s
41.333 N ± 7.6km 20.074 E ± 6.6km
DEPTH = 5.0km (geophysicist)
ALBANIA (391)
ML 2.8 (TTG), 2.9 (SKO), 2.9 (THE).

OHR	0.59	112	iPgd	45	25.40	-2.1
			iSg	45	35.20	
ULC	0.88	316	ePg	45	31.50	-1.5
			eSg	45	47.20	
SKO	1.21	58	ePg	45	39.50	0.9
			i	45	41.50	
			iSg	45	55.20	
TTG	1.25	331	ePg	45	39.00	-0.3
			eSg	45	59.50	
PVY	1.26	357	ePg	45	39.20	-0.4
			eSg	46	00.60	
BDV	1.33	316	ePg	45	41.50	0.8
			eSg	46	02.50	
IVA	1.54	355	ePn	45	47.20	3.3X
			eSn	46	10.80	
HCY	1.62	314	ePn	45	45.60	0.7
			eSn	46	09.50	
GRG	1.80	101	eP	45	47.20	-0.4
			eS	46	13.20	
IGT	1.81	174	eP	45	48.10	0.4
VAY	1.88	90	ePn	45	49.50	0.8
BRY	1.94	325	ePn	45	51.30	1.7X
			eSn	46	21.00	
KNT	2.14	94	eP	45	52.80	0.4
			eS	46	21.40	
LIT	2.21	123	eP	45	54.20	0.7

S.D = 1.1 on 12 of 14 obs.

DEC 12, 1989 16h 15m 36.67± 0.17s
20.809 S ± 3.1km 67.171 W ± 4.9km
DEPTH = 211.2km (19 depth phases)
5.0mb (35 obs.)
SOUTHERN BOLIVIA (125)

YJA	2.06	131	iPd	16	18.00	0.5
CCH	3.54	16	iPc	16	34.20	0.1
	0.4s		14.00nm			
CNCB	4.05	349	iPc	16	41.00	0.4
ANT	4.16	226	iPc	16	40.00	-1.4
			iS	17	24.30	
SLA	4.20	159	iPc	16	43.00	1.0
LPB	4.34	348	iPc	16	44.90	0.8
			S	17	34.00	
ZOBO	4.60	349	iPc	16	47.00	-0.6
ARE	5.96	316	iPc	17	01.10	-3.4X
			iS	17	51.00	
CYA	7.70	171	ePc	17	27.00	0.0
CFA	10.80	185	ePc	18	04.80	-2.1
MRA	11.63	174	ePc	18	13.90	-3.6X
JACH	12.21	194	ePd	18	25.20	0.2
ITB1	12.40	110	eP	18	22.00	-5.3X
ITB	12.59	111	eP	18	29.10	-0.7
PEL	12.68	194	eP	18	29.00	-1.8
	0.5s		95.07nm		5.4mb	
			i	18	30.80	
ITB7	12.72	112	eP	18	31.40	0.0
FCH	12.77	192	eP	18	32.70	0.4
SAN	12.97	193	iPd	18	34.50	0.0
LCCH	13.21	196	eP	18	34.70	-2.7
TACH	13.22	194	eP	18	36.00	-1.6
CHCH	13.43	193	eP	18	39.20	-1.1
RFA	13.96	184	ePd	18	45.10	-1.7
BAO	18.93	77	Pd	19	44.60	0.5
			e	24	12.90	
BIM	35.61	10	iPc	22	14.23	-1.8
MVM	35.68	10	eP	22	14.60	-2.0
FDF	35.81	10	eP	22	15.75	-1.9
	0.3s		1.30nm		3.9mb X	
CRM	35.87	10	eP	22	16.51	-1.6
AIA	44.46	178	e(P)	23	34.00	5.9X
PPM	50.20	320	iP	24	15.00	1.3
JSC	56.40	346	P	24	57.00	-1.3
PRM	56.47	345	P	24	57.40	-1.4
LHS	56.49	346	P	24	57.80	-1.1
GBTN	58.44	344	P	25	10.40	-2.1
RSCP	58.75	342	P	25	12.80	-1.9
	1.1s		360.25nm		6.0mb	
PWLA	58.92	340	P	25	13.40	-2.4
8LA	59.04	348	P	25	15.60	-1.1
	0.8s		30.20nm		5.1mb	
NAV	59.22	347	P	25	16.60	-1.3
CVL	59.43	350	P	25	18.00	-1.2
NA2	59.46	350	P	25	17.80	-1.6
UYO	60.53	334	iPc	25	25.80	-1.0
POW	61.04	338	P	25	28.40	-1.8
PRIN	61.26	353	P	25	33.20	1.6
TBR	61.98	354	P	25	35.00	-1.3
FVM	62.43	339	P	25	37.60	-1.8
			pP	26	27.80	218km
LNO	62.58	334	eP	25	39.50	-0.8
TUL	62.58	334	eP	25	39.40	-1.0
	1.3s		46.90nm		5.1mb	
SIO	62.65	334	eP	25	39.80	-1.1
DHN	64.13	351	P	25	48.80	-1.6
HBVT	65.07	355	P	25	55.00	-1.4
BNH	65.19	357	P	25	56.40	-0.7
EMM	65.23	360	P	25	56.30	-1.0
RSNY	65.38	354	P	25	57.20	-1.2
			pP	26	47.00	214km
PTN	65.45	354	P	25	57.60	-1.2
LIC	66.64	73	P	26	05.70	-1.2
ALQ	66.83	326	iPd	26	07.70	-0.3
	1.0s		27.50nm		4.9mb	
ANMO	66.83	326	P	26	07.80	-0.2
			pP	26	58.50	217km
KIC	66.95	73	Pd	26	07.60	-1.3
CBM	67.43	359	P	26	10.30	-0.9
SPA	69.32	180	iPd	26	25.50	2.6
	1.0s		20.50nm		4.8mb	
GLD	69.94	330	P	26	26.80	-0.2
	1.1s		57.86nm		5.2mb	
GOL	69.97	329	P	26	27.00	-0.3
	1.0s		65.00nm		5 3mb	
			pP	27	17.40	214km
GLA	70.27	319	eP	26	29.00	0.0
			e	27	20.00	216km
KUK	70.82	75	eP	26	31.90	-0.7
BAR	71 18	317	eP	26	35.00	0.6
			e	27	25.00	211km
TPC	71.73	319	eP	26	38.00	0.3
			e	27	29.00	215km
PLM	71.74	318	eP	26	38.00	0.1
PEC	72.28	318	P	26	41.00	0.1
RVR	72.48	318	eP	26	43.00	1.0
MSU	72.55	324	P	26	43.80	1.2
GSC	72.99	319	eP	26	46.00	0.9
			e	27	35.00	206km
MWC	73.06	318	eP	26	46.00	0.4
			e	27	35.00	206km
PAS	73.09	318	eP	26	33.00	-12.5X
			e	27	46.00	320kmX
SBB	73.22	318	eP	26	46.00	-0.4
			e	27	36.00	210km
DAU	73.44	326	P	26	48.80	1.0
CLC	73.82	319	eP	26	50.00	0.2
			e	27	40.00	210km
DUG	74.10	325	P	26	52.70	1.2
	1.0s		25.00nm		4.9mb	
			pP	27	42.40	209km
ISA	74.26	319	eP	26	53.00	0.6
			e	27	43.00	210km
BW06	74.35	329	P	26	52.80	-0.1
SYP	74.47	317	eP	26	55.00	1.3
BCH	74.96	317	P	26	57.00	0.6
RSON	75.09	343	P	26	55.70	-1.0
TNP	75.10	321	P	26	58.00	0.7
	0.8s		14.22nm		4.7mb	
			pP	27	48.00	209km
SCH	75.32	0	ePd	26	57.10	-0.8
	0.7s		59.00nm		5.4mb	
PTI	75.80	327	P	27	01.80	0.7
FRI	75.88	319	e(P)	27	00.80	-0.6
			e	27	13.40	43kmX
PRI	75.93	318	eP	27	02.90	1.0
KVN	76.26	322	P	27	04.30	0.5
			pP	27	54.00	207km
LLA	76.40	318	iPd	27	05.30	0.9
PRS	76.49	318	iPd	27	05.90	1.0
CMB	76.96	320	ePd	27	08.00	0.6
ARN	77.23	318	P	27	10.00	1.1
MHC	77.29	318	ePd	27	10.60	1.2
GCC	77.32	318	ePd	27	10.50	1.1
BKS	77.99	318	ePd	27	14.00	0.9
	0.7s		36.00nm		5.2mb	
LRM	78.00	329	ePd	27	14.20	0.9
			e	28	04.00	206km
BRK	78.01	318	eP	27	14.00	0.9
ORV	78.59	320	ePd	27	17.50	1.2
MIN	79.15	321	e(P)	27	20.80	1.3
LTCM	79.38	320	P	27	20.00	-0.5
WDC	79.86	320	iPd	27	22.50	-0.6
LBFM	79.95	321	P	27	27.40	3.6X
			pP	28	14.40	193kmX
SES	80.77	333	iPd	27	27.80	0.1
	0.8s		76.00nm		5.5mb	
			pP	28	18.00	207km
FHC	80.86	320	ePd	27	29.80	1.5
FFC	80.91	340	iPd	27	28.30	0.0
	0.9s		60.00nm		5.3mb	
DPW	82.24	328	P	27	36.40	1.0
EHOR	82.35	45	e(P)	27	37.20	1.1
LON	83.35	326	P	27	41.70	0.7
EBAN	83.51	45	e(P)	27	43.20	1.2
RMW	83.80	326	P	27	43.40	0.1
PNT	83.91	329	ePd	27	45.00	1.3
	0.7s		28.00nm		5.1mb	
BMW	83.93	325	P	27	43.20	-0.8
TOL	84.27	44	iPd	27	47.00	1.2
	1.2s		125.00nm		5.5mb	
FRB	84.28	359	eP	27	44.50	-0.6
GMW	84.37	326	P	27	46 40	0.3
EVIA	84.61	45	eP	27	48.80	1.2
GUD	84.61	43	e(P)	27	48.80	1.2
KSR	84.64	115	eP	27	48.00	-0.2
MCW	85.11	327	P	27	50.80	1.0
PGC	85.41	326	eP	27	52.00	0.9
	0.9s		74.00nm		5.5mb	
BCAO	87.55	84	iPc	28	03.80	1.4
	0.7s		12.00nm		4.8mb	
			ic	28	56 40	214km
BUL	88.15	111	iPc	28	21.10	15.8X
	0.9s		4.20nm			
			ipP	29	13.70	214km
LFF	89.93	41	eP	28	12.90	0.1
	0 6s		16.20nm		5.1mb	
LPO	90.08	42	eP	28	13.50	0.0
	0.6s		4.30nm		4.6mb	
MFF	90.23	39	eP	28	14.10	-0.1
	0.8s		24.10nm		5.2mb	
CAF	90.74	42	eP	28	15.70	-0.9
	1.0s		14.00nm		4.9mb	
LSF	91.06	40	eP	28	18.20	0.2
	0.8s		14.70nm		5.0mb	
TCF	91.49	40	eP	28	19.80	-0.2
	0.8s		8.00nm		4.8mb	
MAF	91.67	41	eP	28	21.00	0.1
	0.9s		9.80nm		4.8mb	
BGF	92.00	40	eP	28	22.50	0.1
	0.8s		14.70nm		5.1mb	
AVF	92.42	40	eP	28	23.90	-0.4

	0.8s	4.00nm			4.5mb	
SSF	92.64	40 eP	28	24.80	-0.5	
	1.0s	8.00nm			4.8mb	
SMF	92.65	41 eP	28	25.50	0.1	
	1.0s	20.00nm			5.2mb	
LRG	92.80	44 eP	28	27.20	1.1	
	0.8s	18.80nm			5.2mb	
LMR	92.85	45 eP	28	27.00	0.7	
	0.6s	7.20nm			4.9mb	
LBF	92.89	40 eP	28	26.40	-0.1	
	1.0s	8.00nm			4.8mb	
LOR	92.95	40 eP	28	26.30	-0.4	
	0.8s	7.20nm			4.8mb	
SBF	93.68	44 eP	28	30.90	0.7	
	0.8s	11.80nm			5.1mb	
LPG	93.95	43 eP	28	32.00	0.3	
	1.0s	8.80nm			4.8mb	
INK	100.85	340 ePdiff	29	02.00	-0.1	
FBA	104.74	334 Pdiff	29	19.00	-0.5	
CTA	127.83	221 iPKPd	34	20.00	0.7	
	0.8s	14.93nm				
MAIO	131.26	60 iPKPc	34	26.40	0.9	
MTN	142.02	210 ePKP	34	41.00	-4.9X	
KOD	144.42	102 iPKPd	34	51.00	0.6	
KUSJ	145.32	317 ePKP	34	50.80	0.1	
GBA	145.50	96 PKP	34	52.00	0.2	
ASAJ	146.06	320 ePKP	34	54.20	2.3X	
HOOJ	146.58	317 PKP	34	54.30	1.5	
NDI	146.82	69 iPKPd	34	54.00	0.4	
	0.7s	82.19nm				
HYB	147.47	90 iPKP	34	56.50	1.5	
	1.0s	90.00nm				
		i	34	59.00		
		e	35	49.00		
		e	36	43.00		
MRRJ	147.95	319 ePKP	34	59.00	4.0X	
GUA	148.55	262 iPKP	35	01.50	4.8X	
	0.7s	224.66nm				
GUMO	148.61	262 e(PKP)	34	57.80	1.0	
GUMO	148.61	262 iPKP	35	01.50	4.7X	
	0.7s	269.38nm				
PJG	148.61	262 iPKP	35	01.50	4.7X	
		e	35	51.10		
WMQ	148.95	37 PKP	34	58.30	1.6	
AAI	151.37	213 ePKPc	35	05.50	4.5X	
KAKJ	151.62	309 PKP	35	08.30	7.6X	
TRT	151.67	180 ePKPd	35	09.50	8.1X	
NIIJ	151.99	311 PKP	35	09.30	8.0X	
MDJ	152.50	334 ePKP	35	03.50	1.7	
CHJJ	152.55	309 PKP	35	11.10	9.0X	
MAT	152.88	311 iPKPd	35	10.70	8.1X	
	0.7s	27.40nm				
MTMJ	153.15	311 PKP	35	11.70	8.6X	
IIDJ	153.59	309 PKP	35	12.70	9.1X	
CN2	154.77	338 PKPc	35	05.60	0.7	
GTA	158.35	28 ePKP	35	11.80	2.0X	
BJI	160.62	352 ePKP	35	14.00	2.1X	
	1.3s	25.00nm				
		e	35	55.00		
TIY	163.15	1 ePKP	35	15.40	0.7	
TIA	164.20	347 ePKP	35	17.40	1.7	
XAN	166.37	14 PKP	35	20.00	2.4X	
CHG	166.78	96 ePKP	35	20.00	1.7	
WHN	170.21	352 ePKP	35	22.50	2.4X	
	S.D. = 1.1	on 148 of 173 obs.				

DEC 12, 1989 18h 48m 00.94± 0.57s
42.131 N ± 6.4km 15.611 E ± 7.2km
DEPTH = 10.0km (geophysicist)
ADRIATIC SEA (382)
ML 3.0 (KBA).

DUI	0.98	242 Pd	48	19.40	-0.2
		eSn	48	36.10	
BAI	1.38	137 P	48	27.00	0.8
		eSg	48	47.00	
SDI	1.41	253 P	48	25.30	-1.3
		eSn	48	46.10	
SGO	1.59	188 P	48	27.90	-1.2
		eSn	48	49.50	
ALP	1.64	294 iPn	48	29.59	-0.4
		iSn	48	52.63	
BRT	1.73	136 Pc	48	30.00	-1.3
		eSn	48	52.60	
SSO	1.99	306 ePn	48	36.43	1.5
		e(Sn)	49	05.99	
MGR	1.99	181 Pd	48	34.40	-0.6
AOI	2.05	315 ePn	48	37.77	1.9
		iSn	49	07.93	
CIO	2.11	301 ePn	48	39.36	2.6
		iSn	49	11.42	
MMN	2.26	173 P	48	41.40	2.6
ASS	2.37	294 P	48	41.20	0.6
ARV	2.39	306 Pd	48	39.80	-1.0
CSI	2.41	167 P	48	42.60	1.6
LCI	2.52	135 Pd	48	42.40	-0.1
TDS	2.53	167 Pd	48	41.90	-0.8
ROI	2.66	164 P	48	49.00	4.4X
CZI	2.94	172 P	48	52.00	3.5X
CRE	3.08	300 P	48	48.70	-1.9
VBY	3.38	356 e(Pn)	49	03.20	8.4X
		i	49	37.00	
		i(Sn)	49	43.90	
CEY	3.71	347 eP	49	08.00	8.5X
		e(Sn)	49	43.00	
TRI	3.82	340 ePc	49	14.80	13.8X
		e	49	42.10	
LJU	3.99	349 eP	49	03.00	-0.4
		e	49	12.90	
		e(Sn)	49	50.00	
OHR	4.02	103 ePn	49	03.50	-0.4
VOY	4.09	343 ePn	49	04.10	-0.8
		eSn	49	53.70	
SKO	4.34	90 ePn	49	20.00	11.5X
CTI	4.84	325 Pd	49	12.10	-3.6X
FVI	4.90	337 P	49	13.50	-2.8X
BOB	5.20	303 Pd	49	19.70	-1.0
KBA	5.20	343 iPnd	49	18.30	-2.5X
		eSn	50	19.00	
		iSg	50	48.50	
	S.D. = 1.4	on 21 of 30 obs.			

DEC 12, 1989 18h 54m 04.87± 0.48s
38.352 N ± 4.9km 25.074 E ± 4.4km
DEPTH = 10.0km (geophysicist)
AEGEAN SEA (365)
ML 3.2 (ATH).

ATH	1.13	251 ePn	54	26.00	-0 1
PRK	1.29	46 ePn	54	29.50	0.7
APE	1.33	164 ePn	54	29.50	0.1
SMG	1.53	114 ePn	54	32.70	0 4
IZM	1.72	88 ePn	54	35.20	0.1
NEO	1.73	304 ePn	54	34.50	-0.7
EZN	1.77	33 ePn	54	34.00	-1.6
OUR	2.15	337 eP	54	41.50	0.2
AGG	2.25	288 eP	54	48.50	5.8X
PLG	2.38	329 ePn	54	45.00	0.4
LIT	2.66	312 eP	54	48.00	-0.6
ITM	2.75	246 ePn	54	50.00	0.1
RDO	2.81	7 ePn	54	51.50	0.8
BNT	2.98	47 ePn	54	52.00	-1.0
SRS	2.99	338 eP	54	55.10	1.9
KNT	3.27	330 eP	54	56.80	-0.4
GRG	3.32	322 eP	54	57.50	-0.4
	S.D. = 0.9	on 16 of 17 obs.			

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* DEC 12, 1989 18h 56m 03.12± 0.98s
38.931 N ± 8.3km 27.638 E ±11.3km
DEPTH = 10.0km (geophysicist)
TURKEY (366)

IZM	0.61	209 ePg	56	15.70	0.3
		eSg	56	22.90	
DST	1 02	48 iPg	56	21.90	-0.6
		eSg	56	34.90	
EZN	1.35	312 ePn	55	30.00	-58.0X
EDC	1.42	7 ePn	56	28.50	-0.5
BNT	1 44	9 ePn	56	29.00	-0.2
KHL	1.60	112 ePn	56	30.00	-1.5
ALT	1.93	86 ePn	56	38.00	1.6
YLV	2.11	39 ePn	56	40.00	1.0
	S.D. = 1.3	on 7 of 8 obs.			

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* DEC 12, 1989 19h 15m 14.82± 0.70s
13.953 N ± 8.8km 120.945 E ±10.2km
DEPTH = 10.0km (geophysicist)
4.8mb (2 obs.) 4.1Msz (2 obs.)
MINDORO, PHILIPPINE ISLANDS (250)

QCP	0.69	11 eP	15	28.00	-0.5
BAG	2 47	352 eP	16	11.00	15.1X
KKM	9.13	211 eP	17	30.00	0.2
LOE	18.82	283 eP	19	36.00	-0.9
NST	20.19	277 eP	19	52.80	0.2
NNT	20.69	269 eP	19	54.60	-3.2X
BDT	21.38	282 eP	20	04.80	0.0
CHG	21.65	286 eP	20	07.60	0.0
XAN	22.78	333 P	20	33.20	14.5X
CD2	23.12	320 eP	20	27.80	5.7X
TIY	24.85	344 eP	20	53.50	14.7X
E	15s	0.60um			
BJI	26.32	352 eP	21	03.00	10.5X
Z	22s	0.31um			3.8Msz
		eS	25	32.00	
HHC	28.02	345 eP	21	22.20	14.0X
GTA	31.45	328 eP	21	47.60	8.8X
Z	18s	0.70um			4.4Msz
E	15s	0.60um			
WB5	36.12	158 eP	22	17.20	-2.0
HYB	40.90	281 eP	22	58.50	-0.7
WMQ	41.15	323 eP	23	06.20	5.3X
CTA	42.00	143 iPd	23	09.30	1.2
	1.3s	30.77nm			4.9mb
BRS	51.41	143 eP	24	22.50	0.3
MAIO	58.93	304 eP	25	19.00	2.1
NB2	87.15	333 P	28	05.20	3.0X
	0.9s	4.60nm			4.7mb
	S.D. = 1.2	on 11 of 21 obs.			

? DEC 12, 1989 19h 25m 02.51± 1.08s
37.037 N ±19.7km 142.323 E ±16.8km
DEPTH = 33.0km (normal)
4.3mb (1 obs.)
OFF EAST COAST OF HONSHU, JAPAN (229)

MAT	3.34	263 iPd	25	53.90	0.2
		iS	26	37.60	
BJI	20.65	286 eP	29	37.50	-4.3X
INK	54.05	27 eP	34	26.00	0.5
WB5	57.10	189 eP	34	48.00	-0.1
NB2	74.46	338 P	36	38.30	-0.7
	0.6s	2.00nm			4.3mb
ZOBO	146.05	61 PKP	44	43.00	2.1X
	S.D. = 0.9	on 4 of 6 obs.			

? DEC 12, 1989 20h 24m 05.64± 1.57s
51.843 N ±29.3km 178.114 E ±12.5km
DEPTH = 134.5 ± 16.7 km
3.9mb (1 obs.)
RAT ISLANDS, ALEUTIAN ISLANDS (6)

SMY	2.62	291 eP	24	48.00	0.0
ADK	3.22	87 eP	24	56.00	0.1
TTA	17.68	41 eP	28	04.00	-0.6
IMA	20.10	34 eP	28	32.00	1.6
	0.7s	3.63nm			3.9mb
FBA	21.80	40 eP	28	47.00	-0.2
INK	28.20	36 eP	29	46.00	-0.9
KVN	45.13	80 eP	32	10.20	0.0
	S.D. = 1.1	on 7 of 7 obs.			

% DEC 12, 1989 21h 21m 16.91± 0.67s
43.752 N ± 7.7km 11.973 E ± 5.5km
DEPTH = 10.0km (geophysicist)
CENTRAL ITALY (381)

SFI	0.19	333 Pd	21	20.80	-0.3
		eSg	21	23.80	
PGD	0.22	304 Pc	21	21.70	-0.1
		eSg	21	25.40	
RSM	0.39	63 P	21	25.30	0.4
ARV	0.75	109 P	21	31.20	-0.4
		eSg	21	43.20	
ASS	0.85	143 Pd	21	33.30	0.0
		eSg	21	45.30	
PII	1.05	269 P	21	37.00	0.3
	S.D. = 0.4	on 6 of 6 obs.			

DEC 12, 1989 21h 25m 32.61± 0.71s
38.133 N ± 6.4km 22.719 E ± 8.3km
DEPTH = 10.0km (geophysicist)
GREECE (364)
ML 2.5 (ATH).

ATH	0.80	101 ePn	25	49.00	0.8
ITM	1.14	214 ePn	25	53.70	-0.3
NEO	1.24	18 ePn	25	54.70	-0.9
		eSn	26	11.80	
VLI	1.42	173 ePn	25	58.00	-0.5
VLS	1.68	272 ePn	26	02.50	0.3

12d 21h

LIT	1.97	355	eP	26 05.50	-0.9
KZN	2.29	342	ePn	26 12.60	1.5
OHR	3.32	334	eP	26 33.00	7.3X

S.D. = 1.1 on 7 of 8 obs.

DEC 12, 1989 22h 07m 19.22± 0.88s
25.523 N ± 6.9km 102.381 E ±10.3km
DEPTH = 10.0km (geophysicist)
YUNNAN PROVINCE, CHINA (318)
ML 4.2 (BJI).

KMI	0.51	141	Pnc+	07 29.50	-0.2
			iPgd-	07 32.00	
			Sn	07 45.00	
			Sg	07 50 00	
GYA	3.97	75	Pn	08 22.00	0.5
			Sn	09 18 60	
CD2	5.50	12	Pn	08 44.20	0.9
			Pg	08 51.00	
CHG	7.40	206	eP	09 10 10	0.2
	1.1s		28.16nm	5.4mb	
BDT	8.82	202	eP	09 43.00	13.4X
XAN	10.21	32	P	09 45.00	-3.9X
WHN	11.69	62	eP	10 08.50	-0.6
GTA	14.02	352	eP	10 39.30	-0.8
WMQ	21.83	330	eP	12 01.40	-12.2X

S.D. = 0.9 on 6 of 9 obs.

? DEC 12, 1989 22h 10m 45.15± 2.88s
23.705 S ±22.2km 67.015 W ±15.6km
DEPTH = 168.6 ± 53.0 km
CHILE-ARGENTINA BORDER REGION (127)

SLA	1.72	127	iPd	11 19.00	0.0
YJA	2.07	43	e(P)	11 23.00	-0.1
			S	11 55.80	
ANT	3.12	269	iPc	11 35.20	0.0
			iS	12 13.20	
CNCB	6.92	352	iPd	12 26.20	0.5
			S	13 46.00	
LPB	7.21	352	P	12 30.00	0.6
ZOBO	7 47	352	Pd	12 32 00	-1.0
			S	13 56 90	

S.D = 0.9 on 6 of 6 obs.

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* DEC 13, 1989 00h 25m 26.82± 1.09s
35.549 N ±21.5km 27.025 E ±10.5km
DEPTH = 10.0km (geophysicist)
DODECANESE ISLANDS (369)
MD 3.6 (ATH).

KAP	0.12	89	ePg	25 29.90	0.1
NPS	1.19	257	ePb	25 49.00	0.0
VAM	2.31	267	ePb	26 09.60	4.1X
ELL	2.62	62	ePn	26 09.00	-1.1
IZM	2.85	4	ePn	26 23.00	9.8X
KHL	3.42	35	ePn	26 21.00	-0.3
BCK	3.45	55	ePn	26 23.00	1.3

S.D. = 1.2 on 5 of 7 obs.

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* DEC 13, 1989 01h 10m 11 00± 0.71s
39.834 N ± 9.6km 113.949 E ± 7.8km
DEPTH = 10.0km (geophysicist)
NORTHEASTERN CHINA (658)
ML 4.1 (BJI).

BJI	1.72	82	ePn	10 43.00	1.8
			Pg	10 44 00	
			Sn	11 07 00	
			Sg	11 08 00	
HHC	2.09	300	iPgc	10 48 00	1.4
			Sg	11 16 20	
TIY	2.43	210	ePn	10 51.20	-0.2
			iPgd	10 55 10	
			Sg	11 26 60	
TIA	4.40	144	Pn	11 19 50	0.1
			Pg	11 31 10	
			Sn	12 09 70	
			Sg	12 28 10	
DL2	6.02	96	Pn	11 42.80	0.6
DL2	6.02	96	eP	11 54 00	11.8X
			Sn	12 49 50	
XAN	7.05	216	Pn	11 56.30	-0.4
			Sn	13 15 40	
SNY	7.57	72	ePn	12 02.80	-1.2
LZH	8.81	248	P	12 48 50	27.0X
Z	10s		0.40um		
			Pg	12 52.00	
			Lg	14 50.50	
			e	15 05.00	
WHN	9.27	178	eP	12 24.50	-3.2X
FBA	58.00	30	eP	20 05.00	-0.8
INK	61.15	23	eP	20 26.00	-1.4

S.D. = 1.3 on 9 of 12 obs.

DEC 13, 1989 01h 13m 54.18± 0.49s
38.363 N ± 5.3km 25.008 E ± 4.8km
DEPTH = 10.0km (geophysicist)
AEGEAN SEA (365)
ML 3.2 (ATH).

ATH	1.09	249	ePn	14 15.50	0.9
			eSn	14 30.50	
PRK	1.32	48	ePb	14 19.50	0.9
APE	1.36	162	ePn	14 18.20	-0.9
SMG	1.59	114	ePb	14 22.70	0.4
NEO	1.68	305	ePn	14 23.70	-0.1
IZM	1.77	88	ePn	14 25.00	-0.1
EZN	1.78	35	ePn	14 23.70	-1.5
AGG	2.20	288	eP	14 50.30	19.0X
VLI	2.32	226	ePn	14 33.00	-0.1
PLG	2.35	329	ePn	14 33.60	0.2
RDO	2.81	8	ePn	14 39.00	-0.9
SRS	2.96	339	iP	15 20.40	38.3X
EDC	2.97	47	ePn	14 43.50	1.3
BNT	3.01	48	ePn	14 43.00	0.2
KNT	3.23	330	eP	14 45.80	-0.2

S.D. = 0.9 on 13 of 15 obs.

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* DEC 13, 1989 01h 40m 18.92± 2.02s
3.183 S ±13.5km 130.195 E ±14.3km
DEPTH = 86.9 ± 20.8 km
4.8mb (3 obs.)
CERAM (272)

AAI	2.06	256	eP	40 53.50	1.1
			eS	41 19.00	
MTN	9.65	175	iPc	42 35.00	-1.9
			eS	44 26.00	
WB5	17.09	167	eP	44 12.00	-1.8
			e	44 15.90	
			eS	47 30.50	
PMG	17.95	111	eP	44 25.00	0.6
QIS	19.55	153	iPc	44 42.10	-0.4
ASPA	20.68	170	iPc	44 54.20	0 1
	0.4s		46.00nm	5.2mb	
Z	21s		0.75um	4.0Msz	
			iS	48 43.40	
			LR	54 03.00	
CTA	22.97	138	eP	45 19.00	2.2
			iS	49 33.00	
WARB	23.12	188	eP	45 20.00	1.8
	0.4s		3.00nm	4.0mb	
PPI	29.90	275	e(P)	46 15.00	-5.9X
BDT	36.87	304	eP	47 21.00	0.1
CHG	37.73	307	iPd	47 27.90	-0.3
	1.0s		17.75nm	4.9mb	
KMI	38.75	318	Pc	47 37.50	0.6
			pP	47 44.50	24kmX
BJI	44.90	345	eP	48 25.00	-1.5
GTA	50.77	330	eP	49 12.40	0.0
HYB	54.89	294	eP	49 42.50	-0 7
CNCB	153.22	138	ePKP	00 15.00	13.0X
LPB	153.34	138	(PKP)	00 18.00	16.0X
ZOBO	153.51	137	ePKP	00 14.00	11 5X

S.D. = 1.4 on 14 of 18 obs.

DEC 13, 1989 02h 09m 12.92± 0.84s
38.352 N ± 9.6km 25.040 E ± 7.4km
DEPTH = 10.0km (geophysicist)
AEGEAN SEA (365)
ML 2.8 (ATH).

ATH	1.11	250	ePn	09 34.40	0.7
			eSn	09 48.80	
PRK	1.31	47	ePb	09 38.50	1.3
APE	1.34	163	ePn	09 37.70	0.1
SMG	1.56	114	ePn	09 41.00	0.3
NEO	1.71	304	ePn	09 42.00	-0.9
IZM	1.75	88	ePn	09 42.00	-1.5

S D. = 1 4 on 6 of 6 obs

DEC 13, 1989 02h 19m 27.41± 0.70s
14.357 N ± 5.0km 61 006 W ± 9.6km
DEPTH = 10.0km (geophysicist)
WINDWARD ISLANDS (95)
ML 2.9 (FDF).

BIM	0.17	338	iPd	19 32.33	1.0
			S	19 36.90	
MVM	0.22	29	iPc	19 32.51	0.3
			S	19 37.50	
SLW	0.34	169	eP	19 34.50	0.0
			eS	19 42.00	
FDF	0.40	340	iPd	19 35.74	0.1
	0.1s		0.75nm		
			S	19 43.40	
CRM	0.40	12	iPc	19 35.47	-0.2
			S	19 42.80	
SLB	0.53	184	eP	19 34.00	-4.1X
			eS	19 42.00	
DTMT	0.93	339	eP	19 45.58	0.3
			eS	20 01.48	
DSVT	0.94	338	eP	19 44.56	-0.7
			eS	20 00.73	
DPMT	0.97	338	eP	19 45.16	-0.6
			eS	20 01.31	
SVB	1.10	193	eP	19 44.48	-3.7X
			eS	19 57.63	
BBL	1.25	339	eP	19 50.40	-0.2
			S	20 03.00	
MGG	1.58	349	eP	19 55.00	-0.5
PAG	1.79	339	eP	19 59.00	0.4
			S	20 23.50	

S.D. = 0.6 on 11 of 13 obs.

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* DEC 13, 1989 02h 58m 32.69± 1.50s
42.085 N ±14.9km 15.549 E ±10.1km
DEPTH = 10.0km (geophysicist)
ADRIATIC SEA (382)

DUI	0.92	243	Pd	58 51.20	0.9
			eSg	59 06.20	
SDI	1.35	254	P	58 56.70	-0.8
			eSg	59 16.90	
BAI	1.38	134	P	58 58.00	0.1
SGO	1.54	187	P	58 59.90	-0.2
ALP	1.62	296	ePn	59 01.57	0.1
			eSn	59 24.47	

S.D. = 0.9 on 5 of 5 obs.

DEC 13, 1989 04h 03m 56.00± 0.98s
32.654 S ± 5.3km 71.839 W ±10.2km
DEPTH = 46.7 ± 9.1 km
4.9mb (9 obs.)
NEAR COAST OF CENTRAL CHILE (135)
Felt (III) in the Sontiogo areo.

ROCH	0.77	115	iPd	04 09.50	-1.3
LCCH	0.85	165	iPd	04 11.10	-0.6
JACH	1.05	92	iPd	04 13.40	-1.3
			iS	04 27.20	
PEL	1.09	117	iPd	04 14.80	-0.3
TACH	1.25	143	iPd	04 17.50	0.1
SAN	1.27	129	iPd	04 17.50	-0.2
			iS	04 34.00	
LNV	1.35	165	iPc	04 18.20	-0.5
FCH	1.46	118	iPd	04 20.50	-0.2
PCH	1.47	131	iPd	04 20.70	0.1
CHCH	1.62	142	iPc	04 23.20	0.6
RTBS	2.25	65	iPc	04 34.00	2.5
MDZ	2.53	96	iP	04 39.50	3.9X
			iS	05 11.00	
RTCB	2.83	67	iPc	04 41.50	1.5
ZON	2.90	68	iPc	04 42.20	1 3
RTLL	3.15	66	iPd	04 44.80	0 4
RTRS	3.20	40	iPc	04 46.00	0.9
CFA	3.23	72	iPc	04 46.00	0.5
CYA	6.69	53	ePd	05 30.00	-4.2X
ANT	9.00	8	e(P)	06 14.00	7.7X
			i	08 15.50	
SLA	9.66	37	e(P)	06 13.20	-2.3
YJA	11.86	30	e(P)	06 48.00	2.4
			e	06 53.00	
CCH	16.05	20	P	07 32.30	-8.1X
ARE	16.12	1	eP	07 40.00	-1.3
CNCB	16.16	13	Pd	07 40.50	-1.5
LPB	16.41	13	P	07 44.50	-0.5
	1.1s		101.27nm	4 9mb	
			i	07 49.00	
			LR	13 54.00	

ZOBO	16.66	13	iPd	07	46.50	-1.8
	1.0s	32.50nm				4.4mb
Z	19s	1.58um				4.2Msz
			S	09	25.00	
			LR	12	48.00	
BAO	27.48	58	eP	09	37.50	-2.5
			e	16	23.00	
TUL	71.80	340	eP	15	14.70	-0.8
	1.0s	7.70nm				4.6mb
LIC	74.19	72	Pc	15	28.68	-1.3
	0.9s	16.50nm				5.0mb
TIC	74.45	71	P	15	30.36	-1.1
	1.0s	19.50nm				5.0mb
KIC	74.50	72	P	15	30.60	-1.1
	0.9s	35.00nm				5.3mb
ANMO	74.69	331	eP	15	32.00	-0.6
PLM	78.16	323	eP	15	56.00	3.9X
GOL	78.41	334	eP	15	53.00	-0.5
GSC	79.67	324	eP	16	02.00	1.8
SBB	79.70	323	eP	16	01.00	0.7
CLC	80.47	324	eP	16	05.00	0.6
ISA	80.79	323	eP	16	08.00	1.9
BLF	80.98	119	iPd	16	08.00	0.5
	0.5s	8.11nm				4.9mb
KSR	83.25	116	iPd	16	18.60	-0.8
	0.9s	9.23nm				4.8mb
KVN	83.27	325	eP	16	19.00	0.0
IMW	84.13	333	eP	16	13.50	-9.9X
LRM	86.33	333	eP	16	34.90	0.6
BCAO	92.68	86	iPd	17	05.00	0.4
	0.5s	4.00nm				5.1mb
GBA	146.16	117	PKP	23	33.20	1.0
POO	146.18	106	iPKPd	23	33.60	1.4
S.D. = 1.3 on 40 of 46 obs.						

? DEC 13, 1989 05h 04m 37.94± 6.36s
32.517 S ±35.0km 71.911 W ±34.3km
DEPTH = 10.0km (geophysicist)
NEAR COAST OF CENTRAL CHILE (135)

ROCH	0.88	121	iPd	04	55.00	-0.1
			iS	05	05.60	
LCCH	1.00	163	eP	04	56.80	0.0
			iS	05	09.50	
JACH	1.12	99	iPd	04	59.00	-0.1
			iS	05	13.50	
PEL	1.21	122	iPd	05	00.50	0.1
			iS	05	15.50	
TACH	1.40	144	iPd	05	03.10	-0.4
SAN	1.40	132	iPd	05	03.50	-0.1
			iS	05	21.00	
FCH	1.58	121	iP	05	06.50	0.1
			iS	05	25.50	
PCH	1.61	134	iPc	05	06.80	0.3
			iS	05	25.50	
CHCH	1.76	144	iPc	05	09.00	0.3
S.D. = 0.2 on 9 of 9 obs.						

? DEC 13, 1989 05h 19m 57.39± 3.39s
4.879 S ±49.2km 153.481 E ±10.2km
DEPTH = 83.9 ± 16.1 km
5.1mb (3 obs.)
NEW IRELAND REGION (190)

LAT	6.68	254	eP	21	34.00	-0.9
PMG	7.72	234	eP	21	49.00	-0.2
HNR	7.85	126	eP	21	52.00	1.1
			eS	23	22.00	
DZM	21.21	145	iPc	24	37.00	-1.2
BRS	22.40	182	iPc	24	49.80	-0.1
	0.5s	4.50nm				4.1mb
			i	25	07.80	
WB5	23.85	230	eP	25	06.20	2.2
			e	25	12.20	
TCW	40.69	156	P	27	31.60	0.5
MNG	40.71	154	P	27	31.00	-0.3
	0.4s	16.00nm				5.2mb
MRW	40.88	155	eP	27	33.00	0.3
WDW	41.03	155	P	27	33.50	-0.4
PGZ	41.06	153	P	27	33.90	-0.2
	0.4s	23.00nm				5.4mb
MTW	41.16	155	P	27	34.40	-0.6
MOW	41.27	155	P	27	35.80	-0.1
S.D. = 1.0 on 13 of 13 obs.						

? DEC 13, 1989 05h 45m 09.37± 7.79s
32.403 S ±42.3km 72.030 W ±43.1km
DEPTH = 10.0km (geophysicist)
OFF COAST OF CENTRAL CHILE (134)

ROCH	1.03	124	iPd	45	29.00	0.0
			iS	45	39.40	
LCCH	1.14	160	iPc	45	30.50	-0.1
			iS	45	42.50	
JACH	1.24	103	iP	45	32.60	0.0
			iS	45	46.80	
PEL	1.35	123	iPd	45	34.40	0.1
			iS	45	49.30	
TACH	1.55	144	iPd	45	36.70	-0.3
			iS	45	53.00	
SAN	1.56	133	iP	45	37.00	-0.2
			iS	45	54.00	
FCH	1.73	123	iPc	45	39.60	-0.4
			iS	45	59.30	
PCH	1.76	134	iPc	45	40.50	0.3
			iS	46	00.00	
CHCH	1.91	143	iPc	45	42.90	0.5
			i	46	04.50	
			iS	46	05.90	
S.D. = 0.3 on 9 of 9 obs.						

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* DEC 13, 1989 06h 22m 41.72± 1.39s
6.513 N ±17.3km 82.654 W ±12.3km
DEPTH = 10.0km (geophysicist)
4.6mb (6 obs.)
SOUTH OF PANAMA (83)
MD 4.6 (UPA).

BUS	3.22	340	iPnd	23	32.50	-1.2
LCR2	3.48	337	eP	23	25.30	-11.8X
LIO	3.49	354	eP	23	39.00	1.9
SJS	3.68	338	ePd	23	39.50	-0.5
UPA	3.95	51	iPc	23	43.90	0.3
			S	24	30.00	
OLY	29.97	346	P	28	51.00	-1.5
ALQ	35.80	325	eP	29	44.70	1.2
	1.4s	8.72nm				4.4mb
ANMO	35.80	325	eP	29	44.00	0.5
GLD	38.82	332	P	30	09.30	0.5
	1.2s	25.25nm				4.8mb
GOL	38.85	332	P	30	09.50	0.4
	1.0s	15.00nm				4.6mb
PLM	41.46	315	P	30	31.00	0.3
DAU	42.37	327	P	30	31.20	-7.0X
BW06	43.23	331	P	30	44.40	-0.7
	1.5s	5.36nm				4.1mb
TNP	44.36	320	P	30	55.20	0.9
	1.1s	7.47nm				4.5mb
KVN	45.49	321	P	31	03.50	0.1
LRM	46.88	332	eP	31	15.00	0.7
FFC	50.53	346	eP	31	41.00	-1.1
	0.9s	10.00nm				4.8mb
PNT	52.79	330	eP	31	59.00	-0.3
EDM	52.86	337	ePc	31	58.50	-1.3
INK	70.26	342	eP	33	56.50	-0.3
S.D. = 1.0 on 18 of 20 obs.						

DEC 13, 1989 07h 23m 10.08± 1.08s
38.406 N ± 7.0km 73.704 E ± 7.8km
DEPTH = 96.5 ± 12.3 km
5.0mb (8 obs.)
TAJIK-XINJIANG BORDER REGION (719)

KSH	2.06	59	iPgc	23	45.50	1.5
			Sg	24	06.50	
QUE	9.92	216	eP	25	31.50	-0.1
			(S)	27	20.00	
NDI	10.13	162	iPc	25	32.50	-1.8
	0.8s	171.64nm				6.0mb
			iS	27	15.00	
MAIO	11.50	264	iPc	25	52.00	-0.7
	0.7s	28.59nm				5.2mb
			eS	27	46.00	
WMQ	11.85	58	iPc	25	53.80	-3.5X
LSA	16.85	116	P	27	01.60	-0.1
POO	19.80	180	iPc	27	35.60	0.3
			iS	31	22.60	
SHL	19.99	125	iP	27	44.80	7.4X
			iS	31	44.30	
GTA	20.33	79	iPc	27	39.20	-1.5
HYB	21.34	167	iPd	27	51.50	0.6
	1.0s	75.00nm				5.0mb
			e	28	29.00	
GBA	24.92	171	P	28	26.80	1.2
			S	32	40.80	
CHG	29.37	125	eP	29	18.00	11.9X
MLR	35.78	297	eP	30	05.00	3.4X
SUF	37.50	326	iP	30	16.60	1.0
	0.5s	2.90nm				4.5mb
NUR	37.59	322	eP	30	14.00	-2.4
SOD	38.97	333	iP	30	28.70	0.9
			i	30	56.80	
KEV	39.87	337	eP	30	30.00	-5.2X
HFS	42.93	320	eP	31	00.80	0.4
	0.4s	9.70nm				5.0mb
KHC	43.65	304	eP	31	05.10	-1.4
NB2	44.19	322	P	31	10.90	0.2
	0.7s	5.90nm				4.5mb
DAG	53.54	343	iPc	32	22.30	0.0
	0.5s	9.15nm				5.1mb
BCAO	60.34	250	iPd	33	11.70	0.5
	0.6s	11.00nm				5.1mb
			ic	33	54.30	
INK	71.67	10	eP	34	22.50	-0.1
			pP	34	51.00	113kmX
FBA	72.03	17	eP	34	24.00	-0.8
			e	35	08.00	
KIC	77.03	268	(P)	34	55.50	1.2
LIC	77.33	268	(P)	34	57.00	1.1
S.D. = 1.2 on 21 of 26 obs.						

DEC 13, 1989 08h 08m 14.15± 0.20s
44.801 N ± 1.8km 6.771 E ± 2.1km
DEPTH = 10.0km (geophysicist)
FRANCE (538)
ML 3.2 (GEN), 3.1 (LDG).

RRL	0.12	5	Pc	08	17.15	-0.2
BNI	0.26	345	P	08	19.00	-0.7
			eSg	08	22.80	
FOUF	0.27	178	iPg	08	19.34	-0.5
			e(Sg)	08	22.42	
PZZ	0.38	141	P	08	21.56	-0.4
DOI	0.45	131	P	08	22.90	-0.5
			eSg	08	29.40	
RSP	0.49	44	Pc	08	24.19	0.0
			S	08	31.06	
STV	0.68	144	Pc	08	26.98	-0.8
			S	08	36.60	
LPG	0.70	359	Pg	08	27.50	-0.6
			Sg	08	37.50	
LSD	0.71	22	P	08	27.67	-0.7
			S	08	37.15	
LPL	0.72	358	Pg	08	27.80	-0.6
			Sg	08	38.40	
ENR	0.74	141	P	08	28.05	-0.7
			S	08	37.61	
ROB	0.94	122	Pc	08	31.99	0.0
			S	08	44.63	
SBF	1.05	153	Pn	08	34.60	0.6
			Sg	08	49.40	
CKI	1.14	109	Pc	08	35.60	0.1
			eSg	08	50.80	
FIN	1.19	119	P	08	36.26	0.0
			S	08	50.86	
ORO	1.19	46	P	08	36.20	-0.2
			eSg	08	52.40	
ORX	1.19	45	Pd	08	36.03	-0.5
			S	08	50.74	
IMI	1.20	138	Pc	08	36.46	-0.1
			S	08	50.98	
FRF	1.24	184	Pn	08	37.60	0.4
			Sg	08	54.90	
EMS	1.27	5	eP	08	38.20	0.3
PCP	1.29	101	Pc	08	38.39	0.3
			S	08	55.11	
DIX	1.36	19	eP	08	39.70	0.4
LRG	1.38	193	Pn	08	40.20	0.8
			Sg	08	59.00	
LMR	1.48	187	Pn	08	41.80	1.0
			Sg	09	00.70	
MMK	1.51	33	ePd	08	42.50	1.1
VAI	1.77	52	P	08	44.60	-0.3
BOB	1.91	90	P	08	46.70	-0.4
TMA	1.97	48	eP	08	48.70	0.6
VDL	2.54	47	eP	08	58.30	2.1
LLS	2.59	36	eP	09	01.70	4.7X
SMF	2.76	313	Pn	08	59.60	0.4
			Sn	09	33.10	
			Sg	09	44.40	
LBF	2.93	319	Pn	09	02.20	0.6

13d 08h

		Sn	09 36.60			
		Sg	09 48.00			
AVF	3.11 311	Pn	09 04.40	0.3		
		Sg	09 53.00			
LOR	3.19 322	Pn	09 05.80	0.4		
		Sn	09 43.20			
		Sg	09 55.60			
SLE	3.20 21	eP	09 05.20	-0.2		
SSF	3.21 316	Pn	09 06.10	0.5		
		Sn	09 44.20			
		Sg	09 56.50			
HAU	3.22 355	Pn	09 06.40	0.7		
		Sn	09 42.40			
		Sg	09 56.40			
BGF	3.26 304	Pn	09 06.20	-0.2		
		Pg	09 15.00			
		Sg	09 58.10			
MAF	3.28 297	Pn	09 06.40	-0.2		
		Sg	09 58.30			
CAF	3.35 274	Pn	09 07.20	-0.4		
TCF	3.53 297	Pn	09 09.80	-0.4		
CDF	3.63 5	Pn	09 10.60	-1.0		
		Sn	09 54.20			
RJF	3.76 280	Pn	09 13.80	0.4		
LPO	3.98 270	Pn	09 15.40	-1.1		

S.D. = 0.6 on 43 of 44 obs.

? DEC 13, 1989 08h 14m 52.18± 1.59s
42.898 N ±12.8km 12.974 E ± 9.4km
DEPTH = 10.0km (geophysicist)
CENTRAL ITALY (381)
MD 2.4 (SSO).

ASS	0.29 307	P	14 58.30	0.1		
		eSg	15 02.60			
CIO	0.32 23	iPg	14 59.06	0.2		
		iSg	15 04.94			
ALP	0.46 105	iPg	15 01.52	0 0		
		iSg	15 09.17			
ARV	0.60 358	Pc	15 04.10	-0.2		
		eSg	15 14.10			

S.D. = 0.3 on 4 of 4 obs.

? DEC 13, 1989 09h 04m 25.40± 2.82s
54.643 N ±23.1km 165.323 W ±33.2km
DEPTH = 135.0 ± 24.5 km
FOX ISLANDS, ALEUTIAN ISLANDS (9)

SNKA	1.49 95	eP	04 53.53	-0.6		
		eS	05 13.63			
DRRA	1.78 80	eP	04 57.02	-0.4		
		eS	05 20.30			
SASA	2.87 74	eP	05 11.84	0.8		
		eS	05 46.33			
IVF	3.54 67	eP	05 20.99	1.1		
		eS	06 01.73			
KDC	7.80 61	e(P)	06 16.50	-0.9		
TTA	9.60 26	e(P)	06 41.50	0.0		
PMR	11.01 44	e(P)	07 01.00	1.0		
FBA	13.49 33	eP	07 31.50	-0.7		
INK	20.11 35	eP	08 49.00	-1.0		
HFS	65.57 1	(P)	14 56.60	0.7		
	0.3s	2.20nm		4.6mb		

S D. = 1.0 on 10 of 10 obs.

• DEC 13, 1989 09h 43m 51.15± 1.35s
20.594 S ±22.8km 178.296 W ±13.0km
DEPTH = 521.8 ± 11.2 km
4.4mb (7 obs.)
FIJI ISLANDS REGION (181)

MBU	4.58 321	iPc	45 16 00	-0 5		
SGE	4.66 309	iPc	45 17.70	0.4		
DZM	14.30 261	iPc	46 54.30	0.2		
CTA	33.20 265	iPd	49 46.20	0.3		
	0.7s	13.70nm		4.6mb		
ASPA	44.23 257	iPd	51 15.20	-0.3		
	0.8s	14.00nm		4.5mb		
		eS	57 11.60			
WB5	44.30 262	eP	51 15.50	-0.5		
MAT	70.12 324	eP	54 13.00	0.7		
	0.6s	9.33nm		4.5mb		
PRS	78.08 44	ePd	54 57.30	0.3		
BCH	78.25 45	P	54 58.50	0.4		
ARN	78.58 43	P	55 00.20	0.5		
PLM	79.42 48	P	55 04.40	0.1		
CMB	79.72 43	ePd	55 05.40	-0.2		
WDC	79.92 40	ePd	55 06 60	0.0		
KVN	81.77 43	P	55 15.90	-0.4		
TNP	81.79 44	P	55 16.40	-0.1		
	0.9s	6.09nm		4.1mb		
SHW	83.58 35	P	55 28.00	2.8X		
RMW	84.60 35	P	55 30.10	0.0		
PNT	86.89 34	eP	55 42.00	1.0		
PV09	87.44 47	P	55 43.80	-0.4		
ALO	87.68 51	iPc	55 45.50	0.2		
	0.8s	1.87nm		3.9mb		
ANMO	87.68 51	P	55 45.20	-0.1		
IMA	88.38 10	P	55 46.90	-0.9		
	0.6s	1.60nm		4.0mb		
FBA	88.39 13	P	55 47.00	-0.7		
	0.7s	7.99nm		4.7mb		
IMW	88.90 42	P	55 51.20	0.3		
BW06	89.23 43	P	55 51.70	-0.6		
KSP	147.70 343	ePKP	02 38.00	3.8X		
CLL	148.09 347	iPKPd	02 38.90	4.1X		
	0.8s	15.00nm				
MLR	148.15 327	ePKPc	02 40.00	4.7X		
PRU	148.95 344	PKP	02 41.50	5.4X		
KHC	149.98 344	ePKP	02 44.10	6.3X		

S.D. = 0.5 on 24 of 30 obs.

DEC 13, 1989 12h 10m 02.27± 0.97s
40.470 N ± 5.0km 22.006 E ±10.1km
DEPTH = 10.0km (geophysicist)
GREECE (364)
ML 2.9 (THE).

LIT	0.52 135	eP	10 12.20	-0.7		
		eS	10 20.20			
GRG	0.57 32	eP	10 13.70	-0.2		
VAY	0.95 27	ePn	10 20 20	-0.2		
KNT	0.97 44	eP	10 21.00	0.3		
		eS	10 35.60			
PAIG	1.39 112	eP	10 28 30	0.6		
AGG	1.47 170	eP	10 29.00	0.2		
OUR	1.52 94	eP	10 29.40	0.0		
SKO	1.56 344	ePn	10 30.00	-0.1		

S.D. = 0.5 on 8 of 8 obs.

? DEC 13, 1989 12h 30m 53.58± 7.38s
40.057 N ±57.4km 23.732 E ±15.7km
DEPTH = 5.0km (geophysicist)
GREECE (364)
ML 1.0 (THE).

OUR	0.34 35	eP	31 00.30	-0.1		
		eS	31 07.20			
THE	0.82 315	eP	31 09.40	-0.5		
		eS	31 21.10			
KNT	1.27 330	eP	31 17.80	0.1		
GRG	1.36 312	eP	31 19.50	0.4		

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

DEC 13, 1989 13h 09m 53.51± 0.48s
20.447 N ± 5.0km 65.509 W ± 6.1km
DEPTH = 10.0km (geophysicist)
NORTH ATLANTIC OCEAN (402)

LPR	2.15 189	P	10 30.20	0.2		
SJG	2.40 195	iP	10 33.90	0.4		
CPD	2.43 189	P	10 33.90	0.0		
		S	10 58.90			
LRS	2.49 211	P	10 34.80	0.1		
PORP	2.61 204	P	10 36.20	-0.2		
SKI	4.06 139	eP	11 06.52	9.5X		
		eS	11 57.69			
ANG	4.78 133	eP	11 06.60	-0.7		
		eS	11 57.73			
BPA	4.84 134	eP	11 07.49	-0.7		
		eS	11 59.87			
PAG	5.70 140	eP	11 21.00	0.6		
		S	12 23.50			
MGG	6.01 138	eP	11 24.50	-0.2		
BBL	6.22 141	eP	11 27.50	-0.1		
TIC	60.08 94	(P)	20 04 50	0.8		
KIC	60.44 94	(P)	20 06.70	0.6		
DAG	60.92 11	ePd	20 09 00	0.5		
INK	63 07 337	eP	20 22 00	-0 9		
FBA	68.42 333	eP	20 57 00	-0.3		

S.D. = 0.6 on 15 of 16 obs.

• DEC 13, 1989 13h 30m 32.71± 0.67s
2.673 N ±12.9km 95.415 W ±13 1km
DEPTH = 10.0km (geophysicist)
4.7mb (5 obs.) 5.0Msz (1 obs.)
GALAPAGOS ISLANDS REGION (696)
CENTROID, MOMENT TENSOR (HRV)
Data Used: GDSN
L.P.B.: 10S, 22C
Centroid Location:
Origin Time 13:30:34.6 3.4
Lat 2.69N 0.28 Lon 94.53W 0.14
Dep 15.0 FIX Half-durotion 1.5
Moment Tensor; Scale 10**16 Nm
Mrr=-1.10 0.91 Mtt= 6.28 0.72
Mff=-5.18 1.36 Mrt= 0.00 0.00
Mrf= 0.00 0.00 Mtf= 5.95 0.73
Principol Axes:
T Val= 8.81 Plg= 0 Azm=157
N -1.10 90 180
P -7.71 0 67
Best Double Couple:Mo=8.3*10**16
NP1:Strike=202 Dip=90 Slip=-180
NP2: 292 90 0

III	16.10 346	(P)	34 27.00	5.9X		
PPM	16.59 349	(P)	34 32.00	4.3X		
UPA	16.99 68	ePc	34 33.10	1.0		
	1.9s	315.79nm		5.1mb		
CRX	17.15 346	(P)	34 40.50	6.1X		
MEO	32.08 355	iPd	37 01.80	-0.4		
ZOBO	32.89 126	P	37 08.00	-2.0		
	1.2s	20.95nm		4.9mb		
		LR	47 57.00			
LPB	33.05 126	eP	37 13.00	1.7		
	Z 22s	2.96um		5.0Msz		
		LR	47 40.00			
CNC8	33.29 126	P	37 14.30	0.7		
ANMO	33.71 344	P	37 16.00	-0.6		
RSCP	34.01 14	P	37 18.00	-0.9		
CCH	35.08 126	eP	37 28.00	-0.7		
GLA	35.27 331	P	37 30.00	0.2		
BAR	35.90 329	eP	37 36.00	0.8		
PLM	36.53 329	eP	37 40.00	-0.6		
TPC	36.72 331	eP	37 43.00	0.9		
GOL	37.95 347	P	37 54.00	1.4		
	0.9s	7.58nm		4.5mb		
GSC	38.05 331	eP	37 55.00	1.7		
SBB	38.07 329	eP	37 53.00	-0.4		
CLC	38.85 331	eP	38 01.00	1.1		
TNP	40.50 333	P	38 13.00	-0.8		
	1.0s	2.08nm		3.8mb		
KVN	41.69 333	eP	38 23.60	0.1		
BW06	41.88 344	P	38 24.50	-0.6		
IMW	43.30 344	P	38 36.00	-0.7		
LRM	45.49 343	eP	38 54.30	0.0		
SES	49.36 347	eP	39 24.00	-0.3		
PNT	50.86 340	eP	39 36.00	0.3		
	0.7s	6.00nm		4.6mb		
EDM	52.52 347	eP	39 47.00	-1.3		
INK	70.41 346	eP	41 48.00	-0.7		

S.D. = 1.0 on 25 of 28 obs.

% DEC 13, 1989 13h 44m 07.07± 2.32s
11.056 N ±10.0km 61.984 W ±24.5km
DEPTH = 33.0km (normol)
WINDWARD ISLANDS (95)
MD 3.3 (TRN).

TCE	0.42 148	eP	44 15.82	-0.7		
		eS	44 27.95			
TRN	0.70 125	eP	44 19.49	-1.0		
		eS	44 33.90			
TPP	0.90 144	eP	44 24.74	1.4		
		eS	44 39.67			
PIG	1.13 85	eP	44 27.70	1.1		
GRW	1.14 16	eP	44 26.75	-0.1		
		eS	44 43.33			
BOT	1.25 85	eP	44 27.53	-0.7		

S.D. = 1.3 on 6 of 6 obs.

& DEC 13, 1989 14h 32m 27.68s
59.338 N 144.750 W
DEPTH = 10.0km (geophysicist)
GULF OF ALASKA (15)
<AGS-P>.

RAGM	1.05 2	iP	32 43.62	-3.9		
		eS	32 57.57			
SGAM	1.19 349	iP	32 45.80	-4.1		

			eS	33 01.33		
SNH	1.28	48	iP	32 47.39	-4.1	
			eS	33 03.86		
CVA	1.31	338	iP	32 47.36	-4.6	
			eS	33 04.35		
CYK	1.37	56	eP	32 48.07	-4.7	
			eS	33 05.10		
HIN	1.38	321	iP	32 48.81	-4.2	
			eS	33 05.69		
WAX	1.47	40	iP	32 49.71	-4.6	
			eS	33 08.42		
FID	1.66	329	eP	32 52.71	-4.3	
TGL	1.72	33	iP	32 53.49	-4.4	
GLI	1.94	324	eP	32 56.12	-4.9	
VZW	1.95	333	iP	32 56.27	-4.9	
VLZ	1.96	337	eP	32 56.34	-5.0	
BALM	2.08	34	eP	32 58.46	-4.8	
GLB	2.16	12	iP	32 59.51	-4.8	
KLU	2.24	345	eP	33 00.38	-5.0	
SEW	2.50	290	eP	33 04.28	-4.7	
NCA	2.85	340	eP	33 09.33	-4.8	
SLKM	2.99	295	eP	33 10.86	-5.2	
PME	3.13	319	iP	33 13.63	-4.2	
PLRM	3.13	318	iP	33 13.64	-4.3	
PMR	3.13	318	eP	33 13.30	-4.7	
FBA	5.76	347	eP	33 48.00	-7.2	

22 obs. associated

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* DEC 13, 1989 14h 48m 04.04± 2.66s
22.708 N ±21.7km 121.384 E ±14.4km
DEPTH = 10.0km (geophysicist)
TAIWAN REGION (243)

TWF1	0.65	353	ePd	48 17.60	0.6	
			eS	48 26.50		
TWM1	0.89	278	ePc	48 21.60	0.4	
			eS	48 32.70		
TWK	1.00	304	ePc	48 22.40	-0.5	
			eS	48 36.60		
TWD	1.38	8	eP	48 29.50	0.2	
TWC	1.94	13	ePc	48 37.60	0.3	
TWZ	2.38	4	eP	48 43.00	-0.8	
ANP	2.47	3	eP	48 49.50	4.5X	
SSE	8.36	359	eP	50 16.70	8.7X	
Z	20s		0.50um			
N	13s		0.30um			
			eLg	52 35.50		
TIY	16.82	335	eP	52 06.80	5.5X	
N	12s		1.00um			
E	12s		0.60um			
LZH	20.24	315	P	52 42.50	0.2	
Z	16s		0.50um		4.0MszX	
BTO	20.26	334	eP	52 42.00	-0.4	
N	12s		0.80um			
E	12s		0.50um			
GTA	24.77	317	eP	53 27.40	0.0	

S.D. = 0.6 on 9 of 12 obs.

? DEC 13, 1989 16h 32m 28.42± 0.87s
43.316 N ± 7.1km 13.225 E ± 8.5km
DEPTH = 10.0km (geophysicist)
CENTRAL ITALY (381)

CIO	0.13	206	iPg	32 31.90	0.2	
			iSg	32 34 92		
ARV	0.27	312	Pd	32 34.10	-0.1	
			eSg	32 39.20		
AOI	0.36	49	iPg	32 35.93	0.1	
			iSg	32 43.18		
ALP	0.59	154	e(Pg)	32 40.35	-0.2	
			eSg	32 51.61		

S D. = 0.3 on 4 of 4 obs

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* DEC 13, 1989 17h 17m 53.65± 0.75s
34 656 N ± 6.5km 33.614 E ± 7.6km
DEPTH = 10.0km (geophysicist)
CYPRUS (372)
ML 2.8 (CSS).

CSS	0.38	323	eP	18 01.30	-0.2	
			eSg	18 07.00		
FAM	0.47	43	eP	18 03.20	0.1	
PPCY	1.07	283	eP	18 14.00	0.2	
PRNI	4.45	164	eP	19 03.00	0.2	
MBH	4.99	167	eP	19 10.00	-0.3	
			e(S)	20 07.00		

S.D. = 0.4 on 5 of 5 obs.

? DEC 13, 1989 18h 15m 40.09± 6.85s
41.744 N ±44.8km 24.267 E ±31.9km
DEPTH = 10.0km (geophysicist)
GREECE-BULGARIA BORDER REGION (363)
ML 2.5 (THE).

SRS	0.81	219	eP	15 55.80	0.1	
			eS	16 11.10		
KNT	1.18	241	eP	16 01.80	-0.3	
			eS	16 20.80		
VAY	1.34	252	ePn	16 04.30	-0.5	
OUR	1.42	189	eP	16 05.80	-0.2	
GRG	1.61	241	eP	16 09.60	0.9	
			eS	16 33.30		

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

? DEC 13, 1989 18h 37m 01.73± 4.37s
34.917 N ±45.7km 24.851 E ±10.5km
DEPTH = 10.0km (geophysicist)
CRETE (370)
ML 3.7 (ATH).

NPS	0.71	61	ePg	37 15.10	-0.7	
VAM	0.72	313	iPgc	37 14.50	-1.4	
KAP	2.00	71	ePb	37 38.80	2.8X	
APE	2.22	14	ePn	37 39.50	0.4	
VLI	2.38	320	ePn	37 42.80	1.5	
ATH	3.18	344	ePb	37 56.40	3.7X	
SMG	3.21	29	ePb	37 58.00	4.8X	
ITM	3.27	314	ePn	37 57.00	2.9X	
YER	3.55	51	ePn	37 58.00	-0.1	
IZM	3.98	28	ePn	38 09.00	4.9X	
ELL	4.50	65	ePn	38 12.00	0.4	
KHL	5.07	47	ePn	38 11.00	-8.6X	
BCK	5.29	60	ePn	38 15.00	-7.8X	

S.D. = 1.3 on 6 of 13 obs.

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* DEC 13, 1989 18h 59m 44.36± 2.66s
32.710 S ±11.9km 71.672 W ±22.0km
DEPTH = 33.0km (normol)
NEAR COAST OF CENTRAL CHILE (135)

ROCH	0.61	115	iPd	59 55.90	-0.9	
			iS	00 06.50		
LCCH	0.77	174	iPd	59 58.00	-0.7	
			iS	00 10.00		
JACH	0 91	89	iPd	59 59.80	-1.1	
			iS	00 13.50		
PEL	0.94	118	iPd	00 01.10	-0.1	
			iS	00 16.40		
TACH	1.12	147	iPd	00 03.90	0.0	
			iS	00 19.50		
SAN	1.13	131	iPd	00 04.10	0.2	
			iS	00 21.60		
FCH	1.31	118	iPd	00 06.90	0.1	
			iS	00 25.50		
PCH	1.33	133	iPd	00 07.40	0.5	
			iS	00 28.00		
CHCH	1.49	145	iPc	00 10.20	1.1	
			iS	00 31.00		
ZON	2.79	66	eP	00 28.00	0.3	
CFA	3.11	70	ePd	00 33.00	0.7	
			S	01 17.80		

S.D. = 0.8 on 11 of 11 obs.

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* DEC 13, 1989 19h 18m 21.67± 1.79s
17.966 S ±10.0km 178.678 W ± 9.9km
DEPTH = 616.8 ± 22.9 km
4.5mb (16 obs.)
FIJI ISLANDS REGION (181)

DZM	14.57	251	iPc	21 26.20	0.9	
HNR	22.41	289	eP	22 37.00	-1.2	
BRS	27 90	245	iPc	23 26.00	-0.4	
	0.9s		6 00nm		4.2mb	
			i	23 57.00		
CTA	33.18	261	iPd	24 10.90	-0.1	
	0.8s		30.60nm		5.0mb	
CNB	33.19	232	iPd	24 12.40	1.4	
CAN	33.47	232	eP	24 13.80	0.5	
BWA	33 58	234	eP	24 13.10	-1.1	
PMG	34.22	280	eP	24 19.00	-0.7	
CMS	34.77	240	iPd	24 25.00	0.9	
	0.8s		51 00nm		5 2mb	
LAT	35.30	284	eP	24 30.00	1.5	
TOO	36.93	231	iPc	24 43.30	1.5	
	0.8s		44.00nm		5.1mb	
STK	38.38	241	ePd	24 54.50	0.9	
	0.5s		29.00nm		5.1mb	
QIS	39.39	259	eP	25 02.00	0.1	
ADE	41.39	237	eP	25 15.80	-1.8	
	0.9s		28.57nm		4.8mb	
WB5	44.35	260	iPd	25 40.10	-0.8	
			i	27 11.80		
ASPA	44.53	254	iPd	25 42.20	-0.1	
	0.6s		264.00nm		5.9mb X	
			iPcP	27 11.90		
			eS	31 33.50		
WARB	51.02	251	iPd	26 30.40	-0.4	
	0.6s		51.00nm		5.1mb	
COOL	55.70	245	iPd	27 02.60	-1.1	
	0.3s		10.00nm		4.6mb	
MBL	57.72	256	iPd	27 17.10	-0.4	
	0.4s		16.00nm		4.6mb	
MEKA	58.25	249	eP	27 20.10	-1.0	
KLB	58.57	244	eP	27 22.30	-0.8	
MNI	58.82	283	ePc	27 24.50	-0.4	
NWAO	58.96	242	eP	27 25.00	-0.7	
RKG	59.11	241	eP	27 27.10	0.5	
BAL	59.53	245	eP	27 28.80	-0.7	
MUN	59.87	243	eP	27 31.80	0.1	
NANU	61.46	254	eP	27 41.00	-1.2	
MAT	67.80	324	iPd	28 20.70	-0.7	
	0.6s		6.67nm		4.3mb	
SPA	72.15	180	iPc	28 47.80	1.1	
	0.6s		8.54nm		4.5mb	
BCH	76.68	46	P	29 12.80	0.6	
ARN	76.92	43	P	29 13.10	-0.3	
PLM	77.96	49	P	29 19.00	-0.2	
CMB	78.06	43	P	29 19.80	0.4	
	0.9s		8.26nm		4.2mb	
MDJ	78.09	325	eP	29 20.50	1.1	
LBFM	79.00	40	P	29 24.90	0.4	
CN2	79.91	322	P	29 30.20	1.3	
KVN	80.11	44	P	29 30.20	-0.1	
TNP	80.18	45	P	29 30.40	-0.3	
	0.8s		2.45nm		3.7mb	
TTA	82.57	10	P	29 42.00	-0.1	
	0.8s		7.24nm		4.3mb	
PMR	82.72	14	P	29 41.50	-1.2	
	0.5s		5.06nm		4.3mb	
BJI	83.65	315	eP	29 48.00	0.2	
GYA	84.84	300	P	29 55.60	1.5	
TIY	85.11	312	Pd	29 56.40	1.3	
FBA	85.92	13	P	29 57.00	-1.3	
	0.5s		3.10nm		4.3mb	
XAN	86.09	307	P	30 01.30	1.5	
ANMO	86.33	52	P	30 00.60	-0.6	
INK	92.01	15	eP	30 26.00	-0.4	
KSP	145.09	343	iPKP	36 53.00	1.7X	
CLL	145.46	347	iPKPd	36 53.60	1.8X	
	0.8s		16.00nm			
BRG	145.66	346	iPKP	36 54.60	2.4X	
MLR	145.75	329	ePKPc	36 55.00	2.3X	
PRU	146.33	345	PKP	36 56.50	3.2X	
PRNI	147.02	298	iPKPd	36 59.50	4.5X	
MBH	147.26	297	ePKP	37 00.00	4.7X	
KHC	147.37	345	PKP	36 59.50	4.5X	
BZS	147.67	333	ePKP	37 00.00	4.5X	
			e	07 35.00		
CDF	149.25	352	ePKP	37 03.80	5.8X	
	0.4s		2.70nm			
FLN	149.25	2	ePKP	37 02.50	4.6X	
	0.4s		7.30nm			
KBA	149.33	344	ePKP	37 03.00	4.7X	
	0.5s		3.90nm			
LDF	149.43	2	ePKP	37 03 40	5.3X	
	0.4s		6.10nm			
GRR	149.60	3	ePKP	37 04.20	5.8X	
	0.4s		9.10nm			
HAU	149.76	353	ePKP	37 04.80	6.1X	
	0.4s		2.20nm			
BSF	149.88	353	ePKP	37 05.10	6.1X	
LPF	149.95	3	ePKP	37 05.10	6.2X	
	0.4s		5.00nm			
LOR	150.70	356	ePKP	37 07.20	7.0X	
	0.4s		5.70nm			
SSF	150.93	357	ePKP	37 07.80	7.3X	
	0.4s		4.50nm			
LBF	150.98	356	ePKP	37 07 80	7.2X	
	0.4s		2.20nm			
TCF	151.75	359	ePKP	37 09.20	7.5X	
	0.4s		4.20nm			

13d 19h

S.D. = 0.9 on 47 of 68 obs.

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* DEC 13, 1989 19h 48m 51.85± 1.81s
17.743 S ±17.7km 178.680 W ± 9.9km
DEPTH = 541.7 ± 22.4 km
4 4mb (10 obs.)
FIJI ISLANDS REGION (181)

DZM	14.64	250	iPd	51	58.10	0.4
BRS	28.00	245	iPd	54	00.80	-0.2
	0.8s	2.40nm				3.9mb
CTA	33.22	260	eP	54	45.00	-0.5
ASPA	44.59	254	iPd	56	17.00	-0.6
	0.5s	21.00nm				4.9mb
			i	57	47.80	
			iS	02	10.60	
MAT	67.62	323	iPc	58	55.70	-0.7
	1.0s	15.00nm				4.5mb
BCH	76.52	46	P	59	48.80	1.0
ARN	76.76	43	P	59	49.20	0.3
PLM	77.82	49	P	59	55.00	0.1
CMB	77.90	43	P	59	55.50	0.4
	0.8s	8.67nm				4.2mb
MDJ	77.90	325	eP	59	55.50	0.6
LBFM	78.83	40	P	00	00.50	0.4
CN2	79.73	322	P	00	05.50	1.0
KVN	79.95	44	P	00	06.00	0.0
TNP	80.02	45	P	00	06.80	0.4
	0.6s	2.72nm				3.9mb
			pP	00	51.90	184kmX
TTA	82.36	10	P	00	17.20	-0.4
	0.8s	12.07nm				4.5mb
PMR	82.50	14	P	00	16.90	-1.3
	0.5s	7.75nm				4.5mb
BJI	83.49	315	eP	00	24.00	0.4
PNT	84.74	34	eP	00	30.00	0.4
TIY	84.96	312	Pc	00	31.80	0.8
IMA	85.65	10	P	00	32.70	-1.1
FBA	85.70	13	P	00	32.70	-1.2
	0.5s	9.09nm				4.7mb
XAN	85.95	307	P	00	37.20	1.4
ANMO	86.20	52	P	00	37.40	0.2
BW06	87.42	44	P	00	42.20	-0.7
	0.5s	1.43nm				4.0mb
GOL	88.94	48	P	00	49.80	-0.2
	1.2s	19.67nm				4.9mb
GLD	89.07	48	P	00	51.00	0.5
INK	91.80	15	eP	01	01.50	-0.7
NB2	136.18	353	PKP	07	12.60	-0.1
	0.6s	1.40nm				
CLI	144.15	329	ePKPc	07	26.00	-1.3
KSP	144.88	343	iPKPc	07	28.80	0.4
	0.8s	27.00nm				
CLL	145.24	347	iPKPc	07	28.80	-0.2
	0.9s	30.00nm				
BRG	145.44	346	iPKP	07	29 80	0.5
	1.0s	20.00nm				
MLR	145.56	329	ePKPc	07	30.00	0.1
PRNI	146.91	299	iPKPc	07	35.00	2.6X
ZST	147.00	340	ePKP	07	34.50	2.6X
KHC	147.15	345	PKP	07	35.30	3.1X
MBH	147.15	298	iPKPc	07	35.00	2.3X
FLN	149.03	2	iPKPc	07	39 20	4.2X
CDF	149.03	352	iPKPc	07	39.80	4.6X
KBA	149.11	344	iPKPc	07	38.80	3.3X
	0.5s	9.40nm				
LDF	149.21	2	iPKPc	07	39.70	4.4X
GRR	149.38	3	iPKPc	07	40.30	4.7X
HAU	149.54	353	iPKPc	07	40.80	4.9X
BSF	149.66	353	iPKPc	07	41.00	4.8X
LPF	149.73	3	iPKPc	07	41.20	5.1X
VBY	149.98	340	iPKPd	07	42.50	5.9X
LOR	150.48	356	iPKPc	07	43.40	6.1X
SSF	150.71	357	iPKPc	07	43.80	6.1X
LBF	150.76	356	iPKPc	07	43.70	5.9X
AVF	150.99	357	ePKP	07	43.90	5.9X
LIT	151.17	325	ePKP	07	43.50	4.9X
MFF	151.20	2	iPKPc	07	44.50	6.1X
BGF	151.24	358	iPKPc	07	44.90	6.4X
TCF	151.53	359	ePKP	07	45.40	6.5X
LSF	151.57	360	iPKPc	07	45.40	6.4X
MAF	151.58	358	ePKP	07	46.00	7.0X

S.D. = 0.7 on 33 of 56 obs.

? DEC 13, 1989 21h 16m 55 93± 6 31s
34.155 S ±25.2km 72.617 W ±44.6km
DEPTH = 10.0km (geophysicist)

NEAR COAST OF CENTRAL CHILE (135)

LNV	1.02	79	iPd	17	15.50	0.3
			iS	17	24.50	
LCCH	1.10	52	iPd	17	16.40	-0.3
			iS	17	25.50	
TACH	1.48	71	iPd	17	22.20	-0.5
			iS	17	37.60	
CHCH	1.65	83	iPd	17	25.10	0.1
			iS	17	42.00	
SAN	1.77	67	iPc	17	26.60	-0.3
			iS	17	43.90	
			i	17	45.50	
ROCH	1.79	49	iPc	17	27.50	0.3
PCH	1.83	74	iPd	17	27.50	-0.2
			iS	17	45.40	
PEL	1.90	58	iPd	17	29.00	0.3
			iS	17	48.60	
FCH	2.11	68	iPd	17	32.50	0.5
			iS	17	55.00	

S.D. = 0.4 on 9 of 9 obs.

DEC 13, 1989 23h 21m 07.62± 0.63s
36.232 N ± 7.7km 26.997 E ± 6.0km
DEPTH = 10.0km (geophysicist)
DODECANESE ISLANDS (369)
MD 3.7 (ATH).

KAP	0.69	168	ePg	21	21.30	-0.1
YER	1.37	49	iPn	21	33.50	0.7
APE	1.45	306	ePb	21	32.80	-1.1
SMG	1.48	355	ePb	21	33.20	-1.0
NPS	1.48	230	ePb	21	33.00	-1.4
KSL	2.10	92	ePn	21	44.00	0.8
IZM	2.17	6	ePn	21	46.00	1.6
ELL	2.40	77	ePn	21	48.90	1.2
VAM	2.42	251	ePn	21	48.50	0.7
KHL	2.90	43	ePn	21	53.00	-1.8
PRK	3.06	349	ePg	22	05.50	8.6X
BCK	3.13	66	ePn	21	56.70	-1.3
VLI	3.31	280	iPnc	22	00.00	-0.5
ITM	4.18	285	ePn	22	15.00	2.1

S.D. = 1.4 on 13 of 14 obs.

& DEC 14, 1989 01h 58m 31.68s
60.161 N 147.357 W
DEPTH = 0.0km
SOUTHERN ALASKA (2)
<AGS-P>.

CVA	0.89	63	eP	58	48.94	-0.5
			eS	59	02.00	
SGAM	1.12	71	eP	58	52.55	-1.1
			eS	59	09.30	
RAGM	1.36	79	eP	58	55.83	-1.8
			eS	59	15.32	
WAX	2 26	81	eP	59	08.36	-2.6
			eS	59	35.52	

4 obs. associated

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* DEC 14, 1989 02h 12m 56.93± 0.47s
21.907 N ±10.9km 144.352 E ± 8.1km
DEPTH = 67.1km (7 depth phases)
4.6mb (7 obs.)
MARIANA ISLANDS REGION (215)

MAT	15.53	341	eP	16	33.00	-0.2
	1.0s	23.00nm				4.3mb
SSE	22.62	299	P	17	54.00	0.9
	1.0s	51.00nm				4.9mb
LZH	37.87	301	P	20	09.50	0.2
	1.2s	21.00nm				4.9mb
CHG	42.57	274	eP	20	49.00	0.9
CHTO	42.57	274	eP	20	48.40	0.3
WB5	42 66	194	eP	20	47.80	-0.9
BRS	49.68	170	e(P)	22	11.00	26.9X
			e	26	18.00	
GBA	63.85	275	Pd	23	23.90	-1.1
	0.5s	1.60nm				4.3mb
INK	66.94	24	eP	23	43.00	-1.1
MBC	70.38	15	eP	24	05.50	0.3
	0.7s	4.00nm				4.5mb
MAIO	73.39	303	eP	24	25.00	1.1
PNT	77 49	42	eP	25	05.00	18.2X
WDC	78 35	51	eP	24	52.30	0.6
			e	25	11.00	69km
KEV	78.51	342	eP	24	51.00	-1.0
MIN	79.10	51	eP	25	14.70	18.7X
SOD	79.93	340	eP	24	58.00	-1.7
CMB	80.77	53	e(P)	25	05.00	0.1
			pP	25	23.00	65km
FRI	81.65	54	ePc	25	10.20	0.9
			e	25	28.80	68km
KVN	82.08	51	eP	25	12.70	0.9
			pP	25	31.00	66km
SUF	82.70	336	eP	25	13.70	-0.6
	0.4s	1.70nm				4.4mb
TNP	83.08	52	eP	25	17.20	0.1
			pP	25	36.30	69km
NUR	84.57	334	eP	25	13.40	-10.4X
NUR	84.57	334	iP	25	23.40	-0.4
PTI	84.57	46	P	25	45.00	20.6X
FFC	85.07	32	eP	25	27.50	1.1
	0.9s	19.00nm				5.2mb
BW06	86.47	45	e(P)	25	34.00	0.0
			pP	25	52.20	65km
PV09	88.69	49	e(P)	25	43.50	-1.3
			pP	26	02.40	68km
ZOBO	148.84	85	PKP	32	40.00	4.1X
LPB	148.93	86	(PKP)	32	48.00	12.2X
CNCB	149.11	86	PKP	32	37.00	0.7
CCH	150.96	87	ePKP	32	44.00	5.3X

S.D. = 0.9 on 23 of 31 obs.

DEC 14, 1989 03h 02m 52.42± 0.68s
45.071 N ± 5.0km 7.432 E ± 5.9km
DEPTH = 10.0km (geophysicist)
NORTHERN ITALY (545)
ML 2.3 (GEN).

RSP	0.15	303	P	02	55.96	0.0
			S	02	57.91	
LSD	0.43	333	P	03	01.60	0.3
			S	03	07.85	
RRL	0.48	252	P	03	02.42	0.1
			S	03	08.88	
BNI	0.54	268	Pc	03	03.10	-0.2
			eSg	03	09.70	
PZZ	0.61	203	P	03	04.67	-0.2
			S	03	13.08	
ORX	0.68	34	P	03	05.80	-0.2
			S	03	15.03	
ROB	0.84	158	P	03	08.88	0.3
			S	03	19.95	

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

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* DEC 14, 1989 03h 51m 42.06± 1.10s
35.891 N ±15.3km 32.607 E ±17.3km
DEPTH = 33.0km (normal)
CYPRUS (372)
ML 3.0 (CSS).

PPCY	1.03	192	eP	52	00.20	0.1
CSS	1.10	147	eP	52	02.80	1.6
			eS	52	15.80	
BCK	2.26	315	ePn	52	24.80	6.9X
ELL	2.34	292	ePn	52	32.00	12.9X
KHL	3.46	315	ePn	52	35.00	0.0
SHMJ	4.10	139	Pd	52	44.40	0.4
BURJ	4.50	143	Pd	52	49.90	0.0
SALJ	4.64	146	Pd	52	50.80	-0.9
MASJ	4 89	147	Pd	52	54.10	-1.2

S.D. = 1.1 on 7 of 9 obs.

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* DEC 14, 1989 03h 58m 03.01± 3.60s
12.718 N ± 6.1km 59.465 W ±38.3km
DEPTH = 29.6 ± 8.3 km
WINDWARD ISLANDS (95)
ML 3.4 (FDF). MD 4.0 (TRN).

SSV	1.79	290	eP	58	31.46	-1.0
			eS	58	48.65	
SVB	1.83	288	eP	58	33.22	0.3
			eS	58	50.96	
MVM	2.29	323	iPc	58	39.38	-0.2
			S	59	04.50	
BIM	2.37	319	iPc	58	40.62	-0.2
			S	59	06.20	
CRM	2.47	325	iPc	58	42.06	0.0
			S	59	09.20	
FDF	2.59	321	iPc	58	43.92	0.1
	0.1s	3.30nm				
			S	59	12.30	
TBH	2.72	215	eP	58	42.82	-2.8

TRN	2.80	223	ePd	58 47.76	1.0
			eS	59 16.45	
TCE	3.01	228	eP	58 49.98	0.2
			eS	59 21.95	
TPP	3.08	219	eP	58 52.64	1.9
			eS	59 27.49	
DTMT	3.10	324	eP	58 51.27	0.2
			eS	59 24.60	
DSVT	3.11	324	eP	58 51.34	0.2
			eS	59 25.48	
DPMT	3.14	324	eP	58 51.80	0.2
			eS	59 26.40	
BBL	3.40	325	eP	58 55.50	0.1
			S	59 22.00	
MGG	3.65	331	eP	58 58.70	-0.2
			S	59 36.50	
PAG	3.93	327	eP	59 03.00	0.1
			S	59 45.20	

S.D. = 1.1 on 16 of 16 obs.

% DEC 14, 1989 04h 13m 05.97± 1.44s
37.989 N ±19.3km 115.425 E ± 9.6km
DEPTH = 33.0km (normal)
NORTHEASTERN CHINA (658)
ML 3.8 (BJI).

BJI	2.13	16	Pn	13 41.00	1.1
			Pg	13 46.00	
			Sg	14 17.00	
TIY	2.38	264	Pn	13 44.80	1.2
			Sn	14 12.70	
HHC	4.14	315	ePn	14 07.50	-1.0
			Sg	14 57.50	
BTO	4.94	304	Pg	14 28.40	8.5X
			Sg	15 33.40	
DL2	4.96	77	ePn	14 19.50	-0.5
NJ2	6.56	154	eP	14 58.00	15.4X
LZH	9.45	262	P	15 49.00	26.0X
			i	15 57.50	
			i	16 07.50	
			Lg	17 44.00	
			e	17 55.00	
GTA	12.28	281	eP	16 00.80	-0.7

S.D. = 1.5 on 5 of 8 obs.

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* DEC 14, 1989 04h 25m 04.02± 1.30s
36.333 N ± 7.7km 141.179 E ±10.0km
DEPTH = 56.8 ± 9.9 km
4.5mb (5 obs.)
NEAR EAST COAST OF HONSHU, JAPAN (228)

KAKJ	0.82	261	iPd	25 19.30	-0.4
CHJJ	1.79	261	iPd	25 33.00	0.0
			eS	25 57.00	
NIIJ	1.97	298	iPd	25 35.70	0.2
YAMJ	2.05	334	P	25 35.60	-1.1
			eS	26 00.50	
MAT	2.40	276	eP	25 42.00	0.3
			eS	26 07.00	
MDJ	12.08	317	eP	27 58.00	2.3
CN2	14.15	307	eP	28 28.00	5.1X
WHN	23.08	263	eP	30 05.00	-0.4
GTA	32.60	288	eP	31 31.40	-0.8
WMQ	40.99	298	eP	32 42.20	-0.7
FBA	49.80	32	e(P)	33 53.20	0.6
INK	55.10	27	eP	34 31.50	-0.5
WB5	56.28	188	eP	34 40.90	-0.1
MBC	57.25	16	eP	34 47.00	-0.4
	0.5s		1.00nm	4.1mb	
ASPA	60.07	188	eP	35 08.10	0.6
	0.6s		6.00nm	4.9mb	
GBA	60.97	266	P	35 14.00	0.1
KEV	64.03	339	eP	35 21.00	-12.5X
SUF	68.52	333	eP	36 01.50	-0.6
	0.5s		5.00nm	4.7mb	
NUR	70.48	332	eP	36 13.60	-0.4
SLL	74.52	336	eP	36 37.10	-0.8
	0.4s		1.00nm	4.1mb	
NB2	74.76	337	P	36 39.40	0.0
	0.8s		6.30nm	4.6mb	
KVN	75.34	52	e(P)	36 43.80	0.5
FRB	77.50	13	eP	36 54.00	-0.6
BRG	81.56	329	e(P)	37 17.20	0.6
KHC	83.04	328	eP	37 25.50	1.1
VAY	84.45	318	eP	37 32.30	0.7
ZOBO	147.20	60	PKP	44 44.00	2.8X
LPB	147.40	61	PKP	44 45.00	3.7X
CNCB	147.67	61	PKP	44 46.00	4.1X

S.D. = 0.8 on 24 of 29 obs.

? DEC 14, 1989 04h 46m 16.49± 4.56s
15.796 N ±13.8km 60.434 W ±42.2km
DEPTH = 33.0km (normal)
LEEWARD ISLANDS (92)

DEG	0.79	311	eP	46 31.20	0.0
			S	46 40.20	
MGG	0.86	278	eP	46 32.30	0.2
BBL	1.04	255	eP	46 34.70	-0.1
			S	46 46.50	
FDF	1.26	213	eP	46 38.00	0.0
			S	46 53.00	

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

? DEC 14, 1989 05h 14m 24.77± 3.79s
13.838 N ±40.8km 93.553 W ±11.6km
DEPTH = 33.0km (normal)
OFF COAST OF CHIAPAS, MEXICO (68)

TPX	1.64	50	iP	14 52.00	0.3
			iS	15 11.00	
SCX	3.01	17	eP	15 11.00	-0.3
			iS	15 43.00	
OXX	4.44	317	eP	15 31.00	-0.8
IISM	6.30	325	(P)	16 16.50	18.7X
PPM	7.12	318	eP	16 11.00	1.2
INK	60.17	344	eP	24 31.00	-0.4

S.D. = 1.1 on 5 of 6 obs.

? DEC 14, 1989 05h 41m 18.47± 1.35s
11.078 S ±14.3km 119.254 E ±11.1km
DEPTH = 33.0km (normal)
4.2mb (4 obs.)
SOUTH OF SUMBA ISLAND (292)

MBL	10.04	177	iPd	43 41.80	-1.8
	0.2s		15.00nm	5.9mb X	
			eS	45 24.00	
KNA	10.35	118	eP	43 47.30	-0.5
			eS	45 38.00	
MTN	11.75	100	eP	44 06.00	-0.9
			eS	45 11.50	
NANU	11.96	197	eP	44 07.80	-1.9
			eS	46 13.00	
MEKA	15.47	182	eP	44 55.80	-0.2
			eS	47 35.00	
WARB	16.57	156	eP	45 10.00	0.0
	0.4s		5.00nm	4.0mb	
			eS	48 01.00	
WB5	16.98	123	eP	45 14.00	-1.3
			eS	48 11.10	
MRWA	18.30	189	eP	45 32.80	1.2
			eS	48 40.00	
ASPA	18.74	134	iPd	45 39.30	2.2
	0.7s		20.00nm	4.4mb	
	Z 17s		0.16um	3.4MszX	
			eS	48 57.30	
			LR	53 57.70	
BAL	19.58	187	eP	45 47.00	0.2
			eS	49 09.00	
COOL	19.79	175	eP	45 50.00	1.0
	0.4s		5.00nm	4.2mb	
			eS	49 14.00	
KLB	20.46	184	eP	46 00.00	4.0X
			eS	49 30.00	
MUN	20.99	187	eP	46 07.00	5.6X
			eS	49 39.00	
FORR	21.32	159	eP	46 06.70	2.0
QIS	21.71	118	eP	46 12.00	3.2X
NWAO	21.82	185	eP	46 17.00	7.1X
	0.5s		6.00nm	4.3mb	
			eS	50 00.00	
PMG	27.50	89	eP	47 13.00	8.9X
BRS	35.41	122	eP	48 20.00	6.3X
GBA	48.19	300	P	49 58.00	-0.1
CCH	151.22	169	(PKP)	01 13.00	7.8X
CNCB	151.38	165	PKP	01 17.00	11.3X
LPB	151.62	165	ePKP	01 17.00	11.1X
ZOBO	151.87	165	ePKP	01 15.00	8.5X

S.D. = 1.4 on 13 of 23 obs.

DEC 14, 1989 06h 53m 15.43± 0.98s
39.228 N ± 7.5km 21.920 E ± 9.4km
DEPTH = 10.0km (geophysicist)

GREECE (364)
ML 3.0 (THE). MD 3.2 (ATH).

AGG	0.38	123	eP	53 23.50	0.3
			eS	53 30.30	
LIT	0.98	27	eP	53 34.50	0.5
			eS	53 50.20	
NEO	1.02	85	ePn	53 35.10	0.4
			eSn	53 50.80	
KZN	1.08	354	ePn	53 35.40	-0.4
VLS	1.48	225	ePn	53 41.90	-0.2
PLG	1.64	45	ePn	53 43.40	-1.0
GRG	1.77	12	eP	53 48.60	2.3
KNT	2.07	21	eP	53 50.60	-0.1
VAY	2.15	13	ePn	53 55.00	3.2X
SRS	2.28	34	eP	53 51.90	-1.8

S.D. = 1.3 on 9 of 10 obs.

DEC 14, 1989 08h 29m 16.10± 0.75s
15.949 N ± 5.4km 60.956 W ±10.7km
DEPTH = 69.8 ± 6.4 km
LEEWARD ISLANDS (92)
MD 4.0 (TRN). Felt (III) on Guadeloupe and (II) on Martinique.

DOG	0.64	277	iPd	29 30.81	0.2
BBL	0.66	230	iPd	29 30.20	-0.5
SEG	0.69	311	iPc	29 31.38	0.3
PAG	0.70	277	iPd	29 31.29	0.0
			S	29 40.90	
BTG	0.74	273	iP	29 31.74	0.2
			S	29 42.30	
DGBT	0.79	207	eP	29 31.25	-1.0
DPMT	0.80	211	eP	29 32.43	0.1
			eS	29 50.70	
DTMT	0.81	208	eP	29 32.28	-0.2
			eS	29 50.38	
DSVT	0.82	209	eP	29 32.35	-0.2
			eS	29 50.65	
CRM	1.19	178	iPd	29 37.01	-0.3
FDF	1.22	189	iPd	29 37.36	-0.4
	0.1s		15.00nm		
			S	29 51.90	
MVM	1.39	178	iPd	29 39.86	-0.1
BPA	1.39	322	eP	29 40.23	0.2
			eS	29 52.99	
BIM	1.43	184	iPd	29 40.48	0.0
			S	49 57.70	
ANG	1.46	325	eP	29 41.28	0.3
			eS	29 54.62	
SLB	2.11	182	eP	29 50.08	0.1
SLB	2.11	182	eP	30 23.82	33.9X
SKI	2.19	309	eP	29 41.28	-9.8X
			eS	29 53.75	
SSV	2.62	185	eP	29 57.21	0.2
			eS	30 28.30	
SVB	2.68	186	eP	29 58.05	0.3
			eS	30 30.12	
CPD	5.18	294	P	30 33.00	0.1
TCE	5.28	189	eP	30 34.93	0.7
			eS	31 39.44	
TRN	5.29	185	eP	30 36.27	1.9
			eS	31 44.61	
SJG	5.41	294	iP	30 36.50	0.3
TPP	5.62	185	eP	30 38.22	-0.8
PORP	5.82	292	P	30 41.20	-0.7
LRS	6.09	293	P	30 46.00	0.3
INK	68.86	338	eP	40 14.00	-0.9

S.D. = 0.6 on 26 of 28 obs.

DEC 14, 1989 09h 52m 56.28± 0.26s
22.626 S ± 4.4km 68.709 W ± 5.5km
DEPTH = 111.2km (7 depth phases)
4.8mb (7 obs.)
NORTHERN CHILE (123)
Felt (V) in the Calama area.

ANT	1.90	235	iPc	53 28.00	-0.5
			iS	53 50.00	
YJA	3.00	82	iPc	53 45.50	2.0
			(S)	54 21.80	
SLA	3.61	126	iPc	53 53.60	2.1
CCH	5.75	25	P	54 22.60	1.7
CNCB	5.83	7	P	54 23.70	1.5
LPB	6.09	6	P	54 27.00	1.3
ZOBO	6.35	5	P	54 29.30	-0.1

14d 09h

		S	55 38.00		
CYA	6.36	156 eP	54 28 00	-1.1	
ARE	6.67	336 eP	54 29 00	-4.5X	
		iS	55 41.60		
CFA	8.96	177 ePd	55 00.30	-4.0X	
JACH	10.16	189 iPc	55 21 00	0.5	
PEL	10.62	189 eP	55 21.00	-5.7X	
FCH	10.75	187 eP	55 29.30	0.6	
SAN	10.92	189 eP	55 30.00	-0.6	
PCH	11.07	188 eP	55 32.50	-0.1	
LCCH	11.10	193 eP	55 26.50	-6.4X	
TACH	11.16	190 eP	55 28.00	-5.7X	
CHCH	11.39	188 eP	55 30.50	-6.4X	
LNV	11.53	191 eP	55 30.50	-8.1X	
RFA	12.10	179 ePc	55 40.50	-5.7X	
ITB1	13.28	102 e(P)	56 01.00	-0.6	
ITB	13.46	102 e(P)	56 03.00	-0.9	
ITB7	13.53	103 e(P)	56 09.60	4.8X	
BAO	20.76	74 Pc	57 28.10	-2.2	
RSCP	60.07	344 P	02 52.00	-1.9	
		pP	03 19.70	113km	
PWLA	60.16	342 P	02 52.20	-2.2	
NA2	61.02	352 P	03 00.00	-0.2	
OLY	61.70	339 P	03 02.40	-2.5	
LST	62.09	341 P	03 06.00	-1.4	
POW	62.20	340 P	03 06.30	-1.8	
TUL	63.61	336 eP	03 17.00	-0.4	
	1.0s	9.70nm		4.7mb	
		e	03 44.50		
FVM	63.65	341 P	03 15.70	-2.0	
		pP	03 43.00	110km	
SIO	63.66	335 eP	03 16.80	-1.0	
SPA	67.51	180 iPd	03 43.20	0.9	
	1.1s	19.64nm		4.9mb	
		i	04 11.20		
ANMO	67.54	327 P	03 43.40	0.6	
LIC	68.53	73 P	03 48.10	-1.1	
TIC	68.72	73 P	03 49.40	-1 0	
KIC	68.84	73 Pc	03 50.00	-1.1	
GLD	70.80	331 P	04 03.00	0.3	
	0.8s	23.53nm		5.1mb	
GOL	70.82	331 P	04 02.80	-0.2	
	0 9s	10.42nm		4.7mb	
BAR	71.57	319 eP	04 08.00	0.7	
		e	04 35.00		
PV09	71.65	328 P	04 08.00	0.0	
		pP	04 35.40	108km	
PLM	72.14	319 eP	04 12.00	1.1	
		e	04 40.00		
TPC	72.18	320 eP	04 12.00	1.1	
		e	04 40.00		
KUK	72.66	75 eP	04 13.10	-1.0	
PEC	72.70	319 P	04 14.30	0.3	
RVR	72.89	319 eP	04 15.00	-0.1	
		e	04 42.00		
GSC	73.46	321 eP	04 19.00	0.6	
		e	04 46.00		
SBB	73.64	320 eP	04 20.00	0.5	
		e	04 45.00		
DAU	74.17	328 P	04 22.80	0.1	
CLC	74.28	320 eP	04 24.00	0.9	
		e	04 51.00		
ISA	74.69	320 eP	04 25.00	-0.5	
		e	04 55.00		
DUG	74.79	326 P	04 26.80	0.7	
	0.9s	5.64nm		4.4mb	
BW06	75.18	330 P	04 27.00	-1.4	
BCH	75.34	319 P	04 30.30	1.0	
TNP	75.63	322 P	04 30.00	-1.0	
	0.8s	3.33nm		4.2mb	
		pP	04 59.00	114km	
PRI	76.33	319 eP	04 36.00	1.1	
KVN	76.80	323 P	04 37.90	0.4	
		pP	05 05.70	108km	
SCH	77.14	1 eP	04 39.00	0.2	
CMB	77.42	321 eP	04 41.30	0.5	
ARN	77.65	319 P	04 43.00	1.0	
		pP	05 11.70	112km	
LRM	78.85	330 eP	04 49.90	1.2	
WDC	80.36	321 ePd	04 55.90	-0.7	
LBFM	80.49	322 P	04 58.10	0.6	
DPW	83.04	329 P	05 11.00	0.6	
		pP	05 40.30	113km	
BLF	83.33	119 iPd	05 13.70	1.1	
	0.4s	9.09nm		5.0mb	
LON	84.05	326 P	05 15.80	0.3	
PNT	84.72	329 eP	05 20.00	1.2	
EDM	84.85	335 ePc	05 19.00	-0.4	
GBA	146.66	100 PKP	12 27.10	1.7	
NDI	148.77	72 ePKP	12 33.50	5.0X	
	S.D. = 1.1	on 61 of 71 obs.			

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* DEC 14, 1989 10h 38m 36.57± 0.39s
0.973 N ± 6.4km 126.137 E ±14.8km
DEPTH = 33.0km (normal)
4.9mb (8 obs.)
MOLUCCA PASSAGE (266)

MTN	14.60	160 eP	42 03.00	0.3	
KNA	16.82	171 eP	42 32.50	1.2	
	0.8s	50.00nm		4.7mb	
WB5	22.24	159 eP	43 31.80	-0.4	
		e(S)	47 30.40		
QIS	25.14	149 iPd	44 00.30	0.0	
ASPA	25.63	163 iPc	44 04.70	-0.3	
	0.4s	64.00nm		5.6mb	
		iS	48 29.70		
WARB	27.00	179 iPc	44 18.30	0.7	
	0.5s	9.00nm		4.7mb	
BDT	31.21	303 eP	44 56.00	0.7	
WHN	31.47	340 eP	44 53.00	-4.4X	
FORR	31.70	177 eP	44 58.60	-0.9	
	0.4s	16.00nm		5.2mb	
HNR	35.22	108 eP	45 28.00	-2.2	
STK	35.81	157 iPd	45 34.90	-0.1	
	0.5s	9.00nm		5.0mb	
XAN	36.63	336 P	45 40.60	-1.3	
MAT	37.12	16 eP	45 45.00	-0.9	
	0.8s	29.85nm		5.2mb	
DL2	37.98	354 eP	45 54.00	0 9	
BRS	38.10	140 iP	45 53.00	-1.3	
TIY	38.68	343 eP	45 57.20	-1.9	
BJI	39.93	348 eP	46 08.00	-1.3	
SNY	40.74	357 iPd	46 16.60	0.7	
CN2	42.65	359 Pc	46 31.40	-0.2	
MDJ	43.57	4 Pd	46 39.50	0.4	
GTA	45.17	331 Pc	46 51.60	-0.7	
		PcP	48 32.60		
WMO	54.66	327 eP	48 04.00	-0.7	
SVW	83.47	29 ePd	51 03.90	1.8	
TTA	83.61	27 ePd	51 04.40	1.5	
IMA	85.13	24 eP	51 11 80	1.3	
	0.6s	3.30nm		4.7mb	
PMR	86.63	28 eP	51 18.30	0.5	
TOA	88.06	28 eP	51 13.00	-11.8X	
INK	92.93	21 eP	51 49.00	1.7	
MBC	94.75	13 eP	51 56.00	0.4	
	0.7s	2.00nm		4.7mb	
	S.D. = 1.1	on 27 of 29 obs.			

DEC 14, 1989 11h 43m 55.12± 0.61s
43.575 N ± 7.5km 16.887 E ± 7.8km
DEPTH = 10.0km (geophysicist)
YUGOSLAVIA (383)
ML 3.0 (TTG), 3.0 (KBA). MD 3.3 (TRI).

HVAR	0.51	219 iPgd	44 04.30	-1.2	
		iSg	44 14.70		
BLY	1.19	10 Pn	44 15.50	-1.8	
		Sn	44 29.00		
BRY	1.39	119 ePg	44 19.00	-1.6	
		eSg	44 40.00		
HCY	1.63	133 ePn	44 23.80	-0 2	
		eSn	44 46.50		
PLE	1.84	97 ePn	44 27.50	0 4	
		eSn	44 52.00		
BDV	1.92	131 ePn	44 28.50	0 3	
		eSn	44 55.50		
TTG	2.08	123 ePn	44 32.60	2.1	
		eSn	45 00.00		
VBY	2.25	329 ePn	44 32.80	-0.2	
		iSn	45 02.00		
RIY	2.52	316 i(Pn)	44 35.80	-0 9	
		iSn	45 12.10		
BRT	2.71	175 P	45 14.00	34 5X	
CEY	2.79	322 eP	44 40.50	-0 1	
		e(Sn)	45 17.00		
LJU	2.98	327 eP	44 45.00	1 7	
		e(Sn)	45 26.50		
		e	45 30.00		
TRI	3.09	315 P	44 47 50	2 8	
TRI	3.09	315 ePn	44 50.70	6 0X	
		eSn	45 21.30		
		iSg	45 31.50		
VOY	3.25	320 ePn	44 46.70	-0.6	
		eSn	45 29.20		
FVI	4.19	317 P	45 01.00	0 6	
KBA	4.30	326 iPnd	45 01.00	-1.3	
		eSn	45 49.50		
		iSg	46 11.70		
CTI	4.47	305 P	45 08.00	3.4X	
		eSn	45 54.20		
	S.D. = 1.5	on 15 of 18 obs.			

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* DEC 14, 1989 13h 02m 46.01± 0.47s
6.090 S ± 9.3km 122.692 E ±12.9km
DEPTH = 33.0km (normal)
4.7mb (2 obs.)
FLORES SEA (279)

MKS	3.32	285 iPd	03 37.20	0.3	
		eS	05 11.00		
		e	07 00.00		
PCI	5.89	331 iPd	04 13.70	0.4	
		iS	04 34.50		
MTN	10.69	130 eP	05 30.00	10.0X	
		eS	07 17.00		
KNA	11.30	149 eP	05 27.20	-1.1	
WB5	17.80	141 eP	06 52.20	-0.7	
WARB	20.33	170 eP	07 22.00	-0.3	
	0.6s	12.00nm		4.4mb	
ASPA	20.54	149 eP	07 25.50	1.1	
	1.6s	101.00nm		4.9mb	
		eS	11 14.70		
QIS	21.82	133 iPc	07 39.10	1.6	
XAN	41.99	343 P	10 35.20	-0.6	
TIY	44.61	348 eP	10 56.80	-0.4	
BJI	46.29	353 eP	11 10.50	0.2	
GBA	49.00	294 P	11 37.00	5.1X	
GTA	49.97	337 eP	11 39.20	0.0	
WMO	58.87	331 P	12 43.60	-0 5	
ZOBO	155.34	154 ePKP	22 27.00	-11.8X	
	S.D. = 0.9	on 12 of 15 obs.			

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* DEC 14, 1989 13h 43m 25.29± 1.38s
16.986 N ±14.6km 99.731 W ±18.2km
DEPTH = 33.0km (normal)
NEAR COAST OF GUERRERO, MEXICO (58)

ACX	0.17	226 iP	43 31.50	-0 1	
		iS	43 36.00		
III	1.41	10 iP	43 48.50	-0.5	
		iS	44 06.50		
PPM	2.32	27 iP	44 01.50	-0.9	
		(S)	44 35.00		
IIT	2.44	34 (P)	44 05.00	1 1	
OXX	2.88	88 (P)	44 15.00	4.9X	
IISM	3.00	48 (P)	44 17.50	5.9X	
		(S)	44 59.00		
MRX	3.04	333 eP	44 12.50	0.4	
	S.D. = 1.1	on 5 of 7 obs.			

& DEC 14, 1989 15h 19m 41.53s
60.075 N 152.347 W
DEPTH = 82.2km
3.7mb (1 obs.)
SOUTHERN ALASKA (2)
<AGS-P>. Felt (IV) at Homer.

RDT	0.50	357 iP	19 55 20	-0.6	
SPU	1.12	7 eP	20 02.00	-0.5	
SLKM	1.14	67 iP	20 02.80	0 0	
PMS	1.81	48 iPc	20 11.60	0.2	
SVW	1.92	304 iPd	20 10.50	-2 5	
PMR	2.19	45 iPc	20 15 80	-0 8	
KDC	2.34	182 iPc	20 17.30	-1.3	
HIN	2.93	81 eP	20 25.11	-1.8	
		eS	20 57.64		
MID	3.11	99 eP	20 29.50	0.3	
CVA	3.32	79 eP	20 29.99	-2.1	
		eS	21 05.54		
TTA	3.36	330 ePd	20 30.00	-2.8	
SGAM	3.58	80 eP	20 33.49	-2.3	
		eS	21 11 70		
TOA	3.62	53 ePc	20 35.50	-1.0	
RAGM	3.84	82 eP	20 37.10	-2.4	
		eS	21 19.06		
WAX	4.74	81 eP	20 49.11	-3.0	
SNH	4.76	85 eP	20 51.70	-0.6	
FBA	5.28	22 eP	20 56.70	-2.8	

IMA	6.05	355	eP	21 07.40	-2.9
PCA	6.05	85	eP	21 09.15	-1.2
BCPM	6.38	86	eP	21 12.49	-2.2
HON	6.83	89	eP	21 18.80	-2.2
DWY	7.26	51	P	21 24.00	-2.8
INK	11.58	37	eP	22 21.00	-4.4
MBC	19.83	23	eP	24 05.00	-2.5
	0.5s		2.00nm		3.7mb
	24 obs. ossociated				

% DEC 14, 1989 15h 25m 18.98± 0.69s
44.279 N ±11.3km 8.020 E ± 4.4km
DEPTH = 10.0km (geophysicist)
NORTHERN ITALY (545)
ML 2.2 (GEN).

ROB	0.11	279	P	25 21.86	0.0
			S	25 23.71	
FIN	0.15	117	P	25 22.58	0.0
			S	25 24.94	
ENR	0.43	263	P	25 28.02	0.2
			S	25 34.68	
PCP	0.46	55	P	25 28.32	0.0
			S	25 35.71	
STV	0.50	266	P	25 28.94	-0.2
			S	25 35.91	
PZZ	0.70	289	P	25 32.94	0.1
			S	25 42.47	
S.D. = 0.2		on	6 of	6 obs.	

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* DEC 14, 1989 17h 28m 03.81± 1.16s
14.804 N ± 7.8km 99.152 E ±13.1km
DEPTH = 10.0km (geophysicist)
SOUTHEAST ASIA (299)

NST	1.28	48	ePn	28 26.60	-1.0
			ePg	28 28.00	
			eSg	28 44.00	
PCT	2.19	93	ePg	28 41.00	0.3
			eSg	29 12.00	
NNT	2.27	166	ePn	28 41.80	-0.2
			ePg	28 46.90	
			eSg	29 16.00	
BDT	2.43	357	ePg	28 44.50	0.3
			eSg	29 16.50	
LOE	3.58	43	ePn	29 01.50	0.9
			ePg	29 08.10	
			eSg	29 51.80	
CHG	3.99	357	ePn	29 06.00	-0.4
			ePg	29 18.80	
			eSg	30 08.90	
S.D. = 0.8		on	6 of	6 obs.	

? DEC 14, 1989 17h 44m 16.99± 3.24s
17.247 S ±87.8km 75.755 W ±25.2km
DEPTH = 33.0km (normal)
OFF COAST OF PERU (114)

ARE	4.16	80	eP	45 10.00	-10.0X
			iS	46 06.70	
LPB	7.36	86	P	46 07.00	1.6
	1.5s		277.78nm		6.0mb X
			eS	47 29.00	
			LR	48 36.00	
ZOBO	7.37	84	P	46 04.00	-1.7
			i	46 05.00	
			S	47 32.00	
			LR	48 24.00	
CNCB	7.45	88	P	46 07.00	0.3
			S	47 36.00	
CCH	9.18	92	eP	46 27.00	-3.5X
BAO	26.67	91	eP	49 55.20	0.1
KIC	73.94	78	(P)	55 50.80	-0.6
EDM	77.30	338	ePd	56 10.00	0.3
S.D. = 1.4		on	6 of	8 obs.	

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* DEC 14, 1989 18h 22m 13.79± 0.85s
43.194 N ± 7.2km 12.875 E ± 7.2km
DEPTH = 10.0km (geophysicist)
CENTRAL ITALY (381)
MD 2.7 (SSO).

CIO	0.20	90	iPgd	22 18.43	0.3
			iSg	22 20.93	
ASS	0.20	232	Pc	22 18.30	0.1
			eSg	22 22.00	
ARV	0.31	9	Pc	22 20.10	-0.1
			eSg	22 25.20	
AOI	0.64	56	iPg	22 26.65	0.0
			iSg	22 36.72	
ALP	0.66	129	ePg	22 26.76	-0.3
			iSg	22 37.41	
S.D. = 0.3		on	5 of	5 obs.	

DEC 14, 1989 18h 27m 04.13± 0.43s
8.730 N ± 6.7km 126.980 E ± 8.7km
DEPTH = 40.3km (2 depth phases)
4.8mb (7 obs.)
MINDANAO, PHILIPPINE ISLANDS (259)

DAV	2.14	221	eP	27 39.90	1.6
	0.8s		602.98nm		
			eS	28 10.30	
GUMO	18.20	73	eP	31 15.50	0.0
GUA	18.23	73	eP	31 14.50	-1.4
OIZ	19.51	303	eP	31 28.30	-2.9
MTN	21.83	169	eP	31 57.00	2.0
SSE	22.90	347	Pc	32 07.00	1.6
	1.0s		56.00nm		5.0mb
			pP	32 18.30	44km
			eS	36 18.00	
KNA	24.39	176	eP	32 20.50	0.5
LOE	26.04	292	eP	32 36.00	0.4
CHG	28.97	293	eP	33 03.00	0.7
CHTO	28.97	293	eP	33 02.90	0.6
			e	33 13.00	36km
W85	29.34	166	eP	33 07.50	1.9
QIS	31.64	157	eP	33 23.50	-2.4
TIY	31.71	338	eP	33 26.40	0.0
BJI	32.64	345	eP	33 35.00	0.6
SNY	33.10	355	iPc	33 39.40	1.0
WARB	34.70	181	eP	33 50.00	-2.4
	0.5s		6.00nm		4.8mb
HHC	34.80	339	eP	33 52.60	-0.6
CN2	34.96	358	eP	33 56.00	1.6
SHL	37.32	301	iP	34 13.30	-1.5
			eS	40 01.20	
GTA	39.04	326	eP	34 28.00	-1.0
FORR	39.37	178	eP	34 31.00	-0.5
LSA	39.50	307	P	34 33.80	0.5
MUN	41.77	194	eP	34 50.00	-1.3
NWAO	42.45	192	eP	34 59.00	2.1
BRS	43.75	146	iP	35 06.80	-0.8
HYB	47.85	286	eP	35 40.50	0.1
	1.2s		257.10nm		6.1mb X
GBA	48.78	280	Pd	35 46.50	-1.0
	0.7s		3.10nm		4.4mb
WMO	48.86	323	P	35 48.30	0.4
MAIO	66.76	306	eP	37 53.00	-0.9
INK	85.45	22	eP	39 41.00	2.4
MBC	87.05	13	eP	39 49.00	2.7X
	0.9s		13.00nm		5.2mb
SUF	87.24	333	iP	39 47.60	0.2
	0.4s		1.70nm		4.6mb
NUR	88.48	331	iP	39 53.30	-0.1
	0.6s		11.70nm		5.4mb
NAO	94.71	334	P	40 21.20	-1.1
	0.8s		1.90nm		4.6mb
S.D. = 1.4		on	33 of	34 obs.	

? DEC 14, 1989 18h 51m 29.90± 4.86s
24.255 S ±56.2km 172.935 W ±55.9km
DEPTH = 33.0km (normal)
SOUTH OF TONGA ISLANDS (175)

DZM	19.08	272	iPc	55 53.00	0.4
RMO	34.60	258	iPc	58 17.40	-0.7
CAN	34.64	243	eP	58 18.20	-0.1
BWA	35.00	244	eP	58 21.00	-0.4
CTA	37.93	268	iPd	58 45.70	-0.5
	0.5s		22.54nm		5.3mb
ASPA	48.33	259	iPc	00 10.80	0.3
WB5	48.80	264	eP	00 14.00	-0.2
FORR	52.18	249	eP	00 41.00	1.3
	0.4s		13.00nm		5.2mb
S.D. = 0.7		on	8 of	8 obs.	

DEC 14, 1989 19h 13m 53.85± 0.13s
10.445 S ± 2.9km 161.275 E ± 3.4km
DEPTH = 37.6km (17 depth phases)
5.6mb (37 obs.) 5.8Msz (16 obs.)
SOLOMON ISLANDS (193)
Ms 5.7 (BRK). Felt (IV) ot Honioro.

CENTROID, MOMENT TENSOR (HRV)
Data Used: GDSN
L.P.B.: 12S, 32C
Centroid Location:
Origin Time 19:14: 8.9 0.4
Lat 9.84S 0.06 Lon 160.77E 0.03
Dep 30.2 2.3 Half-durotion 4.0
Moment Tensor; Scale 10**18 Nm
Mrr= 1.08 0.03 Mtt=-0.16 0.04
Mff=-0.92 0.04 Mrt=-0.69 0.08
Mrf= 0.07 0.07 Mtf= 0.28 0.03
Principol Axes:

	Val=	Plg=66	Azm=177
T	1.39		
N	-0.33	22	332
P	-1.06	9	66

Best Double Couple:Mo=1.2*10**18

NP1:Strike=180	Dip=41	Slip=	125
NP2:	317	58	63

HNR	1.65	307	iPd-	14 25.50	4.6X
			iS	14 53.00	
PVC	9.96	138	iPc	16 16.50	-1.1
			iS	18 05.80	
RAB	10.96	304	eP	16 40.50	9.2X
DZM	12.58	157	iPc	16 52.80	-0.4
			iS	19 05.90	
PMG	13.95	273	eP	17 17.00	5.7X
	1.0s		240.00nm		5.9mb
LAT	14.61	284	eP	17 28.00	8.1X
CTA	17.36	235	iPd-	17 58.00	2.9
	1.2s		312.50nm		5.3mb
Z	18s		30.58um		3.7Msz
			i	18 15.00	
			iS	21 10.00	
MNDI	17.94	282	eP	18 09.00	6.5X
SVA	18.30	117	eP	18 09.10	2.4
BRS	18.66	204	iPc	18 13.30	2.2
	0.8s		47.50nm		4.7mb
			e	18 22.00	
			iPP	18 29.20	
			e	19 13.00	
			e(PcP)	21 25.50	
			e	21 29.00	
			iS	21 44.00	
			e	24 34.00	
RMO	19.86	215	iPc	18 26.30	1.5
	1.3s		946.00nm		5.9mb
COO	21.85	202	iPc	18 46.00	0.8
OLP	22.73	223	eP	18 55.50	1.7
QIS	23.15	242	iPc	18 59.90	1.9
	0.8s		100.00nm		5.4mb
CMS	25.36	212	eP	19 19.50	0.3
AFI	26.56	100	eP	19 36.00	5.5X
BWA	26.61	204	eP	19 29.80	-1.0
CNB	27.03	202	eP	19 34.00	-0.6
			e	19 36.00	7kmX
CAN	27.17	202	iPc	19 35.90	0.0
WB5	27.58	247	iPc	19 40.00	0.3
			e	26 36.00	
STK	28.04	218	eP	19 44.00	0.2
GUA	28.83	325	eP	19 51.30	0.3
	0.9s		188.24nm		5.8mb
GUMO	28.90	325	eP	19 51.00	-0.6
	1.0s		192.00nm		5.7mb
			eS	24 38.00	
ASPA	29.22	240	eP	19 53.80	-0.7
	1.0s		86.00nm		5.4mb
Z	21s		48.85um		6.1Msz
			eS	24 34.80	
			LR	30 45.40	
MTN	29.61	262	iPd	19 59.00	0.9
KRP	30.21	157	P	20 02.30	-0.9
TOO	30.52	205	iPc	20 06.60	0.7
	0.5s		73.00nm		5.7mb
HITZ	30.99	158	P	20 09.60	-0.4
HBZ	31.08	153	P	20 10.30	-0.4
HATZ	31.27	157	P	20 12.30	-0.2
ADE	31.92	217	iPd	20 18.70	0.4
	0.7s		143.84nm		6.0mb
KNA	32.07	257	iPc	20 20.00	0.3
	0.7s		312.00nm		6.3mb
MNG	32.58	160	P	20 22.10	-1.8
	0.4s		27.00nm		5.5mb
KIW	32.61	161	P	20 22.50	-1.6
TCW	32.72	162	Pd	20 24.40	-0.7
WEL	32.94	161	P	20 25.00	-2.0
WDW	33.00	161	P	20 25.60	-1.9

14d 19h

MOW		33.22	161	P	20	27.30	-2.2	TIA		62.30	320	eP	24	14.20	-0.6				pP	25	16.80	22kmX
AAI		33.49	279	eP	20	32.00	-0.1		Z	25s		3.90um			5.5MszX				i	25	22.50	
KHZ		33.61	163	P	20	30.90	-1.9		E	16s		2.50um							i	26	08.00	
MSZ		34.58	172	P	20	40.20	-0.9					pP	24	24.80	35km				S	34	16.00	
WARB		36.26	240	iPc	20	56.20	0.5					eS	32	34.00					sS	34	26.00	
		0.6s		83.00nm			5.8mb	SNY		62.48	329	iPd	24	15.20	-0.6				PS	34	48.00	
FORR		36.87	232	eP	21	00.00	-0.7		Z	26s		7.10um			5.7MszX				SS	38	44.00	
		0.4s		58.00nm			5.8mb		N	20s		4.40um				SDN		72.93	22	eP	25	20.30	-0.7
DAV		39.58	295	eP	21	28.10	4.5X		E	20s		3.50um				GTA		75.51	315	Pc	25	36.20	-0.3
MBL		41.16	250	iPc	21	37.00	0.5					S	32	34.00			Z	20s		2.70um			5.5Msz
		0.3s		41.00nm			5.6mb	SNG		62.88	284	eP	24	19.20	0.3		E	17s		1.30um			
PCI		42.26	280	ePd	21	49.50	3.9X					e	29	21.30					pP	25	47.00	35km	
		1.0s		16.50nm			4.7mb					eS	32	45.00					S	35	13.00	
COOL		42.39	235	eP	21	47.00	0.4	CN2		63.05	332	eP	24	18.50	-1.0				sS	35	34.00	
		0.8s		100.00nm			5.6mb			0.8s		0.10nm			3.0mb X	SHL		76.38	300	iP	25	41.50	-0.3
MEKA		43.37	242	eP	21	55.30	0.7		Z	24s		5.90um			5.7MszX				iS	35	24.00	
		0.3s		17.00nm			5.3mb		N	20s		3.70um				KDC		77.71	23	ePc	25	48.50	0.3
NANU		45.31	249	iPc	22	11.10	0.9					pP	24	29.50	36km	SVW		78.97	20	ePc	25	55.80	0.7
KLB		45.36	236	iPd	22	10.40	-0.1					eScP	28	52.50		SPA		79.62	180	iPc	25	58.70	-0.1
TSM		45.42	287	eP	22	13.00	1.8					eS	32	46.00				0.7s		110.55nm			5.9mb
BAL		45.94	237	eP	22	15.00	-0.1					iScS	34	06.00			Z	20s		4.41um			5.8Msz
		0.8s		167.00nm			6.0mb					SS	36	53.00		TTA		80.18	18	ePc	26	02.20	0.5
NWAO		46.20	234	iPd	22	17.80	0.6	SMY		63.88	9	P	24	24.70	-0.1	PMR		81.56	22	eP	26	08.50	-0.3
		0.8s		100.00nm			5.8mb			0.6s		98.52nm			6.1mb			0.6s		48.80nm			5.7mb
MUN		46.74	236	iPd	22	21.90	0.5	TSI		63.95	279	ePc	24	25.00	-1.0	TOA		82.97	22	ePc	26	16.50	0.3
		0.8s		83.00nm			5.8mb	GYA		64.48	306	P	24	29.00	-0.5	IMA		83.16	17	ePc	26	17.60	0.4
	Z	20s		23.50um			6.1Msz		Z	34s		3.50um			5.3MszX	MAW		83.61	202	eP	26	19.00	-0.4
KKM		47.77	288	ePc	22	28.90	-0.9		N	20s		2.00um				FBA		84.17	19	ePc	26	21.00	-1.2
		0.9s		72.90nm			5.7mb		E	20s		2.30um				FHC		85.45	47	P	26	30.00	0.9
				e	22	40.00	39km					pP	24	40.00	36km			0.8s		29.41nm			5.5mb
BAG		48.30	303	eP	22	32.00	-2.0					PcP	25	02.00		WMQ		85.58	316	Pd	26	29.00	-0.8
				eS	29	30.00						S	33	06.00				2.0s		0.03nm			2.2mb X
KAGJ		50.62	326	P	22	52.00	0.6					sS	33	26.00			Z	28s		4.20um			5.7MszX
WKYJ		50.67	332	eP	22	51.90	0.1	ADK		64.93	15	P	24	31.40	-0.3				pP	26	39.50	33km	
IIDJ		50.73	335	P	22	52.40	0.1			0.7s		203.49nm			6.3mb				S	36	54.00		
CHJJ		50.79	337	eP	22	52.70	0.1	LOE		65.01	295	eP	24	31.50	-1.4	KOD		85.84	281	eP	26	33.00	1.1
HON		50.95	52	P	22	56.00	2.0	NNT		65.25	289	eP	24	34.20	-0.2				iS	37	08.00		
	Z	22s		11.11um			5.8Msz	BJI		65.31	323	eP	24	33.00	-1.4	BRK		85.87	50	e(P)	26	31.90	0.7
OPA		51.15	51	P	22	55.50	-0.1			1.5s		39.00nm			5.3mb	BKS		85.89	50	e(P)	26	31.50	0.2
TKSJ		51.20	331	P	22	55.80	0.1		Z	40s		7.40um			5.6MszX			0.9s		113.00nm			6.1mb
MAT		51.53	336	eP	22	57.00	-1.3		E	18s		1.01um					Z	20s		3.90um			5.8Msz
		1.0s		55.00nm			5.5mb					epP	24	44.00	36km		N	20s		1.80um			
	Z	20s		4.96um			5.5Msz					eS	33	10.00			E	20s		2.90um			
				eS	30	10.00						esS	33	23.00						eLR	53	01.00	
TSRJ		51.60	334	eP	23	02.00	3.2X	TIY		66.19	319	Pc	24	39.50	-0.7	PRS		86.12	52	eP	26	33.60	1.1
KUMJ		51.69	327	P	22	59.80	0.3		E	20s		4.20um				MHC		86.19	51	eP	26	34.20	1.2
MTMJ		51.73	336	P	22	59.20	-0.7					sP	24	58.00		HYB		86.25	288	eP	26	33.00	-0.5
YAMJ		52.28	339	P	23	04.50	0.6					S	33	26.00		ARN		86.27	51	P	26	33.80	0.5
YONJ		52.46	331	eP	23	05.40	0.1					sS	33	45.00					pP	26	47.00	44km	
ANP		52.49	313	eP	23	09.00	3.3X	XAN		66.51	314	P	24	41.50	-0.8	WDC		86.43	48	eP	26	34.60	0.6
OFUJ		52.55	341	P	23	05.60	-0.2		N	20s		2.80um				GBA		86.53	284	P	26	37.00	2.2
SHNJ		52.78	328	eP	23	07.30	-0.3		E	22s		5.70um				LLA		86.53	52	eP	26	35.50	1.0
OZH		54.49	311	P	23	21.50	1.2	KMI		67.08	303	Pc	24	46.00	-0.3	PRI		86.62	52	eP	26	36.40	1.3
	Z	21s		2.30um			5.2Msz			5.0s		0.60nm			2.9mb X	SYP		86.74	54	eP	26	37.00	1.2
	E	18s		3.50um					Z	28s		6.40um			5.7MszX	ORV		86.91	49	eP	26	36.60	0.3
				S	30	50.50			E	18s		1.70um				CMB		87.34	51	eP	26	38.90	0.4
HOOJ		55.10	344	eP	23	25.30	0.8					pP	24	57.00	36km	FRI		87.58	52	eP	26	40.20	0.6
KUSJ		55.39	345	eP	23	25.80	-0.8					sP	25	04.00		BMW		87.70	42	P	26	40.30	0.3
MRRJ		55.78	342	P	23	29.20	-0.2					PcP	25	13.00		PAS		88.09	55	eP	26	43.00	0.9
SSE		56.43	318	eP	23	33.70	-0.6					S	33	38.00		MWC		88.20	55	eP	26	43.00	0.1
	Z	22s		2.40um			5.2Msz					sS	33	58.00		ISA		88.22	53	eP	26	44.00	1.2
	E	20s		2.80um				SBA		67.45	179	Pc+	24	48.20	0.7	PGC		88.22	40	eP	26	44.00	1.7
				i	23	44.50	36km	BSI		67.58	280	eP	24	48.50	-0.8	RVR		88.70	55	eP	26	45.00	0.0
				eS	31	22.00		CHG		67.98	295	eP	24	51.10	-0.7	LON		88.72	42	P	26	45.00	0.1
				sS	31	39.00				1.1s		18.99nm			5.1mb	PEC		88.85	55	P	26	46.20	0.4
ASAJ		56.88	344	P	23	37.80	0.5	HHC		68.58	322	eP	24	54.60	-0.7	CLC		88.95	53	eP	26	46.00	-0.2
DRV		57.97	190	eP	23	44.20	-0.5	HHC		68.58	322	P	24	55.00	-0.3	PLM		88.97	56	eP	26	47.00	0.4
KGM		58.98	279	ePd	23	53.00	0.4		Z	26s		6.40um			5.7MszX	BAR		88.97	57	eP	26	47.00	0.6
WHN		60.76	314	eP	24	03.70	-0.7		N	20s		1.50um				KVN		89.33	50	P	26	48.00	-0.1
	Z	22s		3.92um			5.5Msz		E	20s		2.10um				GSC		89.46	54	eP	26	48.00	-0.7
	N	22s		3.85um								pP	25	06.00	36km	TNP		89.77	51	P	26	50.50	0.2
	E	22s		4.76um								eS	33	55.00		TPC		89.80	55	eP	26	50.00	-0.3
				pP	24	15.20	39km	CD2		68.78	309	P	24	56.00	-0.6	GLA		90.57	57	eP	26	55.00	1.1
				eS	32	12.00			Z	30s		3.00um			5.4MszX				e	27	07.00	39km	
DL2		61.43	325	eP	24	07.00	-1.8					pP	25	09.00	45km	INK		90.79	20	eP	26	53.00	-1.0
	Z	40s		4.80um			5.3MszX					S	33	55.40		PNT		90.83	40	ePc	26	55.00	0.3
	N	16s		2.60um								sS	34	16.00				0.9s		49.00nm			5.9mb
	E	16s		1.30um								ScS	34	52.60		KSH		92.95	309	P	27	05.90	1.1
				S	32	25.00		BTO		69.39	321	P	24	59.00	-1.2		E	11s		1.80um			
IPM		61.82	281	ePd	24	11.30	-0.7		N	1Bs		1.70um				LRM		94.82	44	eP	27	13.50	0.1
		0.5s		36.00nm			5.8mb		E	18s		1.30um				EDM		95.52	37	iPd	27	16.10	-0.1
				e	24	23.10	40km					pP	25	10.00	36km	IMW		95.56	47	P	27	18.00	1.1
MDJ		61.85	335	Pc	24	11.00	-0.6					eS	33	57.00		BW06		96.39	48	P	27	21.00	0.3
	Z	25s		5.20um			5.6MszX	LZH		71.14	314	Pc	25	10.00	-1.0	SES		96.48	40	eP	27	20.00	-0.6
	E	25s		6.30um						4.0s		714.00nm			6.0mb X	MBC		97.55	14	eP	27	25.00	0.1
				pP	24	22.00	37km		Z	22s		6.10um			5.8Msz			0.5s		4.00nm			5.2mb
				S	32	28.00			E	20s		3.10um				ALQ		97.74	56	iPc	27	28.20	1.4

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        1.0s     10.75nm          5.3mb
      Z 20s      3.37um           5.8Msz
ANMO   97.74  56 P       27 26.00  -0.8
        0.9s     5.25nm           5.1mb
GOL    99.15  51 P       27 38.40   5.2X
        0.8s     5.95nm           5.2mb
      Z 20s      7.35um           6.2Msz
GLD    99.27  51 P       27 40.00   6.4X
      Z 18s      6.26um           6.2Msz
RSON  107.51  40 PKP     32 25.00   6.7X
      Z 22s      5.08um           6.0Msz
FRB   116.33  22 ePKP    32 32.00  -2.6
SUF   118.75 338 ePKP    32 37.40  -1.9
        0.5s     3.10nm
NUR   120.68 337 iPKP    32 42.30  -0.7
        0.7s    12.00nm
                 i        32 46.70
LPB   124.29 118 (PKP)   32 57.00   5.1X
ZOBO  124.38 118 PKP     32 51.00  -1.2
        1.0s    11.25nm
      Z 22s      1.21um           5.5Msz
                 LR       12 44.00
NAO   125.19 343 PKP     32 48.90  -2.8
        0.8s     3.40nm
BBTK  125.91 312 ePKP    32 55.00   1.0
                 e        34 52.00
MLR   128.32 321 ePKP    32 58.00  -0.4
KSP   130.54 331 ePKP    33 04.50   2.2
                 e        33 16.70
                 e        36 23.50
BRG   131.60 333 e(PKP)  33 04.60   0.3
                 e        35 41.20
                 e        36 27.00
                 i        37 07.50
ZST   131.87 328 e(PKP)  33 03.80  -1.1
                 e        36 29.40
VAY   132.46 318 ePKP    33 05.70  -0.5
SKO   132.89 319 ePKP    33 06.00  -1.1
                 i        33 32.50
KHC   132.99 331 PKPc    33 08.00   0.9
      Z 24s      6.20um           6.2MszX
      N 24s      4.40um
                 e        33 21.20
KBA   134.52 329 ePKP    33 05.00  -5.2X
        1.0s     7.10nm
                 i        33 11.80
BAO   141.12 131 ePKP    33 16.50  -6.8X
RJF   141.16 337 ePKP    33 17.00  -5.4X
        1.2s    44.00nm
CAF   141.27 336 ePKP    33 21.70  -0.9
        1.2s    32.10nm
LFF   141.77 338 ePKP    33 18.20  -5.2X
        1.2s    47.60nm
LPO   141.81 337 ePKP    33 19.80  -3.7X
        1.2s    26.10nm
BCAO  142.60 264 iPKPd   33 20.20  -5.6X
        0.7s    58.00nm
                 id       34 44.20
EPF   143.53 336 ePKP    33 25.20  -1.4
        1.3s    33.90nm
ECRI  144.96 339 ePKP    33 28.80  -0.3
ESEL  145.04 330 e(PKP)  33 29.20   0.0
EBR   145.31 334 ePKP    33 29.00  -0.6
EROQ  145.34 334 ePKP    33 29.60  -0.1
ETOR  146.35 337 ePKP    33 33.50   2.0
ECHE  146.95 334 e(PKP)  33 35.00   2.6
GUD   147.28 339 ePKP    33 36.50   3.5X
TOL   147.91 338 ePKP    33 29.00  -4.9X
TOL   147.91 338 ePKPc   33 37.00   3.1X
EVIA  148.40 335 e(PKP)  33 39.50   4.7X
EALH  148.59 333 ePKP    33 40.60   5.6X
EBAN  149.32 337 ePKP    33 40.60   4.4X
ENIJ  149.67 333 ePKP    33 43.00   6.3X
ASMO  149.99 336 iPKPd   33 42.50   5.2X
EHOR  150.17 338 e(PKP)  33 43.40   6.0X
AAPN  150.19 336 ePKP    33 41.50   3.9X
ACHM  150.25 336 iPKPc   33 43.00   5.3X
APHE  150.32 335 ePKP    33 40.50   2.6
ALOJ  150.36 336 iPKPc   33 41.50   3.6X
ATEJ  150.49 336 iPKPc   33 43.00   4.9X
EPRU  150.92 337 ePKP    33 45.00   6.4X
EJIF  151.46 337 ePKP    33 47.80   8.4X
TAF   151.54 331 ePKP    33 54.00  14.3X
NKM   152.32 336 iPKP    33 50.00   9.3X
AVE   154.99 337 ePKP    33 50.00   5.6X
                 i        34 21.50
KIC   165.59 255 PKP     33 56.50   0.1
LIC   165.82 254 PKP     33 56.80   0.2
      Z 22s      2.00um           5.9Msz
TIC   165.93 256 PKP     33 57.00   0.3
      S.D. = 1.0  on 177 of 215 obs.
-------------------------------------
   DEC 14, 1989  19h 21m 48.47± 0.57s
   39.741 N ± 4.6km   23.479 E ± 5.4km
   DEPTH =  10.0km  (geophysicist)
 AEGEAN SEA                        (365)
      ML 2.9 (THE). MD 3.2 (ATH).

NEO      0.48 205 ePb    21 58.10  -0.1
PLG      0.63 358 ePb    22 00.30  -0.9
OUR      0.71  33 eP     22 02.20  -0.2
                 eS     22 15.00
LIT      0.84 296 eP     22 04.90   0.2
THE      0.97 336 eP     22 08.00   1.1
                 eS     22 21.40
AGG      1.14 232 eP     22 09.90   0.0
SRS      1.38   4 eP     22 14.30   0.6
KZN      1.43 294 ePb    22 14.00  -0.5
GRG      1.47 326 eP     22 14.80  -0.2
                 eS     22 35.40
KNT      1.49 343 eP     22 15.90   0.7
                 eS     22 37.80
VAY      1.72 337 eP     22 19.00   0.4
MMB      1.86   6 ePd    22 20.00  -0.6
RDO      2.11  48 ePn    22 25.30   1.1
KKB      2.15 352 iPc     22 24.00  -0.8
RZN      2.16  25 eP     22 25.00  -0.2
KDZ      2.41  37 eP     22 28.00  -0.6
PGB      2.85  10 eP     22 28.00  -6.9X
      S.D. = 0.7  on  16 of  17 obs.
-------------------------------------
&  DEC  14, 1989  20h 31m 53.94s
   60.348 N          152.744 W
   DEPTH = 128.9km
 SOUTHERN ALASKA                   ( 2)
      <AGS-P>.

RED      0.07 349 eP     32 11.63   1.5
RDT      0.28  36 eP     32 11.48   0.9
NNL      0.79 112 eP     32 15.30   0.2
NKA      0.84  61 eP     32 16.64   1.1
CKL      0.87  13 iP     32 15.37  -0.7
PDB      0.92 233 eP     32 15.04  -1.2
CNPM     1.12 137 eP     32 17.72  -0.5
SLKM     1.26  82 eP     32 18.77  -1.0
SUA      1.49  40 eP     32 21.51  -0.8
CDD      1.49 198 eP     32 20.67  -1.6
SEW      1.66  97 eP     32 23.20  -1.0
SKT      1.74  19 eP     32 24.38  -0.8
PMS      1.80  59 eP     32 24.81  -1.1
GHO      2.34  51 eP     32 30.70  -2.0
CUT      2.38  29 eP     32 31.96  -1.1
FID      3.12  80 eP     32 40.78  -2.0
VLZ      3.25  73 eP     32 42.95  -1.4
KLU      3.52  68 eP     32 45.95  -2.2
RND      3.58  29 eP     32 46.74  -2.2
      19 obs. ossocioted
-------------------------------------
&  DEC  14, 1989  22h 00m 55.64s
   58.122 N          151.333 W
   DEPTH =  66.3km
 KODIAK ISLAND REGION              ( 13)
      <AGS-P>.

KDC      0.72 239 eP     01 10.05  -0.7
                 eS     01 21.03
XLV      1.35 352 eP     01 18.10  -0.8
CNPM     1.41   2 eP     01 18.61  -1.1
CDD      1.46 305 eP     01 20.55   0 2
NNL      1.93   1 eP     01 25.96  -0 8
SEW      2.21  25 eP     01 28.66  -2 1
PDB      2.23 320 eP     01 29.78  -1 3
SLKM     2.46  13 eP     01 32.22  -2.0
RDT      2.52 348 eP     01 33.06  -2.1
SPU      3.09 354 eP     01 41.24  -1.9
PMS      3.26  15 eP     01 43.65  -1.8
SUA      3.37   5 eP     01 44.82  -2.2
GLI      3.51  36 eP     01 46.36  -2.6
KNK      3.61  23 eP     01 48.00  -2.3
FID      3.62  41 eP     01 47.93  -2.5
VZW      3.82  37 eP     01 51.33  -2.0
GHO      3.86  17 eP     01 52.11  -1.8
KLU      4.35  37 eP     01 59.10  -1.7
      18 obs. ossocioted
-------------------------------------
&  DEC  14, 1989  22h 29m 56.29s
   60.076 N          152.969 W
   DEPTH = 107.4km
 SOUTHERN ALASKA                   ( 2)
      <AGS-P>.

RED      0.36  16 iP     30 11.61  -0.7
                 eS     30 24.34
RDT      0.57  29 iP     30 12.98  -0.7
PDB      0.68 245 iP     30 13.35  -1.1
AUL      0.73 199 eP     30 14.43  -0.5
                 eS     30 28.70
NNL      0.84  92 iP     30 16.40   0.5
XLV      0.89 134 eP     30 15.49  -0.9
                 eS     30 30.87
CNPM     1.04 121 iP     30 17.27  -0.7
NKA      1.09  51 eP     30 19.54   1.1
                 eS     30 34.95
CKL      1.17  15 iP     30 18.86  -0.7
SPU      1.20  22 eP     30 18.97  -0.8
CDD      1.20 197 eP     30 18.44  -1.4
                 eS     30 36.56
BGL      1.23  13 eP     30 19.68  -0.5
CRP      1.26  18 eP     30 20.09  -0.6
                 eS     30 38.46
NCG      1.39  16 eP     30 21.66  -0.5
SLKM     1.44  71 eP     30 21.63  -1.0
SVW      1.67 309 ePc    30 23.50  -2.0
SEW      1.76  88 eP     30 25.17  -1.4
SUA      1.77  37 eP     30 26.21  -0.6
                 eS     30 49.30
SKT      2.04  20 eP     30 29.07  -1.1
PMS      2.05  54 eP     30 29.37  -0.9
PWA      2.19  42 eP     30 30.92  -1.1
                 eS     30 58.16
KDC      2.35 174 eP     30 31.40  -2.8
PMR      2.42  49 eP     30 32.70  -2.4
GHO      2.61  48 eP     30 35.66  -2.1
CUT      2.68  28 eP     30 37.29  -1.3
FID      3.29  75 eP     30 43.37  -3.5
KTH      3.62  15 eP     30 49.62  -1.9
TOA      3.88  55 ePc    30 53.20  -1.7
MCK      4.14  26 eP     30 57.08  -1.3
NEA      4.87  20 iP     31 06.42  -2.0
WRH      4.96  25 eP     31 07.23  -2.5
HDA      5.17  30 eP     31 10.03  -2.6
FBA      5.40  24 ePc    31 13.30  -2.5
GLM      5.56  25 eP     31 15.27  -2.8
IMA      6.02 357 eP     31 22.80  -1.7
INK     11.77  37 eP     32 38.50  -3.2
      36 obs. ossocioted
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*  DEC  14, 1989  22h 54m 51.51± 0.87s
   11.273 N ± 7.2km   62.304 W ±10.5km
   DEPTH =  28.4 ±  8.8 km
 WINDWARD ISLANDS                  ( 95)
      MD 3.5 (TRN). Felt (II) on
      Trinidod.

TCE      0.79 137 eP     55 07.51   0.9
                 eS     55 20.68
TRN      1.08 125 ePc    55 10.48  -0.3
                 eS     55 25.25
GRW      1.08  35 eP     55 12.73   1.8
                 eS     55 26.30
TPP      1.27 139 eP     55 12.75  -0.6
                 eS     55 24.99
PIG      1 44  94 eP     55 15.26  -0.6
                 eS     55 33.56
TBH      1.45 123 eP     55 15.22  -0.8
                 eS     55 34.80
BOT      1.56  94 eP     55 16.07  -1.5
                 eS     55 34.71
CUM      2.00 247 iP     55 23.40  -0.6
                 iS     55 51.00
SVB      2.24  27 eP     55 26.32  -1.1
                 eS     56 00.53
SSV      2.31  28 eP     55 27.82  -0.7
                 eS     56 01.00
SLB      2.82  26 eP     55 34.85  -0.9
                 eS     56 05.76
      S.D. = 1.1  on  11 of  11 obs.
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*  DEC  15, 1989  00h 14m 22.74± 4.19s
   31.439 S ±35.0km   69.971 W ±20.8km
   DEPTH = 174.3 ± 29.9 km
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15d 00h

SAN JUAN PROVINCE, ARGENTINA (137)

ZON	1.11	96	eP	14	51.00	-0.1
			eS	15	06.00	
JACH	1.35	203	iPc	14	53.00	-0.2
			iS	15	12.00	
CFA	1.49	97	iPd	14	54.60	0.1
			S	15	19.00	
ROCH	1.76	210	iPd	14	51.20	-6.3X
			iS	15	20.50	
PEL	1.80	199	iPc	14	57.60	-0.1
			iS	15	20.10	
FCH	1.90	188	iPd	14	59.50	0.4
			iS	15	23.00	
SAN	2.09	196	eP	15	00.50	-0.3
			iS	15	23.20	
PCH	2.22	192	iPd	15	02.70	0.3
			iS	15	28.50	
TACH	2.35	200	iPc	15	03.70	-0.1
			iS	15	31.50	
LCCH	2.44	213	ePd	15	05.40	0.6
			iS	15	32.90	
CHCH	2.55	193	iPd	15	06.20	0.0
			iS	15	35.50	
LNV	2.79	205	iPd	15	08.50	-0.5
			iS	15	38.50	
MRA	3.75	106	iPc	15	21.00	0.0

S.D. = 0.4 on 12 of 13 obs.

% DEC 15, 1989 00h 33m 32.71± 0.80s
39.494 N ± 7.3km 2.335 W ± 9.0km
DEPTH = 10.0km (geophysicist)
SPAIN (377)
mbLg 2.9 (MDD).

EVIA	0.87	189	iP	33	48.70	-0.8
			eS	34	00.00	
ECHE	1.06	84	eP	33	53.20	0.5
			eS	34	07.20	
ETOR	1.34	9	eP	33	56.80	-0.7
			eS	34	13.60	
EBAN	1.75	221	eP	34	03.80	0.5
			eS	34	26.00	
GUD	1.81	310	eP	34	04.60	0.4
			eS	34	26.50	

S.D. = 0.9 on 5 of 5 obs.

DEC 15, 1989 00h 56m 02.31± 0.73s
37.506 N ± 5.6km 20.521 E ± 5.3km
DEPTH = 44.5 ± 12.0 km
4.2mb (2 obs.)
IONIAN SEA (399)
ML 3.8 (ATH), 3.6 (THE).

VLS	0.67	5	ePn	56	14.50	-1.1
ITM	1.17	106	ePn	56	22.30	-0.2
IGT	2.03	356	eP	56	39.30	4.6X
AGG	2.08	43	eP	56	37.60	2.2
VLI	2.09	111	ePn	56	36.50	1.0
ATH	2.58	79	ePn	56	43.40	0.9
NEO	2.78	49	ePn	56	45.60	0.2
KZN	2.96	19	ePn	56	49.60	1.6
LIT	3.01	30	eP	56	49.40	0.7
LCI	3.46	325	P	56	55.50	0.5
VAM	3.63	124	ePn	56	56.00	-1.4
THE	3.66	31	eP	56	57.50	-0.3
PLG	3.66	38	ePn	56	57.60	-0.3
ROI	3.72	305	P	57	03.10	4.3X
GRG	3.74	22	eP	56	59.10	0.1
			eS	57	26.20	
CZI	3.85	298	P	57	06.50	6.0X
OUR	3.91	43	eP	57	03.70	2.4
TDS	3.92	305	P	57	01.00	-0.6
KNT	4.09	26	eP	57	04.10	0.1
VAY	4.13	22	iPn	57	04.30	-0.2
BRT	4.24	324	P	57	06.50	0.4
			eSn	57	56.40	
SRS	4.32	32	eP	57	07.20	0.0
			eS	57	40.40	
SKO	4.52	9	iPn	57	09.80	-0.2
			i	57	15.20	
			i	57	29.00	
			iSg	57	59.00	
MGR	4.68	306	P	57	12.50	0.2
			eSn	58	02.50	
MMB	4.77	30	ePc	57	13.00	-0.6
KKB	4.78	24	iPd	57	13.00	-0.7
RZN	5.29	36	iPc	57	21.00	0.0
RDO	5.32	45	ePn	57	19.90	-1.4
VTS	5.48	21	iP	57	24.00	0.3
KDZ	5.61	41	iPd	57	24.00	-1.4
PGB	5.76	28	eP	57	27.00	-0.6
PVL	6.78	31	iPd	57	39.00	-2.8
MLR	8.95	25	ePc	58	15.00	2.9X
VRI	9.56	27	ePd	58	21.00	0.8
NAO	24.13	348	P	01	15.20	0.4
	0.9s		2.80nm			3.8mb
BCAO	32.97	184	iPd	02	34.90	-0.1
	0.5s		6.00nm			4.7mb
			id	02	43.80	
KIC	38.60	223	P	03	25.00	0.1
LIC	38.86	223	P	03	25.30	0.2

S.D. = 1.1 on 34 of 38 obs.

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* DEC 15, 1989 02h 07m 13.43± 1.76s
39.473 N ±15.9km 25.472 E ±13.8km
DEPTH = 10.0km (geophysicist)
AEGEAN SEA (365)

EZN	0.75	62	iPg	07	25.90	-2.1
			iSg	07	39.90	
IZM	1.76	127	ePn	07	44.00	-0.2
EDC	2.04	64	ePn	07	51.00	2.9X
BNT	2.08	64	iPn	07	50.70	1.9
KDZ	2.17	359	eP	07	51.00	0.8
RZN	2.29	346	eP	07	52.00	0.1
DST	2.44	86	ePn	07	54.40	0.3
MMB	2.50	328	eP	07	54.00	-0.8
KKB	3.00	324	eP	08	08.00	6.1X

S.D. = 1.6 on 7 of 9 obs.

? DEC 15, 1989 02h 39m 15.69± 0.73s
16.907 S ±21.8km 67.224 E ±14.0km
DEPTH = 10.0km (geophysicist)
4.8mb (2 obs.) 4.6Msz (1 obs.)
MID-INDIAN RISE (429)

HYB	35.89	19	eP	46	23.50	5.4X
BCAD	52.56	289	ePc	48	32.30	0.3
	0.5s		3.00nm			4.5mb
			ic	48	36.20	
MAIO	53.42	352	eP	48	38.00	0.0
ASPA	62.43	108	iPc	49	41.60	-0.1
	1.4s		23.00nm			5.2mb
LZH	63.07	33	P	49	46.00	0.3
WB5	63.41	104	eP	49	48.50	0.4
LIC	74.99	281	P	50	59.68	0.1
	Z 21s		0.31um			4.6Msz
INK	126.95	9	ePKP	58	20.00	-0.9
SES	146.56	358	ePKP	59	02.00	4.6X
PNT	147.20	8	ePKP	59	05.00	6.6X
LRM	151.17	360	ePKP	59	12.10	7.1X
FVM	151.26	321	PKP	59	11.00	6.0X

S.D. = 0.5 on 7 of 12 obs.

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* DEC 15, 1989 02h 50m 37.33± 0.85s
38.529 N ± 7.9km 21.681 E ±11.0km
DEPTH = 10.0km (geophysicist)
GREECE (364)
ML 2.9 (THE). MD 3.3 (ATH).

AGG	0.71	46	eP	50	50.80	-0.5
VLS	0.93	248	ePn	50	55.60	0.6
ITM	1.36	172	ePn	51	00.80	-1.5
NEO	1.43	57	ePn	51	03.20	-0.2
LIT	1.69	22	eP	51	08.00	0.9
			eS	51	39.00	
KZN	1.78	2	ePb	51	12.00	3.6X
VLI	2.06	151	ePb	51	13.70	1.2
GRG	2.49	13	eP	51	20.10	1.6
VAY	2.87	13	ePn	51	17.00	-6.9X
SKO	3.44	357	ePn	51	30.00	-2.1

S.D. = 1.6 on 8 of 10 obs.

DEC 15, 1989 03h 28m 12.58± 0.36s
44.452 N ± 2.2km 7.071 E ± 2.8km
DEPTH = 8.2 ± 4.2 km
NORTHERN ITALY (545)
ML 2.7 (LDG), 2 5 (GEN).

PZZ	0.06	22	P	28	14 14	-0.5
			S	28	15.84	
DOI	0.14	68	P	28	15 40	-0.3
			eSg	28	18.10	
FOUF	0.22	291	ePg	28	16.26	-1.0
			eSg	28	18.40	
STV	0.28	139	P	28	17.41	-0.9
			S	28	21.46	
ENR	0.34	132	P	28	18.58	-0.9
			S	28	23.29	
RRL	0.51	337	P	28	21.99	-0.9
			S	28	30.10	
ROB	0.59	105	P	28	23.95	-0.6
			S	28	33.24	
SBF	0.64	156	Pg	28	25.00	-0.5
			Sg	28	32.60	
BNI	0.66	335	Pc	28	24.70	-1.3
			eSg	28	33.70	
RSP	0.71	11	P	28	25.78	-1.1
			S	28	35.98	
IMI	0.80	132	P	28	27.22	-1.1
			S	28	38.47	
FIN	0.85	106	P	28	28.40	-0.8
			S	28	40.95	
FRF	0.94	199	Pg	28	29.90	-0.8
			Sg	28	42.20	
LSD	1.01	3	P	28	31.53	-0.5
			S	28	46.05	
PCP	1.06	85	P	28	32.19	-0.5
			S	28	47.10	
LPG	1.07	348	Pg	28	32.50	-0.6
			Sg	28	46.70	
LPL	1.09	347	Pg	28	32.80	-0.6
			Sg	28	47.30	
LRG	1.12	207	Pg	28	33.60	-0.1
			Sg	28	48.90	
LMR	1.19	200	Pg	28	34.90	0.0
			Sg	28	50.80	

S.D. = 0.4 on 19 of 19 obs.

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* DEC 15, 1989 03h 31m 47.83± 1.31s
2.892 S ± 9.4km 78.115 W ±27.1km
DEPTH = 33.0km (normal)
ECUADOR (107)

TUNG	1.50	347	iPd	32	12.00	-1.1
			S	32	38.00	
QUR	2.73	351	Pd	32	33.70	3.0X
			eS	33	12.80	
GGP	2.74	350	eP	32	33.60	2.6
			S	33	14.10	
CAYA	2.96	3	eP	32	33.00	-1.0
			S	33	15.50	
COTA	3.21	356	P	32	42.00	4.3X
DIAC	6.43	17	eP	33	23.40	0.4
ANCC	6.49	11	eP	33	24.20	0.6
HOQC	6.49	13	eP	33	25.20	1.4
CLMC	6.90	13	eP	33	28.50	-1.1
HOBC	7.47	15	eP	33	36.10	-1.3
BOG	8.49	28	e(P)	34	35.00	43.1X
ARE	14.98	155	eP	35	24.00	4.8X
ZOBO	16.53	144	P	35	38.00	-1.5
			e	41	00.00	
LPB	16.76	145	P	35	43.00	0.8
			e	41	11.00	
CNCB	17.04	145	P	35	47.00	1.1
			i	41	16.00	
INK	80.54	342	eP	43	57.00	-1.0

S.D. = 1.5 on 12 of 16 obs.

? DEC 15, 1989 04h 37m 22.24± 3.06s
16.016 N ±16.2km 60.972 W ±32 7km
DEPTH = 33.0km (normal)
LEEWARD ISLANDS (92)
ML 2.1 (FDF).

DEG	0.31	344	eP	37	30.15	0.0
			S	37	34.50	
MGG	0.35	254	eP	37	30.00	-0.6
			S	37	34.20	
PAG	0.68	271	eP	37	35.80	0.3
			S	37	44.00	
BBL	0.69	225	eP	37	35.80	0.2
			S	37	44.30	

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

% DEC 15, 1989 06h 00m 22.12± 0.82s
44.045 N ± 6.3km 7.992 E ± 5.5km
DEPTH = 10.0km (geophysicist)
NORTHERN ITALY (545)
ML 2.1 (GEN).

```
IMI      0.15 209 P      00 25.66   -0.1
                  S      00 28.53
FIN      0.23  44 P      00 27.10    0.1
                  S      00 30.38
ROB      0.26 341 P      00 27.41   -0.3
                  S      00 30.89
ENR      0.45 294 P      00 31.71    0.4
                  S      00 37.25
STV      0.52 293 P      00 32.53   -0.1
                  S      00 39.20
PCP      0.64  38 P      00 34.99    0.1
                  S      00 43.20
PZZ      0.79 306 P      00 37.56    0.0
                  S      00 47.50
     S.D. = 0.3  on   7 of   7 obs.
-----------------------------------------
?  DEC  15, 1989  06h 08m 20.71± 9.24s
   6.727 S ±69.6km  130.238 E ±17.4km
   DEPTH = 118.4 ± 49.4 km
   4.8mb (  2 obs.)
 BANDA SEA                          (280)

MTN      6.14 172 iPc    09 51.80    1.3
KNA      9.08 189 eP     10 30.00   -0.3
                  iS     12 09.00
WB5     13.68 163 eP     11 28.50   -2.4
                  i      11 32.50
                  eS     14 01.20
ASPA    17.21 169 eP     12 16.10    0.8
        0.5s     74.00nm          5.2mb
                  eS     15 24.40
MBL     17.53 214 eP     12 19.00   -0.2
                  eS     15 24.00
WARB    19.65 190 eP     12 43.50    0.8
        0.3s      7.00nm          4.5mb
                  eS     16 15.00
CTA     20.44 132 eP     12 51.00    0.2
NANU    21.19 220 iPd    12 57.80   -0.4
FORR    24.08 185 eP     13 26.50    0.1
     S.D. = 1.4  on   9 of   9 obs.
-----------------------------------------
?  DEC  15, 1989  06h 24m 16.32± 2.21s
   24.555 N ±36.4km  125.826 E ±31.8km
   DEPTH =  33.0km  (normal)
   4.6mb (  3 obs.)
 SOUTHWESTERN RYUKYU ISLANDS        (246)

SSE      7.70 329 Pc     26 10.20    1.3
        0.8s     67.00nm          5.7mb X
                  i      26 17.30
BJI     17.44 335 eP     28 17.00   -1.6
LZH     22.13 306 Pd     29 11.50    0.6
        1.2s     35.00nm          4.7mb
                  i      29 41.50
INK     71.27  23 eP     35 35.00    1.0
HFS     79.28 332 eP     36 19.10   -0.6
        0.4s      2.80nm          4.6mb
NAO     80.11 333 P      36 23.50   -0.7
        0.5s      1.40nm          4.2mb
     S.D. = 1.5  on   6 of   6 obs.
-----------------------------------------
*  DEC  15, 1989  07h 31m 50.12± 1.71s
   24.395 N ±11.0km  122.232 E ±16.9km
   DEPTH =  33.0km  (normal)
 TAIWAN REGION                      (243)
      ML 4.1 (BJI).

TWC      0.41 301 iPc    31 59.80    0.4
                  eS     32 04.60
TWD      0.66 242 iPd    32 02.50   -0.5
                  eS     32 09.50
TWZ      0.92 320 iPd    32 08.00    1.4
ANP      1.02 320 iPc    32 09.50    1.3
        0.9s   3764.71nm
                  eS     32 21.00
TWF1     1.35 220 eP     32 13.90    1.1
OZH      3.36 280 Pn     32 39.30   -2.2
                  Sn     33 14.40
SSE      6.74 352 P      33 27.80   -1.5
        0.7s      0.04nm          2.4mb X
                  eS     34 40.80
                  Lg     35 27.00
NJ2      8.19 339 Pd     33 47.00   -2.5
WHN      9.30 313 eP     34 07.00    2.1
                  pP     34 12.50
GYA     14.22 282 P      35 10.00   -1.3
TIY     15.69 330 Pc     35 34.50    4.1X

BJI     16.41 343 eP     35 41.00    1.5
CD2     17.60 296 eP     35 54.60    0.1
GTA     24.12 314 eP     37 04.20    0.1
INK     72.67  22 eP     43 16.00   -0.1
     S.D. = 1.6  on  14 of  15 obs.
-----------------------------------------
&  DEC  15, 1989  08h 38m 33.10s
   36.808 N          121.542 W
   DEPTH =   3.0km
 CENTRAL CALIFORNIA                 ( 39)
      <BRK>. ML 2.7 (BRK).

SAO      0.09 119 iPd    38 34.80   -0.2
GCC      0.43 301 eP     38 40.80   -0.8
PRS      0.50 164 iPc    38 42.70   -0.3
LLA      0.52 111 eP     38 43.30   -0.1
MHC      0.54 352 iPc    38 44.10    0.2
                  eS     38 52.30
ARN      0.54   1 iPd    38 44.00    0.1
PRI      0.97 133 eP     38 51.70   -0.6
BKS      1.20 333 eP     38 55.90   -0.2
                  e(S)   39 14.50
PHAM     1.34 136 eP     38 57.00   -1.5
FRI      1.48  82 eP     38 59.60   -1.1
CMB      1.53  37 eP     39 00.20   -1.3
BCH      2.01 143 eP     39 05.00   -3.3
KVN      3.52  50 eP     39 26.50   -3.6
      13 obs. associated
-----------------------------------------
   DEC  15, 1989  09h 45m 08.77± 0.28s
   21.259 N ± 6.4km   45.668 W ± 3.9km
   DEPTH =  10.0km  (geophysicist)
   5.0mb ( 25 obs.)  4.0Msz (  2 obs.)
 NORTH ATLANTIC RIDGE               (403)

TBR     31.23 316 P      51 31.10    0.4
CBM     31.43 330 P      51 33.10    0.8
RSNY    33.27 321 P      51 50.00    1.6
RSCP    37.63 301 P      52 26.30    0.5
PWLA    39.52 300 P      52 42.30    0.8
TIC     41.89 104 Pc     53 00.24   -0.9
        0.9s     20.00nm          4.8mb
FVM     41.90 304 P      53 01.50    0.5
        1.0s     27.00nm          4.9mb
LIC     42.05 105 Pc     53 01.52   -1.0
        1.1s     27.50nm          4.9mb
     Z  20s      0.16um          3.9Msz
KIC     42.26 104 Pc     53 03.24   -0.9
        1.1s     32.50nm          5.0mb
OLY     42.36 300 P      53 04.50   -0.3
ZOBO    43.31 212 Pc     53 12.00   -1.4
        1.5s     40.86nm          5.0mb
     Z  22s      0.24um          4.0Msz
                  LR     06 36.00
CCH     43.33 209 P      53 15.50    2.3
LPB     43.53 212 P      53 16.00    1.1
CNCB    43.70 212 P      53 17.00    0.5
FRB     45.17 346 eP     53 27.00   -0.1
TCF     46.09  46 eP     53 35.60    0.9
        1.3s     46.90nm          5.3mb
AVF     46.98  45 eP     53 42.30    0.5
        1.2s     26.70nm          5.2mb
SSF     47.16  45 eP     53 43.80    0.6
        1.0s     16.00nm          5.1mb
SMF     47.27  46 eP     53 44.50    0.4
        1.2s     22.00nm          5.1mb
LOR     47.45  45 eP     53 45.90    0.4
        1.2s     17.80nm          5.0mb
LBF     47.45  45 eP     53 45.60    0.1
        1.2s     16.00nm          5.0mb
LPG     48.98  48 eP     53 59.00    1.3
        1.2s     26.70nm          5.1mb
HAU     49.26  44 eP     53 59.40   -0.1
        1.0s     20.00nm          5.1mb
BSF     49.51  45 eP     54 01.50   -0.1
        1.2s     17.80nm          4.9mb
CDF     49.96  44 eP     54 04.70   -0.3
        1.2s     23.80nm          5.0mb
FFC     53.58 323 iPd    54 31.30   -0.7
        1.1s     24.00nm          5.1mb
GOL     53.67 304 P      54 33.00   -0.3
KBA     53.75  47 e(P)   54 31.50   -2.1
        1.3s     20.70nm          5.0mb
KHC     54.19  44 Pd     54 37.10    0.5
        1.3s     12.00nm          4.8mb
                  e      55 21.50
CLL     54.19  41 eP     54 37.00    0.4

LJU     54.44  48 e(P)   54 38.00   -0.5
ANMO    54.58 298 P      54 40.00    0.0
ALQ     54.59 298 eP     54 37.50   -2.5
VBY     54.90  49 e(P)   54 42.00    0.1
ZST     56.40  46 eP     54 51.90   -0.7
BW06    56.89 308 P      54 55.30   -1.3
        1.0s     16.00nm          5.0mb
IMW     57.92 309 P      55 03.50   -0.4
DAU     58.19 305 P      55 05.50   -0.3
SES     58.28 317 eP     55 06.00    0.0
SKO     59.29  53 eP     55 12.50   -0.6
BZS     59.36  49 eP     55 14.00    0.5
EDM     59.93 320 ePd    55 17.00   -0.4
VAY     60.16  54 eP     55 18.80   -0.3
GLA     61.68 297 P      55 30.10    0.5
MLR     62.41  49 ePd    55 35.00    0.6
VRI     62.93  48 eP     55 37.50   -0.2
DPW     62.93 314 P      55 36.50   -1.2
TNP     62.98 303 P      55 38.00   -0.4
        1.0s      3.75nm          4.5mb
PLM     63.32 298 P      55 41.00    0.3
PEC     63.49 298 P      55 42.00    0.4
KVN     63.55 304 P      55 41.00   -1.1
PNT     63.81 316 eP     55 43.00   -0.5
BCAO    64.38  95 iPd    55 47.00   -0.7
        0.6s     5.00nm          4.9mb
CMB     65.46 303 eP     55 54.60    0.2
MBC     65.63 345 eP     55 55.50    0.8
        1.0s     7.00nm          4.8mb
BCH     65.67 300 P      55 56.50    0.6
MIN     66.07 306 eP     55 57.50   -0.9
ELL     66.34  58 eP     56 01.00    0.9
INK     69.66 337 eP     56 19.00   -1.1
MBH     71.86  64 eP     56 35.00    0.8
FBA     75.97 335 P      56 56.40   -1.0
        1.2s     17.05nm          5.0mb
LWI     76.37  98 ePd    57 01.20    0.4
PMR     77.72 332 P      57 07.00   -0.1
        1.1s     11.41nm          4.9mb
IMA     77.79 337 P      57 10.00    2.3
        1.2s      8.14nm          4.7mb
MAIO    89.12  51 eP     58 09.00    2.9X
GBA    114.27  63 Pdiff  00 01.00    1.3X
        0.4s     0.40nm
DZM    150.17 262 iPKPc  05 03.30    6.3X
     S.D. = 0.9  on  64 of  67 obs.
-----------------------------------------
   DEC  15, 1989  10h 07m 19.60± 0.44s
   8.952 S ± 8.6km  113.212 E ± 9.9km
   DEPTH =  33.0km  (normal)
   4.7mb (  5 obs.)
 JAVA                               (277)

MBL     13.71 153 eP     10 29.00   -5.1X
        0.3s     29.00nm          5.6mb
                  eS     12 49.00
NANU    13.71 171 iPd    10 30.30   -3.8X
                  eS     12 52.00
KNA     16.62 115 eP     11 13.00    1.2
MTN     18.01 104 iPc    11 29.90    0.7
                  eS     14 38.50
IPM     18.12 317 ePd    11 32.00    1.4
MEKA    18.28 165 eP     11 33.20    0.8
                  eS     14 40.00
WARB    21.36 145 iPc    12 05.60   -0.8
        0.4s     13.00nm          4.7mb
                  eS     15 54.00
BAL     21.79 172 eP     12 10.50   -0.2
        0.9s     38.00nm          4.8mb
                  eS     16 07.00
COOL    23.04 162 eP     12 22.70   -0.4
                  e      12 35.00
                  eS     16 27.00
MUN     23.08 173 eP     12 24.00    0.6
                  eS     16 30.00
WB5     23.16 120 eP     12 23.00   -1.3
NWAO    24.15 172 iPc    12 34.40    0.7
        0.5s     9.00nm          4.6mb
                  eS     17 06.00
FORR    25.84 150 eP     12 48.50   -1.3
                  eS     17 38.00
CHTO    30.97 333 eP     13 36.50    0.3
BWA     41.04 133 eP     15 03.00    1.3
BRS     41.59 121 iPc    15 05.20   -1.0
        0.8s     4.00nm          4.2mb
                  e      15 26.80
                  i      15 42.00
```

15d 10h

CAN 41.89 134 eP 15 08.50 -0.2
GBA 41.99 302 P 15 08.00 -1.6
LZH 45.66 349 Pd 15 38.50 -0.7
MBH 84.41 301 eP 19 50.50 0.1
PRNI 84.45 302 iPc 19 51.00 0.3
S.D = 1.0 on 19 of 21 obs.

DEC 15, 1989 11h 55m 58.65± 0.88s
34.271 S ± 8.6km 70.309 W ± 6.7km
DEPTH = 10.0km (geophysicist)
CHILE-ARGENTINA BORDER REGION (127)

CHCH 0.44 320 iPc 56 08.10 0.4
iS 56 16.20
PCH 0.67 345 iPc 56 11.70 -0.3
iS 56 22.90
TACH 0.81 320 iPc 56 14.40 0.1
iS 56 27.20
SAN 0.87 340 iPc 56 15.20 -0.2
iS 56 28.50
LNV 0.97 289 iPc 56 16.70 -0.3
iS 56 32.20
PEL 1.17 344 iPc 56 20.50 0.0
iS 56 37.60
LCCH 1.32 307 iPd 56 23.00 0.0
iS 56 43.00
ROCH 1.42 335 eP 56 25.00 0.3
iS 56 45.50
RFA 1.60 109 iPc 56 27.20 0.1
S 56 44.50
JACH 1.60 351 iPc 56 27.10 -0.1
iS 56 50.00
CCH 17.23 14 eP 00 15.00 13.7X
ZOBO 18.03 7 P 00 19.00 7.4X
S.D. = 0.3 on 10 of 12 obs.

? DEC 15, 1989 12h 28m 35.87± 7.70s
49.800 N ±58.8km 0.211 W ±25.9km
DEPTH = 10.0km (geophysicist)
FRANCE (538)
ML 3.0 (LDG).

FLN 1.05 190 Pg 28 56.50 0.8
Sg 29 12.80
LDF 1.21 177 Pn 28 58.00 -0.4
Pg 29 00.20
Sg 29 19.00
GRR 1.48 197 Pn 29 00.70 -1.8
Pg 29 03.00
Sg 29 23.90
LPF 1.85 197 Pg 29 09.80 1.9
Sg 29 35.00
MFF 3.20 179 Pn 29 26.20 -1.0
Sg 30 20.60
BGF 3.84 147 Pn 29 36.60 0.4
Sg 30 43.40
S.D. = 1.7 on 6 of 6 obs.

DEC 15, 1989 12h 30m 56.56± 0.23s
11.329 S ± 6.2km 162.313 E ± 5.0km
DEPTH = 33.0km (normal)
5.2mb (10 obs.) 5.0Msz (5 obs.)
SOLOMON ISLANDS (193)
CENTROID, MOMENT TENSOR (HRV)
Data Used: GDSN
L.P.B.: 10S, 24C
Centroid Location:
Origin Time 12:30:52.8 0.7
Lat 11.33S FIX;Lon 162.34E FIX
Dep 15 0 FIX Half-duration 2.0
Moment Tensor; Scale 10**17 Nm
Mrr=-0.08 0.06 Mtt=-0.30 0.10
Mff= 0.38 0.08 Mrt= 1.80 0.13
Mrf=-2.21 0.13 Mtf=-0.13 0.06
Principal Axes:
T Val= 2.96 Plg=43 Azm= 56
N -0.15 6 321
P -2.80 46 224
Best Double Couple:Mo=2.9*10**17
NP1:Strike=216 Dip= 6 Slip= -14
NP2: 321 88 -96

HNR 2.99 309 iPc+ 31 41.00 -1.8
iS 32 16.00
DZM 11.39 160 iPc 33 40.10 -0.1
PMG 15.03 276 eP 34 30.00 1.6
1.5s 2000.00nm 6.2mb X

LAT 15.82 286 eP 34 30.00 -8.6X
CTA 17.73 239 iPc 35 03.00 0.3
1.6s 933.33nm 5.7mb
BRS 18.32 208 iPc+ 35 11.80 1.8
1.1s 9.30nm 3.9mb X
Z 20s 24.00um 4.0Msz
ipP 35 23.80
i 35 37.00
e 36 16.00
iS 38 36.00
MNDI 19.14 284 eP 35 24.00 3.9X
RMQ 19.77 218 iPd 35 27.10 0.2
1.2s 521.00nm 5.7mb
JAY 23.15 291 ePd 36 01.50 0.3
AFI 25.41 99 eP 36 18.00 -5.0X
e 41 00.00
BWA 26.25 207 eP 36 31.10 0.4
e 36 41.00
CAN 26.77 205 e(P) 36 39.00 3.6X
WB5 28.19 249 eP 36 46.60 -1.8
ASPA 29.68 242 iPd 36 59.20 -2.6
1.5s 26.00nm 4.8mb
Z 22s 3.49um 4.9MszX
eS 41 56.90
LR 47 20.30
GUMO 30.20 325 eP 37 14.00 7.5X
ADE 31.85 219 iPd 37 20.00 -0.8
0.8s 22.39nm 5.1mb
KNA 32.89 259 eP 37 28.00 -2.0
WARB 36.72 241 iPc 38 02.20 -0.5
0.6s 11.00nm 4.9mb
FORR 37.15 233 eP 38 05.00 -1.2
MBL 41.82 251 eP 38 44.20 -1.0
KKM 49 01 288 eP 39 37.00 -5.6X
BAG 49.63 303 eP 39 47.00 -0.5
SSE 57.76 318 eP 40 53.60 6.7X
Z 20s 0.90um 4.9Msz
N 15s 0.90um
eS 48 36.00
MDJ 63.08 334 eP 41 19.50 -3.5X
SNY 63.76 329 eP 41 29.80 2.3
Z 25s 1.30um 5.0MszX
N 30s 1.80um
E 28s 1.30um
eS 49 53.00
CN2 64.31 331 Pc 41 31.20 0.1
1.6s 0.10nm 2.7mb X
Z 17s 1.50um 5.2MszX
N 13s 0.80um
PSI 64.55 278 eP 41 18.50 -14.7X
SBA 66.56 179 e(P) 41 48.90 3.9X
BJI 66.63 323 eP 41 45.50 -0.5
Z 20s 0.90um 5.0Msz
eS 50 26.00
e 58 08.00
NST 67.14 292 eP 41 52.00 2.3
XAN 67.86 314 P 41 53.50 -0.5
CHG 69.28 295 iPc 42 03.80 0.8
CHTO 69.28 295 eP 42 03.40 0.4
HHC 69.90 321 eP 42 07.30 0.7
Z 20s 0.90um 5.0Msz
CD2 70.12 309 eP 42 08.10 0.0
BTO 70.72 320 eP 42 11.00 -0.6
Z 16s 0.60um 4.9MszX
N 16s 1.00um
eS 51 23.00
LZH 72.48 314 Pc 42 22.50 0.2
2.0s 84.00nm 5.4mb
Z 16s 0.70um 5.0MszX
i 42 58.00
SPA 78.75 180 eP 43 06.30 9.0X
0.9s 27.73nm 5.3mb
IMA 83.71 17 eP 43 22.90 -0.4
1.0s 8.10nm 4.8mb
FBA 84.66 19 eP 43 26.50 -1.4
NWRM 85.35 49 P 43 31.50 -0.4
GCC 85.59 51 eP 43 33.30 0.2
BRK 85.64 50 eP 43 33.30 0.0
BKS 85.66 50 eP 43 32.60 -0.9
0.9s 25.00nm 5.4mb
PRS 85.86 52 eP 43 34.70 0.2
MHC 85 95 51 eP 43 35.30 0.2
ARN 86.04 51 P 43 35.00 -0.4
WDC 86.27 48 eP 43 36.30 -0.1
PRI 86.35 52 eP 43 37.50 0.4
SYP 86 43 54 eP 43 38.00 0.5
BCH 86.53 53 P 43 38.10 0.1

ORV 86.72 49 eP 43 38.30 -0.3
WMQ 86.92 316 Pc 43 40.30 0.7
Z 20s 0.70um 5.1Msz
PP 47 06.00
eS 54 20.00
LBFM 86.98 47 P 43 40.70 0.6
CMB 87.11 50 eP 43 40.30 -0.3
FRI 87.33 52 eP 43 41.50 -0.1
PAS 87.77 55 eP 43 42.00 -1.8
MWC 87.88 55 eP 43 44.00 -0.6
SBB 88.18 54 eP 43 46.00 0.1
GMW 88.31 41 P 43 46.50 0.4
RVR 88.37 55 eP 43 46.00 -0.7
PEC 88.51 55 P 43 47.20 -0.2
BAR 88.61 56 eP 43 46.00 -1.9
PLM 88.62 56 eP 43 48.00 -0.2
CLC 88.65 53 eP 43 48.00 -0.1
RMW 88.91 41 P 43 49.20 0.1
KVN 89.11 50 P 43 50.00 -0.4
GSC 89.15 54 eP 43 51.00 0.5
TPC 89.46 55 eP 43 52.00 0.0
TNP 89.53 51 P 43 51.30 -1.1
1.0s 6.67nm 4.9mb
GLA 90.20 56 eP 43 56.00 0.6
PNT 90.85 40 ePd 43 58.00 0.0
INK 91.28 20 eP 43 58.00 -1.5
LRM 94.74 44 eP 44 16.60 0.3
IMW 95.43 46 P 44 22.50 2.9X
EDM 95.61 37 ePd 44 19.00 -0.8
SES 96.50 40 eP 44 23.00 -1.0
ALQ 97.39 56 eP 44 21.00 -7.5X
ANMO 97.39 56 P 44 30.40 1.9
RSON 107.53 40 Pdiff 45 17.00 3.7X
CNCB 122.96 119 ePKP 49 54.00 1.3
LPB 122.98 118 (PKP) 49 58.00 5.5X
ZOBO 123.07 118 PKP 49 53.00 0.1
Z 22s 0.24um 4.8Msz
LR 31 16.00
CCH 124.27 120 PKP 49 55.00 0.0
NB2 126.04 343 PKP 49 55.30 -1.5
1.3s 10.20nm
MLR 129.65 321 ePKP 50 06.50 2.3
KRA 130.53 329 ePKP 50 07.90 2.3
SPC 130.91 328 ePKP 50 09.00 2.4
KSP 131.80 332 ePKP 50 09.50 1.5
e 53 34.00
ZST 133.15 328 e(PKP)50 11.60 1.0
THE 133.86 317 ePdiff47 17.30 6.6X
GRG 134.09 317 ePdiff47 12.90 1.1
KHC 134.25 332 PKP 50 12.40 -0.4
BCAO 143.50 262 iPKPd 50 20.40 -10.2X
0 6s 14.00nm
i 51 50.90
GUD 148.45 340 e(PKP)50 42.00 3.8X
EBAN 150.52 337 e(PKP)50 47.00 5.7X
ASMO 151.21 337 iPKPc 50 48.00 5.5X
AAPN 151.40 337 iPKPc 50 48.50 5.8X
ACHM 151.46 336 iPKPc 50 48.50 5.7X
APHE 151.54 336 iPKPc 50 49.20 6.2X
ALOJ 151.57 337 ePKP 50 48.50 5.5X
ATEJ 151.70 336 iPKPc 50 49.00 5.7X
EPRU 152.12 338 e(PKP)50 54.80 11.1X
S.D. = 1.1 on 77 of 103 obs.

DEC 15, 1989 12h 47m 00.21± 0.80s
40.490 N ± 7.0km 21.820 E ± 7.6km
DEPTH = 10.0km (geophysicist)
GREECE (364)
MD 3.5 (ATH).

KZN 0.19 192 iPgc 47 02.30 -2.1
LIT 0.64 127 eP 47 12.40 -0.7
eS 47 22.00
OHR 0.99 309 ePn 47 19.30 0.2
VAY 1.01 34 ePn 47 17.70 -1.5
KNT 1.06 50 eP 47 20.30 0.1
eS 47 35.00
PLG 1.25 95 ePn 47 25.00 1.6
IGT 1.49 231 eP 47 28.50 1.5
SKO 1.51 349 ePn 47 36.00 8.7X
AGG 1.52 165 eP 47 28.00 0.6
NEO 1.60 137 ePb 47 29.00 0.4
S.D. = 1.5 on 9 of 10 obs.

DEC 15, 1989 13h 39m 28.46± 0.32s
6.323 S ± 6.6km 104.434 E ± 7.7km
DEPTH = 62.0km (4 depth phases)

5.1mb (7 obs.)
SUNDA STRAIT (276)

PPI	7.08	325	eP	41	09.00	-2.8
			eS	42	30.00	
KGM	8.36	352	eP	41	32.50	3.1X
PSI	10.51	328	eP	42	02.40	3.5X
IPM	11.35	342	eP	42	12.50	2.2
BSI	14.87	322	eP	42	57.00	0.4
KKM	17.01	44	iP	43	32.50	8.7X
NNT	19.36	346	eP	43	50.00	-2.0
NANU	19.37	148	eP	43	50.30	-1.8
			eS	47	15.00	
MBL	20.97	136	iPc	44	08.10	-0.6
LOE	23.73	354	eP	44	31.00	-4.9X
BDT	24.02	347	eP	44	38.60	-0.1
CHG	25.56	348	eP	44	52.00	-1.4
CHTO	25.56	348	eP	44	51.90	-1.4
KNA	25.63	113	iPd	44	53.20	-0.8
MTN	27.09	106	eP	45	07.50	0.0
WB5	32.04	118	eP	45	50.80	-0.8
GYA	32.66	4	P	45	57.60	0.7
			pP	46	13.80	67km
FORR	32.99	141	eP	45	58.50	-1.1
ASPA	33.16	124	eP	46	01.20	-0.1
Z	23s	0.40um				4.1MszX
			LR	58	26.10	
GBA	33.32	307	P	46	03.40	0.7
SHL	33.96	339	eP	46	06.50	-1.9
			eS	51	42.50	
WHN	37.87	14	eP	46	42.00	0.9
POO	38.98	310	iPd	46	52.40	1.7
XAN	40.37	6	P	47	01.60	-0.3
LZH	42.19	359	Pd	47	18.00	1.1
	1.6s	39.00nm				4.9mb
Z	18s	0.50um				4.4Msz
PMG	42.41	97	eP	47	19.00	0.1
ADE	42.52	137	eP	47	20.30	0.7
	0.8s	26.87nm				5.1mb
NDI	43.58	324	iPc	47	27.80	-0.4
	0.7s	68.49nm				5.5mb
			eS	53	54.00	
TIA	43.95	15	eP	47	30.80	-0.3
TIY	44.44	9	Pd	47	36.00	0.9
Z	18s	0.90um				4.7Msz
N	12s	0.30um				
GTA	45.70	355	P	47	45.50	0.3
RMO	46.70	121	iPd	47	54.40	1.2
	1.0s	61.00nm				5.5mb
BJI	47.39	12	eP	47	59.00	0.7
	0.7s	18.00nm				5.1mb
Z	16s	0.58um				4.6MszX
HHC	47.39	7	eP	47	59.20	0.7
BWA	49.25	131	iPc	48	15.10	2.1
CAN	50.05	132	iPc	48	19.90	0.8
BRS	50.39	120	iPc	48	22.10	0.3
			i	48	32.00	33kmX
QUE	51.08	317	eP	48	26.00	-1.1
WMQ	52.16	345	P	48	34.50	-0.4
			pP	48	50.50	61km
CN2	53.39	19	Pc	48	43.00	-0.9
			pP	49	00.50	68km
			PcP	49	50 00	
			ScP	53	37.50	
HNR	55.03	97	eP	48	55.00	-1.5
MDJ	55.53	22	eP	49	00.00	0.5
MAIO	59.74	319	eP	49	29.00	-0.4
SLR	74.82	245	iPc	51	03.50	-1.1
	0.7s	10.27nm				4.9mb
MBH	75.65	303	iPc	51	10.00	1.0
PRNI	75.71	303	iP	51	10.50	1.0
DSI	75.74	305	e(P)	51	10.00	0.5
VRI	86.01	317	ePc	52	05.00	1.5
BCAO	86.42	275	iPd	52	06.30	0.2
	0.4s	5.00nm				5.0mb
			i	52	21.40	52km
LIT	87.90	311	eP	52	13.00	0.2
OHR	89.33	311	e(P)	52	19.70	0.1
BZS	89.47	316	eP	52	27.00	7.0X
EDM	124.04	26	ePKP	58	21.50	0.1
BAO	145.04	231	PKPc	59	01.20	-0.3
SIO	145.07	30	ePKP	59	01.30	0.4
TUL	145.19	29	ePKP	59	01.80	0.7
	1.4s	30.20nm				
			e	59	06.50	
CCH	154.67	201	ePKP	59	26.00	9.7X
CNCB	155.82	198	ePKP	59	30.00	11.8X
LPB	156.12	198	ePKP	59	33.00	14.6X
ZOBO	156.38	198	PKP	59	14.50	-4.5X

S.D. = 1.1 on 51 of 60 obs.

DEC 15, 1989 14h 37m 30.55± 0.46s
43.731 N ± 4.7km 12.311 E ± 4.7km
DEPTH = 10.0km (geophysicist)
CENTRAL ITALY (381)
MD 2.6 (SSO).

SFI	0.38	300	P	37	46.10	7.7X
			eSg	37	56.30	
ARV	0.51	117	Pc	37	44.40	3.4X
			eSg	37	54.80	
ASS	0.71	159	Pd	37	44.50	-0.1
			eSg	37	54.70	
CIO	0.81	131	iPg	37	46.37	0.1
			iSg	37	58.31	
SSO	0.92	118	iPg	37	48.74	0.6
			iSg	38	02.03	
AOI	0.95	100	iPg	37	49.35	0.6
			iSg	38	03.57	
BDI	1.28	286	P	37	54.60	0.2
			eSg	38	11.80	
PII	1.30	270	P	37	54.50	0.0
			eSn	38	10.50	
ALP	1.33	135	iPg	37	53.95	-1.2
RIY	2.19	42	iPg	38	33.10	25.6X
			iSg	38	34.30	
TRI	2.23	27	iPgd	38	07.40	-0.7
			i	38	28.90	
			iSg	38	34.70	
CTI	2.36	349	P	38	10.00	-0.1
			eSg	38	38.20	
FVI	2.88	6	Pd	38	17.50	0.2
			eSn	38	51.30	
KBA	3.43	12	iPgd	38	25.20	0.0
			iSg	39	06.30	

S.D. = 0.6 on 11 of 14 obs.

% DEC 15, 1989 15h 15m 52.41± 1.85s
40.728 N ±15.8km 29.992 E ±13.7km
DEPTH = 10.0km (geophysicist)
TURKEY (366)

HRT	0.26	291	ePg	15	58.40	0.4
GBZT	0.42	278	ePg	16	04.60	3.6X
			iSg	16	10.40	
YLV	0.50	251	iPg	16	02.00	-0.5
GPA	0.50	151	iPg	16	02.50	-0.1
			eSg	16	09.40	
ISK	0.78	296	ePg	16	07.00	-0.7
			eSg	16	18.20	
BNT	1.62	257	ePn	16	22.00	0.9

S.D. = 0.9 on 5 of 6 obs.

DEC 15, 1989 17h 59m 28.43± 0.66s
38.384 N ± 8.3km 24.944 E ± 5.8km
DEPTH = 10.0km (geophysicist)
AEGEAN SEA (365)
ML 2.9 (ATH).

ATH	1.05	247	ePn	59	48.50	0.3
PRK	1.35	50	ePb	59	53.50	0.3
APE	1.39	160	ePn	59	53.70	-0.2
NEO	1.63	305	ePn	59	57.00	-0.3
SMG	1.64	114	ePn	59	57.50	0.1
IZM	1.82	89	ePn	59	59.90	-0.2
VLI	2.30	224	ePd	00	11.70	4.7X

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

DEC 15, 1989 18h 43m 45.03± 0.19s
8.337 N ± 4.1km 126.729 E ± 4.8km
DEPTH = 24.4km (geophysicist)
6.2mb (55 obs.) 7.3Msz (19 obs.)
MINDANAO, PHILIPPINE ISLANDS (259)
Ms 7.4 (BRK), 6.9 (PAS).
Mo=4.0*10**20 Nm (PPT). At least one person killed ond many injured on Mindonoo. Damoge (VII RF) at Bislig. Felt (VI RF) at Cotobato ond Davao and (I RF) at Dipolog. Also felt (IV RF) on Camiguin, (III RF) on Cebu and (I RF) in southeostern Luzon. Two events about 10.5 seconds apart. Depth from broodband displacement seismograms, based on second event.
FAULT PLANE SOLUTION: P-Waves
NP1:Strike= 15 Dip=73 Slip= 90
NP2: 195 17 90
Principal Axes:
T Plg=62 Azm=285
P 28 105
Comment: The focal mechanism is poorly controlled and corresponds to reverse faulting. The preferred foult plane is NP2.
RADIATED ENERGY
No. of sta: 6 Focal mech. F
Energy 5.8±1.0*10**14 Nm
CENTROID, MOMENT TENSOR (HRV)
Data Used: GDSN
L.P.B.: 16S, 46C M.W.: 9S, 22C
Centraid Location:
Origin Time 18:44: 7.7 0.2
Lat 7.88N 0.02 Lon 126.96E 0.01
Dep 36.9 0.7 Half-duration 15.0
Moment Tensor; Scale 10**20 Nm
Mrr= 1.99 0.03 Mtt= 0.09 0.02
Mff=-2.08 0.02 Mrt= 0.74 0.06
Mrf= 0.87 0.06 Mtf=-0.41 0.01
Principal Axes:
T Val= 2.36 Plg=71 Azm=330
N 0.03 13 197
P -2.39 13 103
Best Double Couple:Mo=2.4*10**20
NP1:Strike=176 Dip=34 Slip= 66
NP2: 25 59 106
GEOSCOPE MOMENT TENSOR (PAR)
Dep 20.0 Half-duration 19.0
Best Double Couple:Mo=2.3*10**20
NP1:Strike=198 Dip=65 Slip= 102
NP2: 351 27 66

DAV	1.69	223	iPd-	44	17.00	3.7X
QCP	8.36	319	eP	45	54.00	6.3X
TSM	9.53	245	ePc	46	10.80	7.0X
	1.0s	835.30nm				7.0mb
BAG	10.02	324	eP+	46	11.00	0.2
KKM	10.68	258	ePc	46	27.00	7.3X
	1.0s	303.30nm				6.5mb X
			i	47	19.00	
AAI	12.03	173	ePd	46	41.00	2.9
			eS	48	58.60	
MKS	15.29	209	ePd	47	29.50	8.5X
	1.0s	6.00nm				3.8mb X
			e	04	41.00	
ANP	17.47	344	iPc	47	50.00	1.1
JAY	17.62	127	ePd	47	51.00	0.3
QZH	18.25	336	Pc	47	57.50	-0.9
	8.0s	52.30nm				3.7mb X
Z	20s	983.00um				4.7MszX
N	20s	236.00um				
E	21s	363.00um				
			sS	51	26.00	
HKC	18.40	320	P	48	00.00	-0.3
HKC	18.40	320	iP	48	06.30	6.0X
			S	51	30.00	
GUMO	18.55	72	eP	48	00.50	-1.7
	1.2s	1666.67nm				6.1mb
			e	48	08.30	
			e	48	27.70	
PJG	18.55	72	eP	48	00.50	-1.7
GUA	18.58	72	eP	48	01.00	-1.6
	0.8s	883.58nm				6.0mb
			e	48	08.80	
MCO	18.67	319	eP	48	07.40	3.8X
GZH	19.50	320	eP	48	12.00	-1.5
N	16s	267.00um				
E	14s	204.00um				
QIZ	19.53	305	Pc	48	14.20	0.3
N	16s	687.00um				
			iS	51	52.00	
MTN	21.49	168	iPc	48	53.50	19.2X
			e	58	26.00	
MNDI	22.19	130	eP	48	46.00	4.5X
SSE	23.23	348	P+	48	50.00	-1.3
	6.0s	30.10nm				4.0mb X
N	16s	317.10um				
E	16s	138.80um				
			pP	48	56.00	22kmX

15d 18h

i 49 06.00
S 53 09.00
KNA 24.02 175 eP 48 58.90 -0.2
i 49 04.00 18kmX
eS 53 16.00
KGM 24.13 256 ePc 49 03.70 3.4X
e 49 08.10 16kmX
NJ2 24.71 344 Pc 49 05.00 -0.6
9.0s 10.50nm 3.4mb X
N 15s 104.00um
E 15s 40.60um
WHN 24.94 334 Pc 49 06.50 -1.4
E 20s 550.00um
iS 53 24.00
LAT 25.10 126 eP 49 16.00 6.4X
KLM 25.49 260 eP 49 15.50 2.3
e 59 09.20
IPM 25.81 263 ePd 49 17.20 0.9
1.0s 62.30nm 5.2mb
e 50 53.00
e 59 10.90
SNG 25.90 269 iPd 49 02.00 -15.1X
2.2s 1630.77nm
eS 52 39.80
LOE 25.96 293 eP 49 17.10 -0.5
e 49 25.00 28kmX
e 49 39.00
GYA 26.22 316 P 49 20.80 0.7
6.0s 15.80nm 3.8mb X
N 15s 379.00um
E 15s 321.00um
sS 54 00.00
SHK 26.64 11 ePc 49 25.00 1.3
KSI 26.85 245 ePc 49 24.50 -1.3
e 07 59.50
NNT 26.87 281 iP 49 29.00 3.0X
e 50 01.20 155kmX
e 52 56.50
e 59 16.00
e 03 08.80
PMG 26.92 130 eP 49 25.00 -1.4
eS 49 51.50
NST 26.99 288 iPc 49 28.60 1.5
KBR 27.26 284 eP 49 36.00 6.5X
e 52 00.00
PPI 27.66 253 eP 49 34.50 1.3
PSI 28.23 260 ePc 49 43.60 5.3X
RAB 28.26 115 eP 49 36.00 -2.7
KMI 28.31 309 ePc 49 42.41 3.1X
N 18s 540.00um
ec 49 53.50 42kmX
sP 50 06.00
PP 50 47.00
S 54 46.00
TSI 28.41 262 ePc 49 48.50 8.5X
BDT 28.42 291 eP 49 41.00 1.0
0.8s 576.30nm 6.4mb
CHG 28.90 294 iPc 49 44.00 -0.4
1.0s 85.00nm 5.4mb
eS 54 28.00
CHTO 28.90 294 iPc 49 44.00 -0.4
WB5 29.03 165 eP 49 43.20 -2.3
i 49 49.80 23kmX
TIA 29.10 344 ePc 49 42.80 -3.2X
N 14s 250.00um
E 14s 41.50um
eS 54 37.00
MAT 29.96 19 P 49 53.00 -0.7
MBL 30.09 193 eP 49 53.40 -1.6
0.5s 161.00nm 6.1mb
XAN 30.39 330 P 49 54.50 -3.1X
S 54 59.00
DL2 30.78 352 eP 50 00.00 -0.9
Z 16s 290.00um 7.0MszX
N 16s 202.00um
E 16s 208.00um
S 55 03.00
CD2 31.05 319 eP 50 01.00 -2.5
sS 55 18.00
BSI 31.33 267 eP 50 11.50 5.5X
TIY 31.98 338 Pc 50 10.00 -1.6
Z 24s 129.00um 6.5MszX
E 13s 78.50um
S 55 23.00
SS 57 06.00
ASPA 32.57 168 eP 50 16.30 -0.5
Z 20s 918.75um 7.5Msz

eS 55 30.50
LR 04 35.10
NANU 32.61 199 eP 50 16.30 -0.8
BJI 32.95 345 Pc+ 50 18.50 -1.3
2.0s 360.00nm 6.0mb
E 20s 292.60um
eS 55 37.00
BJI 32.95 345 ePc 50 22.32 2.5
2.0s 360.00nm 6.0mb
E 20s 292.60um
ec 50 32.75 37kmX
e 50 39.54
ed 50 44.17
eS 55 37.00
SNY 33.47 356 iPc 50 24.00 -0.4
0.8s 0.50nm 3.5mb X
N 15s 194.00um
E 18s 242.00um
pP 50 30.20 21kmX
S 55 43.00
CTA 34.16 146 iP 50 30.20 -0.5
WARB 34.31 180 eP 50 21.00 -10.9X
LZH 34.62 326 Pc 50 32.50 -2.1
2.5s *******nm 7.3mb X
N 20s 600.80um
E 18s 359.40um
pP 50 38.50 21kmX
sP 50 43.00
i 50 56.00
PP 51 51.00
PPP 52 06.00
PcP 52 55.00
S 56 06.00
sS 56 16.00
PcS 56 39.00
ScP 56 57.00
SS 58 09.00
LZH 34.62 326 ePc 50 36.94 2.3
N 20s 600.80um
E 18s 359.40um
pP 50 38.50 5kmX
sP 50 43.00
ec 50 47.70
i 50 56.00
ed 50 59.29
PP 51 51.00
PPP 52 06.00
PcP 52 55.00
S 56 06.00
sS 56 16.00
PcS 56 39.00
ScP 56 57.00
SS 58 09.00
HHC 35.07 340 Pc 50 37.00 -1.4
N 14s 92.90um
E 13s 50.00um
CN2 35.34 358 Pc 50 39.00 -1.5
1.6s 1.00nm 3.5mb X
E 18s 316.00um
eS 56 16.00
BTO 35.41 338 P 50 39.50 -1.7
Z 16s 138.00um 6.8MszX
N 13s 61.00um
E 13s 48.80um
MDJ 36.23 3 Pc 50 48.70 0.8
N 25s 577.00um
E 20s 301.00um
pP 50 55.00 21kmX
sP 51 00.00
sS 56 37.00
SAP 36 88 18 eP 50 58.00 4.6X
eS 56 43.00
HNR 37.50 117 eP- 51 02.00 3.0X
OLP 38.65 154 eP 51 07.00 -1.5
FORR 38.98 178 eP 51 10.00 -1.2
GTA 39.22 326 Pc 51 12.00 -1.4
E 12s 157.00um
PP 52 47.00
S 57 05.00
COOL 39.36 188 eP 51 13.00 -1.4
LSA 39.53 307 P 51 17.20 0.8
E 16s 64.30um
S 57 19.00
BAL 39.90 194 iPc 51 28.00 9.2X
KLB 40 62 192 iPd 51 24.20 -0.6
RMO 40.69 149 eP 51 24.50 -0.9
i 53 40.00

e 57 25.00
YSS 40.89 17 iPc 51 30.00 3.2X
iS 57 38.00
HIA 41.21 353 ePc 51 32.61 3.1X
ec 51 43.21 37kmX
ed 51 56.12
ePP 53 10.94
MUN 41.33 194 iPc 51 30.00 -0.6
1.0s 2000.00nm 6.8mb
NWAO 42.02 192 eP 51 36.00 -0.2
RKG 43.17 192 iPc 51 50.10 4.5X
i 51 55.90 19kmX
BRS 43.56 145 iPd- 51 47.80 -1.1
1.0s 11.00nm 4.6mb X
i(pP) 51 52.80 17kmX
e(sP) 52 02.00
iPcS 57 33.00
iS 58 00.00
iPPS 58 20.00
i 01 40.50
iScS 01 53.00
iLR 03 21.00
CMS 43.61 156 eP 51 32.00 -17.2X
ADE 44.53 166 iPc+ 51 56.30 -0.4
BWA 47.23 155 eP 52 19.00 0.9
e 52 24.30 18kmX
e 02 14.30
e 05 53.00
IRK 47.49 341 iPc 52 22.00 2.1
eS 59 14.00
HYB 47.71 286 ePc 52 22.00 -0.2
1.0s 570.00nm 6.6mb
e 59 23.00
CAN 48.24 155 eP 52 27.20 1.2
i 52 31.20 13kmX
e 02 22.00
e 06 04.90
CNB 48.39 155 eP 52 29.00 1.8
e 52 41.00 43kmX
e 52 48.00
e 53 10.00
e 02 29.00
e 06 18.00
PVC 48.56 122 iPc 52 35.00 6.3X
GBA 48.61 281 P 52 28.70 -0.4
TOO 48.92 160 iPc 52 33.30 2.1
e 52 39.00 19kmX
WMQ 49.02 323 P 52 30.50 -1.5
N 18s 405.00um
S 59 36.00
WMQ 49.02 323 ePc 52 35.04 3.0X
N 18s 405.00um
ec 52 45.47 36kmX
ec 52 51.92
eS 59 47.83
DZM 49.29 129 iPc 52 33.50 -0.8
NDI 50.70 300 iPc 52 42.50 -2.5
0.9s 294.12nm 6.2mb
PET 51.52 24 iPc 52 55.00 4.2X
eS 00 14.00
POO 52.26 287 iPc 52 59.00 2.0
0.9s 78.99nm 5.6mb
BOM 53.26 287 iP 53 05.20 0.9
eS 59 44.20
KSH 54.84 313 Pd 53 16.00 0.2
E 20s 176.00um
PP 55 25.00
TLG 55.30 318 eP 53 17.60 -1.5
eS 01 24.00
SGE 56.75 117 eP 53 30.80 0.9
FRU 57.00 316 eP 53 29.00 -2.3
iS 01 25.00
SVA 57.43 118 eP 53 41.90 7.4X
SMY 58.54 32 P 53 43.00 1.2
Z 20s 90.00um 6.9Msz
SMY 58.54 32 ePc 53 50.80 9.0X
i 53 56.50 19kmX
OUE 59.78 300 eP 53 44.50 -6.6X
DSH 59.93 310 eP 53 50.00 -1.8
eS 02 20.00
ADK 63.20 35 eP 54 16.40 3.0X
Z 20s 260.00um 7.4Msz
TIK 63.25 1 iPc 54 11.50 -1.9
eS 02 42.00
MSZ 64.50 149 P 54 21.40 -0.6
S 04 13.50
KRP 64.71 139 P 54 24.40 0.9

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                  S      04 15.50
                  ScS    07 59.00
AFI    64.90 110  ePd    54 34.60    9.4X
                  ePP    56 46.70
KIW    66.01 142  eP     54 26.00   -5.8X
                  e      54 40.50   52kmX
KHZ    66.13 144  eP     54 31.10   -1.4
WEL    66.17 142  P+     54 41.00    8.2X
   Z  16s    37.71um            6.7MszX
                  PP     57 28.00
                  S      03 18.00
MAIO   66.78 306  iPc+   54 36.30   -0.8
       0.7s    76.24nm           5.9mb
                  eS     04 22.00
MCQ    68.20 160  eP     54 54.00    8.6X
ILT    69.49  19  iPc    54 54.00    0.8
                  iS     04 04.00
TEH    73.29 305  eP     55 20.00    3.2X
OPA    73.31  70  P      55 20.60    3.6X
KIP    73.32  70  ePd    55 24.51    7.5X
                  eS     04 54.56
                  eSKS   05 29.15
HON    73.33  70  eP-    55 19.60    2.6
SDN    73.40  35  e(P)   55 18.30    1.5
   Z  20s   230.00um            7.5Msz
DHR    74.37 295  eP     55 27.50    4.5X
DRV    75.43 175  eP     55 27.40   -0.8
KER    76.80 303  eP     55 35.00   -1.9
TTA    76.82  27  eP     55 37.40    1.0
TAB    77.37 307  iP+    55 40.00    0.0
RYD    77.62 293  iPc    55 44.00    2.5
BRW    77.83  19  e(P)   55 44.50    2.8X
KDC    78.08  33  eP     55 44.60    1.4
SLY    78.09 305  ePc    55 44.80    1.0
                  iPcP   55 54.50
                  iPP    58 40.00
                  iPPP   00 43.00
                  iPSP   01 20.50
                  iS     05 34.00
                  iScS   05 50.00
                  iPS    06 28.00
                  iSS    10 41.50
IMA    78.20  24  ePc    55 45.10    1.1
       1.0s   515.00nm           6.5mb
BHD    79.10 302  ePd    55 49.00   -0.4
                  iPcP   55 53.00
                  iPPP   00 47.00
                  e      01 32.00
                  i      05 19.00
                  eS     05 37.00
                  iScS   06 01.00
BKR    79.45 311  iPc    55 56.00    4.6X
                  iS     06 00.00
KMSA   79.90 289  eP     55 44.00  -10.0X
PMR    79.93  29  ePc    55 53.30    0.0
       1.0s   800.00nm           6.7mb
   Z  22s   134.00um            7.2Msz
MSL    79.96 305  ePc    55 51.50   -2.5
                  ePcP   55 56.50
                  ePP    58 44.00
                  ePPP   00 32.00
                  eS     05 53.00
                  eScS   06 02.00
                  ePS    07 05 00
QASM   80.30 295  eP     56 02.00    5.9X
COL    80.59  26  ePc    56 00.90    4.2X
                  ec     56 10.83   32kmX
                  ec     56 17.45
                  ed     56 22.42
FBA    80.59  26  eP     55 56.60   -0.1
TOA    81.33  28  eP     56 02.30    1.5
ARO    82.42 281  iP+    56 07.00   -0.3
OBN    83.30 325  iP+    56 09.00   -2.0
       0.9s   279.00nm           6.4mb
   Z  22s   212.00um            7.5Msz
                  iS     06 28.00
APA    83.66 337  iPd    56 13.40    0.8
TAIF   83.66 291  eP     56 20.00    6.2X
RUWJ   83.82 302  P+     56 17.60    3.3X
DWY    84.25  26  Pd     56 17.40    1.7
KVT    85.10 311  iP     56 19.90   -0.6
KEV    85.59 340  ePc    56 24.04    1.7
                  ec     56 34.63   33kmX
                  e      56 40.92
                  ed     56 46.22
                  ePP    59 49.37
                  e      00 06.75
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INK    85.90  22  eP     56 23.50   -0.4
       1.1s   569.00nm           6.7mb
                  pP     56 52.00  109kmX
SIM    86.02 315  iPc    56 28.00    3.1X
                  iS     06 54.00
PUL    86.08 330  iPd    56 25.00    0.1
                  iS     06 46.00
SOD    86.23 338  iP     56 23.70   -1.8
AFR    86.34 108  iP     56 36.80    9.9X
       1.1s   140.00nm           6.1mb
SHMJ   86.36 302  P+     56 28.90    2.0
KBS    86.50 350  iP     56 30.00    3.3X
PPT    86.53 108  iP     56 38.00   10.1X
       1.1s   130.00nm
PAE    86.55 108  eP     56 38.00   10.1X
       1.1s    85.00nm
PPN    86.66 108  iP     56 38.50   10.0X
       1.1s   105.00nm
AYN    86.67 299  eP     56 28.70    0.3
HITJ   86.69 299  P+     56 26.70   -2.0
AAE    86.72 279  iP     56 30.00    0.7
DSI    86.84 301  eP     56 29.00   -0.2
TVO    86.87 108  iP     56 39.80   10.2X
       1.1s   230.00nm
ZNT    87.04 302  e(P)   56 31.00    0.8
SRFA   87.36 299  eP     56 31.70   -0.1
SIT    87.37  33  e(P)   56 33.40    2.2
   Z  20s    65.00um            7.0Msz
AQBJ   87.37 299  P+     56 29.70   -2.1
SUF    87.47 333  eP     56 30.60   -1.0
MBC    87.49  13  eP     56 32.00    0.5
       1.0s   851.00nm           7.0mb
FAM    87.50 305  eP     56 26.00   -6.3X
MBH    87.51 300  ePc    56 31.00   -1.5
TBI    87.63 114  eP     56 42.00    8.9X
       1.5s   555.00nm           6.6mb
PMO    87.70 105  iP     56 41.20    7.7X
       1.1s   295.00nm           6.5mb
ANTO   87.72 310  ePc    56 35.56    2.2
                  e      56 51.95   57kmX
                  ed     56 56.59
                  ePP    59 54.57
BBTK   87.75 310  eP     56 49.00   15.4X
TPT    87.97 105  iP     56 42.40    7.6X
       1.1s   370.00nm           6.6mb
MAW    88.05 200  eP     56 30.00   -4.2X
CSS    88.05 305  eP     56 34.50   -0.5
RUV    88.22 106  iP     56 43.60    7.6X
       1.1s   295.00nm           6.5mb
TRO    88.34 341  eP     56 36.38    0.7
TRO    88.34 341  eP     56 40.50    4.9X
NUR    88.70 331  iP     56 36.10   -1.4
       0.6s   103.00nm           6.3mb
                  i      56 42.10   19kmX
                  e      00 28.00
PPCY   88.86 305  eP     56 39.20    0.4
SBA    88.87 172  eP+    56 41.70    3.7X
                  S      07 02.00
GPA    89.53 311  eP     56 44.90    2.9X
BCK    89.83 308  eP     56 44.30    0.8
ALT    89.91 309  eP     56 42.00   -1.8
KOT    90.11 300  eP     56 46.00    1.2
NAI    90.11 269  iP     56 44.00   -1.4
IAS    90.12 318  eP     56 55.00   10.5X
CFR    90.14 316  eP     56 45.00    0.4
BIR    90.28 317  ePd    56 50.00    4.8X
ISK    90.32 311  eP     56 47.90    2.4
ITU    90.35 312  iPc    56 46.00    0.3
PSN    90.43 314  iPd    56 51.00    5.0X
ELL    90.49 307  eP     56 45.00   -1.6
KHL    90.50 309  eP     56 46.00   -0.6
LOF    90.71 340  eP     56 45.48   -1.3
CTT    90.77 312  eP     56 48.00    0.4
KSL    90.87 307  eP     56 51.80    3.6X
DST    90.93 310  iP     56 48.70    0.2
PTT    90.97 318  eP     56 54.00    5.6X
VRI    90.98 317  ePd    56 48.00   -0.5
BNT    91.31 311  eP     56 53.30    3.1X
EDC    91.36 311  iP     56 52.60    2.3
MLR    91.60 316  eP     56 51.00   -0.5
YER    91.69 308  eP     56 53.20    1.1
BUC    91.74 315  iP     56 54.00    2.0
BUC1   91.80 315  iPc    56 54.00    1.7
JMB    91.84 313  eP     56 51.00   -1.5
IZM    92.22 309  eP     56 54.40    0.0
UPP    92.24 331  iP     56 53.50   -0.4
       1.7s   600.00nm           6.7mb
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                  i      56 57.70   13kmX
                  i      57 00.00
                  i      57 06.80
                  iSKS   07 26.00
                  iS     07 47.00
CMP    92.27 316  ePc    56 58.00    3.5X
PVL    92.56 314  eP     56 54.00   -1.8
EZN    92.62 311  iP     56 59.60    3.5X
BMR    92.69 319  ePc    57 04.00    7.7X
DIM    92.69 313  eP     56 57.00    0.6
SMG    92.70 309  eP     57 00.70    4.2X
DAG    92.73 352  iPd    56 55.10   -0.9
       0.7s   350.68nm           6.9mb
                  ipP    06 46.00
PRK    92.79 310  eP     57 01.00    4.1X
NSS    92.83 337  eP     56 54.65   -2.0
KDZ    92.87 313  iP     57 02.00    4.7X
KAP    92.90 306  eP     56 56.50   -1.0
RDO    92.90 312  eP     57 01.00    3.6X
UZH    93.20 320  iPc    57 00.00    1.4
                  iS     08 10.00
PLD    93.28 313  eP     56 59.00   -0.1
CEI    93.36 319  eP     57 19.00   19.6X
RZN    93.37 313  eP     56 55.00   -4.9X
PGB    93.55 314  eP     57 00.00   -0.5
DEV    93.56 317  ePc    57 04.50    4.1X
APE    93.86 308  eP     57 06.90    4.9X
HFS    93.96 333  eP     57 05.80    3.9X
       0.8s    91.10nm           6.3mb
   Z  19s    95.50um            7.3Msz
                  LR     37 40.00
MMB    94.11 313  eP     57 02.00   -1.1
RGS    94.11 336  eP     57 02.70    0.1
NPS    94.21 306  eP     57 08.80    5.2X
VTS    94.23 314  eP     57 03.00   -0.7
OUR    94.25 312  eP     57 05.10    1.5
KRA    94.25 322  eP     57 02.10   -1.3
       1.2s   357.00nm           6.7mb
   Z  20s    90.10um            7.2Msz
   N  20s   106.80um
                  e      57 07.90   18kmX
SPC    94.33 321  eP     57 02.80   -1.3
                  e      01 04.20
SRS    94.33 312  eP     57 06.40    2.3
BZS    94.50 317  eP     57 07.00    2.3
KKB    94.51 313  iPd    57 03.00   -1.8
PLG    94.63 312  eP     57 06.50    1.0
NB2    94.68 334  P      57 02.90   -2.4
       0.7s    45.90nm           6.0mb
KNT    94.83 313  eP     57 06.60    0.3
THE    94.92 312  eP     57 13.30    6.6X
PSZ    94.94 320  eP     57 06.50   -0.3
VAY    95.02 313  iP     57 04.00   -3.2X
       1.2s     0.40nm           3.7mb X
ATH    95.04 309  iPc    57 09.60    2.3
                  e      10 24.00
                  e      15 36.00
NEO    95.07 311  eP     57 10.50    3.0X
GRG    95.25 313  eP     57 08.10   -0.2
VAM    95.30 307  eP     57 07.50   -1.1
JNW    95.36 347  iP     57 14.50    6.3X
LIT    95.41 312  eP     57 08.90   -0.2
MOL    95.50 336  eP     57 11.75    2.8
BEO    95.52 317  eP     57 11.50    2.1
BUD    95.64 320  eP     57 12.50    2.6
SKO    95.66 314  iPc    57 13.00    2.9X
   Z  23s    67.30um            7.1MszX
   N  22s    57.10um
   E  22s   118.50um
                  i      57 30.00   59kmX
                  i      01 10.00
                  i      01 30.00
                  iSKS   07 38.00
                  iS     08 13.00
                  LR     44 00.00
KZN    95.88 312  eP     57 10.00   -1.3
VLI    95.96 308  eP     57 16.50    4.9X
SRO    95.99 320  eP     57 16.60    5.1X
                  e      00 34.60
                  i      01 09.60
KSP    96.18 323  eP     57 11.30   -1.0
       1.2s   199.00nm           6.4mb
                  i      57 17.80   20kmX
                  e      01 03.50
OHR    96.37 313  eP     57 10.40   -3.0X
       1.1s     0.22nm           3.5mb X
                  i      57 19.10   27kmX
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15d 18h

eSKS 07 48.00
PGC 96.59 39 eP 57 17.00 2.9X
ITM 96.62 309 eP 57 15.80 1.2
ZST 96.62 321 eP 57 18.90 4.5X
e 00 45.20
e 01 07.60
PLE 96.70 315 eP 57 18.00 3.0X
TTG 97.07 315 eP 57 22.60 6.2X
e(S) 07 42.00
VKA 97.09 321 eP 57 17.00 0.5
6.0s 7463.00nm 7.4mb X
Z 17s 52.30um 7.1MszX
i 57 20.20 10kmX
ePP 01 12.00
e 06 13.50
iSKS 07 51.50
i 08 13.00
LR 48 38.00
SOP 97.14 320 eP 57 22.20 5.5X
VLS 97.36 310 eP 57 18.00 0.1
GMW 97.39 40 P 57 20.00 2.1
BRY 97.43 315 eP 57 24.00 5.7X
BMW 97.49 41 P 57 19.30 0.9
BER 97.53 335 iP 57 28.00 9.8X
PRU 97.54 323 eP 57 17.00 -1.4
Z 16s 110.70um 7.4MszX
N 18s 53.70um
E 18s 90.50um
e 57 41.00 88kmX
BRG 97.55 324 eP 57 17.60 -0.9
1.4s 130.00nm 6.3mb
Z 18s 82.00um 7.3Msz
N 18s 64.00um
E 18s 72.50um
i 57 22.80 16kmX
i 57 39.50
i 01 32.00
i 01 51.00
i 09 04.00
CLL 97.92 325 ePd 57 19.00 -1.1
2.0s 50.00nm 5.7mb
Z 21s 110.00um 7.3Msz
i 57 25.00 19kmX
i 57 37.80
eSKS 08 13.00
eS 08 56.00
PKKP 14 43.00
RMW 98.04 40 P 57 23.00 2.1
COR 98.09 43 ePDIFc57 26.84 5.8X
ec 57 36.27 29kmX
e 57 48.03
ePP 01 36.60
PTJ 98.16 319 eP 57 25.80 4.3X
e 02 45.00
LWI 98.16 269 eP+ 57 23.70 1.5
LWI 98.16 269 iP+ 57 25.00 2.8X
ZAG 98.17 319 iPc 57 23.00 1.6
SPA 98.28 180 eP 57 29.20 7.6X
1.8s 120.37nm 6.1mb
Z 20s 4.41um 6.0MszX
i 07 01.30
LON 98.30 40 P 57 19.00 -3.0X
LON 98.30 40 ePDIFc57 25.99 4.0X
ec 57 36 09 31kmX
e 57 49.00
ePP 01 28.14
KHC 98.45 322 P 57 23.00 0.4
Z 20s 93.50um 7.3Msz
N 20s 53.90um
E 19s 71.40um
e 57 25.20 7kmX
S 09 00 00
KMR 98.53 321 iP+ 57 26.20 3.3X
iPP 01 30.60
LCI 98.66 313 P 57 31.20 7.5X
PNT 98.68 37 eP 57 25.00 1.4
0.7s 78.00nm 6.4mb
VBY 98.76 319 iPd 57 29.00 5.0X
FHC 98.88 46 P 57 34.00 9.3X
1.5s 400.00nm 6.7mb
MOX 98.99 324 eP 57 24.00 -1.0
1.6s 40.00nm 5.7mb
Z 19s 101.40um 7.3Msz
N 17s 52.00um
E 19s 55.30um
e 57 30.00 19kmX
e 01 26.00

BRT 99.03 314 P 57 29.80 4.5X
ePP 01 34.40
LJU 99.03 319 eP 57 24.00 -1.3
e 01 29.00
eS 08 03.00
CEY 99.22 319 eP 57 28.50 2.3
KBA 99.40 321 ePd 57 28.00 0.8
1.5s 132.50nm 6.2mb
i 57 31.50 11kmX
i 57 35.20
i 57 39.20
i 57 44.70
iPP 01 34.20
i 01 41.80
i 01 56.00
i 04 02.40
iSKS 07 54.70
isS 09 07.20
e 11 19.00
e 13 53.00
VOY 99.45 319 eP 57 29.80 2.5
TRI 99.66 319 iPc 57 30.00 1.9
ePP 01 34.50
iPPP 03 45.00
e(SKKS08 15.00
iPSP 11 07.00
i(SS) 15 44.00
i(SSS)19 18.00
iLR 30 40.00
ROI 99.92 313 P 57 34.60 5.1X
FVI 99.94 320 Pd 57 33.30 3.9X
WDC 99.99 46 eP 57 30.70 0.9X
CSI 100.05 313 Pdiff 57 36.80 6.7X
TDS 100.06 313 Pdiffd57 33.20 3.1X
MMN 100.23 313 Pdiff 57 38.60 7.8X
CZI 100.35 312 Pdiff 57 35.20 3.8X
BUL 100.40 251 iPdiff57 49.20 17.0X
iPcP 57 56.00
iPP 02 02.00
iSKS 08 28.00
iPS 11 24.00
iPKKP 14 23.40
MGR 100.46 313 Pdiffd57 37.60 5.7X
ePP 01 30.00
EDM 100.47 32 ePdiff57 32.50 0.9X
SGO 100.49 314 Pdiffd57 35.80 3.9X
ePP 01 41.00
AOI 100.59 317 ePdiff57 39.00 6.6X
WIT 100.74 328 e(Pdif57 43.50 10.7X
ePP 01 46.00
SSO 100.81 317 e(Pdif57 39.81 6.5X
CTI 100.88 320 Pdiff 57 37.40 3.7X
ePP 01 56.30
ALP 100.89 316 e(Pdif57 47.35 13.4X
CIO 101.03 317 ePdiff57 40.00 5.6X
ARV 101.05 317 Pdiffd57 39.00 4.6X
WTS 101.07 327 ePdiff57 40.00 5.8X
1.0s 44.00nm 6.0mb
ePP 01 53.00
ORV 101.09 47 ePdiff57 39.00 4.3X
BRK 101.11 49 iPdiff57 40.00 5.2X
Z 20s 129.00um 7.4Msz
i 57 56.00
ePP 02 10.00
i 02 21.00
iSP 11 08.00
eLR 30 40.00
BKS 101.13 49 iPdiff57 40.00 5.1X
0.7s 36.00nm 6.0mb
Z 20s 160.00um 7.5Msz
N 20s 67.00um
E 20s 140.00um
i 57 48.50
i 57 56.00
e 58 01.00
ePP 02 07.00
i 07 09.00
eSKS 08 20.00
iS 09 18.00
iPS 11 00.00
i 12 38.00
i 15 26.00
iSS 16 25.00
i 16 39.00
iSSS 20 03.00
e(SSSS24 07.00
i 24 10.00

eLQ 25 46.00
eLR 30 34.00
SDI 101.13 315 Pdiffd57 38.90 4.0X
SLR 101.15 245 ePdiff57 36.78 1.3X
ec 57 47.37
ePP 01 51.34
ATN 101.20 312 Pdiff 57 40.00 4.8X
ePP 01 37.00
PGD 101.71 318 Pdiff 57 43.60 6.0X
ePP 01 43.00
MHC 101.75 49 e(Pdif57 38.90 1.0X
AKU 101.76 346 iPdiff57 47.10 10.1X
1.0s 32.00nm
SAL 101.78 320 Pdiff 57 45.60 8.0X
ARN 101.83 49 Pdiff 57 43.00 4.9X
MNO 101.85 311 Pdiffd57 43.80 5.4X
DBN 101.89 328 ePdiff57 41.00 3.1X
Z 20s 103.00um 7.3Msz
ePP 01 56.00
eSKS 08 23.00
ePS 11 04.00
eSS 17 00.00
SEK 101.89 243 ePdiff57 45.00 6.3X
0.6s 23.33nm 6.0mb
PRY 101.95 244 iPdiff57 43.00 4.0X
0.7s 11.00nm 5.6mb
FIR 102.06 318 iPdiff57 40.00 1.1X
ENN 102.15 326 ePdiff57 44.00 4.9X
0.9s 62.00nm 6.3mb
ePP 02 03.50
MDI 102.22 320 Pdiff 57 46.60 7.1X
PRS 102.30 50 e(Pdif57 47.00 6.8X
CMB 102.45 48 ePdiff57 41.90 1.1X
CMB 102.45 48 ePdiff57 45.52 4.7X
ec 57 55.12
e 58 07.04
ePP 02 08.53
CDF 102.52 324 ePdiff57 45.10 4.1X
0.8s 19.80nm 5.8mb
VAI 102.78 321 Pdiff 57 49.90 7.9X
PRI 102.90 50 e(Pdif57 49.50 6.5X
BSF 103.08 323 ePdiff57 47.70 4.2X
0.8s 18.80nm 5.9mb
SES 103.13 34 ePdiff57 46.00 2.5X
1.1s 79.00nm 6.4mb
HAU 103.26 323 ePdiff57 48.60 4.4X
0.8s 13.40nm 5.7mb
FRI 103.32 49 ePdiff57 49.50 4.8X
ORO 103.38 321 Pdiff 57 50.00 5.1X
KVN 103.73 47 Pdiff 57 52.00 5.3X
SYP 103.99 51 ePdiff57 55.00 7.1X
e 02 20.00
EKA 104.15 333 Pdiff 57 55.00 7.1X
1.5s 20.80nm 5.8mb
LPG 104.20 321 ePdiff57 53.60 4.8X
0.8s 16.10nm 5.9mb
BNI 104.46 321 Pdiff 57 56.80 7.1X
ePP 02 07.20
SBF 104.52 319 ePdiff57 53.80 3.9X
0.8s 18.80nm 6.0mb
LRM 104.57 38 ePdiff57 52.30 1.9X
ISA 104.74 50 ePdiff58 01.00 9.9X
e 02 30.00
LOR 105.09 324 ePdiff57 56.60 4.3X
0.8s 9.40nm 5.8mb
FFC 105.16 27 ePdiff57 58.60 6.2X
0.7s 8.00nm 5.8mb
FFC 105.16 27 ePKP 01 54.00 -12 8X
1.1s 108.00nm
LBF 105.16 323 ePdiff57 56.80 4.1X
0.9s 19.60nm 6.1mb
CLC 105.34 49 ePdiff58 01.00 7.2X
e 02 20.00
SSF 105.40 324 ePdiff57 58.00 4.3X
0.8s 9.40nm 5.8mb
SMF 105.41 323 ePdiff57 58.00 4.2X
PAS 105.52 51 ePKP 02 22.00 13.8X
PAS 105.52 51 ePdiff57 59.07 4.5X
ec 58 09.34
e 58 20.26
ePP 02 24.00
eSKS 08 31.00
eSKKS 09 00.00
ePS 11 36.00
ePPS 12 44.00
eSS 15 46.00
eSKKP 17 09.00

eSSS 20 48.00
eLg 27 00.00
eLR 32 34.00
MWC 105.58 51 ePdiff58 01.00 5.9X
e 02 22.00
SBB 105.59 51 ePdiff58 01.00 6.1X
e 02 22.00
AVF 105.63 323 ePdiff57 59.00 4.3X
1.0s 20.00nm 6.1mb
GSC 106.13 50 ePdiff58 04.00 6.6X
e 02 18.00
RVR 106.20 51 ePdiff58 04.00 6.5X
e 02 17.00
MAF 106.39 323 ePdiff58 02.60 4.5X
PLM 106.83 52 ePdiff58 06.00 5.4X
e 02 25.00
DLE 106.98 333 ePdiff58 14.20 13.7X
TPC 107.17 51 ePdiff58 14.00 12.0X
e 02 18.00
FRB 107.19 7 ePdiff58 07.00 5.8X
BAR 107.23 52 ePdiff58 08.00 5.8X
e 02 24.00
BCAO 107.28 277 ePdiff58 03.90 1.1X
ePP 02 32.38
BW06 107.88 40 Pdiff 58 10.00 4.9X
Z 20s 142.28um 7.5Msz
GLA 108.52 51 ePdiff58 23.00 15.0X
e 02 27.00
CER 109.09 238 ePdiff58 30.00 19.5X
0.6s 14.29nm
i 02 12.50
EBR 110.50 319 iPdiff58 21.00 4.5X
e 02 23.00
e 02 56.00
e 13 44.00
ECHE 112.10 319 e(PKP)02 26.00 5.5X
ETOR 112.13 320 e(PKP)02 26.00 5.4X
GOL 112.17 41 Pdiff 58 40.00 15.7X
GLD 112.24 41 Pdiff 58 35.00 10.4X
Z 20s 99.00um 7.4Msz
GUD 113.54 321 e(PKP)02 26.00 2.6X
EVIA 113.62 319 e(PKP)02 27.00 3.4X
ANMO 113.89 46 PKP 02 30.00 5.7X
ALQ 113.89 46 PKP 02 25.50 1.1
0.9s 81.93nm
TOL 113.91 320 iPdiff58 21.00 -10.8X
TOL 113.91 320 ePKP 02 23.00 -1.0
e 02 56.00
e 13 44.00
ENIJ 114.33 317 e(PKP)02 27.80 2.9X
ASMO 115.14 318 ePKP 02 31.00 4.5X
APHE 115.32 318 iPKPc 02 30.00 3.1X
ACHM 115.33 318 iPKPc 02 30.50 3.6X
AAPN 115.41 318 iPKPd 02 29.50 2.4X
ALOJ 115.51 318 iPKPc 02 32.00 4.7X
ATEJ 115.56 318 iPKPd 02 31.20 3.8X
TAF 115.60 315 ePKP 02 34.00 6.6X
e 02 39.00
i 02 42.00
EHOR 115.86 319 e(PKP)02 34.00 6.3X
NKM 117.32 317 iPKP 02 40.00 9.4X
IFR 118.20 315 iPKP 02 38.00 5.5X
i 02 39.00
AVE 119.90 316 ePKP 02 42.00 6.5X
i 02 53.00
i 12 42.00
TIO 121.13 314 iPKP 02 43.00 4.9X
i 03 32.40
FVM 122.34 34 PKP 02 45.00 5.0X
UYO 122.48 40 e(PKP)02 40.80 0.4
AIA 122.66 175 ePKP 02 45.30 5.6X
eS 14 16.00
ELF 122.72 24 PKP 02 46.00 5.4X
VNM 122.82 52 (PKP) 02 50.00 8.7X
DLA 122.89 25 PKP 02 46.30 5.4X
LDN 122.90 24 PKP 02 46.20 5.3X
SHGH 125.06 283 ePKP 02 51.00 5.0X
TEGH 125.10 283 ePKP 02 51.00 5.0X
MRX 125.21 59 (PKP) 02 53.50 7.4X
LEGH 125.27 283 ePKP 02 50.00 3.6X
KUK 125.31 284 ePKP 02 46.00 -0.5
WEGH 125.42 283 ePKP 02 51.00 4.3X
CRX 126.62 58 (PKP) 02 55.00 5.7X
HRV 126.71 17 ePdiff59 37.61 9.0X
eSKS 10 08.64
eS 12 41.69
UNM 127.07 58 (PKP) 02 55.00 4.9X

PNJ 127.36 20 PKPd 02 55.80 6.2X
i 03 22.30
PP 04 56.30
CFTV 127.40 316 ePKP 02 54.00 3.8X
i 05 10.00
ACX 127.56 61 (PKP) 02 58.50 7.8X
IIT 127.94 58 (PKP) 03 01.00 9.3X
BLA 128.04 28 PKP 02 56.00 4.8X
CBN 128.53 24 ePKP 02 51.00 -0.9
e 03 03.00
e 05 02.00
GGC 128.66 316 iPKP 02 58.80 6.2X
i 05 31.60
LVVM 129.15 56 (PKP) 02 59.00 5.4X
LKO 129.30 290 PKP 02 49.76 -4.4X
KIC 129.46 285 PKP 02 44.92 -9.5X
TIC 129.64 286 PKP 02 45.44 -9.4X
LIC 129.77 285 PKP 02 45.98 -9.0X
Z 22s 62.40um 7.3Msz
OXX 130.17 59 (PKP) 03 04.00 8.1X
TPX 134.97 59 (PKP) 03 16.00 11.2X
SRA 143.97 60 ePKP 03 21.00 -0.4
SJS 144.38 60 ePKP 03 32.00 9.9X
LCR2 144.52 60 ePKP 03 25.30 2.9X
BUS 144.82 60 ePKP 03 22.30 -0.9
UPA 148.69 57 iPKPc 03 32.00 3.1X
i 03 50.00
CHCH 149.91 150 ePKP 03 40.50 10.2X
TACH 149.99 150 ePKP 03 37.00 6.6X
RFA 150.22 154 e(PKP)03 39.60 8.8X
PCH 150.23 150 ePKP 03 36.00 5.1X
SAN 150.29 150 ePKP 03 37.00 6.1X
LRS 150.34 27 PKP 03 36.00 4.6X
PEL 150.52 149 iPKPc 03 35.00 3.7X
0.4s 525.42nm
i 03 43.10
FCH 150.57 150 ePKP 03 39.00 7.3X
PORP 150.64 27 PKP 03 32.00 0.2
SJG 150.80 26 ePKP 03 35.00 2.9X
JACH 150.94 149 ePKP 03 41.00 9.0X
CPD 150.97 25 PKP 03 32.00 -0.3
MDZ 151.63 152 iPKP 03 38.40 5.4X
i 04 48.40
RTCB 152.80 150 e(PKP)03 41.00 6.3X
ZON 152.81 150 e(PKP)03 39.00 4.3X
CFA 152.98 151 ePKP 03 36.00 1.1
RTLL 153.09 150 e(PKP)03 17.00 -18.1X
ANG 153.30 18 ePKP 03 48.03 12.4X
BPA 153.39 19 ePKP 03 47.85 12.0X
MRA 153.41 156 e(PKP)03 41.00 5.6X
GGP 153.50 73 ePKP 03 45.00 8.1X
RTRS 153.51 147 e(PKP)03 42.00 6.4X
OUR 153.56 73 ePKP 03 45.00 8.3X
COTA 153.57 72 ePKP 03 43.70 6.8X
CAYA 153.99 72 ePKP 03 42.00 4.5X
PSO 154.22 70 ePKP 03 42.00 4.4X
DEG 154.32 17 ePKP 03 42.00 4.9X
PAG 154.40 19 ePKP 03 42.00 4.7X
FISA 154.81 40 ePKP 03 44.00 6.2X
BBL 154.94 19 ePKP 03 43.50 5.6X
DTMT 155.25 19 ePKP 03 51.10 12.8X
FUQ 155.41 57 ePKP 03 44.00 4.9X
BOG 155.59 59 iPKPc 03 44.00 4.6X
TOV 155.61 43 ePKP 03 44.20 5.2X
SDV 155.67 46 ePKP 03 41.00 1.8
MORO 155.74 38 ePKP 03 45.00 5.8X
FDF 155.78 19 ePKP 03 44.20 5.1X
SLB 156.67 19 ePKP 03 54.93 14.6X
CYA 156.77 151 e(PKP)03 46.00 5.9X
LLAV 156.96 36 ePKP 03 51.00 10.2X
SSV 157.08 20 ePKP 03 52 96 12.1X
SVB 157.12 20 ePKP 03 47.59 6.7X
ANT 157.57 135 ePKP 03 48.00 6.8X
CUM 158.40 30 ePKP 03 48.00 5 7X
TCE 159.29 24 ePKP 04 00.43 17.1X
TRN 159.48 23 ePKP 03 56.07 12 6X
TBH 159.76 23 ePKP 03 59.95 16.1X
TPP 159.76 24 ePKP 03 57.14 13.3X
ARE 160.47 116 ePKP 03 47.00 2.1X
ITB7 163.29 177 e(PKP)03 58.00 10.8X
CNCB 163.37 122 PKP 03 50.00 1.9
LPB 163.40 121 PKPc 03 51.00 3 0X
1.2s 531.25nm
i 03 56.00
ITB 163.61 177 e(PKP)03 59.90 12 4X
CCH 164.57 127 ePKP 03 53.00 4 0X
BDF 171.02 215 ePKPc 03 57.44 4 3X

ec 04 07.54
BAO 171.10 215 ePKP 03 55.40 2.2X
e 05 19.00
e 09 07.50
S.D. = 1.4 on 204 of 499 obs.

DEC 15, 1989 18h 53m 38.22± 0.31s
8.397 N ± 6.0km 126.485 E ± 8.5km
DEPTH = 33.0km (normal)
6.0mb (14 obs.)
MINDANAO, PHILIPPINE ISLANDS (259)

BAG 9.83 325 eP 56 02.00 1.4
QIZ 19.30 305 iPd 58 05.60 2.2
SSE 23.12 348 P 58 42.00 -0.4
1.0s 0.62nm 3.1mb X
KNA 24.10 175 iPd 58 52.80 0.9
TIY 31.83 339 Pd 00 01.40 -1.0
BJI 32.83 345 Pc 00 10.00 -0.9
1.2s 365.00nm 6.2mb
SNY 33.39 356 iPc 00 15.80 0.1
WARB 34.37 180 eP 00 24.00 -0.4
0.4s 32.00nm 5.6mb
CN2 35.28 359 Pc 00 31.40 -0.6
MDJ 36.18 4 Pc 00 40.40 0.8
SHL 37.07 302 iP 00 39.00 -8.6X
GTA 39.04 326 P 01 03.00 -0.9
1.0s 0.20nm 2.8mb X
BAL 39.90 193 eP 01 11.00 0.1
0.8s 139.00nm 5.8mb
MUN 41.33 193 eP 01 23.00 0.4
HYB 47.46 286 ePc 02 16.50 4.3X
1.0s 90.00nm 5.7mb
GBA 48.36 281 P 02 20.60 1.4
e 06 08.90
DZM 49.51 128 iPd 02 27.10 -1.0
NDI 50.47 300 eP 02 35.00 -0.2
ADK 63.30 36 eP 04 05.20 -0.8
0.9s 70.80nm 5.8mb
TTA 76.88 27 ePc 05 29.60 0.9
TAB 77.14 307 e(P) 05 31.00 0.3
BRW 77.86 19 iPc 05 35.20 1.4
KDC 78.16 33 ePc 05 36.20 0.6
0.9s 325.00nm 6.4mb
e 05 41.00
IMA 78.25 24 ePc 05 37.30 1.1
PMR 80.00 29 ePc 05 45.70 0.2
1.0s 275.00nm 6.2mb
F8A 80.64 26 eP 05 49.00 0.1
TOA 81.40 28 eP 05 54.50 1.4
KVT 84.88 311 iP 06 11.90 0.6
KEV 85.45 340 iP 06 13.30 -0.2
1.0s 76.00nm 5.9mb
HLBJ 85.76 302 Pd 06 15.00 -0.9
HLBJ 85.76 302 Pd 06 20.80 4.9X
INK 85.94 22 eP 06 16.50 0.5
1.3s 134.00nm 6.0mb
SOD 86.09 338 iP 06 15.70 -1.0
SALJ 86.29 302 P+ 06 18.10 -0.4
MASJ 86.29 301 Pd 06 18.50 -0.1
MKRJ 86.38 301 Pd 06 18.90 -0.1
KBS 86.40 350 iP 06 18.10 0.0
HITJ 86.45 299 P+ 06 18.60 -0.8
DSI 86.60 301 iP 06 21.00 1.1
ZNT 86.80 302 eP 06 22.00 1.0
AOBJ 87.13 299 Pd 06 21.10 -1.5
MBH 87.27 300 eP 06 22.00 -1.2
SUF 87.31 333 iP 06 21.80 -0.9
0.7s 37.30nm 5.7mb
M8C 87.48 13 iPd 06 24.50 1.1
1.0s 146.00nm 6.2mb
NUR 88.53 331 iP 06 28.30 -0 3
1.0s 138.00nm 6.2mb
UPP 92.07 331 iP 06 44.20 -0.9
HFS 93.80 332 eP 06 50.90 -2.2
1.1s 95.10nm 6.1mb
NB2 94.52 334 P 06 54.50 -2.0
1.1s 41.70nm 5.8mb
SCH 116.05 9 ePKP 12 23.10 3.7X
KIC 129.21 285 (PKP) 12 46.20 0.4
TIC 129.39 286 (PKP) 12 46.50 0.3
LIC 129.52 285 (PKP) 12 46.70 0.3
UPA 148.86 57 (PKP) 13 24.50 3.4X
S.D. = 1.0 on 48 of 53 obs.

DEC 15, 1989 18h 57m 25.66± 0.31s
7.866 N ± 6.4km 126.877 E ± 8.3km

15d 18h

DEPTH = 43.6km (2 depth phases)
5.7mb (14 obs.)
MINDANAO, PHILIPPINE ISLANDS (259)

JAY	17.22	126	ePd	01	26.50	1.7
QIZ	19.92	306	iPd	01	57.10	0.4
MTN	21.01	168	eP	02	06.50	-1.4
KNA	23.54	175	iPd	02	33.60	0.7
SSE	23.71	348	P	02	36.40	1.8
	1.0s	65.00nm				5.1mb
PMG	26.50	130	eP	03	00.00	-1.1
PPI	27.66	254	e(P)	03	13.00	1.3
TIY	32.47	338	Pd	03	52.50	-1.7
SNY	33.95	356	iPc	04	05.80	-1.1
CN2	35.82	358	Pc	04	22.40	-0.5
MDJ	36.69	3	Pd	04	30.60	0.4
HNR	37.15	117	(P)	04	35.00	0.5
SHL	37.68	302	iP	04	39.00	0.0
BAL	39.48	194	eP	04	52.00	-1.7
	0.6s	61.00nm				5.6mb
KLB	40.19	192	iPc	05	00.60	1.0
MUN	40.91	194	eP	05	04.00	-1.5
NWAO	41.59	192	eP	05	13.00	2.0
	1.0s	230.00nm				5.9mb
BRS	43.10	145	iPc	05	21.50	-2.0
	1.0s	23.00nm				4.9mb
			i	05	32.80	40km
			e	05	45.00	
HYB	47.98	286	iPc	06	03.00	0.4
	1.0s	70.00nm				5.6mb
GBA	48.84	281	Pc	06	09.40	0.2
	0.9s	81.00nm				5.8mb
DZM	48.88	128	iPc	06	10.90	1.4
WMQ	49.48	323	iPc	06	14.60	0.7
MAIO	67.17	306	eP	08	18.00	0.3
SDN	73.70	35	eP	08	57.50	0.8
SVW	77.12	29	eP	09	18.00	1.9
TAB	77.77	307	eP	09	22.00	1.7
KDC	78.39	33	eP	09	24.80	1.7
	0.9s	158.30nm				6.0mb
PMR	80.27	29	eP	09	32.00	-1.2
	1.0s	70.00nm				5.6mb
KVT	85.52	311	iP	10	00.90	0.3
KEV	86.08	340	iP	10	02.90	0.1
	0.9s	57.40nm				5.8mb
INK	86.29	22	eP	10	07.00	3.2X
HLBJ	86.36	302	Pd	10	04.50	-0.6
QUTJ	86.71	301	Pd	10	05.70	-1.1
SOD	86.72	338	iP	10	05.30	-0.7
BURJ	86.76	302	Pd	10	07.80	0.8
MASJ	86.90	301	Pd	10	07.20	-0.5
DSI	87.21	301	eP	10	10.00	1.0
ZNT	87.41	302	eP	10	10.00	-0.1
MBH	87.87	300	eP	10	13.00	0.8
MBC	87.91	13	eP	10	10.00	-1.6
	1.0s	85.00nm				6.0mb
			pP	10	24.00	47km
SUF	87.95	333	eP	10	11.60	-0.4
	0.8s	92.00nm				6.1mb
NUR	89.18	331	iP	10	16.60	-1.2
	0.9s	114.90nm				6.2mb
UPP	92.72	332	iP	10	33.90	-0.3
HFS	94.44	333	eP	10	40.80	-1.4
	0.6s	3.60nm				5.0mb
NB2	95.17	334	P	10	43.60	-2.0
	0.9s	18.50nm				5.5mb
KSP	96.64	323	iP	10	53.00	0.5
S.D. = 1.2 on 45 of 46 obs.						

DEC 15, 1989 19h 01m 43.52± 0.63s
40.734 N ± 7.8km 27.394 E ± 6.5km
DEPTH = 10.0km (geophysicist)
TURKEY (366)

EDC	0.53	137	iPg	01	54.10	-0.1
			iSg	02	01.30	
BNT	0.55	133	iPg	01	54.80	0.1
			iSg	02	01.30	
EZN	1.22	222	iPn	02	05.60	-0.6
ISK	1.31	75	ePn	02	05.90	-1.8
DST	1.47	140	ePn	02	11.70	1.6
YLV	1.51	96	iPn	02	10.80	0.0
KDZ	1.75	302	iP	02	14.00	-0.1
JMB	1.84	341	eP	02	17.00	1.7
DIM	1.92	314	eP	02	17.00	0.5
RZN	2.23	296	eP	02	20.00	-1.3
S.D. = 1.2 on 10 of 10 abs.						

? DEC 15, 1989 19h 10m 34.94± 1.34s
40.376 N ± 7.8km 22.264 E ±15.4km
DEPTH = 10.0km (geophysicist)
GREECE (364)

GRG	0.59	10	eP	10	46.70	-0.2
			eS	10	54.30	
KNT	0.92	31	eP	10	52.80	0.3
			eS	11	05.00	
OUR	1.31	91	eP	10	59.10	-0.1
			eS	11	18.30	
AGG	1.35	178	eP	10	59.90	0.1
			eS	11	18.40	
S.D. = 0.3 on 4 of 4 obs.						

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* DEC 15, 1989 19h 25m 59.91± 0.44s
8.026 N ± 9.1km 126.951 E ±10.1km
DEPTH = 33.0km (normal)
5.6mb (4 obs.)
MINDANAO, PHILIPPINE ISLANDS (259)

TSM	9.60	247	ePc	28	24.00	5.1X
JAY	17.26	127	ePc	29	59.50	-0.7
SSE	23.58	348	eP	30	52.00	-16.5X
KGM	24.28	257	ePd	31	17.00	1.5
NJ2	25.06	344	P	31	26.80	3.9X
IPM	25.99	264	ePd	31	33.10	1.4
PMG	26.55	130	eP	31	44.00	7.2X
PPI	27.78	254	eP	31	47.00	-1.1
BDT	28.73	291	eP	31	57.00	0.4
TIY	32.35	338	Pc	32	27.80	-0.7
NANU	32.39	200	eP	32	27.00	-1.9
BJI	33.30	345	eP	32	19.00	-17.7X
CN2	35.66	358	eP	32	57.20	0.3
MDJ	36.52	3	Pc	33	06.00	1.8
BRS	43.19	146	e(P)	33	48.00	-11.6X
			i	33	57.00	
BWA	46.86	156	eP	34	30.00	1.1
CAN	47.87	156	eP	34	39.00	2.1
HYB	48.01	286	ePd	34	38.00	-0.2
GBA	48.88	281	P	34	44.40	-0.5
			e	36	09.00	
WMQ	49.40	323	P	34	50.10	1.5
MAIO	67.14	306	eP	36	53.00	0.0
TAB	77.73	307	eP	37	56.00	0.4
KEV	85.96	340	iP	38	37.00	-0.7
	0.9s	27.00nm				5.5mb
INK	86.11	22	eP	38	19.00	-19.5X
HLBJ	86.34	302	Pd	38	39.50	-1.0
SOD	86.60	338	iP	38	40.30	-0.7
MASJ	86.88	301	Pd	38	42.20	-0.9
MKRJ	86.97	301	Pd	38	42.80	-0.8
DSI	87.19	301	ePc	38	45.00	0.5
ZNT	87.39	302	eP	38	46.00	0.5
AQBJ	87.72	300	P+	38	50.90	3.8X
MBC	87.74	13	eP	38	33.00	-13.3X
	0.9s	17.00nm				
			pP	38	48.00	52kmX
SUF	87.85	333	iP	38	46.00	-1.0
	0.7s	26.50nm				5.6mb
MBH	87.86	300	eP	38	48.50	0.8
NUR	89.08	331	iP	38	52.00	-0.9
	0.8s	32.30nm				5.7mb
UPP	92.62	332	iP	39	08.00	-1.3
NB2	95.06	334	P	39	19.30	-1.3
	0.9s	7.50nm				5.1mb
BRG	97.93	324	e(P)	39	36.50	2.7
KIC	129.75	285	PKP	45	08.10	-0.5
LIC	129.94	286	PKP	45	08.70	-0.2
LIC	130.06	285	PKP	45	08.60	-0.5
S.D. = 1.2 on 32 of 41 obs.						

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* DEC 15, 1989 19h 34m 23.12± 0.39s
8.474 N ± 7.0km 126.570 E ±11.9km
DEPTH = 33.0km (normal)
4.9mb (10 obs.)
MINDANAO, PHILIPPINE ISLANDS (259)

QIZ	19.32	305	Pd	38	50.50	1.9
SSE	23.06	348	Pc	39	27.40	0.7
	1.4s	121.00nm				5.2mb
			i	39	37.00	
KGM	24.01	256	ePd	39	41.30	5.2X
IPM	25.67	263	ePc	39	55.80	3.9X
	1.0s	41.50nm				5.0mb
BDT	28.22	291	eP	40	17.00	1.8
TIY	31.79	338	eP	40	45.80	-1.1
ASPA	32.74	168	P	40	54.00	-1.2
BJI	32.78	345	eP	40	54.00	-1.3
	1.0s	54.00nm				5.4mb
SNY	33.32	356	iPc	41	00.60	0.6
WARB	34.45	180	eP	41	10.00	0.0
	0.5s	21.00nm				5.3mb
MDJ	36.10	4	Pc	41	25.00	1.2
MUN	41.42	193	iPc	42	08.70	0.4
NWAO	42.12	192	eP	42	14.00	0.0
BRS	43.77	145	iPc	42	26.80	-0.7
	0.5s	4.50nm				4.5mb
BWA	47.42	155	eP	42	57.00	0.5
HYB	47.52	286	ePc	43	04.00	6.4X
GBA	48.43	281	P	43	04.00	-0.6
			e	45	05.40	
			e	46	30.00	
CAN	48.43	155	eP	43	06.00	1.6
NDI	50.50	300	eP	43	19.00	-1.4
IMA	78.14	24	P	46	20.70	0.2
	0.6s	4.31nm				4.7mb
PMR	79.89	29	P	46	30.00	0.1
	0.6s	10.47nm				5.0mb
FBA	80.53	26	P	46	33.00	-0.3
KEV	85.41	340	eP	46	57.00	-1.2
INK	85.84	22	eP	47	01.50	1.2
SOD	86.05	338	eP	47	02.00	0.6
MBC	87.39	13	ePc	47	08.70	0.9
	0.6s	6.00nm				5.0mb
NUR	88.50	331	eP	47	13.00	-0.4
HFS	93.77	332	eP	47	36.20	-1.6
	0.5s	1.40nm				4.6mb
NB2	94.49	334	P	47	39.50	-1.7
	0.7s	1.30nm				4.5mb
S.D. = 1.1 on 26 of 29 obs.						

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* DEC 15, 1989 19h 36m 21.85± 0.37s
8.010 N ± 6.6km 126.548 E ±13.0km
DEPTH = 37.0km (3 depth phases)
5.2mb (8 obs.)
MINDANAO, PHILIPPINE ISLANDS (259)

QIZ	19.57	306	Pd	40	50.20	0.4
NJ2	24.97	344	iP	42	00.00	16.5X
ASPA	32.29	167	P	42	39.20	-10.4X
BJI	33.22	345	eP	42	57.00	-0.5
SNY	33.78	356	eP	43	01.70	-0.6
WARB	33.99	180	eP	43	10.00	5.7X
	0.5s	21.00nm				5.3mb
CN2	35.66	359	eP	43	17.40	-1.1
MDJ	36.56	4	eP	43	26.00	0.0
BAL	39.54	193	iPd	43	49.90	-1.2
KLB	40.26	192	iPd	43	56.70	-0.4
MUN	40.97	193	iPd	44	02.80	-0.1
NWAO	41.66	192	eP	44	08.00	-0.5
BWA	47.01	155	eP	44	51.10	-0.5
CAN	48.02	155	eP	45	01.20	1.7
MAIO	66.83	306	eP	47	13.00	0.5
TTA	77.20	27	P	48	14.00	0.5
KDC	78.45	33	eP	48	31.70	11.4X
IMA	78.57	24	P	48	20.80	-0.3
	0.8s	11.64nm				4.9mb
IMA	78.57	24	eP	48	33.00	11.9X
	0.9s	13.40nm				
PMR	80.30	29	P	48	29.60	-0.7
	1.0s	47.50nm				5.4mb
			pP	48	40.80	36km
PMR	80.30	29	eP	48	41.20	10.9X
	1 0s	42.50nm				
FBA	80.96	26	P	48	36.00	2.2
KEV	85.83	340	eP	49	10.00	11.4X
INK	86.27	22	eP	49	01.00	0.2
SOD	86.47	338	iP	49	12.60	10.9X
SOD	86.47	338	iP	49	01.00	-0.7
			i	49	12.60	38km
DSI	86.85	301	e(P)	49	05.00	0.7
PRNI	87.34	300	eP	49	08.00	1.2
MBH	87.52	300	ePc	49	09.00	1.5
SUF	87.68	333	eP	49	07.30	-0.4
	0.6s	9.60nm				5.2mb
MBC	87.84	13	eP	49	08.50	0.3
	0.7s	11.00nm				5.2mb
NUR	88.90	331	iP	49	13.40	-0.1
	0.7s	28.00nm				5.7mb
			i	49	25.00	37km
HFS	94.17	332	eP	49	47.40	9.5X
	0.5s	2.20nm				4.8mb

NB2	94.89	334 P	49 39.30	-2.0	
	0.9s	3.90nm		4.8mb	
KIC	129.37	285 (PKP)	55 41.00	11.7X	
LIC	129.68	285 (PKP)	55 41.40	11.6X	
CNCB	163.34	123 PKP	56 37.00	13.9X	
LPB	163.38	122 ePKP	56 36.00	13.1X	
ZOBO	163.48	121 ePKP	56 26.00	2.7X	
CCH	164.52	128 ePKP	56 04.00	-19.9X	
S.D. = 1.0 on 25 of 40 obs.					

* DEC 15, 1989 19h 46m 57.56± 0.51s
8.340 N ± 9.3km 126.944 E ±16.2km
DEPTH = 43.3km (2 depth phases)
5.0mb (8 obs.)
MINDANAO, PHILIPPINE ISLANDS (259)

QIZ	19.70	304 eP	51 25.20	-1.2	
SSE	23.27	347 eP	52 01.50	-0.7	
	1.0s	28.00nm		4.7mb	
KNA	24.00	176 eP	52 09.00	-0.4	
IPM	26.02	263 ePc	52 30.80	2.2	
ASPA	32.53	168 P	53 27.20	0.4	
BJI	33.00	345 eP	53 29.50	-1.1	
	1.2s	49.00nm		5.2mb	
SNY	33.48	355 Pc	53 34.50	-0.3	
MDJ	36.21	3 eP	53 59.00	0.9	
MUN	41.38	194 eP	54 40.00	-1.3	
BRS	43.45	146 iPc	54 56.00	-2.3	
	0.5s	3.00nm		4.3mb	
		i	55 09.20	49km	
BWA	47.15	156 eP	55 28.60	0.9	
IMA	78.11	24 eP	58 54.90	1.3	
		e	59 06.30	37km	
PMR	79.83	29 eP	59 03.00	0.3	
	0.9s	10.40nm		4.8mb	
FBA	80.49	26 P	59 06.00	-0.3	
KEV	85.66	340 eP	59 39.00	6.3X	
INK	85.82	22 eP	59 34.00	0.5	
M8C	87.44	13 eP	59 42.50	1.3	
	1.2s	21.00nm		5.3mb	
SUF	87.56	333 eP	59 40.90	-1.1	
	0.6s	8.10nm		5.1mb	
NUR	88.80	331 eP	59 46.60	-1.4	
NB2	94.77	334 P	00 13.70	-2.0	
	1.1s	6.10nm		4.9mb	
VAY	95.18	313 eP	00 22.30	4.4X	
LIT	95.57	312 eP	00 24.00	4.2X	
SKO	95.81	314 iP	00 25.00	4.2X	
OHR	96.52	313 eP	00 26.30	2.2	
PRU	97.66	323 P	00 19.50	-9.5X	
KHC	98.58	322 P	00 24.00	-9.2X	
	1.1s	8.00nm		5.2mb	
KBA	99.53	321 eP	00 27.00	-10.8X	
	1.3s	12.10nm			
ZOBO	163.31	120 PKP	07 00.00	2.0	
CCH	164.40	126 ePKP	07 02.00	3.3X	
		e	07 59.00		
S.D. = 1.4 on 21 of 29 obs.					

? DEC 15, 1989 19h 47m 43.45± 1.80s
8.221 N ±34.2km 126.616 E ±28.0km
DEPTH = 33.0km (normal)
4.8mb (5 obs.)
MINDANAO, PHILIPPINE ISLANDS (259)

SSE	23.32	348 eP	52 50.20	0.7	
	1.0s	28.00nm		4.7mb	
BJI	33.03	345 eP	54 17.00	-0.8	
	1.0s	18.00nm		4.9mb	
TAB	77.35	307 eP	59 38.00	0.9	
IMA	78.35	24 P	59 42.80	0.8	
	1.0s	11.00nm		4.8mb	
PMR	80.09	29 P	59 50.70	-0.5	
	1.0s	18.75nm		5.0mb	
FBA	80.74	26 P	59 55.00	0.3	
SOD	86.30	338 iP	00 23.00	0.0	
NB2	94.74	334 P	01 01.40	-1.3	
	0.9s	3.30nm		4.8mb	
CNCB	163.40	122 PKP	07 51.90	6.6X	
LPB	163.43	121 ePKP	08 03.00	17.9X	
S.D. = 1.0 on 8 of 10 obs.					

* DEC 15, 1989 19h 58m 14.18± 0.42s
8.456 N ± 7.3km 126.661 E ±13.5km
DEPTH = 33.0km (normal)
4.7mb (5 obs.)
MINDANAO, PHILIPPINE ISLANDS (259)

QIZ	19.40	305 eP	02 41.50	0.8	
SSE	23.10	348 eP	03 18.20	0.1	
LOE	25.85	293 eP	03 46.00	1.4	
		e	10 35.00		
ASPA	32.70	168 P	04 46.00	0.1	
BJI	32.82	345 eP	04 46.00	-0.7	
	1.0s	12.00nm		4.7mb	
SNY	33.35	356 Pc	04 51.40	0.1	
CN2	35.22	358 eP	05 06.00	-1.5	
MDJ	36.11	4 Pd	05 16.00	1.0	
MUN	41.43	193 iPd	05 59.40	0.0	
NWAO	42.12	192 eP	06 05.00	0.0	
RKG	43.27	192 eP	06 19.20	4.8X	
BRS	43.70	145 iPd	06 17.80	-0.2	
BWA	47.37	155 eP	06 47.20	0.0	
IMA	78.12	24 eP	10 12.90	1.4	
PMR	79.86	29 eP	10 21.40	0.6	
	0.8s	10.30nm		4.9mb	
INK	85.82	22 eP	10 52.00	0.7	
SOD	86.10	338 eP	10 52.00	-0.8	
SUF	87.33	333 eP	10 57.60	-1.2	
	0.6s	2.40nm		4.6mb	
MBC	87.39	13 eP	11 00.00	1.1	
	0.6s	4.00nm		4.9mb	
NUR	88.56	331 eP	11 03.80	-0.9	
HFS	93.83	332 eP	11 27.10	-2.1	
	0.4s	1.10nm		4.6mb	
S.D. = 1.0 on 20 of 21 obs.					

? DEC 15, 1989 20h 05m 36.18± 2.30s
8.041 N ±41.7km 126.555 E ±41.2km
DEPTH = 33.0km (normal)
4.8mb (1 obs.)
MINDANAO, PHILIPPINE ISLANDS (259)

SSE	23.48	348 eP	10 44.50	0.7	
BJI	33.19	345 eP	12 11.00	-1.0	
IMA	78.54	24 P	17 36.80	1.0	
PMR	80.27	29 P	17 44.00	-1.0	
	0.8s	8.10nm		4.8mb	
SUF	87.66	333 eP	18 22.40	0.0	
NUR	88.87	331 eP	18 28.40	0.2	
TUL	120.86	40 e(Pdif	21 00.90	8.3X	
	0.5s	20.80nm			
S.D. = 1.1 on 6 of 7 obs.					

? DEC 15, 1989 20h 16m 49.94± 1.64s
7.997 N ±27.5km 126.573 E ±28.6km
DEPTH = 33.0km (normal)
4.8mb (3 obs.)
MINDANAO, PHILIPPINE ISLANDS (259)

BJI	33.23	345 eP	23 26.00	-0.1	
SNY	33.80	356 eP	23 31.20	0.2	
CN2	35.68	359 eP	23 46.50	-0.6	
MDJ	36.57	4 eP	23 55.00	0.4	
IMA	78.57	24 P	28 50.40	0.7	
	0.7s	3.27nm		4.5mb	
PMR	80.30	29 P	28 58.50	-0.4	
	0.8s	8.28nm		4.8mb	
FBA	80.96	26 P	29 02.00	-0.3	
SUF	87.70	333 iP	29 36.30	0.0	
	0.7s	5.20nm		4.9mb	
NUR	88.92	331 eP	29 42.30	0.1	
S.D. = 0.5 on 9 of 9 obs.					

? DEC 15, 1989 20h 26m 28.15± 0.85s
8.334 N ±14.5km 126.641 E ±19.8km
DEPTH = 33.0km (normal)
4.7mb (3 obs.)
MINDANAO, PHILIPPINE ISLANDS (259)

SSE	23.21	348 eP	31 33.00	-0.2	
LOE	25.88	293 eP	32 01.00	2.1	
ASPA	32.59	168 P	32 59.00	0.1	
SNY	33.47	356 Pc	33 06.00	-0.3	
CN2	35.34	359 eP	33 23.20	0.7	
MDJ	36.24	4 eP	33 30.50	0.5	
GTA	39.18	326 eP	33 54.00	-0.9	
KDC	78.13	33 P	38 26.00	0.6	
IMA	78.24	24 eP	38 27.20	1.1	
PMR	79.98	29 eP	38 35.00	-0.4	
	0.6s	4.90nm		4.7mb	
FBA	80.63	26 P	38 39 40	0.6	
SLL	93.95	333 (P)	39 41.70	-2.1	
	0.4s	1.30nm		4.7mb	
NB2	94.65	334 P	39 45.00	-2.0	
	1.0s	2.60nm		4.6mb	
S.D. = 1.3 on 13 of 13 obs.					

? DEC 15, 1989 20h 33m 50.09± 0.65s
7.771 N ±21.7km 126.963 E ±35.8km
DEPTH = 33.0km (normal)
4.2mb (2 obs.)
MINDANAO, PHILIPPINE ISLANDS (259)

BJI	33.55	345 eP	40 48.50	19.5X	
	1.0s	18.00nm			
BRS	42.97	145 iPd	41 47.20	-0.8	
	0.8s	2.50nm		4.0mb	
BWA	46.62	155 eP	42 18.30	1.1	
CAN	47.64	155 eP	42 24.90	-0.3	
		e	42 28.30		
MAIO	67.30	306 eP	44 44.00	-0.2	
INK	86.34	22 eP	46 30.00	0.2	
SOD	86.84	338 eP	46 44.00	11.7X	
SUF	88.08	333 eP	46 39.00	0.7	
NUR	89.30	331 eP	47 06.60	22.4X	
HFS	94.57	333 (P)	47 07.80	-0.7	
	0.4s	0.70nm		4.4mb	
S.D. = 0.9 on 7 of 10 obs.					

DEC 15, 1989 20h 44m 37.20± 0.25s
8.125 N ± 4.5km 126.804 E ± 6.9km
DEPTH = 42.3km (3 depth phases)
5.3mb (19 obs.) 5.1Msz (1 obs.)
MINDANAO, PHILIPPINE ISLANDS (259)

TSM	9.51	246 ePc	47 01.80	7.2X	
BAG	10.24	324 eP	47 10.90	6.1X	
KKM	10.71	260 ePd	47 17.80	6.6X	
QZH	18.47	336 eP	48 50.30	-1.5	
GZH	19.71	321 eP	49 05.20	-0.9	
QIZ	19.71	305 Pd	49 06.80	0.6	
MTN	21.27	168 eP	49 22.00	-0 3	
SSE	23.45	348 P	49 43.70	0.1	
	1.1s	43.00nm		4.9mb	
Z	20s	7.40um		5.1Msz	
N	12s	3.20um			
E	12s	3.10um			
		i	49 58.20	61kmX	
		S	53 58.00		
		sS	54 06.00		
KNA	23.80	175 eP	49 47.50	0.3	
KGM	24.16	257 ePd	49 54.30	3.6X	
NJ2	24.93	344 eP	50 00.00	2.0	
WHN	25.16	334 eP	49 55.00	-5.2X	
		sP	50 16.00		
IPM	25.86	264 ePc	50 10.50	3.6X	
LOE	26.11	293 iPc	50 09.00	-0.2	
GYA	26.42	316 P	50 14.00	1.9	
PMG	26.73	130 eP	50 12.00	-2.8	
NST	27.13	289 eP	50 21.00	2.5	
PPI	27.67	253 eP	50 25.00	1.6	
BDT	28.56	291 eP	50 33.00	1.6	
WB5	28.81	165 eP	50 31.80	-1.8	
		e	50 36.50	16kmX	
CHTO	29.06	294 ePc	50 36.00	0.1	
TIA	29.32	344 eP	50 35.80	-2.3	
MBL	29.90	193 eP	50 42.50	-0.9	
XAN	30.61	330 P	50 47.00	-2.6	
DL2	31.00	352 P	50 53.00	0.1	
CD2	31.26	320 eP	50 55.00	-0.4	
TIY	32.20	338 eP	51 03.00	-0.6	
ASPA	32.35	168 eP	51 04.50	-0.5	
	0.6s	20.00nm		5.2mb	
NANU	32.44	200 eP	51 05.40	-0.2	
	0.8s	36.00nm		5.3mb	
BJI	33.17	345 eP	51 10.50	-1.4	
	1.0s	24.00nm		5.0mb	
SNY	33.69	356 iPc	51 16.60	0.3	
WARB	34.10	180 eP	51 21.00	0.9	
	0.5s	24.00nm		5.4mb	
LZH	34.84	326 Pd	51 25.50	-1.0	
		i	52 06.00	194kmX	
HHC	35.30	340 eP	51 29.30	-1.1	
CN2	35.56	358 eP	51 32.30	-0.1	
BTO	35.63	338 P	51 33.00	-0.2	
MDJ	36.43	3 Pc	51 40.60	0.9	
HNR	37.34	117 (P)	51 49.00	1.3	
SHL	37.49	302 iP	51 50.00	0.9	
		iS	57 39.00		
GTA	39.44	326 Pc	52 04.40	-0.8	
BAL	39.71	194 eP	52 07.00	-0.3	

15d 20h

	0.8s	69.00nm		5.5mb		
KLB	40.43	192 eP	52 13.00	-0.2		
MUN	41.14	194 eP	52 19.00	-0.1		
	0.7s	50.00nm		5.4mb		
NWAO	41.83	192 eP	52 25.00	0.3		
	0.9s	50.00nm		5.2mb		
RKG	42.98	192 eP	52 40.00	5.9X		
BRS	43.35	145 iPc	52 36.50	-0.7		
	0.8s	3.00nm		4.1mb X		
		i	52 48.80	45km		
ADE	44.31	166 iPd	52 45.00	0.1		
	0.8s	34.33nm		5.2mb		
HYB	47.84	286 eP	53 13.00	-0.2		
CAN	48.02	155 e(P)	53 18.00	3.7X		
GBA	48.72	281 P	53 10.10	-9.8X		
GBA	48.72	281 Pc	53 19.30	-0.6		
	0.8s	13.60nm		5.0mb		
DZM	49.10	128 iPc	53 23.90	1.0		
WMQ	49.23	323 eP	53 23.80	0.2		
QUE	59.95	300 eP	54 40.50	-1.6		
ADK	63.33	35 P	55 10.00	5.8X		
	0.9s	58.33nm		5.7mb		
MAIO	66.96	306 iPc	55 27.60	-0.5		
TTA	76.98	27 eP	56 28.70	1.6		
TAB	77.56	307 eP	56 32.00	1.2		
KDC	78.21	33 e(P)	56 34.50	0.7		
		i	56 46.90	42km		
IMA	78.37	24 eP	56 36.20	1.5		
	0.8s	12.60nm		5.0mb		
PMR	80.08	29 eP	56 44.40	0.5		
	0.9s	29.20nm		5.2mb		
		e	56 56.50	40km		
FBA	80.74	26 eP	56 47.80	0.4		
TOA	81.48	28 eP	56 53.30	1.9		
KEV	85.81	340 eP	57 11.00	-2.2		
INK	86.07	22 eP	57 15.00	0.5		
SOD	86.46	338 iP	57 16.20	-0.2		
SALJ	86.70	302 P+	57 17.80	-0.6		
MASJ	86.70	301 Pd	57 18.10	-0.3		
MKRJ	86.79	301 Pd	57 18.60	-0.3		
KAS	86.96	311 eP	57 20.50	1.0		
PRNI	87.50	300 eP	57 23.00	0.7		
MBC	87.68	13 eP	57 23.50	1.3		
	0.8s	16.00nm		5.3mb		
MBH	87.68	300 eP	57 24.00	1.0		
SUF	87.69	333 eP	57 21.80	-0.6		
	0.8s	18.60nm		5.4mb		
NUR	88.92	331 iP	57 27.90	-0.4		
	0.8s	26.40nm		5.6mb		
NAI	90.18	269 iP	57 32.00	-3.5X		
UPP	92.46	332 iP	57 43.70	-1.0		
DAG	92.95	353 iPd	57 46.00	-0.8		
	0.7s	9.59nm		5.3mb		
HFS	94.18	333 eP	57 51.30	-1.4		
	1.2s	38.30nm		5.7mb		
Z	16s	2.34um		5.7MszX		
		LR	40 02.00			
NB2	94.90	334 P	57 52.60	-3.5X		
	0.7s	3.60nm		4.9mb		
KSP	96.39	323 eP	58 03.00	0.0		
BRG	97.76	324 eP	58 09.60	0.4		
		e	58 38.00	107kmX		
KIC	129.58	285 PKP	03 44.98	0.6		
LIC	129.89	285 PKP	03 45.56	0.6		
CNCB	163.19	122 PKP	04 41.00	3.4X		
		i	05 32.00			
LPB	163.22	121 ePKP	04 41.00	3.5X		
ZOBO	163.32	120 PKP	04 39.00	1.2		
CCH	164.39	127 PKP	04 42.40	4.0X		
S.D = 1.1 on 73 of 88 obs.						

DEC 15, 1989 21h 06m 45.08± 0.33s
7.865 N ± 6.1km 126.757 E ± 8.7km
DEPTH = 38.8km (2 depth phases)
5.1mb (6 obs.)
MINDANAO, PHILIPPINE ISLANDS (259)

KKM	10.62	261 eP	09 24.00	6.0X		
QIZ	19.82	306 P	11 17.00	1.5		
KNA	23.55	175 eP	11 52.50	-0.4		
		e	14 50.50			
SSE	23.69	348 eP	11 58.00	3.8X		
LOE	26.17	294 iPd	12 18.50	0.6		
WB5	28.57	165 eP	12 41.10	1.4		
CHG	29.12	295 eP	12 45.00	0.2		
CHTO	29.12	295 eP	12 45.00	0.2		
		e	12 56.40	43km		
XAN	30.81	330 P	12 57.80	-1.8		
ASPA	32.11	168 eP	13 09.70	-1.4		
		e	13 28.80	82kmX		
TIY	32.42	339 eP	13 14.50	0.7		
BJI	33.41	345 eP	13 21.00	-1.2		
SNY	33.94	356 eP	13 26.60	-0.2		
LZH	35.03	327 P	13 35.00	-1.4		
HHC	35.52	340 eP	13 40.40	-0.1		
CN2	35.81	358 eP	13 42.60	-0.2		
MDJ	36.69	3 Pc	13 51.00	0.8		
LSA	39.84	308 P	14 19.20	1.9		
MUN	40.88	194 eP	14 24.00	-1.2		
BRS	43.16	145 e(P)	14 27.00	-17.0X		
		e	14 42.00	58kmX		
BWA	46.79	155 eP	15 13.10	0.2		
CAN	47.81	155 eP	15 22.00	1.1		
HYB	47.87	286 eP	15 22.50	0.8		
GBA	48.73	281 P	15 28.00	-0.2		
WMQ	49.41	323 Pd	15 33.50	0.2		
MAIO	67.08	306 eP	17 37.00	-0.1		
TTA	77.23	27 P	18 37.40	0.6		
IMA	78.62	24 P	18 44.80	0.4		
PMR	80.33	29 P	18 53.50	0.0		
	0.9s	20.83nm		5.1mb		
FBA	81.00	25 P	18 59.00	2.0		
	0.6s	3.08nm		4.5mb		
KEV	86.04	340 eP	19 23.00	0.4		
HLBJ	86.26	302 P	19 24.00	-0.6		
INK	86.33	22 eP	19 24.00	-0.1		
QUTJ	86.61	301 Pd	19 25.20	-1.1		
SOD	86.68	338 iP	19 24.30	-1.5		
SALJ	86.79	302 P+	19 26.80	-0.4		
MASJ	86.80	301 Pd	19 26.90	-0.3		
MKRJ	86.89	301 Pd	19 27.20	-0.4		
DSI	87.11	301 eP	19 29.00	0.5		
ZNT	87.31	302 eP	19 31.00	1.4		
AQBJ	87.63	300 P+	19 30.20	-0.9		
MBH	87 77	300 eP	19 33.00	1.2		
SUF	87.90	333 eP	19 31.00	-0.7		
	0.7s	10.90nm		5.2mb		
MBC	87.94	13 eP	19 48.50	16.8X		
	1.0s	14.00nm				
NUR	89.12	331 eP	19 38.00	0.4		
		e	19 49.00	35km		
DAG	93.20	352 iPd	19 55.30	-0.9		
	0.7s	8.90nm		5.3mb		
HFS	94.39	332 eP	20 00.30	-1.7		
	1.2s	38.30nm		5.7mb		
NB2	95.12	334 P	20 00.60	-4.8X		
	1.0s	3.60nm		4.8mb		
S.D. = 1.0 on 43 of 48 obs.						

DEC 15, 1989 21h 20m 18.50± 0.36s
8.181 N ± 6.6km 126.724 E ± 9.7km
DEPTH = 34.1km (2 depth phases)
4.9mb (11 obs.)
MINDANAO, PHILIPPINE ISLANDS (259)

KKM	10.64	259 eP	22 57.60	5.7X		
QIZ	19.61	305 eP	24 47.60	0.4		
KNA	23.86	175 iPd	25 30.80	1.0		
LOE	26.01	293 eP	25 50.00	-0.4		
NST	27.04	288 eP	26 02.00	2.2		
WB5	28.88	165 eP	26 14.50	-1.9		
CHG	28.96	294 eP	26 17.50	0.3		
CHTO	28.96	294 eP	26 17.00	-0.2		
		e	26 27.50	38km		
XAN	30.52	330 P	26 28.20	-2.8		
ASPA	32.42	168 iPd	26 46.40	-1.3		
	0.7s	10.00nm		4.8mb		
BJI	33.10	345 eP	26 52.00	-1.4		
SNY	33.62	356 eP	26 57.70	-0.2		
WARB	34.16	180 eP	27 03.00	0.3		
	0.4s	16.00nm		5.3mb		
CN2	35.50	358 eP	27 13.00	-1.0		
GTA	39.35	326 eP	27 45.60	-1.0		
LSA	39.62	307 P	27 50.20	0.8		
MUN	41.18	194 iPd	28 02.20	0.7		
NWAO	41.87	192 eP	28 07.00	-0.1		
	0.9s	29.00nm		5.0mb		
BRS	43.44	145 iPc	28 19.80	-0.3		
	0.6s	3.00nm		4.2mb		
		i	28 28.80	30km		
ADE	44.38	166 eP	28 28.00	0.3		
	0.8s	22.39nm		5.0mb		
GBA	48.63	281 P	29 01.10	-0.3		
		e	30 26.00	429kmX		
		e	31 50.00			
WMQ	49.14	323 eP	29 07.40	2.3		
TTA	76.97	27 P	32 10.40	1.1		
KDC	78.21	33 P	32 17.40	1.4		
IMA	78.35	24 eP	32 18.60	1.7		
	0.7s	5.30nm		4.7mb		
PMR	80.07	29 eP	32 26.80	0.7		
	0.7s	9.30nm		4.9mb		
FBA	80.73	26 P	32 29.70	0.1		
	0.6s	2.71nm		4.4mb		
INK	86.05	22 eP	32 57.00	0.3		
SOD	86.38	338 eP	32 54.00	-4.3X		
PRNI	87.41	300 ePc	33 04.00	-0.1		
MBH	87.58	300 eP	33 05.00	0.1		
SUF	87.61	333 eP	33 03.20	-1.1		
MBC	87.64	13 eP	33 05.50	1.2		
	0.7s	15.00nm		5.4mb		
NUR	88.83	331 eP	33 10.00	-0.2		
DAG	92.89	352 iPd	33 27.80	-1.0		
	0.5s	9.86nm		5.5mb		
SLL	94.13	333 (P)	33 32.40	-2.4		
	0.5s	2.00nm		4.8mb		
KIC	129.49	285 PKP	39 26.60	0.1		
TIC	129.68	286 PKP	39 27.10	0.2		
LIC	129.80	285 PKP	39 27.40	0.3		
S.D. = 1.2 on 37 of 39 obs.						

* DEC 15, 1989 21h 21m 42.05± 0.44s
7.885 N ± 8.6km 126.770 E ±15.5km
DEPTH = 41.5km (3 depth phases)
4.9mb (8 obs.)
MINDANAO, PHILIPPINE ISLANDS (259)

PMG	26.60	130 eP	27 16.00	-2.6		
WB5	28.59	165 eP	27 37.00	0 4		
XAN	30.80	330 P	27 54.40	-1.8		
ASPA	32.12	168 eP	28 06.40	-1.5		
TIY	32.41	339 eP	28 07.50	-2 8		
BJI	33.39	345 eP	28 18.00	-0.7		
LZH	35.02	327 P	28 32.00	-1.0		
HHC	35.51	340 eP	28 36.90	-0.2		
CN2	35.79	358 eP	28 39.00	-0.3		
MDJ	36.67	3 eP	28 48.00	1.3		
MUN	40.90	194 iPc	29 22.90	0.9		
NWAO	41.59	192 iPd	29 29.00	1.4		
	0.6s	11.00nm		4.8mb		
BRS	43.17	145 iP	29 39.00	-1.7		
	0.9s	6.50nm		4.4mb		
		i	29 51.00	43km		
BWA	46.81	155 eP	30 10.60	0.9		
HYB	47.87	286 eP	30 19.50	1.1		
TTA	77.21	27 eP	33 34.70	1.4		
KDC	78.43	33 eP	33 41.00	1.1		
		e	33 53.00	40km		
IMA	78.60	24 eP	33 42.30	1.4		
	0.8s	7.10nm		4.7mb		
PMR	80.31	29 eP	33 50.30	0.3		
	0.8s	18.80nm		5.1mb		
		i	34 02.60	41km		
FBA	80.97	26 eP	33 53.80	0.3		
KEV	86.03	340 eP	34 19.00	-0.2		
INK	86.31	22 eP	34 22.00	1.4		
SOD	86.67	338 iP	34 21.90	-0.5		
PRNI	87.59	300 e(P)	34 28.00	0.4		
MBH	87.77	300 ePc	34 30.00	1.6		
SUF	87.89	333 iP	34 28.40	0.1		
	0.7s	14.80nm		5.4mb		
MBC	87.92	13 eP	34 30.00	1 7		
	0.9s	11.00nm		5.1mb		
NUR	89.11	331 iP	34 34.50	0.3		
	0.7s	13.30nm		5 4mb		
NB2	95.10	334 P	34 59.40	-2.6		
	0.7s	1.90nm		4.6mb		
S.D. = 1.4 on 29 of 29 obs.						

* DEC 15, 1989 22h 21m 05.05± 0.54s
7.930 N ± 9.8km 126.689 E ±11.7km
DEPTH = 43.7km (2 depth phases)
4.7mb (4 obs.)
MINDANAO, PHILIPPINE ISLANDS (259)

QIZ	19.73	306 eP	25 34.10	0.0		
CHTO	29.03	295 eP	27 03.00	-0.4		
		e	27 15.00	46km		
BJI	33.33	345 eP	27 40.00	-1.0		
SNY	33.87	356 eP	27 45.20	-0.4		
MDJ	36.63	3 eP	28 09.70	0.6		

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MUN     40.93 194 eP     28 44.00   -1.0
BRS     43.25 145 iPd    29 04.70    0.5
        0.9s      3.00nm          4.0mb
                  i      29 16.30   41km
BWA     46.88 155 eP     29 40.80    7.8X
CAN     47.89 155 eP     29 50.50    9.5X
GBA     48.65 281 P      29 47.00   -0.1
WMQ     49.32 323 eP     29 52.60    0.6
KDC     78.44  33 P      33 03.00    0.3
PMR     80.31  29 P      33 11.70   -1.0
        0.7s      8.72nm          4.8mb
PRNI    87.50 300 eP     33 51.00    1.1
MBH     87.68 300 ePc    33 52.00    1.3
MBC     87.89  13 eP     33 51.50    0.6
        1.0s      7.00nm          4.9mb
NB2     95.03 334 P      34 23.20   -1.1
        0.9s      2.10nm          4.6mb
     S.D. = 0.9  on  15 of  17 obs.
-------------------------------------
   DEC 15, 1989  22h 55m 36.44± 0.64s
   37.457 N ± 5.5km   22.126 E ± 7.9km
   DEPTH =  10.0km  (geophysicist)
 SOUTHERN GREECE                (368)
      ML 3.7 (THE), 3.3 (ATH).

ITM     0.32 210 iPgd    55 42.30   -0.8
VLI     0.98 138 ePb     55 55.50    0.4
ATH     1.36  67 iPbc    56 01.80    0.4
                 eSb     56 20.40
VLS     1.41 301 ePb     56 03.50    1.3
AGG     1.57   6 eP     56 04.40    0.0
VAM     2.64 140 ePg     56 24.80    5.0X
LIT     2.66   6 eP     56 20.00   -0.1
                 eS      57 08.50
KZN     2.86 355 ePb     56 27.00    4.0X
GRG     3.50   3 eP     56 31.50   -0.5
VAY     3.87   5 ePn    56 36.60   -0.7
     S.D. = 0.8  on   8 of  10 obs.
-------------------------------------
*  DEC 15, 1989  23h 26m 23.97± 0.62s
    8.264 N ±10.8km  126.442 E ±25.9km
   DEPTH =  33.0km  (normal)
   4.9mb (  4 obs.)
 MINDANAO, PHILIPPINE ISLANDS   (259)

SSE     23.24 349 eP     31 31.00    1.7
WB5     29.03 164 eP     32 25.50    2.1
ASPA    32.56 167 P      32 53.20   -1.3
BJI     32.95 345 eP     32 57.00   -0.6
SNY     33.52 356 eP     33 02.60    0.0
CN2     35.41 359 eP     33 18.40   -0.4
MDJ     36.32   4 Pd     33 27.50    1.0
GTA     39.13 327 eP     33 51.00    0.7
BRS     43.67 145 eP     34 08.00  -19.6X
TTA     77.02  27 P      38 16.00    0.8
IMA     78.39  24 P      38 22.00   -0.7
PMR     80.13  29 P      38 31.00   -1.0
        0.9s     16.67nm          5.0mb
INK     86.08  22 eP     39 02.00   -0.4
SUF     87.41 333 eP     39 08.40   -0.6
        0.6s      4.50nm          4.9mb
MBC     87.62  13 eP     39 10.00    0.2
        0.8s      6.00nm          4.9mb
                  pP     39 21.50   37kmX
NUR     88.62 331 eP     39 14.60   -0.2
HFS     93.89 332 eP     39 38.00   -1.3
        0.4s      0.70nm          4.4mb
     S.D. = 1.1  on  16 of  17 obs.
-------------------------------------
%  DEC 15, 1989  23h 33m 01.23± 0.76s
   44.057 N ± 6.1km    7.974 E ± 5.3km
   DEPTH =  10.0km  (geophysicist)
 NORTHERN ITALY                 (545)
      ML 2.0 (GEN).

IMI     0.16 203 P       33 04.97    0.0
                 S       33 07.22
FIN     0.23  48 P       33 06.30    0.2
                 S       33 09.48
ROB     0.25 343 P       33 06.61    0.1
                 S       33 10.10
ENR     0.43 293 P       33 10.09    0.0
                 S       33 15.99
STV     0.50 292 P       33 11.27   -0.2
                 S       33 18.26
PCP     0.64  40 P       33 13.79   -0.2
PZZ     0.77 306 P       33 16.55    0.2
                 S       33 26.05
     S.D. = 0.2  on   7 of   7 obs.
-------------------------------------
   DEC 15, 1989  23h 52m 48.69± 0.84s
   37.442 N ± 7.2km   22.169 E ± 9.6km
   DEPTH =  10.0km  (geophysicist)
 SOUTHERN GREECE                (368)
      ML 3.3 (ATH).

ITM     0.33 216 iPgd    52 55.20   -0.2
VLI     0.95 139 ePg     53 07.20    0.4
ATH     1.34  66 ePb     53 13.30    0.0
VLS     1.45 301 ePb     53 14.30   -0.7
AGG     1.58   5 eP     53 15.50   -1.4
NEO     2.04  24 ePn    53 21.80   -1.7
VAM     2.61 141 ePb     53 37.10    5.5X
LIT     2.67   5 eP     53 33.00    0.5
KZN     2.88 354 ePb     53 38.10    2.6
GRG     3.51   3 eP     53 46.00    1.5
VAY     3.89   4 ePn    53 48.40   -1.3
SKO     4.56 353 ePn     54 03.00    3.7X
     S.D. = 1.5  on  10 of  12 obs.
-------------------------------------
?  DEC 16, 1989  00h 11m 30.89± 2.56s
    6.013 N ±45.1km  124.706 E ±28.3km
   DEPTH =  33.0km  (normal)
   4.8mb (  2 obs.)
 MINDANAO, PHILIPPINE ISLANDS   (259)

SSE     25.17 353 P      16 54.50   -0.3
                 i       17 04.00
BJI     34.74 348 eP     18 20.50    0.5
SHL     36.91 305 iP     18 38.70   -0.2
                 iS      24 35.00
IMA     81.13  24 P      23 44.40    0.0
PMR     82.92  29 P      23 52.00   -1.5
        0.8s      6.03nm          4.7mb
INK     88.79  21 eP     24 24.00    1.6
MBC     90.18  12 eP     24 32.50    3.7X
        0.8s      5.00nm          4.8mb
BCAO   105.56 276 iPKPd   30 00.20    6.8X
        0.5s      5.00nm
     S.D. = 1.3  on   6 of   8 obs.
-------------------------------------
   DEC 16, 1989  00h 33m 36.66± 0.22s
    8.431 N ± 4.0km  126.942 E ± 5.3km
   DEPTH =  36.7km  (  8 depth phases)
   5.3mb ( 23 obs.)  5.4Msz (  8 obs.)
 MINDANAO, PHILIPPINE ISLANDS   (259)

DAV      1.90 226 iPc+    34 10.70    3.4X
        1.7s  ********nm
QCP      8.43 318 eP      35 44.00    4.6X
TSM      9.76 245 ePc     36 03.30    5.6X
BAG     10.07 323 eP      36 03.00    0.8
MKS     15.47 209 ePc     37 20.00    6.0X
ANP     17.44 343 iPc     37 40.00    1.0
                 iS      41 02.00
JAY     17.51 128 ePd     37 39.20   -0.6
QZH     18.25 335 iPc     37 47.00   -1.9
        8.0s      5.80nm          2.8mb X
     Z  17s     10.30um          5.1Msz
     N  15s      9.70um
                  sS     41 13.50
GUMO    18.32  72 eP      37 50.00    0.2
GUA     18.35  72 eP-     37 49.80   -0.4
HKC     18.47 320 P       37 51.00   -0.6
KUPT    18.76 190 eP      38 04.00    8.8X
        0.8s    166.90nm          5.3mb
                  eS      41 39.00
GZH     19.56 320 eP      38 02.00   -2.5
     Z  16s     13.40um
     N  13s      5.80um
     E  14s     13.60um
QIZ     19.65 304 P       38 03.80   -1.7
     N  15s     11.90um
     E  14s     12.40um
                  sP      38 17.50
KHKI    20.15 214 ePd     38 12.50    1.8
                  e       43 53.00
TRT     21.45 222 iPc     38 24.50    0.4
SSE     23.18 347 Pd      38 41.50    0.5
        1.0s    101.00nm          5.3mb
     N  13s      5.20um
     E  12s      6.10um
                  i       38 51.70
                  pP      39 12.00 153kmX
                  S       42 54.00
                  sS      43 52.00
KNA     24.09 176 eP      38 50.00    0.0
KGM     24.36 256 ePd     38 55.20    2.5
NJ2     24.68 343 Pc      38 56.40    0.9
        9.0s      3.40nm          2.9mb X
     Z  18s      0.60um          4.1MszX
WHN     24.95 334 iPc     38 58.00   -0.2
        9.0s      2.19nm          2.7mb X
     Z  20s      6.90um          5.2Msz
     N  14s      7.39um
     E  16s     12.40um
                  PP      39 35.50
                  S       43 15.00
IPM     26.03 263 ePc     39 10.30    1.8
        0.8s     64.60nm          5.3mb
GYA     26.30 315 iPc     39 11.00    0.0
     Z  16s      7.50um          5.3MszX
     N  13s     10.70um
     E  13s      3.50um
PMG     26.82 131 eP      39 13.00   -2.7
NNT     27.06 281 eP      39 20.00    2.1
NST     27.17 288 iPc     39 20.60    1.8
KMI     28.42 309 Pc      39 30.00   -0.4
     Z  18s     16.40um          5.7Msz
                  sS      44 28.00
TIA     29.07 344 eP      39 34.80   -1.0
        9.0s      1.40nm          2.7mb X
     Z  18s      3.90um          5.1Msz
     N  12s      3.20um
     E  12s      4.90um
                  S       44 25.00
WB5     29.07 166 eP      39 35.80   -0.2
                  i       39 41.30   19kmX
MBL     30.22 193 eP      39 45.00   -1.3
XAN     30.41 330 P       39 45.50   -2.4
     N  12s      3.30um
     E  12s      3.90um
DL2     30.72 352 Pc      39 52.00    1.6
        7.0s      1.40nm          2.9mb X
     Z  16s      5.40um          5.3MszX
     N  12s      5.80um
     E  11s      3.30um
                  S       44 53.00
CD2     31.12 319 eP      39 50.00   -4.2X
     Z  15s      8.20um          5.5MszX
     N  14s      8.60um
TIY     31.97 338 Pc      40 00.50   -1.1
     Z  16s      7.87um          5.5MszX
     N  14s      5.60um
                  PP      41 13.00
                  S       45 11.00
ASPA    32.62 168 eP      40 08.10    0.8
        0.4s     18.00nm          5.3mb
     Z  19s      4.14um          5.1Msz
                  iS      45 16.30
                  iScS    50 30.80
                  LR      00 43.10
NANU    32.77 200 eP      40 08.00   -0.6
BJI     32.91 345 eP      40 09.00   -0.7
        1.5s     92.00nm          5.4mb
     Z  17s      5.55um          5.3MszX
     N  13s      2.58um
                  eS      45 22.00
SNY     33.39 355 iPc     40 14.00    0.2
        1.2s      0.20nm          2.9mb X
     Z  19s      9.30um          5.5Msz
     N  15s      6.50um
     E  12s      2.70um
                  pP      40 27.00   50kmX
                  PP      41 22.00
                  S       45 28.50
CTA     34.12 146 eP      40 25.00    4.6X
                  iS      45 18.00
WARB    34.41 180 eP      40 22.00   -0.8
        0.5s     23.00nm          5.4mb
LZH     34.66 326 Pc      40 24.50   -0.6
        8.0s    747.00nm          5.7mb X
     Z  18s     10.30um          5.6Msz
     N  14s      6.60um
                  pP      40 32.70   28km
                  sP      40 36.00
                  PP      41 40.00
                  eS      45 52.00
                  PcS     46 40.00
                  SS      47 48.00
HHC     35.06 339 P       40 28.00   -0.4
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16d 00h

Z 17s 6.90um 5.5MszX
N 13s 4.20um
E 13s 2.50um
PP 41 47.00
S 46 02.50
CN2 35.26 358 Pc 40 30.00 0.2
5.0s 1.30nm 3.1mb X
Z 18s 6.00um 5.4Msz
E 11s 3.40um
sP 40 40.50
PP 41 46.00
eS 46 00.00
BTO 35.40 338 P 40 30.50 -0.8
N 14s 4.10um
E 13s 2.80um
PP 41 49.00
S 46 03.50
sS 46 11.00
MDJ 36.12 3 eP 40 38.00 0.8
Z 16s 4 40um 5.3MszX
N 12s 3.20um
sP 40 52.00
S 46 16.00
HNR 37.35 118 P 41 01.00 13.1X
SHL 37.44 301 iP 40 49.00 0.3
iS 46 35.00
GTA 39.26 326 iPc 41 03.10 -0.7
7.0s 1.50nm 2.9mb X
Z 18s 8.80um 5.6Msz
E 13s 5.20um
PP 42 38.00
S 47 04.50
COOL 39.48 188 eP 41 00.70 -4.8X
LSA 39.64 307 iP 41 08.00 0.5
Z 13s 1.90um 5.1MszX
N 13s 1.20um
E 13s 0.80um
S 47 06.50
sS 47 26.00
BAL 40.04 194 eP 41 10.00 -0.1
0.4s 10.00nm 4.9mb
RMQ 40.66 149 eP 41 14.00 -1.3
KLB 40.75 192 eP 41 15.00 -0.9
MUN 41.47 194 eP 41 23.50 1.7
NWAO 42.15 192 eP 41 28.00 0.6
0.9s 43.00nm 5.2mb
RKG 43.30 192 eP 41 43.00 6.2X
BRS 43.52 146 iPc 41 38.00 -0.7
0.5s 8.00nm 4.7mb
e 41 50.00 43km
e 43 24.00
iS 48 02.00
e 49 56.00
CMS 43.61 156 eP 41 38.00 -1.3
ADE 44.57 166 ePc 41 47.10 0.0
0.6s 28.00nm 5.3mb
BWA 47.23 156 eP 42 08.90 0.8
HYB 47.89 286 ePc 42 13.00 -0.6
eS 49 08.00
CAN 48.24 156 eP 42 16.50 0.4
GBA 48.80 281 P 42 20.50 -0.1
KOD 48.82 276 eP 42 21.40 0.2
WMQ 49.08 323 P 42 17.50 -5.0X
Z 14s 8.70um 5.9MszX
N 14s 4.40um
E 14s 5.40um
sS 49 44.00
DZM 49.18 129 iPc 42 23.00 -0.5
NDI 50.84 300 iPc 42 34.00 -2.1
0.6s 80.00nm 5.9mb
eS 49 48.00
BOM 53.43 287 eP 42 54.00 -1.6
eS 49 47.50
MAIO 66.90 306 iPc 44 27.00 -0.8
SVW 76.59 29 eP 45 27.20 2.2
TTA 76.65 27 P 45 27.00 1.7
1.2s 26.52nm 5.1mb
KER 76.92 303 eP 45 26.00 -1.5
TAB 77.48 307 iP+ 45 31.00 0.4
RYD 77.78 293 eP 45 31.50 -0.8
IMA 78.03 24 eP 45 35.00 2.0
1.0s 13.80nm 4.9mb
SLY 78.21 305 ePd 45 33.50 -0.9
eS 55 31.00
BHD 79.23 302 ePd 45 41.00 1.0
eS 55 39.00
PMR 79.75 29 eP 45 42.70 0.5
1.0s 30.00nm 5.2mb
KMSA 80.07 289 eP 45 43.30 -1.6
MSL 80.08 305 ePd 45 44.00 -0.5
eS 55 44.00
FBA 80.41 26 P 45 46.00 0.3
0.8s 10.34nm 4.9mb
KVT 85.20 311 iP 46 11.20 0.3
KEV 85.58 340 iP 46 14.70 2.6
e 56 33.30
e 16 47.30
INK 85.74 22 eP 46 14.00 1.0
1.5s 79.00nm 5.7mb
HLBJ 86.12 302 Pd 46 14.80 -0.9
SOD 86.23 338 iP 46 17.00 1.6
i 46 27.50 33km
SHMJ 86.49 302 Pd 46 19.20 1.8
MASJ 86.66 301 Pd 46 17.60 -0.8
WAJH 86.68 296 eP 46 19.30 0.9
HITJ 86.83 299 Pd 46 18.20 -1.1
KAS 86.87 311 iPc 46 20.70 1.5
AAE 86.92 279 eP 46 20.00 -0.2
DSI 86.97 301 ePc 46 20.00 0.3
ZNT 87.17 302 eP 46 21.00 0.3
MBC 87.35 13 ePc 46 22.20 1.5
1.4s 134.00nm 6.0mb
SUF 87.48 333 eP 46 22.00 0.4
0.6s 9.80nm 5.2mb
HQL 87.58 299 eP 46 23.50 0.8
MBH 87.65 300 iPc 46 23.50 0.5
BBTK 87.86 310 eP 46 19.00 -5.0X
NUR 88.72 331 iP 46 27.30 -0.2
0.8s 57.20nm 5.9mb
i 46 40.00 42km
e 56 56.00
e 17 06.00
ALT 90.01 309 eP 46 32.00 -2.2
ELL 90.60 307 eP 46 37.00 0.0
KHL 90.60 309 eP 46 35.00 -1.9
VRI 91.06 317 eP 46 39.50 0.7
e 06 46.00
UPP 92.26 332 iP 46 44.90 1.0
DAG 92.67 353 eP 46 46.00 0.4
HFS 93.98 333 eP 46 51.10 -0.8
0.7s 2.60nm 4.8mb
Z 16s 1.39um 5.5MszX
LR 30 33.00
NB2 94.69 334 P 46 53.80 -1.5
0.9s 14.20nm 5.4mb
VAY 95.12 313 eP 46 55.70 -1.8
SKO 95.75 314 eP 47 02.00 1.6
KSP 96.23 323 ePc 47 02.30 -0.2
e 47 15.00 42km
PRU 97.59 323 eP 47 09.00 0.4
e 47 19.50 33km
BRG 97.60 324 iP 47 09.20 0.6
1.6s 28.00nm 5.5mb
i 47 20.60 36km
CLL 97.97 325 iPd 47 10.30 0.1
2.4s 115.00nm 6.0mb
Z 17s 2.00um 5.7MszX
i 47 21.90 37km
KHC 98.50 322 iPc 47 13.00 0.2
Z 16s 2.10um 5.7MszX
N 16s 1.20um
E 16s 1.60um
MOX 99.04 324 e(P) 47 15.00 -0.1
KBA 99.46 321 eP 47 16.50 -0.9
e 07 24.00
EDM 100.28 32 ePdiff47 25.00 4.3X
KIC 129.64 285 (PKP) 52 47.90 3.3X
UPA 148.46 57 ePKPc 53 25.20 6.8X
1.6s 286.67nm
CNCB 163.23 121 PKP 53 43.00 5.2X
LPB 163.26 120 PKP 53 43 00 5.3X
ZOBO 163.36 119 PKP 53 35.00 -3.0X
1.0s 13.00nm
CCH 164.46 126 ePKP 53 40.00 1.3
S.D. = 1.2 on 106 of 124 obs.

DEC 16, 1989 00h 53m 45.06± 0.22s
8.396 N ± 3.8km 126.848 E ± 5.9km
DEPTH = 29.5km (3 depth phases)
5 4mb (31 obs.) 5.5Msz (3 obs.)
MINDANAO, PHILIPPINE ISLANDS (259)

DAV 1.81 224 iPc 54 19.00 4.3X
TSM 9.66 245 ePd 56 12.90 7.7X
BAG 10.04 323 eP 56 17.00 6.3X
KKM 10.80 258 ePc 56 28.00 7.0X
1.3s 109.50nm 5.9mb
MKS 15.40 209 eP 57 23.00 1.0
JAY 17.56 128 ePc 57 51.20 1.7
OZH 18.24 335 eP 57 54.00 -3.8X
Z 16s 7.50um
N 14s 5.40um
S 01 18.00
KUPT 18.71 190 eP 58 13.00 9.4X
0.9s 365.00nm 5.6mb
eS 01 50.00
OIZ 19.59 304 P 58 13.10 -0.9
N 15s 8.20um
E 14s 10.00um
sS 01 59.00
KHKI 20.07 214 eP 58 20.10 1.1
e 04 10.00
TRT 21.37 222 ePd 58 32.50 0.1
0.9s 72.90nm 5.1mb
MTN 21.53 169 eP 58 32.50 -1.5
SSE 23.19 348 Pc 58 50.40 0.0
1.2s 484.00nm 5.9mb
N 10s 4.10um
i 59 04.00 57kmX
PP 59 36.00
S 03 03.00
sS 03 59.00
KNA 24.07 175 eP 58 59.00 0.1
KGM 24.26 256 eP 59 04.50 3.6X
WHN 24.94 334 eP 59 06.70 -0.6
IPM 25.93 263 ePd 59 20.20 3.4X
1.0s 64.40nm 5.2mb
NST 27.09 288 iPc 59 29.70 2.3
PPI 27.79 253 e(P) 59 35.20 1.4
TSRJ 28.28 16 eP 59 30.40 -7.5X
PSI 28.35 260 ePc 59 41.50 2.7
CHG 28.99 294 iPc 59 46.00 1 4
0.9s 60.92nm 5.3mb
CHTO 28.99 294 ePc 59 45.00 0.5
WB5 29.06 165 eP 59 43.80 -1.3
i 59 51.00 25km
TIA 29.07 344 eP 59 43.80 -1.3
CHJJ 29.67 20 eP 59 53.90 3.4X
MBL 30.17 193 eP 59 55.70 0.6
XAN 30.40 330 P 59 55.00 -2.0
DL2 30.74 352 eP 00 01.50 1.6
NIIJ 30.76 19 eP 00 01.60 1.5
CD2 31.08 319 eP 00 01.10 -2.0
TIY 31.97 338 Pc 00 09.70 -1.1
Z 16s 6.70um 5.4MszX
N 14s 4.80um
ASPA 32.60 168 eP 00 17.30 0.9
NANU 32.70 200 eP 00 17.00 -0.2
0.5s 10.00nm 5.0mb
BJI 32.92 345 eP 00 18.00 -1.0
1.2s 138.00nm 5.7mb
Z 14s 4.40um 5.3MszX
N 11s 2.33um
eS 05 38.00
SNY 33.42 356 Pc 00 23.10 -0.2
1.2s 0.20nm 2.9mb X
Z 18s 7.50um 5.4Msz
N 13s 4.50um
E 13s 2.80um
sP 00 37.50
S 05 35.00
WARB 34.37 180 eP 00 30.00 -1.7
0.4s 9.00nm 5.1mb
LZH 34.64 326 eP 00 33.50 -0.6
1.5s 66.00nm 5.3mb
Z 16s 8.00um 5.6MszX
N 13s 5.00um
pP 00 43.00 32km
HHC 35.06 340 P 00 36.80 -0.8
BTO 35.40 338 eP 00 40.60 0.1
MRRJ 36.13 18 eP 00 46.80 0.3
MDJ 36.16 3 Pc 00 47.00 0.3
HOOJ 36.82 20 eP 00 53.30 1.0
SHL 37.38 302 iP 00 58.00 0.5
iS 06 52.00
KUSJ 37.95 21 eP 01 02.10 0.3
ASAJ 38.15 19 eP 01 04.00 0.5
OLP 38.65 155 eP 01 06.00 -1.9
GTA 39.24 326 eP 01 11.60 -1.2
1.4s 0.10nm 2.4mb X
Z 20s 6.70um 5.5Msz

E 14s 3.90um
COOL 39.44 188 eP 01 14.00 -0.4
0.6s 15.00nm 4.9mb
LSA 39.59 307 P 01 17.00 0.7
E 12s 0.64um
eS 07 21.00
BAL 39.98 194 eP 01 19.00 0.1
0.8s 42.00nm 5.2mb
RMO 40.68 149 eP 01 24.00 -0.7
MUN 41.41 194 eP 01 31.00 0.4
1.0s 80.00nm 5.4mb
NWAO 42.10 192 eP 01 36.00 -0.2
1.0s 80.00nm 5.4mb
RKG 43.25 192 eP 01 41.90 -3.7X
BRS 43.55 146 iPc 01 45.80 -2.3
1.0s 10.00nm 4.5mb
i 01 58.80 48kmX
e 03 33.00
CMS 43.62 156 eP 01 46.00 -2.6
ADE 44.56 166 iPc 01 57.10 0.8
1.1s 60.76nm 5.4mb
BWA 47.24 156 eP 02 17.20 -0.3
HYB 47.81 286 eP 02 22.00 -0.3
CAN 48.25 156 eP 02 26.00 0.6
CNB 48.39 155 eP 02 27.00 0.4
GBA 48.71 281 P 02 29.90 0.7
WMO 49.05 323 P 02 31.00 -0.5
Z 14s 6.80um 5.8MszX
N 15s 3.30um
E 13s 4.00um
ScS 12 20.00
NDI 50.78 300 eP 02 42.00 -2.9X
eS 09 06.50
KSH 54.88 313 eP 03 16.50 1.0
MAIO 66.84 306 eP 04 36.00 -0.7
0.7s 9.53nm 5.0mb
TTA 76.72 27 eP 05 35.90 0.8
KER 76.86 303 eP 05 35.00 -1.6
TAB 77.43 307 eP+ 05 40.00 0.4
KDC 77.96 33 e(P) 05 42.20 0.3
IMA 78.10 24 eP 05 43.40 0.7
1.3s 50.00nm 5.4mb
SLY 78.15 305 ePd 05 42.00 -1.4
eS 15 37.00
BHD 79.17 302 ePd 05 50.00 1.0
eS 15 45.00
PMR 79.82 29 eP 05 51.80 -0.2
1.0s 67.50nm 5.6mb
MSL 80.02 305 Pd 05 54.00 0.4
eS 15 58.00
FBA 80.48 26 eP 05 55.20 -0.3
TOA 81.23 28 eP 06 00.70 1.2
KVT 85.15 311 iP 06 21.20 1.2
KEV 85.58 340 iP 06 23.40 1.9
INK 85.81 22 eP 06 23.00 0.3
1.2s 50.00nm 5.6mb
HLBJ 86.06 302 Pd 06 24.10 -0.7
SOD 86.23 338 iP 06 25.00 0.2
SALJ 86.59 302 Pd 06 26.40 -1.0
MASJ 86.60 301 Pd 06 26.90 -0.5
KAS 86.82 311 eP 06 29.00 0.7
DSI 86.91 301 eP 06 29.00 0.2
ZNT 87.11 302 eP 06 30.00 0.2
MBC 87.40 13 eP 06 31.00 0.6
1.1s 114.00nm 6.0mb
AQBJ 87.45 300 Pd 06 30.20 -1.2
SUF 87.47 333 eP 06 29.60 -1.3
0.4s 5.60nm 5.2mb
MBH 87.59 300 e(P) 06 32.00 -0.1
BBTK 87.81 310 eP 06 33.00 -0.1
NUR 88.70 331 eP 06 36.00 -0.8
0.9s 37.20nm 5.7mb
ALT 89.96 309 eP 06 41.00 -2.4
NAI 90.23 269 iP 06 42.00 -3.2X
1.3s 38.46nm 5.5mb
ELL 90.55 307 eP 06 45.00 -1.2
KHL 90.55 309 eP 06 44.00 -2.1
UPP 92.24 332 iP 06 53.30 0.1
DAG 92.69 353 iPd 06 54.80 -0.3
1.2s 42.19nm 5.7mb
HFS 93.96 333 eP 06 59.30 -1.9
1.1s 33.50nm 5.7mb
KRA 94.28 322 eP 07 01.90 -0.9
Z 18s 1.80um 5.6Msz
N 18s 1.90um
NB2 94.68 334 P 07 03.10 -1.5
1.1s 10.10nm 5.2mb

VAY 95.07 313 eP 07 05.00 -1.7
SKO 95.70 314 eP 07 10.50 0.9
KSP 96.20 323 eP 07 12.00 0.3
ZST 96.65 321 e(P) 07 16.10 2.3
PRU 97.56 323 eP 07 17.50 -0.3
1.2s 16.50nm 5.4mb
N 18s 2.10um
E 18s 1.10um
BRG 97.57 324 eP 07 18.80 1.0
1.5s 25.00nm 5.5mb
e 07 28.80 31km
CLL 97.94 325 eP 07 19.00 -0.5
1.3s 17.00nm 5.4mb
KHC 98.47 322 iPd 07 22.80 0.8
1.2s 10.00nm 5.2mb
PNT 98.56 37 eP 07 24.00 1.6
MOX 99.01 324 eP 07 25.00 0.6
FFC 105.05 27 ePKP 12 12.00 6.1X
1.3s 21.00nm
UPA 148.56 57 ePKPd 13 32.20 4.2X
1.3s 253.85nm
PORP 150.54 27 PKP 13 31.00 0.1
CPD 150.87 26 PKP 13 35.00 3.6X
CNCB 163.30 121 PKP 13 50.00 2.7
LPB 163.33 120 ePKP 13 49.00 1.8
ZOBO 163.42 120 PKP 13 48.00 0.5
1.0s 12.50nm
S.D. = 1.2 on 104 of 120 obs.

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* DEC 16, 1989 01h 05m 03.78± 0.70s
7.547 N ±12.2km 127.056 E ±21.1km
DEPTH = 33.0km (normal)
4.9mb (3 obs.)
PHILIPPINE ISLANDS REGION (248)

KNA 23.21 176 eP 10 10.50 1.6
LOE 26.56 294 eP 10 42.00 1.1
WB5 28.19 165 eP 10 54.50 -1.1
ASPA 31.73 168 eP 11 26.10 -1.0
MUN 40.64 194 eP 12 42.00 -0.5
NWAO 41.32 193 eP 12 48.00 -0.1
0.7s 21.00nm 5.0mb
BWA 46.38 155 eP 13 30.30 1.3
GBA 49.08 281 Pd 13 49.20 -1.1
0.8s 5.00nm 4.6mb
KEV 86.44 340 eP 17 35.00 -9.0X
SUF 88.32 333 eP 17 52.90 -0.2
NUR 89.54 331 eP 17 59.90 0.9
DAG 93.55 353 iPd 18 16.50 -0.7
0.5s 4.93nm 5.2mb
KIC 129.97 285 PKP 24 12.90 0.0
LIC 130.28 285 PKP 24 13.20 -0.2
S.D. = 1.0 on 13 of 14 obs.

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* DEC 16, 1989 01h 06m 54.90± 1.82s
34.513 N ±12.6km 22.958 E ±15.7km
DEPTH = 33.0km (normal)
4.7mb (1 obs.)
MEDITERRANEAN SEA (400)
MD 4.2 (HLW). ML 3.7 (ATH).

VAM 1.35 48 ePb 07 18.30 0.6
VLI 2.20 360 ePn 07 32.00 2.2
NPS 2.31 70 ePn 07 33.50 2.1
ITM 2.79 343 ePn 07 45.40 7.2X
APE 3.30 39 ePn 07 44.20 -1.3
ATH 3.51 10 ePn 07 48.50 0.1
KAP 3.61 72 ePn 07 51.30 1.4
SMG 4.48 43 ePn 08 02.50 0.4
AGG 4.53 354 eP 08 03.80 0.8
NEO 4.79 2 ePn 08 06.30 -0.3
LIT 5.59 356 eP 08 16.50 -1.4
KZN 5.86 351 ePn 08 21.30 -0.5
PLG 5.86 4 ePn 08 21.50 -0.3
ELL 6.08 67 ePn 08 23.40 -1.6
GRG 6.45 356 eP 08 27.50 -2.5X
KHL 6.52 52 ePn 08 29.20 -1.8
OHR 6.80 346 ePg 09 27.10 52.1X
eSg 09 44.30
KOT 8.79 119 eP 09 03.50 0.8
eS 10 36.00
DSI 10.83 102 eP 09 29.00 -1.7
BURJ 10.98 98 Pd 09 35.00 2.2
PRNI 10.99 109 eP 09 31.00 -1.9
MASJ 11.05 101 Pd 09 34.00 0.2
MBH 11.15 112 eP 09 35.00 -0.1
eS 11 30.00

KHC 16.17 337 P 10 46.50 5.3X
MBC 66.97 351 eP 17 54.00 8.1X
1.0s 7.00nm 4.7mb
S.D. = 1.4 on 20 of 25 obs.

& DEC 16, 1989 01h 47m 00.75s
58.978 N 154.137 W
DEPTH = 116.3km
ALASKA PENINSULA (12)
<AGS-P>.

CDD 0.26 100 iP 47 16.68 0.8
eS 47 29.86
PDB 0.81 358 iP 47 19.76 -1.2
eS 47 35.70
CKL 2.40 21 iP 47 38.50 -1.3
CRP 2.50 23 eP 47 39.93 -1.2
PMS 3.23 43 eP 47 48.91 -1.8
SKT 3.28 22 eP 47 49.53 -1.8
PWA 3.42 36 eP 47 51.11 -2.1
PME 3.68 42 eP 47 54.07 -2.6
GLI 4.02 59 eP 47 58.54 -2.9
KLU 4.81 55 eP 48 09.59 -2.6
TOA 5.03 48 eP 48 12.83 -2.4
GLB 5.71 60 eP 48 22.13 -2.4
BALM 6.26 66 eP 48 29.82 -2.4
HDA 6.43 29 eP 48 30.37 -3.9
14 obs. associated

DEC 16, 1989 02h 40m 47.48± 0.23s
3.610 S ± 4.0km 131.180 E ± 5.0km
DEPTH = 25.2km (2 depth phases)
5.5mb (26 obs.) 5.1Msz (1 obs)
WEST IRIAN REGION (196)

AAI 2.98 268 e(P)d 41 38.00 3.8X
eS 41 58.50
MTN 9.18 180 eP 42 48.00 -13.4X
JAY 9.57 84 ePd 43 07.00 0.1
KUPT 9.94 229 eP 42 20.00 -51.8X
0.9s 535.30nm
MKS 11.78 262 ePc 43 44.60 7.5X
KNA 12.29 191 iPd 43 40.00 -3.9X
eS 45 53.00
MNDI 12.69 102 eP 43 45.00 -4.4X
TSM 15.24 301 eP 44 23.20 0.5
KHKI 16.19 252 eP 44 36.10 1.1
e 47 43.00
WB5 16.47 169 eP 44 32.70 -5.9X
i 44 34.80
eS 47 31.00
KKM 17.76 303 ePd 44 56.20 1.3
1.2s 756.70nm 5.7mb
TRT 18.89 257 ePc 45 08.20 -0.6
ASPA 20.11 173 iPd 45 20.90 -1.6
0.9s 364.00nm 5.7mb
Z 23s 2.15um 4.4MszX
eS 48 55.80
LR 54 21.80
MBL 20.64 211 eP 45 26.00 -1.9
0.5s 51.00nm 5.2mb
CTA 22.01 139 iPc 45 41.00 -0.8
1.0s 200.00nm 5.5mb
iS 49 43.00
BAG 22.48 333 eP 45 46.50 -0.2
1.1s 268.35nm 5.6mb
eS 49 52.00
WARB 22.86 191 iPc 45 51.20 1.0
0.4s 45.00nm 5.3mb
NANU 24.19 217 eP 46 02.50 -0.5
MEKA 25.88 207 eP 46 18.80 -0.4
OLP 26.04 153 eP 46 20.50 -0.1
FORR 27.25 186 iPd 46 32.10 0.5
0.5s 63.00nm 5.5mb
RMO 28.30 145 eP 46 40.00 -1.3
KGM 28.40 281 eP 46 42.00 -0.3
COOL 28.73 198 eP 46 44.00 -1.1
0.7s 33.00nm 5.2mb
HNR 29.15 103 eP 46 45.00 -4.0X
MRWA 29.26 208 eP 46 48.80 -1.1
BAL 30.13 205 eP 46 56.00 -1.7
0.5s 23.00nm 5.3mb
KLB 30.57 203 iPc 47 00.40 -1.1
OIZ 30.77 318 eP 47 01.00 -2.4
N 14s 0.90um
E 14s 1.00um
PPI 30.92 275 ePd 47 06.50 1.7

16d 02h

		0.8s	146.00nm		5.9mb	
CMS		30.97	155 ePc	47 04.50	-0.5	
IPM		31.21	285 ePc	47 08.50	1.2	
		0.9s	85.10nm		5.6mb	
BRS		31.38	141 iPd	47 08.50	-0.2	
			eS	53 00.00		
MUN		31.53	205 iPc	47 08.70	-1.3	
NWAO		31.95	203 eP	47 13.00	-0.7	
		0.5s	18.00nm		5.3mb	
ADE		31.97	168 iPc	47 14.10	0.2	
		0.8s	114.93nm		5.9mb	
PSI		32.84	281 ePd	47 22.50	0.9	
		1.0s	27.60nm		5.1mb	
RKG		33.05	202 iPd	47 28.00	4.8X	
BWA		34.60	154 iPc	47 37.90	1.3	
CAN		35.61	155 iPc	47 45.20	-0.1	
CNB		35.76	154 eP	47 47.00	0.4	
LOE		35.79	307 eP	47 47.50	0.6	
NST		36.21	303 iPc	47 53.00	2.6	
TOO		36.26	161 iPc	47 52.50	1.8	
		0.9s	147.00nm		5.9mb	
WHN		37.58	336 P	48 01.70	-0.1	
		1.0s	0.06nm		2.4mb X	
	Z	24s	0.68um		4.4MszX	
	N	20s	1.89um			
			pP	48 09.20	25km	
GYA		38.16	323 P	48 07.40	0.5	
CHG		38.78	306 iPc	48 13.00	0.9	
		1.0s	92.50nm		5.5mb	
CHTO		38.78	306 eP	48 12.50	0.5	
DZM		38.81	121 iPc	48 11.90	-0.5	
MAT		40.48	9 eP	48 23.00	-2.9	
		0.7s	13.01nm		4.8mb	
TIA		41.74	343 P	48 35.00	-1.2	
XAN		42.93	332 P	48 45.50	-0.6	
CD2		43.16	325 P	48 47.60	-0.4	
TIY		44.65	339 Pd	48 59.50	-0.5	
	Z	23s	1.07um		4.7MszX	
	N	14s	0.50um			
			S	55 26.00		
BJI		45.57	344 eP	49 06.50	-0.7	
		1.0s	61.00nm		5.5mb	
			e	55 50.00		
SNY		45.75	352 Pc	49 07.40	-1.1	
	Z	20s	2.10um		5.1Msz	
	N	20s	1.20um			
	E	16s	0.60um			
LZH		47.04	329 Pc	49 19.50	0.4	
		1.5s	145.00nm		5.8mb	
	Z	24s	0.70um		4.5MszX	
			pP	49 27.00	25km	
			sP	49 31.20		
			i	50 04.50		
CN2		47.48	354 Pc	49 21.40	-0.8	
	Z	24s	1.50um		4.9MszX	
HHC		47.75	340 P	49 24.60	0.1	
MDJ		48.03	358 Pd	49 25.50	-1.0	
BTO		48.07	338 eP	49 26.60	-0.5	
LSA		50.65	314 P	49 48.20	0.7	
GTA		51.64	329 iPc	49 54.00	-0.4	
		1.4s	0.10nm		2.6mb X	
KOD		55.23	285 eP	50 20.00	-1.6	
HYB		55.96	294 iPc	50 25.50	-1.0	
		1.0s	70.00nm		5.6mb	
GBA		55.99	289 P	50 26.50	-0.2	
WMO		61.25	325 iPc	51 03.20	0.2	
		1.0s	0.10nm		2.9mb X	
			eS	59 20.00		
DRV		63.24	176 eP	51 16.00	0.3	
MAIO		77.50	308 iPc	52 44.00	1.0	
PMO		80.31	105 iP	52 59.70	1.2	
		1.2s	50.00nm		5.4mb	
VAH		80.57	105 iP	53 01.80	2.0	
		1.2s	45.00nm		5.4mb	
TPT		80.58	105 iP	53 02.10	2.2	
		1.2s	50.00nm		5.4mb	
RUV		80.81	105 iP	53 03.40	2.3	
		1.2s	45.00nm		5.4mb	
SPA		86.41	180 iPc	53 30.40	1.4	
		1.2s	48.59nm		5.6mb	
TAB		88.15	308 eP	53 39.00	1.1	
BHD		89.28	303 ePc	53 46.00	2.8X	
FBA		89.44	25 eP	53 42.50	-0.8	
MSL		90.53	306 ePd	53 50.00	1.1	
INK		95.30	22 ePc	54 08.70	-1.5	
MBC		98.07	13 eP	54 22.00	-0.6	
		0.7s	5.00nm		5.2mb	

EDM		107.94	35 ePKP	59 14.50	-0.1	
BCAO		112.83	273 iPKPc	59 25.50	0.6	
		0.8s	10.00nm			
SIO		125.80	48 ePKP	59 49.50	0.3	
TUL		126.11	47 ePKP	59 49.70	-0.1	
		1.2s	11.40nm			
KIC		136.01	275 PKP	00 09.56	0.3	
TIC		136.28	276 PKP	00 09.90	0.1	
LIC		136.30	275 PKP	00 10.04	0.2	
ARE		150.00	132 ePKP	00 40.00	6.4X	
		1.1s	89.87nm			
CNCB		152.25	138 PKP	00 40.00	2.7X	
LPB		152.37	137 PKPc	00 46.00	8.7X	
ZOBO		152.53	136 PKP	00 39.70	2.0	
		1.0s	35.00nm			
		S.D. = 1.1	on	78 of	91 obs.	
*	DEC	16, 1989	03h 07m	39.61±	0.85s	
	17.167 N	±11.3km	62.309 W	±	8.3km	
	DEPTH =	33.0km	(normal)			
	LEEWARD ISLANDS				(92)	
	ML 2.4 (FDF).					
SKI		0.44	292 eP	07 49.40	0.0	
			eS	07 55.91		
BPA		0.45	105 eP	07 49.66	0.2	
ANG		0.46	91 eP	07 49.45	-0.1	
PAG		1.28	152 eP	08 01.40	0.0	
			S	08 15.50		
MGG		1.56	142 eP	08 05.50	0.1	
BBL		1.82	154 eP	08 09.00	-0.1	
		S.D. = 0.2	on	6 of	6 obs.	
%	DEC	16, 1989	03h 13m	16.46±	0.76s	
	38.896 N	± 7.5km	27.757 E	±	7.6km	
	DEPTH =	10.0km	(geophysicist)			
	TURKEY				(366)	
IZM		0.63	218 ePg	13 28.50	-0.7	
DST		0.98	43 iPg	13 34.90	-0.2	
			eSg	13 48.90		
EZN		1.45	310 ePn	13 44.00	1.3	
EDC		1.45	3 iPn	13 41.60	-1.1	
BNT		1.46	5 iPn	13 42.70	-0.2	
KHL		1.50	112 ePn	13 43.70	0.2	
ALT		1.84	84 ePn	13 49.00	0.5	
		S.D. = 1.0	on	7 of	7 obs.	
	DEC	16, 1989	04h 06m	26.38±	0.32s	
	8.080 N	± 5.3km	126.824 E	±	8.4km	
	DEPTH =	36.2km	(2 depth phases)			
	5.0mb (	14 obs.)	4.6Msz (	5 obs.)		
	MINDANAO, PHILIPPINE ISLANDS				(259)	
DAV		1.58	232 eP	06 57.00	4.5X	
QCP		8.61	320 eP	08 40.00	8.3X	
BAG		10.28	324 eP	09 01.00	6.2X	
KKM		10.72	260 eP	09 07.50	6.7X	
ANP		17.75	344 eP	10 36.00	3.5X	
QZH		18.52	336 eP	10 40.00	-1.9	
	Z	17s	2.40um			
	N	17s	2.10um			
			eS	14 09.00		
GUMO		18.54	71 eP	10 42.00	-0.3	
GUA		18.57	71 eP	10 42.80	0.1	
		0.9s	134.45nm	5	1mb	
QIZ		19.75	305 eP	10 54.00	-2.3	
	N	17s	5.60um			
	E	17s	3.70um			
			PP	11 14.00		
MTN		21.23	168 eP	11 10.00	-1.6	
SSE		23.50	348 P	11 35.60	1.7	
		1.0s	19.00nm	4.6mb		
	N	14s	0.90um			
	E	12s	1.10um			
			pP	11 52.30	73kmX	
			sP	12 01.50		
			S	15 48.00		
			sS	16 13.00		
			SS	16 50.00		
KNA		23.75	175 eP	11 36.90	0.4	
NJ2		24.98	344 eP	11 50.50	2.3	
	Z	20s	1.20um	4.4Msz		
			sS	16 20.00		
LOE		26 14	293 eP	12 01.00	1.7	
NNT		27.01	282 P	11 57.80	-9.5X	
			eS	16 35.30		

NST		27.16	289 eP	12 09.90	1.3	
WB5		28.76	165 eP	12 19.50	-3.5X	
			e	12 28.10	30km	
CHTO		29.09	294 e(P)	12 23.20	-2.9X	
MAT		30.17	18 eP	12 45.00	9.5X	
			eS	17 59.00		
XAN		30.66	330 P	12 43.40	3.6X	
DL2		31.05	352 eP	12 46.00	2.9	
	Z	15s	0.70um		4.4MszX	
TIY		32.25	338 eP	12 51.50	-2.3	
	Z	20s	1.75um		4.7Msz	
	N	15s	1.60um			
ASPA		32.30	168 eP	12 52.90	-1.4	
		0.6s	8.00nm		4.8mb	
			eS	18 01.50		
NANU		32.40	200 eP	12 56.00	0.9	
BJI		33.22	345 eP	13 00.00	-2.1	
	Z	20s	0.90um		4.5Msz	
	E	14s	0.60um			
			eS	18 16.00		
SNY		33.73	356 eP	13 06.40	-0.1	
	Z	20s	1.50um		4.7Msz	
	N	20s	1.30um			
	E	12s	0.60um			
			S	18 28.00		
WARB		34.06	180 eP	13 09.00	-0.5	
		0.4s	7.00nm		4.9mb	
LZH		34.88	326 eP	13 16.50	-0.3	
	Z	17s	0.70um		4.5MszX	
	N	15s	1.70um			
HHC		35.35	340 P	13 21.60	1.0	
CN2		35.60	358 eP	13 23.40	0.9	
	Z	18s	1.30um		4.7Msz	
	N	13s	1.30um			
			eS	18 55.00		
MDJ		36.48	3 eP	13 30.20	0.3	
	Z	15s	1.30um		4.8MszX	
			S	19 10.00		
SHL		37.53	302 iP	13 38.80	-0.4	
			iS	19 28.50		
MRWA		38.52	195 eP	13 47.60	0.3	
FORR		38.73	178 eP	13 49.00	0.1	
		0.4s	54.00nm		5.7mb	
GTA		39.49	326 P	13 56.10	0.7	
BAL		39.67	194 eP	13 57.00	0.2	
		0.6s	27.00nm		5.2mb	
MUN		41.10	194 eP	14 09.00	0.4	
NWAO		41.79	192 eP	14 15.00	0.8	
		0.9s	29.00nm		5.0mb	
RKG		42.94	192 eP	14 29.00	5.4X	
BRS		43.30	145 iPc	14 26.20	-0.5	
			i	14 38.00	42km	
ADE		44.26	166 eP	14 34.30	-0.1	
BWA		46.96	155 eP	14 56.10	0.3	
CAN		47.97	155 eP	15 04.90	1.1	
GBA		48.75	281 Pd	15 10.90	0.9	
		0.6s	4.40nm		4.7mb	
MAIO		67.01	306 iPd	17 18.80	0.6	
IMA		78.40	24 eP	18 26.00	1.2	
PMR		80.11	29 eP	18 34.00	0.1	
		0.9s	12.50nm		4.9mb	
FBA		80.78	26 eP	18 37.70	0.2	
KEV		85.86	340 eP	19 02.00	-1.4	
INK		86.11	22 eP	19 05.00	0.4	
SOD		86.51	338 eP	19 05.00	-1.6	
MBC		87.72	13 ePc	19 13.50	1.2	
		1.0s	11.00nm		5.1mb	
SUF		87.74	333 ePc	19 12.40	-0.2	
		0.4s	7.30nm		5.3mb	
NUR		88.97	331 eP	19 18.80	0.3	
		0.5s	11.70nm		5.5mb	
DAG		93.00	353 eP	19 36.00	-0.9	
HFS		94.23	333 eP	19 40.70	-2.2	
		0.4s	1.10nm		4.6mb	
	Z	16s	0.31um		4.9MszX	
			LR	04 22.00		
NB2		94.95	334 P	19 43.80	-2.4	
		0.9s	4.30nm		4.9mb	
CNCB		163.15	122 (PKP)	26 42.00	14.5X	
			i	27 25.00		
LPB		163.18	121 ePKP	26 41.00	13.6X	
			e	27 20.00		
ZOBO		163.28	121 ePKP	26 16.00	-11.7X	
"			e	26 28.00		
	S.D. = 1.3		on	46 of	60 obs.	
	DEC	16, 1989	05h 00m	27.64±	0.28s	

44.124 N ± 2.2km 6.766 E ± 2.5km
DEPTH = 10.0km (geophysicist)
FRANCE (538)
ML 3.0 (GEN), 2.9 (LDG).

FOUF	0.41	2	ePg	00	36.21	0.3
			i	00	36.28	
			e(Sg)	00	40.49	
STV	0.42	73	P	00	36.24	0.0
			S	00	41.09	
PZZ	0.45	32	P	00	36.98	0.1
			S	00	42.51	
ENR	0.48	77	P	00	37.40	-0.1
			S	00	43.14	
DOI	0.51	42	P	00	37.90	-0.1
			eSg	00	44.20	
SBF	0.55	118	Pg	00	38.80	0.0
			Sg	00	45.50	
FRF	0.57	189	Pg	00	39.10	-0.1
			Sg	00	45.80	
LRG	0.73	204	Pg	00	42.20	0.2
			Sg	00	52.80	
RRL	0.80	1	P	00	43.18	-0.1
			S	00	53.01	
LMR	0.81	193	Pg	00	43.40	0.0
			Sg	00	54.40	
ROB	0.81	77	P	00	43.50	0.1
			S	00	53.34	
IMI	0.84	104	P	00	43.79	-0.1
			S	00	54.49	
BNI	0.93	356	Pd	00	45.50	0.0
			eSg	00	57.50	
FIN	1.04	85	P	00	47.38	0.1
			S	01	00.09	
RSP	1.09	19	P	00	48.13	0.0
			S	01	01.70	
CKI	1.13	74	Pc	00	48.80	0.0
			eSg	01	03.90	
PCP	1.34	71	P	00	52.73	0.3
			S	01	08.89	
LSD	1.36	12	P	00	53.14	0.3
			S	01	10.30	
LPG	1.37	360	Pg	00	53.70	0.6
			Sg	01	12.30	
LPL	1.39	359	Pg	00	54.10	0.8
ORO	1.73	29	P	00	57.30	-0.7
			eSg	01	18.70	
ORX	1.74	29	P	00	57.13	-1.0
CAF	3.46	285	Pn	01	22.30	-0.3
BGF	3.68	313	Pn	01	25.50	-0.3

S.D. = 0.4 on 24 of 24 obs.

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* DEC 16, 1989 06h 34m 24.04± 0.47s
7.762 N ± 8.3km 126.764 E ±15.1km
DEPTH = 33.0km (normal)
4.7mb (3 obs.)
MINDANAO, PHILIPPINE ISLANDS (259)

DAV	1.36	240	eP	34	53.20	6.4X
QIZ	19.89	306	eP	38	55.50	-0.2
LOE	26.21	294	eP	39	58.50	0.6
WB5	28.47	165	eP	40	18.80	0.4
ASPA	32.01	168	eP	40	51.40	1.7
	0.6s		6.00nm			4.7mb
SNY	34.04	356	eP	41	07.20	0.0
CN2	35.92	358	eP	41	16.80	-6.4X
MDJ	36.80	3	eP	41	31.50	0.9
FORR	38.41	178	eP	41	43.20	-1 0
MUN	40.78	194	eP	42	04.00	0.1
BRS	43.08	145	iPc	42	21.80	-1.0
			i	42	25.00	
INK	86.42	22	eP	47	04.00	-0.2
SOO	86.78	338	eP	47	05.00	-0.9
SUF	88.00	333	eP	47	10.90	-0.9
	0.7s		6.20nm			5.0mb
MBC	88.04	13	eP	47	12.50	0.6
	0.9s		3.00nm			4.6mb
			pP	47	25.00	41kmX

S.D. = 0.9 on 13 of 15 obs.

? DEC 16, 1989 06h 56m 36.21± 0.53s
23.660 S ± 6.0km 63.722 W ± 6.1km
DEPTH = 33.0km (normal)
SALTA PROVINCE, ARGENTINA (129)

SLA	1.94	236	ePd	57	08.40	0.8
CYA	5.12	201	ePc	57	52.60	0.0
CCH	6.64	340	eP	58	15.00	0.6
			S	00	02.00	
CNCB	7.90	329	P	58	32.00	-0.2
LPB	8.20	329	eP	58	55.00	18.8X
			LR	01	48.00	
ZOBO	8.44	330	eP	58	39.00	-0.7
	Z 16s		0.63um			
			LR	01	46.00	
ITB1	8.58	98	e(P)	58	40.50	-0.6
ITB	8.76	99	e(P)	58	44.50	0.9
ITB7	8.82	101	e(P)	58	44.50	0.0
MRA	8.89	191	e(P)	58	44.60	-0.8
BAO	16.82	65	eP	00	42.00	11.0X

S.D. = 0.7 on 9 of 11 obs.

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* DEC 16, 1989 07h 57m 52.89± 1.06s
7.860 N ±13.9km 127.151 E ±16.5km
DEPTH = 33.0km (normal)
4.6mb (4 obs.) 4.2Msz (1 obs.)
PHILIPPINE ISLANDS REGION (248)

DAV	1.74	244	eP	5B	22.60	1.3
BAG	10.65	324	eP	00	27.10	0.6
MTN	20.95	169	eP	02	35.00	-0.5
KNA	23.51	176	eP	03	01.50	0.6
LOE	26.53	293	ePn	03	27.00	-2.6
			eSg	04	09.00	
WB5	28.47	166	eP	03	46.00	-1.2
			i	04	34.00	
QIS	30.78	157	iPd	04	07.60	-0.2
			eS	04	50.00	
ASPA	32.02	168	iPc	04	18.30	-0.4
	0.4s		5.00nm			4.8mb
	Z 20s		0.53um			4.2Msz
			LR	21	04.50	
NANU	32.31	200	eP	04	20.30	-0.9
	0.4s		3.00nm			4.5mb
WARB	33.84	181	eP	04	34.00	-0.5
	0.4s		4.00nm			4.7mb
MUN	40.97	194	eP	05	34.00	-0.3
NWAO	41.64	193	eP	05	39.00	-0.8
ADE	43.97	166	iPd	06	00.10	1.2
BWA	46.63	156	eP	06	22.40	2.4
GBA	49.11	281	P	06	41.00	1.4
	0.4s		0.80nm			4.1mb

S.D. = 1.4 on 15 of 15 obs.

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* DEC 16, 1989 08h 54m 28.65± 0.54s
8.265 N ± 7.8km 127.128 E ±13.3km
DEPTH = 33.0km (normal)
4.8mb (6 obs.)
PHILIPPINE ISLANDS REGION (248)

DAV	1.93	233	eP	55	01.00	1.2
MTN	21.35	169	eP	59	15.00	-0.3
SSE	23.38	347	eP	59	35.40	0.1
	1.0s		9.00nm			4.2mb
			i	59	58.80	
LOE	26.35	293	eP	00	02.00	-1.7
NST	27.39	288	eP	00	15.00	1.7
WB5	28.86	166	eP	00	25.00	-1.5
ASPA	32.42	168	iPd	00	59.10	1.1
	0.3s		11.00nm			5.2mb
SNY	33.57	355	eP	01	07.00	-0.7
WARB	34.24	181	eP	01	13.00	-0.7
	0.5s		14.00nm			5.1mb
MDJ	36.28	3	eP	01	31.50	0.7
FORR	38.90	179	iPd	01	52.30	-0.7
	0.4s		17.00nm			5.2mb
MUN	41.35	194	iPd	02	12.80	-0.4
BRS	43.28	146	iPc	02	30.00	0.9
	0.9s		3.50nm			4.1mb
ADE	44.37	166	eP	02	38.50	0.7
FBA	80.48	26	e(P)	06	30.00	-8.5X
INK	85.83	22	eP	07	07.00	1.2
SOD	86.45	338	eP	07	26.00	17.0X
MBC	87.47	13	eP	07	15.00	1.2
NUR	88.95	331	eP	07	40.00	18.9X
HFS	94.21	333	eP	07	42.80	-2.6
	0.5s		1.00nm			4.5mb

S.D. = 1.3 on 17 of 20 obs.

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* DEC 16, 1989 09h 22m 10.27± 0.91s
37.761 N ± 9.1km 22.700 E ± 9.3km
DEPTH = 5.0km (geophysicist)
SOUTHERN GREECE (368)
ML 2.8 (ATH).

ATH	0.83	75	ePg	22	25.20	-1.6
ITM	0.85	227	ePg	22	26.10	-1.0
VLI	1.06	170	ePn	22	34.30	3.6X
AGG	1.29	347	eP	22	51.50	16.8X
NEO	1.60	15	ePb	22	36.00	-3.3X
VLS	1.72	285	ePb	22	40.50	-0.5
LIT	2.34	356	eP	22	50.50	0.4
VAM	2.64	152	ePn	22	56.00	1.7
KZN	2.64	344	ePb	22	55.30	0.9
PRK	3.17	61	ePg	23	10.50	8.8X
GRG	3.20	356	eP	23	07.50	5.3X
OHR	3.65	337	ePn	23	20.00	11.3X
VRI	8.64	19	ePd	24	07.00	-11.9X

S.D. = 1.6 on 6 of 13 obs.

DEC 16, 1989 10h 24m 44.63± 0.26s
7.976 N ± 4.3km 126.873 E ± 6.6km
DEPTH = 31.0km (11 depth phases)
5.3mb (15 obs.) 5.0Msz (13 obs.)
MINDANAO, PHILIPPINE ISLANDS (259)
CENTROID, MOMENT TENSOR (HRV)
Data Used: GDSN
L.P.B.: 5S, 12C
Centroid Location:
Origin Time 10:24:47.1 2.5
Lat 7.54N 0.24 Lon 127.29E 0.15
Dep 15.0 FIX Half-duration 2.2
Moment Tensor; Scale 10**17 Nm
Mrr= 1.34 0.17 Mtt= 0.84 0.18
Mff=-2.18 0.23 Mrt=-0.01 0.40
Mrf= 0.43 0.73 Mtf=-0.36 0.16
Principal Axes:
T Val= 1.40 Plg=80 Azm=231
N 0.87 7 6
P -2.27 7 97
Best Double Couple:Mo=1.8*10**17
NP1:Strike=194 Dip=39 Slip= 101
NP2: 0 52 81

DAV	1.56	236	iP+	25	16.00	5.5X
OCP	8.72	320	eP	26	39.00	-12.7X
TSM	9.51	247	ePc	27	11.00	8.4X
BAG	10.40	324	eP	27	18.00	3.1X
			eS	29	22.00	
KKM	10.75	260	ePd	27	26.50	6.8X
MKS	15.04	210	iP	28	23.50	6.7X
JAY	17.29	127	ePc	28	47.80	2.3
ANP	17.86	344	eP-	28	54.00	1.4
			iS	32	20.00	
GUMO	18.53	71	e(P)	28	59.00	-1.8
GUA	18.56	71	e(P)	28	55.50	-5.7X
QZH	18.63	336	eP	29	00.00	-2.0
	Z 18s		4.70um			
	N 15s		4.40um			
			S	32	30.00	
HKC	18.77	321	eP	29	01.00	-2.8
			S	32	35.00	
KHKI	19.74	215	eP	29	16.00	1.0
			e	32	35.00	
QIZ	19.85	305	P	29	14.00	-2.1
	N 19s		1.15um			
	E 16s		1.00um			
			PP	29	42.00	
			sS	33	05.00	
GZH	19.86	321	eP	29	16.00	-0.2
	Z 16s		6.00um			
	N 15s		4.00um			
	E 14s		5.20um			
			pP	29	24.20	31km
			S	32	58.00	
MTN	21.11	168	eP	29	28.00	-1.2
SSE	23.61	348	P	29	54.00	0.3
	5.0s		1.00nm			2.6mb X
	Z 20s		3.40um			4.8Msz
	N 12s		1.30um			
	E 12s		3.20um			
			i	30	00.50	23km
			i	30	13.30	
			S	34	09.00	
			i	34	28.00	
			sS	35	10.00	
KNA	23.65	175	eP	29	55.50	1.3
KGM	24.19	257	eP	30	05.00	5.4X
KUMJ	24.71	8	eP	30	05.40	0.9
NJ2	25.09	344	Pc	30	08.00	-0.1
	8.0s		0.70nm			2.3mb X
	Z 18s		3.00um			4.8Msz

16d 10h

	N	11s	1.80um				
	E	14s	2.20um				
			S	34	32.00		
WHN		25.33	334 eP	30	15.00	4.7X	
	Z	20s	4.64um			5.0Msz	
	N	17s	4.71um				
	E	15s	6.61um				
			S	34	33.00		
IPM		25.91	264 eP	30	17.90	1.9	
SHNJ		26.31	8 eP	30	20.20	0.8	
PMG		26.58	130 eP	30	32.00	9.9X	
TKSJ		26.71	13 eP	30	22.20	-1.0	
NNT		27.08	282 eP	30	19.00	-7.7X	
			eS	34	37.80		
			eS	45	55.20		
NST		27.24	289 eP	30	30.00	1.8	
WKYJ		27.33	16 eP	30	28.50	-0.3	
PPI		27.69	254 e(P)	30	35.00	2.7	
YONJ		27.75	12 eP	30	32.30	-0.3	
PSI		28.31	261 eP	30	43.50	5.7X	
WB5		28.65	165 eP	30	39.50	-1.3	
			i	30	46.00	23km	
KMI		28.65	309 eP	30	41.00	-0.1	
	Z	18s	8.80um			5.4Msz	
			S	35	30.00		
CHG		29.18	294 eP	30	46.50	0.8	
CHTO		29.18	294 e(P)	30	46.20	0.5	
IIDJ		29.18	19 eP	30	48.10	2.5	
TIA		29.48	344 eP	30	53.80	5.6X	
	N	12s	1.40um				
	E	14s	2.40um				
			S	35	36.00		
MBL		29.77	193 eP	30	50.00	-0.9	
CHJJ		30.06	20 eP	30	52.30	-1.0	
MTMJ		30.17	18 eP	30	52.10	-2.3	
XAN		30.77	330 P	30	57.00	-2.7	
	N	12s	1.50um				
	E	15s	2.10um				
			S	35	58.00		
QIS		31.00	156 eP	31	00.00	-1.7	
DL2		31.15	352 eP	31	04.00	1.1	
	Z	14s	2.00um			4.9MszX	
	N	13s	2.30um				
	E	14s	1.60um				
			sP	31	15.00		
			S	36	07.50		
CD2		31.42	320 eP	31	04.00	-1.4	
	Z	16s	2.80um			5.0MszX	
	E	13s	4.20um				
ASPA		32.19	168 iPc	31	12.70	0.5	
		0.7s	20.00nm			5.1mb	
			eS	36	18.80		
TIY		32.36	338 eP	31	12.50	-1.2	
	Z	20s	3.13um			5.0Msz	
	N	13s	2.80um				
			S	36	28.00		
BJI		33.33	345 eP	31	21.00	-0.9	
	Z	18s	1.53um			4.8Msz	
	N	14s	0.95um				
			eS	36	39.00		
SNY		33.84	356 Pd	31	29.00	2.7	
		1.2s	0.10nm			2.6mb X	
	Z	20s	3.30um			5.1Msz	
	N	13s	1.70um				
			iS	36	49.00		
WARB		33.96	180 eP	31	27.00	-0.5	
		0.6s	79.00nm			5.8mb	
LZH		35.00	326 eP	31	35.60	-1.0	
	Z	18s	3.00um			5.1Msz	
	N	14s	2.20um				
	E	14s	2.50um				
			pP	31	45 00	32km	
			PcP	34	13.50		
			eS	37	06.00		
HHC		35.46	340 P	31	40.50	0.1	
CN2		35.71	358 eP	31	42.80	0.5	
	Z	18s	2.40um			5.0Msz	
	N	13s	1.60um				
			sP	31	54.50		
			eS	37	15.00		
			SS	39	30.00		
BTO		35.79	338 eP	31	43.50	0.3	
	N	15s	1.60um				
	E	15s	1.40um				
			pP	31	51.50	27km	
			S	37	21.00		
			eSS	39	39.50		

MDJ		36.58	3 eP	31	50.40	0.8	
	Z	18s	1.80um			4.9Msz	
	E	14s	0.60um				
			pP	32	03.00	47kmX	
			S	37	32.00		
			sS	37	51.00		
SHL		37.62	302 iP	31	59.00	0.1	
			iS	37	48.00		
FORR		38.62	178 eP	32	05.90	-1.0	
		0.3s	41.00nm			5.7mb	
COOL		39.03	188 eP	32	09.00	-1.3	
		0.4s	7.00nm			4.8mb	
BAL		39.58	194 eP	32	15.00	0.1	
		0.5s	30.00nm			5.3mb	
GTA		39.60	326 eP	32	14.40	-0.8	
	Z	18s	2.90um			5.2Msz	
	E	15s	3.30um				
			S	38	20.50		
LSA		39.86	308 eP	32	23.00	5.1X	
			eS	38	24.00		
KLB		40.30	192 eP	32	20.50	-0.3	
RMQ		40.31	149 eP	32	20.00	-1.0	
MUN		41.01	194 eP	32	27.00	0.3	
		0.6s	85.00nm			5.7mb	
NWAO		41.70	192 eP	32	32.00	-0.3	
		0.6s	43.00nm			5.4mb	
	Z	20s	1.20um			4.8Msz	
	N	20s	0.50um				
	E	20s	1.00um				
RKG		42.85	192 eP	32	46.90	5.2X	
BRS		43.19	145 iPd	32	44.00	-0.6	
		0.5s	9.00nm			4.8mb	
			i	32	55.00	39km	
			i	34	28.00		
			i	37	13.40		
			eS	39	04.00		
			e	42	12.00		
ADE		44.15	166 eP	32	51.70	-0.6	
		0.7s	53.42nm			5.5mb	
BWA		46.85	155 eP	33	16.10	2.3	
			e	33	26.10	33km	
CAN		47.86	155 eP	33	19.00	-2.7	
HYB		47.95	286 eP	33	22.00	-0.7	
TOO		48.54	160 eP	33	28.00	1.0	
			e	33	38.00	34km	
GBA		48.82	281 P	33	29.20	-0.2	
DZM		48.95	128 iPc	33	30.60	0.2	
WMQ		49.39	323 eP	33	32.10	-1.5	
	Z	18s	3.20um			5.4Msz	
	N	14s	1.60um				
	E	10s	1.10um				
QUE		60.08	300 eP	34	54.50	2.7	
MAIO		67.11	306 eP	35	38.00	0.2	
TTA		77.08	27 eP	36	37.40	1.0	
KDC		78.30	33 ePd	36	44.90	1.8	
			i	36	55.70	35km	
IMA		78.47	24 eP	36	45.20	1.1	
		0.8s	9.50nm			4.9mb	
PMR		80.18	29 eP	36	53.20	0.0	
		0.8s	20.50nm			5.2mb	
FBA		80.85	26 eP	36	56.80	0.0	
TOA		81.58	28 eP	37	02.30	1.6	
KEV		85.98	340 eP	37	21.00	-1.8	
INK		86.19	22 eP	37	24.50	0.6	
SOD		86.62	338 iP	37	26.00	-0.1	
			i	37	36.20	32km	
PRNI		87.64	300 eP	37	32.00	0.2	
MBC		87.80	13 eP	37	34.00	2.4	
		0.9s	23.00nm			5.5mb	
			pP	37	44.50	33km	
MBH		87.81	300 eP	37	33.00	0.5	
SUF		87.86	333 eP	37	31 80	-0.3	
		0.7s	17.80nm			5.5mb	
NUR		89.08	331 eP	37	37.80	-0.1	
DAG		93.11	353 eP	37	56.00	-0.3	
HFS		94.35	333 eP	38	00.40	-1.9	
		0.6s	3.70nm			5.0mb	
	Z	16s	0.59um			5.1MszX	
			LR	22	35.00		
NB2		95.07	334 P	38	04.00	-1.7	
		0.7s	2.70nm			4.8mb	
KSP		96.55	323 eP	38	14.50	1.9	
KHC		98.82	322 P	38	25.00	2.1	
PNT		98.88	37 eP	38	30.00	6.9X	
EDM		100.70	32 ePdiff	38	31.50	0.2	
KIC		129.69	285 (PKP)	43	53.30	-0.2	
LIC		130.00	285 (PKP)	43	53.40	-0.6	

UPA		148.76	58 ePKP	44	34.30	6.7X	
CNCB		163.05	123 ePKP	44	50.00	3.6X	
LPB		163.09	122 PKP	44	52.50	6.2X	
ZOBO		163.19	121 PKP	44	51.00	4.4X	
		1.2s	10.14nm				
CCH		164.24	128 (PKP)	44	51.00	3.8X	
		S.D. = 1.4	on 84 of 105 obs.				

DEC 16, 1989 10h 35m 31.41± 0.41s
8.067 N ± 6.4km 127.091 E ±12.2km
DEPTH = 36.1km (3 depth phoses)
4.9mb (11 obs.)
PHILIPPINE ISLANDS REGION (248)

DAV		1.79	237 iPc	36	04.00	3.5X	
BAG		10.45	323 eP	38	10.00	7.8X	
KKM		10.98	260 P	38	15.00	5.7X	
OIZ		19.98	305 eP	40	02.50	-1.2	
MTN		21.16	169 eP	40	15.50	-0.4	
SSE		23.57	347 P	40	41.00	1.4	
		1.0s	13.00nm			4.4mb	
KNA		23.72	176 eP	40	41.50	0.3	
PPI		27.93	254 eP	41	21.00	0.4	
PSI		28.54	261 ePc	41	10.50	-15.6X	
WB5		28.68	166 eP	41	26.00	-1.3	
			i	41	34.00	28km	
CHG		29.34	294 eP	41	33.10	-0.2	
XAN		30.80	330 eP	41	43.80	-2.3	
ASPA		32.23	168 eP	41	59.00	0.2	
BJI		33.30	345 eP	42	08.00	0.2	
WARB		34.05	181 eP	42	15.00	0.5	
		0.3s	6.00nm			5.0mb	
LZH		35.04	326 eP	42	23.00	-0.1	
HHC		35.45	340 P	42	27.80	1.3	
MDJ		36.47	3 eP	42	37.60	2.7	
MRWA		38.58	196 eP	42	54.00	1.2	
FORR		38.71	179 eP	42	52.30	-1.4	
		0.3s	33.00nm			5.6mb	
GTA		39.65	326 eP	43	02.00	0.2	
MUN		41.15	194 eP	43	15.00	1.0	
RKG		42.98	192 eP	43	34.40	5.4X	
BRS		43.14	146 iPd	43	30.80	0.4	
		0.6s	2.50nm			4.1mb	
			e	43	42.00	40km	
ADE		44.19	166 eP	43	39.70	0.9	
		0.9s	23.53nm			5.0mb	
HYB		48.13	286 eP	44	10.00	-0.3	
GBA		49.01	281 Pd	44	16.80	-0.2	
		0.7s	4.90nm			4.6mb	
GBA		49.01	281 P	44	27.00	10.0X	
WMQ		49.45	323 eP	44	22.00	1.8	
MAIO		67.23	306 eP	46	25.00	0.3	
FBA		80.67	26 e(P)	47	40.00	-1.9	
KEV		85.97	340 eP	48	09.00	0.1	
INK		86.02	22 eP	48	08.00	-1.2	
MBC		87.67	13 eP	48	20.50	3.4X	
		0.8s	10.00nm			5.1mb	
			pP	48	33.00	41km	
SUF		87.87	333 eP	48	18.70	0.5	
		0.6s	5.30nm			5.0mb	
BBTK		88.20	310 eP	48	16.00	-4.5X	
NUR		89.11	331 eP	48	23.80	-0.4	
		0.6s	10.20nm			5.3mb	
HFS		94.37	333 eP	48	47.90	-0.6	
		0.6s	3.20nm			4.9mb	
NB2		95.08	334 P	48	50.20	-1.7	
		1.2s	4.30nm			4.8mb	
		S.D. = 1.2	on 31 of 39 obs.				

DEC 16, 1989 10h 40m 20.28± 0 20s
7.777 N ± 3.4km 126.806 E ± 5.0km
DEPTH = 34.2km (3 depth phoses)
5.5mb (19 obs.) 5.3Msz (1 obs.)
MINDANAO, PHILIPPINE ISLANDS (259)

DAV		1.40	241 iP+	40	46.00	2.2	
QCP		8.83	321 eP	42	26.00	-2.7	
TSM		9.38	248 ePc	42	43.10	7.0X	
BAG		10.52	325 eP	42	57.20	5.2X	
KKM		10.65	261 ePd	42	58.20	4.4X	
		1.1s	137.00nm			6.1mb	
MKS		14.84	210 ePc	43	55.00	5.5X	
JAY		17.23	126 ePd	44	24.20	4.1X	
GUMO		18.66	70 eP	44	37.00	-0.7	
		1.3s	313.73nm			5.3mb	
KHKI		19.54	215 eP	44	47.00	-1.1	
			e	50	05.00		

QIZ	19.91	306	Pd	44	52.00	-0.1
	N 14s		4.10um			
	E 15s		4.10um			
			S	48	26.00	
			sS	48	45.50	
TRT	20.88	223	ePc	45	02.80	0.7
	0.9s		388.00nm		5.8mb	
MTN	20.93	168	eP	45	02.00	-0.7
MNDI	21.77	129	eP	45	15.00	3.6X
KNA	23.45	175	iPd	45	28.00	0.3
KAGJ	23.60	9	eP	45	30.50	1.5
SSE	23.79	348	eP	45	33.00	2.2
			i	45	46.00	53kmX
KGM	24.08	257	ePc	45	37.00	3.2X
LAT	24.72	125	eP	45	42.00	2.0
KUMJ	24.92	8	eP	45	42.00	0.3
NJ2	25.26	344	eP	45	44.50	-0.5
KLM	25.47	261	eP	45	49.50	2.4
IPM	25.82	264	ePd	45	53.00	2.6
	1.1s		76.00nm		5.2mb	
LOE	26.25	294	eP	46	17.10	22.8X
PMG	26.50	130	eP	45	56.00	-0.6
SHNJ	26.52	8	eP	45	55.70	-0.9
TKSJ	26.92	13	eP	46	01.30	1.0
NNT	27.06	282	eP	46	05.20	3.4X
			e	10	55.40	
SHK	27.17	11	eP	46	02.90	0.3
NST	27.24	289	eP	46	06.00	2.6
WKYJ	27.54	16	P	46	06.60	0.6
PPI	27.57	254	eP	46	08.00	1.6
YONJ	27.96	12	eP	46	10.40	0.7
WB5	28.47	165	eP	46	10.00	-4.5X
			i	46	12.90	10kmX
TSRJ	28.88	16	eP	46	18.70	0.7
CHTO	29.20	295	eP	46	21.00	-0.1
IIDJ	29.39	19	eP	46	22.40	-0.3
MBL	29.56	193	eP	46	23.50	-0.8
TIA	29.65	344	eP	46	22.90	-2.1
QIS	30.84	156	eP	46	34.00	-1.6
XAN	30.91	330	P	46	33.20	-3.0X
CD2	31.52	320	P	46	41.50	-0.1
ASPA	32.01	168	iPd	46	44.30	-1.6
			epP	46	58.50	57kmX
			eS	51	51.90	
			e	56	02.50	
			iScS	57	09.90	
TIY	32.52	339	eP	46	47.80	-2.5
8JI	33.51	345	eP	46	56.50	-2.2
WARB	33.76	180	eP	47	01.00	0.0
	0.4s		27.00nm		5.5mb	
SNY	34.03	356	Pd	47	03.00	-0.2
MEKA	35.11	193	eP	47	12.40	-0.3
LZH	35.13	327	eP	47	17.00	4.1X
	1.5s		37.00nm		5.1mb	
	Z 17s		3.70um		5.2MszX	
	N 16s		2.90um			
	E 15s		2.40um			
			sP	47	34.20	
HHC	35.62	340	eP	47	16.20	-0.8
CN2	35.90	358	eP	47	19.20	0.0
			PcP	49	47.00	
			ScP	53	30.00	
BTO	35.95	338	eP	47	19.10	-0.7
MDJ	36.78	3	Pd	47	27.00	0.5
HNR	37.18	117	P	47	29.00	-1.3
MRWA	38.23	195	eP	47	39.00	0.1
FORR	38.43	178	iPd	47	40.70	0.2
	0.4s		114.00nm		6.0mb	
COOL	38.82	188	eP	47	43.00	-0.9
	0.9s		70.00nm		5.4mb	
BAL	39.37	194	iPd	47	48 40	-0.1
	0.4s		41.00nm		5.5mb	
GTA	39.73	327	eP	47	50.20	-1.3
LSA	39.93	308	P	47	53.60	-0.1
			eS	54	01.50	
KLB	40.09	192	iPd	47	54.30	-0.1
RMQ	40.17	149	iPd	47	54.20	-1.0
			e	53	48.00	
MUN	40.81	194	iPd	48	00.40	0.2
	0.7s		125.00nm		5.8mb	
NWAO	41.49	192	iPd	48	06.40	0.6
	0.8s		133.00nm		5.7mb	
RKG	42.64	192	iPc	48	20.60	5.3X
BRS	43.06	145	iPc	48	18.00	-0.8
	1.0s		23.00nm		4.9mb	
			i	48	24.00	20kmX
			i	48	28.00	
			e	49	59.00	
			e	52	58.00	
CMS	43.07	156	e(P)	48	18.00	-0.8
BWA	46.69	155	iPd	48	46.70	-1.1
CAN	47.71	155	iPd	48	55.80	0.0
CN8	47.85	155	eP	48	57.00	0.0
HY8	47.94	286	eP	48	57.50	-0.4
TOO	48.37	160	eP	49	01.60	0.6
G8A	48.79	281	P	49	04.00	-0.4
DZM	48.88	128	iPc	49	04.90	-0.2
WMQ	49.51	323	P	49	10.00	0.3
	Z 20s		3.20um		5.3Msz	
			pP	49	20.00	34km
			S	56	17.00	
			ScS	58	56.00	
POO	52.49	287	eP	49	31.80	-0.9
QUE	60.12	300	eP	50	25.50	-1.8
MAIO	67.17	306	eP	51	13.00	-0.4
SDN	73.82	35	eP	51	53.50	0.4
DRV	74.87	175	eP	51	57.80	-1.1
SVW	77.23	29	eP	52	14.40	1.9
KDC	78.50	33	ePd	52	21.00	1.6
IMA	78.68	24	eP	52	22.00	1.5
8HD	79.46	302	ePc	52	25.00	-0.2
KMSA	80.16	289	ePd	52	28.50	-0.7
MSL	80.34	306	eP	52	29.00	-0.9
PMR	80.38	29	eP	52	30.20	0.7
	1.0s		25.00nm		5.2mb	
FBA	81.06	25	eP	52	33.30	0.2
TOA	81.79	28	eP	52	38.50	1.5
INK	86.40	22	ePd	53	01.00	0.9
SOD	86.78	338	iP	53	01.80	-0.2
DSI	87.19	301	iP	53	05.50	0.8
MBH	87.85	300	e(P)	53	08.00	0.1
MBC	88.01	13	ePc	53	08.90	1.1
	1.0s		77.00nm		6.0mb	
			pP	53	19.50	33km
SBA	88.31	172	eP	53	10.80	1.7
NUR	89.22	331	iP	53	17.60	3.8X
	1.0s		34.00nm		5.6mb	
			i	53	28.90	36km
DAG	93.29	353	iPd	53	31.40	-1.0
	0.5s		24.65nm		5.9mb	
HFS	94.49	332	eP	53	36.30	-1.9
	0.7s		3.70nm		4.9mb	
	Z 16s		0.59um		5.1MszX	
			LR	23	04.00	
NB2	95.22	334	P	53	39.20	-2.4
	0.9s		5.00nm		5.0mb	
VAY	95.46	313	eP	53	41.65	-1.4
KSP	96.67	323	eP	53	48.00	-0.4
BRG	98.04	324	iP	53	59.80	5.3X
KHC	98.94	322	P	54	03.00	4.3X
PNT	99.08	37	eP	54	00.00	0.7
	0.7s		5.00nm		5.2mb	
EDM	100.90	32	ePdiff	54	08.50	1.1
KVN	104.06	47	ePdiff	54	24.80	2.8X
LRM	104.96	38	ePdiff	54	28.50	2.6X
			e	54	38.90	
BCAO	107.42	277	ePKPc	58	45.40	-0.7
	0.5s		4.00nm			
MEO	119.77	42	iPKPc	59	09.40	0.3
SIO	120.68	40	ePKP	59	11.50	0.7
TUL	120.91	40	e(PKP)	59	11.80	0.6
	1.3s		15.10nm			
LNO	120.91	40	e(PKP)	59	11.60	0.6
KIC	129.67	285	PKPc	59	29.00	0.4
TIC	129.87	285	PKP	59	29.30	0.3
LIC	129.99	285	PKP	59	29.40	0.2
UPA	148.92	58	ePKPc	00	07.50	4.4X
LCCH	149.29	149	ePKP	00	08.10	5.0X
CHCH	149.39	151	ePKPd	00	08.50	5.1X
TACH	149.47	150	ePKP	00	08.50	5.0X
PCH	149.71	150	ePKPd	00	09.50	5.6X
SAN	149.77	150	ePKP	00	09.50	5.6X
PEL	150.01	150	iPKPd	00	10.00	5.7X
	0.3s		90.91nm			
FCH	150.05	150	ePKP	00	10.50	5.8X
JACH	150.42	149	iPKPc	00	11.10	6.1X
CNCB	163.00	123	ePKP	00	22.00	0.4
LPB	163.04	122	ePKP	00	16.00	-5.4X
	Z 20s		0.71um		7.5Msz	
			LR	44	34.00	
ZOBO	163.14	121	PKP	00	23.50	1.8
	1.7s		43.60nm			
	Z 24s		0.23um			
			LR	43	06.00	

CCH 164.17 128 ePKP 00 26.00 3.6X
S.D. = 1.2 on 98 of 127 obs.

DEC 16, 1989 10h 45m 42.09± 0.24s
38.591 N ± 4.8km 138.517 E ± 5.2km
DEPTH = 20.9km (3 depth phoses)
5.0mb (21 obs.)
NEAR WEST COAST OF HONSHU, JAPAN(226)

YAMJ	1.26	109	iP+	46	04.20	-0.4
			S	46	21.40	
NIIJ	1.40	164	iP+	46	06.20	-0.3
			S	46	23.90	
MAT	2.06	187	iPc	46	16.30	0.2
			iS	46	41.20	
MTMJ	2.08	196	iP+	46	16.90	0.4
SSE	16.06	247	P	49	34.60	6.4X
	1.0s		21.00nm		4.2mb	
TIA	17.16	269	eP	49	45.00	2.8
BJI	17.35	282	eP	49	38.00	-6.4X
GYA	29.31	255	P	51	44.00	-1.5
IMA	46.53	31	eP	54	10.00	0.4
	1.0s		19.60nm		5.1mb	
PMR	48.76	37	eP	54	26.10	-0.8
FBA	49.03	33	e(P)	54	24.50	-4.4X
INK	54.06	27	eP	55	06.00	-0.7
MBC	55.69	16	eP	55	18.00	-0.6
	1.0s		14.00nm		4.9mb	
WB5	58.29	185	iPc	55	36.20	-1.4
G8A	59.09	263	P	55	42.00	-1.4
SOD	62.63	336	eP	56	06.00	-0.8
PNT	68.64	43	eP	56	45.00	-0.7
HFS	71.71	334	eP	57	02.90	-1.2
	0.7s		2.80nm		4.4mb	
	Z 16s		0.59um		4.9MszX	
			LR	22	57.00	
NB2	71.85	336	P	57	04.20	-0.8
	0.8s		11.50nm		5.0mb	
WDC	71.96	52	e(P)	57	06.00	0.1
SES	72.42	39	eP	57	08.00	-0.5
FFC	73.61	32	iPc	57	14.90	-0.5
	1.0s		18.00nm		5.1mb	
FFC	73.61	32	eP	57	21.00	5.6X
	0.8s		12.00nm		5.0mb	
LRM	74.61	43	ePc	57	22.00	0.3
			i	57	27.70	18km
CMB	74.81	53	eP	57	23.00	0.3
PRS	75.21	55	eP	57	25.20	0.3
KVN	75.61	51	ePd	57	28.00	0.6
FRB	75.76	12	eP	57	26.50	-1.0
FRI	75.87	54	eP	57	29.00	0.3
ISA	77.47	54	eP	57	37.00	-0.7
KSP	77.56	327	eP	57	38.00	0.2
CLC	77.93	54	eP	57	40.00	-0.2
BW06	78.18	44	eP	57	41.10	-0.6
SBB	78.50	55	eP	57	44.00	0.6
CLL	78.59	329	iPd	57	43.30	-0.2
	1.5s		22.00nm		5.0mb	
GSC	78.76	54	eP	57	45.00	0.2
PRU	78.94	327	P	57	45.50	0.1
			e	57	51.50	19km
TPC	80.00	54	eP	57	52.00	0.5
KHC	80.00	327	P	57	50.40	-0.8
	1.2s		10.00nm		4.7mb	
BAR	80.51	56	eP	57	55.00	0.8
GLA	81.46	54	eP	58	01.00	1.8
K8A	81.67	326	eP	58	01.00	0.8
	1.0s		10.70nm		4.8mb	
			e	58	09.00	25km
CDF	83.16	330	eP	58	08.00	0.2
	1.0s		9.60nm		4.9mb	
ANMO	85.30	48	eP	58	20.80	1.8
ALQ	85.31	48	iPd	58	20.50	1.5
	1.0s		9.25nm		5.0mb	
LOR	85.43	331	eP	58	19.10	-0.1
	0.8s		14.70nm		5.3mb	
LBF	85.62	331	eP	58	19.90	-0.3
	0.8s		9.40nm		5.1mb	
SSF	85.73	331	eP	58	20.70	0.0
	0.8s		11.20nm		5.1mb	
SMF	85.95	331	eP	58	21.80	0.0
	1.0s		12.00nm		5.1mb	
AVF	86.02	331	eP	58	22.20	0.1
	0.8s		21.40nm		5.4mb	
GRR	86.18	334	eP	58	23.20	0.3
	0.8s		21.40nm		5.4mb	
LPF	86.55	334	eP	58	25.10	0.4

16d 10h

	0.9s	22.90nm		5.4mb		
MAF	86.79	331 eP	58	26.50	0.6	
	1.0s	18.00nm		5.3mb		
LSF	87.16	332 eP	58	27.80	0.1	
	0.8s	13.40nm		5.2mb		
ZOBO	147.75	54 PKP	05	28.00	3.0X	
LPB	147.96	54 PKP	05	28.00	2.9X	
CNCB	148.24	54 PKPc	05	30.50	4.7X	
CCH	149.83	52 ePKP	05	34.00	6.1X	
	S.D. = 0.9	on 50 of 58 obs.				

* DEC 16, 1989 11h 01m 35.90± 0.61s
7.501 N ± 9.0km 127.060 E ±12.1km
DEPTH = 31.2km (2 depth phases)
5.0mb (5 obs.)
PHILIPPINE ISLANDS REGION (248)

DAV	1.53	255 eP	02	01.50	0.2	
KNA	23.16	176 iPc	06	41.80	1.0	
WB5	28.14	165 eP	07	27.00	-0.5	
QIS	30.49	156 iPc	07	48.30	-0.2	
ASPA	31.69	168 eP	07	56.80	-2.3	
	0.3s	12.00nm		5.2mb		
WARB	33.48	181 iPd	08	14.60	-0.1	
	0.4s	7.00nm		4.9mb		
BJI	33.84	345 eP	08	18.00	0.5	
MEKA	34.91	193 eP	08	26.10	-0.8	
MUN	40.60	194 iPc	09	14.30	-0.2	
NWAO	41.28	193 iPd	09	20.60	0.5	
	0.8s	33.00nm		5.1mb		
BRS	42.69	145 iPc	09	32.00	0.2	
	0.5s	3.50nm		4.3mb		
		i	09	41.80	33km	
ADE	43.65	166 iPc	09	40.20	0.7	
BWA	46.34	155 eP	10	02.90	1.9	
INK	86.56	22 eP	14	17.00	0.1	
MBC	88.23	13 eP	14	24.00	-0.9	
	0.9s	7.00nm		5.0mb		
		pP	14	33.50	30km	
	S.D. = 1.0	on 15 of 15 obs.				

DEC 16, 1989 11h 05m 16.08± 0.28s
8.453 N ± 4.9km 126.578 E ± 7.2km
DEPTH = 33.4km (3 depth phases)
5.1mb (15 obs.) 4.7Msz (2 obs.)
MINDANAO, PHILIPPINE ISLANDS (259)

DAV	1.68	216 eP	05	48.00	4.4X	
QCP	8.17	319 eP	07	30.00	14.6X	
TSM	9.44	244 ePc	07	41.00	8.1X	
BAG	9.84	324 eP	07	38.00	-0.6	
KKM	10.56	258 eP	07	57.00	8.7X	
QIZ	19.34	305 eP	09	41.60	-0.2	
E	17s	3.00um				
SSE	23.08	348 P	10	19.50	-0.3	
	1.0s	56.00nm		5.0mb		
N	11s	0.90um				
		eS	14	36.00		
KGM	24.02	256 eP	10	34.10	5.1X	
NJ2	24.55	344 Pd	10	34.00	-0.1	
WHN	24.77	334 eP	10	38.50	2.3	
IPM	25.67	263 ePd	10	47.60	2.7	
	1.1s	49.30nm		5.0mb		
LOE	25.77	293 eP	10	46.00	0.2	
GYA	26.03	316 P	10	49.20	0.9	
PPI	27.55	253 eP	10	59.00	-3.1X	
PSI	28.10	260 eP	11	06.00	-1.1	
CHG	28.72	294 iPc	11	14.00	1.3	
	1.0s	22.50nm		4.8mb		
CHTO	28.72	294 eP	11	12.90	0.2	
		e	11	23.20	37km	
TIA	28.94	344 eP	11	12.50	-2.0	
WB5	29.18	165 eP	11	14.80	-2.0	
MAT	29.90	19 (P)	11	19.00	-4.1X	
MBL	30.16	193 eP	11	25.00	-0.5	
XAN	30.21	330 eP	11	23.60	-2.3	
DL2	30.65	352 P	11	30.00	0.4	
CD2	30.87	319 eP	11	31.40	-0.3	
QIS	31.55	156 eP	11	36.00	-1.7	
TIY	31.82	338 Pc	11	38.00	-2.0	
ASPA	32.72	168 eP	11	48.50	0.6	
Z	20s	0.81um		4.4Msz		
		eS	16	56.50		
		LR	25	27.80		
BJI	32.80	345 eP	11	47.00	-1.4	
	1.0s	30.00nm		5.1mb		
		e	17	03.00		
		e	17	11.50		
SNY	33.34	356 Pd	11	52.60	-0.5	
		pP	12	03.40	39km	
WARB	34.43	180 iPc	12	02.50	-0.2	
	0.3s	7.00nm		5.1mb		
HHC	34.91	340 P	12	06.40	-0.5	
CN2	35.22	359 eP	12	08.60	-0.7	
BTO	35.24	338 eP	12	09.70	0.0	
MDJ	36.12	4 eP	12	17.20	0.3	
SHL	37.12	302 iP	12	16.70	-9.1X	
		iS	18	11.50		
GTA	39.05	326 P	12	40.50	-1.2	
FORR	39.10	178 eP	12	41.00	-1.0	
MUN	41.41	193 eP	13	01.00	0.0	
NWAO	42.10	192 eP	13	07.00	0.3	
	0.6s	17.00nm		5.0mb		
RKG	43.25	192 eP	13	21.90	5.8X	
BRS	43.74	145 iPd	13	19.00	-1.2	
	1.0s	4.00nm		4.2mb		
		i	13	25.00	20kmX	
		i(PP)	15	10.00		
BWA	47.40	155 eP	13	50.80	1.5	
		i	13	58.00	24km	
HYB	47.54	286 eP	13	51.00	0.4	
CAN	48.41	155 e(P)	14	03.80	6.7X	
GBA	48.44	281 P	13	57.70	0.1	
WMO	48.84	323 P	14	00.00	-0.4	
Z	18s	1.40um		5.0Msz		
		ScS	23	49.00		
DZM	49.48	129 iPc	14	06.40	0.8	
NDI	50.52	300 iPd	14	13.60	0.2	
QUE	59.59	300 eP	15	19.00	-0.6	
MAIO	66.59	306 iPd	16	06.20	0.6	
SVW	76.75	29 eP	17	07.40	1.7	
KDC	78.06	33 e(P)	17	13.50	0.6	
IMA	78.16	24 eP	17	14.80	1.3	
	0.8s	11.00nm		4.9mb		
PMR	79 90	29 eP	17	23.00	0.2	
	1.0s	35.00nm		5.3mb		
FBA	80.55	26 eP	17	26.30	0.0	
TOA	81.30	28 eP	17	32.30	1.9	
KEV	85.43	340 eP	17	52.00	0.8	
INK	85.85	22 eP	17	54.00	0.7	
SOD	86.07	338 iP	17	54.20	-0.3	
DSI	86.65	301 eP	17	59.00	1.0	
PRNI	87.14	300 eP	18	02.00	1.5	
SUF	87.30	333 iP	18	00.10	-0.4	
	0.4s	5.50nm		5.2mb		
MBC	87.41	13 eP	18	02.00	1.2	
	0.9s	36.00nm		5.6mb		
NUR	88.52	331 iP	18	05.70	-0.7	
DAG	92.60	352 iPd	18	24.50	-0.6	
	0.6s	15.33nm		5.6mb		
HFS	93.79	332 eP	18	29.00	-1.9	
	0.5s	3.90nm		5.1mb		
NB2	94.51	334 P	18	32.90	-1.4	
	0.7s	5.20nm		5.1mb		
KSP	96.00	323 eP	18	41.60	0.4	
BRG	97.37	324 e(P)	18	48.30	0.9	
	1.4s	18.00nm		5.4mb		
PNT	98.68	37 eP	18	54.00	0.6	
KIC	129.28	285 (PKP)	24	24.60	0.8	
CNCB	163.55	122 PKP	25	25.00	7.0X	
LPB	163.58	121 PKP	25	26.00	8.1X	
ZOBO	163.68	120 PKP	25	24.00	5.8X	
	1.1s	8.70nm				
	S.D. = 1.1	on 61 of 74 obs.				

DEC 16, 1989 11h 20m 40.62± 0.58s
37.380 N ± 4.9km 121.720 W ± 5.0km
DEPTH = 5.0km (geophysicist)
CENTRAL CALIFORNIA (39)
ML 2.4 (NEIS).

MHC	0.07	122 iPc	20	42.70	0.2	
GCC	0.41	212 eP	20	48.90	0.0	
		eS	20	55.40		
PCC	0.54	283 ePc	20	51.10	-0.3	
BKS	0.64	321 iPd	20	53.80	0.3	
		iS	21	04.10		
SAO	0.65	160 iPd	20	53.70	0.0	
BRK	0.65	319 eP	20	53.80	0.1	
		eS	21	05.90		
CMB	1.24	58 eP	21	03.90	-0.3	
KVN	3.30	59 eP	21	40.70	6.5X	
	S.D. = 0.3	on 7 of 8 obs.				

? DEC 16, 1989 11h 52m 43.26± 3.76s
38.734 N ±35.8km 21.965 E ±11.0km
DEPTH = 10.0km (geophysicist)
GREECE (364)
ML 2.7 (THE).

AGG	0.40	45 eP	52	50.80	-0.8	
		eS	52	58.40		
LIT	1.42	16 eP	53	09.60	0.4	
IGT	1.50	303 eP	53	09.90	-0.3	
PAIG	1.79	48 eP	53	14.80	0.5	
GRG	2.24	8 eP	53	21.40	0.4	
KNT	2.53	16 eP	53	24.80	-0.2	
	S.D. = 0.6	on 6 of 6 obs.				

DEC 16, 1989 12h 13m 47.41± 0.56s
7.624 N ± 7.7km 127.023 E ± 9.2km
DEPTH = 33.0km (normal)
5.1mb (13 obs.)
PHILIPPINE ISLANDS REGION (248)

DAV	1.53	250 iPc+	14	13.80	1.1	
QIZ	20.17	306 eP	18	21.50	-0.6	
MTN	20.74	169 iPc	18	28.00	0.0	
TRT	20.92	224 iPd	18	30.80	1.0	
	0.9s	109.10nm		5.2mb		
KNA	23.29	176 iPc	18	54.10	0.8	
SSE	23.98	348 eP	19	05.00	5.1X	
IPM	26.02	265 ePc	19	19.50	0.0	
LOE	26.50	294 eP	19	21.00	-2.9	
NNT	27.30	283 eP	19	27.20	-4.0X	
NST	27.50	289 eP	19	35.00	2.0	
WB5	28.27	165 eP	19	39.00	-0.9	
		i	19	43.20		
CHG	29.46	295 eP	19	51.50	0.8	
CHTO	29.46	295 eP	19	50.50	-0.2	
QIS	30.62	156 iPc	20	00.10	-0.8	
ASPA	31.82	168 iPd	20	11.10	-0.4	
	0.7s	14.00nm		5.0mb		
		eS	25	15.20		
NANU	32.04	200 iPd	20	12.50	-0.9	
	0.5s	6.00nm		4.7mb		
WARB	33.61	181 eP	20	27.00	0.0	
	0.5s	16.00nm		5.2mb		
BJI	33.71	345 eP	20	35.00	7.3X	
MEKA	35.02	193 eP	20	38.30	-0.8	
	0.5s	5.00nm		4.7mb		
MDJ	36.92	3 eP	20	54.60	-0.4	
MRWA	38.14	196 eP	21	05.00	-0.4	
	0.5s	4.00nm		4.5mb		
FORR	38.27	179 iPc	21	06.00	-0.4	
	0.3s	29.00nm		5.6mb		
BAL	39.28	194 iPc	21	14.50	-0.4	
	0.4s	29.00nm		5.4mb		
KLB	39.99	192 eP	21	20.00	-0.8	
MUN	40.71	194 iPc	21	26.60	-0.1	
	0.6s	85.00nm		5.7mb		
NWAO	41.39	192 iPc	21	32.60	0.4	
	0.6s	40.00nm		5.3mb		
RKG	42.54	192 iPc	21	47.00	5.3X	
BRS	42.82	145 iPc	21	44.40	0.3	
	0.5s	5.50nm		4.5mb		
		i	21	53.00		
ADE	43.78	166 iPc	21	52.10	0.3	
	0.8s	35.82nm		5.2mb		
BWA	46.47	155 eP	22	15.20	1.9	
CAN	47.48	155 eP	22	21.80	0.5	
GBA	49.03	281 P	22	33.00	-0.5	
SOD	87.00	338 eP	26	19.00	-11.4X	
SUF	88.23	333 iP	26	38.00	1.6	
	0.8s	8.10nm		5.1mb		
	S.D. = 1.0	on 29 of 34 obs				

* DEC 16, 1989 12h 19m 24.79± 1.05s
51.129 N ±18.8km 179.252 W ± 8.9km
DEPTH = 33.0km (normal)
4.5mb (7 obs.)
ANDREANOF ISLANDS, ALEUTIAN IS. (7)

ADK	1.77	64 eP	19	55.10	1.5	
SMY	4.41	294 eP	20	36.20	5.0X	
SDN	11.99	62 eP	22	14.90	-1.3	
SVW	16.44	43 eP	23	18.00	3.7X	
KDC	16.84	56 e(P)	23	18.50	-0.8	
TTA	17.18	38 eP	23	25.50	1.8	
PMS	19.20	47 eP	23	48.30	-0.1	
PMR	19.51	46 eP	23	50.00	-1.8	

IMA	19.81	31 eP	23 55.40	0.3	
TOA	21.00	46 eP	24 10.00	2.6	
FBA	21.32	38 eP	24 10.00	-0.5	
	0.7s	5.81nm		4.1mb	
INK	27.83	35 eP	25 11.00	-1.5	
MBC	33.94	22 eP	26 07.50	1.1	
	1.0s	14.00nm		4.8mb	
		pP	26 45.50	180kmX	
LON	37.16	74 eP	26 35.00	0.9	
PNT	37.29	69 eP	26 35.00	-0.1	
	0.5s	3.00nm		4.4mb	
EDM	39.18	60 eP	26 50.50	-0.5	
SES	41.73	63 eP	27 12.00	0.1	
KVN	43.62	81 eP	27 28.50	0.8	
BW06	46.65	72 eP	27 51.00	-0.9	
RSON	50.83	55 eP	28 22.50	-1.3	
GOL	51.02	72 eP	28 26.00	0.2	
	0.7s	5.46nm		4.6mb	
GTA	55.40	292 eP	28 58.70	0.7	
WMO	59.24	303 P	29 25.50	0.4	
NB2	67.87	355 P	30 21.20	-0.2	
	0.6s	1.10nm		4.1mb	
UPP	68.53	351 iP	30 24.00	-1.4	
HFS	68.60	353 eP	30 24.50	-1.4	
	0.4s	1.40nm		4.4mb	
KBA	81.57	351 iPc	31 41.80	1.4	
	0.8s	9.60nm		4.9mb	
		i	38 10.20		
		e	59 03.00		

S.D. = 1.2 on 25 of 27 obs.

% DEC 16, 1989 12h 21m 49.55± 0.69s
46.546 N ± 7.4km 3.378 E ± 6.5km
DEPTH = 10.0km (geophysicist)
FRANCE (538)
ML 2.8 (LDG).

AVF	0.25	356 Pg	21 56.40	1.6	
		Sg	22 01.40		
SMF	0.33	73 Pg	21 55.30	-1.2	
		Sg	21 57.80		
BGF	0.37	272 Pg	21 58.10	1.0	
		Sg	22 04.60		
SSF	0.52	10 Pg	22 00.50	0.4	
		Sg	22 09.00		
LBF	0.60	43 Pg	22 00.60	-1.1	
		Sg	22 09.10		
MAF	0.65	240 Pg	22 01.70	-0.8	
		Sg	22 10.80		
LOR	0.79	24 Pg	22 04.60	-0.4	
		Sg	22 15.90		
TCF	0.85	253 Pn	22 05.00	-0.9	
		Pg	22 05.70		
		Sg	22 17.40		
LSF	1.31	258 Pn	22 11.70	-2.1	
		Pg	22 13.90		
		Sg	22 31.60		
CAF	1.86	210 Pg	22 21.70	-0.1	
		Sg	22 45.00		
LPO	2.42	220 Pg	22 32.00	2.3	
		Sg	23 03.30		
LFF	2.45	230 Pg	22 33.40	3.2X	
		Sg	23 05.20		
LPL	2.55	113 Pg	22 33.20	1.3	

S.D. = 1.5 on 12 of 13 obs.

• DEC 16, 1989 12h 25m 55.47± 1.04s
51.289 N ±17.1km 178.963 W ± 8.4km
DEPTH = 33.0km (normal)
4.2mb (3 obs.)
ANDREANOF ISLANDS, ALEUTIAN IS. (7)

ADK	1.54	66 eP	26 23.00	2.1	
SMY	4.52	291 eP	27 04.00	0.7	
TTA	16.95	38 eP	29 51.00	-0.4	
IMA	19.58	31 eP	30 23.50	0.1	
FBA	21.08	38 eP	30 38.00	-0.8	
	0.8s	4.74nm		3.9mb	
INK	27.59	35 eP	31 41.00	-0.1	
MBC	33.73	22 eP	32 35.00	-0.2	
	1.0s	4.00nm		4.3mb	
LON	36.94	74 eP	33 03.70	0.8	
PNT	37.06	69 eP	33 04.00	0.1	
EDM	38.95	61 eP	33 19.50	-0.2	
SES	41.49	64 eP	33 40.00	-0.7	
KVN	43.42	82 eP	33 56.00	-0.7	
BW06	46.43	72 eP	34 20.00	-0.8	
GOL	50.80	73 eP	34 55.00	0.2	
	0.7s	3.03nm		4.4mb	

S.D. = 0.9 on 14 of 14 obs.

DEC 16, 1989 12h 46m 38.86± 0.54s
39.672 N ±10.2km 143.497 E ± 7.2km
DEPTH = 26.7km (4 depth phases)
4.9mb (15 obs.) 4.2Msz (1 obs.)
OFF EAST COAST OF HONSHU, JAPAN (229)

MAT	5.21	235 iPc	47 58.70	1.6	
		eS	49 01.00		
MDJ	11.44	300 eP	49 24.20	0.7	
Z	15s	3.10um			
CN2	14.09	293 Pd	49 58.00	-0.8	
Z	14s	1.40um			
N	12s	1.00um			
SNY	15.25	285 eP	50 15.50	1.6	
Z	16s	1.60um			
N	13s	1.00um			
E	13s	1.00um			
		sS	53 19.00		
DL2	16.95	274 Pd	50 39.00	3.4X	
Z	12s	0.60um			
SSE	20.07	252 eP	51 10.50	-2.4	
BJI	20.95	280 eP	51 19.50	-2.5	
	1.2s	26.00nm		4.5mb	
Z	16s	0.87um		4.2MszX	
N	14s	0.60um			
		eS	55 22.00		
TIA	21.06	269 P	51 20.40	-2.8	
Z	16s	1.30um		4.4MszX	
E	12s	1.20um			
NJ2	21.33	257 Pd	51 24.40	-1.5	
Z	14s	0.90um		4.3MszX	
		sS	55 32.00		
TIY	24.27	275 eP	51 53.80	-1.1	
Z	16s	1.19um		4.5MszX	
E	15s	1.20um			
HHC	24.33	283 P	51 54.40	-1.1	
WHN	25.43	258 iPc	52 07.00	1.1	
	1.0s	0.13nm		2.5mb X	
Z	18s	0.72um		4.2Msz	
N	16s	1.49um			
E	18s	1.92um			
		pP	52 15.00	28km	
		eS	56 26.00		
BTO	25.53	283 eP	52 08.00	1.1	
N	12s	0.50um			
E	15s	1.20um			
XAN	28.12	269 P	52 30.10	-0.5	
LZH	31.33	276 P	52 59.60	0.3	
Z	14s	1.20um		4.7MszX	
E	13s	0.90um			
		sP	53 20.00		
GYA	33.33	258 iPc	53 16.40	-0.4	
N	18s	0.80um			
E	18s	0.50um			
		pP	53 23.80	25km	
		sS	58 50.00		
CD2	33.37	267 P	53 16.70	-0.4	
GTA	33.44	284 iPc	53 18.60	0.9	
	1.2s	0.10nm		2.6mb X	
KMI	37.02	259 Pd	53 49.00	0.6	
WMO	41.17	295 P	54 23.80	1.2	
Z	14s	0.80um		4.7MszX	
CHG	43.55	255 iPc	54 44.00	1.8	
	1.0s	12.50nm		4.6mb	
CHTO	43.55	255 ePc	54 42.90	0.8	
IMA	43.59	32 eP	54 50.70	8.6X	
	1.0s	10.40nm		4.6mb	
FBA	46.00	34 eP	55 11.20	10.0X	
KSH	50.88	293 eP	55 41.50	1.9	
INK	51.29	28 eP	55 41.00	-1.2	
MBC	53.53	17 eP	55 58.00	-0.8	
	1.0s	6.00nm		4.5mb	
WB5	59.85	190 eP	56 43.20	-1.2	
KEV	61.56	339 eP	56 56.00	0.4	
GBA	63.06	265 P	57 06.00	-0.2	
SOD	63.17	337 iP	57 05.00	-1.3	
DAG	63.29	355 iPd	57 05.50	-1.5	
	0.7s	9.59nm		5.0mb	
EDM	66.27	40 eP	57 27.50	0.9	
SUF	66.36	333 iP	57 26.10	-0.9	
	0.7s	9.10nm		5.0mb	
NUR	68.39	332 iP	57 39.20	-0.6	
SES	69.09	41 eP	57 44.00	-0.4	
CMB	71.02	56 eP	57 56.10	-0.3	
LRM	71.13	46 eP	57 57.00	-0.1	
HFS	72.35	336 eP	58 02.50	-1.3	
	0.7s	6.80nm		4.8mb	
Z	17s	0.18um		4.4MszX	
		LR	30 12.00		
NB2	72.38	338 P	58 03.40	-0.7	
	0.9s	12.30nm		4.9mb	
FRB	73.83	14 eP	58 11.00	-1.3	
KSP	78.71	329 eP	58 40.80	0.8	
CLL	79.61	331 iP	58 44.90	0.0	
PRU	80.07	329 Pd	58 48.50	1.1	
		e	58 56.50	25km	
KHC	81.14	329 Pc	58 53.80	0.7	
	1.0s	7.00nm		4.6mb	
		e	59 02.50	28km	
ALO	81.65	51 eP	58 58.00	1.7	
	1.0s	3.00nm		4.3mb	
VAY	83.14	319 eP	59 04.30	0.7	
SKO	83.21	320 iP	59 05.50	1.5	
CDF	84.10	332 eP	59 09.30	0.8	
OHR	84.18	320 eP	59 19.50	10.5X	
HAU	84.77	333 eP	59 12.30	0.5	
LOR	86.27	334 eP	59 19.80	0.5	
	0.8s	12.00nm		5.2mb	
LBF	86.47	334 eP	59 20.80	0.5	
	0.6s	6.30nm		5.0mb	
SSF	86.57	334 eP	59 20.50	-0.2	
	0.8s	20.10nm		5.4mb	
AVF	86.86	334 eP	59 22.70	0.6	
	0.8s	17.90nm		5.3mb	
MAF	87.62	334 eP	59 26.80	1.0	
	0.8s	12.00nm		5.2mb	

S.D. = 1.2 on 52 of 56 obs.

DEC 16, 1989 12h 51m 10.09± 0.67s
17.754 N ±14.9km 63.444 W ± 7.3km
DEPTH = 33.0km (normal)
LEEWARD ISLANDS (92)
ML 4.0 (FDF). MD 4.0 (TRN). Felt on St. Mortin.

SKI	0.79	122 eP	51 37.23	12.4X	
ANG	1.65	111 eP	51 37.23	0.1	
		eS	51 56.81		
BPA	1.67	115 eP	51 37.40	-0.1	
		eS	51 58.56		
SEG	2.29	126 eP	51 46.00	-0.3	
		S	52 13.30		
CPD	2.37	277 P	51 48.10	0.6	
LPR	2.37	284 P	51 47.30	-0.3	
PAG	2.41	135 eP	51 48.60	0.5	
		S	52 19.50		
DOG	2.45	134 eP	51 49.10	0.5	
SJG	2.60	278 iP	51 51.20	0.4	
MGG	2.74	132 iPd	51 52.69	0.1	
BBL	2.91	139 iPd	51 55.20	0.0	
PORP	3.06	276 P	51 57.00	-0.2	
DPMT	3.17	141 eP	51 58.71	-0.1	
		eS	52 43.68		
DSVT	3.20	141 eP	51 58.97	-0.3	
		eS	52 44.22		
DTMT	3.21	141 eP	51 59.06	-0.4	
		eS	52 45.30		
LRS	3.28	280 P	52 00.00	-0.4	

S.D. = 0.4 on 15 of 16 obs.

DEC 16, 1989 12h 55m 37.24± 0.40s
7.654 N ± 6.0km 127.031 E ± 7.6km
DEPTH = 35.4km (2 depth phases)
5.1mb (8 obs.)
PHILIPPINE ISLANDS REGION (248)

DAV	1.55	249 ePc+	56 03.10	0.2	
QIZ	20.16	306 eP	00 07.20	-4.4X	
N	14s	1.00um			
E	15s	1.10um			
		eS	03 45.50		
MTN	20.77	169 iP	00 17.90	0.0	
TRT	20.95	224 iPd	00 20.00	0.3	
	1.0s	83.10nm		5.1mb	
KNA	23.32	176 eP	00 44.30	1.1	
PMG	26.25	130 eP	01 12.00	0.8	
LOE	26.50	294 eP	01 15.00	1.5	
WB5	28.30	165 eP	01 28.80	-1.0	
CHTO	29.45	295 e(P)	01 39.60	-0.7	
QIS	30.64	156 eP	01 50.00	-0.7	

16d 13h

ASPA 31.84 168 eP 02 00.00 -1.3
Z 17s 0.26um 4.0MszX
eS 07 06.90
LR 16 21.60
NANU 32.07 200 eP 02 02.00 -1.2
WARB 33.64 181 eP 02 17.00 0.2
0.3s 7.00nm 5.1mb
BJI 33.68 345 eP 02 17.50 0.5
MEKA 35.05 193 eP 02 28.00 -1.0
MDJ 36.89 3 eP 02 43.50 -0.8
FORR 38.30 179 iPd 02 56.00 -0.2
0.3s 41.00nm 5.7mb
BAL 39.31 194 iPc 03 04.30 -0.5
0.4s 14.00nm 5.1mb
MUN 40.74 194 iPd 03 16.50 0.0
0.7s 50.00nm 5.4mb
NWAO 41.42 192 iPd 03 22.50 0.4
0.7s 19.00nm 4.9mb
RKG 42.57 192 eP 03 37.00 5.5X
BRS 42.84 145 iPd 03 33.10 -0.7
0.9s 3.00nm 4.0mb X
i 03 44.00 38km
ADE 43.80 166 iPc 03 42.50 0.9
BWA 46.49 155 eP 04 05.00 2.0
CAN 47.50 155 eP 04 11.90 0.9
GBA 49.03 281 P 04 23.00 -0.1
0.6s 2.20nm 4.4mb
INK 86.43 22 eP 08 17.00 -0.1
MBC 88.08 13 eP 08 24.50 -0.5
1.0s 14.00nm 5.2mb
pP 08 35.00 33km
S.D = 0.9 on 26 of 28 obs.

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* DEC 16, 1989 12h 57m 22.12± 1.06s
26.696 N ±19.1km 56.946 E ±10.8km
DEPTH = 33.0km (normal)
4.1mb (2 obs.)
SOUTHERN IRAN (353)

QUE 9.47 66 eP 59 39.50 0.0
MAIO 9.82 12 eP 59 30.00 -14.2X
eS 03 05.00
OHR 33.01 305 e(P) 04 01.40 5.0X
NUR 40.32 336 iP 04 58.00 0.3
HFS 44.52 331 eP 05 32.20 0.1
0.4s 0.80nm 3.9mb
SOD 44.69 344 eP 05 33.00 -0.4
NB2 46.03 331 P 05 44.10 0.0
0.9s 3.20nm 4.3mb
LKO 61.28 266 PKP 07 37.28 0.3
KIC 61.91 263 (P) 07 40.90 -0.3
S.D. = 0.3 on 7 of 9 obs.

? DEC 16, 1989 13h 48m 58.28±15.93s
19.180 N ±133.km 66.363 W ±16.0km
DEPTH = 33.0km (normal)
PUERTO RICO REGION (90)

LPR 0.98 152 P 49 15.80 0.0
LRS 0.99 207 P 49 16.00 0.1
SJG 1.08 169 iP 49 17.30 0.1
S 49 30.90
PORP 1.15 193 P 49 18.00 -0.1
CPD 1.21 159 P 49 19.00 0.0
S.D. = 0.1 on 5 of 5 obs.

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* DEC 16, 1989 14h 16m 35.59± 1.15s
39.750 N ±22.1km 143.598 E ±17.5km
DEPTH = 33.0km (normal)
4.6mb (3 obs.)
OFF EAST COAST OF HONSHU, JAPAN (229)

MAT 5.32 235 iPc 17 55 10 0.3
CN2 14.13 293 eP 20 01.20 5.7X
pP 20 08.60
SSE 20.16 252 eP 21 09.20 -0.6
BJI 21.02 280 eP 21 15.50 -3.1X
TIA 21.14 269 eP 21 18.00 -1.9
WHN 25.53 258 P 22 03.70 1.0
GYA 33.42 258 P 23 13.60 0.1
GTA 33.50 284 eP 23 14.80 0.7
WMQ 41.21 295 P 24 19.80 1.0
INK 51.19 28 eP 25 37.00 -0.2
GBA 63.14 265 Pd 27 02.50 -0.1
0.6s 1.90nm 4.4mb
NUR 68.36 332 iP 27 31.40 -4.0X
0.9s 22.00nm 5.2mb
LRM 71.02 46 eP 27 52.40 0.1
NB2 72.34 338 P 27 59.20 -0.4
0.9s 4.40nm 4.5mb
S.D. = 0.9 on 11 of 14 obs.

? DEC 16, 1989 14h 23m 10.22± 3.94s
31.560 S ±18.5km 71.980 W ±33.0km
DEPTH = 33.0km (normol)
NEAR COAST OF CENTRAL CHILE (135)

JACH 1.62 134 iPc 23 36.10 -0.9
iS 23 53.00
ROCH 1.63 150 eP 23 36.00 -1.2
iS 23 55.60
PEL 1.92 146 iPd 23 41.00 -0.3
iS 24 02.50
LCCH 1.94 170 eP 23 42.00 0.5
iS 24 03.10
SAN 2.19 150 eP 23 45.50 0.4
iS 24 11.80
TACH 2.27 157 iPc 23 46.40 0.3
iS 24 13.20
FCH 2.27 141 iPc 23 46.50 0.0
iS 24 12.50
PCH 2.40 149 eP 23 28.50 -19.6X
iS 24 16.50
CHCH 2.62 155 ePc 23 51.70 0.5
iS 24 22.50
ZON 2.82 91 eP 23 56.00 2.0
CFA 3.19 92 ePd 24 00.80 1.5
S 24 42.00
MRA 5.40 101 eP 24 28.50 -2.0
CYA 6.20 62 ePd 24 40.80 -1.1
S.D. = 1.3 on 12 of 13 obs.

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* DEC 16, 1989 14h 30m 21.52± 0.76s
8.525 N ±11.0km 126.785 E ±16.8km
DEPTH = 33.0km (normal)
4.6mb (2 obs.)
MINDANAO, PHILIPPINE ISLANDS (259)

DAV 1.86 220 eP 30 56.20 4.5X
MTN 21.67 168 eP 35 12.00 0.6
IPM 25.88 263 eP 35 51.50 -0.8
LOE 25.93 292 eP 35 53.50 0.7
NST 26.99 288 eP 36 08.00 5.5X
CHTO 28.88 294 eP 36 19.90 0.3
WB5 29.20 165 eP 36 22.00 -0.4
BJI 32.78 345 eP 36 54.50 0.7
MUN 41.52 194 iPd 38 07.80 0.3
HFS 93.82 333 eP 43 35.50 -1.0
0.6s 2.60nm 4.8mb
Z 15s 0.15um 4.6MszX
LR 23 24.00
NB2 94.54 334 P 43 39.40 -0.5
0.6s 0.90nm 4.4mb
LIT 95.33 312 eP 43 35.00 -8.9X
KIC 129.46 285 PKP 49 35.20 5.6X
0.5s 3.50nm
LIC 129.77 285 PKP 49 33.40 3.2X
S.D. = 0.8 on 9 of 14 obs.

? DEC 16, 1989 14h 38m 56.54± 2.60s
6 612 N ±28.5km 73.617 W ±43.3km
DEPTH = 190.5 ± 26.2 km
4.4mb (2 obs.)
NORTHERN COLOMBIA (99)

BOG 2.03 193 iP 39 35.50 0.1
iS 40 04.00
UPA 6.32 292 ePc 40 28.30 -0.3
0.7s 19.18nm 4.4mb
S 41 42.00
ZOBO 23.37 167 P 43 49.90 -0.1
LPB 23.64 167 eP 43 57.00 4.7X
LRM 51.47 326 eP 47 45.60 0.8
INK 73.06 340 ePc 50 06.80 -0.2
MBC 73.92 350 eP 50 11.50 -0.4
0.7s 4.00nm 4.3mb
WB5 149.80 241 ePKP 58 27.20 6.1X
S.D. = 0.7 on 6 of 8 obs.

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* DEC 16, 1989 14h 55m 41.61± 0.45s
7.937 N ± 7.0km 126.768 E ±13.0km
DEPTH = 40.8km (2 depth phases)
4.8mb (4 obs.)
MINDANAO, PHILIPPINE ISLANDS (259)

DAV 1.45 235 eP 56 12.40 6.6X
QCP 8.69 321 eP 57 55.00 7.2X
BAG 10.37 325 eP 58 19.50 8.4X
KKM 10.64 260 eP 58 21.50 6.8X
QIZ 19.79 306 eP 00 10.40 -1.1
E 15s 0.60um
MTN 21 10 168 iPd 00 23.90 -1.2
KNA 23.62 175 eP 00 50.50 0.6
SSE 23.62 348 P 00 50.40 0.5
NJ2 25.10 344 eP 01 06.50 2.4
IPM 25.80 264 ePd 01 19.50 8.6X
LOE 26.15 294 eP 01 38.40 24.3X
NST 27.16 289 eP 01 21.00 -2.3
PSI 28.20 261 eP 01 19.00 -13.8X
WB5 28.64 165 eP 01 34.80 -1.9
CHG 29.10 295 eP 01 42.50 1.6
CHTO 29.10 295 eP 01 41.90 1.0
e 01 53.30 43km
QIS 31.00 156 eP 01 56.00 -1.7
ASPA 32.17 168 eP 02 10.30 2.3
TIY 32.36 338 eP 02 08.00 -1.6
Z 17s 0.60um 4.4MszX
BJI 33.34 345 eP 02 16.50 -1.4
SNY 33.87 356 Pc 02 22.40 -0.1
eS 07 48.00
LZH 34.97 327 eP 02 31.50 -0.8
Z 16s 0.60um 4.4MszX
HHC 35.46 340 eP 02 35.60 -0.7
CN2 35.74 358 P 02 39.40 0.9
pP 02 50.40 39km
MDJ 36.62 3 eP 02 46.00 0.1
FORR 38.59 178 eP 03 02.00 -0.5
GTA 39.58 327 eP 03 10.60 -0.3
MUN 40.95 194 iPd 03 23.00 0.9
NWAO 41.64 192 eP 03 29.00 1.3
BWA 46.85 155 eP 04 10.20 0.5
HYB 47.86 286 eP 04 18.00 0.1
GBA 48.72 281 P 04 25.00 0.5
WMQ 49.36 323 eP 04 31.00 1.8
MAIO 67.05 306 eP 06 33.00 -0.2
INK 86.26 22 ePd 08 20.00 0.0
SOD 86.62 338 eP 08 33.00 11.2X
SUF 87.84 333 iP 08 27.50 -0.2
0.7s 7.70nm 5.1mb
MBC 87.87 13 eP 08 29.00 1.3
0.9s 7.00nm 4.9mb
SLL 94.36 333 eP 08 56.20 -1.9
0.6s 1.50nm 4.6mb
NB2 95.06 334 P 08 55.60 -5.8X
1.1s 3.70nm 4.7mb
S.D. = 1.3 on 31 of 40 obs.

DEC 16, 1989 15h 20m 33.63± 0.81s
38.393 N ± 6.7km 21.826 E ±10.9km
DEPTH = 10.0km (geophysicist)
GREECE (364)
ML 3.0 (THE), 3.0 (ATH).

AGG 0.74 32 eP 20 46.20 -2.0
eS 20 57.40
VLS 1.00 258 ePb 20 52.50 0.0
ITM 1.21 176 ePb 20 54.50 -1.7
ATH 1.55 105 ePb 21 02.50 1.3
IGT 1.63 315 eP 21 07.90 5.5X
LIT 1.78 17 eP 21 05.40 0.7
eS 21 30.10
VLI 1.89 152 ePn 21 07.50 1.3
KZN 1.91 359 ePn 21 08.40 1.8
PLG 2.34 32 ePb 21 56.00 43.2X
GRG 2.60 10 eP 21 16.30 -0.1
OHR 2.83 344 ePn 21 25.80 6.1X
KNT 2.89 16 eP 21 20.10 -0.4
VAY 2.98 11 ePn 21 21.00 -0.8
MMB 3.51 24 eP 21 27.00 -2.3
SKO 3.59 355 ePn 21 39.00 8.6X
KKB 3.60 15 eP 21 33.00 2.4
RZN 3.97 33 eP 21 36.00 0.0
S.D. = 1.6 on 13 of 17 obs.

& DEC 16, 1989 15h 21m 53.90s
34.570 N 119.130 W
DEPTH = 5.0km
SOUTHERN CALIFORNIA (43)
<PAS-P>. ML 3.3 (PAS).

ABL 0.29 345 iPd 21 59.40 -0.4
SYP 0.70 267 iPd 22 07.20 -0.7

PAS 0.90 118 ePc 22 10.00 -1.6
MWC 0.95 111 iPc 22 11.10 -1.5
BCH 1.00 308 eP 22 11.90 -1.4
BLP 1.05 270 eP 22 12.60 -1.5
ISA 1.22 26 iPd 22 15.10 -2.0
PHAM 1.64 321 eP 22 21.40 -2.0
PKEM 1.69 332 eP 22 22.90 -1.3
PEC 1.77 112 eP 22 22.80 -2.6
PLM 2.24 122 eP 22 29.80 -2.6
SAO 2.89 320 eP 22 38.10 -3.4
CMB 3.60 344 eP 22 50.20 -1.4
TNP 3.83 23 eP 22 55.90 0.9
GLA 3.89 112 eP 22 53.80 -1.9
KVN 4.55 10 eP 23 05.00 -0.1
16 obs. associoted

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* DEC 16, 1989 15h 22m 43.04± 0.47s
7.774 N ± 7.9km 126.808 E ±12.8km
DEPTH = 33.0km (normal)
4.9mb (3 obs.) 3.9Msz (1 obs.)
MINDANAO, PHILIPPINE ISLANDS (259)

DAV 1.40 241 ePc+ 23 12.00 5.5X
BAG 10.52 325 eP 25 20.10 5.2X
OIZ 19.91 306 P 27 14.20 -0.8
N 16s 1.20um
MTN 20.93 168 eP 27 24.50 -1.0
NNT 27.06 282 eP 28 26.40 1.7
NST 27.25 289 eP 28 23.00 -3.3X
WB5 28.47 165 eP 28 38.20 0.8
CHTO 29.20 295 eP 28 43.70 -0.3
ASPA 32.01 168 eP 29 09.70 0.9
Z 19s 0.24um 3.9Msz
LR 46 12.30
BJI 33.51 345 eP 29 18.00 -3.6X
SNY 34.03 356 eP 29 31.00 4.9X
CN2 35.91 358 eP 29 43.40 1.3
MDJ 36.78 3 eP 29 49.50 0.0
SHL 37.67 302 iP 29 57.50 0.0
iS 35 47.10
FORR 38.42 178 eP 30 02.10 -1.2
GTA 39.73 327 eP 30 16.40 2.0
LSA 39.94 308 P 30 16.60 0.0
MUN 40.80 194 iPd 30 23.80 0.7
NWAO 41.49 192 eP 30 29.00 0.3
BRS 43.06 145 iPc 30 41.00 -0.7
ADE 43.97 166 e(P) 30 49.90 0.9
BWA 46.69 155 eP 31 15.70 5.0X
GBA 48.79 281 Pc 31 26.00 -1.3
0.5s 2.70nm 4.5mb
KEV 86.14 340 eP 35 21.00 -0.8
INK 86.40 22 eP 35 23.00 0.0
SOD 86.78 338 eP 35 25.00 0.0
SUF 88.01 333 eP 35 28.00 -2.9
0.7s 6.00nm 5.0mb
MBC 88.02 13 eP 35 31.00 0.2
1.0s 7.00nm 4.9mb
pP 35 42.50 37kmX
NUR 89.23 331 eP 35 40.00 3.3X
S.D. = 1.2 on 22 of 29 obs.

? DEC 16, 1989 15h 47m 10.66± 5.72s
29.685 S ±34.3km 71.932 W ±41.1km
DEPTH = 33.0km (normal)
NEAR COAST OF CENTRAL CHILE (135)

JACH 3.20 159 iPc 48 00.00 0.1
iS 48 34.60
ZON 3.36 124 eP 48 04.00 1.8
ROCH 3.37 167 iPc 48 02.00 -0.5
PEL 3.61 163 eP 48 06.00 0.3
i(S) 48 43.50
CFA 3.71 122 ePd 48 07.50 0.4
LCCH 3.79 175 eP 48 05.00 -3.2X
FCH 3.89 159 iP 48 10.20 0.3
iS 48 54.00
TACH 4.05 168 iP 48 10.50 -1.4
iS 48 53.20
PCH 4.11 163 eP 48 15.00 2.2
iS 48 56.00
CHCH 4.37 166 eP 48 15.70 -0.8
iS 49 02.00
CYA 5.51 79 e(P) 48 33.00 0.4
MRA 5.99 119 ePc 48 36.50 -2.8
S.D. = 1.6 on 11 of 12 obs.

& DEC 16, 1989 16h 15m 06.40s
60.779 N 138.995 W
DEPTH = 5.0km (geophysicist)
4.2mb (1 obs.)
SOUTHERN YUKON TERRITORY, CANADA(18)
<PGC>. ML 4.3 (PGC), 3.8 (PMR).

HYT 0.73 86 P 15 19.00 -2.1
S 15 29.00
BCPM 0.89 201 iP 15 23.96 0.1
eS 15 36.44
PCA 0.93 223 iP 15 24.63 0.0
iS 15 38.42
YKU 1.28 197 eP 15 32.48 1.9
HON 1.33 177 iP 15 31.35 -0.1
eS 15 49.73
YAH 1.42 254 iP 15 32.00 -1.1
iS 15 51.51
BALM 1.66 280 eP 15 36.11 -0.2
eS 15 59.47
TGL 1.88 271 eP 15 39.63 0.0
eS 16 06.41
WHC 1.91 90 P 15 39.20 -0.8
S 16 06.50
GLB 2.43 288 eP 15 48.79 1.3
DWY 3.29 357 P 15 58.40 -1.2
VLZ 3.60 279 eP 16 04.31 0.4
FID 3.67 273 eP 16 05.96 0.9
TOA 3.69 294 eP 16 07.10 1.7
i 16 09.60
DOT 3.73 323 eP 16 04.32 -1.6
PAX 3.77 308 eP 16 07.01 0.4
NCA 3.96 291 eP 16 10.34 1.2
GLI 3.97 275 eP 16 09.59 0.4
SIT 4.19 151 eP 16 16.00 3.7
i 16 22.70
DDM 4.40 316 eP 16 17.46 2.0
GHO 4.89 286 eP 16 23.09 0.6
PMR 4.97 284 eP 16 22.00 -1.4
DLB 5.11 114 P 16 23.00 -2.6
S 17 46.00
PMS 5.16 280 ePd 16 27.00 0.8
HDA 5.17 318 eP 16 23.53 -2.8
SLKM 5.53 272 eP 16 31.03 -0.4
CUT 5.62 292 eP 16 33.94 1.3
SUA 5.74 282 eP 16 35.99 1.6
FBA 5.77 320 eP 16 34.00 -0.7
KDC 7.55 252 e(P) 16 59.50 -0.2
INK 7.91 15 eP 17 01.00 -3.8
SVW 8.10 280 eP 17 08.00 0.5
TTA 8.33 292 e(P) 17 13.10 2.4
IMA 8.44 315 eP 17 12.70 0.4
EDM 15.80 107 eP 18 48.00 -3.0
FFC 20.44 91 eP 19 45.00 -1.9
0.6s 8.00nm 4.2mb
KVN 25.36 140 eP 20 36.00 0.2
37 obs. ossocioted

.DEC 16, 1989 17h 24m 27.11± 0.50s
65.736 N ± 6.9km 134.739 W ± 6.1km
DEPTH = 10.0km (geophysicist)
4.7mb (9 obs.)
NORTHERN YUKON TERRITORY, CANADA(677)

DWY 2.62 232 P 25 10.20 0.0
INK 2.63 10 eP 25 12.10 1.9
FBA 5.54 267 iP 25 50.60 -0.9
TOA 6.22 239 eP 26 03.30 2.2
PMR 7.62 244 P 26 20.00 -0.8
PMR 7.62 244 eP 26 24.00 3.2X
IMA 7.75 281 eP 26 22.30 -0.5
SIT 8.71 182 e(P) 26 34.80 -1.2
TTA 9.63 263 eP 26 52.30 3.6X
MBC 11.62 18 eP 27 13.50 -2.2
0.5s 18.00nm 5.6mb
EDM 16.47 129 iP 28 17.50 -2.0
FFC 19.38 109 eP 28 51.00 -4.5X
0.7s 36.00nm 4.7mb
SES 19.63 130 eP 28 58.00 -0.5
LON 20.26 154 P 29 10.00 4.9X
LBFM 25.49 157 P 29 57.80 0.8
RSON 25.59 106 P 29 59.00 1.5
8W06 26.93 136 P 30 10.20 -0.1
FRB 27.15 63 eP 30 12.50 0.7
KVN 28.40 152 P 30 24 00 0.5
TNP 29.51 151 P 30 34 00 0.4
0.6s 1.70nm 4.0mb
ANMO 35.09 137 P 31 23.20 0.9
0.8s 3.26nm 4.3mb
JSC 44.43 108 P 32 39.00 -0.4
HFS 52.26 19 eP 33 39.40 -0.5
0.5s 2.40nm 4.4mb
LOR 62.89 30 eP 35 00.60 5.5X
0.6s 5.40nm 4.9mb
SSF 63.01 31 eP 35 00.90 5.0X
0.6s 2.70nm 4.6mb
LBF 63.19 30 eP 35 01.40 4.3X
0.8s 5.30nm 4.8mb
BGF 63.35 31 eP 35 02.60 4.4X
0.6s 5.40nm 4.9mb
S.D. = 1.3 on 19 of 27 obs.

DEC 16, 1989 17h 30m 28.03± 0.67s
38.382 N ± 5.5km 21.936 E ± 8.7km
DEPTH = 10.0km (geophysicist)
GREECE (364)
ML 3.1 (THE), 3.0 (ATH).

AGG 0.71 26 eP 30 40.00 -2.0
eS 30 51.40
VLS 1.08 259 ePg 30 47.40 -0.9
ITM 1.20 180 ePb 30 49.50 -0.9
NEO 1.36 47 ePb 30 52.20 -0.9
ATH 1.46 106 ePb 30 54.80 0.4
eSb 31 15.20
IGT 1.70 313 eP 31 04.50 6.7X
LIT 1.77 14 eP 30 59.14 0.2
eS 31 23.80
VLI 1.84 154 ePn 31 01.40 1.5
KZN 1.93 356 ePn 31 02.20 1.0
PLG 2.31 30 ePn 31 06.00 -0.7
GRG 2.60 8 eP 31 12.00 1.2
OHR 2.86 343 ePn 31 20.40 5.8X
KNT 2.87 15 eP 31 14.90 0.2
VAY 2.98 9 ePn 31 15.50 -0.6
MMB 3.49 23 eP 31 22.00 -1.4
SKO 3.61 354 ePn 31 27.00 1.9
RZN 3.93 32 eP 31 31.00 1.1
VTS 4.32 13 eP 31 45.00 9.7X
Sg 32 25.00
S.D. = 1.3 on 15 of 18 obs.

? DEC 16, 1989 17h 44m 56.52± 3.50s
7.260 N ±51.1km 127.006 E ±21.0km
DEPTH = 33.0km (normal)
4.9mb (2 obs.)
PHILIPPINE ISLANDS REGION (248)

DAV 1.43 263 eP 45 20.40 0.0
1.0s 1368.00nm
KNA 22.93 176 eP 50 00.50 1.6
WB5 27.93 165 eP 50 45.00 -0.9
ASPA 31.47 168 P 51 16.90 -0.6
WARB 33.24 181 iPd 51 33.00 0.0
0.3s 5.00nm 4.9mb
MUN 40.36 194 eP 52 32.50 -0.4
NWAO 41.03 193 iPd 52 39.00 0.6
0.6s 13.00nm 4.8mb
BRS 42.53 145 iPd 52 51.00 0.1
i 52 59.00
ADE 43.43 166 e(P) 52 55.50 -2.6
BWA 46.14 155 eP 53 21.20 1.4
CAN 47.16 155 eP 53 28.60 0.8
S.D. = 1.3 on 11 of 11 obs.

DEC 16, 1989 17h 49m 54.28± 0.24s
8.135 N ± 3.9km 126.889 E ± 5.7km
DEPTH = 37.8km (5 depth phases)
5.4mb (24 obs.) 4.9Msz (16 obs.)
MINDANAO, PHILIPPINE ISLANDS (259)
CENTROID, MOMENT TENSOR (HRV)
Data Used: GDSN
L.P.B.: 12S, 24C
Centroid Locotion:
Origin Time 17:50: 2.7 0.9
Lat 8.17N FIX;Lon 126.98E FIX
Dep 15.0 FIX Half-durotion 2.3
Moment Tensor; Scale 10**17 Nm
Mrr= 1.31 0.14 Mtt= 0.44 0.12
Mff=-1.75 0.19 Mrt=-0.38 0.29
Mrf= 1.81 0.34 Mtf=-0.39 0.13
Principal Axes:
T Val= 2.29 Plg=61 Azm=238
N 0.31 15 357
P -2.60 24 94

16d 17h

Best Double Couple:Mo=2.4*10**17
NP1:Strike=214 Dip=25 Slip= 130
NP2: 351 71 74

DAV 1.67 231 eP 50 25.00 3.5X
QCP 8.61 319 eP 52 08.00 8.5X
BAG 10.28 324 eP 52 22.00 -0.6
KKM 10.79 260 ePd 52 35.00 5.4X
1.2s 112.00nm 5.9mb
AAI 11.82 174 eP 52 40.00 -3.4X
MKS 15.19 209 iPc 53 33.50 5.6X
ANP 17.71 344 eP 54 02.00 2.1
GUMO 18.46 71 e(P) 54 06.00 -3.1X
eS 57 43.00
GUA 18.49 72 e(P) 54 07.40 -2.1
QZH 18.50 336 P 54 08.00 -1.5
Z 18s 4.10um
N 17s 5.00um
sS 57 28.00
HKC 18.66 320 eP 54 10.00 -1.5
eS 57 41.00
GZH 19.75 320 eP 54 20.00 -4.0X
Z 18s 4.80um
N 15s 4.00um
E 15s 2.40um
eS 58 02.00
QIZ 19.77 305 P 54 25.00 0.7
N 17s 9.00um
E 17s 6.50um
PP 54 44.00
sS 58 15.00
KHKI 19.87 215 eP 54 27.00 1.6
e 58 10.00
MTN 21.27 169 iPd 54 38.80 -0.9
SSE 23.46 348 P+ 55 01.00 -0.2
5.0s 1.00nm 2.6mb X
Z 20s 2.30um 4.6Msz
N 14s 1.70um
E 12s 1.60um
S 59 12.00
sS 59 46.00
SS 00 16.00
KNA 23.80 176 iPc 55 05.00 0.3
KGM 24.24 257 eP 55 11.70 2.7
NJ2 24.94 344 Pc 55 15.50 -0.1
Z 20s 2.20um 4.7Msz
N 11s 1.10um
E 11s 1.30um
S 59 35.50
WHN 25.19 334 eP 55 17.70 -0.3
Z 20s 3.76um 4.9Msz
N 16s 2.97um
E 15s 3.72um
S 59 36.00
sS 59 54.00
IPM 25.94 264 ePd 55 28.10 2.9
0.9s 43.10nm 5.0mb
e 56 35.00
LOE 26.18 293 eP 55 27.00 -0.3
GYA 26.48 316 P 55 31.00 0.9
Z 18s 4.10um 5.0Msz
N 16s 3.20um
E 16s 2.80um
PMG 26.67 130 eP 55 31.00 -0.8
NNT 27.07 282 eP 55 28.10 -7.4X
ePS 00 01.90
NNT 27.07 282 eP 55 37.90 2.4
e 03 45.40
PPI 27.75 253 eP 55 42.00 0.3
KMI 28.56 309 eP 55 46.00 -3.2X
Z 18s 9.40um 5.4Msz
E 17s 4.40um
S 00 39.00
sS 00 52.00
WB5 28.80 165 eP 55 48.80 -2.3
IIDJ 29.03 19 eP 55 57.50 4.4X
CHG 29.13 294 iPc 55 53.00 -1.1
1.0s 15.00nm 4.6mb
CHTO 29.13 294 ePc 55 53.40 -0.7
TIA 29.33 344 eP 55 54.10 -1.7
Z 18s 1.70um 4.7Msz
E 14s 1.70um
S 00 47.00
CHJJ 29.90 20 eP 55 59.50 -1.4
MBL 29.92 193 eP 56 00.30 -0.9
MTMJ 30.01 18 eP 56 01.40 -0.6
MAT 30.10 18 eP 56 03.00 0.4

2.5s 333.33nm 5.7mb
Z 20s 1.77um 4.7Msz
eS 00 46.00
XAN 30.64 330 P 56 04.70 -2.7
N 13s 1.20um
DL2 31.00 352 P 56 11.00 0.6
Z 16s 1.20um 4.7MszX
N 11s 0.90um
E 14s 1.70um
S 01 15.00
QIS 31.13 156 iPc 56 10.90 -0.9
CD2 31.31 319 eP 56 11.20 -2.1
TIY 32.22 338 eP 56 18.50 -2.8
Z 20s 3.25um 5.0Msz
N 15s 2.60um
ASPA 32.34 168 iPc 56 20.80 -1.6
0.4s 49.00nm 5.7mb
NANU 32.47 200 eP 56 23.20 -0.3
BJI 33.18 345 eP 56 28.50 -1.0
Z 18s 1.47um 4.7Msz
N 14s 0.86um
eS 01 45.00
SNY 33.68 356 iPc 56 34.00 0.2
Z 18s 2.40um 5.0Msz
N 20s 2.00um
pP 56 44.00 35km
iS 01 56.00
WARB 34.11 180 iPc 56 37.30 -0.4
0.4s 36.00nm 5.7mb
LZH 34.87 326 eP 56 43.00 -1.4
Z 18s 4.80um 5.3Msz
N 15s 3.00um
E 15s 2.70um
sP 57 06.70
ePP 58 09.00
eS 02 12.00
HHC 35.32 340 P 56 47.80 -0.3
Z 20s 3.10um 5.1Msz
E 17s 0.70um
S 02 24.50
MEKA 35.48 193 iPc 56 48.10 -1.4
CN2 35.55 358 Pc 56 52.00 2.2
4.0s 0.40nm 2.7mb X
Z 18s 2.30um 5.0Msz
N 15s 1.30um
pP 57 00.60 29km
PP 58 10.00
S 02 20.00
SS 04 36.00
BTO 35.65 338 eP 56 52.50 1.6
N 14s 1.90um
E 11s 0.90um
S 02 28.00
MDJ 36.42 3 eP 56 59.00 1.9
Z 20s 2.20um 4.9Msz
E 10s 0.50um
pP 57 10.00 39km
S 02 36.00
sS 02 48.00
HNR 37.27 117 P 57 05.00 0.4
SHL 37.55 302 iP 57 06.90 -0.3
QLP 38.40 155 eP 57 13.00 -1.0
e 01 32.00
MRWA 38.59 195 iPc 57 15.50 -0.1
0.3s 8.00nm 5.0mb
FORR 38.78 178 eP 57 16.30 -0.8
0.4s 116.00nm 6.0mb
COOL 39.18 188 iPc 57 20.10 -0.4
0.4s 29.00nm 5.4mb
GTA 39.48 326 iPc 57 22.50 -0.6
Z 18s 2.10um 5.0Msz
S 03 24.00
BAL 39.74 194 iPc 57 25.30 0.2
0.4s 24.00nm 5.3mb
LSA 39.78 307 P 57 27.00 0.9
S 03 29.00
RMO 40.44 149 eP 57 31.00 0.1
e 10 04.00
KLB 40.46 192 iPc 57 31.20 0.2
MUN 41.17 194 eP 57 37.00 0.2
0.7s 41.00nm 5.3mb
NWAO 41.85 192 iPc 57 43 10 0.7
0.8s 67.00nm 5.4mb
RKG 43.01 192 iPd 57 57.20 5.3X
0.4s 51 00nm 5.6mb
BRS 43.31 146 iPc 57 54.30 -0.2
0.5s 9.00nm 4.8mb

5.7mb
Z 20s 1.77um 4.7Msz
eS 00 46.00
XAN 30.64 330 P 56 04.70 -2.7
N 13s 1.20um
DL2 31.00 352 P 56 11.00 0.6
Z 16s 1.20um 4.7MszX
N 11s 0.90um
E 14s 1.70um
S 01 15.00
QIS 31.13 156 iPc 56 10.90 -0.9
CD2 31.31 319 eP 56 11.20 -2.1
TIY 32.22 338 eP 56 18.50 -2.8
Z 20s 3.25um 5.0Msz
N 15s 2.60um
ASPA 32.34 168 iPc 56 20.80 -1.6
0.4s 49.00nm 5.7mb
NANU 32.47 200 eP 56 23.20 -0.3
BJI 33.18 345 eP 56 28.50 -1.0
Z 18s 1.47um 4.7Msz
N 14s 0.86um
eS 01 45.00
SNY 33.68 356 iPc 56 34.00 0.2
Z 18s 2.40um 5.0Msz
N 20s 2.00um
pP 56 44.00 35km
iS 01 56.00
WARB 34.11 180 iPc 56 37.30 -0.4
0.4s 36.00nm 5.7mb
LZH 34.87 326 eP 56 43.00 -1.4
Z 18s 4.80um 5.3Msz
N 15s 3.00um
E 15s 2.70um
sP 57 06.70
ePP 58 09.00
eS 02 12.00
HHC 35.32 340 P 56 47.80 -0.3
Z 20s 3.10um 5.1Msz
E 17s 0.70um
S 02 24.50
MEKA 35.48 193 iPc 56 48.10 -1.4
CN2 35.55 358 Pc 56 52.00 2.2
4.0s 0.40nm 2.7mb X
Z 18s 2.30um 5.0Msz
N 15s 1.30um
pP 57 00.60 29km
PP 58 10.00
S 02 20.00
SS 04 36.00
BTO 35.65 338 eP 56 52.50 1.6
N 14s 1.90um
E 11s 0.90um
S 02 28.00
MDJ 36.42 3 eP 56 59.00 1.9
Z 20s 2.20um 4.9Msz
E 10s 0.50um
pP 57 10.00 39km
S 02 36.00
sS 02 48.00
HNR 37.27 117 P 57 05.00 0.4
SHL 37.55 302 iP 57 06.90 -0.3
QLP 38.40 155 eP 57 13.00 -1.0
e 01 32.00
MRWA 38.59 195 iPc 57 15.50 -0.1
0.3s 8.00nm 5.0mb
FORR 38.78 178 eP 57 16.30 -0.8
0.4s 116.00nm 6.0mb
COOL 39.18 188 iPc 57 20.10 -0.4
0.4s 29.00nm 5.4mb
GTA 39.48 326 iPc 57 22.50 -0.6
Z 18s 2.10um 5.0Msz
S 03 24.00
BAL 39.74 194 iPc 57 25.30 0.2
0.4s 24.00nm 5.3mb
LSA 39.78 307 P 57 27.00 0.9
S 03 29.00
RMO 40.44 149 eP 57 31.00 0.1
e 10 04.00
KLB 40.46 192 iPc 57 31.20 0.2
MUN 41.17 194 eP 57 37.00 0.2
0.7s 41.00nm 5.3mb
NWAO 41.85 192 iPc 57 43 10 0.7
0.8s 67.00nm 5.4mb
RKG 43.01 192 iPd 57 57.20 5.3X
0.4s 51 00nm 5.6mb
BRS 43.31 146 iPc 57 54.30 -0.2
0.5s 9.00nm 4.8mb

i 57 58.90 15kmX
i 58 05.80
eS 04 17.00
ADE 44.30 166 iPc 58 02.80 0.4
0.9s 89.08nm 5.6mb
BWA 46.98 155 eP 58 24.90 1.2
i 58 37.50 46km
HYB 47.92 286 eP 58 30.50 -0.8
e 58 42.00 41km
CAN 47.99 156 eP 58 31.00 -0.7
i 58 44.70 51kmX
TOO 48.68 160 eP 58 38.00 1.1
KOD 48.80 276 eP 58 38.00 -0.5
ePP 00 36.00
GBA 48.80 281 P 58 38.00 -0.1
DZM 49.04 129 iPd 58 41.00 1.0
WMQ 49.28 323 P 58 41.00 -0.5
Z 18s 2.50um 5.3Msz
ScS 08 29.00
NDI 50.94 300 eP 58 53.20 -1.2
eS 06 29.00
POO 52.47 287 eP 59 06.00 -0.1
BOM 53.47 287 eP 58 52.80 -20.6X
eS 06 47.30
KSH 55.09 313 eP 59 25.70 0.5
QUE 60.02 300 eP 59 59.00 -1.2
ADK 63.28 35 e(P) 00 22.00 0.6
0.8s 20.50nm 5.3mb
MSZ 64.25 149 P 00 28.50 0.7
MAIO 67.03 306 iPc 00 45.50 -0.6
eS 09 44.00
TTA 76.93 27 eP 01 46.60 2.2
TAB 77.62 307 eP 01 53.00 4.2X
KDC 78.16 33 eP 01 53.20 2.1
e 01 54.50 4kmX
i 02 04.70
IMA 78.32 24 eP 01 54.30 2.2
0.7s 11.80nm 5.0mb
PMR 80.03 29 eP 02 02.50 1.3
0.7s 28.60nm 5.4mb
FBA 80.70 26 eP 02 07.00 2.2
TOA 81.44 28 ePc 02 12.60 3.9X
KEV 85.83 340 eP 02 31.00 0.1
0.7s 13.30nm 5.3mb
INK 86.03 22 eP 02 35.00 3.1X
SOD 86.48 338 iP 02 33.80 -0.3
SALJ 86.76 302 P+ 02 36.80 0.5
MASJ 86.77 301 P+ 02 37.00 0.6
MKRJ 86.86 301 P+ 02 37.40 0.6
PRNI 87.57 300 ePc 02 40.00 -0.2
MBC 87.65 13 eP 02 41.50 1.8
1.0s 25.00nm 5.4mb
SUF 87.72 333 iP 02 39.90 -0.3
MBH 87.75 300 ePc 02 42.00 1.0
NUR 88.95 331 iP 02 46.00 -0.1
0.5s 21.10nm 5.7mb
DAG 92.95 353 iPc 03 03.80 -0.6
0.5s 10.56nm 5.5mb
HFS 94.21 333 eP 03 09.10 -1.4
0.7s 8.00nm 5.3mb
NB2 94.93 334 P 03 12.20 -1.7
0.7s 3.50nm 4.9mb
KHC 98.71 322 P 03 37.00 5.8X
KIC 129.66 285 (PKP) 09 03.90 1.7
UPA 148.66 58 ePKP 09 30.00 -6.2X
CHCH 149.65 150 ePKP 09 42.50 5.2X
PCH 149.97 150 ePKP 09 44.00 6.2X
SAN 150.04 150 ePKP 09 42.80 5.0X
PEL 150.27 149 iPKPc 09 44.50 6.3X
i 09 55.10
CNCB 163.13 122 PKP 09 57 90 2.7X
LPB 163.16 121 ePKP 09 58.00 2.9X
CCH 164.33 127 (PKP) 10 12 00 16.0X
S.D. = 1.3 on 92 of 116 obs.

DEC 16, 1989 17h 56m 19.90± 0.47s
4.593 S ± 6.3km 135.289 E ± 7.9km
DEPTH = 33.0km (normal)
5.3mb (3 obs.)
WEST IRIAN REGION (196)

AAI 7.13 277 e(P) 58 05.00 0.4
MNDI 8.48 101 eP 58 24.00 0.4
MTN 9.17 206 eP 58 33.00 0.0
eS 00 15 00
PMG 12.71 113 eP 59 21.00 -0.2
KNA 12.81 210 eP 59 22.00 -0.4

WB5	15.22	183	eP	59 52.00	-2.2
			i	00 02.20	
			eS	02 38.10	
ASPA	19.01	184	iPd	00 44.20	2.4
	0.7s		93.00nm		5.1mb
GYA	41.48	320	P	04 06.00	0.2
XAN	45.79	329	P	04 40.00	-0.4
TIY	47.15	335	Pc	04 51.20	0.0
BJI	47.77	340	eP	04 55.00	-0.9
	1.5s		52.00nm		5.3mb
N	13s		0.81um		
LZH	50.04	327	Pd	05 15.00	1.3
	1.5s		62.00nm		5.4mb
			pP	05 19.50	15kmX
HHC	50.17	337	P	05 14.40	-0.2
BTO	50.59	335	eP	05 17.00	-0.8
GTA	54.65	327	eP	05 48.20	0.1
WMO	64.42	324	eP	06 55.60	0.3
S.D. = 1.1		on	16 of	16 obs.	

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* DEC 16, 1989 18h 02m 03.76± 2.14s
40.780 N ±12.9km 20.909 E ±19.1km
DEPTH = 10.0km (geophysicist)
GREECE-ALBANIA BORDER REGION (392)
ML 2.6 (THE), 2.5 (SKO). MD 2.9 (ATH).

OHR	0.34	346	iPgc	02 09.80	-1.0
			iSg	02 16.40	
KZN	0.81	125	iPgc	02 16.30	-3.2X
GRG	1.15	81	eP	02 24.30	-0.9
			eS	02 45.00	
SKO	1.26	18	ePn	02 29.00	1.9
			iSn	02 46.20	
VAY	1.37	66	ePn	02 28.00	-0.8
LIT	1.38	119	eP	02 28.30	-0.8
			eS	02 52.10	
PLG	1.97	101	ePb	02 38.60	1.0
NEO	2.31	129	ePb	02 43.20	0.8
S.D. = 1.4		on	7 of	8 obs.	

? DEC 16, 1989 18h 16m 00.31± 2.24s
8.255 N ±42.0km 126.168 E ±56.6km
DEPTH = 33.0km (normal)
4.6mb (3 obs.)
MINDANAO, PHILIPPINE ISLANDS (259)

SSE	23.20	349	P	21 05.50	0.3
BJI	32.89	346	eP	22 33.00	-0.5
INK	86.19	22	eP	28 38.00	-1.3
MBC	87.69	13	eP	28 48.00	1.5
	0.5s		2.00nm		4.6mb
HFS	93.78	332	eP	29 14.90	-0.2
	0.4s		1.10nm		4.6mb
NB2	94.51	334	P	29 18.60	0.1
	0.8s		2.10nm		4.6mb
S.D. = 1.2		on	6 of	6 obs.	

% DEC 16, 1989 18h 22m 58.74± 0.87s
33.055 S ± 6.8km 117.050 E ±10.3km
DEPTH = 10.0km (geophysicist)
WESTERN AUSTRALIA (590)

NWAO	0.20	51	iPd	23 03.40	0.3
			iS	23 08.70	
RKG	1.01	182	eP	23 17.90	0.0
			iS	23 34.00	
MUN	1.29	326	eP	23 23.00	0.4
			iS	23 44.10	
KLB	1.58	23	eP	23 26.60	-0.2
			eS	23 49.00	
MRWA	3.93	346	eP	24 00 00	-0.4
			eS	24 40 00	
S.D. = 0.5		on	5 of	5 obs.	

? DEC 16, 1989 19h 36m 06.89± 2.98s
13.644 N ±37.5km 91.880 W ±22.0km
DEPTH = 33.0km (normal)
4.6mb (2 obs.)
NEAR COAST OF GUATEMALA (71)

TPX	1.31	344	iP	36 30.00	1.0
			(S)	37 01.50	
SCX	3.16	347	(P)	37 06.00	10.6X
			(S)	37 41.50	
OXX	5.79	307	eP	37 33.50	0.5
PPM	8.43	311	eP	38 08.50	-1.7
UYO	20.57	354	iPd	40 43.50	-2.0
LRM	36.48	336	eP	43 12.30	1.2
			e	43 21.00	
PNT	42.24	333	eP	44 00.00	1.4
	0.8s		11.00nm		4.6mb
EDM	43.01	341	iP	44 05.50	0.7
INK	60.81	344	eP	46 17.50	-0.3
MBC	64.28	353	eP	46 40.00	-0.8
	0.8s		4.00nm		4.6mb
S.D. = 1.5		on	9 of	10 obs.	

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* DEC 16, 1989 20h 13m 10.74± 0.66s
17.020 S ±17.7km 173.685 W ±13.2km
DEPTH = 33.0km (normal)
4.9mb (3 obs.)
TONGA ISLANDS (173)

AFI	3.60	31	eP	14 06.80	1.2
			S	14 40.00	
DZM	19.38	252	iPc	17 42.10	5.1X
KRP	22.88	202	P	18 18.90	6.4X
VAH	25.09	90	iP	18 34.30	0.3
	1.0s		25.00nm		4.8mb
RUV	25.33	90	iP	18 36.30	0.0
	1.0s		25.00nm		4.8mb
CAN	37.85	234	eP	20 27.00	0.7
BWA	38.02	236	eP	20 21.70	-6.1X
CMS	39.39	241	iPd	20 40.00	0.8
ASPA	49.37	253	eP	21 31.50	-27.9X
	0.4s		10.00nm		
ASPA	49.37	253	iPc	21 58.70	-0.7
	0.8s		56.00nm		5.6mb
LRM	83.45	38	eP	25 35.70	-0.9
SES	86.68	35	eP	25 51.00	-1.4
S.D. = 1.1		on	8 of	12 obs.	

DEC 16, 1989 20h 28m 45.74± 1.18s
6.807 N ± 6.5km 71.778 W ± 7.9km
DEPTH = 35.8 ± 11.9 km
4.7mb (4 obs.) 4.3Msz (1 obs.)
NORTHERN COLOMBIA (99)

FUQ	2.36	236	iP	29 29.00	5.8X
BOG	3.14	226	eP	29 34.00	-0.4
PSO	7.86	225	eP	30 42.50	1.6
UPA	7.98	286	eP	30 42.00	-0.3
			(S)	32 12.20	
CUM	8.35	64	eP	30 47.00	-0.4
			iS	32 19.00	
SLB	12.65	56	eP	31 37.41	-8.8X
ZOBO	23.21	171	P	33 50.00	-1.3
Z	18s		0.90um		4.3Msz
			LR	42 54.00	
LPB	23.47	171	P	33 54.00	0.3
			SS	41 05.00	
			LR	43 22.00	
CNCB	23.76	171	Pc	33 55.70	-0.9
			i	41 16.00	
CCH	24.67	167	eP	34 06.00	0.9
FVM	35.35	334	eP	35 40.00	0.1
TUL	36.38	326	eP	35 48.90	0.3
	1.0s		9.30nm		4.6mb
ANMO	42.44	316	e(P)	36 38.60	-0.6
SCH	48.04	4	ePd	37 24.50	1.1
LRM	52.35	325	eP	37 57.00	0.2
SES	54.37	330	eP	38 12.00	0.7
FRB	56.88	2	eP	38 28.00	-1.1
EDM	57.26	332	iP	38 30.00	-2.1
PNT	58.32	325	eP	38 40.00	0.5
	0.8s		13.00nm		5.1mb
KIC	66.54	86	(P)	39 35.70	0.8
INK	73.49	340	eP	40 16.00	-0.3
MBC	74.06	349	eP	40 20.00	0.5
	0.7s		4.00nm		4.5mb
NB2	80.69	29	P	40 58.00	1.5
	0.9s		9.40nm		4.8mb
KBA	81.74	43	eP	41 06.00	3.5X
			e	02 31.00	
SOD	87.00	23	iP	41 34.80	6.4X
GBA	143.32	56	PKPd	48 21.90	2.9X
	1.2s		6.70nm		
ASPA	150.18	233	iPKPd	48 33.60	3.5X
	0.6s		9.00nm		
WB5	151.49	240	ePKP	48 31.20	-0.9
S.D. = 1.0		on	22 of	28 obs.	

? DEC 16, 1989 20h 53m 15.05± 3.07s
37.423 N ±13.2km 20.312 E ±27.8km
DEPTH = 10.0km (geophysicist)
IONIAN SEA (399)
ML 3.0 (THE). MD 3.1 (ATH).

VLS	0.78	16	ePb	53 31.10	0.8
ITM	1.31	100	ePb	53 40.00	0.7
AGG	2.25	44	eP	53 52.30	-0.7
			eS	54 18.10	
NEO	2.96	50	ePn	54 02.20	-0.8
LIT	3.17	32	eP	54 06.00	0.1
OHR	3.70	6	e(Pn)	54 18.50	4.9X
SLY	20.31	87	ePd	58 04.00	10.2X
			eS	00 47.00	
TAB	20.57	80	eP	57 57.00	0.3
RYD	25.74	112	eP	58 47.00	-0.5
S.D. = 0.8		on	7 of	9 obs.	

DEC 16, 1989 20h 55m 37.12± 0.30s
34.585 N ± 7.4km 57.516 E ± 3.6km
DEPTH = 33.0km (normal)
4.5mb (10 obs.) 4.4Msz (2 obs.)
IRAN (348)

MHI	2.35	43	iPnd	56 13.60	-0.8
	0.7s		906.85nm		
			eSn	56 48.00	
TEH	5.15	285	eP	56 52.00	-2.1
KER	8.60	271	e(P)	57 43.00	0.6
QUE	9.10	116	eP	57 54.00	4.6X
			e(S)	59 59.50	
MSL	11.85	283	ePc	58 27.00	0.2
			eS	02 02.50	
QASM	14.73	239	eP	59 01.00	-4.0X
KSH	15.52	66	eP	59 10.60	-4.7X
HLBJ	17.90	268	P+	59 46.20	0.9
KMSA	18.25	222	eP	59 47.50	-2.0
SALJ	18.43	268	P+	59 52.40	0.7
MASJ	18.47	267	P+	59 53.30	1.1
DSI	18.79	267	e(P)	59 57.00	0.9
PRNI	19.46	264	e(P)	00 04.00	0.0
MBH	19.74	262	e(P)	00 07.00	0.0
POO	21.61	134	iPc	00 26.00	-0.3
ALT	22.35	290	eP	00 31.20	-2.5
ELL	22.51	283	eP	00 35.40	0.1
KHL	22.79	288	eP	00 38.00	0.0
WMO	25.02	59	eP	01 00.00	0.4
Z	14s		1.10um		4.5MszX
			sS	05 33.00	
HYB	25.40	127	eP	01 03.00	-0.3
VRI	25.91	305	ePd	01 10.00	2.2
			e	13 10.00	
MLR	26.35	304	eP	01 13.00	1.0
CMP	26.93	303	ePd	01 19.00	1.9
GBA	27.59	134	P	01 25.00	1.7
	1.3s		8.30nm		4.2mb
VAY	28.23	294	eP	01 31.50	2.6
LSA	28.81	90	P	01 34.80	0.0
GTA	33.90	69	eP	02 19.80	0.7
LJU	34.33	303	e(P)	02 21.50	-1.1
KHC	35.28	308	P	02 30.90	0.1
FIR	36.61	299	eP	02 40.00	-1.9
SOD	37.34	341	eP	02 53.00	5.2X
LZH	37.55	74	eP	02 52.00	1.8
Z	16s		0.70um		4.6MszX
HFS	38.08	326	eP	02 53.30	-0.8
	0.5s		2.30nm		4.3mb
NB2	39.55	326	P	03 05.80	-0.7
	0.8s		3.30nm		4.1mb
CHG	39.91	102	iPd	03 10.00	0.2
	1.0s		22.50nm		4.9mb
CHTO	39.91	102	eP	03 09.80	0.0
KMI	40.06	91	Pd	03 11.00	-0.3
LBF	41.62	304	eP	03 24.50	0.8
	1.0s		8 00nm		4.4mb
LOR	41.69	304	eP	03 24.40	0.2
	1.0s		14.00nm		4.6mb
SMF	41.73	304	eP	03 24.70	0.2
	1.0s		14.80nm		4.7mb
SSF	41.94	304	eP	03 25.60	-0.6
	1.0s		10.80nm		4.5mb
AVF	42.06	304	eP	03 26.30	-0.9
	1.0s		20.80nm		4.8mb
HHC	42.64	65	eP	03 33.00	0.8
GYA	42.76	87	P	03 32.80	-0.5
LOE	42.89	102	eP	03 17.50	-16.8X
TIY	43.92	69	eP	03 42.00	-0.6

16d 21h

Z 16s 0.70um 4.7MszX
BJI 46.25 65 eP 04 01.00 0.0
Z 20s 0.30um 4.2Msz
BCAO 46.93 239 ePc 04 06.60 -0.1
0.6s 5.00nm 4.7mb
TIA 47.94 70 eP 04 13.20 -1.2
KIC 63.65 259 P 06 07.20 -0.3
TIC 63.71 259 P 06 07.60 -0.4
LIC 63.96 259 P 06 09.20 -0.4
Z 20s 0.32um 4.5Msz
INK 77.09 4 eP 07 27.00 -1.2
FBA 78.88 11 eP 07 38.10 0.0
OXX 123.08 330 (PKP) 14 47.00 14.5X
S.D. = 1.1 on 49 of 55 obs.

DEC 16, 1989 21h 10m 39.02± 0.32s
35.183 N ± 3.5km 26.612 E ± 2.9km
DEPTH = 87.2 ± 4.6 km
4.5mb (21 obs.)
CRETE (370)
MD 4.3 (HLW).

KAP 0.59 51 eP 10 55.70 1.3
NPS 0.82 276 iPd 10 58.50 1.7
APE 2.08 335 eP 11 12.00 -0.7
eS 11 33.40
YER 2.37 34 iPn 11 16.70 -0.1
SMG 2.53 4 iPd 11 18.00 -0.8
KSL 2.59 68 iPd 11 21.30 1.6
eS 11 49.40
ELL 3.10 59 iPn 11 28.70 1.9
IZM 3.25 9 iPn 11 28.80 0.0
VLI 3.35 298 eP 11 30.00 -0.2
ATH 3.63 321 iPd 11 35.00 1.0
KHL 3.91 36 iPn 11 38.20 0.2
BCK 3.93 54 iPn 11 40.20 1.9
PRK 4.06 356 iPd 11 39.10 -1.0
ITM 4.28 299 iPc 11 44.00 0.9
EZN 4.64 357 iPn 11 46.70 -1.4
DST 4.70 19 iPn 11 48.30 -0.6
PPCY 4.71 92 ePn 11 49.20 0.1
eSn 12 39.50
ALT 4.77 35 iPn 11 46.80 -3.2X
NEO 4.92 328 iPc 11 52.40 0.3
AGG 5.14 319 eP 11 55.90 0.9
EDC 5.25 11 iPn 11 55.60 -1.0
BNT 5.27 11 iPn 11 56.90 0.1
CSS 5.51 90 eP 12 00.00 -0.3
eSn 13 00.00
OUR 5.55 339 eP 12 00.90 0.2
VLS 5.69 303 eP 12 02.50 -0.2
PLG 5.76 335 eP 12 04.20 0.6
YLV 5.80 21 iPn 12 04.40 0.1
GPA 5.88 29 ePn 12 04.00 -1.3
LIT 5.90 328 eP 12 06.10 0.5
RDO 6.01 352 iPd 12 07.00 -0.1
FAM 6.06 90 eP 12 09.50 1.7
THE 6.16 333 eP 12 10.00 0.9
ITU 6.21 17 eP 12 08.00 -1.8
SRS 6.38 339 eP 12 12.80 0.5
KZN 6.39 325 iPd 12 13.70 1.2
KDZ 6.52 352 iP 12 14.00 -0.2
IGT 6.62 313 eP 12 16.30 0.8
HLW 6.64 142 ePn 12 16.50 0.7
eSn 13 27.50
KNT 6.65 335 eP 12 16.60 0.7
GRG 6.65 331 eP 12 16.60 0.6
RZN 6.66 348 iPc 12 16.00 -0.3
MMB 6.78 341 iP 12 18.00 0.2
KOT 6.84 138 ePn 12 18.50 -0.1
eSn 13 28.00
VAY 6.90 334 iPn 12 20.00 0.6
PLD 7.07 348 eP 12 22.00 0.3
KKB 7.22 339 iPc 12 24.00 0.2
OHR 7.48 324 ePn 12 26.20 -1.2
PGB 7.60 346 iPc 12 29.00 0.0
ZNT 7.61 110 eP 12 28.20 -0.9
eS 13 49.20
VTS 7.86 341 iP 12 33.00 0.3
SKO 7.89 331 iPn 12 34.50 1.5
JVI 7.98 112 eP 12 34.40 0.2
PVL 8.08 353 iPc 12 35.00 -0.6
DSI 8.17 114 eP 12 36.30 -0.5
BURJ 8.20 108 P+ 12 37.50 0.1
SALJ 8.20 110 Pd 12 37.10 -0.3
MKT 8.32 118 eP 12 38.70 -0.2
MASJ 8.35 112 Pd 12 39.10 -0.3
MKRJ 8.37 113 Pd 12 39.70 0.0
PRNI 8.55 122 eP 12 41.00 -1 1
eS 14 02.00
LCI 8.57 309 P 12 37.40 -4.8X
eSn 14 01.00
PSN 8.57 8 eP 12 41.00 -1.3
HLBJ 8.65 108 P+ 12 42.70 -0.8
OUTJ 8.77 114 P+ 12 44.30 -0.8
MBH 8.82 125 eP 12 45.00 -0.7
ROI 9.11 302 P 12 49.90 0.2
eSn 14 17.20
CZI 9.28 299 P 12 49.70 -2.2
eSn 14 15.50
TDS 9.31 302 P 12 48.00 -4.4X
eSn 14 17.10
BRT 9.35 310 P 12 49.40 -3.5X
CSI 9.40 302 P 12 50.50 -3.1X
eSn 14 22.50
ATN 9.44 292 P 12 51.60 -2.5
eSn 14 22.40
HITJ 9.50 122 P+ 12 54.80 -0.2
MEU 9.64 285 P 12 55.60 -1.4
eSn 14 31.00
PZI 9.64 284 P 12 53.34 -3.6X
MMN 9.65 302 P 12 55.60 -1.4
eSn 14 26.00
BAI 9.69 311 P 12 54.00 -3.5X
CFR 10.06 6 eP 13 01.00 -1.5
MGR 10.06 303 P 12 59.10 -3.5X
CMP 10.14 354 ePc 13 02.00 -1.7
MLR 10.31 357 ePc 13 06.00 0.0
SGO 10.42 304 P 13 04.40 -2.9
(Sn) 14 43.50
FAI 10.66 285 P 13 11.00 0.4
BZS 11.09 341 eP 13 16.00 -0.3
DUI 11.51 308 P 13 21.70 -0.3
SDI 11.95 307 P 13 25.80 -2.0
ASS 13.38 310 P 13 56.00 9.5X
ARV 13.44 312 P 13 56.00 8.8X
CEY 14.02 322 e(P) 13 55.40 0.5
SRO 14.06 336 eP 13 56.80 1.6
LJU 14.19 324 eP 13 57.00 0.0
e(S) 16 21.00
SFJ 14.33 312 P 14 05.30 6.5X
TRI 14.34 321 iPd 14 03.70 4.8X
VOY 14.50 322 eP 14 00.20 -0.9
eS 16 27.20
KBA 15.50 324 e(P) 14 15.00 1.1
0.7s 13.40nm 4.3mb
i 14 18.40
KRA 15.64 344 eP 14 15.50 0.0
CTI 15 68 318 P 14 18.50 2.3
TAB 16.09 74 eP 14 25.00 3.6X
KHC 16.92 329 iP 14 31.30 -0.3
i 14 34.00
SBF 17.12 306 eP 14 34.40 0.3
0.6s 34.20nm 4.8mb
VAI 17.22 314 P 14 36.30 1.1
PRU 17.22 333 eP 14 34.50 -0.7
0.9s 21.00nm 4.4mb
e 14 54.50
KSP 17.35 338 eP 14 36.50 -0.2
ORO 17.57 312 P 14 41.00 1.4
LSD 18.00 311 P 14 43.83 -1.2
S 14 49.37
BNI 18.11 309 P 14 48.20 1.9
BRG 18.17 334 i(P) 14 46.00 -0.8
0.8s 20 00nm 4.4mb
i 14 55.00
LPG 18.27 310 eP 14 48.90 0.5
0.6s 20 70nm 4 6mb
CLL 18.87 333 iP 14 54 90 0.0
0.7s 28.00nm 4.6mb
MOX 18.90 329 e(P) 14 57.00 1.7
BSF 19.42 317 eP 15 00.10 -0.9
0.6s 6.10nm 4.1mb
CDF 19.49 319 eP 15 01.00 -0.6
0.6s 6.10nm 4.1mb
HAU 19.77 317 eP 15 04.00 -0.5
0.6s 7.20nm 4.2mb
SMF 20.59 311 eP 15 12.50 -0.4
LBF 20 66 312 eP 15 13.40 -0.2
LOR 20.86 312 eP 15 15.60 0.0
0.7s 23.10nm 4.6mb
AVF 20.96 311 eP 15 16.50 -0.1
0.8s 40.20nm 4.8mb
SSF 20.98 311 eP 15 17.20 0.4
BGF 21.18 310 eP 15 19.20 0.4
0.7s 16.50nm 4.5mb
FLN 24.13 313 eP 15 47.80 0.1
0.8s 26.80nm 4.7mb
GRR 24.21 311 eP 15 48.90 0.4
0.6s 19.80nm 4.7mb
UPP 25.38 349 iP 15 59.70 0.4
i 16 27.80
HFS 26.34 345 eP 16 07.00 -1.2
0.4s 2.20nm 4.0mb
NB2 27.69 344 P 16 19.10 -1.5
0.6s 2.10nm 3.9mb
EKA 28.72 324 P 16 34.00 4 3X
0.8s 10.20nm 4.5mb
BCAO 31.50 196 ePd 17 02.30 7.6X
0.6s 6.00nm 4.5mb
i 17 21.50
KIC 40.68 233 (P) 18 16.60 4.2X
DAG 46.31 347 iPd 18 57.00 -0.2
0.7s 4.79nm 4.5mb
GBA 50.42 102 Pc 19 34.00 4.3X
0.9s 8.10nm 4.8mb
FRB 61.25 330 eP 20 47.00 0.3
INK 75.76 353 eP 22 17.00 0.7
FFC 80.16 333 eP 22 43.00 2.3
0.7s 10.00nm 4.8mb
EDM 85.34 337 eP 23 10.00 2.6
SES 86.95 334 eP 23 19.00 3.6X
S.D. = 1.0 on 115 of 133 obs.

? DEC 16, 1989 21h 13m 22.58± 3.23s
13.347 N ±33.3km 91.732 W ±38.5km
DEPTH = 33.0km (normal)
4.6mb (1 obs.)
NEAR COAST OF GUATEMALA (71)

TPX 1.63 342 iP 13 47.00 -2.4
(S) 14 19.50
SCX 3.48 346 eP 14 18.00 2.3
(S) 14 56.00
PPM 8.73 312 eP 15 30.00 -0.1
ANMO 25.29 331 eP 18 51.20 3.3X
KVN 34.62 323 eP 20 11.80 0.8
LRM 36.81 336 eP 20 29.60 0.0
PNT 42.57 333 eP 21 17.00 0.0
0.7s 8.00nm 4.6mb
INK 61.13 344 eP 23 35.00 -0.7
S.D. = 1.7 on 7 of 8 obs.

DEC 16, 1989 21h 25m 40.08± 0.46s
45.722 N ± 4.9km 14.143 E ± 3.5km
DEPTH = 10.0km (geophysicist)
YUGOSLAVIA (383)
MD 2.8 (LJU), 2.5 (TRI). ML 2.1 (KBA). Felt (IV) in the Hrusico area. Also felt at Studeno.

CEY 0.20 85 iPgc 25 44.70 0.2
iSg 25 48.00
TRI 0.27 267 iPgc 25 45.60 -0.1
iSg 25 49.90
VOY 0.36 331 iPg 25 47.00 -0.4
eSg 25 52.40
RIY 0.41 156 i(Pg) 25 48.30 -0.3
iSg 25 54.80
LJU 0.42 40 iPgd 25 48.40 -0.3
iSg 25 54.20
VBY 0.81 105 i(Pg)d25 56.00 0 2
i(Sg) 26 07.70
VVI 1.23 283 P 26 03.20 0.2
eSg 26 18.30
FVI 1.29 313 Pc 26 04.20 0 3
eSg 26 20.40
KBA 1.46 338 iPnd 26 07.00 0.3
iSg 26 27.20
CTI 1.77 281 P 26 10.90 -0.2
eSn 26 34.20
S.D. = 0.3 an 10 of 10 obs.

DEC 16, 1989 22h 40m 38.37± 0.39s
26.068 N ± 6.6km 128.425 E ± 5.6km
DEPTH = 27.6km (4 depth phases)
4.9mb (10 obs.)
RYUKYU ISLANDS (238)

NAH 0.68 283 P 40 52.70 1.1
S 41 04.60

EDR No. 12-89
Part 2 of 2
P. 147-294

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 Baysian 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 Δ 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

$20° \leq \Delta \leq 160°$, 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 $\Delta \leq 5°$. Amplitude values stated in this report are in nanometers (nm) for body-waves and micrometers (μm) 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.

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 η 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 (°) appears as "`".

References

Bolt, Bruce A. (1968), Estimation of PKP Travel Times, *Bull. Seis. Soc. Am.*, **58**, pp. 1305–1324.

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.

```
SSE      8.10 310 Pc     42 36.90  -0.1
       0.7s      0.02nm          2.3mb X
     Z  13s     15.50um
     N  11s      5.70um
     E  12s      9.00um
                  pP     42 44.40
                  Lg     45 30.00
NJ2     10.28 308 eP     43 06.50  -0.6
     Z  12s      9.50um
     N  12s      5.40um
     E  11s      8.20um
WHN     13.18 293 eP     43 45.70  -0.5
     Z  16s      4.76um
     N  16s      2.97um
     E  12s      4.88um
                  pP     43 55.00
MAT     13.37  36 (P)    43 59.00  10.2X
TIA     13.98 319 eP     43 52.00  -4.8X
     Z  14s      4.70um
     N  12s      2.70um
     E  12s      2.90um
SNY     16.22 347 Pc     44 26.00   0.2
     Z  13s      4.00um
     N  13s      2.10um
     E  11s      1.10um
                  PP     44 43.00
BJI     17.28 327 eP     44 40.00   0.8
       1.1s     35.00nm          4.4mb
     Z  14s      4.40um          4.2Msz
     N  13s      5.23um
                 ePP     44 55.00
                  eS     48 00.00
TIY     17.84 314 Pc     44 46.50   0.3
     Z  13s      5.87um          3.9Msz
     N  11s      4 00um
                  sP     44 59.00
CN2     17.86 353 eP     44 46.50   0.1
     Z  12s      4.00um
     N  11s      3.10um
                 esP     45 01.00
QIZ     18.53 252 eP     44 55.60   0.8
     N  20s      4.90um
                  PP     45 14.50
XAN     18.64 300 P      44 55.20  -1.0
     N  10s      1.00um
     E  13s      3.00um
GUMO    19.81 126 eP     45 09.00  -0.7
HHC     20.32 321 P      45 14.00  -1.1
     Z  13s      6.10um          5.1MszX
     N  11s      4.00um
     E  12s      2.70um
BTO     21.07 318 P      45 21.50  -1.3
     N  13s      4.10um
     E  14s      2.20um
CD2     22.19 288 eP     45 31.80  -2.3
     Z  14s      3.40um          4.9MszX
     E  12s      4.30um
                  eS     49 37.00
KMI     23.18 273 eP     45 44.00   0.0
     Z  16s      2.50um          4.8MszX
     N  12s      1.80um
                  ed     45 44.50   2kmX
                   S     49 56.00
                  sS     50 09.00
LZH     23.25 301 Pc     45 43.50  -1.0
       1.5s    100.00nm          5.1mb
     Z  15s      2.40um          4.8MszX
     E  10s      1.20um
                  pP     45 48.70  19km
                  sP     45 52.50
                   S     49 58.00
LOE     26.21 256 eP     46 13.00   0.2
GTA     27.37 306 iPc    46 21.80  -1.6
       1.0s      0.10nm          2.4mb X
CHG     28.15 261 iPc    46 31.00   0.6
       1.0s     22.50nm          4.8mb
CHTO    28.15 261 ePc    46 30.00  -0.4
                  pP     46 39.40  33km
WMO     37.35 309 P      47 49.10  -1.3
     Z  16s      2.10um          5.0MszX
                  pP     47 58.00  30km
NDI     45.27 285 eP     48 56.00   0.5
WB5     46.04 172 eP     48 59.70  -1.8
GBA     49.26 266 P      49 27.00   0.1
KOD     50.60 262 eP     49 40.80   3.3X
POO     50.75 273 iPc    49 37.80  -0.5
MAIO    58.75 298 iPc    50 37.00   0.6

FBA     64.10  28 eP     51 12.60   0.7
TAB     68.53 303 eP     51 41.00   0.1
INK     68.97  23 eP     51 42.50  -0.3
KEV     69.65 339 eP     51 54.00   7.1X
MBC     69.94  14 eP     51 48.50  -0.1
       1.0s     21.00nm          5.2mb
SOD     70.62 336 iP     51 52.80  -0.1
NUR     74.11 330 eP     52 14.00   0.5
DAG     75.45 353 iPd    52 20.10  -1.0
       0.7s      4.11nm          4.6mb
UPP     77.52 331 iP     52 27.00  -5.8X
HFS     79.04 332 (P)    52 39.90  -1.4
       0.5s      1.00nm          4.1mb
     Z  14s      0.57um          5.1MszX
                  LR     30 49.00
DSI     79.23 300 eP     52 44.00   1.2
VRI     79.33 316 ePd    52 44.50   1.4
NB2     79.54 334 P      52 43.00  -1.0
       0.9s     11.60nm          4.9mb
MLR     79.98 316 ePc    52 47.00   0.2
PRNI    80.03 299 eP     52 49.00   1.8
MBH     80.35 298 e(P)   52 50.00   1.1
ELL     81.18 307 eP     52 52.00  -1.3
DIM     81.83 313 eP     52 57.00   0.6
RZN     82.53 313 eP     53 02.00   1.7
KSP     82.93 324 eP     53 02.00   0.1
VTS     83.09 314 iP     53 05.00   1.9
MMB     83.23 313 eP     53 05.00   1.2
KKB     83.52 314 iPc    53 06.00   0.8
VAY     84.12 313 eP     53 08.30   0.1
BRG     84.15 325 eP     53 08.80   0.7
       2.0s     44.00nm          5.3mb
                   e     53 18.00  29km
CLL     84.38 325 eP     53 10.00   0.7
SKO     84.53 314 eP     53 11.00   0.7
EDM     84.64  32 eP     53 05.50  -5.1X
OHR     85.38 314 eP     53 13.50  -1.1
KBA     86.65 322 eP     53 25.00   4.1X
       0.7s      3.10nm          4.6mb
SES     87.52  33 eP     53 25.00   0.1
FFC     88.66  27 eP     53 30.00  -0.2
       1.4s     38.00nm          5.5mb
FRB     89.49   7 eP     53 39.00   5.0X
     S.D. = 1.0  on  54 of  62 obs.
-------------------------------------
% DEC 16, 1989  22h 47m 51.56± 1.81s
  31.832 S ±22.1km   69.249 W ±10.6km
  DEPTH =  33.0km  (normal)
 SAN JUAN PROVINCE, ARGENTINA     (137)

RTBS     0.24 314 iPd    47 58.50  -0.1
                   S     48 11.00
RTCB     0.51  48 iP     48 03.00   0.5
                   S     48 20.00
ZON      0.56  60 iPd    48 03.50   0.4
                  eS     48 21.00
RTCV     0.61  93 iPd    48 04.00   0.3
                   S     48 22.00
RTLL     0.83  53 iPc    48 06.00  -0.9
                   S     48 24.50
CFA      0.89  76 iPd    48 07.00  -0.7
                   S     48 27.00
     S.D. = 0.8  on   6 of   6 obs.
-------------------------------------
   DEC 16, 1989  23h 25m 35.33± 0.17s
   40.011 N ± 3.9km  143.291 E ± 3.1km
   DEPTH =  22.0km  (  7 depth phases)
   5.7mb ( 50 obs.) 5.3Msz ( 10 obs.)
 OFF EAST COAST OF HONSHU, JAPAN (229)
      CENTROID, MOMENT TENSOR     (HRV)
      Data Used: GDSN
      L.P.B.: 13S, 31C
      Centroid Location:
      Origin Time        23:25:42.2 0.8
      Lat 39.96N 0.07 Lon 142.93E 0.08
      Dep  15.0 FIX Half-duration  2.6
      Moment Tensor;   Scale 10**17 Nm
        Mrr= 1.26 0.09  Mtt= 0.46 0.10
        Mff=-1.72 0.12  Mrt= 0.56 0.22
        Mrf= 3.41 0.37  Mtf=-0.98 0.10
       Principal Axes:
        T  Val=  3.50  Plg=57  Azm=268
        N          0.73      9       11
        P         -4.23     32      106
      Best Double Couple:Mo=3.9*10**17
       NP1:Strike=224 Dip=15 Slip= 125
       NP2:          9     78       81

SAP      3.38 335 eP     26 27.00  -0.9
                  eS     27 06.00
MAT      5.29 231 iPc    26 57.00   1.9
                  (S)    28 00.00
SHK     10.07 240 eP     28 02.50   0.8
MDJ     11.14 299 iPc    28 16.70   0.4
     Z  16s     44.50um
     N  14s     27.00um
                  pP     28 22.00
                  sP     28 26.00
                  sS     30 34.00
CN2     13.82 292 Pc     28 51.00  -1.1
       6.0s      2.20nm          3.1mb X
     Z  18s     20.10um          3.8Msz
     N  13s      9.00um
                  sP     29 01.00
SNY     15.02 283 Pc     29 07.40  -0.4
       1.2s      0.20nm          2.3mb X
     Z  16s     23.50um          4.0Msz
     N  13s      7.90um
     E  15s     12.30um
                  pP     29 15.50
DL2     16.77 273 iPc    29 31.00   0.7
       5.0s      2.10nm          2.5mb X
     Z  20s      5.40um          4.2MszX
                   S     32 38.00
SSE     20.02 251 Pc     30 07.00  -2.5
       1.4s    302.00nm          5.4mb
     Z  20s      7.80um          5.1Msz
     N  14s      9.40um
     E  14s      6.30um
                   S     34 02.00
                  sS     34 12.00
                  SS     34 38.00
BJI     20.74 279 eP     30 13.50  -3.4X
       1.7s    844.00nm          5.9mb
     Z  17s     13.70um          5.4MszX
     N  15s      8.13um
                   e     38 03.00
                  eS     38 08.00
TIA     20.91 268 P      30 15.40  -3.3X
     Z  15s     17.80um          5.6MszX
     E  14s     13.60um
                   S     34 04.00
NJ2     21.25 256 iPc    30 20.00  -2.1
     Z  18s     11.10um          5.3Msz
     N  12s      8.30um
     E  11s      3.50um
                  sS     34 22.00
ANP     23.47 238 eP     30 44.00  -0.3
TIY     24.08 274 iPd    30 48.40  -1.7
     Z  16s      7.87um          5.3MszX
     N  15s      7.40um
                  PP     31 22.50
                  sS     35 11.00
HHC     24.10 282 Pc     30 48.00  -2.3
     N  12s      2.00um
     E  16s      9.00um
                   S     35 04.50
BTO     25.30 282 iPc    31 00.50  -1.3
     N  16s      6.40um
     E  16s     18.40um
                  PP     31 39.00
                  eS     35 19.00
                  sS     35 36.00
WHN     25.35 257 iPc    31 01.00  -1.2
       3.0s      2.63nm          3.4mb X
     Z  16s      9.51um          5.4MszX
     N  14s     10.90um
     E  16s     10.50um
                  sP     31 11.50
                   S     35 16.00
OZH     25.57 241 iPc    31 04.00  -0.3
       4.0s      1.40nm          3.0mb X
     Z  18s      4.50um          5.0Msz
     N  17s      5.80um
                  pP     31 12.00  28km
                   S     35 32.00
                  sS     35 46.00
GUMO    26.36 177 eP     31 16.00   4.3X
PJG     26.36 177 eP     31 16.50   4.8X
XAN     27.96 269 Pc     31 24.60  -1.7
     N  14s      7.20um
     E  12s      4.90um
ADK     29.88  53 P      31 29.00 -14.2X
       1.0s     50.00nm
HKC     30.34 243 e(P)   31 50.00   2.4
```

16d 23h

GZH		30.40	245	P	31	48.00	-0.1	MTN		53.79	195	iP	34	58.10	-0.3	RSON		76.69	33	P	37	24.20	-1.9
	Z	14s		8.70um			5 6MszX	KHKI		54.52	214	eP	35	03.00	-0.8	CFR		77.17	319	eP	37	28.00	-0.8
	N	12s		5.70um								e	38	12.00		VRI		77.40	320	eP	37	31.00	0.9
	E	12s		4.50um				NDI		54.59	280	iPc	35	03.90	-0.4	KRA		77.44	327	iPd	37	31.00	0.8
				S	36	47.00				0.3s		77.92nm			6.2mb			1.5s		299.00nm			6.1mb
BAG		30.71	227	eP	31	49.50	-1.6					eS	42	45.00			Z	16s		5.00um			5.9MszX
LZH		31.13	276	Pc	31	53.50	-1.2	PSI		54.66	239	ePd	35	05.00	0.0					e	37	49.80	69kmX
		1.5s		266.00nm			5.9mb	KBS		57.99	350	iP	35	28.00	0.0	PV09		77.58	50	P	37	30.50	-1.2
	Z	14s		9.70um			5 6MszX	HYB		59.77	268	iPc	35	40.50	-0.7	GLA		77.60	57	eP	37	32.00	0.5
	E	14s		7.20um						1.2s		142.86nm			6.0mb	ISR		78.01	320	ePd	37	35.00	1.5
				pP	31	57.50	14km	WB5		60.16	190	eP	35	41.50	-2.1	MLR		78.05	320	ePc	37	34.50	0.6
				sP	32	01.50		KEV		61.19	339	iP	35	49.00	-1.1	KSP		78.33	329	iPc	37	35.70	0.6
				i	32	36.00				1.0s		52.00nm			5.6mb			1.2s		80.00nm			5.6mb
				ePP	32	53.00		QUE		61.48	287	eP	35	51.00	-2.0					e	40	19.00	
				eS	36	58.00		POO		62.73	272	iPc	36	00.80	-0.4	CMP		78.66	321	ePc	37	27.00	-10.1X
				sS	37	05.00						eS	44	28.00		GOL		78.94	47	P	37	40.00	1.0
				SS	38	50.00		SOD		62.80	337	iP	35	59.80	-1.1	GLD		78.99	47	P	37	36.50	-2.7
GTA		33.21	283	iPc	32	12.60	-0.1	GBA		62.93	265	P	36	02.00	-0.4	PSZ		79.08	325	iP	37	40.00	0.6
		1.2s		0.30nm			3.1mb X	DAG		62.94	355	iPc	36	00.00	-1.8	BRG		79.23	330	iPc	37	40.00	0.0
	Z	18s		15.90um			5.8Msz			1.2s		54.69nm			5.6mb			1.8s		150.00nm			5.7mb
	E	16s		11.90um				BOM		63.31	273	iP	36	03.80	-1.2		Z	16s		3.50um			5.8MszX
				sP	32	28.00						eS	44	32.60			N	20s		4.00um			
				S	37	24.00		TRO		63.38	341	eP	36	03.50	-1.2		E	20s		6.00um			
CD2		33.23	267	P	32	10.70	-2.2	MAIO		63.61	296	iPc+	36	06.40	-0.5					i	37	46.00	19km
	Z	15s		7.40um			5.5MszX					eS	44	48.00						i	38	04.80	
	N	13s		8.20um				ASPA		63.95	190	iPd	36	08.40	-0.6					i	38	19.50	
				PP	33	17.00				0.7s		34.00nm			5.6mb					e	40	28.00	
				eS	37	28.00		KOD		65.00	262	eP	36	16.00	-0.4					i	40	54.60	
GYA		33.24	257	iPc	32	12.00	-1.1	PNT		65.03	46	eP	36	15.00	-0.9					e	41	05.00	
		1.4s		0.80nm			3.5mb X			0.8s		14.00nm			5.2mb					i	43	31.50	
	Z	22s		3.50um			5.0Msz	LON		65.17	49	P	36	16.50	-0.4	CLL		79.23	331	iPc	37	39.90	-0.1
	N	15s		7.00um				DZM		65.43	156	iPc	36	20.00	1.4			1.5s		130.00nm			5.7mb
	E	15s		8.30um				SUF		65.99	333	iP	36	20.80	-0.9					i	37	46.50	21km
				S	37	29.00		EDM		66.11	40	ePc	36	22.30	-0.4					e	40	36.00	
				sS	37	46.00		RMQ		66.35	175	eP	36	25.00	0.6	RYD		79.34	293	eP	37	41.00	-0.1
QIZ		35.53	244	eP	32	31.00	-1.7	BRS		67 63	171	eP	36	37.00	4.5X	PRU		79.70	329	Pc	37	43.40	0.8
	N	15s		5.50um				NUR		68 02	332	iP	36	34.00	-0.6			1 1s		84.10nm			5.7mb
				pP	32	41.00	34kmX			0.8s		48.40nm			5.7mb	YLV		79.77	315	iP	37	43.90	0.7
				PP	33	55.00			Z	16s		5.40um			5.9MszX	BUD		79.79	325	iP	37	44.00	0.9
				S	38	08.00						LR	09	02.00		SRO		79.85	326	iP	37	44.30	0 9
KMI		36.93	259	iPc+	32	44.50	-0.2	LBFM		68.11	54	P	36	35.50	-0.3	JMB		79.90	318	iPc	37	44.00	0.2
		2.0s		1.60nm			3.5mb X	SES		68.94	41	eP	36	40.00	-0.6	PVL		80.00	319	iPc	37	45.00	0.7
	Z	16s		22.30um			6.0MszX	ORV		69.37	55	P	36	42.00	-1.4	BZS		80.03	323	eP	37	44.00	-0.4
	N	16s		10.70um				FFC		70.41	34	eP	36	48.80	-0.6	ZST		80.07	327	iPc	37	45.10	0.5
	E	16s		16.00um						0.9s		18.00nm			5.2mb	WIT		80.21	335	ePd	37	47.00	1.8
				pP	33	01.50	68kmX	ARN		70.63	57	P	36	50.70	-0.4	MOX		80.29	331	iPc	37	45.00	-0.7
				PP	34	14.00		UPP		70 92	334	iPd	36	52.00	-0.4			1.5s		96.00nm			5.6mb
				S	38	24.00		CMB		70.97	56	P	36	52.90	-0.3	VKA		80.34	327	eP	37	46.50	0.4
				PcS	38	45.00				1.2s		20.14nm			5.1mb			1.5s		127.00nm			5.7mb
				sS	38	54.00		LRM		71 01	46	eP	36	46.70	-6.8X	ALT		80.42	313	eP	37	44.30	-2.5
				SS	41	08.00						e	36	53.80	23km	OASM		80.62	296	eP	37	48.00	0.0
WMQ		40.89	294	iPc	33	17.70	0.4	TAB		71.36	304	eP	36	56.00	0.4	SOP		80.70	327	eP	37	50.00	2.1
		4.0s		2.50nm			3.3mb X	KVN		71.80	54	eP	36	58.40	0.0	BNT		80.70	316	iP	37	48.80	0.7
	Z	22s		6.50um			5.4Msz					e	37	05.80	24km	EDC		80.74	316	eP	37	49.00	0.7
	N	13s		2.00um				HFS		71.98	336	eP	36	57.40	-1.3	DIM		80.74	318	eP	37	49.00	0.7
	E	13s		4.00um						1.3s		219.50nm			6.0mb	KHC		80.76	329	iPc	37	49.00	0.7
				PP	34	50.00			Z	17s		2.09um			5.5MszX			1.2s		55.00nm			5.5mb
				sS	39	38.00						LR	09	46.00						e	38	09.80	77kmX
KKM		41.66	223	eP	33	25.50	1.6	NB2		72.01	338	P	36	57.80	-1.2	EKA		80.81	341	P	37	49.00	0.6
TTA		42.15	36	P	33	27.50	0.1			1.2s		162.80nm			5.9mb			1.4s		67.20nm			5.5mb
		1.2s		23.67nm			4.8mb	BCH		72.86	58	P	37	05.00	0.5	WTS		80.85	334	ePd	37	49.50	0.9
SVW		42.26	39	eP	33	29.70	1.4	TNP		72 94	55	P	37	05.00	-0.1			1.0s		52.00nm			5.5mb
TSM		42.28	219	ePd	33	31.00	2.1			1.2s		22.18nm			5.1mb					e	38	19.00	115kmX
LOE		42.34	250	iPc	33	29 00	-0.4	IMW		73.05	47	P	37	06.00	0.3	PGB		81.07	319	iPc	37	51.00	0.9
IMA		43.38	32	eP	33	37.80	0.3	KER		73.07	301	iPc	37	04.70	-1.1	KDZ		81.09	318	iPc	37	52.00	1.9
LSA		43.47	273	P	33	39.60	0.6	SYP		73.32	59	eP	37	06.00	-1.3	PLD		81.12	319	eP	37	51.00	0.7
	Z	17s		2.00um			5.1MszX	SLY		73.37	303	iPd	37	07.00	-0.3	BCK		81.26	312	eP	37	51.20	0.0
	E	17s		3.10um				FRB		73.54	14	eP	37	07.00	-0.8	KHL		81.26	313	eP	37	50.70	-0.5
				S	40	09.00				0.9s		50.00nm			5.6mb	RDO		81.39	317	iPc	37	52.00	0.3
CHG		43.49	254	iPc	33	39.80	1.0	ISA		73.61	57	eP	37	08.00	-0.9	HLBJ		81.49	305	Pd	37	53.60	1.1
		1.0s		67.25nm			5.4mb	AKU		73.65	352	iP	37	10.20	1.8	VTS		81.52	320	iPc	37	53.00	0.5
CHTO		43.49	254	iPc	33	39.00	0.3			1.3s		69.23nm			5.5mb	ANMO		81.56	51	P	37	54.00	1.1
SHL		44.96	267	iP	33	51.00	0.1	CLC		74.08	57	eP	37	11.00	-0.6	SALJ		81.93	305	P+	37	55.90	1.2
				iS	40	47.00		BWA		74.22	176	eP	37	14.10	2.1	MMB		82.00	319	iPc	37	56.00	1.1
PMR		45.37	38	eP	33	53.40	0.0	MSL		74.39	304	iPd	37	13.80	0.5	MASJ		82.09	305	Pd	37	57.00	1.4
				pP	34	01.00	25km	BW06		74.54	47	P	37	13.00	-1.3	ELL		82.15	312	eP	37	55.00	-0.9
FBA		45.81	34	eP	33	57.00	0.2	SBB		74.63	58	eP	37	15.00	0.2	ENN		82.19	334	ePd	37	56.00	0.4
TOA		46.73	38	eP	34	04.80	0.6	PAS		74.74	58	eP	37	14.00	-1.3			1.0s		60.00nm			5.6mb
NNT		46.99	247	eP	34	07.00	0 3	MWC		74.77	58	eP	37	15.00	-0.7	PTJ		82.35	326	e(P)	37	56.80	0.1
MKS		50.07	212	ePc	34	34.50	4.0X	GSC		74.91	57	eP	37	16.00	-0.4					e	41	05.50	
INK		51.07	28	eP	34	37.00	-0.6	CAN		75.14	175	eP	37	21.80	4.4X	PRK		82.38	316	eP	37	57.00	0.1
IPM		51.87	238	ePc	34	45.00	0.7	RVR		75.35	58	eP	37	12.00	-6.8X	DSI		82.41	305	eP	37	58.00	0.9
		1.1s		76.00nm			5.5mb	BHD		75.52	301	iPc	37	20.00	0.2	IZM		82.46	315	eP	37	51.90	-5.5X
				e	43	14.10		KVT		75.70	312	iP	37	21.10	0.4	KBA		82.51	328	ePc	37	57.00	-0.6
KGM		52.37	234	ePd	34	49.60	1.6	PLM		76.08	58	eP	37	23.00	-0.3			1 4s		104.00nm			5.7mb
MBC		53.25	17	eP	34	53.50	-0.4	TPC		76.14	57	eP	37	24.00	0.6					i	38	21.50	92kmX
		1.5s		81.00nm			5.5mb	BAR		76.63	59	eP	37	26 00	-0.1					iPP	41	05.30	

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VAY     82.78 319 eP     37 59.20    0.3
LJU     82.84 327 eP     37 58.80   -0.4
SKO     82.85 320 eP     38 00.00    0.7
      Z  16s      3.40um              5.8MszX
      N  16s      3.43um
      E  16s      2.72um
                  LR     19 22.00 282kmX
                  i      39 07.00
VBY     82.97 326 iPd    38 00.50    0.7
PLG     83.04 318 eP     38 00.60    0.3
VOY     83.12 327 eP     38 00.00   -0.7
CEY     83.13 327 eP     38 00.00   -0.7
GRG     83.14 319 eP     38 01.50    0.7
HITJ    83.35 303 P+     38 03.00    0.8
TRI     83.43 327 iPd    38 02.00   -0.2
PRNI    83.48 304 iPc    38 03.00    0.2
DLE     83.49 342 eP     37 45.30 -17.0X
KMSA    83.60 291 eP     38 04.00    0.5
CDF     83.72 332 eP     38 04.20    0.4
      1.4s   104.50nm              5.8mb
LIT     83.73 318 eP     38 03.80   -0.1
OHR     83.82 320 iP     38 04.40    0.1
      1.1s     0.11nm              3.0mb X
AYN     83.84 303 eP     38 05.50    1.0
KZN     83.94 319 iPd    38 04.50   -0.5
NEO     83.95 318 eP     38 04.50   -0.5
MBH     83.95 304 iPc    38 06.00    1.0
CTI     84.03 328 P      38 24.80   19.5X
BSF     84.39 332 eP     38 07.70    0.6
      1.2s    23.80nm              5.3mb
HAU     84.40 333 eP     38 07.40    0.3
      1.2s    41.60nm              5.5mb
AGG     84.62 318 eP     38 07.50   -0.8
SAL     84.84 329 P      38 16.00    6.8X
VAI     85.31 330 Pd     38 11.70    0.1
NPS     85.64 313 eP     38 13.00   -0.5
CIO     85.72 326 eP     38 13.88    0.0
KOT     85.76 306 eP     38 14.50    0.4
ORX     85.80 330 P      38 14.02   -0.3
ORO     85.81 330 P      38 13.00   -1.3
CRE     85.88 327 P      38 14.00   -0.6
LOR     85.90 334 eP     38 14.90    0.3
      1.2s   139.40nm              6.1mb
BOB     85.96 329 P      38 14.00   -1.0
FLN     85.98 337 eP     38 15.40    0.5
      1.2s    95.20nm              5.9mb
LDF     86.02 337 eP     38 15.60    0.5
      1.4s   169.00nm              6.1mb
ASS     86.03 326 P      38 16.00    0.6
FIR     86.04 327 eP     38 16.00    0.7
LBF     86.10 333 eP     38 16.00    0.4
HLW     86.11 306 eP     38 16.00    0.1
VLS     86.15 318 eP     38 15.80   -0.2
SSF     86.19 334 eP     38 16.70    0.7
      1.2s    92.20nm              5.9mb
ITM     86.21 317 eP     38 15.50   -0.8
LSD     86.26 331 P      38 17.00    0.3
AQU     86.29 325 P      38 17.90    1.3
VAM     86.31 314 eP     38 17.00    0.2
DUI     86.38 324 P      38 17.70    0.6
LPG     86.38 331 eP     38 18.00    0.6
      1.1s    68.30nm              5.8mb
PII     86.39 328 P      38 15.60   -1.4
GRR     86.42 337 eP     38 17.90    0.8
      1.4s   182.90nm              6.1mb
SMF     86.44 333 eP     38 17.80    0.5
AVF     86.48 334 eP     38 18.10    0.7
RSP     86.48 331 P      38 17.92    0.3
PCP     86.50 329 P      38 17.41   -0.2
MNS     86.58 326 P      38 18.00    0.0
SDI     86.63 325 Pd     38 18.00   -0.3
SIO     86.77  45 eP     38 19.30    0.2
LPF     86.80 337 eP     38 19.70    0.8
      1.3s   197.80nm              6.2mb
BGF     86.86 334 eP     38 20.10    0.8
RRL     86.86 331 P      38 19.25   -0.4
SGO     86.87 323 P      38 19.00   -0.4
TUL     86.93  44 eP     38 18.50   -1.3
      1.2s    13.60nm              5.1mb
    Z  20s      1.15um              5.3Msz
MGR     87.09 323 P      38 16.00   -4.5X
PZZ     87.09 330 P      38 14.43   -6.2X
MAF     87.24 334 eP     38 22.30    1.1
IMI     87.29 329 P      38 14.84   -6.7X
TCF     87.31 334 eP     38 22.40    0.9
      1.2s    86.20nm              5.9mb
LSF     87.57 335 eP     38 23.60    0.9

MFF     87.80 336 eP     38 24.60    0.8
      1.3s   137.10nm              6.1mb
RJF     88.40 334 eP     38 27 90    1.1
      1.0s    56.00nm              5.8mb
CAF     88.55 334 eP     38 28.80    1.3
      1.2s    80.30nm              5.9mb
LFF     88.98 334 eP     38 30.80    1.3
      1.2s    47.60nm              5.7mb
LPO     89.06 334 eP     38 30.90    1.0
      1.2s    65.40nm              5.8mb
ARO     90.53 285 iP+    38 39.00    1.8
BCAO   112.79 297 ePKPd  44 27.50   15.1X
      0.6s     4.00nm
                  i      44 50.50
SLR    124.71 264 ePKP   44 28.00   -7.1X
      1.0s    17.00nm
TIC    125.14 320 PKP    44 36.00   -0.1
KIC    125.25 320 PKP    44 36.30    0.0
LIC    125.51 320 PKP    44 36.00   -0.8
    Z  20s      0.88um              5.4Msz
PRY    125.95 263 ePKP   44 19.50 -18.1X
ZOBO   143.89  58 PKP    45 11.00   -0.6
      1.1s    11.60nm
    Z  22s      0.40um              5.1Msz
LPB    144.09  58 ePKP   45 06.00   -5.8X
    Z  20s      0.71um              5.4Msz
                  LR     35 45.00
CNCB   144.37  59 PKP    45 12.00   -0.4
SNA    144.81 199 ePKP   45 07.40   -3.5X
      0.9s    47.06nm
      S.D. = 1.0  on 228 of 251 obs.
-----------------------------------------
   DEC 17, 1989  00h 11m 24.86± 0.40s
    7.742 N ± 6.2km  126.860 E ±11.6km
   DEPTH =  46.5km  (  2 depth phases)
    4.7mb (  5 obs.)  4.3Msz (  1 obs.)
 MINDANAO, PHILIPPINE ISLANDS     (259)

DAV     1.43 243 eP      11 53.00    4.2X
      1.3s  4753.85nm
MNI     6.57 198 eP      13 03.50    2.0
KKM    10.70 262 ePd     14 04.50    5.9X
QIZ    19.98 306 Pd      15 56.00   -0.3
    N  15s      1.50um
    E  16s      1.50um
KNA    23.42 175 eP      16 30.70    0.0
SSE    23.83 348 eP      16 36.00    1.4
    Z  18s      0.90um              4.3Msz
    E  12s      0.40um
                  PPP    17 25.00
                  S      20 55.00
                  sS     21 20.00
WB5    28.43 165 eP      17 15.10   -2.3
CHTO   29.26 295 eP      17 24.50   -0.6
                  e      17 37.00   48km
MAT    30.48  18 (P)     17 37.00    1.4
      1.2s    10.94nm              4.5mb
QIS    30.79 156 iPc     17 37.90   -0.6
TIY    32.58 338 eP      17 52.90   -1.2
BJI    33.55 345 eP      18 01.00   -1.4
SNY    34.07 356 Pc      18 06.60   -0.3
                  pP     18 18.60   45km
MDJ    36.81   3 Pc      18 30.50    0.4
GTA    39.79 327 eP      18 54.50   -0.8
LSA    40.00 308 P       18 58.80    1.3
MUN    40.79 194 iPd     19 03.30    0.0
NWAO   41.47 192 eP      19 09.00    0.1
BRS    43.00 145 iPc     19 20.30   -1.3
      1.0s     4.50nm              4.2mb
ADE    43.93 166 e(P)    19 29.90    0.9
BWA    46.64 155 eP      19 50.70    0.1
CAN    47.65 155 eP      20 07.70    9.1X
HYB    48.00 286 eP      20 00.50   -1.1
GBA    48.85 281 P       20 08.00   -0.1
WMQ    49.57 323 P       20 14.10    0.7
MAIO   67.23 306 eP      22 17.00    0.0
INK    86.41  22 eP      24 05.00    1.7
SOD    86.83 338 eP      24 04.00   -1.4
PRNI   87.74 300 eP      24 11.00    0.4
MBH    87.92 300 eP      24 12.00    0.7
MBC    88.03  13 eP      24 12.50    1.5
      1.0s     7.00nm              4.9mb
SUF    88.06 333 eP      24 10.00   -1.3
DAG    93.34 353 iPd     24 34.90   -0 8
      0.5s     5 63nm              5.3mb
SLL    94.58 333 (P)     24 40 30   -1.4
      0.5s     1.50nm              4.7mb

KIC   129.74 285 (PKP)  30 34.10    2.3
ZOBO  163.08 121 PKP    31 32.00    7.4X
      S.D. = 1.2  on  32 of  36 obs.
-----------------------------------------
   DEC 17, 1989  00h 15m 56.13± 0.75s
   35.593 N ± 9.8km   27.024 E ± 6.7km
   DEPTH =  25.9 ±  7.5 km
 DODECANESE ISLANDS               (369)
      ML 3.9 (ATH).

KAP     0.13 109 iPbc    16 01.00   -0.2
NPS     1.20 254 ePb     16 17.90    0.6
YER     1.84  33 iPn     16 25.50   -1.1
APE     1.90 321 ePb     16 26.00   -1.5
SMG     2.12 356 ePn     16 29.50   -1.0
KSL     2.14  75 ePn     16 33.00    2.1
VAM     2.31 266 ePb     16 36.00    2.8
ELL     2.60  63 ePn     16 39.50    1.9
IZM     2.81   4 ePn     16 43.90    3.6X
KHL     3.38  36 ePn     16 49.00    0.5
BCK     3.42  56 ePn     16 50.90    1.8
VLI     3.49 290 ePn     16 49.50   -0.6
ATH     3.56 313 ePg     17 01.50   10.5X
ITM     4.41 293 ePn     17 05.00    2.0
NEO     4.78 322 ePn     17 07.00   -1.4
DSI     8.04 118 eP      17 54.00   -0.2
                  eS     19 23.00
PRNI    8.50 126 eP      17 59.00   -1.5
                  eS     19 31.00
MBH     8.80 129 e(P)    18 03.00   -1.7
                  eS     19 39.00
      S.D. = 1.7  on  16 of  18 obs.
-----------------------------------------
   DEC 17, 1989  00h 27m 46.11± 0.28s
    7.817 N ± 4.6km  126.803 E ± 8.0km
   DEPTH =  45.6km  (  4 depth phases)
    5.1mb ( 15 obs.)  4.4Msz (  3 obs.)
 MINDANAO, PHILIPPINE ISLANDS     (259)

DAV     1.42 239 iPc+    28 14.00    4.2X
MNI     6.63 197 ePc     29 25.60    2.1
QCP     8.80 321 eP      30 28.00   34.3X
BAG    10.48 325 eP      30 24.00    7.0X
KKM    10.66 261 eP      30 26.30    7.0X
KUPT   18.13 190 ePd     32 05.50    9.1X
      0.7s   138.20nm              5.2mb
GUMO   18.65  71 eP      32 06.00    3.3X
QIZ    19.89 306 eP      32 16.00   -0.7
    N  14s      2.20um
    E  16s      1.40um
MTN    20.97 168 eP      32 25.50   -2.4
KNA    23.50 175 eP      32 52.60   -0.2
SSE    23.75 348 Pd      32 56.50    1.4
      1.0s    28.00nm              4.7mb
    Z  20s      1.80um              4.5Msz
    E  12s      0.50um
                  pP     33 11.50   64kmX
                  PPP    33 44.40
                  S      37 09.00
                  sS     37 36.00
KGM    24.09 257 eP      33 02.00    3.4X
NJ2    25.22 344 eP      33 10.50    1.2
    Z  20s      0.90um              4.3Msz
IPM    25.82 264 ePc     33 18.00    2.8
GYA    26.65 317 P       33 24.00    1.3
    Z  16s      1.20um              4.5MszX
    N  15s      0.80um
    E  15s      1.10um
WB5    28.51 165 eP      33 38.00   -1.6
KMI    28.70 310 Pd      33 41.50    0.0
CHTO   29.18 295 eP      33 45.80    0.1
                  pP     33 58.00   47km
TIA    29.61 344 eP      33 46.60   -2.7
MAT    30.42  18 (P)     33 54.00   -2.5
XAN    30.87 330 P       33 58.20   -2.3
QIS    30.88 156 eP      33 57.00   -3.6X
CD2    31.49 320 eP      34 04.60   -1.4
    Z  15s      1.00um              4.6MszX
    E  14s      1.10um
ASPA   32.05 168 eP      34 10.30   -0.6
      1.0s    17.00nm              4.8mb
    Z  19s      0.74um              4.4Msz
                  eS     39 14.10
                  LR     49 56.30
NANU   32.15 200 eP      34 12.00    0.3
TIY    32.49 339 eP      34 12.90   -1.7
BJI    33.47 345 eP      34 21.50   -1.5
```

17d 00h

WARB 33.80 180 iPc 34 25.40 -0.7
0.5s 14 00nm 5.1mb
SNY 33.99 356 Pc 34 26.00 -1.5
LZH 35.09 327 eP 34 36.40 -0.9
Z 16s 1.00um 4.7MszX
MEKA 35.15 193 eP 34 37.00 -0.7
CN2 35.86 358 Pc 34 43.20 -0.3
MDJ 36.74 3 Pc 34 51.70 0.9
HOOJ 37.37 20 eP 34 58.20 2.0
KUSJ 38.50 21 eP 35 07.20 1.5
ASAJ 38.71 18 eP 35 08.80 1.3
BAL 39.41 194 eP 35 13.00 -0.4
GTA 39.70 327 eP 35 12.40 -3.5X
LSA 39.91 308 Pd 35 19.50 1.4
MUN 40.84 194 iPd 35 25.20 0.0
0.7s 44.00nm 5.3mb
NWAO 41.53 192 eP 35 31.00 0.2
0.8s 28.00nm 5.0mb
RKG 42.68 192 eP 35 44.90 4.7X
BRS 43.10 145 iPc 35 42.00 -1.7
1.0s 5.00nm 4.2mb
i 35 45.00 10kmX
i 35 53.00
ADE 44.01 166 e(P) 35 51.30 0.2
0.8s 26.87nm 5.0mb
BWA 46.73 155 eP 36 12.00 -0.7
CAN 47.74 155 eP 36 22.70 2.0
HYB 47.93 286 eP 36 22.00 -0.4
e 36 36.50 55km
GBA 48.78 281 P 36 29.00 0.1
WMQ 49.48 323 iPd 36 34.30 0.2
QUE 60.10 300 P 37 50.50 -1.2
ADK 63.58 35 e(P) 38 14.00 -0.4
e 38 25.80 40km
MAIO 67.14 306 iPc 38 37.60 -0.2
e 39 06.00 114kmX
SVW 77.19 29 eP 39 38.30 1.5
TAB 77.74 307 eP 39 41.00 0.6
KDC 78.47 33 eP 39 44.70 1.0
e 39 48.50 12kmX
i 39 56.50
IMA 78.64 24 eP 39 45.90 1.1
0.8s 11.80nm 4.9mb
KMSA 80.14 289 eP 39 53.00 -0.6
PMR 80.35 29 eP 39 54.00 0.2
0.8s 29.10nm 5.3mb
e 40 06.20 41km
FBA 81.02 25 eP 39 57.50 0.2
TOA 81.75 28 eP 40 02.80 1.5
KEV 86.10 340 iP 40 23.00 -0.1
0.8s 19 10nm 5.4mb
HLBJ 86.33 302 Pd 40 26.00 0.9
INK 86.36 22 eP 40 25.00 0.6
SOD 86.74 338 iP 40 25.10 -1.2
SALJ 86.86 302 P+ 40 28.60 0.9
MASJ 86.86 301 Pd 40 29.00 1.3
HITJ 87.01 299 P+ 40 29.00 0.5
DSI 87.17 301 ePc 40 30.00 0.9
PRNI 87.65 300 ePc 40 32.00 0.5
MBH 87.83 300 ePc 40 33.00 0.7
SUF 87.96 333 iP 40 31.90 -0.3
MBC 87.97 13 ePd 40 33.50 1.4
0.9s 14.00nm 5.2mb
NUR 89.19 331 iP 40 38.10 0.0
DAG 93.25 353 iPd 40 56.00 -0.7
0.6s 8.67nm 5.4mb
HFS 94.45 333 ePKP 41 00.60 -1.9
0.4s 1.90nm 4.9mb
NB2 95.18 334 P 41 04.30 -1.6
0.8s 4.10nm 4.9mb
VAY 95.43 313 eP 41 05.30 -2.0
TUL 120.88 40 ePKP 46 47 40 11.9X
1.2s 4.10nm
KIC 129.66 285 PKP 46 53.00 0.0
TIC 129.85 285 PKP 46 53.30 -0.1
LIC 129.97 285 PKP 46 53.50 -0.1
0.6s 4.00nm
CNCB 163.03 123 PKP 48 02.00 16.1X
LPB 163.06 122 ePKP 48 00.00 14.2X
ZOBO 163.17 121 ePKP 47 48.00 1.9
S.D. = 1.3 on 71 of 84 obs.

DEC 17, 1989 00h 39m 38.19± 0.34s
6.487 S ± 5.4km 154.219 E ± 6.8km
DEPTH = 21.6km (3 depth phases)
5.1mb (9 obs.)
SOLOMON ISLANDS (193)

RAB 3.06 318 iPc 40 27.00 0.7
iS 40 40.00
HNR 6.38 118 eP 41 23.00 9.6X
eS 42 40.00
LAT 7.17 268 eP 41 24.00 -0.5
PMG 7.58 247 eP 41 30.00 -0.1
0.7s 13.70nm 5.2mb
eS 42 59.00
MNDI 10.50 271 eP 42 12.00 1.1
DZM 19.48 144 iPc 44 07.40 0.5
OIS 19.91 224 iPd 44 10.60 -0.9
0.8s 69.00nm 5.0mb
RMQ 20.56 194 iPd 44 18.70 0.4
BRS 20.84 184 iPd 44 20.20 -0.9
1.0s 7.00nm 4.0mb X
QLP 22.13 204 eP 44 34.50 0.4
WB5 23.43 233 iPd 44 46.90 0.0
MTN 23.61 253 eP 44 48.50 -0.2
ASPA 25.95 227 iPd 45 10.20 -0.8
0.6s 20.00nm 4.9mb
CMS 26.08 196 ePc 45 12.00 -0.1
BWA 28.31 190 eP 45 31.00 -1.5
CAN 29.09 189 eP 45 39.10 -0.5
WARB 32.79 230 iPd 46 11.60 -0.6
0.4s 9.00nm 5.1mb
RKG 43.98 226 eP 47 48.30 2.5
QZH 46.67 313 eP 48 07.60 0.3
SSE 48.93 322 eP 48 23.00 -1.9
TIA 54.90 323 eP 49 08.70 -1.0
CN2 56.41 335 eP 49 18.20 -2.2
GYA 56.53 308 P 49 22.00 0.2
BJI 58.07 326 eP 49 31.50 -0.7
TIY 58.72 322 Pc 49 36.50 -0.4
XAN 58.81 316 P 49 36.20 -1.4
KMI 59.10 304 Pc 49 50.00 10.0X
CD2 60.90 311 eP 49 51.80 -0.2
BTO 61.99 323 P 50 00.00 0.7
LZH 63.41 316 Pc 50 09.50 0.6
1.5s 66.00nm 5.6mb
sP 50 21.00
GTA 67.84 317 Pd 50 37.40 0.1
LSA 70.35 305 Pd 50 53.20 -0.1
SVW 77.82 22 eP 51 35.90 0.5
i 51 43.00 23km
WMQ 77.93 317 P 51 37.00 0.6
KOD 78.21 282 eP 51 39.70 0.9
HYB 78.38 289 eP 51 41.50 2.2
GBA 78.77 285 P 51 41.00 -0.4
PMR 80.64 24 e(P) 51 52.00 1.4
0.9s 22.90nm 5.2mb
e 51 57.00 16km
PMR 80.64 24 eP 51 57.00 6.4X
IMA 81.57 19 eP 51 54.80 -0.8
FBA 82.92 21 eP 52 00.20 -2.3
e 52 08.50 26km
SPA 83.56 180 iPd 52 06.80 0.9
0.9s 27.73nm 5.5mb
i 52 29.70 85kmX
MAW 84.57 203 eP 52 11.00 0.2
KSH 85.08 310 eP 52 16.50 2.5
INK 89.52 21 eP 52 34.00 -0.8
KVN 92.24 51 P 52 48.80 0.6
PLM 92.62 57 P 52 51.10 1.0
TNP 92.82 52 P 52 50.10 -0.9
0.7s 3.33nm 4.9mb
GLA 94.29 57 P 53 00.00 2.4
MBC 95.40 14 eP 53 09.50 7.7X
0.5s 2.00nm 4.8mb
BW06 98.93 48 P 52 56.70 -22.0X
OHR 126.13 317 ePKP 58 37.50 -3.5X
ZOBO 132.39 119 PKP 58 53.00 -1.3
BCAO 135.85 270 ePKPd 58 49.10 -11.1X
0.5s 5.00nm
i 02 32.20
S.D. = 1.2 on 47 of 54 obs.

DEC 17, 1989 02h 12m 21.93± 0.17s
3.808 S ± 3.2km 127.531 E ± 4.3km
DEPTH = 24.0km (2 depth phases)
5.2mb (19 obs.)
CERAM (272)
CENTROID, MOMENT TENSOR (HRV)
Data Used: GDSN
L.P.B.: 8S, 18C
Centroid Location.
Origin Time 02:12:29.9 2.0
Lat 3.11S 0.16 Lon 127.83E 0.17
Dep 24.0 FIX Half-duration 1.5
Moment Tensor; Scale 10**16 Nm
Mrr= 4.70 1.26 Mtt=-5.61 0.67
Mff= 0.91 1.62 Mrt= 3.93 1.80
Mrf=-2.41 0.90 Mtf= 1.62 1.10
Principal Axes:
T Val= 6.62 Plg=66 Azm= 51
N 0.97 13 291
P -7.59 20 197
Best Double Couple:Mo=7.1*10**16
NP1:Strike=266 Dip=27 Slip= 62
NP2: 117 66 104

AAI 0.67 80 iPd 12 34.90 0.0
e(S) 12 44.50
KUPT 7.41 212 ePc 14 24.50 13.2X
0.6s 129.20nm
MTN 9.66 159 eP 14 42.00 -0.6
KNA 11.93 174 eP 15 11.50 -2.1
JAY 13.22 85 ePd 15 30.20 -0.6
KKM 14.95 311 eP 15 52.00 -1.7
MNDI 16.23 99 eP 16 17.00 6.6X
WB5 17.31 158 eP 16 20.30 -3.5X
e 19 29.80
iS 19 35.70
MBL 18.80 203 iPd 16 42.70 0.5
0.6s 19.00nm 4.5mb
QCP 19.41 341 eP 16 54.00 4.5X
LAT 19.59 99 eP 16 53.00 1.4
PMG 20.26 107 eP 16 58.00 -0.6
OIS 20.38 146 iPc 16 59.20 -0.7
0.9s 262.00nm 5.6mb
ASPA 20.68 163 iPc 17 03.30 0.3
0.8s 632.00nm 6.1mb
eS 20 51.10
BAG 21.23 341 eP 17 09.50 0.7
NANU 21.97 211 eP 17 16.00 0.0
WARB 22.26 182 iPc 17 20.50 1 6
0.6s 34.00nm 5.0mb
MEKA 24.26 200 eP 17 41.00 2.6
0.3s 4.00nm 4.5mb
GUMO 24.39 45 eP 17 43.30 3.6X
CTA 24.39 133 iP 17 41.00 1.3
KGM 24.88 283 eP 17 47.00 2.5
FORR 26.90 179 eP 18 01.50 -1.6
0.4s 34.00nm 5.3mb
PPI 27.31 276 eP 18 07.00 0.0
COOL 27.60 192 eP 18 09.00 -0.5
QLP 27.72 146 ePc 18 10.50 -0.2
IPM 27.76 287 ePc 18 11.90 0.8
0.8s 56.30nm 5.3mb
e 18 20.80 31km
BAL 28.55 200 eP 18 17.50 -0.6
KLB 29.13 197 iPd 18 23.00 -0.3
QZH 29.87 344 eP 18 29.50 -0.4
eS 23 24.00
MUN 29.97 200 eP 18 30.00 -0.8
RMQ 30.36 140 eP 18 33.50 -0.8
NWAO 30.53 197 iPc 18 35.20 -0.5
0.7s 60.00nm 5.5mb
RKG 31.66 197 iPd 18 51.10 5.4X
CMS 32.47 150 ePc 18 52.50 -0.3
ADE 32.69 163 iPd 18 55.30 0.6
1.2s 56.25nm 5.4mb
BRS 33.63 137 iPd 18 59.20 -3.7X
0.8s 8.90nm 4.7mb
SSE 35.23 351 P 19 16.80 0.2
1.2s 24.00nm 5.0mb
CHTO 36.02 310 eP 19 24.10 0.6
BWA 36.12 150 iPc 19 26.00 1.8
GYA 36.24 327 P 19 26.20 0.9
WHN 36.41 341 Pd 19 28.50 2.0
1.5s 1.10nm 3.5mb X
NJ2 36.60 348 Pc 19 29.00 0.8
CAN 37.12 150 iPc 19 33.30 0.7
CNB 37.30 150 eP 19 35.00 0.9
TOO 37.41 156 eP 19 36.00 1.0
KMI 37.50 321 Pd 19 38.00 1.9
TSRJ 39.93 11 P 19 56.70 0.7
IIDJ 40.28 13 P 19 59.10 0.2
CHJJ 41.07 14 P 20 04.80 -0.6
CD2 41.31 328 eP 20 08.00 0.5
MTMJ 41.31 13 P 20 07.00 -0.5
MAT 41.36 13 eP 20 07.00 -0.8
0.8s 19.40nm 4.9mb
KAKJ 41.52 15 eP 20 07.70 -1.3
XAN 41.54 336 P 20 08.80 -0.5

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DZM    41.86 119 iPc    20 12.10   0.0
NIIJ   42.21  14 P      20 14.10  -0.6
TIY    43.63 343 iPc    20 26.30   0.0
BJI    44.86 348 eP     20 36.00  -0.2
       1.5s     52.00nm          5.2mb
SHL    45.25 312 iP     20 40.50   0.8
                 eS     26 49.50
LZH    45.45 333 eP     20 42.00   0.8
       1.5s    137.00nm          5.7mb
                 pP     20 47.00  17km
                 sP     20 55.00
                 ePP    22 31.00
SNY    45.56 356 iPd    20 41.40  -0.3
HHC    46.78 343 P      20 51.60   0.1
CN2    47.43 358 eP     20 53.00  -3.4X
LSA    48.21 316 P      21 04.20   0.9
MDJ    48.24   2 Pc     21 03.00   0.2
GTA    50.01 332 iPc    21 16.60  -0.1
GBA    52.63 290 P      21 35.00  -1.7
HYB    52.72 295 iPc    21 36.00  -1.4
       1.0s     40.00nm          5.3mb
POO    57.32 295 iPd    22 08.80  -2.0
WMQ    59.40 327 iPc    22 24.10  -0.8
QUE    66.96 305 eP     23 13.00  -2.4
ADK    72.78  32 e(P)   23 50.10  -0.1
MAIO   74.78 309 iPc    24 02.00  -0.3
SDN    82.98  33 eP     24 46.70   0.4
TAB    85.42 309 eP     25 00.00   0.8
BHD    86.34 304 ePd    25 04.00   0.3
TTA    87.24  26 eP     25 08.30   0.8
MSL    87.72 307 iPd    25 11.00   0.7
KDC    87.85  32 eP     25 11.30   0.9
IMA    88.92  24 eP     25 16.00   0.4
       0.9s     9.60nm          5.1mb
PMR    90.15  28 eP     25 20.80  -0.4
       1.0s    17.50nm          5.3mb
TOA    91.60  28 eP     25 28.90   0.9
PRNI   94.09 300 ePc    25 40.50   0.4
MBH    94.17 299 eP     25 40.00  -0.4
INK    96.83  22 iPc    25 51.50  -0.3
MBC    99.08  13 eP     26 02.50   0.7
       1.0s     6.00nm          5.1mb
VRI   100.25 316 ePdiff26 08.00   0.2X
MLR   100.83 315 ePdiff26 10.50   0.0X
HFS   105.01 332 ePdiff26 25.50  -3.1X
       0.6s     1.00nm          4.9mb
BCAO  109.20 273 ePKPd 30 51.50  -1.2
       0.6s     5.00nm
KVN   111.22  50 PKP    30 55.50  -0.6
LRM   113.34  41 ePKP   30 58.70  -1.3
FFC   115.44  29 ePKP   31 04.00   0.6
       0.7s     7.00nm
PV09  118.11  48 PKP    31 09.80   0.4
FRB   119.05   8 ePKP   31 09.00  -0.9
GOL   120.42  46 PKP    31 12.90  -0.8
RSON  121.78  29 PKP    31 14.20  -1.3
ACO   126.12  46 ePKPc  31 24.50   0.0
MEO   127.36  48 e(PKP) 31 24.30  -2.6
SIO   128.60  46 ePKP   31 29.80   0.6
TUL   128.89  46 ePKP   31 30.00   0.3
       1.2s    14.50nm
FVM   131.46  40 PKP    31 33.50  -1.1
OLY   132.13  44 PKP    31 35.00  -0.9
KIC   132.40 275 PKP    31 36.50  -0.5
       0.7s     7.00nm
TIC   132.68 275 PKP    31 37.00  -0.6
LIC   132.69 275 PKP    31 37.00  -0.6
       0.7s     8.50nm
ARE   152.45 137 ePKP   32 17.00   5.1X
CNCB  154.42 144 PKP    32 16.90   2.0
                 i      32 24.00
LPB   154.56 143 PKP    32 16.00   1.1
ZOBO  154.75 143 PKP    32 16.00   0.6
CCH   154.99 148 PKP    32 25.20   9.9X
     S.D. = 1.0  on  98 of 111 obs.
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? DEC 17, 1989  03h 00m 36.03± 2.08s
  33.623 N ±26.1km  135.305 E ±14.8km
  DEPTH =  33.0km  (normal)
  4.7mb (  1 obs.)
 NEAR S. COAST OF SOUTHERN HONSHU(233)

SHK     2.36 293 iPd    01 14.00   0.7
       0.5s   394.37nm
MAT     3.76  38 eP     01 34.00   0.9
                 eS     02 29.00
MDJ    11.84 340 eP     03 24.00  -1.4
BJI    16.59 298 eP     04 32.00   4.4X
     Z  14s      0.82um
WHN    18.02 266 eP     04 49.00   3.5X
TIY    19.01 289 eP     04 58.00   0.3
     N  15s      0.60um
BTO    21.29 296 eP     05 24.00   2.0
XAN    21.91 278 eP     05 27.50  -0.7
CD2    26.76 273 eP     06 13.60  -1.1
MBC    61.16  15 eP     10 48.50  -0.6
       1.0s     6.00nm          4.7mb
     S.D. = 1.4  on   8 of  10 obs.
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    DEC  17, 1989  03h 12m 18.07± 0.15s
     8.486 S ± 3.6km    92.233 E ± 3.0km
    DEPTH =  24.8km  ( 21 depth phases)
    5.4mb ( 29 obs.)  5.3Msz ( 20 obs.)
 SOUTH INDIAN OCEAN                (425)
      CENTROID, MOMENT TENSOR      (HRV)
      Data Used: GDSN
      L.P.B.: 12S, 29C
      Centroid Location:
      Origin Time        03:12:19.1 0.3
      Lat  8.54S 0.04 Lon  92.09E 0.04
      Dep  15.0 FIX Half-duration  3.2
      Moment Tensor;   Scale 10**17 Nm
        Mrr= 2.94 0.16  Mtt=-0.73 0.16
        Mff=-2.21 0.25  Mrt=-0.80 0.46
        Mrf= 4.73 0.65  Mtf=-5.31 0.17
       Principal Axes:
        T  Val=  7.45  Plg=43  Azm=233
        N        0.35      42       19
        P       -7.80      18      125
      Best Double Couple:Mo=7.6*10**17
       NP1:Strike=259 Dip=46 Slip= 158
       NP2:          5     74       46

KSI    11.37  66 ePc    15 01.20  -0.9
       0.8s    18.00nm          5.4mb
                 e      19 30.40
PPI    11.39  46 iPc    15 01.50  -0.9
                 iS     15 29.00
PSI    12.96  31 ePd    15 24.00   0.6
       1.0s    93.20nm          5.9mb
BSI    14.22  12 eP     15 40.50   0.4
KLM    14.85  40 eP     15 49.00   0.6
KGM    15.20  47 ePc    15 55.10   2.2
IPM    15.66  34 ePc    15 58.00  -0.9
       0.9s    83.90nm          4.9mb
TRT    20.21  89 ePd    16 55.40   1.3
       0.6s    71.70nm          5.2mb
KOD    23.70 321 eP     17 32.10   2.7X
NANU   26.39 125 eP     17 55.50   0.9
GBA    26.41 326 P      17 56.00   1.3
                 S      22 40.00
CHTO   27.92  14 iP     18 08.90   0.4
                 pP     18 16.00  25km
KKM    27.93  60 ePd    18 10.20   1.4
TSM    28.69  65 ePd    18 15.60   0.1
HYB    29.07 332 iPd    18 20.00   1.1
       1.0s    60.00nm          5.3mb
                 eS     23 12.00
MBL    29.44 118 iPd    18 22.00  -0.3
MUN    32.29 140 eP     18 46.00  -1.2
QIZ    32.39  32 P      18 47.00  -1.2
     N  16s      6.40um
     E  13s      1.30um
                 sP     19 00.00
                 PP     19 54.00
                 sS     24 08.50
KLB    33.05 138 eP     18 52.00  -1.9
BOM    33.27 325 eP     19 02.00   6.1X
                 eS     22 25.00
NWAO   33.56 140 eP     18 57.00  -1.3
     Z  20s      2.80um          5.0Msz
SHL    33.85 359 iP     19 01.00   0.0
                 iS     24 23.50
KMI    34.94  17 Pc+    19 12.00   1.5
     Z  16s      8.50um          5.6MszX
     N  13s      3.90um
                 pP     19 19.00  24km
                 sP     19 24.00
                 eS     24 42.00
                 sS     24 54.00
COOL   34.98 134 eP     19 10.00  -0.6
KNA    36.40 105 eP     19 22.60  -0.1
                 e      21 46.60
QCP    36.69  51 eP     19 26.00   0.9
BAG    37.40  49 eP     19 31.00  -0.3
                 e      21 02.00 487kmX
GYA    37.46  22 Pc     19 32.00   0.4
     Z  18s      2.60um          5.1Msz
     N  16s      3.20um
     E  16s      3.30um
                 sS     25 30.00
GZH    37.57  33 eP     19 34.00   1.6
     Z  15s      3.30um          5.3MszX
     E  13s      3.30um
                 sS     25 30.00
LSA    37.98 358 P      19 37.80   1.5
     E  14s      1.06um
                 iS     25 28.00
NDI    39.69 339 iPc    19 51.00   0.8
                 eS     25 54.00
FORR   40.16 129 iPc    19 54.00   0.0
       0.4s    32.00nm          5.4mb
CD2    40.70  15 eP     19 58.00  -0.5
     Z  22s      2.00um          4.9Msz
     E  12s      2.80um
                 ePcS   25 51.00
                 eS     26 05.50
QZH    42.00  37 Pc     20 10.00   0.9
     Z  18s      3.60um          5.3Msz
     N  15s      2.40um
     E  15s      3.00um
                 pP     20 18.00  27km
                 sS     26 38.00
WB5    42.27 110 iPd    20 11.80   0.3
                 i      20 20.70  30km
ASPA   42.61 116 iPd    20 13.80  -0.4
       0.8s    57.00nm          5.4mb
     Z  22s      5.64um          5.4MszX
                 ipP    20 23.40  32km
                 ePP    21 54.60
                 eS     26 35.30
                 LR     35 20.30
ANP    43.97  40 eP     20 35.00   9.7X
WHN    44.23  28 Pc     20 28.00   0.8
       1.8s     0.16nm          2.6mb X
     Z  20s      1.88um          5.0Msz
     N  15s      2.92um
     E  15s      3.31um
                 pP     20 35.50  25km
                 PP     22 14.00
                 eS     27 03.00
XAN    45.16  20 P      20 34.40  -0.3
     N  17s      3.40um
     E  18s      4.80um
                 S      27 12.00
QUE    45.48 329 eP     20 38.50   1.0
                 eS     27 23.00
LZH    45.66  13 Pc     20 38.00  -0.8
       1.8s    80.00nm          5.3mb
     Z  22s      3.30um          5.2Msz
     N  14s      2.40um
     E  12s      1.30um
                 pP     20 45.50  25km
                 i      20 55.00
                 ePP    22 31.00
                 eS     27 20.00
                 sS     27 27.00
                 SS     30 27.00
                 ScS    30 43.00
QIS    47.24 110 eP     20 52.00   0.6
NJ2    47.66  31 Pc     20 54.50   0.1
       5.0s     0.70nm          2.9mb X
     Z  18s      2.90um          5.3Msz
     N  15s      2.70um
     E  14s      1.60um
SSE    48.15  34 P      20 59.50   1.2
     Z  20s      3.70um          5.4Msz
     N  16s      3.30um
     E  14s      1.40um
                 pP     21 06.00  22km
                 PP     22 54.00
                 S      28 00.00
                 sS     28 10.00
GTA    48.17   8 iPc    20 58.00  -0.5
       1.2s     0.10nm          2.7mb X
     Z  18s      1.50um          5.0Msz
     E  15s      2.10um
                 sP     21 05.50
                 S      27 55.00
                 sS     28 05.50
JAY    48.58  86 ePc    21 05.20   3.2X
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17d 03h

TIY		49.69	21	Pc	21	10.00	-0.1	CHJJ		62.40	42	P	22	39.70	-1.7	CSI		84.74	311	P	24	53.00	1.4
	Z	18s		3.89um			5.5Msz	MDJ		62.68	29	eP	22	42.90	-0.2	ATN		84.94	310	P	24	54.00	1.4
	N	16s		3.70um				SLR		62.93	246	iPc	22	44.90	-0.4	KRA		85.31	322	eP	24	55.10	1.0
				S	28	23.50				0.8s		55.97nm			5.7mb					e	25	02.60	24km
ADE		49.98	129	iPd	21	12.00	-0.4		Z	20s		4.96um			5.7Msz	SRO		85.62	319	eP	24	56.30	0.6
		0.9s		53.78nm			5 6mb	TAB		63.05	321	eP	22	47.00	1.2	SGO		85.67	312	P	24	56.00	-0.1
KSH		50.02	344	P	21	12.00	-0.8					e	22	52.00	16km	ZST		86.51	320	eP	25	00.50	0.4
	E	11s		1.80um				NIIJ		63.10	41	P	22	45.10	-0.9	NUR		86.50	333	iP	25	01.20	0.9
				pP	21	20.00	27km	KAKJ		63.27	42	P	22	45.60	-1.5			0.7s		21.40nm			5.5mb
				sS	28	36.00		LWI		63.40	272	iPc	22	48.70	0.0	SUF		86.86	335	iP	25	01.70	0.1
TIA		50.25	26	eP	21	13.30	-1.1	SEK		63.69	243	iPc	22	50.00	-0.3	VBY		86.99	317	iPd	25	03.60	1.1
	Z	15s		2.50um			5.3MszX			0.8s		22.39nm			5.3mb	SDI		87.04	313	P	25	01.00	-2.0
	E	12s		1.70um				PRY		63.73	244	iPd	22	49.70	-0.9	LJU		87.62	317	eP	25	06.00	0.4
				eS	28	23.10				0.8s		18.75nm			5.3mb	KSP		87.77	322	ePd	25	07.70	1.5
BTO		51.52	17	P	21	24.00	-0.1	MSL		64.14	317	iPd	22	53.00	0.2	ARV		88.10	314	P	25	09.00	1.0
	N	14s		3.40um								e	22	59.00	19km	PRU		88.62	321	eP	25	11.00	0.7
	E	13s		2.20um								eS	31	26.00		SOD		88.69	339	iP	25	11.00	0.7
				sP	21	37.00		FRS		65.81	241	iPd	23	05.50	1.7	FVI		88.93	317	Pd	25	12.50	0.7
				sS	28	50.00				0.6s		30.00nm			5.6mb	SFI		88.96	315	P	25	13.40	1.4
WMQ		52.22	356	eP	21	28.80	-0.5	HLBJ		66.86	310	P+	23	09.90	-0.6	KHC		89.01	320	iP	25	13.00	0.8
	Z	24s		4.60um			5.4MszX	MBH		66.95	307	eP	23	10.00	-1.0					e	25	20.50	23km
				pP	21	37.00	27km	PRNI		67.10	308	eP	23	11.00	-1.0	PGD		89.04	314	P	25	15.00	2.3
				S	28	50.00		MKRJ		67.13	309	Pd	23	11.40	-0.9	BRG		89.21	322	iP	25	12.40	-0.7
HHC		52.22	19	eP	21	29.40	0.0	SALJ		67.30	310	P+	23	13.10	-0.2			1.8s		56.00nm			5.6mb
	Z	18s		4.80um			5.6Msz	DSI		67.34	309	eP	23	13.00	-0.4					e	25	27.00	50kmX
	N	15s		0.90um				HLW		69.79	306	eP	23	28.50	-0.2	CTI		89.57	317	P	25	15.70	0.7
	E	16s		3.70um				SUR		69.83	239	iPd	23	30.00	0.8	KEV		89.61	342	eP	25	14.00	-0.6
				pP	21	37.00	25km			1.3s		211.54nm			6.1mb	UPP		89.66	331	iP	25	14.80	-0.1
				PP	23	32.00		CER		71.15	238	iPc	23	36.00	-1.0	CLL		89.89	322	eP	25	16.00	-0.2
				S	28	58.00				0.7s		20.00nm			5.3mb			1.8s		42.00nm			5.4mb
QLP		52.37	117	eP	21	31.00	0.3	DZM		72.28	110	iPc	23	43.00	-1.0					e	25	29.00	43kmX
ARO		52.99	291	iP+	21	36.00	0.5	BBTK		72.94	316	eP	23	48.00	0.4	SAL		90.24	316	P	25	20.00	2.0
BJI		53.12	23	eP	21	36.00	0.1	WIN		73.11	249	iPc	23	48.50	-0.5	MOX		90.59	321	eP	25	21.00	1.5
		4.0s		0.40nm			2.7mb X			1.4s		93.02nm			5.6mb	HFS		91.63	331	eP	25	23.30	-0.8
	Z	20s		1.56um			5.1Msz		Z	18s		4.12um			5.8Msz			0.6s		8.40nm			5.3mb
	E	15s		1.17um				BCK		73.44	313	iP	23	49.20	-1.3		Z	18s		0.95um			5.3Msz
				eS	28	58.00		ELL		73.64	312	eP	23	51.00	-0.7					LR	06	39.00	
MAIO		54.14	327	iPd-	21	44.00	0.4	ALT		74 45	314	eP	23	51.90	-4.4X	LPG		92.83	315	eP	25	29.60	-0.7
				eS	29	24.00		KHL		74.56	314	eP	23	55.80	-1.2	TEGH		93.02	275	eP	25	33.00	1.6
PMG		54.21	95	eP	21	46.00	1.6	BCAO		74.60	277	iPc	23	56.80	-0.8	NB2		93.03	331	P	25	29.60	-1.0
DL2		54.50	28	eP	21	47.00	1.0			0.6s		62.00nm			5.8mb			0.7s		2.30nm			4.7mb
		9.0s		0.70nm			2.7mb X					i	24	04.70	25km	SHGH		93.10	275	eP	25	32.60	0.8
	Z	14s		1.60um			5.2MszX					i	25	24.40		LEGH		93.20	275	eP	25	33.80	1.5
	E	20s		1.50um				KAP		75.21	310	eP	24	00.50	-0.2	KOGH		93.32	276	eP	25	34.00	1.1
				pP	21	54.00	23km	HRT		75.50	316	eP	24	03.00	0.7	WEGH		93.33	275	eP	25	34.50	1.6
				eS	29	26.00		ISK		76.02	316	eP	24	04.00	-1.1	KUK		93.46	276	eP	25	33.20	-0.3
KMSA		55.01	302	eP	21	48.50	-1.8	IZM		76.22	313	eP	24	06.90	0.5	HAU		93.49	318	eP	25	32.30	-0.7
RYD		55.38	308	eP	21	52.00	-0.8	NPS		76.29	309	eP	24	06.00	-0.8	LBF		94.95	317	eP	25	39.10	-0.6
NAI		55.64	274	iP	21	44.00	-11.1X	PRK		77.26	313	eP	24	12.00	-0.1	LOR		95.06	317	eP	25	39.80	-0.4
		1.0s		28.00nm				VAM		77.42	309	eP	24	13.20	0.1	BGF		95.67	316	eP	25	42.80	-0.2
TOO		56.00	130	eP	21	57.00	-0.2	JMB		78.28	316	eP	24	17.00	-0.6			0.9s		14.70nm			5.4mb
BWA		57.48	125	eP	22	09.30	1.5	CFR		78 34	319	eP	24	17.00	-0.9	KIC		97.79	275	P	25	53.44	0.2
SNY		57.72	27	Pc	22	07.20	-2.0	RDO		78.49	315	eP	24	18.40	-0.4			0.8s		13.50nm			5.5mb
		1.8s		0.20nm			2.8mb X	SBA		78.51	168	P	24	20.00	1.7	LIC		98.05	275	P	25	54.60	0.2
	Z	20s		2.20um			5.3Msz	KDZ		78.77	315	eP	24	20.00	-0.4			1.0s		12.00nm			5.4mb
	N	20s		2.20um				VLI		78.83	310	eP	24	20.00	-0.8		Z	20s		0.61um			5.1Msz
	E	19s		1.20um				RZN		79.27	315	eP	24	23.00	-0.3	TIC		98.10	276	P	25	54.80	0.2
				pP	22	14.00	22km	PVL		79.41	317	eP	24	24.00	0.2	FRB		123.14	350	ePKP	31	12.00	-1.7
				S	30	06.00		PLD		79.43	316	eP	24	24.00	0.1	EDM		130.82	20	ePKP	31	27.00	-1.9
				sS	30	15.00		NEO		79.49	313	eP	24	23.00	-1.4	PNT		131.35	27	ePKP	31	30.00	0.0
CAN		58.15	126	eP	22	12.80	0.4	VRI		79.53	320	ePc	24	24.50	0.1	ORV		136.80	39	PKP	31	48.00	7.3X
BRS		60.02	117	iPc	22	26.00	0.4	PLG		79.70	314	eP	24	24.60	-0.9	LRM		137.17	25	ePKP	31	36.10	-5.4X
		0.9s		5.50nm			4.7mb	ITM		79.74	310	eP	24	24.70	-1.1	RSON		137.47	6	PKP	31	40.00	-1.6
				i	22	33.00	23km	MLR		79.89	319	ePc	24	26.50	0.0	KVN		139.18	37	PKP	31	34.00	-11.3X
				i	22	41.00		MMB		79.92	315	eP	24	26.00	-0.7	TNP		140.33	37	PKP	31	44.00	-3.5X
				eS	30	20.00		PGB		79.96	316	eP	24	26.00	-0.9	PLM		143.48	43	PKP	31	50.00	-3.1X
CN2		60.12	27	eP	22	24.40	-1.4	CMP		80.39	319	ePd	24	29.00	-0.1	PV09		144.46	29	PKP	31	52.60	-2.2
		1.8s		0.10nm			2.6mb X	KKB		80.47	315	ePc	24	28.00	-1.6	GLA		145.03	42	PKP	31	54.80	-0.7
	Z	18s		2.70um			5.4Msz	VTS		80.64	316	iP	24	30.00	-0.6	GOL		145.16	24	PKP	31	53.50	-2.4
	E	13s		0.90um				GRG		80.64	314	eP	24	30.50	0.0	GLD		145.17	24	PKP	31	54.10	-1.7
				PP	24	45.00		VAY		80.65	314	iP	24	29.40	-1.1	CCH		146.57	220	PKP	32	00.50	1.7
				S	30	40.00						i	24	37.60	26km	CNCB		148.15	218	PKP	32	03.20	1.5
TSRJ		60.13	41	eP	22	32.20	6.2X	KZN		80.88	313	iP	24	30.00	-1.8	LPB		148.43	218	PKP	32	03.50	1.5
KER		60.33	318	eP	22	28.00	0.5	VLS		81.07	311	eP	24	32.50	-0.3			1.0s		160.00nm			
IIDJ		61.36	42	P	22	33.50	-0 9	SPA		81.57	180	iPc	24	31.90	-3.1X		Z	16s		0.67um			5.5MszX
BHD		61.57	315	ePd	22	35.00	-0.8			1.0s		93.50nm			5.8mb					i	32	07.00	
				i	22	46.00	37kmX		Z	20s		1.89um			5.4Msz					LR	26	54.00	
				iS	30	55.00		SKO		81.66	315	iP	24	35.00	-0.8	ANMO		148.58	30	PKP	32	02.00	0.5
				iScS	32	15.00						i	24	44.50	30km	ZOBO		148.65	218	PKP	32	03.00	0.5
MTMJ		61.94	41	P	22	37.90	-0.6	OHR		81.84	314	eP	24	33.80	-3.0X		Z	20s		0.55um			5.3Msz
SLY		62.12	318	ePd	22	44.50	5.0X			1.8s		0.19nm			2.8mb X					LR	26	44.00	
				i	22	48.00	11kmX	DEV		82 01	319	ePc	24	38.50	1.0	CBN		148.96	344	ePKP	32	06.00	4.3X
				iS	31	01.00		SNA		83.61	200	iPc	24	46.70	1.4	NA2		149.13	344	PKP	32	05.70	3.8X
MAT		62.18	41	eP	22	37.00	-2.9X			0.9s		66 39nm			5.8mb	CVL		149.46	345	PKP	32	06.50	4.1X
		1.8s		140.91nm			5.8mb	ROI		84.47	311	P	24	51.00	0.7	ACO		150.07	19	ePKPc	32	03.50	0.0
				eS	31	11.00		TDS		84.67	311	Pd	24	53.00	1.8	ARE		150.44	213	iPKPc	32	11.20	6.3X
MAW		62.24	192	eP	22	39.00	-0.8	CZI		84.70	311	P	24	52.40	1.1			0.8s		52.99nm			

FVM	150.53	4	PKP	32	08.30	4.2X
NAV	150.61	349	PKP	32	08.90	4.6X
BLA	150.64	348	PKP	32	08.90	4.6X
	0.7s		29.86nm			
LNO	151.73	14	e(PKP)	32	07.70	1.9
			i	32	12.00	
			e	32	20.40	
TUL	151.74	14	ePKP	32	06.40	0.5
	1.0s		7.30nm			
			i	32	12.00	
SIO	151.77	15	ePKP	32	06.60	0.6
			i	32	12.20	
			i	32	37.50	
MEO	152.01	19	e(PKP)	32	06.30	-0.1
LST	152.03	3	PKP	32	12.50	6.2X
POW	152.29	6	PKP	32	12.40	5.7X
TKL	152.71	353	PKP	32	13.30	6.0X
GBTN	152.75	354	PKP	32	13.30	5.9X
OLY	152.90	7	PKP	32	13.50	5.9X
RSCP	152.94	356	PKP	32	13.50	5.8X
PWLA	153.63	1	PKP	32	14.50	5.9X
JSC	153.64	348	PKP	32	15.80	7.1X
PRM	154.04	350	PKP	32	17.00	7.8X

S.D. = 1.0 on 191 of 223 obs.

DEC 17, 1989 03h 57m 49.28± 0.50s
39.617 N ± 5.0km 26.245 E ± 5.5km
DEPTH = 10.0km (geophysicist)
TURKEY (366)
MD 3.4 (ATH).

EZN	0.22	16	iPg	57	55.00	1.0
PRK	0.37	177	iPgc	57	55.30	-1.6
			eSg	58	00.40	
EDC	1.44	59	iPn	58	15.60	0.2
IZM	1.45	147	iPn	58	14.40	-1.2
BNT	1.48	60	ePn	58	16.70	0.7
RDO	1.62	341	ePd	58	17.00	-0.9
DST	1.84	90	iPn	58	21.50	0.3
SMG	1.96	166	ePg	58	24.50	1.6
KDZ	2.13	343	iPc	58	25.00	-0.3
CTT	2.26	47	ePn	58	29.00	1.7
PLG	2.28	290	ePn	58	29.40	1.8
			eSn	58	50.00	
NEO	2.36	263	ePn	58	30.00	1.3
RZN	2.37	331	iP	58	28.00	-1.0
DMK	2.48	27	iPn	58	29.80	-0.6
YLV	2.58	67	iPn	58	31.70	-0.2
ISK	2.59	55	ePn	58	37.00	5.1X
APE	2.61	193	ePn	58	33.50	1.3
MMB	2.75	317	eP	58	32.00	-2.2
JMB	2.86	5	eP	58	44.00	8.3X
KHL	2.86	116	ePn	58	36.30	0.4
HRT	2.88	64	ePn	58	43.20	7.0X
ALT	3.05	99	ePn	58	36.10	-2.4
KKB	3.29	314	eP	58	42.00	0.1
PGB	3.32	332	eP	58	41.00	-1.4
PVL	3.66	350	eP	58	44.00	-3.1X
VTS	3.75	323	eP	58	48.00	-0.6
MLR	5.88	358	eP	59	23.00	4.4X
VRI	6.26	3	eP	59	26.00	2.1

S.D. = 1.4 on 23 of 28 obs.

% DEC 17, 1989 05h 03m 45.51± 0.69s
39.313 N ± 5.7km 28.256 E ± 7.2km
DEPTH = 10.0km (geophysicist)
TURKEY (366)

DST	0.41	44	iPg	03	53.50	-0.4
			eSg	03	58.50	
BNT	1.07	346	iPn	04	06.10	0.4
EDC	1.08	344	iPg	04	05.60	-0.1
			eSg	04	20.60	
IZM	1.20	221	ePn	04	07.50	-0.4
KHL	1.40	135	ePn	04	12.00	0.9
ALT	1.46	100	ePn	04	11.40	-0.7
YLV	1.52	34	ePn	04	13.10	0.3
HRT	1.86	35	ePn	04	21.00	3.3X

S.D. = 0.7 on 7 of 8 obs.

DEC 17, 1989 05h 30m 26.72± 0.12s
33.139 N ± 2.9km 142.274 E ± 2.4km
DEPTH = 41.0km (9 depth phases)
5.6mb (63 obs.) 4.5Msz (2 obs.)
OFF EAST COAST OF HONSHU, JAPAN (229)
CENTROID, MOMENT TENSOR (HRV)
Data Used: GDSN

L.P.B.: 7S, 14C
Centroid Location:
Origin Time 05:30:21.9 2.2
Lat 32.51N 0.21 Lon 142.31E 0.15
Dep 36.0 FIX Half-duration 1.6
Moment Tensor; Scale 10**16 Nm
Mrr=-4.45 0.66 Mtt=-0.57 1.23
Mff= 5.03 0.87 Mrt= 0.97 1.33
Mrf=-0.39 1.68 Mtf= 1.92 0.69
Principal Axes:
T Val= 5.62 Plg= 0 Azm=107
N -0.87 16 17
P -4.75 74 197
Best Double Couple:Mo=5.2*10**16
NP1:Strike=213 Dip=47 Slip= -68
NP2: 2 47 -112

KAKJ	3.51	331	P	31	18.70	-1.5
			S	31	59.00	
CHJJ	3.97	318	iP+	31	25.50	-1.2
			S	32	12.00	
IIDJ	4.30	304	iP+	31	31.70	0.3
			S	32	22.80	
MAT	4.76	317	iPc	31	37.30	-0.7
			eS	32	30.00	
NIIJ	4.89	328	P	31	38.20	-1.5
			S	32	34.70	
MTMJ	5.03	314	P	31	41.60	-0.2
SHK	8.10	283	eP	32	25.80	1.0
MDJ	15.11	323	Pc	33	58.10	-0.7
CN2	16.91	314	iPc	34	20.40	-1.4
	1.0s		0.10nm			1.9mb X
Z	12s		1.60um			5.4MszX
N	11s		0.90um			
			pP	34	28.00	
			sS	37	35.00	
SNY	17.16	306	Pc	34	25.20	0.2
	0.7s		0.10nm			2.1mb X
Z	16s		1.60um			4.6MszX
E	12s		0.80um			
DL2	17.65	295	eP	34	31.00	-0.1
	6.0s		0.70nm			2.0mb X
Z	15s		1.80um			4.5Msz
N	12s		1.40um			
E	14s		2.70um			
			pP	34	34.00	
			eS	37	47.00	
SSE	17.98	269	Pd	34	34.50	-0.7
	1.2s		43.00nm			4.5mb X
Z	18s		1.30um			4.2Msz
N	14s		0.90um			
E	14s		1.50um			
			i	34	44.70	
			sP	35	06.00	
			eS	38	02.00	
			sS	38	30.00	
GUMO	19.61	172	eP	34	53.50	-1.1
	1.5s		666.67nm			5.7mb
PJG	19.61	172	eP	34	54.00	-0.6
GUA	19.66	172	eP	34	54.00	-1.2
	0.9s		168.07nm			5.3mb
NJ2	19.76	273	Pc	34	54.50	-1.6
	1.1s		0.10nm			2.0mb X
Z	18s		1.70um			5.4MszX
ANP	19.76	252	eP	34	43.00	-13.3X
TIA	20.89	285	Pc	35	06.40	-1.5
N	11s		1.30um			
E	15s		2.10um			
BJI	22.01	296	eP	35	20.00	1.0
Z	16s		1.22um			4.4MszX
E	20s		0.74um			
			eS	39	20.00	
WHN	23.84	271	iPd	35	37.20	0.2
	1.0s		0.44nm			2.9mb X
Z	16s		1.19um			4.5MszX
N	13s		0.90um			
E	16s		1.43um			
			sP	35	51.00	
			PP	36	10.00	
			S	39	51.00	
TIY	24.69	289	eP	35	44.40	-0.8
Z	15s		2.84um			4.9MszX
N	14s		1.50um			
E	14s		2.10um			
			S	40	05.00	
HHC	25.61	296	P	35	51.90	-2.1
Z	20s		1.30um			4 5Msz
N	13s		0.60um			
E	13s		0.90um			
			sS	40	28.00	
BAG	25.71	235	eP	35	53.60	-1.5
BTO	26.75	295	P	36	05.00	0.5
N	12s		0.60um			
E	13s		1.20um			
			pP	36	10.50	19kmX
			PP	36	54.00	
			eS	40	43.00	
XAN	27.73	281	P	36	12.00	-1.4
GYA	31.50	267	P	36	46.00	-1.2
N	15s		0.70um			
E	15s		0.80um			
			S	41	48.60	
LZH	31.63	286	eP	36	47.00	-1.3
	1.5s		62.00nm			5.2mb
Z	15s		2.00um			4.9MszX
E	13s		1.40um			
			pP	36	56.00	31km
			i	37	05.00	
			ePP	37	55.00	
			PcP	39	40.50	
			eS	41	53.00	
CD2	32.61	277	eP	36	55.40	-1.3
Z	16s		2.20um			5.0MszX
E	16s		2.50um			
			eS	42	05.00	
GTA	34.56	293	iPd	37	13.30	-0.3
Z	14s		0.90um			4.7MszX
ADK	34.99	45	eP	37	15.60	-1.4
KMI	35.28	267	Pc	37	39.50	19.4X
WMO	43.33	301	iPd	38	27.60	1.1
Z	20s		0.70um			4.6Msz
			PP	40	15.50	
			PcS	44	06.50	
			S	44	57.20	
LSA	43.42	280	eP	38	25.40	-2.4
MKS	43.85	214	eP	38	33.50	2.7
SHL	44.22	274	eP	38	30.50	-3.5X
			eS	45	03.50	
MTN	46.95	195	iPd	38	54.80	-0.6
IPM	47.78	243	ePc	39	02.20	0.1
	0.8s		41.70nm			5.5mb
SVW	48.22	35	iPd	39	05.40	0.4
TTA	48.26	33	P	39	04.90	-0.5
	0.9s		31.25nm			5.3mb
KDC	49.63	40	iPd	39	14.80	-1.0
			i	39	17.50	9kmX
			e	39	26.90	
IMA	49.72	29	eP	39	16.30	-0.3
	1.2s		39.60nm			5.3mb
BRW	49.74	22	eP	39	17.00	0.5
KNA	50.30	197	eP	39	20.90	-0.4
PSI	50.59	243	ePc	39	24.00	0.3
	0.7s		17.20nm			5.2mb
PMR	51.37	35	ePd	39	27.50	-1.5
	1.1s		134.40nm			5.9mb
PPI	51.66	238	eP	39	32.50	0.7
FBA	52.05	31	eP	39	33.30	-0.9
WB5	53.26	189	iPd	39	42.20	-1.4
			i	40	51.70	327kmX
NDI	55.20	284	iPd	39	58.00	0.1
	1.0s		110.00nm			5.8mb
			eS	47	39.00	
ASPA	57.05	189	iPd	40	09.80	-1.3
	0.8s		12.00nm			5.0mb
			iPcP	41	06.50	
INK	57.55	26	iPd	40	13.00	-1.1
	0.7s		52.00nm			5.7mb
MBL	58.09	205	iPd	40	18.00	-0.3
HYB	58.90	271	ePd	40	24.50	0 2
	0.8s		107.68nm			6.0mb
DZM	59.55	154	iPc	40	29.20	0.6
RMQ	59.62	173	iPd	40	28.90	0.0
MBC	60.06	16	ePd	40	31.00	-0.4
	1.0s		107.00nm			5.9mb
BRS	61.02	169	iP	40	38.00	-0.4
			i	40	51.00	46km
GBA	61.70	268	P	40	43.80	0.4
POO	62.31	275	iPd	40	47.60	0.1
	1.0s		62.00nm			5.7mb
QUE	62.85	290	eP	40	50.50	-0.5
BOM	63.01	276	eP	40	50.00	-2.0
			eS	49	18.90	
KOD	63.41	265	eP	40	56.00	0.9
FORR	65.04	193	eP	41	04.30	-0.6

17d 05h

0.4s 21.00nm 5.6mb
MAIO 66.05 299 iPd 41 12.70 1.0
eS 50 04.00
KEV 67.33 340 iP 41 19.20 0.0
1.0s 60.00nm 5.6mb
BWA 67.46 175 iPd 41 21.00 0.7
i 41 33.70 44km
ADE 67.83 183 iPc 41 23.00 0.3
CAN 68.39 174 iPd 41 26.10 -0.1
PGC 68.55 45 eP 41 27.00 0.0
SOD 68.83 338 iP 41 28.70 0.2
GMW 69.43 46 P 41 32.50 -0.1
DAG 69.71 355 iPd 41 33.00 -0.8
0.6s 44.67nm 5.6mb
NWAO 69.82 202 iPd 41 35.10 0.2
RMW 70.07 46 P 41 36.50 0.0
LON 70.39 47 P 41 37.70 -0.8
TOO 70.41 177 eP 41 39.00 0.5
e 41 52.00 45km
PNT 70.49 43 iPd 41 38.90 -0.1
1.3s 79.00nm 5.6mb
RKG 70.95 202 iPc 41 45.30 3.5X
0.4s 8.00nm 5.1mb
SUF 71.78 334 iP 41 46.80 0.3
FHC 71.78 53 P 41 47.50 0.5
1.0s 50.00nm 5.4mb
EDM 71.97 38 iPd 41 47.00 -0.9
0.9s 49.00nm 5.5mb
NEW 72.45 44 P 41 50.00 -0.8
WDC 72.85 53 ePd 41 53.20 0.0
LBFM 72.91 52 P 41 54.00 0.1
MIN 73.59 52 ePd 41 56.90 -0.8
NUR 73.72 333 iP 41 58.40 0.5
0.8s 57.20nm 5.6mb
ORV 74.05 53 eP 41 59.50 -0.7
BKS 74.39 55 iPc 42 02.50 0.3
SES 74.70 39 iPd 42 03.70 -0.1
1.0s 81.00nm 5 6mb
pP 42 15.00 37km
GCC 74.98 56 eP 42 05.10 -0.5
MHC 75.06 55 eP 42 06.10 -0.2
ARN 75.13 55 P 42 06.00 -0.6
CMB 75.57 54 iPd 42 09.10 0.0
PRS 75.76 56 eP 42 10.00 -0.1
LLA 75.91 55 ePd 42 11.00 0.0
PRI 76.35 56 eP 42 13.80 0.2
SLY 76.43 304 iPc 42 14.00 0.2
iS 53 43.00
LRM 76.45 44 iPd 42 14.50 0.4
e 42 26.40 40km
FRI 76.57 55 iPd 42 14.40 -0.2
KVN 76.58 52 P 42 14.30 -0.6
FFC 76.60 32 iPd 42 14.30 -0.1
1.0s 91.00nm 5.7mb
UPP 76.76 335 iPd 42 15.40 0.2
BCH 77.25 56 P 42 19.00 0.4
MSL 77.65 305 iPc 42 22.00 1.4
eS 53 45.50
SYP 77.67 57 eP 42 21.00 0.1
TNP 77.68 53 P 42 20.60 -0.4
1.1s 40.91nm 5.4mb
HFS 77.93 336 eP 42 21.20 -0.4
1.2s 145.40nm 5.9mb
Z 15s 0.22um 4.6MszX
LR 19 52.00
NB2 78.05 338 P 42 22.70 0.3
0.9s 86.60nm 5.8mb
ISA 78.11 55 eP 42 22.00 -1.3
IMW 78.42 45 P 42 26.00 0.9
pP 42 38.00 40km
BHD 78.43 302 ePc 42 25.00 0 1
CLC 78.63 55 eP 42 26.00 -0.1
SBB 79.08 56 eP 42 29.00 0.4
PAS 79.13 56 eP 42 29.00 0.2
MWC 79.17 56 eP 42 29.00 -0.2
GSC 79.46 55 eP 42 30.00 -0.6
RVR 79.77 56 eP 42 31.00 -1.2
BW06 79.89 45 P 42 32.70 -0.3
0.8s 19.64nm 5.1mb
PEC 79.98 56 P 42 32.50 -0.9
FRB 80.39 13 ePd 42 34.50 -0.4
0.9s 59.00nm 5.6mb
PLM 80.48 56 eP 42 36.00 -0.3
KAS 80.92 314 iPd 42 40.70 2.4
BAR 80.98 57 eP 42 38.00 -0.7
GLA 82.07 56 eP 42 45.00 0.6
PV09 82.68 49 P 42 48.00 0.2

KRA 82.72 327 iPd 42 48.40 1.1
0.9s 80.00nm 5.8mb
e 43 02.10 47km
MLR 82.82 321 ePd 42 49.00 0.8
RSON 82.92 32 P 42 47.00 -1.4
0.8s 150.24nm 6.1mb
HRT 83.71 315 eP 42 53.00 0.3
KSP 83.79 329 iPd 42 53.80 1.0
0.9s 62.00nm 5.7mb
e 55 32.50
YLV 84.05 315 iP 42 55.10 0.7
PSZ 84.24 325 iPc 42 55.00 -0.3
GOL 84.26 46 P 42 56.00 0.2
1.0s 80.00nm 5.8mb
GLD 84.32 46 P 42 57.00 1.0
1.2s 240.40nm 6.2mb
ALT 84.55 314 eP 42 54.90 -2.1
PVL 84.64 319 eP 42 59.00 1.8
BRG 84.76 330 iPd 42 58.00 0.3
1.8s 100.00nm 5.7mb
CLL 84.82 331 iPd 42 58.70 0.7
1.2s 125.00nm 5.9mb
BZS 84.99 323 eP 42 59.00 0.1
BNT 85.04 316 iP 43 00.10 0.8
SRO 85.07 326 eP 43 01.00 1.7
e 55 20.30
PRU 85.17 329 P 43 00.50 0.7
1.0s 34.70nm 5.5mb
SALJ 85.21 305 P+ 43 02.00 1.6
BCK 85.25 312 eP 43 01.30 0.8
ZST 85.35 327 iP 43 02.10 1.4
e 55 35.80
KHL 85.37 313 eP 43 01.40 0.3
KDZ 85.63 318 eP 43 03.00 0.7
VKA 85.66 327 ePd 43 03.50 1.2
0.7s 13.30nm 5.3mb
DSI 85.68 305 eP 43 03.50 0.9
MOX 85.90 331 iP 43 04.50 1.1
1.3s 73.00nm 5.7mb
RZN 86.00 318 iPd 43 05.00 0.7
ELL 86.12 312 eP 43 05.00 0.1
VTS 86.22 320 iP 43 06.00 0.6
KHC 86.23 329 Pc 43 06.50 1.4
1.2s 20.00nm 5.2mb
e 46 13.00
ANMO 86.55 50 P 43 07.50 0.3
1.0s 25.00nm 5.4mb
PRNI 86.67 304 ePd 43 08.00 0.4
KKB 86.78 319 iPd 43 09.00 1.1
EKA 87.03 341 P 43 10.00 1.1
2.3s 351.60nm 6.2mb
MBH 87.09 304 iPd 43 10.50 0.9
VAY 87.44 319 eP 43 10.70 -0.4
PTJ 87.57 326 eP 43 21.00 9.3X
SKO 87.60 320 iP 43 13.00 1.1
KBA 87.89 328 i(P) 43 14.40 1.0
0.7s 12.90nm 5.3mb
FVI 88.51 328 P 43 16.00 -0.1
OHR 88.55 320 eP 43 15.70 -0.8
1.0s 0.06nm 2.8mb X
SCH 88.90 16 ePc 43 18.60 0.7
CDF 89.40 332 eP 43 20.50 0.0
0.7s 5.20nm 5.0mb
CTI 89.43 328 P 43 15.00 -5.7X
ACO 89.93 45 ePc 43 23.40 0.3
HAU 90.09 332 eP 43 23.60 0.0
SAL 90.27 328 P 43 23.00 -1.4
VAI 90.82 330 P 43 26.90 0.0
PGD 91.07 327 P 43 30.00 1.6
CRE 91.16 326 P 43 30.00 1.3
ORX 91.34 330 P 43 29.12 -0.4
BOB 91.40 328 P 43 28.00 -1.8
MEO 91.57 46 iPd 43 30.30 -0.3
LOR 91.66 333 eP 43 31.30 0.4
1.0s 26.00nm 5.6mb
MNS 91.76 325 P 43 31.00 -0.4
LSD 91.83 330 P 43 32.91 0.9
LBF 91.85 333 eP 43 31.60 -0.2
0.7s 7.70nm 5.2mb
FLN 91.95 336 eP 43 32.00 -0.1
0.7s 17.60nm 5.6mb
LPG 91.97 330 eP 43 33.00 0.4
0.7s 25.30nm 5.8mb
SSF 91.97 333 eP 43 32.50 0.3
0.9s 26.80nm 5.7mb
PCP 91.97 329 P 43 31.53 -0.8
LDF 91.97 336 eP 43 32.00 -0.2

0.9s 27.50nm 5.7mb
RSP 92.03 330 P 43 33.63 0.9
SMF 92.19 333 eP 43 33.30 0.0
AVF 92.25 333 iPc 43 33.80 0.3
0.8s 42.10nm 5.9mb
SID 92.25 44 eP 43 34.00 0.2
FIN 92.38 329 P 43 33.94 -0.3
GRR 92.40 336 eP 43 34.40 0.2
RRL 92.42 330 P 43 35.17 0.5
TUL 92.44 44 eP 43 35.00 0.4
1.3s 40.20nm 5.7mb
e 43 47.20 40km
LNO 92.44 44 eP 43 34.90 0.4
ROB 92.46 329 P 43 34.04 -0.6
BGF 92.64 333 eP 43 35.50 0.2
0.8s 12.00nm 5.4mb
IMI 92.76 329 P 43 36.19 0.2
LPF 92.77 336 eP 43 36.40 0.5
0.9s 37.30nm 5.8mb
SBF 92.99 329 eP 43 36.50 -0.6
0.7s 47.10nm 6.0mb
MAF 93.02 333 eP 43 37.80 0.7
0.8s 13.40nm 5.4mb
TCF 93.10 334 eP 43 37.70 0.2
0.9s 21.20nm 5.6mb
LSF 93.39 334 eP 43 39.40 0.6
0.9s 44.80nm 5.9mb
FRF 93.58 329 eP 43 39.30 -0.4
0.7s 11.00nm 5.4mb
MFF 93.69 335 eP 43 40.70 0.5
1.0s 29.60nm 5.7mb
LRG 93.78 329 eP 43 40.80 0.2
0.9s 52.40nm 6.0mb
LMR 93.82 329 eP 43 40.50 -0.3
0.9s 29.40nm 5.7mb
FVM 93.92 39 P 43 40.80 -0.6
0.7s 18.37nm 5.6mb
BCAO 115.01 294 ePKPd 49 05.20 -0.5
0.9s 9.00nm
i 50 06.50
SLR 122.87 259 iPKPd 49 21.30 0.9
0.7s 13.70nm
SPA 122.96 180 iPKPd 49 19.50 0.2
1.0s 25.50nm
i 49 32.90
PRY 124.01 258 ePKP 49 22.50 -0.2
TIC 129.70 316 PKP 49 33.46 -0.3
KIC 129.76 315 PKP 49 33.50 -0.4
0.9s 9.50nm
LIC 130.04 315 PKP 49 34.08 -0.3
ZOBO 147.84 66 PKP 50 07.80 0.7
LPB 148.02 66 PKPd 50 09.00 1.9
0.9s 84.03nm
CNCB 148.27 67 iPKPd 50 09.80 2.1
LCCH 151.78 100 iPKPc 50 18.50 6.6X
TACH 152.33 100 ePKP 50 16.00 3.3X
JACH 152.46 98 iPKP 50 20.40 7.3X
PEL 152.46 99 iPKPd 50 20.10 7.1X
SAN 152.53 100 ePKPd 50 20.00 7.0X
CHCH 152.60 101 ePKPd 50 20.50 7.4X
PCH 152.68 100 ePKP 50 21.00 7.7X
FCH 152.82 99 ePKP 50 22.00 8.2X
S.D. = 0.9 on 212 of 226 obs.

DEC 17, 1989 07h 05m 34.73± 0.42s
8.861 N ± 6.4km 126.850 E ±10.8km
DEPTH = 40.6km (4 depth phases)
5.1mb (8 obs.) 4.2Msz (2 obs)
MINDANAO, PHILIPPINE ISLANDS (259)

DAV 2.17 216 iPc+ 06 12.00 2.8X
1 7s 8153.85nm
MNI 7.64 195 ePc 07 36.00 9.7X
OCP 8.05 316 eP 07 33.00 0.8
BAG 9.68 321 eP 07 36.00 -18.8X
eS 10 35.00
KKM 10.91 256 ePc 08 16.20 4.7X
OZH 17.83 335 eP 09 40.00 -1.5
Z 20s 1.30um
N 20s 1.30um
sS 13 08.00
GUMO 18.28 73 eP 09 20.70 -26.5X
PJG 18.28 73 eP 09 20.80 -26.4X
OIZ 19.34 303 eP 09 47.40 -12.4X
N 15s 1.10um
E 15s 1.10um
SSE 22.74 347 Pd 10 35.40 0.9

	1.0s	127.00nm		5.3mb		
Z	20s	0.90um		4.2Msz		
N	12s	0.30um				
E	12s	0.50um				
		pP	10 46.00	41km		
		S	14 42.00			
NJ2	24.24	343 Pc	10 50.00	1.0		
Z	16s	0.50um		4.1MszX		
		pP	11 00.50	39km		
KGM	24.38	255 eP	10 53.00	2.5		
WHN	24.53	333 eP	10 52.00	0.2		
Z	20s	0.63um		4.1Msz		
E	12s	0.49um				
		S	15 08.00			
		sS	15 24.00			
IPM	25.99	262 ePd	11 08.10	2.3		
	1.1s	90.20nm		5.3mb		
CHTO	28.80	293 eP	11 30.80	-0.6		
		ipP	11 41.60	40km		
WB5	29.50	166 eP	11 36.00	-1.6		
XAN	30.00	329 eP	11 39.10	-2.9		
TIY	31.54	338 eP	11 55.00	-0.5		
N	12s	0.40um				
QIS	31.81	157 iPd	11 57.10	-0.9		
BJI	32.48	345 eP	12 03.50	0.0		
	1.5s	79.00nm		5.4mb		
SNY	32.96	356 Pc	12 08.00	0.3		
	1.2s	0.10nm		2.6mb X		
E	18s	0.60um				
		pP	12 19.50	43km		
		sP	12 26.00			
ASPA	33.05	168 iPd	12 07.70	-1.1		
	0.8s	8.00nm		4.6mb		
HHC	34.63	339 eP	12 22.80	0.5		
MDJ	35.70	3 eP	12 32.50	1.2		
SHL	37.14	301 iP	12 43.00	-0.9		
		eS	18 29.20			
GTA	38.86	326 eP	12 57.30	-0.8		
MUN	41.86	194 eP	13 22.70	0.0		
NWAO	42.55	192 eP	13 28.00	-0.3		
ADE	45.01	166 eP	13 49.00	0.8		
BWA	47.66	156 eP	14 10.40	1.2		
HYB	47.69	285 eP	14 09.50	-0.2		
GBA	48.63	280 P	14 27.80	10.8X		
CAN	48.67	156 eP	14 16.90	-0.1		
WMQ	48.68	323 P	14 17.00	-0.1		
NDI	50.55	300 eP	14 29.50	-2.0		
POO	52.22	287 eP	14 43.50	-0.9		
MAIO	66.57	306 iPc	16 23.00	-0.3		
	0.7s	6.35nm		4.8mb		
INK	85.38	22 eP	18 10.00	1.3		
MBC	86.95	13 eP	18 18.00	1.6		
	0.8s	12.00nm		5.2mb		
SUF	87.06	333 eP	18 17.00	-0.1		
PRNI	87.17	300 ePc	18 19.00	0.6		
MBH	87.36	300 eP	18 20.00	0.8		
NUR	88.30	331 eP	18 33.00	9.9X		
DAG	92.23	353 iPd	18 41.60	0.4		
	0.7s	11.64nm		5.4mb		
NB2	94.27	334 P	18 49.20	-1.7		
	0.9s	2.60nm		4.7mb		
S.D. = 1.2 on 36 of 45 obs						

DEC 17, 1989 07h 12m 15.83± 0.79s
38.480 N ± 6.6km 26.678 E ± 9.2km
DEPTH = 10.0km (geophysicist)
AEGEAN SEA (365)
MD 3.2 (ATH).

IZM	0.47	100 iPg	12 24.50	-0.8
		iSg	12 31.50	
SMG	0.78	171 ePg	12 29.50	-1.5
PRK	0.83	338 ePg	12 31.40	-0.4
		eSg	12 44.30	
EZN	1.37	349 iPn	12 39.30	-1.6
APE	1.68	213 ePb	12 47.10	1.7
YER	1.85	136 ePn	12 48.20	0.3
DST	1.89	53 ePn	12 42.50	-6.0X
EDC	2.08	26 ePn	12 53.60	2.5
BNT	2.11	27 iPn	12 51.60	0.0
KHL	2.24	93 ePn	12 54.00	0.4
ALT	2.74	77 ePn	13 04.00	3.2X
RDO	2.80	342 ePn	13 01.00	-0.5
NEO	2.82	288 ePg	13 09.50	7.7X
YLV	2.95	44 ePn	13 07.00	3.4X
HRT	3.29	44 ePn	13 16.00	7.6X
S.D. = 1.5 on 10 of 15 obs				

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* DEC 17, 1989 07h 25m 34.91± 1.28s
4.077 N ±13.6km 96.026 E ±14.1km
DEPTH = 76.2 ± 11.9 km
4.0mb (1 obs.)
NORTHERN SUMATERA (706)

BSI	1.59	333 ePd	26 01.00	-0.6	
		eS	26 21.50		
TSI	2.60	103 e(P)	26 16.00	0.5	
PSI	3.20	115 iPd	26 24.50	0.6	
		eS	26 59.50		
IPM	5.01	84 ePd	26 48.00	-1.3	
	0.4s	60.00nm		5.2mb X	
		eS	27 38.00		
PPI	6.27	136 eP	27 07.00	0.2	
KGM	7.56	105 eP	27 25.00	0.3	
CHTO	14.92	11 eP	29 04.20	1.1	
KKM	20.20	84 ePc	30 05.00	-1.3	
BJI	40.16	24 eP	33 06.00	0.9	
HFS	82.66	330 eP	37 50.70	-0.4	
	0.4s	0.80nm		4.0mb	
CLC	129.34	36 ePdiff41	36.00	12.0X	
SBB	129.99	37 ePdiff41	35.00	8.0X	
GSC	130.16	35 ePdiff41	33.00	5.2X	
MWC	130.17	37 ePdiff41	34.00	6.1X	
S.D. = 1.0 on 10 of 14 obs.					

DEC 17, 1989 07h 32m 29.61± 0.47s
1.262 S ± 6.4km 78.348 W ± 7.4km
DEPTH = 33.0km (normal)
4.9mb (15 obs.)
ECUADOR (107)

OUR	1.10	351 iPd	32 46.20	-2.9	
		eS	33 05.00		
GGP	1.11	347 iPd	32 46.50	-2.9	
		S	33 00.00		
CAYA	1.38	15 iP+	32 54.00	0.7	
PURC	4.08	29 eP	33 31.33	-0.4	
SALC	4.52	21 ePd	33 40.59	2.9	
ANCC	4.97	17 ePc	33 44.06	0.1	
HOOC	5.00	20 iPd	33 45.28	0.6	
DIAC	5.01	25 eP	33 45.21	0.6	
CLMC	5.41	19 eP	33 49.95	-0.4	
BOG	7.24	36 eP	34 18.00	1.8	
		iSc	36 09.50		
UPA	10.24	353 ePc	34 58.50	1.0	
	1.0s	54.00nm		5.8mb	
Z	18s	0.34um		4.5Msz	
SDV	12.68	37 eP	35 32.90	2.3	
TOV	13.89	38 eP	35 44.00	-2.6	
FISA	15.34	36 eP	36 06.00	0.5	
OLLA	16.05	45 eP	36 15.00	0.3	
LLAV	16.36	44 eP	36 21.00	2.3	
ZOBO	18.00	147 P	36 39.80	0.2	
Z	18s	1.08um			
		LR	44 08.00		
LPB	18.23	147 P	36 46.00	3.7X	
		LR	44 44.00		
CNCB	18.52	147 Pc	36 48.90	2.9	
CCH	20.02	144 P	37 03.50	0.5	
TPP	20.37	55 eP	37 05.18	-1.2	
TRN	20.60	55 eP	37 09.29	0.6	
TUL	40.40	338 e(P)	40 06.00	-0.4	
	0.8s	6.20nm		4.4mb	
MEO	40.56	334 iPd	40 07.80	0.1	
FVM	40.61	345 P	40 06.00	-2.1	
	0.8s	24.24nm		5.0mb	
ACO	42.43	335 ePc	40 23.50	0.5	
ANMO	44.61	327 eP	40 43.00	2.1	
GOL	47.69	332 P	41 05.10	-0.2	
	0.7s	8.50nm		4.9mb	
GLA	48.45	318 eP	41 13.00	1.9	
BAR	49.48	317 eP	41 21.00	2.0	
TPC	49.90	318 eP	41 23.00	0.7	
PLM	50.00	317 eP	41 27.00	3.8X	
RVR	50.72	317 eP	41 30.00	1.6	
BW06	52.06	331 P	41 38.80	0.0	
	1.0s	9.25nm		4.7mb	
ISA	52.42	319 eP	41 43.00	1.6	
TNP	53.07	322 P	41 47.20	0.8	
	0.9s	8.79nm		4.7mb	
RSON	53.55	348 P	41 46.20	-3.2X	
	0.7s	14.88nm		5.1mb	
PRI	54.16	318 eP	41 54.90	0.7	
KVN	54.21	322 P	41 54.90	0.2	
LRM	55.72	332 eP	42 05.70	0.1	
ORV	56.63	321 eP	42 13.30	1.3	
WDC	57.87	321 eP	42 19.50	-1.2	
SES	58.55	336 ePc	42 24.80	-0.6	
FFC	59.10	344 eP	42 28.00	-1.1	
	0.7s	11.00nm		5.1mb	
LON	61.11	327 P	42 43.00	0.0	
PNT	61.63	331 ePc	42 47.00	0.6	
	0.8s	19.00nm		5.3mb	
EDM	61.64	337 eP	42 45.00	-1.5	
FRB	65.26	5 eP	43 07.00	-2.9	
LIC	73.56	83 P	43 59.10	-2.8	
	0.6s	2.00nm		4.3mb	
TIC	73.60	83 P	43 59.30	-2.8	
KIC	73.86	83 Pc	44 01.00	-2.6	
	0.6s	5.50nm		4.7mb	
INK	78.93	342 eP	44 31.50	0.4	
MBC	80.83	351 eP	44 41.00	-0.2	
	0.6s	4.00nm		4.6mb	
PMR	82.06	333 P	44 47.20	-0.6	
FBA	82.53	336 P	44 50.20	0.0	
	1.0s	9.50nm		4.8mb	
DAG	84.53	12 iPd	45 00.20	0.0	
	0.6s	10.67nm		5.2mb	
SPA	88.75	180 iPd	45 22.80	1.6	
	1.1s	19.05nm		5.3mb	
KLB	143.93	204 ePKP	52 02.30	-1.7	
MUN	144.18	201 ePKP	52 03.00	-1.4	
SSE	145.04	330 PKP	52 03.80	-2.0	
	1.0s	28.00nm			
LZH	145.29	357 PKPc	52 06.50	0.1	
	1.5s	166.00nm			
Z	14s	3.90um		6.3MszX	
N	12s	1.20um			
E	13s	2.80um			
		pP	52 10.00		
		PcP	17 25.50		
		pP	17 30.00		
		sP	17 38.00		
		ePP	18 37.00		
		eS	22 46.00		
		i	24 09.00		
XAN	146.69	349 PKP	52 09.20	0.6	
KNA	148.32	237 ePKP	52 15.50	4.0X	
	0.6s	19.00nm			
WHN	148.48	339 PKP	52 15.00	3.6X	
CD2	150.45	356 ePKP	52 14.70	0.2	
GBA	153.08	62 PKP	52 27.00	8.3X	
	1.0s	6.20nm			
S.D. = 1.5 on 60 of 66 obs.					

& DEC 17, 1989 07h 39m 20.69s
63.628 N 149.673 W
DEPTH = 120.4km
CENTRAL ALASKA (1)
<AGS-P>.

MCK	0.35	72 iP	39 38.11	0.0	
		eS	39 51.94		
RND	0.43	121 iP	39 38.18	-0.4	
		eS	39 52.35		
KTH	0.56	263 iP	39 39.07	-0.4	
		eS	39 53.08		
HUR	0.65	179 eP	39 39.49	-0.5	
		eS	39 54.00		
NEA	0.99	15 iP	39 42.32	-0.6	
		eS	39 58.46		
WRH	1.10	39 iP	39 43.58	-0.4	
CUT	1.26	193 iP	39 44.88	-0.8	
CCB	1.31	38 iP	39 45.72	-0.6	
RDS	1.38	28 iP	39 46.72	-0.4	
HDA	1.43	56 iP	39 47.07	-0.6	
FBA	1.52	32 iP	39 48.29	-0.4	
		eS	40 08.70		
GLM	1.69	35 iP	39 50.30	-0.5	
		eS	40 12.73		
DDM	1.70	83 iP	39 50.58	-0.5	
		eS	40 12.71		
DMW	1.80	74 eP	39 51.44	-0.7	
SKT	1.86	208 iP	39 51.22	-1.7	
		eS	40 16.60		
GHO	1.89	169 iP	39 52.49	-0.9	
		eS	40 18.23		
PWA	1.99	183 eP	39 53.11	-1.3	
		eS	40 19.27		
PAX	2.01	107 eP	39 54.68	-0.2	
		eS	40 22.27		

17d 07h

PME	2.03	171	eP	39 53.78	-1.2
			eS	40 19.16	
PLRM	2.06	173	eP	39 54.07	-1.3
NCA	2.10	140	eP	39 55.05	-0.9
			eS	40 23.92	
SDG	2.18	119	eP	39 57.68	0.7
TOA	2.22	132	eP	39 57.04	-0.4
SUA	2.23	193	eP	39 56.69	-1.0
PMS	2.39	179	eP	39 58.43	-1.3
DOT	2.50	87	eP	40 00.21	-0.9
NCG	2.51	208	eP	39 59.62	-1.7
CGLM	2.57	206	eP	40 00.79	-1.3
CRP	2.64	207	eP	40 02.70	-0.3
BGL	2.69	209	eP	40 02.92	-0.7
SPU	2.69	205	eP	40 01.91	-1.7
CKL	2.74	208	eP	40 02.30	-2.0
KLU	2.76	139	eP	40 02.96	-1.6
VLZ	2.95	147	eP	40 04.63	-2.3
VZW	2.96	149	eP	40 04.79	-2.4
IMA	2.99	327	eP	40 06.25	-1.4
GLI	3.01	155	iP	40 05.43	-2.4
SLKM	3.14	185	iP	40 08.14	-1.5
FID	3.25	151	eP	40 08.87	-2.2
RDT	3.32	204	eP	40 11.44	-0.6
GLB	3.49	126	iP	40 13.05	-1.2
SEW	3.54	178	eP	40 12.69	-2.1

42 obs. associated

DEC 17, 1989 08h 11m 05.69± 0.29s
39.552 N ± 6.8km 143.332 E ± 4.1km
DEPTH = 20.3km (5 depth phases)
5.2mb (27 obs.) 4.9Msz (5 obs.)
OFF EAST COAST OF HONSHU, JAPAN (229)

OFUJ	1.37	250	iP+	11 32.00	2.2
			eS	11 54.40	
AOMJ	2.48	295	P	11 48.00	2.3
MAT	5.04	235	iPc	12 24.20	2.2
	0.8s	388.06nm			6.0mb
			(S)	13 28.00	
SHK	9.88	243	eP	13 31.00	1.4
MDJ	11.39	301	Pd	13 51.00	0.7
Z	14s	4.40um			
E	12s	3.20um			
		pP		13 57.00	
		S		15 56.00	
CN2	14.02	293	Pd	14 24.60	-0.7
N	12s	2.80um			
E	18s	4.60um			
		pP		14 33.60	
SNY	15.16	285	Pd	14 40.00	-0.2
Z	16s	6.60um			
N	13s	1.70um			
E	15s	4.10um			
		pP		14 45.40	
		S		17 28.00	
DL2	16.83	275	eP	15 04.00	2.4
Z	18s	1.80um			
N	14s	2.70um			
E	15s	2.70um			
		pP		15 09.00	
		S		18 11.00	
SSE	19.91	252	eP	15 36.50	-2.3
	1.0s	56.00nm			4.8mb
Z	20s	1.80um			5.4MszX
N	11s	10.00um			
E	12s	1.60um			
		sP		15 45.00	83kmX
		i		15 53.00	
		PP		16 02.80	
		eS		19 30.00	
		sS		19 40.00	
BJI	20.85	280	eP	15 46.50	-2.0
	1.5s	118.00nm			5.1mb
Z	15s	4.08um			4.9MszX
N	13s	0.10um			
E	15s	3.04um			
		eS		19 46.00	
TIA	20.93	269	P	15 46.60	-2.8
Z	14s	5.10um			5.1MszX
N	12s	0.90um			
E	12s	4.00um			
		eS		19 41.90	
NJ2	21.18	257	Pd	15 50.20	-1.7
Z	18s	2.00um			4.5Msz
N	12s	1.30um			
E	13s	1.20um			

TIY	24.15	276	Pd	16 19.90	-1.5
Z	18s	3.28um			4.9Msz
N	15s	2.40um			
		sS		20 52.00	
HHC	24.23	283	eP	16 21.00	-1.2
Z	18s	6.10um			5.1Msz
N	13s	0.90um			
E	14s	2.50um			
		sS		20 50.00	
WHN	25.29	258	Pd	16 32.00	-0.2
	1.0s	0.35nm			3.0mb X
Z	18s	1.82um			4.6Msz
N	14s	1.76um			
E	15s	2.89um			
		pP		16 42.50	39kmX
		sS		21 09.00	
BTO	25.43	283	eP	16 33.00	-0.7
N	12s	1.00um			
E	15s	4.80um			
		pP		16 39.00	21km
		eS		20 50.00	
XAN	27.99	270	P	16 56.10	-1.0
N	13s	1.80um			
E	13s	1.70um			
LZH	31.21	276	Pc	17 25.50	-0.5
	1.5s	0.12nm			2.5mb X
Z	14s	3.90um			5.2MszX
N	12s	1.20um			
E	13s	2.80um			
		pP		17 30.00	16km
		sP		17 38.00	
		ePP		18 37.00	
		sS		22 46.00	
		SS		24 09.00	
GYA	33.18	258	iPc	17 42.80	-0.4
	1.0s	0.10nm			2.7mb X
N	14s	1.60um			
E	14s	1.40um			
		S		23 01.40	
CD2	33.24	267	eP	17 42.00	-1.6
Z	14s	2.20um			5.0MszX
N	12s	3.00um			
		eS		23 05.00	
GTA	33.34	284	iPc	17 44.60	0.1
	1.2s	0.10nm			2.6mb X
Z	18s	4.40um			5.2Msz
E	16s	3.70um			
KMI	36.87	259	Pc	18 15.00	0.1
Z	16s	2.60um			5.1MszX
		pP		18 22.00	24km
		eS		24 00.00	
		sS		24 11.00	
WMQ	41.11	295	iPc	18 51.00	1.3
Z	14s	2.10um			5.2MszX
TTA	42.50	36	P	19 04.50	3.6X
CHTO	43.39	255	eP	19 09.50	0.9
		pP		19 16.80	24km
LSA	43.52	274	P	19 11.20	1.1
IMA	43.76	32	eP	19 12.00	0.9
	0.9s	6.70nm			4.4mb
SHL	44.98	268	iP	19 21.50	-0.1
		eS		26 05.00	
PMS	45.53	39	eP	19 25.20	-0.1
PMR	45.71	38	P	19 25.80	-0.9
	0.5s	5.79nm			4.8mb
FBA	46.17	33	eP	19 30.60	0.3
KSH	50.81	293	eP	20 08.00	1.2
INK	51.46	28	eP	20 11.50	0.4
MBC	53.68	17	eP	20 27.50	-0.1
	0.7s	4.00nm			4.5mb
NDI	54.70	280	iPc	20 35.30	-0.4
WB5	59.71	190	eP	21 09.90	-1.3
HYB	59.79	268	eP	21 11.20	-0.8
KEV	61.63	339	eP	21 38.00	14.3X
POO	62.78	272	iPc	21 31.80	-0.3
GBA	62.92	265	P	21 32.90	-0.1
SOD	63.23	337	iP	21 34.00	-0.4
BOM	63.37	273	eP	21 35.00	-0.9
DAG	63.40	355	iPc	21 34.00	-1.4
	0.7s	14.38nm			5.2mb
ASPA	63.50	190	eP	21 35.80	-0.8
	0.7s	11.00nm			5.1mb
Z	23s	0.19um			4.2MszX
		LR		46 10.10	
MAIO	63.84	297	eP	21 40.00	1.0
PNT	65.33	46	eP	21 48.00	-0.4
LON	65.45	49	P	21 50.00	0.7

SUF	66.41	333	iP	21 54.50	-0.5
EDM	66.44	40	eP	21 54.50	-1.0
WDC	68.37	55	eP	22 07.50	-0.3
NUR	68.44	332	eP	22 05.00	-2.8
SES	69.27	41	eP	22 13.00	-0.2
ORV	69.61	55	eP	22 16.30	0.9
FFC	70.78	34	iPc	22 21.80	-0.4
	0.9s	16.00nm			5.1mb
CMB	71.20	56	eP	22 25.80	0.6
LRM	71.30	46	eP	22 26.20	0.3
UPP	71.35	334	iP	22 20.30	-5.3X
		i		22 25.50	17km
KVN	72.05	54	P	22 30.70	0.3
HFS	72.41	336	eP	22 30.90	-1.0
	0.5s	19.60nm			5.4mb
Z	17s	0.42um			4.8MszX
		LR		55 39.00	
NB2	72.44	338	P	22 30.60	-1.6
	0.8s	26.90nm			5.3mb
TNP	73.18	54	P	22 37.30	0.2
	1.0s	12.50nm			4.9mb
IMW	73.34	47	P	22 39.00	0.9
BWA	73.76	176	eP	22 40.80	0.8
ISA	73.84	57	eP	22 39.00	-1.8
FRB	73.98	14	eP	22 40.00	-0.9
CLC	74.31	56	eP	22 45.00	1.5
BW06	74.83	47	P	22 46.50	-0.1
SBB	74.85	58	eP	22 47.00	0.3
MWC	74.98	58	eP	22 54.00	6.4X
GSC	75.14	56	eP	22 50.00	1.7
RSON	77.06	33	P	22 57.00	-1.7
	0.9s	9.29nm			4.8mb
KRA	77.84	327	iPd	23 03.90	0.9
	0.8s	42.00nm			5.5mb
		e		23 17.30	46kmX
PV09	77.85	50	P	23 04.00	0.2
SPC	78.36	326	eP	23 06.50	0.3
BBTK	78.72	313	iPc	23 13.00	4.7X
KSP	78.74	329	iPc	23 08.50	0.5
		e		26 01.00	
CMP	79.03	321	ePc	23 14.00	4.3X
BRG	79.64	330	iP	23 13.40	0.6
CLL	79.65	331	iPc	23 13.40	0.5
	0.9s	28.00nm			5.3mb
PRU	80.11	329	P	23 16.00	0.6
	1.0s	21.70nm			5.1mb
SRO	80.24	326	iP	23 17.60	1.5
ZST	80.47	327	eP	23 18.20	0.9
MOX	80.71	331	iP	23 19.00	0.4
		e		26 10.00	
KHC	81.17	329	iP	23 22.40	1.3
	1.0s	12.00nm			4.9mb
EKA	81.25	341	P	23 22.00	0.7
	2.1s	185.70nm			5.8mb
KBA	82.91	328	eP	23 30.50	0.1
	0.7s	12.90nm			5.2mb
		e		26 45.00	
VAY	83.15	319	eP	23 32.00	0.6
SKO	83.23	320	iPc	23 33.20	1.4
	1.0s	50.00nm			5.6mb
		i		23 47.00	47kmX
PRNI	83.77	304	iPc	23 36.00	1.2
TRI	83.84	327	P	23 34.00	-0.8
LIT	84.10	319	eP	23 36.50	0.2
CDF	84.14	332	eP	23 36.40	-0.1
	0.9s	9.80nm			5.0mb
OHR	84.19	320	eP	23 37.00	0.2
	0.9s	0.06nm			2.8mb X
MBH	84.23	304	ePc	23 38.00	0.9
CTI	84.43	328	P	23 37.00	-1.0
BSF	84.81	332	eP	23 39.40	-0.5
HAU	84.82	333	eP	23 39.60	-0.2
	0.9s	14.40nm			5.2mb
VAI	85.72	330	P	23 44.40	0.2
LOR	86.32	334	eP	23 47.20	-0.1
	0.8s	20.60nm			5.4mb
LBF	86.52	333	eP	23 48.10	-0.2
	0.8s	13.40nm			5.2mb
SSF	86.62	334	eP	23 48.60	-0.1
	0.8s	14.70nm			5.3mb
LPG	86.80	331	eP	23 50.10	0.1
	0.8s	10.70nm			5.1mb
SMF	86.86	333	eP	23 50.10	0.1
AVF	86.91	334	eP	23 50.20	0.1
	0.9s	32.70nm			5.6mb
LSF	87.99	335	eP	23 55.70	0.3
ZOBO	144.10	59	PKP	30 41.00	-1.6

LPB 144.31 59 PKP 30 44.00 1.2
CNCB 144.58 59 PKP 30 44.00 0.6
CCH 146.21 58 PKP 30 57.00 11.2X
S.D. = 1.1 on 102 of 109 obs.

? DEC 17, 1989 08h 24m 37.33± 19.56s
34.056 S ±77.7km 72.195 W ±138.km
DEPTH = 33.0km (normal)
NEAR COAST OF CENTRAL CHILE (135)

LCCH 0.78 42 iPd 24 50.40 -1.5
iS 24 59.50
TACH 1.12 69 ePd 24 55.80 -1.0
S 25 09.50
CHCH 1.29 85 iP 24 59.30 0.1
iS 25 16.00
SAN 1.41 65 iPc 25 00.70 -0.3
iS 25 18.00
PCH 1.47 73 iP 25 01.50 -0.3
iS 25 20.50
ROCH 1.47 43 iP 25 01.50 -0.4
PEL 1.55 55 iPc 25 03.10 0.0
iS 25 22.00
FCH 1.75 66 iP 25 06.10 0.0
iS 25 28.50
JACH 1.92 45 iPd 25 09.50 1.1
iS 25 30.50
S.D. = 0.8 on 9 of 9 obs.

% DEC 17, 1989 08h 26m 14.82± 0.76s
38.858 N ± 7.1km 27.736 E ± 8.6km
DEPTH = 10.0km (geophysicist)
TURKEY (366)

IZM 0.59 219 ePg 26 27.00 0.2
DST 1.02 43 iPg 26 34.50 0.4
iSg 26 47.50
EDC 1.49 4 iPn 26 41.70 0.1
KHL 1.50 110 ePn 26 41.00 -0.8
BNT 1.50 5 iPn 26 41.50 -0.3
ALT 1.86 83 ePn 26 48.00 0.9
YLV 2.12 36 ePn 26 50.50 -0.4
HRT 2.46 37 ePn 27 00.00 4.3X
S.D. = 0.7 on 7 of 8 obs.

& DEC 17, 1989 08h 41m 43.30s
36.658 N 121.325 W
DEPTH = 4.0km
CENTRAL CALIFORNIA (39)
<BRK>. ML 2.6 (BRK).

SAO 0.14 318 iPc 41 46.10 -0.1
LLA 0.31 98 iPc 41 49.60 0.1
iS 41 54.10
PRS 0.33 186 iPd 41 49.90 0.0
GCC 0.65 305 eP 41 55.30 -1.1
ARN 0.71 347 iPd 41 57.40 -0.1
MHC 0.73 340 ePd 41 57.60 -0.3
PRI 0.74 134 eP 41 57.30 -0.8
PHAM 1.11 137 eP 42 03.70 -1.0
PKEM 1.15 121 eP 42 05.50 0.2
FRI 1.34 75 eP 42 06.90 -1.7
eS 42 24.50
BKS 1.42 329 iPc 42 10.50 0.6
KVN 3.50 46 eP 42 47.00 7.3
TNP 3.57 65 eP 42 46.50 5.7
13 obs. associated

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* DEC 17, 1989 08h 58m 15.40± 1.45s
44.269 N ±17.6km 146.792 E ± 7.6km
DEPTH = 80.1 ± 16.0 km
4.6mb (8 obs.)
KURIL ISLANDS (221)

KUSJ 1.91 233 P 58 46.40 -0.2
S 59 07.70
MAT 10.11 223 (P) 00 25.00 -14.8X
eS 02 23.00
CN2 15.36 276 eP 01 47.40 -1.3
SNY 17.13 270 Pc 02 12.40 1.5
BJI 23.02 270 eP 03 13.50 -0.4
TIA 23.94 261 eP 03 22.80 -0.1
SSE 24.04 246 eP 03 24.50 0.6
HHC 26.05 275 eP 03 44.00 1.1
TIY 26 61 268 Pc 03 48.40 0.4
XAN 30.85 264 eP 04 24.60 -1.3
PMR 40.44 42 P 05 47.00 0.1
0.7s 9.88nm 4.8mb
FBA 40.83 36 P 05 51.30 1.2
0.8s 20.69nm 5.0mb
INK 46.09 31 eP 06 33.00 0.5
PNT 60.23 49 eP 08 17.00 -0.1
EDM 61.19 43 ePc 08 23.20 -0.5
SES 64.05 44 eP 08 43.00 0.4
LRM 66.20 49 eP 08 57.00 0.2
CMB 66.49 59 eP 08 58.40 -0.1
KVN 67.25 57 P 09 03.30 -0.2
TNP 68.40 58 P 09 10.00 -0.7
0.7s 4.33nm 4.5mb
FRB 68.75 16 eP 09 11.00 -1.1
NB2 69.03 339 P 09 13.60 -0.3
0.5s 4.90nm 4.7mb
HFS 69.11 337 eP 09 13.00 -1.4
0.4s 16.10nm 5.3mb
BW06 69.77 50 P 09 18.30 -0.7
0.5s 2.14nm 4.3mb
PV09 72.89 53 P 09 39.00 1.2
GOL 74.17 50 P 09 44.80 -0.4
0.6s 2.47nm 4.3mb
EKA 77.55 343 P 10 05.00 1.4
0.7s 4.10nm 4.4mb
S.D = 0.9 on 26 of 27 obs.

DEC 17, 1989 09h 07m 18.20± 0.74s
0.171 S ± 7.6km 123.042 E ± 8.1km
DEPTH = 117.9 ± 11.6 km
4.6mb (2 obs.)
MINAHASSA PENINSULA (265)

MNI 2.41 48 ePd 07 58.00 0.7
eS 08 31.50
MKS 6.15 215 ePc 08 48.00 -0.1
AAI 6.22 124 eP 08 48.50 -0.5
eS 09 59.10
TSM 6.61 311 ePd 08 54.40 0.1
KKM 9.20 312 ePc 09 28.80 -0.7
WB5 22.51 151 eP 12 08.90 0.1
ASPA 25.62 156 iPc 12 38.90 0.4
0.9s 10.00nm 4.3mb
CHTO 30.26 310 eP 13 21.30 1.0
MAT 39.15 19 eP 14 35.00 -0.9
0.9s 16.81nm 4.8mb
GBA 47.19 289 Pc 16 08.60 27.4X
0.6s 1.80nm
S.D. = 0.8 on 9 of 10 obs.

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* DEC 17, 1989 09h 54m 39.46± 1.05s
32.695 N ±20.4km 132.539 E ±11.4km
DEPTH = 33.0km (normal)
4.3mb (5 obs.)
SHIKOKU, JAPAN (236)

SHK 1.84 4 iPd 55 10.20 1.0
0.9s 117.65nm
MAT 6.05 49 iPd 56 08.20 -0.8
0.6s 3.33nm 4.2mb
SSE 9.78 264 eP 57 02.20 1.3
eS 00 12.00
i 01 14.00
NJ2 11.59 271 eP 57 27.00 1.4
BJI 15.07 304 eP 58 17.00 5.4X
TIY 17.17 293 eP 58 44.00 5.6X
Z 20s 0.80um
XAN 19.77 280 eP 59 07.20 -2.5
CD2 24.50 274 eP 59 56.40 -0.5
GBA 53.51 263 P 03 59.00 -0.2
0.8s 2.70nm 4.3mb
INK 61.48 25 eP 04 55.00 0.2
MBC 62.66 15 ePd 05 02.50 -0.1
0 7s 8.00nm 5.0mb
SLL 74.74 333 eP 06 17.10 -0.4
0.4s 1.00nm 4.2mb
NB2 75.15 335 P 06 18.20 -1.7
0.7s 2.50nm 4.3mb
PNT 76.27 40 eP 06 27.00 0.6
SES 80.04 36 eP 06 48.00 0.9
LRM 82.24 40 eP 07 00.40 1.4
KVN 83.13 48 eP 07 03.00 -0.7
S.D. = 1.2 on 15 of 17 obs.

DEC 17, 1989 10h 35m 57.27± 0.22s
8.297 N ± 3 6km 126.671 E ± 7 0km
DEPTH = 31.8km (11 depth phoses)
5.2mb (19 obs.) 4.7Msz (12 obs.)

MINDANAO, PHILIPPINE ISLANDS (259)
CENTROID, MOMENT TENSOR (HRV)
Data Used: GDSN
L.P.B.: 9S, 22C
Centroid Location:
Origin Time 10:36: 2.9 0.9
Lat 8.35N FIX;Lon 127.01E FIX
Dep 15.0 FIX Half-duration 2.3
Moment Tensor; Scale 10**17 Nm
Mrr= 0.50 0.10 Mtt= 0.37 0.09
Mff=-0.87 0.13 Mrt= 2.08 0.19
Mrf= 1.85 0.22 Mtf=-0.11 0.10
Principal Axes:
T Val= 2.97 Plg=48 Azm=329
N -0.18 13 225
P -2.79 39 125
Best Double Couple:Mo=2.9*10**17
NP1:Strike=155 Dip=13 Slip= 19
NP2: 46 86 103

DAV 1.62 222 iPd- 36 29.60 5.6X
MNI 7.05 195 ePc 37 45.50 4.6X
QCP 8.35 319 eP 37 52.00 -7.1X
TSM 9.46 245 ePd 38 23.00 8.6X
BAG 10.02 324 eP 38 26.00 3.7X
eS 40 24.00
AAI 12.00 173 eP 38 48.20 -1.0
MKS 15.23 208 eP 39 40.00 8.3X
ANP 17.50 344 eP 40 02.00 1.4
QZH 18.26 336 eP 40 10.00 0.0
Z 20s 1.90um
N 14s 1.40um
E 14s 1.40um
pP 40 20.00
S 43 34.00
HKC 18.40 321 eP 40 12.00 0.3
KUPT 18.58 190 eP 40 23.50 9.5X
0.6s 186.60nm 5.5mb
GUA 18.65 72 eP 40 08.30 -6.5X
GZH 19.49 320 P 40 28.90 4.1X
Z 20s 4.00um
E 16s 3.50um
eS 44 04.00
QIZ 19.50 305 eP 40 25.00 0.0
N 17s 3.30um
E 16s 4.50um
pP 40 34.00 37km
sP 40 38.00
PP 40 46.50
S 44 02.00
sS 44 15.50
TRT 21.17 222 iPc 40 45.70 3.3X
MTN 21.47 168 iPd 40 44.90 -0.4
KAGJ 23.11 9 P 41 02.90 1.4
SSE 23.25 348 P+ 41 02.00 -0.9
1.0s 42.00nm 4.9mb
Z 20s 2.80um 4.7Msz
N 12s 0.60um
E 12s 1.10um
PP 41 38.00
S 45 15.00
sS 45 30.00
KNA 23.98 175 eP 41 10.50 0.5
KGM 24.07 256 ePd 41 17.00 6.1X
KUMJ 24.42 9 eP 41 14.80 0.6
NJ2 24.73 344 Pc 41 17.00 -0.1
Z 20s 1.80um 4.6Msz
IPM 25.74 263 ePc 41 31.30 4.3X
1.0s 153.10nm 5.6mb
e 41 45.10 57kmX
SHNJ 26.03 8 eP 41 28.30 -1.0
GYA 26.21 316 P 41 35.60 4.3X
Z 30s 1.90um 4.5MszX
N 17s 2.90um
E 17s 2.10um
SHK 26.69 11 eP 41 37.00 1.5
PMG 26.94 130 eP 41 37.00 -0.9
PPI 27.59 253 eP 41 46.50 2.6
PSI 28.16 260 ePd 41 54.00 5.0X
1.0s 23.50nm 4.8mb
KMI 28.29 309 eP 41 51.50 1.1
Z 20s 5.20um 5.1Msz
eS 46 21.00
CHTO 28.87 294 eP 41 55.80 0.4
WB5 29.01 165 eP 41 55.00 -1.6
TIA 29.12 344 eP 41 55.30 -2.1
Z 20s 1.10um 4.5Msz

17d 10h

CHJJ 29.83 20 eP 42 03.50 -0.3
MAT 30.01 19 (P) 42 03.00 -2.5
0.8s 7.46nm 4.5mb
Z 20s 2.13um 4.8Msz
eS 46 54.00
MBL 30.03 193 eP 42 05.20 -0.6
XAN 30.39 330 P 42 06.60 -2.3
DL2 30.81 352 eP 42 12.40 0.0
0.6s 0.10nm 2.8mb X
Z 16s 1.00um 4.6MszX
E 13s 1.20um
eS 47 12.00
CD2 31.04 320 eP 42 14.00 -0.7
Z 21s 2.30um 4.8Msz
N 16s 2.30um
eS 47 23.00
QIS 31.37 156 iPd 42 16.00 -1.5
TIY 31.99 338 eP 42 21.40 -1.6
Z 26s 1.71um 4.6MszX
E 12s 0.80um
pP 42 30.00 30km
sS 47 43.50
ASPA 32.54 168 iPc 42 26.60 -1.2
Z 19s 1.47um 4.7Msz
eS 47 35.30
LR 56 11.80
NANU 32.55 199 eP 42 28.00 0.2
BJI 32.97 345 eP 42 30.00 -1.3
1.4s 33.00nm 5.0mb
Z 20s 1.44um 4.7Msz
N 14s 0.86um
eS 47 42.00
SNY 33.51 356 iPc 42 35.50 -0.4
1.0s 0.10nm 2.7mb X
Z 17s 1.10um 4.6MszX
E 21s 1.60um
pP 42 45.50 35km
sP 42 49.30
S 47 48.00
WARB 34.27 180 iPc 42 43.00 0.2
0.4s 21.00nm 5.4mb
LZH 34.62 326 eP 42 44.00 -1.9
2.0s 47.00nm 5.1mb
Z 19s 5.30um 5.3Msz
N 14s 1.80um
sP 42 54.50
ePP 44 05.00
eS 48 09.00
eSS 50 31.00
HHC 35.09 340 eP 42 50.00 0.2
Z 30s 1.60um 4.6MszX
N 12s 0.70um
E 15s 0.90um
CN2 35.38 358 Pc 42 52.00 -0.1
3.0s 0.40nm 2.8mb X
Z 18s 1.30um 4.7Msz
E 13s 0.60um
pP 43 01.00 30km
eS 48 23.00
BTO 35.42 338 eP 42 52.00 -0.6
N 18s 1.30um
E 18s 1.90um
PP 44 09.50
MDJ 36.27 4 Pc 43 00.40 0.8
Z 16s 0.90um 4.6MszX
S 48 35.00
SHL 37.28 302 iP 43 09.40 0.8
iS 48 53.50
MRWA 38.69 195 eP 43 20.50 0.4
FORR 38.95 178 iPd 43 22.10 0.0
0.4s 58.00nm 5.7mb
GTA 39.23 326 Pc 43 24.00 -0.6
Z 20s 1.20um 4.7Msz
E 17s 1.20um
COOL 39.31 188 eP 43 25.00 -0.3
0.5s 14.00nm 5.0mb
BAL 39.84 193 eP 43 29.00 -0.6
0.4s 12.00nm 5.0mb
KLB 40.57 192 eP 43 36.00 0.4
MUN 41.28 194 eP 43 42.10 0.7
NWAO 41.97 192 eP 43 48.00 1.0
RKG 43.12 192 eP 44 02.20 5.8X
BRS 43.56 145 iPc 43 58.50 -1.7
0.8s 12.00nm 4.7mb
iPP 45 47.00
CMS 43.60 156 eP 44 00.00 -0.4
ADE 44.51 166 eP 44 08.60 0.9

0.8s 56.72nm 5.5mb
BWA 47.22 155 eP 44 29.80 0.6
i 44 38.50 29km
HYB 47.67 286 eP 44 34.00 1.0
CAN 48.23 155 eP 44 36.50 -0.7
e 44 45.40 30km
CNB 48.38 155 eP 44 39.00 0.7
e 44 47.00 27km
KOD 48.57 276 eP 44 47.00 6.6X
TOO 48.91 160 eP 44 42.00 -0.3
e 44 51.00 30km
WMQ 49.02 323 P 44 43.80 0.6
Z 20s 2.20um 5.1Msz
DZM 49.31 128 iPd 44 47.00 1.3
POO 52.21 287 eP 45 08.00 0.1
KSH 54.82 313 eP 45 24.30 -2.6
MAIO 66.76 306 eP 46 49.00 0.9
eS 55 40.00
SVW 76.84 29 eP 47 49.60 2.0
e 48 00.10 34km
KDC 78.14 33 eP 47 56.10 1.4
i 48 06.70 34km
IMA 78.26 24 eP 47 56.70 1.2
0.6s 12.90nm 5.1mb
PMR 79.99 29 eP 48 04.80 0.1
0.6s 31.70nm 5.5mb
FBA 80.65 26 eP 48 08.10 -0.1
TOA 81.40 28 eP 48 14.30 2.0
KEV 85.61 340 eP 48 34.00 0.5
INK 85.96 22 eP 48 37.00 1.7
SOD 86.25 338 iP 48 36.20 -0.6
SUF 87.48 333 iP 48 42.00 -0.8
MBC 87.54 13 eP 48 44.00 1.1
1.0s 27.00nm 5.5mb
pP 48 55.00 35km
NUR 88.70 331 iP 48 48.40 -0.3
0.7s 17.40nm 5.5mb
i 48 53.60 16kmX
HFS 93.97 332 eP 49 11.40 -1.7
0.6s 4.20nm 5.0mb
Z 16s 0.31um 4.9MszX
LR 31 06.00
NB2 94.69 334 P 49 15.10 -1.4
0.7s 3.50nm 4.9mb
KSP 96.18 323 eP 49 26.80 3.3X
PNT 98.75 37 eP 49 36.00 0.9
EDM 100.53 32 ePdiff 49 44.50 1.4X
KIC 129.41 285 (PKP) 55 06.00 0.5
TIC 129.60 286 (PKP) 55 07.30 1.5
UPA 148.76 57 ePKP 55 44.00 3.9X
ZOBO 163.52 120 PKP 56 01.00 1.6
1.6s 43.86nm
Z 24s 0.26um
LR 53 32.00
S.D. = 1.1 on 77 of 96 obs.
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* DEC 17, 1989 11h 14m 58.74± 0.88s
22.974 N ±10.2km 125.930 E ± 9.9km
DEPTH = 33.0km (normal)
4.9mb (4 obs.)
SOUTHEAST OF TAIWAN (247)
TWC 4.08 294 iPc 16 00.00 -0.3
eS 16 15.60
TWD 4.13 286 iPd 16 00.00 -1.1
TWZ 4.50 299 eP 16 07.30 0.8
ANP 4.59 299 eP 16 09.00 1.2
QZH 6.99 288 eP 16 39.80 -1.7
0.6s 0.10nm 2.9mb X
SSE 9.13 333 eP 17 08.80 -2.3
E 11s 0.50um
i 18 45.00
i 20 21.00
i 20 28.00
WHN 12.79 309 eP 18 00.00 -1.0
MAT 17.20 35 (P) 18 59.00 1.0
1.0s 24.00nm 4.3mb
GYA 17.84 285 P 19 08.60 2.3
XAN 18.55 310 P 19 13.90 -0.9
TIY 18.71 325 eP 19 17.50 0.6
BJI 18.91 336 eP 19 18.00 -1.2
CD2 21.26 297 eP 19 44.70 0 2
BTO 22.11 326 eP 19 55.00 2.0
LZH 23.17 309 eP 20 04.00 0.5
1.5s 29.00nm 4.6mb
CHTO 25.53 266 eP 20 32.10 5.9X
CHTO 25.53 266 e(P) 20 27.20 1 0

GTA 27.56 313 eP 20 45.20 0.4
WB5 43.38 168 iPc 22 59.00 -0.9
ASPA 47.00 170 iPc 23 28.30 -0.5
0.6s 21.00nm 5.3mb
INK 72.69 23 eP 26 31.00 6.2X
FFC 92.42 26 eP 28 15.00 7.7X
0.9s 11.00nm 5.3mb
S.D. = 1.3 on 19 of 22 obs.

? DEC 17, 1989 11h 29m 14.16± 1.05s
39.274 N ± 8.8km 27.696 E ±15.2km
DEPTH = 10.0km (geophysicist)
TURKEY (366)
DST 0.79 65 ePg 29 29.60 0.0
IZM 0.94 201 ePg 29 32.10 0.0
eSg 29 46.00
EDC 1.08 7 ePn 29 33.70 -0.7
BNT 1.09 9 iPn 29 35.50 0.8
S.D. = 1.1 on 4 of 4 obs.

DEC 17, 1989 12h 38m 25.92± 0.29s
8.281 N ± 4.8km 126.807 E ± 7.2km
DEPTH = 43.1km (2 depth phases)
4.7mb (7 obs.) 4.3Msz (5 obs.)
MINDANAO, PHILIPPINE ISLANDS (259)
DAV 1.70 226 eP 38 59.00 5.4X
QCP 8.45 319 eP 40 09.00 -19.7X
BAG 10.11 324 eP 40 58.50 6.7X
eS 43 28.00
GUMO 18.49 72 eP 42 40.00 -0.8
Z 17s 1.06um
GUA 18.52 72 eP 42 40.50 -0.7
QIZ 19.62 305 P 42 53.60 -0.3
N 14s 0.90um
E 13s 1.00um
sS 46 54.00
MTN 21.42 168 eP 43 12.50 0.0
SSE 23.30 348 Pc 43 32.20 1 4
1.0s 28.00nm 4.7mb
Z 20s 0.90um 4.2Msz
N 12s 0.30um
E 12s 0.50um
S 47 41.00
sS 48 05.00
KNA 23.95 175 eP 43 38.00 0.7
IPM 25.88 263 ePc 44 01.50 5.8X
0.9s 27.30nm 4.8mb
WB5 28.96 165 eP 44 21.80 -1.8
CHTO 28.99 294 eP 44 23.60 -0.4
pP 44 35.40 45km
MBL 30.05 193 eP 44 33.00 -0.4
QIS 31.30 156 iPc 44 43.00 -1.4
TIY 32.06 338 eP 44 50.60 -0.4
Z 22s 0.78um 4.3Msz
N 15s 0.80um
ASPA 32.50 168 eP 44 56.30 1.4
0.4s 8.00nm 4.9mb
Z 19s 0.26um 4.0Msz
LR 02 04.30
NANU 32.58 200 eP 44 55.90 0.3
0.5s 6.00nm 4.7mb
BJI 33.02 345 eP 44 58.00 -1.2
SNY 33.53 356 iPd 45 03.60 0.0
Z 20s 0.80um 4.4Msz
N 20s 0.70um
pP 45 14.90 41km
S 50 20.00
HHC 35.15 340 P 45 17.10 -0.7
MDJ 36.28 3 eP 45 27.50 0.4
COOL 39.32 188 eP 45 52.20 -0.5
BAL 39.86 194 eP 45 57.50 0.3
MUN 41.29 194 eP 46 09.50 0.6
BRS 43.48 146 iPc 46 26.30 -0.6
0.6s 2.50nm 4.1mb
i 47 08.00 192kmX
BWA 47.15 155 eP 46 56.90 0.8
GBA 48.70 281 Pd 47 08.40 0.0
0.7s 2.20nm 4.3mb
WMQ 49.11 323 eP 47 11.20 -0.1
Z 18s 0.70um 4.7Msz
eS 54 12.00
NDI 50.80 300 eP 47 23.00 -1.3
INK 85.93 22 eP 51 04.00 1.6
SOD 86.32 338 eP 51 04.00 -0.3
MBC 87.52 13 eP 51 11.50 1.4

```
        1.0s    13.00nm          5.1mb
SUF    87.56 333 eP     51 10.00  -0.4
NUR    88.78 331 eP     51 17.00   0.7
                 e      51 23.00  19kmX
ZOBO  163.40 120 PKP    58 28.00   1.5
     S.D. = 0.9  on  31 of  35 obs.
-----------------------------------------
?  DEC  17, 1989  13h 55m 42.64± 1.09s
   17.305 N ±11.4km   99.480 W ±13.9km
   DEPTH =  33.0km  (normal)
 GUERRERO, MEXICO                ( 59)

ACX     0.56 220 iP     55 54.00  -0.2
                 iS     56 04.00
III     1.07   1 iP     56 02.50   1.0
                 iS     56 17.50
PPM     1.93  25 eP     56 13.00  -1.3
CRX     2.10 355 (P)    56 34.50  18.0X
OXX     2.64  94 eP     56 24.50   0.4
                 (S)    56 47.50
     S.D. = 1.7  on   4 of   5 obs.
-----------------------------------------
    DEC  17, 1989  14h 34m 25.59± 0.18s
    8.547 N ± 3.5km  126.794 E ± 4.8km
    DEPTH =  39.9km  (  4 depth phases)
    5.6mb ( 34 obs.) 5.6Msz ( 17 obs.)
 MINDANAO, PHILIPPINE ISLANDS     (259)
      CENTROID, MOMENT TENSOR     (HRV)
      Data Used: GDSN
      L.P.B.: 10S, 22C
      Centroid Location:
      Origin Time        14:34:26.0 0.2
      Lat  8.11N 0.04 Lon 127.07E 0.05
      Dep  15.0 BDY Half-duration  3.6
      Moment Tensor;   Scale 10**17 Nm
        Mrr= 6.43 0.29   Mtt= 0.79 0.27
        Mff=-7.22 0.38   Mrt=-3.60 0.77
        Mrf= 3.83 0.89   Mtf=-2.99 0.27
       Principal Axes:
        T  Val=  9.54   Plg=59   Azm=212
        N       -0.84      29        8
        P       -8.69      11      104
      Best Double Couple:Mo=9.1*10**17
       NP1:Strike=225 Dip=43 Slip= 136
       NP2:       350     62       56

DAV     1.89 220 iPc+   35 00.00   4.0X
MNI     7.32 196 ePc    36 14.00   1.2
QCP     8.24 318 eP     36 17.00  -8.7X
TSM     9.67 244 ePc    36 52.00   6.6X
BAG     9.89 323 eP+    36 45.00  -3.6X
                 eS     39 13.00
KKM    10.78 257 ePc    37 05.00   4.3X
        1.8s  418.10nm          6.3mb
AAI    12.23 173 eP     37 20.50   0.3
MKS    15.50 208 eP     38 08.50   5.4X
ANP    17.29 344 iPc    38 26.00   0.1
                 iS     41 46.00
JAY    17.70 128 ePc    38 25.00  -5.9X
QZH    18.08 335 Pc     38 34.00  -1.6
        8.0s    6.80nm          2.8mb X
     Z  16s   20.80um          4.5Msz
     N  16s   18.10um
HKC    18.28 320 P      38 37.00  -1.1
                 S      42 05.00
GUMO   18.43  73 eP     38 38.00  -1.8
        1.2s  366.67nm          5.4mb
GUA    18.46  73 eP     38 39.00  -1.2
KUPT   18.84 190 eP     38 53.00   8.0X
                 eS     42 27.00
GZH    19.38 320 iPc    38 48 50  -2.6
     Z  14s   23.70um
     N  12s    5.70um
     E  15s   23.60um
                 S      42 24.00
QIZ    19.46 304 Pc     38 51.00  -1.1
     N  15s   18.30um
     E  14s   22.30um
                PP      39 16.00
                sS      42 38.00
TRT    21.44 222 iPd    39 15.00   2.4
        0.9s  136.10nm          5.3mb
MTN    21.69 168 ePc    39 13.50  -1.6
MNDI   22.27 130 eP     39 23.00   1.8
SSE    23.04 348 iP+    39 28.00  -0.3
        1.4s  844.00nm          6.0mb
     Z  20s   16.50um          5.5Msz
     N  12s    6.80um
     E  12s    6.10um
                sP      39 55.00
                PPP     40 18.00
                S       43 37.00
                sS      44 04.00
                SS      44 33.00
KNA    24.22 175 eP     39 40.50   0.6
KGM    24.25 256 ePc    39 44.10   3.9X
NJ2    24.52 344 Pc     39 43.00   0.3
        7.0s    3.20nm          3.0mb X
     Z  20s   11.60um          5.4Msz
     N  13s    6.00um
     E  12s    7.80um
                sS      44 12.00
WHN    24.78 334 Pc     39 45.00  -0.2
        8.0s    3.13nm          2.9mb X
     Z  20s   13.20um          5.4Msz
     N  14s   10.20um
     E  13s    8.66um
                sP      40 00.00
                PP      40 24.00
LAT    25.18 126 eP     39 50.00   0.9
IPM    25.90 263 ePd    39 57.20   1.3
        1.0s  104.60nm          5.4mb
                e       40 42.80
GYA    26.12 316 P      39 57.40  -0.5
     Z  18s   15.00um          5.6Msz
     N  15s   17.40um
     E  15s   14.60um
                sS      44 38.50
SHK    26.42  11 eP     40 00.70   0.2
KSI    27.00 244 ePd    40 06.50   0.6
                e       43 40.20
PMG    27.01 131 eP     40 04.00  -2.0
PPI    27.78 253 eP     40 16.00   2.9
KMI    28.23 309 Pc     40 16.00  -1.3
     Z  16s   33.30um          6.0MszX
     E  16s   14.70um
                S       45 10.00
                sS      45 17.00
RAB    28.29 116 eP     40 16.00  -1.7
PSI    28.33 260 ePd    40 20.00   2.0
CHTO   28.88 294 iPc    40 22.80  -0.2
                pP      40 33.40  39km
TIA    28.91 344 Pc     40 22.10  -1.0
     Z  20s    6.60um          5.2Msz
     N  12s    4.80um
     E  12s    5.00um
WB5    29.22 165 eP     40 23.20  -2.8
                i       40 28.10
MAT    29.74  19 eP     40 29.00  -1.5
        1.0s   27.00nm          4.9mb
     Z  20s    4.26um          5.1Msz
                eS      45 19.00
XAN    30.24 330 P      40 32.60  -2.4
     N  13s    9.90um
     E  13s    2.40um
                S       45 31.00
MBL    30.30 193 eP     40 34.00  -1.6
DL2    30.58 352 eP     40 38.60   0.7
     Z  16s    6.60um          5.4MszX
     N  14s    8.70um
     E  14s    2.70um
OIS    31.55 157 iPd    40 44.60  -2.0
                e       40 48.00
TIY    31.81 338 Pc     40 48.00  -0.8
     Z  16s    8.58um          5.5MszX
     N  14s    8.10um
     E  12s    4.30um
                PcP     43 43.00
                S       45 57.00
ASPA   32.76 168 iPc    40 55.30  -1.9
        1.3s   40.00nm          5.1mb
     Z  17s    9.51um          5.5MszX
                eS      46 04.80
                LR      57 38.60
BJI    32.76 345 eP     40 56.00  -1.0
        1.2s  203.00nm          5.9mb
     Z  16s    6.99um          5.5MszX
     N  14s    4.30um
     E  14s    2.98um
                eS      46 11.00
                eSS     48 04.00
                eScS    51 23.00
NANU   32.83 199 eP     40 57.30  -0.4
SNY    33.27 356 iPc    41 01.40   0.1
        1.2s    0.80nm          3.5mb X
     Z  20s   13.90um          5.7Msz
     N  17s   10.50um
     E  11s    2.90um
                pP      41 13.00  43km
                sP      41 19.00
                S       46 16.50
                sS      46 33.00
                SS      48 21.00
CTA    34.30 146 eP     41 12.00   1.5
                iS      46 18.00
LZH    34.48 326 Pc     41 11.00  -1.1
        1.5s  125.00nm          5.6mb
     Z  18s   13.90um          5.7Msz
     N  17s   16.50um
                pP      41 16.30  18kmX
                PP      42 24.00
                PPP     42 41.00
                S       46 40.00
                sS      46 54.00
                ScP     47 28.50
                PcS     47 31.20
                SS      48 56.00
WARB   34.52 180 eP     41 12.00  -0.4
        0.4s   22.00nm          5.4mb
HHC    34.90 340 Pc     41 15.00  -0.6
     Z  16s    9.50um          5.6MszX
     N  15s    8.40um
     E  13s   31.00um
                PP      42 31.00
                S       46 47.00
CN2    35.14 358 Pc     41 17.00  -0.4
        6.0s    1.40nm          3.1mb X
     Z  16s    9.40um          5.6MszX
     N  12s    2.10um
     E  12s    3.70um
                pP      41 27.50  36km
                PP      42 35.00
                S       46 40.00
                PcS     47 34.00
                SS      48 56.00
BTO    35.24 338 P      41 17.00  -1.5
     N  15s    5.60um
     E  15s    2.90um
MDJ    36.01   3 iPc    41 26.00   1.1
     Z  18s    8.30um          5.5Msz
     N  16s    6.50um
                pP      41 37.50  41km
                PP      42 48.00
                S       47 00.00
                SS      49 24.00
SHL    37.26 301 iP     41 35.50  -0.3
                iS      47 21.50
HNR    37.54 118 eP     41 26.00 -12.0X
                eS      47 20.00
MRWA   38.96 195 eP     41 49.10  -0.7
GTA    39.09 326 iPc    41 49.50  -1.4
        1.6s    0.20nm          2.7mb X
     Z  18s   14.70um          5.9Msz
     E  16s   10.40um
                PP      43 22.00
                S       47 38.00
FORR   39.19 178 eP     41 49.50  -2.1
        0.3s   36.00nm          5.6mb
LSA    39.46 307 iP     41 55.10   0.6
     Z  14s    3.00um          5.3MszX
     N  14s    2.30um
     E  15s    2.10um
                S       47 56.00
COOL   39.58 188 eP     41 53.00  -1.9
BAL    40.11 194 eP     41 59.00  -0.3
KLB    40.84 192 eP     42 05.00  -0.2
RMQ    40.84 149 iPc    42 04.10  -1.2
MUN    41.55 194 eP     42 10.50  -0.5
        0.8s  110.00nm          5.6mb
NWAO   42.24 192 eP     42 17.00   0.3
        0.9s   71.00nm          5.4mb
     Z  20s    2.70um          5.1Msz
     N  20s    2.10um
     E  20s    3.30um
RKG    43.39 192 eP     42 31.00   5.0X
BRS    43.70 146 iPd-   42 27.80  -0.9
        1.0s   16.00nm          4.7mb
     Z  20s   72.00um          6.6Msz
                i       42 58.30
                ePP     44 08.00
                eS      48 18.00
```

17d 14h

			esS	48 54.00		
			eSS	52 12.00		
CMS	43.78	156	eP	42 27.50	-1.7	
ADE	44.72	166	iPc	42 37.00	0.1	
	0.7s		79.45nm		5.7mb	
BWA	47.39	156	eP	42 58.70	0.6	
HYB	47.72	286	eP	43 00.70	-0.2	
			eS	50 04.00		
CAN	48.41	156	eP	43 05.90	0.0	
			i	43 09.10		
CNB	48.55	155	eP	43 07.00	-0.1	
GBA	48.63	281	P	43 08.00	0.1	
KOD	48.66	276	eP	43 08.80	0.3	
WMQ	48.89	323	iPc	43 09.00	-0.7	
	1.5s		0.10nm		2.6mb X	
Z	20s		12.30um		5.9Msz	
N	15s		8.00um			
E	14s		6.50um			
			S	50 16.00		
TOO	49.10	160	eP	43 12.00	0.8	
DZM	49.37	129	iPc	43 14.50	0.9	
NDI	50.65	300	iPc	43 21.50	-1.8	
			eS	50 34.00		
POO	52.26	287	iP	43 35.60	0.0	
			iS	51 05.00		
BOM	53.26	287	eP	43 40.00	-2.9X	
			eS	51 19.00		
KSH	54.74	313	P	43 54.50	0.8	
E	14s		6.50um			
			PP	46 02.00		
ADK	63.00	35	P	44 44.50	-6.1X	
	1.0s		70.00nm		5.7mb	
MSZ	64.65	149	P	45 00.60	-0.9	
KRP	64.82	139	P	45 02.20	-0.6	
SNZO	66.28	142	P	45 20.00	8.0X	
			S	53 56.00		
MAIO	66.71	306	iPc+	45 14.50	-0.6	
	0.8s		21.96nm		5.3mb	
			eS	54 16.00		
SVW	76.57	29	eP	46 15.50	2.1	
TTA	76.61	27	P	46 14.70	1.0	
	1.0s		30.00nm		5.3mb	
KER	76.74	303	eP	46 15.00	-0.1	
TAB	77.29	307	iP+	46 18.00	-0.1	
RYD	77.60	293	eP	46 20.00	0.1	
KDC	77.87	33	eP	46 21.70	1.2	
			e	46 33.50		
IMA	77.99	24	eP	46 23.10	1.8	
	0.9s		19.20nm		5.1mb	
SLY	78.02	305	ePd	46 21.50	-0.4	
			eS	56 15.00		
BHD	79.04	302	ePd	46 28.00	0.4	
			eS	56 40.00		
PMR	79.72	29	eP	46 31.40	0.8	
	1.0s		90.00nm		5.7mb	
MSL	79.89	305	ePd	46 33.00	0.9	
			e	47 00.00		
			eS	56 35.50		
KMSA	79.90	289	P	46 32.00	-0.5	
OASM	80.27	295	eP	46 51.50	17.1X	
FBA	80.37	26	eP	46 34.70	0.6	
TOA	81.12	28	eP	46 40.40	2.2	
KEV	85.42	340	eP	47 01.00	1.1	
			e	57 28.00		
INK	85.69	22	ePd	47 03.00	1.8	
	1.2s		111.00nm		5.9mb	
SOD	86.07	338	eP	47 03.00	-0.2	
SALJ	86.47	302	P+	47 07.00	1.1	
MASJ	86.48	301	Pd	47 07.20	1 2	
WAJH	86.49	296	eP	47 07.30	1.3	
AYN	86.62	299	eP	47 08.00	1.4	
KAS	86.68	311	iPd	47 07.50	0.7	
AAE	86.75	279	eP	47 10.00	2.1	
DSI	86.78	301	eP	47 08.00	0.6	
MBC	87.27	13	eP	47 10.00	1.1	
	1.2s		257.00nm		6.3mb	
PRNI	87.28	300	eP	47 10.00	0.1	
SUF	87.31	333	iP	47 09.50	0.2	
AQBJ	87.33	299	P+	47 10.50	0.5	
HQL	87.39	299	eP	47 11.50	1.2	
MBH	87.47	300	eP	47 11.00	0.3	
BBTK	87.67	310	eP	47 13.00	1.3	
NUR	88.55	331	iP	47 16.00	0.8	
	1.3s		163.50nm		6.2mb	
			e	58 04.00		
SBA	89.07	172	e(P)	47 19.60	2.2	
ALT	89.83	309	eP	47 18.00	-3.9X	

ELL	90.42	307	eP	47 23.00	-1.7	
KHL	90.42	309	eP	47 23.00	-1.6	
VRI	90.87	317	ePd	47 27.00	0.5	
MLR	91.49	316	ePd	47 30.00	0.5	
UPP	92.09	332	iP	47 31.60	-0.1	
CMP	92.16	316	ePc	47 33.00	0.5	
KDZ	92.78	313	eP	47 34.00	-1.3	
RZN	93.28	313	iPd	47 37.00	-0.9	
HFS	93.81	333	eP	47 39.40	-0.3	
	1.2s		127.90nm		6.2mb	
Z	16s		2.38um		5.7MszX	
			LR	33 50.00		
MMB	94.02	313	ePd	47 40.00	-1.1	
KRA	94.13	322	iPd	47 41.90	0.6	
	1.2s		83.00nm		6.0mb	
Z	20s		2.60um		5.7Msz	
N	18s		4.20um			
			e	47 49.90		
VTS	94.13	314	iP	47 42.00	0.3	
SPC	94.21	321	eP	47 41.00	-1.0	
KKB	94.41	313	iPd	47 42.00	-0.9	
NB2	94.52	334	P	47 40.50	-2.5	
	1.8s		39.20nm		5.5mb	
VAY	94.93	313	iP	47 44.30	-0.9	
GRG	95.15	313	eP	47 45.60	-0.7	
LIT	95.32	312	eP	47 45.50	-1.6	
SKO	95.56	314	eP	47 40.00	-8.1X	
			i	47 46.00		
AGG	95.73	311	eP	47 46.50	-2.5	
SRO	95.87	320	eP	47 50.30	0.9	
KSP	96.05	323	eP	47 50.60	0.4	
	1.3s		41.00nm		5.8mb	
			e	51 07.00		
OHR	96.27	313	eP	47 48.00	-3.4X	
ZST	96.50	321	eP	47 52.60	0.3	
GMW	97.19	40	P	47 57.00	1.6	
PRU	97.41	323	eP	47 56.50	0.2	
	1.5s		53.60nm		5.9mb	
BRG	97.42	324	iP	47 56.60	0.3	
	1.2s		42.00nm		5.8mb	
			i	48 04.40		
CLL	97.79	325	iPc	47 57.70	-0.3	
	1.4s		34.00nm		5.7mb	
RMW	97.84	40	P	48 00.00	1.6	
LON	98.10	40	P	48 01.50	1.9	
KHC	98.32	322	Pd	48 01.20	0.7	
	1.4s		33.00nm		5.7mb	
N	22s		6.00um			
			e	52 11.90		
PNT	98.47	37	eP	48 03.00	1.8	
	0.9s		10.00nm		5.3mb	
KBA	99.28	321	e(P)	48 04.50	-0.6	
	1.2s		11.40nm		5.3mb	
WDC	99.80	46	e(P)	48 15.80	8.5X	
EDM	100.26	32	ePdiff	48 11.00	1.8X	
CMB	102.26	48	ePdiff	48 20.20	1.8X	
SES	102.92	34	ePdiff	48 23.00	1.9X	
FRI	103.14	49	e(Pdif	48 23.90	1.6X	
LRM	104.37	38	ePdiff	48 29.20	1.3X	
FFC	104.94	27	ePdiff	48 31.00	1.1X	
	1.2s		18.00nm		5.9mb	
BCAO	107.31	277	iPKPc	52 40.20	-10.3X	
	1.0s		15.00nm			
			i	53 13.00		
TUL	120.33	40	e(PKP)	53 15.80	1.2	
	1.0s		5.70nm			
Z	19s		2.35um		5.8Msz	
			LR	31 00.00		
KIC	129.46	285	PKP	53 33.48	0.7	
	1.2s		12.00nm			
TIC	129.65	286	PKP	53 33.74	0.6	
LIC	129.77	285	PKP	53 34.06	0.7	
	1.3s		21.50nm			
Z	20s		1.19um		5.6Msz	
UPA	148.52	57	ePKPd	54 11.50	4.5X	
	1.5s		227.78nm			
Z	21s		0.97um		5.6Msz	
TACH	150.14	149	ePKP	54 15.00	6.0X	
PCH	150.38	150	ePKP	54 16.00	6.5X	
PORP	150.43	27	PKP	54 16.00	6.2X	
CPD	150.75	25	PKP	54 17.00	6.7X	
CNCB	163.42	121	PKP	54 30.00	3.5X	
			i	55 21.00		
LPB	163.45	120	PKP	54 28.00	1.6	
			LR	51 11.00		
ZOBO	163.54	119	PKPd	54 28.90	2 2	
	1.5s		26.88nm			

Z 24s 1.28um

CCH 164.65 126 ePKP 54 27.00 -0.4
S.D. = 1.2 on 146 of 178 obs.

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* DEC 17, 1989 14h 39m 06.37± 1.28s
43.261 N ± 8.1km 20.958 E ±14.9km
DEPTH = 10.0km (geophysicist)
YUGOSLAVIA (383)

SKO	1.34	164	ePn	39 30.00	-1.0
			eSn	39 48.00	
BEO	1.60	347	eP	39 58.00	23.2X
VTS	1.78	111	iP	39 38.00	0.4
OHR	2.15	183	ePn	39 43.00	0.2
BZS	2.40	11	ePc	39 46.00	-0.3
MMB	2.64	128	eP	39 57.00	7.2X
RZN	3.19	118	eP	40 06.00	8.2X
PVL	3.20	89	eP	39 57.00	-0.6

S.D. = 0.8 on 5 of 8 obs.

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* DEC 17, 1989 15h 07m 05.85± 0.80s
42.829 N ± 5.7km 12.910 E ± 7.3km
DEPTH = 10.0km (geophysicist)
CENTRAL ITALY (381)

ASS	0.30	323	P	07 12.30	0.1
			eSg	07 17.40	
CIO	0.40	25	iPg	07 14.17	0.0
			iSg	07 21.33	
MNS	0.48	201	P	07 15.50	0.0
			eSg	07 22.50	
ALP	0.49	95	ePg	07 15.92	0.0
			iSg	07 23.72	
ARV	0.67	2	P	07 19.00	-0.2
			eSg	07 29.00	

S.D. = 0.1 on 5 of 5 obs.

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* DEC 17, 1989 15h 09m 23.35± 2.42s
36.694 N ±12.2km 26.928 E ± 8.4km
DEPTH = 146.9 ± 32.5 km
DODECANESE ISLANDS (369)

SMG	1.02	356	eP	09 48.20	0.0
KAP	1.16	170	eP	09 49.60	0.1
YER	1.17	68	iPn	09 49.70	0.0
NPS	1.78	217	eP	09 56.00	-0.2
KSL	2.22	104	eP	10 01.40	0.1
ELL	2.39	88	ePn	10 03.50	-0.1
VAM	2.56	241	eP	10 05.60	0.1

S.D. = 0.2 on 7 of 7 obs.

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* DEC 17, 1989 15h 46m 48.95± 0 61s
8.729 N ± 7.7km 126.756 E ±16.1km
DEPTH = 35.8km (3 depth phoses)
4.7mb (5 obs.)
MINDANAO, PHILIPPINE ISLANDS (259)

DAV	2.01	216	eP	47 23.00	1.9
MNI	7.48	195	e(P)	48 40.50	1.9
QIZ	19.33	304	eP	51 14.40	0.0
MTN	21.87	168	e(P)	51 42.00	1.4
SSE	22.85	348	P	51 51.50	1.3
	1.0s		28.00nm		4.7mb
			i	52 01.70	38km
KNA	24.40	175	eP	52 04.50	-0.9
CHTO	28.77	293	eP	52 45.30	-0.5
WB5	29.40	165	eP	52 49.00	-2.4
BJI	32.58	345	eP	53 19.00	-0.1
SNY	33.08	356	iPc	53 24.90	1.4
			pP	53 35.30	37km
HHC	34.72	340	eP	53 38.00	0.2
CN2	34.96	358	Pd	53 40.00	0.3
MDJ	35.84	3	eP	53 49.00	1.9
			pP	53 58.50	32km
GTA	38.92	326	eP	54 11.20	-2.1
BRS	43.87	146	iPc	54 52.00	-1.9
	0.8s		2.00nm		3.9mb
WMQ	48.73	323	P	55 32.20	0.0
NDI	50.53	300	eP	55 44.00	-2.1
MAIO	66.58	306	eP	57 21.00	-17.1X
INK	85.53	22	eP	59 25.50	1.2
MBC	87.10	13	ePc	59 33.50	1.6
	1.0s		16.00nm		5.2mb
HFS	93.63	333	ePKP	00 01.30	-1.4
	0.6s		2.30nm		4.8mb
NB2	94.34	334	P	00 04.50	-1.6
	0.9s		3.00nm		4.7mb

S.D. = 1.6 on 21 of 22 obs.

DEC 17, 1989 15h 56m 00.30± 0.89s
36.646 N ± 8.1km 28.217 E ± 8.4km
DEPTH = 104.7 ± 18.9 km
DODECANESE ISLANDS (369)

YER	0.49	6	iPg	56 14.70	-2.1
KSL	1.22	115	ePn	56 23.70	-0.1
ELL	1.36	85	iPn	56 27.10	1.4
KAP	1.38	218	iPnd	56 26.00	0.3
SMG	1.53	314	ePn	56 27.40	-0.1
IZM	1.91	337	iPn	56 32.20	-0.2
KHL	1.97	31	iPn	56 33.70	0.4
BCK	2.06	66	ePn	56 36.90	2.4
NPS	2.52	238	ePn	56 41.50	1.0
ALT	2.83	31	iPn	56 42.50	-2.3
PRK	3.02	330	ePn	56 48.10	1.0
KOT	7.35	155	ePn	57 46.00	-0.5
DSI	7.80	128	ePd	57 54.00	1.3
PRNI	8.46	136	eP	58 01.00	-0.7
MBH	8.84	139	eP	58 05.00	-1.8

S.D. = 1.5 on 15 of 15 obs.

? DEC 17, 1989 16h 22m 22.51± 1.01s
38.518 N ±12.6km 24.943 E ± 8.3km
DEPTH = 10.0km (geophysicist)
AEGEAN SEA (365)
ML 2.9 (ATH).

ATH	1.11	241	ePb	22 43.00	-0.3
			eSb	22 58.20	
APE	1.52	162	ePb	22 50.10	0.3
NEO	1.56	301	ePb	22 50.50	0.2
IZM	1.83	93	ePn	22 54.00	-0.2
VLI	2.40	222	ePg	23 08.40	5.9X

S.D. = 0.5 on 4 of 5 obs.

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* DEC 17, 1989 16h 34m 20.81± 2.59s
15.906 N ±11.7km 60.431 W ±22.5km
DEPTH = 22.1 ± 6.1 km
LEEWARD ISLANDS (92)
ML 3.1 (FDF).

DEG	0.73	304	iPc	34 34.24	-0.5
			S	34 45.00	
MGG	0.85	271	iPd	34 37.03	0.2
			S	34 48.60	
BBL	1.08	249	iPd	34 39.81	-0.7
			S	34 54.30	
SEG	1.14	296	eP	34 41.40	-0.1
DOG	1.15	276	eP	34 41.80	0.2
PAG	1.21	276	ePd	34 42.70	0.2
			S	34 59.00	
CRM	1.24	202	eP	34 42.89	0.1
			S	34 58.50	
FDF	1.36	211	eP	34 44.48	-0.1
	0.1s		1.15nm		
			S	35 02.20	
MVM	1.42	199	eP	34 45.36	0.0
BIM	1.51	204	eP	34 46.21	-0.6
			S	35 06.20	

S.D. = 0.4 on 10 of 10 obs.

& DEC 17, 1989 16h 55m 59 10s
36.840 N 121.587 W
DEPTH = 4.0km
CENTRAL CALIFORNIA (39)
<BRK>. ML 2.5 (BRK).

SAO	0.14	123	iPd	56 01.80	-0.1
GCC	0.38	300	iPc	56 06.40	-0.3
MHC	0.50	355	iPd	56 09.50	0.3
			iS	56 17.60	
ARN	0.51	5	iPd	56 09.30	0.0
PRS	0.54	161	iPd	56 09.40	-0.4
LLA	0.56	113	iPc	56 10.40	0.0
			iS	56 19.00	
PCC	0.91	316	ePd	56 15.70	-1.4
PRI	1.02	133	ePc	56 18.70	-0.3
BKS	1.16	334	iPc	56 21.10	-0.2
			i	56 38.00	
BRK	1.16	333	eP	56 20.60	-0.8
ZSP	1.23	334	eP	56 20.60	-1.8
			e	56 22.80	
			iS	56 40.50	
FRI	1.51	84	ePd	56 26.10	-0.9
CMB	1.53	38	eP	56 26.60	-0.7
KVN	3.53	50	eP	57 01.00	5.0

14 obs. associated

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* DEC 17, 1989 17h 09m 52.16± 0.62s
8.685 N ± 8.2km 126.808 E ±11.6km
DEPTH = 33.0km (normal)
4.8mb (4 obs.) 4.0Msz (1 obs.)
MINDANAO, PHILIPPINE ISLANDS (259)

DAV	2.00	218	eP+	10 25.00	0.7
	1.6s		4800.00nm		
MNI	7.46	195	e(P)	11 42.50	1.1
GUMO	18.37	73	eP	14 07.00	0.8
SSE	22.91	348	P	14 55.50	1.3
	1.0s		34.00nm	4.8mb	
	Z 20s		0.60um	4.0Msz	
	E 12s		0.40um		
			PP	15 37.30	
			S	19 06.00	
			S	20 10.00	
NJ2	24.40	343	eP	15 09.20	0.5
CHTO	28.83	293	eP	15 48.00	-1.8
WB5	29.34	165	eP	15 48.10	-6.3X
BJI	32.63	345	eP	16 22.00	-1.1
	1.2s		16.00nm	4.8mb	
SNY	33.13	356	Pd	16 28.20	0.8
			pP	16 35.10	24kmX
HHC	34.78	340	eP	16 41.50	-0.3
FORR	39.33	178	eP	17 16.00	-4.0X
	0.3s		10.00nm	5.1mb	
BRS	43.81	146	iPc	17 54.60	-2.3
GBA	48.62	280	Pd	18 36.50	1.4
	1.0s		4.20nm	4.4mb	
WMQ	48.79	323	P	18 36.00	-0.2
	Z 16s		0.60um	4.7MszX	
			sS	25 48.00	
MAIO	66.64	306	eP	20 41.00	-1.1
MBC	87.13	13	eP	22 36.00	0.4

S.D. = 1.3 on 14 of 16 obs.

& DEC 17, 1989 17h 38m 11.50s
36.200 N 120.300 W
DEPTH = 6.0km
CENTRAL CALIFORNIA (39)
<BRK>. ML 2.5 (BRK).

PKEM	0.21	132	eP	38 15.80	0.0
PRI	0.30	259	iPd	38 17.60	0.0
			iS	38 23.00	
PHAM	0.37	192	eP	38 18.90	-0.1
LLA	0.67	309	ePc	38 23.90	-0.9
PRS	0.87	279	ePc	38 27.40	-1.3
FRI	0.92	31	ePc	38 26.50	-3.0
			iS	38 38.20	
BCH	1.03	170	eP	38 30.40	-1.0
SAO	1.08	302	eP	38 30.50	-1.7
ARN	1.52	320	eP	38 36.80	-2.4
MHC	1.57	317	e(P)	38 37.30	-2.7
			e	38 40.30	
GCC	1.60	302	eP	38 41.00	0.7
CMB	1.83	358	ePd	38 41.80	-2.0
KVN	3.34	31	eP	39 02.00	-3.5

13 obs. associated

DEC 17, 1989 18h 48m 17.60± 0.28s
10.024 N ± 4.7km 126.209 E ± 7.5km
DEPTH = 33.0km (normal)
5.0mb (13 obs.) 4.1Msz (2 obs.)
PHILIPPINE ISLANDS REGION (248)

DAV	2.98	192	eP	49 08.00	4.3X
OCP	6.79	313	eP	50 45.00	47.4X
BAG	8.39	320	eP	50 20.50	0.5
QIZ	18.18	301	eP	52 32.00	2.7
	N 15s		0.70um		
	E 16s		0.70um		
			sS	55 58.50	
GUMO	18.60	77	eP	52 36.00	1.5
SSE	21.48	348	P	53 05.20	-0.3
	1.4s		603.00nm	5.8mb	
	Z 20s		0.60um	4.0Msz	
			S	57 02.00	
			sS	57 16.00	
NJ2	22.95	344	Pc	53 20.60	0.5
			sS	57 33.00	
WHN	23.21	333	eP	53 27.00	4.4X
	Z 16s		0.59um		4.1MszX
	N 12s		0.52um		
	E 12s		0.49um		
			sS	57 38.00	
MTN	23.24	168	e(P)	53 24.00	1.0
GYA	24.67	314	P	53 38.00	1.0
	N 15s		0.80um		
	E 15s		0.90um		
IPM	25.55	260	ePc	53 50.90	5.6X
CHTO	27.78	291	eP	54 04.20	-1.6
CD2	29.45	318	eP	54 19.20	-1.6
TIY	30.23	338	eP	54 26.80	-0.9
	Z 10s		0.88um		4.7MszX
	N 18s		1.10um		
WB5	30.78	165	eP	54 30.20	-2.4
BJI	31.20	345	eP	54 35.50	-0.5
MBL	31.62	191	iPd	54 40.20	0.3
	0.5s		9.00nm	4.9mb	
LZH	32.94	325	eP	54 50.50	-1.0
	1.5s		29.00nm	5.0mb	
	Z 17s		0.80um		4.5MszX
	E 13s		0.60um		
HHC	33.32	340	P	54 55.10	0.4
	Z 20s		0.60um		4.3Msz
BTO	33.66	337	eP	54 58.00	0.3
ASPA	34.32	167	iPc	55 02.20	-1.2
	0.5s		9.00nm	5.0mb	
MDJ	34.59	4	eP	55 05.00	-0.5
WARB	35.99	179	eP	55 17.00	-0.6
	0.4s		15.00nm	5.3mb	
GTA	37.55	326	Pd	55 30.00	-0.7
FORR	40.68	178	eP	55 55.80	-0.8
	0.4s		35.00nm	5.5mb	
COOL	40.96	187	eP	55 58.80	-0.2
BAL	41.41	192	eP	56 03.00	0.3
KLB	42.16	191	eP	56 08.50	-0.3
MUN	42.85	193	eP	56 15.00	0.6
NWAO	43.56	191	eP	56 19.00	-1.2
	0.6s		31.00nm	5.3mb	
RKG	44.71	191	eP	56 34.30	4.8X
BRS	45.24	146	iPd	56 33.20	-0.6
	0.8s		3.00nm	4.2mb	
ADE	46.28	166	iPd	56 42.70	0.7
	0.8s		19.40nm	5.1mb	
HYB	46.78	284	eP	56 46.00	-0.2
WMQ	47.38	322	eP	56 50.20	-0.5
GBA	47.81	279	P	56 55.00	0.7
			e	58 33.00	
KOD	47.95	275	eP	56 57.00	1.2
BWA	48.97	156	eP	57 04.10	1.1
CAN	49.98	156	eP	57 12.20	1.4
TOO	50.68	160	eP	57 16.00	0.0
			e	07 35.00	
POO	51.29	286	iPc	57 20.80	-0.2
IMA	76.89	24	eP	00 07.50	-0.6
	1.1s		7.20nm	4.6mb	
SOD	84.49	337	eP	00 49.00	0.9
INK	84.54	22	eP	00 48.00	-0.3
SUF	85.74	333	iP	00 54.20	-0.3
MBC	85.96	13	eP	00 55.00	-0.4
	0.9s		5.00nm	4.7mb	
PRNI	86.05	300	iPc	00 57.50	0.8
MBH	86.24	299	eP	00 58.00	0.4
NUR	86.98	331	eP	01 07.00	6.4X
HFS	92.24	332	ePKP	01 24.10	-1.2
	0.5s		2.10nm	4.8mb	
NB2	92.95	334	P	01 27.30	-1.3
	0.9s		3.10nm	4.7mb	
KIC	128.50	286	(PKP)	07 24.50	0.6
UPA	148.17	54	ePKP	08 11.30	12.0X
ZOBO	164.73	115	ePKP	08 23.00	2.3

S.D. = 1.0 on 47 of 54 obs.

DEC 17, 1989 18h 58m 52.67± 0.38s
7.719 N ± 6.5km 126.995 E ±10.9km
DEPTH = 11.5km (2 depth phoses)
5.0mb (6 obs.) 4.8Msz (2 obs.)
MINDANAO, PHILIPPINE ISLANDS (259)

MNI	6.59	199	eP	00 34.00	2 1
TSM	9.53	249	ePc	01 23.00	10.2X
BAG	10.67	325	eP	01 36.80	8.1X
KKM	10.83	262	ePc	01 38.50	7.7X
AAI	11.39	174	eP	01 36.50	-1.9
MKS	14.88	211	eP	02 30.00	5.2X
MTN	20.84	169	e(P)	03 35.00	-2.0
TRT	20.97	223	iPc	03 40.20	1.9

17d 19h

SSE	23.88	348	P+	04	06.00	-1.0
	7.0s		1.00nm			2.5mb X
Z	20s		1.80um			4.5Msz
N	10s		0.40um			
E	10s		0.90um			
			sP	04	21.00	
			PP	04	40.00	
			i	05	18.00	
			S	08	25.00	
			sS	08	44.00	
KGM	24.25	258	eP	04	16.00	5.2X
KMI	28.91	310	Pd	05	02.00	7.9X
Z	18s		3.60um			5.0Msz
N	16s		2.10um			
			S	10	16.00	
CHTO	29.40	295	eP	04	57.40	-0.9
			e	05	11.50	57kmX
WARB	33.70	181	eP	05	27.00	-9.0X
	0.6s		25.00nm			5.3mb
LZH	35.28	327	eP	05	49.20	-0.5
Z	17s		1.30um			4.8MszX
N	15s		1.10um			
COOL	38.79	188	eP	06	14.00	-5.1X
BRS	42.91	145	iPd	06	48.10	-5.0X
	0.6s		2.50nm			4.1mb
			i	06	51.80	12km
			i	07	03.80	
ADE	43.87	166	iPc	07	00.50	-0.3
	0.8s		29.85nm			5.2mb
BWA	46.56	155	eP	07	22.10	-0.2
CAN	47.58	155	eP	07	31.00	0.7
GBA	48.99	281	P	07	42.00	0.5
	0.8s		4.70nm			4.6mb
MAIO	67.36	306	eP	09	50.00	-0.3
SVW	77.19	29	eP	10	49.70	1.7
			e	10	53.00	11km
			e	11	01.40	
TAB	77.95	307	eP	10	53.00	0.2
KDC	78.45	33	eP	10	55.20	0.3
IMA	78.66	24	eP	10	57.20	1.1
	0.8s		8.70nm			4.9mb
PMR	80.34	29	eP	11	05.10	0.0
	0.9s		33.30nm			5.3mb
MSL	80.53	306	ePd	11	06.50	-0.2
FBA	81.03	25	eP	11	08.30	-0.4
TOA	81.75	28	eP	11	14.30	1.7
KEV	86.26	340	eP	11	28.00	-7.2X
INK	86.38	22	eP	11	31.00	-4.9X
SOD	86.90	338	eP	11	38.00	-0.4
DSI	87.38	301	eP	11	42.00	0.6
PRNI	87.87	300	eP	11	44.00	0.1
MBH	88.05	300	eP	11	44.00	-0.7
SUF	88.14	333	eP	11	45.00	0.6
NUR	89.36	331	eP	11	54.00	3.7X
VAY	95.64	313	eP	12	17.40	-2.3
KIC	129.87	285	(PKP)	18	04.40	-0.5
UPA	148.79	58	(PKP)	18	39.00	0.2
ZOBO	162.95	121	ePKP	18	52.00	-5.5X
	1.0s		10.25nm			
			i	19	49.00	

S.D. = 1.1 on 28 of 41 obs.

DEC 17, 1989 19h 38m 15.68± 0.26s
8.304 N ± 4.9km 126.718 E ± 7.4km
DEPTH = 38.8km (5 depth phases)
5.3mb (15 obs.) 4.5Msz (7 obs.)
MINDANAO, PHILIPPINE ISLANDS (259)

DAV	1.66	223	eP	38	48.00	5.3X
	1.3s	7846.15nm				
MNI	7.07	195	eP	40	03.00	3.6X
QCP	8.38	319	eP	40	16.00	-1.6
TSM	9.50	245	ePc	40	41.20	8.1X
BAG	10.04	324	eP	40	46.00	5.3X
KKM	10.66	259	ePc	40	56.50	7.4X
AAI	12.00	173	eP	41	04.00	-3.2X
MKS	15.25	209	eP	42	03.00	12.9X
JAY	17.61	127	ePc	42	19.70	-0.3
GUMO	18.57	72	eP	42	32.00	0.2
QIZ	19.54	305	eP	42	42.60	-0.5
N	16s		1.90um			
E	18s		2.20um			
MTN	21.46	168	eP	43	02.00	-1.0
SSE	23.26	348	Pc	43	21.30	0.7
	1.2s		118.00nm			5.3mb
E	12s		0.60um			
			pP	43	31.50	38km
			S	47	32.00	
			sS	47	56.00	
KNA	23.98	175	eP	43	28.50	0.7
KGM	24.12	256	eP	43	33.00	3.9X
NJ2	24.73	344	Pd	43	35.80	0.9
Z	18s		1.00um			4.4Msz
WHN	24.97	334	eP	43	35.50	-1.6
Z	20s		1.25um			4.4Msz
E	12s		0.98um			
IPM	25.79	263	ePc	43	48.00	2.9
	0.9s		26.10nm			4.8mb
GYA	26.24	316	P	43	49.20	0.0
N	15s		1.10um			
E	15s		1.00um			
KSI	26.83	245	ePc	44	01.20	6.6X
			e	45	25.00	
PMG	26.91	130	eP	43	53.00	-2.3
CHTO	28.90	294	iPc	44	14.00	0.6
WB5	29.00	165	eP	44	11.30	-2.9
			e	44	22.20	40km
			eS	49	15.30	
TIA	29.12	344	eP	44	14.20	-1.0
XAN	30.41	330	P	44	24.70	-2.0
DL2	30.81	352	eP	44	30.00	-0.1
Z	14s		0.60um			4.4MszX
N	10s		0.60um			
CD2	31.07	319	eP	44	31.20	-1.3
Z	18s		1.40um			4.7Msz
N	14s		1.60um			
TIY	32.01	338	Pd	44	39.70	-1.0
BJI	32.98	345	eP	44	48.50	-0.5
	1.3s		115.00nm			5.6mb
Z	20s		0.60um			4.3Msz
			eS	50	08.00	
SNY	33.50	356	Pc	44	53.50	-0.1
	1.3s		0.30nm			3.0mb X
Z	21s		1.00um			4.5Msz
N	20s		1.00um			
CTA	34.14	146	eP	45	00.00	0.6
			iS	50	20.00	
WARB	34.28	180	eP	45	00.00	-0.5
	0.4s		13.00nm			5.2mb
LZH	34.64	326	eP	45	02.50	-1.2
	1.5s		79.00nm			5.4mb
Z	17s		1.90um			4.9MszX
N	15s		1.50um			
			sP	45	15.00	
			ePP	46	12.00	
			PcS	51	24.00	
HHC	35.10	340	P	45	07.00	-0.5
Z	20s		0.70um			4.4Msz
N	12s		0.50um			
E	12s		0.10um			
CN2	35.38	358	iPd	45	09.80	0.1
BTO	35.43	338	eP	45	10.00	-0.3
MDJ	36.26	3	Pd	45	18.00	0.9
Z	16s		1.10um			4.7MszX
			pP	45	29.50	41km
			S	50	52.00	
HNR	37.49	117	eP	45	29.00	1.2
MRWA	38.71	195	iPd	45	38.30	0.4
	0.2s		2.00nm			4.6mb
FORR	38.95	178	eP	45	39.00	-0.8
	0.5s		84.00nm			5.8mb
GTA	39.25	326	Pc	45	41.60	-0.8
Z	18s		1.00um			4.7Msz
E	12s		0.50um			
COOL	39.33	188	eP	45	42.00	-1.0
	0.4s		15.00nm			5.1mb
LSA	39.54	307	P	45	47.00	1.6
BAL	39.86	194	eP	45	47.50	0.1
KLB	40.59	192	eP	45	54.00	0.7
RMQ	40.67	149	eP	45	53.00	-1.1
MUN	41.29	194	iPd	45	59.80	0.7
NWAO	41.98	192	eP	46	05.00	0.2
RKG	43.13	192	eP	46	20.00	5.8X
BRS	43.54	145	iPd	46	16.80	-0.8
			i	46	27.50	37km
			i	47	58.00	
			i	52	08.00	
ADE	44.50	166	e(P)	46	23.10	-2.2
	0.7s		41.10nm			5.4mb
BWA	47.21	155	eP	46	48.10	1.3
CAN	48.22	155	eP	46	59.70	5.0X
GBA	48.61	281	P	46	50.00	-7.9X
GBA	48.61	281	Pd	46	58.20	0.3
	0.7s		5.80nm			4.7mb
TOO	48.90	160	eP	47	01.00	1.1
WMQ	49.04	323	P	47	00.50	-0.5
Z	16s		1.10um			4.9MszX
DZM	49.27	129	iPd	47	17.00	13.9X
NDI	50.71	300	iPc	47	12.20	-1.7
KSH	54.85	313	P	47	46.40	1.6
MSZ	64.48	149	P	48	53.70	3.1X
MAIO	66.79	306	iPc	49	06.00	0.1
SVW	76.81	29	iPc	50	02.30	-2.7
TTA	76.86	27	eP	50	05.70	0.4
TAB	77.38	307	eP	50	10.00	1.2
BRW	77.87	19	e(P)	50	12.30	1.7
KDC	78.11	33	eP	50	13.60	1.5
IMA	78.24	24	eP	50	14.40	1.5
	1.2s		27.00nm			5.1mb
			e	50	25.80	37km
FBA	80.62	26	iPc	50	09.50	-16.1X
KEV	85.62	340	eP	50	49.00	-2.1
INK	85.94	22	eP	50	54.00	1.3
SOD	86.26	338	iP	50	54.00	-0.3
KAS	86.78	311	eP	50	58.00	0.5
DSI	86.85	301	e(P)	50	49.00	-8.9X
PRNI	87.34	300	eP	51	01.00	0.6
SUF	87.50	333	iP	51	00.50	0.1
MBH	87.52	300	eP	51	02.00	0.8
MBC	87.52	13	ePd	51	01.70	1.4
	1.0s		22.00nm			5.4mb
NUR	88.72	331	eP	51	06.00	-0.3
HFS	93.99	332	eP	51	29.30	-1.4
	0.4s		2.80nm			5.0mb
Z	16s		0.18um			4.6MszX
			LR	33	51.00	
KRA	94.27	322	eP	51	32.50	0.3
NB2	94.71	334	P	51	29.40	-4.7X
	1.3s		20.70nm			5.4mb
VAY	95.04	313	eP	51	34.00	-1.9
KSP	96.20	323	eP	51	41.90	0.8
BRG	97.57	324	eP	51	49.00	1.8
	1.2s		15.00nm			5.4mb
KHC	98.47	322	Pd	51	52.00	0.6
PNT	98.71	37	eP	52	05.00	12.6X
BCAO	107.27	277	ePKPd	56	40.90	0.2
	0.6s		3.00nm			
AIA	122.63	175	ePKP	56	52.00	-16.2X
UPA	148.71	57	ePKP	58	08.00	10.4X
CNCB	163.36	122	PKP	58	19.00	2.3
LPB	163.39	121	ePKP	58	19.00	2.5
ZOBO	163.49	120	PKP	58	11.00	-5.8X
	1.4s		14.73nm			

S.D. = 1.3 on 72 of 93 obs.

& DEC 17, 1989 19h 49m 20.16s
61.763 N 149.917 W
DEPTH = 45.1km
SOUTHERN ALASKA (2)
<AGS-P>. ML 3.3 (PMR).

PWA	0.11	171	eP	49	27.30	1.5
PLRM	0.41	114	iP	49	29.09	-1.0
			iS	49	36.93	
PMR	0.41	114	iPc	49	29.20	-0.9
			iS	49	39.90	
PME	0.44	107	iP	49	29.57	-0.9
			iS	49	38.01	
GHO	0.47	88	iP	49	30.13	-0.8
			iS	49	39.29	
SUA	0.50	233	iP	49	30.71	-0.6
PMS	0.55	162	iPd	49	31.20	-0.6
CUT	0.67	346	iP	49	32.55	-0.8
			iS	49	42.45	
SKT	0.79	287	iP	49	34.05	-1.1
			iS	49	45.36	
CGLM	1.10	246	iP	49	39.05	-0.4
			eS	49	53.67	
NCG	1.13	252	eP	49	39.07	-0.8
			eS	49	54.99	
SPU	1.18	241	iP	49	39.89	-0.7
			eS	49	55.77	
CRP	1.18	246	iP	49	40.32	-0.4
			iS	49	56.45	
NKA	1.21	213	eP	49	42.03	1.2
HUR	1.23	6	eP	49	40.92	-0.3
SLKM	1.27	187	eP	49	40.85	-0.9
BGL	1.29	248	iP	49	41.70	-0.4
			eS	49	59.23	
CKL	1.29	245	iP	49	41.53	-0.7
NCA	1.48	80	iP	49	44.63	-0.2

		eS	50 04.98		
GLI	1.62	122 iP	49 45.77	-1.0	
SEW	1.68	172 eP	49 47.75	0.2	
		eS	50 11.16		
RDT	1.70	226 iP	49 47.30	-0.6	
RND	1.72	16 eP	49 47.98	-0.3	
		eS	50 09.90		
VZW	1.76	112 eP	49 48.10	-0.7	
VLZ	1.84	109 iP	49 48.64	-1.1	
		eS	50 13.14		
KLU	1.93	96 iP	49 50.34	-0.8	
		eS	50 15.22		
RED	1.93	227 eP	49 49.96	-1.3	
		eS	50 16.03		
FID	1.95	120 eP	49 49.73	-1.6	
		eS	50 13.80		
MTU	2.10	147 eP	49 54.41	0.9	
SDG	2.19	68 eP	49 55.18	0.3	
		eS	50 22.63		
CNPM	2.34	197 eP	49 55.78	-1.1	
		eS	50 22.94		

31 obs. associated

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* DEC 17, 1989 19h 58m 34.43± 1.00s
40.291 N ±10.3km 122.027 W ± 7.4km
DEPTH = 5.0km (geophysicist)
NORTHERN CALIFORNIA (36)
ML 2.5 (BRK).

LTCM	0.11	222 eP	58 37.60	0.8	
MIN	0.33	80 iPd	58 42.40	1.3	
		iS	58 47.90		
WDC	0.49	307 eP	58 43.80	-0.4	
		iS	58 49.90		
ORV	0.84	151 eP	58 51.00	-0.1	
		eS	59 01.90		
KVN	3.27	111 e(P)	59 26.00	-1.6	

S.D. = 1.6 on 5 of 5 obs.

DEC 17, 1989 20h 13m 37.31± 0.33s
39.296 N ± 3.2km 28.226 E ± 3.7km
DEPTH = 10.0km (geophysicist)
TURKEY (366)
MD 3.7 (ATH).

DST	0.44	45 iPg	13 45.80	-0.5	
BNT	1.08	348 ePg	13 57.80	0.1	
		iSg	14 09.80		
EDC	1.09	345 iPg	13 57.70	0.0	
IZM	1.17	220 ePn	13 58.20	-1.0	
KHL	1.40	133 iPn	14 03.20	0.2	
ALT	1.48	99 iPn	14 01.90	-2.2	
PRK	1.52	269 ePn	14 04.60	0.1	
		eSn	14 36.50		
YLV	1.55	34 iPn	14 05.30	0.3	
EZN	1.56	290 iPn	14 04.90	-0.2	
ISK	1.88	20 ePn	14 09.80	0.1	
HRT	1.88	36 ePn	14 10.00	0.1	
GPA	1.89	58 ePn	14 10.60	0.7	
ITU	1.91	18 iPnc	14 10.00	-0.1	
		iSg	14 39.00		
YER	2.16	179 ePn	14 11.40	-2.5	
DMK	2.55	352 iPn	14 18.60	-0.7	
BCK	2.61	134 iPn	14 21.00	0.7	
RDO	2.77	313 ePb	14 23.00	0.5	
ELL	2.87	152 ePn	14 25.00	0.9	
APE	3.07	225 ePn	14 34.00	7.2X	
KDZ	3.18	319 iP	14 28.00	-0.3	
KSL	3.35	161 ePn	14 33.10	2.4	
JMB	3.40	339 eP	14 33.00	1.5	
DIM	3.43	324 eP	14 32.00	0.2	
BBTK	3.55	80 eP	14 45.00	11.3X	
		iS	15 35.00		
RZN	3.59	313 eP	14 35.00	0.7	
KAP	3.83	193 ePn	14 37.90	0.3	
PLG	3.83	288 ePn	14 38.70	1.0	
NEO	3.88	272 ePn	14 38.50	0.2	
MMB	4.13	305 ePd	14 41.00	-0.8	
PGB	4.47	318 eP	14 45.00	-1.7	
PVL	4.48	332 iPd	14 46.00	-0.8	
KKB	4.68	305 iPd	14 50.00	0.3	
KAS	4.71	62 eP	15 05.50	15.3X	
VAY	4.77	297 ePn	14 57.00	6.0X	
VTS	5.03	313 iPc	14 55.00	0.3	
MLR	6.42	345 ePc	15 14 50	0.2	
VRI	6.66	351 ePc	15 17.50	-0.1	

S.D. = 1.0 on 33 of 37 obs.

% DEC 17, 1989 20h 57m 08.50± 0.75s
39.291 N ± 6.1km 28.261 E ± 7.8km
DEPTH = 10.0km (geophysicist)
TURKEY (366)

DST	0.42	42 iPg	57 16.80	-0.4	
BNT	1.10	346 iPn	57 29.80	0.7	
EDC	1.10	344 iPn	57 28.70	-0.4	
IZM	1.18	221 ePn	57 30.20	-0.4	
KHL	1.38	134 ePn	57 35.00	1.1	
ALT	1.46	99 ePn	57 34.00	-0.9	
YLV	1.53	34 iPn	57 36.30	0.3	

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

& DEC 17, 1989 20h 58m 37.10s
37.040 N 121.938 W
DEPTH = 18.0km
CENTRAL CALIFORNIA (39)
<BRK>. ML 3.6 (BRK).
Mo=3.6*10**14 Nm (BRK). Felt
(III) at Santa Cruz.

GCC	0.05	258 iPc	58 39.80	-0.6	
MHC	0.38	38 iPd	58 44.90	-0.3	
ARN	0.45	46 iPd	58 45.70	-0.5	
SAO	0.48	125 iPc	58 45.50	-1.3	
PCC	0.58	323 iPc	58 47.70	-0.7	
		iS	58 56.00		
PRS	0.84	147 ePc	58 51.80	-1.1	
		i	58 52.50		
BKS	0.87	344 iPd	58 52.90	-0.4	
		iS	59 04.80		
		i	59 05.00		
BRK	0.87	343 ePd	58 52.80	-0.6	
		iS	59 04.30		
LLA	0.90	118 iPc	58 52.80	-1.2	
PRI	1.36	131 ePc	58 59.70	-1.6	
CMB	1.58	51 ePc	59 03.00	-1.5	
		iS	59 21.90		
NWRM	1.60	332 eP	59 05.00	0.4	
PHAM	1.73	134 eP	59 04.90	-1.6	
PKEM	1.77	123 eP	59 05.40	-1.7	
FRI	1.79	91 iPc	59 05.40	-1.9	
BCH	2.38	140 eP	59 13.80	-2.2	
ORV	2.54	8 ePbc	59 19.20	1.1	
ABL	3.10	134 eP	59 23.70	-2.7	
KVN	3.63	55 eP	59 32.00	-1.9	
TNP	3.89	73 eP	59 37.00	-0.5	

20 obs. associated

DEC 17, 1989 21h 02m 54.56± 1.04s
17.818 N ±15.3km 95.093 W ±10.2km
DEPTH = 33.0km (normal)
OAXACA, MEXICO (60)

OXX	1.72	245 iP	03 23.00	0.2	
		iS	03 49.50		
LVVM	2.30	326 eP	03 30.50	-0.4	
SCX	2.58	114 (P)	03 35.00	0.0	
		(S)	03 53.50		
IIT	3.28	292 eP	03 46.50	1.4	
PPM	3.58	291 iP	03 50.00	0.4	
		iS	04 38.00		
III	4.20	278 eP	03 56.50	-1.6	

S.D. = 1.3 on 6 of 6 obs.

DEC 17, 1989 21h 22m 33.86± 0.35s
39.300 N ± 3.3km 28.282 E ± 3.7km
DEPTH = 18.4 ± 3.9 km
TURKEY (366)
ML 4.2 (ATH).

DST	0.41	41 iPg	22 41.80	-0.5	
BNT	1.09	345 iPg	22 53.80	-0.1	
		iSg	23 08.30		
EDC	1.09	343 iPg	22 52.70	-1.3	
IZM	1.20	222 iPn	22 54.20	-1.5	
KHL	1.38	135 iPn	22 58.70	0.5	
ALT	1.44	99 iPn	22 57.40	-1.8	
YLV	1.52	33 ePn	23 00.80	0.6	
PRK	1.56	269 eP	23 00.20	-0.6	
		eS	23 22.50		
EZN	1.60	290 ePn	23 00.40	-1.0	
GPA	1.85	57 ePn	23 06.20	1.2	
ISK	1.86	18 ePn	23 05.50	0.4	
ITU	1.89	17 iPn	23 05.00	-0.5	
		iSg	23 34.00		
SMG	1.95	216 eP	23 07.00	0.6	
YER	2.16	180 ePn	23 07.30	-2.3	
DMK	2.55	351 iPn	23 14.10	-0.9	
BCK	2.58	135 iPn	23 16.50	0.9	
RDO	2.80	312 eP	23 18.70	0.2	
ELL	2.85	153 ePn	23 20.20	0.8	
APE	3.11	225 eP	23 31.50	8.5X	
KDZ	3.21	318 iP	23 23.00	-1.4	
KSL	3.34	162 eP	23 27.00	0.8	
JMB	3.42	338 eP	23 29.00	1.7	
DIM	3.45	324 eP	23 29.00	1.2	
OUR	3.47	289 eP	23 29.20	1.2	
RZN	3.62	312 eP	23 30.00	-0.4	
ATH	3.81	251 eP	23 43.00	10.1X	
KAP	3.84	194 eP	23 33.50	0.1	
NEO	3.92	272 eP	23 35.50	1.0	
SRS	4.02	298 eP	23 36.50	0.6	
MMB	4.16	305 ePd	23 37.00	-0.9	
PVL	4.50	331 eP	23 42.00	-0.6	
PGB	4.50	317 eP	23 43.00	0.2	
KNT	4.52	296 eP	23 43.60	0.6	
LIT	4.54	282 eP	23 44.20	0.9	
KAS	4.67	62 eP	24 00.00	14.7X	
KKB	4.72	305 eP	23 45.00	-0.8	
GRG	4.80	292 eP	23 46.80	-0.2	
VAY	4.81	297 ePn	23 48.30	1.2	
MLR	6.43	345 ePc	24 10.00	0.0	
VRI	6.67	351 ePc	24 13.00	-0.3	

S.D. = 1.0 on 37 of 40 obs.

DEC 17, 1989 21h 44m 51.50± 1.01s
35.635 N ± 6.4km 69.346 E ± 3.6km
DEPTH = 101.9 ± 10.6 km
4.9mb (31 obs.)
HINDU KUSH REGION (718)

QUE	5.79	201 eP	46 17.00	0.3	
		eS	47 20.00		
MAIO	8.02	278 iPnd	46 46.00	-1.0	
	0.7s	17.47nm		4.8mb	
		eSn	48 14.00		
NDI	9.62	134 iPd	47 06.80	-1.8	
		eS	48 46.00		
WMO	16.29	54 P	48 35.00	-0.5	
		S	51 26.00		
POO	17.50	166 eP	48 36.50	-14.0X	
TAB	18.58	284 eP	49 06.00	2.6	
LSA	19.27	102 P	49 12.60	1.4	
SLY	19.38	277 ePd	49 14.00	2.3	
		e	59 36.00		
HYB	19.91	153 eP	49 17.60	0.2	
		eS	53 30.00		
MSL	21.19	280 ePd	49 36.50	6.3X	
SHL	21.80	111 iP	49 37.00	0.5	
		eS	53 30.00		
GTA	24.40	72 iPc	50 02.80	1.1	
	1.2s	0.10nm		2.1mb X	
KMI	30.52	101 eP	50 55.00	-2.4	
BTO	32.17	69 P	51 12.40	0.8	
XAN	32.37	81 eP	51 12.20	-1.1	
GYA	33.09	96 P	51 19.80	0.1	
HHC	33.32	68 eP	51 21.40	-0.2	
MLR	34.05	300 ePc	51 30.00	2.2	
TIY	34.40	74 iPd	51 31.00	0.2	
BJI	36.91	69 eP	51 52.00	0.1	
	0.8s	15.00nm		5.0mb	
NUR	37.76	325 eP	51 59.00	0.3	
WHN	37.80	85 Pc	52 00.00	0.6	
SUF	37.96	329 iP	52 00.60	0.2	
KRA	38.27	308 eP	52 03.90	0.7	
TIA	38.38	75 eP	52 04.30	0.0	
SOD	39.96	336 eP	52 17.00	0.0	
KSP	40.63	309 eP	52 23.50	0.9	
NJ2	40.93	80 P	52 25.80	0.5	
UPP	40.94	323 iP	52 25.30	0.3	
KEV	41.12	339 eP	52 20.00	-6.4X	
BRG	42.11	309 iP	52 36.00	1.2	
	0.8s	10.00nm		4.7mb	
SNY	42.16	65 iPd	52 35.00	-0.3	
IPM	42.52	129 ePd	52 40.00	1.5	
	0.9s	30.40nm		5.1mb	
CLL	42.70	310 eP	52 40.00	0.4	
	0.9s	12.00nm		4.7mb	
HFS	42.93	323 eP	52 40.50	-0.8	
	0.7s	37.40nm		5.3mb	
Z	15s	0.13um		3.9MszX	

17d 21h

```
                LR    10 31.00
SSE    43.13  81 P     52 44.20   0.9
       0.8s    23.00nm          5.1mb
CN2    43.20  61 eP    52 40.40  -3.3X
MOX    43.60 309 e(P)  52 48.00   1.1
NB2    44.27 324 P     52 51.10  -1 2
       0.6s    14.30nm          5 0mb
CDF    46.63 306 eP    53 11.40   0.3
BSF    47.03 305 eP    53 14.10  -0.3
       0.5s    4.30nm           4.5mb
HAU    47.30 305 eP    53 16.20  -0.2
       0.4s    3.40nm           4.5mb
LPG    47.47 302 eP    53 18.20   0.2
       0.4s    4.00nm           4.6mb
LBF    49.06 305 eP    53 29.20  -0.8
       0.5s    3.60nm           4.6mb
SMF    49.22 304 eP    53 30.90  -0.3
       0.5s   10.90nm           5.1mb
AVF    49.52 304 eP    53 32.90  -0.6
       0.4s    4.00nm           4.7mb
MAF    50.18 304 eP    53 38.50   0.0
       0.4s    2.80nm           4.6mb
TCF    50.40 304 eP    53 40.10  -0.1
       0.5s    3.90nm           4.7mb
CAF    50.82 302 eP    53 43.50   0.1
LSF    50.87 304 eP    53 43.20  -0.5
       0.5s    5.10nm           4.8mb
LDF    51.43 307 eP    53 47.10  -0.8
FLN    51.63 308 eP    53 48.30  -1.1
LFF    51.73 303 eP    53 50.10  -0.1
       0.5s   12.20nm           5.2mb
MFF    51.91 305 eP    53 50.70  -0.9
       0.5s    5.80nm           4.9mb
EKA    51.98 316 P     53 51.00  -1.0
       1.0s   18.60nm           5.1mb
EPF    52.53 300 eP    53 55.20  -1.1
MAT    54.52  67 eP    54 08.00  -3.0X
       0.8s   17 91nm           5.1mb
BCAO   56.10 249 iPc   54 21.60  -1.0
       0.6s   22.00nm           5.4mb
                i      55 10.20
MBC    68.26   2 eP    55 42.00  -0.6
       1.0s    8.00nm           4.6mb
                pP     56 19.00 153kmX
KIC    73.39 266 Pc    56 13.58  -0.8
       0.5s    4.00nm           4.5mb
TIC    73 46 266 Pc    56 14.00  -0.8
       0.4s    5.00nm           4.7mb
LIC    73.70 266 Pc    56 15.32  -0.9
       0.5s    4.00nm           4.5mb
INK    74.97   9 iPd   56 22.00  -0.6
KNA    75.96 121 iPd   56 29.50   0.5
       0.5s   21.00nm           5.2mb
WB5    82.67 121 eP    57 04.80  -0.2
ASPA   84.87 124 iPc   57 16.20   0.1
       1.0s   14.00nm           4.8mb
                e      57 44.90
FORR   86.13 133 eP    57 22.50   0.4
       0.4s   22.00nm           5.5mb
FFC    89.70 355 iPd   57 38.90  -0.1
       0.7s    8.00nm           5.0mb
EDM    91.48   2 iPd   57 47.50   0.2
       0.5s   16.00nm           5.5mb
     S.D. = 0.9  on  64 of  69 obs.
-------------------------------------
*  DEC 17, 1989  22h 30m 35.02± 0.90s
   6.912 N ±10.6km   93.997 E ±15.6km
   DEPTH =  33.0km  (normal)
   4.9mb (  4 obs.)
 NICOBAR ISLANDS REGION          (704)

BSI     1.91 137 ePc   31 06.00   0.2
PSI     6.45 130 ePd   32 12.00   1.8
       0.7s   29.20nm           5.2mb
IPM     7.37 108 ePd   32 22.00  -1.1
                e      33 43.60
CD2    25.57  20 eP    36 03.00   0.2
XAN    30.32  25 P     36 44.80  -1.0
GTA    32.78   8 Pd    37 07.00  -0.4
HHC    37.26  22 P     37 46.70   1.1
CN2    45.92  32 eP    38 57.20   0.8
WB5    47.82 125 eP    39 10.90  -0.9
ASPA   49.41 129 iPc   39 23.10  -0.9
       0.4s    5.00nm           4.9mb
MAT    49.91  47 (P)   39 28.00   0 3
HFS    79.21 330 eP    42 37.60  -0.6
       0.4s    1.20nm           4.2mb
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LPG    83.19 315 eP    43 00.30   0.5
       0.8s    6.70nm           4.8mb
     S.D. = 1.0  on  13 of  13 obs.
-------------------------------------
   DEC 17, 1989  23h 01m 31.89± 0.57s
   35.022 N ± 5.9km   27.215 E ± 4.3km
   DEPTH =  10.0km  (geophysicist)
 DODECANESE ISLANDS              (369)
      MD 4.0 (ATH).

KAP     0.53 356 iPbd  01 42.00  -0.6
NPS     1.33 281 iPnc  01 56.60   0.1
                eSn    02 17.50
KSL     2.22  60 ePn   02 10.20   0.9
YER     2.28  22 ePn   02 09.10  -1.1
APE     2.46 327 ePn   02 12.10  -0.6
VAM     2.50 280 ePn   02 14.00   0.8
SMG     2.70 354 ePn   02 16.50   0.4
ELL     2.78  51 ePn   02 18.20   0.8
IZM     3.37   1 ePn   02 25.70   0.0
BCK     3.66  47 ePn   02 31.00   1.2
KHL     3.78  29 ePn   02 30.70  -0.9
VLI     3.86 297 ePn   02 32.00  -0.6
ALT     4.64  29 ePn   02 39.00  -4.8X
ITM     4.79 298 ePn   02 46.50   0.6
DSI     7.65 114 e(P)  03 15.00 -11.0X
                eS     04 49.00
PRNI    8.05 123 e(P)  03 31.00  -0.6
MBH     8.33 127 eP    03 35.00  -0.5
                eS     05 03.50
     S.D. = 0.8  on  15 of  17 obs.
-------------------------------------
   DEC 17, 1989  23h 30m 06.99± 0.57s
   40.333 N ± 5.0km   22.018 E ± 4.9km
   DEPTH =  10.0km  (geophysicist)
 GREECE                          (364)
      ML 2.9 (THE). MD 3.4 (ATH).

KZN     0.19 262 iPc   30 10.70  -0.6
                eS     30 52.80
LIT     0.43 122 eP    30 14.50  -1.3
                eS     30 21.00
GRG     0.69  25 eP    30 19.90  -0.7
                eS     30 30.60
THE     0.78  67 eP    30 22.50   0.3
                eS     30 34.00
KNT     1.06  39 eP    30 26.60  -0.4
                eS     30 42.50
VAY     1.07  23 iPn   30 26.30  -0.9
PLG     1.09  87 eP    30 28.30   0.8
OHR     1.21 310 iPn   30 29.10  -0.5
AGG     1.33 169 eP    30 32.40   0.8
                eS     30 50.40
NEO     1.38 137 eP    30 32.10  -0.2
SRS     1.43  56 eP    30 33.50   0.5
                eS     30 53.60
OUR     1.50  89 eP    30 34.20   0.3
SKO     1.70 345 iPn   30 38.70   1.9
                iPg    30 40.50
                iSn    31 03.50
                iSg    31 05.80
VLS     2.42 208 eP    30 55.00   7.7X
RDO     2.80  72 eP    31 00.00   7.4X
     S.D. = 1.0  on  13 of  15 obs.
-------------------------------------
?  DEC 17, 1989  23h 58m 17.75± 0.87s
   38.833 N ± 7.8km    2.808 W ± 9.1km
   DEPTH =  10.0km  (geophysicist)
 SPAIN                           (377)
      mbLg 2.9 (MDD).

EVIA    0.31 129 iP    58 24.20   0.0
                eS     58 29.50
EBAN    1.02 229 eP    58 37.00   0.0
                eS     58 51.00
ETOR    2.07  16 eP    58 53.00   0.0
                eS     59 17.00
GUD     2.08 331 eP    58 53.30   0.0
                eS     59 17.00
     S.D. = 0.0  on   4 of   4 obs.
-------------------------------------
*  DEC 18, 1989  00h 48m 11.45± 0.61s
   7.586 N ± 8.2km  127 174 E ±12.8km
   DEPTH =  33 0km  (normal)
   5.2mb (  2 obs.)
 PHILIPPINE ISLANDS REGION       (248)
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```
DAV     1.66 253 eP    48 41.00   2.3
QIZ    20.32 306 P     52 45.80  -1.8
     Z  15s     0.70um           4.1MszX
     N  15s     0.80um
MTN    20.68 169 iPd   52 50.90  -0.4
KNA    23.24 176 eP    53 20.00   3.1X
KLI    25.47 242 eP    53 39.00   0.6
NST    27.65 289 eP    54 03.50   5.1X
WB5    28.20 166 eP    54 01.50  -1.8
ASPA   31.75 168 eP    54 35.20   0.3
SNY    34.25 355 Pc    54 56.50   0.1
CN2    36.10 358 eP    55 12.50   0.3
MDJ    36.95   3 eP    55 20.00   0.7
FORR   38.23 179 eP    55 29.10  -1.0
       0.4s   30.00nm           5.5mb
COOL   38.68 188 eP    55 33.20  -0.8
BAL    39.28 194 iPd   55 38.40  -0.6
KLB    39.98 193 eP    55 44.00  -0.8
MUN    40.71 194 iPd   55 50.50  -0.3
       0.7s   19.00nm           4.9mb
NWAO   41.38 193 eP    55 56.00  -0.3
BRS    42.70 145 eP    56 10.00   2.8
BWA    46.37 156 eP    56 37.90   1.4
WMO    49.88 323 eP    57 03.00  -0.9
     S.D. = 1.3  on  18 of  20 obs.
-------------------------------------
   DEC 18, 1989  02h 43m 09.34± 0.47s
   10.022 N ± 7.1km  126.046 E ± 9.8km
   DEPTH =  33.0km  (normal)
   4.9mb (  6 obs.)  3.9Msz (  1 obs.)
 PHILIPPINE ISLANDS REGION       (248)

DAV     2.95 189 eP    44 02.00   7.0X
OCP     6.68 314 eP    44 46.00  -1.7
BAG     8.28 321 eP    45 11.00   0.6
QIZ    18.05 302 eP    47 21.50   2.1
     N  16s     0.90um
GUMO   18.76  77 eP    47 29.20   1.0
GUA    18.79  77 eP    47 30.20   1.6
       0.8s   89.55nm           5.0mb
SSE    21.45 349 Pd    47 56.40  -0.5
       0.8s    0.03nm           1.8mb X
     Z  20s     0.50um           3.9Msz
     E  12s     0.30um
                i      48 05.00
                S      51 58.00
                sS     52 08.00
NJ2    22.91 344 iPd   48 12.60   1.2
TIA    27.30 344 eP    48 51.70  -1.3
XAN    28.60 329 eP    49 02.00  -2.8
WB5    30.82 165 eP    49 23.90  -0.8
BJI    31.16 345 eP    49 27.50   0.1
SNY    31.75 356 eP    49 34.50   1.9
LZH    32.85 326 eP    49 45.00   2.5
     Z  15s     0.60um           4.4MszX
ASPA   34.35 167 eP    49 55.40   0.0
       0.3s    5.00nm           4.9mb
SHL    35.87 300 eP    50 12.00   3.4X
WARB   35.99 179 iPc   50 09.20  -0.1
       0.3s    6.00nm           5.0mb
GTA    37.46 326 eP    50 21.20  -0.5
FORR   40.68 177 eP    50 47.20  -1.2
BAL    41.38 192 eP    50 54.50   0.4
KLB    42.13 191 eP    51 00.30   0.0
MUN    42.81 192 eP    51 06.10   0.3
       0.7s   15.00nm           4.8mb
NWAO   43.53 191 eP    51 12.40   0.8
       0.6s   17.00nm           5.0mb
RKG    44.68 191 eP    51 26.20   5.2X
GBA    47.65 279 P     51 46.00   1.2
IMA    76.95  24 eP    54 58.70  -1.5
PMS    78.59  29 eP    55 07.20  -1.9
INK    84.60  22 eP    55 35.00  -5.4X
MBC    86.00  13 eP    55 46.00  -1.3
       0.6s    1.00nm           4.2mb
ZST    94.90 321 eP    56 54.50  25.0X
     S.D. = 1.4  on  25 of  30 obs.
-------------------------------------
   DEC 18, 1989  03h 08m 43.20± 0.29s
   10.089 N ± 4.6km  126.325 E ± 7.7km
   DEPTH =  33.0km  (normal)
   5.0mb ( 11 obs.)  3.8Msz (  2 obs.)
 PHILIPPINE ISLANDS REGION       (248)

DAV     3.07 194 eP    09 36.90   6.3X
OCP     6.83 312 eP    11 34.00  70.2X
BAG     8.41 319 eP    10 46.00   0.0
```

KKM	10.79	249	eP	11 23.50	4.9X
PCI	12.69	211	ePd	11 52.50	8.3X
QZH	16.50	335	eP	12 38.00	4.2X
Z	18s		0.60um		
			S	15 41.00	
QIZ	18.25	301	eP	12 54.00	-1.7
E	15s		0.70um		
GUMO	18.48	77	eP	13 05.50	7.0X
PJG	18.48	77	eP	13 04.80	6.3X
JAY	19.02	130	ePc	13 05.00	-0.2
SSE	21.44	348	P	13 31.00	0.3
	1.0s		42.00nm		4.8mb
Z	18s		0.40um		3.9Msz
			S	17 34.00	
			sS	17 43.00	
NJ2	22.92	344	eP	13 46.80	1.4
	0.8s		0.10nm		2.4mb X
WHN	23.21	333	P	13 54.00	5.8X
Z	16s		0.59um		4.1MszX
E	16s		1.24um		
MTN	23.28	168	eP	13 50.00	1.0
GYA	24.71	314	P	14 04.00	1.0
N	15s		0.50um		
E	15s		0.60um		
			S	18 18.00	
NST	26.11	285	eP	14 19.80	3.7X
TIA	27.31	344	eP	14 26.50	-0.4
CHG	27.86	291	eP	14 32.80	0.7
XAN	28.69	329	P	14 38.00	-1.4
TIY	30.21	338	eP	14 53.00	-0.1
E	12s		0.40um		
WB5	30.82	165	eP	14 58.90	0.4
BJI	31.16	345	eP	15 00.00	-1.3
MBL	31.70	192	eP	15 06.00	-0.2
LZH	32.96	325	eP	15 17.00	-0.2
	1.0s		23.00nm		5.0mb
Z	15s		0.70um		4.5MszX
E	15s		0.80um		
HHC	33.30	339	eP	15 20.40	0.2
ASPA	34.36	168	eP	15 27.60	-1.7
Z	20s		0.14um		3.7Msz
			eS	21 01.40	
			LR	28 28.10	
WARB	36.06	180	iPd	15 43.20	-0.5
	0.4s		36.00nm		5.7mb
GTA	37.56	325	Pd	15 56.20	-0.2
Z	16s		0.70um		4.6MszX
FORR	40.74	178	eP	16 22.20	-0.5
	0.4s		26.00nm		5.3mb
COOL	41.04	187	eP	16 25.00	-0.2
BAL	41.50	193	eP	16 29.60	0.6
KLB	42.25	191	eP	16 35.00	-0.1
MUN	42.93	193	eP	16 41.20	0.5
	0.8s		47.00nm		5.3mb
NWAO	43.64	191	eP	16 47.00	0.5
	0.7s		35.00nm		5.2mb
RKG	44.80	191	eP	17 01.50	5.7X
ADE	46.32	166	eP	17 06.20	-1.7
	1.0s		26.00nm		5.1mb
HYB	46.87	284	eP	17 12.70	0.2
WMQ	47.40	322	eP	17 16.60	0.2
Z	16s		0.80um		4.8MszX
GBA	47.91	279	P	17 21.00	0.3
KOD	48.05	275	eP	17 23.10	0.9
BWA	48.98	156	eP	17 30.00	1.3
POO	51.39	286	iPc	17 47.20	-0.2
SVW	75.46	29	eP	20 27.20	1.6
IMA	76.78	24	eP	20 33.80	0.7
	1.1s		7.80nm		4.6mb
PMR	78.60	29	eP	20 43.20	0.2
	1.1s		15.60nm		4.9mb
FBA	79.19	26	e(P)	20 43.30	-2.9
INK	84.43	22	eP	21 14.00	0.6
MBC	85.87	13	eP	21 21 50	1.0
	1.0s		4.00nm		4.6mb
PRNI	86.11	300	eP	21 23.00	0.4
MBH	86.31	299	ePc	21 24.00	0.5
NB2	92.94	334	P	21 53.40	-0.8
	0.8s		2.20nm		4.6mb

S.D. = 1.0 on 41 of 51 obs.

DEC 18, 1989 03h 38m 52.18± 0.23s
10.076 N ± 4.0km 126.326 E ± 6.2km
DEPTH = 21.6km (3 depth phases)
5.3mb (20 obs.) 4.0Msz (2 obs.)
PHILIPPINE ISLANDS REGION (248)

DAV	3.06	194	eP	39 44.00	3.7X
QCP	6.84	312	eP	40 36.00	2.1
BAG	8.42	319	eP	40 56.80	0.7
TSM	10.04	235	eP	41 24.50	6.2X
KKM	10.78	249	ePd	41 33.00	4.4X
PCI	12.68	211	ePd	42 02.00	7.9X
	1.0s		5.00nm		4.6mb
QZH	16.51	335	eP	42 48.00	3.9X
Z	18s		0.60um		
GUMO	18.48	77	eP	43 16.00	7.3X
GUA	18.51	77	eP	43 16.50	7.3X
JAY	19.01	130	ePc	43 15.50	0.2
SSE	21.45	348	P	43 42.20	1.0
	1.0s		59.00nm		5.0mb
Z	18s		0.90um		4.2Msz
N	12s		0.50um		
			S	47 46.00	
			sS	47 54.00	
TPI	22.55	237	ePc	43 57.00	4.7X
			e	45 50.00	
NJ2	22.94	344	Pc	43 57.40	1.4
	1.0s		0.10nm		2.3mb X
WHN	23.22	333	eP	44 00.00	1.3
Z	16s		0.59um		4.1MszX
N	16s		0.59um		
MTN	23.27	168	eP	44 00.00	0.7
GYA	24.72	314	P	44 14.80	1.3
IPM	25.67	260	ePc	44 27.90	5.4X
	0.8s		65.10nm		5.3mb
KNA	25.77	175	iPd	44 22.50	-0.8
KLI	26.03	236	eP	44 38.00	12.2X
			e	44 46.00	28km
NST	26.12	285	eP	44 29.00	2.4
TIA	27.33	344	eP	44 37.30	-0.2
PPI	27.84	249	eP	44 45.00	2.6
CHG	27.87	291	eP	44 41.00	-1.7
CHTO	27.87	291	eP	44 40.40	-2.2
			e	44 46.40	21km
XAN	28.70	329	P	44 47.90	-2.1
CD2	29.49	318	eP	44 55.10	-2.1
TIY	30.23	338	eP	45 02.60	-1.1
E	14s		0.60um		
WB5	30.80	165	eP	45 06.00	-2.8X
BJI	31.18	345	eP	45 11.00	-0.9
MBL	31.69	192	iPd	45 16.10	-0.5
	0.5s		29.00nm		5.4mb
SNY	31.72	356	Pc	45 16.80	0.2
LZH	32.97	325	Pd	45 27.50	-0.3
	1.5s		54.00nm		5.3mb
Z	15s		9.70um		5.6MszX
N	13s		0.40um		
			pP	45 32.00	16km
QIS	33.12	157	iPd	45 27.90	-1.2
HHC	33.32	339	eP	45 29.00	-1.7
CN2	33.61	359	eP	45 33.60	0.5
BTO	33.66	337	eP	45 33.00	-0.7
N	13s		0.30um		
E	13s		0.30um		
NANU	34.12	198	eP	45 37.70	0.0
ASPA	34.34	168	iPd	45 38.00	-1.7
	0.6s		17.00nm		5.1mb
Z	21s		0.17um		3.7Msz
			eS	50 53.30	
			LR	00 42.10	
MDJ	34.53	4	eP	45 41.00	0.0
CTA	35.82	147	iP	45 52.20	-0.1
	0.8s		67.16nm		5.6mb
SHL	36.09	300	iP	45 53.20	-1.6
			eS	51 32.00	
GTA	37.57	325	iPd	46 06.80	-0.2
Z	16s		0.90um		4.7MszX
MRWA	40.31	194	eP	46 30.20	0.4
FORR	40.72	178	eP	46 32.60	-0.5
	0.5s		136.00nm		5.9mb
COOL	41.03	187	eP	46 35.20	-0.4
	0.4s		10.00nm		4.9mb
BAL	41.49	193	eP	46 39.50	0.1
	0.4s		14.00nm		5.0mb
KLB	42.23	191	iPd	46 45.70	0.2
	0.5s		27.00nm		5.2mb
MUN	42.92	193	iPd	46 51.30	0.2
	0.8s		115.00nm		5.7mb
NWAO	43.63	191	iPd	46 57.30	0.4
	0.5s		62.00nm		5.7mb
RKG	44.78	191	iPc	47 11.20	5.0X
	0.4s		89.00nm		6.0mb
ADE	46.31	166	iPd	47 18.60	0.3
	0.7s		52.05nm		5.6mb
HYB	46.88	284	eP	47 23.40	0.3
	0.8s		38.46nm		5.5mb
WMQ	47.41	322	eP	47 27.00	0.0
Z	16s		1.00um		4.9MszX
GBA	47.92	279	P	47 31.50	0.2
KOD	48.06	275	eP	47 33.00	0.2
BWA	48.97	156	iPd	47 40.10	1.0
CAN	49.98	156	eP	47 47.00	0.1
CNB	50.12	155	iPd	47 48.90	0.8
DZM	50.68	129	iPc	47 52.80	0.3
TOO	50.68	160	iPd	47 52.70	0.5
POO	51.39	286	iPc	47 57.00	-0.9
MAIO	65.45	305	eP	49 36.00	-0.1
MSZ	66.19	149	P	49 40.00	-0.4
SVW	75.47	29	eP	50 37.40	1.1
BRW	76.33	19	eP	50 41.80	0.9
IMA	76.79	24	eP	50 44.50	0.7
	1.0s		8.80nm		4.8mb
KDC	76.84	33	eP	50 44.50	0.5
PMR	78.61	29	eP	50 53.20	-0.5
	1.1s		18.80nm		5.0mb
FBA	79.20	26	eP	50 56.40	-0.5
TOA	80.00	28	eP	51 02.10	0.8
INK	84.45	22	eP	51 24.50	0.4
MBC	85.89	13	eP	51 32.00	0.8
	0.9s		10.00nm		5.0mb
PRNI	86.12	300	eP	51 34.00	0.7
MBH	86.32	299	eP	51 34.50	0.3
HFS	92.25	332	eP	51 59.60	-2.0
	0.5s		3.10nm		5.0mb
KSP	94.56	323	eP	52 12.00	-0.4
KIC	128.60	286	(PKP)	58 01.00	0.6
LIC	128.91	286	(PKP)	58 01.40	0.5
UPA	148.05	55	ePKP	58 34.00	-1.4
CNCB	164.56	117	PKP	59 00.00	3.2X
LPB	164.57	116	ePKP	58 55.00	-1.7
ZOBO	164.65	115	PKP	58 58.20	1.3
	1.3s		17.74nm		

S.D. = 1.1 on 69 of 82 obs.

? DEC 18, 1989 03h 52m 29.77±10.22s
40.375 N ±24.7km 21.358 E ±72.2km
DEPTH = 10.0km (geophysicist)
GREECE (364)
ML 2.0 (THE).

LIT	0.91	107	eP	52 46.90	-0.3
			eS	52 59.90	
GRG	0.98	53	eP	52 47.80	-0.7
THE	1.25	78	eP	52 53.50	0.5
KNT	1.41	56	eP	52 55.90	0.4

S.D. = 1.0 on 4 of 4 obs.

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* DEC 18, 1989 04h 38m 28.56± 1.15s
39.436 N ± 7.8km 16.380 E ±10.3km
DEPTH = 10.0km (geophysicist)
SOUTHERN ITALY (390)

ROI	0.20	47	P	38 32.90	-0.1
TDS	0.22	352	P	38 32.90	-0.5
			eSg	38 37.10	
CZI	0.29	221	P	38 34.70	0.1
CSI	0.35	348	P	38 36.60	0.9
MGR	0.95	318	P	38 46.20	-0.4

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

& DEC 18, 1989 05h 45m 26.24s
62.041 N 149.820 W
DEPTH = 48.6km
CENTRAL ALASKA (1)
<AGS-P>.

PWA	0.39	184	eP	45 35.88	-0.3
			iS	45 43.59	
CUT	0.42	330	iP	45 35.84	-0.7
			iS	45 43.62	
GHO	0.50	122	iP	45 36.81	-0.8
			eS	45 45.53	
PLRM	0.56	144	iP	45 37.13	-1.0
			iS	45 46.75	
PME	0.56	138	iP	45 37.36	-0.8
			iS	45 46.96	
SUA	0.73	218	iP	45 40.24	-0.3
			eS	45 50.21	
PMS	0.81	171	iP	45 40.80	-0.7
			eS	45 52.50	

18d 05h

SKT	0.81	266	iP	45	40.54	-1.0
HUR	0.94	5	eP	45	42.61	-0.8
			eS	45	54.73	
CGLM	1.28	236	eP	45	47.94	-0.1
NCG	1.28	241	eP	45	47.43	-0.8
			eS	46	05.18	
CRP	1.36	236	eP	45	49.18	-0.1
			eS	46	06.79	
SPU	1.37	232	eP	45	48.95	-0.4
			iS	46	08.10	
NCA	1.41	91	eP	45	49.54	-0.4
			eS	46	08.20	
RND	1.44	18	eP	45	49.37	-1.0
BGL	1.45	239	eP	45	50.66	0.1
			eS	46	10.00	
CKL	1.47	236	eP	45	50.80	0.0
			eS	46	10.99	
SLKM	1.55	187	eP	45	51.62	-0.3
			eS	46	11.03	
KTH	1.60	342	iP	45	51.93	-0.7
TOA	1.72	86	iP	45	54.35	0.1
			eS	46	17.07	
MCK	1.75	13	eP	45	54.15	-0.5
GLI	1.75	130	eP	45	53.73	-1.0
			eS	46	16.90	
VZW	1.85	121	eP	45	55.02	-1.1
			eS	46	19.14	
VLZ	1.90	117	eP	45	55.34	-1.4
			eS	46	20.69	
RDT	1.93	221	eP	45	56.81	-0.5
			eS	46	21.20	
KLU	1.93	105	iP	45	56.18	-1.2
			eS	46	18.51	
SEW	1.95	175	eP	45	57.96	0.5
FID	2.06	127	eP	45	57.61	-1.5
PAX	2.22	63	eP	46	01.52	0.1
DDM	2.52	44	eP	46	07.13	1.5
WRH	2.56	17	eP	46	04.61	-1.5
CNPM	2.62	196	eP	46	07.67	0.7
CCB	2.77	18	eP	46	07.35	-1.7
FBA	3.01	17	eP	46	10.95	-1.6
BALM	3.72	102	iP	46	20.29	-2.4

35 obs. associated

DEC 18, 1989 06h 10m 54.27± 0.30s
8.316 N ± 4.9km 126.997 E ± 5.9km
DEPTH = 33.0km (normal)
5.0mb (12 obs.) 4.2Msz (2 obs.)
MINDANAO, PHILIPPINE ISLANDS (259)

DAV	1.86	229	eP	11	28.00	3.6X
MNI	7.16	198	ePc	12	44.30	4.9X
TSM	9.76	246	ePc	13	22.10	6.6X
KKM	10.93	259	ePc	13	37.20	5.5X
GUMO	18.30	72	eP	15	07.00	-0.5
PJG	18.30	72	eP	15	06.90	-0.6
GUA	18.33	72	eP	15	07.50	-0.4
	0.7s	65.75nm			4.9mb	
QIZ	19.76	304	eP	15	23.20	-1.4
N	13s	0.80um				
E	13s	1.30um				
KHKI	20.08	215	eP	15	27.30	-0.7
			e	18	13.90	
MTN	21.42	169	eP	15	40.50	-1.2
TPI	22.21	241	ePd	15	50.50	0.9
			e	17	03.00	
SSE	23.30	347	P	16	01.50	1.3
	1.2s	39.00nm			4 8mb	
Z	20s	0.90um			4.2Msz	
E	12s	0.50um				
		sP		16	12.00	
		S		20	10.00	
		sS		20	19.00	
KGM	24.39	256	eP	16	13.00	2.1
NJ2	24.80	343	eP	16	12.00	-2.7
Z	18s	0.60um			4.1Msz	
KLI	25.67	240	ePd	16	22.50	-0.6
IPM	26.07	263	ePc	16	29.40	2.6
	1.1s	55.10nm			5.1mb	
SNG	26.16	269	eP	16	32.50	4.8X
GYA	26.42	316	P	16	30.20	0.1
N	15s	1.00um				
E	15s	0.60um				
NST	27.25	288	eP	16	39.00	1.4
BDT	28.67	291	eP	16	51.00	0.6
	0.6s	17.90nm			4.9mb	
WB5	28.94	166	eP	16	51.00	-1.9

CHG	29.15	294	ePc	16	54.90	0.1
	1.0s	35.00nm			5.0mb	
CHTO	29.15	294	iPc	16	54.80	0.0
OIS	31.26	157	iPc	17	12.40	-1.0
TIY	32.10	338	eP	17	20.10	-0.6
Z	15s	0.95um			4.6MszX	
N	14s	0.80um				
BJI	33.04	345	eP	17	28.00	-0.7
	1.5s	39.00nm			5.1mb	
Z	16s	0.29um			4.1MszX	
		eS		22	41.00	
SNY	33.51	355	Pc	17	33.20	0.4
WARB	34.29	181	eP	17	40.00	0.2
	0.5s	19.00nm			5.3mb	
LZH	34.78	326	eP	17	42.50	-1.6
	1.5s	0.04nm			2.1mb X	
Z	15s	0.80um			4.6MszX	
N	13s	0.60um				
HHC	35.19	339	eP	17	46.80	-0.6
CN2	35.37	358	eP	17	52.00	3.2X
BTO	35.53	338	eP	17	50.80	0.5
MDJ	36.23	3	eP	17	57.00	0.9
SHL	37.55	302	iP	18	06.50	-1.1
			iS	23	55.00	
FORR	38.96	178	eP	18	18.00	-1.0
COOL	39.38	188	eP	18	22.10	-0.5
GTA	39.39	326	P	18	21.40	-1.4
E	15s	0.60um				
LSA	39.76	307	P	18	26.60	0.2
BAL	39.94	194	eP	18	27.30	0.0
KLB	40.65	192	eP	18	32.50	-0.6
MUN	41.37	194	eP	18	39.00	0.0
NWAO	42.05	192	eP	18	45.00	0.4
	1.0s	45.00nm			5.2mb	
BRS	43.40	146	iPc	18	55.50	-0.2
ADE	44.45	166	iPc	19	04.40	0.3
	0.8s	35.82nm			5.3mb	
BWA	47.10	156	eP	19	26.80	1.6
HYB	47.97	286	eP	19	21.50	-10.8X
CAN	48.11	156	eP	19	33.80	0.7
GBA	48.87	281	P	19	38.80	-0.4
WMQ	49.20	323	eP	19	41.00	-0.4
Z	16s	0.70um			4.7MszX	
NDI	50.94	300	iPc	19	53.00	-1.9
MAIO	67.01	306	iPc	21	40.00	-6.5X
MAIO	67.01	306	iPc	21	46.00	-0.5
TTA	76.72	27	eP	22	46.70	2.9X
BRW	77.77	19	eP	22	52.00	2.7X
IMA	78.11	24	eP	22	53.70	2.2
	1.0s	6.30nm			4.6mb	
PMR	79.82	29	eP	23	02.20	1.6
	1.0s	15.00nm			4.9mb	
FBA	80.49	26	eP	23	07.50	3.3X
INK	85.83	22	eP	23	33.00	1.5
MBC	87.45	13	eP	23	41.00	1.7
	1.1s	23.00nm			5.4mb	
PRNI	87.57	300	eP	23	40.00	-0.8
ARE	160.22	116	eP PKP	31	10.00	17.4X
	0.7s	24.66nm				
CNCB	163.13	121	eP PKP	30	59.00	3.2X
			i	31	53.00	
LPB	163.16	120	eP PKP	31	11.00	15.3X
ZOBO	163.25	120	PKP	30	58.00	2.0

S.D. = 1.2 on 50 of 64 obs.

& DEC 18, 1989 06h 27m 04.50s
33.730 N 116.020 W
DEPTH = 10.0km
SOUTHERN CALIFORNIA (43)
<PAS-P>. ML 4.2 (PAS). Felt (IV)
at Mecca and (III) at Chiriaco
Summit, Indio and Riverside

HAY	0.32	94	iPd	27	10.80	-0.3
TPC	0.38	356	iPc	27	11.50	-0.7
PLM	0.80	242	iPd	27	19.60	-0.5
PEC	0.96	280	iPc	27	22.00	-0.9
RVR	1.16	283	iPc	27	25.20	-0.9
BAR	1.18	208	iPd	27	25.20	-1.4
GLA	1.21	124	iPc	27	25.00	-2.0
GSC	1.70	338	iPc	27	32.90	-1.5
ABL	2.88	294	eP	27	50.00	-1.4
BCH	3.66	295	eP	28	00.50	-2.0
FRI	4.44	318	ePc	28	13.10	-0.2
			ePgc	28	23.90	
			eS	29	21.70	
TNP	4.45	348	eP	28	12.50	-1.2

PRI	4.51	304	e(P)	28	15.40	0.9
			ePg	28	26.00	
LLA	4.95	307	eP	28	20.90	0.2
PRS	5.10	302	e(P)	28	22.50	-0.3
CMB	5.57	322	ePc	28	31.00	1.5
			ePg	28	45.00	
			eSg	30	00.00	
KVN	5.57	343	ePd	28	28.00	-1.6
MHC	5.83	310	e(P)	28	32.30	-0.9

18 obs. associated

DEC 18, 1989 07h 13m 01.03± 0.17s
0.939 N ± 4.1km 28.976 W ± 2.9km
DEPTH = 10.0km (geophysicist)
5.7mb (58 obs.) 5.3Msz (6 obs.)
CENTRAL MID-ATLANTIC RIDGE (406)
CENTROID, MOMENT TENSOR (HRV)
Data Used: GDSN
L.P.B.: 12S, 28C
Centroid Locotion:
Origin Time 07:13:13.5 0.3
Lat 1.18N 0.03 Lon 28.00W 0.03
Dep 15.0 FIX Half-duration 3.2
Moment Tensor; Scale 10**17 Nm
Mrr=-0.52 0.13 Mtt= 1.58 0.17
Mff=-1.06 0.21 Mrt= 0.00 0.00
Mrf= 0.00 0.00 Mtf=-5.77 0.12
Principal Axes:
T Vol= 6.17 Plg= 0 Azm=219
N -0.52 90 180
P -5.66 0 129
Best Double Couple:Mo=5.9*10**17
NP1:Strike=264 Dip=90 Slip=-180
NP2: 354 90 0

LIC	24.46	77	Pc	18	20.80	-0.6
Z	20s	14.40um			5.5Msz	
		S		22	40.00	
TIC	24.56	76	Pc	18	21.52	-0.9
KIC	24.77	77	Pc	18	23.64	-0.8
	0.8s	234.50nm			5.9mb	
		TT		38	00.00	
BAO	24.99	228	iPc	18	27.60	1.0
KUK	29.01	79	iPc	19	00.90	-2.6
LEGH	29.12	80	eP	19	02.90	-1.5
KOGH	29.12	79	eP	19	03.00	-1.5
TIO	36.24	33	iP	20	06.50	0.1
		i		20	19.00	46kmX
		i		21	28.00	
AVE	38.03	30	iPc	20	22.50	1.2
OLLA	38.68	285	eP	20	27.50	0.4
LLAV	38.77	286	eP	20	24.00	-3.9X
IFR	39.38	32	iPd	20	35.00	2.1
CPD	40.06	297	P	20	38.80	0.3
PORP	40.71	297	P	20	43.80	0.0
CCH	40.89	242	P	20	48.50	2.9
LRS	40.98	297	P	20	46.00	0.0
FISA	41.36	286	eP	20	49.00	-0.2
TOV	41.53	284	eP	20	52.00	1.3
EVAL	41.83	27	eP	20	54.20	1.5
TAF	41.83	33	iPc	20	54.00	1.1
EPRU	42.03	29	eP	20	56.20	1.8
SDV	42.21	282	iPd	20	57.20	0.8
ZOBO	42.25	244	P	20	58.00	0.9
CNCB	42.31	244	P	20	58.70	1.1
LPB	42.32	244	P	20	59.00	1.5
	1.1s	202.53nm			5.8mb	
		LR		33	16.00	
ALOJ	42 69	30	iPc	21	01.50	1.5
APHE	42.78	30	iPc	21	02.00	1.3
AAPN	42.84	30	iPc	21	02.00	0.8
ENIJ	43.55	32	eP	21	08.80	2.0
EBAN	43.68	29	eP	21	09.00	1.2
EPLA	44.17	25	eP	21	12.20	0.4
EALH	44.63	31	eP	21	16.30	0.7
EZAM	44.90	21	eP	21	19.50	1.8
TOL	44.92	27	iPc	21	19.50	1.6
BOG	45.17	276	eP	21	21.00	0.3
ARE	45.37	246	eP	21	20.00	-2.1
	1.0s	36.00nm			5.3mb	
GUD	45.48	27	eP	21	24 00	1.5
ACU	45.65	32	eP	21	25.00	1.3
ERUA	45.69	23	eP	21	25.00	1.0
CYA	45.80	227	ePc	21	24.50	-0.5
ECHE	46.17	30	eP	21	29.00	1.2
ETOR	46.59	28	eP	21	32.50	1.4
BCAO	47.58	85	iPc	21	39.20	-0.1

	0.6s	215.00nm		6.4mb		HAU	55.95	28 eP	22 41.40	-0.3		PRU	61.29	30 ePc	23 17.80	-1.1							
		i	23 10.60	474kmX			1.1s	126.90nm		5.9mb			2.0s	156.30nm		5.8mb							
		i	28 01.30			CRE	55.96	35 P	22 41.00	-1.0				e	25 30.50	714kmX							
EROQ	47.80	30 eP	21 41.00	0.4		PGD	55.98	35 P	22 42.00	-0.2		CLL	61.37	29 iPd	23 20.20	0.8							
ECRI	47.80	26 eP	21 42.00	1.4		ASS	56.04	36 P	22 41.00	-1.5			2.2s	230.00nm		5.9mb							
EBR	47.84	30 eP	21 42.00	1.2		BSF	56.04	28 eP	22 41.80	-0.7		VAY	61.38	42 eP	23 20.00	0.4							
		eS	28 48.00				1.3s	144.40nm		5.8mb				i	25 31.40	704kmX							
PSO	48.34	271 eP	21 45.50	-0.3		AQU	56.05	37 P	22 43.20	0.6		KNT	61.53	43 eP	23 20.20	-0.5							
EPF	49.43	28 eP	21 53.90	0.7		SFI	56.08	35 Pc	22 42.10	-0.6		BRG	61.54	29 iPc	23 20.00	-0.6							
	1.1s	129.70nm		5.8mb		MGR	56.16	40 Pc	22 42.90	-0.4			1.3s	68.00nm		5.7mb							
GGP	49.63	269 P+	21 55.40	-0.6		DUI	56.30	38 P	22 45.00	0.5				e	25 36.70	745kmX							
WIN	50.58	120 iPd	22 02.00	-0.6		CIO	56.39	36 eP	22 44.07	-1.0		ZST	61.57	33 iP	23 20.60	-0.2							
	1.0s	90.00nm		5.7mb		ALP	56.41	37 eP	22 43.98	-1.3				i	25 32.20	704kmX							
UPA	50.95	281 iPd-	22 05.20	0.0		TDS	56.42	41 Pc	22 45.20	0.0		BEO	61.69	38 eP	23 21.50	-0.2							
	1.6s	600.00nm		6.3mb		CSI	56.45	41 P	22 41.90	-3.6X		OUR	61.91	44 eP	23 22.90	-0.3							
Z	19s	2.29um		5.2Msz		ARV	56.46	36 P	22 44.60	-0.9		SCH	61.93	336 ePd	23 21.70	-1.5							
LFF	51.08	27 eP	22 06.10	0.4		ROI	56.52	41 P	22 39.90	-6.2X		KKB	61.96	42 iPc	23 24.00	0.3							
LPO	51.09	27 eP	22 05.90	0.1		CDF	56.68	28 eP	22 46.20	-0.9		SRS	61.98	43 eP	23 23.20	-0.5							
	0.9s	57.00nm		5.5mb			1.3s	151.60nm		5.9mb		SRO	62.02	34 iP	23 24.10	0.2							
RFA	51.24	222 ePc	22 06.80	-0.4		CER	56.76	132 iPc	22 49.50	1.6				e	25 23.60	610kmX							
CAF	51.68	28 eP	22 10.30	0.0		CBM	57.09	329 P	22 48.40	-1.5				i	25 42.70								
FCH	51.69	225 eP	22 12.70	1.7		TBR	57.16	320 P	22 49.90	-0.6		BUD	62.24	35 iP	23 25.50	0.2							
RJF	51.71	27 eP	22 10.30	-0.3		CTI	57.30	33 Pc	22 51.00	-0.5		MMB	62.27	42 iPc	23 26.00	0.3							
	0.9s	39.30nm		5.3mb		BNH	57.32	325 P	22 50.50	-1.1		VTS	62.37	41 iPc	23 27.00	0.5							
MFF	51.99	25 eP	22 12.50	-0.1		SUR	57.48	130 iPc	22 54.00	0.8		KSP	62.70	30 iPc	23 27.90	-0.4							
	1.1s	122.00nm		5.7mb			1.0s	60.00nm		5.6mb			1.3s	74.00nm		5.7mb							
PCH	52.01	225 eP	22 14.00	0.9		ENN	57.77	25 ePc	22 53.50	-1.1		BZS	62.80	38 eP	23 29.50	0.4							
SAN	52.02	225 ePd	22 13.00	-0.1			1.2s	168.00nm		5.9mb		PSZ	62.97	35 iP	23 30.40	0.1							
TACH	52.32	225 eP	22 12.70	-2.7				e	23 04.00	35kmX		RZN	62.98	43 iPc	23 31.00	0.4							
LSF	52.44	26 eP	22 16.00	-0.1		CBN	57.79	316 eP	22 54.00	-0.9		PGB	62.99	42 iPc	23 31.00	0.5							
LMR	52.76	32 eP	22 18.00	-0.4			1.2s	46.00nm		5.4mb		PLD	63.15	42 eP	23 32.00	0.5							
	1.1s	53.70nm		5.4mb		EKA	58.15	17 P	22 57.00	-0.2		KDZ	63.44	43 iPc	23 33.00	-0.4							
LRG	52.76	32 eP	22 18.40	0.0		HBVT	58.23	324 P	22 56.80	-1.2		IZM	63.47	47 eP	23 30.90	-2.8							
	1.2s	44 00nm		5.3mb		TRI	58.25	34 P	22 58.00	0.0		DIM	63.69	43 iP	23 35.00	0.0							
LPF	52.77	23 eP	22 18.40	0.0		RIY	58.39	35 iPc	22 58.50	-0.5		SPC	63.85	34 iPc	23 35.80	-0.4							
	1.2s	103.50nm		5.6mb		VOY	58.52	34 eP	22 59.80	-0.2		HLW	64.01	57 eP	23 36.50	-0.9							
TCF	52.78	27 eP	22 18.40	-0.2		CEY	58.64	34 ePc	23 00.90	0.1		PVL	64.05	41 iPc	23 36.00	-1.4							
	1.1s	74.20nm		5.5mb		KBA	58.86	33 iPc	23 01.70	-0.8		KRA	64.15	33 iPc	23 38.00	0.1							
MAF	52.89	27 eP	22 19.50	0.1			1.2s	89.20nm		5.8mb			1.5s	247.00nm		6.2mb							
FRF	52.98	32 eP	22 19.50	-0.6				i	23 05.90	14kmX		Z	16s	1.40um		5.2MszX							
GRR	53.13	23 eP	22 20.90	-0.2				i	23 43.30					i	23 42.60	15kmX							
BGF	53.27	27 eP	22 22.00	-0.2				i	25 12.20					e	32 29.00								
FLN	53.58	23 eP	22 24.00	-0.4		LJU	58.88	34 ePc	23 02.00	-0.5		KOT	64.44	57 eP	23 37.00	-3.1X							
	1.1s	92.70nm		5.7mb				e	25 05.00	653kmX		JMB	64.57	43 iPc	23 40.00	-0.8							
LDF	53.59	23 eP	22 24.00	-0.5				eS	31 13.20			CMP	64.76	39 ePc	23 44.00	2.0							
	1.1s	73.20nm		5.6mb		VBY	58.98	35 iPc	23 04.10	1.0		ELL	64.87	49 eP	23 43.10	0.1							
SBF	53.61	32 eP	22 24.40	-0.4		IGT	59.04	43 eP	23 03.10	-0.6		BMR	64.94	36 ePd	23 44.00	1.0							
	1.0s	140.00nm		5.9mb		WTS	59.05	25 ePc	23 03.50	0.0		KHL	65.10	48 eP	23 43.80	-0.6							
AVF	53.68	27 eP	22 24.80	-0.3			1.0s	42.00nm		5.5mb		MLR	65.43	39 ePc	23 46.50	0.0							
SMF	53.79	28 eP	22 26.00	0.0		ZAG	59.57	35 iP	23 24.50	17.3X		ALT	65.78	47 eP	23 47.00	-1.8							
STV	53.81	32 P	22 26.91	0.7		WIT	59.59	24 eP	23 09.00	1.8		VRI	66.09	39 iPd	23 50.50	0.0							
ENR	53.85	32 P	22 27.12	0.6		FRS	60.04	125 iPd	23 10.00	-0.7		PSN	66.13	42 iPc	23 50.00	-0.8							
PZZ	53.87	31 P	22 27.94	1.2			0.7s	34.25nm		5.6mb		TLB	66.40	41 ePc	23 52.00	-0.4							
IMI	53.88	32 P	22 26.61	-0.2				i	23 15.00	16kmX		CFR	66.72	40 eP	23 53.00	-1.5							
DOI	53.94	32 P	22 23.94	-3.3X		OHR	60.09	42 eP	23 07.70	-3.3X		CLI	66.73	39 ePd	23 54.50	-0.1							
	1.3s	92.70nm		5.6mb			1.3s	0.12nm		2.9mb X		CSS	66.99	52 eP	23 56.00	-0.5							
DOI	53.94	32 P	22 27.20	0.0				i	23 12.00	14kmX		PRNI	67.20	57 iPc	23 58.00	0.0							
SSF	53.95	27 eP	22 26.90	-0.2				i	25 19.30			NB2	67.30	20 P	23 57.60	-0.4							
	1.2s	57.70nm		5.5mb		AGG	60.19	44 eP	23 11.30	-0.4			1.2s	71.50nm		5.7mb							
RRL	53.99	31 P	22 28.76	1.0		KHC	60.26	31 iPc	23 11.50	-0.4		HFS	67.54	22 ePKP	23 59.00	-0.5							
PZI	54.10	43 P	22 29.20	0.8			1.2s	86.00nm		5.8mb			0.6s	7.40nm		5.1mb							
	1.2s	141.40nm		5.9mb				e	25 22.50	708kmX		DSI	67.80	56 eP	24 01.00	-0.6							
LBF	54.11	27 eP	22 28.30	0.0		MOX	60.27	28 iPc	23 11.50	-0.4		AAE	67.87	81 eP	24 03.00	0.2							
ROB	54.13	32 P	22 29.07	0.5			1.8s	231.00nm		6.0mb		OXX	68.48	288 (P)	24 12.00	5.7X							
FIN	54.26	32 P	22 29.58	0.1		DHN	60.56	320 P	23 12.00	-2.1		FRB	69.06	342 eP	24 07.00	-1.8							
LOR	54.26	27 eP	22 29.20	-0.3		LIT	60.78	43 eP	23 14.70	-0.9		KAS	69.18	46 eP	24 09.00	-1.1							
	0.9s	50.70nm		5.6mb		PRY	60.92	122 iPd	23 19.10	2.1		UYO	69.32	306 iPc	24 09.40	-1.6							
LPG	54.38	30 eP	22 31.10	0.4			1.2s	30.00nm		5.3mb		PPM	70.48	290 (P)	24 19.00	0.0							
	1.1s	56.10nm		5.5mb		SKO	60.92	41 iPc	23 16.50	-0.1		LNO	70.79	308 eP	24 18.20	-1.6							
RSP	54.39	31 P	22 31.01	0.4			1.3s	190.00nm		6.1mb		TUL	70.79	308 iPd	24 18.70	-1.3							
LSD	54.55	31 P	22 32.55	0.6		Z	17s	3.78um		5.6MszX			1.2s	90.00nm		5.8mb							
LPI	54.87	42 P	22 34.40	0.2		N	18s	2.08um					Z 21s	0.79um		4.9Msz							
ATN	55.06	42 P	22 36.00	0.6		E	17s	2.40um						e	24 29.20	34kmX							
ORX	55.10	31 P	22 34.81	-0.9				i	23 25.00	28kmX				eS	33 33.00								
PII	55.21	34 P	22 37.20	0.8				iPP	25 28.00					LR	45 00.00								
BOB	55.29	33 P	22 38.10	1.0				iS	31 44.00			SIO	71.16	308 eP	24 20.80	-1.4							
RDP	55.29	37 P	22 37.60	0.5				iSS	35 33.00			III	71.21	289 (P)	24 23.50	0.5							
RMP	55.31	37 P	22 37.90	0.7				LR	51 43.00			CRX	71.50	290 (P)	24 25.00	0.1							
DLE	55.40	16 eP	22 37.20	-0.4		SOP	60.97	33 eP	23 12.80	-3.9X		NUR	72.09	25 iP	24 27.00	-0.2							
BDI	55.47	34 Pc	22 38.10	-0.3		GRG	61.10	43 eP	23 17.00	-0.8			1.0s	46.00nm		5.5mb							
MME	55.61	34 Pc	22 39.40	-0.2		VKA	61.18	33 iPc	23 17.70	-0.5				e	34 52.00								
MNS	55.64	37 P	22 39.00	-0.6			1.3s	206.00nm		6.1mb				e	40 08.00								
FIR	55.66	35 eP	22 39.00	-0.6				i	23 22.40	15kmX		MEO	72.78	306 iPd	24 30.50	-1.4							
VAI	55.66	31 Pc	22 38.60	-1.0				e	25 30.00			SNA	73.29	171 iPd	24 37.50	3.4X							
RFI	55.80	38 P	22 41 40	0.7		SLR	61.27	120 eP	23 17 20	-2.2			0.9s	43.70nm		5.5mb							
	1.6s	460.30nm		6.3mb			0.7s	27.40nm		5.5mb		MSL	75.09	53 ePd	24 46.50	1.2							
SDI	55.93	38 Pc	22 41.50	-0.2		Z	22s	9.26um		5.9Msz				ePP	27 36.00								

18d 07h

			eS	34	25.00	
BHD	75.60	56	iPd	24	50.00	1.8
			ePP	27	40.00	
			eS	34	31.00	
SOD	76.49	19	iP	24	53.00	0.4
SLY	76.85	54	ePd	24	55.50	0.3
			ePP	27	48.00	
			eS	34	44.00	
TAB	77.86	51	eP	25	01.00	0.0
KEV	77.88	17	eP	24	55.00	-5.2X
KER	77.99	55	iPc	25	02.20	0.5
GLD	78.83	310	P	25	07.40	1.1
GOL	78.94	310	P	25	07.00	0.0
	1.3s	52.08nm			5.4mb	
ANMO	79.20	305	P	25	09.00	0.5
	1.2s	31.25nm			5.2mb	
FFC	79.47	326	iPd	25	08.30	-0.9
	1.2s	73.00nm			5.6mb	
KBS	80.67	7	eP	25	22.40	7.2X
DAU	83.51	310	P	25	31.60	0.5
IMW	83.55	314	P	25	31.00	-0.2
SES	84.21	320	ePd	25	34.00	-0.1
	1.4s	151.00nm			6.0mb	
LRM	84.77	316	iPd	25	37.80	0.5
			e	25	47.90	32kmX
EDM	85.87	323	iPd	25	42.00	-0.3
	1.4s	285.00nm			6.3mb	
GLA	86.01	303	eP	25	44.00	0.6
TPC	87.05	304	eP	25	49.00	0.5
BAR	87.56	302	eP	25	52.00	1.0
GSC	87.69	305	eP	25	52.00	0.4
PLM	87.72	303	eP	25	52.00	0.1
TNP	88 04	308	P	25	53.20	-0.2
	1.0s	25.00nm			5.5mb	
RVR	88.15	304	eP	25	54.00	0.3
MAIO	88.21	54	iPc+	25	55.50	1.4
	0.7s	19.69nm			5.5mb	
			eS	36	34.00	
CLC	88.34	306	eP	25	54.00	-0.7
SBB	88.52	304	eP	25	55.00	-0.6
MWC	88.72	304	eP	25	57.00	0.3
KVN	88.73	309	P	25	55.90	-0.8
ISA	89.05	305	eP	25	59.00	0.9
MBC	89.19	346	ePd	25	58.50	0.6
	1.0s	24.00nm			5.4mb	
PNT	89.71	319	eP	26	04.00	3.1X
	0.6s	4.00nm			4.8mb	
FRI	90.03	307	eP	26	01.80	-0.7
SYP	90.30	304	eP	25	53.00	-11.1X
BCH	90.37	305	P	26	04.00	-0.4
CMB	90.54	308	ePd	26	04.90	-0.1
PRI	90.82	306	eP	26	06.50	0.1
SPA	90.93	180	eP	26	07.80	1.5
	1.4s	58.82nm			5.7mb	
	Z 20s	0.50um			4.9Msz	
			i	26	16.60	27kmX
LLA	91.03	306	ePd	26	07.50	0.3
PRS	91.38	306	ePd	26	08.60	-0.2
MIN	91.41	310	ePd	26	08.00	-1.1
MHC	91.56	307	eP	26	10.00	0.2
PGC	92.27	319	eP	26	13.00	0.4
INK	94.49	339	ePc	26	22.00	-0.4
QUE	94.66	60	eP	26	24.00	-0.3
HYB	106.42	72	ePKP	31	27.00	-1.7
GTA	118.36	43	ePKP	31	49.40	-1.6
	Z 36s	1.10um			5.2MszX	
LZH	122.75	45	ePKP	32	02.00	2.5
	Z 32s	1.50um			5.4MszX	
	E 18s	1.30um				
			PP	33	32.50	
			eS	50	10.00	
CD2	125.09	50	ePKP	32	03.80	-0.2
HHC	125.10	36	ePKP	32	09.60	5.8X
CHG	125.23	66	ePKP	32	07.00	2.4
XAN	127.37	44	ePKP	32	07.60	-0.7
TIY	127.58	39	ePKP	32	10.40	1.7
	N 11s	0.50um				
BJI	128.28	34	ePKP	32	12.00	2.2
GYA	129.32	54	PKP	32	12.40	0.0
CN2	129.93	24	ePKP	32	20.00	7.2X
	Z 20s	1.00um			5.5Msz	
SNY	130.72	27	ePKP	32	20.40	6.0X
ADE	144.25	163	e(PKP)	32	38.20	-1.3
KKM	144.56	78	ePKP	32	38.50	-2.2
BAG	145.36	59	ePKP	32	41.50	-0.6
CAN	145.74	177	ePKP	32	43.30	1.2
CNB	145.76	178	ePKP	32	46.00	3.8X

TSM	146.68	81	ePKPd	32	44.00	-0.1
WB5	155.10	140	ePKP	33	03.30	6.9X
			e	33	24.50	

S.D. = 1.0 on 261 of 280 obs.

DEC 18, 1989 07h 59m 03.65± 1.47s
20.374 S ±27.8km 177.685 W ±16.6km
DEPTH = 507.5 ± 18.1 km
5.0mb (3 obs.)
FIJI ISLANDS REGION (181)

SGE	4.99	303	eP	00	34.10	2.2
			eS	02	51.70	
AFI	8.55	42	eP	01	05.00	-2.2
			e	02	39.00	
DZM	14.90	261	iPd	02	19.00	6.0X
BRS	27.85	250	iPd	04	12.30	-1.1
TOO	36.21	234	eP	05	25.00	0.8
WB5	44.89	262	eP	06	33.40	-0.7
FORR	49.58	246	iPc	07	10.00	0.5
	0.4s	40.00nm			5.2mb	
COOL	55.55	246	eP	07	51.30	-1.3
MBL	58.08	257	iPd	08	09.30	-0.7
KLB	58.37	245	eP	08	11.30	-0.6
NWAO	58.69	243	eP	08	14.00	0.0
BAL	59.38	246	eP	08	18.00	-0.7
MUN	59.65	244	eP	08	20.30	-0.1
NANU	61.71	255	eP	08	34.20	0.1
	0.4s	21.00nm			5.0mb	
SPA	69.75	180	iPd	09	24.50	0.8
	0.9s	21.82nm			4.7mb	
SES	91.60	36	eP	11	18.00	1.4
HFS	139.46	351	ePKP	17	26.00	-7.8X
	0.4s	1.50nm				
LIC	164.23	152	PKP	18	10.50	0.6
KIC	164.48	153	PKP	18	10.60	0.5
TIC	164.61	151	PKP	18	10.80	0.6

S.D. = 1.2 on 18 of 20 obs.

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* DEC 18, 1989 08h 17m 23.68± 1.10s
8.159 N ±12.0km 127.182 E ±19.6km
DEPTH = 33.0km (normal)
4.4Msz (1 obs.)
PHILIPPINE ISLANDS REGION (248)

DAV	1.92	236	eP	17	56.00	1.4
SSE	23.50	347	eP	22	33.00	1.5
	Z 20s	1.40um			4.4Msz	
	E 15s	0.50um				
			S	26	51.00	
KNA	23.81	176	eP	22	34.00	-0.6
WB5	28.75	166	eP	23	24.80	4.3X
CHTO	29.38	294	e(P)	23	24.10	-2.2
BJI	33.24	344	eP	24	00.00	0.1
SHL	37.79	302	iP	24	38.70	-0.3
BRS	43.17	146	iP	25	16.00	-7.2X
ADE	44.25	166	eP	25	32.00	0.1

S.D. = 1.6 on 7 of 9 obs.

DEC 18, 1989 09h 40m 03.88± 0.45s
7.971 N ± 6.4km 127.186 E ±10.5km
DEPTH = 33.0km (normal)
4.9mb (4 obs.) 4.5Msz (1 obs.)
PHILIPPINE ISLANDS REGION (248)

DAV	1.82	241	eP	40	36.00	2.6
	0.8s	1134.33nm				
TSM	9.80	248	eP	42	31.00	5.4X
MTN	21.05	169	iPd	44	46.70	-0.9
KNA	23.62	176	iPd	45	13.60	0.6
KLI	25.67	241	eP	45	33.00	0.4
WB5	28.56	166	eP	45	57.50	-1.6
QIS	30.87	157	eP	46	19.00	-0.6
BJI	33.42	345	eP	46	41.00	-0.6
CTA	33.61	146	iPd	46	44.80	1.2
SNY	33.87	355	eP	46	46.20	0.7
CN2	35.72	358	eP	47	02.00	0.6
MDJ	36.57	3	eP	47	10.00	1.5
SHL	37.89	302	iP	47	19.00	-1.1
COOL	39.06	188	eP	47	28.70	-0.9
BAL	39.65	194	eP	47	34.10	-0.4
	0.4s	10.00nm			4.9mb	
KLB	40.36	192	eP	47	40.00	-0.3
MUN	41.08	194	eP	47	46.10	-0.1
NWAO	41.76	193	iPd	47	52.10	0.3
	Z 20s	0.60um			4.5Msz	
RKG	42.91	192	eP	48	06.00	4.8X

	0.4s	20.00nm			5.2mb	
BRS	43.01	146	iPc	48	03.00	0.9
ADE	44.07	166	iPd	48	11.40	0.7
GBA	49.12	281	Pd	48	48.70	-2.0
	0.7s	4.90nm			4.6mb	
PRNI	87.91	300	eP	52	52.00	0.0
SUF	88.00	333	eP	52	51.40	-0.3
	0.6s	4.40nm			4.9mb	
MBH	88.09	300	e(P)	52	52.00	-0.8
CNCB	162.79	122	ePKP	00	08.00	2.9X
LPB	162.82	121	(PKP)	00	10.00	5.1X
ZOBO	162.92	120	PKP	00	08.00	2.8X

S.D. = 1.1 on 23 of 28 obs.

DEC 18, 1989 10h 26m 13.78± 0.38s
10.035 N ± 5.9km 126.413 E ± 7.3km
DEPTH = 24.7km (2 depth phases)
5.0mb (6 obs.) 4.5Msz (1 obs.)
PHILIPPINE ISLANDS REGION (248)

DAV	3.04	196	eP	27	07.00	5.6X
OCP	6.94	312	eP	27	58.00	1.5
BAG	8.51	319	eP	28	17.90	-0.8
TSM	10.09	236	ePd	28	47.50	7.2X
KKM	10.85	249	ePd	28	56.60	5.8X
QZH	16.59	334	eP	30	08.50	2.1
	Z 18s	0.70um				
GUMO	18.40	77	eP	30	30.00	0.9
PJG	18.40	77	eP	30	29.30	0.2
GUA	18.44	77	eP	30	30.00	0.5
SSE	21.51	348	P	31	02.70	-0.3
	1.0s	20.00nm			4.5mb	
	E 10s	0.20um				
			pP	31	11.20	31km
			i	31	45.00	
			S	35	01.00	
			sS	35	15.00	
NJ2	23.00	343	Pc	31	18.00	0.2
	Z 16s	0.30um			3.8MszX	
WHN	23.30	333	eP	31	24.00	3.3X
	Z 16s	0.59um			4.1MszX	
	E 16s	0.95um				
			sP	31	42.00	
LOE	25.05	290	eP	31	40.00	2.1
IPM	25.75	260	ePd	31	47.80	3.4X
	1.2s	68.70nm			5.2mb	
CHG	27.96	291	eP	32	06.00	1.3
CHTO	27.96	291	eP	32	05.20	0.5
			e	32	17.00	46kmX
PSI	28.26	257	ePc	32	11.00	3.7X
XAN	28.78	329	eP	32	09.40	-2.5
TIY	30.30	338	eP	32	24.00	-1.5
	Z 17s	0.84um			4.5MszX	
	E 12s	0.40um				
BJI	31.24	345	eP	32	32.50	-1.1
MBL	31.67	192	eP	32	37.00	-0.6
SNY	31.77	356	eP	32	43.60	5.4X
LZH	33.05	325	eP	32	48.00	-1.7
	Z 16s	0.60um			4.4MszX	
	E 13s	0.50um				
HHC	33.39	339	eP	32	51.20	-1.3
WARB	36.00	180	eP	33	15.00	0.1
	0.3s	6.00nm			5.0mb	
SHL	36.18	300	eP	33	20.50	3.7X
			eS	38	51.00	
MEKA	37.22	192	eP	33	25.00	-0.2
GTA	37.65	325	eP	33	27.60	-1.3
	Z 18s	0.70um			4.5Msz	
	E 15s	0.60um				
FORR	40.68	178	eP	33	53.80	-0.1
COOL	41.00	187	eP	33	56.30	-0.3
KLB	42.21	191	eP	34	06.20	-0.3
MUN	42.90	193	eP	34	12.00	-0.1
NWAO	43.61	191	iPc	34	18.00	0.1
	0.5s	13.00nm			5.0mb	
RKG	44.76	191	eP	34	32.50	5.3X
BRS	45.14	146	e(P)	34	24.00	-6.3X
			i	34	29.60	19km
ADE	46.24	166	eP	34	39.40	0.4
	0.8s	22.39nm			5.2mb	
WMO	47.49	322	eP	34	51.50	2.6
GBA	48.01	279	P	34	52.00	-1.2
KEV	83.90	340	eP	38	50.00	7.5X
INK	84.45	22	eP	38	45.00	-0.3
SUF	85.83	333	eP	38	52.90	0.6
MBC	85.91	13	eP	38	53.00	0.5
	1.0s	6.00nm			4.8mb	

```
ZOBO  164.55 115 ePKP   46 12.00  -6.0X
      S.D. = 1.2  on  31 of  43 obs.
-------------------------------------
%  DEC  18, 1989  11h 33m 40.76± 1.28s
   31.456 N ± 6.8km   35.624 E ±16.1km
   DEPTH =  10.0km  (geophysicist)
 DEAD SEA REGION                 (373)

MKRJ    0.10   9 P+     33 43.00  -0.5
MASJ    0.28  16 P+     33 46.70   0.0
OUTJ    0.37 115 P+     33 48.20  -0.1
SALJ    0.55   5 Pd     33 51.10  -1.0
BURJ    0.80  11 P+     33 57.80   1.5
HITJ    1.72 174 Pd     34 11.10   0.1
      S.D. = 1.1  on   6 of   6 obs.
-------------------------------------
%  DEC  18, 1989  11h 44m 14.11± 0.48s
   46.663 N ± 3.7km    0.194 W ± 5.1km
   DEPTH =  10.0km  (geophysicist)
 FRANCE                          (538)
      ML 3.0 (LDG).

MFF     0.07 151 Pg     44 16.10  -0.4
LSF     1.26 108 Pn     44 38.00   0.5
                 Pg     44 38.60
                 Sg     44 54.00
LPF     1.49 338 Pn     44 41.40   0.6
                 Sg     45 02.50
TCF     1.70 102 Pn     44 44.60   0.6
                 Pg     44 45.60
                 Sg     45 08.00
GRR     1.78 346 Pn     44 45.40   0.2
                 Pg     44 47.20
                 Sg     45 11.40
RJF     1.81 138 Pn     44 45.70   0.2
                 Pg     44 47.90
                 Sg     45 11.60
LFF     1.84 159 Pn     44 46.50   0.5
                 Pg     44 48.90
                 Sg     45 13.80
LDF     1.93   1 Pn     44 47.20  -0.1
                 Pg     44 50.10
                 Sn     45 10.80
                 Sg     45 15.20
MAF     1.96 102 Pn     44 48.10   0.4
                 Pg     44 50.70
                 Sg     45 15.00
BGF     2.10  92 Pn     44 50.40   0.7
                 Pg     44 52.90
                 Sg     45 19.00
FLN     2.11 355 Pn     44 49.50  -0.4
                 Pg     44 53.20
                 Sg     45 20.50
LPO     2.20 153 Pg     44 54.80   3.5X
                 Sg     45 24.20
CAF     2.35 137 Pn     44 53.40   0.0
                 Pg     44 57.70
                 Sg     45 28.20
AVF     2.44  86 Pn     44 54.40  -0.2
                 Pg     45 00.00
                 Sg     45 28.60
SSF     2.57  80 Pn     44 56.20  -0.3
                 Pg     45 01.70
                 Sg     45 32.40
SMF     2.78  89 Pn     44 59.10  -0.4
                 Pg     45 05.60
                 Sg     45 38.80
LOR     2.84  76 Pn     44 59.80  -0.6
                 Pg     45 07.10
                 Sg     45 41.00
LBF     2.88  82 Pn     45 00.30  -0.7
                 Pg     45 09.00
                 Sg     45 42.60
EPF     3.65 174 Pn     45 11.10  -0.8
                 Pg     45 22.80
      S.D. = 0.5  on  18 of  19 obs.
-------------------------------------
   DEC  18, 1989  12h 15m 40.62± 0.39s
   44.334 N ± 2.5km    6.765 E ± 3.7km
   DEPTH =  10.0km  (geophysicist)
 FRANCE                          (538)
      ML 2.2 (GEN), 2.1 (LDG).

FOUF    0.20   4 iPg    15 45.07   0.2
               e(Sg)  15 47.38
PZZ     0.30  54 P      15 47.23   0.4
               S      15 51.73

STV     0.41 102 P      15 48.96  -0.1
               S      15 54.61
ENR     0.48 103 P      15 50.19  -0.3
               S      15 56.75
RRL     0.59   1 P      15 51.93  -0.7
               S      16 00.14
SBF     0.67 134 Pg     15 54.00  -0.1
               Sg     16 03.10
FRF     0.78 186 Pg     15 55.00  -0.8
               Sg     16 05.80
ROB     0.79  92 P      15 55.96  -0.1
RSP     0.89  23 P      15 58.12   0.3
IMI     0.91 117 P      15 57.95  -0.2
               S      16 10.65
LRG     0.93 199 Pg     15 59.00   0.7
               Sg     16 10.60
LMR     1.02 191 Pg     16 00.10   0.3
               Sg     16 12.80
FIN     1.04  96 P      16 00.19  -0.2
LSD     1.16  14 P      16 02.40   0.0
LPG     1.16 360 Pg     16 02.40  -0.2
LPL     1.18 359 Pg     16 02.90   0.1
PCP     1.29  80 P      16 05.18   0.6
      S.D. = 0.4  on  17 of  17 obs.
-------------------------------------
*  DEC  18, 1989  13h 32m 09.57± 0.69s
   40.243 N ±10.9km   74.022 E ± 8.8km
   DEPTH =  33.0km  (normal)
   4.9mb (  4 obs.)
 KIRGHIZ-XINJIANG BORDER REGION  (320)
      Felt (IV) at Gulcha and Sufi-
      Kurgon, (III) at Osh and Uzgen,
      USSR.

KSH     1.70 117 Pgd    32 39.40   1.9
               Sg     33 02.00
WMO    10.78  66 P      34 43.20  -1.6
     Z  12s      0.90um          4.4Msz
               eS     36 40.00
QUE    11.57 212 eP     34 53.00  -2.7
               eS     37 06.50
NDI    11.83 166 eP     34 58.50  -0.4
       0.6s     18.67nm          5.4mb
               eS     37 00.00
MAIO   12.08 256 eP     35 01.00  -1.3
               eS     37 15.00
GTA    19.81  84 eP     36 37.70  -2.6
     Z  14s      0.40um
SHL    20.90 129 eP     36 50.50  -1.2
POO    21.64 180 eP     37 11.20  12.2X
HYB    23.08 169 eP     37 15.00   1.7
LZH    23.76  90 eP     37 21.00   1.1
     Z  15s      0.40um          4.0MszX
GBA    26.71 173 P      37 48.20   0.5
KOD    30.04 173 eP     38 19.10   1.0
NB2    42.91 321 P      40 07.40   1.0
       0.7s     4.50nm          4.3mb
BCAO   61.20 250 ePc    42 23.70   0.1
       0.7s     9.00nm          5.0mb
               i      42 29.10
MBC    63.48   4 eP     42 38.00   0.0
       0.5s     4.00nm          4.8mb
KIC    77.35 268 (P)    44 04.40   1.5
LIC    77.65 268 (P)    44 05.60   1.0
      S.D. = 1.6  on  16 of  17 obs.
-------------------------------------
   DEC  18, 1989  13h 58m 14.21± 0.43s
   37.897 N ± 4.0km   29.247 E ± 5.1km
   DEPTH =  30.5 ±  4.8 km
   4.5mb (  1 obs.)
 TURKEY                          (366)
      MD 4.2 (ATH).

KHL     0.48  27 iPg    58 21.90  -2.5
YER     1 08 226 iPn     58 31.50  -1.8
BCK     1.15 112 ePn     58 34.00  -0.3
ELL     1.26 155 ePn     58 36 30   0.3
ALT     1.34  30 iPn     58 37.40   0.3
IZM     1.64 288 iPn     58 41.00  -0.4
DST     1.77 344 ePn     58 43.10  -0.2
KSL     1.79 171 ePn     58 45.80   2.3
SMG     1.92 265 ePn     58 44 80  -0.5
GPA     2.53  19 ePn     58 55 00   0.9
BNT     2.66 338 iPn     58 55.50  -0.4
YLV     2.67   2 ePn     58 56 50   0 4
EDC     2.67 337 iPn     58 56 70   0.6
PRK     2.69 301 ePn     58 56.00  -0.3

KAP     2.87 216 ePn     59 00.20   1.3
GBZT    2.89   3 ePn     59 07.00   7.9X
               iSg     59 50.00
HRT     2.94   6 ePn     59 00.40   0.5
EZN     2.99 311 ePn     58 59.00  -1.5
ISK     3.17 357 ePn     59 05.00   1.9
ITU     3.21 357 iPnc    59 13.00   9.3X
               iSg     59 56.00
PPCY    3.91 139 eP      59 15.00   1.4
NPS     3.93 229 ePn     59 14.90   0.9
DMK     4.08 344 ePn     59 17.40   1.3
RDO     4.33 320 ePn     59 19.20  -0.4
CSS     4.41 130 eP      59 20.70   0.0
KDZ     4.77 323 eP      59 05.00 -20.8X
KAS     4.92  44 ePn     59 46.00  18.0X
DIM     5.03 327 eP      59 32.00   2.4
RZN     5.15 319 eP      59 30.00  -1.4
KK8     6.18 312 eP      59 45.00  -0.8
VTS     6.58 317 eP      59 33.00 -18.5X
HRI     7.02 129 iPc     59 56.50  -1.1
SHMJ    7.41 132 P+      00 03.90   0.8
BURJ    7.79 134 P       00 08.50   0.1
SALJ    7.90 136 Pd      00 07.40  -2.5
DSI     8.08 140 iP      00 11.50  -0.8
               eS     01 40.00
VRI     8.19 348 ePc     00 14.00   0.2
MBH     9.36 148 e(P)    00 25.00  -5.0X
BCAO   34.71 199 ePc     05 04.40   0.8
       0.6s     4.00nm          4.5mb
      S.D. = 1.3  on  33 of  39 obs.
-------------------------------------
%  DEC  18, 1989  14h 00m 10.16± 0.87s
   37.897 N ± 7.5km   29.235 E ±10.1km
   DEPTH =  10.0km  (geophysicist)
 TURKEY                          (366)

KHL     0.48  28 iPg    00 18.90  -1.1
YER     1.07 225 iPn     00 28.50  -1.9
ELL     1.27 155 ePn     00 35.00   1.2
ALT     1.34  30 ePn     00 34.60  -0.4
IZM     1.63 288 ePn     00 40.00   0.9
GPA     2.53  19 ePn     00 52.00   0.0
BNT     2.66 338 ePn     00 55.00   1.2
      S.D. = 1.5  on   7 of   7 obs.
-------------------------------------
   DEC  18, 1989  14h 03m 15.19± 0.41s
   37.921 N ± 3.5km   29.167 E ± 4.5km
   DEPTH =  19.2 ±  4.7 km
   4.7mb (  1 obs.)
 TURKEY                          (366)
      MD 4.0 (ATH).

KHL     0.49  35 iPg    03 23.60  -1.5
YER     1.05 222 ePn     03 33.50  -1.2
ELL     1.31 153 ePn     03 38.60   0.0
ALT     1.35  33 iPn     03 39.30   0.1
IZM     1.58 288 iPn     03 42.50   0.2
DST     1.73 346 iPn     03 44.20  -0.4
KSL     1.83 169 ePn     03 47.60   1.7
SMG     1.86 264 ePn     03 46.40   0.1
GPA     2.53  20 ePn     03 56.00   0.0
BNT     2.62 339 ePn     03 57.50   0.2
EDC     2.63 338 iPn     03 57.80   0.4
PRK     2.63 301 ePn     03 57.90   0.5
YLV     2.65   3 iPn     03 58.50   0.8
KAP     2.86 215 ePn     04 02.00   1.4
GBZT    2.87   4 ePn     04 09.00   8.2X
               iSg     04 51.00
GBZT    2.87   4 ePn     04 10.00   9.2X
EZN     2.92 311 iPn     04 00.60  -0.9
HRT     2.92   7 ePn     04 03.40   1.8
ISK     3.14 359 ePn     04 09.00   4.4X
ITU     3.18 358 ePn     04 14.00   8.8X
               iSg     05 00.00
BBTK    3.40  55 eP      04 10.00   1.6
               eS     05 12.00
NPS     3.90 228 ePn     04 17.00   1.5
PPCY    3.97 139 eP      04 16.00  -0.4
DMK     4.04 345 ePn     04 16.00  -1.4
RDO     4.27 320 ePn     04 21.00   0.3
CSS     4.47 130 eP      04 23.00  -0.6
KDZ     4.71 323 eP      04 27.00   0.0
KAS     4.95  44 eP      04 48.50  18.2X
RZN     5 09 319 eP      04 32.00  -0.5
MMB     5.57 313 eP      04 38.00  -1.1
PVL     6.04 332 iPc     04 45.00  -0.6
VTS     6.52 318 eP      04 57.00   4.3X
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18d 14h

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DSI      8.14 139 eP    05 13.50  -1.6
                eS     06 44.00
VRI      8.15 348 ePc   05 16.50   1.2
PRNI     8.97 146 eP    05 23.00  -3.7X
MBH      9.41 148 eP    05 29.00  -3.8X
BCAO    34.72 199 ePd   10 06.00  -0.1
        0.5s      5.00nm          4.7mb
     S.D. = 1.0  on  29 of  37 obs.
-----------------------------------------
   DEC 18, 1989  14h 24m 35.77± 0.43s
   10.236 N ± 5.2km  126.972 E ± 9.5km
   DEPTH =  31.4km  (  3 depth phases)
   5.1mb ( 11 obs.)
 PHILIPPINE ISLANDS REGION          (248)

DAV      3.42 204 eP    25 28.50   0.3
OCP      7.23 308 eP    26 22.00   0.0
BAG      8.74 315 eP    26 41.00  -2.2
MNI      8.99 194 ePd   26 48.00   1.5
KKM     11.43 249 ePc   27 36.00  15.9X
PCI     13.15 213 ePd   27 45.50   2.5
QIZ     18.72 300 eP    28 51.50  -2.8
SSE     21.44 346 P     29 24.20   0.7
        1.4s    724.00nm          5.9mb
                  i     30 36.00
                  S     33 32.00
                  sS    33 42.00
NJ2     22.97 342 Pc    29 40.00   1.3
MTN     23.30 170 eP    29 42.00   0.0
WHN     23.37 332 P     29 42.00  -0.6
                  sP    29 57.50
GYA     25.08 313 P     30 00.80   1.5
LOE     25.51 289 eP    30 03.00  -0.3
KNA     25.88 176 eP    30 05.00  -1.6
IPM     26.33 260 ePd   30 11.90   1.0
        0.8s     56.80nm          5.2mb
                  e     32 44.00
NST     26 69 285 eP    30 15.00   0.8
                  e     32 47.50
NNT     26.80 278 eP    30 14.80  -0.4
                  e     32 45.80
CHTO    28.41 291 eP    30 28.00  -1.8
XAN     28.90 328 iPc   30 34.50   0.4
WB5     30.80 166 eP    30 49.00  -2.1
BJI     31.19 344 eP    30 54.50   0.2
        2.0s     28.00nm          4.7mb
SNY     31.61 355 eP    30 57.40  -0.6
QIS     33.03 158 iPd   31 09.00  -1.6
        0.9s     65.00nm          5.5mb
                  e     31 17.00  28km
                  e     33 40.00
LZH     33.20 324 Pd    31 13.00   0.8
        2.0s    140.00nm          5.5mb
     Z  15s      0.30um          4.1MszX
                 sP     31 23.50
BTO     33 76 336 eP    31 15.10  -1.8
NANU    34.47 199 iPc   31 22.00  -1.0
        0.6s     32.00nm          5.4mb
WARB    36.20 181 iPc   31 37.10  -0.6
        0.4s      7.00nm          4.9mb
SHL     36.56 299 eP    31 39.30  -1.7
GTA     37.80 325 iPd   31 52.20   0.9
        1.4s      0.10nm          2.5mb X
FORR    40.86 179 eP    32 15.20  -1.3
        0.3s     16.00nm          5.2mb
MUN     43.22 193 eP    32 35.00  -0.8
NWAO    43.91 192 eP    32 42.00   0 6
BRS     45.00 147 eP    32 37.30 -13.0X
                  i     32 47.50  35km
RKG     45.07 192 eP    32 54.50   3.8X
ADE     46.31 167 iPc   33 01.00   0.4
HYB     47.45 284 iPd   33 09.50  -0.4
WMQ     47.68 322 P     33 12.00   0.6
GBA     48.52 279 P     33 18.00  -0.2
                  e     35 49.00
MAIO    65.88 305 eP    35 21.00   0.0
MSZ     66.00 149 P     35 21.20  -0.1
BHD     78.30 302 ePc   36 36.00   1.3
MSL     79.06 305 ePc   36 40.00   1.1
HRI     85.49 303 eP    37 14.00   1.6
MBC     85.59  13 eP    37 12.50   0.6
        0.6s      3.00nm          4.7mb
                  pP    37 22.80  32km
PRNI    86.59 300 eP    37 19.00   1.2
MBH     86.79 300 iPd   37 19.50   0.8
HFS     92.40 333 eP    37 43.40  -1.0
        0.4s      1.70nm          4.8mb

NB2     93.09 334 P     37 46.90  -0.8
        0.7s      2.50nm          4.8mb
KIC    129.16 287 PKP   43 44.00   0.5
TIC    129.34 287 PKP   43 44.10   0.2
LIC    129.48 287 PKP   43 44.50   0.4
ZOBO   164.13 114 PKP   44 41.00   2.4
     S.D. = 1.2  on  49 of  52 obs.
-----------------------------------------
?  DEC 18, 1989  14h 27m 10.10± 2.69s
   10.536 N ±18.5km  126.679 E ±51.1km
   DEPTH =  33.0km  (normal)
   4.8mb (  3 obs.)
 PHILIPPINE ISLANDS REGION          (248)

PCI     13.25 211 ePc   30 19.00   0.5
LZH     32.79 325 eP    33 44.50   1.8
        1.5s     66.00nm          5.3mb
     Z  13s      0.30um          4.2MszX
HYB     47.10 284 iPd   35 40.50  -0.7
GBA     48.19 279 Pd    35 48.60  -1.1
        0.6s     4.10nm          4.6mb
PRNI    86.19 300 iPc   39 51.00   1.1
MBH     86.39 299 eP    39 51.00   0.2
NB2     92.70 334 P     40 18.30  -1.7
        0.8s     2.70nm          4.7mb
     S.D. = 1.5  on   7 of   7 obs.
-----------------------------------------
*  DEC 18, 1989  14h 46m 23.51± 0.83s
   37.993 N ±10.4km   29.021 E ±10.5km
   DEPTH =  10.0km  (geophysicist)
 TURKEY                             (366)

KHL      0.52  50 iPg    46 33.40  -0.6
                 eSg    46 40.40
CIN      0.84 242 ePg    46 40.00   0.3
                 iSg    46 49.00
YER      1.04 215 iPn    46 42.50  -0.7
ALT      1.36  39 ePn    46 49.10   0.5
ELL      1.43 150 ePn    46 50.00   0.4
     S.D. = 0.8  on   5 of   5 obs.
-----------------------------------------
&  DEC 18, 1989  15h 22m 04.05s
   61.440 N          149.997 W
   DEPTH =  34.5km
 SOUTHERN ALASKA                    (  2)
      <AGS-P>.

PWA      0.22  15 iP     22 10.76  -0.2
PMS      0.29 133 iP     22 11.83   0.0
SUA      0.36 274 iP     22 12.57  -0.2
                 iS     22 19.89
PLRM     0.44  69 iP     22 12.92  -0.9
                 eS     22 20.41
PME      0.50  67 eP     22 13.82  -0.8
                 iS     22 21.89
GHO      0.61  57 iP     22 15.30  -1.0
                 iS     22 24.89
SKT      0.91 307 iP     22 19.38  -1.1
                 iS     22 31.86
NKA      0.92 221 eP     22 21.46   0.8
SLKM     0.94 187 eP     22 19.77  -1.2
                 eS     22 33.59
CGLM     0.98 263 eP     22 20.77  -0.8
CUT      0.98 353 iP     22 20.39  -1.0
                 eS     22 33.89
SPU      1.03 256 iP     22 21.31  -0.9
                 iS     22 35.24
NCG      1.04 269 eP     22 21.77  -0 7
                 eS     22 36.11
CRP      1.05 261 eP     22 22.37  -0.3
                 eS     22 36.49
CKL      1.16 259 iP     22 23.33  -0.8
                 eS     22 38.67
BGL      1.17 262 eP     22 23.64  -0.6
                 eS     22 39.89
SEW      1.37 168 eP     22 26.06  -1.0
                 eS     22 45.12
RDT      1.46 235 iP     22 27.75  -0.8
GLI      1.52 111 iP     22 28.24  -1.0
                 eS     22 47.78
NNL      1.54 205 eP     22 29.96   0.4
                 eS     22 49.89
HUR      1.55   6 eP     22 29.54  -0.2
                 eS     22 49.31
NCA      1.61  68 eP     22 30.17  -0.5
RED      1.70 234 eP     22 31.28  -0.6
                 eS     22 53 65

VZW      1.71 101 eP     22 31.28  -0.7
VLZ      1.80  98 eP     22 32.19  -1.0
FID      1.84 111 eP     22 32.45  -1.5
MTU      1.86 141 eP     22 34.60   0.5
TOA      1.94  68 eP     22 35.45   0.2
KLU      1.96  87 eP     22 34.28  -1.3
                 eS     22 59.16
CNPM     2.02 198 eP     22 35.04  -1.4
                 eS     23 01.08
RND      2.04  15 eP     22 36.06  -0.8
KTH      2.16 349 eP     22 37.98  -0.6
                 eS     23 04.91
MCK      2.35  12 eP     22 40.71  -0.5
PAX      2.62  52 eP     22 44.87  -0.1
PDB      2.65 233 eP     22 43.99  -1.3
GLB      2.97  87 eP     22 50.63   0.7
DDM      3.03  37 eP     22 52.50   1.7
CDD      3.11 217 eP     22 50.51  -1.4
WRH      3.17  15 eP     22 51.24  -1.4
HDA      3.29  24 eP     22 53.87  -0.6
CCB      3.37  16 eP     22 54.22  -1.4
RDS      3.50  13 eP     22 56.22  -1.2
TGL      3.55  98 eP     23 00.37   2.2
FBA      3.61  15 eP     22 57.78  -1.2
BALM     3.72  93 eP     23 01.16   0.5
GLM      3.75  17 eP     22 59.15  -1.9
        46 obs. associated
-----------------------------------------
*  DEC 18, 1989  16h 12m 46.06± 0.50s
    7.686 N ± 7.2km  126.969 E ±11.8km
    DEPTH =  33.9km  (  3 depth phases)
    4.7mb (  5 obs.)  4.2Msz (  1 obs.)
 MINDANAO, PHILIPPINE ISLANDS       (259)

DAV      1.51 247 eP     13 16.00   4.9X
        0.8s  1641.79nm
MNI      6.55 199 eP     14 25.50   2.8
OCP      9.01 321 eP     15 12.00  15.2X
BAG     10.68 325 eP     15 28.50   8.4X
PCI     11.11 220 ePd    15 33.00   7.3X
                 eS     16 16.50
PJG     18.54  70 eP     16 44.70 -17.4X
QIZ     20.09 306 eP     17 17.50  -2.3
     N  15s      1.20um
     E  15s      1.10um
MTN     20.81 169 eP     17 26.00  -1.3
KNA     23.35 176 iPc    17 53.00   0.5
SSE     23.91 348 eP     18 04.00   6.2X
     Z  20s      0.90um          4.2Msz
     E  10s      0.50um
                  S     22 16.00
                  sS    22 36.00
KLI     25.34 241 eP     18 09.50  -2.2
                  e     37 11.00
                  e     37 40.00
LOE     26.43 294 eP     18 22.00   0.2
GYA     26.85 316 P      18 21.20  -4.5X
NNT     27.24 283 eP     18 37.00   7.8X
NST     27.43 289 eP     18 32.50   1.6
WB5     28.34 165 eP     18 36.70  -2.5
CHG     29.39 295 eP     18 49.00   0.4
QIS     30.69 156 iPc    18 58.90  -1.3
XAN     31.07 330 P      19 01.20  -2.2
CTA     33.50 146 eP     19 26.00   1.3
BJI     33.63 345 eP     19 32.00   6.4X
CN2     36.00 358 eP     19 45.00  -0.8
                 pP     19 53.00  27km
MDJ     36.86   3 eP     19 54.50   1.5
SHL     37.85 302 eP     20 01.00  -0.9
FORR    38.33 178 eP     20 05.10  -0.4
        0.4s     26.00nm          5 4mb
COOL    38.75 188 eP     20 09.00  -0.1
BAL     39.33 194 eP     20 14.20   0.3
GTA     39.89 327 eP     20 18.80   0.1
KLB     40.04 192 eP     20 20.20   0.5
MUN     40.76 194 eP     20 26.20   0.5
NWAO    41.44 192 eP     20 32.00   0.8
RKG     42.59 192 eP     20 46.20   5.6X
BRS     42.90 145 iPd    20 43.00  -0.3
        0.8s      5.50nm          4.3mb
                  i     20 55.00  43km
ADE     43.85 166 e(P)   20 49.00  -1.9
BWA     46.54 155 eP     21 13.30   0.9
HYB     48.12 286 eP     21 26.00   0.9
GBA     48.97 281 Pd     21 31.50  -0.1
        0.7s      3.10nm          4.4mb
WMQ     49.68 323 P      21 37.80   1.0
```

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      Z  16s      0.70um                4.8MszX
SOD     86.92 338 eP      25 29.00    0.4
                  e       25 39.00   31km
MBH     88.04 300 eP      25 35.00    0.4
MBC     88.07  13 eP      25 36.00    2.1
        0.6s      2.00nm                4.6mb
SUF     88.15 333 eP      25 34.60    0.1
        0.7s      7.60nm                5.1mb
NUR     89.38 331 eP      25 36.00   -4.4X
      S.D. = 1.3  on  32 of  43 obs.
-------------------------------------------
*  DEC  18, 1989  16h 31m 47.91± 0.48s
   7.826 N ± 6.8km  127.232 E ±11.1km
   DEPTH =  39.1km  (  2 depth phases)
   4.3mb (  2 obs.)  4.0Msz (  1 obs.)
 PHILIPPINE ISLANDS REGION          (248)

DAV      1.80 246 eP      32 16.00   -1.0
         1.3s  4753.85nm
MNI      6.77 201 eP      33 28.50    1.0
QIZ     20.23 305 eP      36 24.40    1.8
                  eS      40 02.00
MTN     20.90 169 eP      36 29.00   -0.5
KNA     23.47 176 eP      36 55.60    0.6
SSE     23.83 347 eP      37 16.00   17.6X
      Z  20s      0.50um                4.0Msz
                  S       41 14.00
LOE     26.61 293 eP      37 27.00    2.2
NST     27.63 289 eP      37 34.00   -0.1
WB5     28.41 166 eP      37 42.00    0.9
OIS     30.72 157 iPc     38 01.20   -0.5
XAN     31.08 330 eP      38 00.50   -4.3X
SNY     34.02 355 eP      38 27.40   -2.8
LZH     35.32 326 eP      38 40.00   -1.7
      Z  17s      0.40um                4.2MszX
MDJ     36.71   3 eP      38 51.00   -2.1
SHL     38.00 302 iP      39 01.00   -3.5X
                  eS      44 50.00
FORR    38.46 179 eP      39 07.50   -0.4
COOL    38.93 188 eP      39 11.00   -0.9
BAL     39.52 194 eP      39 16.20   -0.6
KLB     40.23 193 eP      39 22.00   -0.6
MUN     40.96 194 eP      39 28.40   -0.2
NWAO    41.63 193 eP      39 34.00   -0.1
RKG     42.78 193 eP      39 48.30    4.8X
BRS     42.86 146 iPd     39 44.80    0.5
        1.0s      3.00nm                4.0mb
                  e       39 56.00   40km
ADE     43.92 166 e(P)    39 52.40   -0.4
SVW     76.98  29 ePc     43 40.40    2.3
TTA     77.05  27 eP      43 40.10    1.6
BRW     78.16  19 eP      43 44.80    0.4
                  e       43 56.50   39km
INK     86.19  22 eP      44 25.00   -1.2
MBC     87.87  13 eP      44 36.00    1.8
        1.0s      4.00nm                4.6mb
      S.D. = 1.4  on  25 of  29 obs.
-------------------------------------------
*  DEC  18, 1989  16h 41m 55.77± 2.79s
   34.338 S ±13.3km   71.881 W ±18.6km
   DEPTH =  10.0km  (geophysicist)
 NEAR COAST OF CENTRAL CHILE        (135)

LCCH     0.90  17 iPc     42 13.00    0.0
                  iS      42 29.70
TACH     1.04  49 iP      42 15.00   -0.4
CHCH     1.10  69 iP      42 16.80    0.4
                  iS      42 34.40
PCH      1.34  58 iPc     42 20.60    0.0
                  iS      42 42.00
SAN      1.34  49 iPc     42 20.80    0.3
                  iS      42 42.20
ROCH     1.54  28 iP      42 23.50   -0.1
PEL      1.55  40 iPd     42 24.10    0.6
                  iS      42 47.00
FCH      1.66  53 iPc     42 24.60   -0.8
                  iS      42 51.50
JACH     1.97  33 iPd     42 29.60   -0.1
RFA      2.85 100 ePd     42 42.10   -0.1
MRA      5.51  71 e(P)    43 20.00    0.2
      S.D. = 0.4  on  11 of  11 obs.
-------------------------------------------
&  DEC  18, 1989  17h 07m 30.80s
   36.687 N          121.358 W
   DEPTH =   6.0km
 CENTRAL CALIFORNIA                 ( 39)
      <BRK>. ML 3.7 (BRK).

      Mo=1.4*10**15 Nm (BRK).

SAO      0.10 318 iPc     07 33.00   -0.2
LLA      0.34 102 iPc     07 37.80    0.1
PRS      0.35 182 iPc     07 37.90   -0.1
GCC      0.62 304 iPc     07 42.30   -0.8
ARN      0.68 348 iPd     07 44.20   -0.1
MHC      0.69 341 iPd     07 44.60   -0.1
PRI      0.78 134 iPd     07 45.80   -0.6
                  iS      07 57.50
PHAM     1.15 137 eP      07 51.50   -1.2
PCC      1.15 315 ePc     07 50.90   -1.8
PKEM     1.19 121 eP      07 53.50    0.2
FRI      1.36  77 ePc     07 54.50   -1.7
                  i       07 54.90
BKS      1.38 330 iPd     07 54.60   -1.9
                  iS      08 18.30
BRK      1.39 329 eP      07 54.30   -2.3
                  iSg     08 19.00
ZSP      1.45 331 ePd     07 55.60   -1.9
CMB      1.55  30 iPd     07 57.90   -1.2
                  iS      08 17.50
BCH      1.82 145 eP      08 00.60   -2.4
BLP      2.26 160 eP      08 06.90   -2.4
ABL      2.53 136 eP      08 10.80   -2.4
ORV      2.87 358 ePc     08 17.20   -0.7
KVN      3.49  47 eP      08 25.50   -1.5
TNP      3.58  66 eP      08 27.00   -1.2
PEC      4.42 128 eP      08 38.50   -1.5
PLM      4.97 131 eP      08 45.50   -2.4
       23 obs. associated
-------------------------------------------
   DEC  18, 1989  17h 09m 35.34± 0.17s
   15.369 S ± 4.3km  167.419 E ± 4.8km
   DEPTH = 141.5km  (  3 depth phases)
   5.3mb ( 16 obs.)
 VANUATU ISLANDS                    (186)
      CENTROID, MOMENT TENSOR       (HRV)
      Doto Used: GDSN
      L.P.B.:  7S, 14C
      Centroid Location:
      Origin Time        17:09:38.7 2.8
      Lat 15.15S 0.18 Lon 167.38E 0.25
      Dep 138.4 5.5 Half-durotion  1.5
      Moment Tensor;   Scale 10**16 Nm
        Mrr= 4.06 0.58  Mtt= 0.50 0.98
        Mff=-4.56 0.90  Mrt=-1.45 0.73
        Mrf=-1.23 0.71  Mtf=-1.38 0.93
       Principal Axes:
        T  Val=  4.63  Plg=72  Azm=165
        N        0.55      15       19
        P       -5.18      10      286
      Best Double Couple:Mo=4.9*10**16
       NP1:Strike=358 Dip=38 Slip=  64
       NP2:       209     57      109

PVC      2.51 160 iPc     10 17.30    0.7
                  iS      10 50.50
DZM      6.73 188 iPd     11 13.00    0.0
                  iS      12 30.30
HNR      9.38 308 eP      11 17.00  -31.5X
                  eS      13 29.00
SGE     10.32 104 eP      12 02.30    1.4
SVA     10.92 106 ePc     12 18.20    9.4X
BRS     18.12 226 iPc     13 40.80    1.5
        0.6s     11.00nm                4.3mb
                  ipP     13 50.20
                  isP     14 04.20
RMQ     20.62 235 eP      14 07.00    1.8
PMG     20.65 284 eP      14 06.00    0.4
KRP     23.59 164 P       14 35.90    1.8
BWA     25.55 219 eP      14 51.80   -0.9
CNB     25.62 216 eP      14 54.00    0.6
CAN     25.83 216 eP      14 55.80    0.5
MNG     26.12 166 P       14 56.80   -1.0
        0.4s     16.00nm                5.0mb
PGZ     26.31 165 P       14 58.50   -1.0
TCW     26.43 168 P       15 00.30   -0.3
CAW     26.49 167 P       15 00.40   -0.8
MRW     26.53 168 P       15 00.70   -0.8
WDW     26.63 167 P       15 02.10   -0.3
MTW     26.64 166 P       15 01.40   -1.1
BLW     26.83 166 P       15 02.70   -1.6
MOW     26.83 167 P       15 03.20   -1.1
MSZ     29.21 179 P       15 25.90    0.3
TOO     29.43 217 eP      15 28.00    0.3
WB5     31.79 257 eP      15 47.20   -1.3

ADE     32.31 228 eP      15 53.60    0.6
        0.7s     24.66nm                5.1mb
FORR    39.08 240 eP      16 51.00    0.8
        0.4s     39.00nm                5.5mb
PAE     41.23  99 eP      17 08.00    0.0
        1.2s     90.00nm                5.3mb
TVO     41.53 100 eP      17 11.00    0.4
        1.2s    160.00nm                5.6mb
PMO     43.07  96 iP      17 23.80    0.8
        1.2s    210.00nm                5.7mb
VAH     43.30  96 iP      17 25.20    0.3
        1.2s    130.00nm                5.5mb
TPT     43.33  96 iP      17 25.80    0.6
        1.2s    205.00nm                5.7mb
RUV     43.54  96 iP      17 27.20    0.4
        1.2s    205.00nm                5.7mb
COOL    44.94 242 iPd     17 37.80   -0.2
        0.3s      5.00nm                4.7mb
MBL     45.42 255 iPd     17 42.30    0.5
KLB     47.92 241 eP      18 00.60   -0.7
NWAO    48.55 240 iPd     18 06.00   -0.1
        1.0s     54.00nm                5.3mb
MUN     49.28 241 eP      18 11.40   -0.3
KKM     55.00 289 ePd     18 54.20   -0.5
WHN     68.48 312 Pd      20 23.50   -0.8
MDJ     68.91 332 eP      20 26.00   -0.7
CN2     70.26 329 Pc      20 33.80   -1.2
GYA     72.19 305 P       20 47.00   -0.1
BJI     72.85 321 eP      20 50.00   -0.4
        1.0s     15.00nm                4.7mb
TIY     73.83 317 iPd     20 56.40    0.2
XAN     74.23 313 P       20 58.00   -0.6
SPA     74.73 180 iPc     21 01.00   -0.1
        0.9s     45.00nm                5.2mb
                  i       21 14.70   48kmX
KMI     74.76 302 eP      21 02.50    0.4
                  ed      21 03.00
                  pP      21 33.50  123kmX
                  sP      21 46.50
CHTO    75.47 294 eP      21 06.00    0.0
                  pP      21 36.00  118kmX
HHC     76.16 320 Pd      21 10.00    0.4
CD2     76.51 308 eP      21 11.30   -0.3
BTO     77.00 319 eP      21 14.50    0.3
LZH     78.85 312 Pc      21 24.50   -0.1
        1.5s     83.00nm                5.3mb
MAW     81.35 202 eP      21 37.00    0.0
GTA     83.21 314 iPc     21 47.50    0.2
        1.2s      0.05nm               2.2mb X
SHL     84.00 298 iP      21 52.00    0.4
SBB     86.57  53 eP      22 03.00   -1.0
                  e       22 35.00  124kmX
PLM     86.84  54 eP      22 04.90   -0.6
                  e       22 41.20  143km
FBA     86.91  18 eP      22 03.20   -1.7
CLC     87.15  52 eP      22 06.00   -0.8
                  e       22 42.00  141km
KVN     87.95  49 eP      22 09.70   -1.0
                  e       22 45.70  141km
WMQ     93.28 314 P       22 35.00   -0.1
GBA     93.51 283 Pc      22 36.10   -0.5
        1.0s      7.90nm                4.9mb
BUL    126.29 230 iPKPc   28 37.20   13.4X
        0.9s     12.60nm
NB2    131.28 345 PKP     28 30.90   -1.0
        0.9s      4.60nm
BRG    138.65 335 iPKP    28 47.80    1.8
CLL    138.69 336 iPKP    28 47.80    1.7
        1.3s     15.00nm
SRO    138.81 328 ePKP    28 46.40    0.0
ZST    139.16 330 ePKP    28 47.40    0.4
KHC    140.12 333 ePKP    28 49.00    0.2
CDF    143.22 338 ePKP    28 50.60   -3.7X
CTI    143.29 331 PKP     28 51.00   -3.6X
BSF    143.88 338 ePKP    28 52.60   -2.9X
HAU    143.90 338 ePKP    28 52.70   -2.7
AOI    144.12 327 ePKP    28 54.30   -1.6
SAL    144.14 332 PKP     28 54.00   -1.8
ARV    144.50 327 PKP     28 55.50   -1.1
CIO    144.61 327 ePKP    28 55.30   -1.6
ALP    144.66 326 ePKP    28 54.12   -2.9
VAI    144.71 334 PKP     28 55.20   -1.6
PGD    144.86 329 PKP     28 57.00   -0.4
CRE    144.92 328 PKP     28 57.50    0.1
SGO    145.11 321 PKP     28 57.00   -0.6
FIR    145.16 329 e(PKP)  28 57.00   -0.6
ORX    145.23 334 PKP     28 56.95   -0.9
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18d 17h

SDI	145.25	324	PKP	28	57.00	-0.9
FLN	145.25	346	ePKP	28	56.90	-0.7
BDI	145 27	330	PKP	28	56.00	-1.9
BOB	145.27	332	PKP	28	58.50	0.6
LDF	145.32	345	ePKP	28	57.20	-0.6
LOR	145.38	340	ePKP	28	58.10	0.1
MNS	145.41	326	PKP	28	58.00	-0.2
LBF	145.59	340	ePKP	28	58.60	0.2
SSF	145.68	340	ePKP	28	59.20	0.8
GRR	145 69	346	ePKP	28	58.80	0.4
LSD	145 71	335	PKP	28	59.62	0.7
LPG	145.84	336	ePKP	28	59.60	0.4
PCP	145.85	333	PKP	28	59.00	0.1
RSP	145.92	335	PKP	28	59.41	0.3
SMF	145.94	340	ePKP	28	59.30	0.4
AVF	145.97	340	ePKP	28	59.60	0.7
LPF	146.06	346	ePKP	29	00.10	1.1
BNI	146.24	335	PKP	29	00.00	0.4
FIN	146.26	333	PKP	28	59.82	0.3
RRL	146.30	335	PKP	29	01.36	1.5
BGF	146.34	341	ePKP	29	00.60	1.0
ROB	146.34	333	PKP	28	59.82	0.1
PZZ	146.51	334	PKP	29	00.85	0.8
ENR	146.59	333	PKP	28	59.00	-1.1
IMI	146.64	333	PKP	29	01.26	1.1
MAF	146.73	341	ePKP	29	02.00	1.8
TCF	146.78	341	ePKP	29	02.20	1.9
SBF	146.88	333	ePKP	29	02.00	1.4
LSF	147.02	342	ePKP	29	02.60	1.9
MFF	147.17	344	ePKP	29	03.10	2.2
FRF	147.46	334	ePKP	29	03.60	2.2
BCAO	147.53	254	iPKPd	29	01.90	-0.5
	1 0s		140.00nm			
			i	29	05.20	
			i	29	35.40	
LRG	147.67	334	ePKP	29	04.10	2.4
LMR	147.70	333	ePKP	29	04.40	2.6
RJF	147 88	341	ePKP	29	05.10	3.1X
CAF	148.04	340	ePKP	29	05.60	3.2X
LFF	148 44	342	ePKP	29	06.60	3.7X
LPO	148.54	341	ePKP	29	06.80	3.7X
KIC	168.20	222	PKPc	29	25.84	-0.8
	1.2s		21.00nm			
LIC	168.27	220	PKPc	29	26.10	-0.6
	1.1s		12.50nm			
TIC	168.59	221	PKP	29	26.22	-0.7
	S.D. = 1.1		on 115 of 125 obs.			

% DEC 18, 1989 17h 39m 30.46± 1.10s
39.639 N ± 9.2km 28.024 E ±10.1km
DEPTH = 10.0km (geophysicist)
TURKEY (366)

DST	0.47	94	iPg	39	38.70	-1.3
			eSg	39	46.20	
BNT	0.72	354	ePn	39	44.40	-0.2
IZM	1.37	206	ePn	39	55.40	-0.3
YLV	1 39	48	ePn	39	56.40	0.5
ALT	1.72	109	ePn	40	02.00	1.3
	S.D = 1.4		on 5 of 5 obs.			

DEC 18, 1989 18h 44m 33.93± 0.69s
35.674 N ± 8.8km 27.361 E ± 7.2km
DEPTH = 10.0km (geophysicist)
DODECANESE ISLANDS (369)

KAP	0.20	231	ePg	44	38.00	-0.2
YER	1 64	27	iPn	45	03.30	0.4
KSL	1 86	76	ePn	45	05.80	-0.3
CIN	2 01	17	eP	45	08.00	-0.2
SMG	2.07	348	ePn	45	09.20	0.0
ELL	2.32	62	iPn	45	13.60	0.7
VAM	2.59	265	ePn	45	16.90	0.3
KHL	3.16	33	ePn	45	24.00	-0.7
	S.D. = 0.5		on 8 of 8 obs.			

% DEC 18, 1989 18h 59m 12.34± 1.02s
40.533 N ± 6.9km 29.423 E ± 9.8km
DEPTH = 10.0km (geophysicist)
TURKEY (366)

YLV	0.05	311	iPg	59	13.90	-0.7
GBZT	0.26	4	ePg	59	01.70	-16.1X
			iSg	59	21.80	
GBZT	0.26	4	ePg	59	18.20	0.4
			iSg	59	23.00	
DST	1.11	214	iPg	59	33.90	0.7
			eSg	59	48.20	
BNT	1.16	262	iPn	59	34.90	0.9
EDC	1.20	262	ePg	59	33.80	-1.0
ALT	1.57	160	iPn	59	39 90	-0.5
	S.D. = 1.0		on 6 of 7 obs.			

& DEC 18, 1989 19h 30m 26.79s
59.000 N 153.860 W
DEPTH = 1.1km
SOUTHERN ALASKA (2)
<AGS-P>.

CDD	0.13	122	iP	30	29.62	0.2
AUE	0.44	35	iP	30	35.95	0.4
			eS	30	43.57	
AUL	0.44	30	eP	30	35.90	0.3
			eS	30	43.79	
PDB	0.81	348	iP	30	42.63	-0.3
			eS	30	53.39	
XLV	1.19	67	eP	30	47.50	-2.3
CNPM	1.45	68	eP	30	51.78	-2.4
			eS	31	10.67	
RED	1.53	21	eP	30	54.45	-0.9
NNL	1.67	50	eP	30	56.77	-0.6
RDT	1.74	24	eP	30	57.22	-1.2
CKL	2.33	18	eP	31	06.53	-0.5
SPU	2.37	22	eP	31	06.97	-0.5
SLKM	2.38	49	eP	31	06.96	-0.7
BGL	2.39	17	eP	31	06.93	-0.9
	13 obs. associated					

? DEC 18, 1989 20h 00m 24.47± 3.88s
44.679 N ±32.7km 7.504 E ±15.8km
DEPTH = 33.0km (normal)
NORTHERN ITALY (545)
ML 2.3 (GEN).

PZZ	0.34	239	P	00	32.88	0.0
			S	00	39.75	
STV	0.45	197	P	00	34.31	-0.2
			S	00	42.41	
ENR	0.46	188	P	00	34.72	0.2
			S	00	42.93	
ROB	0.47	146	P	00	34.62	0.0
			S	00	42.72	
	S.D. = 0.3		on 4 of 4 obs.			

? DEC 18, 1989 20h 12m 04.17± 2.60s
17.260 N ± 7.5km 99.988 W ±30.8km
DEPTH = 10.0km (geophysicist)
GUERRERO, MEXICO (59)

ACX	0.41	162	iP	12	12.50	0.0
			iS	12	19.50	
III	1.22	24	iP	12	26.50	-0.4
			iS	12	46.00	
PPM	2.21	36	iP	12	42.50	0.5
			iS	13	13.00	
IISM	3.02	55	(P)	12	57.00	4.1X
OXX	3.13	93	eP	12	54.50	-0.1
	S.D. = 0.7		on 4 of 5 obs.			

? DEC 18, 1989 20h 58m 35.11± 2.01s
39.605 N ±16.9km 28.506 E ±15.9km
DEPTH = 10.0km (geophysicist)
TURKEY (366)

DST	0.09	90	iPg	58	36.80	-1.0
			eSg	58	38.20	
BNT	0.87	329	iPn	58	51.80	-0.1
YLV	1.17	34	iPn	58	57.30	0.3
ALT	1.36	113	ePn	59	01.00	0.8
	S.D. = 1.3		on 4 of 4 obs.			

DEC 18, 1989 21h 08m 22.89± 0.40s
39.255 N ± 3.8km 22.218 E ± 4.6km
DEPTH = 18.8 ± 4.1 km
GREECE (364)
ML 3.5 (THE), 3.4 (ATH).

AGG	0.25	159	eP	08	27.40	-1.3
NEO	0.78	86	ePn	08	38.00	0.3
LIT	0.87	14	eP	08	38.20	-1.0
			eS	08	50.20	
KZN	1.11	342	ePn	08	42 30	-0.9
PLG	1.46	40	ePn	08	48.30	-0.1
IGT	1.49	281	eP	08	49.50	0.8
			eS	09	13.60	
THE	1.49	22	eP	08	48.40	-0.3
VLS	1.67	230	ePn	08	52.60	1.2
GRG	1.71	5	eP	08	52.00	0.1
OUR	1.73	51	eP	08	53.10	0.8
ATH	1.74	137	ePn	08	53.40	1.1
KNT	1.97	15	eP	08	56.50	0.7
VAY	2.08	7	iPnc	08	57.60	0.3
ITM	2.08	186	ePn	08	59.00	1.6
SRS	2.14	29	eP	08	58.40	0.2
OHR	2.15	330	iPn	08	59.30	0.9
VLI	2.60	167	ePn	09	04.10	-0.6
MMB	2.60	26	iPc	09	05.00	0.2
KKB	2.69	14	iPc	09	06.00	0.0
SKO	2.78	348	iPn	09	08.00	0.7
			iSn	09	41.50	
			iSg	09	47.00	
			Lg	09	54.70	
RZN	3.09	37	iPc	09	12.00	0.2
RDO	3.17	52	ePn	09	12.50	-0.3
KDZ	3.42	45	eP	09	16.00	-0.3
PLD	3.42	33	eP	09	27.00	10.7X
VTS	3.42	12	iP	09	17.00	0.6
PGB	3.61	24	eP	09	19.00	-0.1
BRT	4.17	294	P	09	27.50	0.4
TDS	4.57	277	P	09	35.70	3.0X
PVL	4.60	30	iPd	09	31.00	-2.1
MEU	6.13	252	P	09	51.90	-2.9
			eSn	11	00.60	
BZS	6.37	356	eP	09	08.00	-50.1X
MLR	6.81	23	eP	10	06.50	2.0
SDI	6.86	294	P	10	05.00	0.0
			eSn	11	20.50	
VRI	7.40	25	ePc	10	13.00	0.5
	S.D. = 1.1		on 31 of 34 obs.			

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* DEC 18, 1989 21h 15m 49.69± 1.19s
18.296 N ±12.6km 98.353 W ±10.3km
DEPTH = 33.0km (normal)
CENTRAL MEXICO (523)

IIT	0.72	3	iP	16	04.00	0.3
PPM	0.81	341	iP	16	06.50	1.4
			iS	16	21.50	
III	1.06	274	eP	16	07.50	-1.0
IISM	1.15	53	eP	16	07.50	-2.0
			iS	16	23.50	
OXX	1.97	128	(P)	16	22.50	0.9
ACX	2.02	226	(P)	16	31.50	9.4X
LVVM	2.30	51	(P)	16	26.50	0.4
	S.D. = 1.7		on 6 of 7 obs.			

DEC 18, 1989 21h 48m 10.31± 0.73s
28.424 N ± 7.5km 33.333 E ± 7.6km
DEPTH = 10.0km (geophysicist)
4.4mb (3 obs.)
ARAB REPUBLIC OF EGYPT (553)
Felt (II) at Eilot, Israel.

MBH	1.91	45	iPc	48	45.60	2.5
AQBJ	1.99	49	Pd	49	44.10	59.8X
AQBJ	1.99	49	P	48	44.10	-0.2
KOT	1.99	319	ePn	48	44.00	-0.4
HLW	2.25	310	ePn	48	48.75	0.6
			ePb	48	52.50	
			ePg	48	56.50	
			eSn	49	20.00	
			eSb	49	24.50	
			eSg	49	29.50	
RMN	2.35	28	iPc	48	51.10	1.5
			eS	49	19.30	
PRNI	2.40	37	iP	48	51.70	1.4
			eS	49	20.10	
HITJ	2.56	59	P+	49	52.00	59.4X
HITJ	2.56	59	P	48	52.00	-0.6
NOH	2.67	32	iPc	48	55.20	1.1
			eS	49	26.10	
MKT	2.97	32	iPc	48	59.80	1.4
QUTJ	3.69	38	P	50	07.10	58.4X
QUTJ	3.69	38	P	49	07.10	-1.6
MKRJ	3.70	32	Pd	50	07 90	59.0X
MKRJ	3.70	32	P	49	07.90	-1.0
MASJ	3.89	32	Pd	50	10.40	58.9X
MASJ	3.89	32	P	49	10.40	-1.1
ZNT	4.07	21	iP	49	14.30	0.3
			eS	50	01.10	
SALJ	4.11	29	P+	50	13.70	59.1X

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SALJ     4.11  29 P      49 13.70  -0.9
ASW      4.35 185 iPc    49 19.00   1.1
                 eS     50 06.00
BURJ     4.36  29 P+     50 18.20  60.0X
BURJ     4.36  29 P      49 18.20   0.0
HLBJ     4.46  34 Pd     50 17.90  58.4X
HLBJ     4.46  34 P      49 17.90  -1.6
ATZ      4.69  20 iP     49 22.80   0.0
                 eS     50 15.40
SHMJ     4.77  25 P+     50 23.20  59.2X
SHMJ     4.77  25 P      49 23.20  -0.8
CSS      6.52 360 eP     49 47.50  -1.1
                 eSn    50 58.20
BCK      9.30 346 ePn    50 29.00   1.5
YER      9.67 335 ePn    50 28.00  -4.5X
KBA     24.30 325 e(P)   53 30.00   1.0
        1.1s     11.60nm          4.4mb
                 i      53 37.60
BCAO    27.70 213 ePc    53 59.30  -1.4
        0.8s      7.00nm          4.5mb
                 i      54 07.20
NB2     35.83 342 P      55 10.20  -1.5
        0.9s      3.60nm          4.2mb
     S.D. = 1.3  on  24 of  34 obs.
-----------------------------------------
&  DEC  18, 1989  22h 25m 05.52s
   54.246 N          162.908 W
   DEPTH =  43.8km
 ALASKA PENINSULA                 ( 12)
      <PAL>.

SNKA     0.24  19 ePd    25 13.18  -0.4
                 eS     25 18.76
DRRA     0.77  28 ePd    25 19.01  -1.1
PVV      1.30  29 eP     25 26.95  -0.6
                 eS     25 42.25
PN6      1.34  25 eP     25 29.66   1.5
SASA     1.78  51 eP     25 33.45  -0.8
                 eS     25 54.01
IVF      2.55  48 eP     25 44.00  -1.3
        6 obs. associated
-----------------------------------------
&  DEC  18, 1989  22h 33m 26.28s
   53.880 N          162.766 W
   DEPTH =  38.3km
 SOUTH OF ALASKA                  ( 17)
      <PAL>.

SNKA     0.00 359 ePd    33 37.61  -0.6
DRRA     1.08  15 ePd    33 43.44  -1.7
PVV      1.60  20 eP     33 52.30  -0.2
                 eS     34 10.05
PN6      1.65  17 eP     33 53.64   0.3
                 eS     34 10.79
BLHA     1.87  12 eP     33 56.79   0.3
                 S      34 18.34
SASA     1.97  41 eP     33 57.47  -0.4
                 eS     34 18.42
IVF      2.75  41 eP     34 08.13  -0.9
                 eS     34 37.94
        7 obs. associated
-----------------------------------------
?  DEC  18, 1989  22h 34m 10.90± 1.99s
   43.591 N ±36.8km  146.365 E ±22.6km
   DEPTH =  33.0km  (normal)
   4.7mb (  4 obs.)
 KURIL ISLANDS                    (221)

TTA     37.91  39 ePc    41 26.70   0.2
IMA     39.13  34 eP     41 37.00   0.3
KDC     39.83  47 eP     41 42.00  -0.4
PMR     41.15  41 eP     41 52.10  -1.1
        0.8s      6.80nm          4.4mb
FBA     41.56  36 ePc    41 57.20   0.7
TOA     42.50  40 ePc    42 05.20   0.9
PNT     60.91  48 eP     44 22.00  -0.6
        0.5s      6.00nm          5.0mb
SES     64.75  44 eP     44 48.00  -0.1
FFC     66.17  36 eP     44 56.00  -0.9
        0.6s     10.00nm          5.1mb
LRM     66.89  48 iPc    45 02.10   0.1
FRB     69.49  16 eP     45 11.00  -6.5X
NB2     69.54 339 P      45 18.00   0.0
        0.7s      2.20nm          4.3mb
BW06    70.44  49 P      45 23.60  -0.4
MSU     71.77  54 P      45 32.30   0.2
CLL     77.19 332 eP     46 18.00  15.3X

ANMO    77.56  53 P      46 06.40   1.1
     S.D. = 0.7  on  14 of  16 obs.
-----------------------------------------
?  DEC  18, 1989  23h 13m 19.04±13.50s
   45.469 N ±76.3km     5.593 E ±91.0km
   DEPTH =  10.0km  (geophysicist)
 FRANCE                           (538)
      ML 2.3 (LDG).

LPL      0.80  86 Pg     13 34.80   0.0
                 Sg     13 45.30
LPG      0.82  88 Pg     13 35.00  -0.1
FRF      2.05 158 Pn     13 52.90  -1.1
                 Pg     13 55.50
                 Sg     14 16.40
SBF      2.08 140 Pg     13 54.80   0.4
                 Sg     14 15.00
LRG      2.09 164 Pg     13 55.20   0.7
                 Sg     14 17.60
     S.D. = 1.0  on   5 of   5 obs.
-----------------------------------------
&  DEC  18, 1989  23h 15m 01.70s
   36.685 N          121.360 W
   DEPTH =   5.0km
 CENTRAL CALIFORNIA               ( 39)
      <BRK>. ML 2.5 (BRK).

SAO      0.11 319 iPc    15 03.90  -0.1
LLA      0.34 101 iPc    15 08.70   0.1
                 iS     15 14.00
PRS      0.35 181 iPc    15 08.80   0.0
GCC      0.62 304 e(P)   15 13.20  -0.8
ARN      0.68 348 iPd    15 15.10  -0.2
MHC      0.69 341 ePd    15 15.50  -0.1
PRI      0.78 134 ePd    15 16.80  -0.6
PCC      1.15 315 ePd    15 22.40  -1.3
FRI      1.36  77 e(P)   15 25.60  -1.6
BKS      1.38 330 iPc    15 28.30   0.7
                 i      15 48.70
BCH      1.82 145 eP     15 32.50  -1.5
KVN      3.50  47 e(P)   16 00.00   2.0
        12 obs. associated
-----------------------------------------
*  DEC  18, 1989  23h 48m 41.52± 1.55s
   38.112 N ±13.0km    15.889 E ±15.9km
   DEPTH =  10.0km  (geophysicist)
 SICILY                           (398)

ATN      0.34 278 Pc     48 48.40  -0.1
                 eSg    48 52.30
CZI      1.12  10 P      49 04.10   1.6
MEU      1.26 217 P      49 05.30   0.2
                 eSg    49 21.50
ROI      1.55  20 P      49 08.20  -1.0
TDS      1.58  13 P      49 11.20   1.5
CSI      1.69  11 P      49 09.30  -2.0
MGR      2.04 353 P      49 16.00  -0.3
     S.D. = 1.6  on   7 of   7 obs.
-----------------------------------------
?  DEC  19, 1989  00h 21m 29.25± 6.60s
   18.307 N ±50.2km    62.017 W ±15.6km
   DEPTH =  10.0km  (geophysicist)
 LEEWARD ISLANDS                  ( 92)
      ML 3.5 (FDF).

ANG      1.16 171 eP     21 51.35   0.4
                 eS     22 07.30
SKI      1.19 215 eP     21 51.51   0.1
                 eS     22 07.46
BPA      1.26 173 eP     21 52.45  -0.3
                 eS     22 08.86
SEG      1.96 165 eP     22 04.00   1.2
                 S      22 26.50
DEG      2.18 155 eP     22 06.80   0.6
PAG      2.29 172 eP     22 08.00   0.3
                 S      22 33.60
MGG      2.47 164 eP     22 08.50  -1.7
BBL      2.82 169 eP     22 14.50  -0.7
     S.D. = 1.0  on   8 of   8 obs.
-----------------------------------------
&  DEC  19, 1989  01h 12m 18.62s
   60.449 N          143.171 W
   DEPTH =  15.0km
 SOUTHERN ALASKA                  (  2)
      <AGS-P>.

WAX      0.16  89 iP     12 22.45  -0.4
                 iS     12 26.48
SNH      0.32 148 iP     12 24.78  -0.7
                 eS     12 30.26
TGL      0.35  29 eP     12 25.77  -0.3
                 eS     12 31.59
CYK      0.50 137 iP     12 28.03  -0.5
                 eS     12 36.49
BALM     0.72  34 eP     12 31.66  -0.7
                 eS     12 42.49
RAGM     0.75 266 eP     12 31.73  -1.1
SGAM     1.01 274 eP     12 36.14  -1.1
                 eS     12 50.64
GLB      1.04 343 eP     12 36.69  -1.2
                 eS     12 51.38
CVA      1.28 276 eP     12 40.83  -1.0
PCA      1.49 102 iP     12 44.16  -0.8
PCA      1.49 102 iP     12 44.17  -0.8
                 eS     13 01.74
HIN      1.65 270 eP     12 44.78  -2.4
FID      1.66 282 eP     12 46.38  -0.9
VLZ      1.69 295 eP     12 46.70  -1.0
                 eS     13 09.04
KLU      1.70 309 eP     12 46.95  -1.0
BCPM     1.83 104 eP     12 48.88  -0.9
                 eS     13 11.09
GLI      1.98 284 eP     12 50.29  -1.6
NCA      2.35 313 eP     12 56.99  -0.3
HON      2.38 113 eP     12 55.73  -1.9
PAX      2.76 338 eP     13 02.50  -0.6
RND      4.00 320 eP     13 19.40  -1.3
DWY      4.02  24 P      13 20.00  -0.8
       22 obs. associated
-----------------------------------------
*  DEC  19, 1989  01h 31m 51.78± 0.54s
   33.836 S ±10.7km  178.524 W ±10.0km
   DEPTH =  33.0km  (normal)
   5.3mb (  3 obs.)  4.7Msz (  2 obs.)
 SOUTH OF KERMADEC ISLANDS        (179)

HBZ      4.56 214 eP     33 01.10   0.9
TAZ      5.95 221 eP     33 21.40   1.5
PGZ      7.94 210 eP     33 45.50  -2.2
MNG      8.29 213 eP     33 47.80  -4.8X
                 eS     35 20.90
DZM     17.69 308 iPd    35 58.10   0.8
COO     25.20 269 eP     37 18.00   2.0
BRS     25.47 277 iPc    37 19.80   1.3
        1.3s      4.80nm          3.9mb X
                 i      37 22.50
                 i      37 30.50
RMQ     29.14 276 eP     37 52.00   0.1
CTA     34.07 285 iPc    38 34.00  -1.3
        1.2s     75.00nm          5.5mb
                 iS     44 04.00
ADE     35.11 256 iPd    38 43.90  -0.2
        0.9s     33.61nm          5.3mb
OIS     39.26 279 eP     39 17.00  -2.1
ASPA    42.60 271 iPc    39 44.70  -1.9
        0.9s     47.00nm          5.2mb
     Z  18s      1.07um          4.8Msz
                 iPP    41 35.00
                 iS     46 03.60
                 LR     58 34.20
SPA     56.34 180 eP     41 42.80  11.0X
        1.0s     25.50nm
     Z  20s      0.54um          4.6Msz
MWC     88.30  46 eP     44 55.00  13.6X
PLM     88.43  47 eP     44 44.00   2.0
RVR     88.55  47 eP     44 57.00  14.7X
SBB     88.76  46 eP     44 43.00  -0.4
ISA     89.04  45 eP     44 44.00  -0.8
GLA     89.49  49 eP     44 47.00   0.1
CLC     89.67  45 eP     44 47.00  -0.7
GSC     89.79  46 eP     44 48.00  -0.3
ZOBO    97.14 115 eP     45 29.00   5.9X
                 LR     27 13.20
CCH     97.94 117 eP     45 42.00  15.6X
BUL    120.41 210 ePKP   50 55.50  13.5X
MAIO   133.06 290 ePKP   51 06.00   0.3
SOD    143.38 344 ePKP   51 36.00  12.5X
MSL    146.00 286 ePKPd  51 29.00   0.1
                 e      51 38.50
BCAO   146.71 212 iPKPc  51 31.90   1.2
        0.9s     50.00nm
                 i      51 44.00
SUF    147.18 339 ePKP   51 29.60  -0.3
        0.9s     25.60nm
```

19d 01h

NUR 149.34 338 iPKP 51 33.58 0.2
0 7s 26.70nm
i 51 48.00
HITJ 150.59 272 PKP+ 51 41.50 5.0X
HLBJ 150.81 276 PKPd 51 41.60 4.9X
MKRJ 151.23 275 PKPd 51 42.30 5.0X
AOBJ 151.24 271 PKP+ 51 42.60 5.3X
MBH 151.40 271 iPKPd 51 44.00 6.5X
DSI 151.45 275 ePKP 51 44.00 6.5X
HRI 151.51 279 ePKP 51 44.00 6.3X
LIC 151.87 166 PKP 51 45.02 6.4X
UPP 151.88 343 iPKP 51 50.40 13.2X
KIC 152.06 167 PKP 51 45.64 6.7X
NB2 152.06 350 PKP 51 42.00 4.4X
0.8s 10.30nm
KUK 152.44 176 ePKP 51 42.00 2.5X
BBTK 154.34 293 iPKPd 51 50.00 8.5X
S.D. = 1.3 on 22 of 43 obs.

? DEC 19, 1989 03h 50m 06.27± 1.37s
9.424 S ±24.2km 125.229 E ±21.6km
DEPTH = 33.0km (normal)
4.2mb (2 obs.)
TIMOR (289)

MTN 6.72 121 iPc 51 46.90 1.7
eS 53 09:00
KNA 7.17 152 iPd 51 55.40 3.8X
WB5 13.64 141 eP 53 18:50 -1.3
eS 56 01.00
ASPA 16.41 151 eP 53 56.00 0.2
0.8s 27.00nm 4.4mb
Z 21s 0.47um 4.0Msz
eS 57 05.30
LR 01 06.40
WARB 16.72 176 eP 54 05.00 5.2X
0.4s 5.00nm 4.0mb
QIS 17.74 130 eP 54 12.00 -0.5
e 54 14.00
FORR 21.49 173 eP 54 55.00 0.8
CTA 22.90 120 iPd 55 07.70 -0.7
GBA 52.66 295 Pc 59 57.50 37.5X
0.4s 0.50nm
CNCB 150.84 153 PKP 09 51.00 -1.8
LPB 151.03 153 ePKP 09 53.00 0.1
CCH 151.09 157 ePKP 10 00.00 7.2X
ZOBO 151.25 153 PKP 09 55.00 1.6
S.D. = 1.4 on 9 of 13 obs.

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* DEC 19, 1989 04h 13m 24.69± 1.54s
53.257 N ±24.3km 163.693 W ±14.8km
DEPTH = 33.0km (normal)
4.4mb (3 obs.)
UNIMAK ISLAND REGION (10)
ML 4.2 (PMR).

SNKA 1.34 24 ePc 13 46.92 -0.2
eS 14 01.57
DRRA 1.87 26 ePd 13 54.74 -0.1
DLG 2.18 29 eP 13 59.65 0.3
PVV 2.40 27 eP 14 03.12 0.7
eS 14 29.74
SASA 2.80 41 ePd 14 08.94 0.8
eS 14 37.60
SDN 2.81 41 ePc 14 09.10 1.0
IVF 3.59 41 ePc 14 19.66 0.4
eS 14 58.50
KDC 7.79 50 eP 15 18.60 0.1
ADK 8.04 265 eP 15 22.90 1.0
SVW 9.00 26 eP 15 34.00 -1.4X
PMR 11.44 37 eP 16 04.10 -4.5X
TOA 12.86 40 eP 16 24.30 -3.4X
INK 20.74 32 eP 18 02.00 -2.5
MBC 28.48 21 eP 19 18.00 -0.2
0.5s 2.00nm 4.1mb
KVN 34.01 96 eP 20 18.50 11.0X
FRB 46.21 38 eP 21 48.00 0.3
SUF 64.11 355 eP 23 56.80 -0.4
NB2 65.98 3 P 24 09:20 -0.1
0.8s 2.20nm 4.3mb
NUR 66.39 356 eP 24 11.70 -0.2
HFS 66.94 1 ePKP 24 14.60 -0.8
0.4s 3.60nm 4.8mb
BUL 145.61 339 iPKPc 33 17.20 16.0X
0.9s 8.40nm
ipP 33 27.90
S.D = 0.9 on 16 of 21 obs.

DEC 19, 1989 04h 44m 45.34± 0.71s
43.661 N ± 6.1km 16.924 E ± 8.6km
DEPTH = 5.0km (geophysicist)
YUGOSLAVIA (383)
ML 2.6 (LJU).

HVAR 0.59 216 iPgd 44 54.90 -2.3
iSg 45 06.50
BLY 1.10 10 Pn 45 05.50 -1.0
Sn 45 19.30
BDV 1.96 134 ePn 45 19.40 -0.2
eSn 45 46.40
TTG 2.11 125 ePn 45 26.00 4.3X
eSn 45 50.00
VBY 2.19 328 ePn 45 23.90 0.9
iSn 45 52.10
ZAG 2.26 343 i(Pn) 45 24.00 0.1
iSg 45 55.50
PTJ 2.34 343 ePn 45 23.00 -2.2
eSn 45 51.40
RIY 2.48 314 ePn 45 28.20 1.3
iSn 46 02.50
CEY 2.74 320 e(Pn) 45 30.80 0.1
eSn 46 06.50
LJU 2.93 325 eP 45 38.00 4.6X
e(Sn) 46 07.00
SDI 3.01 231 P 45 36.00 1.4
TRI 3.04 313 P 45 38.00 3.0X
eSn 46 12.00
TRI 3.04 313 iP 45 42.00 7.0X
i 46 20.00
VOY 3.20 319 ePn 45 37.30 -0.1
eSn 46 28.20
SKO 3.73 115 ePn 45 56.50 11.7X
OHR 3.84 130 ePn 45 47.70 1.3
BZS 3.88 58 eP 45 41.00 -5.9X
FVI 4.15 316 P 45 50.50 -0.1
CTI 4.44 304 P 45 56.00 0.9
eSn 46 44.00
S.D. = 1.3 on 13 of 19 obs.

% DEC 19, 1989 06h 26m 13.69± 3.37s
34.215 S ±30.1km 71.055 W ± 8.0km
DEPTH = 33.0km (normal)
NEAR COAST OF CENTRAL CHILE (135)

LNV 0.39 311 iPc 26 23.00 0.3
iS 26 40.00
CHCH 0.44 50 iPc 26 23.80 0.4
iS 26 40.80
TACH 0.57 10 iPc 26 25.90 0.6
iS 26 45.00
PCH 0.74 37 iPd 26 27.90 0.1
iS 26 48.60
SAN 0.83 23 eP 26 29.00 0.1
iS 26 52.00
LCCH 0.85 330 iP 26 28.60 -0.7
iS 26 48.00
FCH 1.09 36 iPd 26 32.10 -0.9
iS 26 57.50
PEL 1.11 16 eP 26 33.50 0.5
iS 26 56.60
ROCH 1.24 2 iPd 26 35.50 0.5
iS 26 56.70
JACH 1.58 14 iPd 26 39.00 -0.8
iS 27 07.00
S.D. = 0.6 on 10 of 10 obs.

DEC 19, 1989 07h 03m 18.06± 0.21s
7.945 N ± 4.0km 126.847 E ± 5.8km
DEPTH = 39.5km (5 depth phases)
5 5mb (18 obs.) 4.8Msz (10 obs.)
MINDANAO, PHILIPPINE ISLANDS (259)
CENTROID, MOMENT TENSOR (HRV)
Data Used: GDSN
L.P.B.: 8S, 14C
Centroid Location:
Origin Time 07:03:17.7 0.4
Lat 7.68N 0.09 Lon 127.61E 0.07
Dep 15.0 FIX Half-duration 1.9
Moment Tensor; Scale 10**17 Nm
Mrr= 1.50 0.12 Mtt= 0.51 0.09
Mff=-2.01 0 15 Mrt=-0.81 0.20
Mrf=-0.14 0 34 Mtf=-0.03 0.10
Principal Axes:
T Val= 1.96 Plg=61 Azm=177
N 0.06 29 3
P -2.01 3 271
Best Double Couple:Mo=2.0*10**17
NP1:Strike=334 Dip=50 Slip= 50
NP2: 207 54 127

DAV 1.52 236 eP+ 03 49.00 5.8X
MNI 6.76 197 eP 05 01.00 3.5X
OCP 8.73 320 eP 05 32.00 7.2X
TSM 9.48 248 ePc 05 43.20 8.1X
BAG 10.40 325 eP 05 44.00 -4.1X
KKM 10.72 261 ePd 05 59.00 6.7X
1.6s 283.40nm 6.2mb
MKS 15.00 210 eP 06 56.50 7.3X
ANP 17.88 344 eP 07 26.00 0.3
GUMO 18.56 71 eP 07 31.50 -2.5
eS 10 55.00
GUA 18.59 71 eP 07 32.00 -2.4
QZH 18.65 336 P 07 33.00 -2.0
8.0s 2.11nm 2.4mb X
N 18s 3.00um
E 18s 3.00um
HKC 18.78 321 P 07 36.00 -0.6
S 11 14.00
QIZ 19.85 305 P 07 47.20 -1.5
N 15s 4.50um
E 15s 5.00um
MTN 21.09 168 iPd 08 00.20 -1.4
KAGJ 23.43 9 eP 08 25.50 0.9
KNA 23.62 175 eP 08 26.80 0.3
SSE 23.63 348 iP+ 08 25.00 -1.5
6.0s 2.50nm 2.9mb X
Z 20s 2.40um 4.7Msz
N 10s 1.30um
E 12s 2.30um
i 08 52.00 131kmX
S 12 44.00
sS 13 00.00
KGM 24.16 257 ePc 08 35.40 3.6X
KUMJ 24.75 8 eP 08 36.60 -0.7
NJ2 25.11 344 iPc 08 40.00 -0.8
Z 20s 1.80um 4.6Msz
WHN 25.34 334 Pc 08 40.50 -2.5
Z 20s 3.01um 4.8Msz
N 14s 2.82um
E 14s 1.31um
IPM 25.88 264 ePd 08 54.90 6.7X
1.1s 51.80nm 5.0mb
SHNJ 26.35 8 eP 08 52.60 0.3
PMG 26.58 130 eP 08 52.00 -2.6
GYA 26.58 316 P 08 56.00 1.3
Z 16s 3.30um 5.0MszX
N 14s 2.70um
E 14s 3.50um
ScP 15 56.80
SHK 27.00 11 eP 08 58.30 0.0
NNT 27.06 282 eP 09 10.00 10.9X
e 33 39.00
NST 27.23 289 eP 09 02.00 1.5
WB5 28.62 165 eP 09 10.80 -2.3
i 09 18.30 26kmX
KMI 28.65 309 Pc 09 12.50 -1.1
N 14s 2.00um
e 09 13.00 2kmX
sP 09 38.00
PP 10 12.50
S 14 04.00
sS 14 30.00
SS 15 49.00
BDT 28.67 291 eP 09 14.90 1.4
CHG 29.17 295 ePc 09 18.20 0.1
1.5s 43.06nm 4.9mb
e 16 06.00
CHTO 29.17 295 ePc 09 18.20 0.1
pP 09 29.50 42km
TIA 29.50 344 eP 09 19.10 -1.8
Z 14s 1.40um 4.7MszX
N 11s 1.10um
E 11s 0.80um
eS 14 12.90
MBL 29.73 193 eP 09 23.10 0.0
XAN 30.78 330 P 09 29.60 -2.7
N 15s 1.60um
E 14s 1.40um
eS 14 22.00
QIS 30.98 156 iPc 09 32.50 -1.6
DL2 31.18 352 Pc 09 35.00 -0.6

		5.0s	0.90nm		2.8mb X
	Z	16s	1.70um		4.8MszX
	N	12s	1.70um		
ASPA		32.17	168	iPd	09 42.90	-1.6
		1.3s	34.00nm		5.1mb
	Z	18s	1.81um		4.8Msz
			iS	14 50.30	
			iScS	20 10.20	
			LR	24 58.20	
TIY		32.38	338	eP	09 44.80	-1.5
	N	12s	2.00um		
BJI		33.35	345	eP	09 54.00	-0.6
		1.5s	131.00nm		5.6mb
	Z	22s	0.92um		4.4Msz
	E	14s	1.49um		
			eS	15 14.00	
			eScP	16 19.50	
			eScS	20 21.50	
CTA		33.78	146	iPd	09 57.80	-0.7
		1.5s	351.39nm		6.1mb
			iS	15 18.00	
SNY		33.87	356	iPc	09 58.60	-0.4
		1.2s	0.30nm		3.1mb X
	Z	20s	2.80um		5.0Msz
	N	13s	1.20um		
	E	12s	1.20um		
			pP	10 13.00	57kmX
			PP	11 13.00	
			S	15 20.00	
WARB		33.92	180	eP	10 00.00	0.3
		0.6s	34.00nm		5.4mb
LZH		35.01	327	Pc	10 08.00	-1.2
		1.5s	50.00nm		5.2mb
	Z	17s	2.70um		5.1MszX
	N	14s	2.00um		
			pP	10 20.00	44km
			sP	10 34.00	
			i	11 10.00	
			SS	15 23.00	
			ScP	16 23.50	
			PcS	16 27.50	
			i	18 17.00	
HHC		35.48	340	eP	10 12.00	-1.0
	Z	18s	1.80um		4.9Msz
	N	12s	1.20um		
	E	12s	0.80um		
CN2		35.74	358	Pc	10 14.00	-1.0
		6.0s	0.80nm		2.8mb X
	Z	17s	1.80um		4.9MszX
	E	12s	1.30um		
			pP	10 25.00	39km
			iPP	11 34.00	
			eS	15 45.00	
			ScP	16 26.00	
			SS	18 04.00	
BTO		35.81	338	P	10 14.50	-1.3
	N	15s	1.30um		
	E	15s	2.10um		
			PP	11 40.00	
MDJ		36.61	3	Pc	10 22.50	0.2
	Z	20s	2.20um		4.9Msz
	E	10s	1.30um		
			pP	10 30.00	25kmX
			PP	11 50.00	
			S	16 03.00	
			sS	16 16.00	
FORR		38.59	178	eP	10 38.00	-1.1
		0.4s	39.00nm		5.6mb
			e	10 47.00	30km
COOL		38.99	188	eP	10 42.00	-0.5
BAL		39.55	194	eP	10 47.00	-0.1
GTA		39.61	326	Pc	10 47.00	-0.8
	Z	17s	2.30um		5.1MszX
	E	17s	2.60um		
LSA		39.86	308	iP	10 51.50	1.1
KLB		40.26	192	eP	10 53.00	0.0
RMQ		40.30	149	iPd	10 52.30	-1.1
			e	13 00.00	
MUN		40.98	194	eP	10 59.00	0.1
NWAO		41.66	192	eP	11 05.00	0.5
RKG		42.81	192	eP	11 19.70	5.8X
BRS		43.18	145	iPc	11 15.00	-2.0
		0.6s	13.00nm		4.8mb
			ipP	11 26.80	42km
			isP	11 34.00	
			i	12 57.00	
			eS	17 38.00	
			e(SS)	20 40.00	
ADE		44.13	166	iPd	11 24.70	0.1
		1.0s	60.00nm		5.3mb
COO		45.22	149	eP	11 33.00	-0.4
BWA		46.83	155	eP	11 47.00	0.9
CAN		47.84	155	eP	11 54.00	-0.1
HYB		47.93	286	eP	11 55.00	0.0
			e		12 20.00	106kmX
			e		13 23.50	
CNB		47.99	155	iPc	11 55.60	0.4
TOO		48.52	160	eP	12 00.00	0.7
GBA		48.80	281	P	12 02.10	0.4
			e		13 26.00	422kmX
WMO		49.40	323	P	12 06.00	-0.1
		8.0s	0.80nm		2.8mb X
	Z	16s	2.80um		5.4MszX
			sS	19 32.00	
POO		52.48	287	eP	12 28.00	-1.8
BOM		53.49	288	eP	12 36.50	-0.6
			eS	20 04.50	
KSH		55.19	313	eP	12 51.00	1.5
	E	12s	2.00um		
QUE		60.08	300	eP	13 23.00	-1.2
MSZ		64.11	149	P	13 49.50	-1.0
MAIO		67.10	306	eP	14 10.00	-0.2
			eS		23 12.00	
SVW		77.06	29	eP	15 10.00	1.3
TTA		77.12	27	eP	15 10.30	1.3
TAB		77.70	307	eP+	15 14.00	1.2
BRW		78.17	19	eP	15 16.30	1.8
KDC		78.34	33	eP	15 17.20	1.5
SLY		78.40	305	ePd	15 16.00	-0.5
IMA		78.51	24	ePd	15 17.70	1.0
		1.3s	62.00nm		5.4mb
BHD		79.41	302	ePd	15 22.00	0.0
PMR		80.22	29	eP	15 25.90	0.1
		1.4s	98.80nm		5.6mb
MSL		80.28	306	ePc	15 26.50	-0.2
FBA		80.89	26	ePd	15 29.40	0.1
TOA		81.62	28	eP	15 35.50	2.2
KEV		86.00	340	eP	15 55.00	-0.3
INK		86.22	22	ePd	15 56.90	0.5
		1.4s	140.00nm		6.0mb
SOD		86.64	338	eP	15 58.00	-0.5
DSI		87.14	301	eP	16 03.00	1.4
MBH		87.81	300	eP	16 06.00	1.2
MBC		87.84	13	ePd	16 05.20	1.1
		1.4s	82.00nm		5.8mb
SUF		87.87	333	iP	16 03.70	-0.8
		0.6s	8.50nm		5.2mb
BBTK		88.09	310	eP	16 12.00	5.8X
NUR		89.09	331	eP	16 10.30	-0.1
MLR		91.96	316	eP	16 24.00	-0.2
KRA		94.63	322	eP	16 36.10	0.0
NB2		95.08	334	P	16 37.00	-1.1
		1 4s	28.70nm		5.5mb
KSP		96.56	323	ePd	16 45.50	0.5
MCW		97.19	39	P	16 50.80	2.9X
GMW		97.62	40	P	16 50.00	0.2
BMW		97.70	41	P	16 51.10	0.8
PRU		97.92	323	eP	16 52.00	0.9
BRG		97.93	324	iP	16 52.40	1.3
		1.3s	22.00nm		5.5mb
RMW		98.27	40	P	16 53.70	0.8
LON		98.52	40	P	16 54.00	0.0
KHC		98.83	322	P	16 53.50	-1.8
PNT		98.92	37	eP	16 57.00	1.3
VGB		99.64	41	P	17 00.80	1.7
WDC		100.17	46	ePdiff	17 04.00	2.5X
DPW		100.36	38	Pdiff	17 03.10	0.8X
LBFM		100.38	46	Pdiff	17 04.00	1.3X
MIN		100.92	46	ePdiff	17 07.00	1.9X
ORV		101.27	47	e(Pdif	17 08.70	2.2X
ASS		101.77	317	Pdiff	16 53.20	-15.5X
MHC		101.92	49	e(Pdif	17 12.20	2.6X
ARN		102.00	49	Pdiff	17 10.00	0.2X
CMB		102.62	48	ePdiff	17 13.70	1.1X
SES		103.38	34	ePdiff	17 17.00	1.3X
KVN		103.91	47	Pdiff	17 20.00	1.5X
MSU		108.35	45	PKP	21 46.50	1.9
GOL		112.39	41	PKP	21 52.50	0.3
GLD		112.46	41	PKP	21 55.00	2.8
ANMO		114.08	46	PKP	21 58.00	2.4
ALQ		114.08	46	ePKP	21 57.20	1.6
SIO		120.53	40	ePKP	22 08 40	0.8
TUL		120.75	40	ePKP	22 09.20	1.2
		1 3s	10.10nm		
	Z	18s	0.67um		5.3Msz
			LR	59 37.00	
KIC		129.67	285	PKP	22 26.40	0.7
TIC		129.86	285	PKP	22 26.80	0.7
LIC		129.98	285	PKP	22 27.00	0.7
	Z	20s	0.11um		4.6Msz
UPA		148.80	58	iPKPd	23 03.80	3.8X
		1.5s	266.67nm		
YJA		161.52	141	ePKPd	23 19.30	2.4
CNCB		163.06	123	PKP	23 20.80	2.1
			i	24 10.00	
			SKS	33 20.00	
LPB		163.09	122	PKP	23 22.00	3.4X
			e	24 14.00	
			LR	21 04.00	
ZOBO		163.20	121	PKP	23 21.00	2.1
		1.2s	15.20nm		
	Z	24s	0.13um		
			i	24 12.00	
			LR	20 10.00	

S.D. = 1.3 on 110 of 136 obs.

DEC 19, 1989 07h 27m 55.12± 0.25s
7.985 N ± 3.9km 126.920 E ± 7.0km
DEPTH = 31.9km (4 depth phases)
5.1mb (22 obs.) 4.7Msz (5 obs.)
MINDANAO, PHILIPPINE ISLANDS (259)
CENTROID, MOMENT TENSOR (HRV)
Dato Used: GDSN
L.P.B.: 7S, 13C
Centroid Location:
Origin Time 07:28: 0.1 1.4
Lat 7.83N 0.15 Lon 127.38E 0.11
Dep 15.0 FIX Half-durotion 1.9
Moment Tensor; Scale 10**17 Nm
Mrr= 1.06 0.11 Mtt= 0.54 0.10
Mff=-1.60 0.14 Mrt=-0.88 0.22
Mrf= 0.31 0.35 Mtf=-0.11 0.10
Principal Axes:
T Vol= 1.74 Plg=53 Azm=189
N -0.11 36 355
P -1.64 6 90
Best Double Couple:Mo=1.7*10**17
NP1:Strike=214 Dip=50 Slip= 141
NP2: 331 61 47

DAV		1.60	236	eP	28 27.00	5.4X
MNI		6.82	198	ePd	29 37.00	1.4
TSM		9.56	248	ePc	30 20.50	6.9X
BAG		10.42	324	eP	30 25.00	-0.6
KKM		10.80	260	ePc	30 37.50	6.7X
MKS		15.07	210	eP	31 33.50	5.9X
QIZ		19.88	305	P	32 25.90	-1.0
	N	16s	4.50um		
	E	18s	6.00um		
			S	36 10.00	
MTN		21.11	169	eP	32 38.50	-1.1
KAGJ		23.38	9	eP	33 01.10	-0.8
SSE		23.61	348	P	33 05.00	0.9
	Z	18s	2.20um		4.7Msz
	E	10s	1.40um		
			S	37 20.00	
			sS	37 42.00	
KNA		23.65	176	iPc	33 05.10	0.4
		0.6s	50.00nm		5.2mb
KGM		24.24	257	ePc	33 12.30	1.9
KUMJ		24.70	8	eP	33 13.60	-1.1
NJ2		25.09	344	eP	33 21.50	3.0X
IPM		25.96	264	ePd	33 31.80	5.0X
		1.0s	37.40nm		4.9mb
TKSJ		26.70	13	eP	33 31.60	-1.7
NST		27.28	289	eP	33 40.10	1.2
WKYJ		27.31	16	P	33 39.30	0.3
YONJ		27.73	12	eP	33 42.20	-0.6
WB5		28.64	165	eP	33 49.50	-1.7
KMI		28.68	309	Pd	33 54.50	2.8
			sP	34 17.50	
BDT		28.72	291	eP	33 52.00	0.1
CHG		29.22	294	eP	33 56.00	-0.4
CHTO		29.22	294	eP	33 56.00	-0.4
TIA		29.48	344	eP	34 01.10	2.5
MBL		29.79	193	eP	34 01.00	-0.4
MTMJ		30.15	18	eP	34 11.90	7.3X
MAT		30.23	18	(P)	34 05.00	-0.2
		1 3s	46.15nm		5.1mb
	Z	20s	1.42um		4.6Msz
QIS		30.99	156	eP	34 10.00	-2.0

19d 07h

DL2 31.15 352 eP 34 12.80 -0.5
CD2 31.44 320 eP 34 16.00 0.0
ASPA 32.19 168 iPc 34 20.70 -1.9
0.6s 14.00nm 5.0mb
Z 18s 1.21um 4.6Msz
iS 39 30.30
iScS 44 47.60
LR 53 09.00
NANU 32.34 200 eP 34 24.00 0.1
0.5s 11.00nm 5.0mb
BJI 33.33 345 eP 34 30.50 -1.8
1.0s 18.00nm 4.9mb
eS 39 51.00
ScP 40 57.00
eScS 44 57.00
CTA 33.77 146 iPd 34 36.40 0.1
0.9s 26.47nm 5.2mb
iS 40 04.00
SNY 33.83 356 iPc 34 36.40 -0.2
WARB 33.96 180 iPc 34 38.00 0.1
0.4s 15.00nm 5.3mb
LZH 35.02 326 Pd 34 49.50 2.4
1.5s 33.00nm 5.0mb
Z 15s 2.10um 5.0MszX
N 15s 1.30um
pP 34 56.50 24km
sP 35 03.00
CN2 35.70 358 eP 34 51.40 -1.2
epP 34 59.00 26km
MDJ 36.57 3 eP 35 00.70 0.8
SHL 37.66 302 iP 35 09.00 -0.5
iS 40 58.20
MRWA 38.45 195 eP 35 16.00 0.1
FORR 38.63 178 eP 35 16.10 -1.2
0.5s 87.00nm 5.8mb
COOL 39.04 188 eP 35 20.00 -0.8
BAL 39.60 194 eP 35 26.00 0.5
GTA 39.62 326 eP 35 24.20 -1.5
Z 18s 1.50um 4.9Msz
E 15s 1.70um
LSA 39.90 308 P 35 28.00 -0.5
eS 41 35.00
KLB 40.32 192 eP 35 31.00 -0.3
MUN 41.03 194 iPc 35 37.80 0.6
0.8s 239.00nm 6.0mb
NWAO 41.72 192 eP 35 43.00 0.2
1.0s 90.00nm 5.5mb
RKG 42.87 192 iPd 35 57.90 5.7X
0.6s 89.00nm 5.7mb
BRS 43.17 145 iPd 35 53.50 -1.3
0.8s 8.00nm 4.5mb
ipP 36 05.00 41km
iPP 37 40.80
e 44 32.00
e(ScS) 49 45.20
ADE 44.15 166 iPc 36 03.00 0.3
1.0s 48.00nm 5.3mb
BWA 46.83 155 eP 36 24.90 0.9
CAN 47.85 156 eP 36 34.00 2.0
CNB 47.99 155 eP 36 34.00 0.8
TOO 48.53 160 iPd 36 38.00 0.7
GBA 48.86 281 P 36 39.30 -0.8
e 38 03.00 420kmX
WMQ 49.41 323 eP 36 44.80 0.7
Z 20s 1.40um 5.0Msz
eS 43 50.00
QUE 60.12 300 eP 38 07.00 4.6X
MAIO 67.14 306 eP 38 47.00 -1.3
SVW 76.99 29 eP 39 48.50 2.2
TTA 77.05 27 P 39 47.40 0.8
BRW 78.11 19 eP 39 53.90 1.7
KDC 78.27 33 eP 39 54.70 1.4
IMA 78.45 24 eP 39 55 80 1.5
0.8s 9.40nm 4.9mb
PMR 80.15 29 eP 40 04.00 0.6
pP 40 15.50 38km
FBA 80.82 26 eP 40 06.90 -0.1
KEV 85.99 340 eP 40 32.00 -1.2
INK 86.16 22 eP 40 35.00 0.9
SOD 86.63 338 iP 40 35.50 -1.0
PRNI 87.67 300 eP 40 42.00 -0.3
MBC 87.79 13 eP 40 43.00 1.1
1.1s 35.00nm 5.6mb
MBH 87.85 300 eP 40 43.00 -0.1
SUF 87.87 333 iP 40 41.50 -1.0
0.5s 8.00nm 5.3mb
NUR 89.10 331 iP 40 47.80 -0.6

0.6s 9.10nm 5.3mb
HFS 94.36 333 eP 41 10.60 -2.1
0.4s 1.80nm 4.9mb
NB2 95.08 334 P 41 14.20 -1.9
0.9s 4.00nm 4.9mb
ARN 101.92 49 Pdiff 41 50.00 2.5X
KVN 103.83 47 Pdiff 41 57.30 1.2X
TNP 104.84 47 Pdiff 42 02.00 1.3X
0.8s 1.47nm 4.9mb
KIC 129.73 285 PKP 47 04.00 0.1
LIC 130.04 285 PKP 47 04.40 -0.1
UPA 148.72 58 ePKPc 47 42.60 4.7X
1.2s 43.75nm
LRS 150.57 27 PKP 47 46.00 5.4X
PORP 150.87 27 PKP 47 47.10 6.0X
CPD 151.20 26 PKP 47 48.00 6.4X
CNCB 163.02 123 ePKP 48 00.00 3.3X
i 48 50.20
ZOBO 163.15 121 ePKP 47 59.00 2.1
S.D. = 1.2 on 72 of 89 obs.

% DEC 19, 1989 07h 42m 23.29± 0.54s
10.822 N ± 4.4km 61.559 W ± 6.8km
DEPTH = 33.0km (normal)
TRINIDAD (98)
MD 3.2 (TRN). Felt on Trinidad.

TCE 0.23 237 eP 42 30.71 0.5
eS 42 36.32
TRN 0.23 138 eP 42 30.29 0.1
eS 42 35.08
TPP 0.51 168 eP 42 33.76 -0.3
eS 42 40.91
TBH 0.59 125 eP 42 34.74 -0.4
eS 42 45.64
PIG 0.78 64 eP 42 38.47 0.6
eS 42 49.93
TPR 0.85 65 eP 42 38.87 0.0
eS 42 52.31
BOT 0.89 67 eP 42 39.65 0.2
eS 42 51.22
GRW 1.33 356 eP 42 45.83 0.0
eS 42 58.35
SVB 2.45 7 eP 43 01.33 -0.6
eS 43 33.53
SSV 2.51 8 eP 43 03.03 0.2
eS 43 36.70
SLB 3.03 10 eP 43 09.74 -0.3
eS 43 46.83
S.D. = 0.4 on 11 of 11 obs.

? DEC 19, 1989 07h 49m 35.30± 1.79s
20.103 S ±49.3km 177.841 W ±28.2km
DEPTH = 418.8 ± 21.0 km
4.6mb (6 obs.)
FIJI ISLANDS REGION (181)

SVA 4.02 299 ePd 50 48.60 -0.7
SGE 4.73 301 iPd 50 56.80 0.6
DZM 14.80 260 iPc 52 47.70 0.6
CTA 33.68 264 iPc 55 41.60 0.6
0.6s 23.33nm 4.7mb
ASPA 44.76 256 iPc 57 11.20 -0.2
0.6s 25.00nm 4.8mb
WB5 44.79 262 eP 57 11.00 -0.6
FORR 49.55 246 eP 57 47.00 -0.9
KNA 50.81 266 eP 57 57.60 0.1
0.6s 17.00nm 4.6mb
WARB 51.09 252 eP 57 59.00 -0.4
0.3s 6.00nm 4.4mb
MBL 57.99 257 eP 58 58.00 9.5X
NANU 61.64 255 eP 59 13.40 0.5
0.6s 24.00nm 4.9mb
SPA 70.02 180 iPc 00 05.20 0.3
0.8s 7.92nm 4.4mb
S.D. = 0.7 on 11 of 12 obs.

& DEC 19, 1989 08h 35m 25.53s
59.359 N 151.499 W
DEPTH = 37.6km
KENAI PENINSULA, ALASKA (14)
<AGS-P>.

XLV 0.15 310 iP 35 31.58 -0.6
eS 35 35.79
CNPM 0.21 39 iP 35 32.52 -0.2
NNL 0.69 8 eP 35 39.16 0.3

AUE 0.96 271 eP 35 41.76 -0.9
AUL 0.99 272 eP 35 42.26 -0.9
eS 35 54.82
CDD 1.19 250 iP 35 44.75 -1.2
eS 35 56.91
SEW 1.28 53 eP 35 46.05 -1.1
RDT 1.30 340 eP 35 46.82 -0.8
SLKM 1 32 29 eP 35 47.31 -0.5
PDB 1.44 289 eP 35 48.29 -1.2
SPU 1.85 352 eP 35 55.02 -0.4
CKL 1.89 348 eP 35 55.72 -0.4
CRP 1.94 351 eP 35 57.58 0.7
CGLM 1.97 353 eP 35 57.67 0.4
NCG 2.08 351 eP 35 58.71 -0.1
15 obs. associated

DEC 19, 1989 09h 03m 11.82± 0.86s
39.209 N ± 7.1km 28.077 E ± 9.8km
DEPTH = 10.0km (geophysicist)
TURKEY (366)

IZM 1.03 218 ePn 03 30.80 -0.5
EDC 1.15 352 ePn 03 33.80 0.5
BNT 1.15 354 iPn 03 34.00 0.6
KHL 1.44 128 ePn 03 39.00 1.0
ALT 1.59 95 ePn 03 40.00 -0.2
YLV 1.68 36 iPn 03 40.00 -1.5
S.D. = 1.2 on 6 of 6 obs.

DEC 19, 1989 09h 43m 57.53± 0.30s
8.378 N ± 5.1km 126.954 E ± 7.9km
DEPTH = 36.2km (3 depth phases)
4.9mb (14 obs.) 4.0Msz (3 obs.)
MINDANAO, PHILIPPINE ISLANDS (259)

DAV 1.87 227 eP 44 31.00 3.2X
MNI 7.20 197 eP 45 48.00 4.8X
GUA 18.36 72 eP 48 11.20 0 0
MTN 21.49 169 eP 48 45.00 -0.4
SSE 23.23 347 P 49 02.00 -0.5
1.0s 37.00nm 4.8mb
Z 20s 1.00um 4.3Msz
pP 49 10.00 29km
S 53 11.00
sS 53 25.00
KNA 24.04 176 eP 49 10.00 -0.4
NJ2 24.73 343 eP 49 12.50 -4.5X
Z 20s 0.40um 3.9Msz
WHN 25.01 334 eP 49 24.50 4.9X
eS 53 34.00
IPM 26.03 263 ePd 49 31.00 1.6
1.1s 58.50nm 5.1mb
NST 27.19 288 eP 49 42.00 2.0
BDT 28.61 291 eP 49 51.80 -1.0
WB5 29.01 166 eP 49 56.00 -0.4
CHG 29.09 294 ePc 49 55.40 -1.8
1.2s 29.30nm 4.9mb
XAN 30.47 330 P 50 10.00 0.7
CD2 31.17 319 eP 50 15.30 -0.2
QIS 31.33 157 eP 50 16.00 -1.0
TIY 32.02 338 eP 50 24.10 1.1
ASPA 32.56 168 eP 50 26.70 -1.1
0.3s 6.00nm 5.0mb
Z 21s 0.22um 3.8Msz
iPcP 51 42.80
LR 04 14.50
BJI 32.97 345 eP 50 29.00 -2.1
SNY 33.45 355 iPc 50 33.60 -1 6
CTA 34.07 146 iPc 50 42.00 1.1
1.1s 36.71nm 5.2mb
WARB 34.35 180 eP 50 43.00 -0.3
0.4s 5.00nm 4.8mb
LZH 34.71 326 Pd 50 47.50 1 1
1.0s 26.00nm 5.1mb
Z 17s 0.70um 4.5MszX
E 14s 0.40um
i 51 20.00 151kmX
HHC 35.11 340 P 50 48.00 -1.8
CN2 35.31 358 eP 50 49.50 -1.7
epP 51 01.00 41km
MDJ 36.17 3 iPc 50 57.80 -0.7
COOL 39.43 188 eP 51 25.00 -1.0
BAL 39.99 194 eP 51 30.00 -0.6
NWAO 42.10 192 eP 51 49.00 1.1
RKG 43.25 192 eP 52 02.50 5.2X
BRS 43.47 146 iPc 51 59.20 0.0
1.0s 9.00nm 4.5mb

		ipP	52 10.20	39km	
		ePP	53 40.00		
GBA	48.82 281	P	52 45.00	3.3X	
	0.8s	4.40nm		4.5mb	
NDI	50.88 300	eP	52 54.00	-3.3X	
MAIO	66.94 306	eP	54 50.00	1.0	
SVW	76.63 29	eP	55 47.40	1.2	
TTA	76.69 27	eP	55 47.40	0.9	
BRW	77.73 19	ePd	55 52.70	0.7	
KDC	77.92 33	eP	55 54.00	0.8	
IMA	78.08 24	ePd	55 54.80	0.6	
	0.8s	11.10nm		4.9mb	
PMR	79.79 29	eP	56 03.00	-0.4	
	0.8s	24.00nm		5.2mb	
FBA	80.45 26	eP	56 06.30	-0.6	
TOA	81.19 28	eP	56 12.00	1.1	
INK	85.79 22	eP	56 34.50	0.4	
MBC	87.40 13	eP	56 42.50	0.6	
	1.0s	13.00nm		5.1mb	
HFS	94.03 333	eP	57 09.70	-3.4X	
	0.4s	2.00nm		4.9mb	
NB2	94.74 334	P	57 13.40	-3.0X	
	0.7s	2.00nm		4.7mb	
CNCB	163.20 121	ePKP	04 03.00	4.3X	
LPB	163.22 120	(PKP)	04 00.00	1.4	
ZOBO	163.32 119	ePKP	04 03.00	4.1X	
	S.D. = 1.1	on 38 of 49 obs.			

% DEC 19, 1989 09h 48m 19.87± 1.10s
60.570 N ± 6.9km 5.078 E ±14.7km
DEPTH = 10.0km (geophysicist)
SOUTHERN NORWAY (535)

ASK	0.10 146	ePg	48 22.52	-0.1	
		eSg	48 24.48		
BER	0.23 146	iP	48 24.49	-0.2	
		eSg	48 29.11		
SUE	0.51 343	iP	48 30.21	0.0	
		iSg	48 37.44		
HYA	0.81 42	iP	48 35.54	0.0	
		iS	48 47.58		
ODD1	1.02 130	iP	48 39.04	-0.1	
		iS	48 53.25		
BLS1	1.47 143	eP	48 47.00	0.5	
		eS	49 06.01		
	S.D. = 0.3	on 6 of 6 obs.			

% DEC 19, 1989 09h 58m 15.06± 0.78s
39.222 N ± 6.6km 27.776 E ± 8.7km
DEPTH = 10.0km (geophysicist)
TURKEY (366)

IZM	0.92 206	ePn	58 31.80	-0.8	
EDC	1.13 3	iPn	58 35.80	-0.3	
BNT	1.14 6	iPn	58 36.50	0.1	
EZN	1.27 299	iPn	58 39.40	0.7	
KHL	1.63 123	ePn	58 45.00	1.0	
YLV	1.82 42	ePn	58 46.00	-0.7	
	S.D. = 1.0	on 6 of 6 obs.			

% DEC 19, 1989 10h 17m 21.78± 2.17s
39.758 N ±26.2km 22.032 E ±17.5km
DEPTH = 10.0km (geophysicist)
GREECE (364)

THE	1.13 39	eP	17 42.70	-0.2	
GRG	1.23 13	eP	17 44.50	-0.2	
		eS	18 03.30		
IGT	1.33 261	eP	17 46.30	0.0	
KNT	1.55 25	eP	17 49.90	0.5	
		eS	18 11.50		
SRS	1.81 41	eP	17 53.10	-0.1	
	S.D. = 0.4	on 5 of 5 obs.			

DEC 19, 1989 10h 30m 48.43± 0.36s
8.309 N ± 5.8km 126.722 E ±11.8km
DEPTH = 43.5km (3 depth phases)
5.0mb (10 obs.) 4.4Msz (4 obs.)
MINDANAO, PHILIPPINE ISLANDS (259)

DAV	1.66 223	eP	31 20.80	5.2X	
GUMO	18.57 72	eP	34 08.80	-55.4X	
MTN	21.47 168	e(P)	35 36.00	0.6	
SSE	23.25 348	P	35 54.00	1.1	
	1.0s	34.00nm		4.8mb	
	Z 20s	1.00um		4.3Msz	
		pP	36 08.60	62kmX	
		S	40 08.00		
		sS	40 32.00		
KNA	23.99 175	eP	36 01.00	0.9	
IPM	25.80 263	ePd	36 21.00	3.6X	
BDT	28.42 291	eP	36 42.50	1.2	
CHG	28.91 294	ePc	36 46.50	0.8	
	1.4s	37.79nm		4.9mb	
CHTO	28.91 294	eP	36 46.20	0.5	
		pP	36 57.80	44km	
WB5	29.01 165	eP	36 45.00	-1.5	
XAN	30.41 330	P	36 57.00	-2.0	
QIS	31.36 156	eP	37 05.00	-2.4	
TIY	32.00 338	eP	37 10.90	-2.1	
ASPA	32.55 168	eP	37 17.30	-0.5	
	0.4s	5.00nm		4.7mb	
	Z 19s	0.30um		4.0Msz	
		eS	42 34.90		
		LR	51 09.80		
BJI	32.97 345	eP	37 21.00	-0.3	
	1.0s	30.00nm		5.1mb	
SNY	33.50 356	iPc	37 26.20	0.4	
LZH	34.64 326	eP	37 35.00	-1.0	
	1.5s	33.00nm		5.0mb	
	Z 18s	0.70um		4.4Msz	
	N 15s	0.40um			
HHC	35.10 340	P	37 39.00	-0.8	
CN2	35.37 358	Pd	37 41.80	-0.1	
	Z 15s	0.40um		4.3MszX	
		esP	37 53.00		
		eS	43 10.00		
MDJ	36.25 3	Pc	37 50.00	0.7	
SHL	37.32 302	iP	37 59.50	0.7	
		iS	43 46.50		
GTA	39.24 326	iPc	38 14.10	-0.6	
	Z 16s	0.60um		4.5MszX	
COOL	39.33 188	eP	38 15.00	-0.3	
BAL	39.87 194	eP	38 20.00	0.3	
KLB	40.59 192	eP	38 26.00	0.3	
MUN	41.30 194	eP	38 32.00	0.5	
NWAO	41.99 192	eP	38 38.00	0.9	
BRS	43.55 145	eP	38 48.00	-1.9	
	0.5s	3.00nm		4.3mb	
		ipP	39 00.80	47km	
		ePP	40 47.00		
ADE	44.51 166	eP	39 00.20	2.6	
	0.7s	21.92nm		5.1mb	
WMQ	49.04 323	eP	39 33.50	0.3	
	Z 20s	0.70um		4.7Msz	
MAIO	66.79 306	eP	41 36.00	-2.1	
TTA	76.85 27	eP	42 50.10	12.6X	
BRW	77.86 19	eP	42 44.30	1.5	
IMA	78.23 24	eP	42 46.80	1.7	
PMR	79.96 29	eP	42 55.00	0.7	
INK	85.93 22	eP	43 25.00	0.1	
		pP	43 37.00	39km	
SUF	87.49 333	eP	43 32.70	0.1	
	0.6s	5.00nm		4.9mb	
MBC	87.51 13	eP	43 34.00	1.5	
	1.2s	18.00nm		5.2mb	
NUR	88.72 331	eP	43 38.30	-0.1	
NB2	94.70 334	P	44 05.30	-1.0	
	1.3s	12.40nm		5.2mb	
CNCB	163.36 122	PKP	50 54.00	5.1X	
ZOBO	163.49 120	ePKP	50 48.00	-1.0	
	S.D. = 1.2	on 37 of 42 obs.			

DEC 19, 1989 11h 34m 08 66± 1.02s
39.297 N ± 6.0km 23.609 E ± 9.5km
DEPTH = 10.0km (geophysicist)
AEGEAN SEA (365)
ML 2.8 (ATH).

NEO	0.30 272	iPgd	34 14 90	0.0	
AGG	1.03 255	eP	34 28.20	0.0	
PLG	1.08 353	iPbc	34 29.00	0.0	
LIT	1.18 313	eP	34 30.60	-0.1	
		eS	34 51.70		
ATH	1.33 176	ePg	34 33.10	0.0	
		eSb	34 46.70		
GRG	1.90 331	eP	34 41.50	0.1	
	S.D. = 0.1	on 6 of 6 obs.			

? DEC 19, 1989 11h 56m 58.47± 2.45s
40.347 N ±36.1km 23.534 E ±14.5km
DEPTH = 10.0km (geophysicist)
GREECE (364)

OUR	0.34 92	eP	57 05.50	0.0	
THE	0.52 304	eP	57 08.50	-0.5	
		eS	57 15.20		
KNT	0.95 330	eP	57 16.50	0.0	
		eS	57 28.70		
GRG	1.06 306	eP	57 18.90	0.5	
		eS	57 32.40		
	S.D. = 0.7	on 4 of 4 obs.			

DEC 19, 1989 12h 36m 20.12± 0.91s
39.369 N ± 7.4km 22.327 E ± 9.3km
DEPTH = 10.0km (geophysicist)
GREECE (364)
MD 3.2 (ATH).

AGG	0.35 180	eP	36 13.00	-14.3X	
NEO	0.70 95	ePg	36 33.60	-0.3	
LIT	0.74 10	eP	36 34.40	-0.3	
		eS	36 50.60		
KZN	1.03 336	ePg	36 38.30	-1.3	
PLG	1.32 40	ePb	36 44.50	-0.1	
GRG	1.59 2	eP	36 48.40	0.1	
VAY	1.96 5	ePn	36 54.00	0.3	
OHR	2.10 327	ePn	36 55.00	-0.8	
ITM	2.21 188	ePn	36 57.50	0.1	
SKO	2.69 346	ePn	37 06.50	2.3	
RDO	3.03 53	ePg	37 18.50	9.5X	
	S.D. = 1.2	on 9 of 11 obs.			

DEC 19, 1989 13h 41m 29.18± 0.31s
7.758 N ± 4.8km 126.983 E ± 6.6km
DEPTH = 41.9km (3 depth phases)
5.4mb (13 obs.) 4.3Msz (9 obs.)
MINDANAO, PHILIPPINE ISLANDS (259)

DAV	1.55 245	ePc+	41 55.00	0.3	
MNI	6.63 199	ePc	43 07.50	0.9	
		eS	44 28.50		
OCP	8.96 320	eP	43 23.00	-16.1X	
BAG	10.63 325	eP	44 09.50	7.2X	
KKM	10.82 262	ePc	44 07.20	2.4	
MKS	14.91 210	eP	45 03.50	4.6X	
PJG	18.50 70	eP	45 37.20	-7.0X	
QIZ	20.06 306	P	46 00.20	-1.7	
	N 15s	2.20um			
	E 15s	2.30um			
		S	49 38.50		
		sS	49 54.50		
		SS	50 04.00		
MTN	20.88 169	eP	46 09.50	-0.8	
KNA	23.42 176	iPc	46 36.10	0.6	
SSE	23.84 348	eP	46 43.50	4.0X	
	Z 20s	1.10um		4.3Msz	
	E 12s	0.60um			
		sP	46 54.50		
		S	50 56.00		
		sS	51 08.00		
		i	52 14.00		
KGM	24.25 258	ePd	46 46.00	2.4	
LAT	24.57 125	eP	46 50.00	3.3X	
SNG	26.15 270	eP	47 02.20	0.7	
		eS	51 40.00		
PMG	26.36 130	eP	47 04.00	0.6	
	0.9s	70.59nm		5.3mb	
GYA	26.81 316	P	47 10.80	3.1X	
NNT	27.24 282	eP	47 14.00	2.5	
NST	27.42 289	eP	47 16.20	3.1X	
WB5	28.41 165	eP	47 20.30	-1.8	
BDT	28.86 292	eP	47 25.50	-0.7	
CHG	29.37 295	eP	47 30.00	-0.8	
MBL	29.58 194	eP	47 32.00	-0.6	
TIA	29.72 344	eP	47 30.00	-3.7X	
	Z 21s	0.50um		4.1Msz	
MAT	30.43 18	eP	47 41.00	1.0	
	0.8s	9.70nm		4.6mb	
	Z 20s	1.06um		4.5Msz	
QIS	30.75 156	iPd	47 42.20	-0.8	
	0.9s	121.00nm		5.7mb	
		e	47 53.00	40km	
XAN	31.01 330	eP	47 45.00	-0.2	
CD2	31.65 320	eP	47 51.70	0.8	
	Z 18s	1.40um		4.7Msz	
		eS	52 52.80		
ASPA	31.96 168	iPc	47 52.20	-1.3	
	0.3s	24.00nm		5.5mb	
	Z 21s	0.51um		4.2Msz	
		iS	53 00.30		

19d 13h

		iScS	58	20.10	
		LR	02	39.50	
NANU	32.15	200 eP	47	54.00	-1.2
	0.6s	26.00nm			5.3mb
CTA	33.55	146 iPc	48	08.00	0.6
	1.0s	41.00nm			5.3mb
		iS	53	28.00	
BJI	33.57	345 eP	48	04.00	-3.4X
Z	20s	0.30um			4.0Msz
		eS	53	32.00	
		eScP	54	27.00	
SNY	34.06	355 eP	48	10.50	-1.1
Z	24s	0.60um			4.2MszX
N	24s	0.80um			
E	24s	0.60um			
LZH	35.24	327 eP	48	23.60	1.6
Z	16s	1.40um			4.8MszX
		i	48	49.00	110kmX
		eS	53	56.00	
HHC	35.70	340 eP	48	24.20	-1.6
CN2	35.93	358 eP	48	28.00	0.5
Z	18s	0.50um			4.3Msz
		pP	48	39.60	42km
		eS	53	56.00	
		ScP	54	38.00	
MDJ	36.79	3 eP	48	35.00	0.3
SHL	37.83	302 iP	48	43.00	-1.0
		eS	54	30.50	
MRWA	38.25	196 eP	48	46.90	-0.3
FORR	38.40	178 iPd	48	48.00	-0.4
	0.4s	65.00nm			5.8mb
COOL	38.83	188 eP	48	51.00	-1.0
BAL	39.40	194 eP	48	56.00	-0.8
GTA	39.84	326 eP	49	02.00	1.5
Z	20s	0.09um			3.6Msz
RMQ	40.07	149 eP	49	02.50	0.1
LSA	40.08	308 P	49	03.10	0.1
KLB	40.11	192 eP	49	02.00	-0.6
MUN	40.83	194 iPc	49	08.30	-0.2
	0.6s	293.00nm			6.2mb
NWAO	41.51	192 eP	49	14.00	-0.1
	1.0s	158.00nm			5.7mb
RKG	42.66	192 eP	49	28.60	5.1X
BRS	42.95	145 iP	49	25.80	-0.2
	1.0s	11.00nm			4.5mb
		ipP	49	38.00	44km
		i(PP)	50	14.50	
		i	50	28.50	
ADE	43.91	166 iPc	49	34.20	0.5
	0.8s	70.15nm			5.5mb
BWA	46.60	155 eP	49	56.80	1.6
CAN	47.62	155 eP	50	03 80	0.6
CNB	47.76	155 eP	50	05.00	0.7
TOO	48.30	160 eP	50	09.00	0.6
KOD	48.93	277 eP	50	14.00	0.0
GBA	48.97	281 P	50	12.50	-1.3
WMQ	49.63	323 P	50	16.70	-2.0
Z	20s	1.10um			4.9Msz
		S	57	24.00	
NDI	51.21	301 eP	50	31.00	0.1
QUE	60.29	300 eP	51	34 00	-2.4
MAIO	67.32	306 eP	52	21.00	-1.4
PMR	80.31	29 eP	53	37.90	0.8
INK	86.35	22 eP	54	04.00	-3.9X
PRNI	87.84	300 eP	54	14.00	-1.9
MBC	87.99	13 eP	54	17.00	1.3
	0.9s	19.00nm			5.4mb
NUR	89.32	331 iP	54	26.20	3.9X
	0.8s	16.10nm			5.4mb
NB2	95.31	334 P	55	01.10	11.1X
	0.8s	1.80nm			
KIC	129.85	285 PKP	00	37.30	0.4
TIC	130.04	285 PKP	00	37.60	0.3
LIC	130.16	285 PKP	00	37.80	0.3
UPA	148.78	58 ePKP	01	16.00	5.2X
CNCB	162.85	123 PKP	01	32.90	3.6X
LPB	162.88	122 ePKP	01	31.00	1.8
ZOBO	162.99	121 PKP	01	32.00	2.5X
	1.2s	10.14nm			
Z	24s	0.11um			
		LR	58	28.00	

S.D. = 1.2 on 56 of 73 obs.

? DEC 19, 1989 13h 56m 13.80± 7.73s
13.123 N ±24.7km 62.348 W ±68.7km
DEPTH = 33.0km (normal)
WINDWARD ISLANDS (95)

MD 3.3 (TRN).

SVB	1.08	82 eP	56	33.16	0.5
		eS	56	48.62	
SVV	1.12	80 eP	56	33.09	-0.1
		eS	56	48.58	
SSV	1.14	80 eP	56	33.19	-0.4
		eS	56	48.47	
GRW	1.17	145 eP	56	33.96	0.0
		eS	56	49.78	
SLB	1.45	61 eP	56	38.08	0.1
		eS	56	57.30	

S.D. = 0.5 on 5 of 5 obs.

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* DEC 19, 1989 14h 28m 21.96± 2.27s
41.663 N ±18.7km 12.735 E ± 8.7km
DEPTH = 10.0km (geophysicist)
SOUTHERN ITALY (390)
ML 3.1 (KBA).

RDP	0.10	352 Pc	28	24.00	-0.7
		eSg	28	24.90	
RMP	0.15	351 Pc	28	24.80	-0.6
		eSg	28	29.10	
AZI	0.62	58 Pc	28	33.70	-0.6
		eSg	28	41.40	
MNS	0.72	357 Pc	28	34.40	-1.8
		eSg	28	44.50	
SDI	0.81	87 Pc	28	37.30	-0.4
		eSg	28	48.00	
AQU	0.85	36 P	28	37.90	-0.5
ALP	1.28	29 iPn	28	47.60	1.8
		i(Sn)	29	10.54	
MAO	1.40	303 Pd	28	46.20	-1.3
ASS	1.41	358 P	28	46.50	-1.2
		eSg	29	06.20	
CIO	1.56	11 iPn	28	48.69	-1.2
		iSn	29	12.21	
SSO	1.71	17 ePn	28	53.52	1.6
		eSn	29	21.69	
ARV	1.84	5 Pd	28	53.90	0.0
		eSn	29	17.40	
AOI	1.99	18 iPn	28	58.18	2.1
		iSn	29	32.00	
CRE	2.05	344 P	29	02.00	5.1X
RSM	2.27	355 P	29	01.50	1.4
SFI	2.35	344 P	29	02.20	1.1
FIR	2.38	333 eP	29	12.00	10.4X
BDI	2.87	327 P	29	11.00	2.4
MME	2.94	330 P	29	10.90	1.2
TRI	4.11	10 iP	29	24.40	-1.7
VBY	4.25	25 e(Pn)	29	30.00	1.8
		iSn	30	16.00	
CEY	4.25	16 eP	29	31.00	2.7X
		e(Sn)	30	15.00	
CTI	4.45	350 P	29	29.60	-1.5
LJU	4.57	16 e(Pn)	29	34.00	1.3
		eSn	30	23.80	
PTJ	4.84	28 eP	29	35.40	-1.2
KBA	5.43	4 iPnc	29	43.00	-2.1
		iPg	29	52.70	
		i(Sn)	30	18.50	

S.D. = 1.5 on 23 of 26 obs.

DEC 19, 1989 14h 28m 25.70± 0.69s
36.817 N ± 7.1km 27.461 E ± 8.0km
DEPTH = 33.0km (normal)
DODECANESE ISLANDS (369)
MD 3.5 (ATH).

YER	0.73	64 iPg	28	34.20	-5.4X
SMG	1.02	331 eP	28	44.90	1.2
KAP	1.29	190 eP	28	47.00	-0.4
		eS	29	04.10	
IZM	1.59	354 ePn	28	50.90	-1.0
KSL	1.85	112 eP	28	55.80	0.2
ELL	1.97	91 ePn	28	58.20	0.7
NPS	2.16	225 eP	29	00.00	0.0
KHL	2.22	47 ePn	29	00.30	-0.7
BCK	2.58	75 ePn	29	09.00	2.9X
ALT	3.06	42 ePn	29	16.00	3.0X

S.D. = 1.0 on 7 of 10 obs.

% DEC 19, 1989 15h 15m 30.96± 0.76s
60.725 N ± 5.9km 5 552 E ± 7.5km
DEPTH = 10.0km (geophysicist)
SOUTHERN NORWAY (535)

MD 1.4 (BER).

ASK	0.30	216 iPgc	15	37.09	-0.1
		eSg	15	41.09	
SUE	0.51	311 iP	15	41.33	0.0
		eS	15	48.44	
HYA	0.54	35 iP	15	41.81	-0.1
		iS	15	49.50	
ODD1	0.98	146 iP	15	49.18	-0.3
		iS	16	02.12	
BLS1	1.48	154 iP	15	58.27	0.5
		iS	16	17.90	

S.D. = 0.4 on 5 of 5 obs.

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* DEC 19, 1989 15h 37m 06.26± 0.71s
8.635 N ± 8.8km 126.999 E ±13.7km
DEPTH = 29.7km (2 depth phases)
4.5mb (6 obs.) 4.0Msz (1 obs.)
MINDANAO, PHILIPPINE ISLANDS (259)

DAV	2.09	223 eP	37	41.90	2.0
	1.3s	4615.38nm			
MNI	7.46	197 ePc	38	54.70	-1.2
MTN	21.73	169 eP	41	56.50	-0.7
		eS	42	48.50	
SSE	23.00	347 eP	42	14.70	5.1X
	1.0s	20.00nm			4.6mb
Z	20s	0.50um			4.0Msz
N	10s	0.40um			
		e	42	20.70	22km
		i	42	39.80	
		S	46	20.00	
		sS	46	35.00	
KNA	24.29	176 eP	42	22.50	0.2
LOE	26.09	292 eP	42	49.90	10.5X
NST	27.16	288 eP	42	53.00	3.8X
BDT	28.56	290 eP	43	01.00	-0.9
CHG	29.03	293 eP	43	06.00	-0.1
CHTO	29.03	293 eP	43	05.90	-0.2
WB5	29.25	166 eP	43	08.00	0.0
BJI	32.73	345 eP	43	38.00	-0.5
SHL	37.39	301 eP	44	22.50	3.8X
BRS	43.66	146 iPd	45	10.10	-0.1
	0.6s	2.00nm			4.1mb
		i	45	21.00	38km
		i	48	45.00	
GBA	48.82	280 P	45	55 00	3.8X
	0.7s	1.90nm			4.2mb
QUE	59.86	300 eP	47	12.50	0.4
MAIO	66.83	306 eP	48	03.00	5.2X
INK	85.53	22 eP	49	45.00	2.6
MBC	87.14	13 eP	49	54.00	3.7X
	0.8s	5.00nm			4.8mb
SLL	93.85	333 eP	50	20.40	-1.5
	0.6s	1.30nm			4.5mb
NB2	94.53	334 P	50	34.00	8.9X
	0.8s	2.70nm			4.7mb

S.D. = 1.3 on 13 of 21 obs.

% DEC 19, 1989 15h 50m 00.16± 0.76s
41.136 N ± 8.8km 28.514 E ± 6.4km
DEPTH = 10.0km (geophysicist)
TURKEY (366)

CTT	0.06	280 ePg	50	02.30	-0.2
		eSg	50	07.30	
ISK	0.42	100 ePg	50	08.70	0.0
YLV	0.86	131 iPg	50	16.80	-0.1
DMK	0.89	321 iPg	50	17.30	0.1
		iSg	50	28.80	
BNT	0.90	210 ePg	50	17.50	0.1

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

? DEC 19, 1989 16h 09m 27.37± 2.28s
31.958 S ±24.2km 68.274 W ±12.0km
DEPTH = 104.4 ± 20.2 km
SAN JUAN PROVINCE, ARGENTINA (137)

RTCV	0.24	293 iPc	09	42.50	-0.2
		S	09	54.00	
CFA	0.35	5 iPd	09	43.20	0.2
RTLL	0.65	345 iPc	09	45.00	0.0
RTBS	1.05	286 ePc	09	49.00	0.1
		S	10	05.00	
RTRS	2.05	330 e(P)	10	01.20	-0.1
TCA	3.20	80 iPc	10	16 80	0.0
		S	10	51.00	

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

% DEC 19, 1989 17h 44m 42.96± 0.73s
39.322 N ± 5.9km 28.195 E ± 7.5km
DEPTH = 10.0km (geophysicist)
TURKEY (366)

DST	0.44	50	iPg	44 51.40	-0.5
			eSg	44 59.40	
BNT	1.05	349	iPn	45 03.70	0.9
EDC	1.06	346	iPn	45 02.80	0.0
IZM	1.18	219	ePn	45 04.50	-0.4
KHL	1.44	133	ePn	45 09.30	0.1
ALT	1.51	100	ePn	45 11.00	0.8
YLV	1.54	36	iPn	45 09.70	-0.8

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

? DEC 19, 1989 17h 53m 22.87± 2.92s
31.042 N ±17.1km 51.434 E ±33.8km
DEPTH = 33.0km (normal)
4.4mb (3 obs.)
IRAN (348)

KER	4.92	313	eP	54 36.50	-0.1
BHD	6.38	292	ePnc	55 07.00	10.0X
			iSn	56 16.00	
SLY	6.73	314	eP	55 02.50	0.6
QASM	8.52	237	eP	55 27.30	0.4
KBA	33.25	310	eP	59 57.00	-2.3
	0.6s		4.20nm		4.5mb
HFS	38.38	330	eP	00 43.20	0.8
	0.6s		6.70nm		4.6mb
NB2	39.89	331	P	00 55.60	0.5
	0.5s		1.00nm		3.8mb

S.D. = 1.5 on 6 of 7 obs.

% DEC 19, 1989 17h 58m 03.24± 0.82s
39.248 N ± 6.6km 28.182 E ± 8.5km
DEPTH = 10.0km (geophysicist)
TURKEY (366)

DST	0.50	44	iPg	58 12.40	-0.9
			eSg	58 19.00	
IZM	1.11	221	ePn	58 24.00	-0.1
EDC	1.12	348	ePn	58 23.80	-0.5
BNT	1.12	350	ePn	58 25.20	0.9
KHL	1.40	131	ePn	58 28.00	-0.8
ALT	1.51	97	ePn	58 32.00	1.5
YLV	1.60	34	iPn	58 31.70	-0.1

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

DEC 19, 1989 19h 33m 03.69± 0.49s
17.591 S ± 7.4km 70.215 W ± 5.7km
DEPTH = 163.7 ± 9.2 km
NEAR COAST OF PERU (115)

ARE	1.66	312	iP	33 37.10	0.5
			iS	34 00.50	
CNCB	2.27	70	iPd	33 43.80	0.0
LPB	2.28	63	P	33 44.00	0.2
			S	34 12.00	
ZOBO	2.39	57	iPd	33 44.80	-0.5
			S	34 16.00	
CCH	3.89	88	iPc	34 04.00	0.1
	0.4s		9.00nm		
ANT	6.09	182	e(P)	34 32.50	0.0
YJA	6.36	137	ePc	34 36.40	-0.2
PT06	6.98	302	iPc	34 44.40	-0.1
			eS	35 00.40	
NNA	8.49	310	iPd	35 04.30	-0.4
	0.3s		71.43nm		5.7mb X
			eS	36 42.00	
KIC	68.87	76	Pc	43 53.20	0.3

S.D. = 0.4 on 10 of 10 obs.

DEC 19, 1989 19h 34m 30.02± 0.70s
49.800 N ± 8.2km 18.491 E ± 5.4km
DEPTH = 10.0km (geophysicist)
CZECHOSLOVAKIA (547)
ML 3.2 (VKA), 2.9 (KBA), 2.8 (KRA).

KRA	0.97	74	ePg	34 48.80	0.3
			eSg	35 00.80	
SPC	1.30	117	iPn	34 54.50	0.3
			iSg	35 13.00	
KSP	1.75	307	ePn	35 00.50	-0.1
			iPg	35 03.50	
			iSg	35 26.00	
ZST	1.85	210	ePn	35 02.60	0.6
			e	35 27.00	
SRO	1.99	183	i(P)	35 10.60	6.5X
PSZ	2.10	153	eP	35 11.00	5.3X
VKA	2.10	224	eP	35 05.50	-0.1
			iPgd	35 13.20	
			iSg	35 45.50	
SOP	2.47	212	eP	35 12.00	1.0
PRU	2.56	276	Pg	35 15.00	2.8X
			e	35 32.70	
			Sg	35 51.50	
BRG	3.10	292	iPg	35 26.00	6.1X
			iSg	36 08.00	
KHC	3.27	260	Pn	35 22.00	-0.4
			Pg	35 30.20	
			Sn	36 03.50	
			Sg	36 15.00	
CLL	3.81	295	ePg	35 43.00	13.0X
			eSg	36 30.00	
KBA	4.38	233	e(Pn)	35 38.00	-0.2
			iPg	35 54.30	
			iSg	36 55.20	
BZS	4.69	152	eP	35 41.00	-1.4

S.D. = 0.8 on 9 of 14 obs.

? DEC 19, 1989 22h 05m 25.48± 3.02s
38.637 N ±19.7km 26.717 E ±24.9km
DEPTH = 10.0km (geophysicist)
AEGEAN SEA (365)

IZM	0.49	119	iPg	05 35.50	0.1
			iSg	05 43.00	
EZN	1.23	346	ePn	05 48.10	-0.1
DST	1.77	56	ePn	05 56.00	-0.4
BNT	1.95	28	ePn	05 59.50	0.5

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

& DEC 19, 1989 23h 00m 50.10s
36.677 N 121.350 W
DEPTH = 4.0km
CENTRAL CALIFORNIA (39)
<BRK>. ML 2.6 (BRK).

SAO	0.12	319	iPc	00 52.40	-0.1
LLA	0.33	100	iPc	00 56.80	0.0
			iS	01 02.60	
PRS	0.35	183	iPc	00 56.90	-0.1
GCC	0.63	304	ePd	01 02.20	-0.4
			iS	01 12.40	
ARN	0.69	348	iPd	01 03.50	-0.3
MHC	0.70	341	ePd	01 04.00	-0.2
PRI	0.77	134	ePd	01 04.80	-0.7
PCC	1.16	315	ePd	01 10.80	-1.6
FRI	1.35	76	ePd	01 14.20	-1.5
			eS	01 32.10	
BKS	1.39	330	iPc	01 16.50	0.2
			i	01 25.60	
			iS	01 37.40	
CMB	1.56	29	ePc	01 17.30	-1.4
			eS	01 36.60	
BCH	1.81	145	eP	01 20.00	-2.4
KVN	3.50	46	eP	01 53.00	6.4

13 obs. associated

? DEC 19, 1989 23h 27m 57.20± 1.19s
42.880 N ± 7.2km 12.984 E ±13.2km
DEPTH = 10.0km (geophysicist)
CENTRAL ITALY (381)

ASS	0.30	309	P	28 03.60	0.0
			eSg	28 08.10	
CIO	0.34	20	ePg	28 04.25	0.1
			iSg	28 10.16	
MNS	0.54	204	P	28 08.20	0.0
			eSg	28 15.60	
ARV	0.62	357	P	28 09.60	-0.1
			eSg	28 18.20	

S.D. = 0.1 on 4 of 4 obs.

DEC 20, 1989 00h 08m 20.61± 0.14s
8.094 N ± 3.5km 126.828 E ± 4.0km
DEPTH = 21.0km (geophysicist)
6.0mb (49 obs.) 6.3Msz (27 obs.)
MINDANAO, PHILIPPINE ISLANDS (259)
Ms 6.3 (BRK), 5.9 (PAS)

19d 16h

Mo=1.3*10**19 Nm (PPT). Depth from broadbond displocement seismograms.
FAULT PLANE SOLUTION: P-Woves
NP1:Strike= 11 Dip=70 Slip= 90
NP2: 191 20 90
Principol Axes:
T Plg=65 Azm=281
P 25 101
Comment: The focol mechanism is poorly controlled ond corresponds to reverse foulting. The preferred fault plane is NP2.
RADIATED ENERGY
No. of sto: 5 Focol mech. M
Energy 9.6±3.5*10**13 Nm
MOMENT TENSOR SOLUTION
Dep 17 No. of sto: 10
Moment Tensor; Scale 10**18 Nm
Mrr= 3.57 Mtt= 0.40
Mff=-3.96 Mrt=-1.49
Mrf= 4.87 Mtf=-0.45
Principol oxes:
T Vol= 6.36 Plg=61 Azm=239
N 0.01 12 351
P -6.37 26 88
Best Double Couple:Mo=6.4*10**18
NP1:Strike=204 Dip=21 Slip= 124
NP2: 348 72 77
CENTROID, MOMENT TENSOR (HRV)
Doto Used: GDSN
L.P.B.: 10S, 27C M.W.: 8S, 12C
Centroid Locotion:
Origin Time 00:08:27.2 0.2
Lot 8.08N 0.02 Lon 127.11E 0.02
Dep 24.8 1.2 Half-durotion 5.0
Moment Tensor; Scole 10**18 Nm
Mrr= 5.05 0.09 Mtt= 0.37 0.08
Mff=-5.41 0.12 Mrt= 0.52 0.25
Mrf= 4.27 0.35 Mtf= 0.03 0.08
Principol Axes:
T Vol= 6.61 Plg=70 Azm=284
N 0.33 4 183
P -6.94 20 91
Best Double Couple:Mo=6.8*10**18
NP1:Strike=174 Dip=26 Slip= 81
NP2: 5 65 94

DAV	1.59	231	iPc	08 54.00	6.2X
MAP	3.58	308	P	09 25.00	8.8X
OCP	8.61	320	eP	10 32.00	5.0X
MAN	8.62	320	P	10 32.00	4.8X
TSM	9.52	247	ePc	10 47.90	8.4X
	1.0s		709.40nm		6.9mb X
BAG	10.27	324	eP+	10 47.00	-3.2X
KKM	10.73	260	ePc	11 03.10	6.8X
	1.1s		437.60nm		6.7mb X
PCI	11.34	218	ePd	11 08.50	4.0X
			eS	11 39.00	
AAI	11.78	173	ePd	11 14.10	3.5X
MKS	15.12	209	iPc	12 02.20	7.4X
	1.0s		554.70nm		5.8mb
JAY	17.40	127	ePc	12 26.20	2.3
ANP	17.73	344	iPc	12 29.00	0.9
			iS	15 44.00	
QZH	18.51	336	P	12 35.00	-2.5
	8.0s		19.00nm		3.3mb X
Z	20s		162.00um		4.4MszX
N	16s		57.10um		
E	16s		62.00um		
GUMO	18.53	71	eP-	12 36.30	-1.6
	1.0s		336.00nm		5.5mb
			pP	12 45.50	
PJG	18.53	71	eP	12 36.10	-1.8
			TT	31 46.00	
GUA	18.56	72	eP-	12 35.70	-2.6
	0.9s		201.68nm		5.3mb
Z	17s		106.80um		4.0Msz
			eS	16 16.50	
HKC	18.65	321	iP	12 40.00	0.7
			iS	16 12.00	
MCO	18.91	319	eP	12 43.70	1.1
GZH	19.74	321	eP	12 49.50	-2.7X
Z	18s		100.00um		
N	16s		49.10um		
E	17s		80.20um		

20d 00h

			S	16 30.00			
			SS	16 51.00			
OIZ		19.75	305 iPc	12 51.50	-0.8		
	E	15s	163.00um				
			PP	13 12.00			
KHKI		19.81	215 ePd	12 53.00	0.1		
MTN		21.24	168 iPd	13 07.00	-0.7		
MNDI		21.96	130 eP	13 19.00	3.8X		
SSE		23.48	348 iP+	13 30.00	0.2		
		6.0s	21.30nm		3.9mb X		
	Z	18s	63.10um		6.1Msz		
	N	12s	60.50um				
	E	14s	138.70um				
			pP	13 40.50	40kmX		
			sP	13 42.00			
			PP	14 02.00			
			PPP	14 17.50			
			i	15 10.00			
			S	17 40.00			
			sS	17 55.00			
			SS	18 34.00			
KNA		23.77	175 iPc	13 33.20	0.6		
KGM		24.17	257 ePd	13 40.40	3.7X		
			e	13 46.30			
LAT		24.88	126 eP	13 46.00	2.5X		
NJ2		24.97	344 Pc	13 44.00	-0.1		
	E	15s	46.40um				
			iS	18 04.00			
WHN		25.20	334 iPc	13 46.00	-0.4		
		1.0s	0.10nm		2.4mb X		
	Z	20s	96.60um		6.3Msz		
	E	15s	132.00um				
			sS	18 24.00			
KLM		25.54	260 eP	13 57.50	7.7X		
IPM		25.88	264 ePc	13 55.30	2.4		
		0.9s	107.50nm		5.5mb		
			e	14 42.50			
			e	17 37.00			
GYA		26.46	316 P	13 59.00	0.6		
	N	13s	23.80um				
	E	13s	64.40um				
PMG		26.69	130 eP	14 02.00	1.7		
SHK		26.86	11 ePd	14 01.00	-0.7		
RAB		28.07	115 eP	14 16.00	3.0X		
KMI		28.54	309 ePc	14 18.09	0.7		
	E	14s	82.00um				
			pP	14 33.00	61kmX		
			PP	15 16.00			
			eS	18 47.04			
			sS	19 33.00			
WB5		28.77	165 eP	14 17.00	-2.2		
			i	14 21.90			
CHTO		29.09	294 iP	14 20.50	-1.7		
TIA		29.36	344 Pc	14 22.60	-1.7		
		9.0s	4.60nm		3.3mb X		
	Z	13s	100.00um		6.6MszX		
	N	14s	22.50um				
	E	14s	49.30um				
			esP	14 46.80			
MBL		29.87	193 iPc	14 28.90	-0.2		
MAT		30.16	18 iPc	14 28.10	-3.4X		
			(S)	19 00.00			
XAN		30.65	330 P	14 33.30	-2.6		
	N	16s	53.80um				
	E	16s	72.80um				
			pP	14 54.70	94kmX		
			PP	15 43.00			
DL2		31.03	352 Pc	14 40.00	0.9		
	N	15s	63.60um				
	E	14s	15.30um				
OIS		31.12	156 iPc	14 38.50	-1.6		
CD2		31.30	320 eP	14 39.00	-2.7X		
	E	13s	69.90um				
			S	19 41.50			
TIY		32.24	338 Pc	14 48.00	-1.9		
	N	13s	53.20um				
	E	12s	37.30um				
			sP	15 56.50			
			iS	20 01.00			
			SS	21 50.00			
ASPA		32.31	168 iPc	14 49.00	-1.6		
		0.6s	141.00nm		6.1mb		
	Z	20s	27.88um		5.9Msz		
			LR	29 50.50			
NANU		32.41	200 iPc	14 41.70	-9.7X		
BJI		33.21	345 ePc	14 57.96	-0.2		
	N	12s	21.20um				
	E	14s	24.90um				
			epPd	15 04.58	23kmX		
			iS	20 15.61			
SNY		33.72	356 iPd	15 01.50	-1.0		
	Z	17s	49.80um		6.3MszX		
	N	14s	38.10um				
	E	12s	25.40um				
			S	20 13.00			
CTA		33.91	146 iPc+	15 04.00	-0.5		
		1.2s	303.13nm		6.1mb		
			iS	20 05.00			
WARB		34.07	180 iPc	15 06.00	0.2		
LZH		34.88	326 Pc	15 11.50	-1.3		
		1.5s	228.00nm		5.9mb		
	N	19s	165.40um				
	E	18s	87.50um				
			sP	15 20.50			
			i	15 50.00			
			PP	16 24.00			
			PcP	17 53.50			
			iS	20 34.00			
			sS	20 45.00			
			SS	22 46.00			
			ScS	25 34.50			
HHC		35.34	340 Pc	15 15.90	-0.7		
	E	14s	42.40um				
MEKA		35.43	193 eP	15 17.30	-0.1		
CN2		35.59	358 iPc	15 19.00	0.4		
		1.2s	0.24nm		3.0mb X		
	Z	18s	354.00um		7.2Msz		
	N	12s	12.30um				
	E	12s	25.00um				
			pP	15 32.00	49kmX		
			eS	20 49.00			
			ePcS	21 32.00			
			iSS	23 06.00			
BTO		35.67	338 iPc	15 18.50	-1.0		
	N	14s	2.73um				
	E	14s	49.30um				
			sP	15 46.50			
			PP	16 40.50			
			S	20 49.50			
			SS	23 15.00			
MDJ		36.46	3 iPd	15 25.70	-0.3		
	Z	25s	40.30um		6.1MszX		
	N	13s	20.60um				
	E	16s	34.90um				
			S	21 04.00			
			SS	23 32.00			
SAP		37.08	18 eP	15 40.00	8.8X		
HNR		37.30	117 eP	15 32.00	-1.3		
			e(S)	21 06.00			
MRWA		38.54	195 iPd	15 43.40	-0.2		
			e	18 15.60			
FORR		38.74	178 iPd	15 44.70	-0.5		
COOL		39.14	188 iPc	15 48.30	-0.3		
		0.4s	97.00nm		5.9mb		
GTA		39.48	326 iPc	15 50.80	-0.7		
		7.0s	3.70nm		3.2mb X		
	Z	16s	55.40um		6.5MszX		
	E	17s	63.20um				
			PP	17 30.00			
			S	21 44.00			
BAL		39.69	194 iPc	15 53.40	0.3		
		0.5s	129.00nm		5.9mb		
LSA		39.76	307 iP	15 55.00	0.7		
	N	15s	13.80um				
	E	15s	17.60um				
			PcP	17 57.00			
KLB		40.40	192 iPc	15 59.40	0.4		
		0.5s	81.00nm		5.7mb		
YSS		41.09	17 iPc	16 06.00	1 5		
			eS	22 12.00			
MUN		41.12	194 iPc	16 05.50	0.6		
		0.6s	415.00nm		6.3mb		
	Z	20s	15.00um		5.9Msz		
			eS	22 16.00			
HIA		41.47	353 ePc	16 09.04	1.5		
			epPd	16 15.16	21kmX		
			ePP	17 50.25			
			iS	22 21.59			
NWAO		41.80	192 iPc	16 11.00	0.5		
		0.8s	311.00nm		6.1mb		
			eS	22 36.00			
RKG		42.95	192 iPd	16 25 60	5.7X		
BRS		43.31	145 iPc+	16 21.80	-1.1		
		1.0s	72.00nm		5.4mb		
			epP	16 33.00	40kmX		
			ePP	18 07.00			
			e	18 25.00			
			eS	23 46.00			
			e(ScS)	26 41.00			
			eSS	27 00.00			
ADE		44.27	166 iPc+	16 30.80	0.1		
		0.7s	356.16nm		6.3mb		
	Z	20s	6.00um		5.5Msz		
BWA		46.97	155 eP	16 53.00	0.9		
IRK		47.75	341 eP	16 58.00	0.0		
			iS	23 52.00			
HYB		47.87	286 ePc	16 59.00	-0.5		
		1.2s	171.40nm		6.0mb		
			e	17 09.00			
			eS	24 01.00			
CAN		47.98	155 eP	16 59.80	-0.3		
CNB		48.13	155 eP	17 01.60	0.4		
			e	17 05.00			
PVC		48.35	122 iP	17 06.50	3.4X		
TOO		48.66	160 eP	17 06.00	0.7		
			e	17 08.00			
			e	17 22.00			
KOD		48.74	276 eP	17 07.00	0.4		
			iS	24 16.00			
GBA		48.75	281 P	17 05.00	-1.2		
DZM		49.06	128 iPc	17 09.10	0.5		
WMQ		49.27	323 ePc	17 10.00	0.0		
	N	17s	67.30um				
	E	18s	61.50um				
			epPd	17 17.61	25kmX		
			eS	24 16.23			
NDI		50.91	300 iPc	17 20.20	-2.4		
			eS	24 20.00			
PET		51.70	24 eP	17 30.00	1.8		
			eS	24 48.00			
POO		52.42	287 eP	17 33.50	-0.8		
			iS	25 02.00			
BOM		53.42	287 iP	17 27.70	-13.9X		
			iS	25 08.70			
KSH		55.07	313 iPd	17 53.50	-0.1		
	Z	16s	78 00um		6.9MszX		
	N	16s	73.00um				
			PP	20 02.00			
SGE		56.55	117 ePd	18 07.20	2.7X		
SVA		57.23	118 eP	18 15.30	6.1X		
FRU		57.24	316 eP	18 08.00	-1.0		
			eS	26 04.00			
SMY		58.69	32 P	18 22.80	3.9X		
	Z	20s	10.00um		5.9Msz		
QUE		59.99	300 eP	18 26.00	-2.5		
			eS	26 40.00			
DSH		60.16	310 eP	18 29.00	-0.4		
			eS	26 44.00			
ADK		63.34	35 P	18 51.20	0.8		
		1.0s	300.00nm		6.4mb		
MSZ		64.25	149 P	18 45.60	-10.8X		
KRP		64.46	139 P	18 57.80	-0.2		
AFI		64.73	109 eP	19 04.67	4.5X		
			epP	19 10.62	19kmX		
			eS	27 45.36			
			esS	28 07.87			
TCW		65.58	142 P	19 04.20	-0.9		
MRW		65.85	142 eP	19 04.60	-2.2		
KHZ		65.87	144 P	19 05.40	-1.5		
WEL		65.92	142 P	19 06.00	-1.3		
			S	27 52.00			
CAW		66.00	142 P	19 06.10	-1.7		
MTW		66.30	142 eP	19 08.40	-1.3		
BLW		66.40	142 eP	19 08.80	-1.6		
PGZ		66.46	141 eP	19 09.20	-1.6		
MAIO		67.00	306 eP	19 13.00	-1.5		
		0.7s	22.24nm		5.4mb		
			eS	28 04.00			
ILT		69.68	19 iPd	19 29.60	-0.8		
			iS	28 38.00			
HON		73.32	70 P	20 00.00	6.9X		
	Z	18s	11.34um		6.2Msz		
SDN		73.55	35 eP	19 55.50	1.8		
DRV		75.18	175 eP	20 02.00	-0.9		
PLL		75.80	72 P	20 08.40	0.5		
MLH		75.87	72 P	20 08.60	0.5		
AHA		76.00	72 P	20 09.60	0.9		
MKA		76.09	72 P	20 09.80	0.6		
SVW		76.94	29 ePd	20 13.30	0.2		
TTA		76.99	27 ePd	20 13.10	-0.3		
KER		77.01	303 eP	20 13.00	-1.2		

TAB	77.59	307	iP+	20 17.00	-0.3
RYD	77.81	294	eP	20 20.50	1.9
BRW	78.03	19	ePd	20 19.10	0.2
KDC	78.23	33	ePd	20 19.30	-0.8
SLY	78.30	305	ePd	20 20.00	-1.0
			iPcP	20 28.40	
			ePP	23 19.00	
			eS	30 12.50	
			eScS	30 46.00	
			ePS	31 10.00	
IMA	78.38	24	ePd	20 21.00	-0.1
BHD	79.31	302	iPd	20 28.00	1.4
			iPcP	20 38.00	
			ePP	23 50.00	
			ePPP	25 24.00	
			iScS	30 26.00	
			iS	30 28.00	
			eSS	35 53.00	
BKR	79.68	311	iPc	20 30.00	1.3
			iS	30 30.00	
PMR	80.10	29	ePd	20 29.00	-1.2
	0.7s	128.60nm			6.0mb
	Z 20s	10.00um			6.2Msz
MSL	80.18	306	ePd	20 32.50	1.3
			ePcP	20 42.50	
			e	22 18.50	
			ePP	23 18.00	
			eS	30 36.00	
QASM	80.49	295	eP	20 35 00	1.8
COL	80.76	26	ePc	20 34.92	1.2
			ePP	23 41.54	
			eS	30 38.12	
FBA	80.76	26	eP	20 32.60	-1.1
TOA	81.50	28	eP	20 37.80	0.1
ARO	82.56	281	iP+	20 41.50	-2.6X
OBN	83.56	325	iPd+	20 48.00	-0.4
	1.0s	170.00nm			6.2mb
	Z 20s	20.00um			6.5Msz
			iS	31 02.00	
RUWJ	84.03	302	Pd	20 53.30	1.8
DWY	84.42	26	P	20 53.60	1.0
GAZ	84.87	307	iP	20 57.50	2.1
KVT	85.33	311	iP	21 01.10	3.4X
KEV	85.85	340	iP	20 58.80	-0.9
	1.1s	139.20nm			6.1mb
	Z 20s	27.80um			6.7Msz
			i	21 07.10	
			e	31 24.00	
			LR	05 08.00	
INK	86.09	22	ePd	21 00.50	-0.4
	1.2s	309.00nm			6.4mb
			pP	21 14.50	48kmX
AFR	86.17	108	eP	21 16.00	13.9X
	1.2s	145.00nm			
HLBJ	86.20	302	Pd	21 01.70	-0.6
PUL	86.34	330	iPd	21 06.00	3.8X
			iS	31 27.00	
SOD	86.50	338	iP	21 01.70	-1.2
HRI	86.52	303	eP	21 04.00	0.1
SHMJ	86.57	302	Pd	21 07.10	3.1X
WAJH	86.72	296	eP	21 05.30	0.5
MASJ	86.74	301	Pd	21 04.40	-0.5
KBS	86.76	350	eP	21 09.50	5.5X
AAE	86.85	279	iP	21 08.00	2.0
KAS	87.00	311	iPd	21 06.10	0.1
DSI	87.05	301	eP	21 06.50	0.2
PRNI	87.54	300	eP	21 09.00	0.3
PMO	87.54	105	iP	21 15.30	6.5X
	1.2s	80.00nm			5.9mb
AQBJ	87.58	300	Pd	21 08.90	0.0
HOL	87.64	299	eP	21 09.00	-0.2
MBC	87.70	13	eP	21 09.00	0.4
	1.2s	409.00nm			6.6mb
			pP	21 23.00	47kmX
SUF	87.73	333	iP	21 08.00	-0.9
TPT	87.81	105	iP	21 16.20	6.1X
	1.2s	100.00nm			6.0mb
VAH	87.83	106	iP	21 16.30	6.1X
	1.2s	55.00nm			5.7mb
BBTK	87.98	310	eP	21 10.00	-0.8
RUV	88.06	106	iP	21 17.70	6.4X
	1.2s	85.00nm			5.9mb
CSS	88.27	305	eP	21 11.70	-0.4
TRO	88.60	341	iP	21 13.09	0.1
TRO	88.60	341	eP	21 13.40	0.4
SBA	88.62	172	e(P)	21 16.50	3.6X
NUR	88.96	331	iP	21 14.10	-0.7
	1.1s	475.00nm			6.7mb
	Z 20s	27.80um			6.7Msz
			i	21 20.00	
			e	32 00.00	
			LR	05 16.00	
PPCY	89.08	305	eP	21 15.00	-1.0
GPA	89.76	311	eP	21 21.00	1.9
BCK	90.05	308	eP	21 21.10	0.5
ALT	90.14	309	eP	21 19.00	-2.0
NAI	90.20	269	iP	21 23.60	1.7
	1.3s	30.77nm			5.4mb
ASW	90.31	294	P	21 24.00	2.1
			eS	24 58.00	
CFR	90.39	316	eP	21 23.00	1.2
ISK	90.55	311	eP	21 24.00	1.3
ITU	90.58	312	iPc	21 22.00	-0.8
PSN	90.67	314	eP	21 24.00	0.8
ELL	90.72	307	eP	21 22.00	-1.7
KHL	90.73	309	eP	21 21.00	-2.7
HLW	90.74	300	eP	21 25.00	1.2
			eS	31 56.00	
LOF	90.97	340	iPc	21 24.62	0.5
KSL	91.09	307	eP	21 24.50	-0.8
DST	91.16	310	eP	21 24.50	-1.1
VRI	91.22	317	ePc	21 26.00	0.3
BNT	91.54	311	iP	21 27.50	0.2
EDC	91.59	311	eP	21 28.00	0.5
MLR	91.84	316	ePc	21 30.00	1.3
YER	91.92	308	eP	21 29.70	0.5
BUC	91.98	315	eP	21 39.00	9.8X
BUC1	92.04	315	ePc	21 28.00	-1.5
JMB	92.08	313	eP	21 28.00	-1.7
IZM	92.45	309	eP	21 30.60	-1.0
UPP	92.50	332	iP	21 30.10	-1.1
	1.1s	300.00nm			6.6mb
			iSKS	32 00.00	
			iS	32 29.00	
CMP	92.51	316	ePc	21 35.00	3.3X
PVL	92.80	314	iPc	21 31.00	-2.0
EZN	92.85	311	iP	21 32.10	-1.2
SMG	92.93	309	eP	21 34.60	0.9
DIM	92.93	313	eP	21 34.00	0.4
BMR	92.94	319	ePd	21 40.00	6.5X
PRK	93.02	310	eP	21 34.50	0.4
NSS	93.09	337	eP	21 33.34	-0.6
KDZ	93.11	313	eP	21 36.00	1.5
KAP	93.12	306	eP	21 34.00	-0.6
RDO	93.14	312	eP	21 35.00	0.4
UZH	93.45	320	iPc	21 37.00	1.2
			iS	32 35.00	
RZN	93.61	313	eP	21 36.00	-1.0
PGB	93.79	314	eP	21 36.00	-1.7
HFS	94.22	333	eP	21 37.50	-1.7
	1.0s	103.10nm			6 2mb
	Z 16s	15.33um			6.6MszX
			LR	01 34.00	
MMB	94.35	313	eP	21 39.00	-1.2
RGS	94.37	336	iPc	21 40.50	0.6
NPS	94.43	306	eP	21 39.60	-1.1
VTS	94.47	314	eP	21 40.00	-0.9
OUR	94.48	312	eP	21 40.00	-0.8
KRA	94.50	322	eP	21 39.90	-0.8
	1.0s	124.00nm			6.3mb
	Z 18s	15.30um			6.5Msz
	N 22s	18.40um			
			e	21 45.20	
			eS	32 18.00	
			e	32 57.00	
SRS	94.57	312	eP	21 41.20	0.0
SPC	94.58	321	eP	21 42.10	0.8
BZS	94.74	317	eP	21 41.50	-0.4
KKB	94.75	313	eP	21 40.00	-2.0
SOH	94.82	312	eP	21 44.80	2.4X
PLG	94.87	312	eP	21 42.80	0.2
NB2	94.94	334	P	21 39.40	-3.2X
	1.0s	75.60nm			6.1mb
KNT	95.06	313	eP	21 41.70	-1.8
THE	95.15	312	eP	21 43.40	-0.5
PSZ	95.19	320	eP	21 45.20	1.2
VAY	95.26	313	iP	21 42.00	-2.4
	1.3s	0.21nm			3.4mb X
ATH	95.27	309	eP	21 44.00	-0.5
			e	25 24.00	
			e	32 12.00	
GRG	95.48	313	eP	21 45.00	-0.5
VAM	95.52	307	eP	21 45.20	-0.5
JNW	95.61	347	eP	21 53.00	7.5X
LIT	95.64	312	eP	21 44.00	-2.2
BEO	95.76	317	eP	21 49.50	2.9X
SKO	95.90	314	eP	21 46.20	-1.1
	1.2s	80.00nm			6.0mb
	Z 18s	7.09um			6.2Msz
	N 17s	6.64um			
	E 16s	8.00um			
			i	21 52.30	
			i	22 02.00	
			iPP	25 42.00	
			i	26 37.00	
			iPPP	27 46.00	
			i	28 28.00	
			i	29 42.00	
			i	31 04.00	
			iSKS	32 18.00	
			iPS	34 06.00	
			i	34 54.00	
			iSS	39 20.00	
			i	40 00.00	
			LR	10 29.00	
AGG	96.05	311	eP	21 46.90	-1.2
KZN	96.12	312	eP	21 49.50	1.1
VLI	96.19	308	eP	21 50.00	1.3
SRO	96.24	320	iP	21 50.70	2.0
			e(PP)	25 56.40	
KSP	96.43	323	eP	21 48.70	-0.8
	1.2s	115.00nm			6.2mb
			ePP	25 29.00	
OHR	96.60	313	eP	21 48.30	-2.3
	1.2s	0.08nm			3.1mb X
			i	21 53.80	
			i	22 03.70	
ITM	96.85	309	eP	21 49.80	-1.9
ZST	96.87	321	eP	21 55.30	3.7X
			e(PP)	25 49.40	
VKA	97.34	321	eP	21 54.00	0.3
	4.0s	597.00nm			6.5mb X
	Z 17s	11.60um			6.4MszX
			e(PP)	25 43.50	
SOP	97.39	320	eP	21 55.50	1.6
GMW	97.51	40	P	21 52.00	-2.5
VLS	97.59	310	eP	21 53.00	-2.0
PRU	97.79	323	P	21 55.70	0.0
	Z 17s	25.30um			6.8MszX
	N 22s	8.10um			
	E 17s	24.50um			
			e	21 59.50	
			PP	25 51.50	
			SKS	32 28.00	
			S	33 26.00	
			PS	34 46.00	
BRG	97.80	324	iP	21 55.60	-0.1
	Z 18s	10.50um			6.4Msz
	N 20s	15.00um			
	E 20s	18.50um			
			i	21 58.40	
			i	22 08.80	
			i	25 36.20	
			i	26 36.00	
			i	28 00.60	
			i	32 28.00	
			i	33 28.00	
SPA	98.04	180	eP	22 00.40	3.8X
	1.0s	21.50nm			5.7mb
	Z 20s	7.07um			6.2Msz
RMW	98.17	40	P	21 59.00	1.5
CLL	98.17	325	iPd	21 58.90	1.6
	1.3s	68.00nm			6.1mb
			i	22 11.00	
			eS	33 23.00	
LWI	98.26	269	iP+	21 59.00	0.3
KHC	98.70	322	iPc	22 01.40	1.6
	Z 17s	18.60um			6.6MszX
	N 20s	14.50um			
	E 18s	17.00um			
			i	22 05.50	
			S	32 36.00	
KMR	98.78	321	iP+	22 00.80	0.6
			iPP	26 04.20	
PNT	98.81	37	eP	22 00.00	-0.3
FHC	98.97	47	e(P)	22 03.70	2.5X
VBY	99.01	319	eP	22 05.90	4.7X
KRI	99.17	254	iPd	21 58.30	-4.3X
			iPP	25 29.40	
			iS	32 13.20	
MOX	99.25	324	eP	22 03.00	0.7

20d 00h

2.0s 98.00nm 6.0mb
Z 17s 21.90um 6.7MszX
N 16s 14.40um
E 17s 6.50um
eSKS 32 40.00
eS 33 40.00
LJU 99.28 319 eP 22 04.50 2.0
CEY 99.46 319 e(P) 22 08.00 4.6X
KBA 99.65 321 e(P) 22 02.00 -2.4
1.1s 34.90nm 5.8mb
i 22 06.10
i 22 09.00
ePP 26 05.00
ePPP 28 12.00
VOY 99.70 319 eP 22 03.20 -1.3
TRI 99.91 319 e(P) 22 00.00 -5.3X
e(PP) 26 04.00
e(SKS)32 48.00
e(SP) 35 00.00
e(SS) 45 16.00
WDC 100.09 46 ePdiff22 06.50 0.2
epP 22 20.80
ePP 26 17.20
ePKKP 38 27.70
ROI 100.15 313 Pdiff 22 08.10 1.4
FVI 100.19 320 Pdiff 22 05.00 -1.5
TDS 100.29 313 Pdiff 22 10.10 2.9X
BUL 100.42 251 iPdiff22 23.00 14.6X
iPP 26 15.30
iS 33 02.90
CZI 100.59 312 Pdiff 22 10.20 1.7
EDM 100.62 32 iPdiff22 08.70 0.3
MIN 100.84 46 e(Pdif22 09.50 -0.3
epP 22 23.50
WIT 101.00 328 ePdiff22 14.00 4.0X
CTI 101.13 320 Pdiff 22 11.00 0.1
SLR 101.14 245 ePdiff21 56.40 -15.1X
Z 20s 21.28um 6.7Msz
ORV 101.18 47 ePdiff22 10.90 -0.3
epP 22 25.20
ePP 26 25.00
BKS 101.21 49 ePdiff22 11.00 -0.4
1.0s 87.00nm 6.3mb
Z 20s 10.00um 6.3Msz
N 20s 4 30um
E 20s 8.00um
i 22 45.00
iPP 26 37.00
i 27 23.00
iSKS 32 53.00
iS 33 50.00
iPS 35 12.00
i 39 18.00
i 40 08.00
iSS 40 59.00
e 42 09.00
e 43 15.00
e 44 16.00
iSSS 44 27.00
i 45 24.00
iRScS 46 11.00
e 47 15.00
e 48 10.00
e 48 49.00
eLQ 50 10.00
eLR 54 24.00
WTS 101.32 327 ePdiff22 13.00 1.6
1.1s 38 00nm 5.9mb
SDI 101.37 315 Pdiff 22 17.00 5.0X
AZI 101.53 316 Pdiff 22 18.00 5.4X
MHC 101.84 49 ePdiff22 16.10 1.8X
Z 20s 9.00um 6.3Msz
N 20s 3.50um
E 20s 9.00um
iSKS 32 58.00
eS 33 55.00
iPS 35 19.00
i 35 48.00
e 36 30.00
e 37 13.00
i 38 51.00
i 40 17.00
eSS 41 04.00
eSSS 44 37.00
eRScS 46 10.00
e 48 23.00
iLQ 50 19.00
i 53 16.00
eLR 54 50.00
ARN 101.92 49 Pdiff 22 15.50 0.9
SAL 102.03 320 Pdiff 22 18.00 3.3X
RMP 102.10 316 Pdiff 22 19.20 4.0X
DBN 102.15 328 e(Pdif22 21.00 5.9X
ePP 26 38.00
SAO 102.18 50 ePdiff22 29.00 13.3X
Z 20s 8.00um 6.2Msz
N 20s 2.30um
E 20s 7.00um
eSKS 33 01.00
eS 34 03.00
iPS 35 32.00
e 39 42.00
eSS 41 08.00
eSSS 44 54.00
eRScS 46 11.00
eP'P' 47 56.00
e 48 32.00
eLQ 50 22.00
eLR 54 47.00
FIR 102.31 318 ePdiff22 05.00 -11.0X
PRS 102.38 50 ePdiff22 17.00 0.4
epP 22 31.40
ePKKP 38 15.20
CMB 102.53 48 ePdiff22 17.20 -0.1
epP 22 31.40
ePP 26 25.00
ePKKP 38 21.60
CDF 102.77 324 ePdiff22 20.60 2.4X
1.0s 17.60nm 5.7mb
PRI 102.98 50 ePdiff22 19.70 0.3
epP 22 34.60
VAI 103.02 321 Pdiff 22 08.00 -11.2X
SES 103.27 34 ePdiff22 20.00 -0.3
FRI 103.41 49 ePdiff22 21.00 -0.1
epP 22 35.70
ePP 26 31.10
KVN 103.82 47 Pdiff 22 19.80 -3.4X
CKI 103.97 320 Pdiff 22 25.00 1.5
SYP 104.07 51 ePdiff22 29.00 4.7X
LPG 104.45 321 ePdiff22 26.00 0.0
1.0s 26.00nm 6.1mb
LRM 104.70 38 ePdiff22 28.70 1.7
BNI 104.71 321 Pdiff 22 36.00 9.1X
TNP 104.84 47 Pdiff 22 28.40 0.6
FFC 105.33 27 ePdiff22 29.00 -0.3
1.0s 12.00nm 5.8mb
LOR 105.34 324 ePdiff22 32.10 2.6X
1.2s 20.80nm 6.0mb
LBF 105.41 323 ePdiff22 32.00 2.1
1.0s 16.00nm 5.9mb
CLC 105.42 50 ePdiff22 30.00 -0.2
ePP 26 47.00
PAS 105.60 51 ePdiff22 50.00 19.0X
epP 23 02.00
ePP 27 01.00
ePPP 29 16.00
eSKS 33 10.00
eS 34 32.00
ePS 36 06.00
ePPS 36 56.00
eSS 41 29.00
eSKKP 42 02.00
eLg 51 33.00
eLR 56 06.00
PAS 105.60 51 ePdiff22 42.58 11.6X
epP 23 02.00
ePP 27 01.00
ePPP 29 16.00
eSKS 33 08.41
eS 34 30.09
ePS 35 49.31
ePPS 36 56.00
eSS 41 29.00
eSKKP 42 02.00
eLg 51 33.00
eLR 56 06.00
SSF 105.65 324 ePdiff22 33.40 2.5X
1.0s 12.00nm 5.8mb
SMF 105.67 323 ePdiff22 32.60 1.6
1.0s 16.80nm 6.0mb
SBB 105.67 51 ePdiff22 31.00 -0.4
ePP 26 48.00
AVF 105.88 323 ePdiff22 33.20 1.3
1.0s 10.00nm 5.8mb
GSC 106.21 50 ePdiff22 37.00 3.2X
ePP 26 49.00
MAF 106.64 323 ePdiff22 35.70 0.4
PLM 106.91 52 ePdiff22 39.00 2.0
ePP 26 27.00
e 27 17.00
TPC 107.25 51 ePdiff22 43.00 4.6X
ePP 26 51.00
e 27 04.00
BAR 107.30 52 ePdiff22 52.00 13.4X
ePP 26 55.00
e 27 03.00
BCAO 107.41 277 ePdiff22 42.00 2.5X
0.6s 1.30nm 5.2mb
id 25 58.20
iS 26 53.50
iPP 27 09.81
FRB 107.42 7 ePdiff22 42.00 3.7X
GLA 108.60 51 ePdiff22 44.00 -0.4
ePP 26 51.00
EBR 110.74 319 (PKP) 27 12.00 18.1X
RSON 111.64 26 PKP 27 00.00 4.7X
Z 20s 12.43um 6.5Msz
GOL 112.29 41 PKP 26 59.00 1.8
GLD 112.36 41 PKP 26 59.00 1.7
Z 22s 13.90um 6.5Msz
ANMO 113.99 46 ePdiff23 26.27 17.7X
eSKS 33 52.38
eSKKS 34 53.96
e 35 21.77
iS 35 43.17
ePS 37 24.96
ALQ 113.99 46 ePdiff23 12.00 3.4X
ALQ 113.99 46 iPKPc 27 03.20 2.6X
1.0s 32.50nm
Z 20s 3.72um 6.0Msz
pP 37 51.30
ASMO 115.38 318 iPKPc 27 05.00 1.9
APHE 115.57 318 iPKPc 27 06.00 2.5X
ACHM 115.58 318 iPKPc 27 05.50 2.1
AAPN 115.66 318 iPKPc 27 04.50 0.9
ALOJ 115.76 318 ePKP 27 06.00 2.1
ATEJ 115.81 318 iPKPc 27 06.00 2.0
SCH 116.29 9 ePKP 27 05.50 1.4
IFR 118.44 315 iPKP 27 10.50 1.4
i 27 15.00
MEO 119.52 42 e(PKP)27 13.50 2.6X
AVE 120.14 316 ePKP 27 15.00 2.9X
SIO 120.43 40 ePKP 27 14.50 1.9
e 27 27.20
TUL 120.65 40 ePKP 27 15.30 2.3
1.2s 62.30nm
Z 20s 16.80um 6.7Msz
i 27 27.30
LR 05 09.00
LNO 120.65 40 e(PKP)27 13.00 0.1
e 27 27.80
TIO 121.37 314 iPKP 27 18.00 3.3X
i 27 47.50
UYO 122.60 40 iPKPd 27 16.80 0.1
VNM 122.89 52 (PKP) 27 32.50 15.0X
ELF 122.90 24 PKP 27 18.40 1.4
DLA 123.07 25 PKP 27 18.60 1.2
LDN 123.08 24 PKP 27 18.50 1.1
SHGH 125.21 283 ePKP 27 26.30 3.9X
e 29 15.70
TEGH 125.24 283 ePKP 27 26.00 3.6X
LEGH 125.42 283 ePKP 27 24.30 1.5
e 29 10.00
KUK 125.46 283 ePKP 27 22.90 0.0
RSCP 126.88 33 PKP 27 26.40 1.3
Z 20s 5.65um 6.2Msz
III 127.29 60 (PKP) 27 34.00 7.5X
PPM 127.70 58 (PKP) 27 30.50 2.8X
CBN 128.71 24 ePKP 27 34.00 5.6X
e 29 40.00
IISM 128.79 58 (PKP) 27 29.00 -0.1
KIC 129.61 285 PKP 27 17.94 -12.9X
TIC 129.80 286 PKP 27 19.02 -12.2X
LIC 129.93 285 PKP 27 18.96 -12.5X
Z 21s 5.80um 6.2Msz
OXX 130.21 60 (PKP) 27 41.50 9.4X
SRA 144.00 60 ePKP 27 58.00 0.5
SJS 144.41 60 ePKP 28 01.00 2.8X
UPA 148.73 58 ePKP 28 06.00 0.9
Z 19s 5.07um 6.3Msz
LNV 149.26 149 ePKP 28 09.00 3.6X

LCCH	149.55	149	iPKPd	28	14.50	8.7X
CHCH	149.65	150	ePKP	28	13.00	6.9X
TACH	149.73	150	ePKPd	28	11.50	5.3X
PCH	149.97	150	ePKPd	28	12.00	5.4X
SAN	150.03	150	ePKP	28	12.00	5.4X
PEL	150.27	149	iPKP	28	12.00	5.0X
	1.3s	298.08nm				
			i	28	15.00	
FCH	150.32	150	ePKP	28	16.00	8.5X
LRS	150.51	27	PKP	28	08.00	0.3
JACH	150.68	149	ePKP	28	14.00	6.3X
PORP	150.81	27	PKP	28	10.00	1.9
SJG	150.98	26	ePKP	27	51.00	-17.4X
CPD	151.15	26	PKP	28	12.00	3.3X
GGP	153.47	74	ePKP	28	17.50	4.6X
PSO	154.21	70	ePKP	28	18.00	4.3X
TCA	154.54	157	ePKPd	28	17.00	3.8X
PAG	154.59	19	ePKP	28	25.00	11.4X
FISA	154.93	40	ePKP	28	17.00	2.9X
BBL	155.13	19	ePKP	28	19.00	4.7X
BOG	155.63	59	ePKP	28	18.00	2.5X
TOV	155.72	43	ePKP	28	18.60	3.4X
SDV	155.77	46	ePKP	28	16.70	1.2
FDF	155.98	19	ePKP	28	25.10	9.6X
CAR	157.00	37	ePKP	28	22.00	5.0X
LLAV	157.10	37	ePKP	28	23.00	5.9X
ANT	157.33	135	e(PKP)	28	24.50	7.5X
SLA	159.70	146	ePKPd	28	23.00	3.1X
ARE	160.28	117	ePKP	28	11.00	-9.8X
YJA	161.65	141	ePKPc	28	26.00	3.7X
CNCB	163.15	122	PKP	28	26.00	2.0
			i	29	20.00	
LPB	163.19	121	ePKP	28	22.00	-1.9
	1.1s	101.27nm				
	Z 22s	8.52um				
			i	28	29.80	
			i	29	21.00	
			LR	25	08.00	
ZOBO	163.29	120	PKPc	28	25.00	0.8
	1.2s	121.62nm				
			LR	25	16.00	
CCH	164.35	127	PKP	28	28.30	3.4X
	S.D. = 1.2	on 267 of 394 obs.				

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* DEC 20, 1989 00h 19m 42.04± 0.78s
42.876 N ± 5.8km 12.977 E ± 6.9km
DEPTH = 10.0km (geophysicist)
CENTRAL ITALY (381)
MD 2.2 (SSO).

ASS	0.30	310	P	19	48.50	0.1
			eSg	19	53.20	
CIO	0.34	21	iPg	19	49.31	0.2
			iSg	19	55.23	
ALP	0.45	102	e(Pg)	19	51.27	0.0
			iSg	19	59.01	
MNS	0.54	204	P	19	52.90	0.0
			eSg	20	00.20	
ARV	0.62	358	P	19	54.30	-0.3
			eSg	20	03.70	
	S.D. = 0.3	on 5 of 5 obs.				

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* DEC 20, 1989 00h 28m 33.46± 0.45s
8.123 N ± 6.4km 126.814 E ±20.9km
DEPTH = 33.0km (normal)
5.1mb (8 obs.)
MINDANAO, PHILIPPINE ISLANDS (259)

MTN	21.27	168	eP	33	19.00	-0.4
SSE	23.45	348	P	33	40 50	-0.3
	1.0s	28.00nm			4.7mb	
			i	33	52.00	
KNA	23.80	175	eP	33	35.50	-8.8X
WB5	28.80	165	eP	34	29.30	-1.5
QIS	31.15	156	eP	34	50 00	-1.7
ASPA	32.35	168	eP	35	00.80	-1.3
	0.5s	18.00nm			5.2mb	
BJI	33.17	345	eP	35	07.00	-2.1
FORR	38.77	178	iPd	35	56.60	-0.1
	0.4s	26.00nm			5.4mb	
COOL	39.16	188	iPc	36	00.20	0.2
	0.5s	20.00nm			5.1mb	
BAL	39.71	194	eP	36	05.10	0.5
KLB	40.43	192	eP	36	11.20	0.7
MUN	41.14	194	eP	36	17.20	0.9
NWAO	41.83	192	eP	36	22.00	0.1
	0.7s	31.00nm			5.1mb	
RKG	42.98	192	iPd	36	37.30	6.0X
BRS	43.34	145	iPc	36	35.00	0.6
	0.8s	10.00nm			4.6mb	
			i	36	45.00	
			iPP	38	18.00	
			i	42	33.00	
BWA	47.00	155	eP	37	05.10	1.5
SVW	76.92	29	e(P)	40	35.30	11.2X
BRW	78.01	19	ePd	40	30.80	1.0
KDC	78.21	33	e(P)	40	42.70	11.6X
IMA	78.36	24	e(P)	40	32.70	0.6
PMR	80.08	29	e(P)	40	41.20	0.0
FBA	80.74	26	e(P)	40	44.30	-0.4
INK	86.07	22	eP	41	12.00	0.1
SOD	86.46	338	eP	41	24.00	10.2X
MBC	87.68	13	eP	41	21.00	1.5
	1.0s	14.00nm			5.2mb	
SUF	87.70	333	eP	41	31.00	11.2X
NUR	88.92	331	eP	41	34.00	8.3X
NB2	94.91	334	P	42	02.60	9.1X
	0.8s	1.90nm			4.6mb	
	S.D. = 1.1	on 20 of 28 obs.				

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* DEC 20, 1989 00h 37m 23.54± 0.42s
8.215 N ± 6.9km 127.161 E ±13.6km
DEPTH = 33.0km (normal)
5.0mb (5 obs.)
PHILIPPINE ISLANDS REGION (248)

TSM	9.87	247	eP	39	48.50	2.3
SSE	23.44	347	P	42	29.60	-1.2
	1.0s	23.00nm			4.6mb	
KNA	23.86	176	eP	42	36.00	1.0
WB5	28.81	166	eP	43	19.80	-1.1
QIS	31.10	157	eP	43	40.00	-1.3
ASPA	32.36	168	eP	43	51.40	-1.0
BJI	33.18	344	eP	43	53.00	-6.2X
SNY	33.62	355	iPc	44	02.50	-0.6
CTA	33.83	146	iPc	44	06.00	0.9
WARB	34.20	181	eP	44	07.00	-1.2
	0.4s	8.00nm			5.0mb	
CN2	35.48	358	eP	44	15.00	-4.0X
MDJ	36.32	3	eP	44	26.00	-0.1
FORR	38.85	179	eP	44	46.60	-0.8
COOL	39.30	188	eP	44	50.20	-1.1
BAL	39.88	194	eP	44	55.50	-0.6
NWAO	41.99	193	eP	45	14.00	0.7
BRS	43.22	146	iPc	45	24.00	0.5
			i	45	34.50	
			e	47	11.50	
BWA	46.94	156	eP	45	55.20	2.0
QUE	60.21	300	eP	47	33.00	1.7
TTA	76.74	27	eP	49	14.10	0.9
BRW	77.81	19	eP	49	20.10	1.3
KDC	77.95	33	eP	49	21.70	1.9
IMA	78.14	24	eP	49	22.00	1.1
PMR	79.83	29	eP	49	31.20	1.2
	1.1s	25.50nm			5.1mb	
FBA	80.51	26	eP	49	33.10	-0.5
INK	85.86	22	eP	50	01.00	0.1
			pP	50	12.00	35kmX
SOD	86.51	338	eP	50	02.00	-2.1
MBC	87.51	13	ePc	50	09.50	0.7
	1.0s	27.00nm			5.5mb	
SUF	87.77	333	eP	50	08.00	-2.3
NUR	89.01	331	eP	50	22.00	5.8X
HFS	94.27	333	(P)	50	38.10	-2.5
	0.7s	2.40nm			4.7mb	
CNCB	162.94	121	ePKP	57	38.00	13.1X
LPB	162.97	120	ePKP	57	37.00	12.3X
ZOBO	163.06	120	ePKP	57	37.00	12.0X
	S.D. = 1.4	on 28 of 34 obs.				

DEC 20, 1989 00h 51m 15.55± 0.22s
8.156 N ± 3.9km 126.840 E ± 6.1km
DEPTH = 38.2km (5 depth phases)
5.4mb (26 obs.)
MINDANAO, PHILIPPINE ISLANDS (259)

OCP	8.57	319	eP	53	30.00	9.9X
TSM	9.55	246	eP	53	40.10	6.4X
BAG	10.23	324	eP	53	45.00	1.8
KKM	10.75	259	ePc	53	58.00	7.7X
PCI	11.39	218	ePd	54	06.00	7.1X
MKS	15.18	209	eP	54	56.20	7.2X
QZH	18.46	336	eP	55	30.00	-0.2
GZH	19.70	320	P	55	43.80	-1.0
QIZ	19.72	305	iPd	55	45.40	0.4
KHKI	19.86	215	eP	55	49.00	2.5
			e	59	10.00	
KAGJ	23.22	9	P	56	19.10	-1.1
SSE	23.43	348	eP	56	22.00	-0.2
	1.0s	84.00nm			5.2mb	
			S	00	37.20	
KNA	23.83	175	eP	56	27.20	1.0
KGM	24.20	257	eP	56	34.00	4.2X
KUMJ	24.54	8	P	56	33.80	0.8
NJ2	24.91	344	Pc	56	36.00	-0.5
WHN	25.15	334	eP	56	38.50	-0.3
			pP	56	49.50	42km
IPM	25.89	264	ePd	56	49.90	3.9X
	1.0s	100.40nm			5.3mb	
GYA	26.43	316	P	56	50.60	-0.3
			ScP	03	55.00	
PMG	26.72	130	eP	56	52.00	-1.5
KMI	28.51	309	Pd	57	10.00	0.0
WB5	28.83	165	eP	57	10.50	-2.1
CHTO	29.07	294	eP	57	14.80	-0.1
	1.0s	28.75nm			4.9mb	
TIA	29.30	344	eP	57	15.60	-1.1
MBL	29.93	193	eP	57	21.00	-1.5
	0.6s	47.00nm			5.4mb	
MAT	30.09	18	(P)	57	20.00	-3.8X
	1.0s	15.00nm			4.7mb	
XAN	30.60	330	P	57	24.80	-3.5X
QIS	31.17	156	eP	57	31.00	-2.4
			e	57	33.00	7kmX
			e	57	45.00	
CD2	31.26	320	eP	57	31.80	-2.4
TIY	32.19	338	Pd	57	40.70	-1.5
ASPA	32.37	168	iPc	57	43.20	-0.7
	0.5s	48.00nm			5.6mb	
			e	01	30.20	
			eS	02	53.20	
			iScS	08	09.80	
BJI	33.15	345	eP	57	48.50	-2.0
	1.0s	56.00nm			5.4mb	
SNY	33.66	356	iPc	57	53.70	-1.1
CTA	33.95	146	iPd	57	59.00	1.3
	1.4s	89.53nm			5.5mb	
WARB	34.13	180	eP	57	59.00	-0.2
	0.5s	56.00nm			5.7mb	
LZH	34.83	326	eP	58	04.50	-0.8
	2.0s	70.00nm			5.2mb	
HHC	35.28	340	P	58	08.10	-0.9
CN2	35.53	358	Pc	58	10.40	-0.5
BTO	35.61	338	eP	58	11.40	-0.4
MDJ	36.40	3	eP	58	18.70	0.5
			pP	58	29.80	39km
HOOJ	37.05	20	eP	58	24.20	0.6
KUSJ	38.18	21	eP	58	32.60	-0.5
ASAJ	38.38	18	eP	58	35.60	0.7
FORR	38.80	178	eP	58	37.10	-1.4
	0.4s	170.00nm			6.2mb	
COOL	39.20	188	eP	58	41.00	-0.9
	0.5s	22.00nm			5.2mb	
GTA	39.43	326	eP	58	42.40	-1.5
	0.6s	0.04nm			2.4mb	X
LSA	39.73	307	P	58	48.40	1.5
BAL	39.75	194	eP	58	46.00	-0.4
	0.5s	45.00nm			5.5mb	
KLB	40.47	192	eP	58	51.90	-0.4
	0.5s	16.00nm			5.0mb	
NWAO	41.86	192	eP	59	03.00	-0.8
	0.8s	72.00nm			5.5mb	
RKG	43.02	192	eP	59	18.30	5.1X
BRS	43.35	145	iPd	59	16.00	0.0
	0.5s	17.50nm			5.1mb	
			i	59	26.00	34km
			ePP	00	56.00	
ADE	44.33	166	iPc	59	24.90	1.0
	0.7s	80.82nm			5.6mb	
BWA	47.02	155	eP	59	47.00	1.8
HYB	47.87	286	eP	59	52.50	0.3
CAN	48.03	155	eP	59	57.20	4.0X
KOD	48.75	276	eP	00	00.00	0.7
GBA	48.75	281	P	00	00.00	1.0
DZM	49.09	129	iPc	00	02.90	1.3
WMO	49.23	323	P	00	02.90	0.5
			ScS	09	50.00	
NDI	50.89	300	iPc	00	14.20	-1.0
	0.7s	27.40nm			5.4mb	
KSH	55.04	313	eP	00	47.00	0.9
QUE	59.96	300	eP	01	18.50	-2.5X

20d 01h

KRP	64.50	139	P	01	57.30	6.5X
MAIO	66.98	306	eP	02	07.00	0.0
TTA	76.93	27	eP	03	06.50	0.8
TAB	77.56	307	eP	03	11.00	1.3
BRW	77.97	19	eP	03	11.80	0.7
KDC	78.17	33	eP	03	12.80	0.4
IMA	78.32	24	eP	03	13.50	0.2
PMR	80.04	29	eP	03	22.50	0.0
	1.2s	63.80nm			5.5mb	
FBA	80.70	26	P	03	26.10	0.1
	1.2s	64.39nm			5.5mb	
TOA	81.44	28	eP	03	31.70	1.7
KEV	85.80	340	eP	03	52.00	0.0
INK	86.03	22	eP	03	53.00	-0.1
	1.2s	95.00nm			5.9mb	
			pP	04	05.50	41km
SOD	86.44	338	iP	03	55.20	0.0
HRI	86.50	303	eP	03	58.00	1.7
KAS	86.97	311	eP	04	00.00	1.6
PRNI	87.52	300	eP	04	01.00	-0.2
MBC	87.64	13	eP	04	02.50	1.7
	0.9s	43.00nm			5.7mb	
			pP	04	13.50	35km
SUF	87.68	333	iP	04	01.50	0.3
BBTK	87.95	310	eP	04	02.00	-1.2
NUR	88.91	331	eP	04	07.00	-0.1
	0.5s	37.90nm			6.0mb	
VRI	91.18	317	ePd	04	19.50	1.4
UPP	92.45	332	iP	04	22.90	-0.6
HFS	94.17	333	eP	04	30.60	-0.9
	0.6s	8.00nm			5.3mb	
KRA	94.46	322	eP	04	33.70	0.7
NB2	94.89	334	P	04	34.20	-0.7
	0.7s	6.80nm			5.2mb	
VAY	95.23	313	eP	04	35.00	-1.7
SKO	95.86	314	eP	04	39.00	-0.7
KSP	96.39	323	eP	04	41.20	-0.7
BRG	97.76	324	eP	04	49.20	1.2
	1.1s	10.00nm			5.3mb	
CLL	98.13	325	eP	04	52.00	2.3
WDC	100.03	46	ePdiff	04	58.30	-0.3
			e	05	09.40	
MIN	100.79	46	e(Pdif	05	02.00	-0.1
			e	05	14.40	
ORV	101.14	47	ePdiff	05	04.10	0.6
			e	05	16.10	
MHC	101.79	49	e(Pdif	05	09.00	2.4X
			e	05	21.20	
CMB	102.48	48	ePdiff	05	10.20	0.6
			e	05	21.30	
SES	103.22	34	ePdiff	05	25.00	12.4X
KVN	103.77	47	Pdiff	05	16.00	0.5
LRM	104.64	38	ePdiff	05	33.00	13.7X
SIO	120.37	40	ePKP	10	17.30	12.4X
TUL	120.60	40	ePKP	10	17.30	12.0X
	1.0s	6.30nm				
LKO	129.46	289	PKP	10	25.22	2.2X
KIC	129.61	285	PKP	10	23.90	0.6
CHCH	149.70	150	ePKP	11	17.00	18.4X
PCH	150.02	150	ePKP	11	08.50	9.4X
SAN	150.08	150	ePKPd	11	17.50	18.4X
PEL	150.31	149	ePKP	11	05.50	6.0X
PORP	150.75	27	PKP	11	04.00	3.5X
CPD	151.09	26	PKP	11	07.00	6.0X
CNCB	163.18	122	PKP	11	20.50	4.0X
			i	12	10.00	
			i	15	56.00	
LPB	163.21	121	PKP	11	03.00	-13.3X
			i	11	32.00	
			i	12	12.50	
ZOBO	163.31	120	PKP	11	13.00	-3.6X
	1.2s	27.03nm				

S.D. = 1.1 on 86 of 114 obs.

% DEC 20, 1989 00h 51m 17.95± 3.31s
36.879 N ±21.9km 6.608 W ±23.8km
DEPTH = 10.0km (geophysicist)
STRAIT OF GIBRALTAR (385)
mbLg 3.2 (MDD).

EVAL	0.71	351	ePg	51	33.00	1.0
			eSg	51	47.40	
EJIF	1.01	115	ePn	51	36.70	-0.4
			eSn	51	55.00	
EPRU	1.11	85	ePn	51	40.00	1.3
AFC	2.48	80	iPnd	51	59.50	0.3
EBAN	2.58	59	iPnc	52	00.50	0.0
			eSn	52	37.00	
EPLA	3.21	7	ePn	52	08.50	-0.9
			eSn	52	48.50	
EVIA	3.70	60	ePn	52	15.20	-1.2
			eSn	53	02.80	

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

& DEC 20, 1989 01h 26m 54.30s
35.800 N 121.400 W
DEPTH = 5.0km
CENTRAL CALIFORNIA (39)
<BRK>. ML 2.5 (BRK).

PRS	0.53	3	iPd	27	04.20	-0.7
			iS	27	11.60	
PRI	0.69	60	ePd	27	07.10	-1.0
			eS	27	17.20	
			i	27	19.10	
PHAM	0.81	87	eP	27	09.50	-1.1
LLA	0.89	24	ePd	27	10.70	-1.2
SAO	0.96	358	iPd	27	11.70	-1.4
			iS	27	25.50	
BCH	1.24	119	eP	27	15.50	-2.3
GCC	1.32	339	ePd	27	18.80	-0.3
ARN	1.55	356	eP	27	21.00	-1.6
MHC	1.55	353	ePc	27	22.90	0.2
KVN	4.17	38	eP	28	09.00	8.8

10 obs. associated

• DEC 20, 1989 01h 28m 23.88± 0.92s
21.641 S ±10.6km 179.177 W ±13.5km
DEPTH = 618.9 ± 9.7 km
4.5mb (4 obs.)
FIJI ISLANDS REGION (181)

SGE	4.87	325	iPc	29	57.50	0.0
MNG	19.46	192	eP	32	13.90	0.6
KHZ	21.60	195	eP	32	31.50	-1.2
MHZ	25.22	199	eP	33	05.60	0.6
CTA	32.30	266	iPd	34	06.00	0.3
	0.6s	8.67nm			4.6mb	
ASPA	43.20	258	iPd	35	34.10	0.0
	0.5s	7.00nm			4.4mb	
			iS	41	16.30	
			iScS	44	27.20	
WB5	43.35	264	eP	35	34.80	-0.4
FORR	47.80	247	eP	36	09.10	0.1
MBL	56.45	258	eP	37	10.50	-0.4
NANU	60.05	256	eP	37	35.20	0.2
	0.4s	12.00nm			4.5mb	
GBA	107.17	278	Pdiffc	41	46.60	9.1X
	0.7s	3.90nm			5.3mb	
LWI	143.78	233	iPKPc	46	52.90	0.5
BCAO	155.75	228	iPKPd	47	42.00	31.9X
	0.6s	17.00nm				
LIC	163.66	159	PKP	47	18.50	0.0
KIC	163.88	160	PKP	47	18.50	-0.2
TIC	164.06	158	PKP	47	18.70	-0.2

S.D. = 0.6 on 14 of 16 obs.

? DEC 20, 1989 01h 44m 48.64± 1.15s
8.039 N ±16.2km 126.950 E ±29.2km
DEPTH = 33.0km (normal)
4.9mb (2 obs.)
MINDANAO, PHILIPPINE ISLANDS (259)

QIS	31.02	157	iPc	51	05.10	-0.6
ASPA	32.23	168	iPd	51	17.30	1.0
NANU	32.40	200	iPd	51	18.00	0.2
	0.7s	14.00nm			5.0mb	
CTA	33.80	146	eP	51	30.00	0.1
COOL	39.10	188	eP	52	14.00	-0.7
BRS	43.20	146	iPc	52	58.60	10.2X
			e	01	14.00	
INK	86.10	22	eP	57	38.00	10.8X
MBC	87.73	13	eP	57	35.00	0.0
	1.0s	6.00nm			4.8mb	
CCH	164.22	127	(PKP)	04	52.00	1.1X

S.D. = 0.8 on 6 of 9 obs.

? DEC 20, 1989 02h 12m 20.05± 5.28s
28.611 S ±47.8km 68.876 W ±13.1km
DEPTH = 195.0 ± 23.9 km
LA RIOJA PROVINCE, ARGENTINA (138)

RTRS	1.63	198	iPc	12	54 50	-0.3
ZON	2.93	177	eP	13	08 00	-1.1
			eS	13	39.00	
CFA	3.04	170	ePc	13	09.80	-0.6
			S	13	40.50	
RTBS	3.08	189	e(P)	13	12.00	1.2
			S	13	44.50	
RTCV	3.25	175	iPd	13	13.00	0.0
			S	13	46.00	
JACH	4.32	200	iPc	13	27.50	1.1
TCA	4.60	127	iPc	13	30.20	0.2
MRA	4.67	145	ePc	13	31.00	0.3
ROCH	4.72	202	iPd	13	31.50	-0.1
			iS	14	21.20	
PEL	4.78	199	ePd	13	32.60	0.4
			iS	14	11.90	
FCH	4.86	194	iPd	13	35.00	1.5
			iS	14	28.00	
PCH	5.19	195	iPd	13	38.00	0.5
			iS	14	33.00	
TACH	5.33	199	iPd	13	38.70	-0.5
			iS	14	35.00	
LCCH	5.37	205	iPc	13	39.00	-0.8
CHCH	5.52	196	eP	13	42.00	0.3
			eS	14	40.00	
LNV	5.75	202	iPc	13	43.30	-1.4
RFA	6.15	177	ePd	13	49.20	-0.8

S.D. = 0.9 on 17 of 17 obs.

? DEC 20, 1989 02h 32m 57.19± 1.55s
10.787 S ±14.2km 160.981 E ±23.2km
DEPTH = 33.0km (normal)
4.2mb (1 obs.)
SOLOMON ISLANDS (193)

HNR	1.69	323	iPc	33	25.00	0 2
			iS	33	46.00	
DZM	12.38	156	iPd	35	54.00	-0.1
CTA	16.93	235	iPc	36	59.50	6.2X
	0.9s	16.81nm			4.2mb	
BRS	18.23	204	iP	37	10.10	0.6
			i	37	13.00	
			e	38	54.00	
W85	27.18	247	eP	38	39.20	-0.7

S.D. = 0.9 on 4 of 5 obs.

• DEC 20, 1989 02h 48m 49.97± 0.78s
42.888 N ± 5.9km 12.961 E ± 7.0km
DEPTH = 10.0km (geophysicist)
CENTRAL ITALY (381)
MD 1.9 (SSO).

ASS	0.29	310	P	48	56.10	0.1
			eSg	49	00.70	
CIO	0.33	24	iPg	48	57.23	0.3
			iSg	49	02.96	
ALP	0.47	103	e(Pg)	48	59.43	0.0
			iSg	49	06.99	
MNS	0.54	202	P	49	01.00	0.0
			eSg	49	09.50	
ARV	0.61	359	P	49	01.90	-0.4
			eSg	49	12.30	

S.D. = 0.4 on 5 of 5 obs.

? DEC 20, 1989 03h 24m 56.41± 2.61s
36.634 N ±20.7km 6.182 W ±17.0km
DEPTH = 10.0km (geophysicist)
STRAIT OF GIBRALTAR (385)
mbLg 2.6 (MDD).

EJIF	0.60	107	ePg	25	08.70	0.1
			eSg	25	17.00	
EPRU	0.83	66	ePg	25	12.00	-0.5
			eSg	25	23.80	
EVAL	1.05	335	ePg	25	16.00	-0.2
			eSg	25	30.00	
EHOR	1.40	32	ePn	25	22.50	0.6
			eSn	25	40.00	

S.D. = 0.8 on 4 of 4 obs.

? DEC 20, 1989 03h 26m 29.12± 1.39s
8.490 N ±18.9km 127.256 E ±16.6km
DEPTH = 33.0km (normal)
4.6mb (1 obs.)
PHILIPPINE ISLANDS REGION (248)

DAV	2.17	230	eP	27	04.00	0.3
ASPA	32.61	169	eP	33	00.40	0.3
	0.5s	4.00nm			4.6mb	

		e	33 37.00		
SHL	37.68	301 eP	33 43.50	-0.1	
FORR	39.12	179 eP	33 54.00	-1.3	
BRS	43.40	146 eP	34 31.20	0.7	
S.D. = 1.1 on 5 of 5 obs.					

& DEC 20, 1989 03h 27m 15.81s
58.944 N 145.114 W
DEPTH = 10.0km (geophysicist)
3.8mb (1 obs.)
GULF OF ALASKA (15)
<AGS-P>. ML 3.6 (PMR).

MID	0.80	308 eP	27 29.20	-2.0	
RAGM	1.46	9 iP	27 37.28	-5.0	
		eS	27 54.86		
SGAM	1.56	358 iP	27 38.99	-4.7	
		eS	27 58.58		
HIN	1.62	335 iP	27 40.09	-4.4	
		eS	27 58.42		
CVA	1.64	349 iP	27 39.91	-4.8	
		iS	27 59.17		
SNH	1.70	42 eP	27 41.50	-4.2	
CYK	1.76	48 eP	27 42.83	-3.7	
WAX	1.90	36 iP	27 43.89	-4.7	
		eS	28 05.32		
FID	1.94	340 eP	27 44.32	-4.8	
		eS	28 07.59		
TGL	2.15	31 iP	27 47.48	-4.8	
		eS	28 10.68		
GLI	2.18	334 iP	27 47.98	-4.7	
VZW	2.24	342 eP	27 48.42	-5.2	
SEW	2.50	300 eP	27 53.38	-3.7	
		eS	28 21.17		
BALM	2.52	32 eP	27 52.43	-5.1	
GLB	2.59	14 eP	27 53.10	-5.4	
		eS	28 21.64		
KLU	2.59	351 eP	27 53.17	-5.3	
PCA	2.73	63 eP	27 56.04	-4.5	
SLKM	3.02	303 eP	28 00.02	-4.6	
NCA	3.18	345 iP	28 01.95	-4.8	
PMS	3.21	318 eP	28 02.13	-5.1	
TOA	3.21	351 ePc	28 02.70	-4.7	
PME	3.33	326 eP	28 02.44	-6.4	
PLRM	3.33	325 eP	28 04.31	-4.6	
PMR	3.33	325 eP	28 04.10	-4.8	
GHO	3.41	328 eP	28 06.06	-4.1	
SDG	3.60	357 eP	28 07.72	-5.1	
RDT	4.03	297 eP	28 14.74	-4.2	
PAX	4.04	358 eP	28 13.37	-5.8	
KDC	4.07	256 e(P)	28 20.60	1.3	
SPU	4.14	306 eP	28 15.16	-5.3	
CUT	4.30	326 eP	28 18.00	-4.7	
SKT	4.40	317 eP	28 18.20	-6.0	
DOT	4.75	6 eP	28 23.64	-5.5	
RND	4.83	340 eP	28 24.86	-5.5	
DDM	4.87	356 eP	28 25.85	-5.1	
MCK	5.14	341 eP	28 29.51	-5.2	
KTH	5.41	331 eP	28 31.95	-6.5	
SIT	5.54	106 e(P)	28 30.00	-10.2	
HDA	5.55	352 eP	28 33.16	-7.3	
DWY	5.80	26 P	28 38.00	-5.9	
CCB	5.86	349 eP	28 37.66	-7.1	
NEA	5.96	343 eP	28 39.51	-6.6	
FBA	6.11	349 eP	28 41.00	-7.3	
TTA	6.64	312 eP	28 50.00	-5.9	
IMA	8.17	335 eP	29 10.00	-7.2	
INK	10.69	24 eP	29 41.00	-10.9	
MBC	19.61	18 eP	31 41.00	-5.7	
	0.8s	4.00nm		3.8mb	
SES	21.27	99 eP	32 07.00	2.8	
48 obs. associated					

? DEC 20, 1989 03h 37m 34.15± 0.91s
42.785 N ± 7.1km 13.065 E ± 7.3km
DEPTH = 10.0km (geophysicist)
CENTRAL ITALY (381)
MD 2.0 (SSO).

ALP	0.38	91 e(Pg)	37 42.04	0.1	
		iSg	37 47.95		
ASS	0.41	314 P	37 42.80	0.2	
		eSg	37 49.30		
CIO	0.41	8 ePg	37 42.36	-0.3	
		iSg	37 48.96		
MNS	0.49	216 P	37 44.00	-0.1	
		eSg	37 50.80		

S.D. = 0.4 on 4 of 4 obs.

? DEC 20, 1989 04h 02m 12.48± 2.30s
8.334 N ±38.1km 126.671 E ±26.5km
DEPTH = 33.0km (normol)
4.6mb (1 obs.)
MINDANAO, PHILIPPINE ISLANDS (259)

SSE	23.22	348 eP	07 18.00	0.4	
	E 12s	0.30um			
		S	11 35.00		
BJI	32.94	345 eP	08 45.50	-0.6	
SHL	37.26	302 eP	09 23.50	0.1	
INK	85.93	22 eP	14 50.00	-0.2	
MBC	87.50	13 eP	14 58.00	0.3	
	1.5s	6.00nm		4.6mb	
S.D. = 0.5 on 5 of 5 obs.					

* DEC 20, 1989 04h 14m 45.67± 1.13s
7.932 N ±15.5km 127.318 E ±13.7km
DEPTH = 33.0km (normol)
4.8mb (2 obs.)
PHILIPPINE ISLANDS REGION (248)

DAV	1.92	244 eP	15 16.90	0.2	
MTN	20.99	170 eP	19 28.00	-0.7	
KNA	23.57	177 eP	19 56.00	1.7	
WB5	28.49	166 eP	20 39.00	-1.2	
ASPA	32.06	169 eP	21 11.80	0.0	
	0.5s	8.00nm		4.9mb	
NANU	32.43	201 eP	21 14.50	-0.5	
COOL	39.04	188 eP	22 11.00	-0.3	
BRS	42.90	146 e(P)	22 44.00	0.9	
MBC	87.75	13 eP	27 32.00	-0.1	
	1.0s	4.00nm		4.7mb	
S.D. = 1.0 on 9 of 9 obs.					

DEC 20, 1989 04h 15m 02.51± 0.40s
37.207 N ± 3.0km 7.352 W ± 2.8km
DEPTH = 14.0 ± 2.5 km
4.8mb (18 obs.) 4.4Msz (1 obs.)
PORTUGAL (376)
mbLg 5.2 (MDD). Minor damage in the Santo Cristino area, Spain. Felt (V) in southern Portugal.

FIG	0.40	255 P	15 11.00	0.2	
		S	15 22.20		
FAR	0.53	249 P	15 11.50	-1.5	
		S	15 21.70		
EVAL	0.61	52 iPgc	15 16.30	1.8	
MOE	1.53	329 P	15 30.00	0.6	
EJIF	1.69	116 iPnd	15 33.40	1.7	
EPRU	1.71	97 iPnd	15 33.80	1.7	
EHOR	1.78	69 iPnc	15 34.20	1.2	
LIS	2.07	317 iPnd	15 37.90	0.7	
		iSn	16 07.80		
MTH	2.23	320 P	15 40.00	0.5	
NKM	2.35	138 iPnd	15 42.00	0.7	
		iSn	16 05.50		
EBAN	2.99	70 iPn	15 50.60	0.3	
EPLA	3.02	19 iPn	15 50.70	-0.1	
AFC	3.04	88 iPnd	15 52.20	1.0	
COI	3.11	345 P	15 52.00	0.0	
RBA	3.22	172 iPnc	15 54.00	0.4	
		iSn	16 29.00		
TOL	3.72	43 iPnc	16 01.00	0.3	
	0.3s	2337.66nm			
		iPg	16 17.00		
		i(Sn)	16 37.50		
		eSg	17 03.00		
AVE	3.90	181 iPn	16 03.00	-0.2	
		i	16 43.50		
		iSn	16 46.50		
EMEL	4.03	117 iPnc	16 04.70	-0.3	
		eSn	16 50.50		
EVIA	4.09	68 iPn	16 05.40	-0.6	
IFR	4.11	153 iPnd	16 06.00	-0.3	
		iSn	16 50.00		
ENIJ	4.11	92 iPn	16 06.30	0.0	
		eSn	16 51.00		
GUD	4.24	35 iPnd	16 07.60	-0.6	
TAF	4.66	119 iPnd	16 13.00	-1.2	
		i	16 14.00		
		iSn	17 09.00		
		iSn	17 12.00		
EALH	4.76	80 iPnc	16 14.90	-0.6	

		eSn	17 07.50		
EZAM	5.04	349 iPn	16 18.60	-0.8	
		eSn	17 13.00		
ERUA	5.18	2 iPnc	16 20.00	-1.4	
		eSn	17 16.00		
ETOR	5.48	47 iPn	16 25.00	-0.7	
		eSn	17 24.50		
ECHE	5.55	63 iPnc	16 25.80	-0.9	
		eSn	17 24.00		
ACU	5.64	75 iPnc	16 26.70	-1.3	
		eSn	17 30.00		
STS	5.75	351 iPn	16 28.00	-1.4	
		eSn	17 30.00		
TIO	6.26	179 iPnc	16 35.00	-1.9X	
		iSn	17 44.50		
ECRI	6.55	33 iPn	16 39.50	-1.3	
		eSn	17 49.00		
EROQ	7.04	57 iPn	16 47.00	-0.6	
		eSn	18 01.00		
EBR	7.09	57 ePn	16 47.00	-1.3	
EPF	8.28	43 Pn	17 02.80	-2.2X	
		Sn	18 29.00		
		Sg	19 24.00		
ETER	9.36	54 iPnd	17 17.90	-2.0X	
LFF	9.84	36 Pn	17 23.00	-3.5X	
		Sn	19 07.00		
LPO	9.87	38 Pn	17 23.20	-3.7X	
		Sn	19 06.40		
CAF	10.48	40 Pn	17 31.20	-4.1X	
		Sn	19 22.60		
RJF	10.48	37 Pn	17 31.40	-3.9X	
		Sn	19 22.00		
MFF	10.81	27 Pn	17 36.80	-2.9X	
		Sn	19 29.40		
LSF	11.20	33 Pn	17 41.40	-3.7X	
		Sn	19 38.00		
TCF	11.54	35 Pn	17 46.00	-3.7X	
		Sn	19 47.00		
MAF	11.65	36 Pn	17 47.90	-3.4X	
		Sn	19 50.50		
LPF	11.77	21 Pn	17 49.60	-3.2X	
		Sn	19 52.50		
BGF	12.03	36 Pn	17 52.90	-3.5X	
		Sn	19 59.00		
GRR	12.14	21 Pn	17 54.60	-3.2X	
		Sn	19 59.90		
LRG	12.18	55 Pn	17 56.00	-2.3X	
LMR	12.22	56 Pn	17 56.20	-2.7X	
FRF	12.41	55 Pn	17 59.00	-2.5X	
AVF	12.44	36 Pn	17 58.00	-3.8X	
HYF	12.47	33 Pn	17 59.00	-3.3X	
LDF	12.55	23 Pn	18 00.40	-2.8X	
		Sn	20 10.40		
SMF	12.57	38 Pn	17 59.90	-3.7X	
FLN	12.59	21 Pn	18 00.60	-3.2X	
		Sn	20 11.60		
SSF	12.71	36 Pn	18 01.80	-3.6X	
		Sn	20 14.80		
LBF	12.88	37 Pn	18 05.00	-2.7X	
		Sn	20 20.00		
LOR	13.03	36 Pn	18 06.00	-3.7X	
SBF	13.06	55 Pn	18 06.60	-3.6X	
PZZ	13.14	52 P	18 11.37	0.1	
RRL	13.15	50 P	18 10.77	-0.7	
STV	13.15	53 P	18 10.25	-1.2	
ENR	13.21	53 P	18 11.17	-1.0	
DOI	13.23	52 P	18 14.40	2.0	
IMI	13.37	55 P	18 13.09	-1.3	
LPL	13.43	47 Pn	18 14.00	-1.3	
LPG	13.43	48 Pn	18 14.20	-1.1	
ROB	13.53	54 P	18 16.36	0.0	
RSP	13.55	50 P	18 16.81	0.1	
LSD	13.65	48 P	18 18.11	-0.1	
FIN	13.71	54 P	18 19.33	0.6	
CKI	13.85	54 P	18 30.00	9.5X	
PCP	14.07	54 P	18 23.32	-0.2	
ORO	14.23	49 P	18 26.80	1.1	
ORX	14.24	49 P	18 26.41	0.7	
HAU	14.75	39 P	18 30.40	-1.9	
BOB	14.75	54 P	18 38.00	5.6X	
VAI	14.83	49 Pc	18 35.00	1.6	
BSF	14.86	40 Pn	18 30.80	-3.0X	
VAL	14.87	353 eP	18 33.00	-0.8	
ECP	14.99	2 eP	18 36.30	1.0	
CDF	15.48	39 Pn	18 41.00	-0.9	
ETA	15.51	3 eP	18 38.30	-3.8X	
YRH	15.74	6 eP	18 39.40	-5.8X	

20d 04h

SAL 15.80 52 P 18 52.00 6.1X
CRE 16.02 60 P 18 54.00 5.0X
SFI 16.04 59 P 18 55.00 5.9X
DLE 16.09 2 eP 18 52.70 3.1X
RMP 16.14 67 P 18 55.00 4.6X
MNS 16.23 65 Pc 18 59.00 7.4X
ASS 16.37 63 P 19 01.10 7.7X
ARV 16.68 62 P 19 04.00 6.8X
CTI 16.70 52 P 19 01.70 4.2X
AZI 16.71 67 P 19 05.00 7.4X
SDI 16.94 68 P 19 05.00 4.4X
DUI 17.41 68 P 19 02.00 -4.6X
FVI 17.64 52 P 19 12.00 2.8X
WTS 17.85 30 eP 19 13.00 1.3
0.8s 17.00nm 4.2mb
e 19 21.00
e 22 34.50
SGO 17.95 72 P 19 22.00 8.9X
VOY 18.13 54 eP 19 18.00 2.6X
KBA 18.19 51 e(P) 19 17.00 0.7
1.2s 25.00nm 4.2mb
i 19 18.20
i 19 24.30
EKA 18.35 8 P 19 24.00 6.0X
1.4s 59.00nm 4.6mb
CEY 18.37 56 e(P) 19 18.50 0.2
WIT 18.43 28 eP 19 21.00 2.1
LJU 18.55 55 e(P) 19 21.50 1.1
CZI 18.56 77 P 19 19.60 -1.0
CSI 18.67 75 P 19 27.10 5.0X
TDS 18.71 75 Pd 19 27.00 4.5X
VBY 18.84 57 e(P) 19 23.00 -1.1
ROI 18.89 75 P 19 25.50 0.8
MOX 19.09 39 eP 19 26.00 -1.0
1.6s 25.00nm 4 2mb
e 19 30.00
CLL 20.19 39 eP 19 40.00 0.8
1.5s 40 00nm 4.5mb
e 19 52.00
PRU 20.27 44 P 19 39.70 -0.4
BRG 20.42 41 eP 19 42.60 0.9
1.3s 34.00nm 4.5mb
e 20 00.00
e 43 42.50
SOP 20.44 52 eP 19 41.50 -0.4
VKA 20.52 50 eP 19 44.00 1.3
2.5s 224.00nm 5.1mb
ZST 20.97 51 eP 19 48.20 0.8
e 27 02.30
SRO 21.59 53 eP 19 53.00 -0.6
KSP 21.67 44 ePd 19 54.50 0.1
1.0s 31.00nm 4.7mb
e 25 46.00
BUD 21.94 54 iP 19 57.00 -0.1
OHR 22.13 71 eP 19 58.70 -0.5
1.2s 0.13nm 2.2mb X
i 20 03.20
i 20 14.50
PSZ 22.63 53 e(P) 20 04.00 -0.1
KZN 22.88 73 eP 20 08.00 1.4
BZS 23.20 60 eP 20 10.00 0.4
SPC 23.27 50 eP 20 10.00 -0.5
ITM 23.29 81 eP 20 13.50 2.9X
GRG 23.34 72 eP 20 10.20 -0.9
KRA 23.41 48 eP 20 12.20 0.6
1.0s 74.00nm 5.2mb
Z 10s 2.00um 4.9MszX
e 20 15.40
LIT 23.43 74 eP 20 10.00 -2.0
VAY 23.47 71 eP 20 11.60 -0.7
KNT 23.72 71 eP 20 15.30 0.6
KKB 23.86 69 eP 20 17.00 0.9
VTS 23.98 68 iP 20 19.00 1.6
NEO 24.05 76 eP 20 15.50 -2 4
PLG 24.15 73 eP 20 19.80 0.9
VLI 24.16 82 eP 20 20.00 1.0
SRS 24.24 71 eP 20 23.60 3.8X
MMB 24.34 70 eP 20 21.00 0.2
OUR 24.56 73 eP 20 22.90 0.0
RZN 25.08 70 eP 20 29.00 0.9
VAM 25.43 84 eP 20 27.70 -3.5X
CMP 25.52 61 ePc 20 38.00 6.0X
KDZ 25.61 70 eP 20 34.00 1.2
RDO 25.71 71 eP 20 35.30 1.5
APE 26.14 80 eP 20 37.00 -0.9
MLR 26.18 61 eP 20 45 00 6.7X
NB2 26.57 20 P 20 48.00 6.4X

0.9s 6.20nm 4.3mb
NPS 26.59 84 eP 20 45.50 3.5X
VRI 26.77 60 eP 20 50.00 6.5X
LKO 27.59 176 P 20 51.68 0.5
0.9s 51.50nm 5.2mb
TIC 30.49 175 P 21 16.52 -0.8
0.9s 37.00nm 5.2mb
KIC 30.80 175 P 21 18.86 -1.1
1.0s 32.00nm 5.1mb
LIC 30.91 175 P 21 20.02 -0.9
0.9s 33.50nm 5.2mb
Z 20s 0.84um 4.4Msz
BBTK 31.31 73 eP 21 29.00 4.6X
KUK 31.52 167 eP 21 25.50 -0.8
SHGH 31.84 166 eP 21 33.00 3.9X
SUF 32.74 28 eP 21 36.00 -0.5
SOD 35.77 22 eP 21 57.00 -5.5X
BCAO 40.32 138 iPd 22 42.40 1.2
1.0s 40.00nm 5.1mb
id 22 45.50
SCH 43.45 314 eP 23 11.00 4.6X
FRB 44.73 326 eP 23 18.00 1.4
MAIO 52.52 69 eP 24 08.00 -9.4X
FFC 63.06 320 eP 25 30.00 -1.2
0.7s 8.00nm 5.0mb
INK 67.43 341 eP 26 01.00 1.8
TUL 68.33 299 eP 26 03.60 -1.8
1.3s 10.10nm 4.8mb
SIO 68.78 299 e(P) 26 06.20 -1.9
EDM 69.59 322 eP 26 12.00 -0.9
MEO 70.87 299 eP 26 20.70 -0.3
BLF 73.08 150 eP 26 35.00 0.8
CCH 77.51 237 P 27 00.20 0.4
GBA 77.80 82 Pc 27 04.20 3.0X
0.8s 2.60nm 4.4mb
NNA 81.40 248 eP 27 05.00 -15.6X
0.8s 3.73nm
GSC 82.59 309 eP 27 29.00 2.4
CLC 82.75 310 eP 27 29.00 1.6
TPC 82.90 308 eP 27 30.00 1.8
LZH 83.15 50 eP 27 35.00 5.4X
ISA 83.39 310 eP 27 30.00 -0.7
MWC 84.08 309 eP 27 35.00 0.6
BAR 84.22 307 eP 27 37.00 2.1
S.D. = 1.1 on 114 of 179 obs.

DEC 20, 1989 04h 23m 45.22± 0.53s
35.067 S ± 4.7km 179.642 W ± 4.6km
DEPTH = 28.5 ± 3.7 km
5.5mb (9 obs.) 5.6Msz (9 obs.)
EAST OF NORTH ISLAND, N.Z. (688)
MOMENT TENSOR SOLUTION
Dep 12 No. of sta: 3
Moment Tensor; Scale 10**17 Nm
Mrr= 3.45 Mtt=-3.43
Mff=-0.01 Mrt= 0.10
Mrf= 4.61 Mtf=-4.58
Principal axes:
T Val= 7.32 Plg=47 Azm=247
N 0.06 38 37
P -7.38 16 139
Best Double Couple:Mo=7.3*10**17
NP1:Strike=270 Dip=44 Slip= 152
NP2: 21 71 49
CENTROID, MOMENT TENSOR (HRV)
Data Used: GDSN
L.P.B.: 11S, 28C
Centroid Location:
Origin Time 04:23:56.0 0.8
Lat 34.71S 0.08 Lon 179.68W 0.07
Dep 15.0 FIX Half-duration 3.0
Moment Tensor; Scale 10**17 Nm
Mrr= 3.29 0.16 Mtt=-0.38 0.17
Mff=-2.91 0.22 Mrt= 0.71 0.43
Mrf= 6.52 0.48 Mtf=-1.50 0.16
Principal Axes:
T Val= 7.41 Plg=57 Azm=267
N 0.00 8 10
P -7.42 31 105
Best Double Couple:Mo=7.4*10**17
NP1:Strike=222 Dip=16 Slip= 122
NP2: 8 77 81

HBZ 3.02 213 eP 24 32 70 0.5
0.2s 158.00nm
TAZ 4.42 223 eP 24 53.40 1.3
KRP 4.82 232 P 24 58.90 1.2

WHH 4.91 218 P 24 58.40 -0.6
TUTZ 5.05 223 eP 25 01.40 0.4
HATZ 5.12 221 eP 25 01.20 -0.8
HITZ 5.17 224 eP 25 03.00 0.3
RAO 5.98 15 eP 25 14.90 0.8
eS 26 11.70
PGZ 6.41 209 eP 25 15.90 -4.3X
MNG 6.75 213 eP 25 21.20 -3.8X
eS 26 39.90
KIW 7.21 215 eP 25 27.10 -4.3X
BLW 7.37 210 P 25 27.60 -6.0X
WDW 7.49 213 eP 25 31.30 -4.0X
WEL 7.61 214 eP 25 28.00 -8.9X
S 26 58.00
e 27 54.00
TCW 7.78 216 eP 25 33.90 -5.5X
KHZ 9.07 214 eP 25 51.60 -5.5X
MSZ 13.52 221 P 26 56.40 -1.1
S 29 17.50
SVA 16.97 354 eP 27 43.00 0.9
DZM 17.78 313 iPc 27 57.10 4.8X
i 31 49.00
i 35 04.40
PVC 20.32 325 iPd 28 23.50 1.7
AFI 22.23 21 P 28 39.00 -2.3X
S 32 44.00
BRS 24.74 280 iPd 29 02.20 -3.4X
i 29 07.80
i 29 11.00
eS 33 40.00
i 34 31.00
CNB 25.28 260 eP 29 16.00 5.2X
e 29 27.00
CAN 25.58 260 eP 29 17.80 4.3X
BWA 26.20 262 eP 29 20.90 1.6
TOO 28.11 255 eP 29 40.00 3.3X
e 32 51.00
HNR 31.61 319 eP 30 05.00 -2 9X
eS 35 10.00
CTA 33.52 287 iPc+ 30 25.10 0 5
1.2s 328.13nm 6.1mb
i 31 49.00
iS 35 50.00
iScP 36 48.00
ADE 33.93 258 e(P) 30 29.00 0.9
1.0s 44.00nm 5.3mb
QIS 38.56 281 iPd 31 07.70 0.4
e 31 10.00
DRV 39.32 204 eP 31 29.00 15.9X
PMG 39.63 302 eP 31 19.00 2.7X
ASPA 41.72 273 iPc 31 32.80 -0.6
0.7s 144.00nm 5.8mb
Z 18s 31.62um 6.2Msz
iS 37 50.20
LR 49 28.60
WB5 43.14 278 eP 31 44.20 -0.8
SBA 43.29 184 e(P) 31 47.20 1.7
FORR 43.64 260 eP 31 49.00 0.1
0.4s 30.00nm 5.4mb
WARB 46.59 266 eP 32 11.00 -1.6
0.5s 21.00nm 5.4mb
COOL 49.23 257 eP 32 33.50 0.4
MTN 49.55 284 eP 32 34.00 -1.7
NWAO 51.59 253 eP 32 50.50 -0.6
KLB 51.66 255 eP 32 51.00 -0.6
MUN 52.74 254 eP 33 00.00 0.2
MBL 54.41 268 eP 33 11.50 -0.7
SPA 55.11 180 eP 33 18.00 1 0
1.0s 49.00nm 5.5mb
Z 18s 4.12um 5.5Msz
NANU 57.27 264 eP 33 32.10 -0 6
0.5s 14.00nm 5.3mb
GUA 58.88 319 e(P) 33 35.50 -8 4X
GUMO 58.94 319 e(P) 33 42.50 -1.9
Z 20s 1.69um 5.2Msz
MAT 81.33 327 (P) 35 55.00 -5.3X
Z 20s 1.06um 5.2Msz
eS 46 05.00
QZH 83.54 306 eP 36 11.00 -1.0
Z 20s 1.25um 5.3Msz
LNV 83.99 127 eP 36 13.00 -1.2
SAN 84.79 127 eP 36 17.50 -0.8
PEL 84.97 127 iPd 36 19.00 -0.3
0.5s 80.99nm 6.2mb
SYP 88.89 45 eP 36 39.00 0.8
PRS 89.37 43 ePc 36 40.50 0.2
GCC 89.52 43 ePc 36 41.00 0.1

BAR	89.60	49	eP	36	42.00	0.5	
PRI	89.63	44	ePc	36	42.10	0.4	
SAO	89.64	43	eP	36	42.20	0.7	
PCC	89.65	42	ePc	36	41.10	-0.4	
PAS	89.69	47	eP	36	43.00	1.2	
MWC	89.81	47	eP	36	40.00	-2.6X	
LLA	89.81	43	ePc	36	42.50	0.1	
PLM	89.94	48	eP	36	44.00	0.8	
MHC	89.94	43	ePc	36	43.20	0.1	
BRK	89.98	42	eP	36	43.00	-0.1	
BKS	90.00	42	iPd	36	44.00	0.8	
RVR	90.06	47	eP	36	41.00	-2.6	
WHN	90.08	308	eP	36	45.00	1.3	
Z	28s	0.90um				5.1MszX	
ISA	90.56	46	eP	36	47.00	1.1	
FRI	90.78	44	ePc	36	46.50	-0.2	
TPC	90.95	48	eP	36	49.00	1.3	
GLA	90.99	49	eP	36	49.00	1.1	
CMB	91.13	43	ePc	36	48.00	-0.5	
CLC	91.18	46	eP	36	49.00	0.2	
FHC	91.20	39	eP	36	43.30	-5.4X	
GSC	91.30	47	eP	36	49.00	-0.3	
ORV	91.61	41	eP	36	49.80	-0.7	
WDC	91.79	40	ePc	36	51.20	-0.1	
MIN	92.12	40	eP	36	51.90	-1.2	
TIA	92.16	314	Pd	36	54.00	0.9	
N	19s	1.70um					
E	19s	1.50um					
SNY	92.53	321	eP	36	53.00	-1.7	
Z	23s	1.30um				5.3MszX	
N	20s	0.90um					
E	26s	1.00um					
CN2	93.04	324	Pc	36	56.50	-0.5	
Z	24s	1.50um				5.4MszX	
		pP		37	06.00	30kmX	
		SKS		47	28.00		
		eS		48	04.00		
ARE	94.83	114	e(P)	36	54.00	-12.3X	
BJI	95.29	316	eP	37	08.00	0.6	
Z	24s	1.08um				5.2MszX	
		eSKS		47	40.00		
TIY	95.96	312	eP	37	06.50	-4.2X	
Z	19s	1.73um				5.5Msz	
N	18s	1.70um					
		SKS		47	48.00		
		S		48	16.00		
		sS		48	41.00		
CNCB	97.22	116	P	37	17.30	-0.2	
LPB	97.31	116	P	37	18.50	0.7	
ZOBO	97.46	116	P	37	18.50	-0.1	
ALQ	97.54	52	eP	37	15.80	-2.2	
1.0s	3.00nm					4.8mb	
Z	18s	3.11um				5.8Msz	
CCH	98.19	118	eP	37	21.00	-0.6	
INK	108.64	16	ePKP	42	12.00	0.1	
HYB	109.29	278	ePKP	42	14.00	-0.7	
WMQ	114.97	307	ePKP	42	26.00	1.1	
Z	16s	1.00um				5.5MszX	
MBC	117.26	14	ePKP	42	27.50	-0.7	
1.0s	9.00nm						
BUL	118.89	211	iPKPd	42	47.60	14.5X	
WIN	120.52	198	iPKPd	42	37.50	1.2	
Z	20s	3.55um				6.0Msz	
		e		53	50.00		
QUE	124.63	285	ePKP	42	44.00	0.0	
FRB	130.06	33	ePKP	42	43.00	-10.0X	
MAIO	132.61	290	ePKP	42	59.00	0.1	
KEV	142.31	345	ePKP	43	17.00	1.3	
SOD	144.29	343	iPKP	43	17.30	-1.8	
BCAO	145.18	213	iPKP	43	20.76	-1.5	
MSL	145.44	285	ePKPd	43	21.00	-1.1	
		e		43	31.00		
AKU	147.43	14	iPKPd	43	28.40	4.1X	
1.1s	55.70nm						
SUF	147.99	338	ePKP	43	26.00	0.7	
HITJ	149.68	270	PKP+	43	32.40	3.2X	
HLBJ	150.00	275	PKP+	43	36.30	6.8X	
NUR	150.11	336	iPKP	43	33.60	4.9X	
0.8s	132.00nm						
GAZ	150.27	285	ePKP	43	34.00	4.3X	
MKRJ	150.40	273	PKP+	43	36.00	5.8X	
PRNI	150.57	271	ePKP	43	35.00	4.6X	
SHMJ	150.61	276	PKP+	43	38.30	7.9X	
DSI	150.62	273	ePKP	43	33.00	2.7X	
TEGH	150.71	179	ePKP	43	39.40	8.4X	
LEGH	150.72	179	ePKP	43	37.80	6.8X	
HRI	150.76	277	ePKP	43	31.00	0.3	
LIC	150.87	169	PKP	43	31.70	0.5	
Z	19s	1.05um				5.7Msz	
SHGH	151.00	179	ePKP	43	37.20	5.8X	
KIC	151.05	169	PKP	43	31.74	0.2	
KUK	151.25	178	ePKP	43	37.00	5.2X	
TIC	151.28	169	PKP	43	32.10	0.2	
RGS	151.32	350	iPKPc	43	37.30	6.9X	
KVT	151.41	293	iPKP	43	40.20	8.9X	
UPP	152.76	341	iPKP	43	38.40	5.8X	
NB2	153.09	348	PKP	43	33.00	-0.1	
0.9s	24.40nm						
KAS	153.12	294	iPKPd	43	42.10	8.3X	
HFS	153.46	345	ePKP	43	40.10	6.5X	
0.9s	33.20nm						
LKO	154.02	167	PKP	43	38.36	2.6X	
KHL	156.43	287	ePKP	43	50.00	11.6X	
KRA	159.30	322	ePKP	43	41.40	0.1	
SPC	159.67	320	ePKP	43	40.80	-1.2	
KSP	160.46	329	ePKP	43	43.50	1.0	
		e		44	18.50		
CLL	161.37	335	ePKP	43	51.00	7.6X	
2.0s	45.00nm						
		e		44	26.00		
SRO	161.53	319	iPKP	43	56.00	12.4X	
ZST	161.92	322	ePKP	43	43.70	-0.3	
KHC	162.90	329	PKPc	43	44.70	-0.3	
		e		44	34.00		
KBA	164.54	325	ePKP	43	57.00	10.1X	
1.0s	4.90nm						
		e		44	04.50		
TIO	172.39	121	iPKPd	43	55.00	2.7X	
IFR	175.20	107	iPKP	43	54.00	0.7	

S.D. = 1.0 on 90 of 139 obs.

& DEC 20, 1989 04h 30m 53.28s
61.551 N 146.681 W
DEPTH = 24.3km
SOUTHERN ALASKA (2)
<AGS-P>.

KLU	0.37	99	eP	31	00.91	-0.5	
			eS	31	07.71		
NCA	0.45	351	iP	31	02.16	-0.5	
VLZ	0.45	158	eP	31	01.58	-1 1	
			eS	31	09.30		
TOA	0.61	23	eP	31	04.44	-0.8	
			eS	31	13.62		
GLI	0.70	197	eP	31	05.34	-1.5	
			eS	31	15.83		
FID	0.81	173	eP	31	07.18	-1.4	
			eS	31	19.38		
GHO	1.09	283	eP	31	11.26	-1.9	
CVA	1.11	155	iP	31	11.94	-1.3	
			eS	31	28.54		
SDG	1.12	28	eP	31	11.36	-2.1	
			eS	31	24.81		
PME	1.13	275	eP	31	12.69	-0.8	
HIN	1.16	176	eP	31	12.57	-1.5	
			eS	31	29.45		
PLRM	1.17	273	eP	31	12.67	-1 5	
SGAM	1.27	145	eP	31	13.75	-1.9	
			eS	31	31.84		
GLB	1.38	93	eP	31	14.94	-2.2	
RAGM	1.52	139	eP	31	18.37	-0.9	
			eS	31	38.75		
PAX	1.53	21	eP	31	17.25	-2.2	
CUT	1.90	298	eP	31	23.81	-0 8	
SEW	1.99	224	eP	31	24.46	-1.4	
HUR	1.99	317	eP	31	23.71	-2.3	
SLKM	2.02	240	eP	31	25.51	-0.9	
TGL	2.03	111	eP	31	24.36	-2.3	
RND	2.12	333	eP	31	26.50	-1.4	
BALM	2.16	102	eP	31	25.78	-2.7	
WAX	2.17	119	eP	31	27.35	-1.2	
			eS	31	54.91		
DDM	2.28	9	eP	31	29.31	-0.8	
MCK	2.42	336	eP	31	30.80	-1.4	
DOT	2.43	29	eP	31	30.55	-1.7	
KTH	2.81	318	eP	31	36.34	-1.3	
HDA	2.87	358	eP	31	36.95	-1.5	
CCB	3.15	351	eP	31	39 44	-3.0	

30 obs. ossocioted

DEC 20, 1989 04h 48m 52.38± 1.28s
5.669 S ± 5.9km 130.787 E ± 8.4km
DEPTH = 73.6 ± 14.0 km
4.9mb (9 obs.)

BANDA SEA (280)

AAI	3.25	307	iPc	49	44.00	2.0	
			eS	50	24.00		
MTN	7.14	177	eP	50	35.00	-1.3	
KNA	10.21	191	eP	51	16.10	-2.4	
			eS	53	05.00		
JAY	10.38	73	ePc	51	20.30	-0.4	
			eS	53	17.00		
MKS	11.28	272	eP	51	39.00	6.2X	
WB5	14.55	166	eP	52	10.50	-5.4X	
			eS	54	45.00		
TSM	16.06	307	ePd	52	38.80	3.7X	
PMG	16.64	104	eP	52	44.00	1.5	
QIS	17.10	151	eP	52	45.00	-3.1X	
			e	52	50.00		
			eS	55	43.00		
ASPA	18.14	171	iPd	52	58.80	-2.2	
0.6s	183.00nm					5.5mb	
			eS	56	08.60		
KKM	18.63	308	iPc	53	08.50	1.5	
0.9s	151.90nm					5.2mb	
MBL	18.71	214	eP	53	07.50	-0.3	
0.4s	11.00nm					4.4mb	
			eS	56	25.00		
CTA	20.77	135	iPc	53	31.10	1.5	
1.0s	37.00nm					4.7mb	
NANU	22.34	220	eP	53	47.00	1.7	
			eS	57	57.00		
BAG	24.15	335	eP	54	03.20	0.1	
FORR	25.18	185	eP	54	12.80	0.3	
0.5s	63.00nm					5.3mb	
COOL	26.67	199	eP	54	26.40	0.0	
MRWA	27.28	209	eP	54	32.30	0.4	
KLB	28.53	204	eP	54	43.20	0.0	
NWAO	29.92	203	eP	54	56.00	0.5	
ADE	30.06	167	iPc	54	57.90	1.1	
BRS	30.07	138	iP	54	56.00	-1.0	
BWA	32.94	153	eP	55	24.10	2.0	
CAN	33.95	153	eP	55	32.00	1.2	
GYA	39.58	325	iPc	56	19.60	1.2	
CHTO	39.71	309	iP	56	19.00	-0 4	
0.9s	8.53nm					4.7mb	
MAT	42.56	9	eP	56	40.00	-2.6	
0.8s	18.66nm					5.0mb	
XAN	44.58	334	P	56	56.40	-2.6	
TIY	46.42	340	eP	57	13.20	-0.4	
BJI	47.43	345	eP	57	21.00	-0.4	
1.0s	12.00nm					4.8mb	
LZH	48.62	331	Pd	57	31.00	0.1	
1.5s	33.00nm					5.1mb	
SHL	48.90	311	iP	57	32.50	-0.7	
CN2	49.48	355	P	57	37.60	0.5	
GTA	53.20	330	eP	58	02.40	-3.1X	
Z	20s	0.70um				4.7Msz	
GBA	56.31	290	P	58	27.00	-1.3	
WMQ	62.72	326	P	59	12.50	0.5	
CNCB	150.96	141	PKPc	08	42.00	8.1X	
			i	09	11.00		
LPB	151.09	140	PKP	08	42.00	8.1X	
ZOBO	151.27	140	PKP	08	42.00	7.6X	
1.5s	22.58nm						

S.D. = 1.4 on 31 of 39 obs.

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* DEC 20, 1989 05h 15m 41.94± 0.86s
8.044 N ±12.9km 127.198 E ±12.4km
DEPTH = 33.0km (normal)
5.0mb (5 obs.)
PHILIPPINE ISLANDS REGION (248)

DAV	1.87	240	eP	16	12.50	0.3	
TSM	9.83	248	ePc	18	06.00	1.8	
SSE	23.61	347	eP	21	01.00	10.2X	
E	16s	1.00um					
		i		21	09.50		
		e		24	52.00		
CHTO	29.44	294	eP	21	44.50	-0.6	
1.0s	3.00nm					4.0mb	
MBL	29.91	194	eP	21	48.50	-0.7	
ASPA	32.19	168	eP	22	09.70	0.4	
0.4s	12.00nm					5.1mb	
WARB	34.03	181	iPc	22	25.50	0.3	
0.4s	16.00nm					5.3mb	
FORR	38.68	179	eP	23	04.00	-0.4	
0.4s	33.00nm					5.5mb	
COOL	39.14	188	eP	23	07.00	-1.3	
MUN	41.16	194	eP	23	23.00	-1.9	

20d 05h

NWAO	41.83	193	eP	23	30.00	-0.4
BRS	43.06	146	iP	23	41.60	1.0
ADE	44.14	166	iPc	23	51.40	2.1
GBA	49.12	281	P	24	25.00	-3.7X
MBC	87.67	13	eP	28	29.50	1.5
	0.8s	2.00nm			4.4mb	
KIC	129.98	285	PKP	34	49.90	-1.1
LIC	130.29	285	PKP	34	50.50	-1.1
S.D. = 1.3 on 15 of 17 obs.						

* DEC 20, 1989 06h 02m 43.44± 0.90s
14.020 S ±13.8km 70.789 W ±10.8km
DEPTH = 33.0km (normal)
4.3mb (1 obs.)
PERU (116)

ARE	2.52	196	iP	03	22.60	-0.7
ZOBO	3.41	131	iPd	03	36.20	0.1
LPB	3.60	134	iPd	03	39.90	1.2
CNCB	3.88	136	P	03	43.00	0.3
CCH	5.58	127	P	04	05.90	-0.8
NNA	6.24	288	eP	04	16.50	0.8
	0.5s	3.52nm			4.3mb	
SES	73.19	334	eP	14	12.00	-0.9
S.D. = 1.0 on 7 of 7 obs.						

? DEC 20, 1989 06h 15m 48.14± 3.41s
17.556 S ±36.0km 75.167 W ±26.0km
DEPTH = 33.0km (normal)
OFF COAST OF PERU (114)

ARE	3.68	73	iPd	16	39.10	-5.3X
			iS	17	08.60	
PT06	3.87	343	iPd	16	47.30	0.5
			iS	17	29.80	
PT08	5.72	346	iPd	17	13.30	-0.1
			iS	18	08.50	
NNA	5.77	343	eP	17	13.50	-0.3
	0.6s	23.33nm			4.9mb X	
			i	17	17.00	
			eS	18	12.50	
LPB	6.84	82	Pc	17	30.20	1.0
	1.1s	126.58nm			5.7mb X	
			i	17	45.00	
ZOBO	6.86	80	P	17	28.00	-1.6
			S	18	40.00	
CNCB	6.91	85	P	17	31.00	0.7
			i	17	32.00	
CCH	8.61	90	P	17	57.90	4.0X
KIC	73.46	78	P	27	19.50	-0.2
S.D. = 1.1 on 7 of 9 obs.						

DEC 20, 1989 06h 18m 38.10± 0.56s
8.265 N ±10.0km 127.054 E ±13.6km
DEPTH = 35.6km (3 depth phases)
4.8mb (3 obs.)
PHILIPPINE ISLANDS REGION (248)

DAV	1.88	232	eP	19	10.20	1.8
WB5	28.88	166	eP	24	29.80	-6.1X
CHTO	29.22	294	eP	24	39.00	0.0
ASPA	32.43	168	eP	25	07.20	-0.1
	0.6s	8.00nm			4.8mb	
BJI	33.10	345	eP	25	10.50	-2.3
SNY	33.57	355	Pd	25	15.80	-1.1
CTA	33.92	146	iPd	25	19.00	-1.2
	1.0s	10.00nm			4.7mb	
CN2	35.43	358	eP	25	35.00	2.2
MDJ	36.28	3	Pc	25	40.30	0.3
			pP	25	50.50	35km
SHL	37.62	302	iP	25	49.50	-2.3
BRS	43.32	146	iPc	26	37.40	-1.2
			i	26	48.60	
SVW	76.69	29	eP	30	27.90	0.8
BRW	77.80	19	eP	30	33.90	0.9
IMA	78.14	24	eP	30	35.70	0.5
PMR	79.84	29	eP	30	44.40	0.1
TOA	81.24	28	eP	30	53.20	1.4
INK	85.85	22	eP	31	15.00	-0.1
			pP	31	26.00	35km
MBC	87.49	13	eP	31	23.00	0.0
	0.7s	4.00nm			4.8mb	
			pP	31	34.50	37km
SUF	87.68	333	eP	31	22.00	-2.1
NUR	88.92	331	eP	31	32.00	2.0
ZOBO	163.18	120	ePKP	38	40.00	0.6
S.D. = 1.4 on 20 of 21 obs.						

? DEC 20, 1989 07h 00m 36.12± 3.06s
27.354 N ±10.1km 101.309 E ±32.3km
DEPTH = 33.0km (normal)
SICHUAN PROVINCE, CHINA (307)
ML 3.5 (BJI).

KMI	2.57	150	ePn	01	16.50	0.0
			Pg	01	20.00	
			Sg	01	53.00	
CD2	4.14	31	ePn	01	39.30	0.6
			Pg	01	45.00	
			Sg	02	38.70	
GYA	4.86	99	Pn	01	48.80	-0.2
			Pg	02	03.00	
XAN	9.34	43	P	02	50.50	-1.1
WHN	11.86	71	iPd	03	26.50	0.7
			sP	03	35.00	
S.D. = 1.0 on 5 of 5 obs.						

* DEC 20, 1989 07h 10m 08.91± 0.65s
8.301 N ± 8.8km 127.074 E ±15.9km
DEPTH = 34.8km (3 depth phases)
4.3mb (2 obs.)
PHILIPPINE ISLANDS REGION (248)

DAV	1.91	231	eP	10	42.00	2.2
SSE	23.34	347	eP	15	25.00	10.0X
			pP	15	34.60	35km
			sP	15	39.70	
			eS	19	32.00	
KNA	23.95	176	eP	15	22.00	0.9
WB5	28.91	166	eP	16	05.50	-1.5
CHTO	29.23	294	eP	16	08.00	-2.0
	1.0s	2.00nm			3.8mb	
NANU	32.69	200	eP	16	39.50	-0.8
BJI	33.07	345	eP	16	42.50	-1.0
SNY	33.53	355	Pc	16	48.20	0.7
MDJ	36.24	3	eP	17	12.50	1.9
			pP	17	22.50	34km
SHL	37.62	301	iP	17	22.40	-0.3
MRWA	38.80	196	eP	17	32.40	0.1
COOL	39.37	188	eP	17	36.00	-1.1
MUN	41.38	194	eP	17	53.30	-0.2
BRS	43.34	146	iP	18	10.60	0.9
			e	18	21.00	36km
INK	85.81	22	eP	22	44.00	-1.8
MBC	87.45	13	eP	22	55.50	1.8
	1.0s	6.00nm			4.8mb	
ZOBO	163.18	120	ePKP	30	06.00	-4.3X
S.D. = 1.5 on 15 of 17 obs.						

DEC 20, 1989 07h 22m 58.16± 0.47s
51.530 N ±12.0km 175.827 W ± 6.2km
DEPTH = 45.1km (6 depth phases)
4.8mb (15 obs.)
ANDREANOF ISLANDS, ALEUTIAN IS. (7)
Felt on Adok.

ADK	0.64	304	iPd	23	12.90	1.9
SVW	14.69	41	eP	26	31.10	6.6X
KDC	14.83	56	eP	26	30.00	3.7X
TTA	15.58	35	eP	26	38.50	2.4
	0.6s	9.85nm			4.2mb	
PMS	17.37	46	eP	26	59.60	1.0
PMR	17.69	45	eP	27	03.00	0.5
IMA	18.38	29	eP	27	10.50	-0.6
	0.8s	6.03nm			3.8mb	
TOA	19.19	45	eP	27	21.20	0.5
FBA	19.70	36	eP	27	23.50	-2.7
	0.8s	22.41nm			4.5mb	
INK	26.28	34	eP	28	29.00	-1.6
MBC	32.78	22	eP	29	28.50	0.1
	0.9s	31.00nm			5.2mb	
			pP	29	47.50	81kmX
LON	34.98	76	eP	29	50.00	2.1
			e	30	02.00	45km
PNT	35.13	71	eP	29	50.00	0.9
	0.5s	6.00nm			4.8mb	
MAT	35.65	263	eP	29	54.00	0.4
	0.9s	15.13nm			4.9mb	
EDM	37.11	62	eP	30	05.50	-0.2
	0.5s	17.00nm			5.2mb	
SES	39.62	65	ePc	30	26.70	0.0
KVN	41.44	84	eP	30	43.00	1.0
TNP	42.57	85	eP	30	53.00	1.7
	1.0s	6.25nm			4.3mb	

BW06	44.48	74	eP	31	07.20	0.4
	1.0s	16.25nm			4.8mb	
			e	31	18.80	41km
RSON	48.83	57	eP	31	39.00	-1.6
	0.8s	10.02nm			4.9mb	
			e	31	52.00	48km
GOL	48.85	75	eP	31	42.00	0.8
	1.0s	15.00nm			5.0mb	
			e	31	53.00	38km
TIA	48.98	279	Pc	31	42.00	0.1
SSE	49.86	271	eP	31	50.00	1.3
	1.0s	14.00nm			4.9mb	
			i	32	07.00	67kmX
TIY	50.88	284	eP	31	57.00	0.5
ANMO	51.24	80	e(P)	32	00.00	0.6
	1.0s	2.50nm			4.2mb	
			e	32	13.50	50km
ALQ	51.24	80	iPd	32	12.40	13.0X
	1.2s	5.47nm				
			pP	33	15.70	297kmX
FRB	51.91	33	eP	32	01.50	-2.3
WHN	54.50	276	Pd	32	23.70	0.3
XAN	55.45	283	P	32	29.50	-0.9
FVM	58.79	67	eP	32	52.00	-1.9
	0.5s	27.99nm			5.6mb	
			e	33	05.50	49km
GYA	62.15	278	P	33	16.80	-0.3
GBTN	63.96	65	eP	33	27.70	-1.1
BLA	64.96	61	eP	33	35.00	-0.3
JSC	66.64	64	eP	33	45.70	-0.3
SGS	67.85	64	eP	33	54.00	0.4
SHL	71.78	288	iP	34	18.70	0.7
WB5	83.37	226	eP	35	20.00	-1.6
GBA	89.56	291	Pd	35	51.10	-1.0
	0.8s	2.90nm			4.6mb	
TIC	121.52	11	PKP	41	47.80	-0.5
KIC	121.83	10	PKP	41	48.40	-0.5
LIC	121.93	11	PKP	41	48.60	-0.5
S.D. = 1.2 on 38 of 41 obs.						

DEC 20, 1989 07h 38m 41.55± 1.29s
7.358 N ± 4.8km 126.923 E ± 8.1km
DEPTH = 70.9 ± 12.4 km
5.2mb (10 obs.)
MINDANAO, PHILIPPINE ISLANDS (259)

DAV	1.36	259	iPd-	39	05.80	0.7
TSM	9.34	251	eP	41	01.00	5.2X
BAG	10.93	326	eP	41	22.90	5.3X
GUMO	18.69	69	eP	42	58.00	1.0
QIZ	20.25	307	Pd	43	12.40	-1.3
E	15s	2.00um				
MTN	20.50	168	eP	43	16.00	-0.3
KNA	23.03	175	eP	43	41.20	-0.2
KAGJ	23.99	8	P	43	51.20	0.5
SSE	24.22	348	eP	43	50.50	-2.3
Z	20s	1.50um			4.5Msz	
E	11s	0.50um				
			pP	44	11.50	96kmX
			i	44	37.50	
			S	48	16.00	
			sS	48	36.00	
KUMJ	25.31	8	eP	44	03.00	-0.2
WB5	28.04	165	eP	44	26.50	-1.8
MBL	29.18	194	eP	44	38.00	-0.5
CHTO	29.48	295	eP	44	41.00	-0.3
	1.0s	3.00nm			3.9mb X	
QIS	30.41	156	eP	44	48.00	-1.5
MAT	30.82	18	(P)	44	51.00	-1.9
	1.3s	42.31nm			5.0mb	
CTA	33.25	145	iPc	45	14.90	0.6
	1.1s	37.97nm			5.2mb	
			iS	50	32.00	
BJI	33.94	345	eP	45	19.00	-1.0
SNY	34.45	356	eP	45	24.80	0.4
LZH	35.54	327	eP	45	36.30	2.4
Z	17s	1.60um			4.8MszX	
E	15s	1.10um				
			i	46	11.30	
CN2	36.32	358	Pd	45	40.00	-0.2
Z	16s	0.90um			4.6MszX	
			pP	45	45.00	17kmX
			eS	51	20.00	
			ScP	51	45.00	
MDJ	37.19	3	eP	45	48.20	0.7
MRWA	37.86	196	eP	45	53.60	0.3
SHL	37.99	303	eP	45	55.20	0.5

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FORR   38.01 178 iPd    45 54.10  -0.3
       0.4s     47.00nm            5.8mb
COOL   38.42 188 eP     45 57.00  -1.1
       0.4s      6.00nm            4.9mb
BAL    39.00 194 eP     45 57.00  -5.8X
KLB    39.71 192 eP     46 05.00  -3.7X
GTA    40.14 327 P      46 11.60  -0.8
MUN    40.43 194 iPc    46 15.10   0.5
       0.7s     38.00nm            5.4mb
NWAO   41.11 192 iPd    46 21.10   1.0
       0.4s     18.00nm            5.2mb
RKG    42.26 192 eP     46 35.00   5.4X
BRS    42.66 145 eP     46 31.80  -1.2
ADE    43.54 166 e(P)   46 39.80  -0.3
       0.9s     30.25nm            5.1mb
BWA    46.27 155 eP     47 03.00   1.2
CAN    47.28 155 eP     47 11.80   2.0
GBA    48.99 282 P      47 23.30   0.0
                e       48 47.00
WMO    49.91 323 P      47 31.80   1.7
     Z  16s      1.40um            5.1MszX
MAIO   67.51 306 eP     49 32.00  -0.6
INK    86.74  22 eP     51 19.00   0.3
SOD    87.21 338 eP     51 26.00   5.0X
MBC    88.39  13 eP     51 28.00   1.5
       0.9s     15.00nm            5.2mb
NUR    89.64 331 eP     51 32.00  -0.6
       0.6s     10.40nm            5.3mb
NB2    95.64 334 P      51 59.50  -0.9
       0.7s      1.90nm            4.7mb
KIC   129.89 285 PKP    57 46.50   0.8
       0.6s      3.50nm
TIC   130.09 285 PKP    57 46.58   0.5
       0.6s      2.50nm
LIC   130.20 285 PKP    57 46.98   0.7
       0.7s      4.50nm
CNCB  162.67 124 ePKP   58 25.00 -12.8X
LPB   162.72 123 ePKP   58 47.00   9.3X
      S.D. = 1.1  on  40 of  48 obs.
-------------------------------------------
   DEC  20, 1989  08h 35m 20.38± 0.16s
    8.192 N ± 3.0km   126.852 E ± 4.3km
   DEPTH =  39.3km  (  6 depth phases)
   5.8mb ( 33 obs.)  5.3Msz ( 15 obs.)
 MINDANAO, PHILIPPINE ISLANDS     (259)
      FAULT PLANE SOLUTION: P-Waves
       NP1:Strike=  7 Dip=85 Slip=  34
       NP2:       274     56       174
       Principal Axes:
        T                Plg=27  Azm=236
        P                  19        135
      Comment: The focal mechanism is
        poorly controlled and
        corresponds to strike-slip
        faulting with a large reverse
        component. The preferred fault
        plane is not determined.
      MOMENT TENSOR SOLUTION
      Dep  27            No. of sta:  5
      Moment Tensor;   Scale 10**17 Nm
        Mrr= 1.65        Mtt= 0.69
        Mff=-2.33        Mrt=-1.05
        Mrf= 3.63        Mtf=-3.05
       Principal axes:
        T  Val=  5.26  Plg=43  Azm=226
        N        0.04       39        4
        P       -5.30       23      113
      Best Double Couple:Mo=5.3*10**17
       NP1:Strike=250 Dip=41 Slip= 162
       NP2:       354     78        50
      CENTROID, MOMENT TENSOR     (HRV)
      Data Used: GDSN
      L.P.B.: 10S, 23C
      Centroid Location:
      Origin Time        08:35:21.2 0.3
      Lat  7.64N 0.05 Lon 127.09E 0.05
      Dep  15.0 FIX Half-duration  2.7
      Moment Tensor;   Scale 10**17 Nm
        Mrr= 3.58 0.18   Mtt= 1.83 0.15
        Mff=-5.41 0.25   Mrt=-2.34 0.32
        Mrf= 1.00 0.53   Mtf=-0.59 0.15
       Principal Axes:
        T  Val=  5.33  Plg=55  Azm=191
        N        0.21       35       359
        P       -5.54        6        93
      Best Double Couple:Mo=5.4*10**17
       NP1:Strike=215 Dip=50 Slip= 138
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       NP2:        335      59        49
DAV     1.68 229 iPc+   35 51.00   3.3X
OCP     8.55 319 eP     37 26.00   1.3
TSM     9.58 246 ePc    37 45.50   6.6X
       1.7s   1964.40nm          7.0mb X
BAG    10.21 324 eP     37 50.00   2.3
                eS     39 47.00
KKM    10.77 259 ePd    38 01.00   5.7X
       1.8s    905.90nm          6.7mb X
PCI    11.43 218 ePd    38 06.00   1.9
       1.6s     10.00nm          4.7mb X
AAI    11.88 173 eP     38 08.90  -1.3
MKS    15.22 209 eP     38 55.00   0.7
JAY    17.43 127 ePd    39 22.20  -0.3
ANP    17.65 344 iP-    39 31.00   5.9X
                iS     42 47.00
QZH    18.43 336 eP     39 32.00  -2.6
     Z  17s     17.10um
     N  15s     15.70um
                pP     39 41.00
GUMO   18.48  72 iPd    39 33.14  -2.2
GUA    18.51  72 eP-    39 34.00  -1.7
       1.5s    733.33nm          5.6mb
                eS     44 00.00
HKC    18.59 320 Pd     39 37.00   0.3
                (S)    43 01.00
GZH    19.69 320 eP     39 48.00  -1.3
     Z  15s     13.30um
     N  13s      5.80um
     E  13s     14.30um
                S      43 26.00
QIZ    19.71 305 Pc     39 48.00  -1.7
     N  15s     15.90um
     E  16s     20.60um
KHKI   19.90 215 ePc    39 49.50  -2.1
                e      50 25.00
MTN    21.33 168 iPd    40 05.40  -0.9
                eS     41 58.00
KAGJ   23.19   9 P      40 26.00   1.4
SSE    23.39 348 P-     40 27.00   0.4
       5.0s      3.80nm          3.1mb X
     Z  20s      7.40um          5.1Msz
     N  10s      4.30um
     E  10s      4.50um
                i      40 37.00  37km
                PP     41 09.00
                S      44 38.00
                sS     45 08.00
                SS     45 37.00
KNA    23.86 175 eP     40 31.20   0.0
KGM    24.22 257 eP     40 38.50   3.7X
KUMJ   24.50   8 eP     40 37.10  -0.3
NJ2    24.88 344 Pc     40 40.00  -1.0
     Z  18s      7.50um          5.2Msz
     N  10s      2.30um
     E  12s      6.40um
                S      45 00.00
LAT    24.92 126 eP     40 41.00  -0.5
WHN    25.13 334 Pd     40 43.50   0.2
     Z  20s      7.50um          5.2Msz
     N  11s      4.60um
     E  16s     15.20um
                pP     40 56.50  53kmX
                iS     45 06.00
KLM    25.58 260 eP     40 53.00   5.3X
IPM    25.91 264 ePc    40 53.20   2.3
       1.4s    248.70nm          5.6mb
SHNJ   26.10   8 eP     40 51.50  -0.9
GYA    26.41 316 P      40 55.00  -0.5
     N  14s     13 10um
     E  14s     13.50um
TKSJ   26.51  13 P      40 56.30   0.1
PMG    26.73 130 eP     40 56.00  -2.3
SHK    26.76  11 eP     40 58.20  -0.2
WKYJ   27.13  16 P      41 00.90  -1.0
YONJ   27.54  12 eP     41 05.30  -0.3
TSRJ   28.47  16 eP     41 13.00  -0.9
KMI    28.50 309 ePc    41 13.46  -1 1
     E  13s      8.30um
                pP     41 30.00  70kmX
                sP     41 42.00
                PP     42 18.00
                eS     46 00.44
WB5    28.86 165 eP     41 15.20  -2 4
IIDJ   28.99  19 P      41 17.60  -1.1
CHTO   29.07 294 iPc    41 19.50  -0 1
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       1.5s   205.52nm          5.6mb
TIA    29.27 344 Pd     41 20.00  -1.1
     Z  18s      5.60um          5.2Msz
CHJJ   29.86  20 eP     41 23.90  -2.6
MBL    29.97 193 iPc    41 27.20  -0.3
MTMJ   29.97  18 eP     41 25.00  -2.5
MAT    30.06  18 iPd    41 25.00  -3.2X
       1.8s   590.91nm          6.1mb
     Z  20s      4.96um          5.1Msz
                eS     46 15.00
KAKJ   30.42  22 eP     41 26.20  -5.1X
XAN    30.57 330 P      41 30.20  -2.6
     N  12s      6.70um
     E  13s      6.00um
DL2    30.94 352 eP     41 38.00   2.1
     Z  16s      5.40um          5.3MszX
     N  15s      9.20um
     E  12s      2.00um
                eS     46 40.00
NIIJ   30.95  19 eP     41 33.30  -2.7
QIS    31.20 156 eP     41 36.00  -2.4
                e      41 48.00  46km
CD2    31.24 319 eP     41 36.60  -2.1
     Z  16s     10.20um          5.6MszX
     N  15s     14.70um
                eS     46 39.00
TIY    32.16 338 Pc     41 45.40  -1.3
     N  13s      7.30um
                S      46 56.00
NANU   32.51 200 eP     41 50.00   0.2
BJI    33.12 345 ePc    41 53.71  -1.2
       1.2s   172.00nm          5.8mb
     Z  14s      4.80um          5.4MszX
     N  14s      2.24um
     E  11s      2.75um
                eScS   52 22.00
SNY    33.62 356 Pc     41 59.40   0.1
       4.0s      1.70nm          3.3mb X
     Z  21s     10.30um          5.5Msz
     N  14s      5.10um
     E  11s      3.10um
                pP     42 09.80  37km
                iS     47 20.00
                SS     49 26.00
CTA    33.98 146 iPc+   42 02.50  -0.1
       1.4s   283.72nm          6.0mb
                i      42 22.20  84kmX
                iS     47 26.00
WARB   34.17 180 eP     42 04.00  -0.2
       0.4s    56.00nm          5.8mb
LZH    34.81 326 Pc     42 08.50  -1.3
       2.0s   210.00nm          5.7mb
     Z  17s     18.20um          5.9MszX
     N  15s     11.50um
     E  15s      9.40um
                sP     42 23.00 140kmX
                i      42 39.00
                i      42 50.00
                PPP    43 40.00
                S      47 34.00
                sS     47 45.00
                SS     49 52.00
HHC    35.25 340 eP     42 12.50  -1.0
     Z  16s     10.50um          5.7MszX
     N  14s      5.20um
     E  14s      6.50um
                pP     42 20.00  25kmX
                S      47 46.00
CN2    35.49 358 Pc     42 15.00  -0.3
       1.0s      0.04nm          2.3mb X
     Z  17s      8.60um          5.6MszX
     N  11s      2.10um
     E  11s      3.60um
                S      47 46.00
                iSS    50 00.00
MEKA   35.53 193 eP     42 15.90   0.1
                e      44 06.00
BTO    35.59 338 eP     42 15.50  -0.8
     N  13s      4.20um
     E  13s      5.30um
                PP     43 40.00
                S      47 49.00
MRRJ   36.33  18 eP     42 22.60   0.3
MDJ    36.36   3 Pd     42 23.00   0.4
     Z  15s      5.20um          5.4MszX
     N  14s      4.00um
     E  14s      4.40um
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20d 08h

sP 42 40.00
S 48 00.00
SS 50 25.00
HOOJ 37.01 20 eP 42 29.70 1.6
HNR 37.32 117 eP 42 29.00 -2.1
eS 48 10.00
SHL 37.49 302 iP 42 32.50 -0.1
iS 48 18.20
KUSJ 38.14 21 P 42 38.80 1.3
ASAJ 38.35 18 eP 42 40.60 1.3
MRWA 38.64 195 eP 42 41.90 0.0
FORR 38.84 178 eP 42 42.30 -1.2
0.4s 226.00nm 6.3mb
COOL 39.23 188 eP 42 46.00 -0.9
0.4s 45.00nm 5.6mb
GTA 39.41 326 iPc 42 47.20 -1.3
1.2s 0.10nm 2.5mb X
Z 18s 7.90um 5.6Msz
E 16s 7.40um
PcP 44 57.50
S 48 50.40
ScS 52 55.00
LSA 39.72 307 iP 42 52.00 0.5
N 13s 1.60um
E 13s 1.20um
pP 42 58.20 21kmX
sS 49 13.00
BAL 39.79 194 eP 42 51.00 -0.4
0.6s 105.00nm 5.8mb
eS 44 42.00
KLB 40.50 192 eP 42 57.10 -0.2
0.4s 16.00nm 5.1mb
MUN 41.22 194 eP 43 03.20 0.0
0.7s 163.00nm 5.9mb
e 44 54.00
HIA 41.37 353 ePc 43 05.30 1.0
eS 49 17.92
NWAO 41.90 192 eP 43 08.80 0.0
0.6s 69.00nm 5.6mb
Z 20s 1.80um 4.9Msz
N 20s 1.60um
E 20s 1.20um
RKG 43.05 192 iPd 43 23.80 5.6X
BRS 43.38 146 iPc 43 19.20 -1.7
i 43 30.80 41km
iPP 45 04.00
e 46 54.60
i 48 35.00
i 48 47.00
eS 49 28.00
i 52 27.50
e(SS) 53 00.00
ADE 44.36 166 iPd 43 29.30 0.4
1.0s 126.00nm 5.7mb
BWA 47.05 155 iPd 43 51.70 1.5
e 45 39.70 601kmX
CAN 48.06 156 eP 43 58.70 0.6
e 45 47.80 605kmX
CNB 48.21 155 eP 44 00.00 0.7
TOO 48.75 160 eP 44 03.00 -0.4
GBA 48.76 281 P 44 03.50 -0.2
DZM 49.10 129 iPd 44 06.90 0.5
WMQ 49.21 323 ePc 44 06.52 -0.4
Z 20s 10.00um 5.8Msz
N 14s 5.20um
E 14s 4.30um
iS 51 12.41
iSS 53 55.30
NDI 50.88 300 iPc 44 18.00 -1.9
0.4s 42.37nm 5.8mb
eS 51 34.00
POO 52.42 287 eP 44 31.00 -0.6
KSH 55.02 313 eP 44 51.60 0.9
Z 16s 7.10um 5.8MszX
N 14s 5.50um
QUE 59.96 300 eP 45 22.00 -3.7X
eS 45 33.00
MSZ 64.32 149 P 45 54.20 0.0
KRP 64.52 139 P 45 55.20 -0.5
AFI 64.74 110 eP 46 00.00 2.4X
WEL 65.99 142 eP 46 04.00 -1.0
MAIO 66.97 306 iPc 46 11.00 -0.6
eS 55 08.00
DRV 75.28 175 eP 47 01.00 0.3
SVW 76.85 29 ePd 47 11.50 1.6
TTA 76.90 27 ePd 47 10.90 0.7
TAB 77.55 307 eP+ 47 15.00 0.6

RYD 77.79 294 eP 47 16.00 0.2
BRW 77.93 19 ePd 47 17.30 1.7
KDC 78.13 33 ePd 47 18.00 1.1
SLY 78.27 305 ePd 47 14.00 -4.1X
eS 57 09.00
IMA 78.29 24 ePd 47 18.80 1.0
1.9s 242.50nm 5.9mb
BHD 79.28 302 iPd 47 24.00 0.3
e 50 38.00
iS 57 20.00
iPS 57 38.00
PMR 80.00 29 ePd 47 26.50 -0.5
1.4s 195.80nm 5.9mb
KMSA 80.07 289 eP 47 25.50 -2.7X
MSL 80.14 305 iPd 47 29.00 0.7
eS 57 29.00
COL 80.66 26 eP 47 27.64 -2.9
ePP 50 33.93
eS 57 35.29
FBA 80.66 26 ePd 47 30.00 -0.5
TOA 81.40 28 ePd 47 35.60 1.1
KVT 85.29 311 iP 47 54.00 -0.7
KEV 85.77 340 eP 47 57.00 0.5
e 58 28.00
INK 85.99 22 ePd 47 58.10 0.5
1.5s 345.00nm 6.4mb
pP 48 09.00 35km
SOD 86.42 338 iP 47 59.50 -0.2
HRI 86.49 303 eP 48 02.00 1.0
SALJ 86.70 302 P+ 48 02.30 0.3
MKRJ 86.80 301 Pd 48 02.80 0.4
AAE 86.86 279 eP 48 05.00 1.7
HITJ 86.87 299 P+ 48 02.90 0.0
KAS 86.96 311 eP 48 03.50 0.5
DSI 87.02 301 eP 48 04.00 0.6
PRNI 87.51 300 eP 48 06.00 0.2
PMO 87.55 105 eP 48 24.00 17.9X
1.6s 255.00nm
MBC 87.60 13 ePc 48 07.50 2.2
1.4s 230.00nm 6.2mb
SUF 87.65 333 iP 48 05.20 -0.6
0.6s 35.90nm 5.8mb
BADA 87.76 298 eP 48 08.50 1.5
MAW 87.96 200 eP 48 08.00 0.9
RUV 88.07 106 eP 48 27.00 18.4X
1.6s 175.00nm
SBA 88.71 172 Pd 48 13.00 2.5
NUR 88.88 331 iP 48 11.40 -0.3
1.0s 104.00nm 6.1mb
e 58 56.00
ALT 90.10 309 eP 48 15.00 -3.0X
NAI 90.23 269 iP 48 21.30 2.0
1.2s 34.38nm 5.5mb
ELL 90.68 307 eP 48 19.00 -1.8
VRI 91.17 317 ePc 48 22.00 -0.7
MLR 91.79 316 ePc 48 26.50 0.8
IZM 92.41 309 eP 48 26.50 -2.1
PVL 92.75 314 eP 48 30.00 0.0
KDZ 93.06 313 eP 48 30.00 -1.5
RZN 93.56 313 eP 48 33.00 -1.0
PGB 93.74 314 eP 48 35.00 0.3
HFS 94.15 333 ePKP 48 35.00 -1.1
1.5s 191.10nm 6.3mb
MMB 94.30 313 ePd 48 37.00 -0.2
VTS 94.42 314 iPd 48 38.00 0.1
KRA 94.44 322 eP 48 38.30 0 7
1.6s 164.00nm 6.2mb
Z 20s 1.80um 5.5Msz
E 20s 2.50um
SPC 94.52 321 eP 48 38.70 0.4
KKB 94.70 313 iPd 48 38.00 -1.0
NB2 94 87 334 P 48 38.40 -1 1
1.2s 43.20nm 5.8mb
VAY 95.21 313 eP 48 40.20 -1.2
SKO 95.85 314 eP 48 43.80 -0.5
1.4s 70.00nm 5.9mb
Z 20s 0.79um 5.2Msz
N 19s 1.07um
E 16s 1.09um
SRO 96.18 320 eP 48 46.20 0.6
KSP 96.37 323 iPd 48 47.00 0.5
1.4s 64.00nm 5.9mb
e 52 23.00
OHR 96.55 313 eP 48 45.70 -1.9
ZST 96.81 321 eP 48 48.00 -0.5
GMW 97.42 40 P 48 52.80 1.5
BMW 97.52 41 P 48 53.10 1.3

PRU 97.73 323 ePd 48 53.20 0.6
1.5s 44.60nm 5.8mb
Z 16s 2.80um 5.8MszX
E 16s 2.40um
e 49 05.50 40km
eS 00 20.00
BRG 97.74 324 iP 48 53.10 0.5
1.0s 70.00nm 5.9mb
i 49 11.00 63kmX
i 52 18.80
RMW 98.08 40 P 48 55.00 0.6
CLL 98.11 325 eP 48 54.00 -0.3
2.1s 98.00nm 6.0mb
LON 98.33 40 P 48 54.20 -1.3
KHC 98.64 322 P 48 56.50 -0.3
1.2s 19.00nm 5.5mb
Z 17s 2.20um 5.7MszX
N 20s 2.20um
E 18s 2.10um
e 53 13.80
PNT 98.72 37 eP 48 59.00 1.9
FHC 98.89 47 eP 48 59.80 1.7
MOX 99.18 324 eP 49 00.00 0.8
KBA 99.59 321 eP 49 05.00 3.7X
WDC 100.00 46 ePdiff49 04.20 1.1
epP 49 14.40
e 51 05.60
ePP 52 01.20
ePKKP 05 45.90
e 05 54.90
EDM 100.53 32 ePdiff49 06.80 1.6
MIN 100.75 46 ePdiff49 07.10 0.4
epP 49 16.80
ePKKP 05 43.90
ORV 101.10 47 ePdiff49 08.80 0.7
epP 49 18.70
BRK 101.12 49 e(Pdif49 11.00 2.9X
Z 20s 3.10um 5 8Msz
ePP 52 47.00
e(SS) 08 22.00
e 15 45.00
eLR 21 57.00
MHC 101.76 49 ePdiff49 12.80 1.6
epP 49 22.60
PRS 102.30 50 ePdiff49 15.00 1.5
epP 49 24.80
ePKKP 05 37.00
CMB 102.45 48 ePdiff49 15.30 1.1
epP 49 25.40
ePP 52 17.10
ePKKP 05 36.50
e 05 46.20
CMB 102.45 48 ePdiff49 11.59 -2.6X
epP 49 25.40
ePP 53 22.52
ePKKP 05 36.50
e 05 48.20
LLA 102.53 50 e(Pdif49 15.50 1.0
ePKKP 05 36.20
e 05 46.10
SES 103.18 34 ePdiff49 18.00 0.9
FRI 103.33 49 ePdiff49 19.20 1.2
epP 49 29.00
KVN 103.74 47 Pdiff 49 21.10 1.0
HPI 105.19 41 iPKPc 53 36.00 -4.9X
FFC 105.23 27 ePdiff49 28.00 2.0X
1.2s 16.00nm 5.8mb
JGI 105.28 40 ePKP 53 38.00 -2 9X
CLC 105.34 49 ePdiff49 28.00 0.9
CLC 105.34 49 ePKP 53 48.00 6.9X
GSC 106.13 50 ePdiff49 34.00 3.3X
GSC 106.13 50 ePKP 53 49.00 6 4X
PLM 106.83 52 ePdiff49 42.00 8.1X
TPC 107.17 51 ePdiff49 36.00 0.7
BAR 107.23 52 ePKP 53 28.00 -16.7X
FRB 107.32 7 ePKP 53 47.00 3.2X
BCAO 107.42 277 iPKPc 53 46.40 0.8
1.0s 10.00nm
ALQ 113.90 46 ePKP 53 57.00 -0.6
1.2s 7.81nm
MEO 119.43 42 ePKP 54 10.50 2.6X
SIO 120.34 40 ePKP 54 11.60 2.1
TUL 120.56 40 ePKP 54 10.30 0.3
1.2s 12.70nm
Z 21s 2.60um 5.8Msz
LR 32 00.00
LNO 120.56 40 e(PKP)54 11.80 2.0

KIC 129.61 285 PKP 54 28.58 0.6
TIC 129.80 286 PKP 54 28.70 0.4
LIC 129.92 285 PKP 54 28.86 0.3
Z 21s 0.47um 5.2Msz
UPA 148.66 58 iPKPd 55 06.50 4.4X
2.0s 752.94nm
Z 18s 0.62um 5.4Msz
LNV 149.33 149 ePKP 55 08.00 5.4X
LCCH 149.62 149 ePKP 55 10.00 6.9X
CHCH 149.72 150 ePKP 55 10.00 6.7X
TACH 149.80 150 ePKP 55 10.00 6.6X
PCH 150.04 150 iPKPc 55 10.80 7.0X
SAN 150.10 150 ePKP 55 10.00 6.1X
FCH 150.39 150 ePKP 55 12.00 7.3X
PORP 150.72 27 PKP 55 12.00 6.9X
JACH 150.75 149 ePKP 55 13.00 8.0X
CPD 151.05 26 PKP 55 07.00 1.4
PSO 154.16 70 ePKP 55 15.00 4.3X
BOG 155.56 59 ePKP 55 28.00 15.5X
NNA 156.37 101 ePKP 55 19.00 5.8X
1.0s 7.00nm
CNCB 163.19 122 PKP 55 25.00 3.8X
LPB 163.22 121 PKP 55 24.00 3.0X
Z 24s 1.55um
eLR 52 38.00
ZOBO 163.32 120 PKP 55 23.50 2.2
1.2s 45.61nm
SS 20 46.00
LR 52 30.00
S.D. = 1.2 on 175 of 219 obs.

DEC 20, 1989 08h 52m 46.29± 0.73s
44.620 N ± 5.6km 117.073 W ± 8.1km
DEPTH = 5.0km (geophysicist)
OREGON (32)
ML 3.2 (BUT). Felt in the
Brownlee Dam area.

CPI 0.94 143 P 53 04.50 -0.1
(S) 53 15.00
WPI 1.35 170 P 53 12.00 0.3
S 53 32.00
TID 1.39 143 P 53 12.00 -0.3
S 53 32.00
LNOR 1.52 326 P 53 14.00 -0.2
EBI 2.32 16 P 53 26.00 0.1
VGB 2.77 290 eP 53 34.90 2.6X
eS 54 13.00
MCMT 3.02 85 ePn 53 35.90 0.0
BUT 3.47 65 (P) 53 40.00 -2.3X
eSg 54 37.00
LRM 3.48 68 ePn 53 42.60 0.2
LTMT 3.55 90 ePn 53 43.30 -0.1
S.D. = 0.2 on 8 of 10 obs.

DEC 20, 1989 09h 04m 14.45± 0.96s
40.067 N ± 6.8km 142.475 E ± 8.6km
DEPTH = 59.1 ± 7.6 km
4.7mb (16 obs.)
NEAR EAST COAST OF HONSHU, JAPAN(228)

OFUJ 1.17 213 P 04 34 70 -0.1
S 04 50.00
AOMJ 1.68 288 iPd 04 42.30 0.4
eS 05 03.40
HOOJ 2.39 15 eP 04 51.00 -0.9
eS 05 18.00
MRRJ 2.58 336 P 04 53.60 -0.9
S 05 23.30
YAMJ 2.68 226 eP 04 56.80 0.8
MAT 4.86 225 iPc 05 27.70 0.9
MDJ 10.56 300 eP 06 46.50 0.9
CN2 13.21 292 eP 07 25.40 4.5X
SSE 19.46 249 P 08 38.80 -0.2
1.0s 17.00nm 4.3mb
BJI 20.11 278 eP 08 41.50 -4.4X
1.2s 18.00nm 4.3mb
TIA 20.29 267 eP 08 45.10 -2.6
TIY 23.45 274 eP 09 21.40 2.2
WHN 24.76 256 Pd 09 31.60 -0.2
GTA 32.58 283 eP 10 41.40 -0.9
GYA 32.65 256 P 10 41.60 -1.4
WMQ 40.29 294 P 11 47.70 0.3
CHTO 42.90 253 iP 12 09.00 0.1
1.0s 5.00nm 4.2mb
INK 51.32 28 eP 13 15.00 0.8
MBC 53.39 17 eP 13 30.00 0.4
1.0s 5.00nm 4.5mb
WB5 60.11 189 eP 14 17.00 -0.9
KEV 60.91 339 eP 14 19.00 -3.9X
GBA 62.31 265 P 14 31.90 -1.0
SOD 62.50 337 eP 14 33.00 -0.6
MAIO 63.02 296 eP 14 37.00 -0.6
SUF 65.66 333 iP 14 53.90 -0.2
0.6s 4.60nm 4.6mb
NUR 67.67 332 eP 14 57.00 -9.9X
SES 69.31 41 ePc 15 17.70 0.3
FFC 70.72 34 eP 15 26.00 0.3
0.7s 10.00nm 4.9mb
HFS 71.67 336 eP 15 30.10 -1.3
0.5s 4.40nm 4.6mb
Z 16s 1.67um 5.4MszX
LR 34 34.00
NB2 71.71 337 P 15 31.00 -0.7
0.8s 6.60nm 4.6mb
FRB 73.63 14 eP 15 42.00 -0.8
KHC 80.39 329 iP 16 22.00 1.3
KBA 82.12 328 eP 16 31.00 1.0
0.9s 8.50nm 4.7mb
iSg 31 40.00
LOR 85.56 333 eP 16 47.70 0.4
0.8s 5.30nm 4.7mb
LBF 85.77 333 eP 16 48.60 0.3
0.8s 8.00nm 4.9mb
SSF 85.86 333 eP 16 49.30 0.6
1.0s 14.00nm 5.1mb
LPG 86.03 331 eP 16 50.80 0.9
0.6s 7.20nm 5.0mb
AVF 86.15 333 eP 16 50.90 0.8
0.8s 13.40nm 5.2mb
MAF 86.92 333 eP 16 55.20 1.3
0.6s 3.90nm 4.8mb
TCF 86.98 334 eP 16 55.00 0.7
1.0s 14.00nm 5.1mb
ZOBO 144.38 57 PKP 23 44.00 -2.6
CNCB 144.87 58 PKP 23 48.70 1.3
S.D. = 1.1 on 38 of 42 obs.

DEC 20, 1989 09h 12m 06.34± 0.35s
8.144 N ± 5.3km 126.746 E ±13.9km
DEPTH = 33.9km (3 depth phases)
5.0mb (11 obs.)
MINDANAO, PHILIPPINE ISLANDS (259)

TSM 9.46 246 ePd 14 32.80 9.4X
MTN 21.30 168 iPd 16 51.50 -1.0
SSE 23.42 348 P 17 15.30 2.0
1.0s 0.02nm 1.6mb X
pP 17 25.30 37km
KNA 23.82 175 eP 17 17.90 0.6
WB5 28.84 165 eP 18 01.80 -2.1
CHTO 29.00 294 eP 18 04.00 -1.4
1.1s 7.36nm 4.3mb
QIS 31.20 156 iPc 18 23.50 -1.4
TIY 32.16 338 eP 18 33.40 0.1
NANU 32.43 200 eP 18 36.40 0.8
0.8s 28.00nm 5.2mb
BJI 33.14 345 eP 18 40.50 -1.1
SNY 33.66 356 eP 18 46.00 -0.1
CN2 35.54 358 eP 19 01.60 -0.6
MDJ 36.42 3 eP 19 10.50 0.9
pP 19 20.00 32km
MRWA 38.56 195 eP 19 28.50 0.7
0.5s 13.00nm 5.0mb
FORR 38.79 178 iPd 19 29.30 -0.3
0.4s 36.00nm 5.5mb
COOL 39.17 188 iPd 19 33.10 0.2
0.4s 10.00nm 4.9mb
GTA 39.39 326 eP 19 33.60 -1.2
BAL 39.71 194 eP 19 38.00 0.6
KLB 40.43 192 eP 19 43.50 0.2
MUN 41.15 194 iPd 19 50.20 1.1
0.7s 38.00nm 5.2mb
NWAO 41.83 192 iPc 19 55.90 1.2
BRS 43.40 145 iPc 20 07.00 -0.6
i 20 16.80 33km
ePP 21 51.00
ADE 44.34 166 iPc 20 15.10 -0.1
0.9s 31.93nm 5.1mb
GBA 48.66 281 P 20 50.00 0.5
e 22 15.00 429kmX
INK 86.08 22 eP 24 46.00 1.3
SOD 86.42 338 eP 24 46.00 -0.4
SUF 87.65 333 eP 24 51.80 -0 6
0.5s 6.70nm 5.2mb
MBC 87.67 13 eP 24 53.50 1.2
0.7s 5.00nm 4.9mb
NUR 88.87 331 eP 24 58.10 -0.2
HFS 94.14 333 eP 25 21.30 -1.4
0.5s 1.90nm 4.8mb
NB2 94.86 334 P 25 25.20 -0.9
0.7s 2.00nm 4.7mb
CNCB 163.25 122 ePKP 32 13.00 5.1X
e 33 02.00
LPB 163.28 121 (PKP) 32 11.00 3.3X
e 33 05.00
ZOBO 163.38 120 PKP 32 10.00 2.0
i 33 02.00
S.D. = 1.1 on 31 of 34 obs.

? DEC 20, 1989 09h 45m 25.85± 2.92s
36.584 N ±22.7km 6.209 W ±17.8km
DEPTH = 10.0km (geophysicist)
STRAIT OF GIBRALTAR (385)
mbLg 2.9 (MDD).

EJIF 0.61 102 eP 45 38.20 0.0
eS 45 47.20
EPRU 0.87 64 eP 45 42.50 -0.2
eS 45 55.00
EVAL 1.09 337 eP 45 46.20 -0.1
eS 46 01.00
EHOR 1.45 32 eP 45 52.30 0.2
eS 46 11.00
S.D. = 0.3 on 4 of 4 obs.

& DEC 20, 1989 09h 49m 49.65s
63.996 N 150.410 W
DEPTH = 17.0km
CENTRAL ALASKA (1)
<AGS-P>. ML 3.3 (PMR).

KTH 0.50 207 eP 49 59.44 -0.2
MCK 0.70 111 iP 50 02.90 -0.2
NEA 0.82 44 eP 50 04.45 -0.7
eS 50 15.86
RND 0.91 130 eP 50 06.86 0.2
HUR 1.08 161 eP 50 10.56 1.1
WRH 1.12 64 eP 50 09.99 -0.2
eS 50 25.20
RDS 1.29 49 eP 50 12.25 -0.6
CCB 1.31 59 eP 50 12.45 -0.7
eS 50 30.54
FBA 1.45 50 iPc 50 14.50 -0.6
HDA 1.57 73 eP 50 16.33 -0.5
CUT 1.60 178 eP 50 20.17 2.9
GLM 1.64 51 eP 50 17.21 -0.7
eS 50 39.94
DDM 2.02 94 eP 50 23.12 -0.3
SKT 2.09 195 eP 50 25.69 1.3
GHO 2.33 162 eP 50 29.49 1.6
PAX 2.44 113 eP 50 30.93 1.4
PMR 2.48 166 eP 50 31.60 1.7
IMA 2.50 328 eP 50 30.70 0.4
SUA 2.55 184 eP 50 32.96 2.0
TOA 2.71 133 eP 50 35.40 2.2
NCG 2.72 198 eP 50 34.26 0.7
TTA 2.73 249 eP 50 32.50 -1.1
SPU 2.93 196 eP 50 37.89 1.6
KLU 3.25 139 eP 50 43.20 2.2
VLZ 3.44 145 eP 50 45.15 1.7
FID 3.74 149 eP 50 49.47 1.7
DWY 4.83 84 P 51 01.00 -2.2
INK 8.08 50 eP 51 48.00 -0.9
28 obs. associated

DEC 20, 1989 10h 05m 56.69± 0.70s
10.814 S ± 7.6km 74.408 W ± 7.3km
DEPTH = 33.0km (normal)
PERU (116)

PT08 2.39 241 iPd 06 35.90 1.2
NNA 2.66 244 iPc 06 37.00 -1.2
0.6s 183.33nm
iS 07 06.50
PT10 2.81 243 iPc 06 41.50 1.3
iS 07 12.00
PT06 3.54 212 iPc 06 49.50 -1.2
eS 07 34.50
ARE 6.29 154 eP 07 29.00 -0.9
ZOBO 8.17 132 P 07 55.50 -1.0

20d 10h

Z 22s 0.76um
LR 24 50.00
LPB 8.36 134 eP 08 00.00 1.0
e 08 10.00
CNCB 8.63 134 eP 08 04.00 1.1
PSO 12.27 346 eP 08 52.00 -0.5
BOG 15.34 1 eP 09 33.00 0.1
FRB 74.47 3 eP 17 52.00 18.9X
INK 89.17 341 eP 19 09.00 19.1X
S.D. = 1.2 on 10 of 12 obs.

% DEC 20, 1989 10h 12m 43.50± 0.91s
36.917 N ± 9.5km 4.932 W ± 7.4km
DEPTH = 10.0km (geophysicist)
STRAIT OF GIBRALTAR (385)
mbLg 2.7 (MDD).

EPRU 0.24 282 eP 12 48.20 -0.5
EJIF 0.63 223 eP 12 56.50 0.3
eS 13 05.00
EHOR 0.93 345 eP 13 02.00 0.7
eS 13 14.30
AFC 1.16 73 eP 13 05.40 0.1
eS 13 21.00
EBAN 1.54 36 eP 13 10.50 -0.6
eS 13 30.30
S.D. = 0.8 on 5 of 5 obs.

? DEC 20, 1989 10h 18m 13.38± 1.84s
36.729 N ±14.0km 6.131 W ±13.0km
DEPTH = 10.0km (geophysicist)
STRAIT OF GIBRALTAR (385)
mbLg 2.9 (MDD).

EJIF 0 60 117 eP 18 25.60 0.1
eS 18 34.60
EPRU 0.76 72 eP 18 28.00 -0.2
eS 18 40.60
EVAL 0.98 330 eP 18 32.00 -0.1
eS 18 46.00
EHOR 1.30 33 eP 18 37.60 0.2
eS 18 56.20
S.D. = 0.4 on 4 of 4 obs.

? DEC 20, 1989 10h 26m 07.01± 2.47s
36.640 N ±19.6km 6.180 W ±16.2km
DEPTH = 10.0km (geophysicist)
STRAIT OF GIBRALTAR (385)
mbLg 3.0 (MDD).

EJIF 0.60 108 eP 26 19.20 0.0
eS 26 27.30
EPRU 0.83 67 eP 26 23.00 0.0
EVAL 1.04 335 eP 26 26.70 0.0
eS 26 41.00
EHOR 1 39 32 eP 26 32.50 0.1
eS 26 52.00
TOL 3.64 27 ePg 27 47.00 42.3X
iSg 28 03.00
S.D. = 0.1 on 4 of 5 obs.

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* DEC 20, 1989 10h 30m 09.00± 1.90s
11.065 N ± 8.4km 61.960 W ±22.1km
DEPTH = 33.0km (normal)
WINDWARD ISLANDS (95)
MD 3.1 (TRN).

TCE 0.42 151 eP 30 18.95 0.5
eS 30 29.75
TRN 0.69 127 eP 30 22.32 0.1
eS 30 34.91
TPP 0.90 146 eP 30 24.89 -0.3
eS 30 37.33
TBH 1.05 123 eP 30 26.86 -0.6
eS 30 46.51
GRW 1.13 15 eP 30 28.50 -0.1
eS 30 48.60
BOT 1.22 85 eP 30 30.20 0.4
eS 30 49.61
S.D. = 0.5 on 6 of 6 obs.

? DEC 20, 1989 10h 59m 43.80± 1.35s
11.451 N ± 7.1km 61.728 W ±39.5km
DEPTH = 10.0km (geophysicist)
WINDWARD ISLANDS (95)

GRW 0.71 5 eP 59 57.81 0.0
eS 00 12.96
TCE 0.75 182 eP 59 58.28 -0.2
eS 00 13.88
TRN 0.86 158 eP 59 59.95 -0.4
eS 00 17.07
TPP 1.16 166 eP 00 06.01 0.6
eS 00 22.67
S.D. = 0.7 on 4 of 4 obs.

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* DEC 20, 1989 11h 44m 48.81± 0.44s
34.828 S ±10.1km 179.526 W ± 8.9km
DEPTH = 32.1km (6 depth phases)
5.2mb (7 obs.)
SOUTH OF KERMADEC ISLANDS (179)
CENTROID, MOMENT TENSOR (HRV)
Data Used: GDSN
L.P.B.: 8S, 17C
Centroid Location:
Origin Time 11:44:58.1 1.2
Lat 34.74S 0.12 Lon 179.73W 0.12
Dep 15.0 FIX Half-duration 2.0
Moment Tensor; Scale 10**17 Nm
Mrr= 0.87 0.07 Mtt=-0.10 0.07
Mff=-0.76 0.09 Mrt= 0.30 0.19
Mrf= 1.32 0.19 Mtf=-0.50 0.07
Principal Axes:
T Val= 1.61 Plg=61 Azm=272
N 0.11 9 18
P -1.71 27 112
Best Double Couple:Mo=1.7*10**17
NP1:Strike=224 Dip=19 Slip= 117
NP2: 15 73 81

HBZ 3.28 212 eP 45 40.30 1.2
TAZ 4.66 222 P 45 59.60 0.8
KRP 5.04 231 P 46 04.30 0.1
PGZ 6.67 209 eP 46 22.90 -4.1X
MNG 7.00 213 eP 46 27.10 -4.7X
CAW 7.58 213 eP 46 34.70 -5.2X
BLW 7.63 210 eP 46 34.00 -6.5X
WDW 7.75 212 eP 46 36.50 -5.6X
MRW 7.85 214 eP 46 39.30 -4.2X
eS 48 06.00
WEL 7.86 213 eP 46 41.00 -2.7X
S 48 06.00
e 49 00.00
TCW 8.03 216 eP 46 40.60 -5.5X
KHZ 9.32 214 eP 47 00.90 -3.0X
MSZ 13.77 221 P 48 00.30 -3.6X
S 50 35.00
DZM 17.69 312 iPc 48 58.30 3.9X
BRS 24.79 280 iPd 50 12.50 3.2X
1.0s 10.00nm 4.4mb
i 50 22.00 34km
CNB 25.42 260 eP 50 17.00 1.8
CAN 25.71 260 eP 50 22.20 4.3X
BWA 26.33 262 eP 50 23.30 -0.3
CTA 33.54 287 iPc 51 29.00 1.1
0.9s 130.25nm 5.8mb
iS 56 51.00
iScP 57 51.30
eS 59 11.20
FORR 43.78 260 iPd 52 53.30 0.2
0.5s 55.00nm 5.6mb
JAY 48.97 302 ePc 53 28.30 -6.0X
MTN 49.58 284 iPc 53 38.10 -0.9
NWAO 51.75 253 eP 53 53.50 -1.9
KLB 51.81 255 eP 53 54.00 -1.9
MUN 52.90 254 iPd 54 02.40 -1.6
SPA 55.35 180 eP 54 22.40 0.6
1.3s 34.17nm 5.2mb
i 54 31.40 29km
NANU 57.39 264 eP 54 35.20 -1.5
0.5s 11.00nm 5.2mb
PCI 65.65 287 ePd 55 32.50 0.2
1.5s 4.00nm 4.3mb
MAW 67.73 202 eP 55 45.00 0.2
PRS 89.13 43 ePd 57 42.80 0.6
epP 57 52.80 31km
PRI 89.40 44 eP 57 44.10 0.5
epP 57 55.10 35km
MHC 89.70 42 eP 57 45.40 0.4
epP 57 55.50 32km
CMB 90.89 43 ePd 57 50.30 -0.1
epP 58 00.50 32km
WDC 91.55 40 ePd 57 53.10 -0.2
ZOBO 97.47 116 eP 58 20.00 -1.8
MBC 117.00 13 ePKP 03 32.00 1.2
0.7s 2.00nm
FRB 129.81 33 ePKP 03 58.00 2.4X
MAIO 132.62 290 ePKP 04 03.00 1.0
KEV 142.11 345 ePKP 04 20.00 1.6
BHD 143.80 280 ePKPd 04 20.00 -2.4
SOD 144.09 343 iPKP 04 19.00 -2.8X
BCAO 145.43 213 iPKPd 04 24.70 -1.1
0.9s 48.00nm
i 05 51.20
i 08 07.80
MSL 145.47 285 ePKPd 04 25.00 -0.2
AKU 147.18 14 iPKP 04 33.70 6.7X
1.0s 40.00nm
SUF 147.80 338 iPKP 04 29.60 1.5
0.7s 35.20nm
HITJ 149.77 270 PKP+ 04 36.80 4.4X
NUR 149.93 336 iPKP 04 35.40 4.0X
1.0s 74.00nm
MASJ 150.46 274 PKPd 04 38.00 4.7X
WIGH 150.66 178 ePKP 04 40.50 6.5X
WEGH 150.90 178 ePKP 04 40.00 5.7X
LIC 151.09 169 PKPc 04 39.94 5.3X
0.7s 9.00nm
RGS 151.10 351 ePKP 04 38.30 5.2X
KIC 151.27 169 PKPc 04 40.44 5.6X
0.7s 5.50nm
KUK 151.49 178 ePKP 04 40.00 4.8X
TIC 151.50 169 PKP 04 40.92 5.7X
0.6s 4.00nm
NB2 152.88 349 PKP 04 35.10 -0.8
0.9s 12.10nm
HFS 153.26 345 ePKP 04 41.80 5.5X
0.6s 5.80nm
BBTK 153.93 291 iPKPd 04 49.00 10.9X
LKO 154.23 166 PKP 04 47.20 8.1X
S.D. = 1.2 on 32 of 62 obs.

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* DEC 20, 1989 12h 02m 49.04± 0.92s
1.825 N ±11.9km 95.076 W ± 9.2km
DEPTH = 10.0km (geophysicist)
4.7mb (10 obs.)
GALAPAGOS ISLANDS REGION (696)

OXX 15.25 354 (P) 06 26.00 -0.3
ACX 15.67 343 (P) 06 31.00 -0.7
III 17.00 346 (P) 06 49.00 0.1
UPA 17.02 65 iPc- 06 56.00 7.2X
2.0s 411.76nm 5.2mb
IISM 17.20 353 (P) 06 51.50 0.3
IIT 17.38 350 (P) 06 54.00 0.3
PPM 17.48 349 (P) 06 55.00 -0.2
LVVM 17.85 356 (P) 06 39.00 -20.3X
CRX 18.04 346 (P) 07 03.00 1.0
MRX 18.75 342 (P) 07 10.00 -0.3
AGX 21.14 341 (P) 07 42.00 5.4X
NNA 22.73 128 eP 08 09.00 16.4X
1.0s 10.00nm
MZX 23.93 333 (P) 08 05.00 0.8
ZOBD 32.12 125 P 09 31.00 11.3X
1 0s 15.00nm
SS 16 40.00
LR 19 38.00
UYO 32.18 1 iPc 09 18.90 -0.4
LPB 32.28 125 eP 09 28.00 7.1X
Z 17s 2.04um 4.9MszX
LR 19 38.00
CNCB 32.52 126 P 09 36.50 13.3X
MEO 32.95 355 iPd 09 25.20 -0.9
OLY 33.67 5 P 09 32.40 0.1
HBF 33.88 23 P 09 34.30 0.2
PRM 34.22 19 P 09 37.00 -0.1
POW 34.35 6 P 09 38.00 -0.1
ALQ 34.61 343 eP 09 39.00 -1.7
1.0s 10.00nm 4.7mb
pP 11 04.60 475kmX
ANMO 34.62 343 P 09 41.40 0.7
RSCP 34.74 14 P 09 41.40 -0.2
JSC 34.77 20 P 09 42.30 0.5
LHS 35.11 21 P 09 44.40 -0.3
GBTN 35.15 15 P 09 44.90 -0.1
GLA 36.18 331 eP 09 53.00 -0.8

FVM	36.24	6	P	09 53.20	-1.0	
BAR	36.80	329	eP	09 58.00	-1.0	
PLM	37.43	329	eP	10 04.00	-0.5	
TPC	37.62	331	eP	10 06.00	0.0	
NAV	37.69	19	P	10 07.00	0.5	
PEC	38.00	329	P	10 10.00	0.8	
RVR	38.19	329	eP	10 12.00	1.3	
MWC	38.72	329	eP	10 15.00	-0.4	
GOL	38.85	347	P	10 16.90	0.5	
	1.0s	17.50nm			4.7mb	
GLD	38.86	348	P	10 18.10	1.6	
	1.2s	25.25nm			4.8mb	
GSC	38.95	331	eP	10 17.00	-0.2	
MSU	39.73	339	P	10 24.20	0.4	
CLC	39.75	331	eP	10 23.00	-0.8	
SYP	39.97	327	eP	10 27.00	1.3	
BCH	40.53	328	P	10 29.50	-0.7	
DAU	41.12	341	P	10 36.40	1.1	
TNP	41.41	333	P	10 36.00	-1.5	
	1.5s	15.15nm			4.5mb	
DUG	41.45	339	P	10 39.00	1.2	
	0.6s	5.02nm			4.4mb	
PRS	42.08	328	ePd	10 42.60	-0.2	
KVN	42.60	333	P	10 47.00	-0.3	
BW06	42.78	344	P	10 48.20	-0.6	
	1.2s	19.18nm			4.7mb	
CMB	42.87	330	eP	10 48.80	-0.5	
ARN	42.93	329	P	10 50.00	0.2	
MHC	42.98	328	eP	10 50.20	-0.1	
ORV	44.60	331	eP	11 04.60	1.3	
WDC	45.89	331	ePd	11 11.40	-2.1	
LBFM	46.18	332	P	11 15.00	-1.0	
LRM	46.40	343	eP	11 19.00	1.2	
SES	50.26	347	ePc	11 48.00	0.5	
LON	50.45	336	P	11 50.00	1.0	
PNT	51.76	340	iP	12 00.00	1.1	
FFC	53.03	355	eP	12 07.00	-1.3	
	1.3s	36.00nm			5.1mb	
EDM	53.42	346	eP	12 10.00	-1.2	
FRB	64.78	13	eP	13 29.00	-0.8	
INK	71.31	346	eP	14 11.00	0.5	
PMR	72.04	336	P	14 15.00	0.1	
	1.2s	24.62nm			5.2mb	
MBC	75.60	354	eP	14 36.50	1.1	
	1.0s	6.00nm			4.6mb	

S.D. = 0.9 on 59 of 66 obs.

? DEC 20, 1989 12h 08m 30.69± 7.86s
32.988 S ±21.2km 70.254 W ±34.2km
DEPTH = 111.3 ± 59.0 km
CHILE-ARGENTINA BORDER REGION (127)

FCH	0.34	185	iPd	08 47.40	0.0	
PEL	0.39	247	iPc	08 47.50	0.2	
			iS	09 00.50		
JACH	0.42	317	iPc	08 47.50	0.0	
			iS	09 01.00		
SAN	0.58	216	eP	08 48.60	0.1	
			iS	09 02.50		
ROCH	0.64	271	iPc	08 49.00	-0.2	
			iS	09 03.00		
PCH	0.67	199	iPd	08 49.20	-0.1	
			iS	09 03.50		
TACH	0.88	221	iPc	08 50.70	-0.4	
CHCH	1.00	199	iPd	08 52.60	0.3	
			iS	09 09.70		
LCCH	1.21	246	iPd	08 54.90	0.4	
			iS	09 12.50		
LNV	1.37	225	iPd	08 56.00	-0.3	
			iS	09 14.00		

S.D. = 0.3 on 10 of 10 obs.

& DEC 20, 1989 12h 26m 25.62s
58.446 N 152.520 W
DEPTH = 64.4km
KODIAK ISLAND REGION (13)
<AGS-P>.

KDC	0.70	179	eP	26 39.63	-0.7	
			eS	26 50.23		
CDD	0.76	310	eP	26 40.10	-1.0	
			eS	26 52.34		
XLV	1.09	22	eP	26 44.73	-0.6	
			eS	26 59.83		
CNPM	1.27	31	eP	26 47.01	-0.7	
			eS	27 04.01		
PDB	1.60	328	eP	26 51.25	-0.9	
NNL	1.72	21	eP	26 53.89	0.0	
RED	1.98	356	eP	26 56.54	-1.1	
SEW	2.29	42	eP	26 59.64	-2.1	
SLKM	2.38	29	eP	27 01.34	-1.7	
SPU	2.75	5	eP	27 07.46	-0.9	
SVW	3.10	331	eP	27 11.36	-1.8	
PMS	3.18	27	eP	27 12.78	-1.6	
SKT	3.58	8	eP	27 18.92	-1.0	
GLI	3.68	46	eP	27 18.19	-3.1	
GHO	3.79	27	eP	27 20.48	-2.5	
FID	3.84	50	eP	27 20.37	-3.2	
VZW	4.00	46	eP	27 22.84	-3.0	

17 obs. associated

DEC 20, 1989 12h 33m 34.52± 0.88s
40.449 N ± 7.0km 21.836 E ± 8.6km
DEPTH = 10.0km (geophysicist)
GREECE (364)
MD 3.7 (ATH).

KZN	0.15	199	ePb	33 36.90	-1.2	
LIT	0.61	125	eP	33 45.80	-1.0	
GRG	0.66	40	eP	33 47.10	-0.7	
OHR	1.03	310	iPn	33 54.70	0.7	
VAY	1.03	32	ePn	33 53.30	-0.7	
KNT	1.08	48	eP	34 04.70	9.9X	
PLG	1.23	93	ePb	33 59.00	1.6	
AGG	1.48	165	eP	34 02.50	1.3	
SKO	1.55	349	ePn	33 52.50	-9.7X	
NEO	1.56	136	ePg	34 06.50	4.1X	

S.D. = 1.4 on 7 of 10 obs.

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* DEC 20, 1989 12h 46m 03.18± 4.53s
51.559 N ±29.8km 16.047 E ±27.0km
DEPTH = 5.0km (geophysicist)
POLAND (548)
ML 4.1 (VKA), 3.9 (KBA).

KSP	0.73	168	iPd	46 17.60	-0.2	
	0.5s	147.00nm				
			iS	46 24.80		
BRG	1.49	243	iPn	46 30.50	-0.1	
			iPg	46 32.40		
			iSg	46 52.30		
PRU	1.84	212	Pnd	46 36.00	0.3	
			Pg	46 38.00		
			Sg	46 59.20		
CLL	1.92	264	iPn	46 37.10	0.3	
			iPg	46 40.20		
			iSg	47 06.80		
KRA	2.89	120	eP	46 59.10	8.4X	
			iS	47 33.80		
KHC	2.90	214	ePn	46 50.40	-0.5	
			Pg	46 57.70		
			Sn	47 27.30		
			Sg	47 37.30		
MOX	2.94	254	ePn	46 51.00	-0.4	
			iPg	47 00.00		
			iSg	47 39.00		
VKA	3.30	177	iPgd	47 05.80	9.2X	
			iSg	47 49.60		
ZST	3.43	168	ePn	47 06.00	7.6X	
			e	47 28.00		
			i	47 44.10		
			i	47 54.90		
SPC	3.58	130	ePn	47 10.60	9.9X	
KBA	4.82	203	iPnc	47 18.20	-0.1	
	0.4s	13.60nm				
			i	48 39.70		
LJU	5.61	191	e(Pn)	47 29.00	-0.3	
			e(Sn)	48 52.50		
VOY	5.71	195	ePn	47 31.20	0.4	
			eSn	49 09.00		
VBY	6.08	185	e(Pn)	47 36.10	0.2	
CTI	6.23	209	Pd	47 38.60	0.5	
VAI	7.45	223	P	48 28.00	32.9X	

S.D. = 0.4 on 11 of 16 obs.

DEC 20, 1989 13h 01m 07.91± 0.26s
38.201 N ± 4.4km 135.295 E ± 3.2km
DEPTH = 361.9 ± 3.2 km
4.6mb (18 obs.)
SEA OF JAPAN (660)

MTMJ	2.57	128	iPd	02 05.40	0.4	
			S	02 50.80		
TSRJ	2.72	168	P	02 06.70	0.6	
			S	02 53.00		
MAT	2.85	125	iPd	02 06.70	-0.6	
			iS	02 52.80		
NIIJ	3.09	107	iPd	02 08.60	-0.8	
YONJ	3.35	207	P	02 13.60	1.9	
			S	03 04.90		
IIDJ	3.43	142	iPd	02 12.20	-0.4	
			S	03 04.30		
CHJJ	3.65	125	iPd	02 13.70	-1.0	
			S	03 05.50		
YAMJ	3.74	89	P	02 14.50	-0.9	
WKYJ	3.98	176	P	02 18.90	1.0	
			S	03 13.40		
SHK	4.23	211	eP	02 22.90	2.5	
KAKJ	4.37	116	P	02 19.30	-2.6	
			S	03 15.50		
SAP	6.68	42	eP	02 46.00	-1.4	
			eS	04 03.00		
MDJ	7.71	328	eP	03 00.80	1.3	
CN2	9.31	310	iPd	03 19.30	0.9	
	1.0s	0.06nm			1.8mb X	
			S	05 04.00		
SNY	9.69	296	iPd	03 24.00	1.0	
	1.0s	0.14nm			2.2mb X	
			S	05 08.00		
DL2	10.73	278	eP	03 37.00	1.5	
SSE	13.60	243	P	04 09.50	0.2	
	1.2s	79.00nm			5.0mb	
			i	04 42.00		
			S	06 38.00		
TIA	14.62	268	Pd	04 19.70	-0.6	
NJ2	14.78	250	iPc	04 23.80	1.8	
BJI	14.96	283	eP	04 22.00	-1.8	
	1.2s	4.90nm			3.7mb	
TIY	18.03	276	iPc	04 55.00	-0.7	
	1.0s	0.05nm			1.8mb X	
HHC	18.49	286	eP	04 59.30	-1.0	
WHN	18.88	252	eP	05 03.50	-0.5	
XAN	21.68	267	P	05 30.50	-0.8	
LZH	25.10	275	P	06 02.00	-1.0	
	1.5s	162.00nm			5.2mb	
Z	17s	0.60um			4.2MszX	
			sP	06 20.50		
GYA	26.77	253	P	06 16.80	-1.2	
			S	10 25.00		
CD2	26.88	264	eP	06 16.50	-2.4	
GTA	27.57	284	eP	06 23.80	-1.2	
WMQ	35.96	294	eP	07 36.50	-0.4	
			S	12 49.50		
CHTO	37.02	249	iPd	07 47.00	1.2	
	1.0s	23.75nm			4.5mb	
SHL	38.62	264	iP	07 59.20	0.0	
KSH	45.49	291	eP	08 55.50	1.3	
TTA	47.27	35	P	09 07.20	-0.3	
BRW	47.29	24	eP	09 07.80	0.4	
SVW	47.55	38	eP	09 10.30	0.6	
IMA	48.18	31	eP	09 14.40	-0.1	
	0.8s	9.50nm			4.1mb	
PMR	50.60	37	eP	09 31.60	-1.1	
	0.7s	8.70nm			4.2mb	
FBA	50.72	32	eP	09 33.30	-0.2	
MTN	50.93	185	iPc	09 34.90	-0.6	
KNA	54.01	188	eP	09 57.70	-0.3	
INK	55.55	27	eP	10 08.00	-0.5	
GBA	56.53	261	P	10 15.80	-0.2	
MBC	56.77	16	ePc	10 15.90	-1.0	
	0.5s	7.00nm			4.3mb	
WB5	57.78	181	iPc	10 23.40	-1.0	
			i	11 12.20		
QIS	58.58	175	iPc	10 28.90	-1.0	
	0.6s	35.00nm			5.0mb	
CTA	58.89	168	iPc	10 31.00	-1.0	
	1.0s	50.00nm			4.9mb	
WARB	64.56	189	iPc	11 09.60	0.4	
	0.3s	17.00nm			5.2mb	
BRS	67.27	163	iPd	11 26.50	0.2	
FORR	69.02	187	iPc	11 36.40	-0.4	
	0.4s	37.00nm			5.4mb	
MRWA	69.45	198	eP	11 39.00	-0.5	
GMW	69.95	45	P	11 42.80	0.3	
BMW	70.32	46	P	11 44.50	-0.3	
RMW	70.55	45	P	11 45.00	-1.1	
PNT	70.64	42	eP	11 46.00	-0.6	
HFS	70.94	333	(P)	11 45.70	-2.4	
	0.5s	1.80nm			4.0mb	
LON	70.96	45	P	11 48.00	-0.5	
NB2	71.15	335	P	11 48.80	-0.6	

20d 13h

	0.9s	3.60nm		4.1mb	
DPW	72.26	43 P	11 55.80	-0.3	
VGB	72.27	46 P	11 56.40	0.3	
FHC	73.17	51 ePc	12 02.70	1.3	
LBFM	74.11	50 P	12 07.70	0.6	
WDC	74.18	51 ePc	12 07.40	0.2	
SES	74.29	38 iPc	12 07.50	-0.2	
MIN	74.89	50 ePc	12 10.80	-0.6	
ORV	75.44	51 ePc	12 14.10	-0.2	
BRK	75.99	53 ePc	12 17.40	0.1	
PCC	76.14	53 ePc	12 18.10	0.0	
LRM	76.61	42 ePc	12 21.40	0.5	
FRB	76.64	11 ePc	12 19.70	-0.7	
GCC	76.67	53 eP	12 21.30	0.3	
MHC	76.70	53 eP	12 21.60	0.2	
ARN	76.76	53 P	12 21.80	0.1	
CMB	77.06	52 iPc	12 23.70	0.4	
SAO	77.18	53 e(P)	12 26.30	2.4	
PRS	77.49	54 iPc	12 26.00	0.4	
LLA	77.59	53 eP	12 26.60	0.4	
KVN	77.81	50 P	12 27.90	0.3	
FRI	78.13	52 ePc	12 29.00	0.0	
IMW	78.70	42 P	12 33.40	1.0	
TNP	78.96	50 P	12 33.90	0.1	
	0.8s	12.99nm		4.8mb	
BCH	79.03	54 P	12 33.70	-0.3	
DUG	80.16	46 P	12 40.40	0.5	
	0.9s	6.58nm		4.4mb	
CLC	80.19	52 eP	12 40.00	0.0	
BW06	80.20	43 P	12 40.00	-0.2	
	0.9s	6.78nm		4.5mb	
DAU	80.89	45 P	12 44.50	0.5	
MWC	80.92	54 eP	12 44.00	-0.1	
GSC	81.01	52 eP	12 45.00	0.6	
RVR	81.50	53 eP	12 47.00	0.2	
MSU	81.66	47 P	12 48.80	0.9	
PLM	82.24	54 eP	12 51.00	0.1	
TPC	82.26	53 eP	12 51.00	0.2	
BAR	82.80	54 eP	12 54.00	0.5	
GLA	83.72	53 eP	12 59.00	0.9	
GOL	84.60	42 P	13 03.00	0.3	
	1.0s	16.25nm		4.8mb	
GLD	84.65	42 P	13 03.70	0.9	
ANMO	87.43	46 P	13 16.50	0.1	
ALQ	87.43	46 iPd	13 17.80	1.4	
	1.1s	6.33nm		4.4mb	
MSZ	87.59	157 P	13 18.20	1.8	
MEO	91.87	42 e(P)	13 37.40	0.6	
TIC	122.11	312 PKP	19 21.00	-0.7	
KIC	122.17	311 PKP	19 21.00	-0.8	
LIC	122.45	311 PKP	19 21.40	-0.9	
ZOBO	149.98	50 ePKP	20 14.00	1.2	
	0.9s	9.30nm			
LPB	150.20	50 PKP	20 19.00	6.1X	
CNCB	150.48	50 PKP	20 15.00	1.5	
		i	20 21.00		

S.D. = 1.0 on 104 of 105 obs.

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* DEC 20, 1989 13h 25m 22.50± 0.73s
42.276 N ± 7.5km 19.114 E ± 5.8km
DEPTH = 10.0km (geophysicist)
YUGOSLAVIA (383)
ML 2.2 (TTG).

TTG	0.19	35 iPgd	25 26.80	0.1	
		iSg	25 30.50		
BDV	0.21	272 iPgd	25 27.20	0.1	
		iSg	25 32.50		
ULC	0.33	162 ePg	25 29.40	0.1	
		eSg	25 35.20		
HCY	0.49	291 iPgc	25 32.30	-0.1	
		iSg	25 40.50		
OHR	1.72	132 ePn	25 56.00	3.4X	
SKO	1.76	99 ePn	25 53.00	-0.2	
		iSg	26 25.70		

S.D. = 0.2 on 5 of 6 obs.

DEC 20, 1989 13h 57m 53.23± 0.34s
8.198 N ± 5.2km 126.896 E ± 8.7km
DEPTH = 33.0km (normal)
4.9mb (10 obs.) 4.2Msz (1 obs.)
MINDANAO, PHILIPPINE ISLANDS (259)

DAV	1.71	230 eP	58 24.00	2.8	
QCP	8.57	319 eP	00 12.00	14.0X	
TSM	9.62	246 eP	00 18.40	5.9X	
BAG	10.23	324 eP	00 28.90	7.8X	
KKM	10.81	259 ePc	00 34.70	5.7X	
GUMO	18.44	72 eP	02 08.00	-0.1	
QIZ	19.74	305 P	02 24.70	1.3	
E	14s	1.10um			
MTN	21.33	169 iPd	02 39.10	-0.6	
SSE	23.40	348 eP	03 05.50	5.4X	
Z	20s	0.90um		4.2Msz	
		sP	03 19.00		
		S	07 14.00		
		sS	07 32.00		
KNA	23.86	176 eP	03 05.10	0.4	
IPM	25.95	264 ePd	03 29.90	5.2X	
WB5	28.85	165 eP	03 49.00	-2.0	
CHTO	29.11	294 eP	03 52.00	-1.4	
	1.0s	16.25nm		4.7mb	
MBL	29.99	193 eP	04 01.00	-0.2	
XAN	30.59	330 eP	04 12.10	5.7X	
QIS	31.19	157 iPc	04 11.00	-0.8	
TIY	32.17	338 eP	04 18.00	-2.3	
N	14s	0.50um			
E	14s	0.60um			
BJI	33.12	345 eP	04 27.50	-0.9	
	1.2s	16.00nm		4.8mb	
SNY	33.62	356 Pc	04 32.80	0.1	
CTA	33.96	146 iPd	04 36.30	0.4	
	2.0s	105.88nm		5.4mb	
WARB	34.18	180 eP	04 37.50	-0.2	
	0.5s	10.00nm		5.0mb	
LZH	34.83	326 eP	04 42.50	-0.9	
HHC	35.26	340 eP	04 46.60	-0.4	
CN2	35.49	358 eP	04 51.80	3.0X	
MDJ	36.36	3 eP	04 57.70	1.6	
SHL	37.52	302 iP	05 06.00	-0.4	
		eS	10 54.50		
MRWA	38.65	195 eP	05 15.80	0.3	
FORR	38.84	178 eP	05 17.00	0.0	
COOL	39.25	188 eP	05 20.00	-0.5	
GTA	39.43	326 eP	05 20.40	-1.7	
LSA	39.75	307 P	05 26.60	1.3	
BAL	39.80	194 eP	05 25.00	-0.1	
KLB	40.52	192 eP	05 31.00	0.0	
MUN	41.23	194 eP	05 37.00	0.2	
NWAO	41.92	192 eP	05 43.00	0.6	
BRS	43.36	146 iPd	05 53.80	-0.5	
		ipP	06 03.80	34kmX	
		ePP	07 50.00		
ADE	44.36	166 e(P)	06 05.80	3.5X	
	0.8s	22.39nm		5.1mb	
HYB	47.91	286 eP	06 38.50	7.8X	
G8A	48.80	281 P	06 45.00	7.4X	
WMO	49.23	323 eP	06 41.40	0.8	
MAIO	67.00	306 eP	08 44.00	-1.4	
SVW	76.82	29 eP	09 53.90	10.6X	
TTA	76.87	27 P	10 00.50	16.9X	
BRW	77.91	19 eP	09 51.10	2.0	
KDC	78.10	33 P	10 00.40	10.1X	
IMA	78.26	24 eP	09 53.50	2.2	
PMR	79.97	29 P	10 00.00	-0.4	
FBA	80.64	26 P	10 05.10	1.1	
TOA	81.38	28 eP	10 20.00	12.0X	
INK	85.97	22 eP	10 32.00	0.9	
SOD	86.43	338 eP	10 37.00	3.6X	
MBC	87.59	13 eP	10 41.00	2.1	
	1.0s	14.00nm		5.2mb	
SUF	87.67	333 eP	10 38.60	-0.9	
	0.5s	2.40nm		4.7mb	
NUR	88.90	331 iP	10 53.40	8.0X	
	0.8s	19.10nm		5.5mb	
HFS	94.16	333 (P)	11 07.80	-2.0	
	0.8s	2.30nm		4.7mb	
NB2	94.88	334 P	11 20.80	7.7X	
	0.9s	3.10nm		4.7mb	
UPA	148.62	58 (PKP)	17 35.50	-0.2	
CNCB	163.15	122 ePKP	18 07.00	12.2X	
ZOBO	163.28	120 PKP	18 06.00	11.0X	

S.D. = 1.2 on 39 of 59 obs.

DEC 20, 1989 14h 07m 03.68± 0.36s
46.313 N ± 4.0km 12.645 E ± 3.3km
DEPTH = 5.0km (geophysicist)
NORTHERN ITALY (545)
ML 3.1 (KBA). MD 3.1 (TRI), 3.4 (LJU).

FVI	0.30	19 Pd	07 09.70	0.1	
VVI	0.36	205 P	07 11.60	0.6	
		eSg	07 17.90		
CTI	0.74	249 P	07 16.90	-1.6	
		eSg	07 32.80		
KBA	0.90	32 iPgd	07 21.40	-0.2	
		iSg	07 33.50		
VOY	0.91	108 iPg	07 20.80	-0.9	
		eSg	07 35.30		
TRI	0.99	127 ePg	07 22.30	-0.5	
		i	07 24.10		
		iSg	07 40.00		
LJU	1.34	101 iPnd	07 30.00	1.1	
		iSg	07 50.00		
CEY	1.37	114 iPnd	07 30.10	0.7	
		iSn	07 50.40		
RIY	1.56	128 iPnc	07 32.60	0.6	
		iSn	07 55.30		
SAL	1.64	245 P	07 34.90	1.7	
		eSg	07 55.20		
VBY	1.99	113 iPnc	07 41.00	2.6X	
		iSn	08 08.80		
MDI	2.11	256 P	07 41.20	1.1	
		eSn	08 07.10		
PTJ	2.34	99 e(P)	07 44.20	0.7	
SFI	2.46	193 P	07 43.10	-1.9	
		eSn	08 14.10		
VAI	2.73	262 P	07 50.00	1.0	
		eSn	08 30.50		
AOI	2.85	166 iPn	07 50.69	0.0	
		iSn	08 26.23		
KHC	2.89	12 Pn	07 51.50	0.2	
		Pg	07 58.40		
		Sg	08 28.00		
CIO	3.14	173 iPn	07 54.33	-0.5	
		iSn	08 32.15		
PRU	3.89	18 Pg	08 40.00	34.6X	
		e	08 52.50		
		Sg	09 07.00		
HVAR	4.14	138 iPn	08 08.10	-0.8	
		i(Sn)	08 58.10		
LPL	4.20	261 Pn	08 11.60	1.6	
CDF	4.21	302 Pn	08 10.00	0.0	
		Pg	08 25.00		
		Sn	09 01.50		
MOX	4.39	351 (Pn)	08 11.50	-1.0	
		iSg	09 02.00		
HAU	4.62	294 Pn	08 15.40	-0.3	
		Sn	09 10.00		
LBF	6.01	280 Pn	08 34.00	-1.4	
SMF	6.09	276 Pn	08 36.20	-0.3	

S.D. = 1.0 on 24 of 26 obs.

DEC 20, 1989 14h 18m 29.53± 0.56s
31.290 S ± 8.9km 69.182 W ± 7.7km
DEPTH = 122.2 ± 16.1 km
SAN JUAN PROVINCE, ARGENTINA (137)
Felt (II) in San Juan Province.

ZON	0.50	121 iPd	18 47.50	-0.5	
		eS	19 50.20		
JACH	1.83	220 iP	19 02.50	0.9	
		iS	19 28.00		
FCH	2.24	205 iPc	19 08.50	1.6	
		iS	19 38.50		
PEL	2.24	214 iPc	19 07.00	0.3	
		iS	19 35.30		
ROCH	2.28	222 iPd	19 07.20	-0.2	
		iS	19 36.50		
PCH	2.58	206 iPd	19 16.00	4.9X	
		iS	19 45.00		
TACH	2.78	212 iPd	19 13.20	-0.5	
		iS	19 48.00		
CHCH	2.91	205 iP	19 16.00	0.5	
LCCH	2.97	222 eP	19 15.50	-0.7	
		iS	19 50.50		
MRA	3.16	112 ePc	19 19.20	0.5	
		S	19 55.40		
LNV	3.26	215 iPd	19 18.60	-1.3	
		iS	19 56.50		
RFA	3.52	170 iPc	19 23.20	-0.4	
TCA	3.93	92 iPd	19 28.80	-0.3	
CNC8	14.46	5 P	21 51.00	0.9	
ZOBO	14.98	4 P	21 56.00	-0.7	

S.D. = 0.9 on 14 of 15 obs.

DEC 20, 1989 15h 35m 06.57± 0.45s
31.579 N ± 8.4km 40.993 W ± 8.4km
DEPTH = 10.0km (geophysicist)
4.8mb (8 obs.) 4.5Msz (1 obs.)

NORTH ATLANTIC RIDGE (403)

FRB	36.56	340	eP	42 13.00	-0.9
SSF	37.20	52	eP	42 20.20	0.6
SMF	37.37	53	eP	42 22.00	0.9
	1.0s	14.00nm		4.7mb	
LOR	37.47	52	eP	42 21.50	-0.4
	1.0s	10.00nm		4.5mb	
LBF	37.51	53	eP	42 22.30	0.0
	1.2s	26.70nm		4.9mb	
HAU	39.24	51	eP	42 36.10	-0.6
	1.0s	12.00nm		4.5mb	
BSF	39.52	52	eP	42 38.40	-0.7
CDF	39.91	51	eP	42 41.70	-0.6
LIC	42.02	119	P	42 58.24	-1.7
Z	20s	0.57um		4.5Msz	
KIC	42.15	119	P	43 00.50	-0.4
MOX	42.96	48	eP	43 13.00	5.7X
CLL	43.90	47	eP	43 15.00	0.2
KHC	44.12	50	Pc	43 17.00	0.3
		i		43 22.40	
BRG	44.45	48	eP	43 25.50	6.1X
	1.0s	27.00nm		5.1mb	
PRU	44.78	49	ePd	43 23.50	1.5
		e		43 27.50	
KSP	45.94	48	eP	43 33.00	1.8
ZST	46.44	52	eP	43 40.40	5.2X
FFC	48.35	317	iPc	43 50.20	0.1
	1.0s	13.00nm		5.0mb	
SPC	48.49	50	eP	43 58.50	7.0X
ALQ	53.96	292	eP	44 27.80	-5.2X
ZOBO	54.23	213	P	44 35.00	-0.5
LPB	54.45	212	P	44 38.00	1.0
CNCB	54.64	212	P	44 39.50	1.0
MBC	56.83	344	eP	44 52.50	-0.5
	0.8s	4.00nm		4.5mb	
BCAO	61.87	103	ePc	45 28.50	-0.2
	0.9s	23.00nm		5.4mb	
		i		45 33.40	
INK	61.98	335	eP	45 28.00	-0.7
AAI	150.45	22	e(PKP)	55 04.00	9.0X
S.D. = 0.9 on 21 of 27 obs.					

DEC 20, 1989 15h 41m 07.18± 0.46s
8.301 N ± 6.1km 126.967 E ±12.2km
DEPTH = 30.5km (3 depth phases)
4.9mb (4 obs.)
MINDANAO, PHILIPPINE ISLANDS (259)

DAV	1.83	229	eP	41 40.00	2.9
PCI	11.58	218	ePd	43 58.00	4.5X
QIZ	19.74	304	P	45 42.00	4.3X
MTN	21.41	169	eP	45 56.00	1.2
SSE	23.31	347	eP	46 14.50	1.0
			pP	46 24.00	35km
			S	50 30.00	
KNA	23.96	176	eP	46 21.30	1.4
IPM	26.04	263	ePd	46 43.50	3.7X
WB5	28.94	165	eP	47 03.70	-2.3
CHTO	29.13	294	eP	47 07.00	-0.9
	1.0s	8.00nm		4.4mb	
QIS	31.25	157	eP	47 26.00	-0.6
TIY	32.10	338	eP	47 34.60	0.6
BJI	33.04	345	eP	47 41.00	-1.0
	1.0s	12.00nm		4.8mb	
SNY	33.52	355	Pd	47 41.00	-5.2X
			pP	47 56.10	61kmX
CTA	34.00	146	iPc	47 53.50	2.9X
WARB	34.28	181	iPc	47 52.70	-0.2
	0.4s	8.00nm		5.0mb	
CN2	35.39	358	P	48 02.00	-0.2
MDJ	36.25	3	eP	48 11.00	1.5
			pP	48 20.50	32km
SHL	37.53	302	iP	48 20.20	-0.5
			eS	54 08.10	
MRWA	38.77	195	eP	48 31.00	0.2
COOL	39.36	188	eP	48 35.00	-0.7
GTA	39.39	326	eP	48 34.70	-1.3
BAL	39.92	194	eP	48 40.00	-0.3
KLB	40.63	192	eP	48 46.00	-0.2
MUN	41.35	194	eP	48 52.50	0.4
NWAO	42.03	192	eP	48 56.00	-1.6
BRS	43.40	146	iPd	49 09.30	0.3
			i	49 16.80	25km
			i	49 41.00	
ADE	44.44	166	e(P)	49 17.10	-0.2
HYB	47.95	286	eP	49 45.00	-0.3
GBA	48.85	281	P	49 56.00	3.8X
KSH	55.03	313	eP	50 37.00	-1.6
INK	85.85	22	eP	53 46.00	1.1
MBC	87.47	13	ePc	53 54.20	1.6
	1.0s	12.00nm		5.1mb	
ZOBO	163.27	120	PKP	01 22.00	12.7X
S.D. = 1.2 on 26 of 33 obs.					

DEC 20, 1989 16h 12m 38.44± 1.23s
41.369 N ± 7.4km 142.154 E ± 9.4km
DEPTH = 61.9 ± 12.2 km
4.5mb (7 obs.)
HOKKAIDO, JAPAN REGION (224)

SAP	1.80	340	eP	13 07.00	-0.5
			eS	13 29.00	
MAT	5.72	214	iPc	14 03.50	0.8
			eS	15 04.00	
MDJ	9.76	294	eP	15 05.00	6.4X
BJI	19.72	275	eP	17 05.00	-0.5
WMQ	39.56	292	eP	20 06.70	1.7
TTA	41.58	37	eP	20 21.90	0.5
BRW	42.22	25	eP	20 25.70	-0.7
IMA	42.70	33	eP	20 30.70	0.2
FBA	45.17	34	ePd	20 51.00	0.7
INK	50.29	29	iPd	21 30.50	0.4
	0.6s	21.00nm		5.3mb	
MBC	52.22	17	eP	21 44.50	-0.1
	0.9s	5.00nm		4.5mb	
WB5	61.36	188	eP	22 48.60	-1.5
GBA	62.20	264	Pd	23 08.70	12.8X
	0.5s	3.10nm			
FHC	67.04	55	e(P)	23 27.80	0.8
WDC	68.06	55	ePd	23 33.70	0.3
MIN	68.78	55	eP	23 37.50	-0.5
ORV	69.31	55	ePd	23 40.90	-0.2
FFC	69.77	34	iPc	23 43.80	0.2
	0.8s	10.00nm		4.8mb	
NB2	70.42	337	P	23 47.00	-0.6
	0.4s	0.90nm		4.1mb	
CMB	70.93	56	ePd	23 51.40	0.4
KVN	71.71	54	P	23 56.00	0.1
FRB	72.43	14	eP	23 59.00	-0.4
TNP	72.85	54	P	24 03.20	0.5
	0.8s	5.59nm		4.5mb	
BW06	74.24	47	P	24 10.80	0.1
	0.5s	3.39nm		4.5mb	
ALQ	81.38	51	eP	24 49.00	-1.0
	1.0s	2.50nm		4.1mb	
S.D. = 0.7 on 23 of 25 obs.					

DEC 20, 1989 17h 27m 53.92± 0.29s
8.215 N ± 4.6km 126.734 E ±10.0km
DEPTH = 30.3km (5 depth phases)
5.1mb (16 obs.)
MINDANAO, PHILIPPINE ISLANDS (259)

TSM	9	48	246	eP	30 20.00	8.5X
KKM	10.66	259	ePc	30 35.20	7.4X
PCI	11.37	218	ePd	30 47.50	10.0X
QIZ	19.60	305	eP	32 31.40	8.5X
			eS	36 01.00	
KNA	23.90	175	eP	33 06.20	0.2
NJ2	24.82	344	Pd	33 16.00	1.1
IPM	25.80	264	ePc	33 29.00	4.7X
	0.9s	24.30nm		4.8mb	
WB5	28.91	165	eP	33 50.20	-2.4
CHTO	28.96	294	eP	33 53.20	0.2
	1.0s	5.50nm		4.2mb	
XAN	30.49	330	P	34 04.50	-2.1
QIS	31.27	156	iPd	34 12.20	-1.3
			e	34 21.00	31km
TIY	32.09	338	eP	34 19.30	-1 4
Z	16s	0.70um		4.4MszX	
NANU	32.50	200	iPd	34 25.00	0.8
	0.6s	22.00nm		5.2mb	
BJI	33.07	345	eP	34 28.00	-1.0
	1.0s	24.00nm		5.1mb	
SNY	33.59	356	Pc	34 33.20	-0.3
			pP	34 42.10	30km
CTA	34.06	146	iPd	34 37.30	-0.6
WARB	34.19	180	eP	34 39.00	0.1
	0.4s	13.00nm		5.2mb	
LZH	34.72	326	Pd	34 43.00	-0.6
	1.0s	20.00nm		5.0mb	
HHC	35 19	340	eP	34 47.00	-0.5
CN2	35.47	358	P	34 48.80	-0.8
MDJ	36.35	3	eP	34 57.70	0.6
			pP	35 06.50	30km
SHL	37.38	302	iP	35 07.00	0.8
			eS	40 55.50	
MRWA	38.63	195	iPd	35 16.90	0.5
	0.5s	19.00nm		5.1mb	
FORR	38.86	178	iPd	35 18.00	-0.3
	0.4s	54.00nm		5.7mb	
COOL	39.24	188	eP	35 21.40	-0.1
	0.4s	14.00nm		5.1mb	
GTA	39.33	326	iPd	35 21.50	-0.8
LSA	39.61	307	P	35 27.00	1.8
BAL	39.78	194	eP	35 26.30	0.3
	0.4s	10.00nm		4.9mb	
KLB	40.50	192	eP	35 32.30	0.4
MUN	41.21	194	eP	35 38.30	0.6
NWAO	41.90	192	iPd	35 44.50	1.2
	0.9s	43.00nm		5.2mb	
BRS	43.46	145	iPc	35 55.50	-0.7
			ipP	36 05.00	32km
			ePP	37 48.50	
ADE	44.41	166	iPd	36 04.10	0.3
	0.8s	37.31nm		5.3mb	
DZM	49.21	128	iPd	36 48.20	6.4X
KSH	54.92	313	eP	37 24.00	-0.5
MAIO	66.86	306	eP	38 46.00	0.4
TTA	76.93	27	eP	39 45.90	0.9
BRW	77.95	19	eP	39 52.10	1.7
KDC	78.18	33	eP	39 52.90	1.1
IMA	78.31	24	eP	39 54.20	1.5
PMR	80.04	29	eP	40 01.80	0.0
	0.6s	8.70nm		4.9mb	
KEV	85.71	340	eP	40 35.00	4.1X
INK	86.02	22	eP	40 33.00	0.6
SOD	86.35	338	eP	40 34.00	-0.1
SUF	87.58	333	eP	40 39.50	-0.6
	0.6s	6.90nm		5.1mb	
MBC	87.60	13	ePd	40 41.20	1.1
	1.0s	35.00nm		5.6mb	
			pP	40 50.50	29km
NUR	88.81	331	iP	40 43.40	-2.6X
NB2	94.79	334	P	41 12.20	-1.6
	0.9s	3.60nm		4.8mb	
KIC	129.49	285	PKP	47 12.00	9.5X
UPA	148.75	57	(PKP)	47 45.00	8.0X
CNCB	163.30	122	ePKP	48 07.00	10.9X
LPB	163.33	121	ePKP	48 12.00	16.1X
ZOBO	163.43	120	PKP	48 07.00	10.8X
	1.2s	18.58nm			
		i		48 59.00	
S.D. = 1.0 on 40 of 53 obs.					

DEC 20, 1989 18h 07m 42.24± 0.78s
6.094 S ± 7.7km 149.059 E ± 7.2km
DEPTH = 80.4 ± 8.5 km
5.0mb (3 obs.)
NEW BRITAIN REGION (192)

LAT	2.12	255	eP	08 17.00	0.7
RAB	3.63	59	iPd	08 37.00	-0.2
PMG	3.80	210	iPd	08 39.00	-0.6
	1.0s	400.00nm			
			eS	09 23.00	
MNDI	5.37	269	eP	09 08.00	6.2X
CTA	14.17	191	iPd	11 01.50	0.9
	1.0s	18.00nm		4.3mb	
QIS	17.05	212	eP	11 36.00	-1.1
WB5	19.79	225	iPc	12 08.30	-0.5
			eS	15 41.00	
BRS	21.47	171	iPc	12 25.50	-0.4
			e(pP)	12 41.50	72kmX
			i	13 52.00	
DZM	23.12	135	iPd	12 43.00	0.8
FORR	31.52	216	eP	13 58.80	0.0
MBL	32.02	239	eP	14 04.00	0.7
COOL	35.97	223	eP	14 37.00	-0.2
NANU	36.25	240	eP	14 40.00	0.4
	0.5s	11.00nm		5.0mb	
KLB	38.73	225	iPd	15 00.40	0.0
MUN	40.04	226	eP	15 11.00	-0.2
MAT	43.61	347	eP	15 40.00	-0.3
	1.8s	86.36nm		5.3mb	
CNCB	136.88	122	PKP	26 56.00	-3.1X
LPB	136.92	122	PKP	27 02.00	3.1X
S.D. = 0.7 on 15 of 18 obs.					

? DEC 20, 1989 18h 15m 44.26± 1.41s

20d 18h

11.044 N ± 7.4km 61.779 W ±22.2km
DEPTH = 10.0km (geophysicist)
WINDWARD ISLANDS (95)
MD 3.2 (TRN).

TCE	0.35	176	eP	15 51.74	0.3
			eS	15 59.00	
TRN	0.54	137	ePd	15 55.48	0.3
			eS	16 05.11	
TPP	0.79	156	eP	15 58.98	-0.7
			eS	16 11.41	
GRW	1.11	6	eP	16 05.25	0.0
			eS	16 23.76	

S D. = 0.8 on 4 of 4 obs.

& DEC 20, 1989 18h 31m 28.57s
64.816 N 147.504 W
DEPTH = 17.2km
CENTRAL ALASKA (1)
<AGS-P>.

FBA	0.15	304	iP	31 32.95	0.2
			eS	31 35.75	
GLM	0.18	16	eP	31 33.49	0.2
			eS	31 36.48	
CCB	0.21	217	iP	31 33.68	-0.1
RDS	0.27	272	eP	31 34.75	0.0
			eS	31 39.00	
WRH	0.43	216	eP	31 37.25	-0.1
			eS	31 43.52	
HDA	0.48	150	eP	31 38.03	-0.1
NEA	0 72	251	eP	31 42.42	0.2
DMW	1.08	134	eP	31 49.21	0.7
MCK	1.25	210	eP	31 51.39	0.1
DDM	1.26	145	eP	31 50.46	-0.9
KTH	1.96	231	eP	32 01.65	0.2

11 obs. associated

DEC 20, 1989 19h 20m 35.35± 2.77s
8.254 N ±11.6km 126.774 E ±25 0km
DEPTH = 65.6 ± 26.6 km
4.7mb (3 obs.)
MINDANAO, PHILIPPINE ISLANDS (259)

DAV	1.66	226	eP	21 03.00	0.2
SSE	23.32	348	P	25 38.50	0.2
	1.0s	17.00nm		4.4mb	
			eS	29 52.00	
WB5	28.94	165	eP	26 31.20	0.5
BJI	33.04	345	eP	27 05.00	-1.5
	1.2s	15.00nm		4.7mb	
CTA	34.07	146	eP	27 26.00	10.3X
SHL	37.39	302	iP	27 44.20	0.2
MRWA	38.67	195	eP	27 54.10	-0.4
BRS	43.47	145	iPd	28 33.00	-0.9
			ipP	28 44.50	41kmX
INK	85.97	22	eP	33 10.00	0.7
MBC	87.56	13	eP	33 18.00	1.1
	1.0s	6.00nm		4.7mb	

S D. = 1.0 on 9 of 10 obs.

& DEC 20, 1989 19h 35m 13.18s
58.991 N 154.004 W
DEPTH = 93.3km
ALASKA PENINSULA (12)
<AGS-P>.

CDD	0.20	108	iP	35 26.11	0.8
AUL	0.49	37	eP	35 27.99	-0.4
PDB	0.81	353	eP	35 30.33	-0.9
			eS	35 44.19	
KDC	1 48	147	eP	35 38.48	-0.7
CNPM	1 52	68	eP	35 38.15	-1.6
			eS	35 58.39	
RED	1 56	23	eP	35 39.25	-1.1
NNL	1.74	51	eP	35 42.18	-0.4
CKL	2.37	20	eP	35 49.67	-1.4
SLKM	2.45	50	eP	35 50.01	-2.0
SEW	2.57	62	eP	35 52.02	-1.7
SUA	2.97	32	eP	35 57.57	-1.7
PMS	3.17	43	eP	35 59.71	-2.3
SKT	3.24	21	eP	36 01.04	-1.9
PWA	3.37	36	eP	36 02.55	-2.0
MTU	3.39	70	eP	36 02.22	-2.7
PLRM	3.56	41	eP	36 04.55	-2.7
GHO	3.76	40	eP	36 06.75	-3.4
FID	4 18	62	eP	36 11.33	-4.6
KLU	4.75	55	eP	36 19.89	-3.8
KTH	4.81	17	eP	36 21.93	-2.7
TOA	4.97	48	eP	36 23.42	-3.4
RND	5.08	27	eP	36 24.64	-3.8
GLB	5.64	60	eP	36 32.08	-4.1

23 obs. associated

DEC 20, 1989 20h 18m 11.92± 1.46s
8.201 N ± 4.6km 126.844 E ± 9.1km
DEPTH = 69.2 ± 13.4 km
4.9mb (11 obs.)
MINDANAO, PHILIPPINE ISLANDS (259)

DAV	1.67	229	iPc+	18 41.30	1.7
	1.9s	********	nm		
QCP	8.54	319	eP	20 08.00	-7.2X
TSM	9.57	246	ePc	20 34.50	5.1X
BAG	10.20	324	eP	20 40.00	1.9
PCI	11.43	218	ePd	21 03.50	9.0X
	1.4s	4.00nm		4.2mb	
AAI	11.88	173	e(P)	21 03.50	2.9X
MKS	15.22	209	eP	21 50.60	6.3X
ANP	17.64	344	eP	22 17.00	2.3
QZH	18.42	336	eP	22 22.00	-2.1
	Z 16s	1.80um			
	N 10s	1.10um			
GUMO	18.48	72	eP	22 20.00	-5.0X
GZH	19.67	320	eP	22 33.00	-5.2X
	N 13s	2.10um			
			eS	26 17.00	
QIZ	19.70	305	eP	22 36.50	-2.0
	E 15s	2.50um			
			sP	22 54.00	
MTN	21.34	168	eP	22 53.00	-2.3
SSE	23.38	348	P	23 15.50	0.3
	1.2s	39.00nm		4.7mb	
	Z 20s	2.00um		4.6Msz	
	N 12s	1.30um			
		S		27 28.00	
		i		28 27.00	
KNA	23.87	175	eP	23 20.50	0.4
NJ2	24.87	344	eP	23 30.50	0.9
	Z 20s	1.20um		4.4Msz	
		S		27 50.00	
WHN	25.12	334	Pc	23 32.50	0.6
	Z 20s	1.38um		4.5Msz	
	N 12s	1.05um			
IPM	25.90	264	ePc	23 42.00	2.6
KMI	28.49	309	Pc	24 02.00	-1.1
	N 14s	1.20um			
		eS		29 02.00	
WB5	28.87	165	eP	24 00.90	-5.4X
CHTO	29.06	294	iPc	24 08.00	-0.1
	1.2s	35.42nm		4.9mb	
TIA	29.26	344	Pd	24 07.80	-1.8
	Z 15s	0.70um		4.4MszX	
	N 11s	0.50um			
	E 11s	0.60um			
		S		29 00.00	
MBL	29.98	193	eP	24 16.00	-0.2
MAT	30.05	18	(P)	24 14.00	-2.7
	1.2s	18.75nm		4.7mb	
	Z 20s	1.77um		4.7Msz	
		eS		29 27.00	
XAN	30.56	330	P	24 18.50	-2.7
DL2	30.93	352	eP	24 26.00	1.7
	Z 14s	1.13um		4.7MszX	
	N 16s	2.30um			
	E 12s	1.20um			
		S		29 27.00	
QIS	31.21	156	eP	24 23.00	-4.0X
		e		24 25.00	
CD2	31.23	319	eP	24 24.00	-3.2X
	Z 16s	1.30um		4.7MszX	
	N 14s	1.90um			
TIY	32.15	338	eP	24 33 50	-1.6
		S		29 45.50	
NANU	32.52	200	eP	24 38.20	-0.2
BJI	33.11	345	eP	24 42.00	-1.3
	1.0s	0.03nm		2.1mb X	
	Z 14s	0.88um		4.6MszX	
	E 10s	0.63um			
		eS		29 59.00	
		eScP		31 09.00	
SNY	33.61	356	iPc	24 47.10	-0.6
	1.2s	0.06nm		2.4mb X	
	Z 20s	1.60um		4.7Msz	
	N 19s	1.80um			
		pP		24 58.00	39kmX
		S		30 08.00	
CTA	33.99	146	iPc	24 50.00	-1.2
	1.3s	35.58nm		5.1mb	
		iS		30 13.00	
WARB	34.18	180	eP	24 52.00	-0.8
	0.4s	7.00nm		4.9mb	
HHC	35.24	340	eP	25 00.60	-1.3
	Z 18s	1.20um		4 7Msz	
	N 14s	1.00um			
	E 12s	0.60um			
CN2	35.48	358	eP	25 03.40	-0.3
	Z 18s	1.20um		4.7Msz	
		esP		25 15.00	
		eS		30 32.00	
BTO	35.58	338	eP	25 03.00	-1.7
	N 15s	1.00um			
	E 13s	0.30um			
		S		30 38.50	
MDJ	36.36	3	eP	25 11.15	0.1
	Z 15s	1.00um		4.7MszX	
		S		30 50.00	
SHL	37.48	302	iP	25 21.00	0.0
		iS		31 09.50	
MRWA	38.64	195	iPd	25 30.50	0.1
FORR	38.84	178	eP	25 30.50	-1.5
COOL	39.24	188	eP	25 34.50	-0.9
GTA	39.40	326	iPc	25 36.00	-0.8
	Z 18s	1.20um		4.8Msz	
	E 12s	0.80um			
LSA	39.71	307	eP	25 38.80	-1.0
		S		31 46.00	
BAL	39.79	194	eP	25 40.00	0.1
KLB	40.51	192	eP	25 45.50	-0.3
MUN	41.22	194	eP	25 52.00	0.4
NWAO	41.91	192	eP	25 57.00	-0 3
BRS	43.39	146	iP	26 08.30	-1.1
ADE	44.37	166	e(P)	26 18.00	0.7
	1.0s	30.00nm		5.1mb	
BWA	47.06	155	eP	26 39.20	0.6
CAN	48.07	156	eP	26 47.00	0.5
KOD	48.75	276	eP	26 52.90	0.5
GBA	48.75	281	P	26 52.00	0.0
WMQ	49.20	323	P	26 55.00	-0.2
	Z 18s	1.40um		5.0Msz	
		eS		34 03.00	
		ScS		36 45.00	
NDI	50.87	300	iPc	27 06.50	-1.6
KSH	55.01	313	P	27 39.50	0.7
QUE	59.95	300	eP	28 12.00	-1.8
MAIO	66.95	306	eP	29 01.00	1.3
SVW	76.84	29	eP	29 59.10	1.2
TTA	76.89	27	eP	29 58.90	0.7
TAB	77.54	307	eP	30 03.00	0.7
BRW	77.93	19	eP	30 05.00	1.4
KDC	78.13	33	eP	30 05.20	0.3
IMA	78.28	24	eP	30 06.80	1.0
PMR	80.00	29	eP	30 14.70	-0.2
	0.9s	21.30nm		5.1mb	
TOA	81.40	28	eP	30 24.50	2.0
INK	85.99	22	eP	30 46.00	0.4
SOD	86.40	338	iP	30 51.00	3.4X
HRI	86.48	303	eP	30 50.00	1.2
DSI	87.01	301	eP	30 53.00	1.7
PRNI	87.50	300	iPc	30 55.00	1.3
MBC	87.59	13	eP	30 55.00	1.7
	1 2s	41.00nm		5.5mb	
SUF	87.64	333	eP	30 53.90	0.2
NUR	88.87	331	iP	31 00.00	0.4
	0.9s	28.70nm		5.5mb	
NB2	94.85	334	P	31 28.70	1 4
	0.9s	2.70nm		4 7mb	
VAY	95.20	313	eP	31 28.00	-1.2
CNCB	163.20	122	ePKP	38 16.00	7.1X
LPB	163.23	121	ePKP	38 02.00	-6.8X
ZOBO	163.33	120	PKP	38 11.00	1.9

S.D. = 1.3 on 67 of 80 obs.

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* DEC 20, 1989 21h 19m 38.25± 0.79s
41.140 N ± 6.8km 22.665 E ± 6.6km
DEPTH = 10.0km (geophysicist)
YUGOSLAVIA (383)
ML 1 9 (THE), 1.8 (SKO)

KNT	0.18	83	eP	19 42.50	0.2
			eS	19 45 30	

VAY	0.19	339	iPg	19 42.40	-0.1
			iSg	19 45.00	
GRG	0.27	228	eP	19 44.10	0.1
			eS	19 48.80	
THE	0.56	156	eP	19 49.40	-0.1
			eS	19 56.90	
SOH	0.61	121	eP	19 50.40	-0.2

S.D. = 0.3 on 5 of 5 obs.

DEC 20, 1989 22h 17m 50.34± 0.78s
36.107 N ± 5.7km 69.896 E ± 3.9km
DEPTH = 142.1 ± 8.6 km
4.7mb (23 obs.)
HINDU KUSH REGION (718)

KSH	5.86	53	P	19 16.80	0.5
			S	20 21.50	
QUE	6.40	204	eP	19 23.00	-0.6
MAIO	8.41	274	iPnc	19 51.20	0.6
	0.7s	13.02nm		4.7mb	
			eSn	21 20.00	
NDI	9.64	138	iPd	20 05.60	-1.3
	1.0s	240.00nm		5.8mb	X
			iS	21 46.00	
WMQ	15.65	55	iPd	21 22.50	-1.9
			S	24 07.50	
POO	17.85	168	eP	21 55.00	3.8X
BBU	19.31	245	(P)	22 10.70	4.1X
BEE	19.38	244	(P)	22 08.20	0.9
	0.4s	89.00nm		5.5mb	
HYB	20.14	155	iPd	22 16.50	1.2
	0.8s	30.80nm		4.8mb	
			eS	25 56.00	
SHL	21.56	113	iP	22 30.20	0.6
			iS	26 18.30	
GBA	23.41	161	P	22 51.00	3.6X
			S	27 51.00	
GTA	23.83	73	Pc	22 52.00	0.5
CD2	28.62	91	eP	23 35.50	0.2
CHTO	30.83	116	eP	23 55.00	0.1
XAN	31.86	82	P	24 06.00	2.2
ELL	32.02	283	eP	24 06.30	1.0
GYA	32.70	97	eP	24 11.00	-0.3
TIY	33.84	74	eP	24 21.00	0.0
MLR	34.20	300	ePc	24 26.00	2.0
NUR	37.63	325	iP	24 52.70	0.2
SUF	37.79	329	iP	24 54.10	0.3
	0.5s	14.00nm		5.0mb	
SOD	39.72	335	iP	25 09.80	0.0
KEV	40.84	339	eP	25 18.00	-0.9
SNY	41.56	65	eP	25 26.20	1.0
HFS	42.83	322	eP	25 34.50	-0.8
	0.5s	13.00nm		4.8mb	
NB2	44.16	323	P	25 45.20	-0.9
	0.4s	5.20nm		4.5mb	
BSF	47.13	305	eP	26 09.70	-0.2
	0.8s	8.00nm		4.4mb	
LPG	47.60	302	eP	26 14.20	0.5
	0.6s	4.50nm		4.4mb	
SMF	49.33	304	eP	26 26.80	0.1
	0.8s	10.70nm		4.7mb	
AVF	49.63	304	eP	26 28.80	-0.1
	0.8s	9.40nm		4.6mb	
MAF	50.29	304	eP	26 34.20	0.2
	0.6s	7.20nm		4.6mb	
CAF	50.95	302	eP	26 39.50	0.4
	0.4s	2.80nm		4.4mb	
LDF	51.50	307	eP	26 43.20	0.1
	0.6s	5.40nm		4.5mb	
FLN	51.70	307	eP	26 43.90	-0.7
	0.6s	7.90nm		4.7mb	
LFF	51.85	302	eP	26 46.10	0.3
	0.6s	12.60nm		4.9mb	
EKA	51.95	316	P	26 46.00	-0.4
	2.6s	257.90nm		5.5mb	
EPF	52.68	300	eP	26 51.60	-0.4
	0.6s	3.00nm		4.3mb	
BCAO	56.69	249	iPc	27 20.50	-0.8
	0.7s	33.00nm		5.4mb	
MBC	67.77	2	ePd	28 34.00	0.0
	0.8s	24.00nm		5.1mb	
			pP	29 00.20	104kmX
KIC	73.87	266	Pc	29 10.90	-0.6
	0.7s	10.00nm		4.7mb	
TIC	73.93	267	Pc	29 11.12	-0.7
	0.8s	9.50nm		4.6mb	
LIC	74.18	266	Pc	29 12.62	-0.7
	0.7s	9.50nm		4.7mb	
INK	74.43	9	eP	29 13.50	-0.3
WB5	82.52	121	eP	29 57.00	-1.5
FFC	89.26	355	iPc	30 31.00	-0.1
	0.8s	9.00nm		4.9mb	

S.D. = 0.9 on 42 of 45 obs.

DEC 20, 1989 22h 55m 55.40± 2.29s
8.212 N ± 6.0km 126.900 E ±11.4km
DEPTH = 53.1 ± 21.2 km
4.9mb (11 obs.) 4.2Msz (2 obs.)
MINDANAO, PHILIPPINE ISLANDS (259)

DAV	1.72	230	ePc+	56 25.40	1.9
	0.8s	2746.27nm			
GUMO	18.43	72	eP	59 43.30	-25.5X
PJG	18.43	72	eP	59 43.60	-25.2X
GUA	18.46	72	eP	59 42.70	-26.5X
MTN	21.34	169	eP	00 39.00	-1.2
SSE	23.38	348	P	01 00.00	-0.2
	1.0s	17.00nm		4.5mb	
Z	20s	0.90um		4.2Msz	
E	12s	0.50um			
			S	05 14.00	
			i	06 16.00	
KNA	23.88	176	eP	01 06.10	1.0
NJ2	24.87	344	eP	01 16.00	1.4
IPM	25.96	264	ePd	01 27.00	2.0
	1.0s	48.50nm		5.0mb	
PMG	26.71	131	eP	01 30.00	-1.8
WB5	28.87	165	eP	01 49.50	-1.8
CHTO	29.11	294	eP	01 52.00	-1.5
	1.2s	14.58nm		4.5mb	
MBL	30.00	193	eP	02 01.00	-0.4
XAN	30.58	330	eP	02 02.50	-4.0X
QIS	31.20	157	eP	02 10.00	-2.0
TIY	32.16	338	eP	02 18.20	-2.1
Z	20s	0.50um		4.2Msz	
			S	07 28.00	
ASPA	32.41	168	eP	02 21.30	-1.3
			i	02 24.10	
NANU	32.55	200	iPd	02 23.50	-0.2
	0.6s	15.00nm		5.0mb	
BJI	33.11	345	eP	02 27.00	-1.5
	1.0s	21.00nm		4.9mb	
SNY	33.61	356	iPd	02 32.40	-0.3
CTA	33.97	146	iPc	02 36.20	0.1
	1.0s	11.00nm		4.7mb	
			iS	08 03.00	
LZH	34.82	326	eP	02 41.60	-1.9
Z	15s	0.60um		4.5MszX	
			i	03 20.50	
HHC	35.25	340	eP	02 45.80	-1.2
SHL	37.52	302	iP	03 06.00	-0.4
MRWA	38.67	195	iPc	03 15.80	0.1
	0.4s	5.00nm		4.7mb	
COOL	39.26	188	eP	03 20.20	-0.5
GTA	39.42	326	eP	03 20.70	-1.4
BAL	39.82	194	eP	03 25.00	-0.3
KLB	40.53	192	eP	03 31.20	0.1
MUN	41.25	194	eP	03 37.00	0.0
NWAO	41.93	192	eP	03 44.00	1.4
BRS	43.37	146	iPc	03 53.80	-0.6
			ipP	04 04.00	35kmX
ADE	44.37	166	iPd	04 03.00	0.5
	1.0s	56.00nm		5.3mb	
BWA	47.05	156	eP	04 25.60	1.9
CAN	48.06	156	eP	04 37.80	6.2X
GBA	48.80	281	P	04 38.00	0.4
	0.6s	2.60nm		4.4mb	
WMQ	49.22	323	eP	04 40.00	-0.6
TTA	76.86	27	eP	07 44.70	1.4
BRW	77.90	19	eP	07 50.70	1.9
IMA	78.25	24	eP	07 52.70	1.7
PMR	79.96	29	eP	08 00.70	0.6
	0.9s	17.00nm		5.0mb	
TOA	81.36	28	eP	08 09.20	1.6
INK	85.96	22	eP	08 31.50	0.7
			pP	08 43.00	37kmX
MBC	87.57	13	ePc	08 40.10	1.6
	1.0s	24.00nm		5.4mb	
			pP	08 51.50	37kmX
SUF	87.66	333	eP	08 39.30	0.2
NUR	88.89	331	eP	08 44.50	-0.6
CNCB	163.16	122	PKP	16 08.20	13.8X
LPB	163.19	121	ePKP	16 08.00	13.8X
ZOBO	163.28	120	PKP	15 56.00	1.5

S.D. = 1.3 on 42 of 49 obs.

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* DEC 20, 1989 23h 25m 47.56± 1.84s
53.315 N ±24.5km 163.884 W ±15.2km
DEPTH = 15.8 ± 6.4 km
4.6mb (4 obs.)
UNIMAK ISLAND REGION (10)

SNKA	1.33	29	eP	26 11.30	-0.2
			eS	26 28.03	
DRRA	1.87	30	eP	26 19.29	0.1
PVV	2.40	30	eP	26 27.77	1.0
			eS	26 55.15	
PN6	2.43	27	eP	26 29.10	1.8X
SASA	2.84	43	eP	26 33.56	0.6
			eS	27 04.55	
IVF	3.62	43	eP	26 44.34	0.2
KDC	7.84	51	eP	27 42.70	-0.8
ADK	7.93	265	eP	27 44.70	-0.1
TTA	10.49	20	eP	28 21.50	1.2
IMA	13.76	18	eP	29 02.50	-1.7
FBA	14.19	29	eP	29 12.50	2.8X
INK	20.75	32	eP	30 27.00	-2.6X
MBC	28.46	21	eP	31 42.50	-0.7
	0.5s	2.00nm		4.1mb	
KVN	34.13	96	e(P)	32 43.30	9.6X
FRB	46.24	38	eP	34 13.00	-0.1
NB2	65.93	3	P	36 33.70	-0.6
	1.1s	5.60nm		4.6mb	
HFS	66.89	1	eP	36 36.70	-3.7X
	0.4s	2.20nm		4.7mb	
KBA	79.96	2	eP	37 58.50	1.4
	0.8s	4.50nm		4.5mb	
BUL	145.51	339	iPKPc	45 42.00	15.5X
SLR	150.99	337	ePKP	45 39.50	4.5X

S.D. = 1.0 on 13 of 20 obs.

DEC 20, 1989 23h 45m 58.22± 0.23s
58.775 S ± 5.8km 25.485 W ± 5.9km
DEPTH = 33.0km (normal)
5.5mb (10 obs.)
SOUTH SANDWICH ISLANDS REGION (153)

SNA	15.12	149	iPc	49 29.00	-1.7
	0.5s	126.76nm		5.5mb	
AIA	19.05	234	eP	50 19.30	-0.6
MAW	37.43	141	eP	53 10.00	0.7
PCH	38.95	290	eP	53 23.00	0.3
FCH	39.08	291	iPd	53 25.00	1.0
LNV	39.13	289	eP	53 23.50	-0.4
TACH	39.14	290	iPd	53 23.70	-0.4
SAN	39.16	290	eP	53 24.50	0.2
PEL	39.42	290	iPd	53 27.10	0.6
	0.5s	116.20nm		5.9mb	
LCCH	39.59	289	eP	53 28.50	0.7
JACH	39.75	291	eP	53 30.00	0.7
SLR	49.73	72	eP	54 49.50	0.3
CNCB	52.18	305	P	55 08.20	-0.1
LPB	52.47	305	P	55 12.00	1.6
ZOBO	52.72	305	P	55 10.80	-1.6
			LR	08 48.00	
ARE	54.01	301	eP	55 20.00	-1.6
LIC	66.84	22	Pc	56 49.02	0.3
	0.7s	29.00nm		5.5mb	
KIC	67.03	22	Pc	56 50.08	0.2
	0.8s	24.00nm		5.4mb	
TIC	67.25	22	Pc	56 51.58	0.3
	0.7s	23.00nm		5.4mb	
KUK	67.82	27	eP	56 53.60	-1.3
LKO	69.97	21	Pc	57 09.46	1.3
	0.7s	37.00nm		5.6mb	
LWI	70.31	60	iPc	57 12.70	2.2
BCAO	72.06	47	iPc	57 21.00	0.2
	0.6s	50.00nm		5.7mb	
CCW	78.51	195	eP	57 58.20	1.1
MOW	78.69	196	P	57 58.50	0.3
BLW	78.71	196	P	57 58.70	0.4
WDW	78.87	196	P	57 59.50	0.4
MTW	78.91	196	P	57 59.80	0.4
MRW	78.95	195	P	58 00.20	0.7
CAW	79.02	196	P	58 00.40	0.4
TCW	79.03	195	P	58 00.20	0.2
KIW	79.28	196	P	58 01.90	0.5
MNG	79.44	196	P	58 02.60	0.3
	0.3s	3.00nm		4.8mb	
KRP	82.08	197	P	58 15.60	-0.5
NWAO	83.50	149	eP	58 23.50	-0.1

20d 23h

MUN	84.12	148	eP	58 27.00	0.2
ADE	85 68	167	iPd	58 35.10	0.5
	0 8s	38.81nm		5.7mb	
COOL	86.45	152	eP	58 38.00	-0.4
ASPA	96.11	161	iPc	59 23.40	-0.3
	0.7s	21.00nm		5.7mb	
HFS	122.47	22	ePKP	04 48.20	-1.9
	0.4s	1.60nm			
NB2	122.84	20	PKP	04 50.70	-0.1
	0.8s	7.50nm			
NUR	125.21	28	iPKP	04 55.10	-0.2
	0.6s	14.30nm			
LRM	126 22	300	ePKP	04 58.60	0.4
FRB	126.53	338	ePKP	04 57.00	-0.8
KSH	128.35	75	ePKP	05 02.80	0.5
FFC	128.66	314	ePKP	05 02.00	-0.2
	0.7s	6.00nm			
SOD	131.55	24	iPKP	05 06.70	-0.6
WMQ	137.51	80	PKP	05 13.20	-6.3X
GTA	140.62	95	ePKP	05 19.80	-5.6X
SSE	144.30	126	ePKP	05 29.70	-2.1
TIY	145.75	109	PKPc	05 34.60	0.4
			sPKP	05 49.00	
TIA	146.80	116	ePKP	05 37.20	1.4
MBC	146.85	334	ePKP	05 33.00	-1.7
	1.0s	6.00nm			
HHC	147.72	105	ePKP	05 40.00	2.7X
INK	148.47	317	ePKP	05 35.50	-2.0
BJI	149.39	111	ePKP	05 44.00	4.2X
	S.D. = 1.0	on	52 of	56 obs.	

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* DEC 21, 1989 00h 33m 59.31± 0.58s
55.300 S ±13.5km 28.131 W ±10.9km
DEPTH = 33.0km (normal)
5.2mb (5 obs.) 4.6Msz (1 obs.)
SOUTH SANDWICH ISLANDS REGION (153)

SNA	18.87	153	eP	38 18.50	-0.2
	0 8s	32.84nm		4.6mb	
LNV	36 67	287	eP	41 03.50	-0.9
PEL	36.89	289	iPc	41 06.50	0.1
	0.6s	26.67nm		5.3mb	
CCH	47.64	307	eP	42 32.00	-2.4
CNCB	48 98	306	iPd	42 47.20	2.1
LPB	49.28	306	eP	42 47.00	-0.2
Z	22s	0.74um		4.6Msz	
		LR	59 30.00		
ZOBO	49.52	306	Pc	42 49.20	-0.1
	1.1s	53.94nm		5.5mb	
		LR	58 20.00		
ARE	50.95	302	eP	43 01.00	1.1
BUL	54.87	74	iPc	43 47.00	18.2X
	1.1s	24.05nm			
LIC	64.24	26	Pd	44 33.50	0.3
	0 8s	9.50nm		4.9mb	
KIC	64.44	26	P	44 34.84	0.4
TIC	64 65	26	P	44 35.12	-0.7
KUK	65.46	31	eP	44 40.40	-0.7
BCAO	70.83	50	iPc	45 14.80	0.2
	0.9s	36.00nm		5.4mb	
		i	45 18.90		
		i	45 28.90		
FRB	122.76	340	ePKP	52 52.50	0.8
EDM	128.81	310	ePKPd	53 04.70	0.9
MBC	143.08	337	ePKP	53 29.00	-0.6
	1.0s	4.00nm			
SSE	147 51	125	ePKP	53 42.00	3.7X
		i	53 51.80		
TOA	148.25	308	ePKP	53 43.30	4.7X
PMR	149.46	306	ePKP	53 45.60	5.2X
	1 4s	54.50nm			
FBA	149.62	313	ePKP	53 46 00	5.4X
BJI	151.91	108	ePKP	53 50.00	5.3X
IMA	152.20	315	ePKP	53 52.10	7.5X
TTA	152.89	308	ePKP	53 54.00	8.5X
BRW	153.08	326	e(PKP)	53 54.00	8.6X
	S.D. = 1.1	on	16 of	25 obs.	

& DEC 21, 1989 00h 40m 35.61s
63.061 N 149.519 W
DEPTH = 90.2km
CENTRAL ALASKA (1)
<AGS-P>.

HUR	0 10	213	eP	40 48.25	1.5
RND	0.46	41	iP	40 50.13	-0.3
MCK	0.72	21	eP	40 52.46	-0.2
			eS	41 04.26	
CUT	0.74	208	iP	40 52.50	-0.3
			eS	41 03.79	
KTH	0.80	309	eP	40 53.33	-0.2
GHO	1.32	168	eP	40 59.61	0.0
PWA	1.43	187	iPd	41 00.90	0.1
SKT	1.43	222	iP	41 00.26	-0.6
			eS	41 18.45	
PMR	1.49	173	eP	41 01.30	-0.2
WRH	1.55	24	iP	41 01.82	-0.6
			eS	41 20.56	
SUA	1.70	200	eP	41 04.73	0.2
CCB	1.76	25	iP	41 04.41	-0.8
			eS	41 25.37	
HDA	1.77	39	eP	41 04.63	-0.6
TOA	1.82	120	ePc	41 06.20	0.1
PMS	1.82	181	eP	41 07.50	1.5
FBA	2.00	22	ePd	41 07.70	-0.6
NCG	2.07	218	eP	41 08.93	-0.5
GLM	2.15	25	iP	41 09.68	-0.7
SPU	2.23	213	eP	41 11.05	-0.5
KLU	2.30	131	eP	41 11.32	-1.2
TTA	2.97	270	eP	41 20.70	-0.9
SVW	3.48	238	ePc	41 27.50	-1.0
IMA	3.51	331	eP	41 28.50	-0.6
INK	8.42	44	eP	42 35.00	-1.7
	1.2s	43.00nm		5.1mb X	
			ec	53 32.40	
	24 obs. ossociated				

? DEC 21, 1989 01h 08m 40.22± 2.72s
53.145 N ±37.0km 163.972 W ±35.6km
DEPTH = 33.0km (normal)
4.2mb (1 obs.)
UNIMAK ISLAND REGION (10)

SNKA	1.51	28	eP	09 04.64	-0.6
			eS	09 20.54	
DRRA	2.04	29	eP	09 12.31	-0.6
			eS	09 33.68	
PVV	2.57	29	eP	09 20.85	0.4
			eS	09 48.22	
PN6	2.61	27	eP	09 22.54	1.5
SASA	3.00	41	eP	09 26.64	0.2
			eS	09 56.30	
IVF	3.78	41	ePc	09 37.32	-0.2
INK	20.92	32	eP	13 20.00	-1.9
FRB	46.40	38	eP	17 06.00	1.3
HFS	67.06	1	(P)	19 31.60	-0.1
	0.4s	0.90nm		4.2mb	
	S.D. = 1.2	on	9 of	9 obs.	

% DEC 21, 1989 02h 49m 48.68± 2.00s
33.681 S ± 7.1km 71.664 W ±16.0km
DEPTH = 19.2 ± 10.0 km
NEAR COAST OF CENTRAL CHILE (135)

LCCH	0.22	21	iPd	49 54.10	0.0
			iS	50 01.50	
LNV	0.35	142	iPd	49 56.10	0.0
			iS	50 04.00	
TACH	0.61	88	iPd	50 00.70	0.2
			iS	50 12.00	
CHCH	0.88	107	iPd	50 05.00	-0.2
			iS	50 21.50	
ROCH	0.89	38	iPc	50 05.20	-0.3
PCH	0.96	87	iPd	50 06.50	-0.1
			iS	50 24.00	
PEL	0.98	57	iPd	50 07.10	0.3
			iS	50 24.60	
FCH	1.20	73	iPc	50 10.60	-0.1
			iS	50 32.00	
JACH	1.34	42	iPc	50 12.70	0.2
			iS	50 33.10	
	S.D = 0.2	on	9 of	9 obs.	

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* DEC 21, 1989 02h 55m 35.05± 1.38s
43.905 N ±14.2km 11.943 E ± 8.2km
DEPTH = 10.0km (geophysicist)
CENTRAL ITALY (381)
MD 2.8 (ROM).

SFI	0.07	283	P	55 36.30	-1.1
			eSg	55 37.20	
PGD	0.16	259	P	55 38.20	-0.7
			eSg	55 42.00	
CRE	0.28	179	P	55 40.50	-0.4
			eSg	55 45.50	
FIR	0.51	256	ePg	55 45.00	-0.4
			iSg	55 53.50	
ARV	0.83	119	P	55 50.40	-0.7
			eSg	56 02.80	
BDI	0.98	280	P	55 55.70	1.9
ASS	0.98	148	P	55 55.00	1.2
			eSg	56 08.10	
PII	1.04	260	P	55 54.90	0.2
			eSn	56 08.10	
KBA	3.32	17	eP	56 32.00	3.7X
	0.4s	1.70nm			
			i	56 42.30	
			iSg	57 06.80	
	S.D. = 1.2	on	8 of	9 obs.	

? DEC 21, 1989 03h 08m 03.45± 3.54s
31.080 S ±17.7km 67.200 W ±27.5km
DEPTH = 10.0km (geophysicist)
SAN JUAN PROVINCE, ARGENTINA (137)

ZON	1.35	249	iPd	08 28.00	-0.3
			eS	08 39.00	
RTCV	1.38	235	iPc	08 30.00	1.2
RTCB	1.43	253	iPd	08 28.80	-0.7
RTBS	2.01	253	ePd	08 32.80	-5.0X
			S	08 47.00	
RTRS	2.15	294	iPc	08 39.90	0.1
RFA	3.83	196	ePc	09 03.50	-0.3
	S.D. = 1.0	on	5 of	6 obs.	

? DEC 21, 1989 03h 21m 47.53±23.36s
41.586 N ±148.km 12.713 E ±132.km
DEPTH = 10.0km (geophysicist)
SOUTHERN ITALY (390)

RDP	0.17	1	P	21 51.40	-0.1
			eSg	21 52.40	
RMP	0.22	358	P	21 52.50	0.1
			eSg	21 54.00	
MNS	0.80	358	P	22 03.00	-0.1
			eSg	22 11.40	
SDI	0.83	81	P	22 03.70	0.0
			eSg	22 16.00	
	S.D. = 0.1	on	4 of	4 obs.	

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* DEC 21, 1989 04h 12m 58.14± 1.57s
0.848 N ±19.3km 77.170 W ±25.1km
DEPTH = 10.0km (geophysicist)
COLOMBIA-ECUADOR BORDER REGION (106)

CAYA	1.12	227	iP+	13 19.10	-0.3
			S	13 39.50	
COTA	1.27	246	iP+	13 21.60	-0.6
			S	13 39.50	
PURC	1.67	29	eP	13 27.22	-0.8
GGP	1.75	235	P+	13 30.20	0.9
			S	13 53.50	
SALC	2.16	13	iPd	13 33.85	-1.0
TUNG	2.59	210	P	13 45.50	4.4X
			S	14 21.60	
DIAC	2.61	22	eP	13 42.57	1.2
HOQC	2.66	12	eP	13 41.76	-0.3
ANCC	2.67	7	ePc	13 42.88	0.9
CLMC	3.07	11	eP	13 47.87	0.1
HOBC	3.63	16	eP	13 55.72	-0.1
	S.D. = 0.9	on	10 of	11 obs.	

DEC 21, 1989 04h 40m 31.81± 3.15s
33.862 S ±12.5km 72.112 W ±26 0km
DEPTH = 42.0 ± 20.0 km
OFF COAST OF CENTRAL CHILE (134)

LNV	0.59	99	iP	40 43.60	-0.2
LCCH	0.59	50	iPd	40 42.00	-1.9
TACH	1.00	78	iP	40 48.60	-1.0
			iS	40 54.60	
CHCH	1.22	94	iPd	40 52.70	0.0
SAN	1.28	72	iPd	40 53.00	-0.5
			iS	41 09.00	
			i	41 10.70	
ROCH	1.28	46	iP	40 53.00	-0.7
			iS	41 09.50	
PCH	1.35	80	iPd	40 54.50	-0.2
PEL	1.39	59	iPd	40 55.10	-0.1
FCH	1.61	71	iPd	40 05.88	-52.7X
JACH	1.73	48	iPc	41 00.00	-0.1

			iS	41 22.00		
MDZ	2.90	71	iP	41 24.90	8.2X	
			iS	41 58.40		
RTBS	3.14	46	e(P)	41 25.00	5.1X	
RFA	3.15	108	ePc	41 22.30	2.1	
RTCV	3.61	57	e(P)	41 28.00	1.2	
RTCB	3.66	51	ePd	41 28.80	1.2	
ZON	3.70	52	eP	41 30.00	1.9	
CFA	3.96	56	ePc	41 32.00	0.3	
			S	42 26.00		
RTRS	4.32	32	iPd	41 37.50	0.8	
MRA	5.56	77	ePd	41 54.00	-0.3	
TCA	6.83	70	ePc	42 09.60	-2.5	
			S	43 31.00		
CYA	7.65	47	ePd	42 18.70	-4.8X	
CCH	17.26	20	P	44 32.50	0.7	
CNCB	17.38	13	P	44 33.50	0.0	
			i	44 37.20		
LPB	17.63	13	P	44 40.00	3.6X	
ZOBO	17.88	13	P	44 39.00	-0.7	
KIC	75.10	72	P	52 11.70	0.2	
GBA	145.80	119	PKPc	00 07.40	-0.6	
	0.5s		2.30nm			
	S.D. = 1.2		on 22 of 27 obs.			

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* DEC 21, 1989 05h 02m 35.23± 1.05s
11.723 S ±11.4km 117.144 E ±27.1km
DEPTH = 33.0km (normal)
4.2mb (2 obs.)
SOUTH OF SUMBAWA ISLAND (291)

KHKI	3.66	335	ePd	03 30.90	-0.1	
			eS	04 15.80		
			e	05 53.70		
MBL	9.73	165	iPd	04 55.20	-0.9	
	0.2s		24.00nm		6.1mb X	
			eS	06 34.00		
NANU	10.89	188	eP	05 12.00	0.1	
	0.2s		9.00nm		5.6mb X	
			eS	07 03.00		
WARB	16.95	149	eP	06 32.00	0.5	
	0.3s		10.00nm		4.4mb	
MRWA	17.44	183	eP	06 38.00	0.3	
			eS	09 37.00		
ASPA	19.87	129	eP	07 11.70	4.9X	
	0.6s		4.00nm		3.9mb	
			eS	10 40.80		
	S.D. = 0.7		on 5 of 6 obs.			

% DEC 21, 1989 05h 53m 48.49± 0.78s
37.461 N ± 7.8km 23.299 E ± 8.2km
DEPTH = 10.0km (geophysicist)
SOUTHERN GREECE (368)
MD 2.8 (ATH).

ATH	0.61	33	ePb	53 59.50	-1.2	
			eSb	54 09.50		
VLI	0.80	201	ePb	54 02.20	-1.7	
			eSb	54 15.50		
ITM	1.13	256	ePg	54 10.00	0.3	
APE	1.82	102	ePn	54 21.50	1.3	
NEO	1.84	358	ePn	54 20.20	-0.2	
VAM	2.17	160	ePn	54 25.70	0.5	
VLS	2.26	289	ePb	54 27.60	1.1	
	S.D. = 1.4		on 7 of 7 obs.			

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* DEC 21, 1989 07h 43m 22.11± 2.21s
8.757 N ± 9.9km 126.493 E ±23.7km
DEPTH = 89.5 ± 19.8 km
4.5mb (4 obs.)
MINDANAO, PHILIPPINE ISLANDS (259)

DAV	1.89	209	ePc	43 54.00	0.6	
	0.9s		860.50nm			
GUMO	18.65	73	eP	47 46.30	10.5X	
GUA	18.68	74	eP	47 46.70	10.5X	
MTN	21.95	168	eP	48 10.00	0.3	
SSE	22.77	348	P	48 16.50	-1.1	
	1.0s		28.00nm		4.6mb	
	Z 16s		0.40um		4.0MszX	
			sP	48 44.00		
			PP	49 00.00		
			eS	52 30.00		
CHTO	28.52	293	eP	49 11.00	-0.4	
	1.0s		2.00nm		3.7mb	
WB5	29.49	165	eP	49 17.80	-2.3	
BJI	32.48	345	eP	49 45.00	-1.1	
MRWA	39.09	195	iPd	50 42.90	0.7	
	0.4s		2.00nm		4.3mb	
FORR	39.41	178	eP	50 44.20	-0.6	
COOL	39.75	187	eP	50 48.00	0.3	
KLB	40.98	191	eP	50 58.00	0.2	
MAIO	66.35	306	eP	54 04.00	0.3	
INK	85.60	22	eP	55 53.00	1.6	
MBC	87.13	13	ePc	56 00.40	1.6	
	0.9s		11.00nm		4.9mb	
	S.D. = 1.3		on 13 of 15 obs.			

DEC 21, 1989 08h 08m 04.60± 0.17s
3.251 N ± 3.9km 96.404 E ± 3.6km
DEPTH = 21.5km (16 depth phases)
5.6mb (44 obs.) 4.7Msz (2 obs.)
NORTHERN SUMATERA (706)

IPM	4.80	74	ePd	09 19.80	2.4	
	0.8s		96.30nm			
			e	09 45.80		
			e	10 19.00		
SNG	5.73	47	eP	09 32.80	2.2	
	1.2s		1837.50nm		6.6mb X	
KGM	7.02	100	ePd	09 51.80	3.1X	
			e	12 05.40		
NNT	9.85	19	eP	10 28.10	0.0	
NST	12.88	16	eP	11 13.00	3.8X	
CHG	15.67	9	eP	11 47.00	1.2	
	1.1s		38.61nm		4.5mb X	
KKM	19.94	81	ePd	12 38.70	0.4	
	0.9s		85.10nm		5.1mb	
QIZ	20.46	39	Pd	12 44.30	0.7	
	N 13s		2.00um			
	E 13s		1.70um			
			eS	16 27.00		
GBA	21.38	300	P	12 53.10	0.1	
KHKI	22.36	121	eP	13 03.00	0.1	
			e	15 52.30		
HYB	22.47	310	ePd	13 04.70	0.7	
	1.2s		200.00nm		5.5mb	
			eS	17 12.20		
KMI	22.59	15	Pd	13 05.00	-0.3	
			pP	13 17.50	51kmX	
			S	17 20.00		
SHL	22.61	349	iP	13 01.60	-3.9X	
			eS	17 08.50		
GYA	25.09	22	iPc	13 29.40	0.0	
	Z 18s		1.20um		4.4Msz	
	N 14s		2.00um			
	E 14s		1.20um			
GZH	25.65	38	eP	13 35.80	1.2	
	Z 12s		1.40um		4.7MszX	
	N 10s		0.80um			
	E 11s		1.40um			
LSA	26.77	350	iP	13 44.50	-1.0	
POO	26.80	306	eP	13 47.50	2.2	
BOM	27.82	306	iP	14 02.50	7.9X	
			eS	19 03.80		
CD2	28.37	13	P	13 57.40	-2.1	
	Z 15s		1.20um		4.6MszX	
	E 10s		1.20um			
			eS	18 40.00		
NDI	31.20	326	iPd	14 23.00	-1.6	
	1.0s		70.00nm		5.5mb	
			eS	19 31.00		
NANU	31.74	145	eP	14 29.30	-0.1	
WHN	32.01	30	eP	14 32.00	0.2	
	Z 12s		1.18um		4.8MszX	
	N 12s		1.10um			
	E 11s		0.88um			
			pP	14 40.00	28km	
XAN	32.78	19	P	14 36.40	-2.1	
	N 11s		0.90um			
	E 11s		0.90um			
LZH	33.39	11	eP	14 42.50	-1.4	
	1.1s		50.00nm		5.4mb	
	Z 17s		0.80um		4.5MszX	
	E 15s		0.80um			
			i	15 30.00	233kmX	
MBL	33.40	138	eP	14 43.00	-1.0	
GTA	36.13	4	Pd	15 05.60	-1.7	
	Z 14s		1.20um		4.8MszX	
	N 10s		0.70um			
KNA	37.17	121	eP	15 14.10	-2 0	
TIY	37.31	21	eP	15 16.60	-0.6	
	N 15s		1.40um			
	E 14s		2.00um			
MRWA	37.35	151	eP	15 18.60	1.0	
TIA	37.97	28	eP	15 21.70	-0.9	
	N 11s		0.68um			
	E 11s		0.71um			
MTN	38.01	116	ePd	15 21.50	-1.8	
BAL	38.85	152	eP	15 30.00	-0.1	
BTO	39.16	16	eP	15 32.00	-0.7	
	N 13s		2.40um			
	E 12s		0.80um			
			sP	15 42.00		
HHC	39.85	18	P	15 38.00	-0.4	
	Z 16s		1.40um		4.9MszX	
	N 14s		1.10um			
	E 11s		0.40um			
KLB	40.17	151	eP	15 42.00	1.0	
KSH	40.53	335	eP	15 44.00	-0.1	
BJI	40.76	23	eP	15 46.50	0.7	
	1.0s		30.00nm		5.0mb	
	Z 12s		0.60um		4.7MszX	
	E 12s		0.45um			
			eS	21 52.00		
WMO	41.13	350	P	15 48.00	-0.9	
	Z 16s		0.70um		4.6MszX	
			pP	15 57.00	30km	
COOL	41.34	147	eP	15 51.00	0.3	
WB5	43.80	123	iPc	16 10.20	-0.7	
ASPA	45.27	128	iPc	16 21.00	-1.7	
	1.3s		79.00nm		5.5mb	
	Z 24s		0.36um		4.2MszX	
			eS	21 52.80		
			LR	34 25.90		
FORR	45.42	141	eP	16 23.70	-0.1	
	0.5s		80.00nm		5.9mb	
SNY	45.47	29	eP	16 22.80	-1.2	
MAIO	47.30	319	eP	16 39.00	0.2	
CN2	47.87	28	Pd	16 41.20	-1.7	
	Z 18s		1.10um		4.9Msz	
QIS	48.52	121	iPc	16 47.60	-0.8	
	1.0s		63.00nm		5.6mb	
BEE	49.46	302	(P)	16 58.60	3.1X	
	0.5s		199.00nm		6.4mb	
MDJ	50.49	30	eP	17 03.00	-0.1	
MAT	50.75	44	(P)	17 06.00	0.8	
	0.9s		5.88nm		4.5mb X	
PMG	52.11	104	eP	17 17.00	1.2	
RYD	52.44	299	eP	17 18.00	-0.3	
KMSA	53.32	293	eP	17 24.00	-0.8	
CTA	54.14	118	iPc	17 30.00	-0.8	
	1.5s		166.67nm		5.8mb	
ADE	54.95	138	iPc	17 36.00	-0.6	
	1.0s		50.00nm		5.5mb	
SLY	56.92	311	ePd	17 54.50	3.8X	
BHD	56.94	308	ePd	17 53.00	2.1	
			i	17 58.00	16km	
TAB	57.30	314	eP	17 58.00	4.5X	
MSL	58.98	311	ePd	17 54.50	-10.7X	
BWA	61.56	132	eP	18 23.10	0.2	
BRS	62.23	123	iPc	18 27.20	-0.3	
			i	18 34.50	24km	
CAN	62.38	133	eP	18 27.40	-1.0	
DSI	63.76	304	eP	18 33.00	-4.4X	
CSS	66.20	307	eP	18 53.00	-0.3	
LWI	67.79	266	iPc	19 04.70	0.7	
BBTK	67.84	312	iPc	19 07.00	3.3X	
BCK	68.92	309	eP	19 12.00	1.6	
ELL	69.31	308	eP	19 12.00	-0.8	
ALT	69.64	310	eP	19 13.00	-1.8	
GPA	69.77	312	eP	19 14.00	-1.5	
KHL	69.93	310	eP	19 14.00	-2.6	
HRT	70.37	312	eP	19 18.00	-1.1	
GBZT	70.53	312	eP	19 19.00	-1.0	
YLV	70.53	312	iP	19 19.50	-0.7	
ISK	70.87	312	eP	19 21.00	-1.1	
CTT	71.36	312	iP	19 25.00	-0.1	
EDC	71.61	311	eP	19 26.00	-0.6	
IZM	71.69	309	eP	19 25.50	-1.7	
SLR	71.87	242	iPd	19 27.80	-0.8	
	1.2s		42.19nm		5.4mb	
PSN	72.09	315	iPd	19 29.00	-0.4	
EZN	72.67	311	eP	19 31.60	-1.2	
DZM	72.84	114	iPc	19 34.00	-0.3	
JMB	72.98	313	eP	19 35.00	0.4	
KSR	73.11	242	iPd	19 35.70	-0.3	
	1.2s		20.00nm		5.0mb	
CLI	73.36	318	ePc	19 36.50	-0.3	
VRI	73.59	317	iPc	19 38.50	0.4	
DIM	73.66	313	eP	19 38.00	-0.6	

21d 08h

KDZ	73.68	312	iP	19 38.00	-0.8
PVL	74.03	314	iPd	19 41.00	0.3
MLR	74.04	316	ePc	19 41.00	0.0
RZN	74.20	312	iPc	19 41.00	-1.0
CMP	74.62	316	ePc	19 44.00	-0.2
PGB	74.75	313	eP	19 44.00	-1.0
MMB	74.91	312	ePd	19 45.00	-1.0
KKB	75.43	312	iPc	19 48.00	-0.9
VTS	75.46	313	iPc	19 48.00	-1.2
VAY	75.73	312	eP	19 49.30	-1.3
BMR	76.12	318	ePd	19 58.00	5.4X
SKO	76.66	312	eP	19 54.50	-1.3
			i	20 01.50	22km
OHR	77.03	311	eP	19 56.00	-2.0
	0.9s	0.09nm			2.8mb X
			i	20 03.30	23km
BZS	77.06	316	eP	19 58.00	0.1
BCAO	77.67	274	iPc	20 00.50	-1.5
	0.8s	42.00nm			5.5mb
			i	20 02.00	5kmX
			i	20 08.60	
SUF	78.15	334	eP	20 03.90	0.4
NUR	78.25	331	iP	19 55.80	-8.3X
			e	20 08.00	41kmX
SPC	78.51	319	i(P)	20 10.80	4.7X
SOD	79.31	338	iP	20 09.80	-0.1
SRO	79.60	318	eP	20 13.20	1.4
KEV	79.92	341	eP	20 14.00	0.9
ROI	80.10	309	P	20 15.90	1.2
TDS	80.28	310	P	20 15.40	-0.3
CZI	80.41	309	P	20 16.70	0.4
ZST	80.45	318	iP	20 16.50	0.1
MMN	80.57	310	P	20 16.80	-0.3
ATN	80.88	308	P	20 25.30	6.5X
MGR	80.92	310	P	20 18.40	-0.6
VKA	80.98	318	iPd	20 19.80	0.6
	1.1s	121.00nm			5.8mb
			i	20 23.80	13km
			i	20 27.10	
ZAG	81.00	316	ePKP	20 20.00	0.7
			i	20 26.50	21km
PTJ	81.02	316	ePKP	20 20.20	0.7
KSP	81.24	321	iPd	20 21.10	0.6
	1.0s	56.00nm			5.6mb
			ic	20 28.30	23km
PZI	81.26	307	P	20 27.18	6.3X
	0.8s	109.30nm			5.9mb
MNO	81.47	308	P	20 29.90	7.7X
VBY	81.48	315	iPd	20 22.90	1.1
			i	20 29.70	22km
UPP	81.56	330	iP	20 02.10	-19.8X
LJU	82.02	316	eP	20 25.00	0.4
			i	20 32.50	24km
CEY	82.08	316	e(P)	20 26.00	1.0
PRU	82.29	320	P	20 26.60	0.7
			e	20 30.30	12km
SDI	82.31	311	P	20 25.60	-0.7
VOY	82.47	316	eP	20 26.90	-0.2
			i	20 33.20	20km
ALP	82.54	313	ePKP	20 27.69	0.1
AOI	82.55	313	ePKP	20 28.45	1.0
AOU	82.65	312	P	20 28.70	0.7
BRG	82.73	321	eP	20 28.30	0.1
	1.3s	60.00nm			5.6mb
			e	20 36.00	24km
KHC	82.86	319	iPd	20 29.50	0.5
	1.0s	14.00nm			5.0mb
CIO	82.87	313	ePKP	20 28.75	-0.5
KBA	82.90	317	iPd	20 29.00	-0.4
	0.9s	30.80nm			5.4mb
			i	20 35.90	22km
			i	20 40.50	
ARV	83.03	313	P	20 30.70	0.8
FVI	83.27	316	P	20 31.90	0.9
CLL	83.35	321	iP	20 32.00	0.7
	1.1s	32.00nm			5.4mb
RSM	83.40	314	P	20 32.80	1.1
KRP	83.43	129	eP	20 37.10	5.1X
HFS	83.56	330	eP	20 31.30	-0.9
	0.5s	4.20nm			4.9mb
SFI	83.83	314	P	20 36.60	2.7X
CTI	84.03	316	P	20 35.90	0.8
FIR	84.26	313	eP	20 40.00	3.9X
MME	84.67	314	P	20 45.80	7.3X
BDI	84.74	314	P	20 44.10	5.5X
NB2	84.84	331	P	20 38.60	-0.1
	1.3s	39.50nm			5.5mb
VAI	86.04	316	P	20 50.60	5.7X
PCP	86.21	314	P	20 52.27	6.3X
FIN	86.46	314	P	20 53.03	5.9X
ORX	86.59	315	P	20 52.41	4.5X
IMI	86.70	314	P	20 55.87	7.5X
ROB	86.70	314	P	20 54.34	6.0X
CDF	87.01	318	eP	20 49.70	-0.1
	0.8s	18.80nm			5.4mb
ENR	87.03	314	P	20 56.08	6.1X
SBF	87.03	314	eP	20 50.10	0.1
	0.8s	59.10nm			5.9mb
STV	87.09	314	P	20 56.56	6.3X
RSP	87.12	315	P	20 55.87	5.4X
LSD	87.18	315	P	20 56.56	5.7X
PZZ	87.25	314	P	20 57.04	5.9X
RRL	87.46	315	P	20 59.19	7.0X
LPG	87.46	315	eP	20 52.60	0.3
BNI	87.53	315	P	20 58.90	6.4X
FRF	87.61	313	eP	20 52.80	0.1
	0.9s	42.50nm			5.7mb
HAU	87.65	318	eP	20 52.70	-0.1
	0.6s	44.00nm			5.9mb
DOU	88.69	320	P	20 58.80	1.1
			e	21 05.70	22km
LBF	89.31	317	eP	21 01.00	0.2
	1.0s	46.00nm			5.7mb
LOR	89.37	317	eP	21 01.50	0.5
	1.0s	50.80nm			5.8mb
SMF	89.42	317	eP	21 01.40	0.1
	0.7s	34.10nm			5.7mb
SSF	89.62	317	eP	21 03.00	0.8
	0.8s	22.80nm			5.5mb
AVF	89.75	317	eP	21 03.70	0.9
	0.8s	22.80nm			5.5mb
BGF	90.11	316	eP	21 05.30	0.8
	1.0s	62.00nm			5.8mb
MAF	90.34	316	eP	21 06.20	0.6
	0.8s	28.20nm			5.6mb
LSF	91.05	316	eP	21 09.70	0.9
	1.0s	34.00nm			5.6mb
LPO	91.45	315	eP	21 12.00	1.3
	0.8s	46.70nm			5.9mb
LFF	91.74	315	eP	21 13.10	1.1
	0.8s	37.60nm			5.8mb
LDF	91.90	319	eP	21 13.40	0.7
	0.8s	34.90nm			5.8mb
FLN	92.12	319	eP	21 15.10	1.4
	0.8s	51.00nm			6.0mb
MFF	92.16	317	eP	21 15.00	1.1
	0.8s	45.60nm			5.9mb
GRR	92.42	319	eP	21 16.80	1.8
	1.0s	52.00nm			5.9mb
LPF	92.58	318	eP	21 16.80	1.0
	1.0s	48.00nm			5.9mb
MBC	98.00	8	eP	21 41.00	1.0
	0.7s	3.00nm			5.0mb
INK	100.76	17	ePdiff	21 52.00	-0.5
LKO	101.27	280	Pdiff	22 03.42	7.3X
	0.9s	5.00nm			5.1mb
WDC	123.71	35	ePKP	27 02.50	-0.2
MIN	124.40	35	ePKP	27 03.80	-0.4
LRM	124.84	24	ePKP	27 05.00	0.0
CMB	126.64	36	ePKPd	27 08.70	0.2
			epPKP	27 15.80	
PRS	127.16	38	ePKP	27 10.30	0.8
			epPKP	27 17.50	
PRI	127.72	38	ePKP	27 12.70	2.0
FRI	127.74	37	ePKPd	27 11.10	0.6
			epPKP	27 18.00	
ALQ	136.36	28	ePKP	27 28.00	0.7
	1.0s	5.50nm			
			pP	30 59.70	
ITB	144.51	230	e(PKP)	27 31.00	-10.9X
ITB1	144.72	230	e(PKP)	27 38.50	-3.7X
LNV	147.41	199	ePKP	27 47.50	1.1
PCH	147.41	201	iPKP	27 52.00	5.4X
TACH	147.52	200	iPKPd	27 56.60	10.0X
PEL	147.90	201	iPKPc	27 50.00	2.7X
	0.6s	13.33nm			
CNCB	159.58	228	PKP	28 06.00	1.6
LPB	159.85	228	PKP	28 06.00	1.5
ZOBO	160.03	229	PKP	28 05.50	0.6
	1.0s	10.75nm			

S.D. = 1.0 on 159 of 200 obs.

? DEC 21, 1989 09h 09m 24.22± 0.96s
39 116 N ± 8.2km 27.591 E ± 9.8km
DEPTH = 10.0km (geophysicist)
TURKEY (366)

IZM	0.76	200	ePg	09 39.00	-0.1
			eSg	09 50.50	
DST	0.94	58	ePn	09 42.50	0.3
EZN	1.21	306	ePn	09 47.00	0.3
EDC	1.25	10	ePn	09 46.90	-0.5

S.D. = 0.6 on 4 of 4 obs.

& DEC 21, 1989 09h 18m 07.70s
36.647 N 121.303 W
DEPTH = 2.0km
CENTRAL CALIFORNIA (39)
<BRK>. ML 2.7 (BRK).

SAO	0.16	316	iPc	18 10.80	-0.2
LLA	0.29	96	iPc	18 13.60	0.1
PRS	0.32	190	iPd	18 14.10	0.0
GCC	0.68	305	ePc	18 20.30	-0.9
PRI	0.72	134	ePd	18 21.50	-0.6
ARN	0.72	345	iPd	18 22.10	-0.1
MHC	0.74	339	ePd	18 22.50	-0.1
PHAM	1.09	138	eP	18 27.70	-1.3
PCC	1.21	315	ePc	18 29.30	-1.7
FRI	1.33	74	ePc	18 30.80	-2.1
			eS	18 48.50	
BKS	1.44	329	ePnc	18 32.80	-1.9
			iPgc	18 35.30	
BRK	1.44	328	ePgc	18 35.30	0.5
ZSP	1.50	330	ePg	18 36.00	0.3
CMB	1.57	28	ePc	18 35.30	-1.4
			iS	18 55.80	
KVN	3.49	46	eP	19 03.50	-0.8

15 obs. associated

• DEC 21, 1989 10h 45m 26.59± 1.28s
15.143 N ±19.2km 94.673 W ± 7.2km
DEPTH = 33.0km (normal)
4.6mb (1 abs.)
NEAR COAST OF OAXACA, MEXICO (66)

TPX	2.34	95	iP	46 04.00	0.4
SCX	2.52	51	iP	46 05.50	-0.6
			iS	46 35.22	
OXX	2.76	315	iP	46 09.50	-0.1
			iS	46 38.50	
IISM	4.62	326	iP	46 32.42	-3.4X
LVVM	4.87	340	iP	46 35.00	-4.5X
IIT	5.19	318	eP	46 45.00	0.7
ACX	5.27	290	iP	46 44.50	-0.7
PPM	5 43	316	iP	46 48.00	0.1
III	5.61	306	eP	46 50.00	-0.1
CRX	6.39	312	eP	47 01.50	0.3
UYO	18.94	1	iPc	49 42.80	-4.7X
INK	58.63	344	eP	55 10.00	-12.5X
MBC	62.48	354	eP	55 58.00	9.4X
	0.9s	5.00nm			4.6mb

S.D. = 0.6 an 8 af 13 abs.

DEC 21, 1989 11h 22m 25.38± 0.83s
36.716 N ± 8.0km 20.590 E ± 5.2km
DEPTH = 10.0km (geophysicist)
MEDITERRANEAN SEA (400)
ML 4.0 (ATH).

ITM	1.17	66	iPbd	22 48.20	1.0
VLI	1.89	89	ePn	22 58.40	0.5
AGG	2.68	30	eP	23 11.80	2.4
			eS	23 43.50	
ATH	2.79	62	ePg	23 20.00	9.1X
VAM	3.20	113	ePn	23 14.60	-2.1
NEO	3.32	38	ePn	23 19.20	0.8
LIT	3.69	23	iPc	23 24.30	0.5
			iS	24 06.80	
KZN	3.70	14	ePn	23 25.50	1.6
APE	3.98	83	ePb	23 37.30	9.6X
ROI	4.26	313	P	23 32.50	0.7
PLG	4.28	31	ePn	23 33.30	1.2
CZI	4.32	307	P	23 33.50	1.0
			eSn	24 15.60	
NPS	4.32	108	ePn	23 34.50	1.8
THE	4.33	25	eP	23 33.70	1.0
			eS	24 22.10	
OHR	4.39	2	iPnd	23 34.90	1.2
TDS	4.46	313	P	23 35.50	1.0
			eSn	24 22.30	

OUR	4.49	35	eP	23	34.90	0.0
MEU	4.55	277	Pc	23	35.40	-0.6
CSI	4.56	313	P	23	39.30	3.3X
SOH	4.63	27	iPd	23	37.60	0.5
			eS	24	30.40	
KNT	4.79	21	eP	23	39.70	0.4
			eS	24	33.30	
MMN	4.81	313	P	23	42.00	2.5
			eSn	24	27.50	
VAY	4.85	18	ePn	23	40.00	-0.1
BRT	4.93	329	P	23	41.40	0.2
			eSn	24	34.80	
BAI	5.27	328	P	23	45.00	-1.0
SKO	5.29	7	ePn	23	45.50	-0.8
ULC	5.34	349	ePn	23	47.00	-0.1
			eSn	24	46.00	
MMB	5.44	26	iPc	23	43.00	-5.5X
KAP	5.45	100	ePn	23	48.50	-0.2
KKB	5.50	20	eP	23	47.00	-2.3
SGO	5.64	314	P	23	53.60	2.3
			eSn	24	51.00	
BDV	5.72	347	ePn	23	50.50	-2.0
			eSn	24	53.00	
TTG	5.80	350	ePn	23	52.30	-1.1
			eSn	24	57.50	
RZN	5.91	32	iPc	23	55.00	-0.2
HCY	5.95	345	ePn	23	54.00	-1.6
			eSn	24	59.50	
KDZ	6.19	36	eP	23	58.00	-1.0
VTS	6.21	18	eP	23	59.00	-0.4
			e	48	50.00	
BRY	6.37	346	ePn	24	00.20	-1.6
			eSn	25	09.00	
HVAR	7.19	335	i(Pn)	24	10.90	-2.2
			iSn	25	27.70	
KSL	7.28	92	ePn	24	12.50	-1.8
VOY	10.58	334	eP	24	58.50	-1.5
			eS	26	49.50	

S.D. = 1.4 on 37 of 41 obs.

DEC 21, 1989 11h 24m 59.40± 0.81s
35.763 N ±10.0km 27.402 E ± 7.7km
DEPTH = 10.0km (geophysicist)
DODECANESE ISLANDS (369)
MD 3.8 (ATH).

KAP	0.28	221	ePg	25	05.30	0.0
NPS	1.54	252	ePb	25	27.40	0.4
KSL	1.81	78	ePb	25	30.00	-0.8
CIN	1.91	17	ePn	25	30.00	-2.3
			iSg	25	51.00	
APE	1.99	311	iPn	25	32.50	-1.1
SMG	1.99	347	ePb	25	37.60	4.1X
ELL	2.25	63	ePn	25	37.40	0.0
IZM	2.63	358	ePn	25	44.00	1.3
VAM	2.63	263	ePg	25	49.50	6.8X
KHL	3.07	33	ePn	25	51.00	2.1
BCK	3.07	56	ePn	25	49.00	0.1
VLI	3.73	286	ePn	25	58.50	0.2

S.D. = 1.4 on 10 of 12 obs.

& DEC 21, 1989 11h 27m 28.10s
37.108 N 121.505 W
DEPTH = 7.0km
CENTRAL CALIFORNIA (39)
<BRK>. ML 3.1 (BRK).

ARN	0.24	355	iPd	27	33.00	-0.1
MHC	0.26	335	iPd	27	33.30	-0.1
SAO	0.35	172	iPc	27	35.40	0.3
GCC	0.40	259	iPc	27	35.80	-0.4
			iS	27	42.00	
LLA	0.67	137	iPc	27	40.80	-0.7
PCC	0.80	300	iPc	27	42.60	-1.3
			iS	27	55.30	
BKS	0.96	323	iPc	27	45.60	-1.1
			i	27	58.80	
			eS	27	59.90	
BRK	0.97	322	eP	27	46.00	-0.8
			eS	28	00.70	
ZSP	1.03	325	iPc	27	47.00	-0.8
			iS	28	03.10	
CMB	1.28	44	eP	27	51.30	-0.9
			iS	28	07.90	
FRI	1.44	94	eP	27	53.20	-1.4
			iS	28	12.50	
KVN	3.31	53	eP	28	23.30	1.7

12 obs. associated

& DEC 21, 1989 11h 36m 29.30s
37.110 N 121.507 W
DEPTH = 7.0km
CENTRAL CALIFORNIA (39)
<BRK>. ML 2.5 (BRK).

ARN	0.24	355	iPd	36	34.30	0.0
MHC	0.26	335	iPd	36	34.60	0.0
			iS	36	38.70	
SAO	0.35	172	iPd	36	36.70	0.3
GCC	0.40	259	iPc	36	37.10	-0.3
			iS	36	43.00	
LLA	0.67	137	iPc	36	41.90	-0.8
PRS	0.78	172	iPc	36	44.30	-0.6
PCC	0.80	299	ePd	36	43.90	-1.2
BKS	0.96	323	ePc	36	47.30	-0.5
			eS	37	00.00	
BRK	0.97	322	eP	36	47.00	-1.0
			eS	37	02.20	
ZSP	1.02	325	ePc	36	48.20	-0.7
			eS	37	04.50	
PRI	1.18	145	eP	36	51.00	-0.7
CMB	1.28	44	ePd	36	52.60	-0.8
			iS	37	09.10	
FRI	1.44	94	ePd	36	54.50	-1.4
KVN	3.31	53	eP	37	29.00	6.2

14 obs. associated

DEC 21, 1989 11h 47m 28.77± 0.62s
37.583 N ± 6.3km 21.120 E ± 4.7km
DEPTH = 10.0km (geophysicist)
3.7mb (1 obs.)
SOUTHERN GREECE (368)
ML 3.4 (ATH).

VLS	0.73	325	iPgd	47	50.50	7.4X
ITM	0.76	122	iPbc	47	42.50	-1.1
VLI	1.69	120	ePg	47	59.90	1.5
AGG	1.72	33	iPc	48	01.30	2.3
			eS	48	25.20	
IGT	2.04	343	eP	48	03.60	0.0
			eS	48	27.90	
ATH	2.09	79	ePg	48	05.50	1.2
NEO	2.39	43	ePn	48	08.80	0.3
LIT	2.73	23	eP	48	15.20	1.7
KZN	2.77	10	ePn	48	12.00	-2.0
PAIG	3.08	40	eP	48	18.00	-0.3
VAM	3.30	130	ePn	48	21.00	-0.5
PLG	3.32	32	ePn	48	22.60	0.7
GRG	3.51	16	eP	48	24.10	-0.4
OHR	3.53	356	iPnc	48	24.80	0.0
OUR	3.54	38	eP	48	24.30	-0.5
SOH	3.67	28	eP	48	27.00	0.2
			eS	49	11.20	
KNT	3.83	21	iPd	48	29.30	0.3
VAY	3.90	16	ePn	48	28.30	-1.7
ROI	4.08	301	P	48	33.00	0.4
			eSn	49	18.50	
CZI	4.24	294	P	48	34.60	-0.3
			eSn	49	23.20	
TDS	4.28	300	P	48	38.20	2.8
			eSn	49	31.20	
CSI	4.37	302	P	48	36.90	0.2
			eSn	49	28.50	
SKO	4.39	3	ePn	48	35.50	-1.5
MMB	4.48	26	eP	48	39.00	0.8
ATN	4.51	279	P	48	38.50	-0.2
RZN	4.95	33	eP	48	43.00	-2.1
MEU	4.96	266	P	48	42.80	-2.3
			(Sn)	49	39.20	
MGR	5.04	302	Pd	48	46.60	0.5
			eSn	49	38.60	
KDZ	5.24	38	eP	48	48.00	-1.1
PVL	6.48	28	eP	48	57.00	-9.5X
NB2	24.30	348	P	52	48.20	1.1

0.7s 1.50nm 3.7mb
S.D. = 1.3 on 29 of 31 obs.

DEC 21, 1989 11h 53m 31.33± 0.44s
77.507 N ± 7.1km 7.354 E ± 9.2km
DEPTH = 10.0km (geophysicist)
4.4mb (5 obs.) 4.6Msz (1 obs.)
SVALBARD REGION (643)

KBS	1.70	31	iP	54	00.00	-1.1
			iS	54	21.70	
NB2	16.60	173	P	57	27.40	2.1
	1.2s		15.20nm			4.0mb
HFS	17.59	169	eP	57	37.50	-0.1
	0.5s		4.50nm			3.9mb
MBC	23.58	331	eP	58	45.50	3.4X
	1.5s		23.00nm			4.5mb
FRB	26.13	282	eP	59	06.00	-0.6
INK	32.51	334	eP	00	04.00	0.4
OHR	36.94	163	eP	00	40.00	-1.8
EDM	44.52	312	eP	01	44.50	0.3
WMQ	45.58	87	P	01	54.00	1.2
Z	20s		0.70um			4.6Msz
			eS	08	35.00	
SES	46.87	310	ePd	02	03.80	1.0
LRM	51.54	309	eP	02	39.30	0.2
GTA	52.42	78	eP	02	45.80	0.1
TIY	56.66	66	eP	03	17.20	0.5
KIC	71.40	193	P	04	52.50	-0.6
LIC	71.55	193	P	04	53.30	-0.7
GBA	72.53	107	P	05	00.00	0.1
	1.2s		7.50nm			4.7mb
BCAO	73.27	168	iPd	05	03.30	-0.9
	0.8s		11.00nm			5.0mb

S.D. = 1.0 on 16 of 17 obs.

? DEC 21, 1989 12h 06m 37.20± 3.22s
17.548 N ±17.8km 101.198 W ±25.7km
DEPTH = 33.0km (normal)
NEAR COAST OF GUERRERO, MEXICO (58)
Felt along the coast of Guerrero.

ACX	1.45	118	iP	07	00.00	-1.3
			iS	07	19.00	
III	1.84	63	iP	07	06.99	-0.2
			iS	07	31.47	
MRX	2.14	0	iP	07	12.00	0.7
			iS	07	45.50	
CRX	2.34	38	(P)	07	18.41	3.9X
			(S)	07	55.00	
PPM	2.87	58	iP	07	21.50	-0.7
IIC	2.87	39	eP	07	20.41	-1.6
IIT	3.11	61	eP	07	26.50	1.1
IISM	3.90	68	iP	07	36.50	0.2
OXX	4.30	96	eP	07	44.00	1.8
AGX	4.43	347	(P)	08	08.50	24.6X

S.D. = 1.4 on 8 of 10 obs.

DEC 21, 1989 12h 20m 20.22± 0.35s
55.534 N ± 4.2km 162.579 W ± 4.1km
DEPTH = 150.0 ± 2.8 km
4.7mb (28 obs.)
ALASKA PENINSULA (12)

BLHA	0.34	60	eP	20	41.22	1.4
			eS	20	55.95	
PN6	0.39	102	iPd	20	41.09	1.0
PS4	0.44	114	eP	20	40.75	-0.8
			eS	20	55.54	
PVV	0.48	109	iPd	20	40.68	-1.0
			eS	20	55.91	
DRRA	0.64	164	ePd	20	40.75	-1.8
SNKA	1.07	186	iPd	20	43.90	-1.9
SASA	1.20	98	ePd	20	45.03	-2.0
			eS	21	03.36	
SDN	1.20	98	iPc	20	45.00	-2.0
SGB	1.21	89	eP	20	45.54	-1.6
			eS	21	03.98	
IVF	1.76	77	iPc	20	51.83	-1.1
			eS	21	15.10	
CDD	5.93	51	eP	21	46.97	0.1
			eS	22	52.13	
KDC	5.99	64	ePc	21	44.90	-2.7X
PDB	6.20	43	eP	21	51.67	1.2
SVW	6.68	30	eP	21	56.30	-0.8
RED	7.15	43	eP	22	03.92	0.5
CNPM	7.30	52	eP	22	04.01	-1.3
RDT	7.39	43	eP	22	06.89	0.3
NNL	7.53	49	eP	22	08.31	-0.1
SPU	7.91	40	eP	22	14.68	1.1
NKA	7.95	44	eP	22	16.02	2.0
TTA	8.14	22	eP	22	18.80	2.1
SLKM	8.23	48	eP	22	16.09	-1.7
SEW	8.37	51	eP	22	17.83	-1.7
SUA	8.58	41	eP	22	22.24	-0.3
SKT	8.64	37	eP	22	24.35	1.2

21d 12h

PMS	8.91	45	eP	22	25.01	-1.8X
PWA	9.02	42	eP	22	26.12	-2.1X
ADK	9.13	252	eP	22	29.30	-0.3
PMR	9.27	44	eP	22	29.00	-2.6X
	1.0s	30.00nm			4.9mb	
CUT	9.36	38	eP	22	32.41	-0.3
GHO	9.46	43	eP	22	31.20	-2.9X
MID	9.57	59	e(P)	22	32.90	-2.6X
GLI	9.76	50	eP	22	34.59	-3.4X
FID	9.97	52	eP	22	37.48	-3.4X
VZW	10.07	50	eP	22	39.99	-2.2X
NCA	10.41	45	eP	22	43.98	-2.7X
RND	10.51	36	eP	22	47.12	-0.9
KLU	10.54	49	eP	22	45.98	-2.4X
MCK	10.71	34	eP	22	50.26	-0.3
TOA	10.73	46	ePd	22	49.60	-1.3
IMA	11.41	19	e(P)	23	00.00	0.3
PAX	11.47	43	eP	22	58.92	-1.5
TGL	11.65	55	eP	23	01.14	-1.7
FBA	11.89	32	eP	23	03.00	-2.8X
	0.8s	14.48nm			4.6mb	
DOT	12.37	41	eP	23	11.03	-1.1
PCA	12.72	60	eP	23	16.08	-0.6
SIT	15.17	73	eP	23	49.00	1.5
INK	18.47	35	eP	24	24.00	-2.7X
MBC	26.11	22	eP	25	42.00	0.8
	0.5s	1.00nm			3.7mb	
PNT	26.58	85	eP	25	47.00	1.3
LON	26.70	92	eP	25	47.50	0.6
EDM	28.29	74	iPd	26	01.90	0.8
	0.7s	59.00nm			5.4mb	
NEW	28.54	86	eP	26	04.00	0.6
	1.0s	28.00nm			4.9mb	
FHC	29.21	104	e(P)	26	10.80	1.3
WDC	30.16	103	ePc	26	18.50	0.7
			e	26	58.90	
			e	27	02.30	
			ePcP	29	14.70	
			eScP	32	43.50	
MIN	30.84	102	eP	26	23.90	0.0
			ePcP	29	16.10	
SES	30.86	78	ePd	26	24.00	0.1
ORV	31.45	103	eP	26	28.80	-0.2
LRM	32.55	86	eP	26	39.20	0.3
CMB	33.14	104	eP	26	44.40	0.6
	1.0s	6.00nm			4.3mb	
KVN	33.69	100	iPd	26	49.20	0.5
			epP	27	31.40	203kmX
FFC	33.70	66	iPd	26	48.30	0.0
	0.7s	6.00nm			4.4mb	
FRI	34.26	105	eP	26	53.60	0.3
			ePcP	29	26.40	
			eScP	32	58.00	
PRI	34.36	107	eP	26	56.40	2.0
IMW	34.57	88	eP	26	57.00	0.7
TNP	34.86	101	iPd	26	59.00	0.3
	1.0s	13.00nm			4.6mb	
			epP	27	41.80	206kmX
ISA	35.91	105	eP	27	08.00	0.6
BW06	36.05	88	eP	27	09.00	0.3
	0.8s	16.07nm			4.8mb	
CLC	36.28	104	eP	27	11.00	0.5
			e	29	32.00	
SBB	36.99	105	eP	27	17.00	0.5
			e	29	34.00	
GSC	37.10	104	eP	27	18.00	0.6
			e	28	04.00	
			e	29	35.00	
MSU	37.40	96	eP	27	21.00	0.9
			ePcP	29	36.50	
PLM	38.52	106	eP	27	30.00	0.6
BAR	39.13	106	eP	27	35.00	0.7
PV09	39.13	93	eP	27	34.50	-0.1
GLA	39.86	104	eP	27	41.00	0.7
			e	28	27.00	
RSON	39.99	67	eP	27	41.50	0.4
	0.9s	62.73nm			5.3mb	
GOL	40.45	88	eP	27	46.00	0.6
	0.9s	43.56nm			5.1mb	
			ePcP	29	45.50	
GLD	40.50	88	eP	27	46.50	0.8
	1.0s	50.00nm			5.1mb	
ANMO	43.16	94	eP	28	08.00	0.6
	1.0s	10.00nm			4.4mb	
			ePcP	29	54.50	
ALQ	43.16	94	iPc	28	07.60	0.2
	1.0s	12.75nm			4.5mb	
			pP	29	55.70	627kmX
MAT	43.78	270	(P)	28	12.00	-0.2
FRB	44.02	40	eP	28	13.50	-0.2
CN2	45.99	287	eP	28	29.60	0.0
SIO	48.35	85	e(P)	28	47.70	-0.4
TUL	48.53	85	iP	28	49.00	-0.4
	0.7s	17.20nm			4.9mb	
FVM	50.07	79	eP	28	59.80	-1.4
	0.8s	30.30nm			5.1mb	
SCH	50.38	48	ePd	29	02.90	-0.5
	0.9s	41.00nm			5.2mb	
RSCP	54.48	77	eP	29	31.80	-2.3
BLA	56.13	72	eP	29	44.50	-1.5
CVL	56.62	70	eP	29	48.80	-0.5
SOD	57.22	356	iP	29	52.70	-0.4
JSC	57.84	75	eP	29	56.20	-1.7
SUF	61.89	355	eP	30	24.90	-0.2
GTA	62.49	300	eP	30	27.10	-2.5
NB2	63.67	3	P	30	36.60	-0.3
	0.8s	5.40nm			4.5mb	
NUR	64.16	356	eP	30	40.00	0.0
WMQ	64.61	311	P	30	44.00	0.7
HFS	64.64	2	eP	30	42 30	-0.8
	0.3s	3.80nm			4.8mb	
CD2	67.09	291	P	30	59.50	0.3
LOR	76.94	9	eP	31	58.40	1.4
	0.6s	6.30nm			4.5mb	
PMG	77.00	231	eP	31	58.00	0.4
SSF	77.11	10	eP	31	59.30	1.4
	0.6s	7.20nm			4.6mb	
MFF	77.17	12	eP	31	59.40	1.2
	0.6s	7.20nm			4.6mb	
LBF	77.23	9	eP	31	59.60	1.0
	0.6s	3.60nm			4.3mb	
AVF	77.36	10	eP	32	00.40	1.1
	0.6s	3.90nm			4.3mb	
SMF	77.55	10	eP	32	01.60	1.3
	0.5s	2.90nm			4.3mb	
KBA	77.70	3	eP	31	59.00	-2.4
	0.5s	1.60nm			4.0mb	
			iSg	32	03.40	
MAF	77.85	10	eP	32	03.60	1.6
	0.9s	15.30nm			4.7mb	
CTA	86.89	227	iPd	32	49.50	0.7
	0.8s	19.40nm			5.1mb	
WB5	92.04	237	eP	33	12.80	-0.1
BCAO	120.24	359	iPKP	38	54.30	-0.4
BUL	143.67	342	iPKPd	39	50.80	12.1X
	0.9s	4.20nm				
SPA	145.35	180	iPKPd	39	40.20	0.1
	1.0s	60.00nm				
			i	40	18.20	
WIN	147.08	1	iPKPd	39	47.00	2.7X
	0.8s	11.19nm				
SLR	149.19	341	iPKPd	39	53.00	5.4X
	0.9s	33.61nm				

S.D. = 1.1 on 100 of 116 obs.

? DEC 21, 1989 12h 41m 18.19± 8.49s
44.318 N ±17.5km 8.107 E ±87.5km
DEPTH = 10.0km (geophysicist)
NORTHERN ITALY (545)
ML 2.2 (LDG).

SBF	0.66	227	Pg	41	31.30	-0.2
			Sg	41	38.30	
FRF	1.30	235	Pg	41	42.30	0.1
			Sg	41	56.00	
LMR	1.52	230	Pg	41	45.50	0.1
			Sg	42	02.70	
LRG	1.53	236	Pg	41	45.50	0.0
			Sg	42	02.00	
LPL	1.55	321	Pg	41	46.00	0.0

S.D. = 0.1 on 5 of 5 obs.

DEC 21, 1989 13h 17m 23.34± 1.17s
40.681 N ± 9.9km 21.611 E ± 7.8km
DEPTH = 10.0km (geophysicist)
GREECE (364)
ML 3.1 (SKO).

GRG	0.66	65	eP	17	36.00	-0.5
			eS	17	46.10	
OHR	0.75	305	iPgc	17	37.40	-0.7
			iSg	17	49.10	
LIT	0.89	131	eP	17	40.80	0.4
			eS	17	56.40	
VAY	0.97	48	ePg	17	41.30	-0.4
			eSg	17	54.00	
KNT	1.09	63	eP	17	43.80	0.0
			eS	17	58.90	
SKO	1.30	354	ePn	17	48.50	1.2
			iSn	18	04.60	

S.D. = 0.9 on 6 of 6 obs.

DEC 21, 1989 13h 46m 18.55± 0.74s
40.716 N ± 5.4km 21.586 E ± 6.4km
DEPTH = 10.0km (geophysicist)
GREECE (364)
MD 3.5 (ATH). ML 3.2 (SKO).

KZN	0.43	161	ePg	46	26.00	-1.4
GRG	0.66	68	eP	46	31.10	-0.7
OHR	0.72	304	iPc	46	32.20	-0.5
			iSg	46	44.00	
LIT	0.92	131	eP	46	35.30	-0.9
			eS	46	49.30	
VAY	0.96	51	iPg	46	35.30	-1.5
			iSg	46	48.70	
THE	1.05	94	eP	46	38.80	0.4
			eS	46	54.70	
KNT	1.09	65	eP	46	38.50	-0.5
			eS	46	53.80	
SKO	1.26	355	ePn	46	43.00	1.0
			i	46	44.60	
			iSn	46	59.40	
SOH	1.35	85	eP	46	44.10	0.7
			e	47	03.10	
PLG	1.46	103	ePn	46	45 60	0.7
AGG	1.79	161	eP	46	50.60	0.9
OUR	1.87	101	eP	46	51.80	1.0
			e	47	17.80	
NEO	1.89	138	ePb	46	51.90	0.8
ITM	3.54	176	ePn	47	07.70	-7.0X

S.D. = 1.0 on 13 of 14 obs.

? DEC 21, 1989 13h 49m 58.46± 1.13s
40.734 N ±11.5km 21.634 E ± 8.4km
DEPTH = 10.0km (geophysicist)
GREECE (364)
ML 2.8 (SKO).

GRG	0.62	69	eP	50	10.50	-0.5
OHR	0.74	301	iPg	50	12.90	-0.1
			iSg	50	24.60	
LIT	0.91	134	eP	50	16.00	0.1
			eS	50	32.00	
VAY	0.92	50	ePg	50	16.50	0.5
SKO	1.25	353	ePn	50	25.50	3.9X

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

DEC 21, 1989 14h 12m 50.12± 1.02s
14.427 N ± 3.7km 146.783 E ± 4.3km
DEPTH = 43.4 ± 9.1 km
4.9mb (12 obs.) 4.4Msz (6 obs.)
MARIANA ISLANDS (216)

GUA	2.02	244	ePc+	13	22.80	0.4
			eS	13	49.80	
GUMO	2.04	246	ePc+	13	23.10	0.5
PJG	2.04	246	ePc	13	23.10	0.5
JAY	17.88	200	ePd	17	11.00	13.6X
MNDI	20.68	189	eP	17	19.50	-9.9X
LAT	20.94	179	eP	17	46.00	14.2X
DAV	22.06	253	eP	17	44.30	1.3
KAGJ	22.15	322	eP	17	43.30	-0.5
IIDJ	22.43	341	P	17	46.50	-0.1
KAKJ	22.48	346	P	17	46.90	-0.1
CHJJ	22.63	343	P	17	48.00	-0.5
KUMJ	23.16	324	eP	17	53.90	0.2
MAT	23.32	342	(P)	17	52.00	-3.2X
	1.6s	70.00nm			4.9mb	
	Z 20s	0.71um			4.1Msz	
			eS	21	56.00	
MTMJ	23.48	342	P	17	56.10	-0.8
PMG	23.68	179	eP	17	58.00	-0.9
NIIJ	23.75	344	P	17	55.70	-3.7X
MNI	25.23	241	ePc	18	15.50	1.7
BAG	25.33	278	eP	18	14.00	-0.9
SSE	28.74	310	eP	18	44.00	-1.7
	Z 20s	0.90um			4.4Msz	
	E 12s	0 60um				
			pP	18	53.70	34kmX
			eS	23	18.00	

MTN	31.22	211	eP	19	07.00	-0.8
WHN	33.83	304	eP	19	30.50	0.0
CTA	34.30	181	eP	19	35.00	0.3
CN2	34.49	332	eP	19	31.00	-5.1X
Z	16s	0.80um				4.6MszX
			esP	19	48.00	
			eS	25	06.00	
QIS	35.47	192	eP	19	43.00	-1.7
WB5	36.21	200	eP	19	45.90	-5.0X
BJI	36.98	319	eP	19	56.00	-1.2
	1.5s	55.00nm				5.2mb
Z	20s	0.60um				4.4Msz
			eS	25	40.00	
TIY	38.26	314	eP	20	08.40	0.3
E	16s	0.70um				
KHKI	38.33	236	ePc	20	07.90	-0.9
			e	22	18.90	
XAN	39.36	307	Pc	20	16.60	-0.7
ASPA	39.90	199	eP	20	22.10	0.3
Z	20s	0.37um				4.2Msz
			LR	36	34.40	
HHC	40.38	318	P	20	25.50	-0.2
DZM	41.08	152	iPc	20	30.00	-1.5
BTO	41.28	316	P	20	33.00	-0.1
			sP	20	48.00	
			PP	22	12.00	
			eS	26	40.00	
BRS	41.97	172	iPc	20	38.80	0.1
	0.7s	5.00nm				4.4mb
KMI	42.62	291	Pd	20	46.00	1.6
CD2	42.66	300	P	20	44.30	-0.2
LZH	43.97	307	Pc	20	56.00	0.9
	1.5s	98.00nm				5.3mb
			i	21	22.00	
MBL	44.17	217	eP	20	55.80	-0.9
NST	45.00	278	eP	21	05.80	2.4
NNT	45.72	274	eP	21	06.50	-2.7X
CHTO	45.94	282	eP	21	10.00	-0.9
	0.8s	2.75nm				4.2mb
BDT	45.96	280	eP	21	11.80	0.7
NANU	47.84	220	eP	21	26.00	0.2
GTA	48.03	310	iPc	21	27.20	-0.1
BWA	48.60	178	eP	21	31.60	0.1
CAN	49.52	178	eP	21	38.50	0.0
SHL	52.45	291	iP	22	01.00	-0.3
			eS	29	23.80	
LSA	53.28	296	P	22	08.40	0.7
WMQ	57.92	313	P	22	40.00	-0.5
Z	20s	0.40um				4.5Msz
			S	30	39.00	
KRP	58.66	154	P	22	45.00	-0.4
MSZ	61.88	163	P	23	06.00	-1.3
PMR	65.17	28	P	23	28.00	-0.8
	1.0s	15.00nm				5.0mb
HYB	65.37	283	ePc	23	30.00	-0.8
KSH	66.21	307	eP	23	36.50	0.4
FBA	66.68	25	P	23	38.00	-0.4
	1.0s	14.00nm				5.0mb
GBA	67.04	279	P	23	41.00	-0.5
POO	69.63	285	eP	23	57.00	-0.6
INK	72.89	23	eP	24	15.00	-1.2
			pP	24	27.00	40kmX
QUE	74.22	298	eP	24	24.00	-1.0
MBC	77.01	14	eP	24	39.50	-0.2
	1.4s	29.00nm				5.1mb
MAIO	79.46	305	iPc	24	55.00	1.0
LON	80.60	44	P	25	00.00	0.2
WDC	81.27	50	ePc	25	03.20	-0.2
PNT	81.52	41	eP	25	05.00	0.4
PCC	82.02	53	ePc	25	08.20	0.9
BRK	82.04	53	ePc	25	07.30	-0.1
BKS	82.06	53	iPd	25	08.40	0.9
ORV	82.27	51	ePc	25	08.30	-0.3
GCC	82.42	54	ePc	25	10.40	1.0
MHC	82.63	53	ePc	25	10.60	-0.1
PRS	83.06	54	ePc	25	13.00	0.2
LLA	83.33	54	ePc	25	14.40	0.2
CMB	83.45	53	ePc	25	14.60	-0.2
PRI	83.66	54	ePc	25	16.70	0.7
FRI	84.21	53	ePc	25	18.50	-0.1
BCH	84.34	55	P	25	20.00	0.6
EDM	84.38	37	eP	25	19.00	-0.1
SYP	84.58	56	eP	25	31.00	10.3X
KVN	84.95	51	P	25	22.00	-0.5
PAS	86.12	56	eP	25	29.00	0.8
CLC	86.15	54	eP	25	29.00	0.6
MWC	86.19	56	eP	25	29.00	0.2
SBB	86.26	55	eP	25	28.00	-1.0
KEV	86.30	342	eP	25	41.00	12.7X
SES	86.59	39	ePd	25	29.70	-0.5
RVR	86.80	56	eP	25	30.00	-1.5
GSC	86.91	54	eP	25	33.00	0.9
LRM	87.11	43	eP	25	33.00	-0.1
PLM	87.38	56	eP	25	35.00	0.4
SOD	87.71	340	eP	25	41.00	5.8X
BAR	87.71	57	eP	25	35.00	-1.0
TPC	87.83	55	eP	25	48.00	11.5X
GLA	89.10	56	eP	25	43.00	0.4
BW06	90.05	46	P	25	46.00	-1.2
FFC	90.11	33	eP	25	47.00	0.2
	1.1s	18.00nm				5.3mb
SUF	90.44	337	eP	25	47.90	-0.3
PV09	91.81	50	P	25	56.00	0.6
GOL	94.10	47	P	26	07.00	1.1
	1.0s	5.50nm				4.9mb
ALQ	95.07	52	eP	26	11.50	1.1
	1.0s	3.00nm				4.7mb
ANMO	95.07	52	P	26	11.10	0.8
	1.0s	2.50nm				4.6mb
GRG	104.64	320	ePdiff	26	39.80	-13.2X
LIT	105.06	319	ePdiff	26	44.00	-10.9X
8CAO	125.38	286	ePKPd	31	50.00	1.0
	0.9s	5.00nm				
KIC	145.01	304	PKPc	32	24.56	-0.8
	0.9s	34.50nm				
TIC	145.06	305	PKPc	32	24.64	-0.8
	0.9s	30.00nm				
LIC	145.32	304	PKPc	32	25.56	-0.3
	0.8s	30.50nm				
ZOBO	146.31	98	PKP	32	28.80	0.6
	1.0s	27.50nm				
Z	20s	0.10um				4.6Msz
			LR	21	16.00	
LPB	146.34	98	PKP	32	30.00	2.0
CNCB	146.46	99	PKP	32	30.00	1.6
CCH	148.22	100	PKP	32	32.00	1.1
S.D. = 0.8		on	96 of 110 obs.			

% DEC 21, 1989 14h 26m 10.11± 2.41s
41.701 N ±22.6km 12.776 E ±11.7km
DEPTH = 10.0km (geophysicist)
SOUTHERN ITALY (390)

RDP	0.07	322	Pd	26	12.40	-0.2
			eSg	26	13.10	
RMP	0.12	333	P	26	13.20	0.1
			eSg	26	13.90	
AZI	0.57	60	P	26	21.50	-0.2
			eSg	26	30.50	
MNS	0.69	354	P	26	23.80	0.1
			eSg	26	34.00	
SDI	0.78	89	P	26	25.40	0.1
			eSg	26	35.70	
S.D. = 0.2		on	5 of 5 obs.			

DEC 21, 1989 14h 28m 24.02± 0.62s
40.719 N ± 4.1km 21.575 E ± 5.7km
DEPTH = 10.0km (geophysicist)
GREECE (364)
MD 3.6 (ATH). ML 3.5 (SKO).

KZN	0.44	160	ePg	28	32.00	-1.0
GRG	0.67	69	ePd	28	36.40	-1.0
			eS	28	46.80	
OHR	0.71	304	iPgc	28	37.90	-0.1
			iSg	28	49.60	
LIT	0.93	131	eP	28	40.90	-0.9
VAY	0.96	51	iPgd	28	41.80	-0.5
			iSg	28	54.30	
THE	1.06	94	eP	28	44.40	0.4
			e	29	00.50	
KNT	1.10	66	iPd	28	44.20	-0.4
			eS	28	59.00	
SKO	1.26	355	iPn	28	47.00	-0.4
			i	28	50.20	
			iSn	29	05.30	
SOH	1.36	85	eP	28	49.30	0.3
			eS	29	08.80	
PLG	1.47	103	ePb	28	50.60	0 1
KKB	1.61	44	iPd	28	53.00	0.4
AGG	1.79	161	eP	28	56.60	1.4
PAIG	1.79	115	eP	28	55.00	-0.2
			eS	29	18.30	
MMB	1.84	61	iPgc	28	57.00	1.0
OUR	1.87	101	eP	28	57.70	1.3
			eS	29	22.30	
NEO	1.90	138	ePb	28	56.50	-0.2
VTS	2.24	33	iP	29	03.00	1.2
RZN	2.56	67	eP	29	09.00	2.6X
PLD	2.73	59	eP	29	18.00	9.3X
KDZ	3.05	71	eP	29	19.00	5.9X
DIM	3.26	65	iP	29	11.00	-5.2X
ITM	3.54	175	ePg	29	32.30	12.1X
PVL	3.75	47	eP	29	22.00	-1.2
MLR	5.74	32	eP	29	54.00	2.5X
VRI	6.37	34	ePd	30	00.00	-0.2
S.D. = 0.8		on	19 of 25 obs.			

% DEC 21, 1989 14h 41m 48.39± 0.67s
60.375 N ± 7.2km 5.410 E ± 7.7km
DEPTH = 10.0km (geophysicist)
SOUTHERN NORWAY (535)

BER	0.04	282	iPg	41	50.29	-0.1
			eSg	41	52.50	
ASK	0.15	316	iPgc	41	51.88	0.0
			iSg	41	54.82	
SUE	0.75	335	iP	42	03.34	0.2
			eS	42	14.77	
ODD1	0.77	127	iP	42	03.14	-0.2
			eS	42	14.82	
HYA	0.88	25	iP	42	05.20	-0.1
			iS	42	20.32	
BLS1	1.22	143	iP	42	11.43	0.3
			eS	42	24.89	
S.D. = 0.3		on	6 of 6 obs.			

? DEC 21, 1989 14h 49m 14.04± 4.53s
3.948 S ±46.6km 141.516 E ±13.2km
DEPTH = 46.2 ± 26.8 km
4.6mb (1 obs.)
PAPUA NEW GUINEA (202)

MNDI	3.06	136	eP	50	01.50	0.2
LAT	6.09	116	eP	50	45.00	1.2
PMG	7.80	134	eP	51	06.00	-1.7
MTN	13.55	229	e(P)	52	25.00	-0.7
QIS	16.61	186	eP	53	06.00	0.6
			eS	55	57.00	
WB5	17.30	203	eP	53	14.60	0.6
			eS	56	31.00	
ASPA	20.94	200	iPc	53	55.80	0.4
	0.7s	24.00nm				4.6mb
Z	23s	0.10um				3.1MszX
			eS	57	44.50	
			LR	02	02.50	
BRS	25.67	156	iP	54	41.00	-0.5
S.D. = 1.2		on	8 of 8 obs.			

? DEC 21, 1989 15h 16m 13.48± 3.87s
11.141 N ±13.7km 62.030 W ±53.1km
DEPTH = 33.0km (normal)
WINDWARD ISLANDS (95)
MD 3.0 (TRN).

TCE	0.52	148	eP	16	23.50	-0.9
			eS	16	31.52	
TRN	0.79	128	eP	16	27.00	-1.1
			eS	16	38.51	
TPP	1.00	145	eP	16	32.26	1.1
			eS	16	46.47	
GRW	1.08	20	eP	16	32.28	-0.1
			eS	16	45.22	
TBH	1.15	125	eP	16	34.16	0.8
			eS	16	49.15	
S.D. = 1.4		on	5 of 5 obs.			

DEC 21, 1989 16h 15m 00.36± 1.01s
6.562 S ± 6.5km 153.010 E ± 7.0km
DEPTH = 40.3 ± 10.1 km
4.2mb (4 obs.)
NEW BRITAIN REGION (192)

RAB	2.50	340	iPd	15	39.00	-0.5
			iS	16	10.00	
LAT	5.97	269	eP	16	29.00	0.3
PMG	6.45	244	eP	16	36.00	0.6
			eS	17	52.00	
HNR	7.44	113	P	16	50.00	0.8
			S	18	20.00	
CTA	14.96	205	iPd	18	36.50	5.6X

21d 16h

0.9s 13.03nm 4.2mb
OIS 19.04 222 eP 19 21.00 -1.0
DZM 20.15 141 iPc 19 33.20 -1.0
BRS 20.72 181 iPc 19 40.30 0.3
0.8s 3.00nm 3.7mb
WB5 22.43 232 eP 19 57.00 -0.2
MTN 22.44 252 e(P) 19 58.00 0.7
ASPA 25.03 225 iPc 20 22.00 -0.5
0.6s 37.00nm 5.1mb
Z 23s 0.23um 3.6MszX
LR 29 01.10
KNA 25.45 247 eP 20 26.00 -0.4
MDJ 55.13 340 eP 24 30.50 -0.5
CN2 55.98 336 Pd 24 36.60 -0.5
BJI 57.47 327 eP 24 47.00 -0.7
CHG 58.94 296 eP 24 59.00 0.5
CD2 60.04 311 P 25 06.10 0.2
HHC 60.59 325 P 25 08.00 -1.5
BTO 61.33 324 eP 25 15.40 0.9
GBA 77.64 285 Pd 26 54.40 -0.4
0.2s 0.50nm 4.2mb
KSH 84.22 311 eP 27 32.00 2.7
INK 90.02 21 eP 27 57.00 0.3
BAO 149.68 137 PKPd 34 48.50 4.9X
S.D. = 1.0 on 21 of 23 obs.

DEC 21, 1989 16h 40m 09.96± 0.31s
3.097 N ± 6.8km 96.238 E ± 4.9km
DEPTH = 21.8km (6 depth phases)
5.3mb (17 obs.)
NORTHERN SUMATERA (706)

IPM 5.00 73 ePc 41 24.80 -0.8
0.5s 50.90nm
e 42 23.50
KLM 5.40 90 eP 41 42.00 10.7X
SNG 5.95 47 eP 41 39.00 -0.1
1.6s 1426 67nm 6.4mb X
KGM 7.15 98 eP 41 57.00 1.0
NNT 10.05 20 eP 41 47.50 -48.6X
BDT 14.32 11 eP 43 35.80 2.3
LOE 15.21 20 eP 43 49.00 3.8X
CHG 15.84 9 eP 43 54.90 1.4
OIZ 20.68 39 eP 44 46.10 -5.2X
N 11s 1.00um
E 11s 1.10um
eS 48 39.00
GBA 21.31 300 P 44 59.00 1.3
TSM 21.82 86 ePc 45 05.30 2.5
HYB 22.44 311 ePc 45 10.00 0.9
SHL 22.73 350 iP 45 09.00 -3.0X
eS 49 14.00
KMI 22.78 15 Pd 45 14.00 1.5
GYA 25.29 22 P 45 36.00 -0.7
POO 26.75 307 iPc 45 52.70 2.4
LSA 26.90 350 P 45 49.80 -2.1
CD2 28.56 14 P 46 04.70 -1.8
NDI 31.23 326 eP 46 29.00 -1.3
WHN 32.23 30 eP 46 40.50 1.5
GTA 36.29 5 eP 47 11.20 -2.8
TIY 37.52 21 eP 47 28.50 4.3X
OUE 38.65 317 eP 47 33.50 -0.6
BTO 39.35 17 eP 47 42.40 2.7X
HHC 40.05 18 eP 47 45.80 0.4
BJI 40.97 24 eP 47 51.00 -1.8
WMQ 41.25 351 P 47 54.00 -1.2
WB5 43.85 123 iPc 48 15.60 -1.1
ASPA 45.30 128 iPc 48 28.60 0.2
MAIO 47.31 319 eP 48 44.00 -0.1
CTA 54.21 117 eP 49 36.00 -0.7
KER 55.20 310 eP 49 42.00 -1.9
BHD 56.91 308 ePc 49 57.00 1.0
TAB 57.28 314 eP 49 58.00 -0.8
MSL 58.96 311 ePc 50 10.00 -0.3
BWA 61.58 132 eP 50 28.30 0.0
BRS 62.29 123 iPc 50 32.80 -0.4
CAN 62.40 133 eP 50 32.90 -0.9
DSI 63.70 304 eP 50 43.00 0.6
PRNI 63.75 302 eP 50 42.50 -0.3
HRI 63.81 306 eP 50 44.00 0.7
LWI 67.62 266 ePc 51 09.10 0.9
BBTK 67.82 312 iPd 51 09.00 0.1
ELL 69.27 308 eP 51 17.00 -0.9
YLV 70.51 312 iP 51 24.40 -1.0
VRI 73.59 317 ePc 51 43.50 0.0
MLR 74.04 316 ePc 51 46.00 -0.3
CMP 74.62 316 ePd 51 49.00 -0.5
PAIG 74.67 310 iPc 51 54.40 4.6X
e 52 06.70 42kmX
KNT 75.44 312 iPd 51 53.30 -1.0
eS 52 05.60
LIT 75.59 311 iPc 51 53.30 -1.9
VAY 75.71 312 eP 51 54.40 -1.4
GRG 75.78 311 eP 51 54.80 -1.5
eS 52 08.40
OHR 77.01 311 eP 52 01.20 -1.9
BZS 77.05 316 eP 52 03.50 0.3
e 01 11.00
BCAO 77.52 274 iPc 52 07.00 0.6
1.0s 40.00nm 5.4mb
i 52 13.50 21km
SUF 78.21 334 ePc 52 28.40 19.2X
0.8s 5.70nm
SPC 78.52 319 eP 52 10.30 -1.2
KRA 78.84 320 eP 52 13.00 0.0
SOD 79.39 338 iP 52 15.20 -0.4
SRO 79.60 318 iP 52 17.90 0.8
ROI 80.07 309 P 52 18.70 -1.2
TDS 80.25 310 P 52 22.00 1.2
CSI 80.30 310 P 52 22.00 0.9
CZI 80.38 309 P 52 21.60 0.1
ZST 80.46 318 iP 52 22.00 0.3
MMN 80.54 310 P 52 22.60 0.3
MGR 80.89 310 Pc 52 23.40 -0.8
PTJ 81.02 316 eP 52 24.50 -0.3
KSP 81.26 321 eP 52 26.20 0.3
1.0s 19.00nm 5.1mb
e 52 33.50 23km
VBY 81.48 315 eP 52 28.00 0.9
LJU 82.02 316 eP 52 30.00 0.1
PRU 82.30 320 eP 52 31.50 0.2
e 52 39.10 24km
VOY 82.46 316 eP 52 32.00 -0.4
e 52 38.20 20km
BRG 82.74 321 eP 52 33.80 0.2
1.4s 25.00nm 5.1mb
e 52 41.00 23km
KHC 82.86 319 P 52 34.30 0.0
KBA 82.90 317 eP 52 33.50 -1.2
0.8s 7.10nm 4.9mb
e 52 40.00 21km
CLL 83.36 321 e(P) 52 43.00 6.3X
1.2s 20.00nm 5.2mb
HFS 83.61 330 eP 52 38.20 0.4
0.6s 2.00nm 4.5mb
SFI 83.82 314 P 52 41.30 2.1
CTI 84.02 316 P 52 40.90 0.5
NB2 84.89 331 PKP 52 45.90 1.6
1.0s 4.00nm 4.6mb
SBF 87.01 314 eP 52 55.90 0.7
0.8s 18.80nm 5.4mb
LPG 87.45 315 eP 52 58.40 0.8
0.8s 40.20nm 5.7mb
HAU 87.65 318 eP 52 58.10 0.0
0.8s 16.10nm 5.4mb
LBF 89.30 317 eP 53 06.70 0.6
1.0s 12.00nm 5.1mb
LOR 89.37 317 eP 53 07.30 1.0
1.0s 18.00nm 5.3mb
SMF 89.42 316 eP 53 07.20 0.6
0.8s 12.00nm 5.2mb
BGF 90.11 316 eP 53 10.30 0.5
1 0s 37.60nm 5.6mb
MAF 90.33 316 eP 53 11.30 0.4
0.8s 18.80nm 5.4mb
MFF 92.16 317 eP 53 19.80 0.6
0.8s 18.80nm 5.6mb
EKA 92.82 326 P 53 26.00 4.0X
2.2s 94.90nm 5.8mb
PFH 106.62 69 PKP 58 21.00 -15.0X
EDM 118.64 20 iPKPd 59 09.60 11.7X
1.0s 219.00nm
FFC 120.43 12 ePKP 59 13.00 11.8X
SES 121.79 20 ePKPc 59 01.00 -3.0X
0.8s 100.00nm
pP 00 28.00
TNP 128.64 34 e(PKP) 59 21.00 3.1X
CNCB 159.36 228 ePKP 00 17.00 7.6X
LPB 159.62 228 (PKP) 00 19.00 9.5X
ZOBO 159.80 229 PKP 00 10.00 0.0
S.D. = 1.1 on 82 of 100 obs.

DEC 21, 1989 16h 49m 13.15± 0.12s
45.364 N ± 2.8km 150.108 E ± 2.4km
DEPTH = 43.2km (geophysicist)
5.9mb (73 obs.) 5.8Msz (21 obs.)
KURIL ISLANDS (221)
Felt (IV) at Kurilsk, Kitovyy and Gornyy; (III) at Mys Von-Der-Lind. Depth from broadband displacement seismograms.
FAULT PLANE SOLUTION: P-Woves
NP1:Strike= 10 Dip=65 Slip= 90
NP2: 190 25 90
Principol Axes:
T Plg=70 Azm=280
P 20 100
Comment: The focol mechonism is poorly controlled and corresponds to reverse faulting. The preferred foult plane is NP2.
RADIATED ENERGY
No. of sta: 9 Focol mech. F
Energy 9.6±2.5*10**12 Nm
MOMENT TENSOR SOLUTION
Dep 32 No. of sto: 17
Moment Tensor; Scale 10**17 Nm
Mrr= 3.88 Mtt= 1.20
Mff=-5.08 Mrt=-2.76
Mrf= 5.56 Mtf=-1.15
Principal axes:
T Val= 7.88 Plg=56 Azm=224
N -0.13 21 348
P -7.75 26 89
Best Double Couple:Mo=7.8*10**17
NP1:Strike=217 Dip=27 Slip= 143
NP2: 342 74 68
CENTROID, MOMENT TENSOR (HRV)
Data Used: GDSN
L.P.B.: 12S, 31C
Centroid Location:
Origin Time 16:49:17.1 0.2
Lat 45.29N 0.03 Lon 150.45E 0.04
Dep 38.5 2.3 Half-duration 4 0
Mament Tensor; Scale 10**18 Nm
Mrr= 1.08 0.03 Mtt=-0.38 0.04
Mff=-0.70 0.04 Mrt= 0.00 0.07
Mrf= 0.67 0.08 Mtf=-0.64 0.04
Principal Axes:
T Val= 1.34 Plg=68 Azm=250
N -0.01 17 30
P -1.32 13 124
Best Double Couple:Mo=1.3*10**18
NP1:Strike=236 Dip=35 Slip= 120
NP2: 20 60 70

KUSJ 4.49 242 P 50 18.50 -2.0
S 51 09.50
YSS 5.39 290 iPc 50 35.00 1.8
eS 51 34.00
ASAJ 5.46 259 P 50 37.00 2.8X
HOOJ 5.76 241 P 50 38.20 -0.1
S 51 44.30
SAP 6.71 253 eP 50 54.00 2.3
eS 52 10.00
MRRJ 7.16 249 P 50 57.80 -0.1
eS 52 18.50
PET 9.48 33 eP 51 32.00 2.1
eS 53 21.00
MAT 12.58 230 iPc 52 08.00 -4.1X
0.8s 250.00nm 6.3mb
eS 54 41.00
MDJ 14.54 274 Pc 52 38.50 0.8
Z 20s 66.40um 4.6Msz
E 15s 23.80um
S 55 15.00
SS 55 32.00
SHK 17.16 237 ePc 53 10.00 -1.2
SMY 17.32 56 P 53 16.80 3.8X
CN2 17.62 274 Pc 53 15.00 -1.9
0.8s 0.20nm 2.3mb X
Z 16s 47.20um 4.8Msz
E 16s 27.60um
isP 53 36.00
iS 56 32.00
iSS 56 56.00
ScS 05 04.00
SNY 19.50 269 iPc 53 39.40 -0.1
1.4s 1.30nm 3.0mb X
Z 20s 21.30um 4.1Msz

N 13s 9.60um
E 14s 13.50um
PP 53 59.00
S 57 09.50
HIA 20.88 292 ePc 53 49.93 -3.9X
DL2 22.01 263 iPc 54 06.00 0.8
1.6s 2.10nm 3.3mb X
Z 32s 17.90um 5.3MszX
E 14s 6.30um
S 58 01.00
ADK 22.76 61 P 54 13.00 0.6
1.1s 500.00nm 5.9mb
BJI 25.38 270 iPc 54 38.46 0.7
eS 59 06.41
esS 59 20.32
TIA 26.44 261 Pc 54 47.30 -0.4
Z 34s 13.40um 5.3MszX
N 17s 6.30um
E 17s 9.70um
S 59 16.50
SSE 26.64 248 iPc 54 49.80 0.3
1.0s 704.00nm 6.2mb
Z 20s 14.70um 5.5Msz
N 16s 7.60um
E 16s 9.30um
pP 55 06.00 69kmX
PcP 58 13.20
S 59 20.00
sS 59 44.00
SS 00 36.00
NJ2 27.58 252 Pc 54 58.50 0.4
N 17s 7.30um
E 18s 14.90um
S 59 38.00
ILT 27.79 25 iPd 54 59.00 -0.6
iS 59 06.00
TIK 28.24 346 iPc 55 01.20 -2.4
eS 00 06.00
HHC 28.31 275 Pc 55 04.80 0.1
Z 16s 43.60um 6.1MszX
N 15s 10.60um
E 15s 21.10um
S 59 48.00
TIY 29.01 268 iPc 55 11.20 0.2
1.0s 0.30nm 2.9mb X
E 16s 10.30um
S 00 01.00
sS 00 19.00
BTO 29.49 275 iPc 55 10.00 -5.4X
N 15s 12.00um
E 15s 18.00um
PP 56 11.00
S 00 05.00
IRK 30.51 300 eP 55 21.00 -3.1X
eS 00 00.00
WHN 31.55 254 iPc 55 32.70 -0.7
0.7s 0.53nm 3.5mb X
Z 20s 8.78um 5.4Msz
N 21s 6.67um
E 15s 7.44um
pP 55 52.00 83kmX
ePcP 58 27.00
S 00 28.00
isS 01 02.00
GUMO 31.98 190 eP 55 37.50 0.2
eS 00 39.00
QZH 32.54 242 Pc 55 43.00 0.9
4.0s 2.70nm 3.5mb X
Z 30s 8.60um 5.3MszX
N 16s 2.90um
E 16s 3.50um
pP 55 55.00 45kmX
S 00 52.00
XAN 33.31 265 iPc 55 47.60 -1.2
5.0s 1.43nm 3.1mb X
N 14s 6.50um
E 15s 6.20um
pP 56 00.00 47kmX
LZH 35.84 272 ePc 56 10.96 0.3
Z 28s 19.60um 5.7MszX
N 15s 7.00um
E 20s 6.30um
epP 56 25.69 57kmX
ePP 57 35.12
eS 01 44.29
eScP 02 11.93
SS 04 16.00
GTA 37.12 279 Pc 56 21.60 0.3
6.0s 2.10nm 3.2mb X
Z 17s 11.70um 5.7MszX
E 14s 8.90um
PP 57 48.00
PcP 58 41.60
S 02 00.00
PcS 02 30.60
GZH 37.19 246 Pc 56 22.00 0.1
6.0s 2.30nm 3.3mb X
Z 18s 8.90um 5.6Msz
N 17s 9.60um
E 14s 4.90um
PP 57 54.00
S 02 06.00
HKC 37.23 244 iP 56 22.90 0.7
eS 02 08.00
MCO 37.75 244 iP 56 28.00 1.4
BAG 38.01 230 eP 56 27.50 -1.5
eS 02 17.00
PMR 38.04 43 P 56 40.00 11.4X
Z 21s 7.81um 5.5Msz
CD2 38.67 264 iPc 56 34.00 -0.3
Z 32s 7.17um 5.3MszX
N 15s 7.63um
pP 56 47.00 49kmX
PP 58 06.00
S 02 26.50
OCP 39.22 228 eP 56 38.00 -0.9
GYA 39.36 256 iPc 56 40.00 -0.2
3.0s 2.70nm 3.5mb X
Z 36s 5.10um 5.1MszX
N 18s 4.30um
E 18s 6.00um
PP 58 16.00
PcP 58 48.00
S 02 37.00
ScS 06 43.40
QIZ 42.37 245 iPc 57 06.50 1.7
N 22s 9.70um
E 24s 6.60um
pP 57 23.00 66kmX
S 03 21.50
sS 03 47.00
SS 06 30.00
KMI 42.92 258 P+ 57 11.00 1.4
3.0s 3.20nm 3.5mb X
N 18s 5.30um
pP 57 22.00 39kmX
PP 58 51.50
S 03 24.50
sS 03 52.50
WMQ 43.48 291 iPc 57 14.86 1.2
Z 16s 18.70um 6.1MszX
N 15s 6.80um
E 14s 10.80um
epPd 57 28.27 50kmX
ePP 59 02.54
eS 03 41.47
eSS 07 03.75
DAV 43.66 217 eP 57 15.00 -0.3
SIT 45.85 47 P 57 49.00 16.6X
MBC 46.60 19 eP 57 32.00 -6.1X
1.0s 142.00nm 5.9mb
LSA 48.25 272 iP 57 54.20 2.0
5.0s 0.50nm 2.8mb X
Z 16s 3.00um 5.4MszX
N 15s 21.00um
E 16s 2.30um
PP 59 46.50
PcS 03 16.00
S 04 50.00
SS 08 04.00
JAY 48.40 193 ePc 57 53.50 0.6
HON 48.54 102 P 58 00.00 6.1X
Z 19s 5.63um 5.6Msz
LOE 48.86 251 eP 57 55.00 -1.4
e 59 20.00 429kmX
KKM 48.99 227 ePd 57 57.00 -0.5
MNI 49.07 214 eP 57 56.50 -1.6
TSM 49.62 224 ePc 58 02.10 -0.1
CHG 49.75 255 iPc 58 03.10 -0.2
1.0s 192.50nm 6.1mb
eS 05 12.00
SHL 50.23 267 iP 58 06.00 -1.1
eS 05 10.00
BDT 50.80 254 eP 58 11.20 -0.1
0.7s 60.20nm 5.7mb
NST 51.16 251 eP 58 15.50 1.5
FRU 52.39 296 iP 58 24.00 0.9
eS 05 44.00
KSH 53.26 292 iPd 58 30.60 0.9
Z 20s 23.10um 6.2Msz
N 15s 12.90um
pP 58 44.00 49kmX
KBS 53.55 351 eP 58 32.40 1.3
NNT 53.66 249 iPd 58 32.00 -0.7
PMG 54.58 184 eP 58 39.00 -0.3
HNR 55.26 168 eP 58 46.00 1.7
eS 06 22.00
GMW 56.92 54 P 58 57.40 1.4
SNG 57.15 244 eP 58 57.80 -0.1
0.9s 97.48nm 5.8mb
eS 07 15.20
RMW 57.53 54 P 59 01.40 1.0
APA 57.80 336 eP 59 01.30 -0.6
eS 06 53.30
LON 57.92 54 ePc 59 03.45 0.4
e 03 23.15
KEV 57.94 340 eP 59 05.00 2.2
NDI 58.61 280 iPc 59 07.00 -1.1
1.0s 480.00nm 6.6mb
eS 07 07.00
IPM 58.90 242 ePc 59 09.90 -0.3
1.0s 131.60nm 6.0mb
KGM 59.52 238 ePd 59 14.90 0.4
1.0s 864.80nm 6.8mb
e 59 16.20 4kmX
SOD 59.77 338 iP 59 13.70 -1.9
TRO 59.88 342 eP 59 16.70 0.4
FHC 60.01 61 eP 59 18.00 0.3
MTN 60.43 201 eP 59 19.00 -1.5
LBFM 60.97 59 P 59 25.00 0.6
LTCM 61.51 61 P 59 27.50 -0.3
KHKI 61.81 219 ePd 59 27.90 -2.0
e 03 33.50
ORV 62.28 61 eP 59 31.80 -1.2
e 00 44.20 328kmX
BKS 62.84 63 iPc 59 37.20 0.5
1.0s 43.00nm 5.5mb
i 59 48.70 39kmX
eS 08 20.00
eLQ 15 30.00
FFC 63.13 38 eP 59 36.00 -2.4
1.0s 188.00nm 6.2mb
SUF 63.39 335 eP 59 37.50 -2.4
GCC 63.51 63 eP 59 39.50 -1.6
MHC 63.54 63 eP 59 39.60 -1.9
ARN 63.61 63 P 59 41.60 -0.2
CMB 63.90 62 ePc 59 44.00 0.3
epPd 59 55.75 40kmX
iS 08 18.40
esS 08 37.27
eSKS 09 32.50
eScS 09 32.56
eP'P' 28 29.50
LLA 64.43 63 eP 59 46.50 -0.7
KVN 64.67 59 P 59 48.90 0.0
QUE 64.69 288 eP 59 48.00 -1.1
HYB 64.92 270 iPc 59 49.00 -1.5
1.0s 290.00nm 6.3mb
FRI 64.97 62 eP 59 49.60 -1.0
CTA 65.23 184 iPd+ 59 50.90 -1.4
1.1s 86.08nm 5.7mb
iS 08 30.00
OBN 65.24 325 iPc 59 49.80 -2.3
1.5s 105.00nm 5.7mb
Z 18s 11.40um 6.1Msz
iS 08 20.00
NUR 65.55 334 iP 59 52.00 -1.9
0.6s 30.00nm 5.5mb
PTI 65.61 53 P 59 55.80 0.9
MAIO 65.67 298 iPc+ 59 54.80 -0.5
eS 08 40.00
TNP 65.82 60 P 59 56.20 -0.1
1.0s 135.00nm 6.0mb
BCH 65.87 64 P 59 57.00 0.4
QIS 66.30 191 iPc 59 57.20 -1.9
1.3s 267.00nm 6.1mb
SYP 66.36 64 eP 00 01.00 1.3
WB5 66.49 196 iPc 59 58.30 -2.1
ISA 66.58 63 eP 00 00.00 -1.0
FRB 67.02 18 ePc 00 01.40 -1.9
0.6s 55.00nm 5.8mb

21d 17h

CLC	67.03	62	eP	00	03.00	-0.9	SPC	76.19	329	iP	00	58.50	0.1	PGB	80.09	323	iPc	01	20.00	0.2
DUG	67.08	56	P	00	03.30	-1.0	BMR	76.20	326	ePc	01	03.00	4.7X	BNT	80.19	319	iP	01	20.90	0.6
BW06	67.25	52	P	00	02.00	-3.4X	VRI	76.33	323	ePd	00	59.50	0.4	EDC	80.22	319	iP	01	21.00	0.6
POO	67.48	274	iPc	00	06.30	-0.6	EBH	76.35	345	iPd	00	58.60	-0.4	PLD	80.22	322	iPc	01	21.00	0.6
	0.9s	275.63nm			6.3mb			0.7s	76.00nm			5.8mb		ETA	80.22	346	iPd	01	21.50	1.3
			iS	09	00.00		EAB	76.56	346	iPd	00	59.90	-0.3		1.0s	220.00nm			6.1mb	
SBB	67.61	63	eP	00	07.00	-0.6	CEI	76.59	327	eP	01	02.00	1.5	KDZ	80.28	321	iP	01	22.00	1.3
PAS	67.75	64	ePc	00	08.42	0.1	KAS	76.61	316	eP	01	02.00	1.2	WLF	80.29	337	P	01	20.30	-0.3
			epPd	00	20.17	39kmX	EBL	76.72	345	eP	01	00.70	-0.4				e	04	18.80	
			esP	00	40.00			0.6s	28.00nm			5.4mb		DOU	80.31	338	P	01	20.20	-0.5
			ePP	01	46.00		CLL	76.82	334	iPc	01	00.90	-0.8				e	04	14.60	
			eLg	09	05.00			1.3s	220.00nm			6.0mb		CAN	80.32	181	eP	01	21.20	0.4
			eLR	10	10.00		Z	19s	6.50um			6.0Msz		COOL	80.32	205	eP	01	20.00	-0.9
MWC	67.77	63	eP	00	09.00	0.3	BHD	76.87	304	ePd	01	04.50	2.3	KBA	80.40	332	eP	01	21.50	0.0
DAU	67.84	55	P	00	08.20	-1.1				eS	10	49.50			0.8s	117.00nm			5.9mb	
GSC	67.86	62	eP	00	09.00	-0.1				ePS	11	37.00					id	01	22.20	2kmX
BOM	67.97	275	eP	00	07.40	-2.5	BRG	76.91	333	iP	01	01.80	-0.4				i	01	47.30	
			eS	09	05.90			1.3s	115.00nm			5.7mb					iPP	04	39.70	
UPP	68.16	336	iP	00	09.80	-0.7	Z	20s	10.00um			6.1Msz					i	04	49.90	
GBA	68.29	267	P	00	11.00	-0.9	N	20s	8.50um								e	05	03.00	
RVR	68.35	63	eP	00	12.00	-0.1	E	20s	3.00um					DST	80.45	318	iP	01	21.50	-0.2
PEC	68.55	63	P	00	13.00	-0.4				e	04	15.00		MRWA	80.45	210	eP	01	21.00	-0.6
MSU	68.56	57	P	00	13.60	0.0	MLR	76.96	323	ePd	01	03.00	0.2	PTJ	80.52	329	eP	01	21.70	-0.3
DZM	68.74	164	iPc	00	15.90	1.3	EKA	77.16	345	P	01	03.00	-0.5	RZN	80.56	322	iPc	01	23.00	0.6
NB2	68.84	340	P	00	12.40	-2.3		0.8s	50.10nm			5.6mb		ZAG	80.58	329	iPd	01	22.20	0.0
	0.8s	33.10nm			5.4mb		ESK	77.18	345	iPd	01	04.80	1.2	ADE	80.62	189	eP	01	22.00	-0.4
AKU	68.91	355	iP	00	15.90	0.9		1.0s	80.00nm			5.7mb			1.1s	88.61nm			5.6mb	
	1.5s	211.11nm			5.9mb		WIT	77.30	338	eP	01	03.50	-0.8	RDO	80.63	321	eP	01	22.70	0.1
HFS	69.00	338	eP	00	13.90	-1.7	PSZ	77.37	328	iP	01	05.00	0.1	ELF	80.67	35	P	01	23.00	0.3
	1.1s	69.00nm			5.6mb		PSN	77.43	321	iPd	01	06.00	0.8	ECP	80.75	346	iPd	01	23.20	0.2
PLM	69.09	63	eP	00	16.00	-0.9	PRU	77.48	332	Pc	01	05.50	0.1		0.7s	362.00nm			6.4mb	
TPC	69.11	62	eP	00	15.00	-1.8		1.4s	148.00nm			5.8mb		FVM	80.76	44	P	01	23.00	-0.3
RSON	69.43	37	P	00	17.40	-1.0	Z	18s	7.10um			6.0Msz		LDN	80.85	35	P	01	23.45	-0.2
	1.3s	319.26nm			6.1mb		N	21s	6.60um					LDN	80.85	35	P	01	23.90	0.2
Z	21s	2.07um			5.3Msz		E	19s	4.60um					LJU	80.90	330	eP	01	21.50	-2.4
BAR	69.65	64	eP	00	20.00	-0.1				e	04	04.20		FVI	81.02	332	P	01	25.00	0.5
HYA	69.87	342	eP	00	21.80	0.9	CMP	77.52	324	ePc	01	06.00	0.3	KHL	81.04	317	iP	01	24.00	-0.9
ASPA	70.27	196	iPc	00	23.20	-0.6	WTS	78.00	338	ePc	01	07.00	-1.1	MMB	81.07	322	iPc	01	25.00	0.1
	1.0s	95.00nm			5.7mb			1.1s	190.00nm			6.0mb		CDF	81.11	336	iPc	01	25.10	0.0
			eS	09	26.00					i	01	25.60	68kmX		1.2s	178.50nm			5.9mb	
GLA	70.57	63	eP	00	25.00	-0.7				e	04	04.00		VBY	81.11	330	iPd	01	25.10	0.1
ASK	70.70	342	eP	00	26.90	0.9	SRO	78.04	329	iP	01	09.00	0.6	KKB	81.11	323	iPc	01	26.00	0.9
BER	70.76	342	eP	00	27.10	0.7		1.4s	534.00nm			6.4mb		VOY	81.13	331	iP	01	24.10	-1.1
TEH	71.01	302	ePc	00	30.50	2.0	BUD	78.06	328	eP	01	08.10	-0.4	BCK	81.19	316	iP	01	26.40	0.7
GOL	71.65	52	P	00	32.50	0.1	ZST	78.15	330	iP	01	09.60	0.6	CEY	81.20	330	eP	01	25.00	-0.5
	1.1s	141.03nm			5.8mb					i	04	33.30		EZN	81.34	320	iP	01	25.70	-0.6
Z	21s	1.98um			5.4Msz		ANTO	78.24	316	ePc	01	10.38	0.6	FAM	81.36	312	eP	01	27.50	1.0
MBL	71.71	210	eP	00	31.00	-1.5	BBTK	78.28	316	iPc	01	11.00	0.9	PLE	81.41	326	eP	01	27.00	0.2
TAB	72.37	306	iP+	00	38.00	1.4	DHR	78.29	295	eP	01	11.00	0.8	TRI	81.46	331	iP	01	25.50	-1.3
BRS	72.45	178	iP	00	37.00	0.2	VKA	78.37	330	eP	01	10.00	-0.3	BAL	81.48	209	eP	01	27.00	0.0
			i	00	49.50	43kmX		1.5s	280.00nm			6.0mb		SRS	81.51	322	eP	01	26.00	-1.2
SIM	73.74	318	eP	00	44.00	-0.3	KHC	78 54	333	iPc	01	11.50	0.3	RIY	81.56	330	eP	01	26.20	-1.1
Z	24s	6.00um			5.8MszX			1.2s	225.00nm			6.0mb		IVA	81.59	325	eP	01	28.00	0.3
			eS	10	08.00		Z	22s	8.30um			6.0Msz		UYO	81.64	49	iPd	01	27.30	-0.7
ANMO	74.35	56	ePc	00	49.10	0.9	N	22s	5.10um					RYD	81.65	297	iPc	01	28.50	0.3
			epPd	01	00.86	39kmX	E	20s	4.20um					VVI	81.67	332	P	01	27.40	-0.6
WARB	74.35	202	iPc	00	47.90	0.0				e	04	25.70		SKO	81.72	324	iPc	01	28.50	0.2
	0.7s	82.00nm			5.8mb		SOP	78.78	330	iP	01	14.00	1.5		1.4s	586.00nm			6.4mb	
KER	74.51	303	iPd	00	49.60	0.5	HRT	79.00	318	eP	01	13.00	-0.9	Z	19s	1.01um			5.2Msz	
SLY	74.57	305	iPd	00	49.50	0.3	PVL	79.05	322	eP	01	15.00	0.9	N	18s	8.23um				
			iPcP	01	04.00		ITU	79.08	319	iPc	01	11.00	-3.3X	E	18s	5.42um				
			eS	10	21.00		ISK	79.10	319	eP	01	08.00	-6.3X				i(pP)	01	34.20	18kmX
			eScS	10	41.50		JMB	79.11	321	iPc	01	15.00	0.6				iPcP	01	44.00	
NANU	74.57	213	iPd	00	48.90	-0.3	GPA	79.12	317	eP	01	14.00	-0.6				eS	12	01.00	
IAS	74.93	323	eP	00	52.00	0.9	GBZT	79.13	318	eP	01	14.80	0.2				LR	41	28.00	
MSL	75.35	307	ePd	00	55.00	1.3	KMR	79.29	332	iP+	01	15.00	-0.3	CSS	81.74	312	eP	01	29.00	0.5
			ePcP	01	09.50		CTT	79.32	319	iP	01	15.30	-0.3	HAU	81.74	336	eP	01	28.30	0.0
			eS	10	33.00		YLV	79.34	318	iP	01	16.40	0.6		1.2s	121.30nm			5.8mb	
SCH	75.40	21	ePd	00	53.20	-0.5	ENN	79.35	338	iPc	01	15.40	-0.1	HRI	81.75	310	iPc	01	30.00	1.3
	1.0s	89.00nm			5.7mb			1.1s	297.00nm			6.2mb		BSF	81.77	336	eP	01	28.40	-0.2
EDR	75.54	345	ePd	00	53.80	-0.6				e	01	33.50	66kmX		1.2s	91.60nm			5.7mb	
CLI	75.55	323	iPc	00	54.50	-0.2				e	04	12.00		KNT	81.77	323	iPd	01	28.60	0.0
KRA	75.58	329	iPd	00	54.80	0.1	BWA	79.43	181	eP	01	16.90	0.8	VAY	81.78	323	iPc	01	28.60	0.0
	1.2s	241.00nm			6.0mb		MEM	79.47	338	iP	01	16.03	-0.1		1.3s	0.63nm			3.5mb	X
Z	19s	7.00um			6.0Msz		TUL	79.60	49	eP+	01	16.90	-0.3	PRK	81.83	319	eP	01	29.00	0.1
E	19s	6.80um						1.2s	109 10nm			5.7mb		SOH	81.86	322	iPd	01	28.50	-0.5
			i	00	55.90	4kmX	Z	21s	3.42um			5.7Msz		CTI	81.87	332	Pd	01	28.10	-1.0
			eS	10	26.00					eS	11	17.50		PTN	81.93	31	P	01	28.70	-0.6
KVT	75.70	315	iP	00	56.30	0.6				LR	28	00.00		OUR	81.98	321	eP	01	29.70	0.1
UZH	75.88	327	iPc	00	58.00	1.6	DLE	79.71	346	eP	01	17.50	0.0	CLE	81.99	37	iP	01	32.40	2.7X
			eS	10	20.00			0.6s	180.00nm			6.2mb		KLB	82.04	207	eP	01	29.00	-0.8
KSP	76.17	332	iPc	00	57.60	-0.5	BEO	79.74	326	iP	01	17.50	-0.3	IZM	82.05	318	eP	01	29.70	-0.4
	1.3s	185.00nm			5.9mb		DCN	79.78	346	eP	01	18.60	0.8	ELL	82.09	316	eP	01	30.40	0.0
			i	04	16.20			1.0s	290.00nm			6.2mb		PMO	82.10	121	iP	01	32.90	2.4
			e	06	48.00		YRH	79.81	345	eP	01	17.90	-0.1		1.2s	80.00nm			5.6mb	
ELO	76.18	345	ePc	00	56.60	-1.5		1.4s	606.00nm			6.4mb		BRY	82.11	326	eP	01	29.50	-0.9
	0.7s	67.00nm			5.7mb		DIM	79.91	321	iP	01	20.00	1.3	RSNY	82.12	30	eP	01	28.50	-1.8

CBM	82.13 25 eP	01 30.00	-0.3	SDI	84.92 329 P	01 44.10	-0.6
GRG	82.15 323 eP	01 30.20	-0.4	AYN	84.95 307 eP	01 46.50	1.6
OLY	82.17 46 P	01 30.40	-0.3	HRV	84.95 30 eP	01 43.09	-1.6
PLG	82.18 322 eP	01 30.50	-0.2	IMI	84.98 334 P	01 44.42	-0.6
TTG	82.22 326 eP	01 30.00	-0.8	RSCP	85.00 43 P	01 45.00	-0.2
DHN	82.22 34 eP	01 30.30	-0.6		1.4s 178.78nm	6.0mb	
TPT	82.25 120 iP	01 33.70	2.4		Z 21s 1.85um	5.4Msz	
	1.2s 90.00nm	5.7mb		SBF	85.17 334 iPc	01 46.80	0.9
PPCY	82.31 313 eP	01 31.50	0.1	TBR	85.19 32 eP	01 45.30	-0.6
VAH	82.44 120 iP	01 34.50	2.2	VLS	85.24 322 eP	01 45.90	-0.4
	1.2s 55.00nm	5.5mb		RDP	85.28 329 P	01 44.60	-1.9
PAIG	82.45 321 eP	01 31.40	-0.7	SGO	85.36 327 P	01 46.70	-0.1
HCY	82.51 326 eP	01 31.50	-0.8	PNJ	85.41 32 iP	01 47.70	0.6
BDV	82.52 326 eP	01 31.50	-0.9	VLI	85.42 320 eP	01 45.50	-1.7
RUV	82.56 120 iP	01 35.30	2.5	ITM	85.49 321 eP	01 46.50	-1.1
	1.2s 80.00nm	5.6mb		RJF	85.54 338 eP	01 48.60	0.9
OASM	82.57 300 eP	01 34.00	1.0		1.0s 125.00nm	6.1mb	
YER	82.58 317 iP	01 33.00	0.1	GBTN	85.59 42 P	01 48.10	0.0
ULC	82.62 325 eP	01 32.20	-0.8	MGR	85.63 327 P	01 46.50	-1.7
HVAR	82.67 328 iPd	01 32.00	-1.2	CSI	85.65 326 P	01 48.60	0.2
SALJ	82.74 309 Pd	01 34.30	0.5	MMN	85.67 326 P	01 48.50	0.1
KSL	82.74 315 eP	01 33.00	-0.7	FRF	85.69 334 eP	01 49.60	1.2
FLN	82.80 341 iPc	01 33.90	0.2		1.3s 219.50nm	6.2mb	
	1.2s 325.40nm	6.3mb		ROI	85.72 326 P	01 49.00	0.3
HBVT	82.80 30 eP	01 33.50	-0.3	TDS	85.74 326 P	01 47.70	-1.0
LDF	82.87 341 iPc	01 34.30	0.2	CAF	85.74 338 iPc	01 50.00	1.3
VAI	82.95 334 Pd	01 34.30	-0.2		1.0s 125.00nm	6.1mb	
KZN	82.96 323 eP	01 34.30	-0.5	NAV	85.78 38 P	01 49.20	0.2
OUTJ	83.10 308 Pd	01 36.30	0.6	LRG	85.87 334 eP	01 50.00	0.7
LOR	83.10 338 iPc	01 35.40	0.0		1.2s 232.40nm	6.3mb	
	1.0s 125.00nm	5.9mb		VAM	85.91 318 eP	01 48.30	-1.4
PPN	83.15 123 iP	01 37.90	2.0	LMR	85.93 334 eP	01 50.10	0.5
	1.2s 80.00nm	5.7mb			1.3s 223.80nm	6.2mb	
NEO	83.16 321 eP	01 35.00	-0.8	KRP	86.02 160 P	01 51.20	1.4
BNH	83.22 28 eP	01 36.20	0.2	BLA	86.03 38 P	01 50.30	0.0
GRR	83.24 341 iPc	01 36.50	0.5		1.0s 65.00nm	5.8mb	
DSI	83.24 309 iP	01 32.00	-4.3X	LFF	86.08 339 iPc	01 51.20	0.9
LBF	83.33 337 iPc	01 36.50	-0.1		1.0s 125.00nm	6.1mb	
SSF	83.39 338 iPc	01 37.00	0.2	KMSA	86.14 295 iPc	01 51.50	0.4
AOI	83.39 330 eP	01 36.10	-0.8	CZI	86.20 326 P	01 49.40	-1.6
ORX	83.41 334 P	01 35.60	-1.5	LPO	86.20 338 iPc	01 52.00	1.0
RSM	83.47 331 Pd	01 38.20	1.0		1.0s 125.00nm	6.1mb	
LPF	83.61 341 iPc	01 38.50	0.6	CVL	86.22 36 P	01 51.70	0.6
ARV	83.67 330 Pd	01 38.40	0.1	NA2	86.39 36 P	01 52.40	0.5
AVF	83.68 338 iPc	01 38.40	0.1	KOT	86.44 310 eP	01 53.20	0.9
SFI	83.68 331 P	01 39.60	1.3	CBN	86.48 36 eP	01 53.50	1.1
SMF	83.68 337 iPc	01 38.40	0.1	HLW	86.76 310 eP	01 56.00	2.1
BOB	83.72 333 Pd	01 39.00	0.3		eS	12 32.00	
PGD	83.76 331 P	01 40.20	1.2	EPF	87.96 338 iPc	02 00.10	0.5
AGG	83.78 322 eP	01 37.80	-1.2		1.2s 80.30nm	5.9mb	
LSD	83.81 335 P	01 39.71	0.4	JSC	88.10 40 P	02 00.10	-0.2
MME	83.82 332 Pd	01 40.30	0.9	LVI	88.73 328 P	02 03.70	0.5
CIO	83.87 330 eP	01 39.08	-0.3	SGS	89.35 40 P	02 07.40	1.1
LPG	83.90 335 iPc	01 40.50	0.7	AMAN	90.49 306 iPd	02 13.50	1.8
	1.0s 125.00nm	5.9mb		PPM	90.66 62 (P)	02 14.50	1.3
BDI	83.98 332 P	01 40.00	0.1	AKSR	90.67 305 iPd	02 15.00	2.5
FIR	84.01 331 eP	01 41.00	1.0	AGRW	90.78 305 iPd	02 14.50	1.5
BGF	84.03 338 iPc	01 41.00	0.9	AKRL	90.83 305 iPd	02 15.50	2.2
ATH	84.03 320 eP	01 39.80	-0.4	AGMR	91.02 306 iPd	02 16.00	1.9
RSP	84.06 335 P	01 39.40	-1.0	IISM	91.49 61 (P)	02 18.00	1.6
ALP	84.07 329 eP	01 40.48	-0.1	TOL	92.02 340 eP	02 18.50	-0.1
ASS	84.15 330 P	01 41.50	0.7	OXX	93.34 62 (P)	02 27.00	1.8
PCP	84.21 333 P	01 40.63	-0.5	BCAO	114.33 305 iPKPc	07 49.60	-0.5
PWLA	84.29 45 P	01 40.20	-1.4		0.8s 21.00nm		
EMM	84.29 26 eP	01 41.60	0.2		i	09 16.40	
PII	84.30 332 Pd	01 40.80	-0.6	LKO	121.13 332 PKP	08 02.80	-0.2
BNI	84.32 335 P	01 42.20	0.4		0.6s 14.00nm		
BRT	84.35 326 P	01 41.90	0.1	KUK	122.27 325 ePKP	08 05.00	-0.2
KAP	84.38 317 eP	01 41.50	-0.5	SHGH	122.38 324 ePKP	08 05.40	0.1
PRNI	84.38 308 iPc	01 43.00	0.8	LEGH	122.69 324 ePKP	08 06.30	0.4
CKI	84.40 334 P	01 41.70	-0.3	WEGH	122.80 324 ePKP	08 05.60	-0.6
MAF	84.41 338 iPc	01 42.90	0.9	WIGH	123.12 324 ePKP	08 06.10	-0.7
RRL	84.41 335 P	01 42.37	0.0	SBA	123.37 176 ePKP	08 06.10	0.7
TCF	84.44 338 iPc	01 42.80	0.6	TIC	123.63 330 PKP	08 06.72	-1.1
AQU	84.51 329 P	01 43.80	1.2	KIC	123.80 329 PKP	08 07.08	-1.1
FIN	84.62 334 P	01 41.96	-1.1	LIC	124.02 330 PKP	08 07.52	-1.1
ROB	84.64 334 P	01 42.06	-1.2		Z 21s 2.50um	5.9Msz	
DOI	84.65 334 P	01 42.00	-1.3	BUL	126.07 278 iPKPc	08 26.00	13.4X
LSF	84.65 339 iPc	01 43.90	0.7		1.0s 51.00nm		
PZZ	84.69 334 P	01 42.06	-1.6		iPP	10 17.90	
DUI	84.73 328 P	01 44.40	0.6	NNA	128.12 65 ePKP	08 15.50	-1.0
MNS	84.74 330 P	01 43.20	-0.5		1.0s 19.00nm		
MFF	84.74 340 iPc	01 44.20	0.6	SLR	129.91 272 ePKP	08 06.50	-13.2X
FOUF	84.77 335 e(P)	01 43.89	0.1		0.9s 67.23nm		
AZI	84.82 329 P	01 44.60	0.6		Z 20s 4 61um	6.2Msz	
ENR	84.85 334 P	01 42.37	-2.0		i	08 20.00	
STV	84.86 334 P	01 42.27	-2.1	MAW	129.95 210 ePKP	08 19.00	0.7

KSR	130.97 273 iPKPd	08 21.70	-0.1		
	1.2s 40.00nm				
	i	11 41.70			
ARE	134.88 64 ePKP	08 29.00	-0.6		
SPA	135.17 180 ePKP	08 26.30	-2.2		
	1.1s 22.62nm				
	Z 20s 1.35um	5.7Msz			
	i	08 43.30			
WIN	135.65 285 iPKPc	08 31.00	0.2		
	1.0s 20.00nm				
	Z 20s 3.55um	6.1Msz			
	e	11 03.50			
ZOBO	136.83 60 PKP	08 23.70	-10.0X		
	1.5s 29.57nm				
	PKS	12 02.00			
	i	34 48.00			
	LR	55 08.00			
LPB	137.05 61 ePKP	08 25.00	-8.9X		
	1.0s 60.00nm				
	Z 24s 3.10um	6.0MszX			
	i	08 35.50			
	eLR	56 10.00			
CNCB	137.33 61 ePKP	08 23.00	-11.6X		
CCH	138.89 59 ePKP	08 27.00	-10.1X		
SLA	144.71 66 ePKPc	08 44.90	-2.1		
LCCH	146.04 84 ePKPd	08 49.10	0.3		
PEL	146.48 83 iPKPc	08 50.00	0.4		
	0.8s 37.31nm				
TACH	146.58 84 iPKPd	08 50.30	0.6		
SAN	146.67 83 ePKP	08 50.50	0.7		
BAO	146.68 33 PKPd	08 50.70	0.3		
FCH	146.86 83 iPKPc	08 52.60	2.1		
PCH	146.86 84 iPKPd	08 51.50	1.3		
CHCH	146.93 84 iPKPc	08 52.00	1.8		
ZON	146.97 79 ePKPd	08 50.00	-0.4		
RFA	148.91 84 ePKP	08 53.10	-0.3		
MRA	149.53 77 e(PKP)	08 55.00	0.7		
TCA	149.65 75 ePKPd	08 55.00	0.4		
ITB1	151.39 52 PKPd	09 03.00	5.7X		
ITB	151.60 52 e(PKP)	09 04.50	6.8X		
ITB7	151.88 52 e(PKP)	09 02.30	4.2X		
	S.D. = 1.0 on 408 of 433 obs.				

& DEC 21, 1989 16h 53m 19.33s
62.421 N 155.620 W
DEPTH = 0.4km
5.4mb (9 obs.) 5.5Msz (2 obs.)
CENTRAL ALASKA (1)
<AGS-P>. ML 5.5 (PMR). Felt (V) at McGrath and Red Devil. Felt (III) at Flat and Stony River.

TTA	0.54 341 iPd	53 30.70	0.6		
SVW	1.32 180 iPc	53 42.90	-1.7		
BGL	1.92 126 iP	53 51.88	-1.8		
NCG	1.93 120 iP	53 51.95	-1.9		
	eS	54 18.73			
SKT	1.97 101 iP	53 51.93	-2.3		
	eS	54 19.38			
CKL	1.98 127 iP	53 52.70	-1.9		
CRP	2.01 124 iP	53 53.38	-1.6		
CGLM	2.04 122 iP	53 53.57	-1.9		
	eS	54 21.50			
SPU	2.10 125 iP	53 54.15	-2.1		
	eS	54 21.85			
RDT	2.41 139 iP	53 58.14	-2.6		
KTH	2.43 60 eP	53 57.27	-3.7		
RED	2.43 144 iP	53 58.31	-2.7		
CUT	2.49 88 eP	53 59.69	-2.0		
SUA	2.50 110 iP	53 59.57	-2.4		
NKA	2.69 127 iP	54 04.28	-0.3		
PDB	2.73 165 iP	54 01.77	-3.4		
HUR	2.81 76 eP	54 04.42	-2.0		
PWA	2.81 103 iP	54 03.52	-2.8		
BGM	3.05 176 eP	54 06.42	-3.2		
PMS	3.11 110 iP	54 08.09	-2.4		
PLRM	3.17 102 iP	54 08.25	-3.1		
	eS	54 45.76			
PMR	3.17 102 ePd	54 08.30	-3.0		
NNL	3.17 137 iP	54 10.00	-1.4		
PME	3.21 101 iP	54 09.05	-2.8		
GHO	3.22 99 iP	54 08.98	-3.1		
SLKM	3.22 124 iP	54 09.40	-2.8		
AUL	3.23 160 iP	54 10.33	-1.9		
RND	3.25 69 eP	54 09.70	-2.9		
MCK	3.31 64 eP	54 09.72	-3.8		
BRLK	3.52 137 eP	54 13.68	-2.7		

21d 16h

XLV	3.53	146	eP	54	13.79	-2.7
CNPM	3.61	142	iP	54	14.55	-3.0
CDD	3.64	164	iP	54	14.88	-3.1
NEA	3.64	51	eP	54	13.13	-5.0
IMA	3.76	12	ePc	54	16.50	-3.4
SEW	3.78	125	iP	54	17.70	-2.3
WRH	3.96	55	eP	54	17.67	-4.9
RDS	4.12	51	eP	54	19.83	-5.0
NCA	4.14	92	eP	54	22.92	-2.3
CCB	4.15	54	eP	54	19.81	-5.4
FBA	4.28	51	eP	54	21.30	-5.9
GLI	4.35	107	iP	54	24.25	-3.9
HDA	4.37	59	eP	54	26.17	-2.3
TOA	4.43	90	ePd	54	27.20	-2.1
GLM	4.48	51	eP	54	24.45	-5.5
VZW	4.52	104	iP	54	26.84	-3.8
VLZ	4.60	102	iP	54	27.75	-3.8
DDM	4.64	69	eP	54	29.84	-2.5
KLU	4.67	97	iP	54	29.32	-3.5
FID	4.68	107	iP	54	28.13	-4.7
SDG	4.68	84	eP	54	30.60	-2.2
PAX	4.71	79	eP	54	30.33	-3.0
DMW	4.76	65	eP	54	34.30	0.3
ANM	4.87	301	P	54	33.50	-2.1
KDC	4.94	160	ePc	54	32.90	-3.6
DOT	5.40	72	eP	54	40.08	-3.1
GLB	5.66	95	iP	54	42.51	-4.3
TMW	5.85	76	eP	54	46.87	-2.5
TGL	6.33	100	eP	54	52.02	-4.2
BALM	6.46	97	iP	54	53.40	-4.7
DWY	7.49	70	P	55	08.60	-3.8
SDN	7.53	202	eP	55	08.10	-4.9
PCA	7.76	101	eP	55	11.89	-4.4
BRW	8.93	358	iP	55	28.38	-4.1
INK	10.90	48	eP	55	54.00	-5.4
	0.8s	201.00nm				6.6mb X
			pP	57	18.00	
SIT	11.53	109	eP	56	02.80	-5.3
ADK	15.47	237	eP	57	03.00	2.8
	1.0s	220.00nm				5.5mb
MCW	22.77	112	eP	58	21.50	-2.6
GMW	23.66	114	eP	58	31.00	-1.8
PNT	23.70	107	eP	58	32.00	-1.2
	0.9s	118.00nm				5.5mb
			pP	59	02.00	149kmX
EDM	23.89	93	eP	58	33.90	-1.1
BMW	24.31	116	eP	58	38.40	-0.8
LON	24.69	114	eP	58	41.50	-1.4
SHW	24.95	115	eP	58	45.00	-0.5
VGB	26.11	114	eP	58	54.60	-1.7
WDC	29.48	122	ePc	59	24.20	-2.6
			e	00	37.40	
LRM	29.53	104	eP	59	25.20	-2.4
MIN	30.05	121	eP	59	28.30	-3.8
IMW	31.70	105	eP	59	45.00	-1.8
PTI	31.87	107	eP	59	48.00	-0.2
KVN	32.56	118	eP	59	55.50	1.3
BW06	33.21	105	eP	59	57.30	-2.6
	1.0s	30.00nm				5.2mb
RSON	34.57	80	eP	00	07.70	-3.5
	0.8s	26.04nm				5.2mb
TUL	45.03	97	e(P)	01	31.90	-6.2
	1.0s	43.30nm				5.3mb
Z	20s	1.43um				4.9Msz
			LR	15	30.00	
KEV	48.10	359	iP	02	02.80	1.0
	0.8s	42.50nm				5.6mb
SOD	50.49	359	iP	02	21.00	0.7
SUF	55.17	359	iP	02	56.20	1.0
	0.7s	33.40nm				5.5mb
NB2	56.45	8	P	03	04 40	-0.2
	1.0s	19.30nm				5.1mb
NUR	57.39	360	iP	03	11.80	0.6
	0.9s	49.00nm				5.5mb
Z	22s	20.50um				6.2Msz
			LR	30	22.00	
EKA	60.62	18	P	03	30.00	-3.6
KNT	76.76	1	eP	05	15.80	2.1
GRG	76.96	2	eP	05	16.90	2.0
MAIO	77.64	332	eP	05	22.00	3.3
LIT	77.82	1	iPc	05	21.00	1.4
PAIG	78.00	1	iPd	05	30.70	10.2
IGT	78.34	3	iPd	05	30.70	8.2
TSM	84.57	269	eP	05	54.00	-1.5
SPA	152.26	180	ePKP	13	18.90	9.1
	1.0s	24.50nm				
Z	20s	0.99um				5.6MszX

			i	13	52.70	
	98 obs. associated					
&	DEC 21, 1989 18h 07m 39.63s					
	62.442 N			155.642 W		
	DEPTH = 14.0km					
	CENTRAL ALASKA					(1)
	<AGS-P>.					
TTA	0.52	341	eP	07	49.66	-0.4
			eS	07	57.56	
SVW	1.34	180	eP	08	02.01	-1.9
			eS	08	19.35	
NCG	1.95	121	eP	08	10.85	-1.9
SKT	1.98	102	eP	08	11.11	-2.0
KTH	2.43	61	eP	08	17.42	-2.1
CUT	2.50	88	eP	08	18.87	-1.6
SUA	2.51	111	eP	08	18.89	-1.9
PDB	2.75	165	eP	08	21.29	-2.8
PWA	2.83	104	eP	08	23.59	-1.5
PMS	3.12	110	eP	08	27.34	-2.0
GHO	3.23	99	eP	08	30.09	-0.8
SLKM	3.24	124	eP	08	29.68	-1.4
CNPM	3.63	142	eP	08	34.67	-1.9
TOA	4.44	90	eP	08	46.40	-1.6
GLM	4.47	52	eP	08	45.02	-3.5
	15 obs. associated					
?	DEC 21, 1989 18h 12m 11.66± 1.57s					
	38.021 N ±13.2km			29.035 E ±14.1km		
	DEPTH = 10.0km (geophysicist)					
	TURKEY					(366)
KHL	0.49	52	iPg	12	21.60	0.0
			iSg	12	28.60	
YER	1.07	214	iPn	12	31.80	0.0
BCK	1.35	114	ePn	12	36.60	0.0
IZM	1.45	286	ePn	12	43.00	5.1X
ELL	1.45	151	ePn	12	38.00	0.0
	S.D. = 0.0		on	4	of 5	obs.
%	DEC 21, 1989 18h 52m 13.54± 0.59s					
	44.874 N ± 4.5km			10.417 E ± 8.2km		
	DEPTH = 10.0km (geophysicist)					
	NORTHERN ITALY					(545)
BOB	0.70	262	P	52	27.10	-0.3
			eSg	52	37.10	
MME	0.71	163	P	52	28.00	0.3
SAL	0.74	6	P	52	28.60	0.6
			eSg	52	39.20	
BDI	0.82	171	Pd	52	29.40	-0.1
			(Sg)	52	44.70	
MDI	1.03	331	P	52	33.10	0.1
PII	1.16	176	P	52	35.20	0.1
CTI	1.46	36	P	52	39.30	-0.7
			eSg	52	59.20	
	S.D. = 0.5		on	7	of 7	obs.
*	DEC 21, 1989 19h 04m 18.61± 1.03s					
	40.805 N ± 9.7km			21.631 E ± 8.4km		
	DEPTH = 10.0km (geophysicist)					
	GREECE					(364)
	ML 2.9 (SKO).					
GRG	0.60	75	iPd	04	30.20	-0.6
			eS	04	40 40	
OHR	0.70	296	iPg	04	32.10	-0.4
			iSg	04	43.90	
VAY	0.88	54	ePg	04	35.40	-0.1
LIT	0.96	137	iPc	04	35.30	-1.6
			eS	04	50.80	
KNT	1.02	69	eP	04	39.00	1.0
			eS	04	52.70	
SKO	1.17	353	ePn	04	44.00	3.5X
			eSn	05	00.50	
AGG	1.86	163	eP	04	52.30	1.5
	S.D. = 1.5		on	6	of 7	obs.
*	DEC 21, 1989 19h 05m 50.54± 1.46s					
	17.751 S ±15.9km			122.416 E ±11.9km		
	DEPTH = 10.0km (geophysicist)					
	WESTERN AUSTRALIA					(590)
MBL	4.18	215	eP	06	58.20	2.5
KNA	6.40	73	eP	07	27.70	0.5
			eS	08	36.00	

NANU	8.05	232	eP	07	50.20	-0.1
	0.3s	35.00nm				6.2mb
			eS	09	13.00	
WARB	9.26	156	iPd	08	09.10	2.0
	0.2s	21.00nm				6.2mb
			eS	09	48.50	
MEKA	9.52	201	eP	08	15.00	4.3X
			eS	09	50.00	
MTN	9.72	61	iPd	08	12.70	-0.8
WB5	11.51	102	eP	08	37.00	-1.1
			eS	10	37.20	
ASPA	12.25	121	iPc	08	49.90	1.8
	0.4s	58.00nm				6.2mb
			eS	10	58.60	
MRWA	12.84	206	eP	08	56.00	0.1
			eS	11	05.00	
COOL	13.13	185	eP	08	59.00	-0.7
			eS	11	18.00	
BAL	13.81	201	eP	09	07.00	-1.7
			eS	11	28.00	
FORR	14.03	159	eP	09	09.00	-2.5
	0.3s	15.00nm				5.2mb
			eS	11	38.00	
KLB	14.41	196	eP	09	16.00	-0.6
			eS	11	41.00	
OIS	16.48	102	eP	09	44.00	0.5
			eS	12	35.00	
RKG	16.96	196	eP	10	02.00	12.6X
			eS	12	58.00	
CTA	22.67	100	eP	11	03.00	9.6X
	S.D. = 1.6		on	13	of 16	obs.
*	DEC 21, 1989 19h 19m 07.16± 1.29s					
	40.678 N ±11.0km			21.646 E ± 8.8km		
	DEPTH = 10.0km (geophysicist)					
	GREECE					(364)
	ML 2.7 (SKO).					
GRG	0.64	64	eP	19	19.50	-0.5
			e	19	29.80	
OHR	0.77	304	iPg	19	21.30	-1.0
			iSg	19	33.10	
LIT	0.86	132	eP	19	24.40	0.6
			eS	19	37.70	
VAY	0.95	47	ePg	19	24.40	-0.8
KNT	1.06	63	iPc	19	27.20	0.0
			eS	19	41.60	
SKO	1.30	353	ePn	19	33.00	1.7
			eSn	19	52.00	
	S.D. = 1.3		on	6	of 6	obs.
%	DEC 21, 1989 19h 24m 57.23± 2.24s					
	44.117 N ±13.0km			7.239 E ±13.4km		
	DEPTH = 10.0km (geophysicist)					
	NORTHERN ITALY					(545)
	ML 1.8 (GEN).					
STV	0.14	26	P	25	00.69	0.1
			S	25	02.45	
ENR	0.17	50	P	25	01.30	0.1
			S	25	03.44	
PZZ	0.40	346	P	25	05.42	0.0
			S	25	09.88	
ROB	0.49	68	P	25	07.09	-0.1
			S	25	13.37	
IMI	0.51	114	P	25	07.73	0.1
			S	25	14.84	
FIN	0.70	82	P	25	10.96	-0.2
			S	25	20.29	
	S.D. = 0.2		on	6	of 6	obs.
?	DEC 21, 1989 19h 27m 25.70± 1.11s					
	40.727 N ±11.2km			21.631 E ± 8.2km		
	DEPTH = 10.0km (geophysicist)					
	GREECE					(364)
	ML 2.5 (SKO).					
GRG	0.63	68	P	27	38.20	-0.2
OHR	0.74	302	iPg	27	40.20	0.0
			iSg	27	52.00	
LIT	0.91	133	eP	27	43 10	0.0
VAY	0.93	50	ePg	27	43.50	0.1
SKO	1.25	353	ePn	27	52.50	3.5X
	S.D. = 0.2		on	4	of 5	obs.
&	DEC 21, 1989 20h 03m 47.51s					
	61.794 N			150.187 W		

DEPTH = 42.1km
SOUTHERN ALASKA (2)
<AGS-P>.

PWA	0.21	134	iP	03 55.04	0.0
			eS	04 01.51	
SUA	0.42	219	eP	03 57.16	-0.4
			eS	04 05.49	
PLRM	0.54	111	eP	03 57.83	-1.1
			eS	04 06.39	
PME	0.57	106	eP	03 58.53	-0.8
			eS	04 07.88	
GHO	0.60	92	eP	03 58.96	-0.8
CUT	0.61	356	eP	03 59.40	-0.5
PMS	0.63	151	eP	03 59.13	-1.0
			eS	04 09.36	
SKT	0.66	287	eP	03 59.83	-0.8
BGL	1.18	244	eP	04 07.56	-0.4
HUR	1.22	12	eP	04 08.20	-0.1
SLKM	1.29	181	eP	04 08.11	-1.3
NCA	1.60	81	eP	04 13.91	0.0
KTH	1.80	349	eP	04 16.67	0.0

13 obs. ossociated

DEC 21, 1989 20h 15m 42.99± 0.42s
39.714 N ± 6.0km 20.420 E ± 3.3km
DEPTH = 10.0km (geophysicist)
GREECE-ALBANIA BORDER REGION (392)
MD 3.5 (ATH).

KZN	1.19	60	ePb	16 04.00	-1.3
OHR	1.43	12	iPn	16 09.90	0.9
VLS	1.54	175	ePb	16 10.70	0.2
LIT	1.64	76	ePc	16 12.10	0.1
			eS	16 36.00	
GRG	1.96	50	eP	16 16.70	0.1
LCI	1.99	289	P	16 18.00	0.9
			eSn	16 41.90	
NEO	2.21	100	ePn	16 21.00	0.8
VAY	2.29	45	ePn	16 21.00	-0.4
SKO	2.38	19	ePn	16 23.00	0.3
PLG	2.41	73	ePn	16 23.60	0.4
BRT	2.72	296	P	16 27.30	-0.2
			eSn	17 10.20	
ITM	2.79	154	ePg	16 34.20	5.6X
SRS	2.80	59	eP	16 28.00	-0.6
ROI	2.98	268	P	16 30.20	-1.0
			eSn	17 04.50	
TDS	3.15	270	P	17 08.80	35.2X
CSI	3.19	272	P	16 33.40	-0.7
CZI	3.35	263	P	16 36.40	-0.1
			eSn	17 16.50	
SGO	4.01	284	P	16 46.50	0.8
SDI	5.40	294	P	17 05.30	-0.3

S.D. = 0.7 on 17 of 19 obs.

? DEC 21, 1989 20h 30m 30.49±14.52s
42.913 N ±68.3km 127.915 W ±93.6km
DEPTH = 10.0km (geophysicist)
OFF COAST OF OREGON (30)
CL 3.8 (SEA).

GROR	3.91	50	eP	31 31.75	-0.2
NLO	4.50	44	eP	31 40.91	0.6
GT2	4.65	59	eP	31 42.45	0.0
PGO	4.68	55	eP	31 43.42	0.5
TCO	4.75	73	eP	31 43.91	-0.1
BMW	4.88	42	eP	31 45.24	-0.5
RVW	4.91	47	eP	31 45.77	-0.3
ONR	4.94	35	eP	31 46.66	0.2
TDH	5.01	60	eP	31 47.59	0.0
VBEM	5.05	63	eP	31 48.26	0.1
LVP	5.05	49	eP	31 47.97	-0.1
			eS	32 39.55	
MTMW	5.13	51	eP	31 49.07	-0.2
FL2	5.16	49	eP	31 49.78	0.1
VLL	5.16	58	eP	31 49.81	0.1
SHW	5.22	49	eP	31 50.72	0.2
CZM	5.22	46	eP	31 50.27	-0.2
ERK	5.23	48	eP	31 50.53	-0.1
VFP	5.23	60	eP	31 50.39	-0.4
HSR	5.23	50	eP	31 51.05	0.2
JLK	5.24	50	eP	31 50.70	-0.1
STD	5.25	49	eP	31 50.99	0.0
YEL	5.25	49	eP	31 51.23	0.1

S.D. = 0.3 on 22 of 22 obs.

& DEC 21, 1989 20h 59m 06.83s
59.978 N 152.791 W
DEPTH = 103.8km
SOUTHERN ALASKA (2)
<AGS-P>.

RED	0.44	1	eP	59 22.40	-0.6
			eS	59 34.64	
RDT	0.63	18	eP	59 23.60	-0.7
			eS	59 36.51	
AUL	0.68	209	eP	59 24.03	-0.6
PDB	0.73	255	iP	59 24.16	-1.0
			eS	59 37.55	
NNL	0.75	84	eP	59 25.78	0.4
XLV	0.75	134	eP	59 24.48	-0.9
			eS	59 38.66	
CNPM	0.91	119	eP	59 26.18	-0.7
NKA	1.09	44	eP	59 30.01	1.3
CDD	1.14	203	eP	59 27.99	-1.4
SPU	1.26	16	eP	59 30.14	-0.7
SLKM	1.39	66	eP	59 31.15	-1.2
SEW	1.68	84	eP	59 34.46	-1.4
SUA	1.80	33	eP	59 37.11	-0.5
PMS	2.04	50	eP	59 39.66	-0.9
SKT	2.10	16	eP	59 40.63	-0.8
MTU	2.58	88	eP	59 46.73	-1.1
GHO	2.61	45	eP	59 46.34	-1.9
CUT	2.72	26	eP	59 47.04	-2.6
GLI	2.97	70	eP	59 51.45	-1.5
FID	3.23	73	eP	59 52.99	-3.6
VZW	3.27	68	eP	59 54.22	-2.9
KTH	3.70	13	eP	00 03.01	0.0
KLU	3.70	63	eP	00 00.37	-2.7
TOA	3.86	54	eP	00 03.53	-1.7

24 obs. ossociated

DEC 21, 1989 21h 46m 00.22± 0.33s
40.710 N ± 3.4km 21.717 E ± 3.2km
DEPTH = 5.5 ± 2.8 km
3.6mb (1 obs.)
GREECE (364)
ML 3.7 (SKO), 3.6 (THE), 3.7
(ATH).

KZN	0.41	174	iPgc	46 07.40	-1.0
GRG	0.57	64	iPc	46 11.80	0.1
			iS	46 22.90	
OHR	0.80	300	iPgc	46 13.20	-3.1X
			iSg	46 24.80	
LIT	0.85	136	iPc	46 15.20	-1.8
VAY	0.89	46	iPgd	46 17.00	-0.7
			iSg	46 29.40	
THE	0.95	94	iPc	46 18.80	0.0
			iS	46 35.30	
SOH	1.25	84	iPc	46 23.80	-0.1
			iS	46 39.40	
SKO	1.28	351	iPn	46 22.60	-1.7
			i	46 23.70	
			iSn	46 40.50	
PLG	1.36	104	ePg	46 26.00	0.2
SRS	1.48	73	eP	46 31.80	4.3X
KKB	1.55	41	iPd	46 29.00	0.6
AGG	1.75	164	iPc	46 31.00	-0.4
MMB	1.75	59	iPgc	46 32.00	0.6
NEO	1.82	140	ePb	46 31.70	-0.7
VTS	2.19	30	iPd	46 39.00	1.2
ULC	2.24	305	ePn	46 40.40	1.9
			eSn	47 10.50	
PVY	2.29	326	ePn	46 40.00	0.7
			eSn	47 10.00	
RZN	2.46	66	eP	46 42.00	0.2
TTG	2.52	314	ePn	46 43.30	0.9
			eSn	47 15.50	
IVA	2.55	328	ePn	46 43.00	0.1
			eSn	47 16.00	
PGB	2.60	44	iPd	46 44.00	0.4
PLD	2.64	57	eP	46 46.00	1.8
VLS	2.68	199	ePb	46 46.50	1.8
BDV	2.68	307	ePn	46 45.00	0.3
			eSn	47 21.20	
LCI	2.89	264	P	46 45.40	-2.3
			eSn	47 49.90	
RDO	2.93	80	ePn	46 47.50	-0.7
KDZ	2.95	70	iP	46 49.00	0 5
PLE	3.14	327	ePn	46 51.00	-0.3
			eSn	47 32.50	
ATH	3.14	150	ePn	46 51.50	0.3
DIM	3.17	64	eP	46 59.00	7.4X
BRY	3.23	314	ePn	46 52.50	-0.1
			eSn	47 33.50	
BRT	3.43	274	P	46 55.00	-0.4
			eSn	47 53.50	
ITM	3.53	177	ePn	46 57.50	0.7
PVL	3.68	46	eP	46 57.00	-1.9
VLI	4.10	166	ePn	47 04.50	-0.3
BEO	4.21	348	eP	47 05.50	-0.9
MMN	4.45	261	P	47 11.00	1.1
CZI	4.54	253	P	47 11.20	0.1
			eSn	48 03.80	
HVAR	4.64	304	iPn	47 09.90	-2.6
BZS	4.90	359	eP	47 13.00	-3.3X
MLR	5.69	32	ePd	47 27.50	0.0
SDI	6.04	282	P	47 33.60	1.2
VRI	6.32	34	iPc	47 36.00	-0.3
KHC	10.20	328	eP	48 31.00	0.7
NB2	21.35	346	P	50 48.30	-1.9
	0.8s		2.30nm		3.6mb

S.D. = 1.1 on 41 of 45 obs.

DEC 21, 1989 22h 21m 10.27± 1.75s
24.035 N ± 6.4km 122.338 E ±10.6km
DEPTH = 17.0 ± 12.0 km
4.8mb (2 obs.)
TAIWAN REGION (243)

TWD	0.68	274	ePc	21 24.00	0.7
			eS	21 35.80	
TWC	0.72	322	iPc	21 23.40	-0.6
			eS	21 36.20	
TWF1	1.17	235	ePc	21 31.50	-0.2
TWZ	1.26	327	ePc	21 33.20	0.1
ANP	1.37	327	ePd	21 35.20	0.6
			eS	21 57.50	
TWQ	1.39	280	ePc	21 36.20	1.3
QZH	3.53	286	ePn	22 04.00	-1.5
Z	14s		2.40um		
SSE	7.11	352	Pc	22 53.00	-3.0X
0.8s		0.10nm			3.0mb X
Z	14s		2.60um		4.2Msz
N	11s		1.40um		
			pP	23 00.00	
			eS	24 12.50	
GZH	8.31	265	eP	23 17.50	4.7X
			eS	24 36.00	
NJ2	8.56	340	Pc	23 13.00	-3.3X
Z	15s		2.10um		
N	11s		1.40um		
WHN	9.61	314	eP	23 30.50	-0.4
Z	14s		1 66um		
			pP	23 36.00	
			S	25 13.50	
GYA	14.39	283	P	24 35.00	-0.3
			S	27 17.00	
XAN	15.38	313	P	24 52.50	4.3X
N	10s		0.70um		
E	10s		0.70um		
TIY	16.05	330	eP	24 58.50	1.7
N	13s		1.00um		
BJI	16.78	343	eP	25 12.50	6.5X
Z	15s		0.93um		
N	12s		0.65um		
			eS	28 00.00	
SNY	17.77	3	eP	25 24.40	6.0X
CD2	17.84	297	eP	25 18.00	-1.4
HHC	19.05	334	eP	25 34.80	0.6
Z	16s		1.40um		5.3MszX
N	14s		1.00um		
BTO	19.49	331	eP	25 39.00	-0.5
N	14s		1.20um		
E	14s		0.90um		
CN2	19.88	7	Pd	25 43.60	0.0
Z	14s		1.20um		
LZH	19.97	311	eP	25 43.50	-1.3
	1.5s		56.00nm		4.7mb
MDJ	21.37	14	eP	26 07.70	8.8X
CHG	22.38	261	eP	26 11.00	1.8
GTA	24.44	314	eP	26 29.60	0.3
Z	16s		0.60um		4.2MszX
WMQ	34.52	313	eP	27 57.80	-2.0
KSH	41.85	303	P	29 02.50	1.3
WB5	45.20	164	eP	29 27.50	-0.8
ASPA	48.73	166	iPd	29 55.40	-0.6
	1.2s		15.00nm		4.9mb
CTA	49.66	150	eP	30 04.00	0.8

21d 22h

ZOBO 167.51 54 PKP 41 18.00 0.2
S.D. = 1.1 on 23 of 30 obs.

DEC 21, 1989 22h 43m 09.37± 0.74s
40.695 N ± 5.8km 21.591 E ± 7.3km
DEPTH = 10.0km (geophysicist)
GREECE (364)
ML 2.8 (SKO).

KZN	0.41	161	ePg	43 17.50	-0.3
GRG	0.67	67	ePd	43 22.00	-0.7
			eS	43 31.00	
OHR	0.73	305	iPg	43 23.50	-0.3
			iSg	43 35.40	
LIT	0.91	131	eP	43 26.20	-0.6
			eS	43 40.20	
VAY	0.97	50	iPg	43 27.40	-0.4
			iSg	43 40.00	
SKO	1.28	355	ePn	43 33.60	0.5
			i	43 37.20	
			iSn	43 50.80	
PLG	1.45	102	ePb	43 36.90	1.2
SRS	1.57	74	eP	43 42.00	4.6X
			eS	44 10.00	
NEO	1.87	137	ePb	43 42.20	0.5

S.D. = 0.8 on 8 of 9 obs.

% DEC 21, 1989 22h 52m 20.29± 0.75s
37.529 N ± 7.1km 29.844 E ± 7.4km
DEPTH = 10.0km (geophysicist)
TURKEY (366)

BCK	0.60	96	iPg	52 32.60	0.2
ELL	0.78	176	iPn	52 35.20	-0.4
KHL	0.83	342	ePn	52 35.80	-0.6
YER	1.31	253	iPn	52 45.10	0.6
IZM	2.22	294	ePn	52 57.00	-0.7
DST	2.28	336	ePn	52 59.50	0.9

S.D. = 0.9 on 6 of 6 obs.

DEC 22, 1989 00h 32m 48.58± 0.43s
36.309 N ± 8.5km 141.153 E ± 6.1km
DEPTH = 40.1km (7 depth phases)
4.9mb (15 obs.) 4.3Msz (4 obs.)
NEAR EAST COAST OF HONSHU, JAPAN(228)
Felt (III JMA) at Mito; (II JMA) at Utsunomiya and Nikko; (I JMA) at Tokyo, Chiba, Choshi and Kumagoyo.

MAT	2.39	276	eP	33 28.00	1.9
			eS	33 58.00	
SHK	7.14	258	eP	34 35.70	2.4
MDJ	12.09	317	eP	35 42.50	1.4
CN2	14.15	307	P	36 08.00	-0.3
Z	16s		1.10um		
N	13s		0.60um		
			pP	36 15.00	
			eS	38 42.00	
SNY	14.72	297	iPd	36 16.00	0.3
Z	20s		1.80um		
N	16s		1.00um		
E	18s		1.30um		
			eS	38 54.00	
SSE	17.40	258	eP	36 52.50	2.6
Z	20s		1.40um		
			pP	37 00.30	
			eS	40 12.00	
NJ2	18.92	264	Pc	37 08.00	-0.6
Z	20s		0.90um		
			pP	37 16.20	
TIA	19.37	277	P	37 10.80	-3.0X
BJI	19.97	288	eP	37 16.50	-3.6X
TIY	22.94	282	eP	37 48.00	-2.3
E	13s		1.00um		
			eS	41 57 00	
WHN	23.06	263	Pd	37 50.50	-0.8
			pP	38 00.00	35km
HHC	23.51	290	eP	37 54.00	-1.8
Z	18s		0.90um		4.3Msz
BTO	24.69	289	eP	38 09.00	1.8
XAN	26.38	275	iPc	38 22.40	-0.6
LZH	29.99	281	eP	38 55.00	-0.7
Z	18s		1.20um		4.6Msz
			i	39 40.50	226kmX
GYA	30.90	261	P	39 02.00	-1.8
CD2	31.47	271	P	39 07.00	-1.7
GTA	32.58	288	eP	39 16 80	-1.6
Z	20s		0.50um		4.2Msz
KMI	34.65	262	Pc	39 35.00	-1.6
CHG	40.91	256	eP	40 29.00	0.2
WMO	40.98	298	P	40 29.50	0.3
Z	20s		0.50um		4.4Msz
			eS	46 41.00	
LSA	42.07	276	P	40 40.00	1.3
SNG	46.98	242	eP	41 18.80	1.2
			e	09 35.80	
IPM	48.52	239	ePd	41 30.50	0.8
	0.9s		30.40nm		5.3mb
KSH	50.53	294	P	41 46.00	1.0
NDI	53.61	281	iPc	42 07.00	-1.1
WB5	56.25	188	eP	42 26.30	-1.0
MBC	57.28	16	eP	42 33.50	-0.5
	1.0s		7.00nm		4.7mb
HYB	57.98	269	eP	42 39.00	-0.7
	1.0s		25.00nm		5.3mb
ASPA	60.04	188	eP	42 53.80	0.0
GBA	60.95	266	P	43 00.00	-0.2
OUE	60.96	288	eP	42 58.00	-2.3
POO	61.19	273	iPc	43 01.20	-0.6
KEV	64.05	339	eP	43 23.00	3.0X
BRS	64.30	169	eP	43 17.00	-5.1X
SOD	65.55	337	eP	43 29.00	-0.8
SUF	68.54	333	iP	43 47.10	-1.6
	0.7s		12.50nm		5.1mb
NUR	70.49	332	eP	44 12.00	11.4X
SES	72.85	40	eP	44 15.00	0.0
FFC	74.43	32	iPd	44 23.90	-0.1
	1.0s		17.00nm		5.0mb
CMB	74.46	54	eP	44 24.40	-0.2
HFS	74.66	336	eP	44 24.50	-0.8
	0.4s		1.40nm		4.3mb
NB2	74.77	337	P	44 25.20	-0.8
	0.9s		17.70nm		5.0mb
LRM	74.81	44	ePc	44 27.10	0.3
FRB	77.53	13	eP	44 41.00	-0.3
VRI	79.14	320	ePc	44 52.00	1.5
KRA	79.58	326	ePd	44 53.00	0.2
	0.7s		25.00nm		5.3mb
SPC	80.05	325	eP	44 55.50	-0.1
KSP	80.61	328	iPd	44 58.80	0.5
			i	45 10.80	40km
BRG	81.57	329	eP	45 03.60	0.3
	1.0s		12.00nm		4.9mb
			e	45 15.00	37km
CLL	81.62	330	iPc	45 03.20	-0.3
	1.2s		31.00nm		5.2mb
			i	45 15.90	43km
HRI	81.83	305	eP	45 06.00	0.9
SRO	81.94	325	i(P)	45 06.20	1.0
PRU	81.99	328	Pc	45 05.50	0.0
	1.0s		8.70nm		4.7mb
			e	45 18.00	42km
ZST	82.21	326	eP	45 06.80	0.1
KHC	83.05	328	iPc	45 11.40	0.3
	1.0s		10.50nm		4.9mb
			i	45 24.10	42km
EKA	83.74	340	P	45 16.00	1 6
	3.2s		722.40nm		6.2mb X
PRNI	84.14	303	ePd	45 18.00	1.0
VAY	84.45	318	eP	45 18.40	0.2
SKO	84.59	319	iP	45 19.50	0.5
			i	45 32.20	42km
KBA	84.72	327	eP	45 20.00	0.2
	0.7s		3.60nm		4.6mb
			i	45 25.80	18kmX
ALQ	85.22	50	eP	45 23.50	1.0
	1.0s		2.50nm		4.4mb
OHR	85.54	319	eP	45 23.70	-0.1
	1 0s		0.05nm		2.7mb X
KOT	86.52	305	eP	45 39.50	10.8X
CSI	88.86	321	P	45 39.70	-0.2
ROI	88.87	320	P	45 39.20	-0.8
CZI	89.36	320	P	45 41.20	-1.0
TUL	90.77	43	e(P)	45 49.30	0.5
	1.2s		7.70nm		4.9mb
ZOBO	147.23	60	PKP	52 30.00	2.0
LPB	147.43	61	PKP	52 32.00	3.9X

S.D. = 1.1 on 63 of 70 obs.

DEC 22, 1989 00h 38m 52.30± 0.52s
35 899 N ± 7.0km 26.364 E ± 4.6km
DEPTH = 33.0km (normal)
CRETE (370)

KAP	0.75	118	eP	39 07.00	0.6
NPS	0.88	224	iPc	39 08.50	0.2
APE	1.35	330	eP	39 15.90	0.9
VAM	1.83	255	eP	39 21.50	-0.5
SMG	1.85	12	eP	39 22.20	0.0
KSL	2.62	84	eP	39 32.40	-0.8
VLI	2.89	287	eP	39 36.50	-0.5
ELL	2.99	72	iPn	39 39.10	0.6
KHL	3.50	45	ePn	39 45.00	-0.8
ITM	3.80	291	eP	39 50.00	0.1

S.D. = 0.7 on 10 of 10 obs.

DEC 22, 1989 00h 43m 42.14± 0.53s
36.940 N ± 5.5km 26.406 E ± 5.2km
DEPTH = 9.9 ± 3.7 km
4.6mb (1 obs.)
DODECANESE ISLANDS (369)
ML 3.9 (ATH).

APE	0.71	281	iPbd	43 57.00	0.8
SMG	0.84	24	iPbc	43 58.80	0.4
YER	1.51	82	iPn	44 08.50	-0.9
KAP	1.52	156	iPbc	44 07.70	-1.7
NPS	1.79	201	ePb	44 11.80	-1.6
PRK	2.31	357	ePn	44 21.20	0.5
VAM	2.35	230	ePb	44 24.00	2.6X
ATH	2.38	297	ePg	44 28.60	6.9X
KSL	2.69	107	ePn	44 26.50	0.3
VLI	2.79	266	ePn	44 27.50	-0.2
ELL	2.82	93	ePn	44 29.70	1.5
KHL	2.83	60	ePn	44 36.70	8.3X
EZN	2.88	359	iPn	44 27.90	-1.0
DST	3.18	33	ePn	44 34.00	0.7
NEO	3.45	314	iPnd	44 36.90	-0.1
EDC	3.59	18	ePn	44 40.00	1.0
ITM	3.59	275	ePn	44 40.70	1.7
BNT	3.61	19	ePn	44 38.00	-1.3
RDO	4.25	351	ePn	44 47.30	-1 1
LIT	4.40	317	eP	44 50.00	-0.6
CTT	4.49	20	ePn	45 00.20	8.5X
HRT	4.64	32	ePn	44 57.00	3.1X
SRS	4.71	333	eP	44 42.00	-13.0X
KZN	4.95	314	ePn	44 57.40	-0.9
BBTK	5.77	58	iPgc	44 17.00	-53.0X
			iSg	44 26.00	
KVT	8.57	58	ePn	45 38.00	-11.2X
BCAO	33.15	194	ePc	50 22.80	2.0
	0.4s		3.00nm		4.6mb

S D. = 1.2 on 19 of 27 obs.

& DEC 22, 1989 01h 02m 05.40s
60.209 N 153.051 W
DEPTH = 129.8km
SOUTHERN ALASKA (2)
<AGS-P>.

RED	0.25	33	eP	02 22.77	0.7
RDT	0.49	41	iP	02 23.92	-0.8
PDB	0.71	234	iP	02 25.01	-1.1
			eS	02 40.05	
AUL	0.85	193	eP	02 26.63	-0.6
NNL	0.89	100	eP	02 27.13	-0.5
XLV	1.01	138	eP	02 27.55	-1.1
CKL	1.05	19	eP	02 28.74	-0.5
			eS	02 46.92	
SPU	1.09	26	eP	02 28.89	-0.6
			eS	02 46.97	
CNPM	1.14	126	eP	02 29.27	-0.7
			eS	02 47.68	
CDD	1.32	193	eP	02 30.70	-1.2
SLKM	1.44	77	eP	02 32.33	-0.8
SUA	1.69	41	eP	02 35.66	-0.5
SEW	1.80	92	eP	02 36.07	-1.3
SKT	1.93	22	eP	02 38.12	-0.8
PMS	2.01	57	eP	02 38.67	-1.2
GHO	2.55	50	eP	02 44.98	-1.9
CUT	2.58	30	eP	02 46.35	-0.8
FID	3.30	78	eP	02 54.77	-1.8
KTH	3.50	16	eP	02 57.26	-2.1
KLU	3.72	67	eP	02 59.69	-2.6
RND	3.78	30	eP	03 01.14	-1.9

21 obs. associated

& DEC 22, 1989 01h 10m 01.18s
62 521 N 151.284 W
DEPTH = 93.2km
CENTRAL ALASKA (1)

<AGS-P>.

CUT	0.49	103	iP	10 16.21	-0.1
			eS	10 27.51	
SKT	0.55	192	iP	10 16.80	-0.1
			eS	10 28.34	
HUR	0.89	58	eP	10 19.86	-0.3
KTH	1.05	9	eP	10 21.73	-0.3
			eS	10 36.21	
SUA	1.09	166	eP	10 22.45	-0.1
PWA	1.10	142	eP	10 22.67	0.2
NCG	1.19	201	eP	10 23.49	-0.3
GHO	1.34	123	eP	10 25.96	0.4
RND	1.42	50	eP	10 26.21	-0.4
MCK	1.62	40	eP	10 29.00	0.0
NKA	1.78	179	iP	10 33.61	2.5
RDT	2.03	196	eP	10 34.38	-0.1
SLKM	2.08	165	eP	10 34.63	-0.5
NCA	2.15	102	eP	10 35.96	-0.1
WRH	2.43	35	eP	10 38.93	-0.8
GLI	2.59	128	eP	10 40.97	-1.0
CCB	2.64	35	eP	10 41.61	-1.0
VZW	2.68	121	eP	10 42.80	-0.5
RDS	2.70	30	iP	10 42.93	-0.6
PAX	2.71	78	eP	10 44.31	0.5
KLU	2.73	110	eP	10 42.67	-1.3
FBA	2.85	32	eP	10 44.72	-0.8
FID	2.90	126	eP	10 44.59	-1.6
PDB	3.08	208	eP	10 48.74	0.0

24 obs. associated

? DEC 22, 1989 01h 13m 23.41± 0.88s
41.821 N ± 9.1km 12.768 E ± 8.3km
DEPTH = 10.0km (geophysicist)
SOUTHERN ITALY (390)

RMP	0.05	259	P	13 25.40	-0.2
RDP	0.07	211	P	13 26.00	0.1
			eSg	13 27.30	
MNS	0.57	353	P	13 35.00	0.1
			eSg	13 44.90	
SDI	0.79	98	Pc	13 38.80	-0.1
			eSg	13 50.00	

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

& DEC 22, 1989 01h 38m 19.25s
60.567 N 150.885 W
DEPTH = 35.0km
KENAI PENINSULA, ALASKA (14)
<AGS-P>.

NKA	0.25	316	eP	38 28.73	2.2
			eS	38 34.75	
SLKM	0.33	100	iP	38 27.28	-0.3
NNL	0.57	201	eP	38 31.16	0.4
RDT	0.75	271	eP	38 33.02	-0.5
			eS	38 44.50	
SPU	0.84	318	eP	38 34.36	-0.4
			eS	38 46.57	
SEW	0.85	122	eP	38 33.36	-1.4
			eS	38 45.28	
SUA	0.90	4	eP	38 35.01	-0.7
PMS	0.94	43	eP	38 35.06	-1.1
			eS	38 48.69	
CNPM	1.06	190	eP	38 36.80	-1.0
PWA	1.19	24	eP	38 39.50	-0.2
XLV	1.19	201	eP	38 38.93	-0.8
SKT	1.45	348	eP	38 43.58	0.0
GHO	1.54	37	eP	38 43.72	-1.1
AUL	1.75	228	eP	38 47.41	-0.3
PDB	1.83	246	eP	38 48.45	-0.4
GLI	1.89	79	eP	38 46.69	-3.1
CDD	2.16	222	eP	38 53.29	-0.3
FID	2.18	83	eP	38 50.28	-3.6
VZW	2.18	75	eP	38 51.18	-2.8
SVW	2.38	285	eP	38 55.49	-1.3
NCA	2.43	52	eP	38 55.84	-1.6
KLU	2.59	67	eP	38 57.37	-2.4
TOA	2.75	54	eP	39 00.85	-1.1
RND	3.01	18	eP	39 04.85	-0.8
PAX	3.53	45	eP	39 11.67	-1.4
GLB	3.56	73	eP	39 10.10	-3.3

26 obs. associated

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* DEC 22, 1989 02h 01m 46.94± 1.68s
8.006 N ± 7.0km 126.688 E ±13.2km
DEPTH = 87.3 ± 14.9 km

4.6mb (3 obs.)
MINDANAO, PHILIPPINE ISLANDS (259)

DAV	1.43	230	ePc+	02 12.00	-0.1
	0.9s		2225.21nm		
MNI	6.77	196	eP	03 28.50	2.9X
QIZ	19.68	306	P	06 11.50	-0.3
	N 18s		1.30um		
			eS	09 48.00	
MTN	21.18	168	iPd	06 25.20	-1.9
KNA	23.69	175	eP	06 51.50	-0.2
NST	27.06	289	eP	07 24.00	0.8
WB5	28.72	165	eP	07 39.80	1.6
CHTO	29.00	295	eP	07 41.50	0.7
ASPA	32.26	168	eP	08 10.90	1.5
	Z 19s		0.16um		3.7Msz
			LR	24 22.10	
BJI	33.25	345	eP	08 23.50	5.7X
SNY	33.79	356	Pc	08 21.90	-0.6
CN2	35.67	358	eP	08 40.00	1.5
MDJ	36.56	3	eP	08 46.00	0.1
SHL	37.45	302	iP	08 53.50	-0.4
			eS	14 42.00	
MRWA	38.41	195	eP	09 02.00	0.3
FORR	38.66	178	eP	09 03.00	-0.6
COOL	39.03	188	eP	09 06.00	-0.8
GTA	39.48	327	eP	09 09.80	-0.8
BAL	39.57	194	eP	09 12.00	0.8
KLB	40.29	192	eP	09 18.00	0.8
BRS	43.32	145	iP	09 40.80	-1.2
GBA	48.63	281	P	10 24.00	-0.2
KEV	85.89	340	eP	14 18.00	0.1
SOD	86.52	338	eP	14 20.00	-1.1
SUF	87.75	333	eP	14 26.70	-0.3
	0 6s		4.10nm		4.7mb
MBC	87.82	13	eP	14 29.00	1.8
	0.9s		4.00nm		4.5mb
NUR	88.97	331	eP	14 27.00	-5.9X
NB2	94.96	334	P	14 59.10	-1.6
	0 7s		1.50nm		4.5mb

S.D. = 1.1 on 25 of 28 obs.

% DEC 22, 1989 02h 04m 37.78± 0.95s
39.222 N ± 8.7km 28.998 E ±11.2km
DEPTH = 10.0km (geophysicist)
TURKEY (366)

DST	0.48	323	iPg	04 45.80	-1.7
			iSg	04 53.80	
KHL	0.99	155	ePg	04 56.40	-0.2
BNT	1.40	324	iPn	05 03.20	-0.2
EDC	1.42	322	ePn	05 05.00	1.3
GPA	1.47	43	ePn	05 04.00	-0.3
HRT	1.68	18	ePn	05 06.90	-0.4
ISK	1.84	1	ePn	05 10.00	0.3
CTT	1.97	347	ePn	05 12.70	1.1

S.D. = 1.1 on 8 of 8 obs.

? DEC 22, 1989 02h 10m 24.41± 1.22s
40.682 N ±11.0km 21.630 E ±10.5km
DEPTH = 10.0km (geophysicist)
GREECE (364)
ML 2.8 (SKO).

OHR	0.76	305	iPg	10 38.90	-0.4
			iSg	10 50.60	
LIT	0.88	131	eP	10 41.50	0.2
			eS	10 55.20	
VAY	0.96	48	ePg	10 42.00	-0.6
SKO	1.30	354	ePn	10 49.20	0.8
			iSn	11 08.00	
SRS	1.55	73	eP	10 56.80	4.7X

S.D. = 1.1 on 4 of 5 obs.

DEC 22, 1989 02h 26m 49.69± 0.70s
33.152 S ± 6.4km 68.125 W ± 5.7km
DEPTH = 29.6 ± 5.6 km
MENDOZA PROVINCE, ARGENTINA (139)

RTCV	1.33	345	iP	27 11.80	-0.7
CFA	1.54	356	iPc	27 15.00	-0.5
			S	27 36.00	
RFA	1.64	190	ePc	27 15.90	-1.0
ZON	1.67	344	eP	27 16.00	-1.3
			eS	27 38.00	
RTCB	1.76	341	ePd	27 18.50	-0.2
FCH	1.82	264	iPd	27 19.50	-0.3
			iS	27 41.70	
RTBS	1.86	323	ePd	27 21.00	0.9
PCH	2.05	256	eP	27 22.50	-0.4
			iS	27 23.40	
JACH	2.13	282	iPd	27 24.00	0.0
			iS	27 50.50	
PEL	2.15	270	iPd	27 24.50	0.3
			iS	27 50.30	
MRA	2.17	71	ePd	27 25.90	1.5
TACH	2.40	257	iP	27 27.50	-0.4
			iS	28 00.50	
ROCH	2.43	273	iP	27 30.00	1.6
LCCH	2.90	263	ePd	27 35.00	0.1
			i	28 15.00	
RTRS	3.18	339	iPd	27 40.00	1.1
TCA	3.50	60	ePc	27 43.80	0.3
CYA	5.10	24	ePc	28 04.80	-1.4

S.D. = 1.0 on 17 of 17 obs.

? DEC 22, 1989 02h 39m 24.69± 5.65s
40.911 N ±32.5km 30.386 E ±41.3km
DEPTH = 10.0km (geophysicist)
TURKEY (366)

HRT	0.55	261	ePg	39 36.10	0.2
			eSg	39 44.60	
GPA	0.62	185	iPg	39 37.20	-0.1
			eSg	39 46.20	
ISK	1.02	279	ePg	39 43.40	-0.5
			eSg	39 58.40	
CTT	1.50	280	iPn	39 52.00	0.4
DST	1.87	226	ePn	40 00.80	3.7X

S.D. = 0.6 on 4 of 5 obs.

? DEC 22, 1989 02h 45m 53.89± 1.21s
40.673 N ±10.8km 21.589 E ±10.2km
DEPTH = 10.0km (geophysicist)
GREECE (364)
ML 2.5 (SKO).

OHR	0.74	306	iPg	46 08.20	-0.3
			iSg	46 20.00	
LIT	0.89	129	eP	46 11.20	0.1
			eS	46 25.50	
VAY	0.99	49	ePg	46 12.20	-0.4
SKO	1.30	355	ePn	46 18.50	0.5
SRS	1.58	73	eP	46 27.00	5.0X

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

? DEC 22, 1989 02h 59m 41.62± 1.51s
40.568 N ±13.7km 21.489 E ±12.1km
DEPTH = 10.0km (geophysicist)
GREECE (364)
ML 2.7 (SKO).

OHR	0.75	316	iPg	59 56.00	-0.4
			iSg	00 07.80	
LIT	0.90	121	eP	59 58.90	0.1
			eS	00 12.50	
VAY	1.11	47	ePg	00 02.00	-0.5
SKO	1.40	359	ePn	00 08.00	0.8
SRS	1.69	70	eP	00 14.00	2.7X

S.D. = 1.0 on 4 of 5 obs.

& DEC 22, 1989 03h 03m 25.50s
33.620 N 116.690 W
DEPTH = 14.0km
SOUTHERN CALIFORNIA (43)
<PAS-P>. ML 3.4 (PAS). Felt (V) at Anza; (IV) at Palm Desert; (III) at Cathedral City, Indio and North Palm Springs. Also felt at Palm Springs and Rancho Mirage.

PLM	0.30	208	iPd	03 31.70	-0.4
PEC	0.48	305	iPc	03 34.40	-0.8
RVR	0.68	303	iPc	03 37.70	-0.9
TPC	0.72	48	iPc	03 38.90	-0.5
HAY	0.88	84	iPd	03 41.80	-0.3
IKP	1.08	153	iPd	03 45.50	-0.1
MWC	1.29	298	iPc	03 48.30	-0.8
PAS	1.34	294	eP	03 48.90	-0.8
SBB	1.42	319	eP	03 50.90	0.0
GLA	1.66	109	eP	03 52.30	-2.0
GSC	1.68	357	iPd	03 54.10	-0.6
ABL	2.43	301	eP	04 04.90	-0.7

22d 03h

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BCH      3.21 300 eP     04 15.90  -0.7
TNP      4.47 355 iPd    04 34.00  -0.6
KVN      5.54 349 ePd    04 49.00  -0.7
ALQ      8.57  78 eP     05 37.50   5.3
        16 obs. associated
-------------------------------------
?  DEC 22, 1989  03h 40m 34.41± 4.95s
   16.451 N ±39.0km   99.623 W ±23.5km
   DEPTH =  10.0km  (geophysicist)
 NEAR COAST OF GUERRERO, MEXICO  ( 58)

ACX      0.47 332 (P)    40 44.00   0.0
                 iS      40 49.00
III      1.92   4 eP     41 07.50  -0.1
                 iS      41 26.00
PPM      2.77  20 (P)    41 20.50   0.4
OXX      2.85  77 (P)    41 21.00   0.0
IISM     3.31  40 (P)    41 27.00  -0.3
     S.D. = 0.4  on   5 of   5 obs.
-------------------------------------
?  DEC 22, 1989  04h 01m 33.02± 1.05s
   31.224 S ± 7.5km   69.296 W ±11.6km
   DEPTH =  10.0km  (geophysicist)
 SAN JUAN PROVINCE, ARGENTINA    (137)

RTBS     0.46 197 iP     01 42.20  -0.1
                 S       01 57.00
RTCB     0.50 122 iPd    01 49.00   5.8X
                 S       02 03.00
ZON      0.62 121 eP     01 45.00  -0.5
                 eS      01 59.00
RTCV     0.91 135 iPd    01 51.00   0.6
                 S       02 05.00
RTRS     1.06 352 iPc    01 53.00   0.0
                 S       02 19.00
     S.D. = 0.8  on   4 of   5 obs.
-------------------------------------
%  DEC 22, 1989  04h 08m 25.59± 0.71s
   37.690 N ± 9.0km   12.947 E ± 6.2km
   DEPTH =  10.0km  (geophysicist)
 SICILY                          (398)

CVT      0.12 264 Pc     08 27.70  -0.9
ERC      0.45 321 Pd     08 35.40   0.7
LVI      0.57 302 P      08 36.90  -0.1
                 eSn     08 45.20
FAI      0.71 125 P      08 40.80   1.2
PTS      1.16 221 P      08 47.80   0.5
MNO      1.41  80 P      08 51.50   0.1
MEU      1.69 110 P      08 53.90  -1.4
                 eSn     09 16.50
     S.D. = 1.1  on   7 of   7 obs.
-------------------------------------
*  DEC 22, 1989  04h 44m 12.04± 0.69s
    8.389 N ±10.7km  127.151 E ±13.7km
   DEPTH =  33.0km  (normal)
   4.6mb (  2 obs.)  3.8Msz (  1 obs.)
 PHILIPPINE ISLANDS REGION       (248)

DAV      2.03 230 ePc+   44 46.00   1.4
        1.3s  2784.61nm
BAG     10.23 322 eP     46 46.90   7.0X
MTN     21.46 169 e(P)   49 00.00   0.1
SSE     23.27 347 eP     49 06.00 -11.6X
     Z  16s      0.50um          4.1MszX
                 S       53 36.00
WB5     28.98 166 eP     50 10.20  -0.7
CHG     29.26 294 eP     50 12.80  -0.8
QIS     31.26 157 iPd    50 30.10  -1.1
ASPA    32.53 168 eP     50 41.70  -0.7
     Z  18s      0.19um          3.8Msz
                 LR      05 17.40
BJI     33.01 344 eP     50 46.00  -0.2
SHL     37.64 301 iP     51 24.80  -1.4
                 eS      57 13.00
BRS     43.37 146 iPc    52 13.00  -0.2
        0.6s      2.50nm          4.1mb
BWA     47.11 156 eP     52 44.00   1.0
CAN     48.12 156 eP     52 51.10   0.2
MBC     87.34  13 ePc    56 58.90   2.4
        1.1s     12.00nm          5.1mb
ZOBO   163.16 119 PKP    04 18.00   4.4X
     S.D. = 1.2  on  12 of  15 obs.
-------------------------------------
?  DEC 22, 1989  05h 52m 55.14± 1.35s
   40.669 N ±12.0km   21.615 E ±11.5km
   DEPTH =   5.0km  (geophysicist)
 GREECE                          (364)
      ML 2.7 (SKO).

OHR      0.76 306 iPg    53 09.80  -0.6
                 iSg     53 21.60
LIT      0.88 130 eP     53 12.80   0.3
VAY      0.97  48 ePg    53 13.20  -0.9
SKO      1.31 354 ePn    53 21.00   1.2
     S.D. = 1.6  on   4 of   4 obs.
-------------------------------------
   DEC 22, 1989  06h 46m 35.76± 1.01s
   40.730 N ± 8.1km   21.618 E ± 9.0km
   DEPTH =  10.0km  (geophysicist)
 GREECE                          (364)
      ML 3.0 (SKO), 2.8 (THE).

OHR      0.73 302 iPg    46 48.90  -1.2
                 iSg     47 00.60
LIT      0.92 133 iPc    46 52.00  -1.3
                 eS      47 06.50
VAY      0.93  50 iPg    46 52.30  -1.2
                 eSg     47 04.30
KNT      1.06  66 iPc    46 54.50  -1.3
                 e       47 09.80
SKO      1.25 354 iPn    46 59.80   0.9
KKB      1.58  44 iPd    47 04.00   0.1
AGG      1.79 162 iPc    47 08.40   1.4
MMB      1.81  61 ePd    47 09.00   1.8
VTS      2.21  32 iPc    47 14.00   0.9
KDZ      3.01  71 eP     47 57.00  32.6X
     S.D. = 1.5  on   9 of  10 obs.
-------------------------------------
   DEC 22, 1989  06h 48m 13.69± 0.16s
   43.057 N ± 2.2km   12.763 E ± 1.6km
   DEPTH =  33.0km  (normal)
 CENTRAL ITALY                   (381)
      MD 4.2 (SSO), 4.1 (ROM), 4.4
      (TRI)  ML 4.7 (ZAG), 4.7 (KBA),
      4.2 (LDG).

ASS      0.08 280 P      48 20.90   1.4
                 eSg     48 22.90
CIO      0.31  64 iPgd    48 22.15   0.5
ARV      0.46  16 Pd     48 25.20   1.5
SSO      0.54  64 iPgd    48 26.16   1.3
                 iSg     48 32.72
ALP      0.66 115 iPgd    48 27.01   0.3
                 iSg     48 34.85
MNS      0.68 185 P      48 27.30   0.5
AOI      0.79  51 iPg    48 30.02   1.7
                 iSg     48 40.18
AQU      0.85 146 P      48 31.80   2.6
RSM      0.90 346 Pd     48 33.50   3.6X
SFI      1.09 323 Pd     48 33.80   1.2
                 eSg     48 48.80
PGD      1.12 318 Pc     48 34.20   1.0
AZI      1.18 155 P      48 34.80   0.9
RMP      1.25 182 P      48 35.50   0.6
RDP      1.30 182 P      48 36.10   0.4
                 eSn     48 52.00
FIR      1.31 304 iPnd    48 37.50   1.7
                 iSn     48 55.00
MAO      1.35 242 Pc     48 36.70   0.3
SDI      1.56 150 P      48 39.60   0.1
PII      1.76 293 P      48 42.60   0.3
                 eSn     49 03.50
BDI      1.87 303 P      48 44.10   0.1
DUI      1.88 137 P      48 45.50   1.4
MME      1.88 308 Pd     48 44.70   0.4
RIY      2.57  26 iPnc    48 54.40   0.6
                 iSn     49 23.20
HVAR     2.70  86 iPnd    48 55.90   0.2
                 iSn     49 26.40
TRI      2.75  15 P      48 57.00   0.7
CEY      2.93  23 iP     49 00.00   0.9
                 iSn     49 31.00
                 i(Sb)   49 34.50
VVI      2.94 355 P      49 00.00   0.9
                 eSn     49 34.50
BOB      2.94 307 P      49 01.40   2.1
SAL      3.01 329 P      49 01.60   1.5
                 eSn     49 34.90
VBY      3.03  35 iPnc    49 01.50   1.1
                 iSn     49 32.50
VOY      3.08  15 iPn     49 01.80   0.6
                 eSn     49 32.20
CTI      3.09 345 Pd     49 02.30   0.9
                 eSn     49 36.80
SGO      3.14 142 P      49 01.30  -0.6
LJU      3.24  22 iPnc    49 04.50   1.1
                 iPg     49 11.10
                 iSn     49 37.00
PCP      3.39 297 Pg     49 06.22   0.5
                 S       49 36.71
MDI      3.49 322 P      49 07.48   0.6
FIN      3.50 291 Pg     49 07.16   0.0
                 S       49 38.86
CKI      3.52 294 Pd     49 07.40  -0.1
                 eSn     49 46.10
FVI      3.54   0 Pd     49 08.60   1.0
                 eSn     49 45.60
MGR      3.59 143 P      49 08.20  -0.2
ZAG      3.60  39 iPn     49 09.20   0.8
                 iSg     50 04.00
BLY      3.61  61 ePn     49 13.90   5.2X
                 Sn      49 49.90
BAI      3.62 121 P      49 09.00   0.3
PTJ      3.65  38 iPnc    49 09.50   0.3
                 iSn     49 49.00
IMI      3.65 285 Pg     49 09.20  -0.1
                 S       49 44.34
ROB      3.76 291 Pg     49 10.96   0.2
                 S       49 46.74
SBF      3.96 284 Pn     49 13.50  -0.2
                 Sn      49 58.00
BRT      3.96 122 P      49 12.90  -0.8
MMN      3.99 141 P      49 13.40  -0.6
VAI      4.01 316 Pd     49 14.60   0.3
                 eSn     49 56.90
KBA      4.04   6 iPnd    49 16.20   1.2
                 iPg     49 31.50
                 iSn     50 04.70
                 iSg     50 27.30
ENR      4.05 289 Pg     49 15.65   0.6
                 S       49 53.88
STV      4.12 289 Pg     49 16.91   0.9
                 S       49 54.38
CSI      4.22 140 P      49 17.20  -0.1
BRY      4.24  90 ePn     49 17.80   0.0
                 eSn     50 00.50
DOI      4.25 292 P      49 18.10   0.3
                 eSn     50 03.30
HCY      4.27  96 ePn     49 17.80  -0.2
                 eSn     50 01.00
ORO      4.28 308 P      49 18.10  -0.2
                 eSn     50 04.20
ORX      4.29 309 Pg     49 17.71  -0.7
                 S       49 57.22
TDS      4.33 140 P      49 19.20   0.3
PZZ      4.35 291 P      49 19.01  -0.3
                 S       50 01.51
RSP      4.48 300 P      49 19.92  -1.3
FRF      4.49 279 Pn     49 21.70   0.5
                 Sn      50 09.80
ROI      4.51 139 P      49 23.40   1.9
BDV      4.54  98 ePn     49 21.50  -0.4
                 eSn     50 05.50
FOUF     4.57 291 ePnc    49 22.80   0.5
                 e(Sn)   50 07.16
LMR      4.58 276 Pn     49 22.80   0.4
                 Sn      50 11.80
CZI      4.60 145 P      49 22.30  -0.4
LSD      4.69 303 P      49 22.98  -1.2
                 S       50 06.28
LRG      4.69 277 Pn     49 24.10   0.1
                 Sn      50 15.20
RRL      4.70 295 P      49 24.36   0.0
LCI      4.74 123 P      49 25.80   1.1
BNI      4.82 297 P      49 26.70   0.8
TTG      4.83  95 ePn     49 25.50  -0.4
                 eSn     50 15.00
ULC      4.92 101 ePn     49 26.60  -0.6
                 eSn     50 16.70
LPG      4.96 302 Pn     49 28.20   0.1
LPL      4.98 302 Pn     49 28.60   0.3
                 Sn      50 22.20
KMR      5.09  10 iPn-    49 30.70   1.0
                 iPg     49 52.50
                 iSn     50 27.80
IVA      5.24  90 ePn     49 32.70   0.8
                 eSn     50 25.00
PVY      5.32  93 ePn     49 33.50   0.5
                 eSn     50 26.50
SOP      5.34  29 e(P)    49 34.00   0.8
```

VKA	5.77	24	iPnc	49	38.90	-0.4
			iSn	50	41.20	
BEO	5.83	70	ePn	50	01.50	21.5X
			i	50	56.50	
ZST	5.97	29	iP	49	40.80	-1.3
			i	50	49.30	
KHC	6.10	5	iPn	49	43.40	-0.5
			Pg	49	50.30	
			Sg	50	48.90	
SRO	6.15	37	iP	49	43.70	-0.9
			i	50	18.60	
			e	50	31.10	
			i	51	27.70	
OHR	6.29	105	iPnd	49	46.00	-0.6
	1.4s		0.50nm			3.0mb X
BSF	6.36	321	Pn	49	47.00	-0.6
			Sn	50	55.20	
SKO	6.50	97	iPn	49	49.00	-0.6
			iSn	50	53.00	
			iSg	51	24.00	
CDF	6.59	326	Pn	49	49.60	-1.2
			Sn	50	59.20	
HAU	6.69	320	Pn	49	51.20	-1.0
			Sn	51	01.80	
BZS	6.84	65	ePc	49	54.00	-0.3
PSZ	6.98	43	eP	49	55.00	-1.3
PRU	7.04	9	Pn	49	55.80	-1.2
			e	50	02.70	
			Sn	51	11.30	
			Lg	52	11.00	
SMF	7.28	303	Pn	49	58.80	-1.7
			Sn	51	17.00	
LBF	7.36	305	Pn	50	00.00	-1.6
			Sn	51	17.20	
VAY	7.49	100	ePn	50	01.50	-1.8
LOR	7.57	307	Pn	50	02.80	-1.7
			Sn	51	21.80	
AVF	7.65	302	Pn	50	04.40	-1.2
SSF	7.68	305	Pn	50	04.20	-1.8
			Sn	51	25.20	
VTS	7.69	90	iPc	50	06.00	-0.4
KKB	7.72	95	iPd	50	06.00	-0.7
BRG	7.86	5	ePn	50	06.70	-1.8
			e	50	41.00	
			i	51	30.30	
BGF	7.87	300	Pn	50	07.60	-1.1
			Sn	51	30.40	
MAF	7.93	297	Pn	50	08.10	-1.5
			Sn	51	32.00	
CAF	7.94	287	Pn	50	09.60	-0.1
WLF	8.03	328	P	50	11.00	0.1
KSP	8.15	16	eP	50	12.00	-0.6
	1.5s	133.00nm				5.8mb
			e	50	15.50	
			e	50	59.00	
			e	51	16.50	
			iS	51	49.00	
			i	52	41.50	
TCF	8.18	297	Pn	50	12.50	-0.6
MMB	8.26	97	ePc	50	13.00	-1.1
CLL	8.26	1	ePn	50	13.00	-1.0
			ePg	50	53.00	
			eSn	51	39.00	
RJF	8.39	289	Pn	50	15.90	0.0
PGB	8.40	90	iPd	50	16.00	-0.1
LPO	8.52	285	Pn	50	17.60	-0.1
LFF	8.87	286	Pn	50	22.00	-0.5
RZN	8.95	95	iPd	50	22.00	-1.9
DOU	9.01	324	P	50	21.80	-2.6X
			iS	52	02.10	
ENN	9.02	331	eP	50	25.00	0.5
	0.8s	18.00nm				5.3mb
EPF	9.10	274	Pn	50	25.00	-0.8
PVL	9.19	85	iPd	50	24.00	-3.0X
KDZ	9.48	94	eP	50	22.00	-8.9X
DIM	9.48	92	iPc	50	30.00	-0.9
MLR	9.76	71	eP	50	35.50	0.5
WTS	9.80	338	e(P)	50	47.50	12.2X
	0.7s	4.00nm				
JMB	10.18	89	eP	50	39.00	-1.6
HRT	12.79	94	eP	51	11.00	-4.9X
ELL	14.58	110	eP	51	40.00	0.5
DLE	16.40	315	eP	52	16.50	13.8X
DCN	16.80	315	eP	52	16.50	8.7X
HRI	20.48	111	eP	52	50.00	-1.4
DSI	21.26	115	eP	52	56.00	-3.2X
PRNI	21.80	118	eP	53	03.00	-1.7

BCAO	38.80	171	ePc	55	46.30	9.2X
	0.4s		4.00nm			4.6mb

S.D. = 1.0 on 120 of 132 obs.

? DEC 22, 1989 07h 04m 45.60± 1.30s
38.303 N ±17.8km 142.341 E ±24.4km
DEPTH = 33.0km (normal)
4.7mb (2 obs.)
NEAR EAST COAST OF HONSHU, JAPAN (228)

MAT	3.73	243	eP	05	43.00	0.7
			eS	06	27.00	
WB5	58.36	189	eP	14	40.00	0.1
GBA	62.05	265	P	15	03.70	-1.7
SOD	64.08	337	iP	15	18.00	-0.1
HFS	73.23	336	eP	16	15.20	0.4
	0.5s		6.10nm			4.9mb
NB2	73.30	337	P	16	15.90	0.6
	0.7s		3.40nm			4.5mb
LPB	145.61	59	PKP	24	26.80	3.8X
CNCB	145.88	60	PKP	24	27.20	3.6X
			i	24	41.80	

S.D. = 1.2 on 6 of 8 obs.

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* DEC 22, 1989 07h 22m 16.85± 0.73s
8.324 N ±12.5km 126.610 E ±18.8km
DEPTH = 33.0km (normal)
4.5mb (2 obs.)
MINDANAO, PHILIPPINE ISLANDS (259)

MTN	21.51	168	eP	27	06.00	0.9
KNA	24.01	175	eP	27	30.50	0.7
CHTO	28.80	294	eP	28	14.00	-0.2
	1.0s		3.75nm			4.0mb
WB5	29.05	165	eP	28	15.50	-0.9
SHL	37.22	302	eP	29	29.50	2.1
FORR	38.97	178	eP	29	41.20	-0.6
BRS	43.62	145	eP	30	16.00	-4.1X
GBA	48.50	281	P	30	58.00	-0.9
IMA	78.26	24	eP	34	15.50	0.6
PMR	80.00	29	eP	34	24.50	0.3
SLL	93.95	333	eP	35	30.40	-2.0
	0.5s		2.90nm			5.0mb

S.D. = 1.3 on 10 of 11 obs.

? DEC 22, 1989 07h 32m 19.99± 2.82s
53.085 N ±24.4km 160.904 W ±16.3km
DEPTH = 33.0km (normal)
4.4mb (1 obs.)
SOUTH OF ALASKA (17)

SNKA	1.78	322	eP	32	48.34	-0.6
			eS	33	09.40	
DRRA	2.01	337	eP	32	52.08	-0.2
			eS	33	15.35	
SASA	2.27	6	eP	32	55.42	-0.5
			eS	33	20.79	
PS4	2.34	346	eP	32	57.25	0.3
			eS	33	23.54	
PVV	2.35	348	eP	32	57.12	0.0
			eS	33	23.51	
PN6	2.45	346	eP	32	59.62	1.1
			eS	33	25.70	
IVF	2.93	15	eP	33	04.99	-0.3
			eS	33	37.60	
KVN	32.32	98	e(P)	39	01.00	12.8X
HFS	67.05	3	eP	43	11.60	0.2
	0.8s		2.70nm			4.4mb

S.D. = 0.6 on 8 of 9 obs.

% DEC 22, 1989 08h 46m 22.58± 0.90s
39.227 N ± 8.1km 27.758 E ±12.8km
DEPTH = 10.0km (geophysicist)
TURKEY (366)

DST	0.77	60	ePg	46	37.90	0.2
			eSg	46	49.90	
IZM	0.91	205	ePg	46	40.10	0.0
			eSg	46	55.10	
EDC	1.12	4	ePn	46	44.00	0.4
BNT	1.13	6	iPn	46	43.50	-0.3
YLV	1.83	42	ePn	46	54.00	-0.3

S.D. = 0.5 on 5 of 5 obs.

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* DEC 22, 1989 08h 47m 27.71± 0.64s
12.430 S ± 7.3km 166.551 E ±13.9km
DEPTH = 33.0km (normal)

	5.1mb (6 obs.)					
SANTA CRUZ ISLANDS						(184)
PVC	5.55	162	iP	49	38.50	48.4X
			iS	50	22.00	
HNR	7.14	294	eP	49	12.00	-0.5
			eS	50	25.00	
DZM	9.59	181	iPc	49	47.20	0.5
			iS	51	45.00	
BRS	19.70	219	iPc	51	57.50	0.1
CTA	20.91	246	iPd	52	11.30	1.3
	1.4s	46.51nm				4.7mb
MSZ	32.15	178	P	53	53.40	-1.0
ASPA	32.91	246	eP	53	59.50	-1.9
Z	23s		0.53um			4.2MszX
			LR	05	32.80	
MAT	55.55	332	eP	57	01.00	-1.3
SSE	61.39	316	Pc	57	42.50	-0.6
	1.0s		28.00nm			5.3mb
MDJ	65.93	332	eP	58	12.00	-0.7
CN2	67.33	329	P	58	21.00	-0.5
GYA	69.84	304	P	58	37.60	-0.1
BJI	70.05	321	eP	58	38.00	-0.4
	1.2s		24.00nm			5.1mb
TIY	71.11	317	Pc	58	45.00	-0.1
XAN	71.63	312	Pc	58	48.80	0.5
CHTO	73.50	294	iP	59	00.00	0.5
	1.2s		27.78nm			5.1mb
CD2	74.06	307	P	59	02.80	0.2
BTO	74.24	319	eP	59	05.00	1.5
LZH	76.27	312	eP	59	16.50	1.2
	1.5s		75.00nm			5.5mb
SPA	77.65	180	iPc	59	21.60	-0.8
	0.9s		12.73nm			5.0mb
			i	59	30.10	
GTA	80.58	314	Pc	59	39.40	0.7
HYB	91.78	287	eP	00	34.00	0.0
BCAO	147.41	259	iPKPc	07	09.60	1.3
	0.5s		41.00nm			
			i	07	12.50	
			i	07	21.10	

S.D. = 0.9 on 22 of 23 obs.

? DEC 22, 1989 09h 10m 52.08± 1.66s
42.699 N ±18.9km 7.706 W ±10.1km
DEPTH = 10.0km (geophysicist)
SPAIN (377)
mbLg 3.0 (MDD).

ERUA	0.52	126	iP	11	03.00	0.4
			eS	11	09.40	
STS	0.65	287	iP	11	05.00	-0.1
			eS	11	13.50	
EZAM	0.92	233	iP	11	09.90	0.3
			eS	11	23.00	
EPLA	2.90	154	eP	11	38.50	-0.7
GUD	3.36	126	eP	11	55.00	9.2X
			eS	12	34.00	

S.D. = 0.9 on 4 of 5 obs.

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* DEC 22, 1989 09h 22m 39.73± 0.94s
37.177 N ±12.2km 26.504 E ± 7.5km
DEPTH = 33.0km (normal)
DODECANESE ISLANDS (369)
MD 3.6 (ATH).

YER	1.42	91	iPn	23	09.50	6.0X
KAP	1.71	161	eP	23	08.00	0.3
NPS	2.04	201	eP	23	12.20	-0.3
VAM	2.57	227	eP	23	20.00	0.1
			eS	23	50.00	
KSL	2.69	112	eP	23	20.80	-0.8
ELL	2.76	98	iPn	23	23.40	0.7
ITM	3.66	271	eP	23	38.60	3.2X
VLS	4.80	284	eP	23	53.00	1.5
CZI	8.42	287	P	24	40.80	-1.5

S.D. = 1.2 on 7 of 9 obs.

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* DEC 22, 1989 10h 00m 40.51± 2.50s
23.892 N ±11.2km 122.706 E ±21.6km
DEPTH = 10.0km (geophysicist)
TAIWAN REGION (243)

TWD	1.03	281	iPc	00	59.40	-0.6
TWC	1.06	313	iPd	01	00.30	-0.1
			eS	01	13.40	
TWF1	1.40	248	ePc	01	05.90	-0.2

22d 10h

		eS	01	21.90	
TWZ	1.58	320 ePc	01	10.00	1.4
ANP	1.68	320 eP	01	14.00	3.8X
TWG	1.84	235 ePc	01	12.70	0.3
SSE	7.30	350 P	02	29.00	-0.7
	0.5s	16.00nm			5.4mb
	S.D. = 1.0	on	6 of	7 obs.	

* DEC 22, 1989 10h 02m 47.02± 1.14s
4.951 S ±15.4km 142.863 E ± 8.4km
DEPTH = 33.0km (normal)
4.8mb (1 obs.)
PAPUA NEW GUINEA (202)

MNDI	1.43	147 eP	03	13.00	1.8
LAT	4.45	113 eP	03	54.00	0.0
PMG	6.14	136 eP	04	16.00	-1.9
MTN	13.99	235 iPd	06	04.60	-0.6
		eS	08	40.00	
WB5	16.99	208 eP	06	44.20	0.3
		i	06	50.00	
		eS	09	42.80	
KNA	17.52	231 eP	06	50.50	0.0
ASPA	20.52	204 iPd	07	25.00	-0.3
	0.8s	37.00nm			4.8mb
		eS	13	31.00	
GBA	67.49	287 P	13	42.60	0.2
BCAO	124.53	272 iPKPc	21	46.00	0.3
	0.5s	4.00nm			
KIC	147.73	274 PKPc	22	30.70	2.6X
	0.9s	8.50nm			
TIC	148.01	275 PKP	22	31.40	2.8X
	0.8s	8.50nm			
LIC	148.02	274 PKP	22	31.56	3.0X
	0.8s	13.00nm			
	S.D. = 1.1	on	9 of	12 obs.	

% DEC 22, 1989 10h 03m 45.31± 1.17s
29.910 S ±11.2km 68.822 W ±10.0km
DEPTH = 10.0km (geophysicist)
SAN JUAN PROVINCE, ARGENTINA (137)

RTRS	0.61	245 iPd	03	58.00	0.4
RTCB	1.57	179 iPc	04	13.20	-0.2
		S	04	38.00	
CFA	1.76	164 iPc	04	17.00	0.9
		S	04	44.50	
RTBS	1.83	197 e(P)	04	16.00	-1.0
		S	04	39.80	
RTCV	1.96	173 iP	04	19.00	0.0
		S	04	47.20	
CYA	3.02	62 ePc	04	34.00	-0.1
	S.D. = 0.8	on	6 of	6 obs.	

% DEC 22, 1989 11h 03m 58.27± 1.03s
39.081 N ± 8.4km 27.566 E ±10.9km
DEPTH = 10.0km (geophysicist)
TURKEY (366)

IZM	0.72	199 ePg	04	12.10	-0.4
		eSg	04	19.10	
DST	0.98	57 iPn	04	17.90	1.1
EZN	1.22	308 iPn	04	21.80	0.9
EDC	1.28	10 ePn	04	21.00	-1.1
BNT	1.30	12 iPn	04	21.90	-0.5
	S.D. = 1.3	on	5 of	5 obs.	

? DEC 22, 1989 11h 13m 01.61± 4.29s
22 416 S ±41.9km 178.484 W ±36.0km
DEPTH = 416.8 ± 30.3 km
4.9mb (4 obs.)
SOUTH OF FIJI ISLANDS (171)

SGE	5.87	324 eP	14	34.10	-0.2
DZM	13.96	269 iPd	16	05.90	1.3
ASPA	43.68	259 iPd	20	29.00	-0.2
	0.8s	12.00nm			4.3mb
WB5	43.91	264 eP	20	30.10	-1.0
FORR	48.11	248 eP	21	03.40	0.0
MBL	56.92	259 eP	22	06.50	-1.1
	0.4s	26.00nm			5.0mb
NANU	60.48	256 eP	22	31.50	-0.2
	0.3s	15.00nm			4.9mb
MAT	71.49	324 eP	23	39.00	-1.1
BJI	86 94	316 eP	25	02.00	0.2
PNT	88.49	34 eP	25	09.00	0.0
CHG	90.47	290 iPc	25	21.00	2.3
	0.9s	13.66nm			4.8mb
NUR	138.63	343 ePKP	31	38.00	-1.8
HFS	141.35	350 ePKP	31	37.60	-7.1X
	0.4s	3.20nm			
EKA	146.94	5 PKP	31	56.00	1.8
	0.7s	10.10nm			
CLL	149.81	346 iPKPd	32	04.00	5.2X
	1.1s	21.00nm			
PRU	150.63	343 PKP	32	05.60	5.5X
		e	32	07.10	
ZST	151.42	338 ePKP	31	57.50	-3.8X
KHC	151.67	343 ePKP	32	07.80	6.0X
	S.D. = 1.4	on	13 of	18 obs.	

% DEC 22, 1989 11h 26m 38.15± 1.14s
17.170 N ±26.2km 95.181 W ±11.0km
DEPTH = 33.0km (normal)
OAXACA, MEXICO (60)
Felt along the Veracruz-Oaxaca border.

OXX	1.48	267 iP	27	03.50	0.6
		iS	27	24.50	
SCX	2.48	100 eP	27	17.00	0.0
		iS	27	41.00	
IISM	2.76	311 eP	27	21.00	0.0
TPX	3.60	128 (P)	27	57.00	24.0X
PPM	3.78	300 eP	27	37.00	1.0
III	4.26	287 eP	27	41.00	-1.5
ACX	4.49	267 (P)	28	33.00	47.4X
	S.D. = 1.4	on	5 of	7 obs.	

DEC 22, 1989 11h 32m 06.09± 0.99s
41.232 N ± 8.6km 29.000 E ± 5.9km
DEPTH = 10.0km (geophysicist)
TURKEY (366)

ISK	0.17	165 ePg	32	09.80	-0.2
		eSg	32	13.80	
CTT	0.44	259 iPg	32	14.30	-0.7
GBZT	0.56	143 ePg	32	17.60	0.2
		iSg	32	26.00	
HRT	0.65	129 ePg	32	18.90	-0.2
YLV	0.72	157 iPg	32	19.90	-0.5
DMK	1.10	303 iPn	32	27.10	0.3
BNT	1.20	223 iPn	32	28.90	0.5
EDC	1.24	225 ePn	32	29.00	-0.1
DST	1.65	190 ePn	32	35.90	0.7
	S.D. = 0.5	on	9 of	9 obs.	

DEC 22, 1989 12h 24m 25.45± 0.48s
28.894 N ± 6.3km 94.691 E ± 6.3km
DEPTH = 33.0km (normal)
4.8mb (2 obs.)
INDIA-CHINA BORDER REGION (313)

LSA	3.20	285 Pn	25	17.80	2.8
		Sn	25	56.50	
		Sg	26	05.00	
SHL	4.15	218 eP	25	27.00	-1.3
LZH	10.54	45 eP	26	57.50	0.1
	Z 20s	1.00um			
	N 10s	0.80um			
	E 10s	0.60um			
CHG	10.76	158 ePd	26	59.90	-0.5
	1.0s	17.50nm			5.2mb
GYA	10.89	100 P	27	02.00	-0.2
GTA	11.31	21 eP	27	07.40	-0.5
	Z 12s	1.50um			
	N 11s	1.20um			
NST	14.08	158 eP	27	46.00	1.2
WMQ	15.92	341 eP	28	12.00	3.4X
	Z 16s	1.40um			3.8Msz
NNT	16.89	163 eP	28	21.20	0.2
BTQ	17.15	43 eP	28	24.00	-0.2
	N 12s	0.60um			
	E 12s	0.50um			
KSH	18.69	309 eP	28	41.60	-1.7
	Z 14s	1.20um			
HYB	18.70	236 eP	28	42.00	-1.4
TIA	20.24	63 P	29	00.60	0.0
BJI	20.86	52 eP	29	10.00	3.1X
GBA	22.09	230 P	29	20.00	0.5
		S	33	20.00	
QUE	24.15	280 eP	29	39.50	-0.3
HFS	61.00	326 eP	34	38.30	0.7
	0.4s	1.10nm			4.3mb
WB5	61.79	137 eP	34	44.00	0.5
	S.D. = 1.2	on	16 of	18 obs.	

? DEC 22, 1989 12h 59m 03.05± 7.57s
27.296 S ±66.6km 67.387 W ±18.0km
DEPTH = 155.1 ± 59.3 km
CATAMARCA PROVINCE, ARGENTINA (130)

CYA	1.82	129 ePc	59	37.00	0.2
CFA	4.36	190 ePc	00	09.50	0.6
		S	01	00.00	
ZON	4.38	195 eP	00	08.00	-1.2
		eS	01	01.00	
TCA	4.71	149 iPd	00	13.00	-0.6
		S	00	56.50	
MRA	5.30	164 ePd	00	21.70	0.4
JACH	6.04	207 eP	00	32.00	0.6
ROCH	6.47	208 eP	00	36.50	-0.7
PEL	6.49	205 eP	00	36.60	-0.7
FCH	6.51	202 iP	00	39.50	1.5
TACH	7.04	205 iP	00	44.60	-0.1
LNV	7.49	207 eP	00	48.00	-2.7X
	S.D. = 1.0	on	10 of	11 obs.	

DEC 22, 1989 13h 57m 27.55± 1.25s
36.516 N ± 8.4km 70.816 E ± 7.6km
DEPTH = 183.5 ± 14.6 km
4.8mb (8 obs.)
HINDU KUSH REGION (718)

QUE	7.09	208 eP	59	10.00	0.1
MAIO	9.13	272 iPc	59	36.50	-0.2
	0.7s	9.53nm			4.3mb
		eS	01	17.00	
NDI	9.49	144 eP	59	40.00	-1.3
	0.7s	23.97nm			4.7mb
WMQ	14.81	55 P	00	48.00	-1.3
		S	03	34.60	
POO	18.11	171 eP	01	34.50	6.2X
		iS	05	21.00	
LSA	18.32	106 P	01	32.00	1.1
HYB	20.22	158 iPd	01	52.00	2.0
	1.0s	20.00nm			4.6mb
		eS	05	25.00	
SHL	21.05	115 iP	02	03.20	4.9X
		iS	05	38.80	
GTA	23.00	74 eP	02	18.20	1.0
GBA	23.58	164 P	02	24.00	1.3
		S	07	04.00	
RYD	23.85	247 eP	02	26.00	0.7
NUR	37.73	324 iP	04	28.30	1.7
SUF	37.83	328 eP	04	28.00	0.6
SOD	39.66	335 eP	04	43.00	0.5
KEV	40.73	338 eP	04	51.00	-0.2
HFS	42.96	322 eP	05	09.40	-0.2
	0.7s	20.90nm			4.8mb
	Z 15s	0.09um			3.8MszX
		LR	20	56.00	
NB2	44.28	323 P	05	20.20	0.0
	0.8s	17.40nm			4.7mb
BCAO	57.53	249 iPd	06	58.60	-1.5
	0.5s	12.00nm			4.9mb
MBC	67.33	3 ePd	0B	04.10	0.1
	1.0s	21.00nm			4.9mb
		pP	08	50.50	197kmX
BUL	69.03	223 iPc	08	28.90	13.6X
	1.0s	10.00nm			
KIC	74.64	267 P	08	47.00	-1.6
ASPA	84.38	125 ePc	09	38.60	-1.7
	0.6s	16.00nm			5.0mb
FORR	85.86	133 iPc	09	46.30	-1.1
	S.D. = 1.2	on	20 of	23 obs.	

? DEC 22, 1989 14h 08m 08.71± 6.17s
7.955 N ±81.7km 126.935 E ±32.5km
DEPTH = 33.0km (normal)
4.7mb (1 obs.)
MINDANAO, PHILIPPINE ISLANDS (259)

MTN	21.08	169 eP	12	53.00	0.3
MBL	29.76	193 eP	14	14.00	-0.6
MRWA	38.43	195 eP	15	30.00	0.8
	0.5s	7.00nm			4.7mb
FORR	38.60	178 eP	15	30.00	-0.5
COOL	39.01	188 eP	15	34.00	0.0
BRS	43.14	145 iP	16	08.00	0.0
	S.D. = 0.7	on	6 of	6 obs.	

& DEC 22, 1989 17h 17m 38.94s
62.025 N 150.723 W
DEPTH = 51.4km
4.3mb (1 obs.)
CENTRAL ALASKA (1)
<AGS-P>. Felt (III) at Houston and Tolkeetno.

SKT	0.38	264	iP	17 48.74	-0.4
CUT	0.44	29	iP	17 49.12	-0.5
PWA	0.55	133	iPd	17 50.80	-0.1
SUA	0.56	181	iP	17 51.12	-0.1
			eS	17 59.86	
PLRM	0.87	119	iP	17 54.25	-0.9
PMR	0.87	119	iPc	17 54.30	-0.8
GHO	0.89	106	iP	17 54.76	-0.7
PME	0.90	116	iP	17 54.83	-0.6
NCG	0.92	228	iP	17 55.18	-0.8
CGLM	0.95	221	iP	17 55.39	-0.8
PMS	0.96	144	iPd	17 55.80	-0.6
CRP	1.02	223	iP	17 56.68	-0.7
SPU	1.06	218	iP	17 56.92	-0.8
HUR	1.08	27	iP	17 56.89	-1.1
BGL	1.10	227	iP	17 57.74	-0.7
CKL	1.13	224	iP	17 58.04	-0.8
NKA	1.31	191	eP	18 02.93	1.8
KTH	1.54	357	iP	18 03.11	-1.3
RND	1.63	31	eP	18 04.04	-1.8
RDT	1.67	210	iP	18 05.52	-0.8
			eS	18 24.90	
NCA	1.84	89	iP	18 07.57	-1.1
RED	1.89	212	iP	18 08.83	-0.6
NNL	2.01	188	eP	18 11.37	0.3
SEW	2.03	162	eP	18 11.60	0.4
GLI	2.09	122	iP	18 09.91	-2.2
TOA	2.14	86	iPc	18 12.00	-1.0
VLZ	2.28	111	eP	18 12.65	-2.2
KLU	2.35	101	iP	18 13.86	-2.0
FID	2.41	120	iP	18 13.90	-2.8
SDG	2.47	76	eP	18 16.86	-0.8
SVW	2.52	251	iPc	18 16.10	-2.2
CNPM	2.52	186	eP	18 18.07	-0.2
HIN	2.62	127	iP	18 17.05	-2.6
			eS	18 47.76	
TTA	2.62	293	iPc	18 17.10	-2.6
PDB	2.81	219	eP	18 20.85	-1.6
CVA	2.82	120	eP	18 19.66	-2.9
SGAM	3.07	117	eP	18 22.65	-3.5
FBA	3.17	23	iPc	18 24.90	-2.7
RAGM	3.36	117	eP	18 27.57	-2.6
MID	3.38	138	e(P)	18 29.10	-1.4
WAX	4.12	109	eP	18 37.57	-3.4
SNH	4.25	112	eP	18 40.56	-2.2
IMA	4.26	344	ePc	18 40.20	-2.8
KDC	4.38	193	eP	18 43.40	-1.1
DWY	5.53	63	P	18 57.30	-3.4
SDN	8.41	222	eP	19 39.70	-1.0
SIT	9.26	116	e(P)	19 48.50	-4.0
BRW	9.61	348	eP	19 53.00	-4.3
KBA	70.50	11	iPc	28 44.80	-5.0
	0.8s		3.50nm		4.3mb
	49 obs. associated				

? DEC 22, 1989 18h 49m 04.94± 1.51s
31.247 S ±11 2km 68.664 W ±20.4km
DEPTH = 33.0km (normal)
SAN JUAN PROVINCE, ARGENTINA (137)

RTCB	0.27	206	iPd	49 15.50	3.1X
			S	49 25.50	
ZON	0.30	182	iPd	49 13.30	0.5
RTCV	0.62	170	iPc	49 16.90	-0.4
RTBS	0.79	238	iPc	49 19.50	-0.1
			S	49 34.50	
RTRS	1.27	327	iPc	49 26.50	0.0
			S	49 45.50	
	S.D. = 0.7		on	4 of 5 obs.	

DEC 22, 1989 19h 19m 20.79± 0.47s
40.731 N ± 4.6km 21.720 E ± 4.5km
DEPTH = 10.0km (geophysicist)
GREECE (364)
MD 3.6 (ATH) ML 3.7 (SKO), 2.9 (TTG).

KZN	0.43	175	iPgc	19 27.50	-2.0
OHR	0.79	299	iPgc	19 33.40	-2.9
			iSg	19 45.50	
LIT	0.86	137	ePd	19 36.50	-0.9
			eS	19 50.60	
VAY	0.87	47	iPgd	19 37.40	-0.2
			iSg	19 50.00	
THE	0.95	96	eP	19 40.00	1.1
			eS	19 55.20	
KNT	0.99	64	iPd	19 39.50	-0.1
			eS	19 54.30	
SOH	1.24	85	eP	19 44.80	0.9
			eS	20 04.20	
SKO	1.26	350	iPn	19 43.30	-0.9
			i	19 45.50	
			iSn	19 59.00	
PLG	1.36	105	ePg	19 46.20	0.4
SRS	1.47	74	iPd	19 31.80	-15.5X
			eS	19 41.80	
KKB	1.53	42	iPd	19 49.00	0.8
PAIG	1.70	118	eP	19 50.50	-0.1
			eS	20 15.30	
MMB	1.74	60	eP	19 52.00	0.7
OUR	1.77	102	eP	19 52.80	1.2
			eS	20 17.80	
AGG	1.77	164	iPd	19 52.00	0.3
			eS	20 17.60	
NEO	1.83	140	ePb	19 52.00	-0.6
VTS	2.17	30	iPd	19 59.00	1.4
ULC	2.23	304	ePn	19 59.40	1.0
			eSn	20 30.00	
RZN	2.45	66	eP	20 02.00	0.3
TTG	2.51	313	ePn	20 03.50	1.3
			eSn	20 36.80	
PGB	2.58	44	eP	20 04.00	0.6
PLD	2.63	58	eP	20 13.00	9.0X
BDV	2.67	306	ePn	20 06.00	1.4
			eSn	20 42.00	
VLS	2.70	199	ePn	20 04.50	-0.5
RDO	2.92	81	ePn	20 07.50	-0.6
KDZ	2.94	71	eP	20 08.00	-0.4
DIM	3.16	64	eP	20 19.00	7.5X
ITM	3.55	177	ePb	20 18.50	1.4
PVL	3.66	46	iPc	20 17.00	-1.7
CZI	4.55	252	P	20 32.50	1.3
MLR	5.67	32	ePd	20 51.00	3.7X
VRI	6.30	34	iPc	20 52.50	-3.5
	S.D. = 1.4		on	28 of 32 obs.	

? DEC 22, 1989 19h 52m 32.27± 1.59s
41.748 N ±17.1km 12.745 E ±10.3km
DEPTH = 10.0km (geophysicist)
SOUTHERN ITALY (390)

RDP	0.02	296	Pc	52 34.20	-0.1
			eSg	52 36.30	
RMP	0.07	333	Pc	52 34.80	0.1
			eSg	52 36.30	
MNS	0.64	356	P	52 45.00	-0.1
			eSg	52 55.50	
SDI	0.80	93	P	52 47.90	0.0
	S.D. = 0.2		on	4 of 4 obs.	

? DEC 22, 1989 19h 55m 03.14± 5.70s
41.588 N ±27.5km 12.548 E ±30.5km
DEPTH = 10.0km (geophysicist)
SOUTHERN ITALY (390)

RDP	0.21	37	Pc	55 07.90	0.1
			eSg	55 09.70	
RMP	0.25	27	Pc	55 08.50	0.0
			eSg	55 09.90	
AZI	0.77	59	P	55 18.00	-0.2
			eSg	55 27.70	
MNS	0.80	7	P	55 18.70	0.0
			eSg	55 30.30	
SDI	0.96	83	P	55 21.50	0.1
			eSg	55 35.70	
CIO	1.67	15	ePn	55 36.05	3.5X
			iSn	55 57.14	
	S.D. = 0.2		on	5 of 6 obs.	

? DEC 22, 1989 19h 56m 20.08± 6.02s
41.666 N ±43.8km 12.717 E ±31.0km
DEPTH = 10.0km (geophysicist)
SOUTHERN ITALY (390)

RDP	0.09	360	Pc	56 22.40	-0.4
			eSg	56 23.50	
RMP	0.15	356	P	56 22.90	-0.6
			eSg	56 24.60	
AZI	0.63	59	Pd	56 32.40	-0.3
			eSg	56 41.40	
MNS	0.72	358	Pd	56 33.30	-1.0
			eSg	56 43.70	
SDI	0.82	87	P	56 35.90	-0.2
			eSg	56 47.90	
ASS	1.40	358	P	56 46.30	0.5
			eSg	57 03.60	
CIO	1.56	12	iPn	56 50.21	2.2
			iSg	57 11.27	
	S.D. = 1.3		on	7 of 7 obs.	

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* DEC 22, 1989 19h 57m 49.01± 0.98s
51.639 N ±16.2km 175.962 E ± 9.1km
DEPTH = 33.0km (normal)
4.5mb (6 obs.)
RAT ISLANDS, ALEUTIAN ISLANDS (6)

SMY	1.58	314	iPd	58 17.50	2.5
ADK	4.58	84	ePd	58 58.30	0.7
SVW	18.22	48	e(P)	02 01.70	0.9
TTA	18.72	42	e(P)	02 07.30	0.5
			e	02 15.50	
KDC	19.11	59	eP	02 08.00	-3.4X
IMA	21.03	35	eP	02 31.30	-0.7
	0.7s		3.30nm		3.8mb
			e	02 41.70	
PMS	21.10	50	eP	02 31.50	-1.1
	0.6s		12.20nm		4.5mb
FBA	22.82	41	eP	02 49.90	0.2
BRW	23.24	22	e(P)	02 53.00	-0.6
MBC	34.60	22	eP	04 35.50	-0.8
	0.9s		6.00nm		4.5mb
EDM	41.51	59	iP	05 36.00	1.7
LBFM	42.79	79	eP	05 46.50	1.4
WDC	42.84	80	e(P)	06 04.90	19.6X
CMB	45.71	81	e(P)	06 09.60	1.1
KVN	46.48	79	eP	06 14.00	-0.8
TNP	47.63	79	eP	06 13.50	-10.4X
PLM	50.93	84	eP	06 58.50	9.3X
FRB	54.47	30	eP	07 13.00	-1.9
SUF	63.52	345	eP	08 17.00	-0.7
SHL	66.81	282	eP	08 40.00	0.3
NB2	67.01	352	P	08 39.20	-1.1
	0.8s		7.00nm		4.8mb
HFS	67.67	351	eP	08 42.70	-1.6
	0.5s		1.70nm		4.4mb
QUE	77.55	303	eP	09 37.00	-6.3X
KBA	80.54	348	iPc	10 00.70	1.5
	0.7s		7.70nm		4.8mb
			i	10 14.40	
MAW	144.69	218	ePKP	17 21.00	-1.3
	S.D. = 1.3		on	20 of 25 obs.	

DEC 22, 1989 20h 18m 40.35± 0.75s
37.216 N ± 6.7km 30.391 E ± 8.3km
DEPTH = 10.0km (geophysicist)
TURKEY (366)

BCK	0.29	33	iPg	18 46.40	-0.1
ELL	0.61	220	iPg	18 51.10	-1.6
KHL	1.30	328	ePn	19 03.70	-0.8
YER	1.69	268	iPn	19 11.90	1.9
IZM	2.74	296	ePn	19 25.20	-0.1
DST	2.76	330	ePn	19 26.00	0.5
PPCY	2.81	145	eP	19 31.50	5.3X
CSS	3.27	132	eP	19 36.50	3.7X
BNT	3.68	329	iPn	19 38.10	-0.4
DSI	6.98	142	eP	20 24.00	-1.1
PRNI	7.85	149	eP	20 39.00	1.6
	S.D. = 1.3		on	9 of 11 obs.	

DEC 22, 1989 20h 24m 02.90± 0.70s
31.757 S ± 8.8km 69.698 W ± 7.7km
DEPTH = 10.0km (geophysicist)
SAN JUAN PROVINCE, ARGENTINA (137)

RTBS	0.23	66	e(P)	24 51.00	43.2X
RTCB	0.81	71	iPd	24 19.80	1.1
ZON	0.89	77	iPd	24 19.80	-0.3
			eS	24 34.00	
RTCV	0.99	96	iPc	24 21.00	-0.8
RTRS	1.59	7	iPc	24 31.00	-0.2
PEL	1.61	211	iPd	24 32.10	0.5

22d 20h

		iS	24 55.60		
FCH	1.64	198 iPd	24 33.30	1.1	
		iS	24 57.50		
ROCH	1.64	222 iPc	24 32.80	0.7	
PCH	1.98	200 iPd	24 36.90	0.0	
		i	25 05.00		
		iS	25 06.00		
TACH	2.16	209 iPc	24 38.20	-1.3	
		iS	25 08.50		
LCCH	2.33	222 iPd	24 41.10	-0.8	
		e	25 10.90		
LNV	2.62	213 iPd	24 43.10	-2.9X	

S.D. = 0.9 on 10 of 12 obs.

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* DEC 22, 1989 20h 37m 59.20± 0.84s
41.771 N ± 8.4km 12.736 E ± 7.0km
DEPTH = 10.0km (geophysicist)
SOUTHERN ITALY (390)

RDP	0.02	227 Pc	38 01.20	0.0	
		eSg	38 03.30		
RMP	0.05	328 P	38 01.10	-0.3	
		eSg	38 03.30		
AZI	0.57	67 P	38 10.40	-0.3	
MNS	0.61	356 Pd	38 11.90	0 3	
		eSg	38 22.30		
SDI	0.81	94 Pd	38 15.10	0.1	
		eSg	38 28.10		
CIO	1.45	12 ePn	38 29.17	3.6X	
		iSn	38 50.21		

S.D. = 0.3 on 5 of 6 obs.

DEC 22, 1989 21h 09m 38.06± 0.37s
6.990 S ± 3.3km 124.807 E ± 4.9km
DEPTH = 551.5 ± 5.3 km
5.2mb (20 obs.)
BANDA SEA (280)
CENTROID, MOMENT TENSOR (HRV)
Data Used: GDSN
L.P.B., 9S, 16C
Centroid Location:
Origin Time 21:09:39.3 0.9
Lat 7.03S FIX;Lon 124.84E FIX
Dep 549.3 6.8 Half-duration 1.7
Moment Tensor; Scale 10**16 Nm
Mrr=-3.98 0.95 Mtt=-1.01 0.90
Mff= 4.99 1.52 Mrt=-5.08 1.04
Mrf= 2.96 0.95 Mtf= 6.14 1.30
Principal Axes:
T Val= 8.83 Plg= 1 Azm=122
N 1.48 47 213
P -10.30 43 31
Best Double Couple:Mo=9.6*10**16
NP1:Strike=176 Dip=60 Slip=-147
NP2: 68 62 -34

MKS	5.59	288 iPc	11 14.20	0.4	
MTN	8.52	134 iPc	11 41.80	-0.1	
KNA	9.53	156 iPc	11 51.60	-0.5	
		eS	13 39.00		
TSM	13.01	329 ePc	12 29.30	2.0	
MBL	14.89	198 iPd	12 46.00	0.0	
	0.5s	77.00nm	5.5mb		
KKM	15.53	326 ePd	12 53.50	1.0	
	0.3s	34.80nm	5.4mb		
WB5	15.82	145 iPc	12 55.90	0.7	
NANU	17.88	209 eP	13 16.00	0.8	
	0.4s	38.00nm	5.4mb		
		eS	17 17.00		
ASPA	18.74	153 iPc	13 24.20	0.7	
	0.5s	444.00nm	6.3mb X		
		eS	16 26.80		
		iPcS	23 46.40		
WARB	19.17	175 iPc	13 28.20	0.7	
	0.4s	89.00nm	5.7mb		
MEKA	20.41	196 iPc	13 38.70	-0.3	
PMG	22.25	98 eP	13 56.00	0.2	
MRWA	23.62	200 eP	14 07.00	-1.1	
	0.3s	8.00nm	4.8mb		
		eS	19 50.00		
FORR	23.94	173 eP	14 09.40	-1.5	
	0.4s	170.00nm	6.0mb		
COOL	24.02	188 eP	14 10.00	-1.7	
CTA	24.54	124 iPc	14 16.60	0 2	
	1.0s	127.00nm	5.5mb		
		i	15 31.60		
		iS	17 58.00		

		iScP	20 23.00		
BAL	24.69	197 eP	14 17.00	-0.7	
KLB	25.35	194 eP	14 23.00	-0.4	
IPM	26.37	295 ePd	14 33.20	0.6	
OLP	26.86	139 iPc	14 37.20	0.4	
RKG	27.90	194 iPd	14 50.20	4.5X	
GUA	28.54	44 eP	14 51.30	-0.2	
	0.6s	149.33nm	5.8mb		
QIZ	29.77	331 eP	15 01.80	-0.2	
ADE	30.64	157 iPc	15 10.00	0.6	
	1.0s	220.00nm	5.7mb		
GZH	31.93	340 P	15 20.70	0.5	
NST	33.23	313 eP	15 33.90	2.6	
LOE	33.28	317 eP	15 31.50	-0.2	
BRS	33.40	131 iPd	15 32.30	-0.4	
		i	15 36.00		
		i	17 01.00		
		i(ScP)	20 51.20		
		i	21 32.20		
		eS	23 16.00		
HNR	34.85	96 P	15 45.00	0.1	
BWA	34.92	145 eP	15 47.70	2.4	
		e	17 22.00		
		iScP	20 57.10		
BDT	35.08	314 eP	15 47.10	0.5	
	0.7s	51.10nm	5.3mb		
CAN	35.90	145 eP	15 54.50	1.1	
		i	16 12.10		
		i	17 19.10		
		iScP	21 00.20		
CHG	36.16	316 iPc	15 56.10	0.5	
	1.0s	20.00nm	4.7mb		
GYA	37.62	333 P	16 08.00	0.4	
		PcP	18 12.20		
SSE	38.03	355 eP	16 11.00	0.3	
	1.0s	70.00nm	5.2mb		
		e	21 22.00		
		i	24 50.00		
KMI	38.47	327 Pc	16 16.50	1.7	
		S	21 33.00		
WHN	38.64	345 Pd	16 15.70	-0.1	
	1.0s	0.07nm	2.2mb X		
NJ2	39.23	352 Pd	16 21.00	0.5	
	1.0s	0.20nm	2.7mb X		
CD2	42.74	333 eP	16 47.80	-0.8	
		S	22 29.40		
DZM	42.83	115 iPc	16 50.00	0.4	
XAN	43.49	341 Pc	16 51.80	-2.7	
TIA	43.57	351 eP	16 54.20	-0.8	
TSRJ	43.59	13 P	16 55.50	0.3	
IIDJ	44.01	15 P	16 57.80	-0.7	
CHJJ	44.84	16 P	17 04.00	-0.8	
MTMJ	45.03	15 P	17 06.20	-0.2	
MAT	45.09	15 iPd	17 06.10	-0.7	
	0.8s	92.54nm	5.4mb		
KAKJ	45.33	18 P	17 07.50	-1.0	
SHL	45.52	317 iP	17 09.00	-1.4	
		iS	23 02.20		
DL2	45.76	357 iPc	17 12.00	0.2	
	0.9s	0.20nm	2.6mb X		
		eS	23 10.00		
TIY	45.95	346 Pd	17 12.20	-1.2	
NIIJ	45.96	16 P	17 13.90	0.5	
YAMJ	47.12	16 P	17 23.00	0.8	
LZH	47.16	337 P	17 23.00	0.2	
	1.5s	0.17nm	2.4mb X		
		pP	17 46.50	99kmX	
		sP	17 54.50		
		S	23 34.00		
BJI	47.47	351 eP	17 24.00	-0.8	
	1.0s	54.00nm	5.0mb		
		PcP	18 45.50		
		ScP	21 47.00		
		eS	23 36.50		
OFUJ	48.43	18 P	17 32.50	0.3	
SNY	48.59	359 Pd	17 31.90	-1.4	
LSA	48.75	320 P	17 36.30	1.0	
HHC	49.14	347 eP	17 36.50	-1.1	
BTO	49.27	345 eP	17 37.50	-1.0	
AOMJ	49.44	16 eP	17 41.60	2.0	
CN2	50.55	1 Pc	17 46.80	-0.9	
GBA	51.29	294 P	17 50.00	-3.6X	
		e	19 36.00		
MDJ	51 55	4 iPd	17 55.00	0.0	
		S	24 33.00		
GTA	51.64	335 Pd	17 55.80	-0.2	
	1.2s	0.10nm	2.1mb X		

HYB	51.73	299 eP	17 55.00	-1.8	
	1.0s	30.00nm	4.7mb		
		i	17 56.00		
MSZ	53.00	142 P	18 05.90	0.4	
KRP	55.19	132 P	18 22.40	1.4	
KHZ	55.52	138 P	18 23 40	0.1	
	0.4s	8.00nm	4.4mb		
TCW	55.53	136 P	18 23.00	-0.3	
CCW	55.70	137 P	18 24 60	0.0	
KIW	55.83	135 P	18 25.00	-0.5	
MRW	55.83	136 P	18 24.70	-0.7	
WEL	55.89	136 eP	18 25.60	-0.3	
CAW	56.03	136 eP	18 26.30	-0.6	
WDW	56.04	136 P	18 25.80	-1.1	
MNG	56.13	135 P	18 26.70	-0.9	
	0.3s	21.00nm	4.9mb		
POO	56.28	298 iPc	18 27.20	-1.8	
MTW	56.35	135 P	18 28.30	-0.8	
BLW	56.42	136 P	18 28.90	-0.6	
HBZ	57.15	131 P	18 35.10	0.6	
	0.5s	129.00nm	5.5mb		
NDI	57.96	310 iPc	18 37.80	-2.4	
	0.5s	31.69nm	4.9mb		
WMQ	60.69	330 P	18 57.80	-0.3	
		S	26 32.50		
KSH	64.57	320 P	19 24.50	1.3	
MAIO	74.71	310 iPd	20 24.40	1.1	
TAB	85.28	309 eP	21 20.00	1.9	
HFS	106.48	331 ePdiff	22 52.70	-1.0X	
	0.4s	0.60nm	4.9mb		
NB2	107.40	332 PKP	27 02.70	-0.5	
	0.8s	2.10nm			
BSF	113.80	319 ePKP	27 15.70	-0.2	
	0.6s	3.60nm			
HAU	114.03	320 ePKP	27 16.20	0.0	
LPG	114.48	317 ePKP	27 17.60	0.1	
LOR	115.86	320 ePKP	27 19.90	0.2	
	0.5s	2.10nm			
LBF	115.88	319 ePKP	27 19.80	0.0	
	0.5s	2.10nm			
SSF	116.16	319 ePKP	27 20.50	0.3	
	0.6s	4.50nm			
AVF	116.34	319 ePKP	27 20.50	-0.1	
BGF	116.75	319 ePKP	27 21.80	0.4	
	0.6s	11.10nm			
MAF	117.04	319 ePKP	27 22.10	0.1	
TCF	117.25	319 ePKP	27 22.80	0.4	
LSF	117.71	319 ePKP	27 23.40	0.2	
LDF	117.89	322 ePKP	27 23.50	0.0	
FLN	118.04	322 ePKP	27 24.10	0.4	
GRR	118.42	322 ePKP	27 24.70	0.2	
MFF	118.66	320 ePKP	27 25.20	0.2	
LPF	118.67	322 ePKP	27 25.30	0.3	
	0.5s	8.70nm			
FRB	122.54	7 ePKP	27 31.00	-0.8	
ALQ	125.39	52 ePKP	27 40.00	1.3	
	1.0s	5.00nm			
KIC	129.91	272 PKP	27 47.98	0.4	
	0.8s	6.00nm			
LIC	130.18	272 PKPc	27 48.44	0.4	
	0.7s	4.50nm			
TIC	130.20	273 PKP	27 48.38	0.3	
CNCB	153.18	152 PKP	28 38.10	10.0X	
		S	30 37.00		
LPB	153.37	151 ePKP	28 39.00	10.8X	
ZOBO	153.58	151 PKP	28 41.00	12.3X	
		i	28 54.00		
		S	30 45.00		

S.D. = 0.9 on 106 of 112 obs.

DEC 22, 1989 21h 50m 56.06± 1.17s
40.694 N ±10.6km 21.609 E ± 7.3km
DEPTH = 10.0km (geophysicist)
GREECE (364)
ML 3.4 (SKO).

GRG	0.66	66 eP	51 07.80	-1.4	
		eS	51 17.70		
OHR	0.74	304 iPgc	51 09.60	-1.0	
		iSg	51 21.30		
LIT	0.90	131 eP	51 12.00	-1.3	
		eS	51 25.30		
VAY	0.96	49 iPg	51 12.40	-1.9	
		iSg	51 24.70		
THE	1.03	93 eP	51 15.90	0.3	
KNT	1.08	64 iPc	51 15.50	-0.9	
SKO	1.28	354 iPn	51 19.30	-0.5	

			i	51	22.00	
			iSn	51	36.30	
SOH	1.33	84	eP	51	21.10	0.4
KKB	1.61	43	iPd	51	25.00	0.3
MMB	1.83	60	ePc	51	28.00	0.1
OUR	1.84	100	eP	51	29.60	1.6
ULC	2.18	306	ePn	51	36.00	3.1X
			eSn	52	06.00	
VTS	2.24	32	iPd	51	35.00	1.1
			i	01	03.00	
TTG	2.47	315	ePn	51	37.20	0.2
			eSn	52	16.00	
IVA	2.52	330	ePn	51	39.00	1.2
			eSn	52	19.50	
RZN	2.55	66	eP	51	38.00	-0.3
PGB	2.67	45	eP	51	40.00	0.1
PLD	2.72	58	eP	51	45.00	4.4
KDZ	3.03	70	eP	51	44.00	-0.9
DIM	3.25	64	eP	51	56.00	7.9X
PVL	3.75	47	eP	51	54.00	-1.2
VRI	6.38	34	ePc	52	32.00	-0.4

S.D. = 1.5 on 20 of 22 obs.

DEC 22, 1989 22h 00m 24.24± 0.94s
40.729 N ± 7.8km 21.618 E ± 8.2km
DEPTH = 10.0km (geophysicist)
GREECE (364)
ML 2.2 (SKO).

GRG	0.64	69	eP	00	36.10	-0.9
			eS	00	46.00	
OHR	0.73	302	iPgc	00	37.70	-0.9
			iSg	00	49.60	
LIT	0.91	133	eP	00	40.60	-1.2
VAY	0.93	50	iPg	00	41.60	-0.4
			iSg	00	56.00	
KNT	1.06	66	iPc	00	43.70	-0.5
			eS	00	58.20	
SKO	1.25	354	ePn	00	48.00	0.6
			i	00	49.50	
			iSn	09	04.00	
PAIG	1.77	116	eP	00	54.80	-0.3
AGG	1.79	162	iPd	00	56.80	1.4
MMB	1.81	61	ePd	00	58.00	2.3
KDZ	3.01	71	eP	01	00.00	-12.9X

S.D. = 1.3 on 9 of 10 obs.

DEC 22, 1989 22h 56m 37.60± 0.35s
38.606 N ± 3.5km 24.060 E ± 3.9km
DEPTH = 10.0km (geophysicist)
AEGEAN SEA (365)
ML 2.9 (ATH).

ATH	0.69	203	ePn	56	51.00	-0.2
NEO	0.96	317	ePn	56	56.30	0.5
PLG	1.83	345	ePn	57	09.50	0.2
PRK	1.84	69	ePn	57	10.00	0.5
APE	1.93	142	ePn	57	10.60	-0.2
VLI	2.08	206	ePn	57	12.60	-0.4
EZN	2.14	55	ePn	57	14.00	0.2
ITM	2.21	231	ePn	57	15.50	0.7
SMG	2.36	111	ePn	57	16.70	-0.3
IZM	2.52	94	ePn	57	20.00	0.7
VLS	2.76	262	ePn	57	22.50	-0.2
RDO	2.78	24	ePn	57	22.50	-0.4
VAY	2.94	338	ePg	57	35.00	9.8X
MMB	2.99	355	eP	57	35.00	9.1X
RZN	3.12	9	eP	57	28.00	0.1
KDZ	3.21	18	iP	57	28.00	-1.1
KKB	3.34	347	iPd	57	31.00	0.1
OHR	3.54	316	iPg	57	00.10	-33.7X
			iSg	57	11.70	
VTS	4.03	351	eP	57	46.00	5.2X

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

? DEC 22, 1989 23h 16m 42.37± 1.14s
40.710 N ±12.4km 21.627 E ± 8.3km
DEPTH = 10.0km (geophysicist)
GREECE (364)
ML 2.9 (SKO).

GRG	0.64	67	iPd	16	54.80	-0.4
OHR	0.74	303	iPg	16	57.00	0.0
			iSg	17	08.70	
LIT	0.90	132	eP	16	59.60	0.0
			e	17	12.40	
KNT	1.06	64	iPc	17	02.80	0.4
			eS	17	16.30	
SKO	1.27	354	iPn	16	08.80	-57.1X

S.D. = 0.5 on 4 of 5 obs.

& DEC 22, 1989 23h 40m 10.83s
61.422 N 146.159 W
DEPTH = 27.6km
SOUTHERN ALASKA (2)
<AGS-P>.

KLU	0.13	58	iP	40	16.29	0.0
VLZ	0.30	196	iP	40	17.32	-0.8
			eS	40	23.08	
VZW	0.41	208	iP	40	18.52	-1.3
			eS	40	25.20	
NCA	0.66	331	iP	40	22.72	-1.0
			eS	40	33.53	
TOA	0.69	359	eP	40	23.47	-0.8
FID	0.69	193	eP	40	23.23	-1.1
GLI	0.71	220	eP	40	22.72	-1.8
CVA	0.90	167	eP	40	25.98	-1.5
			eS	40	39.68	
SGAM	1.03	153	iP	40	27.55	-2.0
			iS	40	41.73	
HIN	1.04	189	eP	40	28.19	-1.5
			eS	40	43.53	
GLB	1.13	88	iP	40	28.58	-2.3
RAGM	1.27	144	eP	40	31.24	-1.6
			eS	40	48.48	
GHO	1.37	286	eP	40	33.10	-1.2
			eS	40	51.79	
PME	1.39	280	iP	40	33.78	-0.8
			eS	40	52.41	
PLRM	1.44	278	iP	40	34.39	-0.8
			eS	40	53.23	
PAX	1.59	11	eP	40	36.56	-1.0
			eS	40	56.08	
PMS	1.65	265	eP	40	37.81	-0.5
			eS	40	59.09	
TGL	1.75	111	eP	40	37.85	-2.0
			eS	41	00.45	
PWA	1.80	279	eP	40	39.63	-0.8
BALM	1.89	100	eP	40	39.38	-2.5
WAX	1.89	120	eP	40	39.39	-2.4
			eS	41	05.12	
SNH	2.05	126	eP	40	43.50	-0.7
SEW	2.09	232	eP	40	42.89	-1.7
CUT	2.18	299	eP	40	45.27	-0.7
SLKM	2.18	247	eP	40	44.92	-1.1
SUA	2.20	273	eP	40	45.19	-1.2
RND	2.35	329	eP	40	47.22	-1.3
SKT	2.62	285	eP	40	50.43	-1.8
SPU	2.85	268	eP	40	54.14	-1.4
CNPM	3.15	235	eP	40	57.43	-2.3
RDT	3.16	257	eP	40	57.70	-2.2
PCA	3.19	112	eP	40	58.95	-1.4

32 obs. associated

DEC 22, 1989 23h 59m 45.19± 1.31s
8.546 N ± 5.0km 126.781 E ± 7.0km
DEPTH = 37.5 ± 12.4 km
5.1mb (14 obs.) 4.9Msz (9 obs.)
MINDANAO, PHILIPPINE ISLANDS (259)

DAV	1.88	220	ePd-	00	17.00	1.5
OCP	8.24	318	eP	01	56.00	10.7X
TSM	9.66	244	ePc	02	12.00	7.1X
BAG	9.89	323	eP	02	07.00	-1.2
			eS	04	06.00	
OZH	18.08	335	Pc	03	54.00	-1.3
	8.0s		1.70nm			2.2mb X
	Z 18s		5.20um			4.0MszX
	N 17s		5.10um			
			sP	04	04.00	
HKC	18.28	320	eP	03	56.00	-1.7
			eS	07	25.00	
GUMO	18.44	73	eP	04	00.20	0.4
PJG	18.44	73	eP	04	00.30	0.5
GZH	19.37	320	P	04	12.70	1.9
	Z 17s		6.20um			
	N 14s		3.40um			
	E 16s		5.20um			
QIZ	19.45	304	P	04	10.00	-1.8
	N 16s		4.00um			
	E 18s		6.30um			
			PP	04	28.00	
			S	07	48.00	
MTN	21.69	168	iPd	04	34.00	-0.9
SSE	23.03	348	P+	04	48.00	-0.1
	8.0s		1.90nm			2.6mb X
	Z 20s		3.20um			4.8Msz
	N 11s		1.40um			
	E 10s		1.30um			
			pP	05	03.00	64kmX
			PPP	05	33.00	
			SS	09	02.00	
			sS	09	27.00	
KNA	24.22	175	iPd	04	59.90	0.2
NJ2	24.52	344	eP	05	04.00	1.5
	Z 16s		1.80um			4.7MszX
WHN	24.78	334	eP	05	06.00	1.0
	8.0s		0.83nm			2.4mb X
	Z 20s		4.39um			5.0Msz
	E 18s		6.94um			
IPM	25.88	263	ePc	05	17.50	1.9
	0.9s		48.00nm			5.1mb
SNG	25.95	269	eP	05	20.20	4.0X
			eS	09	29.00	
NST	26.98	288	eP	05	28.50	2.9X
KMI	28.22	309	eP	05	33.00	-4.1X
	Z 20s		14.90um			5.6Msz
	E 15s		6.20um			
			S	10	09.00	
			sS	10	34.00	
CHTO	28.87	294	iP	05	44.50	1.8
	1.1s		44.17nm			5.1mb
TIA	28.91	344	P	05	41.80	-1.1
	Z 20s		2.00um			4.7Msz
	E 15s		2.20um			
			S	10	28.00	
WB5	29.22	165	eP	05	42.30	-3.5X
			i	05	49.60	
XAN	30.23	330	P	05	53.50	-1.3
	N 11s		0.90um			
	E 14s		1.40um			
MBL	30.30	193	eP	05	51.00	-4.4X
DL2	30.58	352	eP	06	01.00	3.3X
	Z 16s		1.64um			4.8MszX
			S	11	00.00	
TIY	31.81	338	Pc	06	07.80	-0.8
	N 15s		2.10um			
			S	11	18.00	
BJI	32.76	345	eP	06	16.50	-0.3
	1.2s		16.00nm			4.8mb
	Z 20s		2.10um			4.8Msz
			eS	11	20.00	
			eScP	13	02.00	
ASPA	32.76	168	iPd	06	15.60	-1.4
	0.4s		16.00nm			5.3mb
	Z 20s		1.73um			4.7Msz
			LR	21	06.40	
SNY	33.27	356	iPc	06	22.00	0.8
	Z 18s		3.30um			5.1Msz
	N 14s		1.40um			
	E 11s		0.90um			
			pP	06	33.00	40kmX
			PP	07	36.00	
			S	11	42.50	
CTA	34.31	146	iPd	06	30.80	0.4
	1.0s		30.00nm			5.2mb
			iS	11	52.00	
LZH	34.48	326	eP	06	31.50	-0.4
	1.5s		19.00nm			4.8mb
	Z 20s		5.40um			5.3Msz
	N 15s		2.70um			
	E 15s		3.20um			
HHC	34.90	340	P	06	36.10	0.7
	Z 19s		2.50um			5 0Msz
	N 15s		1.60um			
	E 15s		1.00um			
CN2	35.14	358	eP	06	37.60	0.3
	Z 16s		2.60um			5.1MszX
	N 10s		0.50um			
	E 10s		0.70um			
			pP	06	43.00	18kmX
			S	12	06.00	
			SS	14	18.00	
BTO	35.23	338	eP	06	37.50	-0.8
	N 15s		1.50um			
	E 15s		1.60um			
SHL	37.25	301	iP	06	55.70	0.2
			iS	21	42.00	
MRWA	38.96	195	eP	07	08.80	-0.8
GTA	39.08	326	eP	07	10.60	-0.1

23d 00h

	Z	16s	3.20um			5.2MszX
	E	17s	2.90um			
			PP	08	50.00	
			eS	13	05.00	
FORR		39.19	178 eP	07	09.00	-2.4
LSA		39.45	307 P	07	15.80	1.5
COOL		39.57	188 eP	07	16.00	1.3
BAL		40.11	194 eP	07	20.00	0.9
KLB		40.83	192 eP	07	25.00	0.0
STK		42.62	161 eP	07	49.00	9.3X
RKG		43.38	192 eP	07	50.00	4.1X
BRS		43.71	146 iPc	07	46.30	-2.3
		0.7s	9.00nm			4.6mb
			i	07	56.80	
			i	09	33.00	
			eS	13	48.00	
ADE		44.72	166 e(P)	07	52.20	-4.5X
		0.6s	21.33nm			5.2mb
BWA		47.40	156 eP	08	17.70	-0.2
			e	08	19.80	
HYB		47.70	286 eP	08	20.50	-0.1
CAN		48.41	156 eP	08	29.80	4.0X
KOD		48.65	276 eP	08	28.00	-0.3
WMO		48.89	323 P	08	29.00	-0.5
	Z	16s	3.50um			5.4MszX
	N	16s	2.60um			
	E	16s	2.20um			
DZM		49.38	129 iPc	08	35.00	1.5
NDI		50.65	300 iPc	08	41.60	-1.5
		0.5s	38.73nm			5.7mb
POO		52.25	287 eP	08	56.50	1.1
KSH		54.73	313 P	09	15.50	1.9
	E	16s	4 76um			
QUE		59.72	300 eP	09	47.00	-2.1
MAIO		66.70	306 iPd	10	35.70	0.7
			eS	19	38.00	
TAB		77.29	307 eP	11	40.00	2.1
BRW		77.62	19 eP	11	37.70	-1.2
IMA		77.99	24 eP	11	44.90	3.7X
PMR		79.73	29 eP	11	52.30	1.8
		0.7s	15.20nm			5.1mb
KEV		85.41	340 eP	12	16.00	-3.8X
SOD		86.06	338 eP	12	23.00	0.0
HRI		86.24	303 e(P)	12	25.00	0.3
DSI		86.77	301 e(P)	12	25.00	-2.2
MBC		87.27	13 eP	12	31.00	2.2
		0.8s	20.00nm			5.4mb
PRNI		87.27	300 eP	12	29.00	-0.7
SUF		87.31	333 eP	12	29.00	-0.2
NUR		88.54	331 iP	12	35.10	0.0
		0.7s	22.70nm			5.6mb
HFS		93.80	333 eP	12	58.50	-1.0
		0.6s	6.50nm			5.2mb
	Z	17s	0.66um			5.2MszX
			LR	52	34.00	
KRA		94.12	322 eP	13	00.90	-0.3
NB2		94.52	334 P	13	02.20	-0.7
		0.8s	6.20nm			5.1mb
KSP		96.05	323 eP	13	11.00	1.0
KIC		129.45	285 PKP	18	53.00	0.3
CNCB		163.43	121 PKP	19	51.00	4.5X
LPB		163.46	120 PKP	19	53.00	6.7X
	Z	25s	0.40um			
			LR	16	30.00	
ZOBO		163.55	119 ePKP	19	50.00	3.4X
	Z	22s	0.42um			
			LR	16	40.00	
	S.D. = 1.3		on 60 of 77 obs.			

DEC 23, 1989 01h 32m 46.36± 0.62s
29.945 S ± 6.3km 178.338 W ± 5.5km
DEPTH = 37.2 ± 5.8 km
5.3mb (10 obs.)
KERMADEC ISLANDS (178)

RAO		0.78	28 iP	33	01.50	0.6
			S	33	27.30	
KRP		9.44	211 P	35	16.00	13.0X
MNG		11.78	204 eP	35	34.20	-0.7
			S	37	45.30	
KIW		12.20	205 eP	35	39.40	-1.1
MTW		12.26	202 eP	35	39.50	-1.8
TCW		12.74	206 eP	35	47.80	0.1
			eS	38	06.40	
KHZ		14.06	206 eP	36	05.40	0.4
DZM		15.76	296 iPc	36	35.00	7.7X
			pP	36	45.30	
BRS		25.45	269 iPc	38	17.10	4.6X
			i	38	19.60	
			ipP	38	36.50	87kmX
			e	39	20.00	
TBI		26.59	83 iP	38	24.10	1.1
		0.8s	30.00nm			5.0mb
CAN		27.95	250 eP	38	39.90	4.5X
BWA		28.41	252 eP	38	41.80	2.2
AFR		28.83	71 iP	38	43.20	-0.1
		0.8s	55.00nm			5.3mb
PAE		28.93	72 iP	38	44.20	0.0
		0.8s	35.00nm			5.1mb
PPT		28.98	71 iP	38	44.80	0.1
		0.8s	30.00nm			5.0mb
TVO		29.14	72 iP	38	46.20	0.0
		0.8s	45.00nm			5.2mb
VAH		31.78	69 iP	39	09.20	-0.3
		0.8s	35.00nm			5.3mb
TPT		31.93	69 iP	39	10.80	0.0
		0.8s	40.00nm			5.3mb
CTA		33.44	279 iPd	39	26.10	2.1
		1.0s	148.00nm			5.8mb
STK		34.30	256 eP	39	35.00	3.6X
ASPA		42.84	267 ePd	40	43.80	1.0
		0.5s	44.00nm			5.4mb
	Z	22s	0.14um			3.8MszX
			ePcP	42	32.80	
			eScP	46	12.00	
			e	46	22.00	
			eS	46	59.40	
			eScS	50	30.80	
			LR	56	17.40	
WB5		43.79	272 iPd	40	51.00	0.5
			i	41	22.80	
			i	42	36.00	
			e(S)	46	17.50	
DRV		44.45	202 eP	40	57.80	2.6
FORR		45.83	255 iPc	41	07.10	0.5
		0.4s	49.00nm			5.8mb
SBA		48.47	184 P	41	33.60	6.9X
MTN		49.62	279 eP	41	36.00	-0.4
COOL		51.62	253 eP	41	51.00	-0.5
KLB		54.22	251 eP	42	10.00	-0.7
BAL		55.36	252 eP	42	19.00	-0.1
MBL		55.90	264 eP	42	21.50	-1.6
MRWA		56.37	253 eP	42	25.70	-0.6
NANU		59.06	260 eP	42	44.00	-1.3
MAW		72.63	201 eP	44	13.00	1.5
CHJJ		76.92	326 P	44	35.50	-1.1
IIDJ		77.01	325 P	44	35.50	-1.6
MTMJ		77.93	325 P	44	42.00	-0.2
OZH		81.46	305 P	45	01.30	0.1
SYP		84.51	45 eP	45	17.00	0.1
PRS		84.89	43 eP	45	18.60	0.0
MWC		85.50	46 eP	45	21.00	-0.9
PLM		85.69	48 eP	45	23.00	0.1
SBB		85.95	46 eP	45	24.00	0.0
ISA		86.18	45 eP	45	25.00	-0.1
FRI		86.32	43 eP	45	25.00	-0.6
CMB		86.62	42 eP	45	26.50	-0.7
TPC		86.69	47 eP	45	28.00	0.4
GLA		86.82	49 eP	45	29.00	0.7
CLC		86.82	45 eP	45	28.00	-0.2
GSC		86.98	46 eP	45	29.00	-0.1
WDC		87.15	39 eP	45	29.00	-0.6
WHN		87.84	307 eP	45	33.50	0.4
SNY		89.26	321 Pc	45	39.40	-0.2
TIA		89.45	313 eP	45	40.80	0.1
CN2		89.60	323 iPc	45	41.30	0.1
TIY		93.35	312 eP	45	58.60	-0.2
GBA		108.87	275 PKP	51	14.00	0.0
		0.5s	1.00nm			
BUL		123.84	211 iPKPd	51	56.20	13.5X
		1.1s	17.72nm			
KEV		137.61	347 ePKP	52	07.00	-0.3
SOD		139.68	345 ePKP	52	07.00	-4.1X
SUF		143.59	341 ePKP	52	14.00	-4.1X
NUR		145.79	340 ePKP	52	20.00	-1.9
		0.9s	256.80nm			
UPP		148.20	345 iPKPc	52	27.90	2.1
NB2		148.26	351 PKP	52	27.90	1.9
		0.8s	24.30nm			
HFS		148.74	348 ePKP	52	25.80	-0.9
		0.9s	44.90nm			
BCAO		150.03	215 iPKPc	52	34.60	4.5X
		0.2s	44.00nm			
			i	52	40.60	
			i	54	07.20	
HLBJ		150.31	283 PKP+	52	35.50	5.4X
SHMJ		150.81	284 PKP+	52	38.80	8.1X
HRI		150.86	285 iPKP	52	35.00	4.1X
DSI		151.04	282 e(PKP)	52	35.00	4.0X
PRNI		151.23	279 iPKPd	52	35.50	4.1X
KAS		151.69	303 ePKP	52	38.00	6.1X
KRA		155.64	331 ePKP	52	46.40	9.5X
KSP		156.42	336 ePKP	52	48.20	10.2X
		0.6s	37.00nm			
			ic	53	06.20	
	S.D. = 1.0		on 55 of 73 obs.			

? DEC 23, 1989 01h 53m 27.85± 7.97s
35.005 S ±73.3km 71.141 W ±19.3km
DEPTH = 100.0km (geophysicist)
CENTRAL CHILE (136)

LNV		1.07	348 iPc	53	49.60	0.3
			iS	54	06.10	
CHCH		1.14	21 iPd	53	50.00	-0.2
			iS	54	08.40	
TACH		1.36	7 iPc	53	52.50	-0.3
			iS	54	11.50	
PCH		1.48	21 iPd	53	54.00	-0.3
			iS	54	15.00	
LCCH		1.57	347 iPc	53	55.10	-0.2
			iS	54	16.00	
SAN		1.60	15 eP	53	56.50	0.7
			i	54	15.40	
			iS	54	18.00	
FCH		1.82	23 iPc	53	59.00	0.1
			iS	54	23.50	
PEL		1.90	12 iPc	53	59.50	-0.1
			iS	54	21.90	
ROCH		2.03	3 iPc	54	01.50	-0.1
			i	54	24.00	
			i	54	29.00	
	S.D. = 0.4		on 9 of 9 obs.			

DEC 23, 1989 02h 20m 16.21± 1.81s
43 032 N ± 7.1km 13.918 E ±16.3km
DEPTH = 10.0km (geophysicist)
CENTRAL ITALY (381)
MD 2 7 (SSO)

ALP		0.36	225 iPgc	20	22.88	-0.7
			iSg	20	28.69	
AOI		0.57	336 iPg	20	28.07	0.3
			iSg	20	39.40	
CIO		0.59	286 iPg	20	27.44	-0.8
			iSg	20	38.41	
ARV		0.85	304 P	20	32.50	-0.1
			eSg	20	47.20	
MNS		1.12	235 P	20	38.80	1.6
			eSg	20	55.00	
SDI		1.33	183 P	20	40.40	-0.3
			eSg	20	59.30	
	S.D. = 1.1		on 6 of 6 obs.			

DEC 23, 1989 02h 38m 13.03± 0.67s
41.095 N ± 6.8km 19.942 E ± 4.8km
DEPTH = 10.0km (geophysicist)
ALBANIA (391)
ML 2.9 (SKO), 2.9 (TTG).

OHR		0.65	88 iPg	38	25.60	-0.4
			iSg	38	35.50	
ULC		1.01	329 ePg	38	32.00	-0.2
			eSg	38	47.00	
SKO		1.43	52 iPn	38	38.80	-0 2
TTG		1.43	339 ePg	38	39.20	0.3
			eSg	38	59.10	
BDV		1.45	325 ePg	38	39.00	-0.3
			eSg	38	59.10	
PVY		1.50	1 ePn	38	40.50	0.4
			eSg	39	02.50	
HCY		1.73	322 ePn	38	42.50	-0.8
			eSn	39	07.50	
IVA		1.78	359 ePn	38	44.20	0.2
			eSn	39	10.00	
VAY		2.00	83 ePn	38	47.50	0.3
BRY		2.08	330 ePn	38	49.00	0.4
			eSn	39	15.50	
CZI		3.47	239 P	39	08.30	0.2
	S.D. = 0.4		on 11 of 11 obs.			

DEC 23, 1989 02h 56m 15.84± 0.23s
41.180 N ± 3.1km 19.864 E ± 2.2km
DEPTH = 33.0km (normol)
3.5mb (2 obs.)
ALBANIA (391)
MD 3.6 (TTG), 4.0 (ATH). ML 4.0 (SKO).

OHR	0.71	95	iPgd	56	27.10	-2.4
			iSg	56	37.10	
ULC	0.91	330	ePg	56	32.60	0.3
			eSg	56	49.00	
TTG	1.33	340	ePg	56	40.10	1.9
			eSg	57	01.10	
BDV	1.35	325	ePg	56	40.50	2.0
			eSg	57	01.20	
PVY	1.42	3	ePg	56	40.30	0.7
			eSg	57	02.00	
SKO	1.42	56	iPn	56	39.00	-0.6
			i	56	40.50	
			iSn	56	56.00	
HCY	1.63	322	iPnc	56	44.00	1.5
			iSn	57	09.20	
LCI	1.68	240	P	56	42.50	-0.8
			eSg	57	08.20	
IVA	1.69	1	ePn	56	45.50	1.9
			eSn	57	11.00	
KZN	1.69	120	eP	56	44.70	1.1
GRG	1.93	96	eP	56	46.90	-0.1
			eS	57	13.20	
BRY	1.98	331	ePn	56	49.20	1.4
			eSn	57	20.00	
BRT	2.04	262	P	56	49.60	1.1
VAY	2.05	85	iPn	56	48.00	-0.6
BAI	2.26	269	P	56	52.00	0.3
LIT	2.27	117	eP	56	52.30	0.5
			eS	57	24.20	
THE	2.41	102	iPd	56	54.10	0.3
			eS	57	24.70	
KKB	2.51	73	iPd	56	56.00	0.7
SRS	2.82	90	eP	56	59.10	-0.4
			eS	57	32.50	
PLG	2.84	105	eP	57	00.50	0.7
VTS	2.87	59	iPd	57	01.00	0.6
MMB	2.94	81	eP	57	01.00	-0.3
ROI	2.99	239	P	57	02.40	0.4
VLS	3.05	169	eP	57	02.20	-0.7
CSI	3.07	244	P	57	03.00	-0.1
TDS	3.09	242	P	57	03.50	0.1
PAIG	3.16	112	eP	57	03.90	-0.6
NEO	3.18	125	eP	57	04.70	0.0
HVAR	3.23	309	iPn	57	05.40	0.0
			iSn	57	45.40	
OUR	3.24	104	iPd	57	05.90	0.4
ACI	3.34	238	P	57	08.10	1.1
MGR	3.44	254	P	57	09.10	0.7
CZI	3.46	237	P	57	09.90	1.2
PGB	3.49	66	iPd	57	10.00	0.8
SGO	3.51	261	Pc	57	09.90	0.5
RZN	3.68	80	eP	57	12.00	0.0
PLD	3.74	74	iPc	57	13.00	0.4
KDZ	4.20	82	eP	57	18.00	-1.2
RDO	4.28	89	eP	57	20.00	-0.3
ITM	4.30	157	eP	57	20.00	-0.7
DIM	4.34	77	eP	57	26.00	4.9X
PVL	4.54	62	eP	57	20.00	-4.1X
SDI	4.58	279	Pc	57	25.10	0.5
ALP	4.95	291	ePn	57	29.55	-0.5
			eSn	58	25.28	
CIO	5.38	294	iPn	57	34.85	-1.2
			iSn	58	35.25	
ZAG	5.43	330	iP	57	36.10	-0.4
VBY	5.47	324	ePn	57	37.30	0.1
			e(Sn)	58	39.00	
MNS	5.50	285	P	57	37.80	0.1
PTJ	5.51	330	eP	57	36.70	-1.0
ARV	5.63	297	Pc	57	38.20	-1.2
ASS	5.68	292	P	57	40.10	-0.1
RIY	5.77	318	iPnd	57	40.60	-0.8
CEY	6.03	321	ePn	57	45.00	-0.1
			eSn	57	55.50	
MLR	6.18	44	ePc	57	48.00	0.7
LJU	6.21	323	ePn	57	47.00	-0.6
			e(Sn)	58	53.50	
			e	59	03.00	
TRI	6.34	318	i(Pn)d	57	47.30	-2.1
			iSn	58	58.70	
VOY	6.50	320	ePn	57	50.80	-1.0
			eSn	59	04.50	
PSN	6.64	65	eP	57	51.00	-2.7X
SRO	6.72	351	eP	58	05.80	11.1X
			e	58	11.90	
PSZ	6.74	0	e(P)	57	57.00	2.0
VRI	6.84	44	eP	57	57.00	0.5
VVI	7.23	314	Pd	57	59.90	-1.9
ZST	7.29	345	eP	58	21.90	19.3X
KBA	7.53	324	ePn	58	05.00	-1.3
			ic	58	05.30	
CTI	7.69	312	Pc	58	06.00	-2.4X
SPC	8.01	2	eP	58	21.70	8.7X
KHC	9.10	333	P	58	26.50	-1.4
			e	01	15.90	
HFS	19.36	351	eP	00	38.20	-3.1X
	0.4s		1.20nm		3.5mb	
NB2	20.58	348	P	00	51.80	-2.5
	0.5s		0.90nm		3.4mb	
SUF	21.90	8	eP	01	06.00	-1.5X
KIC	41.03	219	P	03	57.80	0.1
LIC	41.29	219	P	04	00.00	0.2
S.D. = 1.0 on 63 of 72 obs.						

* DEC 23, 1989 03h 27m 05.17± 0.82s
8.536 N ±13.5km 126.680 E ±21.8km
DEPTH = 33.0km (normol)
5.1mb (3 obs.)
MINDANAO, PHILIPPINE ISLANDS (259)

MTN	21.70	168	eP	31	55.00	-0.4
KNA	24.22	175	eP	32	21.80	1.7
LOE	25.83	292	eP	32	37.00	1.5
			eSg	52	37.50	
CHTO	28.78	294	eP	33	01.50	-0.8
	1.0s		2.00nm		3.8mb X	
WB5	29.23	165	eP	33	05.90	-0.5
ASPA	32.77	168	eP	33	37.20	-0.4
	0.4s		5.00nm		4.8mb	
SHL	37.17	301	eP	34	15.00	-0.3
MRWA	38.92	195	eP	34	29.10	-0.6
MBC	87.30	13	eP	39	50.50	1.0
	0.9s		10.00nm		5.1mb	
NUR	88.50	331	eP	39	56.00	0.6
SLL	93.79	333	eP	40	18.20	-1.8
	0.9s		14.60nm		5.4mb	
S.D. = 1.2 on 11 of 11 obs.						

% DEC 23, 1989 03h 55m 34.07± 2.39s
10.451 N ±13.5km 61.823 W ±14.3km
DEPTH = 5.0km (geophysicist)
TRINIDAD (98)

TCE	0.25	16	eP	55	39.66	0.4
			eS	55	49.21	
TPP	0.39	110	eP	55	42.10	0.2
TRN	0.46	65	eP	55	43.05	-0.2
			eS	55	53.55	
TBH	0.74	87	eP	55	52.22	3.3X
			eS	56	06.86	
PIG	1.20	54	eP	55	56.75	0.0
BOT	1.30	57	eP	55	58.29	-0.3
GRW	1.71	5	eP	56	03.34	-1.3
			eS	56	29.06	
SVB	2.86	11	eP	56	21.63	0.4
			eS	57	06.03	
SSV	2.92	12	eP	56	22.97	0.8
			eS	57	07.28	
S.D. = 0.8 on 8 of 9 obs.						

* DEC 23, 1989 04h 47m 05.61± 0.62s
7.540 N ±10.4km 126.330 E ±14.1km
DEPTH = 33.0km (normol)
4.6mb (2 obs.) 4.0Msz (1 obs.)
MINDANAO, PHILIPPINE ISLANDS (259)

GUMO	19.18	70	eP	51	31.00	1.5
KNA	23.26	174	eP	52	11.00	-0.3
SSE	23.92	349	eP	52	18.00	0.5
Z 20s		0.50um			4.0Msz	
			eS	56	35.00	
CHTO	28.87	296	eP	53	05.00	1.4
	1.0s		3.00nm		3.9mb	
ASPA	31.89	167	eP	53	29.20	-1.1
SHL	37.40	303	iP	54	18.50	0.8
MRWA	37.88	195	eP	54	23.00	1.6
FORR	38.21	178	iPd	54	23.20	-0.9
KLB	39.76	191	eP	54	38.00	0.9
GBA	48.37	281	Pd	55	47.40	0.7
SOD	86.82	338	eP	59	48.00	0.3
PRNI	87.39	300	iP	59	50.50	-0.7
SUF	88.00	333	eP	59	51.00	-2.4
NUR	89.20	331	eP	59	57.00	-2.2
SLL	94.52	333	eP	00	20.90	-2.9X
	0.9s		11.80nm		5.3mb	
S.D. = 1.4 on 14 of 15 obs.						

& DEC 23, 1989 05h 51m 34.77s
65.623 N 149.894 W
DEPTH = 40.9km
ALASKA (676)
<AGS-P>. ML 3.1 (PMR).

RDS	1.09	137	eP	51	53.62	-0.2
			eS	52	07.34	
NEA	1.11	161	eP	51	53.88	-0.1
			eS	52	07.25	
FBA	1.14	128	iPc	51	54.30	-0.2
GLM	1.23	120	eP	51	55.70	-0.1
			eS	52	09.21	
CCB	1.32	137	eP	51	56.73	-0.3
			eS	52	12.21	
WRH	1.39	146	eP	51	57.62	-0.4
IMA	1.62	288	iPc	52	02.50	1.1
RND	2.27	168	eP	52	10.73	0.0
DDM	2.53	135	eP	52	14.74	0.4
SKT	3.73	192	eP	52	30.60	-0.8
TTA	3.80	227	eP	52	32.50	0.1
TOA	3.90	153	eP	52	35.50	1.7
PME	4.03	174	eP	52	35.35	-0.2
PMR	4.06	175	eP	52	37.90	1.9
PMS	4.40	178	eP	52	43.20	2.3
15 obs. associated						

% DEC 23, 1989 06h 43m 10.23± 0.86s
44.642 N ± 7.5km 10.263 E ± 9.1km
DEPTH = 10.0km (geophysicist)
NORTHERN ITALY (545)

MME	0.55	145	P	43	21.70	0.4
			eSg	43	30.40	
BOB	0.59	282	P	43	22.40	0.1
			eSg	43	32.40	
BDI	0.63	157	P	43	23.00	0.1
			eSg	43	32.20	
PII	0.94	168	P	43	27.50	-0.6
			eSg	43	39.10	
CTI	1.71	34	P	43	40.20	-0.2
S.D. = 0.5 on 5 of 5 obs.						

* DEC 23, 1989 08h 22m 33.57± 0.64s
52.186 N ±14.4km 158.991 E ± 8.6km
DEPTH = 33.0km (normol)
4.8mb (10 obs.)
NEAR EAST COAST OF KAMCHATKA (218)

FBA	29.54	44	eP	28	37.00	0.2
CMB	55.76	70	e(P)	32	09.50	0.2
			e	32	26.60	
KVN	56.39	68	eP	32	14.00	0.0
			i	32	31.10	
CHG	57.06	258	eP	32	18.80	0.0
CHTO	57.06	258	iP	32	19.00	0.2
	1.0s		10.50nm		4.8mb	
TNP	57.55	68	iP	32	21.50	-0.8
	0.9s		5.47nm		4.6mb	
			e	32	40.00	
NB2	64.22	343	P	33	05.60	-1.4
	0.6s		6.40nm		4.9mb	
HFS	64.60	342	eP	33	07.60	-1.8
	0.6s		7.90nm		5.0mb	
GBA	74.21	272	P	34	08.00	-0.8
KHC	74.86	337	eP	34	12.50	0.3
KBA	76.83	337	iPc	34	23.90	0.3
	0.7s		21.60nm		5.3mb	
CDF	76.92	341	eP	34	23.70	-0.2
HAU	77.49	342	eP	34	26.70	-0.3
BSF	77.57	341	eP	34	27.20	-0.3
LOR	78.66	343	eP	34	33.30	-0.1
	0.9s		11.40nm		4.9mb	
LBF	78.91	343	eP	34	34.30	-0.5
SSF	78.92	343	eP	34	34.60	-0.2
AVF	79.21	343	eP	34	36.40	0.0
	0.9s		8.10nm		4.7mb	

23d 08h

SMF 79.27 343 eP 34 36.80 0.1
LPG 79.81 341 eP 34 40.70 0.7
0.7s 5.50nm 4.7mb
TCF 79.90 344 eP 34 40.30 0.1
MAF 79.90 344 eP 34 40.70 0.6
0.4s 3.00nm 4.6mb
LSF 80.05 344 eP 34 41.60 0.7
CAF 81.25 344 eP 34 48.40 1.1
0.6s 3.60nm 4.6mb
LPO 81.63 344 eP 34 50.10 0.8
EPF 83.38 344 eP 34 59.60 1.2
S.D. = 0.7 on 26 of 26 obs.

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* DEC 23, 1989 09h 42m 07.80± 1.34s
8.922 S ±10.7km 118.695 E ±16.7km
DEPTH = 33.0km (normal)
4.7mb (1 obs.)
SUMBAWA ISLAND REGION (285)

MKS 3.76 12 iPc 43 05.00 0.1
1.0s 554.70nm
KNA 11.95 126 eP 45 00.50 1.6
eS 47 11.00
MBL 12.22 175 eP 45 03.40 0.9
0.2s 15.00nm 5.8mb X
eS 47 10.00
MTN 12.82 109 iPd 45 11.60 1.1
eS 47 28.00
NANU 13.90 192 eP 45 25.00 0.3
eS 47 51.00
MEKA 17.60 180 eP 46 12.00 -0.2
eS 49 18.00
WB5 18.67 127 eP 46 23.50 -2.0
eS 49 45.10
MRWA 20.35 187 eP 46 56.00 11.8X
eS 50 22.00
ASPA 20.66 137 eP 46 45.60 -1.9
0.4s 15.00nm 4.7mb
eS 50 29.70
BAL 21.65 185 eP 47 12.00 14.5X
eS 50 54.00
COOL 21.97 174 eP 47 13.00 12.3X
eS 51 01.00
BRS 37.05 124 iPd 49 13.60 -3.1X
S.D. = 1.6 on 8 of 12 obs.

% DEC 23, 1989 09h 57m 42.38± 1.03s
39.119 N ± 8.4km 27.613 E ±10.6km
DEPTH = 10.0km (geophysicist)
TURKEY (366)

IZM 0.77 201 ePg 57 57.00 -0.4
eSg 58 08.00
DST 0.93 58 iPg 58 01.10 1.0
eSg 58 15.10
EZN 1.22 306 ePn 58 06.00 0.9
EDC 1.24 9 ePn 58 05.00 -0.4
BNT 1.26 11 iPn 58 04.70 -1.1
S.D. = 1.3 on 5 of 5 obs.

? DEC 23, 1989 10h 31m 24.78± 8.93s
32.458 S ±68.4km 71.481 W ±24.7km
DEPTH = 24.3 ± 8.7 km
NEAR COAST OF CENTRAL CHILE (135)

ROCH 0.65 142 iPd 31 37.50 -0.1
iS 31 46.00
PEL 0.96 136 iPd 31 42.60 0.0
iS 31 55.40
LCCH 1.02 184 iPd 31 43.60 0.1
TACH 1.28 159 iPd 31 46.90 -0.3
iS 32 03.50
FCH 1.32 131 iPd 31 48.20 0.1
iS 32 04.70
PCH 1.42 145 eP 31 49.00 -0.2
iS 32 07.80
LNV 1.50 178 eP 31 50.00 -0.3
iS 32 06.60
CHCH 1.63 155 eP 31 53.00 0.7
iS 32 12.70
S.D. = 0.4 on 8 of 8 obs.

DEC 23, 1989 11h 24m 02.68± 0.13s
17.401 N ± 3.2km 145.788 E ± 3.3km
DEPTH = 161.5km (geophysicist)
5.9mb (48 obs.)
MARIANA ISLANDS (216)

Depth from broadband
displacement seismograms.
FAULT PLANE SOLUTION: P-Waves
NP1:Strike=157 Dip=88 Slip= -50
NP2: 249 40 -177
Principal Axes:
T Plg=31 Azm=215
P 34 100
Comment: The focal mechanism is
poorly controlled and
corresponds to normal faulting
with a large strike-slip
component. The preferred fault
plane is not determined.
RADIATED ENERGY
No. of sta: 5 Focal mech. F
Energy 2.2±1.0*10**14 Nm
CENTROID, MOMENT TENSOR (HRV)
Data Used: GDSN
L.P.B.: 12S, 33C M.W.: 10S, 25C
Centroid Location:
Origin Time 11:24: 7.8 0.2
Lat 17.26N 0.02 Lon 145.73E 0.02
Dep 185.7 1.2 Half-duration 5.6
Moment Tensor; Scale 10**18 Nm
Mrr=-0.47 0.05 Mtt= 2.12 0.05
Mff=-1.65 0.05 Mrt=-0.65 0.04
Mrf= 2.05 0.04 Mtf=-1.98 0.07
Principal Axes:
T Val= 3.53 Plg=21 Azm=209
N -0.04 51 328
P -3.48 31 106
Best Double Couple:Mo=3.5*10**18
NP1:Strike=250 Dip=52 Slip=-172
NP2: 156 84 -39

GUMO 3.89 193 iPc+ 25 07.00 4.5X
PJG 3.89 193 ePc 25 07.00 4.5X
GUA 3.93 193 ePc 25 07.10 4.1X
eS 25 48.00
MAT 20.21 342 P 28 25.00 -1.8
SHK 20.70 328 eP 28 30.00 -1.6
DAV 22.23 245 ePc+ 28 49.80 3.0X
1.7s 2769.23nm 6.4mb
RAB 22.36 163 iPc+ 28 49.00 0.9
ANP 23.88 293 iP+ 29 04.00 1.2
iS 33 09.00
LAT 23.93 177 iPd 29 04.00 0.8
BAG 24.14 271 eP 29 06.00 0.6
eS 33 50.00
SAP 25.85 352 eP 29 21.00 0.2
eS 34 47.00
SSE 26.17 306 eP 29 22.50 -1.4
1.0s 115.00nm 5.5mb
Z 20s 3.30um 4.9Msz
N 12s 4.90um
pP 29 58.00 175kmX
sP 30 16.00
S 33 56.00
sS 34 53.00
SS 35 35.00
QZH 26.41 291 P 29 27.00 0.9
0.6s 0.20nm 2.9mb X
PMG 26.67 177 iPc 29 27.00 -1.5
1.5s 666.67nm 6.1mb
eS 29 43.00
NJ2 28.38 306 eP 29 43.00 -0.8
Z 30s 22.00um 5.6MszX
N 14s 11.30um
E 12s 17.40um
HKC 30 10 285 iP 30 00.50 1.4
S 34 46.00
HNR 30.11 151 eP 29 59.00 -0.2
eS 31 05.00
TSM 30.15 247 ePd 30 02.00 2.4
MDJ 30.36 337 Pc 30 00.30 -0.9
Z 10s 11.60um 5.8MszX
E 16s 11.30um
SNY 30.89 327 eP 30 04.20 -1.7
Z 16s 6.90um 5.4MszX
N 15s 7.90um
E 12s 9.10um
GZH 30.92 286 Pc 30 08.00 1.7
5.0s 1.50nm 3.0mb X
Z 24s 8.40um 5.3MszX
N 10s 4.00um
E 10s 2.30um

KKM 31.02 252 ePc 30 09.00 1.6
0.9s 237.00nm 5.9mb
CN2 31.43 331 eP 30 09.20 -1.4
Z 15s 11.00um 5.7MszX
N 10s 4.40um
E 10s 4.00um
eS 35 05.00
ScP 36 21.00
ScS 40 20.00
WHN 31.45 300 eP 30 11.40 0.5
Z 18s 1.70um 4.8Msz
N 12s 6.54um
E 14s 1.63um
S 34 59.00
SS 37 08.00
TIA 31.53 312 eP 30 13.60 2.1
Z 31s 12.90um 5.4MszX
N 15s 10.60um
E 11s 3.30um
ScP 36 22.50
MTN 33.36 207 iPc 30 27.00 -0.5
BJI 34.13 317 eP 30 33.00 -1.0
1.5s 26.00nm 4.7mb X
epP 31 10.00 174kmX
esP 31 32.00
eS 35 44.00
esS 36 50.00
QIZ 34.15 278 iPc 30 36.50 2.2
N 14s 6.60um
E 14s 5.90um
PP 31 53.00
iS 35 51.00
MKS 34.36 231 ePc 30 37.00 0.8
1.5s 1850.40nm 6.6mb
TIY 35.55 311 eP 30 45.80 -0.4
N 14s 16.20um
E 13s 8.10um
CTA 37.26 179 iPc+ 31 00.70 0.2
1.2s 679.69nm 6.2mb
i 34 26.20
iS 36 33.00
i 39 24.00
GYA 37.28 291 iPc 31 02.00 1.2
1.2s 0.50nm 3.1mb X
Z 24s 4.10um 5.1MszX
N 14s 9.30um
E 14s 4.90um
pP 31 38.00 163kmX
PP 32 35.00
S 36 38.00
PcS 37 06.00
sS 37 45.00
HHC 37.57 316 P 31 03.50 0.4
Z 19s 10.20um 5.6Msz
N 14s 6.00um
E 14s 5.50um
pP 31 40.00 169kmX
sP 32 02.00
HIA 38.14 332 ePc 31 06.19 -1.4
i 33 36.65
eS 36 41.69
esS 37 50.66
eSS 40 21.71
BTO 38.50 314 eP 31 11.00 0.1
N 11s 2.90um
E 15s 3.40um
WB5 38.71 197 iPc 31 12.50 -0.1
iS 36 52.00
CD2 40.40 297 P 31 27.00 0.4
Z 13s 6.50um 5.7MszX
N 14s 13.70um
S 37 20.00
KMI 40.71 288 ePc 31 31.44 2.1
epPc 32 08.52 170kmX
esP 32 24.57
iS 37 31.09
isS 38 37.72
eSS 40 40.21
PVC 41.36 146 iPd 31 36.00 1.6
LZH 41.45 305 ePc 31 36.26 1.0
Z 40s 23.10um 5.7MszX
N 18s 12.90um
i 31 47.00
epPc 32 13.17 168kmX
sP 32 35.00
PP 33 18.00
PPP 33 53.00

			e	33 58.27	
			eS	37 39.00	
			sS	38 40.00	
			SS	40 40.00	
SMY	41.66	26	eP	31 38.00	1.6
LOE	41.97	277	iPc	31 40.60	1.1
ASPA	42.44	196	iPc	31 42.90	-0.3
Z	22s	5.44um			5.4MszX
			eS	37 51.90	
			eSS	41 25.00	
			LR	47 44.40	
NST	43.72	275	iPc	31 57.70	4.0X
DZM	44.14	152	iPc	31 58.00	1.0
			iS	38 18.00	
KGM	44.42	255	ePd	32 01.80	2.5
			e	32 41.10	179kmX
			e	33 42.10	
CHG	44.45	279	iPc	32 01.00	1.5
	0.9s	96.64nm			5.4mb
			eS	38 16.00	
BDT	44.57	277	iPc	32 02.50	2.0
	0.7s	266.50nm			5.9mb
BRS	45.04	171	iPd	32 04.10	0.1
	0.5s	91.50nm			5.6mb
			i	32 15.00	38kmX
			e(PPP)	37 17.00	
			eS	38 30.00	
			e(sS)	39 40.00	
			e(SS)	41 20.00	
ADK	45.36	32	iPc	32 07.10	0.9
GTA	45.41	309	eP	32 07.10	0.1
Z	20s	6.90um			5.6Msz
E	13s	4.90um			
			S	38 35.00	
KLM	45.56	257	eP	32 11.00	2.7X
IPM	45.62	259	ePc	32 11.20	2.4
	1.1s	152.00nm			5.5mb
			e	32 50.00	176kmX
			e	33 42.00	
MBL	46.00	215	iPc	32 12.40	0.8
SGE	47.01	136	eP	32 20.10	0.3
WARB	47.15	204	eP	32 21.50	0.8
SVA	47.74	136	eP	32 25.10	-0.1
PSI	48.24	258	ePc	32 31.00	1.7
	0.9s	107.20nm			5.5mb
TSI	48.30	259	eP	32 30.00	0.3
STK	49.16	185	iPc	32 35.70	-0.3
			e	32 37.50	6kmX
			e	39 24.00	
NANU	49.54	218	iPd	32 40.10	1.1
BSI	50.73	263	ePd	32 32.00	-16.3X
FORR	50.90	200	iPc	32 49.10	-0.1
	0.4s	179.00nm			6.1mb
MEKA	51.14	212	iPc	32 51.30	0.1
LSA	51.15	294	P	32 53.00	1.1
N	13s	1.60um			
E	10s	0.90um			
			S	39 57.00	
			sS	42 08.00	
BWA	51.60	177	iPc	32 53.60	-0.9
			e	37 45.20	
AFI	52.17	124	eP	33 00.00	0.8
ADE	52.51	187	iPc+	33 01.10	-0.2
	0.7s	205.48nm			6.0mb
CAN	52.52	177	iPc	33 01.30	0.0
			e	37 49.50	
OPA	52.90	76	P	33 05.50	1.1
HON	52.94	76	P	33 05.00	0.4
DHH	53.14	76	P	33 07.50	1.4
COOL	53.54	206	iPc	33 08.00	-0.9
	0.6s	162.00nm			6.0mb
MRWA	54.55	212	iPc	33 16.20	-0.1
WMQ	55.22	312	ePc	33 20.99	-0.2
Z	18s	1.70um			5.2Msz
E	14s	2.90um			
			epPc	33 59.56	168kmX
			S	40 52.00	
BAL	55.33	211	iPc	33 21.59	-0.3
SDN	55.48	34	eP	33 22.00	-0.6
KLB	55.65	209	iPc	33 23.40	-0.7
	0.7s	117.00nm			5.8mb
TTA	60.36	27	iPc	33 56.10	-0.6
KDC	60.43	33	ePc	33 56.40	-0.7
TAZ	62.40	153	P	34 11.40	1.0
IMA	62.42	24	iPc	34 10.00	-0.5
	0.8s	47.90nm			5.5mb
HBZ	62.68	151	P	34 10.60	-1.6
	0.7s	211.00nm			6.2mb
PMR	63.04	29	iPc	34 13.00	-1.4
	0.7s	120.30nm			5.9mb
Z	20s	4.50um			5.6Msz
NDI	63.36	294	iPc	34 15.60	-1.5
	1.0s	45.00nm			5.3mb
			eS	42 34.00	
BRW	63.45	18	iPc	34 16.80	-0.2
KSH	63.69	306	eP	34 20.60	1.4
			eS	42 41.00	
HYB	63.82	281	iPc	34 20.00	-0.3
	1.0s	90.00nm			5.6mb
			i	35 01.00	174kmX
			i	35 13.50	
			iS	42 42.00	
			e	43 27.00	
			eP'P'	03 07.00	
KIW	63.97	156	P	34 19.30	-1.4
MNG	63.98	155	eP	34 19.10	-1.7
	0.3s	46.00nm			5.9mb
TCW	64.02	156	P	34 19.60	-1.4
HIN	64.04	31	eP	34 20.63	-0.3
MRW	64.20	156	P	34 20.60	-1.5
CAW	64.24	156	P	34 20.90	-1.5
WEL	64.27	156	P	34 21.10	-1.5
WDW	64.34	156	P	34 21.30	-1.8
COL	64.42	26	eP	34 21.62	-1.7
			e	35 08.30	200kmX
			iS	42 45.62	
			eSKS	43 57.90	
			esS	43 58.04	
FBA	64.42	26	ePc	34 21.70	-1.7
CVA	64.43	31	eP	34 23.26	-0.2
MTW	64.45	155	P	34 22.10	-1.7
CCW	64.46	157	P	34 22.30	-1.5
TOA	64.52	29	iPc	34 24.00	-0.1
MOW	64.58	156	P	34 22.80	-1.8
BLW	64.62	156	P	34 22.70	-2.2
SGAM	64.69	31	eP	34 25.04	-0.1
KHZ	64.79	158	P	34 23.70	-2.2
	0.8s	249.00nm			6.2mb
RAGM	64.93	31	eP	34 26.32	-0.4
MSZ	64.99	163	P	34 25.90	-1.2
	0.9s	518.00nm			6.4mb
GBA	65.67	277	P	34 31.00	-1 1
MHZ	65.74	162	eP	34 30.70	-1.4
SNH	65.80	31	eP	34 32.33	0.0
WAX	65.83	31	eP	34 32.46	-0.1
KOD	66.44	274	eP	34 37.00	-0.5
DWY	67.84	27	Pc	34 44.90	-0.1
POO	67.99	283	iPc	34 46.30	-0.5
	0.8s	56.72nm			5.4mb
			iS	43 31.00	
BOM	68.88	284	eP	34 54.10	2.0
			iS	43 42.10	
SIT	69.54	35	eP	34 55.60	0.1
AFR	72.30	115	iP	35 14.30	1.6
PPT	72.48	115	iP	35 15.70	1.9
	1.1s	515.00nm			6.2mb
PAE	72.52	115	iP	35 15.60	1.6
PPN	72.59	115	iP	35 16.20	1.8
TVO	72.85	115	iP	35 18.00	2.0
PMO	72.89	112	iP	35 17.50	1.3
	1.1s	960.00nm			6.4mb
TPT	73.13	112	iP	35 18.80	1.3
	1.1s	590.00nm			6.2mb
VAH	73.22	112	iP	35 19.00	0.9
	1.1s	370.00nm			6.0mb
RUV	73.42	112	iP	35 20.40	1.2
	1.1s	740.00nm			6.3mb
MBC	74.38	14	iPc	35 23.00	-0.9
	0.9s	134.00nm			5.7mb
			pP	36 08.50	189kmX
TBI	75.10	121	iP	35 30.20	1.4
	0.8s	285.00nm			6.1mb
MAIO	76.99	304	iPc+	35 39.00	-0.4
			i	36 23.00	181kmX
			eS	45 12.00	
PGC	77.64	43	ePd	35 43.50	1.0
	0.7s	148.00nm			5.8mb
MCW	78.03	43	P	35 45.70	0.9
GMW	78.31	44	P	35 47.80	1.4
RMW	78.98	44	P	35 50.60	0.5
SHW	78.99	45	P	35 47.00	-3.2X
FHC	79.01	51	ePc	35 51.70	1 4
LON	79 15	44	P	35 51.40	0.5
PNT	79.94	41	iPc	35 55 40	0.3
	0.8s	117.00nm			5.7mb
			pP	36 41.00	187kmX
WDC	80.13	51	iPc	35 57.00	0.8
			epP	36 41.20	180kmX
VGB	80.15	45	P	35 57.00	0.7
NWRM	80.40	53	P	35 58.00	0.3
LBFM	80.42	50	P	35 58.80	0.8
LTCM	80.53	51	P	35 58.90	0.6
KBS	80.58	352	eP	35 56.50	-1.4
MIN	80.88	51	ePc	36 00.50	0.1
BRK	81.03	53	ePc	36 01.50	0.6
PCC	81.03	54	ePc	36 01.40	0.4
BKS	81.05	53	iPc	36 02.00	0.9
	0.8s	366.00nm			6.2mb
Z	20s	5.00um			5.9Msz
N	20s	2.50um			
E	20s	3.40um			
			iS	45 56.00	
			i	46 04.00	
			eSS	51 12.00	
			eLQ	56 40.00	
			e	57 24.00	
			eLR	59 50.00	
ORV	81.16	51	ePc	36 02.20	0.5
			epP	36 45.40	175kmX
GCC	81.45	54	ePc	36 03.80	0.6
MHC	81.64	54	ePc	36 05.10	0.8
ARN	81.72	54	P	36 03.30	-1.4
SAO	81.95	54	ePc	36 05.80	0.0
			epP	37 00.00	224kmX
			iS	46 08.00	
			ePS	47 12.00	
			e	48 43.00	
			eSS	51 28.00	
			esSS	52 35.00	
			e	56 35.00	
			eLQ	57 33.00	
PRS	82.12	55	iPc	36 07.60	0.9
LLA	82.37	54	ePc	36 08.90	0.9
CMB	82.41	53	eP	36 08.29	0.0
			epPd	36 47.52	157kmX
			esP	37 04.41	
			ePP	39 17.56	
			iS	46 11.33	
			esS	47 08.86	
EDM	82.57	37	iPc	36 08.80	0.1
	0.9s	186.00nm			5.9mb
			pP	36 55.00	188kmX
PRI	82.72	55	ePc	36 11.10	1.1
PHAM	83.01	55	P	36 12.60	1.3
PKEM	83.18	54	P	36 14.00	1.9
KEV	83.19	342	eP	36 09.00	-2.5
	0.7s	24.00nm			5.1mb
			i	36 56.80	195kmX
			e	46 20.00	
			e	47 14.00	
FRI	83.22	53	ePc	36 12.80	0.5
			epP	36 57.80	182kmX
BLP	83.37	56	P	36 13.00	-0.1
BCH	83.44	55	P	36 13.30	-0.3
SYP	83.71	56	eP	36 16.00	0.9
			e	37 03.00	191kmX
KVN	83.84	51	P	36 16.60	0.9
			pP	37 03.60	191kmX
DRV	83.93	182	eP	36 15.00	0.0
ABL	84.22	55	P	36 18.60	0.9
ISA	84.56	54	eP	36 19.00	-0.2
SOD	84.60	340	iP	36 16.00	-2.7
			i	36 21.00	16kmX
			i	37 04.80	
TNP	84.79	52	P	36 21.10	0.6
SES	84.89	39	iPc	36 20.40	-0.1
	0.7s	415.00nm			6.3mb
			pP	37 10.00	202kmX
CLC	85.20	54	eP	36 22.00	-0.3
CLC	85.20	54	eP	36 23.50	1.2
PAS	85.25	56	eP	36 22.76	0.2
			epPd	37 01.99	156kmX
			esP	37 19.37	
			e	37 56.70	
CIS	85.29	57	eP	36 23.70	0.9
MWC	85.32	56	eP	36 24.20	1.0
SBB	85.36	55	eP	36 23.00	-0.2
			e	37 05.00	168kmX
TRO	85.53	344	eP	36 21.50	-1.8
LRM	85.62	43	iPc	36 24.80	0.3
			e	37 10.80	186kmX

23d 11h

RVR	85.93	56	eP	36	26.00	0.1
GSC	85.97	54	eP	36	26.00	-0.2
			e	37	10.00	177kmX
PEC	86.13	56	P	36	27.30	0.3
CPE	86.50	57	eP	36	29.80	1.1
PLM	86.54	56	eP	36	29.00	-0.1
TAB	86.64	309	eP	36	28.00	-1.5
			i	37	12.00	177kmX
PTI	86.71	46	P	36	31.00	1.2
TPC	86.94	55	eP	36	31.00	0.1
			e	37	15.00	176kmX
RKT	87.24	115	iP	36	35.00	2.7X
	1.1s	220.00nm			6.0mb	
IMW	87.31	45	P	36	33.70	0.9
DUG	87.33	49	P	36	34.60	1.8
	1.0s	55.00nm			5.4mb	
			pP	37	23.80	199kmX
SUF	87.35	336	iP	36	29.00	-3.2X
FFC	88.14	32	iPc	36	35.60	-0.5
	0.7s	210.00nm			6.2mb	
GLA	88.25	56	eP	36	37.00	-0.2
			e	37	19.00	167kmX
			e	40	06.00	
DAU	88.37	48	P	36	38.20	0.2
BW06	88.67	45	P	36	39.00	-0.2
	1.0s	125.00nm			5.9mb	
NUR	89.20	335	eP	36	36.00	-5.0X
			i	37	32.40	231kmX
			e	47	14.00	
			e	48	12.00	
			e	49	10.00	
MSL	89.60	308	ePd	36	42.00	-1.4
			e	37	27.00	180kmX
			eSKS	46	54.00	
			eS	47	20.00	
			ePS	48	14.00	
BHD	89.76	305	ePd	36	44.00	-0.2
			iSKS	46	57.00	
			iS	47	21.00	
			iPS	48	19.00	
UPP	92.36	337	eP	36	53.00	-2.6
KVT	92.82	315	iP	36	56.10	-2.1
GLD	92.88	47	P	36	59.70	1.0
	1.0s	95.00nm			5.9mb	
HFS	93.61	338	eP	36	58.00	-3.4X
	0.4s	3.20nm			4.9mb	
NB2	93.81	340	P	36	59.60	-2.8X
	0.8s	5.40nm			4.8mb	X
ANMO	94.00	52	eP	37	06.37	2.4
	1.0s	75.00nm			5.9mb	
			eS	47	52.26	
			esS	49	18.34	
			ePS	50	21.31	
ALQ	94.00	52	iPc	37	04.20	0.2
	1.0s	72.50nm			5.8mb	
Z	20s	2.31um			5.6Msz	
RSON	94.43	33	P	37	04.20	-1.2
	1.2s	76.53nm			5.8mb	
			pP	37	53.20	197kmX
FRB	94.84	15	ePc	37	04.60	-2.4
	0.7s	44.00nm			5.9mb	
KSP	98.93	330	eP	37	20.50	-5.3X
			e	38	11.50	206kmX
			e	38	31.50	
			e	41	13.00	
ELL	99.07	313	eP	37	23.00	-3.9X
MEO	99.85	49	iPd	37	28.60	-1.7
TUL	101.26	47	e(Pdif	37	35.50	-1.0
	1.2s	25.90nm			5.7mb	
Z	20s	1.17um			5.4Msz	
			e	54	11.50	
			LR	12	00.00	
VAY	101.45	320	ePdiff	37	34.60	-2.6X
SKO	101.75	321	iPdiff	37	36.30	-2.2X
Z	18s	2.09um			5.7Msz	
N	21s	2.24um				
E	21s	2.94um				
			i	38	26.00	
			i	38	29.00	
			i	38	49.00	
			eS	48	54.00	
			iPS	50	14.50	
			eSS	55	30.00	
			i	57	20.00	
			e	00	38.00	
			e	02	20.00	
			i	06	33.00	
			LR	27	27.00	
OHR	102.65	321	ePdiff	37	37.80	-4.8X
	1.2s		0.04nm		3.1mb	X
			e	38	29.50	
			eS	48	01.20	
KBA	102.91	329	ePdiff	37	43.00	-0.8
			i	38	14.50	
FVM	103.73	43	Pdiff	37	48.00	0.6
WLF	104.29	334	Pdiff	38	08.00	18.5X
VAI	105.99	330	PKP	42	09.00	0.2
SPA	107.29	180	ePKP	42	29.40	18.6X
	1.0s		13.00nm			
Z	20s		3.15um		5.9Msz	
ASMO	118.44	333	iPKPc	42	30.50	-2.5
AAPN	118.64	333	iPKPd	42	31.00	-2.4
ALOJ	118.80	333	ePKP	42	31.50	-2.2
BUL	120.76	257	iPKPd	42	50.50	12.6X
	1.0s		14.00nm			
			ipP	42	58.70	
			iPP	43	39.00	
SLR	121.74	250	iPKPd	42	38.70	-0.9
	0.7s		17.12nm			
IFR	122.26	331	iPKPd	42	40.00	-0.4
KSR	123.00	250	ePKP	42	31.00	-11.1X
BCAO	123.60	288	ePKPd	42	37.20	-6.2X
	0.6s		17.00nm			
			i	42	42.10	
			i	43	04.00	
			i	44	11.70	
BLF	123.82	246	ePKP	42	44.00	0.4
TIO	125.41	331	iPKP	42	45.00	-1.6
			i	43	46.00	
WIN	131.69	255	iPKPd	42	51.00	-7.9X
	0.9s		12.60nm			
			i	46	08.00	
PORP	132.47	44	PKP	42	47.00	-13.2X
GGP	133.10	73	ePKPd	43	02.30	0.0
PSO	133.69	71	ePKP	43	03.50	0.3
BMG	134.55	61	ePKP	43	10.00	5.6X
BOG	134.98	65	e(PKP)	43	10.00	4.4X
SHGH	139.05	302	ePKP	43	10.00	-2.7X
KOGH	139.13	302	ePKP	43	09.40	-3.5X
KUK	139.17	302	ePKP	43	11.00	-1.9
TEGH	139.19	301	ePKP	43	07.60	-5.3X
SLB	139.21	42	ePKP	43	06.99	-6.0X
LEGH	139.33	301	ePKP	43	12.30	-0.9
WEGH	139.48	301	ePKP	43	08.00	-5.5X
SSV	139.48	43	ePKP	43	02.03	-11.5X
SVB	139.48	43	ePKP	43	01.75	-11.7X
KIC	142.51	307	PKP	43	12.58	-6.3X
TIC	142.55	307	PKP	43	12.54	-6.4X
LIC	142.82	307	PKPc	43	13.42	-6.0X
	1.0s		34.00nm			
LNV	142.88	124	ePKPc	43	15.10	-3.8X
TACH	143.35	123	iPKPc	43	16.80	-3.0X
ROCH	143.48	122	iPKPc	43	16.80	-3.5X
CHCH	143.49	124	iPKPc	43	17.30	-2.8X
SAN	143.63	123	iPKPc	43	18.10	-2.2
PCH	143.70	123	iPKP	43	18.50	-2.0
PEL	143.70	123	iPKPc	43	18.50	-1.9
	0.5s		619.72nm			
JACH	143.90	122	ePKP	43	17.00	-3.9X
FCH	143.96	123	iPKPc	43	19.50	-1.8
ARE	144.36	94	iPKPc	43	22.00	-0.3
RFA	144.93	126	iPKPc	43	22.20	-0.3
RTBS	145.11	121	iPKPc	43	24.00	1.2
ANT	145.59	107	iPKPd	43	24.70	0.9
RTC8	145.69	121	iPKPd	43	24.50	0.6
ZON	145.78	121	ePKPd	43	23.00	-1.0
RTCV	145.80	121	iPKPd	43	24.50	0.5
CFA	146.12	121	ePKPc	43	24.00	-0.6
ZOBO	147.54	93	iPKPc	43	28.00	0.1
Z	21s		0.96um		5.6Msz	
			PS	53	42.00	
			eLR	31	24.00	
LPB	147.60	94	iPKPc	43	28.80	1.0
	1.0s		720.00nm			
			i	43	31.60	
			PS	53	34.00	
			LR	32	50.00	
CNCB	147.74	94	iPKPc	43	29.00	0.8
			i	43	33.00	
MRA	147.91	124	ePKPc	43	27.00	-0.3
TCA	149 16	122	ePKPd	43	29 00	-0.5
CCH	149.55	95	PKP	43	29.90	-0.8
			i	43	35.50	
SLA	149 96	109	ePKPc	43	30 20	-0.7
			e	43	36.00	

S.D. = 1.2 on 229 of 271 obs.

? DEC 23, 1989 14h 25m 26.31± 5.22s
10.806 N ±22.9km 62.746 W ±40.9km
DEPTH = 10.0km (geophysicist)
NEAR COAST OF VENEZUELA (97)
MD 3.5 (TRN).

TCE	0.98	96	eP	25	43.96	-1.0
			eS	26	01.67	
TRN	1.33	97	eP	25	49.79	-1 0
			eS	26	09.57	
TPP	1.36	111	eP	25	51.10	-0.2
			eS	26	11.93	
TBH	1.68	101	eP	25	56.60	0.7
			eS	26	18.43	
GRW	1.72	38	eP	25	57.46	1.0
			eS	26	23.12	
PIG	1.90	79	eP	26	00.46	1.4
			eS	26	25.55	
BOT	2.02	80	eP	26	01.04	0.2
			eS	26	29.27	
SVB	2.85	31	eP	26	13.18	0.4
			eS	26	59.13	
SVV	2.91	31	eP	26	13.63	0.1
			eS	27	00.88	
SSV	2.93	31	eP	26	14.04	0.2
			eS	27	01.80	
SL8	3.43	29	eP	26	18.94	-2.1
			eS	27	04.74	

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

DEC 23, 1989 14h 49m 42.76± 0.79s
38.324 N ± 6.6km 26.654 E ± 8.9km
DEPTH = 10.0km (geophysicist)
AEGEAN SEA (365)
MD 3.2 (ATH)

IZM	0.48	81	iPg	49	53.70	1.1
			iSg	50	02.20	
SMG	0.63	167	ePb	49	54.50	-0.9
			eSn	50	05.00	
PRK	0.97	342	ePn	50	01.50	0.4
			eSn	50	16.00	
EZN	1.52	350	iPn	50	10.30	0.3
APE	1.54	216	ePn	50	11.00	0.7
DST	2.00	50	ePn	50	17.10	0.1
BNT	2.25	25	ePn	50	19.00	-1.7

S.D. = 1.2 on 7 of 7 obs.

DEC 23, 1989 14h 59m 03.24± 0.31s
38.305 N ± 3.1km 26.585 E ± 3.4km
DEPTH = 10.0km (geophysicist)
4.5mb (1 obs.)
AEGEAN SEA (365)
ML 3.6 (ATH).

IZM	0.54	80	iPg	59	15.20	1.0
SMG	0.63	161	iPgc	59	16.00	0.2
PRK	0.97	345	ePb	59	22.20	0.5
APE	1.49	214	ePb	59	29.00	-1 1
EZN	1.53	352	iPn	59	30.30	-0 3
YER	1.78	130	iPn	59	34.50	0 2
DST	2.06	50	iPn	59	38.10	-0.2
EDC	2.27	26	iPn	59	40.00	-1.3
ATH	2.29	263	ePb	59	41.50	-0.1
BNT	2.30	26	iPn	59	40.60	-1 1
KHL	2.31	89	iPn	59	42.90	0 9
KAP	2.79	170	ePn	59	47.50	-1.2
NEO	2.81	292	ePn	59	49.00	-0.1
ALT	2.86	74	iPn	59	50.60	0.8
OUR	2.86	316	eP	59	48.40	-1.3
RDO	2.95	344	ePn	59	51.00	0 1
ELL	3.07	119	ePn	59	55.50	2.8X
YLV	3.12	43	iPn	59	52.10	-1.4
NPS	3.14	195	ePn	59	52.50	-1.1
CTT	3.17	26	ePn	59	57.00	2.8X
PLG	3.19	311	ePn	59	55.00	0 5
KSL	3.24	131	ePn	59	56.00	0.9
BCK	3.28	104	ePn	59	57.00	1.2
VLI	3.30	242	ePn	59	55.20	-0.9
GBZT	3.32	41	ePn	00	23.40	27.1X
ISK	3.35	34	ePn	00	00.00	3.3X
KDZ	3.46	345	iPd	59	58 00	-0 2
HRT	3.46	43	ePn	59	56.00	-2.3
VAM	3.47	214	ePn	59	57.30	-1.0

GPA 3.50 54 ePn 00 05.00 6.1X
DMK 3.63 14 iPn 00 00.10 -0.5
RZN 3.67 338 iP 00 02.00 0.6
DIM 3.83 348 eP 00 05.00 1.6
ITM 3.86 255 ePn 00 04.50 0.6
MMB 3.95 327 ePd 00 05.00 -0.2
KNT 4 03 316 eP 00 06.70 0.4
PLD 4.06 340 eP 00 07.00 0.3
VAY 4.32 316 e(Pn) 00 13.00 2.6X
KKB 4.46 324 iP 00 13.00 0.6
PGB 4.62 337 eP 00 08.00 -6.8X
VTS 5.00 330 iP 00 21.00 0.8
PVL 5 00 349 iPd 00 19.00 -1.0
OHR 5.27 304 e(P) 00 25.80 1.8
MLR 7 20 356 ePc 00 51.00 -0.1
MLR 7.20 356 eP 01 02.00 10.9X
VRI 7.56 1 ePd 01 01.00 4.9X
BCAO 34.50 194 iPc 05 56.00 2.4
0.8s 6.00nm 4.5mb
S.D. = 1.0 on 38 of 47 obs.

? DEC 23, 1989 16h 19m 41.26± 1.15s
38.012 N ±11.5km 29.114 E ±16.5km
DEPTH = 10.0km (geophysicist)
TURKEY (366)

KHL 0.45 46 iPg 19 50.80 0.4
eSg 19 59.60
YER 1.10 217 ePn 20 02.00 0.1
ALT 1.30 37 ePn 20 05.00 -0.4
ELL 1.41 153 ePn 20 07.00 -0.1
S.D. = 0.6 on 4 of 4 obs.

& DEC 23, 1989 16h 37m 46.50s
36.457 N 120.443 W
DEPTH = 11.0km
CENTRAL CALIFORNIA (39)
<BRK>. ML 3.8 (BRK).

PRI 0.36 210 iPd 37 53.40 -0.6
LLA 0.43 292 iPc 37 54.10 -1.3
PKEM 0.48 146 iPc 37 55.80 -0.5
PRS 0.76 261 iPc 38 00.00 -1.2
FRI 0.80 48 iPd 37 59.80 -2.1
SAO 0.86 291 iPc 38 01.52 -1.5
eS 38 14.95
ARN 1.25 316 eP 38 07.30 -2.3
BCH 1.30 167 eP 38 07.80 -2.8
MHC 1.30 313 iPc 38 08.10 -2.5
eS 38 27.25
GCC 1.37 295 ePc 38 08.50 -3.0
CMB 1.58 2 iPd 38 13.10 -1.4
iS 38 33.40
PCC 1.87 304 ePc 38 15.40 -3.3
ABL 1.89 148 eP 38 15.50 -3.6
BLP 1.89 179 eP 38 16.50 -2.5
BKS 2.01 315 ePc 38 17.70 -3.1
BRK 2.03 315 ePd 38 18.30 -2.6
ZSP 2.07 316 ePc 38 18.90 -2.7
TNP 3.04 57 eP 38 34.20 -1.4
KVN 3.19 35 eP 38 36.70 -1.0
ORV 3.20 345 ePd 38 36.40 -1.3
PEC 3.71 133 eP 38 41.30 -3.7
MIN 3 99 347 ePd 38 48 40 -0.6
PLM 4.27 135 eP 38 52.80 -0.3
DUG 7.06 56 e(P) 39 33.00 0.5
DAU 8.22 59 eP 39 49.70 0.9
25 obs. associated

DEC 23, 1989 16h 59m 48 62± 1.95s
2.590 N ± 5.6km 128.566 E ± 7.4km
DEPTH = 268.8 ± 21.9 km
4.9mb (9 obs.)
HALMAHERA (267)

MTN 15.55 171 iPd 03 14.10 -2.1
eS 06 00.00
KNA 18.22 179 eP 03 44.00 -0.6
0.2s 49.00nm 5.6mb
LAT 20.57 117 eP 04 09.00 0.9
PMG 22.03 123 eP 04 22.00 -0.2
WB5 23.04 166 eP 04 32.00 0.0
eS 08 23.50
ASPA 26.61 169 iPc 05 04.60 -0.1
0.6s 35.00nm 5.1mb
eS 09 20.80
IPM 27.56 275 ePd 05 13.30 0.0
0.8s 30.20nm 4.9mb
NANU 28.05 206 eP 05 17.60 0.0
LOE 30.18 301 iPd 05 36.40 0.0
NST 30.87 297 eP 05 44.50 2.1
WHN 30.89 336 Pc 05 43.00 0.6
GYA 31.70 320 P 05 50.60 0.9
BDT 32.48 299 eP 05 57.00 0.7
CHG 33.18 301 iPd 06 02.90 0.5
0.9s 37.82nm 5.0mb
FORR 33.26 181 eP 06 03.00 0.2
KMI 33.48 314 Pd 06 06.00 0.9
MRWA 33.84 200 eP 06 07.90 0.0
XAN 36.27 332 Pc 06 27.50 -0.7
STK 36.45 161 iPd 06 30.20 0.5
CD2 36.65 323 P 06 31.20 -0.3
BRS 37.85 144 iPd 06 41.20 -0.4
TIY 37.96 339 Pc 06 42.20 -0.2
ADE 38.55 167 iPc 06 48.90 1.6
1.0s 36.00nm 4.8mb
BJI 38.94 345 eP 06 50.00 -0.3
1.0s 15.00nm 4.4mb
SNY 39.32 354 iPc 06 53.00 -0.4
LZH 40.42 329 P 07 03.50 0.8
1.2s 59.00nm 4.8mb
HHC 41.07 340 eP 07 07.40 -0.5
MDJ 41.86 1 eP 07 13.70 -0.4
SHL 42.02 306 iP 07 16.00 0.0
DZM 44.38 125 iPc 07 35.30 0.5
LSA 44.56 311 P 07 37.90 1.3
GTA 45.02 328 iPd 07 39.60 0.0
HYB 51.23 290 iPd 08 27.00 -0.5
0.8s 46.20nm 5.0mb
KOD 51.29 281 eP 08 27.60 -0.8
GBA 51.68 285 P 08 30.00 -0.8
WMQ 54.71 325 P 08 52.80 0.2
NDI 55.27 303 iPd 08 55.00 -1.9
MSZ 58.68 148 P 09 21.50 1.2
KSH 60.11 315 P 09 31.20 0.8
MAIO 71.66 307 iPd 10 43.40 0.1
SOD 92.21 338 iP 12 28.70 0.0
SUF 93.39 333 iP 12 33.00 -1.2
NUR 94.58 331 eP 12 38.00 -1.7
HFS 99.87 333 eP 13 02.80 -0.9
0.5s 2.00nm 4.8mb
S.D. = 0.9 on 44 of 44 obs.

DEC 23, 1989 17h 02m 29.74± 0.78s
43.226 N ± 8.2km 0.112 W ± 9.0km
DEPTH = 10.0km (geophysicist)
PYRENEES (378)
ML 3.2 (LDG). mbLg 3.1 (MDD).

EPF 0.38 120 Pg 02 36.90 -0.7
Sg 02 42.00
LPO 1.73 32 Pg 03 05.00 5.0X
Sg 03 29.40
LFF 1.82 19 Pg 03 07.20 5.9X
Sg 03 32.00
ECRI 1.87 252 iP 03 03.30 1.2
eS 03 25.80
CAF 2.31 42 Pn 03 08.00 -0.5
Pg 03 15.20
Sg 03 46.00
ETER 2.37 112 ePn 03 14.40 5.1X
eSn 03 44.60
RJF 2.38 29 Pn 03 10.40 0.9
Pg 03 17.60
Sg 03 48.80
ERDQ 2.43 171 ePn 03 12.20 2.1
eSn 03 40.00
ETOR 2.81 212 eP 03 14.50 -1.1
LSF 3.24 21 Pn 03 21.20 -0.4
Pg 03 33.60
Sg 04 17.00
MFF 3.38 360 Pg 03 36.00 12.5X
Sg 04 20.20
TCF 3.48 28 Pg 03 38.00 13.0X
Sg 04 23.00
GUD 3.97 231 eP 03 30.60 -1.5
eS 04 15.00
S.D. = 1.5 on 8 of 13 obs.

& DEC 23, 1989 17h 35m 26.46s
63.058 N 151.114 W
DEPTH = 77.7km
CENTRAL ALASKA (1)
<AGS-P>.

PMR 1.74 147 iPc 35 55.60 0.4
SPU 1.93 194 iP 35 57.60 -0.4
TTA 2.24 269 iPd 36 02.70 0.5
FBA 2.36 37 ePd 36 03.00 -0.8
TOA 2.48 110 iPc 36 05.00 -0.5
RDT 2.57 194 eP 36 05.80 -0.9
eS 36 38.00
SLKM 2.59 170 iP 36 06.60 -0.5
SVW 2.89 229 iPd 36 10.80 -0.3
KLU 2.89 121 iP 36 08.00 -3.2
IMA 3.22 341 ePc 36 14.50 -1.3
DWY 5.32 74 P 36 41.60 -3.4
11 obs. associated

? DEC 23, 1989 17h 43m 24.51± 6.62s
41.307 N ±51.9km 13.195 E ±11.1km
DEPTH = 10.0km (geophysicist)
SOUTHERN ITALY (390)

RDP 0.58 322 P 43 35.20 -1.0
eSg 43 42.10
SDI 0.61 49 P 43 37.20 0.3
eSg 43 46.40
RMP 0.62 324 P 43 37.50 0.4
AZI 0.70 15 P 43 37.50 -0.9
MNS 1.14 341 P 43 47.10 1.2
eSg 43 59.60
S.D. = 1.3 on 5 of 5 obs.

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* DEC 23, 1989 18h 15m 21.73± 3.06s
2.589 N ±13.1km 128.526 E ±12.1km
DEPTH = 224.4 ± 30.0 km
5.3mb (3 obs.)
HALMAHERA (267)

MKS 11.91 229 iPc 18 13.00 7.1X
MTN 15.55 170 eP 18 51.00 0.0
eS 21 37.00
KNA 18.22 179 iPc 19 20.80 0.0
0.4s 144.00nm 5.8mb X
WB5 23.05 166 eP 20 08.60 -0.1
MBL 25.09 199 eP 20 28.00 0.3
ASPA 26.62 169 iPc 20 41.20 -0.4
0.3s 23.00nm 5.3mb
NANU 28.03 206 eP 20 54.50 0.2
WARB 28.66 184 iPd 21 00.40 0.5
0.3s 5.00nm 4.7mb
CHTO 33.14 301 iP 21 39.00 -0.1
1.0s 3.75nm 4.0mb X
FORR 33.25 181 iPc 21 39.40 -0.4
0.5s 79.00nm 5.6mb
MRWA 33.83 200 eP 21 44.50 -0.3
COOL 34.02 191 eP 21 46.00 -0.4
STK 36.46 161 iPd 22 07.10 0.2
BRS 37.88 144 iPd 22 17.80 -1.1
e 23 51.00
ADE 38.56 167 eP 22 25.10 0.6
DZM 44.42 125 iPc 23 13.00 0.7
S.D. = 0.5 on 15 of 16 obs.

DEC 23, 1989 18h 20m 17.17± 0.76s
38.345 N ± 6.1km 26.633 E ± 8.7km
DEPTH = 10.0km (geophysicist)
AEGEAN SEA (365)
MD 3.1 (ATH).

IZM 0.50 84 iPg 20 28.30 1.0
iSg 20 36.80
SMG 0.66 166 eP 20 29.50 -0.7
eS 20 40.00
PRK 0.94 343 eP 20 36.30 1.2
eS 20 50.50
EZN 1.50 351 ePn 20 43.00 -1.1
APE 1.55 215 eP 20 45.40 0.6
DST 2.00 50 ePn 20 56.20 4.8X
EDC 2.21 25 ePn 20 55.00 0.5
BNT 2.24 26 ePn 20 54.00 -0.9
KHL 2.27 90 ePn 21 00.00 4.6X
YLV 3.07 43 ePn 21 06.00 -0.6
S.D. = 1.1 on 8 of 10 obs.

? DEC 23, 1989 18h 41m 25.93± 1.82s
18.324 S ±38.0km 13.567 W ±32.9km
DEPTH = 10.0km (geophysicist)
4.9mb (12 obs.) 4.8Msz (2 obs.)
SOUTH ATLANTIC RIDGE (410)

23d 18h

LIC	25.81	20	P	46	58.38	-0.7
	0.8s	6.00nm			4.3mb	
Z	20s	0.09um			3.3MszX	
KIC	26.03	20	P	47	02.44	1.3
	1.1s	14.50nm			4.6mb	
TIC	26.20	20	P	47	01.72	-1.0
	0.9s	8.50nm			4.4mb	
HVD	37.42	117	eP	48	39.00	-2.3X
KSR	38.12	109	eP	48	41.70	-5.6X
BCAO	38.89	58	ePd	49	03.00	9.3X
	1.0s	15.00nm			4.6mb	
		i		50	32.70	
SLR	39.36	108	eP	49	06.00	8.4X
BUL	39.79	100	iPc	49	25.20	23.9X
	0.9s	13.45nm				
LWI	44.48	74	iPc	49	50.10	10.3X
TIO	49.34	7	iP	50	18.00	0.4
CCH	49.91	262	eP	50	22.00	-0.4
AVE	51.67	7	eP	50	36.00	0.9
CNCB	51.74	263	P	50	37.20	0.5
LPB	51.90	263	P	50	38.50	0.8
Z	18s	1.37um			5.0Msz	
		LR		06	36.00	
ZOBO	51.97	263	P	50	37.00	-1.5
Z	20s	0.53um			4.6Msz	
		LR		06	32.00	
IFR	52.17	9	iPc	50	40.00	0.8
NKM	54.03	8	iPc	50	53.00	0.4
ARE	55.11	262	eP	51	02.00	0.7
LFF	64.29	11	eP	52	03.00	-0.6
	0.9s	20.90nm			5.3mb	
LSF	65.70	11	eP	52	12.30	-0.4
	1.1s	19.50nm			5.2mb	
TCF	65.87	12	eP	52	13.60	-0.2
	1.1s	15.60nm			5.1mb	
MAF	65.88	12	eP	52	13.50	-0.4
	1.1s	9.70nm			4.9mb	
LPG	66.15	15	eP	52	16.10	0.2
	1.0s	12.80nm			5.1mb	
BGF	66.26	12	eP	52	15.80	-0.5
	1.1s	14.60nm			5.1mb	
SSF	66.87	13	eP	52	19.70	-0.5
	1.1s	15.60nm			5.1mb	
LBF	66.90	13	eP	52	19.70	-0.7
BSF	68.34	15	eP	52	28.50	-1.0
HAU	68.39	14	eP	52	28.90	-0.9
KHC	71.36	18	P	52	49.00	1.1
ZST	71.67	21	e(P)	52	50.80	1.1
SRO	71.77	22	eP	52	51.20	0.9
HFS	81.25	13	eP	53	43.10	-0.2
	0.6s	1.60nm			4.2mb	
S.D. = 0.8	on	26 of	32 obs.			

? DEC 23, 1989 21h 23m 48.76± 3.16s
50.209 N ± 8.9km 12.355 E ±29.7km
DEPTH = 10.0km (geophysicist)
GERMANY (543)

CLL	1.18	20	iPg	24	10.70	0.0
			iSg	24	26.10	
BRG	1.21	56	iPg	24	11.40	0.0
			iSg	24	25.70	
KHC	1.34	143	iPg	24	13.50	0.0
			Sg	24	30.30	
PRU	1.43	98	Pg	24	14.60	-0.1
			eSg	24	32.30	
KBA	3.20	168	eP	25	24.00	43.8X
	0.6s	4.20nm				
			iSg	25	33.30	
S.D. = 0.1	on	4 of	5 obs.			

% DEC 23, 1989 21h 38m 51.35± 0.80s
44.375 N ±10.0km 7.093 E ± 9.7km
DEPTH = 10.0km (geophysicist)
NORTHERN ITALY (545)
ML 2.0 (GEN).

PZZ	0.13	3	P	38	54.97	0.3
			S	38	57.33	
STV	0.21	128	P	38	56.00	0.0
			S	38	59.17	
FOUF	0.27	305	ePgd	38	57.14	0.1
			e(Sg)	39	00.67	
ENR	0.28	122	P	38	57.43	0.2
			S	39	01.12	
ROB	0.56	98	P	39	02.66	-0.2
			S	39	10.86	
RRL	0.59	338	P	39	03.07	-0.4
			S	39	11.69	
IMI	0.74	129	P	39	05.74	-0.1
			S	39	15.58	
S.D. = 0.3	on	7 of	7 obs.			

? DEC 23, 1989 22h 09m 07.38± 4.79s
18.084 S ±31.4km 177.348 W ±71.7km
DEPTH = 642.2 ± 11.8 km
4.8mb (4 obs.)
FIJI ISLANDS REGION (181)

SVA	3.99	269	eP	10	36.10	0.0
SGE	4.53	276	iPc	10	40.00	0.0
DZM	15.73	253	iPc	12	21.90	0.0
BRS	29.01	246	iPc	14	20.00	-0.4
CAN	34.40	233	eP	15	06.40	0.9
CTA	34.41	261	iPd	15	05.20	-0.5
	0.8s	18.66nm			4.7mb	
BWA	34.54	235	eP	15	05.10	-1.5
PMG	35.49	279	eP	15	15.00	0.5
STK	39.44	242	eP	15	47.50	1.0
WB5	45.57	260	iPd	16	33.60	-0.8
ASPA	45.72	254	ePd	16	37.30	1.8
	0.9s	42.00nm			4.9mb	
FORR	50.81	245	eP	17	13.10	-0.1
	0.4s	27.00nm			4.9mb	
KNA	51.46	264	eP	17	17.20	-0.8
MBL	58.92	256	iPd	18	09.30	-0.1
	0.4s	11.00nm			4.4mb	
S.D. = 1.0	on	14 of	14 obs.			

% DEC 23, 1989 22h 29m 53.52± 0.73s
39.649 N ± 5.7km 22.835 E ± 6.4km
DEPTH = 10.0km (geophysicist)
GREECE (364)

LIT	0.52	330	eP	30	04.00	-0.1
			eS	30	12.50	
PAIG	0.71	67	iPd	30	07.20	-0.3
			e	30	16.00	
AGG	0.74	212	eP	30	08.00	0.0
			eS	30	19.50	
THE	0.99	6	eP	30	12.20	0.0
			eS	30	26.30	
OUR	1.12	52	eP	30	14.80	0.4
SOH	1.24	19	iP	30	16.20	-0.3
			eS	30	32.90	
GRG	1.35	346	iP	30	18.50	0.2
			eS	30	37.40	
KNT	1.51	2	iPd	30	20.90	0.2
			eS	30	40.90	
S.D. = 0.3	on	8 of	8 obs.			

DEC 23, 1989 22h 56m 38.84± 0.98s
20.010 S ±10.6km 168.500 E ± 9.1km
DEPTH = 51.6 ± 9.7 km
4.7mb (3 obs.)
LOYALTY ISLANDS (188)

PVC	2.26	355	iPc	57	14.70	0.2
			iS	57	42.50	
DZM	2.81	223	iPc	57	21.50	-0.9
			iS	57	53.60	
SGE	9.24	76	eP	58	53.00	0.5
BRS	16.16	240	e(P)	00	24.00	-0.1
CTA	20.90	266	iPd	01	23.00	3.7X
	1.0s	28.00nm			4.5mb	
BWA	22.85	227	eP	01	40.10	1.4
CAN	22.98	224	eP	01	42.90	3.0X
WB5	32.05	264	eP	03	03.00	-0.1
ASPA	32.27	257	iPd	03	05.60	0.6
	0.6s	36.00nm			5.4mb	
KVN	90.24	48	eP	09	35.00	-0.6
TNP	90.45	49	eP	09	36.00	-0.6
	1.0s	2.00nm			4.4mb	
YMT3	90.49	51	eP	09	36.20	-0.4
PRN	91.74	51	eP	09	43.00	0.6
SKO	144.60	316	iPKP	16	12.00	0.6
KHC	144.68	331	iPKPc	16	17.50	6.1X
	1.0s	7.00nm				
OHR	145.43	315	ePKP	16	11.80	-1.1
BCAO	146.91	246	iPKPd	16	19.60	3.5X
	0.8s	11.00nm				
			i	16	43.00	
WLF	147.23	339	PKP	16	19.00	3.6X
DOU	147.36	341	PKPc	16	19.70	4.0X
CDF	147.87	336	ePKP	16	20.60	3.9X
BSF	148.53	336	ePKP	16	22.10	4.3X
HAU	148.56	337	ePKP	16	22.30	4.6X
	0.7s	4.40nm				
VAI	149.28	332	PKP	16	24.00	5.2X
FIR	149.61	326	ePKP	16	26.00	6.6X
FLN	149.97	345	ePKP	16	25.60	5.8X
LOR	150.07	339	ePKP	16	26.20	6.2X
SSF	150.37	339	ePKP	16	27.10	6.6X
GRR	150.41	346	ePKP	16	26.80	6.3X
LPG	150.45	333	ePKP	16	31.00	10.0X
	0.8s	6.70nm				
LPF	150.79	346	ePKP	16	27.70	6.7X
	1.0s	17.60nm				
S.D. = 0.8	on	13 of	30 obs.			

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* DEC 23, 1989 23h 39m 10.95± 0.43s
52.522 S ± 8.0km 140.309 E ±15.6km
DEPTH = 10.0km (geophysicist)
4.7mb (4 obs.)
WEST OF MACQUARIE ISLAND (701)
CENTROID, MOMENT TENSOR (HRV)
Data Used: GDSN
L.P.B.: 8S, 17C
Centroid Location:
Origin Time 23:39:15.7 1.4
Lat 53.50S 0.20 Lon 138.75E 0.22
Dep 15.0 FIX Half-duration 1.7
Moment Tensor; Scale 10**17 Nm
Mrr=-0.31 0.13 Mtt= 0.18 0.10
Mff= 0.13 0.10 Mrt= 0.00 0.00
Mrf= 0.00 0.00 Mtf=-1.15 0.14
Principol Axes:

T	Val= 1.31	Plg= 0	Azm=224
N	-0.31	90	180
P	-1.00	0	134

Best Double Couple:Mo=1.1*10**17
NP1:Strike=269 Dip=90 Slip=-180
NP2: 359 90 0

ADE	17.59	356	iPd	43	17.00	-0.6
	0.8s	34.33nm			4.5mb	
CAN	18.28	23	eP	43	26.40	0.3
BWA	19.00	21	eP	43	35.80	0.8
STK	20.65	3	eP	43	53.00	-0.1
BRS	26.78	25	iP	44	54.00	1.3
			eS	49	26.00	
			e	50	40.00	
ASPA	29.22	348	eP	45	12.80	-2.1
	0.7s	23.00nm			5.1mb	
CTA	32.70	10	iPc	45	44.90	-0.6
			iS	51	04.00	
WB5	32.91	350	eP	45	45.20	-2.1
MBL	35.08	325	eP	46	05.00	-1.0
DZM	36.43	43	iPd	46	17.90	0.3
SPA	37.66	180	iPc	46	25.50	-2.2
	0.9s	22.73nm			4.9mb	
			e	47	53.20	
SPA	37.66	180	eP	46	26.00	-1.7
KNA	37.81	342	eP	46	27.60	-1.5
MTN	40.25	346	eP	46	48.00	-1.5
PMG	43.35	10	eP	47	15.00	0.2
IPM	65.88	316	ePd	49	57.90	-0.9
LOE	77.25	322	eP	51	07.00	0.2
CHG	79.59	320	eP	51	20.50	0.9
GYA	83.96	330	P	51	43.20	0 9
KMI	83.98	326	eP	51	45.00	2.4X
			sP	51	58.00	
GBA	85.07	300	P	51	48.00	0 0
GBA	85.07	300	P	51	52.00	4.0X
	0.9s	3.20nm			4.5mb	
WHN	85.77	338	Pd	51	53.10	2.0
BUL	86.63	241	iPc	52	16.10	20.1X
	1.0s	12.00nm				
HYB	87.67	303	eP	52	01.00	0.2
CD2	89.01	329	eP	52	07.80	0.9
XAN	90.45	334	eP	52	15.50	1.9
TIA	90.65	341	eP	52	12.20	-2.2
LZH	93.79	331	eP	52	30.00	1.0
			pP	52	44.00	47kmX
BJI	94.54	342	eP	52	26.00	-6.1X
SNY	95.08	348	eP	52	40.00	5.5X
CN2	96.80	349	eP	52	43.00	0.7
CMB	124.31	71	e(PKP)	58	16.60	5.5X
WDC	124.81	67	ePKP	58	10.40	-1.4
INK	136.03	32	ePKP	58	33.00	0.7
MBC	142.64	23	ePKP	58	40.00	-4.2X

0.8s 3.00nm
KRA 143.55 291 ePKP 58 53.80 7.3X
FFC 144.06 61 iPKPc 58 44.90 -2.3
0.8s 12.00nm
ZST 144.31 286 ePKP 58 45.60 -2.3
LJU 144.77 282 e(PKP) 58 48.00 -0.7
VKA 144.81 286 ePKP 58 47.50 -1.2
SUF 144.86 313 iPKP 58 47.20 -1.1
NUR 144.97 309 ePKP 58 50.00 1.5
NUR 144.97 309 ePKP 58 43.00 -5.5X
e 58 57.00
CRE 145.04 276 PKP 58 50.50 1.1
PGD 145.32 277 PKP 58 54.50 4.5X
FIR 145.55 276 ePKP 58 50.00 -0.1
SOD 145.58 321 iPKP 58 43.30 -6.1X
SOD 145.58 321 ePKP 58 49.00 -0.4
i 58 54.20
KEV 145.71 325 ePKP 58 49.00 -0.6
KBA 145.99 282 iPKPd 58 50.70 -0.3
1.0s 17.00nm
i 58 59.40
FVI 146.09 281 PKP 58 51.50 0.6
CTI 146.50 280 PKP 58 52.00 0.2
PRU 146.63 288 ePKP 58 52.00 0.3
e 59 00.80
KHC 146.82 286 iPKPd 58 53.30 1.2
1.0s 12.00nm
SAL 146.96 278 PKP 58 56.50 4.2X
BRG 147.35 289 ePKP 58 56.60 3.8X
1.1s 21.00nm
e 59 03.20
SBF 147.92 273 ePKP 58 54.90 0.8
0.9s 34.00nm
TIO 148.00 240 iPKP 59 04.00 9.3X
CLL 148.07 289 ePKP 59 00.00 6.1X
e 59 13.00
VAI 148.15 278 PKP 58 56.00 1.8
TAF 148.21 251 ePKP 59 00.00 5.2X
FRF 148.24 272 ePKP 58 55.90 1.4
0.7s 18.50nm
LRG 148.36 272 ePKP 58 56.80 2.2
IFR 148.81 246 iPKP 58 59.50 3.5X
BNI 149.01 275 PKP 58 59.00 3.2X
LPG 149.19 276 ePKP 58 58.50 2.2
0.9s 16.30nm
AVE 149.91 243 ePKP 59 12.00 14.6X
CDF 150.24 281 ePKP 58 58.90 1.4
BSF 150.28 280 ePKP 59 00.30 2.7X
0.8s 10.70nm
NKM 150.38 248 iPKP 59 11.00 13.0X
SLL 150 43 307 ePKP 59 00.40 3.1X
1.0s 22.60nm
HAU 150.62 280 ePKP 59 01.50 3.5X
0.7s 9.70nm
EVIA 150.86 256 e(PKP) 59 03.50 4.7X
EBAN 151.31 254 e(PKP) 59 05.00 5.6X
WLF 151.44 283 PKP 59 06.00 6.9X
e 59 18.00
SMF 151.52 276 ePKP 59 03.30 3.9X
NB2 151.53 308 PKP 59 03.60 4.6X
0.8s 9.60nm
LBF 151.59 276 ePKP 59 03.80 4.3X
0.8s 17.90nm
CAF 151.76 271 ePKP 59 04.40 4.6X
0 8s 6.70nm
LOR 151.79 277 ePKP 59 04.10 4.3X
0.7s 4.40nm
EPF 151.80 266 ePKP 59 04.10 4.1X
0.8s 5.30nm
AVF 151.88 276 ePKP 59 03.30 3.4X
WTS 151.91 288 ePKP 59 11.00 11.3X
1.0s 18.00nm
SSF 151.91 276 ePKP 59 04.40 4.4X
0.9s 12.10nm
ETOR 151.97 260 e(PKP) 59 06.00 5.6X
ENN 152.00 285 ePKP 59 06.00 6.1X
0.8s 12.00nm
BGF 152.08 275 ePKP 59 05.00 4.8X
0.7s 7.70nm
LPO 152.17 270 ePKP 59 05.40 5.0X
TCF 152.34 274 ePKP 59 05.80 5.2X
DOU 152.53 283 PKP 59 06.80 6.1X
TOL 152.58 257 ePKP 59 13.00 11.8X
LSF 152.74 273 ePKP 59 06.30 5.1X
S.D. = 1.3 on 50 of 93 obs.

DEC 24, 1989 01h 20m 20.97± 0.40s
35.361 N ± 6.1km 31.859 E ± 5.5km
DEPTH = 33.0km (normal)
CYPRUS (372)
MD 4.0 (HLW). ML 3.8 (CSS).

PPCY 0.62 140 ePc 20 35.20 1.9
CSS 1.27 108 ePg 20 41.50 -1.0
eSg 20 57.50
FAM 1.79 101 eP 20 52.00 1.9
KSL 2.00 293 eP 20 53.50 0.4
ELL 2.10 312 ePn 20 57.00 2.4
BCK 2.33 334 iPn 20 57.70 -0.2
YER 3.39 303 ePn 21 14.80 1.9
KHL 3.50 328 ePn 21 13.70 -0.8
KAP 3.83 274 eP 21 19.20 0.2
HRI 3.83 122 iPd 21 15.50 -3.6X
ALT 3.94 340 ePn 21 21.00 0.3
SHMJ 4.17 128 P 21 24.00 0.1
BURJ 4.52 132 P 21 28.70 -0.3
BBTK 4.53 9 eP 21 29.00 -0.1
i 21 44.00
SALJ 4.62 135 P 21 30.00 -0.4
SMG 4.67 302 eP 21 29.80 -1.2
GAZ 4.69 66 iPg 22 17.00 45.8X
KFNJ 4.73 137 P 21 31.30 -0.4
IZM 4.77 311 ePn 21 31.40 -1.0
DSI 4.79 141 iPd 21 30.00 -2.6
eS 22 23.00
MASJ 4.85 137 P 21 33.10 -0.5
HLBJ 4.94 130 P 21 35.00 0.1
DST 4.95 330 ePn 21 35.20 0.1
NPS 5.11 271 eP 21 37.30 0.1
KOT 5.42 180 ePn 21 43.00 1.5
eSn 22 38.50
HLW 5.50 185 ePn 21 43.00 0.2
VAM 6.26 273 eP 21 54.00 0.6
VLI 7.35 283 eP 22 06.50 -2.3
ITM 8.22 286 eP 22 20.00 -1.0
SOH 8.64 312 ePb 22 07.00 -19.7X
S.D. = 1.2 on 27 of 30 obs.

DEC 24, 1989 01h 41m 55.83± 0.99s
40.271 N ± 6.6km 21.744 E ± 8.2km
DEPTH = 10.0km (geophysicist)
GREECE (364)
ML 2.7 (THE).

LIT 0.60 106 ePgc 42 06.50 -1.4
eSg 42 15.60
GRG 0.85 36 ePg 42 11.70 -0.5
eSg 42 25.20
THE 1.00 68 ePg 42 15.30 0.6
eSg 42 29.70
OHR 1.11 320 iPg 42 16.50 -0.1
iSg 42 34.50
VAY 1.22 31 ePn 42 18.60 0.1
KNT 1.25 44 ePb 42 19.10 0.1
eSb 42 38.30
AGG 1.33 160 ePb 42 20.60 0.3
eSb 42 39.50
OUR 1.71 87 ePb 42 26.90 1.1
SKO 1.71 352 iPn 42 28.60 2.7X
S.D. = 0.9 on 8 of 9 obs.

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* DEC 24, 1989 02h 14m 30.57± 0.53s
49.545 N ±10.7km 155.677 E ±11.0km
DEPTH = 33.0km (normal)
4.7mb (19 obs.)
KURIL ISLANDS (221)

FBA 32.91 41 eP 21 04.00 0.6
0.9s 13.33nm 4.8mb
INK 38.37 34 eP 21 50.00 0.3
CHG 54.43 257 eP 23 57.10 0.3
SOD 57.26 339 eP 24 14.00 -2.6
KVN 59.37 65 iP 24 32.00 0.0
TNP 60.53 65 iP 24 40.00 0.1
0.9s 1.95nm 4.2mb
SUF 61.16 336 eP 24 42.00 -1.6
FRB 61.84 21 eP 24 46.00 -2.2
NUR 63.40 335 eP 24 55.00 -3.5X
NB2 66.12 342 P 25 14.40 -1.8
0.8s 2.90nm 4.4mb
HFS 66.42 340 eP 25 15.90 -2.1
0 4s 1 30nm 4.4mb
WB5 71.66 201 eP 25 49.90 -0.9
WRA 71.73 201 Pc 25 50.40 -0 8
0.8s 1.70nm 4.1mb
GBA 72.16 270 P 25 54.70 0.8
EKA 74.00 348 P 26 04.00 -0.1
0.5s 4.00nm 4.7mb
PRU 75.40 335 eP 26 12.50 0.3
KHC 76.44 335 P 26 18.50 0.3
KBA 78.38 335 iPd 26 30.00 0.9
0.7s 26.50nm 5.4mb
CDF 78.69 339 eP 26 30.60 -0.1
0.8s 8.00nm 4.8mb
HAU 79.28 340 eP 26 33.80 -0.1
1.0s 13.60nm 4.9mb
BSF 79.34 339 eP 26 34.10 -0.2
FLN 79.94 344 eP 26 37.50 0.2
0.7s 13.20nm 5.0mb
LDF 80.04 344 eP 26 37.80 -0.1
0.8s 11.80nm 4.9mb
GRR 80.37 344 eP 26 40.10 0.5
0.8s 40.20nm 5.5mb
LOR 80.53 341 eP 26 40.70 0.2
0.8s 6.70nm 4.7mb
LPF 80.75 344 eP 26 42.10 0.5
0.7s 8.80nm 4.9mb
LBF 80.77 341 eP 26 41.70 -0.2
SSF 80.80 341 eP 26 42.30 0.4
0.9s 4.90nm 4.5mb
AVF 81.09 341 eP 26 43.70 0.3
0.6s 3.60nm 4.5mb
SMF 81.12 341 eP 26 43.90 0.2
OHR 81.39 327 eP 26 44.50 -0.7
BGF 81.42 341 eP 26 46.00 0.8
0.7s 4.40nm 4.6mb
LPG 81.55 338 eP 26 47.20 0.9
0.7s 11.00nm 5.0mb
MAF 81.80 342 eP 26 48.00 0.8
TCF 81.81 342 eP 26 47.80 0.6
MFF 81.96 343 eP 26 48.60 0.6
LSF 81.98 342 eP 26 48.70 0.6
0.6s 7.20nm 4.9mb
CAF 83.14 341 eP 26 55.10 0.9
LFF 83.39 342 eP 26 56.50 1.1
LPO 83.55 342 eP 26 57.30 1.1
EPF 85.31 342 eP 27 05.60 0.4
S.D. = 0.9 on 40 of 41 obs.

% DEC 24, 1989 03h 11m 31.93± 1.03s
16.106 N ± 9.0km 61.165 W ±11.3km
DEPTH = 33.0km (normal)
LEEWARD ISLANDS (92)
ML 1.9 (FDF).

DEG 0.23 26 iPc 11 38.81 -0.1
S 11 42.30
MGG 0.24 218 iPc 11 38.60 -0.3
S 11 41.00
SEG 0.44 312 iPd 11 41.89 0.3
DOG 0.44 260 ePc 11 41.79 0.1
S 11 47.50
PAG 0.50 261 eP 11 42.30 -0.3
S 11 48.40
BBL 0.65 208 iPc 11 45.10 0.4
S 11 51.80
S.D. = 0.4 on 6 of 6 obs.

% DEC 24, 1989 05h 00m 11.43± 0.94s
37.713 N ± 7.8km 29.118 E ± 9.4km
DEPTH = 10.0km (geophysicist)
TURKEY (366)

KHL 0.69 28 iPg 00 24.20 -0.9
YER 0.88 229 ePn 00 28.50 0.1
ELL 1.15 147 ePn 00 32.60 -0.5
BCK 1.20 102 ePn 00 34.20 0.4
ALT 1.55 30 ePn 00 40.00 0.8
S.D. = 1.0 on 5 of 5 obs.

& DEC 24, 1989 05h 06m 48.36s
59.941 N 152.866 W
DEPTH = 98.0km
SOUTHERN ALASKA (2)
<AGS-P>.

RDT 0.68 20 iP 07 05.60 -0.1
eS 07 18.70
SPU 1.31 17 iP 07 11.60 -1.0
eS 07 30.00
SLKM 1.44 66 iP 07 12.80 -1.3

24d 05h

		eS	07 32.80		
SVW	1.80	312 iPd	07 17 50	-1.2	
KDC	2.21	175 iPd	07 22.50	-1.6	
PMR	2.47	46 iPd	07 25.70	-1.9	
MID	3.35	96 eP	07 38.60	-1.0	
TTA	3.36	335 iPd	07 37.50	-2.3	
KLU	3.75	62 iP	07 42.70	-2.5	
TOA	3.91	53 iPc	07 45.80	-1.6	
FBA	5.51	23 ePd	08 06.20	-3.2	
IMA	6.16	357 ePd	08 15.90	-2.6	
SDN	6.17	225 e(P)	08 15.30	-3.1	
SIT	9.62	100 e(P)	09 02.70	-2.8	
INK	11.85	37 eP	09 32.00	-3.1	

15 obs. associated

% DEC 24, 1989 05h 10m 32.42± 0.68s
43.134 N ± 4.6km 10.771 E ± 6.0km
DEPTH = 10.0km (geophysicist)
CENTRAL ITALY (381)
MD 2.9 (ROM).

PII	0.61	343 Pc	10 44.50	-0.3	
		eSg	10 52.90		
FIR	0.73	29 ePg	10 47.00	0.2	
		i	10 50.00		
MAO	0.77	159 Pc	10 47.50	0.1	
		eSg	10 59.00		
BDI	0.94	352 P	10 50.10	-0.2	
		eSg	11 03.80		
CRE	0.99	60 P	10 51.50	0.2	
PGD	1.01	43 Pd	10 51.50	-0.2	
MME	1.06	357 P	10 52.90	0.3	
SFI	1.11	45 P	10 52.80	-0.4	
ASS	1.39	92 P	10 57.50	-0.3	
MNS	1.59	117 P	11 00.50	-0.2	
ARV	1.63	76 P	11 02.00	0.8	
BOB	1.89	330 P	11 05.30	0.2	

S.D. = 0 4 on 12 of 12 obs

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* DEC 24, 1989 06h 17m 49.19± 1 37s
41.369 N ± 9.2km 22.604 E ±11.9km
DEPTH = 5.0km (geophysicist)
YUGOSLAVIA (383)
ML 1.9 (SKO).

VAY	0.05	208 iPg	17 50.70	0.0	
		iSg	17 52.00		
KNT	0.30	133 eP	17 54.90	-0.4	
KKB	0.61	36 iPg	18 01.00	-0.5	
MMB	0.87	75 iPgd	18 06.00	-0.5	
		Sg	18 18.00		
RZN	1.62	78 eP	18 20.00	1.4	

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

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* DEC 24, 1989 07h 11m 34.23± 1 02s
51 118 N ±17.4km 179.465 E ±13 0km
DEPTH = 33.0km (normal)
4.4mb (5 obs.)
RAT ISLANDS, ALEUTIAN ISLANDS (6)

ADK	2.53	71 eP	12 15.20	1.4	
SMY	3.69	298 eP	12 36.30	6.0X	
SDN	12.71	63 e(P)	14 34.20	-1.0	
SVW	17.01	44 eP	15 33.20	2.3	
TTA	17.69	39 eP	15 40.70	1.3	
PMR	20.10	46 eP	16 08.20	0.7	
IMA	20.25	32 eP	16 08.60	-0.5	
	0.8s	7.90nm		4.1mb	
TOA	21.59	46 eP	16 21.70	-1.1	
FBA	21.82	38 e(P)	16 24.40	-0.7	
KVN	44 42	80 eP	19 42 00	-1.6	
TNP	45.56	81 eP	19 52 50	-0.2	
BW06	47.42	71 eP	20 07.00	-0.4	
GOL	51.80	72 eP	20 40.50	-0.6	
		e	20 55.50		
NB2	67.80	354 P	22 29.90	-0.5	
	0.8s	6.10nm		4.8mb	
HFS	68.51	352 eP	22 33.20	-1.6	
	0.6s	2.90nm		4.5mb	
WRA	81.08	222 Pd	23 49.10	1.8	
	0.7s	0.80nm		3.8mb	
KBA	81.46	350 ePc	23 50.00	0.8	
	0.5s	3.80nm		4.7mb	

S.D. = 1.3 on 16 of 17 obs

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* DEC 24, 1989 07h 31m 05.35± 1 72s
32 900 S ± 9.0km 72.419 W ±17 1km
DEPTH = 31.4 ± 6.6 km
OFF COAST OF CENTRAL CHILE (134)

LCCH	0.91	129 iPd	31 21.50	-0.5	
		iS	31 32.50		
ROCH	1.19	94 iPd	31 26.00	0.0	
		iS	31 39.00		
LNV	1.35	142 iPd	31 28.00	-0.1	
		iS	31 43.00		
TACH	1.45	122 iPd	31 29.00	-0.7	
		iS	31 47.50		
PEL	1.48	100 iPd	31 30.70	0.6	
		iS	31 48.50		
JACH	1.55	82 iPd	31 30.00	-1.2	
		iS	31 46.90		
SAN	1.57	111 iPd	31 32.00	0.5	
		iS	31 51.00		
PCH	1.75	115 iPd	31 34.50	0.4	
		iS	31 56.30		
FCH	1.84	104 iPd	31 36.50	0.9	
		iS	31 57.70		
ZON	3.45	68 eP	31 58.00	-0.2	
MRA	5.68	87 ePd	32 34.90	5.1X	
CCH	16.46	22 eP	34 56.00	0.1	
CNCB	16.52	15 eP	34 58.00	1.1	
LPB	16.76	15 eP	34 58.00	-1.8	
ZOBO	17.01	14 P	35 03.90	0.8	

S.D. = 1.0 on 14 of 15 obs.

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* DEC 24, 1989 07h 45m 12.13± 2.50s
51.225 N ±20.3km 15.889 E ±13.3km
DEPTH = 10.0km (geophysicist)
POLAND (548)
ML 3.3 (VKA), 2.9 (KBA).

KSP	0.46	146 eP	45 21.50	0.0	
		iS	45 31.50		
BRG	1.28	255 iPg	45 35.80	0.0	
		iSg	45 55.70		
PRU	1.51	215 Pn	45 38.80	-0.4	
		Pg	45 41.80		
		Sn	45 58.50		
		Sg	46 06.30		
CLL	1.81	274 i(Pg)	45 43.60	0.0	
		eSg	46 09.00		
KHC	2.57	216 Pg	45 55.00	0.5	
		Sg	46 40.20		
VKA	2.98	174 iPgc	46 09.80	9.5X	
		iSg	46 53.80		
KBA	4.47	203 ePn	46 21.50	-0.2	
		eSg	47 39.50		

S.D. = 0.4 on 6 of 7 obs.

& DEC 24, 1989 08h 45m 58.90s
46.650 N 122.116 W
DEPTH = 18.5km
4.3mb (8 obs.)
WASHINGTON (29)
<SEA>. ML 5.1 (SEA). Felt (V) at Ashford, Eatonville, Enumclaw, Graham, Kapowsin, Orting and Wilkeson; (IV) at Carbonado, Carrolls, Chehalis, Cinebor, Curtis, Elbe, Everett, Glenoma, Greenwater, Kent, Lakeboy, Littlerock, Longmire, Marysville, McMillin, Minerol, Morton, Packwood, Puyallup, Rondle, Seattle-Tacoma Airport, South Colby, Summer and Winlock. Felt from Portland, Oregon to the Canadian border.

LMW	0.12	279 Pd	46 02.88	-0.2	
KOSW	0.20	195 Pd	46 03.63	-0.3	
LON	0.23	64 iPc	46 03.70	-0.8	
TDL	0.31	193 Pd	46 05.09	-0.7	
RVC	0.31	19 Pc	46 05.17	-0.6	
CZM	0.34	232 P	46 05.78	-0.5	
GLK	0.36	104 Pd	46 06.03	-0.6	
APW	0.37	270 Pd	46 06.22	-0.4	
ERK	0.38	204 Pd	46 06.15	-0.8	
GHW	0.41	345 Pd	46 06.47	-0.8	
SOSW	0.41	182 Pc	46 06.64	-0.9	
FMW	0.42	47 Pc	46 06.92	-0.7	
STD	0.42	190 Pd	46 06.90	-0.7	
YEL	0.44	186 Pd	46 07.44	-0.6	
ESD	0.45	183 Pd	46 07.59	-0.6	
SHW	0.47	190 Pd	46 07.81	-0.6	
HSR	0.48	186 Pd	46 08.05	-0.6	
FL2	0.48	200 Pd	46 07.82	-0.9	
JLK	0.50	183 Pd	46 08.33	-0.7	
CDFW	0.54	175 Pd	46 08.87	-0.7	
GSM	0.60	22 Pc	46 09.78	-0.8	
LVP	0.62	199 Pc	46 10.17	-0.8	
ASR	0.62	144 Pd	46 10.08	-0.9	
MTMW	0.63	186 Pd	46 10.48	-0.7	
MEW	0.66	327 Pd	46 11.30	-0.3	
RVW	0.66	221 Pc	46 10.67	-1.0	
CPW	0.77	295 Pd	46 12.60	-1.0	
BMW	0.79	258 P	46 12.88	-0.9	
GULW	0.81	153 Pd	46 13.31	-0.9	
RMW	0.84	15 Pc	46 13.44	-1.2	
NAC	0.89	84 Pc	46 14.99	-0.6	
SPW	0.91	354 Pd	46 15.33	-0.5	
TWW	0.99	60 Pc	46 16.92	-0.3	
GMW	1.01	333 Pd	46 16.10	-1.4	
SMW	1.07	309 Pd	46 17.59	-1.1	
NLO	1.08	239 Pc	46 17.98	-0.9	
EBG	1.09	76 Pc	46 18.90	-0.2	
YAKW	1.10	96 Pd	46 19.05	-0.1	
VLMM	1.11	177 Pd	46 18.67	-0.7	
GL2	1.13	127 Pd	46 19.10	-0.6	
ONR	1.16	282 Pd	46 19.38	-0.7	
TBM	1.16	63 Pc	46 20.01	-0.2	
HTW	1.18	11 Pc	46 18.96	-1.5	
HDW	1.19	328 Pd	46 18.81	-1.8	
BLH	1.19	3 Pd	46 19.41	-1.1	
PGO	1.21	191 Pc	46 20.22	-0.6	
PGW	1.22	344 Pd	46 20.13	-0.8	
VLL	1.23	165 Pd	46 20.62	-0.6	
MXC	1.26	93 Pd	46 21.36	-0.2	
OBH	1.38	300 Pd	46 22.40	-0.8	
TDH	1.38	170 Pd	46 22.81	-0.6	
KMOR	1.39	224 Pc	46 22.40	-1 1	
VFP	1.41	161 Pd	46 23.32	-0.5	
VGB	1.47	140 Pd	46 24.33	-0.2	
BRVW	1.47	96 Pd	46 24.42	-0.2	
BLN	1.48	337 Pd	46 23.52	-1.1	
VTG	1.49	77 Pc	46 24.70	-0.1	
GT2	1.50	184 Pc	46 24.86	-0.1	
BVW	1.55	83 P	46 25.35	-0.3	
ETW	1.55	51 P	46 25.66	-0.1	
JCW	1.55	5 Pd	46 25.39	-0.3	
OSD	1.59	318 Pd	46 25.92	-0.6	
MDW	1.62	90 Pd	46 26.36	-0.4	
VBEM	1.63	167 Pd	46 27.40	0.4	
GROR	1.69	220 Pc	46 27.14	-0.6	
OHW	1 70	351 Pd	46 27.13	-0.6	
WAH2	1.76	86 Pd	46 28.46	-0.3	
RSW	1.76	98 Pd	46 28.28	-0.6	
CMW	1.77	360 Pd	46 29.04	0 0	
OOW	1.78	308 Pd	46 28.96	-0 1	
PATW	1.81	114 Pd	46 28.95	-0.4	
WTV	1.81	54 Pc	46 28.88	-0.6	
VTHM	1.83	143 Pd	46 29.46	-0.3	
GBL	1.83	91 Pd	46 29.29	-0.5	
STW	1.84	325 Pd	46 30.09	0.3	
CROR	1.84	154 Pd	46 29.90	-0.1	
RPW	1.85	13 Pd	46 30.16	0.2	
EPH	1.86	67 Pc	46 29.70	-0.5	
NLW	1.87	40 Pc	46 30.34	-0 1	
CRF	1.88	84 Pd	46 30.15	-0.4	
OBC	1.92	317 P	46 30.89	-0 3	
VGZ	1.95	336 iPd	46 30.49	-0 9	
WIW	1.96	95 Pd	46 31.03	-0 6	
JBO	1.98	126 Pd	46 30.69	-1.3	
OFK	2 00	311 Pd	46 31 87	-0 4	
WRD	2.07	80 P	46 32.46	-0.7	
DHW2	2.08	49 P	46 32.51	-0.9	
OTR	2.09	314 Pd	46 33.16	-0.3	
MCW	2.09	347 Pd	46 33.35	-0.2	
SAW	2.13	59 P	46 32.99	-1.1	
MBW	2.14	4 Pd	46 34.71	0.3	
PGC	2.20	336 eP	46 35.00	0.0	
SNB	2.24	342 iPd	46 35.97	0.3	
WG2	2.34	104 Pd	46 36.10	-1.0	
OSP	2.34	315 Pd	46 36.38	-0.7	
GMO	2.36	159 P	46 36.97	-0.5	
VIPM	2.39	153 Pd	46 37.24	-0.6	
PFB	2.48	322 iPd	46 38.00	-1.1	
HNB	2.64	353 iPd	46 41.64	0.2	
LNOR	2.77	105 Pd	46 41.81	-1.4	
NAB	2 87	334 iPd	46 43.94	-0.6	

BIB	2.87	344	iPd	46 44.47	-0.1
MGB	2.92	325	iPd	46 44.41	-1.0
DPW	2.93	64	Pc	46 43.94	-1.6
WPB	3.10	347	iPd	46 47.53	-0.2
PNT	3.15	31	iPnc	46 48.20	-0.4
SHB	3.18	339	iPd	46 48.55	-0.5
ALB	3.19	326	iPd	46 48.18	-1.0
OZB	3.24	317	eP	46 48.34	-1.6
WHB	3.53	351	iPd	46 53.92	0.0
BTB	3.63	322	iPd	46 54.05	-1.5
NEW	3.75	63	eP	46 55.00	-2.2
	0.5s	350.88nm			
CBB	4.02	329	eP	46 59.59	-1.3
LBFM	5.30	178	eP	47 21.20	1.8
FHC	6.00	194	eP	47 28.50	-0.4
WDC	6.08	183	eP	47 31.20	1.2
			e	49 14.00	
MIN	6.31	176	eP	47 35.50	2.0
BUT	6.65	92	eP	47 42.60	4.4
LRM	6.76	94	eP	47 37.40	-2.4
HRY	7.08	86	eP	47 42.60	-1.6
ORV	7.11	176	eP	47 47.30	2.8
LCCM	7.15	93	eP	47 42.90	-2.3
BGMT	7.17	98	eP	47 43.10	-2.4
LTMT	7.33	103	eP	47 46.10	-1.8
SXM	7.56	90	eP	47 49.60	-1.4
KVN	8.15	157	eP	48 00.50	1.3
SES	8.25	59	eP	47 58.00	-2.5
IMW	8.35	105	eP	48 00.30	-1.8
EDM	8.67	37	eP	48 06.30	0.0
CMB	8.70	171	eP	48 09.60	2.8
BKS	8.77	181	eP	48 09.00	1.3
BRK	8.77	181	eP	48 08.20	0.5
TNP	9.30	155	eP	48 16.80	1.7
ARN	9.30	177	eP	48 16.80	1.7
MHC	9.31	178	eP	48 16.20	0.9
DUG	9.35	130	eP	48 17.00	1.3
BW06	9.74	109	eP	48 22.00	0.7
DAU	10.05	124	eP	48 26.60	1.0
PRS	10.32	177	eP	48 31.80	2.7
PRI	10.56	174	eP	48 35.60	3.2
PRN	10.62	148	eP	48 36.00	2.7
YMT3	10.73	155	eP	48 37.80	3.0
ISA	11.31	165	eP	48 45.00	2.3
CLC	11.34	161	eP	48 45.00	2.0
BCH	11.56	172	eP	48 49.00	3.0
GSC	12.02	159	eP	48 55.00	2.7
SYP	12.22	172	eP	48 58.00	3.0
SBB	12.38	163	eP	49 01.00	3.9
PV09	12.55	126	eP	49 01.00	1.4
PEC	13.29	162	eP	49 13.00	3.9
TPC	13.35	158	eP	49 13.00	3.1
PLM	13.87	161	eP	49 20.00	3.1
BAR	14.56	161	eP	49 30.00	4.2
FFC	15.07	50	eP	49 31.00	-1.3
	0.6s	7.00nm		4.2mb	
ANMO	16.62	129	eP	49 54.50	2.0
	1.0s	12.50nm		4.0mb	
ALQ	16.62	129	eP	49 54.30	1.8
	1.0s	15.00nm		4.1mb	
RSON	19.14	67	eP	50 21.50	-2.0
	1.0s	16.27nm		4.2mb	
MEO	21.33	115	e(P)	50 45.00	-1.9
PMR	21.55	324	eP	50 50.50	1.7
	1.0s	23.00nm		4.6mb	
SIO	22.17	110	e(P)	50 58.10	2.8
TUL	22.40	109	eP	51 02.10	4.5
	1.2s	20.00nm		4.5mb	
INK	22.49	349	eP	50 58.00	-0.1
FBA	23.01	332	eP	51 03.50	0.2
	1.0s	10.25nm		4.3mb	
TTA	25.02	323	eP	51 22.80	-0.1
	1.0s	7.50nm		4.3mb	
SLR	148.57	59	ePKP	05 41.00	-1.5
	165 obs. associated				

? DEC 24, 1989 09h 54m 28.93± 1.03s
39.139 N ± 8.7km 27.540 E ±16.7km
DEPTH = 10.0km (geophysicist)
TURKEY (366)

IZM	0.77	196	ePg	54 44.00	0.0
			eSg	54 56.00	
DST	0.96	61	ePn	54 47.30	0.0
EDC	1.23	12	ePn	54 52.00	0.2
BNT	1.25	13	iPn	54 52.00	-0.2
	S.D. = 0.2	on	4 of	4 obs.	

? DEC 24, 1989 10h 17m 03.45± 1.72s
40.384 N ±20.3km 28.958 E ±10.6km
DEPTH = 10.0km (geophysicist)
TURKEY (366)

YLV	0.37	60	iPg	17 11.00	0.0
			iSg	17 14.50	
ISK	0.69	6	ePg	17 17.00	0.0
BNT	0.79	268	iPn	17 19.50	0.6
DST	0.82	198	iPn	17 24.30	5.0X
EDC	0.84	268	iPg	17 19.00	-0.6
			eSg	17 33.00	
	S.D. = 0.9	on	4 of	5 obs.	

? DEC 24, 1989 10h 51m 20.28± 4.33s
32.549 S ±14.8km 72.217 W ±36.8km
DEPTH = 33.0km (normal)
OFF COAST OF CENTRAL CHILE (134)

LCCH	1.07	150	iPc	51 39.60	0.6
			iS	51 52.50	
ROCH	1.10	113	iPd	51 37.90	-1.7
			iS	51 49.00	
JACH	1.38	96	eP	51 45.90	2.4
PEL	1.42	115	iPd	51 43.10	-0.9
			iS	51 58.60	
TACH	1.54	136	iPd	51 45.70	0.0
			iS	52 02.00	
LNV	1.56	154	ePd	51 46.50	0.6
			iS	52 06.10	
SAN	1.59	125	iPd	51 46.20	-0.3
			iS	52 05.00	
PCH	1.79	127	iPd	51 49.50	0.1
			i	52 10.00	
			i	52 12.50	
FCH	1.80	116	iPd	51 48.70	-1.1
			iS	52 09.00	
ZON	3.17	73	eP	52 11.00	2.0
MRA	5.50	90	ePd	52 42.20	0.2
CYA	6.89	55	e(P)	52 59.80	-1.8
	S.D. = 1.4	on	12 of	12 obs.	

? DEC 24, 1989 11h 27m 51.39± 2.64s
12.998 N ±67.3km 144.217 E ±86.0km
DEPTH = 33.0km (normal)
4.5mb (2 obs.)
SOUTH OF MARIANA ISLANDS (210)

GUMO	0.86	47	iPd	28 07.20	0.1
PJG	0.86	47	eP	28 07.20	0.1
GUA	0.86	51	iPd	28 07.00	-0.2
			eS	28 18.70	
WB5	34.08	197	eP	34 35.10	0.0
WRA	34.15	197	Pd	34 35.80	0.1
	0.7s	2.40nm		4.2mb	
COOL	48.94	207	eP	36 36.50	-0.1
	0.6s	6.00nm		4.8mb	
	S.D. = 0.1	on	6 of	6 obs.	

& DEC 24, 1989 12h 16m 56.92s
61.754 N 149.736 W
DEPTH = 30.0km
SOUTHERN ALASKA (2)
<AGS-P>.

PLRM	0.33	119	iP	17 04.16	-0.6
PME	0.36	110	eP	17 04.62	-0.6
			eS	17 12.01	
GHO	0.39	87	eP	17 05.08	-0.6
			eS	17 12.85	
SUA	0.56	239	eP	17 07.53	-0.9
CUT	0.70	339	iP	17 09.34	-1.2
			eS	17 19.39	
SKT	0.88	286	iP	17 11.78	-1.4
			eS	17 24.07	
NCG	1.21	254	iP	17 17.21	-0.8
HUR	1.23	2	eP	17 17.23	-0.9
SLKM	1.27	191	eP	17 17.37	-1.4
NCA	1.40	79	iP	17 19.57	-1.1
			eS	17 38.91	
GLI	1.55	123	iP	17 21.10	-1.6
SEW	1.66	175	eP	17 23.17	-1.2
RND	1.71	13	eP	17 24 16	-1.0
RDT	1.75	229	eP	17 24 53	-1.3
KLU	1.84	97	iP	17 25.53	-1.5
FID	1.87	121	eP	17 25.10	-2.3
KTH	1.89	344	eP	17 26.74	-1.0
	17 obs. associated				

% DEC 24, 1989 12h 18m 16.37± 1.34s
36.092 N ±10.7km 31.376 E ±25.6km
DEPTH = 10.0km (geophysicist)
TURKEY (366)

ELL	1.35	299	ePn	18 41.60	0.2
BCK	1.51	335	iPn	18 43.80	0.3
KHL	2.67	327	iPn	18 59.40	-0.9
ALT	3.12	342	ePn	19 07.00	0.3
KOT	6.16	176	ePn	19 49.50	0.0
			eSn	20 54.00	
	S.D. = 0.7	on	5 of	5 obs.	

DEC 24, 1989 12h 25m 07.38± 0.50s
1.869 S ± 6.2km 133.709 E ± 9.0km
DEPTH = 33.0km (normal)
4.8mb (4 obs.)
WEST IRIAN REGION (196)

AAI	5.80	252	eP	26 33.50	0.1
			eS	27 37.00	
MTN	11.20	193	eP	27 46.50	-1.8
			eS	29 47.00	
LAT	14.08	110	eP	28 27.00	0.3
KNA	14.63	199	eP	28 32.00	-1.9
			e	31 12.00	
WB5	17.91	178	eP	29 14.30	-1.5
			eS	32 27.00	
WRA	17.9B	178	P	29 24.00	7.4X
	0.5s	18.70nm		4.5mb	
ASPA	21.67	180	iPd	29 58.30	0.9
	0.7s	66.00nm		5.2mb	
Z	16s	1.85um		4.6MszX	
			eS	33 57.60	
			LR	39 07.70	
CTA	21.87	147	eP	30 00.00	0.7
			iS	34 20.00	
MBL	23.47	214	eP	30 16.50	1.5
WARB	25.11	195	eP	30 33.00	2.1
	0.7s	17.00nm		4.8mb	
NANU	27.11	219	iPd	30 50.50	1.1
FORR	29.31	190	eP	31 09.20	0.1
COOL	31.21	201	eP	31 26.50	0.4
BRS	31.27	146	iPc	31 26.00	-0.6
	0.6s	9.00nm		4.8mb	
			i	31 28.80	
			e(PP)	32 38.00	
CHG	39.88	303	eP	32 40.30	0.2
CD2	43.30	321	eP	33 07.40	-0.6
TIY	44.04	336	eP	33 13.10	-0.8
BJI	44.69	341	eP	33 19.00	0.0
	1.0s	0.01nm		1.8mb X	
HHC	47.06	337	eP	33 38.20	0.2
GTA	51.52	327	eP	34 12.00	-0.4
WMQ	61.31	324	P	35 22.20	0.0
IIT	126.33	68	(PKP)	44 28.50	18.7X
CNCB	151.67	132	ePKP	45 01.00	5.9X
LPB	151.75	131	ePKP	45 06.00	10.9X
ZOBO	151.89	131	PKP	45 03.00	7.5X
	S.D. = 1.1	on	20 of	25 obs.	

% DEC 24, 1989 12h 48m 41.32± 0.87s
46.977 N ± 9.6km 5.804 E ± 7.7km
DEPTH = 10.0km (geophysicist)
FRANCE (538)
ML 2.7 (LDG).

BSF	1.09	38	Pg	49 01.80	0.0
			Sg	49 15.40	
HAU	1.09	20	Pg	49 01.60	-0.3
			Sg	49 15.20	
LBF	1.25	271	Pg	49 04.40	-0.2
			Sg	49 21.00	
LOR	1.36	283	Pg	49 06.60	0.3
			Sg	49 24.00	
SMF	1.39	257	Pn	49 05.00	-1.7
			Pg	49 06.70	
			Sg	49 24.50	
SSF	1.57	274	Pg	49 10.60	1.3
			Sg	49 30.80	
LPL	1.60	156	Pg	49 10.20	0.3
			Sg	49 30.00	
AVF	1.69	265	Pg	49 12.80	1.8
			Sg	49 34.40	

24d 12h

```
BGF      2.08 259 Pn     49 15.20  -1.4
                  Pg     49 20 00
                  Sg     49 46 00
MAF      2.36 252 Pg     49 24.80   4.1X
                  Sg     49 54 80
TCF      2.57 256 Pg     49 28.80   5 1X
                  Sg     50 02.00
      S.D  = 1.3  on   9 of  11 obs
-------------------------------------
*  DEC  24, 1989  13h 53m 47.74± 1.54s
   19.970 S ±18.9km  177.477 W ±14.2km
   DEPTH = 395.9 ± 12.2 km
   4.7mb (  8 obs.)
 FIJI ISLANDS REGION                (181)

SVA      4.26 295 iPc    55 02.10  -0.5
SGE      4.96 298 iPc    55 10.10   0.3
AFI      8.13  43 eP     55 36.00  -9.0X
DZM     15.16 259 iPc    57 06.90   2.5
BRS     28.18 249 iPc    59 08.50   0.7
        0.9s     4.00nm          3.7mb
                  i      59 16.50
                  i      59 46.00
                  e      01 23.00
CTA     34.03 263 iPd    59 58.30   0.1
        0.7s    50.68nm          5.0mb
ASPA    45.12 256 iPd    01 28.20  -0.3
        0.7s    46.00nm          4.9mb
                  eS     07 38.10
WB5     45.14 261 eP     01 27.90  -0.8
WRA     45.16 261 Pd     01 27.90  -0.9
        0.5s     6.70nm          4.2mb
MTN     49.65 270 eP     02 03.00  -0.3
FORR    49.92 246 eP     02 04.50  -0.6
        0.4s    24.00nm          4.9mb
KNA     51.17 266 eP     02 13.90  -0.6
        0 4s    19.00nm          4.8mb
AAI     55.31 280 eP     02 44 00  -0.5
MBL     58.36 257 eP     03 04.00  -1.5
NANU    62.01 254 eP     03 29 00  -0.9
SPA     70.15 180 eP     04 20.70   0.4
        0.8s     7.08nm          4.4mb
CMB     78.74  43 eP     05 08.10  -0.9
WDC     78.96  39 eP     05 09.00  -1.0
CN2     82.18 322 P      05 27.00   0 4
BJI     85.86 315 eP     05 45.00   0.1
PNT     85.94  34 eP     05 46.00   0.8
        0.8s    10.00nm          4.7mb
LRM     87.99  39 eP     05 55.10  -0.3
CHG     90.53 290 eP     06 09.00   1.7
HFS    139.09 351 ePKP   12 18.30 -10.8X
        0.4s     0.60nm
CLL    147.65 348 ePKP   12 46.00   2.0
BRG    147.87 346 e(PKP) 12 48.40   4.0X
PRU    148.55 345 ePKP   12 49.50   4.0X
KHC    149.58 346 PKP    12 51.50   4.4X
      S.D. = 1.1  on  23 of  28 obs.
-------------------------------------
*  DEC  24, 1989  14h 18m 39.83± 1.43s
   35.289 N ±16.5km   27.774 E ± 6.8km
   DEPTH =  10.0km  (geophysicist)
 DODECANESE ISLANDS                 (369)
      MD 4.1 (ATH)

KAP      0.55 298 ePg    18 50.00  -1.1
KSL      1.69  60 ePb    19 08 40  -1.1
NPS      1.77 270 ePb    19 11 50   0.8
YER      1.89  12 iPn    19 13 00   0.6
ELL      2.26  49 ePn    19 17.60  -0 3
SMG      2.53 343 ePn    19 21.50  -0.1
APE      2 54 315 ePn    19 22.00   0 2
VAM      2.92 273 ePn    19 28 80   1 6
IZM      3.13 353 ePn    19 37.00   6.9X
BCK      3.14  46 ePn    19 30 00  -0 3
KHL      3.34  24 ePn    19 35 00   1.8
VLI      4.17 291 ePn    19 43.50  -1.4
ALT      4.20  26 ePn    19 53.00   7.6X
ITM      5.09 293 ePn    19 57.30  -0 7
      S.D. = 1.2  on  12 of  14 obs.
-------------------------------------
?  DEC  24, 1989  14h 27m 27.92± 1.04s
   4.373 S ±16.2km  128.514 E ±28.1km
   DEPTH = 185.1 ± 12.1 km
   4.7mb (  3 obs.)
 BANDA SEA                          (280)

AAI      0.75 335 ePc    27 54.60  -0 2
                  eS     28 24.50
MTN      8.81 163 iPd    29 33 50   0 8
KNA     11.31 179 eP     30 06.00   0.7
WB5     16.43 160 eP     31 08.90  -0.7
WRA     16.49 160 Pd     31 09.50  -0.8
        0.3s     6.70nm          4.5mb
MBL     18.70 206 eP     31 34.10  -0.7
ASPA    19.87 165 iPc    31 47.50   0.6
        0.5s    56.00nm          5.3mb
                  eS     35 18.70
CHG     37.14 309 ePd    34 22.90   0.3
        0.8s    10.26nm          4.5mb
      S.D. = 0.9  on   8 of   8 obs.
-------------------------------------
*  DEC  24, 1989  15h 00m 19.92± 0.92s
   6.633 S ±12.0km  127.390 E ±16.1km
   DEPTH = 415.4 ± 12.9 km
   5.1mb (  5 obs.)
 BANDA SEA                          (280)

AAI      3.03  15 iPc    01 25.50   0.4
MTN      7.19 149 iPd    02 06.60  -0.3
KNA      9.16 172 iPd    02 29.30   0.0
WB5     14.81 153 iPd    03 30.10  -1.8
WRA     14.85 154 Pd     03 29.80  -2.6
        0.3s    25.80nm          5.2mb
MBL     16.19 206 eP     03 46.60   0.5
ASPA    18.06 160 iPd    04 05.40   0.5
        0.4s   169.00nm          5.8mb
                  eS     07 10.20
WARB    19.45 182 iPd    04 20.90   2.3
        0.3s    13.00nm          4.9mb
CTA     22.67 128 iPc    04 49.90   0.7
        0.9s    13.45nm          4.4mb
FORR    24.10 179 eP     05 01.80  -0.2
        0.4s    30.00nm          5.1mb
COOL    24.83 193 eP     05 08.60  -0.1
STK     28 41 154 eP     05 40.00  -0.4
ADE     30.06 161 ePd    05 55.30   0.4
BRS     31.73 134 iP     06 08.50  -0.9
BWA     33.79 148 iPd    06 28.70   2.0
CAN     34.78 148 iPd    06 36.00   1.0
CHTO    37.76 313 iP     07 01.50   1.6
GBA     53.51 292 Pc     09 00.10  -2.0
        0.6s     2.30nm          3.7mb X
HYB     53.83 297 eP     09 03.50  -1.0
      S.D. = 1.4  on  19 of  19 obs.
-------------------------------------
*  DEC  24, 1989  15h 55m 49.77± 2.03s
   40.665 N ± 8.8km   20.729 E ±18.4km
   DEPTH =  10.0km  (geophysicist)
 GREECE-ALBANIA BORDER REGION       (392)
      ML 2.5 (THE), 2.2 (SKO).

OHR      0.45   7 iPg    55 58.90   0.0
                  iSg    56 07.00
GRG      1.30  77 ePb    56 13.60  -0.3
                  eSb    56 33.10
LIT      1.46 112 ePbd   56 16.40   0.2
                  eSb    56 38.00
KNT      1.72  73 ePb    56 20.10   0.2
                  eSb    56 46.40
AGG      2.05 143 ePn    56 24.60  -0.2
      S.D. = 0.3  on   5 of   5 obs.
-------------------------------------
&  DEC  24, 1989  16h 02m 01.08s
   62.442 N          155.669 W
   DEPTH =  17.3km
 CENTRAL ALASKA                     (  1)
      <AGS-P>.

TTA      0 51 342 iP     02 11.00  -0.4
                  eS     02 18.27
SVW      1.34 179 eP     02 23 43  -1.6
                  eS     02 39.36
NCG      1.96 121 eP     02 31.96  -2.1
SKT      1.99 102 eP     02 32.21  -2 2
RDT      2.44 139 eP     02 39.15  -1.7
CUT      2.51  88 eP     02 40.09  -1.7
PDB      2.76 164 eP     02 42.40  -2.9
        7 obs. associated
-------------------------------------
&  DEC  24, 1989  17h 03m 41.10s
   40.813 N          127.610 W
   DEPTH =   6 0km
 OFF COAST OF NORTHERN CALIFORNIA( 34)
      <BRK>. ML 3 9 (BRK).

FHC      2.75  89 eP     04 23.40  -3.2
                  eS     04 59.50
WDC      3.86  92 eP     04 40.00  -2.3
                  eS     05 22.90
LTCM     4.23  96 eP     04 47.50   0.0
LBFM     4.36  81 eP     04 47.00  -2.6
MIN      4.60  94 e(P)   04 49.50  -3.4
ORV      4.85 103 eP     04 53.80  -2.5
PCC      5.24 127 eP     04 58.50  -3.3
GCC      5.78 129 eP     05 06.00  -3.5
MHC      5.79 125 eP     05 06.10  -3.7
ARN      5.86 124 eP     05 07.00  -3.6
KVN      7.52 100 eP     05 31.50  -2.6
FFC     21.98  42 eP     08 34.00  -3.3
        0 7s    10.00nm          4.4mb
      12 obs. associated
-------------------------------------
%  DEC  24, 1989  17h 12m 09.92± 1.50s
   41.497 N ±13.4km   13.753 E ± 6.2km
   DEPTH =  10.0km  (geophysicist)
 SOUTHERN ITALY                     (390)

SDI      0.21  13 Pc     12 15.20   0.6
                  eSg    12 19.70
AZI      0.55 334 P      12 20.50  -0.4
                  eSg    12 29.80
DUI      0.55  73 P      12 21.00  -0.2
RDP      0.82 289 P      12 26.00   0.2
                  eSg    12 39.00
RMP      0.85 292 P      12 26.50   0.2
                  eSg    12 40.00
MNS      1.19 318 P      12 31.90  -0.3
                  eSg    12 50.20
      S.D  = 0.5  on   6 of   6 obs.
-------------------------------------
*  DEC  24, 1989  17h 27m 35.57± 0.74s
   16.980 S ±16.9km   14.448 W ±12.2km
   DEPTH =  10.0km  (geophysicist)
   4.8mb (  3 obs.)  4.2Msz (  3 obs.)
 SOUTH ATLANTIC RIDGE               (410)

LIC     24.87  23 Pc     33 00.38   0.6
        1.2s    26.00nm          4.8mb
      Z 20s      0.16um          3.5Msz
TIC     25.26  22 Pc     33 02.46  -1.1
        1.0s    51.00nm          5.2mb
TIC     25.26  22 Pc     33 03.78   0.2
BCAO    38.92  60 ePc    35 04.10   0.6
        0.5s     4.00nm          4.4mb
KSR     39.36 110 eP     35 07.40   0.1
SLR     40.59 110 eP     35 17.00  -0.4
CNCB    51.08 262 P      36 43.00   1.7
LPB     51.23 262 eP     36 40.00  -2.3
      Z 20s      1.06um          4.9Msz
                  eLR    55 30.00
ZOBO    51.30 263 P      36 42.00  -1.0
      Z 20s      0.26um          4.3Msz
                  e      52 16.00
                  LR     55 36.00
ARE     54.46 262 eP     37 08.00   1 8
      S.D. = 1.4  on  10 of  10 obs.
-------------------------------------
*  DEC  24, 1989  17h 36m 36.00± 1.26s
   20.451 S ±10.6km  168.725 E ± 8.9km
   DEPTH =  34.6 ± 10.6 km
   4.7mb (  5 obs.)
 LOYALTY ISLANDS                    (188)

DZM      2.67 232 iPc    37 16.60  -1 1
                  iS     37 46.90
PVC      2 72 352 iP     37 18.00  -0 4
                  iS     37 58.00
SGE      9.15  73 ePd    39 49.10  60.2X
SVA      9.48  77 ePc    38 55.10   1.8
HNR     13.85 321 eP     40 09.00  16.8X
BRS     16.13 242 i(PKP) 40 22.00   0.1
CTA     21.08 267 iPc    41 27.00   7.2X
        1.2s    51.56nm          4.8mb
                  iS     45 21.00
BWA     22.71 228 eP     41 36.20   0.1
CAN     22.82 225 eP     41 40.60   3.5X
PMG     23.52 295 eP     41 50.00   6 0X
WB5     32.22 265 eP     43 02.70  -0.8
WRA     32.24 265 Pd     43 05.70   2.1
        0.8s     4.10nm          4.4mb
ASPA    32.39 258 eP     43 04.00  -0 9
        0.8s    19.00nm          5.0mb
```

Z 17s 2.67um 5.0MszX
epP 43 13.30 32kmX
LR 56 46.20
MTN 36.74 276 eP 43 42.50 0.3
SPA 69.68 180 eP 47 43.70 -0.4
1.0s 5.50nm 4.6mb
e 47 50.40
MDJ 73.96 332 P 48 10.00 0.4
CN2 75.24 329 eP 48 17.40 0.4
BJI 77.57 321 P 48 30.00 -0.2
TIY 78.39 318 eP 48 35.40 0.5
CHTO 78.72 295 eP 48 38.00 1.1
1.0s 7.50nm 4.6mb
LZH 83.18 312 P 49 00.00 -0.4
GTA 87.61 314 eP 49 21.70 -0.5
WDC 88.05 45 eP 49 23.00 -1.1
ORV 88.26 47 e(P) 49 23.80 -1.4
FRI 88.32 49 e(P) 49 24.00 -1.5
CMB 88.32 48 eP 49 24.20 -1.4
BRG 143.73 333 ePKP 56 06.00 -3.0X
1.6s 28.00nm
CLL 143.80 334 iPKPd 56 07.50 -1.5
1.8s 48.00nm
ZST 144.11 327 ePKP 56 09.40 -0.3
PRU 144.11 331 ePKP 56 09.00 -0.6
e 56 15.30
VAY 144.60 314 ePKP 56 07.40 -3.3X
SKO 145.06 315 ePKP 56 09.00 -2.5
1.7s 76.00nm
i 56 11.50
KHC 145.17 331 PKPd 56 11.00 -0.5
i 56 19.50
OHR 145.89 314 ePKP 56 12.70 -0.3
1.1s 0.05nm
KBA 146.74 329 ePKP 56 15.00 0.6
i 56 27.30
VBY 146.82 325 e(PKP)56 17.00 2.7
LJU 146.85 326 e(PKP)56 15.50 1.1
BCAO 146.92 245 iPKPc 56 16.80 1.4
0.9s 27.00nm
i 56 27.90
VOY 147.19 327 ePKP 56 16.30 1.3
WLF 147.71 339 PKP 56 19.00 3.5X
DOU 147.85 341 PKP 56 18.40 2.6X
CTI 148.30 329 PKP 56 20.50 3.7X
CDF 148.36 336 ePKP 56 20.50 3.7X
0.7s 4.40nm
SAL 149.16 329 PKP 56 24.00 6.0X
ARV 149.38 324 PKP 56 19.00 0.5
VAI 149.77 332 PKP 56 23.00 4.1X
BDI 150.24 327 PKP 56 22.00 2.2X
MNS 150.25 323 PKP 56 21.00 1.2
FLN 150.45 345 ePKP 56 23.50 3.6X
LOR 150.55 339 ePKP 56 25.40 5.3X
1.0s 10.80nm
LBF 150.76 338 ePKP 56 26.40 5.9X
SSF 150.85 339 ePKP 56 26.30 5.8X
LPG 150.94 333 ePKP 56 25.80 4.7X
0.8s 8.00nm
BGF 151.51 339 ePKP 56 29.10 7.5X
S.D. = 1.2 on 34 of 54 obs.

& DEC 24, 1989 18h 45m 42.50s
40.413 N 125.317 W
DEPTH = 8.0km
OFF COAST OF NORTHERN CALIFORNIA(34)
<BRK>. ML 3.8 (BRK).

FHC 1.09 69 iPc 46 02.20 -0.9
iS 46 15.60
WDC 2.12 85 iPc 46 16.80 -2.0
iS 46 41.40
LTCM 2.45 94 eP 46 21.20 -2.2
NWRM 2.71 135 eP 46 24.50 -2.6
LBFM 2.76 69 eP 46 26.50 -1.6
MIN 2.84 90 iPc 46 26.70 -2.4
iS 47 00.00
ORV 3.05 105 ePd 46 28.90 -3.1
iS 47 04.90
ZSP 3.42 135 ePc 46 34.60 -2.6
BRK 3.48 136 ePc 46 34.80 -3.1
i 46 35.70
BKS 3.49 136 iPd 46 35.00 -3.1
PCC 3.70 141 ePc 46 36.90 -4.3
MHC 4.20 136 ePc 46 44.50 -3.9
ARN 4.25 135 eP 46 45.00 -4.0
GCC 4.26 141 eP 46 45.00 -4.1
CMB 4.51 120 iPc 46 51.50 -1.2
TCO 4.61 36 eP 46 53.61 -0.6
SAO 4.74 139 eP 46 51.40 -4.6
GROR 5.08 13 eP 46 59.73 -1.1
eS 47 56.88
LLA 5.11 136 iPc 46 57.50 -3.7
PRS 5.12 141 ePc 46 57.40 -3.9
GMO 5.16 37 eP 47 01.12 -0.9
GT2 5.24 24 eP 47 01.94 -1.1
VIPM 5.37 39 eP 47 03.85 -1.1
KMOR 5.39 14 eP 47 03.61 -1.6
eS 48 02.67
VBEM 5.40 29 eP 47 03.91 -1.4
PGO 5.47 22 eP 47 06.25 0.0
TDH 5.52 27 eP 47 05.97 -1.1
FRI 5.56 126 eP 47 04.80 -2.7
i 47 06.50
CROR 5.57 33 eP 47 06.40 -1.3
PRI 5.62 138 ePc 47 05.70 -2.8
VLMM 5.66 24 eP 47 08.17 -0.8
VFP 5.66 29 eP 47 07.89 -1.2
VLL 5.71 27 eP 47 08.96 -0.8
KVN 5.73 101 eP 47 07.20 -2.9
VTHM 5.91 35 eP 47 11.62 -0.8
LRM 10.84 56 eP 48 18.40 -2.9
SES 14.12 40 eP 49 01.00 -3.9
EDM 15.18 28 iP 49 15.50 -3.2
FFC 21.14 40 iPc 50 27.80 -2.2
0.7s 25.00nm 4.7mb
39 obs. associated

DEC 24, 1989 18h 49m 13.47± 0.72s
33.573 N ± 5.2km 138.435 E ± 3.6km
DEPTH = 251.6 ± 6.6 km
4.5mb (15 obs.)
SOUTH OF HONSHU, JAPAN (211)

MAT 2.97 356 iPd 50 06.00 -0.1
iS 50 45.30
MDJ 12.98 331 iPd 52 09.80 -0 3
SNY 14.35 309 iPc 52 27.80 0.9
CN2 14.37 319 Pd 52 27.00 -0.2
DL2 14.56 296 P 52 30.00 0.5
SSE 14.79 265 P 52 33.70 1.4
1.0s 28.00nm 4.6mb
eS 55 22.00
TIA 17.68 285 eP 53 04.30 -0.5
BJI 18.93 296 eP 53 16.00 -1.6
1.0s 15.00nm 4.5mb
TIY 21.50 288 eP 53 43.10 0.0
HHC 22.54 297 P 53 52.50 -0.7
BTO 23.66 295 eP 54 04.60 0.8
XAN 24.49 279 P 54 12.20 0.7
GYA 28.33 264 iPd 54 45.80 -0.6
S 59 13.60
LZH 28.42 285 eP 54 46.00 -1.1
CD2 29.37 274 P 54 54.30 -1.1
CHTO 38.12 257 iP 56 10.20 0.2
1.0s 5.50nm 4.0mb
PMR 52.85 35 eP 58 04.30 -0.8
1.0s 1.20nm 3.3mb X
WB5 53.29 185 iPc 58 08.00 -0.8
FBA 53.32 31 iP 58 09.10 0.6
1.0s 20.00nm 4.5mb
WRA 53.36 185 Pc 58 08.60 -0.7
0.6s 8.40nm 4.4mb
HYB 55.69 269 iPd 58 26.00 -0.3
ASPA 57.08 185 eP 58 35.80 0.0
0.6s 5.00nm 4.3mb
GBA 58.52 266 Pd 58 45.70 -0.3
1.1s 10.00nm 4.4mb
INK 58.56 26 ePc 58 44.80 -0.8
POO 59.08 273 iPc 58 50.00 0.1
MBC 60.52 16 ePc 58 58.00 -0.8
0.5s 4.00nm 4.3mb
BRS 62.14 166 iPc 59 11.10 1.0
0.6s 3.50nm 4.2mb
i 59 27.30
e 00 37.50
MAIO 63.01 297 eP 59 09.00 -6.9X
KEV 65.81 339 iP 59 42.00 8.7X
SOD 67.20 337 iP 59 42.00 -0.1
SUF 69.96 333 iP 59 58.90 -0.1
0.6s 8.50nm 4.7mb
NUR 71.84 332 iP 00 10.20 0 0
EDM 73.57 37 ePc 00 19.70 -0 8
FHC 74.06 52 ePc 00 24.40 0.9
WDC 75.11 51 ePc 00 29.50 0.0
HFS 76.21 335 eP 00 34.50 -0.7
0.4s 4.60nm 4.6mb
ORV 76.33 52 ePc 00 35.90 -0.4
SES 76.37 38 iPc 00 36.30 -0.1
BRK 76.72 53 ePc 00 38.60 0.2
BKS 76.74 53 iPd 00 39.10 0.5
0.8s 34.00nm 5.1mb
PCC 76.84 54 ePc 00 38.70 -0.4
MHC 77.42 54 ePc 00 42.50 0.0
SAO 77.87 54 eP 00 44.30 -0.5
CMB 77.88 52 ePc 00 44.90 0.0
FFC 77.92 31 iPc 00 44.30 -0.4
0.6s 9.00nm 4.7mb
PRS 78.15 54 ePc 00 46.60 0.2
LLA 78.28 54 ePc 00 47.40 0.3
LRM 78.33 42 iPc 00 47.50 0.0
PRI 78.73 54 ePc 00 49.90 0.3
FRI 78.91 53 ePc 00 50.50 0.1
TNP 79.93 51 eP 00 56.80 0.7
1.0s 22.75nm 4.9mb
FRB 80.67 12 eP 00 59.00 -0.1
CLC 80.97 53 eP 01 01.00 -0.4
SBB 81.47 54 eP 01 04.00 0.0
DUG 81.47 47 iP 01 04.70 0.7
MWC 81.57 55 eP 01 05.00 0.3
KSP 81.72 327 eP 01 06.00 1.1
GSC 81.80 53 eP 01 06.00 0.3
BW06 81.83 44 iP 01 06.50 0.5
RVR 82.17 54 eP 01 07.00 -0.5
BRG 82.74 328 e(P) 01 11.50 1.4
CLL 82.84 329 eP 01 11.00 0.4
PLM 82.89 55 eP 01 11.00 -0.5
TPC 83.00 54 eP 01 11.00 -0.9
PRU 83.12 327 eP 01 12.00 0.0
e 01 13.30
ELL 83.41 310 eP 01 15.00 1.0
KHC 84.17 327 P 01 18.50 1.1
RSON 84.21 30 iP 01 17.00 -0.5
0.8s 7.21nm 4.6mb
PV09 84.77 47 iP 01 21.80 0.8
OHR 86.11 318 eP 01 22.50 -4.7X
ARE 148.14 65 i(PKP)08 33.30 5.2X
ZOBO 150.52 61 ePKP 08 35.00 2.9X
i 08 38.70
CCH 152.68 60 PKP 08 53.60 18.8X
S.D. = 0.7 on 67 of 73 obs.

DEC 24, 1989 19h 24m 37.30± 0.68s
35.630 N ± 5.3km 111.389 E ± 6.1km
DEPTH = 41.6 ± 9.9 km
4.5mb (5 obs.)
EASTERN CHINA (664)
ML 4.7 (BJI).

TIY 2.24 22 Pnc 25 13.80 1.0
Pg 25 16.80
XAN 2.58 233 Pn 25 16.60 -0.9
Pg 25 22.40
Sn 25 50.00
Sg 25 56.00
TIA 4.69 81 ePn 25 46.90 -0.6
Pg 26 00.80
BTO 5.08 348 Pn 25 52.90 -0.1
Pg 26 10.30
HHC 5.21 1 Pn 25 55.00 0.1
Pg 26 09.40
WHN 5.65 153 Pnd 26 00.50 -0.5
Z 10s 1.91um
Pg 26 21.00
Sn 27 07.00
Sg 27 34.00
BJI 5.81 39 Pn 26 02.00 -1.2
Z 13s 1.48um
Pg 26 20.00
LZH 6.14 276 Pn 26 09.00 0.9
Pg 26 14.60
Sn 27 14.00
Sg 27 41.50
NJ2 7.16 118 Pd 26 24.50 2.3
Z 10s 0.70um 4.3Msz
S 27 41.80
CD2 7.94 236 Pn 26 29.50 -3.5X
Sn 27 58.00
SSE 9.36 116 eP 26 56.00 3.4X
Z 12s 0.90um
N 12s 0.90um

24d 19h

		e	27 02.50		
		Lg	29 30.00		
CYA	10.00	205 iPc	26 59.40	-2.1	
		pP	27 03.80		
KMI	12.85	218 Pd	27 40.00	-0.2	
E	10s	1.10um			
		S	29 53.00		
CN2	13.54	49 eP	27 57.00	8.1X	
Z	14s	0.90um			
N	11s	0.60um			
		epP	28 01.00		
		eS	30 31.50		
OIZ	16.59	185 eP	28 22.20	-6.3X	
LSA	18.03	257 eP	28 48.40	1.6	
WMO	19.93	301 P	29 07.80	-0.6	
N	10s	0.80um			
		S	32 49.50		
CHTO	20.04	217 iP	29 10.00	0.3	
	1.1s	12.37nm	4 2mb		
BDT	21.37	214 eP	29 24.80	1.5	
	1.0s	34.50nm	4.7mb		
GBA	37.57	243 P	31 50.00	0.4	
SUF	56.92	327 iP	34 19.80	-0.4	
WB5	59.35	155 eP	34 37.00	-0.6	
WRA	59.40	155 Pc	34 37.90	0.0	
	0.8s	3.10nm	4 5mb		
HFS	63.42	326 eP	35 03.70	-0.9	
	0.5s	1.50nm	4.3mb		
KBA	69.79	314 eP	35 45.50	0.0	
	0.7s	5.20nm	4 6mb		
		i	35 51.60		

S.D. = 1.1 on 21 of 25 obs.

DEC 24, 1989 20h 26m 21.88± 0.82s
40 201 N ± 9.9km 119.003 E ± 5.9km
DEPTH = 18.5 ± 7.9 km
4.6mb (1 obs.)
NORTHEASTERN CHINA (658)
ML 4.5 (BJI).

BJI	2.17	267 Pn	26 57.00	-0.7	
Z	10s	2.56um			
		Pg	27 00.00		
		Sg	27 30.00		
DL2	2.41	122 Pn	27 03.40	2.4	
SNY	3.82	63 Pnd	27 21.00	-0.1	
		Sn	28 06.00		
		Sg	28 24.30		
TIA	4.25	201 Pn	27 26.60	-0.6	
		Sg	28 33.30		
TIY	5.69	246 Pnc	27 47.00	-0.6	
		Pg	28 04.00		
		Sg	29 16.00		
HHC	5.71	279 Pn	27 49.20	1.3	
		Pg	28 04.20		
		Sg	29 19.10		
CN2	6.00	51 Pn	27 50.80	-1.0	
		Pg	28 13.00		
		Sn	28 56.60		
		Sg	29 30.20		
BTO	6.87	276 Pg	28 26 60	22.3X	
		Sg	29 55.40		
MDJ	8 99	57 eP	28 33 00	-0.7	
		S	30 14.50		
SSE	9.26	168 eP	28 47 50	10.1X	
E	12s	0 30um			
		e	29 00 30		
		eLg	31 32.00		
LZH	12.62	256 eP	29 22.50	-0.9	
		Lg	32 51.50		
GTA	14.77	273 eP	29 51 60	-0.1	
CD2	15.47	238 eP	30 00.40	-0.3	
MAT	15.50	98 eP	30 09.00	7.9X	
WMO	23.47	289 P	31 33.00	1.9	
WB5	61 46	164 eP	36 39.10	-0.4	
WRA	61.52	164 Pd	36 39.10	-0.8	
	0.8s	3 50nm	4.6mb		

S.D. = 1 3 on 14 of 17 obs.

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* DEC 24, 1989 22h 36m 05.89± 1.34s
10.407 N ±14.3km 62.238 W ± 7.7km
DEPTH = 22.1 ± 10.8 km
NEAR COAST OF VENEZUELA (97)
MG 4.4 (FDF).

TCE	0.56	59 eP	36 16.18	-0.7	
		eS	36 28.36		
TPP	0.78	97 eP	36 21.53	0.9	
		eS	36 41 46		
TRN	0.86	74 ePc	36 21.18	-0 8	
		eS	36 39.98		
GRW	1.83	18 eP	36 37 79	1 3	
		eS	37 06.77		
CUM	1.90	272 iPc	36 37.20	-0.3	
		iS	37 04.00		
SVV	3.06	19 eP	36 55 23	1 2	
		eS	37 36.93		
BIM	4.24	15 eP	37 10.77	-0 1	
		S	37 58.50		
MVM	4.33	18 eP	37 12.01	0.0	
FDF	4.43	14 eP	37 13.39	-0.1	
	0.1s	0.40nm			
CRM	4.51	17 eP	37 13.20	-1.4	

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

% DEC 24, 1989 22h 43m 45 78± 0.45s
46.031 N ± 4.7km 2.737 E ± 4.7km
DEPTH = 23.3 ± 5.3 km
FRANCE (538)
ML 3.1 (LDG).

MAF	0.22	328 Pg	43 51.20	-0.4	
TCF	0.45	305 Pg	43 55.40	0.3	
BGF	0.53	8 Pg	43 56.20	-0.2	
LSF	0.87	285 Pg	44 03.20	1 1	
		Sg	44 15.00		
AVF	0.87	29 Pg	44 02.20	0 1	
		Sg	44 12.80		
SMF	0.98	51 Pg	44 03.70	-0.3	
RJF	1 12	230 Pg	44 07.20	1 1	
		Sg	44 22.80		
SSF	1.16	27 Pg	44 07.40	0 8	
		Sg	44 22.00		
CAF	1.20	203 Pn	44 08 00	0.8	
		Pg	44 08.80		
		Sg	44 24.20		
LBF	1.28	41 Pg	44 09.30	1 0	
		Sg	44 25.20		
LOR	1.46	32 Pg	44 12 80	1.9	
		Sg	44 31.00		
LPO	1.74	220 Pn	44 16.20	1.4	
		Pg	44 18.60		
		Sg	44 41.70		
LFF	1.78	233 Pn	44 17.00	1.5	
		Pg	44 19.60		
		Sg	44 43.00		
MFF	2.08	287 Pn	44 19.20	-0.6	
		Pg	44 25 60		
		Sg	44 51.60		
LPL	2.84	99 Pn	44 30.80	-0.1	
		Pg	44 38.60		
LPG	2.86	99 Pn	44 30 40	-0 8	
		Pg	44 39.20		
		Sg	45 14.00		
HAU	3.16	50 Pg	44 44.20	8 9X	
		Sg	45 24.40		
LPF	3.27	309 Pn	44 35.60	-1 1	
BSF	3.31	56 Pg	44 47.00	9 6X	
		Sg	45 28.00		
GRR	3.40	315 Pn	44 37.60	-1 0	
		Sg	45 32.00		
EPF	3.45	211 Pn	44 38.00	-1 4	
		Pg	44 51 00		
		Sg	45 34.80		
FLN	3.50	323 Pn	44 40 00	0 0	
		Sg	45 35 60		
CDF	3.90	51 Pg	44 58.00	12 2X	
		Sg	45 47 00		

S.D = 1.0 on 20 of 23 obs.

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* DEC 25, 1989 01h 52m 24.63± 2.03s
34.062 S ±18.7km 70 767 W ±11 1km
DEPTH = 92.4 ± 13.8 km
CHILE-ARGENTINA BORDER REGION (127)

TACH	0.43	341 iPc	52 39 50	0 1	
PCH	0.49	26 iP	52 39.50	-0 4	
LNV	0.55	281 iPc	52 41.00	0.9	
SAN	0 61	8 iPd	52 40 80	0 0	
		iS	52 50 50		
FCH	0.83	29 iPd	52 42 50	-0 8	
LCCH	0.89	311 iP	52 44 00	0 5	
		iS	52 56.50		
PEL	0.92	4 iPc	52 42.30	-1 6	
		iS	52 56.00		
ROCH	1.11	349 iPd	52 46.00	-0.3	
JACH	1.38	6 iP	52 48.50	-1.0	
		iS	53 05.20		
RTCV	2.89	41 e(P)	53 10.00	0.5	
RTCB	3.06	33 ePd	53 14.00	2.1	
ZON	3.06	36 eP	53 12.00	0.0	
		eS	53 50.00		
CFA	3.24	42 ePc	53 10.00	-4.4X	
		S	53 52.00		
RTLL	3.34	36 e(P)	53 18.00	2.2	
RTRS	4.04	16 e(P)	53 26.00	0.7	
MRA	4.55	70 ePc	53 32.10	-0.3	
TCA	5.87	64 ePc	53 49.50	-1.3	
ZOBO	17.88	8 eP	56 28.00	-1.3	

S.D. = 1 2 on 17 of 18 obs.

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* DEC 25, 1989 03h 05m 08.95± 0.93s
43.166 N ± 7.4km 21.783 E ±11.0km
DEPTH = 10.0km (geophysicist)
YUGOSLAVIA (383)
ML 2.1 (SKO).

VTS	1.19	118 iP	05 31.00	-0.3	
SKO	1.22	192 iPg	05 30.60	-1.1	
		iSg	05 44.00		
KKB	1.62	143 eP	05 38.00	0.4	
		eS	05 57.00		
VAY	1.93	162 ePn	05 41.60	-0.6	
MMB	2.14	137 eP	05 48.00	2.8X	
KNT	2.17	157 eP	05 46.40	0.8	
OHR	2.18	200 ePn	05 46.70	0.9	
BZS	2.45	357 ePc	05 49.50	-0.1	
RZN	2.63	123 eP	05 57.00	4.7X	

S.D. = 0.9 on 7 of 9 obs.

? DEC 25, 1989 03h 18m 48.73± 5.16s
40 315 N ±31 0km 19.712 E ±30.7km
DEPTH = 10.0km (geophysicist)
ALBANIA (391)

TPE	0.23	95 ePg	18 53.60	-0.1	
TIR	1.04	6 ePg	19 08.70	0.4	
OHR	1.15	46 iPn	19 09.50	-0.7	
LACI	1.32	360 ePn	19 16.00	2.9X	
PHP	1 48	22 iPnc	19 14.70	-0.6	
PUK	1.73	4 ePn	19 18 50	-0.5	
SKO	2.11	38 ePn	19 26.00	1.5	

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

& DEC 25, 1989 03h 21m 35.70s
35.917 N 117.728 W
DEPTH = 11.0km
CENTRAL CALIFORNIA (39)
<PAS-P>. ML 3.6 (BRK), 3.3 (PAS).

GSC	0.97	129 iPc	21 53.30	-0.8	
SBB	1.23	184 iPd	21 57.60	-0.9	
ABL	1.62	229 eP	22 05.10	0.6	
FRI	1.92	304 eP	22 08.80	0.2	
		iS	22 33.90		
PKEM	1.94	275 eP	22 10.40	1.5	
BCH	2.06	250 eP	22 10.00	-0.7	
PEC	2.07	167 eP	22 09.70	-1.2	
TNP	2.20	11 eP	22 12.30	-0.6	
PRI	2.39	276 eP	22 15.90	0.4	
BLP	2 57	239 eP	22 20.00	2.0	
PLM	2 66	164 eP	22 18 20	-1.2	
LLA	2.69	286 eP	22 19.50	-0.2	
PRS	2.98	279 eP	22 23 20	-0.5	
CMB	3.00	316 eP	22 27.20	3.1	
		eS	23 01.30		
SAO	3.12	287 ePc	22 27.10	1.4	
KVN	3.14	355 eP	22 25.80	-0.4	

16 obs. associated

? DEC 25, 1989 03h 45m 03.91±13.84s
37 046 N ±35.2km 30.897 E ±109.km
DEPTH = 10.0km (geophysicist)
TURKEY (366)

BCK	0.48	329 iPg	45 13.40	-0.3	
ELL	0.85	250 ePg	45 19.60	-0.7	
		eSg	45 32.60		
KHL	1.68	320 iPn	45 33.60	0.1	
YER	2 09	273 ePn	45 40.50	1.0	

S.D. = 1.3 on 4 of 4 obs.

? DEC 25, 1989 04h 07m 48.68±12.84s
32.236 S ±89.4km 69.743 W ±66.1km
DEPTH = 33.0km (normal)
MENDOZA PROVINCE, ARGENTINA (139)

RTCV	1.09	70	iPc	08 07.80	0.1
RTCB	1.10	47	iPd	08 08.20	0.3
			S	08 22.00	
ZON	1.14	53	iPd	08 08.00	-0.4
			eS	08 23.00	
RTLL	1.41	51	iPc	08 19.70	7.4X
			S	08 27.00	
RTRS	2.07	7	iPc	08 21.80	0.0

S.D. = 0.5 on 4 of 5 obs.

DEC 25, 1989 04h 25m 51.35± 0.12s
60.051 N ± 3.0km 73.463 W ± 2.2km
DEPTH = 10.0km (geophysicist)
5.1mb (38 obs.) 4.6Msz (2 obs.)
NORTHERN QUEBEC (443)

FRB	4.38	30	eP	26 59.00	-0.3
SCH	6.37	143	eP	27 25.90	-1.6
CBM	13.51	164	P	29 04.00	-1.4
RSON	14.66	240	P	29 13.20	-7.1X
RSNY	15.54	183	P	29 27.80	-4.1X
FFC	16.19	263	eP	29 32.70	-7.5X
	0.6s	168.00nm		5.3mb	
DHN	17.49	192	P	29 52.60	-4.0X
ELF	17.55	199	P	29 57.50	0.2
LDN	17 68	199	P	29 59.00	0.1
DLA	17.92	200	P	30 01.50	-0.4
PNJ	19.17	182	iP	30 17.70	0.5
GMTN	19.20	182	eP	30 17.10	-0.5
CLE	19.25	199	iP	30 20.50	2.3X
PRIN	19.72	183	P	30 18 70	-5.0X
CBN	22.01	188	eP	30 47.00	-0.1
			e	37 17.00	
MBC	22.57	333	ePd	30 52.00	-0.4
	0.5s	36.00nm		5.1mb	
EDM	22.68	270	eP	30 52.20	-1.6
SES	23.20	262	eP	30 59.00	0.1
BLA	23.29	194	P	31 01.00	1.2
FVM	24.58	214	P	31 12.20	-0.1
INK	26.35	313	eP	31 27.00	-1.7
	1.1s	172.00nm		5.7mb	
LRM	26.99	256	eP	31 34.90	-0.2
IMW	27.68	251	P	31 42.00	0.5
BW06	27.89	248	P	31 42.80	-0.5
	1.0s	13.50nm		4.7mb	
TUL	28.13	221	e(P)	31 38.40	-6.8X
	1.3s	21.20nm		4.8mb	
			e	40 21.50	
PNT	28.17	268	eP	31 45.00	-0.5
GOL	28.48	239	P	31 48.20	-0.5
UYO	29.31	217	e(P)	31 56 50	0.7
DWY	29.92	306	P	32 01.00	-0.1
MEO	30.10	224	iPd	32 01.80	-1.1
DUG	31.43	249	P	32 14.60	-0.1
FBA	32.84	311	eP	32 26.20	-0.4
TOA	33.54	306	eP	32 33 50	0.7
IMA	34.46	315	eP	32 40.80	0.0
	0.7s	3 60nm		4.4mb	
KVN	34.84	253	P	32 44 20	-0.2
LBFM	34.92	260	P	32 44.80	-0.3
PMR	35.01	306	eP	32 45.60	0.3
	0.7s	17.10nm		5.0mb	
TNP	35.18	251	P	32 47.60	0.2
	0.7s	7 41nm		4.7mb	
MIN	35.54	258	ePc	32 49.60	-0.7
WDC	35.82	260	ePc	32 49.90	-2.6X
ORV	36.10	257	e(P)	32 54.00	-0.9
FHC	36.37	261	ePc	32 56.70	-0.5
CMB	36.74	255	e(P)	32 59.90	-0.4
GSC	37.24	248	eP	33 05.00	0.4
FRI	37.24	253	eP	33 04.80	0.3
ISA	37.73	250	eP	33 09.00	0.3
SVW	37.87	308	eP	33 09.70	0.1
TPC	37.88	246	eP	33 10.00	0.1
MHC	37.90	255	ePc	33 11.40	1.2
LLA	38.14	254	eP	33 13.50	1.5
GLA	38.20	244	eP	33 12.00	-0.7
SBB	38.22	249	eP	33 13 00	0.2
SAO	38.26	254	ePc	33 15.00	1.9
GCC	38.32	255	eP	33 15.70	2.2
PRI	38.38	253	e(P)	33 16.20	2.0
PRS	38.57	254	ePc	33 16.90	1.2
RVR	38.58	248	eP	33 15.00	-0.8
KEV	38.82	33	eP	33 17.00	-0.3
PAS	38.83	249	eP	33 17.00	-0.8
PLM	38.88	246	eP	33 19.00	0.5
BAR	39.35	246	eP	33 23.00	0.7
SYP	39.36	251	eP	33 22.00	-0.5
SOD	40.22	36	iP	33 28.40	-0.6
HFS	40.42	50	eP	33 32.20	1.5
	0.4s	1.00nm		3.9mb X	
FLN	41.78	72	eP	33 42.10	0.1
LPF	42.02	73	eP	33 44.10	0.1
UPP	42.10	49	iP	33 44.30	-0.2
WIT	42.30	63	eP	33 48.00	1.8
WTS	42.92	63	eP	33 52.00	0.7
	1.1s	35.00nm		5.0mb	
SUF	43.19	42	iP	33 53.60	0.3
	0.5s	7.00nm		4.7mb	
DOU	43.23	67	iPc	33 54.30	0.4
ENN	43.37	65	eP	33 55.00	0.0
	1.0s	20.00nm		4.8mb	
MFF	43.46	74	eP	33 55.60	-0.2
	0.7s	6.60nm		4.5mb	
NUR	44.22	45	eP	34 02.00	0.3
LSF	44.52	73	eP	34 04.10	-0.3
	1.0s	36.00nm		5.2mb	
TCF	44.82	72	iPc	34 06.60	-0.2
	0.9s	17.00nm		5.0mb	
SSF	44.88	71	eP	34 06.90	-0.3
	1.1s	31.70nm		5.1mb	
LOR	44.90	70	iPc	34 07.20	-0.2
	1.2s	60.60nm		5.4mb	
BGF	44.93	72	iPc	34 07.40	-0.3
	1.1s	61.00nm		5.4mb	
AVF	45.00	71	eP	34 07.70	-0.5
	1.2s	39.80nm		5.2mb	
MAF	45.04	72	eP	34 08.30	-0.2
	1.0s	12.00nm		4.8mb	
LBF	45 16	70	iPc	34 09.00	-0.5
	1.0s	18.00nm		5.0mb	
SMF	45.34	71	eP	34 10.10	-0.8
HAU	45.53	68	eP	34 12.70	0.3
	1.0s	29.60nm		5.2mb	
CDF	45.67	67	eP	34 13.80	0.2
	1.2s	44.00nm		5.3mb	
BSF	45.86	68	eP	34 15.20	0.0
	1.0s	24.00nm		5.1mb	
CLL	46.15	60	iPd	34 17.60	0.4
	1.8s	46.00nm		5.2mb	
BRG	46.87	60	eP	34 23.40	0.4
	1.2s	22.00nm		5.1mb	
LPG	47.56	70	eP	34 29.40	0.6
	1.3s	44.70nm		5.4mb	
LSD	47.78	70	P	34 31.25	0.8
PRU	47.78	61	P	34 30.50	0.3
	1.2s	14.90nm		5.0mb	
KSP	47.91	59	eP	34 31.00	-0.2
	1.0s	25.00nm		5.3mb	
			i	34 31.50	
KHC	47.99	62	iP	34 32.50	0.6
	1.2s	34.00nm		5.3mb	
RRL	48 00	70	P	34 32.89	0.7
ORX	48 03	69	P	34 33.10	0.8
RSP	48.05	70	P	34 33.20	0.7
VAI	48.23	68	P	34 33.10	-0.5
PZZ	48.46	71	P	34 35.97	0.3
ENR	48 82	71	P	34 37.20	-1.2
LRG	48.90	72	eP	34 39.10	0.3
	1.0s	21.60nm		5.1mb	
FRF	48.96	72	eP	34 39.10	-0.2
	1.1s	31.20nm		5.3mb	
ROB	48 98	70	P	34 39.66	0.1
LMR	49.06	72	eP	34 40.10	0.0
	0.9s	6.50nm		4.7mb	
PCP	49.12	70	P	34 39.34	-1.2
FIN	49.21	70	P	34 41.20	-0.1
IMI	49.28	71	P	34 41.92	0.0
KBA	49.42	64	eP	34 43.00	0.0
	1.0s	29.50nm		5.2mb	
			id	34 44.00	
CTI	49 42	66	P	34 43.50	0.5
FVI	49.53	65	P	34 44.50	0.9
ZST	50.24	60	e(P)	34 49.40	0.3
TRI	50.64	65	iPc	34 51.70	-0.5
SRO	51.06	60	eP	34 55.40	0.1
ARV	51.96	67	P	35 02.50	0.2
ASS	52.16	68	P	35 03.00	-0.8
VRI	56.16	56	ePc	35 32.00	-1.1
PRNI	72.69	59	eP	37 21.00	0.0
TIC	73.59	106	Pd	37 26.76	0.4
LIC	73.95	106	Pd	37 29.00	0.6
	1.2s	42.00nm		5.3mb	
KIC	73.97	105	P	37 29.14	0.6
MDJ	73.99	343	eP	37 25.50	-2.8
CN2	75.35	346	eP	37 35.00	-1.1
Z	20s	0.50um		4.8Msz	
			epP	37 40.00	16kmX
			eS	47 14.00	
ZOBO	76.17	175	P	37 40.80	-0.9
	1.3s	17.74nm		5.0mb	
Z	20s	0.15um		4.3Msz	
			LR	03 00.00	
CCH	77.38	173	P	37 47.40	-0.7
BJI	79.95	352	eP	38 01.50	0.0
	1.5s	26.00nm		5.0mb	
GTA	80.74	5	eP	38 04.40	-1.6
TIY	82.47	355	iPd	38 16.00	1.1
TIA	83.69	351	eP	38 20.80	-0.4
LZH	84.19	2	eP	38 24.50	0.6
	1.5s	38.00nm		5.4mb	
XAN	86.24	358	Pd	38 34.20	0.2
BCAO	87.19	86	iPd	38 39.50	0.6
	1.1s	19.00nm		5.3mb	
WRA	135.30	321	PKP	45 15.00	2.4X
	0.7s	2.10nm			
FORR	147.43	324	ePKP	45 36.60	2.9X
SPA	149.88	180	iPKPc	45 42.40	5.8X
	1.0s	20.00nm			

S.D. = 0.8 on 122 of 133 obs.

? DEC 25, 1989 04h 59m 03.14± 0.92s
44.256 N ±10.7km 7.454 E ± 6.9km
DEPTH = 10.0km (geophysicist)
NORTHERN ITALY (545)
ML 2.6 (GEN).

ENR	0.04	220	P	59 05.26	0.0
			S	59 07.21	
STV	0.09	263	P	59 05.88	0.0
			S	59 08.24	
ROB	0.30	82	P	59 09.47	0.0
			S	59 13.26	
PZZ	0.35	315	P	59 10.49	0.0
			S	59 15.01	

S.D. = 0.0 on 4 of 4 obs.

* DEC 25, 1989 07h 32m 11.12± 1.05s
23.882 S ±13.7km 66.791 W ±15.0km
DEPTH = 226.0 ± 14.1 km
JUJUY PROVINCE, ARGENTINA (128)

SLA	1.45	126	iPd	32 47.00	-0.3
ANT	3.32	272	iP	33 06.80	0.5
			i	33 12.50	
			eS	33 48.00	
CNCB	7.12	351	Pd	33 55.00	0.6
			S	35 15.00	
LPB	7.41	350	P	33 59.00	1.0
			S	35 22.00	
ZOBO	7.68	350	P	34 01.00	-0.5
			S	35 28.00	
ARE	8.60	328	eP	34 12.00	-1.4
			eS	35 41.00	
KIC	67.53	72	P	42 45.50	0.1

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

? DEC 25, 1989 07h 39m 59.23± 2.93s
5.578 S ±39.2km 144.802 E ± 8 9km
DEPTH = 109.1 ± 13.8 km
4.1mb (3 obs.)
PAPUA NEW GUINEA (202)

MNDI	1.27	243	eP	40 24.20	0.3
LAT	2.43	116	eP	40 38.00	-0.3
			eS	41 18.00	
PMG	4.46	149	eP	41 06.00	0.1
WB5	17.47	215	eP	43 57.20	-0.3
WRA	17.53	215	Pd	43 58.20	-0.1
	0.8s	10.40nm		4.1mb	
ASPA	20.82	209	eP	44 33.70	-0.3
	0.6s	10.00nm		4.3mb	
			epP	44 39.40	21kmX
BRS	22.98	162	iPc	44 55.80	0.6

25d 07h

0.8s 3.50nm 3 8mb
S.D = 0 5 on 7 of 7 obs

& DEC 25, 1989 08h 24m 21.20s
62 972 N 124 953 W
DEPTH = 18.0km (geophysicist)
NORTHWEST TERRITORIES, CANADA (679)
<PGC-P> mbLg 3.7 (PGC).

MUB	4.05	186	ePnd	25 21.20	-2.5
			eSg	26 28.00	
INK	6 42	330	eP	25 55 00	-2 1
DWY	6.57	286	P	25 55 20	-4.0
MNB	11.35	159	ePn	27 00.90	-4.8
EDM	11.52	143	eP	27 02 50	-5.2
MBC	13.47	6	eP	27 29.50	-4.0
FFC	14.40	114	eP	27 40.00	-5.9
	0.5s	5.00nm			4.4mb X
SES	14.69	143	eP	27 45.00	-4.7
	8 obs. associated				

DEC 25, 1989 08h 29m 26.95± 1.17s
35.245 N ±11.9km 90.744 W ± 6.4km
DEPTH = 5.0km (geophysicist)
ARKANSAS (502)
mbLg 3.2 (NEIS). Felt (V) at Wynne

OLY	0 65	294	eP	29 40.00	0.1
POW	0 97	338	eP	29 45 80	-0 1
GRT	1.48	46	eP	29 54.40	0 2
LST	1.52	33	eP	29 55 00	0 2
PWLA	2.21	96	eP	30 04.80	-0 1
FVM	2.75	5	eP	30 12 20	-0.3
TUL	4.17	281	eP	30 42.50	9.9X
	1.1s	9.50nm			
			e	31 40.50	
RSCP	4.23	84	e(P)	30 33 40	-0 1
	S.D. = 0.2 on 7 of 8 obs				

DEC 25, 1989 08h 47m 21.37± 0 40s
36.263 N ± 8 2km 141.010 E ± 6.2km
DEPTH = 47.4km (6 depth phases)
4.7mb (11 obs)
NEAR EAST COAST OF HONSHU, JAPAN(228)

TKSJ	6 14	250	eP	48 52.90	1 1
SHK	7.02	258	eP	49 06.70	2.5
SHNJ	8.38	258	eP	49 28.00	5 0X
KUMJ	9.20	249	eP	49 35 70	1 4
KAGJ	9.83	242	eP	49 45 00	2.0
MDJ	12 04	317	Pc	50 14 50	1 6
CN2	14.09	307	Pc	50 42.00	2.1
Z	17s	0.50um			
			pP	50 46 00	
			eS	53 22.00	
SNY	14 63	298	eP	50 46.60	-0.4
SSE	17.28	258	eP	51 29.50	8.8X
Z	22s	0.50um			4.3Msz
			esS	54 53.00	
NJ2	18.80	264	Pd	51 37.00	-2.5
TIA	19.26	277	eP	51 41.50	-3.3X
BJI	19.87	288	eP	51 48.50	-2 8
TIY	22.84	282	Pc	52 20.70	-0 7
E	14s	0 90um			
WHN	22 94	263	Pd	52 20.20	-2 1
GYA	30 78	261	P	53 32 80	-2.0
CD2	31 36	271	P	53 38 40	-1 3
GTA	32 49	288	eP	53 46 50	-3 1X
CHTO	40 79	256	eP	55 00 00	0.2
	1 0s	2 50nm			3 9mb
WMQ	40.90	298	P	55 01 00	0 4
NNT	43.90	248	eP	55 26 00	0.8
SNG	46.85	242	eP	55 49 80	1.1
FBA	49.93	32	eP	56 12 50	0 6
	1.3s	16 98nm			4 9mb
KSH	50 44	294	P	56 17 50	1.1
INK	55.22	27	ePc	56 50.50	-0.8
WB5	56.19	188	eP	56 58.20	-0 6
WRA	56.26	188	Pc	56 58.50	-0 8
	0.9s	7 60nm			4.7mb
MBC	57.36	16	eP	57 05.50	-1.0
	1 0s	6 00nm			4.6mb
			pP	57 20 50	55nm
ASPA	59 98	188	iPc	57 23 20	-2 1
	0.9s	7 00nm			4.8mb
CBA	60 83	266	P	57 30.80	-0.5
POO	61 07	273	iPd	57 32.50	-0 5
KOD	62 72	263	eP	57 44 00	-0 4
SOD	65 55	337	eP	58 06 00	4.3X
FORR	67.85	192	eP	58 17.00	0 4
SUF	68.52	333	iP	58 19.50	-1 1
	0.5s	4.30nm			4.7mb
EDM	70.15	38	eP	58 30.00	-0.8
NUR	70.48	332	eP	58 31.00	-1 5
WDC	71.79	53	ePc	58 41.00	0.2
			e	58 54.30	46km
FFC	74.53	32	eP	58 56 00	-0 5
	1.1s	22.00nm			5.0mb
CMB	74.58	54	eP	58 57 20	0.0
			e	59 09.70	42km
HFS	74 65	336	eP	58 56.20	-1 0
	0.5s	1.10nm			4.1mb
LRM	74.93	44	eP	58 59.80	0.5
			e	59 13.50	48km
KVN	75.49	52	eP	59 03.50	0.9
FRI	75.61	55	e(P)	59 03.00	-0.1
			e	59 14.80	39km
TNP	76.61	53	eP	59 10.00	1.1
	1 0s	6 25nm			4.6mb
KSP	80.58	328	eP	59 30.00	0.0
PV09	81.39	48	eP	59 36.80	1.9
BRG	81.55	329	eP	59 34.60	-0.5
	1.0s	12.00nm			4.8mb
			e	59 49 90	54km
CLL	81.60	330	iPd	59 35 10	-0.2
	1.2s	23.00nm			5.0mb
PRU	81 97	328	P	59 37.30	0.0
KHC	83 03	328	iP	59 43 30	0 4
PRNI	84 07	303	eP	59 49.00	0 5
ZOBO	147 35	60	PKP	07 02 00	2.0
LPB	147.55	60	PKP	07 04 00	3 9X
CNCB	147 82	61	PKP	07 05 30	4.6X
CCH	149 49	59	PKP	07 04.50	1.5
	S.D = 1 3 on 48 of 55 obs				

& DEC 25, 1989 08h 48m 20.59s
63.325 N 145.197 W
DEPTH = 0 0km
CENTRAL ALASKA (1)
<AGS-P>

PAX	0.38	199	iP	48 27.98	-0.1
			eS	48 33.50	
DDM	0.55	328	eP	48 30.91	-0 7
DOT	0 60	57	eP	48 32.05	-0 6
			eS	48 40.32	
DMW	0 77	342	eP	48 34.74	-1.3
SDG	0 82	191	eP	48 35 95	-0 9
TOA	1.30	201	eP	48 44.94	-0.8
NCA	1 53	210	eP	48 48.73	-0 6
RND	1.65	274	eP	48 50 63	-0 4
			eS	49 13 58	
WRH	1.72	313	eP	48 51 76	-0.2
			eS	49 15 09	
MCK	1.72	285	eP	48 52.38	0 3
CCB	1.76	320	eP	48 52.12	-0.3
KLU	1.87	191	eP	48 53 59	-0.6
FBA	1.95	325	eP	48 55.71	0.4
RDS	1.99	321	eP	48 56 70	0 9
HUR	2.05	262	eP	48 57 10	0 4
GHO	2.33	230	eP	49 00 59	-0.2
PME	2.46	228	eP	49 02.89	0.2
GLI	2 61	201	eP	49 04 28	-0 5
FID	2.65	194	eP	49 06 36	1 0
BALM	2 66	149	eP	49 04 92	-0.6
DWY	2 67	72	P	49 03 00	-2.6
	21 obs associated				

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* DEC 25, 1989 09h 13m 47.77± 0.82s
23 495 N ± 7 2km 121.425 E ±11.0km
DEPTH = 50 0 ± 9.5 km
3 8mb (3 obs)
TAIWAN (244)

TWD	0 60	15	iPd	13 59.40	-0.9
			eS	14 08.10	
TWG	0.75	206	eP	14 02.80	0.6
TWQ	0.94	325	iPd	14 07 40	2 4X
			eS	14 22.20	
TWC	1 17	19	eP	14 08 00	-0 1
			eS	14 23 80	
TWZ	1 60	5	eP	14 14 80	0 7
ANP	1.68	3	eP	14 17 00	1 7
GZH	7.44	268	eP	15 34 80	-1 6
			eS	16 55 30	
SSE	7.57	358	eP	15 38 00	-0 2
			eS	17 01.00	
			Lg	17 44.50	
NJ2	8.82	346	eP	15 55.00	-0.4
WHN	9.43	320	P	16 03.00	-0.9
			pP	16 09.00	
			S	17 44.50	
CHTO	21.47	262	eP	18 36.50	2.4
	1 0s	2.00nm			3.4mb
WB5	44.92	163	eP	21 58.80	-0.8
WRA	44.98	163	Pc	21 59 80	-0 2
	0.5s	0.60nm			3.7mb
INK	73.78	22	eP	25 18 00	-0.2
SLL	78.28	331	eP	25 43.70	0.0
	0.4s	2.20nm			4 5mb
	S.D = 1.2 on 14 of 15 obs.				

DEC 25, 1989 10h 23m 02.02± 0.85s
36.684 N ± 7.5km 26.739 E ± 7.6km
DEPTH = 10.0km (geophysicist)
DODECANESE ISLANDS (369)

SMG	1.03	4	ePg	23 21.00	-0 4
			eSg	23 35.00	
APE	1.04	292	ePg	23 21.20	-0.5
KAP	1.18	163	ePb	23 24.70	0.6
YER	1.32	70	iPn	23 26.30	-0.1
CIN	1.41	49	eP	23 28.00	0.3
IZM	1.76	14	ePn	23 34.10	1.3
ELL	2.55	88	ePn	23 43.00	-1 2
PRK	2 58	352	ePg	23 49.50	4 9X
	S.D. = 1.0 on 7 of 8 obs				

& DEC 25, 1989 11h 44m 30.00s
36.433 N 118.013 W
DEPTH = 7 0km
CENTRAL CALIFORNIA (39)
<BRK> ML 3 5 (BRK).

FRI	1.47	293	iPc	44 56.00	-0 9
			iS	45 14 80	
TNP	1.76	21	eP	45 00.30	-1.0
BCH	2.09	234	eP	45 05.30	-0 7
PRI	2.16	263	eP	45 08.30	1.3
			eS	45 35.60	
LLA	2.37	275	e(P)	45 10.50	0 6
CMB	2.48	311	e(P)	45 12.00	0 5
			iSg	45 44 60	
KVN	2.61	359	eP	45 12.70	-0 9
PEC	2.63	164	eP	45 12.20	-1 4
PRS	2.71	269	e(P)	45 13 70	-1.1
SAO	2.78	278	eP	45 16.10	0.3
ARN	2.97	289	eP	45 18.90	0 5
MHC	3.05	288	e(P)	45 20.00	0.4
			eSb	46 03 00	
PLM	3.21	163	eP	45 20.60	-1.5
	13 obs. associated				

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* DEC 25, 1989 11h 58m 07.17± 0 94s
29.455 S ±10 4km 69.582 W ±11.6km
DEPTH = 149.1 ± 19.1 km
CHILE-ARGENTINA BORDER REGION (127)

RTPS	0 72	172	iPd	58 29 00	-0 9
RTCB	2 13	162	e(P)	58 45.80	1 5
ZON	2 23	160	ePd	58 45 00	-0 4
CFA	2 44	152	ePc	58 48 90	0 9
			S	59 19 50	
RTCV	2.56	160	e(P)	58 50 50	1 0
JACH	3.33	195	iPc	59 03 40	4 0X
ROCH	3 71	199	eP	59 13.00	8 4X
PEL	3.80	194	eP	59 06 00	0 5
FCH	3.91	189	eP	59 12 00	4.8X
TACH	4.34	195	eP	59 13 00	0.3
LCCH	4.35	202	iPc	59 11.90	-0 9
MRA	4.44	133	ePc	59 14.00	0.0
CHCH	4.56	191	eP	59 19.50	4 0X
TCA	4.70	115	iPc	59 15.90	-1.6
			S	00 05.00	
LNV	4.75	199	eP	59 17 00	-1.0
ZOBO	13.19	6	P	01 11.00	0.5
	S.D = 1.1 on 12 of 16 obs				

DEC 25, 1989 13h 24m 08.45± 0.60s
31.614 N ± 8 8km 99 704 E ± 7 0km

DEPTH = 33.0km (normal)
4.0mb (1 obs.)
SICHUAN PROVINCE, CHINA (307)
ML 4.4 (BJI).

CD2	3.54	100	Pn	25	05.00	2.5
			Pg	25	09.40	
			Sg	26	00.80	
LZH	5.64	37	P	25	34.00	1.7
			Lg	27	12.00	
			e	27	21.00	
KMI	7.00	157	Pnc	25	51.50	0.0
LSA	7.61	258	Pn	25	59.00	-1.3
			Sn	27	30.00	
GTA	7.78	1	ePn	26	06.20	3.8X
Z	11s		1.20um			
GYA	7.97	128	P	26	03.40	-1.5
			S	27	28.00	
XAN	8.13	70	Pc	26	05.10	-2.0
SHL	9.14	231	iP	26	18.00	-3.2X
			eS	28	37.00	
TIY	12.11	56	eP	27	00.80	-0.9
E	10s		1.50um			
WHN	12.60	91	eP	27	05.00	-3.1X
Z	10s		0.64um			
N	10s		1.98um			
CHG	12.76	183	eP	27	11.50	1.1
			e	30	58.00	
GZH	14.79	122	eP	27	32.10	-4.8X
N	11s		1.30um			
E	11s		1.30um			
WMQ	15.43	326	P	27	42.00	-3.3X
QIZ	15.51	141	eP	27	40.00	-6.4X
N	11s		1.00um			
E	12s		1.50um			
BJI	15.77	53	eP	27	50.00	0.4
	1.0s		12.00nm		4.0mb	
			eS	32	28.00	
NDI	19.66	267	eP	28	33.00	-4.6X
KSH	20.79	299	eP	28	49.00	-0.4
SNY	21.62	55	eP	28	56.60	-0.9
CN2	23.62	52	P	29	17.00	-0.2
HYB	23.82	239	iP	29	19.70	0.3
POO	26.72	247	eP	29	46.00	-0.8
MAIO	33.51	289	eP	30	49.00	1.9

S.D. = 1.4 on 15 of 22 obs.

? DEC 25, 1989 14h 07m 03.83± 1.27s
43.136 N ± 9.5km 12.690 E ±14.8km
DEPTH = 10.0km (geophysicist)
CENTRAL ITALY (381)

ASS	0.07	198	Pd	07	06.10	-0.1
			eSg	07	07.60	
CIO	0.34	80	iPg	07	10.78	-0.1
			iSg	07	16.50	
ARV	0.41	27	P	07	12.20	0.0
			eSg	07	19.00	
MNS	0.75	181	P	07	18.70	0.1
			eSg	07	30.30	

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

DEC 25, 1989 14h 24m 32.69± 0.07s
60.080 N ± 1.8km 73.445 W ± 1.4km
DEPTH = 5.1km (geophysicist)
6.2mb (58 obs.) 6.3Msz (28 obs.)
NORTHERN QUEBEC (443)
Ms 6.2 (BRK), 6.2 (PAS). mbLg 6.1 (OTT). Felt strongly ot Kuujjuoq. Depth from broodband displocement seismogroms.
FAULT PLANE SOLUTION: P-Woves
NP1:Strike=230 Dip=85 Slip= 90
NP2: 50 5 90
Principol Axes:
T Plg=50 Azm=140
P 40 320
Comment: The focal mechonism is poorly controlled and corresponds to reverse faulting. The preferred fault plane is NP2.
RADIATED ENERGY
No. of sto: 12 Focol mech. C
Energy 1.6±0.3*10**13 Nm
MOMENT TENSOR SOLUTION
Dep 4 No. of sta: 12
Moment Tensor; Scale 10**18 Nm
Mrr= 0.14 Mtt=-0.26
Mff= 0.11 Mrt=-0.81
Mrf=-0.72 Mtf=-0.04
Principal axes:

	Val=	Plg=	Azm=
T	1.11	48	129
N	-0.01	9	230
P	-1.10	41	328

Best Double Couple:Mo=1.1*10**18
NP1:Strike=118 Dip=10 Slip= 158
NP2: 229 86 81
CENTROID, MOMENT TENSOR (HRV)
Data Used: GDSN
L.P.B.: 17S, 40C
Centroid Location:
Origin Time 14:24:40.4 0.8
Lat 60.58N 0.06 Lon 73.43W 0.09
Dep 15.0 BDY Half-duration 4.0
Moment Tensor; Scale 10**18 Nm
Mrr= 1.05 0.03 Mtt=-0.89 0.03
Mff=-0.16 0.04 Mrt=-0.07 0.12
Mrf=-0.02 0.09 Mtf=-0.55 0.04
Principal Axes:

	Val=	Plg=	Azm=
T	1.05	88	183
N	0.13	1	62
P	-1.18	2	332

Best Double Couple:Mo=1.1*10**18
NP1:Strike= 61 Dip=43 Slip= 89
NP2: 243 47 91

FRB	4.35	30	eP	25	40.30	-0.5
SCH	6.38	143	ePd	26	07.90	-1.8
DPQ	13.43	178	P	27	41.80	-4.5X
EEQ	13.87	196	P	27	47.10	-5.0X
KLN	13.90	159	P	27	47.30	-5.2X
RSON	14.68	240	iPc	27	54.30	-8.4X
BNH	15.57	174	P	28	10.80	-3.5X
RSNY	15.57	183	iPc	28	08.80	-5.5X
EMM	15.78	164	P	28	11.90	-5.0X
FFC	16.20	263	ePc	28	14.20	-8.1X
ELF	17.58	199	P	28	34.00	-5.7X
HRV	17.64	175	eP	28	37.61	-2.8X
			eS	32	02.12	
LDN	17.71	199	P	28	35.40	-5.9X
DLA	17.95	200	P	28	38.00	-6.3X
PNJ	19.20	182	iP	28	58.60	-1.0
GMTN	19.23	182	iP	28	59.10	-0.9
CLE	19.28	199	iP	28	55.30	-5.4X
YKA	19.68	295	P	29	01.00	-4.2X
BWD	20.35	185	iPd	29	11.70	-0.6
			iS	32	44.20	
BVD	20.37	185	iPd	29	11.90	-0.6
NED	20.45	185	iPd	29	12.90	-0.4
CBN	22.04	188	eP	29	29.00	-0.5
			e	35	51.00	
NA2	22.14	189	P	29	30.00	-0.5
MBC	22.54	333	ePd	29	34.20	-0.1
	0.9s	251.00nm			5.7mb	
EDM	22.69	270	eP	29	33.80	-2.2
BLA	23.32	194	P	29	42.50	0.3
REY	23.88	58	iP	29	49.10	1.7
FVM	24.61	214	iPc	29	55.00	0.3
AKU	25.09	53	iPc	30	01.10	2.1
	1.1s	541.77nm			6.2mb	
GBTN	25.41	201	P	30	02.40	0.1
RSCP	25.73	203	P	30	04.50	-0.9
Z	18s	80.00um			6.3Msz	
HRY	26.07	256	ePc	30	08.30	-0.3
SXM	26.17	255	ePc	30	08.80	-0.8
INK	26.33	313	eP	30	09.00	-1 6
	1.2s	1716.00nm			6.6mb	
MEMT	26.45	254	eP	30	12.40	0 2
LCCM	26.72	255	ePc	30	14.30	-0.3
PWLA	26.86	207	P	30	15.00	-0.7
LRM	27.01	256	ePc	30	17.10	-0.3
OLY	27.23	213	P	30	17.80	-1.3
BGMT	27.24	254	ePc	30	19.30	-0.1
JNW	27.51	40	eP	30	22.90	1.5
LTMT	27.79	253	ePc	30	25.00	0.4
LNO	28.15	221	eP	30	19.30	-8.1X
TUL	28.16	221	iPc+	30	25.80	-1.8
	1.5s	8.30nm			4.3mb X	
Z	18s	37.12um			6.0Msz	
			e	35	29.00	
			LR	39	23.00	
PNT	28.18	268	eP	30	27.00	-0.7
GLD	28.40	239	P	30	30.00	0.0
Z	18s	46.00um			6.1Msz	
DPW	28.43	265	P	30	29.40	-0.6
SIO	28.48	222	ePc	30	28.40	-2.0
GOL	28.51	239	iPc	30	30.00	-1.0
UYO	29.34	217	iPd	30	36.90	-1.3
DWY	29.91	306	Pd	30	43.00	-0.1
MEO	30.13	224	iPc	30	43.30	-2.0
RMW	30.50	268	P	30	55.30	6.7X
PGC	30.54	271	eP	30	46.00	-2.7X
KBS	31.05	22	iP	30	53.50	0.6
VGB	31.33	264	P	30	55.60	-0.3
SIT	31.37	292	eP	30	56.20	0.2
COL	32.83	311	ePc	31	08.83	0.2
			eS	36	22.79	
FBA	32.83	311	ePc	31	08.50	-0.1
ANMO	32.99	235	iPc	31	10.44	-0.2
			epPd	31	12.68	8kmX
			eS	36	32.26	
ALQ	33.00	235	iPc	31	07.60	-3.1X
	1.5s	506.94nm			6.2mb	
			pP	41	29.00	
BRW	33.08	324	eP	31	10.50	-0.2
TOA	33.53	306	ePc	31	15.30	0.4
IMA	34.44	315	ePc	31	22.90	0.1
KVN	34.86	253	iPc	31	26.00	-0.7
LBFM	34.93	260	P	31	27.50	0.1
PMR	35.00	306	ePc	31	27.00	-0.4
	0.7s	142.90nm			5.9mb	
Z	18s	57.00um			6.4Msz	
EAB	35.18	65	iPc	31	28.60	-0.4
	0.8s	117.00nm			5.8mb	
TNP	35.20	251	iPc	31	29.30	-0.4
ELO	35.30	64	iPc	31	29.90	-0.2
DMU	35.35	70	eP	31	30.10	-0.4
DCN	35.52	71	eP	31	31.40	-0.5
	0.9s	1055.00nm			6.7mb	
EBH	35.52	64	iPc	31	31.60	-0.3
MIN	35.56	258	ePc	31	31.30	-1.3
EAU	35.78	65	iPc	31	33.70	-0.5
	1.2s	434.00nm			6.2mb	
WDC	35.84	259	ePc	31	31.80	-3.0X
EDI	35.86	65	iPc	31	34.30	-0.5
DLE	35.90	70	iPc	31	35.70	0.5
	0.9s	480.00nm			6.3mb	
EBL	36.01	65	iPc	31	35.50	-0.6
	1.0s	192.00nm			5.9mb	
ORV	36.11	257	ePc	31	36.00	-1.1
			ePcP	32	58.30	
ESK	36.21	66	iPd	31	38.00	0.2
	1.0s	200.00nm			5.9mb	
EKA	36.22	66	Pc	31	37.30	-0.6
	1.1s	214.20nm			5.9mb	
FHC	36.38	261	ePc	31	38.70	-0.7
TRO	36.56	36	iP	31	40.70	0.2
ECP	36.68	72	iPc	31	41.30	-0.4
	1.0s	882.00nm			6.5mb	
CMB	36.76	255	iPc	31	41.56	-1.1
			epP	31	42.63	4kmX
			esP	31	43.54	
			e	32	27.10	
			ePP	32	50.83	
			eS	37	26.42	
TTA	36.96	311	eP	31	43.70	-0.4
CLC	37.21	249	eP	31	46.00	-0.4
GSC	37.26	248	eP	31	47.00	0.1
FRI	37.26	253	ePc	31	46.70	-0.1
			e	33	13.00	
RGS	37.40	48	iP	31	47.50	-0.1
ISA	37.75	250	eP	31	52.90	1.9
BKS	37.78	256	iPc	31	52.10	1.0
	1.6s	775.00nm			6.2mb	
Z	20s	9.00um			5.6Msz	
N	20s	6.00um				
E	20s	36.00um				
			e	33	15.00	
			eS	37	40.00	
			e	41	00.00	
			eLQ	41	55.00	
			eLR	44	08.00	
			e	44	35.00	
			e	45	08.00	
			e	47	20.00	
			e	47	45.00	
BRK	37.80	256	ePc	31	51.60	0.4
ARN	37.86	255	P	31	54.00	2 2
SVW	37.86	308	eP	31	51.90	0.3
TPC	37.90	246	eP	31	52.00	-0.2

25d 14h

			e	33	14.00		UNM		44.67	216	(P)	32	49.50	1.2	EPRU	48.16	87	iP	33	16.30	0.9
MHC	37.91	255	ePc	31	53.20	0.8	IIT		44.71	214	(P)	32	49.00	0.4	VAI	48.21	68	Pc	33	16.30	0.7
			eLR	44	14.40		CRX		44.75	216	(P)	32	50.00	1.1	EVIA	48.22	83	iPc	33	16.00	0.0
PCC	38.15	256	ePc	31	54.90	0.7	PPM		44.76	215	(P)	32	50.50	1.2	ECHE	48.25	81	iPc	33	16.60	0.5
LLA	38.15	254	ePc	31	55.00	0.7	TCF		44.80	72	iPd	32	48.60	-0.2	FOUF	48.27	71	ePd	33	16.52	0.4
GLA	38.22	244	eP	31	55.00	0.0	PAG		44.81	164	eP	32	49.50	0.3	EJIF	48.44	87	iPc	33	18.40	0.9
SBB	38.24	249	eP	31	55.00	-0.1	SSF		44.86	71	iPd	32	48.80	-0.4	PZZ	48.44	71	Pc	33	18.18	0.5
			e	33	25.00		LOR		44.88	70	iPd	32	49.00	-0.4	AAPN	48.45	85	iPc	33	18.00	0.3
SAO	38.28	254	ePc	31	56.50	1.2			1.2s	604	.40nm			6.4mb	DOI	48.51	71	P	33	18.50	0.4
GCC	38.33	255	ePc	31	56.00	0.2	BGF		44.91	72	iPd	32	49.30	-0.3	TBT	48.52	105	Pd	33	19.00	0.8
PRI	38.40	253	ePc	31	57.50	1.0	AVF		44.98	71	iPd	32	49.80	-0.4	ASMO	48.60	85	iPc	33	19.00	0.1
PEC	38.59	247	P	31	58.30	0.3	MAF		45.02	72	eP	32	50.10	-0.5	ALOJ	48.61	86	iPd	33	19.50	0.5
PRS	38.59	254	ePc	31	58.70	0.8	LFF		45.08	75	iPd	32	50.90	-0.1	GRW	48.63	165	eP	33	18.50	-0 7
RVR	38.60	248	eP	31	57.00	-1.1	LBF		45.14	71	iPd	32	50.90	-0.6	MDI	48.71	68	P	33	16.90	-2.6
			e	33	37.00		RJF		45.18	74	iPd	32	51.00	-0.9	STV	48.74	71	Pc	33	19.52	-0.4
KDC	38.61	302	eP	31	58.50	0.7	ECRI		45.21	79	iPc	32	52.80	0.7	ACHM	48.75	85	iPd	33	20.50	0.5
MWC	38.73	248	eP	32	00.00	0.6	SMF		45.32	71	iPd	32	52.00	-0.9	AFC	48.78	85	eP	33	21.20	0.9
			e	33	30.00		BBL		45.34	164	eP	32	54.10	0.8	ENR	48.80	71	Pc	33	19.72	-0.7
KEV	38.79	33	iP	31	58.10	-1.1	EPLA		45.35	85	iPc	32	53.50	0.3	ATEJ	48.80	86	iPc	33	21.00	0.4
	0.8s	124	.70nm			5.6mb	LPO		45.48	75	iPd	32	53.90	-0.3	FISA	48.82	175	eP	33	21.50	0.8
	Z 18s	8	.90um			5.6Msz	HAU		45.51	68	iPd	32	54.60	0.2	LRG	48.88	72	iPd	33	21.00	0.2
			e	37	46.00				1.1s	381	.50nm			6.3mb		1.2s	464	.90nm			6.4mb
			e	40	44.00		MDN		45.56	164	eP	32	55.37	0.4	FRF	48.94	72	iPd	33	20.90	-0.4
			LR	46	18.00		CDF		45.65	67	iPd	32	55.70	0.1	APHE	48.94	85	iPc	33	22.00	0.4
PAS	38.84	249	ePc	32	00.28	0.2	III		45.66	216	(P)	32	54.50	-1.6	ROB	48.96	70	Pc	33	21.67	0.1
			epPd	32	01.61	5kmX	CAF		45.73	74	iPd	32	55.60	-0.6	KMR	49.01	63	iP+	33	23.20	1.3
			iPP	33	32.07		BSF		45.84	68	iPd	32	57.20	0.1	LMR	49.04	72	iPd	33	21.80	-0.3
			ePcP	34	20.00		GUD		45.87	83	iPc	32	57.50	0.0	CKI	49.06	70	Pc	33	22.50	0.3
			eS	38	01.28		MOX		45.99	62	iPc	32	59.00	0.8	SBF	49.08	71	iPd	33	21.90	-0.6
			eLg	40	27.00				1.4s	487	.00nm			6.3mb	PCP	49.10	70	Pc	33	22.59	0.0
			eLR	41	56.00			Z	15s		7.40um			5.8MszX	FIN	49.19	70	Pc	33	23.21	-0.1
			eScS	42	40.00			N	15s		6.00um				SAL	49.22	67	Pc	33	23.70	0.3
NB2	38.87	51	P	31	59.80	-0.3		E	15s		5.30um				NKM	49.26	88	iPc	33	24.50	0.7
	1.0s	98	.70nm			5.4mb					eS	39	45.00		IMI	49.26	71	Pc	33	23.93	0.0
PLM	38.90	246	iPc	32	02.00	1.2	CLL		46.13	60	iPc	32	59.30	0.1	BOB	49.35	69	Pc	33	25.30	0.7
VNM	39.00	221	(P)	32	01.00	-0.5		Z	17s		6.50um			5.6MszX	ACU	49.36	81	eP	33	25.70	1.0
ANM	39.36	317	P	32	04.20	0.1					eS	39	45.00		KBA	49.40	64	ePc	33	25.40	0.4
BAR	39.37	246	eP	32	05.00	0.4	OXX		46.13	212	(P)	33	00.00	0.2		1.0s	384	.00nm			6.4mb
SYP	39.38	251	eP	32	05.00	0.2	FDF		46.16	163	eP	33	00.67	0.8				ic	33	26.00	
BLP	39.56	251	P	31	51.00	-15.0X			0.7s		1.20nm			4.0mb X				i(sS)	43	35.30	
SOD	40.19	36	iP	32	10.00	-0.9	CRM		46.18	163	eP	33	00.43	0.5	CTI	49.40	66	Pc	33	25.10	0.1
HFS	40.39	50	eP	32	12.30	-0.3	EPF		46.29	77	iPd	33	00.00	-0.7	CTFE	49.49	103	Pc	33	27.80	2.1
	0.9s	65	.40nm			5.3mb			1.4s	163	.30nm			5.9mb	FVI	49.51	65	Pc	33	26.40	0.8
	Z 16s	4	.08um			5.4MszX	MVM		46.38	163	eP	33	01.60	0.1	ENIJ	49.66	84	eP	33	26.60	-0.4
			LR	44	06.00		81M		46.39	163	eP	33	02.55	0.9	LLAV	49.76	171	iP	33	28.00	0.1
FLN	41.76	72	iPd	32	23.90	-0.1	TOL		46.50	83	ePc	33	00.93	-1.4	VVI	49.80	66	Pc	33	28.00	0.0
	1.2s	325	.40nm			5.9mb					eS	39	48.79		VKA	49.82	61	iPc	33	28.00	-0.1
GRR	41.84	72	iPd	32	24.60	0.0					eSS	44	03.72			4.0s	1239	.00nm			6.2mb X
LPF	42.00	73	iPd	32	25.90	0.0	ETOR		46.78	81	iPc	33	05.00	0.4				i(PP)	36	10.50	
LRS	42.01	171	P	32	27.50	1.2	BRG		46.85	60	iPc	33	05.50	0.6	AVE	49.96	92	iPc	33	29.00	-0.3
STS	42.01	84	eP	32	26.50	0.4			1.5s	470	.00nm			6.4mb				i	34	40.00	
LDF	42.05	72	iPd	32	26.20	-0.1		Z	17s		8.00um			5.7MszX	CUM	50.00	168	iP	33	31.20	1.5
UPP	42.08	49	iPc	32	26.00	-0.4		N	17s		6.00um				ESEL	50.02	78	eP	33	30.00	0.4
	1.0s	600	.00nm			6.3mb		E	17s		4.00um				KRA	50.03	57	iPc	33	29.50	-0.1
			iS	38	43.00						i	33	20.90			1.3s	337	.00nm			6.1mb
DBN	42.09	64	iP+	32	27.00	0.4	EVAL		46.92	87	iP	33	06.30	0.7		Z 16s	5	.00um			5.6MszX
SJG	42.25	170	e(P)	32	29.50	1.2	ACX		47.20	215	(P)	33	09.00	1.0		E 14s	6	.80um			
PORP	42.26	170	P	32	29.50	1.1	EHOR		47.49	86	iPc	33	10.00	-0.1	TCE	50.05	165	eP	33	29.02	-1.1
WIT	42.28	63	iPc	32	29.80	1.7	LPG		47.54	70	eP	33	11.30	0.5	TRN	50.15	165	eP	33	30.35	-0.4
UCC	42.62	66	iP+	32	31.00	0.1			1.3s	417	.40nm			6.4mb		1.0s	580	.00nm			6.5mb
WTS	42.90	64	iPc	32	34.00	0.7	SSV		47.54	164	eP	33	11.02	0.2	OLLA	50.21	171	iPd	33	31.20	-0.2
	1.0s	345	.00nm			6.0mb	SVB		47.59	164	eP	33	11.61	0.5	ZST	50.22	61	iPc	33	31.00	-0.1
ERUA	43.07	83	eP	32	35.40	0.6	LSD		47.76	70	Pc	33	13.37	0.9				e	35	16.30	
SUF	43.16	42	iP	32	35.20	-0.1	PRU		47.76	61	iPc	33	12.60	0.5				e	35	32.60	
	0.8s	118	.00nm			5.7mb			2.0s	664	.00nm			6.4mb				e	40	53.30	
DOU	43.21	67	iPc	32	36.00	0.2		Z	17s		8.40um			5.8MszX	TOV	50.27	175	iPc	33	32.60	0.8
			e	39	11.90			N	17s		6.10um				TBH	50.36	164	eP	33	33.72	1.3
AGX	43.25	221	(P)	32	39.00	2.6X		E	18s		4.00um				MME	50.37	68	P	33	32.90	0.3
ENN	43.35	65	iPc	32	37.10	0.2	BNI		47.83	70	Pc	33	13.40	0.5	SOP	50.37	61	iPc	33	34.90	2.7X
	1.1s	385	.00nm			6.1mb	KSP		47.89	59	eP	33	12.50	-0.6	BDI	50.42	68	Pc	33	31.30	-1.5
MFF	43.45	74	iPd	32	37.60	-0.2			1.0s	37	.00nm			5.4mb	VOY	50.44	65	ePc	33	32.40	-0.5
MEM	43.50	66	iP	32	38.30	0.2					ic	33	13.50		TPP	50.47	165	eP	33	33.38	0.2
LVVM	43.52	212	(P)	32	37.00	-1.6					e	38	33.00		CFTV	50.61	101	P	33	34.30	0.0
SDN	43.54	304	eP	32	37.90	-0.5					e	40	12.00					e	41	06.00	
	Z 18s	52	.00um			6.5Msz	EBAN		47.95	84	iPc	33	14.60	0.8	TRI	50.62	65	Pc	33	34.30	0 1
NUR	44.19	45	eP	32	41.00	-2.6X	KHC		47.97	62	iPc	33	14.80	1.0	PII	50.65	69	P	33	32.80	-1.6
	1.1s	571	.00nm			6.3mb			1.2s	366	.00nm			6.4mb	LJU	50.72	64	ePc	33	34.50	-0.4
	Z 20s	14	.60um			5.9Msz		Z	16s		7.20um			5.7MszX	SPC	50.81	58	iPc	33	36.30	0.5
			e	39	10.00			N	16s		5.00um					1.8s	598	.00nm			6.2mb
			e	42	44.00			E	16s		6.10um				CEY	50.90	64	iPc	33	36.50	0.2
			LR	49	12.00						e	34	28.50		IFR	50.93	89	iPc	33	36.50	-0.4
WLF	44.23	66	iPc	32	44.00	-0.1	RRL		47.98	70	Pc	33	14.80	0.6	FIR	50.94	68	eP	33	36.00	-0.6
			e	39	23.00		EROO		47.99	79	iPc	33	14.10	0.1	SRO	51.04	60	iPc	33	38.20	0.9
SEG	44.47	164	eP	32	46.00	-0.3	ORX		48.01	69	Pc	33	15.11	0.8	PGD	51.09	68	P	33	37.90	0.0
IISM	44.49	213	(P)	32	48.00	1.6	ORO		48.02	69	P	33	15.30	0 9	SFI	51.11	68	Pc	33	38.30	0.4
LSF	44.50	73	iPd	32	46.20	-0.2	RSP		48.03	70	Pc	33	15.21	0.7	SDV	51.13	176	iPc	33	38.30	-0.2
DEG	44.62	163	eP	32	49.00	1.4	ETER		48.07	76	iPc	33	15.00	0.4	TAF	51.26	86	iPc	33	37.00	-2.2

CRE	51.38	68	Pc	33 40.00	-0.1
RSM	51.38	67	Pc	33 40.60	0.6
VBY	51.45	64	iP	33 40.90	0.4
ZAG	51.54	63	iPc	33 46.50	5.4X
BUD	51.60	60	iPc	33 41.80	0.2
PSZ	51.64	59	eP	33 42.20	0.2
ARV	51.94	67	Pc	33 44.20	-0.1
TIO	51.94	93	iP	33 44.00	-0.5
			i	34 59.00	
MAO	51.94	69	Pc	33 43.30	-1.0
ASS	52.14	68	Pc	33 45.00	-0.8
CIO	52.27	67	iPd	33 46.24	-0.6
SSO	52.32	67	eP	33 47.08	0.0
ADK	52.57	311	eP	33 46.50	-2.3
Z	18s	38.00um			6.5Msz
MNS	52.68	68	Pc	33 48.80	-1.1
ALP	52.79	67	iPc	33 50.02	-0.8
BMG	52.89	180	eP	34 11.00	19.3X
RMP	53.14	69	P	33 52.90	-0.3
RDP	53.19	69	P	33 53.50	-0.1
AZI	53.34	68	P	33 54.70	0.1
BMR	53.36	57	ePd	34 03.00	8.3X
SDI	53.74	68	P	33 56.80	-0.9
DUI	54.07	68	P	34 00.20	0.1
RFI	54.14	68	P	33 59.97	-0.5
	1.8s	1166.30nm			6.6mb
BZS	54.18	60	eP	34 01.50	0.8
BEO	54.30	61	iP	34 01.60	0.0
DEV	54.52	58	ePc	34 04.00	0.7
BRY	54.96	64	eP	34 06.00	-0.8
PTT	55.15	55	eP	34 09.00	1.1
SMY	55.22	317	eP	34 06.70	-1.6
Z	19s	25.00um			6.3Msz
NKY	55.24	63	eP	34 09.00	0.3
HCY	55.30	64	eP	34 08.50	-0.6
BOG	55.32	181	eP	34 10.00	0.2
			iS	41 53.50	
SGO	55.34	68	Pc	34 08.40	-0.9
IAS	55.42	54	eP	34 11.00	1.2
BDV	55.58	64	eP	34 10.50	-0.6
TTG	55.66	64	eP	34 11.30	-0.3
MGR	55.79	68	Pc	34 11.20	-1.4
CMP	55.92	57	ePc	34 15.00	1.5
BRT	55.96	66	P	34 13.70	-0.1
LVI	55.98	72	P	34 13.70	-0.3
SDA	56.10	64	iPd	34 15.00	0.3
MLR	56.12	57	iPc	34 14.50	-0.6
VRI	56.14	56	iPc	34 15.00	-0.1
MMN	56.19	68	P	34 13.40	-2.0
PUK	56.25	63	iPc	34 15.90	0.0
CSI	56.41	68	P	34 16.60	-0.5
CVT	56.44	72	P	34 17.80	0.5
LACI	56.49	64	iPc	34 17.80	0.2
TDS	56.53	68	P	34 17.30	-0.6
ROI	56.71	68	P	34 19.80	0.5
LCI	56.74	66	P	34 20.00	0.6
PTS	56.76	73	P	34 19.10	-0.5
PHP	56.78	63	iPc	34 18.50	-1.2
GIB	56.78	71	P	34 19.00	-0.9
CZI	56.79	68	P	34 17.80	-2.0
TIR	56.80	64	iPd	34 20.50	0.7
LPI	56.81	70	P	34 20.07	0.1
SKO	57.00	62	iPc	34 20.90	-0.4
	1.5s	632.00nm			6.4mb
Z	15s	4.07um			5.6MszX
N	15s	3.55um			
E	15s	8.35um			
			i	34 29.00	
			i	34 41.00	
			LR	00 25.50	
BUC1	57.08	57	iPc	34 20.00	-1.8
MNO	57.14	70	P	34 21.80	-0.8
FAI	57.19	71	Pc	34 23.00	0.4
VTS	57.28	61	iPc	34 22.00	-1.4
ATN	57.32	69	Pc	34 22.00	-1.6
OHR	57.40	63	iPc	34 24.10	-0.1
	1.9s	1.21nm			3.6mb X
GMB	57.50	69	P	34 24.15	-0.9
	0.4s	15.40nm			5.4mb
PVL	57.69	59	iPc	34 26.00	-0.1
PGB	57.73	60	iPc	34 26.00	-0.5
KKB	57.81	61	iP	34 27.00	0.0
PZI	57.97	71	P	34 27.04	-1.2
	0.9s	394.80nm			6.4mb
VAY	58.02	62	iPc	34 28.30	-0.1
	1.8s	0.70nm			3.4mb X
SRN	58.03	65	iP	34 29.10	0.6
GRG	58.24	62	ePc	34 29.70	-0.3
KNT	58.30	62	ePc	34 30.30	-0.1
MMB	58.32	61	iPc	34 31.00	0.4
PLD	58.32	60	eP	34 30.00	-0.5
IGT	58.47	65	ePc	34 31.50	-0.1
PSN	58.52	56	iPc	34 32.00	0.1
SRS	58.64	61	ePc	34 32.20	-0.6
RZN	58.67	60	iPc	34 33.00	-0.2
DIM	58.73	59	iPd	34 34.00	0.6
THE	58.76	62	eP	34 33.00	-0.6
SOH	58.77	62	ePc	34 33.80	0.0
PSO	58.81	185	eP	34 34.00	-0.6
LIT	58.98	63	ePc	34 34.70	-0.5
KDZ	59.00	60	iPc	34 35.00	-0.3
OUR	59.45	62	eP	34 38.50	0.1
PAIG	59.65	62	eP	34 39.30	-0.5
AGG	59.78	64	ePc	34 40.80	0.0
OUR	60.21	186	P	34 43.80	-0.5
GGP	60.22	186	iP+	34 44.00	-0.6
EZN	60.89	60	iP	34 48.00	-0.2
YLV	61.59	58	iP	34 52.30	-0.8
DST	62.07	59	iP	34 55.60	-0.7
GPA	62.22	57	eP	34 57.40	0.1
IZM	62.48	61	iP	34 57.70	-1.4
KHL	63.52	59	eP	35 04.00	-2.0
ANTO	63.60	56	iPc	35 06.71	0.2
			esP	35 09.19	
BBTK	63.61	56	iPc	35 07.00	0.4
KVT	63.90	53	iP	35 08.70	0.3
YER	63.98	61	iP	35 08.00	-1.0
BCK	64.70	59	iP	35 14.10	0.4
ELL	65.01	60	iP	35 16.10	0.4
CSS	67.99	58	eP	35 33.80	-0.8
HON	69.08	276	P	36 00.00	18.6X
Z	20s	7.98um			6.0Msz
TAB	70.44	47	ePc+	35 50.00	0.3
HRI	70.46	57	iPc	35 50.50	0.6
HIA	70 49	351	iPc	35 49.46	-0.2
			esP	35 51.94	
MSL	70.74	50	iPd	35 53.50	2.1
			ePcP	36 08.00	
			eS	45 09.50	
HLW	71.49	62	eP	35 57.00	1.0
KOT	71.65	62	ePc	35 57.00	0.1
DSI	71.78	58	iPc	35 58.00	0.3
MASJ	71.78	58	P+	35 56.90	-0.9
NNA	71.87	183	iPc	35 57.50	-0.9
	1.4s	227.91nm			6.1mb
Z	20s	2.13um			5.4Msz
MKRJ	71.90	58	P+	35 58.00	-0.5
PT10	71.97	184	e(P)	35 59.00	0.1
ASAJ	72.03	334	eP	35 57.80	-1.2
SLY	72.32	48	iPd	36 00.00	-0.8
			iPcP	36 15.00	
			iS	45 24.00	
RUWJ	72.44	55	P+	36 00.90	-0.8
KUSJ	72.52	332	eP	36 00.00	-1.9
PRNI	72.67	59	iPc	36 03.50	0.4
HOOJ	73.53	332	eP	36 06.20	-1.6
TIC	73.59	106	Pc	36 08.66	0.2
	0.7s	116.50nm			6.1mb
LIC	73.95	106	Pc	36 10.80	0.2
	1.2s	324.50nm			6.2mb
Z	22s	5.50um			5.8Msz
BHD	73.95	50	iPd	36 11.50	1 1
			ePcP	36 28.00	
			iS	45 45.00	
			ePS	46 21.00	
KIC	73.97	106	Pc	36 11.08	0.4
	1.0s	385.00nm			6.4mb
			S	45 43.00	
MDJ	73.97	343	Pd	36 09.50	-0.8
	3.0s	1.30nm			3.4mb X
Z	25s	7.60um			5.9MszX
N	14s	7.90um			
			S	45 40.00	
			SS	50 30.00	
MRRJ	73.99	334	eP	36 09.10	-1.3
KER	74.03	48	ePc	36 11.00	0.0
BADA	74.25	60	iPc	36 12.70	0.5
AYN	74.38	59	iPc	36 13.70	0.8
WMQ	75.31	14	iPc	36 18 06	-0.1
Z	22s	19.80um			6.4Msz
N	20s	10.50um			
E	16s	6.10um			
			epP	36 18.89	3kmX
			esP	36 20.38	
			eS	45 55.73	
CN2	75.32	346	iPc	36 17.00	-1.2
	1.8s	0.80nm			3.5mb X
Z	20s	29.00um			6.6Msz
N	18s	6.00um			
			pP	36 24.80	25kmX
			PP	39 07.00	
			S	45 51.00	
			ScS	46 24.00	
			SS	50 47.00	
AOMJ	75.93	334	eP	36 22.70	1.1
ZOBO	76.20	175	Pc	36 23.20	-0.8
			SKS	46 10.00	
			LR	57 34.00	
KUK	76.25	102	iPc	36 23.40	-0.4
			e	46 08.00	
ARE	76.29	178	iPc	36 24.10	-0.1
KOGH	76.40	102	iPc	36 24.50	-0.2
			e	46 10.00	
MAIO	76.46	37	iPc	36 25.30	0.5
			eS	46 20.00	
LPB	76.46	175	Pc	36 25.00	-0.3
Z	18s	9.62um			6.2Msz
			LR	59 32.00	
SHGH	76.63	102	iPc	36 26.00	0.1
			e	46 13.00	
CNCB	76.74	175	Pc	36 26.20	-0.9
WEGH	76.78	102	iPc	36 26.70	-0.1
LEGH	76.80	102	iPc	36 27.00	0.1
			e	46 14.60	
TEGH	76.90	102	iPc	36 27.30	-0.1
			e	46 15.00	
WAJH	76.97	60	iPc	36 28.30	0.6
OFUJ	77.05	333	eP	36 28.00	0.1
AMAN	77.31	64	iPc	36 29.50	-0.1
AKRL	77.44	64	iPd	36 31.00	0.7
SNY	77.49	347	iPc	36 30.00	-0.3
	1.6s	0.50nm			3.4mb X
Z	22s	19.10um			6.4Msz
N	17s	10.50um			
E	14s	4.00um			
AGRW	77.50	64	iPc	36 30.50	-0.1
AKSR	77.60	64	iPd	36 32.00	0.8
KSH	77.67	24	P	36 32.20	0.7
Z	20s	9.80um			6.1Msz
N	16s	9.50um			
			eS	46 17.00	
SEN	78.01	333	P	36 34.00	0.8
BDF	78.25	155	iPc	36 34.87	0.0
			epP	36 35.54	2kmX
			eS	46 28.54	
YAMJ	78.29	334	eP	36 35.40	0.6
HHC	79.34	356	iPc	36 41.70	1.1
	1.0s	0.30nm			3.2mb X
Z	24s	16.90um			6.3MszX
N	17s	5.30um			
E	15s	5.30um			
			PP	39 46.00	
			S	46 44.50	
NIIJ	79.41	334	P	36 40.90	0.0
BTO	79.64	357	iPc	36 43.00	0.8
N	17s	11.30um			
E	17s	4.30um			
			eS	46 45.00	
BJI	79.92	353	iPc	36 43.45	-0.1
	2.0s	776.00nm			6.3mb
Z	16s	20.40um			6.6MszX
N	16s	11.40um			
			epP	36 44.27	3kmX
			esP	36 46.09	
			eSKS	46 36.00	
			eScS	46 47.50	
			iS	46 47.91	
QASM	79.98	54	iPc	36 45.30	1.1
KAKJ	80.14	333	P	36 45.20	0.4
MAT	80.25	335	P	36 46.00	0.5
MTMJ	80.30	335	P	36 46.10	0.3
CHJJ	80.56	334	P	36 47.60	0.5
DL2	80.59	348	iPc	36 47.00	-0.2
	1.8s	1.60nm			3.7mb X
Z	16s	10.20um			6.3MszX
N	15s	8.10um			
GTA	80.71	5	iPc	36 48.00	0.0
	1.4s	0.20nm			2.9mb X
Z	16s	6.70um			6.1MszX
E	16s	6.90um			
			S	46 55.00	

25d 14h

			SS	52	06.00		
IIDJ	81.34	335	P	36	51.20	0.0	
TSRJ	81.69	336	P	36	54.10	1.1	
TIY	82.44	355	iPc	36	57.50	0.5	
	1.6s		0.40nm			3.3mb	X
N	16s		13.40um				
			S	47	15.00		
			SS	52	40.00		
RYD	82.44	53	iPc	36	58.00	0.8	
BBU	82.59	49	iP	36	56.80	-1.0	
BEE	82.79	49	iP	36	57.90	-1.0	
	0.5s		446.00nm			6.9mb	
BJA	82.85	49	eP	36	58.20	-0.9	
SHK	83.30	339	ePd	37	02.30	0.9	
ANT	83.51	177	iPc	37	02.80	0.5	
TIA	83.66	351	Pc	37	02.70	-0.5	
Z	18s		22.30um			6.6Msz	
N	17s		10.50um				
E	15s		5.00um				
			S	47	21.30		
LZH	84.16	2	iPc	37	06.93	1.0	
Z	16s		7.80um			6.2MszX	
N	15s		8.30um				
			epPd	37	08.91	6kmX	
			esP	37	10.40		
			PP	40	18.00		
			S	47	30.00		
			PS	48	25.00		
			SS	53	13.00		
QUE	84.35	34	eP	37	05.00	-2.0	
			eS	47	29.00		
FKK	84.64	340	P	37	09.00	0.9	
KMSA	85.47	56	iPc	37	13.30	0.7	
XAN	86.21	358	iPc	37	16.00	-0.1	
	3.0s		1.30nm			3.6mb	X
N	15s		3.20um				
E	14s		4.90um				
			SKS	47	42.80		
			S	47	48.40		
NJ2	87.65	350	iPc	37	22.50	-0.5	
	4.0s		1.90nm			3.7mb	X
Z	18s		14.00um			6.4Msz	
N	16s		7.20um				
E	16s		7.30um				
NDI	88.33	26	iPc	37	27.00	0.7	
			ePP	40	52.00		
			eS	48	09.00		
SSE	88.36	347	Pc	37	27.00	0.6	
	1.5s		251.00nm			6.3mb	
Z	20s		20.70um			6.5Msz	
N	17s		11 70um				
E	15s		4.10um				
			sP	37	50.00		
			i	38	08.00		
			i	40	52.00		
			SKS	47	52.00		
			S	48	10.00		
			PS	49	14.00		
CD2	89.32	2	P	37	31.90	0.8	
Z	16s		6.60um			6.2MszX	
			SKS	48	00.00		
			S	48	20.60		
WHN	89.48	353	iPc	37	32.00	0.2	
	1.4s		0.31nm			3.4mb	X
Z	18s		12.20um			6.4Msz	
N	17s		12.90um				
E	16s		5.71um				
			pP	37	36.50	14kmX	
			SKS	48	00.00		
			S	48	19.00		
LSA	89.66	13	iP	37	34.90	1.6	
Z	12s		2.20um			5.8MszX	
N	11s		1.20um				
			S	48	14.00		
AAE	93.00	66	eP	37	50.00	1.4	
GYA	93.78	360	iPc	37	52.60	0.7	
	1.2s		0.10nm			3.1mb	X
N	18s		9.40um				
E	18s		7.30um				
			SKS	48	26.00		
			S	48	57.00		
			ScS	49	00.00		
SHL	93.82	13	iP	37	52.20	0.0	
			eS	48	24.00		
QZH	94 72	349	P	37	56.00	0.0	
Z	20s		9.90um			6.3Msz	
E	17s		7.50um				

KMI	95.05	3	ePc	37	57.42	-0.5	
Z	18s		13.30um			6.5Msz	
E	18s		5.00um				
			epP	37	58.25	3kmX	
			esP	37	59.74		
			ePP	41	45.92		
			iS	48	30.00		
			SS	49	19.90		
TPT	95.18	249	iP	37	59.80	1.8	
	1.6s		100.00nm			6.0mb	
RUV	95.24	249	iP	38	00.40	2.1	
	1.6s		165.00nm			6.2mb	
PMO	95.32	249	iP	38	00.60	1.9	
	1.6s		115.00nm			6.1mb	
VAH	95.40	249	iP	38	01.10	2.1	
	1.6s		190.00nm			6.3mb	
GZH	96.95	354	eP	38	06.40	0.2	
Z	18s		14.20um			6.5Msz	
N	17s		12.00um				
E	15s		2.40um				
POO	97.29	31	eP	38	09.00	1.1	
PPN	98.23	249	iP	38	14.20	2.4X	
	1.6s		100.00nm			6.3mb	
PPT	98.33	249	iP	38	15.00	2.7X	
	1.6s		150.00nm			6.4mb	
TVO	98.37	249	iP	38	15.30	2.8X	
	1.6s		175.00nm			6.5mb	
AFR	98.40	250	iP	38	15.20	2.6X	
	1.6s		150.00nm			6.4mb	
PAE	98.42	249	iP	38	15.20	2.6X	
	1.6s		205.00nm			6.6mb	
HYB	99.51	27	ePd	38	18.00	0.1	
GUMO	100.40	322	ePdiff	38	24.00	2.2	
Z	22s		4.13um			5.9Msz	
CHG	101.15	7	ePdiff	38	24.80	-0.3	
	1.5s		43.06nm			5.8mb	
KOD	106.17	30	ePKP	43	10.00	10.2X	
DAV	111.37	340	ePKP	43	18.00	8.8X	
BUL	113.24	90	iPKPc	43	27.20	14.4X	
	1.0s		14.50nm				
			i	44	13.30		
KSR	117.16	95	ePKP	43	18.50	-1.8	
	0 7s		15.00nm				
			e	59	46.00		
SLR	117.75	94	iPKPc	43	21.30	0.0	
	0.9s		42.02nm				
Z	22s		9.63um			6.4Msz	
			e	59	54.00		
PRY	118.33	95	ePKP	43	21.80	-0.6	
	0.7s		7.50nm				
			i	59	55.00		
HVD	120.36	99	iPKPc	43	14.00	-12.2X	
			i	59	11.00		
PMG	121.07	311	ePKP	43	28.00	0.3	
DZM	123.82	285	iPKPd	43	33.90	0.9	
MTN	129.48	328	ePKP	43	44.00	0.1	
CTA	131.14	307	iPKPc	43	46.70	-0.2	
	1.7s		292.31nm				
			iPP	46	02.20		
			iSKP	47	11.00		
			iPKS	47	15.00		
			iPPS	57	48.00		
BRS	134.78	295	iPKPc	43	54.30	0.6	
	0.6s		9.50nm				
			e	46	08.00		
			e	46	24.00		
			e(SKS)	53	20.00		
WB5	135.22	321	ePKP	43	37.30	-17.4X	
			e	43	46.00		
			i	43	54.20		
			ePP	46	08.50		
			eSKP	47	25.50		
WRA	135.29	321	PKP	43	46.00	-8.8X	
	0.6s		2.60nm				
MBL	139.99	341	ePKP	43	53.00	-10.5X	
NANU	141.98	346	ePKP	44	01.00	-6.0X	
BWA	142.71	294	ePKP	44	03.20	-4.8X	
CAN	143.18	293	ePKP	44	05.20	-3.6X	
WARB	143.40	329	iPKPd	44	26.00	16.6X	
	0.5s		9.00nm				
STK	143.51	305	iPKPd	44	06.40	-3.0X	
MEKA	145.54	341	iPKPd	44	12.60	-0.5	
ADE	147.38	306	iPKPd	44	15.70	-0.1	
	0 7s		136.99nm				
FORR	147.41	324	ePKP	44	16.50	0.6	
	0 4s		159.00nm				
MRWA	148.48	344	ePKP	44	21.00	3.3X	

	0.4s		14.00nm				
COOL	149.21	335	ePKP	44	18.80	0.0	
			i	44	23.10		
BAL	149.75	342	ePKP	44	19.50	-0.1	
			i	44	24.00		
SPA	149.91	180	iPKPc	44	18.50	-0.4	
	1.3s		304.17nm				
Z	20s		5.41um			6.3Msz	
			i	45	22.90		
KLB	150.54	340	ePKP	44	21.00	0.2	
			i	44	26.30		
RKG	153.09	341	ePKP	44	33.00	8.6X	
SBA	153.95	205	PKP	44	25.90	1 6	
S.D. = 0.8 on 465 of 511 obs.							

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* DEC 25, 1989 14h 50m 57.44± 0.47s
59.572 S ±12.5km 25.898 W ±10.0km
DEPTH = 33.0km (normal)
5.1mb (7 obs.)
SOUTH SANDWICH ISLANDS REGION (153)

SPA	30.60	180	iPd	57	11.10	0.9	
	1.1s		42.26nm			5.2mb	
PCH	39.04	291	eP	58	23.00	0.4	
FCH	39.18	292	eP	58	26.00	2.0	
LNV	39.19	290	eP	58	22.50	-1.2	
TACH	39.21	291	eP	58	24.00	0.0	
SAN	39.25	291	ePc	58	24.00	-0.2	
PEL	39.51	292	iPc	58	26.60	0.1	
	0.6s		60.00nm			5.5mb	
LCCH	39.66	290	eP	58	29.50	1.9	
CNCB	52.47	306	P	00	09.90	0.2	
LPB	52.76	306	P	00	12.00	0.2	
ZOBO	53.01	306	P	00	12.50	-1.3	
ARE	54.26	302	eP	00	21.00	-1.6	
BUL	55.09	69	iPd	00	43.00	14.5X	
	0.6s		6.33nm				
LIC	67.66	23	Pc	01	53.62	0.5	
	0.8s		9.50nm			4.9mb	
KIC	67.85	23	P	01	54.98	0 7	
	0.9s		9.00nm			4.9mb	
TIC	68.07	22	P	01	56.16	0.5	
	0.8s		7.50nm			4.8mb	
BCAO	72.77	47	iPd	02	24.70	0.5	
	0.9s		41.00nm			5.4mb	
			i	02	40.10		
KRP	81.25	197	P	03	11.00	0.0	
ASPA	95.42	161	eP	04	19.80	0.1	
	0.7s		9.00nm			5 3mb	
HYB	112.17	93	ePKP	09	31.00	0.1	
	1.4s		125.00nm				
APO	123.71	22	ePKP	09	50.50	-1.2	
	0.8s		5.60nm				
NUR	126.01	28	ePKP	10	11.00	14.8X	
KSH	128.75	76	PKP	10	03.50	1.2	
SOD	132.37	25	iPKP	10	00.86	-7.2X	
XAN	141.03	111	PKP	10	23.50	-1.8	
SSE	143.99	128	ePKP	10	42.70	12.3X	
			i	10	49.70		
TIY	145.68	111	ePKP	10	33.50	0.2	
BTO	146.76	105	PKP	10	37.80	2.8X	
MBC	147.47	334	ePKP	10	37 50	2.6X	
	0.7s		13.00nm				
HHC	147.71	106	ePKP	10	40.00	3.5X	
INK	148.91	317	ePKP	10	35.00	-2.4	
BJI	149.29	112	ePKP	10	43.50	4.7X	
	1.0s		12.00nm				
DL2	150.86	121	ePKP	10	47.50	6.3X	
TOA	151.68	301	ePKP	10	49.00	7.2X	
FBA	153.28	306	ePKPc	10	50.70	6.8X	
	0.6s		3.70nm				
S.D. = 1.1 on 24 of 35 obs							

? DEC 25, 1989 15h 04m 24.72± 2.58s
16.616 N ±22.3km 96.633 W ±17.6km
DEPTH = 82.5 ± 11.8 km
OAXACA, MEXICO (60)

OXX	0.47	349	iPd	04	38.50	-0.4	
			iS	04	46.50		
IISM	2.46	343	iP	05	05.00	1.4	
			(S)	05	45.50		
IIT	2.88	327	(P)	05	09.00	-0.5	
PPM	3.09	322	iP	05	12.00	-0.7	
			(S)	05	58.00		
ACX	3.10	275	(P)	05	13.00	0.6	
LVVM	3.11	3	eP	05	12 50	0.0	

```
 III      3.22 303 (P)    05 14.00   -0.3
 UNM      3.63 318 (P)    05 27.00    7.0X
 CRX      4.01 314 (P)    05 35.00    9.6X
 INK     56.71 345 eP     14 01.50   -0.2
 GBA    149.41  11 PKPd   24 07.80    5.9X
         0.9s      2.20nm
        S.D. = 0.9  on   8 of  11 obs.
-------------------------------------------
%  DEC 25, 1989  15h 40m 05.21± 1.93s
    16.678 N ±20.7km   97.653 W ±10.4km
    DEPTH =  33.0km  (normal)
  OAXACA, MEXICO                    ( 60)

 OXX      0.98  66 iP     40 23.00    0.2
                 iS     40 41.00
 ACX      2.12 275 eP     40 38.50   -0.6
 IISM     2.31   6 eP     40 45.00    3.3X
 IIT      2.41 345 (P)    40 42.50   -1.0
 III      2.42 315 (P)    40 45.00    1.5
 PPM      2.55 339 eP     40 45.50   -0.1
                 iS     41 26.50
 LVVM     3.25  20 (P)    41 04.50    9.4X
       S.D. = 1.3  on   5 of   7 obs.
-------------------------------------------
    DEC 25, 1989  17h 49m 04.66± 0.56s
    36.753 N ± 6.7km   26.633 E ± 4.7km
    DEPTH =  10.0km  (geophysicist)
  DODECANESE ISLANDS                (369)
       ML 4.1 (ATH).

 APE      0.94 290 ePn    49 23.20    0.6
 SMG      0.97  10 ePn    49 22.50   -0.5
 KAP      1.28 160 ePn    49 26.50   -1.9
 YER      1.38  73 iPn    49 28.90   -1.0
 IZM      1.72  17 iPn    49 34.20   -0.6
 VAM      2.38 236 ePn    49 44.00   -0.4
 KSL      2.46 104 ePn    49 46.20    0.7
 PRK      2.51 354 ePn    49 45.50   -0.6
 ATH      2.62 299 ePb    49 49.50    1.7
 ELL      2.63  89 ePn    49 49.60    1.6
 KHL      2.78  55 ePn    49 50.00   -0.1
 VLI      2.97 270 ePn    49 52.20   -0.5
 EZN      3.08 356 iPn    49 52.00   -2.1
 BCK      3.24  76 eP     49 57.60    1.0
 DST      3.25  28 ePn    50 02.00    5.2X
 NEO      3.71 314 ePn    50 02.50   -0.7
 EDC      3.72  15 ePn    50 10.00    6.7X
 YLV      4.37  29 ePn    50 22.00    9.4X
 BBTK     5.72  56 eP     50 33.00    1.2
 CZI      8.65 290 P      51 12.20   -0.5
 CSI      8.68 293 P      51 15.30    2.1
       S.D. = 1.3  on  18 of  21 obs.
-------------------------------------------
&  DEC 25, 1989  18h 31m 39.83s
   61.844 N          148.895 W
    DEPTH =  12.6km
  SOUTHERN ALASKA                   (  2)
       <AGS-P>.

 GHO      0.07 191 eP     31 42.84    0.1
 PME      0.23 197 iP     31 44.39   -0.5
 CUT      0.86 312 eP     31 55.17   -0.9
                 eS     32 06.72
 SUA      0.96 247 eP     31 57.21   -0.7
 NCA      0.99  80 eP     31 56.79   -1.6
                 eS     32 10.74
 HUR      1.19 343 eP     32 01.11   -0.7
 SKT      1.25 277 eP     32 01.68   -1.3
                 eS     32 18.40
 GLI      1.30 137 eP     32 02.33   -1.3
                 eS     32 19.26
 TOA      1.31  77 eP     32 02.68   -1.2
 VZW      1.37 124 eP     32 03.77   -1.0
 KLU      1.46 103 eP     32 03.94   -2.1
 SLKM     1.49 206 eP     32 04.46   -1.8
 RND      1.57   1 eP     32 06.79   -0.7
 CGLM     1.58 251 eP     32 06.98   -0.8
 NCG      1.62 256 eP     32 07.48   -0.8
 SEW      1.77 189 eP     32 09.54   -0.8
 MCK      1.90 359 eP     32 11.88   -0.3
 PAX      1.96  53 eP     32 12.43   -0.7
 RDT      2.12 235 eP     32 15.08   -0.5
 NNL      2.15 214 eP     32 16.18    0.2
 CNPM     2.60 207 eP     32 21.65   -0.6
 CCB      2.86   9 eP     32 24.59   -1.3
 RDS      3.01   6 eP     32 26.88   -1.3
 BALM     3.25 102 eP     32 30.69   -0.9

       24 obs. associated
-------------------------------------------
   DEC  25,  1989  19h 50m 18.96± 0.25s
    1.679 N ± 2.7km  127.200 E ± 3.8km
   DEPTH = 102.2 ±  2.3 km
   5.6mb ( 33 obs.)
 HALMAHERA                          (267)
      FAULT PLANE SOLUTION: P-Woves
       NP1:Strike=200 Dip=85 Slip= 150
       NP2:       293     60        6
       Principol Axes:
        T                 Plg=24  Azm=152
        P                   17      250
      Comment: The focol mechonism is
        poorly controlled and
        corresponds to strike-slip
        faulting with o large reverse
        component. The preferred foult
        plone is not determined.
      RADIATED ENERGY
       No. of sto:   4  Focal mech.  C
       Energy        5.1±1.7*10**13 Nm
      CENTROID, MOMENT TENSOR    (HRV)
      Doto Used: GDSN
      L.P.B.: 11S, 24C
      Centroid Locotion:
      Origin Time          19:50:22.3 0.5
      Lot  1.96N 0.06 Lon 127.52E 0.09
      Dep 115.6 2.5 Holf-durotion  2.4
      Moment Tensor;   Scole 10**17 Nm
        Mrr=-0.80 0.22  Mtt= 2.32 0.19
        Mff=-1.52 0.31  Mrt=-1.25 0.12
        Mrf=-1.43 0.13  Mtf= 1.59 0.29
       Principol Axes:
        T  Vol=  3.55  Plg=22  Azm=157
        N        -0.86     49       40
        P        -2.69     33      261
      Best Double Couple:Mo=3.1*10**17
       NP1:Strike=295 Dip=50 Slip= -10
       NP2:         31     83      -139

 AAI      5.42 169 ePd    51 40.90    2.0
                 e(S)    51 45.40
 DAV      5.61 343 ePc+   51 41.00   -0.5
          1.1s  2855.70nm          6.4mb X
 TSM      9.46 286 ePd    52 37.30    3.3X
          0.5s  1052.60nm          7.0mb X
                 e       54 21.90
 MKS     10.32 228 ePc    52 48.00    2.4
                 eS      54 40.00
 KKM     11.79 292 ePc    53 06.00    0.8
          0.5s   143.30nm          6.0mb
 KUPT    12.29 197 ePc    53 22.50   10.9X
          1.0s  1009.60nm
 MTN     14.95 165 eP     53 45.00   -1.2
 BAG     16.03 336 eP     54 00.70    0.7
 TRT     17.26 237 iPc    54 16.20    1.1
          0.7s   349.50nm          5.7mb
 KNA     17.39 175 iPd    54 16.30   -0.3
          0.5s   407.00nm          5.9mb
 GUMO    21.11  55 eP     55 05.80    8.7X
 GUA     21.12  55 eP     55 05.50    8.3X
 LAT     21.43 113 eP     55 04.00    3.7X
 WB5     22.55 162 iPc    55 11.30   -0.1
                 eS      59 09.50
                 iScP    02 29.80
 PMG     22.72 119 eP     55 08.00   -5.1X
 MBL     23.82 197 iPc    55 24.30    0.7
          0.6s   130.00nm          5.5mb
 KGM     23.87 271 ePc    55 25.50    1.3
 HKC     24.10 329 iP     55 27.10    0.8
 QIZ     24.22 317 iPd    55 27.00   -0.5
          5.5s      1.60nm          2.7mb X
       N  13s      2.00um
       E  14s      2.00um
                 S       59 34.50
 MCO     24.27 328 eP     55 28.30    0.3
 QZH     24.58 341 Pd     55 31.00    0.2
          0.6s      0.30nm          2.9mb X
                 S       59 40.00
 GZH     25.17 329 iPd    55 36.80    0.4
          4.0s      1.40nm          2.8mb X
       N  10s      0.80um
       E  11s      1.10um
                 S       59 51.00
 KLM     25.57 274 eP     55 40.00   -0.3
 RAB     25.62 103 eP     55 41.00    0.2

 ASPA    26.02 166 eP     55 43.40   -1.0
          0.5s   225.00nm          6.0mb
       Z  22s      0.52um          4.0MszX
                 eS      00 04.70
                 i       06 27.50
                 LR      10 39.20
 IPM     26.29 277 ePd    55 46.50   -0.4
          0.8s    98.50nm          5.4mb
                 e       56 56.90
                 e       59 11.80
 NANU    26.65 205 eP     55 50.40    0.4
 SNG     27.05 282 iPd    55 53.40   -0.4
          1.2s   225.00nm          5.6mb
                 eS      00 22.40
 WARB    27.70 181 eP     55 59.50   -0.1
          0.4s    52.00nm          5.5mb
 CTA     28.59 140 iPc+   56 08.30    0.7
          1.2s   215.63nm          5.7mb
                 i       56 12.80
                 iS      00 50.00
                 iScP    02 48.80
 NNT     29.29 293 iPd    56 12.00   -2.0
 MEKA    29.35 196 iPc    56 14.10   -0.3
 KAGJ    29.55   6 eP     56 14.50   -1.6
 SSE     29.81 350 Pd     56 19.20    0.9
          1.0s    76.00nm          5.4mb
       Z  20s      0.50um          4.1Msz
       N  14s      0.70um
                 eS      01 03.00
                 sS      01 12.00
 NST     30.09 299 eP     56 22.00    1.0
 KUMJ    30.88   6 eP     56 26.80   -1.0
 WHN     31.19 338 Pc     56 30.00   -0.5
          1.0s      0.08nm          2.4mb X
       Z  40s      2.30um          4.5MszX
       N  10s      0.93um
                 pP      56 58.00 129kmX
                 iS      01 28.00
                 ScP     02 55.00
 NJ2     31.22 346 Pd     56 31.80    1.0
          3.0s      0.80nm          2.9mb X
                 S       01 27.00
 GYA     31.57 323 P      56 33.60   -0.5
       N  12s      0.70um
       E  12s      0.70um
                 PcP     59 24.80
                 S       01 33.00
                 ScP     02 57.40
                 ScS     06 55.00
 BDT     31.74 301 eP     56 35.00   -0.5
          0.7s   132.80nm          5.8mb
 FORR    32.36 179 iPd    56 39.30   -1.4
          0.4s   192.00nm          6.2mb
 SHNJ    32.48   6 eP     56 38.10   -3.6X
 CHG     32.51 303 iPd    56 41.50   -0.7
          0.8s    61.57nm          5.4mb
                 e       59 28.00
                 e       03 01.70
 MRWA    32.54 198 iPd    56 42.20   -0.1
 TKSJ    32.77  11 eP     56 44.20   -0.1
 COOL    32.89 190 eP     56 44.60   -0.8
 SHK     33.08   8 eP     56 46.70   -0.3
 KMI     33.17 317 iPd    56 48.71    0.6
                 eS      57 17.02
 WKYJ    33.31  13 eP     56 48.70   -0.3
 BAL     33.63 196 iPc    56 51.40   -0.4
 YONJ    33.84   9 P      56 53.20   -0.4
 KLB     34.28 194 iPc    56 57.00   -0.4
 HNR     34.44 109 eP     56 58.00   -0.9
 IIDJ    35.07  15 P      57 03.30   -0.8
 TIA     35.61 346 Pd     57 08.30   -0 3
                 PcP     59 35.60
                 S       02 34.90
 CHJJ    35.90  16 P      57 09.30   -1.8
 STK     36.06 159 iPc    57 12.50    0.1
          0.7s   174.00nm          6.1mb
                 e       58 35.00
 MTMJ    36.09  15 P      57 11.90   -0.9
 XAN     36.45 334 iPc    57 15.50   -0.2
          1.4s     0.40nm          3.1mb X
                 S       02 47.00
 CD2     36.57 325 P      57 16.10   -0.7
                 S       02 46.00
 RKG     36.83 194 iPd    57 24.00    5.1X
 NIIJ    37.02  16 P      57 18.90   -1.5
 DL2     37.40 353 iPd    57 24.00    0.5
          1.2s     0.10nm          2.6mb X
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25d  19h

       Z  16s     0.90um          4.7MszX
       N  12s     0.80um
                        PcP   59 41.00
                        ScS   07 26.00
BRS      37.97 141 iPd    57 28.00  -0.6
       1.0s    49.50nm            5.4mb
       Z  19s    71.00um          6.5MszX
                        ipP   57 42.00   54kmX
                        isP   57 51.80
                        ePP   58 55.00
                        eS    03 08.00
                        iScP  03 21.80
                        e(SS) 05 50.00
                        eScS  10 42.00
ADE      38.02 165 iPc    57 29.80   0.9
       0.8s   179.10nm            6.0mb
YAMJ     38.18  16 P      57 30.70   0.5
TIY      38.35 341 iPd    57 32.00   0.3
       1.0s     0.40nm            3.3mb X
       E  13s     0.70um
                        S     03 15.00
                        SS    06 06.00
BJI      39.48 347 iPd    57 41.67   0.8
                        e     58 13.46
                        PcP   59 48.00
                        ScP   03 25.50
                        iS    03 33.43
                        eScS  07 39.00
OFUJ     39.50  18 P      57 41.50   0.4
SNY      40.10 356 iPd    57 45.80  -0.2
       0.8s     0.20nm            3.0mb X
                        PP    59 18.00
                        S     03 40.00
                        SS    06 44.00
                        ScS   07 40.00
LZH      40.50 330 iPd    57 50.07   0.5
       1.5s   658.00nm            6.2mb
                        PcP   59 51 00
                        eS    03 49.10
AOMJ     40.50  16 eP     57 51.40   2.1
BWA      41.07 153 iPc    57 56.00   1.9
                        iScP  03 34.90
SHL      41.48 308 iP     57 58.00   0.2
                        eS    04 03.60
BTO      41.75 340 P      58 00.50   0.8
       N  15s     0.50um
       E  15s     0.50um
                        S     04 09.00
CN2      41.97 358 iPd    58 00.80  -0.5
                        iPcP  59 55.40
                        ScP   03 34.20
                        eS    04 07.00
                        iSS   07 18.00
                        iScS  07 50.00
CAN      42.08 153 iPc    58 03.20   0.8
                        iPP   59 42.30
                        iScP  03 37.10
MRRJ     42.43  15 eP     58 05.70   0.6
MDJ      42.81   3 Pd     58 09.00   0.9
       Z  20s     0.90um          4.7Msz
                        S     04 25.00
HOOJ     43.02  18 eP     58 11.20   1.4
KUSJ     44.11  18 eP     58 19.00   0.3
LSA      44.15 313 P      58 20.60   0.8
       4.0s     1.10nm            3.0mb X
                        PP    00 05.00
                        S     04 42.00
ASAJ     44.43  16 eP     58 21.40   0.1
DZM      44.99 124 iPc    58 26.50   0.3
GTA      45.09 330 iPd    58 27.00   0.3
       1.0s     0.20nm            2.9mb X
       Z  22s     0.60um          4.5Msz
       E  11s     0.40um
                        S     04 56.00
HIA      47.84 353 iPd    58 48.28   0.2
                        e     59 17.08
                        iS    05 35.96
KOD      50.13 282 eP     59 05.20  -1.3
HYB      50.27 291 iPd    59 06.30  -0.9
       1.0s   290.00nm            6.2mb
                        e     59 48.00
GBA      50.61 286 P      59 08.00  -1.8
SGE      53.50 113 eP     59 33.40   1.9
NDI      54.65 304 iPd    59 37.00  -2.7X
       0.5s   169.01nm            6.3mb
                        eS    07 07.00
WMQ      54.67 326 iPd    59 40.42   0.7
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                        e     59 56.15
                        e     00 08.73
                        S     07 07.00
POO      54.88 291 iPd    59 40.20  -1.3
BOM      55.91 292 eP     59 33.10 -15.8X
MSZ      58.65 147 P      00 07.10  -0.6
KRP      59.49 137 P      00 13.80   0.1
KSH      59.79 316 P      00 17.40   1.5
KHZ      60.56 142 P      00 19.40  -1.5
         0.6s    18.00nm          5.3mb
MRW      60.65 140 P      00 19.50  -2.0
MNG      60.82 139 P      00 21.40  -1.3
         0.3s    14.00nm          5.5mb
HBZ      61.26 135 eP     00 24.60  -1.1
SMY      64.00  30 eP     00 44.20   0.7
ADK      68.39  34 iPc    01 11.20  -0.3
         0.9s    62.50nm          5.5mb
MAIO     71.13 308 iPd    01 29.00   0.4
         0.7s    44.79nm          5.4mb
BJA      77.21 296 iP     02 03.20  -0.5
         0.4s   192.00nm          6.3mb
BEE      77.29 296 iP     02 03.50  -0.7
BBU      77.37 296 iP     02 03.90  -0.7
DHR      77.66 296 eP     02 06.00  -0.2
SDN      78.61  34 ePc    02 11.10   0.3
RYD      80.75 295 iPd    02 23.00   0.0
KER      80.87 304 ePc    02 23.50  -0.1
TAB      81.78 308 ePd    02 29.00   0.8
MAW      82.01 200 eP     02 29.00   0.4
SLY      82.27 306 ePc    02 30.00  -0.6
SVW      82.35  29 eP     02 32.40   1.8
TTA      82.51  27 ePc    02 32.90   1.5
KMSA     82.58 290 iPd    02 32.00  -0.6
BHD      83.07 303 eP     02 34.50  -0.3
                        eS    12 42.00
KDC      83.41  32 eP     02 37.20   1.3
QASM     83.58 296 eP     02 38.00   0.4
BRW      83.96  18 eP     02 40.60   2.1
IMA      84.06  24 eP     02 40.40   1.1
         1.0s    56.30nm          5.4mb
MSL      84.22 306 iPc    02 42.50   2.0
                        i     02 45.50
PMR      85.51  28 eP     02 45.50  -0.9
         0.9s    68.70nm          5.6mb
FBA      86.36  25 eP     02 49.70  -0.9
TOA      86.94  28 eP     02 55.00   1.4
KVT      89.78 311 iP     03 07.50   0.0
HRI      90.31 303 iP     03 12.00   1.8
NAI      90.43 269 iPd    03 16.00   4.7X
         1.0s    32.00nm          5.4mb
DSI      90.68 301 iP     03 12.00   0.3
PRNI     91.07 300 iPc    03 14.00   0.4
BADA     91.14 298 eP     03 14.50   0.6
SPA      91.67 180 iPc    03 16.70   0.9
         0.8s    11.67nm          5.2mb
INK      91.89  22 eP     03 15.50  -1.0
KEV      91.97 340 iP     03 15.80  -1.1
         0.8s    29.30nm          5.7mb
SOD      92.53 338 iP     03 18.00  -1.5
SUF      93.58 333 iP     03 23.20  -1.2
         0.5s    13.80nm          5.6mb
MBC      93.84  13 eP     03 25.50   0.1
         1.4s    24.00nm          5.4mb
NUR      94.71 331 eP     03 29.00  -0.7
                        e     03 38.00
VRI      96.09 316 ePc    03 36.50   0.2
KRI      97.74 253 iPd    03 54.00   9.6X
                        iPP   07 50.50
BUL      98.64 250 iPd    04 02.60  14.2X
BZS      99.66 317 eP     03 52.00  -0.4
                        e     07 43.00
KRA      99.73 321 eP     03 52.20  -0.5
VAY      99.85 312 eP     03 52.00  -1.4
HFS     100.04 332 ePdiff03 51.90  -1.9
         0.7s    10.80nm          5.6mb
KSP     101.75 323 iPdiff04 01.50  -0.2
                        e     08 06.00
                        e     08 15.00
BRG     103.15 323 iPdiff04 07.90   0.0
         1.0s    14.00nm          5.8mb
SGO     105.37 313 PKP    08 37.50   5.9X
ARV     106.19 316 PKP    08 33.50   0.4
CTI     106.22 319 PKP    08 33.00  -0.2
AZI     106.31 315 PKP    08 15.50 -17.8X
ASS     106.52 316 PKP    08 52.90  19.1X
MNS     106.73 315 PKP    08 38.00   3.8X
SFI     106.81 317 PKP    08 35.00   0.9
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PGD     106.91 317 PKP    08 49.00  14.4X
SAL     107.11 319 PKP    08 38.50   3.8X
BDI     107.61 317 PKP    08 34.50  -1.3
BOB     108.13 318 PKP    08 37.00   0.2
VAI     108.16 320 PKP    08 34.40  -2.2
BCAO    108.46 275 ePKPc  08 35.70  -2.6
          0.5s     3.00nm
LPG     109.61 320 ePKP   08 40.10   0.2
          0.4s     2.20nm
SBF     109.81 318 ePKP   08 40.00   0.0
          0.3s     4.20nm
FFC     110.81  28 ePKP   08 40.00  -1.4
          0.5s     4.00nm
BGF     111.60 322 ePKP   08 43.50   0.3
          0.4s     1.70nm
MFF     113.39 323 ePKP   08 46.70   0.1
          0.5s     7.80nm
SIO     124.95  43 ePKP   09 06.50  -2.6
TUL     125.21  43 ePKP   09 10.00   0.4
          1.2s     8.60nm
KUK     127.07 279 ePKP   09 14.00   0.2
KIC     131.36 280 PKP    09 21.54  -0.4
TIC     131.60 280 PKP    09 22.08  -0.4
LIC     131.66 280 PKP    09 22.26  -0.3
CNCB    158.81 136 PKP    10 09.00   1.7
LPB     158.91 135 ePKP   10 09.00   1.7
ZOBO    159.07 135 PKP    10 10.00   2.4X
                        LR    06 44.00
       S.D. = 1.0  on 155 of 175 obs.
------------------------------------------
*  DEC  25, 1989  21h 16m 14.89± 2.76s
   35.668 N ± 7.9km   10.303 W ±26.6km
   DEPTH =  33.0km  (normal)
 NORTH ATLANTIC OCEAN                (402)
        mbLg 3.7 (MDD).

AVE        3.36 134 iPn   17 07.00   0.7
                    iSn   17 39.00
                    i     17 40.50
EVAL       3.44  55 iP    17 08.70   1.2
                    eS    17 43.00
EJIF       3.99  77 iP    17 15.90   0.6
                    eS    17 55.40
NKM        4.00  92 iPn   17 15.00  -0.3
                    iSn   17 53.00
                    i     17 57.00
EPRU       4.30  71 iP    17 19.80   0.2
                    eS    18 03.00
EHOR       4.59  61 iP    17 24.20   0.4
                    eS    18 12.00
TIO        5.37 151 iPn   17 34.50  -0.4
                    iSn   18 28.00
EPLA       5.52  36 eP    17 38.70   1.8X
                    eS    18 34.40
AFC        5.67  72 eP    17 39.00  -0.2
                    eS    18 37.50
EBAN       5.79  63 iP    17 40.00  -0.7
                    eS    18 38.50
EVIA       6.90  62 eP    17 55.00  -1.4
                    eS    19 06.00
GUD        6.94  42 eP    17 57.00   0.0
                    eS    19 09.60
ETOR       8.28  49 eP    18 15.70   0.0
                    eS    19 42.40
       S.D. = 0.8  on  12 of  13 obs.
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*  DEC  25, 1989  21h 25m 07.57± 0.52s
   21.328 S ± 6.1km   67.340 W ±14.3km
   DEPTH = 235.3 ± 10.6 km
   4.6mb (  1 obs.)
 CHILE-BOLIVIA BORDER REGION         (124)

ANT        3.70 230 iPc   26 08.50   0.9
                    iS    26 30.80
SLA        3.79 154 iPc   26 08.30  -0.5
                    S     26 52.90
CNCB       4.53 352 Pc    26 18.60   0.3
                    S     27 11.00
LPB        4.82 351 P     26 22.50   0.8
        1.0s    120.00nm
                    S     27 14.00
ZOBO       5.09 351 P     26 25.00  -0.1
                    eS    27 21.00
ARE        6.23 320 iPd   26 38.00  -1.3
                    iS    27 45.50
CFA       10.27 184 ePd   27 30.50  -0.2
LIC       66.94  73 P     35 37.00  -0.2
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TIC 67.13 73 P 35 38.40 0.0
KIC 67.25 73 Pc 35 39.20 0.0
0.5s 6.50nm 4.6mb
KUK 71.10 75 iPd 36 03.00 0.4
S.D. = 0.7 on 11 of 11 obs.

DEC 25, 1989 23h 07m 20.43± 0.72s
38.116 N ± 6.1km 22.027 E ± 8.4km
DEPTH = 10.0km (geophysicist)
GREECE (364)
ML 3.0 (ATH).

AGG 0.94 15 eP 07 35.80 -2.5
eS 07 48.70
ITM 0.94 185 ePn 07 37.70 -0.6
VLS 1.14 274 ePn 07 41.50 -0.2
ATH 1.34 96 ePn 07 45.70 0.6
NEO 1.51 38 ePn 07 47.00 -0.6
VLI 1.57 152 ePn 07 48.70 0.3
LIT 2.01 10 eP 07 54.90 0.0
eS 08 22.10
KZN 2.20 355 ePn 07 59.00 1.4
THE 2.62 16 e(P) 08 05.20 1.8
GRG 2.85 6 eP 08 09.90 3.1X
KNT 3.12 12 eP 08 09.60 -0.9
eS 08 47.50
OHR 3.14 343 ePn 08 11.50 0.6
S.D. = 1.3 on 11 of 12 obs.

DEC 25, 1989 23h 14m 47.90± 0.67s
21.295 S ± 3.8km 68.189 W ± 5.2km
DEPTH = 94.5 ± 6.3 km
5.3mb (23 obs.)
CHILE-BOLIVIA BORDER REGION (124)

ANT 3.16 220 iPc+ 15 35.80 -0.7
iS 16 05.70
SLA 4.22 145 iPd 15 55.90 4.5X
S 16 46.10
CNCB 4.47 3 iPc 16 01.60 6.5X
LPB 4.74 1 iPc 16 05.20 6.5X
1.0s 920.00nm
S 17 03.00
ZOBO 5.00 1 iPc 16 07.70 5.2X
ARE 5.73 326 iPd 16 12.10 -0.4
iS 17 14.50
ZON 10.22 182 e(P) 17 09.00 -4.4X
CFA 10.27 180 eP 17 10.00 -4.1X
PT06 10.74 312 iPc 17 19.20 -1.2
eS 19 07.80
MRA 11.29 169 ePc 17 23.90 -3.7X
PEL 12.01 190 iPc 17 37.10 -0.1
0.7s 27.40nm 5.1mb
FCH 12.13 188 eP 17 40.00 0.9
PT08 12.26 318 iP 17 40.20 -0.7
e(S) 19 51.90
SAN 12.31 190 ePc 17 42.00 0.9
NNA 12.42 317 eP 17 42.50 -0.2
0.6s 66.67nm 5.5mb
i 17 58.80
eS 19 51.00
PCH 12.45 189 ePd 17 43.30 0.3
LCCH 12.50 193 eP 17 42.50 -1.1
TACH 12.55 191 eP 17 43.50 -0.8
LNV 12.93 192 eP 17 46.50 -2.7X
ITB1 13.14 107 e(P) 17 54.90 2.8
ITB 13.33 108 e(P) 17 59.80 5.2X
PSO 24.07 337 eP 19 58.50 2.4
BOG 26.39 347 eP 20 19.00 1.2
eS 27 56.00
TPP 32.10 13 eP 20 59.29 -8.9X
BIM 36.27 12 eP 21 43.84 -0.1
MVM 36.34 12 eP 21 43.87 -0.6
FDF 36.46 12 eP 21 45.06 -0.5
0.3s 0.75nm 4.1mb X
CRM 36.53 12 eP 21 46.32 0.2
RSCP 58.94 343 iP 24 38.50 -1.0
1.0s 113.88nm 6.0mb
UYO 60.56 335 iPd 24 49.90 -0.7
OLY 60.65 338 iP 24 49.50 -1.6
FVM 62.56 340 iP 25 02.10 -1.9
1.0s 250.00nm 6.2mb
i 25 34.50
TUL 62.61 335 eP 25 03.80 -0.5
1.2s 65.90nm 5.5mb
LNO 62.61 335 eP 25 03.50 -0.7
SIO 62.67 334 eP 25 03.90 -0.8
CLE 63.68 349 iP 25 11.20 -0.1
ALO 66.69 326 iPd 25 30.50 -0.5
1.0s 29.25nm 5.2mb
ANMO 66.70 326 iP 25 31.80 0.8
1.8s 130.68nm 5.6mb
LIC 67.69 74 Pd 25 36.74 -0.7
0.6s 40.50nm 5.6mb
TIC 67.88 73 Pd 25 38.04 -0.6
0.8s 35.50nm 5.3mb
KIC 68.00 74 Pd 25 38.90 -0.5
0.6s 120.50nm 6.0mb
SPA 68.84 180 iPd 25 44.20 0.2
1.0s 34.50nm 5.2mb
i 26 17.90
GLD 69.88 330 iP 25 51.10 0.4
1.2s 60.61nm 5.3mb
GOL 69.91 330 iP 25 51.10 0.1
1.1s 58.97nm 5.4mb
GLA 70.02 319 iP 25 52.10 0.6
PV09 70.80 327 iP 25 56.80 0.3
PLM 71.47 318 eP 26 01.00 0.6
TPC 71.48 320 eP 26 01.00 0.7
WEGH 71.65 76 iPc 26 01.30 -0.4
LEGH 71.80 76 iPc 26 02.60 0.0
KUK 71.86 76 iPc 26 02.30 -0.6
KOGH 71.93 76 iPc 26 03.00 -0.4
TEGH 71.96 76 iPc 26 03.50 0.0
SHGH 72.05 76 iPc 26 04.20 0.2
RVR 72.21 319 eP 26 05.00 0.4
GSC 72.75 320 eP 26 08.00 0.2
MWC 72.79 318 eP 26 09.00 0.8
SBB 72.95 319 eP 26 09.00 0.0
CLC 73.57 320 eP 26 12.00 -0.6
DUG 73.96 326 iP 26 15.70 0.9
ISA 74.00 319 eP 26 16.00 0.9
SYP 74.18 318 eP 26 17.00 0.8
BW06 74.28 330 iP 26 16.50 -0.2
1.2s 20.55nm 4.9mb
BCH 74.68 318 iP 26 20.00 0.9
TNP 74.88 322 iP 26 21.00 0.7
1.0s 40.00nm 5.2mb
RSON 75.28 344 iP 26 21.20 -0.8
0.9s 44.15nm 5.3mb
FRI 75.62 320 ePd 26 23.70 -0.5
PRI 75.65 318 ePd 26 25.40 0.8
SCH 75.81 1 ePd 26 24.80 -0.1
0.6s 22.00nm 5.2mb
KVN 76.05 322 iP 26 27.00 0.1
LLA 76.13 319 eP 26 27.60 0.4
ePP 28 03.60
PRS 76.21 318 ePd 26 28.10 0.5
SAO 76.54 319 eP 26 29.40 0.0
CMB 76.71 320 ePd 26 30.90 0.5
MHC 77.02 319 eP 26 33.10 0.8
GCC 77.04 318 eP 26 32.90 0.7
BKS 77.73 319 ePd 26 36.80 0.8
0.8s 34.00nm 5.3mb
BRK 77.74 319 eP 26 36.80 0.8
LRM 77.94 330 eP 26 38.10 0.8
ORV 78.36 321 eP 26 40.20 0.8
ePP 28 15.60
WDC 79.63 321 ePd 26 44.90 -1.4
ePP 28 20.70
FHC 80.62 320 eP 26 52.50 0.9
SES 80.78 334 eP 26 52.00 -0.2
FFC 81.05 341 iPc 26 53.10 -0.4
0.6s 10.00nm 4.8mb
HVD 82.46 120 iPc 26 49.00 -12.7X
0.5s 18.31nm
BLF 83.54 119 eP 27 07.50 0.3
0.5s 16.22nm 5.2mb
PNT 83 83 329 eP 27 08.00 0.1
0.8s 14.00nm 5.0mb
EDM 83.86 335 iP 27 07.00 -1.0
FRB 84.76 360 eP 27 11.50 -0.6
KSR 85.29 116 eP 27 15.70 -0.3
PGC 85.29 327 eP 27 16.00 0.9
PRY 85.38 117 eP 27 19.50 3.0X
SLR 86.50 116 eP 27 20.00 -2.0
1.0s 15.00nm 5.0mb
BCAO 88.54 85 ePd 27 36.60 4.8X
0.5s 3.00nm 4.7mb
BUL 88.86 111 iPc 27 48.50 15.1X
0.7s 10.27nm
INK 100.98 340 ePdiff 28 27.00 -0.5
FORR 125.85 197 ePKP 33 39.50 -1.1
ASPA 130.40 207 ePKP 33 48.50 -1.1
0.7s 19.00nm
WRA 133.47 210 PKPd 33 54.80 -0.7
0.6s 9.30nm
WB5 133.51 210 ePKP 33 54.90 -0.6
KSH 144.48 51 PKP 34 14.50 -0.6
KOD 145.25 103 ePKP 34 17.80 0.5
GBA 146.38 97 PKP 34 19.00 0.3
NDI 147.88 70 ePKP 34 22.00 1.2
HYB 148.42 91 ePKP 34 23.00 1.0
WMO 149.91 36 PKP 34 24.00 0.4
KAKJ 151.17 307 ePKP 34 31.60 6.0X
NIIJ 151.59 310 ePKP 34 32.00 5.8X
CHJJ 152.10 308 ePKP 34 34.00 7.0X
MTMJ 152.74 310 ePKP 34 35.10 7.1X
IIDJ 153.14 307 ePKP 34 36.20 7.6X
GTA 159.22 27 ePKP 34 33.80 -2.5
HHC 160.50 1 PKP 34 40.00 2.4X
BJI 160.95 350 ePKP 34 39.00 1.2
S.D. = 0.9 on 94 of 114 obs.

% DEC 26, 1989 00h 50m 48.08± 1.08s
39.432 N ± 8.9km 23.109 E ± 8.5km
DEPTH = 10.0km (geophysicist)
AEGEAN SEA (365)
ML 2.4 (ATH).

PAIG 0.66 42 ePg 51 01.20 0.0
eSg 51 10.50
AGG 0.73 236 iPgd 51 02.40 0.0
eSg 51 14.20
LIT 0.82 325 iPgd 51 04.70 0.7
iSg 51 15.70
OUR 1.12 36 ePb 51 09.60 0.5
eSb 51 24.30
THE 1.20 355 ePb 51 10.10 -0.4
SOH 1.40 8 ePb 51 13.40 -0.3
eSb 51 32.10
GRG 1.62 341 ePb 51 16.30 -0.4
KNT 1.74 355 ePbd 51 18.40 0.0
eSb 51 40.40
S.D. = 0.5 on 8 of 8 obs.

& DEC 26, 1989 01h 14m 20.58s
61.616 N 150.887 W
DEPTH = 58.0km
SOUTHERN ALASKA (2)
<AGS-P>.

SUA 0.17 156 iP 14 30.16 0.3
SKT 0.48 320 iP 14 31.53 -0.7
eS 14 40.35
CGLM 0.62 241 iP 14 33.60 -0.4
NCG 0.65 251 iP 14 33.65 -0.6
CRP 0.70 241 iP 14 34.60 -0.4
SPU 0.71 233 iP 14 34.33 -0.7
BGL 0.80 245 eP 14 35.58 -0.7
eS 14 47.81
CKL 0.82 240 iP 14 35.65 -0.7
PLRM 0.84 91 iP 14 35.58 -1.0
PMR 0.84 91 iPc 14 35.60 -0.9
CUT 0.84 20 iP 14 36.02 -0.6
PME 0.89 88 eP 14 36.47 -0.7
eS 14 48.63
NKA 0.89 191 eP 14 38.84 1.6
GHO 0.95 80 eP 14 37.49 -0.6
SLKM 1.16 163 iP 14 39.93 -0.9
RDT 1.28 216 iP 14 41.84 -0.7
HUR 1.49 23 eP 14 45.35 0.0
eS 15 02.59
RED 1.51 218 eP 14 45.14 -0.7
KTH 1.94 360 eP 14 51.24 -0.6
GLI 1.98 110 eP 14 49.63 -2.6
TOA 2.29 76 ePc 14 55.70 -0.9
SVW 2.34 259 ePc 14 55.20 -2.1
KLU 2.38 91 eP 14 55.50 -2.5
TTA 2.73 301 eP 15 01.00 -2.0
FBA 3.58 22 eP 15 13.10 -1.8
IMA 4.64 346 eP 15 27.20 -2.6
26 obs. ossociated

DEC 26, 1989 01h 30m 13.85± 0.20s
41.714 S ± 5.1km 83.954 W ± 4.6km
DEPTH = 10.0km (geophysicist)
5.9mb (21 obs.) 5.8Msz (9 obs.)
WEST CHILE RISE (686)
Mo=3.0*10**18 Nm (PPT).
CENTROID, MOMENT TENSOR (HRV)

26d 01h

Data Used: GDSN
L.P.B : 11S, 27C
Centroid Location:
Origin Time 01:30:17.4 0.3
Lat 41.28S 0.08 Lon 84.56W 0.08
Dep 15.0 FIX Half-duration 3.2
Moment Tensor; Scale 10**17 Nm
Mrr=-5.12 0.38 Mtt=-0.22 0.52
Mff= 5.34 0.39 Mrt= 2.53 0.95
Mrf=-3.15 1.00 Mtf=-4.28 0.36
Principal Axes:
T Val= 8.80 Plg=16 Azm= 60
N -2.42 10 328
P -6.38 71 208
Best Double Couple:Mo=7.6*10**17
NP1:Strike=165 Dip=30 Slip= -71
NP2: 322 62 -101

LCCH	12.80	54	eP	33	19.60	1.1
TACH	13.07	56	ePd	33	22.10	0.0
PCH	13.35	57	eP	33	24.50	-1.5
SAN	13.37	56	eP	33	24.00	-2.2
			eSSS	36	16.00	
			e-	36	35.00	
PEL	13.57	55	iPc	33	28.10	-0.7
	1.7s	269.23nm			5.9mb	
MDZ	14.89	59	i(P)	33	46.00	-0.1
			i	37	58.00	
RTCB	15.86	55	ePd	34	02.00	3.2X
ZON	15.89	55	e(P)d	33	57.00	-2.2
CFA	16.12	56	ePc	34	01.00	-1.1
RTRS	16.42	50	eP	34	06.00	0.2
MRA	17.24	63	e(P)	34	18.00	1.8
BAA	21.21	79	P+	35	04.00	2.2
			S	39	00.00	
SLA	22.84	48	iPd	35	21.20	2.8X
ARE	27.36	27	eP	36	02.00	0.6
CNCB	28.36	34	iPc	36	13.20	2.4
LPB	28.56	33	Pc	36	14.60	2.2
	1.2s	156.25nm			5.7mb	
			LR	42	52.00	
ZOBO	28.79	33	P	36	15.00	0.3
Z	20s	7.30um			5.3Msz	
			LR	42	44.00	
PT10	30.15	14	e(P)	36	21.50	-4.7X
NNA	30.26	14	eP	36	28.00	0.8
	0.8s	26.12nm			5.1mb	
PSO	43.13	10	eP	38	18.00	1.5
BOG	46.99	14	eP	38	49.50	2.2
			eS	45	45.00	
SPA	48.48	180	iPc	38	59.10	0.8
	2.0s	350.00nm			6.1mb	
Z	19s	6.75um			5.6Msz	
			e	40	25.50	
BMG	49.56	14	iPd	39	26.00	19.0X
SBA	53.45	194	P	39	37.10	1.4
CUM	55.02	24	iP	39	47.60	-0.2
OXX	59.68	346	(P)	40	22.50	1.6
ACX	60.11	342	(P)	40	42.50	18.8X
III	61.49	343	(P)	40	32.50	-0.7
PORP	61.59	19	P	40	28.00	-5.7X
SJG	61.76	19	e(P)	40	32.00	-2.9X
LRS	61.77	18	(P)	40	32.00	-2.9X
IIT	61.87	345	(P)	40	36.50	0.6
PPM	61.98	344	(P)	40	37.50	0.6
LVVM	62.22	347	(P)	40	37.50	-0.4
CRX	62.53	343	(P)	40	41.00	0.7
MAW	68.15	167	eP	41	16.00	0.3
SNZO	71.03	231	P	41	39.00	5.3X
			S	50	56.00	
			SS	55	44.00	
			SSS	59	23.00	
PRM	75.44	1	P	41	58.00	-1.4
JSC	75.66	2	P	41	59.50	-1.1
UYO	76.12	351	iPd	42	02.40	-0.9
PWLA	76.41	357	P	42	03.80	-1.1
RSCP	76.95	359	P	42	06.20	-1.7
OLY	77.15	354	P	42	07.50	-1.5
MEO	77.30	348	iPc	42	09.00	-0.9
SIO	77.91	350	eP	42	11.50	-1.7
TUL	78.01	350	ePc	42	13.00	-0.7
	1.5s	20.60nm			5.0mb	
Z	18s	0.32um			4.7MszX	
			LR	08	25.00	
BLA	78.61	3	P	42	16.50	-0.5
	2.0s	221.52nm			5.9mb	
NAV	78.71	3	P	42	16.10	-1.4

ALQ	79.03	341	iPd	42	19.30	-0.3
	2.0s	338.24nm			6.0mb	
Z	22s	2.09um			5.4Msz	
ANMO	79.03	341	iPd	42	19.43	-0.2
	2.0s	330.88nm			6.0mb	
			e	42	26.55	
CVL	79.47	4	P	42	21.30	-0.3
GLA	79.64	334	eP	42	23.00	0.3
NA2	79.66	5	P	42	21.80	-0.8
PLM	80.60	333	eP	42	28.00	0.0
TPC	81.01	333	eP	42	31.00	1.0
PEC	81.19	333	P	42	31.40	0.4
RVR	81.36	332	eP	42	32.00	0.2
PAS	81.77	332	ePd	42	34.59	0.7
			e	42	41.21	
MWC	81.80	332	eP	42	35.00	0.7
SBB	82.14	332	eP	42	36.00	0.1
GSC	82.35	333	eP	42	38.00	1.0
SYP	82.76	331	eP	42	39.00	-0.2
CLE	82.85	2	iP	42	37.90	-1.4
HVD	83.06	125	iPd	42	30.00	-11.1X
	1.5s	166.67nm				
CLC	83.09	333	eP	42	41.00	0.2
ISA	83.25	332	eP	42	43.00	1.4
GOL	83.34	344	P	42	42.00	-0.3
	2.0s	243.64nm			6.1mb	
GLD	83.36	344	P	42	42.00	-0.3
	2.0s	236.36nm			6.0mb	
BCH	83.39	331	P	42	42.70	0.3
MSU	83.89	338	P	42	45.80	0.7
DHN	84.31	4	P	42	44.50	-2.3
PRI	84.46	331	ePc	42	49.10	1.3
BLF	84.54	124	iPc	42	50.00	1.4
FRI	84.87	332	ePc	42	49.90	0.2
PRS	84.88	330	ePc	42	51.00	1.2
LLA	84.98	331	ePc	42	51.50	1.2
TNP	85.02	334	P	42	51.10	0.4
	1.7s	170.65nm			6.0mb	
DAU	85.42	339	P	42	53.00	0.2
GCC	85.73	330	e(P)	42	54.80	0.8
ARN	85.85	331	P	42	55.00	0.4
MHC	85.88	331	ePc	42	56.40	1.5
LIC	85.90	78	P	42	56.58	1.2
	1.8s	285.00nm			6.2mb	
Z	20s	3.00um			5.7Msz	
CMB	86.05	332	ePc	42	56.79	1.2
			e	43	03.41	
KVN	86.18	334	P	42	57.10	0.6
TIC	86.18	78	P	42	57.00	0.2
	1.3s	24.00nm			5.2mb	
KIC	86.20	78	P	42	58.02	1.2
	1.7s	202.50nm			6.0mb	
RSNY	86.29	7	P	42	55.00	-1.6
	1.8s	275.00nm			6.1mb	
BRK	86.58	331	ePc	43	01.10	3.0X
PRY	86.88	124	iPc	43	01.00	0.7
	1.2s	50.00nm			5.6mb	
BW06	87.22	341	P	43	01.30	-0.2
	2.0s	117.90nm			5.8mb	
KSR	87.28	123	iPd	43	02.80	0.5
	1.2s	30.00nm			5.4mb	
ORV	87.79	332	ePc	43	05.00	1.0
SLR	88.24	123	eP	42	58.50	-8.4X
	1.2s	46.88nm			5.7mb	
Z	20s	7.80um			6.1Msz	
MIN	88.53	332	ePc	43	08.20	0.5
WEGH	88.94	82	eP	43	11.50	1.4
WDC	89.07	332	ePc	43	10.20	0.1
KUK	89.30	81	eP	43	12.30	0.5
KOGH	89.33	81	eP	43	12.50	0.5
SHGH	89.37	82	eP	43	13.20	1.1
CBM	89.38	11	P	43	12.20	0.8
LBFM	89.52	332	P	43	12.70	0.2
LRM	90.79	341	ePc	43	19.60	1.3
BUL	92.47	120	iPd	43	41.90	15.3X
	1.0s	44.00nm				
RSON	92.58	354	P	43	24.20	-1.9
	2.0s	312.50nm			6.4mb	
HON	92.74	296	P	43	40.00	12.6X
Z	19s	5.42um			6.0Msz	
SES	94.74	343	eP	43	36.00	-0.1
KRI	95.51	118	iPd	43	53.00	12.3X
FFC	97.29	350	eP	43	43.00	-4.5X
	2.1s	109.00nm			6.1mb	
LWI	105.29	107	ePKP+	48	54.00	15.1X
INK	115.78	342	ePKP	48	56.00	-0.9
FBA	117.31	334	ePKP	48	59.80	-0.2

MBC	119.84	351	ePKP	49	03.00	-1.5
	1.0s	13.00nm				
IMA	119.96	334	ePKP	49	04.40	-0.8
	0.9s	6.20nm				
VOY	123.15	56	e(PKP)	49	18.00	6.2X
KBA	123.29	54	ePKP	49	12.00	-0.2
	1.0s	4.50nm				
MOX	123.88	50	ePKP	49	13.00	0.0
	2.0s	78.00nm				
Z	20s	3.30um			6.0Msz	
N	20s	1.20um				
E	20s	2.30um				
ZAG	124.35	57	ePKP	49	16.00	2.0
KHC	124.35	52	PKPc	49	13.60	-0.4
CLL	124.96	49	iPKPd	49	15.90	0.9
	2.5s	150.00nm				
PRU	125.29	51	ePKP	49	15.50	-0.2
			e	49	23.00	
OHR	125.33	64	ePKP	49	15.00	-1.2
ZST	126.07	54	ePKP	49	16.20	-1.1
			e	51	26.00	
SKO	126.15	63	iPKP	49	17.80	0.1
Z	19s	3.04um			6.0Msz	
N	19s	2.00um				
E	19s	2.47um				
			i	51	14.50	
			LR	45	44.00	
VAY	126.61	64	ePKP	49	19.00	0.4
SRO	126.65	55	ePKP	49	18.00	-0.4
KSP	126.66	51	ePKP	49	18.00	-0.4
BUD	126.95	56	e(PKP)	49	17.00	-2.0
BZS	127.83	59	ePKP	49	21.00	0.3
SPC	128.37	54	ePKP	49	20.70	-1.2
KRA	128.51	53	ePKP	49	20.90	-1.0
CMP	129.90	61	ePKPc	49	42.00	17.2X
MLR	130.57	61	ePKPc	49	25.50	-0.7
DSI	131.18	81	ePKP	49	18.00	-9.5X
VRI	131.22	60	ePKPd	49	27.00	-0.2
HRI	132.27	80	ePKP	49	30.00	0.3
BBTK	133.01	70	ePKP	49	30.00	-1.0
ANTO	133.05	70	ePKP	49	31.04	0.1
MSL	139.11	79	ePKP	49	35.50	-6.9X
SLY	140.53	82	ePKPd	49	45.00	0.1
TAB	142.10	79	ePKP	49	42.00	-5.9X
BSI	143.93	179	ePKPd	49	49.00	-2.5X
KUSJ	144.44	289	ePKP	49	47.20	-4.3X
KOD	144.64	147	ePKP	49	52.00	-1.1
TEH	144.96	85	ePKP	49	52.00	-0.8
SNG	145.37	188	ePKP	49	52.20	-1.7
	2.0s	976.47nm				
QCP	145.40	226	ePKP	49	47.00	-6.9X
ASAJ	146.14	290	ePKP	49	53.60	-0.8
CHJJ	146.36	275	ePKP	49	54.70	-0.3
NIIJ	146.80	277	ePKP	49	55.10	-0.5
IIDJ	146.94	273	ePKP	49	55.10	-0.9
GBA	147.65	145	PKP	49	58.00	0.5
POO	150.13	134	iPKPc	50	06.20	4.8X
MAIO	151.23	89	iPKPc	50	03.00	0.3
HYB	151.52	143	ePKP	50	04.00	0.5
	1.6s	166.70nm				
			e	53	55.00	
QUE	153.91	107	ePKP	50	04.00	-2.8X
MDJ	155.46	288	ePKP	50	05.50	-2.6X
Z	28s	1 60um			5.7MszX	
CHG	157.04	187	ePKP	50	10.30	-0.7
			e	50	42.00	
SSE	157.23	250	ePKP	50	06.00	-4.9X
Z	20s	1.50um			5.8Msz	
			epPKP	50	12.00	
			ePP	54	28.00	
			eSKKS	01	10.00	
NDI	159.91	124	ePKP	50	13.00	-1.0
DL2	160.31	270	ePKP	50	10.00	-4.1X
Z	32s	2.10um				
WHN	161.52	239	ePKP	50	20.00	4.5X
Z	20s	0.75um				
KMI	162.55	201	PKPc	50	17.00	-0.1
			pPKP	50	29.00	
KSH	164.59	92	PKP	50	20.00	1.5
BJI	164.68	270	ePKP	50	17.00	-1.3
TIY	166.77	258	ePKP	50	19.00	-1.3
N	17s	1.10um				
XAN	167.28	237	PKP	50	20.00	-0.7
CD2	167.56	212	ePKP	50	21.40	0.4
HHC	168.29	271	ePKP	50	21.00	-0.3
Z	28s	4.60um				
LZH	171.72	230	PKP	50	14.00	-9.3X

		pPKP	50 22.50		
		sPKP	50 28.00		
		i	50 35.50		
WMO	173.50 68	ePKP	50 20.00	-3.7X	
	Z 20s	5.80um			
		e	51 54.00		
		PP	55 41.00		
GTA	176.32 233	PKP	50 24.00	-0.6	
	Z 24s	1.80um			
	E 21s	2.20um			
		e	52 05.00		

S.D. = 1.0 on 138 of 171 obs.

% DEC 26, 1989 01h 39m 06.79± 1.03s
40.509 N ± 8.5km 22.920 E ±10.2km
DEPTH = 10.0km (geophysicist)
GREECE (364)
ML 1.6 (THE).

THE	0.13 16	ePgd	39 10.50	0.6	
		iSg	39 13.10		
SOH	0.45 46	iPg	39 15.80	-0.2	
LIT	0.52 219	iPg	39 17.40	0.0	
		eSg	39 24.30		
GRG	0.60 319	ePgc	39 18.80	-0.1	
		iSg	39 28.10		
KNT	0.65 359	iPgd	39 19.50	-0.3	
		iSg	39 29.10		

S.D. = 0.5 on 5 of 5 obs.

DEC 26, 1989 02h 30m 09.62± 0.23s
36.395 N ± 3.3km 26.784 E ± 2.7km
DEPTH = 143.5 ± 4.0 km
4.4mb (28 obs.)
DODECANESE ISLANDS (369)
MD 4.2 (HLW).

KAP	0.90 159	eP	30 34.30	1.1	
APE	1.21 304	eP	30 36.00	-0.1	
SMG	1.31 2	eP	30 36.20	-0.8	
YER	1.41 58	iPn	30 38.50	0.4	
NPS	1.48 220	eP	30 40.00	1.2	
CIN	1.59 41	iPnc	30 38.00	-2.0	
		iSg	31 02.00		
IZM	2.03 11	iPn	30 44.10	-1.1	
KSL	2.28 96	eP	30 49.00	0.9	
VAM	2.32 246	eP	30 50.00	1.4	
ELL	2 54 81	iPn	30 52.80	1.3	
PRK	2.87 352	eP	30 55.20	-0.4	
KHL	2.91 48	iPn	30 56.60	0.4	
ATH	2.91 304	iPd	30 57.40	1.3	
VLI	3.11 277	eP	30 59.40	0.6	
BCK	3.23 70	iPn	31 01.40	1.0	
EZN	3.44 354	iPn	31 02.50	-0.5	
DST	3.52 24	iPn	31 03.70	-0.4	
ITM	3.98 283	eP	31 11.10	1.0	
EDC	4.04 12	iPn	31 10.00	-0.9	
NEO	4.05 317	eP	31 11.50	0.4	
BNT	4.05 12	iPn	31 11.80	0.7	
AGG	4.40 308	iPc	31 17.20	1.4	
YLV	4.63 25	iPn	31 18.30	-0.6	
PPCY	4.77 107	eP	31 20.20	-0.5	
GPA	4.77 34	ePn	31 21.20	0.4	
RDO	4.84 349	eP	31 21.30	-0.3	
HRT	4.96 26	ePn	31 22.00	-1.3	
LIT	5.01 319	ePc	31 24.70	0.8	
THE	5.18 326	eP	31 27.20	1.0	
KDZ	5.35 349	iP	31 29.00	0.5	
CSS	5.52 103	eP	31 30.20	-0.6	
		eS	32 33.80		
RZN	5.52 344	eP	31 31.00	0.0	
KZN	5.55 316	eP	31 32.00	0.8	
KNT	5.64 329	ePc	31 34.30	1.9	
GRG	5.70 324	ePc	31 33.70	0.5	
DIM	5.73 351	iPd	31 34.00	0.5	
BBTK	5.83 52	eP	31 37.00	1.9	
FAM	6.04 101	eP	31 38.80	1.1	
OHR	6.64 317	eP	31 45.30	-0.6	
	1.1s 0.06nm			1.9mb X	
VTS	6.78 337	eP	31 49.00	1.1	
SKO	6.94 325	eP	31 50.00	-0.1	
		i	31 52.80		
HLW	7.56 148	eP	31 59.00	0.7	
		eS	33 19.00		
KOT	7.71 145	ePn	31 59.00	-1.3	
		eSn	33 20.00		
LCI	7.97 302	Pd	32 01.00	-2.8X	
		eSn	33 22.50		
HRI	8.00 110	iP	32 03.50	-0.8	
BURJ	8.53 116	Pd	32 11.00	-0.5	
SALJ	8.57 118	P+	32 11.00	-0.9	
DSI	8.61 122	eP	32 12.00	-0.3	
		eS	33 47.00		
ROI	8.67 295	P	32 11.40	-1.8	
BRT	8.73 304	P	32 12.40	-1.6	
		eSn	33 41.70		
MASJ	8.75 120	Pd	32 13.20	-1.1	
TDS	8.86 295	Pd	32 13.80	-1.9	
		eSn	33 38.20		
ACI	8.87 293	P	32 15.20	-0.7	
GMB	8.88 285	P	32 14.00	-2.2	
CZI	8.89 292	P	32 15.10	-0.9	
CSI	8.94 295	P	32 15.80	-0.9	
		eS	33 45.50		
MLR	9.11 356	ePc	32 20.00	0.9	
MSI	9.13 285	P	32 17.20	-2.0	
		eSn	33 48.90		
PRNI	9.14 129	eP	32 19.00	-0.5	
MMN	9.19 296	P	32 19.80	-0.3	
		eS	33 59.00		
ATN	9.19 284	Pd	32 18.00	-2.2	
VRI	9.47 360	ePc	32 20.00	-3.7X	
MEU	9.54 278	P	32 24.00	-0.8	
		eSn	33 57.00		
PZI	9.55 277	P	32 21.81	-3.1X	
MGR	9.59 296	Pd	32 23.40	-2.0	
		eSn	33 52.20		
AQBJ	9.60 131	Pd	32 24.00	-1.6	
LPI	9.65 286	P	32 24.13	-2.1	
MNO	9.77 283	P	32 27.00	-1.0	
		eSn	33 58.40		
SGO	9.91 298	Pd	32 28.40	-1.2	
HOL	9.94 133	iPd	32 30.00	0.0	
SRFA	10.27 134	eP	32 34.50	0.2	
HVAR	10 44 314	iPn	32 34.50	-2.1	
BADA	10.47 136	iPd	32 37.00	0.0	
FAI	10.54 279	P	32 39.20	1.2	
AYN	10.80 131	iPd	32 42.00	0.7	
DUI	10.93 302	P	32 45.50	2.4	
SDI	11.39 302	P	32 46.80	-2.3	
AZI	11.76 302	P	32 55.50	1.6	
RDP	12.17 300	P	33 01.00	1.7	
MNS	12.44 303	P	33 03.00	0.3	
PTJ	12.51 323	eP	33 04.10	0.4	
VBY	12.59 320	e(P)	33 04.80	0.2	
ASS	12.74 306	P	33 07.50	0.8	
ARV	12.76 308	P	33 07.00	0.0	
CEY	13.18 319	e(P)	33 14.00	1.7	
LJU	13.32 320	e(P)	33 15.00	0.9	
		e	33 20.00		
CRE	13.46 307	P	33 17.00	1.0	
TRI	13.52 318	eP	33 16.60	0.1	
VOY	13.65 319	ePc	33 18.00	-0.4	
SFI	13.66 308	P	33 25.00	6.6X	
PGD	13.72 308	P	33 21.50	2.1	
FIR	13.98 307	eP	33 27.00	4.6X	
VKA	14.15 330	e(P)	33 28.00	3.4X	
KRA	14.53 342	eP	33 33.20	3.9X	
BDI	14.53 307	P	33 27.70	-1.8	
FVI	14.60 319	P	33 31.00	0.7	
K8A	14.63 321	eP	33 32.00	1.2	
	0.7s 35.10nm			4.8mb	
		ic	33 34.40		
CTI	14.90 315	P	33 34.40	0.2	
SAL	15.32 312	P	33 37.40	-1.9	
BOB	15.58 308	P	33 44.20	1.6	
KHC	15.97 327	P	33 48.10	0.7	
	1.0s 14.00nm			4.2mb	
PRU	16.23 331	P	33 45.80	-4.7X	
		e	33 51.00		
KSP	16.29 336	eP	33 52.00	0.7	
VAI	16.51 311	Pc	33 53.70	-0.3	
SBF	16.55 303	eP	33 54.50	-0.1	
	0.6s 23.40nm			4.7mb	
ORO	16.89 309	P	33 57.80	-1.0	
FRF	16.99 301	eP	33 59.50	-0.4	
	0.8s 16.10nm			4.4mb	
LRG	17.16 301	eP	34 01.50	-0.4	
BNI	17.49 306	P	34 07.40	1.3	
LPG	17.62 307	eP	34 07.80	0.0	
	0.5s 14.50nm			4.5mb	
CLL	17.87 331	e(P)	34 09.00	-1.3	
	0.7s 13.00nm			4.4mb	
MOX	17.94 327	e(P)	34 12.00	0.8	
BSF	18.66 314	eP	34 18.60	-0.5	
	0.5s 7.80nm			4.3mb	
CDF	18.69 316	eP	34 19.00	-0.4	
	0.7s 15.40nm			4.4mb	
HAU	19.01 314	eP	34 22.40	-0.2	
	0.6s 19.80nm			4.6mb	
SMF	19.93 308	eP	34 31.50	-0.6	
	0.8s 24.10nm			4.7mb	
LBF	19.98 309	eP	34 32.10	-0.6	
	0.5s 6.80nm			4.3mb	
WLF	20.00 318	P	34 33.00	0.3	
LOR	20.17 310	eP	34 34.10	-0.4	
	0.5s 5.30nm			4.2mb	
AVF	20.30 308	eP	34 35.10	-0.7	
	0.5s 8.00nm			4.4mb	
SSF	20.31 309	eP	34 35.50	-0.4	
	0.6s 31.50nm			4.9mb	
BGF	20.54 307	eP	34 38.20	0.0	
	0.5s 13.80nm			4.6mb	
CAF	20.54 302	eP	34 38.60	0.3	
	0.8s 18.80nm			4.6mb	
MAF	20.60 306	eP	34 39.90	1.0	
	0.5s 2.90nm			4.0mb	
TCF	20.86 306	eP	34 41.90	0.5	
	0.5s 4.30nm			4.1mb	
RJF	21.02 303	eP	34 43.40	0.4	
	0.5s 7.20nm			4.3mb	
LPO	21.08 301	eP	34 44.00	0.4	
	0.5s 10.20nm			4.5mb	
DOU	21.08 317	P	34 43.90	0.3	
LSF	21.29 305	eP	34 46.70	1.0	
EPF	21.34 296	eP	34 45.20	-1.1	
LFF	21.45 301	eP	34 48.00	0.7	
	0.7s 13.20nm			4.5mb	
MFF	22.50 305	eP	34 57.90	0.4	
	0.4s 2.70nm			4.0mb	
LDF	23.15 310	eP	35 04.50	0.7	
	0.5s 4.30nm			4.1mb	
FLN	23.44 310	eP	35 07.10	0.5	
	0.6s 16.20nm			4.7mb	
LPF	23.53 308	eP	35 08.30	0.8	
	0.4s 2.70nm			4.1mb	
GRR	23.54 309	eP	35 07.80	0.3	
	0.5s 13.10nm			4.7mb	
HFS	25.21 345	eP	35 22.20	-1.0	
	0.4s 5.10nm			4.4mb	
SUF	26.35 359	iP	35 37.40	3.8X	
NB2	26.57 343	P	35 33.00	-2.7	
	0.6s 1.60nm			3.8mb	
TIC	41.49 232	P	37 46.40	2.4	
KIC	41.53 232	P	37 46.80	2.4	
LIC	41.82 232	P	37 49.40	2.7X	

S.D. = 1.1 on 132 of 142 obs.

DEC 26, 1989 03h 30m 33.32± 0.60s
38.145 N ± 5.1km 21.993 E ± 7.6km
DEPTH = 10.0km (geophysicist)
GREECE (364)
ML 2.8 (THE), 2.9 (ATH).

AGG	0.92 17	ePg	30 50.00	-0.8	
		eSg	31 01.80		
ITM	0.96 183	ePg	30 51.10	-0.6	
VLS	1.11 272	ePg	30 54.00	-0.1	
ATH	1.37 97	ePg	30 59.10	0.7	
NEO	1.51 39	ePb	30 59.00	-1.4	
VLI	1.61 152	ePb	31 02.30	0.4	
LIT	1.99 11	ePb	31 08.90	1.5	
		eSb	31 33.80		
KZN	2.17 356	ePn	31 10.00	0.0	
GRG	2.83 6	ePn	31 20.40	1.0	
SOH	2.87 21	iPnc	31 19.50	-0.5	
KNT	3.09 13	iPnc	31 22.90	-0.2	

S.D. = 1.0 on 11 of 11 obs.

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* DEC 26, 1989 05h 56m 04.88± 2.10s
41.721 N ±16.7km 23.132 E ± 7.6km
DEPTH = 10.0km (geophysicist)
GREECE-BULGARIA BORDER REGION (363)
ML 2.8 (THE), 2.5 (SKO).

VAY	0.58 227	iPg	56 16.30	-0.3	
		iSg	56 26.30		
KNT	0.59 198	ePgc	56 16.80	0.1	
		eSg	56 28.20		
SRS	0.70 150	iPgc	56 18.50	-0.1	
		iSg	56 30.50		

26d 05h

SOH	0.91	169	ePb	56 22.80	0.4
			eSb	56 38.40	
GRG	0.94	216	iPbc	56 23.10	0.2
			eSb	56 38.10	
THE	1.10	187	ePbc	56 26.20	0.8
			eSb	56 45.00	
PLG	1.37	170	ePb	56 29.50	-0.5
OUR	1.53	155	ePb	56 31.20	-1.0
RDO	1.90	107	ePn	56 38.10	0.5
			eSn	57 04.50	

S.D. = 0.6 on 9 of 9 obs.

& DEC 26, 1989 06h 11m 15.20s
61 383 N 140.311 W
DEPTH = 18.0km (geophysicist)
SOUTHERN YUKON TERRITORY, CANADA(18)
<PGC>. ML 3.1 (PGC).

BALM	1.04	251	eP	11 33.79	-0.7
PCA	1.29	179	eP	11 39.07	0.7
TGL	1.38	244	eP	11 39.50	-0.1
GLB	1.68	274	eP	11 44.52	0.5
WHC	2.62	102	ePn	11 56.00	-1.4
			ePg	12 01.50	
			eSg	12 37.50	
KLU	2.70	275	eP	12 00.96	2.4
DWY	2.71	8	P	11 57.90	-0.8
TOA	2.88	287	eP	12 04.20	3.1
NCA	3.16	284	eP	12 07.50	2.4
DDM	3.52	316	eP	12 15.03	4.8
PME	4.19	277	eP	12 21.40	1.8
INK	7.52	20	eP	13 04.00	-2.6

12 obs. associoted

? DEC 26, 1989 06h 17m 00.08± 8.02s
15.161 N ±59.4km 61.329 W ±28.6km
DEPTH = 10.0km (geophysicist)
LEEWARD ISLANDS (92)
MD 3.4 (TRN).

DTMT	0.08	343	eP	17 02.59	0.1
			eS	17 03.51	
DGBT	0.08	0	eP	17 02.47	0.0
DSVT	0.08	330	eP	17 02.55	0.0
			eS	17 03.61	
DPMT	0.11	331	eP	17 02.56	-0.4
			eS	17 03.70	
MDN	0.17	336	eP	17 03.91	0.0

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

% DEC 26, 1989 06h 21m 21.82± 1.77s
40 323 N ± 6.8km 22.080 E ±17.7km
DEPTH = 10.0km (geophysicist)
GREECE (364)
ML 1.7 (THE).

LIT	0.38	125	iPgc	21 29.00	-0.7
			iSg	21 35.10	
GRG	0.68	21	ePg	21 34.50	-0.8
KNT	1.04	36	ePg	21 41.90	0.4
			eSg	21 58.40	
SOH	1.09	62	ePb	21 43.10	0.7
AGG	1.31	171	ePb	21 46.50	0.4

S.D. = 1 0 on 5 of 5 obs.

? DEC 26, 1989 08h 33m 52.86±11.70s
32 145 S ±73.1km 72.079 W ±61.2km
DEPTH = 33.0km (normal)
OFF COAST OF CENTRAL CHILE (134)

ROCH	1.22	133	iP	34 13.80	-0.1
			iS	34 27.00	
JACH	1.37	113	iPd	34 16.00	0.1
			iS	34 30.10	
LCCH	1.39	162	iPd	34 16.50	0.3
			iS	34 30.50	
PEL	1.54	131	iPc	34 12.40	-6.0X
			iS	34 35.00	
SAN	1.77	138	iPc	34 21.50	-0.2
			iS	34 40.50	
TACH	1.78	148	iPd	34 22.40	0.5
			iS	34 40.50	
LNV	1.89	163	eP	34 22.90	-0.5
			iS	34 41.50	
FCH	1.91	129	iPc	34 24.00	-0.1
			iS	34 44.00	
PCH	1.97	139	iPd	34 24.50	-0.2
			iS	34 46.00	
CHCH	2.15	147	iP	34 27.20	0 1
			iS	34 50.20	

S.D. = 0.3 on 9 of 10 obs.

DEC 26, 1989 09h 35m 56.75± 0.37s
42.538 N ± 3.3km 13.177 E ± 4.4km
DEPTH = 10.0km (geophysicist)
CENTRAL ITALY (381)
MD 3.3 (SSO), 3.0 (ROM). ML 3 0
(KBA).

MNS	0.40	248	Pd	36 05.00	0.1
AZI	0.58	161	P	36 07.70	-0.8
			eSg	36 15.90	
ASS	0.65	325	P	36 09.60	-0.2
			eSg	36 20.10	
CIO	0.66	358	iPgd	36 08.80	-1.1
			iSg	36 18.75	
SSO	0.78	13	ePg	36 11.38	-0.5
			eSg	36 24.21	
RDP	0.85	204	P	36 13.40	0.2
			eSg	36 27.10	
SDI	0.96	150	P	36 13.60	-1.4
			eSg	36 29.50	
ARV	0.98	350	P	36 15.50	0.2
			eSn	36 30.50	
DUI	1.30	132	P	36 22.50	1.7
CRE	1.41	321	P	36 23.00	0.4
MAO	1.50	266	P	36 23.70	0.0
SFI	1.69	325	P	36 27.70	1.3
PGD	1.71	322	P	36 27.40	0.5
			eSn	36 49.20	
FIR	1.87	312	ePg	36 32.00	2.9X
			iSg	36 55.00	
PII	2.27	302	P	36 33.80	-1.1
BDI	2.42	310	P	36 35.20	-1 9
			eSn	37 06.90	
MME	2.45	313	P	36 38.40	0.8
HVAR	2.49	74	iPn	36 37.50	-0.4
			iSn	37 10.00	
SGO	2.54	140	P	36 39.50	0.8
TRI	3.20	7	e(Pn)	36 47.30	-0.7
			iSn	37 24.70	
VBY	3.32	26	e(Pn)	36 53.40	3.6X
			e(Sn)	37 33.70	
VOY	3.53	8	e(Pn)	36 53.00	0.2
			e(Sn)	37 34.50	
SAL	3.61	329	P	36 55.00	1.1
LJU	3.64	15	e(Pn)	36 47.00	-7.3X
			eSn	37 37.50	
CTI	3.68	343	P	36 55.40	0 5
			eSn	37 35.80	
PTJ	3.91	30	eP	37 16.00	17.8X
FVI	4.06	356	P	37 00.30	0.1
KBA	4.54	1	ePn	37 07.50	0 3
			i(Pg)	37 17.60	
			iSg	37 58.20	

S.D. = 0.9 on 24 of 28 obs.

• DEC 26, 1989 09h 40m 50.08± 2.02s
43.609 N ±18.2km 18 810 E ± 8.4km
DEPTH = 10.0km (geophysicist)
YUGOSLAVIA (383)
ML 2.6 (TTG).

PLE	0.51	123	ePg	41 00.50	0.1
			eSg	41 08.60	
HCY	1.18	191	ePg	41 12.20	0 1
			eSg	41 30.20	
TTG	1.22	164	ePg	41 12.80	0 0
			eSg	41 31.00	
PVY	1.32	140	ePg	41 14.50	-0 1
			eSg	41 33.20	
HVAR	1.77	257	iPn	41 21.00	0 0
			iSn	41 44.70	
BZS	2.84	44	ePd	41 43.50	7.3X

S.D. = 0.1 on 5 of 6 obs.

• DEC 26, 1989 09h 42m 05.06± 0.64s
37.183 N ± 9.1km 70.777 E ± 9.6km
DEPTH = 33.0km (normal)
4.5mb (4 obs.)
AFGHANISTAN-USSR BORDER REGION (717)
Felt (III) at Khorog, USSR.

KSH	4.68	59	Pn	43 14.60	-0 7
			Sn	44 04.50	
QUE	7.67	206	eP	43 55.50	-2.0
			eS	45 23.50	
MAIO	9.10	268	iPc	44 16.70	-0.5
	0.8s		9.52nm		5.0mb
			eS	46 01.00	
NDI	10.05	146	eP	44 32.00	1.8
			eS	46 18.00	
WMQ	14.47	57	eP	45 22.50	-6.9X
HYB	20.85	159	eP	46 47 50	0.9
GTA	22.86	75	eP	47 04.60	-2.0
GBA	24.22	164	P	47 20.00	0.2
HFS	42.42	321	eP	49 58.90	1.0
	0.5s		4.10nm		4.4mb
NB2	43.73	323	P	50 09.20	0.6
	0.7s		3.20nm		4.2mb
MBC	66.66	3	eP	52 55.00	1.0
	0.6s		3.00nm		4.6mb
INK	73.26	9	eP	53 34.00	-0.3

S.D. = 1.4 on 11 of 12 obs.

DEC 26, 1989 12h 12m 51.13± 0.60s
36.247 N ± 6.3km 27.305 E ± 6.5km
DEPTH = 10.0km (geophysicist)
DODECANESE ISLANDS (369)

KAP	0.70	189	ePg	13 04.00	-1.0
			eSg	13 16.00	
YER	1.18	41	iPn	13 13.10	-0.2
CIN	1.49	25	eP	13 18.00	0.1
SMG	1.51	346	ePb	13 17.30	-0.8
APE	1.65	300	ePb	13 20.50	0.3
NPS	1.69	235	ePb	13 21.80	0.9
KSL	1.85	93	ePn	13 23.50	0.4
ELL	2.16	76	ePn	13 28.00	0.3

S.D. = 0.8 on 8 of 8 obs.

• DEC 26, 1989 12h 26m 08.08± 0 85s
9.073 S ± 9.4km 121.601 E ±10.4km
DEPTH = 33.0km (normal)
SAVU SEA (288)

MKS	4.37	331	ePd	27 14.00	0.0
KNA	9.64	134	eP	28 28.00	0.3
	0.4s		8.00nm		5.3mb X
			eS	30 15.00	
MTN	10.08	113	eP	28 34.00	0.3
			eS	30 26.00	
MBL	12.14	188	eP	29 02.40	0.7
			eS	31 12.00	
NANU	14.62	203	eP	29 34.00	-0.5
			eS	32 05.00	
WB5	16.36	132	eP	29 56.20	-0.9
			eS	32 51.90	
BRS	34.61	126	iPc	33 00.80	4.4X
KSP	106.65	320	ePKP	44 43.00	11.5X
PRU	107.86	320	ePKP	44 45.50	11.7X
KHC	108.59	319	PKP	44 49.70	14.4X
	1.2s		5.00nm		
CLL	108.64	321	ePKP	44 42.00	6.8X
	1.8s		24.00nm		

S.D. = 0.8 on 6 of 11 obs.

DEC 26, 1989 12h 40m 21.45± 1.16s
6.301 S ±10.2km 154.273 E ± 7.6km
DEPTH = 62.4 ± 11.1 km
4.4mb (1 obs.)
SOLOMON ISLANDS (193)

RAB	2.96	315	iPc	41 07.00	-0.1
HNR	6.42	119	eP	41 55.00	-0.6
			eS	43 15.00	
LAT	7.24	267	eP	42 07 00	0.1
CTA	15.76	209	iPd	44 02.60	1.5
	1.0s		32.00nm		4.4mb
DZM	19.60	144	iPc	44 43.10	-4.5X
WB5	23.58	233	eP	45 25.90	-1.6
LOE	56.99	295	eP	50 04.00	0.6
BJI	57.95	326	eP	50 08.00	-1.7
CHG	59.95	296	eP	50 24.50	0.5
LZH	63.32	316	Pc	50 47.00	0.5
	1.4s		73.00nm		5.5mb X
			pP	50 59.00	41kmX
GBA	78.78	285	P	52 21.00	1.5
INK	89 33	21	eP	53 11.00	-0.9
PAS	91.48	56	eP	53 23.00	0.5
MWC	91.58	56	eP	53 24.00	0.7

RVR	92.12	56	eP	53 26.00	0.5
CLC	92.13	54	eP	53 26.00	0.4
PLM	92.47	57	eP	53 28.00	0.6
GSC	92.72	55	eP	53 29.00	0.6
TPC	93.22	56	eP	53 31.00	0.3
GLA	94.15	57	eP	53 35.00	0.1
ZOBO	132.43	119	PKP	59 31.00	-1.1
8CAO	135.90	270	ePKPd	59 36.00	-2.1
	0.6s		4.00nm		

S.D. = 1.1 on 21 of 22 obs.

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* DEC 26, 1989 12h 41m 07.38± 0.93s
36.256 N ± 8.9km 27.217 E ± 9.2km
DEPTH = 10.0km (geophysicist)
DODECANESE ISLANDS (369)

KAP	0.70	183	ePn	41 21.10	-0.2
YER	1.23	44	ePn	41 28.60	-1.6
SMG	1.48	348	ePn	41 35.20	1.2
APE	1.58	301	ePn	41 35.00	-0.5
KSL	1.92	93	ePn	41 40.30	-0.1
ELL	2.22	76	ePn	41 46.20	1.2

S.D. = 1.4 on 6 of 6 obs.

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* DEC 26, 1989 12h 42m 22.37± 2.76s
41.314 N ±17.6km 22.519 E ±15.4km
DEPTH = 10.0km (geophysicist)
YUGOSLAVIA (383)
ML 1.8 (THE), 1.7 (SKO).

VAY	0.04	80	iPg	42 24.30	-0.1
			iSg	42 30.00	
KNT	0.32	118	iPgd	42 29.00	-0.1
			eSg	42 37.90	
GRG	0.37	194	ePg	42 30.00	0.0
SOH	0.80	128	ePg	42 37.70	-0.2
SRS	0.83	103	ePg	42 38.90	0.4

S.D. = 0.4 on 5 of 5 obs.

DEC 26, 1989 13h 15m 25.95± 0.70s
36.247 N ± 7.5km 27.283 E ± 7.2km
DEPTH = 10.0km (geophysicist)
DODECANESE ISLANDS (369)

KAP	0.70	187	ePg	15 38.80	-1.0
			eSg	15 51.00	
YER	1.20	42	iPn	15 47.10	-1.2
SMG	1.50	346	ePb	15 52.60	-0.3
APE	1.63	301	ePb	15 55.20	0.4
NPS	1.68	235	ePb	15 56.00	0.5
KSL	1.87	93	ePb	15 58.50	0.3
ELL	2.17	76	ePn	16 04.00	1.2
BCK	2.92	64	ePn	16 19.30	6.0X
BNT	4.13	7	ePn	17 06.00	35.5X

S.D. = 1.0 on 7 of 9 obs.

? DEC 26, 1989 13h 15m 45.30± 2.57s
11.029 S ±21.9km 162.367 E ±27.5km
DEPTH = 33.0km (normal)
5.2mb (1 obs.)
SOLOMON ISLANDS (193)

HNR	2.86	303	iP	16 30.60	1.0
			iS	17 05.00	
DZM	11.65	161	iP	18 33.00	0.5
			iS	20 39.50	
PMG	15.06	275	eP	19 21.00	3.5X
CTA	17.93	238	iPc	19 55.20	1.3
	1.1s		245.57nm	5.2mb	
			eS	23 38.00	
BRS	18.61	208	eP	20 02.50	0.3
WB5	28.35	249	eP	21 36.50	-2.1
MRWA	46.81	240	eP	24 13.00	-0.9
BCAO	143.59	262	iPKPc	35 23.50	4.0X
	0.5s		5.00nm		

S.D. = 1.6 on 6 of 8 obs.

% DEC 26, 1989 13h 22m 05.42± 1.49s
37.316 N ±11.3km 1.795 W ±14.0km
DEPTH = 10.0km (geophysicist)
SPAIN (377)
mbLg 3.0 (MDD).

ENIJ	0.48	225	iPgc	22 15.00	-0.2
			eSg	22 21.00	
EALH	0.62	29	iPgc	22 17.90	0.1
			eSg	22 26.00	
AFC	1.40	268	ePn	22 31.70	0.6
			eSn	22 48.60	
EVIA	1.43	337	iPn	22 31.50	0.0
			eSn	22 49.00	
EBAN	1.79	299	iPnc	22 36.20	-0.4
			eSn	22 57.60	

S.D. = 0.6 on 5 of 5 obs.

DEC 26, 1989 13h 24m 42.93± 0.75s
36.287 N ± 8.0km 27.231 E ± 6.8km
DEPTH = 10.0km (geophysicist)
DODECANESE ISLANDS (369)
ML 4.1 (ATH).

KAP	0.74	184	ePg	24 56.20	-1.2
			eSg	25 08.70	
YER	1.20	45	iPn	25 04.60	-0.7
SMG	1.45	348	ePb	25 07.50	-1.7
CIN	1.48	27	ePn	25 09.00	-0.6
			iSg	25 30.00	
APE	1.57	300	ePg	25 12.20	1.2
KSL	1.91	94	ePn	25 15.70	-0.1
IZM	2.11	1	ePn	25 22.00	3.3X
ELL	2.21	77	ePn	25 21.20	1.0
VAM	2.61	251	ePg	25 31.60	5.7X
KHL	2.73	41	ePn	25 27.30	-0.4
BCK	2.94	65	ePn	25 32.30	1.7
ATH	3.27	302	ePg	25 45.30	10.0X
VLI	3.49	278	ePn	25 39.00	0.7

S.D. = 1.3 on 10 of 13 obs.

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* DEC 26, 1989 14h 19m 21.97± 1.14s
51.378 N ±16.3km 175.343 W ± 9.7km
DEPTH = 33.0km (normal)
4.1mb (3 obs.)
ANDREANOF ISLANDS, ALEUTIAN IS. (7)

ADK	0.98	302	iPd	19 39.50	0.1
SDN	9.72	60	eP	21 42.00	-0.4
SVW	14.60	41	eP	22 49.90	2.0
KDC	14.66	55	eP	22 52.90	4.3X
TTA	15.54	34	eP	23 05.10	5.1X
IMA	18.37	29	eP	23 36.70	1.2
TOA	19.08	45	eP	23 43.70	-0.5
FBA	19.64	36	eP	23 48.30	-2.1
	0.7s		2.90nm	3.7mb	
INK	26.23	34	eP	24 54.00	-1.2
PNT	34.90	71	eP	26 12.00	-0.1
	0.8s		6.00nm	4.6mb	
EDM	36.91	62	iP	26 29.00	-0.1
KVN	41.15	84	eP	27 05.40	0.7
TNP	42.29	85	eP	27 14.50	0.4
BW06	44.23	74	eP	27 29.50	-0.3
GOL	48.60	75	eP	28 04.50	0.1
ALQ	50.97	81	eP	28 17.70	-4.8X
	1.0s		2.50nm	4.1mb	
KBA	81.64	354	eP	31 38.00	0.1

S.D. = 1.1 on 14 of 17 obs.

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* DEC 26, 1989 14h 23m 21.22± 0.95s
15.459 N ±14.4km 92.383 W ±17.4km
DEPTH = 33.0km (normal)
4.7mb (1 obs.)
MEXICO-GUATEMALA BORDER REGION (62)

TPX	0.56	168	iP	23 32.50	-0.2
			iS	23 45.50	
OXX	4.47	292	eP	24 28.00	-0.7
			iS	25 22.00	
LVVM	5.76	318	eP	24 56.00	9.4X
IISM	5.92	307	(P)	24 03.00	-46.0X
IIT	6.68	303	(P)	25 29.00	29.1X
PPM	6.96	302	eP	25 05.00	1.0
ACX	7.32	282	(P)	25 19.00	10.4X
III	7.38	294	(P)	25 18.00	8.4X
INK	58.94	343	eP	33 18.00	-1.3
MBC	62.43	353	eP	33 43.00	0.1
	0.7s		4.00nm	4.7mb	
GBA	149.42	20	PKP	43 06.00	1.2
			e	43 21.30	

S.D. = 1.3 on 6 of 11 obs.

? DEC 26, 1989 16h 00m 33.34± 6.36s
32.251 S ±40.1km 71.891 W ±29 7km
DEPTH = 10.0km (geophysicist)
NEAR COAST OF CENTRAL CHILE (135)

ROCH	1.03	134	iPc	00 52.80	-0.2
			iS	01 03.00	
JACH	1.18	112	iPd	00 55.30	-0.1
			iS	01 09.00	
LCCH	1.25	168	iP	00 56.80	0.2
			iS	01 09.00	
PEL	1.35	132	iPd	00 58.50	0.3
			iS	01 13.10	
SAN	1.58	140	iPc	01 01.50	0.0
			iS	01 18.80	
TACH	1.61	150	iP	01 01.90	0.0
			iS	01 17.80	
FCH	1.72	129	iP	01 03.90	0.1
			iS	01 23.00	
LNV	1.75	167	eP	01 03.50	-0.3
			iS	01 21.50	
			i	01 24.00	
PCH	1.79	140	iPc	01 04.70	0.1
			iS	01 25.00	
CHCH	1.97	149	iPc	01 08.00	0.8X
			iS	01 29.30	

S.D. = 0.2 on 9 of 10 obs.

% DEC 26, 1989 16h 31m 15.99± 1.48s
39.719 N ± 8.6km 15.709 E ±10.7km
DEPTH = 10.0km (geophysicist)
SOUTHERN ITALY (390)

MMN	0.28	52	P	31 22.60	0.8
MGR	0.43	344	P	31 24.60	-0.2
			eSg	31 30.60	
CSI	0.45	83	P	31 24.40	-0.8
TDS	0.49	97	P	31 25.90	0.0
CZI	0.60	147	P	31 28.30	0.2

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

& DEC 26, 1989 16h 46m 31.52s
61.396 N 150.935 W
DEPTH = 61.0km
SOUTHERN ALASKA (2)
<AGS-P>.

SUA	0.11	53	iP	46 40.90	1.6
CGLM	0.52	261	iP	46 43.54	-0.5
			eS	46 52.70	
PWA	0.57	63	iP	46 44.13	-0.2
SPU	0.58	249	iP	46 43.99	-0.6
			eS	46 54.01	
NCG	0.59	271	iP	46 44.29	-0.5
			eS	46 54.42	
CRP	0.60	258	iP	46 44.50	-0.5
SKT	0.65	334	iP	46 44.51	-0.9
NKA	0.67	193	iP	46 47.00	1.4
PMS	0.68	102	iP	46 45.51	-0.2
CKL	0.71	254	iP	46 45.49	-0.6
BGL	0.71	260	iP	46 45.61	-0.6
PLRM	0.89	76	iP	46 47.45	-0.8
			eS	47 00.16	
PME	0.94	75	eP	46 48.39	-0.6
			eS	47 01.86	
SLKM	0.96	158	iP	46 48.51	-0.7
GHO	1.03	68	eP	46 49.72	-0.5
CUT	1.06	17	eP	46 49.81	-0.7
RDT	1.09	222	iP	46 50.35	-0.7
RED	1.33	223	iP	46 53.68	-0.6
			eS	47 10.68	
SEW	1.49	150	eP	46 57.15	0.8

19 obs. associated

DEC 26, 1989 17h 41m 04.19± 1.13s
2.247 N ± 4.2km 126.724 E ± 5.7km
DEPTH = 55.7 ± 10.7 km
5.3mb (19 obs.)
MOLUCCA PASSAGE (266)

MNI	2.05	247	iPd	41 39.30	2.5
			eS	41 58.50	
AAI	6.08	166	eP	42 35.00	1.4
			eS	44 02.00	
TSM	8.86	283	ePd	43 15.50	3.3X
MKS	10.37	224	ePd	43 34.00	1.1
KKM	11.14	290	ePc	43 46.30	2.8
	0.8s		76.10nm	5.8mb	
MTN	15.62	164	eP	44 40.00	-2.4
KNA	18.00	174	iPd	45 11.10	-1.0
	0.7s		102.00nm	5.1mb	
GUMO	21.18	57	eP	45 44.00	-3.2X

26d 17h

LAT	22.09	114	eP	45	57.00	0.8
WB5	23.23	161	iPc	46	06.50	-0.9
			eS	50	18.60	
PMG	23.42	120	eP	46	09.00	-0.2
QIZ	23.48	316	eP	46	09.60	-0.2
QZH	23.89	342	P	46	13.00	-0.7
Z	28s	0.90um			4.1MszX	
			eS	50	19.00	
MBL	24.22	196	eP	46	16.70	-0.3
	0.4s	10.00nm			4.7mb	
GZH	24.44	329	P	46	19.00	-0.1
IPM	25.76	276	ePc	46	32.50	0.9
NANU	26 97	203	eP	46	42.50	-0.1
NNT	28.63	292	eP	46	56.20	-1.6
LOE	28.80	303	eP	46	58.50	-0.8
SSE	29.17	350	P	47	02.20	-0.2
	0.9s	50.00nm			5.2mb	
Z	28s	0.50um			4.0MszX	
			eS	51	48.00	
CTA	29.32	140	iPc	47	03.10	-0.9
	1.2s	43.75nm			5.0mb	
NST	29.40	299	eP	47	05.60	0.9
WHN	30.49	339	eP	47	14.00	-0.1
GYA	30.83	323	P	47	17.00	-0.4
BDT	31.04	300	iPc	47	18.20	-1.0
	0.8s	57.10nm			5.4mb	
CHG	31.80	303	iPd	47	25.00	-0.9
	0.7s	53.42nm			5.5mb	
TKSJ	32.31	11	eP	47	29.70	-0.3
KMI	32.43	317	Pd	47	30.50	-1.0
WKYJ	32.87	14	eP	47	34.50	-0.5
MRWA	32.93	197	eP	47	35.50	-0.1
FORR	32.94	178	iPd	47	34.10	-1.4
	0.3s	43.00nm			5.8mb	
YONJ	33 37	10	eP	47	39.20	-0.1
COOL	33.37	189	iPd	47	38.70	-0.7
BAL	34.04	196	eP	47	44.50	-0.6
IIDJ	34.66	16	P	47	50.20	-0.3
KLB	34.71	194	eP	47	51.00	0.1
TIA	34.94	346	Pc	47	51.80	-1.0
CHJJ	35.50	17	P	47	55.80	-1.8
MTMJ	35.67	15	P	47	58.30	-0.8
XAN	35.73	334	P	47	57.20	-2.4
CD2	35.84	325	eP	47	58.90	-1.7
STK	36 76	159	eP	48	07.00	-1.2
			e	50	30.00	
DL2	36.78	353	P	48	08.50	0.2
	0.8s	0.18nm			3.1mb X	
RKG	37.26	193	eP	48	17.50	5.1X
TIY	37.66	341	Pc	48	14.80	-1.0
YAMJ	37.78	17	P	48	17.10	0.4
BRS	38.70	141	iPd	48	23.50	-1.2
	0.8s	10.00nm			4.7mb	
			e	48	27.50	
			e	48	36.00	
BJI	38.82	347	eP	48	25.00	-0.4
	0.9s	52.00nm			5.4mb	
			e	48	50.00	
			eS	53	44.00	
OFUJ	39.11	19	eP	48	28.20	0.3
SNY	39.50	356	Pd	48	31.20	0.2
Z	30s	0.60um			4.3MszX	
LZH	39.78	331	Pc	48	32.00	-1.6
	1.6s	66 00nm			5.2mb	
Z	28s	0.90um			4.5MszX	
			pP	48	37.20	18kmX
			i	48	43.50	
			PP	50	10.00	
AOMJ	40.09	16	eP	48	44.60	8.7X
HHC	40.80	342	eP	48	41.80	-0.1
BTO	41.06	341	eP	48	44.80	0.8
CN2	41.39	359	Pc	48	46.20	-0.3
BWA	41.79	153	eP	48	51.00	1.0
MDJ	42.27	3	eP	48	54.80	1.1
CAN	42.80	153	eP	48	58.10	-0.1
LSA	43.42	313	iPd	49	04.00	0.1
GTA	44.36	330	eP	49	10.20	-0.8
DZM	45.70	124	iPd	49	21.30	-0.6
KOD	49.55	281	eP	49	50.00	-2.3
HYB	49.62	291	iPc	49	51.50	-1.0
	1.0s	40.00nm			5.4mb	
GBA	50.00	286	P	49	52.80	-2.5
WMQ	53.93	326	P	50	23.50	-1.0
			PcP	51	29.50	
NDI	53.93	304	iPc	50	22.00	-2.6X
	1.5s	180.56nm			5.9mb	
POO	54.23	291	iPc	50	24.80	-2.2
KSH	59.06	316	eP	51	01.00	-0.2
QUE	62.93	303	eP	51	22.50	-5.2X
ADK	68.19	34	ePc	52	00.30	-0.4
	0.7s	25.70nm			5.3mb	
MAIO	70.40	308	eP	52	14.00	-0.8
SDN	78.41	34	eP	53	00.70	0.4
TAB	81.06	308	eP	53	16.00	0.9
SVW	82.08	29	eP	53	21.40	1.6
TTA	82.22	27	ePc	53	22.00	1.4
KDC	83.18	32	eP	53	26.80	1.3
BRW	83.57	18	ePc	53	29.20	1.9
IMA	83.73	24	ePc	53	30.00	1.6
	0.6s	13.40nm			5.1mb	
PMR	85.24	29	ePc	53	36.30	0.5
	0.8s	22.30nm			5.3mb	
TOA	86.67	28	eP	53	44.40	1.4
KVT	89.05	311	iP	53	56.40	1.6
HRI	89.61	303	eP	54	01.00	3.3X
MASJ	89.69	302	Pd	54	00.00	1.9
SALJ	89.71	302	P	54	00.20	2.1
MKRJ	89.76	301	Pd	54	00.10	1.7
DSI	89.98	301	eP	54	01.00	1.7
PRNI	90.37	300	eP	54	02.00	0.8
INK	91.54	22	ePc	54	05.70	0.0
SOD	91.83	338	eP	54	07.00	-0.1
			e	54	13.00	
SUF	92.86	333	eP	54	13.00	1.1
MBC	93.39	13	eP	54	14.50	0.4
	0.9s	5.00nm			4.9mb	
NUR	93.99	331	eP	54	19.00	1.9
SLL	99.37	333	eP	54	40.00	-1.6
	0.7s	6.50nm			5.3mb	
NB2	100.10	334	Pdiff	54	43.60	-1.4
	0.9s	4.30nm			5.0mb	
KIC	130.80	280	PKP	00	13.10	1.1
TIC	131.03	281	PKP	00	13.50	1.1
LIC	131.10	280	PKP	00	13.70	1.2
TACH	144.66	154	ePKP	00	36.50	-0.3
PCH	144.87	155	ePKP	00	37.20	-0.1
PEL	145.20	154	iPKPc	00	38.00	0.2
	0.7s	20.55nm				
FCH	145.21	155	ePKP	00	39.50	1.3
CNCB	159.54	136	PKP	01	02.00	2.8X
LPB	159.65	135	(PKP)	01	06.00	6.8X
ZOBO	159.81	135	PKP	01	01.00	1.5
			PKS	03	48.00	
			LR	57	38.00	

S.D. = 1.2 on 95 of 104 obs.

DEC 26, 1989 19h 06m 14.77± 0.32s
44.316 N ± 3.9km 9.735 E ± 2.7km
DEPTH = 10.0km (geophysicist)
NORTHERN ITALY (545)
ML 2.9 (LDG). MD 2.9 (ROM).

BOB	0.50	336	P	06	23.80	-1.0
			eSg	06	31.80	
BDI	0.67	112	P	06	27.20	-0.9
			eSg	06	36.50	
MME	0.70	100	P	06	28.00	-0.8
			eSg	06	37.70	
PII	0.82	136	P	06	30.20	-0.5
			eSg	06	41.20	
PCP	0.88	285	P	06	31.95	0.2
			S	06	42.12	
CKI	1.05	276	P	06	34.60	0.0
FIN	1.10	265	P	06	35.64	0.2
			S	06	48.92	
FIR	1.22	116	ePg	06	40.00	2.5
			iSg	06	56.00	
ROB	1.34	270	P	06	38.92	-0.6
			S	06	55.33	
IMI	1.39	254	P	06	39.74	-0.5
			S	06	55.84	
SAL	1.41	23	P	06	41.00	0.6
ENR	1.67	268	P	06	43.64	-0.6
			S	07	02.25	
VAI	1.69	337	P	06	44.40	-0.1
SBF	1.72	256	Pn	06	45.20	0.3
			Sn	07	08.80	
STV	1.73	268	P	06	44.77	-0.4
			S	07	03.45	
DOI	1.79	277	P	06	45.30	-0.8
ORX	1.81	317	P	06	46.20	-0.1
PZZ	1.90	277	P	06	46.82	-0.8
RSP	1.95	296	P	06	48.35	-0.1
LSD	2.16	303	P	06	52.15	0.6
RRL	2.19	287	P	06	52.25	0.3
			S	07	17.14	
CTI	2.20	37	P	06	51.30	-0.7
BNI	2.30	290	P	06	53.70	0.2
FRF	2.36	252	Pn	06	54.00	-0.1
			Sn	07	21.80	
LPG	2.43	300	Pn	06	57.00	1.6
LPL	2.45	300	Pn	06	57.40	1.8
			Sn	07	29.00	
LMR	2.53	248	Pn	06	56.20	-0.4
			Sn	07	25.20	
LRG	2.59	252	Pn	06	57.70	0.3
			Sn	07	29.00	
KBA	3.75	41	ePn	07	14.00	0.0
			eSg	08	04.00	
HAU	4.38	329	Pn	07	23.20	0.4
			Sn	08	13.00	
CDF	4.44	338	Pn	07	22.80	-0.9
LBF	4.84	305	Pn	07	29.20	-0.2
BGF	5.34	297	Pn	07	36.80	0.3

S.D. = 0.8 on 33 of 33 obs.

? DEC 26, 1989 19h 41m 50.64± 0.99s
15.704 N ± 6.8km 61.471 W ±11.7km
DEPTH = 10.0km (geophysicist)
LEEWARD ISLANDS (92)
ML 1.6 (FDF).

BBL	0.18	182	iP	41	54.70	0.0
			S	41	57.20	
MGG	0.26	35	eP	41	56.50	0.4
PAG	0.38	328	eP	41	58.50	0.0
			S	42	04.20	
DEG	0.72	33	eP	42	04.50	-0.4

S.D. = 0.5 on 4 of 4 obs.

DEC 26, 1989 19h 58m 34.04± 0.55s
35.417 N ± 5.0km 119.446 W ± 6.1km
DEPTH = 5.0km (geophysicist)
CENTRAL CALIFORNIA (39)
ML 3.2 (BRK).

BCH	0.57	246	iPd	58	46.30	0.8
ABL	0.59	162	iPd	58	46.00	0.0
PKEM	0.84	320	eP	58	51.80	1.1
PHAM	0.88	299	eP	58	52.00	0.6
BLP	1.16	223	eP	58	56.00	-0.2
PRI	1.23	306	eP	58	57.70	0.3
FRI	1.59	352	ePc	59	03.30	0.5
			iS	59	23.20	
LLA	1.70	315	eP	59	04.90	0.3
PRS	1.81	301	ePc	59	04.70	-1.4
SAO	2.10	310	eP	59	08.20	-2.2
PEC	2.42	128	eP	59	15.30	0.3
ARN	2.56	319	eP	59	16.80	-0.1
CMB	2.72	344	eP	59	19.60	0.4
PLM	2.97	133	eP	59	22.50	-0.4
TNP	3.21	33	eP	59	29.50	3.3X
KVN	3.78	16	eP	59	40.50	6.0X

S.D. = 0.9 on 14 of 16 obs.

DEC 26, 1989 19h 59m 56.66± 0.27s
43.473 N ± 2.9km 7.525 E ± 2.0km
DEPTH = 10.0km (geophysicist)
4.6mb (1 obs.)
NEAR SOUTH COAST OF FRANCE (379)
ML 4.6 (GEN), 4.5 (LDG). Felt (V) at Nice and (IV) along the French Riviera near Monaco.

SBF	0.40	351	Pg	00	05.60	0.8
			Sg	00	11.20	
IMI	0.51	31	P	00	08.37	1.3
FRF	0.64	278	Pg	00	11.00	1.4
LMR	0.75	260	Pg	00	13.20	1.8
			Sg	00	23.00	
ENR	0.76	354	Pd	00	12.46	0.9
STV	0.78	349	Pd	00	12.85	0.9
ROB	0.86	17	Pc	00	14.58	1.3
FIN	0.89	34	Pc	00	14.87	1.2
DOI	1.05	349	P	00	17.40	0.9
			eSg	00	31.80	
PZZ	1.08	344	Pd	00	18.04	1.0
CKI	1.10	30	Pc	00	17.70	0.4
FOUF	1.18	333	ePgc	00	20.18	1.5
			e(Sg)	00	33.90	
PCP	1.30	34	Pc	00	20.50	-0.2

			S	00	34.93		KBA	5.46	47	iPnc	01	20.50	0.2	IMI	0.50	34	P	36	32.23	0.4
RRL	1.54	340	Pc	00	25.91	1.5				i(sP)	01	30.80					S	36	38.16	
			S	00	44.35					iPgPg	01	50.50		FRF	0.63	276	Pg	36	34.10	-0.2
RSP	1.69	354	Pc	00	26.12	-0.3				iSn	02	32.80					Sg	36	42.20	
			S	00	44.72		EROQ	5.91	246	eP	01	25.00	-1.4	ENR	0.73	355	P	36	35.98	-0.2
BNI	1.69	339	Pc	00	28.40	1.9	WLF	6.27	352	P	01	31.00	-0.3				S	36	44.42	
BOB	1.90	46	P	00	30.00	0.6	MFF	6.27	303	Pn	01	31.00	-0.4	LMR	0.74	258	Pg	36	36.20	-0.1
LSD	2.00	353	P	00	31.50	0.4				Sg	03	16.00					Sg	36	46.00	
LPG	2.10	345	Pn	00	34.40	1.8	HVAR	6.52	90	iPn	01	34.40	-0.5	STV	0.76	350	P	36	36.48	-0.1
			Sn	00	59.50					iSn	02	47.20					S	36	45.75	
LPL	2.12	345	Pn	00	34.60	1.8	DOU	6.92	344	P	01	40.40	-0.2	LRG	0.83	268	Pg	36	38.00	0.2
ORO	2.18	8	Pd	00	33.00	-0.5				i	02	45.30					Sg	36	49.20	
			eSn	00	58.90					iS	02	55.60		ROB	0.84	18	P	36	38.03	0.1
ORX	2.18	8	P	00	33.08	-0.6	KHC	7.04	34	iP	01	39.80	-2.5				S	36	48.62	
			S	00	56.64					e	01	45.30		FIN	0.88	35	P	36	38.35	-0.2
PII	2.19	82	P	00	33.80	0.2	MEM	7.21	352	iP	01	42.80	-1.8				S	36	49.85	
			eSg	00	58.70		ENN	7.38	352	ePn	01	47.00	0.1	PZZ	1.05	344	P	36	41.93	0.3
BDI	2.30	74	P	00	34.90	-0.4		0.7s		14.00nm			5.3mb X				S	36	54.78	
MME	2.41	71	Pc	00	36.90	-0.1				e	02	02.50		PCP	1.29	35	P	36	45.65	0.1
VAI	2.55	20	Pc	00	38.80	0.1				e	03	07.00		RRL	1.51	340	P	36	50.31	1.2
FIR	2.73	82	ePn	00	42.00	0.7				e	04	01.00		RSP	1.66	354	P	36	49.64	-1.5
			i	00	51.00		LDF	7.38	317	Pn	01	46.60	-0.4	S.D. = 0.6 on 13 of 13 obs.						
			iSn	01	13.00		ECRI	7.40	267	eP	01	49.00	1.6							
MDI	2.78	33	P	00	41.90	-0.1	LPF	7.53	310	Pn	01	47.60	-1.4							
MAO	2.86	110	P	00	43.50	0.3	ETOR	7.60	253	eP	01	50.50	0.4	* DEC 26, 1989 21h 33m 57.57± 1.01s						
SAL	3.03	44	P	00	46.10	0.7				eS	03	24.00		7.151 S ± 7.3km 129.462 E ±12.2km						
PGD	3.07	81	P	00	46.70	0.4	GRR	7.63	313	Pn	01	49.00	-1.5	DEPTH = 115.3 ± 12.5 km						
SFI	3.17	80	P	00	46.60	-0.9	FLN	7.67	316	Pn	01	50.40	-0.7	4.2mb (2 obs.)						
			eSn	01	23.50					Sn	03	15.00		BANDA SEA						(280)
CRE	3.22	86	P	00	49.50	1.1	MOX	7.70	20	ePn	01	47.00	-4.5X							
ETER	3.63	253	eP	00	53.80	-0.2				e	03	12.00		AAI	3.66	340	ePc	34	53.50	0.1
			eS	01	42.00		VKA	7.78	49	ePnc	01	50.50	-2.2	MTN	5.89	164	iPc	35	23.90	0.0
ASS	3.77	94	P	00	55.50	-0.7				iSn	03	21.30					eS	36	28.00	
CTI	3.91	47	Pd	00	57.60	-0.5	PRU	8.10	34	P	01	53.30	-3.8X	KNA	8.57	184	eP	35	58.30	-2.1
MNS	3.94	104	P	00	58.50	0.0				e	02	03.60			0.2s		35.00nm			5.7mb X
ARV	3.94	88	P	00	59.60	1.1	ZST	8.19	51	eP	02	07.60	9.3X				eS	37	30.00	
SMF	4.11	322	Pn	01	00.70	-0.1				e	02	28.40		MNI	9.70	331	ePc	36	16.50	0.9
			Pg	01	15.80					e	05	01.70		WB5	13.52	160	eP	37	02.00	-3.9X
			Sg	02	06.40		WTS	8.54	357	ePn	02	03.00	-0.2				eS	39	23.00	
CIO	4.11	92	ePn	01	03.36	2.4		0.7s		3.00nm			4.7mb X	MBL	16.75	213	eP	37	46.50	-0.2
			iSn	01	52.31		BRG	8.60	28	ePn	02	02.20	-1.8				eS	40	39.00	
RMP	4.16	112	P	01	01.50	-0.2				e	02	46.00		PMG	17.65	99	eP	37	58.00	0.3
CAF	4.19	292	Pn	01	01.40	-0.6				e	03	34.00		WARB	19.12	188	eP	38	16.00	1.8
RDP	4.20	112	P	01	02.00	-0.2				e	04	25.00			0.4s		4.00nm			4.1mb
LBF	4.31	326	Pn	01	03.80	0.0	CLL	8.67	23	(Pg)	02	40.00	35.0X				eS	41	40.00	
			Pg	01	18.60					e	03	43.00		NANU	20.37	220	eP	38	28.00	0.9
			Sg	02	13.20					eSg	04	55.00					eS	42	10.00	
BSF	4.39	354	Pn	01	04.30	-0.6	SRO	8.71	56	eP	02	09.70	4.1X	CTA	20.75	130	eP	38	36.00	5.0X
			Sn	01	53.70					e	03	48.90		FORR	23.61	183	eP	39	00.00	1.0
AVF	4.44	320	Pn	01	05.30	-0.2	8ZS	10.29	73	eP	02	26.50	-0.8	CHG	39.64	311	eP	41	19.60	-0.2
			Pg	01	22.00		DLE	13.53	321	eP	03	16.00	5.0X	CHTO	39.64	311	eP	41	18.50	-1.3
			Sg	02	16.00					e	05	48.00			1.0s		5.50nm			4.3mb
MAF	4.47	310	Pn	01	05.30	-0.7	EKA	13.74	334	P	03	18.00	4.4X	CNCB	150.60	144	PKP	53	40.80	7.5X
			Sg	02	19.00			0.7s		6.70nm			4.6mb	LPB	150.75	144	ePKP	53	32.00	-1.4
BGF	4.53	315	Pn	01	06.30	-0.5	DMU	14.10	323	eP	03	18.00	-0.5	ZOBO	150.94	143	PKP	53	34.00	0.2
SSF	4.57	323	Pn	01	06.70	-0.8				e	05	52.00			1.1s		6.38nm			
			Pg	01	24.00		NUR	19.95	25	eP	04	42.00	10.7X	S.D. = 1.2 on 13 of 16 obs.						
			Sg	02	20.40		SUF	22.13	23	iP	04	52.50	-1.1							
LOR	4.59	327	Pn	01	06.70	-1.0	SOD	26.06	17	eP	05	17.00	-14.5X	? DEC 26, 1989 22h 07m 11.34±20.69s						
			Pg	01	23.60		S.D. = 1.0 on 87 of 96 obs.							43.435 N ±140.km 7.499 E ±27.4km						
			Sn	01	59.00									DEPTH = 10.0km (geophysicist)						
			Sg	02	21.30									NEAR SOUTH COAST OF FRANCE						(379)
AZI	4.60	107	P	01	08.00	0.2	& DEC 26, 1989 20h 14m 19.30s							ML 1.8 (GEN).						
HAU	4.61	350	Pn	01	08.10	0.1	40.427 N 125.513 W													
			Sn	02	00.40		DEPTH = 33.0km (normal)							IMI	0.55	31	P	07	22.71	0.1
RJF	4.68	295	Pn	01	08.60	-0.4	OFF COAST OF NORTHERN CALIFORNIA(34)										S	07	28.99	
			Sg	02	25.00		<BRK>. ML 3.7 (BRK).							ENR	0.79	356	P	07	26.63	-0.2
TCF	4.71	309	Pn	01	08.70	-0.8											S	07	35.35	
			Pg	01	26.80		FHC	1.22	72	iPc	14	39.10	-1.1	STV	0.82	351	P	07	26.98	-0.3
			Sg	02	25.20					i	14	45.70					S	07	36.26	
LPO	4.72	287	Pn	01	08.80	-0.8				eS	14	52.50		ROB	0.90	17	P	07	28.67	0.0
			Sg	02	26.00		WDC	2.27	85	ePd	14	54 00	-1.3				S	07	38.47	
FVI	4.86	48	P	01	11.80	0.3				eS	15	20.40		FIN	0.93	33	P	07	28.99	-0.1
CDF	4.94	358	Pn	01	11.40	-1.4	LTCM	2.60	94	eP	14	59.00	-0.9	PZZ	1.11	345	P	07	32.59	0.4
			Sn	02	08.80		LBFM	2.90	70	eP	15	04.00	-0.3				S	07	45.71	
SDI	4.97	109	P	01	14.00	0.9	ORV	3.20	104	e(P)	15	07.40	-1.1	S.D. = 0.3 on 6 of 6 obs.						
TRI	4.99	61	e(Pn)	01	12.40	-0.9				eS	15	43.50								
			iSn	02	07.00		KVN	5.88	101	eP	15	45.30	-1.3	DEC 26, 1989 22h 16m 43.09± 1.11s						
ESEL	5.07	225	iPc	01	16.00	1.5	6 obs. ossociated							15.493 N ± 4.1km 60.807 W ± 8.8km						
LSF	5.09	305	Pn	01	14.80	0.1								DEPTH = 29.4 ± 7.8 km						
			Sg	02	37.00		DEC 26, 1989 20h 36m 21.70± 1.20s							LEEWARD ISLANDS						(92)
LFF	5.09	289	Pn	01	15.00	0.2	43.497 N ± 9.4km 7.505 E ± 7.1km							ML 3.2 (FDF).						
			Sg	02	38.00		DEPTH = 10.0km (geophysicist)													
HYF	5.12	319	Pn	01	15.00	-0.2	NEAR SOUTH COAST OF FRANCE (379)							DGBT	0.56	243	eP	16	54.51	0.0
RIY	5.26	67	e(Pn)	01	17.00	-0.2	ML 2.4 (LDG), 2.2 (GEN)										eS	17	03.69	
EPF	5.27	268	Pn	01	16.60	-0.8								DTMT	0.59	244	eP	16	54.66	-0.2
DUI	5.43	107	P	01	18.00	-1.7	SBF	0.37	352	Pg	36	29.20	-0.1				eS	17	03.64	
										Sg	36	34.00		MDN	0.60	253	eP	16	55.09	0.0

26d 22h

		eS	17	04.13	
DSVT	0.60	244 eP	16	54.86	-0.3
		eS	17	03.93	
DPMT	0.60	247 eP	16	55.16	0.0
		eS	17	04 42	
BBL	0.65	273 iPc	16	55.71	-0.2
		S	17	04 70	
MGG	0.65	311 iPc	16	56 03	0.2
DEG	0.85	343 iPc	16	58 37	-0.6
		S	17	10 70	
DOG	0.95	305 iPc	17	00 67	0.3
PAG	1 00	303 iPc	17	01.37	0.3
		S	17	14 30	
SEG	1 13	324 iPc	17	03.28	0.4
		S	18	17.50	
SLB	1.67	188 eP	17	11.04	0.2
		eS	17	31.35	
BPA	1.84	327 eP	17	13.23	-0.1
		eS	17	34.89	
ANG	1.92	329 eP	17	14 32	-0.1

S.D. = 0.3 on 14 of 14 obs.

& DEC 26, 1989 22h 46m 42.00s
37.187 N 122.070 W
DEPTH = 12.0km
CENTRAL CALIFORNIA (39)
<BRK>. ML 3.7 (BRK).
Mo=1.7*10**14 Nm (BRK). Felt (IV) at Brookdale. Felt in the San Jose-Watsonville area.

GCC	0.17	159 iPc	46	45 60	-0.4
		iS	46	48.20	
MHC	0.37	66 iPd	46	49.70	-0.1
PCC	0.40	322 iPc	46	49.60	-0.6
ARN	0.46	69 iPd	46	50.90	-0.5
SAO	0.65	130 iPc	46	53.40	-1.5
BKS	0.70	349 iPc	46	55 00	-0.7
		iS	47	04 70	
BRK	0.70	348 ePc	46	54.70	-0.9
		iS	47	04.40	
ZSP	0.77	349 iPc	46	56.20	-0.6
		iS	47	08.20	
PRS	1.02	146 iPc	47	00.40	-0.7
LLA	1.07	122 ePc	47	00 60	-1.3
NWRM	1.42	333 eP	47	03 90	-3.7
PRI	1.54	132 ePc	47	08.20	-1.2
CMB	1.58	57 ePd	47	08.00	-2.0
FRI	1.90	95 ePc	47	13.00	-1.5
		eS	47	34.70	
PHAM	1.91	135 eP	47	12.50	-2.1
PKEM	1.94	125 eP	47	13 50	-1.5
BCH	2.56	141 eP	47	21.50	-2.6
KVN	3.64	58 eP	47	37 00	-2.6

18 obs. associated

DEC 26, 1989 23h 17m 59.87± 0.56s
18.144 N ±11.4km 63.777 W ± 6.1km
DEPTH = 105.5 ± 7.7 km
4.5mb (1 obs.)
LEEWARD ISLANDS (92)
MD 4.2 (TRN).

LPR	2.00	275 P	18	33.00	-0.2
ANG	2.10	118 eP	18	34.43	0.0
		eS	18	58.34	
BPA	2.13	121 eP	18	34.80	-0.1
		eS	18	58.83	
SJG	2.26	270 iP	18	37.00	0.4
		S	19	04.40	
PORP	2.72	269 P	18	43.00	0.2
SEG	2.78	128 iP	18	43 56	0.1
PAG	2.91	136 ePc	18	46.00	0.7
		S	19	23.10	
LRS	2.92	273 P	18	45.00	-0.5
DOG	2.94	135 eP	18	46.10	0.3
DEG	3.17	125 ePc	18	48.01	-0.9
MGG	3.23	133 iPc	18	50.25	0.6
BBL	3.41	139 iPc	18	52.71	0.6
MDN	3.62	141 eP	18	48.97	-6.0X
DPMT	3.67	141 eP	18	53.77	-1.9
FDF	4.22	143 eP	19	03.50	0.2
	0.4s	0.50nm			
CRM	4.35	140 eP	19	05 27	0.3
BIM	4 44	144 eP	19	06 47	0.2
MVM	4.52	142 eP	19	07.64	0.4
TCE	7.66	165 eP	19	49.98	-0.5
TRN	7.80	163 eP	19	56.92	4.6X
TIC	58.30	93 P	27	45.90	-0.4
LIC	58.41	94 P	27	46.70	-0.4
KIC	58.65	94 P	27	48.80	0.1
BCAO	81.34	88 ePc	30	07.50	0.8
	0.4s	3.00nm		4.5mb	

S.D. = 0.7 on 22 of 24 obs.

DEC 26, 1989 23h 22m 40.16± 1.09s
23.655 N ± 5.5km 120.924 E ±11.8km
DEPTH = 10.0km (geophysicist)
TAIWAN (244)

TWF1	0.46	131 iPd	22	49.60	0.1
TWQ	0.62	353 iPc	22	52.50	-0.2
		eS	23	01.70	
TWD	0.75	55 iPd	22	54.30	-0.5
		eS	23	05.60	
TWG	0.84	171 ePc	22	56.30	-0.1
		eS	23	09.50	
TWC	1.27	41 iPd	23	03.90	0.1
		eS	23	21.40	
TWZ	1 56	22 eP	23	08.40	0.5
SSE	7.42	2 P	24	25.70	-5.3X
		epP	24	33.50	
		Lg	26	46.70	

S.D. = 0.4 on 6 of 7 obs.

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* DEC 26, 1989 23h 23m 50.94± 1.07s
3.869 S ±15.5km 152.040 E ±14.6km
DEPTH = 218.6 ± 8.1 km
4.9mb (4 obs.)
NEW IRELAND REGION (190)

RAB	0.34	158 iPd-	24	21.00	-0.3
PMG	7.34	221 eP	25	37.00	0.6
DZM	22.86	144 iPc	28	37.00	0.4
WB5	23.46	226 iPd	28	42.50	0.3
WRA	23.52	226 Pc	28	43.40	0.6
	0.5s	67.50nm		5.5mb	
ASPA	26.35	220 iPd	29	08.10	-0.8
	0.7s	8.00nm		4.5mb	
		i	29	51.50	
		eS	33	11.80	
WARB	32.93	225 iPc	30	06.60	-0.3
	0.6s	10.00nm		4.6mb	
FORR	35.07	217 iPd	30	24.00	-0.9
	0.4s	31.00nm		5.3mb	
HYB	75.47	289 eP	35	12.70	-0.5
KOD	75.56	282 eP	35	15.00	0.9

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

? DEC 26, 1989 23h 48m 43.03± 3.21s
5.164 S ±23.7km 147.746 E ±66.8km
DEPTH = 212.6 ± 16.9 km
4.2mb (1 obs.)
EAST PAPUA NEW GUINEA REGION (207)

LAT	1.66	207 eP	49	19.50	0.0
PMG	4.26	188 eP	49	49.00	0.0
WB5	19.58	221 iPd	52	57.00	0.1
WRA	19.65	220 Pd	52	57.50	-0.1
	0.4s	3.40nm		4.2mb	
POO	76.48	290 eP	00	11.50	0.0

S.D. = 0.1 on 5 of 5 obs.

DEC 27, 1989 00h 21m 08.43± 1.28s
43.572 N ± 9.9km 7.501 E ± 7.3km
DEPTH = 10.0km (geophysicist)
NEAR SOUTH COAST OF FRANCE (379)
ML 1.8 (GEN).

SBF	0.30	351 Pg	21	14.80	0.2
		Sg	21	19.80	
IMI	0.44	40 P	21	17.69	0.3
		S	21	23.67	
FRF	0.62	269 Pg	21	20.50	-0.4
		Sg	21	28.60	
ENR	0.66	355 P	21	21.11	-0.5
		S	21	29.90	
STV	0.68	349 P	21	21.97	-0.1
		S	21	31.47	
ROB	0.77	20 P	21	23.60	0.1
		S	21	33.57	
FIN	0.82	39 P	21	23.98	-0.3
LRG	0.84	262 Pg	21	25.00	0.4
		Sg	21	35.20	
PZZ	0.98	343 P	21	27.38	0.3
		S	21	40.40	

S.D. = 0.4 on 9 of 9 obs.

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* DEC 27, 1989 00h 45m 37.17± 2.57s
37.668 N ±20.7km 20.860 E ±21.7km
DEPTH = 10.0km (geophysicist)
IONIAN SEA (399)
ML 3.4 (ATH).

VLS	0.55	337 iPgc	45	48.50	0.1
ITM	0.98	119 ePg	45	55.20	-0.6
VLI	1.91	119 ePg	46	15.70	5.6X
ATH	2.28	81 ePb	46	17.00	1.5
NEO	2.47	48 ePn	46	17.00	-1.2
OHR	3.44	359 ePn	46	32.00	0.1

S.D. = 1.4 on 5 of 6 obs.

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* DEC 27, 1989 01h 47m 21.60± 1.97s
32.260 S ± 8.6km 71.626 W ±19.2km
DEPTH = 33.0km (normal)
NEAR COAST OF CENTRAL CHILE (135)

ROCH	0.88	144 iPc	47	36.90	-0.9
		iS	47	52.50	
JACH	0.97	116 iP	47	37.80	-1.2
		iS	47	53.00	
PEL	1.19	138 ePc	47	41.80	-0.2
		iS	48	01.00	
LCCH	1.21	178 iP	47	42.00	-0.3
		iS	48	04.00	
TACH	1.51	158 iPc	47	36.90	-9.7X
		iS	47	52.50	
FCH	1.55	134 iPd	47	48.00	0.5
		iS	48	09.70	
PCH	1.65	146 iP	47	49.50	0.8
		iS	48	13.50	
CHCH	1 86	154 iPc	47	52.50	0.8
		iS	48	20.00	
RTBS	1.94	73 e(P)	47	53.00	0.2
		S	48	10.00	
RTCB	2.53	73 e(P)	48	02.00	0.7
RTCV	2.65	82 e(P)	48	42.00	39.0X
RTRS	2.79	42 e(P)	48	04.50	-0.3

S.D. = 0.8 on 10 of 12 obs.

% DEC 27, 1989 02h 00m 03.46± 1.80s
43.511 N ±13.2km 7.482 E ± 7.9km
DEPTH = 10.0km (geophysicist)
NEAR SOUTH COAST OF FRANCE (379)
ML 1.7 (GEN).

SBF	0.35	355 Pg	00	11.00	0.2
		Sg	00	15.80	
IMI	0.50	36 P	00	13.72	0.2
		S	00	20.38	
FRF	0.61	275 Pg	00	15.80	0.0
		Sg	00	24.00	
ENR	0.72	356 P	00	17.51	-0.1
		S	00	26.81	
STV	0.74	351 P	00	17.87	-0.2
		S	00	27.40	
ROB	0.83	20 P	00	19.56	0.0
		S	00	30.02	
FIN	0.87	37 P	00	20.17	-0.1
PZZ	1.03	345 P	00	23.05	0.0
		S	00	36.38	

S.D = 0.2 on 8 of 8 obs.

? DEC 27, 1989 03h 15m 01.60± 1.07s
40.125 N ± 9.3km 28.879 E ± 9.0km
DEPTH = 10.0km (geophysicist)
TURKEY (366)

DST	0.55	201 iPg	15	12.90	0.0
		iSg	15	20.90	
YLV	0.58	40 iPg	15	13.40	0.0
BNT	0.77	288 iPg	15	16.90	0.3
EDC	0.81	286 iPg	15	17.00	-0.3
		eSg	15	30.00	
KHL	1.87	164 ePn	15	38.00	4.0X

S.D. = 0.4 on 4 of 5 obs.

DEC 27, 1989 03h 43m 39.82± 1.13s
43.527 N ± 9.7km 7.502 E ± 7.3km
DEPTH = 10.0km (geophysicist)
NEAR SOUTH COAST OF FRANCE (379)

ML 2.3 (LDG), 2.0 (GEN).

SBF	0.34	352	Pg	43 47.30	0.4
			Sg	43 52.00	
IMI	0.48	36	P	43 49.70	0.2
			S	44 55.69	
FRF	0.62	273	Pg	43 52.20	-0.2
			Sg	44 00.40	
ENR	0.70	355	P	43 53.49	-0.3
			S	44 02.56	
STV	0.73	350	P	43 53.83	-0.4
			S	44 03.38	
LMR	0.75	255	Pg	43 54.20	-0.3
			Sg	44 04.40	
ROB	0.81	19	P	43 55.61	0.0
			S	44 05.84	
LRG	0.83	265	Pg	43 56.40	0.5
			Sg	44 07.60	
FIN	0.85	37	P	43 55.74	-0.5
			S	44 07.48	
PCP	1.26	36	P	44 03.73	0.4

S.D. = 0.4 on 10 of 10 obs.

% DEC 27, 1989 03h 48m 09.65± 1.77s
43.522 N ±13.1km 7.479 E ± 7.9km
DEPTH = 10.0km (geophysicist)
NEAR SOUTH COAST OF FRANCE (379)
ML 1.7 (GEN).

SBF	0.34	355	Pg	48 16.80	0.1
			Sg	48 21.60	
IMI	0.49	37	P	48 19.64	0.1
			S	48 26.15	
FRF	0.61	274	Pg	48 21.90	0.0
			Sg	48 30.30	
ENR	0.71	357	P	48 23.53	-0.1
			S	48 32.92	
STV	0.73	351	P	48 23.72	-0.3
			S	48 33.23	
ROB	0.82	20	P	48 25.83	0.2
			S	48 36.00	
FIN	0.87	37	P	48 26.19	-0.1
PZZ	1.02	345	P	48 29.26	0.2

S.D. = 0.2 on 8 of 8 obs.

DEC 27, 1989 04h 19m 43.84± 0.93s
0.963 N ± 3.3km 126.131 E ± 4.9km
DEPTH = 62.4 ± 9.4 km
5.1mb (22 obs.)
MOLUCCA PASSAGE (266)

AAI	5.06	156	ePd	20 58.50	-0.4
			eS	21 52.00	
DAV	6.11	355	eP	21 14.00	0.4
TSM	8.68	292	ePd	21 51.00	1.8
KKM	11.11	297	ePd	22 26.30	3.8X
QCP	14.48	340	eP	23 15.00	8.1X
MTN	14.59	160	iPc	23 07.20	-1.1
BAG	16.30	341	eP	23 31.00	0.6
KNA	16.81	171	iPd	23 35.70	-0.9
	0.9s		211.00nm	5.3mb	
WB5	22.23	159	iPc	24 36.00	-0.7
			iS	28 36.80	
WRA	22.28	159	Pc	24 36.50	-0.7
	0.5s		50.10nm	5.2mb	
GUMO	22.39	55	eP	24 39.20	1.0
GUA	22.40	55	eP	24 39.60	1.2
	0.6s		85.33nm	5.4mb	
KGM	22.83	273	eP	24 43.00	0.5
MBL	22.83	195	eP	24 41.70	-0.8
	0.6s		46.00nm	5.1mb	
PMG	23.33	117	eP	24 48.00	0.6
	1.0s		80.00nm	5.1mb	
QIZ	24.03	319	P	24 55.60	1.4
N	15s		1.60um		
QZH	24.93	344	P	25 03.23	0.5
IPM	25.33	279	ePd	25 06.50	-0.1
	0.8s		63.00nm	5.2mb	
NANU	25.56	203	eP	25 09.00	0.3
	0.6s		49.00nm	5.2mb	
ASPA	25.62	163	iPc	25 09.10	-0.2
	0.9s		94.00nm	5.3mb	
Z	27s		0.23um	3.6MszX	
			iS	29 32.10	
			LR	31 36.90	
			iScS	36 02.80	
PPI	25.77	267	eP	25 11.00	0.3
SNG	26.18	284	eP	25 14.80	0.4
			eS	30 14.00	
WARB	26.99	179	iPd	25 22.60	0.8
	0.6s		38.00nm	5.2mb	
PSI	27.25	274	iPc	25 24.50	0.2
	0.9s		68.00nm	5.2mb	
CTA	28.75	138	iP	25 38.20	0.4
	1.0s		24.00nm	4.8mb	
			iS	30 25.00	
			iScP	32 26.90	
			i	32 51.40	
SSE	30.33	352	eP	25 53.00	1.3
Z	22s		1.00um	4.4Msz	
			pP	26 02.20	32kmX
			S	30 52.00	
KAGJ	30.40	8	eP	25 51.70	-0.6
BDT	31.21	303	eP	25 59.50	-0.1
	0.3s		11.10nm	5.1mb	
WHN	31.47	340	eP	26 03.20	1.4
			sP	26 25.50	
GYA	31.52	325	iPc	26 02.00	-0.4
			PcP	28 55.00	
			S	31 03.00	
MRWA	31.54	197	iPd	26 01.80	-0.6
FORR	31.69	177	iPd	26 03.10	-0.5
	0.5s		53.00nm	5.6mb	
KUMJ	31.71	8	eP	26 03.20	-0.7
COOL	32.02	188	eP	26 06.00	-0.6
	0.5s		6.00nm	4.7mb	
CHG	32.03	305	ePc	26 06.20	-0.6
	0.6s		8.33nm	4.7mb	
BAL	32.65	195	eP	26 12.00	-0.1
	0.4s		10.00nm	5.0mb	
KMI	32.97	319	Pc	26 16.00	0.8
SHNJ	33.32	8	eP	26 17.00	-0.8
KLB	33.34	193	eP	26 17.80	-0.2
	0.7s		15.00nm	5.0mb	
HNR	35.22	108	ePc	26 34.00	-0.4
	0.9s		235.29nm	6.1mb	
			eS	27 45.00	
STK	35.80	157	eP	26 40.00	0.9
RKG	35.89	193	iPd	26 45.50	5.7X
TIA	36.05	348	eP	26 42.30	1.1
XAN	36.64	336	Pd	26 44.00	-2.2
CHJJ	36.90	17	P	26 46.70	-1.6
MTMJ	37.06	16	P	26 49.10	-0.6
MAT	37.13	16	iPd	26 48.90	-1.3
	2.0s		452.94nm	6.1mb	
			eS	35 20.00	
KAKJ	37.41	19	eP	26 50.20	-2.3
ADE	37.63	163	e(P)	26 55.10	0.6
DL2	37.99	354	iPc	26 58.50	1.1
NIIJ	38.00	17	eP	26 56.10	-1.5
BRS	38.10	140	iPc	26 58.80	0.3
	1.0s		4.00nm	4.3mb	
			e(PP)	27 31.00	
TIY	38.69	343	Pc	27 02.30	-1.1
YAMJ	39.17	17	eP	27 08.10	0.7
BJI	39.94	348	eP	27 13.00	-0.6
	0.9s		27.00nm	5.1mb	
OFUJ	40.51	19	P	27 18.90	0.6
LZH	40.61	332	Pc	27 19.00	-0.4
	2.0s		0.06nm	2.1mb X	
Z	24s		0.80um	4.5MszX	
			pP	27 26.50	25kmX
			sP	27 31.00	
			i	27 41.00	
			i	28 04.20	
SNY	40.74	357	Pd	27 20.50	0.3
BWA	40.94	151	eP	27 24.10	2.1
HHC	41.84	343	eP	27 28.80	-0.6
CAN	41.95	152	eP	27 31.20	1.0
CN2	42.66	359	Pd	27 35 40	-0.4
Z	14s		0.50um	4.6MszX	
MDJ	43.58	4	Pd	27 43.50	0.2
LSA	43.86	314	P	27 47.60	1.2
GTA	45.18	331	Pc	27 56.00	-0.5
DZM	45.49	123	iPc	27 59.50	0.3
KOD	49.24	283	eP	28 28.20	-0.6
GBA	49.79	287	P	28 30.50	-2.1
POO	54.15	292	iPc	29 03.30	-2.0
NDI	54.17	305	eP	29 03.60	-1.7
WMO	54.66	327	P	29 08.20	-0.6
Z	20s		0.40um	4.5Msz	
KSH	59.56	316	eP	29 44.00	0.4
NAI	89.35	269	eP	32 40.00	4.1X
PRNI	90.50	300	eP	32 43.00	2.4
INK	92.94	21	eP	32 51.00	0.0
SUF	93.73	333	eP	32 58.00	3.3X
NUR	94.82	331	eP	33 17.00	17.3X
SLL	100.22	332	ePdiff	33 23.20	-1.1X
	0.8s		3.90nm	5.0mb	
ALQ	119.31	48	PKP	38 30.00	1.6
	0.7s		3.42nm		
KIC	130.43	279	PKP	38 51.20	1.1
LIC	130.73	279	PKP	38 52.20	1.6
CNCB	159.00	139	PKP	39 41.00	3.6X
LPB	159.12	139	ePKP	39 41.00	3.6X
ZOBO	159.29	138	ePKP	39 37.00	-0.8

S.D. = 1.0 on 75 of 84 obs.

? DEC 27, 1989 05h 13m 46.51± 1.04s
39.597 N ± 9.1km 28.854 E ± 9.7km
DEPTH = 10.0km (geophysicist)
TURKEY (366)

DST	0.17	273	iPg	13 49.90	-0.6
			iSg	13 51.90	
BNT	1.04	317	ePn	14 07.00	0.8
YLV	1.05	22	iPn	14 05.90	-0.4
KHL	1.37	157	ePn	14 12.00	0.2

S.D. = 1.1 on 4 of 4 obs.

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* DEC 27, 1989 05h 26m 38.64± 1.21s
6.526 S ±16.0km 144.652 E ±10.4km
DEPTH = 33.0km (normal)
3.8mb (2 obs.)
PAPUA NEW GUINEA (202)

MNDI	1.05	290	eP	26 57.00	-0.3
LAT	2.34	93	e(P)	27 16.00	0.5
PMG	3.79	139	eP	27 41.00	4.9X
WB5	16.61	216	eP	30 29.90	-0.9
WRA	16.68	216	Pd	30 32.10	0.5
	0.6s		2.70nm	3.6mb	
ASPA	19.93	210	eP	31 12.50	1.7
	0.8s		8.00nm	4.1mb	
Z	17s		0.10um	4.2Msz	
			LR	40 54.30	
BRS	22.14	161	iPd	31 31.80	-1.5

S.D. = 1.5 on 6 of 7 obs.

DEC 27, 1989 06h 12m 18.12± 0.70s
32.501 N ± 5.1km 47.556 E ± 6.4km
DEPTH = 44.9 ± 7.1 km
4.7mb (21 obs.)
IRAN-IRAQ BORDER REGION (346)

KER	1.88	349	ePc	12 48.50	-0.1
			eS	13 11.00	
BHD	2.78	287	ePnd	13 02.00	0.9
			ePg	13 10.50	
			iSn	13 36.50	
			iSg	13 46.50	
SLY	3.53	332	iPnd	13 11.50	-0.3
			iP*	13 18.50	
			iPg	13 22.50	
			iSn	13 53.00	
			iS*	14 00.00	
			iSg	14 05.00	
TEH	4.53	43	e(P)	13 34.00	7.9X
MSL	5.31	318	ePnd	13 37.00	0.0
			eP*	13 47.50	
			ePg	13 57.00	
			iSn	14 37.50	
			eSg	15 10.50	
			e	15 20.00	
TAB	5.64	350	e(P)	13 51.00	9.2X
DHR	6.57	159	eP	13 55.00	0.3
QASM	7.29	210	eP	14 03.50	-1.3
RYD	7.80	186	eP	14 11.50	-0.4
MAIO	10.57	66	iPc	14 50.60	0.6
			eS	16 53.00	
PRNI	10.94	262	e(P)	14 56.00	1.0
ELL	15.13	291	eP	15 57.00	6.4X
KHL	15.80	297	eP	15 58.00	-1.1
VAM	19.58	285	ePb	16 45.50	0.2
VLI	20.68	289	ePb	16 55.00	-1.7
VRI	20.87	316	ePd	16 59.00	0.4
ITM	21.52	290	ePn	17 04.00	-1.2
OHR	23.01	300	eP	17 14.50	-5.5X
BMR	23.71	317	ePc	17 40.00	13.4X
BZS	23.90	311	eP	17 27.00	-1.5
SPC	26.34	317	eP	17 53.70	1.9

27d 06h

SRO 26.87 313 eP 17 59.90 3.5X
ZST 27.77 313 eP 18 05.80 1.2
KSP 29.37 318 eP 18 18.50 -0.4
KBA 29.78 309 iPd 18 23.20 0.3
0.6s 10.80nm 4.8mb
PRU 30.03 315 e(P) 18 26.00 1.2
KHC 30.29 313 iPc 18 28.70 1.5
CTI 30.64 307 Pd 18 31.00 0.7
MME 30.93 303 P 18 35.00 1.9
CLL 31.45 317 eP 18 39.00 1.7
1.5s 26.00nm 4.8mb
NUR 31.81 339 eP 18 40.00 -0.3
BOB 31 90 304 P 18 43.00 1.5
VAI 32.56 306 P 18 47.00 0.0
CKI 32.68 303 P 18 46.00 -2.1
SUF 33.16 342 iP 18 51.30 -0.8
SBF 33.21 302 eP 18 53.30 0.4
0.8s 34.90nm 5.3mb
DOI 33.42 303 Pd 18 54.00 -0.7
8NI 33.89 304 P 18 57.50 -1.4
LPG 33.90 305 eP 18 59.20 0.1
BSF 34.27 309 eP 19 01.70 -0.3
0.8s 5.30nm 4.5mb
WTS 35.30 316 e(P) 19 12.00 1.4
0.7s 10.00nm 4.9mb
HFS 35.50 331 eP 19 10.70 -1.5
1.1s 19.70nm 5.0mb
LBF 36.01 307 eP 19 16.40 -0.4
0.8s 9.40nm 4.8mb
SMF 36.06 306 eP 19 16.90 -0.3
LOR 36.13 307 eP 19 17.60 -0.2
0.8s 8.00nm 4.7mb
SSF 36.34 307 eP 19 19.40 -0.1
0.8s 24.70nm 5.2mb
AVF 36.41 306 eP 19 19.80 -0.3
1.0s 14.00nm 4.8mb
BGF 36.73 306 eP 19 22.70 -0.1
0.8s 17.90nm 5.0mb
MAF 36.89 305 eP 19 24.20 0.1
0.8s 6.70nm 4.6mb
SOD 37.01 347 iP 19 24.00 -0.8
N82 37.02 331 P 19 23.40 -1.6
1.0s 5.90nm 4.5mb
TCF 37.14 305 eP 19 26.40 0.1
0.6s 6.30nm 4.7mb
RJF 37.55 304 eP 19 29.90 0.2
0.6s 3.60nm 4.5mb
LFF 38.08 303 eP 19 34.30 0.2
0.6s 9.70nm 4.9mb
MFF 38.79 306 eP 19 39.80 -0.3
0 6s 5.40nm 4.6mb
8CAO 38.94 230 iPc 19 43.00 1.4
0.6s 11.00nm 4.8mb
i 20 28.40
i 21 23.30
LDF 38.96 309 eP 19 41.40 0.0
0.4s 2.20nm 4.3mb
KEV 39.04 349 eP 19 45.00 3.2X
FLN 39.21 309 eP 19 43.00 -0.5
0.4s 5.70nm 4.7mb
EKA 41.88 319 Pc 20 05.70 0.4
0.9s 11.10nm 4.6mb
DLE 43.52 315 eP 20 18.90 0.2
DMU 43.81 316 eP 20 21.40 0.3
DCN 43.96 315 eP 20 22.90 0.6
FRB 71.72 335 eP 23 36.00 -1.1
INK 79.50 0 eP 24 21.00 0.1
PNT 97.75 352 eP 25 45.00 -4.6X
S.D = 1.0 on 58 of 66 obs.

DEC 27, 1989 06h 12m 53.49± 0.34s
44.623 N ± 3.5km 114.358 W ± 3.2km
DEPTH = 10.0km (geophysicist)
WESTERN IDAHO (33)
ML 3.5 (NEIS), 3.7 (BUT). Felt (V) at Challis. Felt (III) at Clayton and Ellis.

MCMT 1.10 79 iPc 13 13.40 -0.9
CPI 1.59 242 P 13 22.00 0.3
S 13 44.00
TID 1.60 226 P 13 22.00 0.2
S 13 42.00
LTMT 1 61 93 iPnd 13 22.50 0.2
CBTI 1.62 139 P 13 21.20 -1.1
BGMT 1.76 69 ePnd 13 24.30 -0.1
GBI 1.77 110 P 13 24.10 -0.4
LRM 1.80 48 iPnc 13 25.40 0.3
BUT 1.88 42 ePn 13 26.50 0.4
ePg 13 29.10
iSn 13 51.00
eSg 13 54.70
LCCM 2.13 54 ePn 13 29.80 0.0
WPI 2.18 233 P 13 30.00 -0.3
S 13 51.00
YPDC 2.23 87 P 13 31.20 0.0
PTI 2.27 140 eP 13 31.20 -0.6
YPW8 2.33 89 P 13 32.90 0.2
IMW 2.56 105 eP 13 36.20 0.2
MEMT 2.59 67 ePn 13 36.40 0.0
SXM 2.69 54 ePn 13 37.30 -0.6
HRY 2.74 39 ePn 13 38.20 -0.2
BW06 3.94 116 eP 13 57.50 2.0
DPW 4.20 322 eP 13 59.20 0.1
DUG 4.57 165 eP 14 03.50 -0.9
DAU 4.79 150 eP 14 08.70 1.0
PNT 5.91 324 eP 14 23.00 -0.2
KVN 6.23 208 eP 14 32.20 4.4X
TNP 6.88 199 eP 14 41.50 4.4X
GOL 8.29 123 eP 14 57.00 0.2
S.D. = 0.7 on 24 of 26 obs.

DEC 27, 1989 07h 19m 58.58± 0.40s
8.550 N ± 6.3km 126.891 E ± 8.0km
DEPTH = 36.9km (2 depth phases)
4.9mb (9 obs.) 4.4Msz (4 obs.)
MINDANAO, PHILIPPINE ISLANDS (259)

DAV 1.95 222 eP- 20 31.00 1.1
OCP 8.31 317 eP 22 09.50 9.9X
BAG 9.95 322 eP 22 23.90 1.5
GUMO 18.33 73 eP 24 10.80 -1.1
GUA 18.36 73 eP 24 10.50 -1.8
OIZ 19.54 304 eP 24 24.60 -1.6
E 15s 1.10um
MTN 21.67 169 eP 24 47.00 -1.2
SSE 23.05 347 eP 25 03.00 1.3
Z 20s 1.00um 4.3Msz
pP 25 12.40 34km
S 29 12.00
KNA 24.21 176 eP 25 14.00 0.9
NST 27.08 288 eP 25 40.00 0.0
8DT 28.49 290 eP 25 52.00 -0.7
CHG 28.96 294 ePc 25 55.90 -1.1
0.9s 20.17nm 4.8mb
WB5 29.19 165 eP 26 01.00 2.0
WRA 29.25 166 Pc 26 03.80 4.3X
0.6s 2.90nm 4.2mb
ASPA 32.74 168 iPd 26 30.70 0.4
0.5s 6.00nm 4.7mb
Z 22s 0.25um 3.9MszX
iS 31 37.80
LR 40 18.20
BJI 32.79 345 eP 26 30.00 -0.4
1.5s 26.00nm 4.9mb
Z 20s 0.48um 4.2Msz
eS 31 33.00
eScS 36 55.50
SNY 33.27 355 Pc 26 35.00 0.4
WARB 34.53 180 eP 26 45.00 -0.7
0.4s 6.00nm 4.9mb
LZH 34.53 326 eP 26 43.00 -2.9X
epP 26 54.00 40km
sP 26 57.00
CN2 35.14 358 eP 26 52.50 1.8
Z 17s 0.50um 4.3MszX
MDJ 36.01 3 eP 27 00.00 1.9
GTA 39.14 326 eP 27 23.80 -0.8
Z 18s 0.60um 4.5Msz
FORR 39.19 178 eP 27 24.00 -0.9
BRS 43.65 146 iPc 28 02.30 0.7
i 28 08.50 21kmX
GBA 48.73 281 P 28 42.00 0.1
WMO 48.95 323 P 28 42.50 -0.9
Z 20s 0.60um 4.6Msz
NDI 50.74 300 eP 28 54.10 -3.1X
INK 85.65 22 eP 32 36.00 1.6
MBC 87.24 13 eP 32 44.00 1.9
0.9s 6.00nm 4.8mb
SUF 87.35 333 iP 32 42.50 -0.3
NUR 88.59 331 iP 32 48.00 -0.8
0.5s 18.20nm 5.6mb
HFS 93.85 333 eP 33 11.60 -1.6
0.6s 9.00nm 5.4mb
NB2 94.56 334 P 33 15.20 -1.4
0.6s 3.00nm 4.9mb
DOI 104.29 320 Pdiff 34 03.50 2.8X
eSg 34 17.00
S.D. = 1.3 on 29 of 34 obs.

DEC 27, 1989 07h 33m 43.90± 1.13s
43.495 N ± 8.8km 7.524 E ± 6.7km
DEPTH = 10.0km (geophysicist)
NEAR SOUTH COAST OF FRANCE (379)
ML 2.6 (LDG), 2.2 (GEN).

SBF 0.37 350 Pg 33 51.80 0.2
Sg 33 56.40
IMI 0.49 32 P 33 54.03 0.1
S 34 00.08
FRF 0.64 276 Pg 33 56.40 -0.4
Sg 34 04.60
ENR 0.73 354 P 33 58.02 -0.4
S 34 06.95
LMR 0.76 258 Pg 33 58.60 -0.1
Sg 34 08.70
STV 0.76 349 P 33 58.41 -0.4
S 34 07.77
ROB 0.84 17 P 34 00.03 -0.1
S 34 10.36
LRG 0.85 268 Pg 34 00.50 0.3
Sg 34 12.00
FIN 0.87 35 P 34 00.29 -0.3
S 34 11.56
PZZ 1.05 343 P 34 03.69 -0.2
S 34 16.79
PCP 1.28 35 P 34 07.87 0.2
S 34 23.97
RRL 1.52 340 P 34 12.39 1.0
S.D. = 0.5 on 12 of 12 obs.

% DEC 27, 1989 07h 54m 33.04± 0.89s
40.236 N ± 5.3km 23.864 E ± 6.8km
DEPTH = 0.0km (geophysicist)
GREECE (364)
ML 2.3 (THE).

OUR 0.13 42 iPgc 54 35.40 -0.3
eSg 54 38.40
PAIG 0.34 205 iPgc 54 40.10 0.3
eSg 54 44.60
SOH 0.70 327 ePg 54 47.20 0.1
eSg 54 57.30
THE 0.79 300 ePg 54 48.50 -0.4
eSg 55 00.50
SRS 0.90 347 ePg 54 51.40 0.3
eSg 55 03.60
LIT 1.06 263 ePb 54 53.60 -0.4
KNT 1.18 322 ePb 54 56.30 0.3
eSg 55 13.20
S.D. = 0.4 on 7 of 7 obs.

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* DEC 27, 1989 09h 00m 00.70± 2.65s
43.558 N ±18.7km 7.497 E ±13.0km
DEPTH = 10.0km (geophysicist)
NEAR SOUTH COAST OF FRANCE (379)
ML 1.5 (GEN).

SBF 0.31 352 Pg 00 08.00 0.9
Sg 00 12.90
IMI 0.45 39 P 00 09.50 -0.4
S 00 17.09
FRF 0.62 270 Pg 00 13.20 0.1
Sg 00 21.60
ENR 0.67 355 P 00 13.00 -1.1
S 00 23.35
STV 0.70 350 P 00 13.00 -1.5
S 00 24.48
ROB 0.78 20 P 00 17.20 1.2
S 00 27.04
PZZ 0.99 343 P 00 20.48 0.9
S 00 33.09
S.D. = 1.3 on 7 of 7 obs.

DEC 27, 1989 09h 18m 21.17± 1.42s
43.534 N ±11.9km 7.475 E ± 8.0km
DEPTH = 10.9 ± 8.0 km
NEAR SOUTH COAST OF FRANCE (379)
ML 2.3 (LDG).

SBF 0.33 355 Pg 18 28.20 0.1

		Sg	18 33.00		
IMI	0.48 39	P	18 31.27	0.3	
FRF	0.60 273	Pg	18 33.00	-0.3	
		Sg	18 41.30		
ENR	0.69 357	P	18 35.09	0.2	
		S	18 43.41		
STV	0.72 351	P	18 35.19	-0.1	
		S	18 44.74		
ROB	0.81 20	P	18 37.16	0.3	
		S	18 46.79		
LRG	0.81 265	Pg	18 37.30	0.4	
FIN	0.86 38	P	18 37.36	-0.3	
		S	18 48.12		
PZZ	1.01 345	P	18 40.43	0.2	
		S	18 53.46		

S.D. = 0.3 on 9 of 9 obs.

DEC 27, 1989 10h 43m 40.67± 0.59s
43.919 N ± 5.3km 19.080 E ± 7.8km
DEPTH = 5.0km (geophysicist)
YUGOSLAVIA (383)
MD 3.2 (TTG). ML 3.5 (ZAG), 3.4 (KBA).

PLE	0.63 159	iPgd	43 51.80	-1.5	
		eSg	44 00.00		
BRY	1.09 201	ePg	43 59.80	-1.9	
		eSg	44 18.30		
NKY	1.11 183	iPgc	44 00.40	-1.6	
		eSg	44 17.50		
IVA	1.21 150	ePg	44 01.70	-1.9	
		eSg	44 19.00		
BEO	1.34 47	iPg	44 05.40	-0.4	
	1.5s 0.35nm				
		iSg	44 23.60		
PVY	1.48 153	ePg	44 07.40	-0.6	
		eSg	44 27.00		
TTG	1.49 175	ePg	44 06.80	-1.4	
		eSg	44 29.40		
HCY	1.53 196	ePg	44 08.20	-0.5	
		eSg	44 32.50		
BLY	1.59 302	ePn	44 12.20	2.6X	
		eSn	44 35.20		
BDV	1.65 187	ePn	44 11.00	0.6	
		eSn	44 35.50		
SDA	1.93 171	iPn	44 16.00	1.6	
ULC	1.96 176	ePn	44 16.60	1.7	
		eSn	44 43.00		
PUK	1.97 162	iPn	44 16.50	1.5	
HVAR	2.05 250	iPn	44 17.90	1.7	
		iSn	44 44.70		
KKS	2.09 152	ePn	44 18.00	1.3	
LACI	2.33 168	ePn	44 21.40	1.2	
PHP	2.44 155	iPnc	44 23.30	1.4	
SKO	2.61 138	eP	44 29.30	5.1X	
	1.3s 700.00nm				
		i	45 10.00		
TIR	2.64 167	ePn	44 26.70	2.1X	
ZAG	2.91 312	iPn	44 31.40	3.0X	
		iSn	45 09.00		
		iSg	45 20.00		
OHR	3.08 155	eP	44 34.20	3.3X	
VBY	3.15 302	ePn	44 38.20	6.3X	
		eSn	45 33.20		
BERA	3.28 168	ePn	44 36.30	2.6X	
KBN	3.54 158	ePn	44 45.20	7.9X	
BUD	3.56 359	e(P)	44 35.00	-2.7X	
VAY	3.66 134	eP	44 50.40	11.3X	
TPE	3.69 169	ePn	44 48.00	8.5X	
CEY	3.78 300	e(Pn)	44 41.00	0.1	
		e	44 52.00		
		eSn	45 40.50		
LJU	3.86 305	e(Pn)	44 52.50	10.5X	
		e(Sn)	45 42.00		
SOP	4.16 336	eP	44 46.00	-0.1	
TRI	4.18 297	eP	44 36.00	-10.5X	
		i	45 59.30		
VOY	4.24 302	ePn	44 46.80	-0.7	
		eSn	46 04.80		
CMP	4.46 70	ePc	45 02.00	11.4X	
ZST	4.49 343	eP	45 07.80	16.9X	
		e	45 12.30		
		e	46 05.40		
KBA	5.12 310	iPnd	44 59.20	-0.8	
		iPg	45 16.40		
		iPgPg	45 19.20		
		iSn	45 56.00		
KHC	6.45 326	P	45 19.00	0.4	
		e	46 06.80		
PRU	6.82 335	eP	46 19.00	55.2X	
		e	46 50.50		
BBTK	10.98 107	ePg	46 16.00	-5.6X	
		eSg	46 18.00		

S.D. = 1.3 on 21 of 38 obs.

DEC 27, 1989 11h 28m 46.76± 0.91s
43.517 N ± 6.9km 7.545 E ± 5.2km
DEPTH = 10.0km (geophysicist)
NEAR SOUTH COAST DF FRANCE (379)
ML 2.8 (GEN), 2.7 (LDG).

SBF	0.35 347	Pg	28 54.50	0.4	
IMI	0.47 32	Pc	28 56.90	0.7	
		S	29 02.70		
FRF	0.65 274	Pg	28 59.70	-0.1	
		Sg	29 08.00		
ENR	0.71 353	Pd	29 00.68	-0.2	
		S	29 09.17		
STV	0.74 348	Pd	29 01.11	-0.3	
		S	29 09.88		
LMR	0.78 257	Pg	29 01.90	0.0	
		Sg	29 12.00		
ROB	0.81 17	Pc	29 02.80	0.3	
		S	29 12.45		
FIN	0.84 35	Pc	29 03.08	0.1	
		S	29 14.19		
LRG	0.86 266	Pg	29 03.60	0.2	
		Sg	29 15.20		
DOI	1.01 348	P	29 06.00	0.1	
		eSg	29 18.90		
PZZ	1.04 342	P	29 06.39	-0.1	
		S	29 19.62		
CKI	1.05 30	P	29 06.30	-0.3	
		eSg	29 21.00		
FOUF	1.15 332	ePgd	29 08.38	0.1	
		e(Sg)	29 23.16		
PCP	1.25 35	P	29 09.93	-0.2	
RRL	1.51 339	P	29 14.81	0.8	
RSP	1.65 353	P	29 14.60	-1.3	
LSO	1.96 352	P	29 20.45	-0.2	
LPL	2 08 344	Pn	29 22.40	0.1	

S.D. = 0.5 on 18 of 18 obs.

& DEC 27, 1989 11h 29m 43.67s
61.270 N 150.201 W
DEPTH = 31.8km
SOUTHERN ALASKA (2)
<AGS-P>. ML 2.6 (PMR).

SUA	0.33 307	iP	29 51.98	0.2	
		eS	29 58.53		
PWA	0.41 22	iP	29 52.42	-0.5	
		eS	29 59.51		
NKA	0.73 224	eP	29 58.51	0.9	
SLKM	0.76 181	eP	29 57.19	-1.0	
GHO	0.79 50	eP	29 57.47	-1.1	
		eS	30 08.86		
CGLM	0.87 273	eP	29 59.01	-0.7	
SKT	0.95 319	iP	29 59.77	-1.1	
CUT	1.14 358	eP	30 02.37	-1.1	
SEW	1.23 162	eP	30 03.54	-1.1	
RDT	1.28 238	eP	30 04.63	-0.9	
NNL	1.35 204	eP	30 06.96	0.6	
GLI	1.56 103	eP	30 07.84	-1.7	
		eS	30 27 57		
HUR	1.73 9	eP	30 11.63	-0.4	
NCA	1.77 64	eP	30 11.98	-0.6	
VZW	1.78 95	eP	30 11.28	-1.5	
		eS	30 33.38		
CNPM	1.82 197	eP	30 12.39	-1.0	
FID	1.89 104	eP	30 11.74	-2.5	
KLU	2.07 82	eP	30 15.32	-1.7	
TOA	2.10 65	eP	30 16.96	-0.3	
RND	2.23 16	eP	30 19.12	-0.1	
KTH	2.32 352	eP	30 20.03	-0.4	
PDB	2.47 235	eP	30 21.41	-1.2	
MCK	2.54 13	eP	30 23.80	0.2	
SVW	2.63 269	eP	30 23.20	-1 7	
PAX	2.80 50	eP	30 26.73	-0.6	
CDD	2.91 218	eP	30 28.42	-0.4	
GLB	3.08 84	eP	30 29.00	-2.3	
CCB	3.56 17	eP	30 37.52	-0.5	
BALM	3.82 90	eP	30 38.72	-3.0	

29 obs. associoted

DEC 27, 1989 11h 31m 50.80± 1.43s
43.544 N ±10.7km 7.524 E ± 7.9km
DEPTH = 10.0km (geophysicist)
NEAR SOUTH COAST OF FRANCE (379)
ML 2.0 (GEN).

SBF	0.33 349	Pg	31 58.00	0.4	
		Sg	32 02.60		
IMI	0.45 36	P	32 00.34	0.3	
		S	32 06.11		
FRF	0.64 272	Pg	32 03.00	-0.6	
		Sg	32 11.40		
ENR	0.69 354	P	32 04.19	-0.3	
		S	32 12.88		
STV	0.71 348	P	32 04.66	-0.3	
		S	32 13.60		
ROB	0.79 18	P	32 06.15	-0.1	
		S	32 16.26		
FIN	0.83 36	P	32 06.59	-0.3	
		S	32 17.59		
LRG	0.85 264	Pg	32 07.80	0.6	
		Sg	32 18.50		
PZZ	1.01 343	P	32 10.11	0.1	
		S	32 22.62		

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

? DEC 27, 1989 12h 02m 04.95± 7.50s
43.697 N ±51.0km 7.510 E ±15.3km
DEPTH = 10.0km (geophysicist)
NEAR SOUTH COAST OF FRANCE (379)
ML 1.5 (GEN).

SBF	0.17 342	Pg	02 08.60	-0.3	
		Sg	02 13.50		
IMI	0.35 52	P	02 12.42	0.3	
		S	02 18.57		
ENR	0.53 353	P	02 16.01	0.2	
		S	02 24.62		
STV	0.56 346	P	02 16.52	0.1	
ROB	0.65 23	P	02 17.44	-0.6	
		S	02 27.70		
PZZ	0.86 340	P	02 21.75	0.1	
		S	02 34.05		

S.D. = 0.4 on 6 of 6 obs.

DEC 27, 1989 12h 02m 22.23± 3.69s
43.745 N ±26.4km 7.550 E ± 9.4km
DEPTH = 10.0km (geophysicist)
NEAR SOUTH COAST DF FRANCE (379)
ML 1.7 (GEN).

SBF	0.14 325	Pg	02 25.20	-0.5	
		Sg	02 30.40		
IMI	0.30 56	P	02 28.41	0.0	
		S	02 35.18		
ENR	0.49 349	P	02 32.21	0.0	
		S	02 41.23		
STV	0.52 342	P	02 32.72	-0.1	
ROB	0.60 23	P	02 34.26	-0.1	
		S	02 44.21		
PZZ	0.83 337	P	02 38.87	0.6	
		S	02 50.77	#	

S.D. = 0.4 on 6 of 6 obs.

DEC 27, 1989 13h 33m 56.61± 0.52s
42.562 N ± 5.9km 24.074 E ± 9.6km
DEPTH = 10.0km (geophysicist)
BULGARIA (359)
ML 3.0 (THE).

SRS	1.49 194	ePbd	34 22.90	-0.5	
		eSb	34 45.70		
KNT	1.65 213	iPbc	34 25.60	-0.2	
		iSb	34 49.20		
VAY	1.67 223	ePn	34 26.20	0.2	
SOH	1.82 197	ePnc	34 27.40	-0.9	
		eSn	34 55.10		
GRG	2.03 219	ePn	34 31.50	0.2	
		eSn	34 59.10		
SKO	2.04 254	ePn	34 31.50	0.1	
THE	2.10 204	iPnc	34 32.60	0.4	
		eSn	35 02.30		
OUR	2.23 182	ePn	34 34.40	0.3	
PAIG	2.65 187	ePn	34 40.60	0 5	
MLR	3.22 24	ePc	34 48.00	-0.4	
VRI	3.82 29	ePd	34 57.00	0.3	

27d 13h

S.D. = 0.5 on 11 of 11 obs.

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* DEC 27, 1989 14h 07m 06.87± 2.20s
43.512 N ±17.9km 7.430 E ±10.4km
DEPTH = 10.0km (geophysicist)
NEAR SOUTH COAST OF FRANCE (379)
ML 1.5 (GEN).

SBF	0.35	1	Pg	07	13.40	-0.7
			Sg	07	18.40	
IMI	0.52	40	P	07	17.52	0.1
			S	07	23.36	
FRF	0.57	275	Pg	07	18.40	-0.1
			Sg	07	26.80	
STV	0.74	354	P	07	21.93	0.6
			S	07	29.82	
ROB	0.85	22	P	07	23.88	0.7
			S	07	32.70	
FIN	0.90	39	P	07	23.57	-0.5

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

DEC 27, 1989 14h 31m 30.66± 0.82s
32.671 N ± 6.4km 47.962 E ± 4.7km
DEPTH = 43.2 ± 8.5 km
4.5mb (15 obs.)
IRAN-IRAQ BORDER REGION (346)

KER	1.82	337	eP	32	01.00	0.8
			eS	32	25.00	
BHD	3.07	282	ePnd	32	27.00	9.2X
			eP*	32	30.50	
			eSn	33	02.00	
			iS*	33	07.50	
			iSg	33	13.00	
SLY	3.56	326	ePnc	32	24 50	-0.4
			iPg	32	36.00	
			iSn	33	06.50	
			iS*	33	12.00	
			iSg	33	22.00	
TEH	4.17	42	eP	32	35.00	1.3
MSL	5.43	314	ePnc	32	51.00	-0.3
			ePg	33	11.00	
			eSn	33	51.00	
TAB	5.55	347	e(P)	33	06.00	12.9X
DHR	6 62	163	eP	33	10.50	2.6
OASM	7.61	212	eP	33	20.50	-1.3
RYD	8.01	189	eP	33	31.00	3.6X
MAIO	10.18	66	eP	33	56.00	-1.3
			eS	36	03.00	
PRNI	11.31	262	eP	34	11.00	-1.6
BADA	11.90	253	eP	34	25.50	4.9X
QUE	16.40	94	eP	35	17.00	-2.5
CMP	21.73	312	ePc	36	21.00	1.1
SKO	22.97	301	eP	36	34.70	2.5
OHR	23.23	299	eP	36	35.20	0.4
	1.5s	0.14nm			2.2mb X	
KSH	23.58	65	P	36	42.50	4.2X
SPC	26.45	317	eP	37	07.30	1.8
CZI	26.49	293	P	37	06.90	1.2
KRA	27.04	318	eP	37	09.30	-1.3
			e	37	23.40	
ZST	27.91	313	eP	37	22.60	4.1X
KBA	29.94	309	eP	37	36.00	-1.0
	1.0s	7.10nm			4.4mb	
KHC	30.42	313	eP	37	41.10	0.0
WMO	32.84	59	P	38	03.00	0.6
GBA	32.91	118	Pc	38	02.80	-0.3
	1.4s	7.30nm			4.3mb	
SUF	33.11	342	eP	38	04 20	-0.1
	0.6s	6.10nm			4.6mb	
LPG	34.09	304	eP	38	13.90	0.5
	1.2s	22.00nm			5 0mb	
HFS	35.51	331	eP	38	23.40	-1.6
	1.2s	20.70nm			4.9mb	
LBF	36.19	306	eP	38	30.80	-0 2
	0.8s	4.00nm			4.4mb	
SMF	36.24	306	eP	38	30.20	-1.2
	0.9s	11.40nm			4.8mb	
LOR	36.31	307	eP	38	30.70	-1.2
	0.8s	4.00nm			4.4mb	
SSF	36.52	306	eP	38	32.80	-0.9
	0.8s	4.00nm			4.4mb	
AVF	36.59	306	eP	38	32.40	-1.9
	0.8s	4.00nm			4.4mb	
NB2	37.04	331	P	38	38.20	0 3
	1.0s	9.10nm			4.6mb	
BCAO	39.31	231	ePc	38	57.50	0.1
	0.6s	3.00nm			4.3mb	
			ic	39	12.30	
EKA	41.98	318	P	39	19.00	0.1
	1.7s	24.10nm			4.7mb	
GTA	41.99	66	eP	39	20.40	1.1
ASMO	42.18	291	iPd	39	20.40	-0.5
APHE	42.20	291	iPc	39	22.00	0.9
ATEJ	42.46	291	eP	39	24.00	0.7
ALOJ	42.50	291	eP	39	25.00	1.4
LZH	45.71	70	P	39	50.00	0.5
	1.2s	17.00nm			4.8mb	
CD2	46.99	76	eP	40	00.00	0.5
CHG	47.53	94	eP	40	04.30	0.4
GYA	50.89	81	P	40	29.00	-0.7
TIY	52.01	65	eP	40	44.30	6.3X
KIC	55.45	254	P	41	03.60	0.1
WHN	55.73	73	eP	41	05.00	-0.3
MBC	71.05	357	eP	42	46.00	0.4
	1.0s	6.00nm			4.5mb	
INK	79.32	1	eP	43	32.00	-0.8

S.D. = 1.2 on 43 of 50 obs.

DEC 27, 1989 14h 31m 46.19± 1.02s
43.518 N ± 7.8km 7.539 E ± 6.2km
DEPTH = 10.0km (geophysicist)
NEAR SOUTH COAST OF FRANCE (379)
ML 2.5 (LDG), 2.2 (GEN).

SBF	0.35	348	Pg	31	53.60	0.1
			Sg	31	58.40	
IMI	0.47	33	P	31	56.13	0.4
			S	32	02.70	
FRF	0.65	274	Pg	31	58.90	-0.3
			Sg	32	07.80	
ENR	0.71	353	P	31	59.93	-0.4
			S	32	08.23	
STV	0.74	348	P	32	00.44	-0.4
			S	32	09.05	
LMR	0.77	257	Pg	32	01.10	-0.1
			Sg	32	11.10	
ROB	0.81	17	P	32	02.08	0.1
			S	32	11.97	
FIN	0.84	35	P	32	02.39	-0.1
			S	32	12.95	
LRG	0.86	266	Pg	32	03.20	0.5
			Sg	32	14.40	
DOI	1.01	348	P	32	05.50	0.2
			eSg	32	19.00	
PZZ	1.04	342	P	32	05.98	0.1
			S	32	19.10	
PCP	1.26	35	P	32	09.20	-0.4
			S	32	26.22	

S.D. = 0.3 on 12 of 12 obs.

DEC 27, 1989 15h 02m 53.42± 1.10s
43.506 N ± 8.3km 7.528 E ± 6.5km
DEPTH = 10.0km (geophysicist)
NEAR SOUTH COAST OF FRANCE (379)
ML 2.5 (LDG), 2.2 (GEN).

SBF	0.36	349	Pg	03	01.00	0.1
			Sg	03	06.00	
IMI	0.48	33	P	03	03.68	0.5
			S	03	10.04	
FRF	0.64	275	Pg	03	06.00	-0.3
			Sg	03	14.00	
ENR	0.72	354	P	03	07.48	-0.3
			S	03	16.61	
STV	0.75	349	P	03	07.99	-0.2
			S	03	17.53	
LMR	0.76	257	Pg	03	08.40	0.1
			Sg	03	18.40	
ROB	0.83	17	P	03	09.63	0.2
			S	03	20.40	
LRG	0.85	267	Pg	03	10.00	0.2
			Sg	03	21.40	
FIN	0.86	35	P	03	09.84	-0.1
			S	03	21.06	
DOI	1.02	349	P	03	13.00	0.3
			eSg	03	26.50	
PZZ	1.05	343	P	03	13.22	0.0
			S	03	26 76	
PCP	1.27	35	P	03	16.81	-0.2
			S	03	32.83	
RRL	1.51	340	P	03	21.84	1 1
RSP	1.66	353	P	03	21.53	-1.2

S.D. = 0.5 on 14 of 14 obs.

& DEC 27, 1989 16h 10m 01.70s
37.200 N 122.068 W
DEPTH = 12.0km
CENTRAL CALIFORNIA (39)
<BRK>. ML 3.6 (BRK).
Mo=1.8*10**14 Nm (BRK). Felt in Sonto Clara County.

GCC	0.18	161	iPc	10	05.40	-0.5
			eS	10	08.20	
MHC	0.37	67	iPd	10	09.40	0.0
PCC	0.39	320	iPc	10	09.30	-0.5
ARN	0.45	71	iPd	10	10.60	-0.4
SAO	0.66	131	eP	10	13.00	-1.7
BKS	0.69	349	iPc	10	14.50	-0.6
			iS	10	24.50	
BRK	0.69	347	ePc	10	14.40	-0.7
			eS	10	24.40	
ZSP	0.76	349	ePc	10	16.00	-0.3
			iS	10	28.00	
PRS	1.03	147	iPc	10	19.90	-1.1
LLA	1.07	123	iPc	10	20.20	-1.5
NWRM	1.41	333	eP	10	24.50	-2.6
PRI	1.55	133	ePc	10	27.80	-1.4
CMB	1.58	58	eP	10	27.50	-2.0
FRI	1.90	96	e(P)	10	31.30	-2.9
			eS	10	54.60	
KVN	3.63	58	eP	10	56.50	-2.6

15 obs. associated

& DEC 27, 1989 16h 22m 14.10s
37.180 N 121.975 W
DEPTH = 8.0km
CENTRAL CALIFORNIA (39)
<BRK>. ML 2 6 (BRK).

GCC	0.15	187	iPd	22	17.00	-0.5
			iS	22	19.50	
MHC	0.31	59	iPd	22	20.60	0.1
			iS	22	26.10	
ARN	0.39	64	iPd	22	21.90	-0.2
PCC	0.46	315	ePc	22	22.70	-0.6
SAO	0.59	134	iPc	22	24.60	-1.4
BKS	0.73	344	eP	22	28.30	-0.3
BRK	0.73	342	eP	22	28.00	-0.6
			e(S)	22	38.50	
ZSP	0.80	344	eP	22	29.80	0.1
			eS	22	41.90	
PRS	0.98	150	iPc	22	31.90	-0.9
LLA	1.00	124	iPc	22	31.90	-1.4
NWRM	1.47	331	eP	22	42.00	1.2
PRI	1.48	134	eP	22	41.10	0.0
CMB	1.52	55	ePd	22	40.60	-1.1
			eS	22	59.20	
FRI	1.82	95	eP	22	44.50	-1.5
			eS	23	07.20	
BCH	2.51	142	eP	22	53.40	-2.6
KVN	3.58	57	eP	23	07.70	-3.6

16 obs. associated

? DEC 27, 1989 16h 27m 16.52± 5.42s
16.050 N ±22.0km 61.017 W ±38.3km
DEPTH = 10.0km (geophysicist)
LEEWARD ISLANDS (92)
ML 2.1 (FDF).

DEG	0.27	351	eP	27	22.10	0.0
			S	27	28.50	
MGG	0.32	246	eP	27	23.30	0.2
			S	27	31.00	
SEG	0.59	307	eP	27	28.60	0.2
PAG	0.64	268	eP	27	29.00	-0.4
			S	27	40.90	

S.D. = 0.5 on 4 of 4 obs.

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* DEC 27, 1989 16h 27m 52.26± 1.41s
11.172 N ±12.0km 93.045 E ± 8.6km
DEPTH = 94.2 ± 24.3 km
4.0mb (1 obs.)
ANDAMAN ISLANDS REGION (703)

NNT	6.70	77	iPd	29	29.10	-0.7
BDT	8.35	43	eP	29	52.10	-0.4
CHG	9.50	36	eP	30	09.00	0.9
IPM	10.26	129	ePd	30	18.80	0.4
HYB	15.35	296	eP	31	25.00	0.0

GBA	15.44	281	P	31 26.00	-0.1
			S	33 58.00	
HFS	75.08	329	eP	39 25.20	-0.1
	0.4s		1.00nm	4.0mb	

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

* DEC 27, 1989 17h 43m 01.53± 1.74s
43.524 N ±13.0km 7.460 E ± 7.8km
DEPTH = 10.0km (geophysicist)
NEAR SOUTH COAST OF FRANCE (379)
ML 1.4 (GEN).

SBF	0.34	357	Pg	43 08.60	0.0
			Sg	43 13.40	
IMI	0.50	39	P	43 11.59	0.0
			S	43 17.59	
FRF	0.59	274	Pg	43 13.50	0.0
			Sg	43 21.80	
ENR	0.70	358	P	43 15.28	-0.2
			S	43 23.79	
STV	0.73	352	P	43 15.69	-0.2
			S	43 24.46	
ROB	0.83	21	P	43 17.64	0.1
			S	43 27.53	
FIN	0.87	38	P	43 18.36	0.0
PZZ	1.01	345	P	43 21.12	0.3
			S	43 34.15	

S.D. = 0.2 on 8 of 8 obs.

* DEC 27, 1989 18h 39m 15.58± 1.75s
43.520 N ±13.0km 7.463 E ± 7.8km
DEPTH = 10.0km (geophysicist)
NEAR SOUTH COAST OF FRANCE (379)
ML 1.4 (GEN).

SBF	0.34	357	Pg	39 22.70	0.0
			Sg	39 27.60	
IMI	0.50	38	P	39 25.73	0.0
			S	39 31.78	
FRF	0.59	274	Pg	39 27.60	0.0
			Sg	39 35.80	
ENR	0.71	358	P	39 29.53	-0.1
			S	39 38.28	
STV	0.73	352	P	39 29.93	-0.1
			S	39 38.95	
ROB	0.83	21	P	39 31.67	0.0
			S	39 41.65	
FIN	0.88	38	P	39 32.39	0.0
PZZ	1.02	345	P	39 35.06	0.1
			S	39 48.39	

S.D. = 0.1 on 8 of 8 obs.

DEC 27, 1989 19h 24m 08.56± 0.29s
4.906 S ± 5.8km 103.119 E ± 6.2km
DEPTH = 62.7km (7 depth phases)
5.3mb (17 obs.)
SOUTHERN SUMATERA (274)

PPI	5.19	328	eP	25 25.50	0.0
			eS	26 20.00	
KGM	6.88	2	ePd	25 51.70	2.6
			e	26 14.60	
PSI	8.64	331	eP	26 11.50	-1.9
IPM	9.65	347	ePc	26 30.90	3.6X
	0.6s		35.50nm	5.6mb	
SNG	12.26	348	eP	27 05.00	2.5
			eS	30 03.80	
BSI	12.95	323	eP	27 08.00	-3.7X
KKM	17.01	50	ePd	28 12.50	8.5X
TSM	17.47	59	eP	28 12.20	2.6
NNT	17.70	349	eP	28 11.50	-1 0
NST	20.66	352	eP	28 45.60	0.0
NANU	21.26	147	eP	28 54.00	2.3
			eS	32 35.00	
LOE	22.21	356	iPd	29 01.00	-0.2
BDT	22.38	350	eP	29 02.00	-0.8
	0.7s		70.90nm	5.2mb	
MBL	22.90	136	eP	29 08.30	0.4
			eS	33 14.00	
CHG	23.93	350	iPc	29 18.00	0.1
	0.9s		54.62nm	5.0mb	
OIZ	24.69	15	eP	29 28.10	2.9X
KNA	27.40	115	iPc	29 48.00	-2.3
MTN	28.75	108	eP	30 01.00	-1.6
KOD	29.65	301	eP	30 12.80	1.8
KMI	29.85	359	Pc	30 13.00	0.5
GYA	31.37	6	P	30 25.80	0.1
GBA	31.44	306	P	30 26.00	-0.3
HYB	32.87	313	iPc	30 39.00	0.1
WB5	33.86	119	iPc	30 47.10	-0.4
ASPA	35.04	125	iPc	30 57.60	0.1
	0.9s		49.00nm	5.4mb	
	Z 21s		0.25um	3.9Msz	
			iS	36 24.40	
			LR	46 21.60	
CD2	35.62	1	iPd	31 01.40	-0.9
LSA	36.27	342	iPc	31 08.00	-0.4
WHN	36.85	16	eP	31 13.00	0.4
	Z 20s		0.63um	4.4Msz	
POO	37.08	310	iPc	31 15.20	0.4
XAN	39.12	8	P	31 31.50	-0.2
SSE	39.74	25	Pc	31 38.20	1.4
	1.0s		28.00nm	5.1mb	
LZH	40.78	1	Pc	31 45.00	-0.5
	1.6s		74.00nm	5.2mb	
			pP	31 58.50	51kmX
NDI	41.67	325	iPc	31 50.10	-2.6
	0.6s		173.33nm	6.0mb	
			eS	38 00.00	
TIA	42.95	17	Pc	32 02.40	-0.7
TIY	43.28	11	Pc	32 06.00	0.2
	Z 16s		1.00um	4.8MszX	
PMG	43.90	98	eP	32 09.00	-2.0
GTA	44.20	356	iPc	32 13.50	0.2
	Z 18s		0.60um	4.6Msz	
CTA	44.57	114	iPc	32 16.90	0.5
	1.2s		106.25nm	5.5mb	
			i	32 34.20	69km
			iS	38 49.00	
STK	44.90	131	iPc	32 19.60	0.6
			i	32 36.30	66km
HHC	46.19	9	Pc	32 29.60	0.6
BJI	46.31	14	Pc	32 30.00	0.1
	1.0s		79.00nm	5.6mb	
	Z 24s		0.38um	4.3MszX	
			e	34 05.00	504kmX
QUE	49.16	318	eP	32 48.00	-4.5X
WMQ	50.46	346	iPc	33 02.00	-0.1
	1.0s		0.10nm	2.8mb X	
			S	40 13.00	
BWA	51.16	131	eP	33 09.20	1.6
CAN	51.97	132	eP	33 14.10	0.4
BRS	52.24	121	iPd	33 16.80	1.0
			ipP	33 32.50	60km
CN2	52.50	20	iPc	33 17.40	0.0
	Z 24s		0.40um	4.4MszX	
			PcP	34 26.70	
			eS	40 37.00	
MAT	52.68	36	iPc	33 17.00	-1.9
	1.2s		37.50nm	5.3mb	
MDJ	54.72	23	eP	33 33.00	-0.8
HNR	56.51	98	eP	33 46.00	-1.2
MAIO	57.82	319	iPc	33 54.80	-1.3
RYD	62.31	301	eP	34 26.00	-1.0
KMSA	62.79	296	eP	34 29.30	-0.9
DZM	63.47	112	iPc	34 34.50	-0.3
TAB	67.76	314	eP	35 00.00	-2.1
MSZ	68.76	136	eP	35 19.40	11.4X
AYN	72.60	302	eP	35 32.00	0.5
PRNI	73.84	303	iPc	35 40.00	1.2
DSI	73.86	305	iP	35 40.00	1.2
HRI	74.06	306	eP	35 41.00	1.0
VRI	84.09	317	ePc	36 35.50	1.6
MLR	84.54	316	ePc	36 37.00	0.7
BCAO	84.99	275	iPc	36 39.10	0.0
	1.1s		20.00nm	5.1mb	
			id	36 56.70	63km
VAY	86.14	312	eP	36 43.50	-0.7
OHR	87.42	311	eP	36 50.00	-0.5
SUF	88.39	333	iP	36 55.80	1.2
	0.7s		16.60nm	5.4mb	
NUR	88.58	331	iP	36 55.20	-0.3
	0.7s		25.40nm	5.6mb	
SPC	89.03	319	eP	36 59.00	0.8
SOD	89.33	338	iP	36 59.40	0.4
KRA	89.35	320	eP	37 00.60	1.1
			e	37 18.10	62km
KEV	89.79	340	eP	36 59.00	-2.1
	0.6s		13.00nm	5.4mb	
SRO	90.11	318	iP	37 04.40	1.4
ZST	90.96	318	eP	37 07.60	0.6
			e	37 24.70	60km
KSP	91.76	321	eP	37 11.50	0.9
			e	37 28.50	59km
UPP	91.94	330	iP	37 11.30	0.2
KBA	93.40	317	eP	37 18.00	-0.5
	0.8s		1.90nm	4.6mb	
HFS	93.93	330	eP	37 20.20	-0.1
	1.1s		18.30nm	5.4mb	
NB2	95.18	331	P	37 25.80	-0.4
	1.0s		5.70nm	5.0mb	
FFC	126.34	18	iPKPd	43 05.80	0.0
	0.9s		10.00nm		
LRM	128.86	31	ePKP	43 11.00	-0.2
ALQ	139.49	39	ePKP	43 31.50	0.0
	1.0s		5.00nm		
			pP	47 21.20	
SIO	144.47	28	ePKPc	43 39.50	-0.4
LNO	144.57	27	ePKP	43 38.60	-1.3
TUL	144.57	27	ePKPc	43 38.60	-1.5
	0.7s		63.00nm		

S.D. = 1.2 on 78 of 84 obs.

? DEC 27, 1989 19h 35m 37.62± 7.79s
42.856 N ±38.8km 127.760 W ±48.9km
DEPTH = 10.0km (geophysicist)
OFF COAST OF OREGON (30)
CL 3.4 (SEA).

KMOR	4.14	46	eP	36 41.71	-0.6
			eS	37 24.20	
NLO	4.47	42	eP	36 47.07	0.1
GT2	4.58	58	eP	36 48.78	0.2
TCO	4.65	72	eP	36 50.06	0.3
BMW	4.85	40	eP	36 52.13	-0.3
			eS	37 40.65	
RVW	4.87	46	eP	36 52.50	-0.1
VLMM	4.91	55	eP	36 53.30	0.0
			eS	37 43.01	
ONR	4.92	34	eP	36 53.45	0.2
TDH	4.94	58	eP	36 53.82	0.0
VBEM	4.97	62	eP	36 54.61	0.4
LVP	5.00	48	eP	36 54.65	0.1
MTMW	5.08	50	eP	36 55.58	-0.1
VLL	5.09	57	eP	36 56.18	0.3
FL2	5.11	47	eP	36 56.28	0.1
VFP	5.16	59	eP	36 57.10	0.2
SHW	5.17	48	eP	36 57.43	0.4
CZM	5.18	45	eP	36 57.11	0.0
ERK	5.18	46	eP	36 56.96	-0.2
HSR	5.19	48	eP	36 57.38	0.1
JLK	5.19	49	eP	36 56.89	-0.3
STD	5.20	48	eP	36 57.52	0 1
YEL	5.21	48	eP	36 57.70	0.1
ESD	5.22	48	eP	36 57.90	0.2
APM	5.23	55	eP	36 57.82	0.1
CDFW	5.23	49	eP	36 57.56	-0.2
OBH	5.25	30	eP	36 58.10	0.1
SOSW	5.25	48	eP	36 57.90	-0.2
APW	5.26	42	eP	36 58.00	-0.1
CPW	5.27	37	eP	36 58.46	0.2
TDL	5.28	47	eP	36 58.38	-0.2
CROR	5.33	64	eP	36 58.74	-0.6
KOSW	5.36	46	eP	36 59.81	0.1
GULW	5.38	53	eP	37 00.18	0.2
VIPM	5.44	70	eP	37 00.39	-0.4
LMW	5.45	44	eP	37 00.77	-0.1

S.D. = 0.3 on 35 of 35 obs.

DEC 27, 1989 20h 01m 05.24± 0.62s
4.436 S ± 3.9km 102.965 E ± 3.7km
DEPTH = 65.0 ± 5.1 km
5.4mb (37 obs.)
SOUTHERN SUMATERA (274)
CENTROID, MOMENT TENSOR (HRV)
Data Used: GDSN
L.P.B.: 12S, 24C
Centroid Location:
Origin Time 20:01:16.9 0 6
Lat 4.43S FIX; Lon 102.93E FIX
Dep 32.7 4.8 Half-duration 1.7
Moment Tensor; Scale 10**16 Nm
Mrr= 8.72 0.75 Mtt=-7.59 0.61
Mff=-1.13 1.15 Mrt= 7.68 1.89
Mrf= 0.04 1.31 Mtf= 8.43 0.76
Principal Axes:

T	Val= 12.65	Plg=59	Azm=329
N	2.48	26	113
P	-15.13	15	211

Best Double Couple:Mo=1.4**10**17
NP1:Strike=333 Dip=37 Slip= 136

27d 20h

```
       NP2:       100      65        61
PPI      4.71 327 iPc   02 16.50    1.0
                  iS    03 19.50
KGM      6.42   3 ePd   02 41.90    2.6
                  e     02 57.20
TSI      9.03 331 eP    03 16.00    0.6
IPM      9.16 348 ePc   03 18.00    0.7
       1.0s   221.60nm          6.1mb
                  e     03 38.40
SNG     11.77 349 eP    03 51.40   -1.2
       1.1s   286.08nm          6.2mb
                  eS    06 05.00
KKM     16.84  52 ePc   05 02.00    3.7X
       0.9s    72.90nm          4.9mb
NNT     17.22 349 eP    05 01.50   -1.5
TSM     17.37  61 ePc   05 08.00    3.1X
       1.0s   792.80nm          5.9mb
NST     20.17 352 iPd   05 36.30   -0.8
LOE     21.74 357 iPd   05 53.00    0.0
NANU    21.74 147 eP    05 53.50    0.6
       0.4s    10 00nm          4.6mb
                  eS    09 43.00
BDT     21.89 350 eP    05 54.00   -0.5
MBL     23.34 137 eP    06 09.50    0.8
       0.8s    71.00nm          5.2mb
                  eS    10 23.00
CHG     23.44 350 ePc   06 09.60    0.0
       1.0s   163.75nm          5.4mb
                  eS    10 20.00
                  e     13 27.50
QIZ     24.28  16 P     06 20.10    2.3
    E  14s     1.20um
                  S     10 34.50
                  SS    11 24.50
DAV     25.30  63 ePc+  06 30.00    2.5
BAG     27.06  40 eP    06 44.00    0.1
KNA     27.74 116 iPc   06 47.20   -2 6
MTN     29.05 109 iPc   06 59.80   -1.9
KOD     29.28 300 iPc   07 05 00    0.9
       0.9s    38.66nm          5.1mb
KMI     29.38 360 Pc+   07 06.00    1.2
    Z  16s     2.40um           4.9MszX
    N  14s     0.15um
                  sP    07 27.00
                  eS    11 58.00
GYA     30.92   6 P     07 19.00    0.7
       1.2s     0.10nm          2.4mb X
    N  15s     0.80um
    E  15s     0.40um
GBA     31.04 306 P     07 09.00  -10.3X
GBA     31.04 306 Pc    07 17.00   -2.3
       0.5s    35.10nm          5.4mb
WARB    31.33 136 iPc   07 21.60   -0.2
       0.4s     9.00nm          4.9mb
COOL    31 39 149 eP    07 21.50   -0.8
       0.4s    10.00nm          4.9mb
HYB     32.44 313 iPc   07 31.50   -0.1
       1.0s    35.00nm          5.1mb
WB5     34.22 119 iPc   07 46.30   -0.7
                  eS    13 06.00
ANP     34.52  31 e(P)  07 34.00  -15.6X
CD2     35.15   1 Pc    07 54.00   -0.8
    Z  16s     1.30um           4.8MszX
ASPA    35.43 126 iPc   07 57.40    0.0
    Z  22s     0.41um           4.1MszX
                  i(S)  13 25.60
                  iScS  18 09.60
                  LR    21 44.90
LSA     35.78 342 iPc   08 00.20   -0.5
WHN     36.45  17 Pd    08 07.50    1.8
       1.2s     0.07nm          2.5mb X
                  sP    08 27.20
                  eS    13 46.00
POO     36.66 309 iPc   08 06.80   -0.9
       0.9s    38 66nm          5.3mb
NJ2     39.31  22 Pc    08 30.00    0.3
    Z  22s     1 00um           4.6Msz
                  PcP   10 37.00
SSE     39.38  25 P     08 32.00    1.7
       1.2s    79.00nm          5.5mb
    Z  20s     1.00um           4.6Msz
    E  10s     0 20um
                  pP    08 44.50   46kmX
                  sP    08 49.50
                  PPP   09 37.50
                  eS    14 44.00

LZH     40.32   1 Pc    08 37.50   -0.6
       1.2s   269.00nm          6.0mb
    Z  18s     1.20um           4.8Msz
    E  15s     0.60um
                  i     09 00.00
                  PcP   10 27.50
                  PP    10 40.50
NDI     41.20 325 iPc   08 42.00   -3.3X
       0.7s   191.78nm          6.0mb
                  eS    14 47.70
TIA     42.55  17 Pc    08 56.60    0.3
    Z  26s     0.90um           4.5MszX
    E  18s     0.90um
                  PcP   10 47.80
                  ScP   14 29.90
                  eS    15 13.00
TIY     42.85  11 iPd   08 59.40    0.7
       0.8s     0.10nm          2.7mb X
    N  15s     0.90um
GTA     43.72 356 iPc   09 06.20    0.3
       0.8s     0.10nm          2.7mb X
    Z  20s     1.50um           4.9Msz
    N  14s     0.90um
KAGJ    44.32  35 eP    09 10.40   -0.3
ADE     44.89 137 iPc   09 16.00    0.7
       0.4s    76.27nm          5.9mb
CTA     44.90 114 iPc   09 15.80    0.3
       1.1s   392.41nm          6.1mb
                  iScP  14 42.90
                  iS    15 47.00
QLP     45.15 124 iPc   09 18.40    1.0
BTO     45.28   8 P     09 19.00    0.7
    N  16s     0.60um
    E  13s     0.20um
                  pP    09 35.50   65kmX
                  eS    15 53.50
GUMO    45.28  66 eP    09 16.50   -2.0
       0.5s   102 04nm          5.9mb
PJG     45.28  66 eP    09 16.50   -2.0
KUMJ    45.30  34 P     09 18.80    0.4
GUA     45.30  66 eP    09 16.60   -2.2
       0.5s   112.68nm          6.0mb
STK     45.33 132 iPc   09 19.50    0.7
                  e     09 28.00
HHC     45.75   9 Pc    09 22.80    0.8
    N  12s     0.60um
    E  12s     0.20um
BJI     45.90  14 Pc    09 23.50    0.5
       1.0s   127.00nm          5.8mb
    Z  20s     1.20um           4.8Msz
    N  16s     0.60um
                  PcP   10 59.00
                  eScP  14 46.00
                  eS    16 00.00
DL2     46.45  20 eP    09 28.00    0.6
    Z  28s     0.60um           4.4MszX
SHNJ    46.65  33 eP    09 29.50    0.4
QUE     48.71 317 eP    09 40.50   -5.0X
RMO     48.92 122 iPc   09 48.00    1.0
SNY     49.73  20 Pc    09 51.20   -1.7
       1.2s     0.60nm          3.5mb X
    Z  28s     1.10um           4.7MszX
WMO     49.97 346 iPc   09 54.60   -0.2
       1.0s     0.30nm          3.3mb X
    Z  22s     0.50um           4.5Msz
                  PcS   15 10.00
                  S     16 59.60
KSH     50.26 333 P     09 57.50    0.3
IIDJ    51.49  37 P     10 05.40   -1.1
BWA     51.58 131 iPc   10 08.80    1.6
                  i     10 17.20
CN2     52.12  21 iPc   10 10.10   -0.9
       0.8s     0.10nm          2.9mb X
    Z  22s     0.80um           4.7Msz
                  pP    10 27.20   67kmX
                  sP    10 35.60
MTMJ    52.19  36 P     10 11.00   -0.8
CAN     52.39 132 iPc   10 13.50    0.2
                  i     10 22.30
MAT     52.39  36 iPc   10 11.70   -1.5
       1.0s    85.00nm          5.7mb
CHJJ    52.52  37 P     10 13 00   -1.2
BRS     52.61 121 iPd   10 15.80    0.7
                  i     10 21.00
                  i     11 25.00
                  e     17 07.00
KAKJ    53.34  38 P     10 17.70   -2.4

MDJ     54.35  23 eP    10 26.50   -1.0
HNR     56.73  98 ePc   10 44.00   -1.2
MAIO    57.37 319 iPc   10 47.40   -2.0
                  i     11 42.00
DHR     59.54 304 iPc   11 04.00   -0.6
ASAJ    60.04  32 eP    11 07.60   -0.1
KUSJ    60.49  34 eP    11 10.60   -0.1
RYD     61.94 301 iPc   11 20.00   -1.0
KMSA    62.44 296 iPc   11 22.50   -1.9
DZM     63.79 112 iPc   11 33.50    0.2
QASM    65.01 301 iPc   11 40.30   -0.9
KER     65.18 311 eP    11 40.00   -2.2
BHD     66.83 309 ePd   11 51.00   -1.5
                  eS    21 10.00
TAB     67.32 314 eP    11 55.00   -0.8
MSZ     69.21 136 P     12 07.10    0.0
RUWJ    70.94 306 P+    12 20.10    2.0
WAJH    71.04 299 iPc   12 19.00    0.3
AYN     72.22 302 iPc   12 26.00    0.3
HLBJ    72.86 305 Pd    12 29.10   -0.4
MASJ    73.24 305 P+    12 31.30   -0.4
MKRJ    73.25 305 P+    12 31.80    0.0
BURJ    73.31 305 P+    12 32.10    0.0
SALJ    73.34 305 Pd    12 32.20   -0.1
PRNI    73.46 303 iP    12 33.50    0.6
DSI     73.47 305 eP    12 33.50    0.6
HRI     73.66 306 iPc   12 34.50    0.4
BUL     73.80 250 iPd   12 48.90   13.7X
       0.9s    16.39nm
SLR     74.29 245 eP    12 31.20   -6.8X
       0.7s    10.27nm          4 9mb
SEK     75.01 242 iPd   12 39.00   -3.1X
       0.9s    10.08nm          4.7mb
PRY     75.07 243 e(P)  12 41.00   -1.5
KOT     76.01 302 ePc   12 47.50   -0.1
BLF     76.30 241 eP    12 49.00   -0.5
HVD     76.97 240 e(P)  12 48.00   -5.2X
BBTK    77.82 312 eP    12 57.00   -0.6
ELL     79.19 309 eP    13 04.70   -0.4
ALT     79.59 311 eP    13 06.00   -1.2
KHL     79.86 310 eP    13 00.70   -8.0X
DST     80.84 311 iP    13 12.10   -1.7
PSN     82.12 315 iP    13 20.00   -0.3
VRI     83.64 317 ePc   13 28.50    0.4
KDZ     83.67 313 iP    13 28.00   -0.3
PVL     84.05 314 iPc   13 31.00    0.9
MLR     84.09 316 iPc   13 31.00    0.5
RZN     84.19 313 iP    13 31.00   -0.2
PGB     84.76 313 iP    13 34.00    0.2
BCAO    84.80 275 iPc   13 34.50   -0.1
       0.6s    21.00nm          5.4mb
                  id    13 55 20
MMB     84.90 312 eP    13 34.00   -0.5
THE     85.30 311 ePd   13 36.00   -0.5
KKB     85.43 312 iP    13 37.00   -0.1
KNT     85.44 312 ePc   13 36.40   -0.8
VTS     85.46 313 iPd   13 38.00    0.5
LIT     85.57 311 iPc   13 37.20   -0.7
VAY     85.71 312 eP    13 37.50   -1.0
BMR     86.18 318 ePd   13 42.00    1.3
SKO     86.65 312 iP    13 42.40   -0.8
OHR     87.00 311 eP    13 44 10   -0.8
       0.9s     0.07nm          2.8mb X
BEO     87.79 315 iP    13 50.20    1.7
SUF     87.90 333 iP    13 49.00    0.3
       0.5s    20.60nm          5.6mb
NUR     88.10 331 iP    13 50.00    0.4
       0.6s    39.10nm          5.8mb
SPC     88.57 319 iP    13 52.40   -0.1
SOD     88.84 338 iP    13 53.00   -0.1
KRA     88.89 320 eP    13 53.60   -0 1
       1.1s    79.00nm          5.9mb
                  e     14 04.30
LCI     89.04 310 P     13 55.00    0.4
KEV     89.30 340 iP    13 56.00    0.7
SRO     89.66 318 iP    13 57.90    0.5
BRT     89.67 311 P     13 58.50    0.9
TDS     90.20 310 Pc    14 01.50    1.4
CSI     90.25 310 P     14 01.90    1.6
CZI     90.32 309 P     14 01.70    1.1
HVAR    90.46 313 iPc   14 01.00   -0.2
MMN     90.49 310 P     14 02.20    0.8
ZST     90.51 318 iP    14 01.30    0.0
ATN     90.75 308 P     14 04.50    1.9
VKA     91.04 318 ePc   14 04.00    0.2
       1.0s    37.30nm          5.7mb
ZAG     91.04 316 iPc   14 04.70    0.9
```

PTJ	91.07	316	eP	14 05.50	1.5
SGO	91.07	310	P	14 04.50	0.5
KSP	91.30	321	iPc	14 05.30	0.4
			e	17 31.00	
MNO	91.33	308	P	14 07.00	1.4
UPP	91.46	330	iP	14 05.10	-0.2
VBY	91.52	315	eP	14 04.90	-1.1
			i	14 06.80	
LJU	92.07	316	eP	14 09.40	0.9
PRU	92.35	320	Pc	14 10.20	0.5
VOY	92.51	316	eP	14 10.70	0.0
BRG	92.79	321	eP	14 12.50	0.8
KHC	92.92	319	P	14 12.80	0.4
KBA	92.96	317	ePc	14 11.50	-1.3
	1.2s		11.40nm	5.2mb	
ARV	93.04	313	P	14 14.00	0.9
FVI	93.32	316	P	14 15.00	0.8
CLL	93.40	321	iPc	14 14.50	0.0
	1.0s		10.00nm	5.2mb	
HFS	93.45	330	eP	14 13.80	-0.7
	1.0s		29.40nm	5.7mb	
MOX	94.25	320	eP	14 18.00	-0.5
NB2	94.70	331	P	14 19.30	-1.1
	0.8s		6.70nm	5.1mb	
LPG	97.50	315	eP	14 33.50	-0.3
	0.8s		5.30nm	5.1mb	
HAU	97.71	318	eP	14 33.90	-0.4
	0.6s		3.60nm	5.1mb	
LBF	99.36	317	eP	14 41.50	-0.3
LOR	99.42	317	eP	14 41.80	-0.3
SMF	99.47	316	eP	14 41.90	-0.4
	1.0s		6.00nm	5.1mb	
AVF	99 80	317	eP	14 43.40	-0.4
	1.0s		6.00nm	5.1mb	
INK	106.02	19	ePdiff	15 10.00	-1.0
INK	106.02	19	ePKP	19 22.50	-0.4
PNT	122.58	32	iPKPd	19 55.50	0.5
	0.6s		11.00nm		
EDM	122.99	25	iPKPc	19 55.30	-0.4
	0.5s		39.00nm		
FHC	124.52	42	e(PKP)	20 00.00	0.9
WDC	125.59	42	ePKP	20 00.80	-0.4
			ePP	21 56.70	
FFC	125.95	18	iPKPc	20 00.60	-0.8
	0.8s		13.00nm		
ORV	126.79	43	ePKP	20 02.90	-0.6
BRK	127.06	45	e(PKP)	20 03.70	-0.3
PCC	127.15	45	e(PKP)	20 04.40	0.2
MHC	127.75	45	ePKP	20 05.90	0.3
CMB	128.29	44	ePKP	20 06.50	0.0
PRS	128.40	46	ePKP	20 07.40	0.7
LLA	128.58	46	ePKP	20 07.50	0.5
PRI	129.00	46	ePKP	20 09.00	1.0
SCH	129.09	352	ePKP	20 07.00	-0.4
FRI	129.27	45	ePKP	20 08.50	0.2
CLC	131.33	45	ePKP	20 13.00	0.7
SBB	131.73	46	ePKP	20 14.00	0.9
MWC	131.78	47	ePKP	20 15.00	1.6
GSC	132.15	45	ePKP	20 15.00	1.1
TPC	133.29	46	ePKP	20 17.00	0.9
BAR	133.54	48	ePKP	20 19.00	2.4X
GLA	134.70	46	ePKP	20 19.00	0.2
ALQ	139.22	38	ePKP	20 20.90	-6.5X
	1.0s		10.50nm		
			pP	23 56.80	
MEO	143.80	31	iPKPc	20 31.80	-3.4X
UYO	146.28	27	e(PKP)	20 39.60	0.2
CBN	146.39	0	ePKP	20 40.00	0.6
CNCB	157.07	203	ePKP	21 01.00	4.7X
LPB	157.37	203	(PKP)	21 04.00	7.5X
ZOBO	157.62	203	PKPc	20 57.80	0.8
	1.2s		11.82nm		
Z	24s		0.13um	4.7MszX	
			LR	40 22.00	

S.D. = 1.0 on 182 of 198 obs.

DEC 27, 1989 21h 45m 58.12± 3.68s
22.399 N ±13.7km 143.527 E ±17.8km
DEPTH = 127.1 ± 31.2 km
4.3mb (4 obs.)
VOLCANO ISLANDS REGION (213)

MAT	14.83	343	(P)	49 22.00	-0.5
	0.8s		33.58nm	4.7mb	
SSE	21.72	298	P	50 40.50	0.5
	0.8s		11.00nm	4.3mb	
DL2	24.91	316	eP	51 09.30	-1.4
	1.0s		0.10nm	2.3mb X	
MDJ	24.95	336	eP	51 12.00	1.0
SNY	25.59	324	eP	51 18.40	1.4
BJI	29.09	313	eP	51 30.00	-18.7X
CD2	36.39	292	eP	52 51.90	0.0
GTA	40.73	305	eP	53 27.40	-0.6
WB5	42.96	193	eP	53 46.20	0.0
			e	55 34.30	
WMO	50.39	309	P	54 45.20	0.9
INK	66.80	24	eP	56 38.00	0.4
SUF	81.94	336	eP	58 04.40	-0.1
	0.3s		0.30nm	3.5mb	
NUR	83.79	334	eP	58 13.80	-0.2
HFS	88.21	337	eP	58 34.20	-1.5
	0.4s		1.20nm	4.3mb	
ZOBO	149.56	84	PKP	05 31.00	0.4
LPB	149.65	85	ePKP	05 36.00	5.5X
CNCB	149.84	85	PKP	05 38.00	7.0X

S.D. = 1.0 on 14 of 17 obs.

& DEC 27, 1989 22h 10m 47.60s
34.190 N 117.380 W
DEPTH = 14.0km
SOUTHERN CALIFORNIA (43)
<PAS-P>. ML 3.1 (PAS).

RVR	0.20	179	iPc	10 52.00	-0.3
PEC	0.35	148	iPc	10 54.60	-0.4
MWC	0.56	274	iPc	10 58.20	-0.6
SBB	0.62	324	iPc	10 59.00	-0.7
PAS	0.66	267	iPd	10 59.70	-0.6
PLM	0.94	152	iPd	11 04.60	-0.7
TPC	1.11	94	iPc	11 08.20	0.2
CIS	1.16	228	eP	11 08.70	-0.2
GSC	1.21	23	iPd	11 09.80	0.0
ABL	1.66	294	eP	11 16.00	-0.5
GLA	2.41	117	eP	11 30.00	2.7
BCH	2.44	295	eP	11 27.30	-0.4
BLP	2.53	279	eP	11 27.50	-1.3

13 obs. associated

• DEC 27, 1989 22h 29m 32.82± 0.76s
61.983 N ± 7.7km 150.899 W ± 9.4km
DEPTH = 33.0km (normol)
SOUTHERN ALASKA (2)

PMR	0.93	114	iPc	29 49.70	0.2
TTA	2.56	294	eP	30 13.30	0.4
FBA	3.24	24	eP	30 22.50	0.0
IMA	4.28	345	eP	30 37.10	-0.3
KDC	4.32	191	e(P)	30 37.60	-0.3

S.D. = 0.4 on 5 of 5 obs.

• DEC 27, 1989 22h 34m 55.29± 1.20s
19.018 S ±10.6km 68.582 W ±19.5km
DEPTH = 80.9 ± 10.5 km
4.0mb (1 obs.)
CHILE-BOLIVIA BORDER REGION (124)

CNCB	2.27	15	iPd	35 31.00	-1.0
LPB	2.51	11	iPd	35 36.30	1.1
			S	36 15.00	
ZOBO	2.77	9	iPc	35 39.00	0.1
			S	36 20.00	
ARE	3.76	312	eP	35 53.00	0.6
			iS	36 49.50	
ANT	4.97	200	eP	36 08.50	-0.4
			i	36 15.00	
OLY	58.41	338	P	44 42.90	-1.8
FVM	60.30	340	P	44 56.10	-1.6
ANMO	64.61	326	P	45 26.30	-0.3
DAU	71.22	327	P	46 10.00	2.1X
BCH	72.75	318	P	46 20.00	3.1X
TNP	72.88	322	P	46 20.00	2.3X
	0.8s		1.84nm	4 0mb	
KVN	74.04	322	P	46 26.00	1.6
ARN	75.01	319	P	46 35.80	5.9X
EDM	81.66	335	ePd	47 06.40	0.7
GBA	146.98	94	PKP	54 30.00	1.2
HYB	148.76	88	ePKP	54 36.50	4.8X

S.D. = 1.4 on 11 of 16 obs.

DEC 27, 1989 22h 56m 48.98± 1.13s
38.689 S ± 7.7km 174.960 E ± 9.5km
DEPTH = 278.4 ± 11.8 km
NORTH ISLAND, NEW ZEALAND (159)

HITZ	0.63	92	P	57 25.70	0.1
RATZ	0.66	106	Pd	57 25.50	-0.2
KETZ	0.68	128	P	57 25.90	0.0
TUTZ	0.81	92	P	57 26.20	-0.1
KRP	0.89	31	P	57 26.90	0.2
			S	57 49.50	
HATZ	0.91	103	Pd	57 26.30	-0.6
MNG	1.97	168	Pd	57 33.90	0.0
			S	58 02.70	
KIW	2.17	181	Pc	57 35.80	0.1
PGZ	2.18	153	Pd	57 35.40	-0.3
GNZ	2.40	90	P	57 38.10	0.4
CAW	2.42	178	Pc	57 38.00	0.1
MTW	2.50	171	Pc	57 38.30	-0.4
MRW	2.55	184	Pc	57 39.30	0.2
			S	58 13.20	
TCW	2.58	192	Pc	57 40.00	0.6
WDW	2.58	179	eP	57 38.80	-0.6
WEL	2.60	183	P	57 39.50	-0.1
BLW	2.71	172	Pc	57 40.50	-0.2
MOW	2.74	175	Pc	57 40.80	-0.2
HBZ	2.85	69	Pd	57 42.20	0.1
COB	2.95	215	P	57 43.20	0.1
			S	58 20.50	
CCW	3.11	190	P	57 45.80	1.0
TMP	6.69	211	P	58 26.90	0.1
			S	59 33.50	
DNZ	7.89	203	P	58 44.80	3.2X
			S	00 10.50	
MSZ	7.97	219	P	58 42.00	-0.6
			S	00 08.50	

S.D. = 0.4 on 23 of 24 obs.

DEC 27, 1989 23h 26m 57.03± 0.19s
32.967 S ± 3.7km 151.619 E ± 4.0km
DEPTH = 10.0km (geophysicist)
5.4mb (18 obs.)
NEAR S.E. COAST OF AUSTRALIA (603)
MD 5.5 (CNB). Twelve people killed, more than 100 injured and estimated 1.1 billion U.S. dollars domoge (VIII) coused in the Newcostle areo. Damoge occurred os far oway as Liverpool, Scone and Glodstone. Felt in o 200,000 sq. km. oreo of New South Woles and the Australian Copital Territory from Albury ond Cooma to Coffs Harbour and Inverell and as for west as Norromine. Also felt by people in high-rise buildings in Gold Coast and Melbourne. Believed to be the first earthquake in Australian history that has coused deaths.

WER	1.31	221	eP	27 22.20	1.0
JNL	1.59	237	eP	27 25.50	0.2
AVO	1.64	210	eP	27 26.50	0.5
COO	2.39	6	iP	27 37.80	0.9
IVY	2.55	218	iPd	27 39.20	0.2
CAH	2.59	229	iPc	27 40.50	0.8
CNB	3.00	218	eP	27 47.00	1.5
YOU	3.00	243	iPc	27 46.70	1.2
BWA	3.04	241	iPc	27 43.80	-2.3
CAN	3.20	222	iPc	27 48.80	0.4
CBR	3.99	221	iPc	27 59.90	0.2
BRS	5.65	11	iPd	28 22.30	-0.8
			i	28 24.80	
			i	28 35.00	
			i	28 38.00	
			i	28 48.00	
			eS	29 22.00	
			e(S)	29 41.00	
			i(S)	29 50.00	
			eLR	30 20.00	
			i(PcP)	35 12.00	
			e	35 26.00	
TOO	6.80	226	eP	28 40.00	0.7
RMQ	6.92	338	iPc	28 39.70	-1.3
STK	8.55	275	iPd	29 02.00	-1.7
			e	29 05.00	
			e	30 23.00	
			e	30 52.00	
OLP	9.03	313	iPc	29 09.20	-1.2
MOO	10.09	199	eP	29 24.00	-0.9

27d 23h

CTA	13.69	338	iPc	30	15.10	1.5	GBA	84.48	290	P	39	31.00	-0.5	MOX	145.86	313	ePKP	46	38.00	0.8
	0.9s	82.35nm			5.6mb		LSA	84.63	311	eP	39	34.00	1.3		1.5s	62.00nm				
			iS	32	43.80		HYB	85.83	294	iPc	39	39.50	1.2				e	46	42.00	
DZM	17.03	54	iPc	30	59.10	2.2		1.0s	30.00nm			5.4mb		AZI	145.90	298	PKPc	46	38.00	0.6
			i	34	10.10		GTA	86.54	322	iPc	39	42.80	1.3	FVI	145.96	306	PKP	46	38.00	0.6
ASPA	18.12	296	iPc	31	10.50	0.0		1.2s	0.10nm			2.9mb	X	TIC	145.98	225	PKPc	46	38.42	0.0
	0.9s	204.00nm			5.3mb		POO	90.12	292	iPc	39	58.50	-0.4		0.6s	81.50nm				
Z	17s	0.44um			3.6MszX		WMQ	96.10	319	P	40	26.20	0.3	CIO	146.06	300	ePKP	46	38.13	0.3
			eS	34	41.60		KVN	110.06	56	PKP	45	30.30	-0.4	ARV	146.19	300	PKPc	46	39.30	1.3
			LR	39	53.80		TNP	110.25	57	PKP	45	31.60	0.5	ASS	146.42	300	PKPc	46	38.80	0.4
FORR	20.07	270	iPd	31	33.10	-0.2	INK	114.91	23	ePKPc	45	37.80	-0.9	RDP	146.44	297	PKP	46	39.70	1.2
WRA	20.15	306	Pd	31	33.40	-0.8	ALQ	116.84	64	PKP	45	55.00	11.2X	MNS	146.44	298	PKPc	46	39.30	0.9
	0.8s	98.90nm			5.2mb		BW06	117.48	55	PKP	45	43.50	-1.3	RMP	146.45	297	PKP	46	40.00	1.6
SNZO	20.16	121	P	31	48.00	13.8X	ZOBO	118.04	136	PKP	45	46.00	-1.0	AKU	146.66	352	iPKP	46	41.10	3.2X
			S	35	33.00		EDM	118.49	43	iPKPd	45	45.50	-0.6		1.1s	60.76nm				
WB5	20.17	306	iPc	31	33.20	-1.3	GOL	119.38	60	PKP	45	48.20	-0.3	CTI	146.82	305	PKPc	46	38.00	-1.0
			eS	35	19.70		MBC	121.49	16	ePKPc	45	50.50	-0.6	CBM	146.87	53	PKP	46	38.50	-0.4
PVC	21.34	49	iPc	31	52.00	5.5X		0.9s	19.00nm					CRE	146.90	301	PKP	46	41.00	1.8
WARB	22.72	281	eP	32	00.30	0.0	SIO	124.89	67	ePKP	45	59.00	0.1	SFI	146.94	301	PKPc	46	42.00	2.9X
	0.5s	12.00nm			4.7mb					e	46	03.20		PGD	147.04	301	PKP	46	42.00	2.5
			eS	36	25.00		TUL	125.34	67	ePKP	45	59.50	-0.2	FIR	147.38	301	ePKP	46	42.50	2.7X
PMG	23.80	349	eP	32	09.00	-1.8		0.8s	24.30nm					SAL	147.66	304	PKP	46	43.00	2.8X
HNR	24.65	20	eP	32	19.00	-0.1				e	46	03.90		MME	147.74	302	PKP	46	43.10	2.4
COOL	25.91	266	eP	32	32.00	1.1	LNO	125.34	67	ePKP	45	59.50	-0.1	BDI	147.83	302	PKP	46	39.80	-0.8
KNA	26.87	304	iPd	32	37.20	-2.6X				e	46	03.50		PII	147.92	301	PKP	46	42.80	2.2
	0.8s	85.00nm			5.5mb		FFC	125.37	43	iPKPd	45	58.80	-0.4	WIT	148.01	319	ePKP	46	49.00	8.5X
MTN	27.42	312	ePc	32	44.50	-0.3		0.9s	17.00nm					WTS	148.26	317	iPKPc	46	44.90	4.0X
KLB	28.59	263	eP	32	55.00	-0.4	UYO	125.83	69	iPKPc	46	00.00	-0.8		1.0s	113.00nm				
BAL	29.69	265	iPc	33	04.50	-0.8	BCAO	127.89	247	iPKPd	46	04.30	-1.0				e	46	48.00	
	0.7s	36.00nm			5.3mb			0.8s	14.00nm								e	46	51.50	
MUN	29.81	262	P	33	06.30	0.0				id	46	08.90		BOB	148.55	303	PKPc	46	45.30	3.5X
MBL	30.53	285	eP	33	11.50	-1.3	KEV	132.37	337	ePKP	46	12.00	-0.1	VAI	148.83	305	PKPc	46	41.50	-0.5
MRWA	30.64	267	iPc	33	13.50	-0.3	SOD	133.31	334	ePKP	46	12.00	-1.9	CDF	149.20	311	ePKP	46	46.50	3.8X
	0.8s	24.00nm			5.1mb		SUF	134.86	328	iPKP	46	15.90	-1.1	PCP	149.22	303	PKP	46	46.22	3.4X
NANU	33.43	279	eP	33	38.00	-0.1		0.6s	11.60nm					ENN	149.24	316	iPKPc	46	47.20	4.7X
AFI	38.31	69	eP	34	25.00	5.3X	NUR	136.12	325	PKP	46	15.90	-3.6X		0.9s	68.00nm				
GUA	46.68	351	e(P)	35	31.80	4.0X	NUR	136.12	325	ePKP	46	05.00	-14.5X				i	46	51.40	
PAE	54.65	89	iP	36	28.10	-0.4	OHR	140.35	296	e(PKP)	46	17.50	-10.5X	MEM	149.25	315	iPKPd	46	46.90	4.4X
	1.1s	55.00nm			5.5mb		FRB	140.42	27	ePKP	46	18.00	-9.3X	ORX	149.41	305	PKP	46	46.22	3.1X
PMO	57.35	87	iP	36	48.20	0.3	SPC	140.65	309	ePKP	46	21.20	-7.3X	ORO	149.42	305	PKP	46	47.00	3.9X
	1.1s	70.00nm			5.6mb		KRA	140.75	310	ePKP	46	27.90	-0.4	WLF	149.50	313	PKP	46	49.00	6.1X
VAH	57.46	88	iP	36	48.50	-0.2	HFS	141.37	328	ePKP	46	21.10	-8.0X	FIN	149.51	302	PKP	46	46.94	3.7X
	1.1s	40.00nm			5.4mb			0.7s	8.30nm					BSF	149.68	310	ePKP	46	47.80	4.4X
TPT	57.59	87	iP	36	49.90	0.3	NB2	142.03	330	PKP	46	24.70	-5.7X	ROB	149.74	303	PKP	46	47.76	4.2X
	1.1s	50.00nm			5.5mb			0.7s	6.60nm					IMI	149.78	302	PKP	46	48.07	4.4X
RUV	57.69	88	iP	36	50.40	0.1	SRO	142.06	307	ePKP	46	25.90	-4.9X	HAU	149.91	310	ePKP	46	48.60	4.9X
	1.1s	30.00nm			5.2mb		KUK	142.74	230	ePKP	46	27.20	-5.7X	RSP	150.01	304	PKP	46	47.15	3.1X
QIZ	65.32	316	P	37	41.90	0.3	ZST	142.83	308	ePKP	46	27.80	-4.3X	LSD	150.02	305	PKP	46	49.10	4.9X
NST	68.97	306	eP	38	05.50	0.8	KSP	142.92	312	ePKP	46	29.00	-3.2X	ENR	150.07	303	PKP	46	47.76	3.6X
CHJJ	69.66	349	P	38	08.40	-0.2	VKA	143.34	308	ePKP	46	30.50	-2.5X	SBF	150.12	302	ePKP	46	49.30	5.1X
TSRJ	69.70	346	eP	38	09.50	0.7				e	47	46.00		STV	150.13	303	PKP	46	47.56	3.3X
SSE	69.91	332	Pd	38	10.50	0.3	TDS	143.65	294	PKP	46	32.00	-1.7	DOI	150.14	303	PKP	46	47.30	3.1X
	0.9s	50.00nm			5.7mb		HBVT	143.71	58	PKP	46	31.20	-2.5X	EDR	150.20	331	ePKP	46	48.80	5.0X
			i	38	14.50		ZAG	143.84	304	iPKPd	46	32.10	-1.7	PZZ	150.24	303	PKP	46	47.87	3.4X
MAT	70.27	349	iPd	38	11.90	-0.4	PTJ	143.85	304	ePKP	46	31.90	-2.1	DOU	150.28	315	iPKPc	46	49.70	5.6X
	1.0s	68.00nm			5.7mb		PRU	144.19	311	PKPc	46	32.90	-1.4				e	46	53.00	
MTMJ	70.39	348	P	38	13.00	-0.1		1.1s	32.10nm					LPG	150.29	305	ePKP	46	50.20	5.5X
NIIJ	70.83	349	eP	38	15.90	0.2				e	46	37.20		RRL	150.39	304	PKP	46	49.61	4.8X
BDT	70.84	307	eP	38	17.00	0.9	BRG	144.37	313	ePKP	46	33.40	-1.2	BNI	150.43	304	PKPc	46	47.00	2.3
CHG	71.99	308	ePc	38	23.80	0.7	VBY	144.38	304	ePKP	46	30.20	-4.6X	EDU	150.65	331	ePKP	46	50.10	5.7X
	1.1s	22.78nm			5.2mb					i	46	33.90		FRF	150.73	301	ePKP	46	50.90	5.9X
WHN	72.34	327	Pd	38	26.00	1.1	SGO	144.48	295	PKP	46	33.00	-2.1	LMR	150.86	301	ePKP	46	51.30	6.1X
	1.0s	0.06nm			2.6mb	X	MNO	144.79	290	PKP	46	35.00	-1.0	ESY	150.90	330	ePKP	46	50.70	5.8X
			pP	38	29.50	11kmX	KMR	144.82	308	iPKP+	46	34.80	-0.7		0.6s	62.00nm				
GYA	72.94	319	P	38	29.00	0.3	LJU	144.83	305	ePKPc	46	35.00	-0.6	LRG	150.95	301	ePKP	46	51.90	6.6X
KMI	74.19	315	Pc	38	37.50	1.4	CLL	144.83	314	iPKPc	46	34.20	-1.2	ELO	150.98	331	ePKP	46	50.70	5.7X
TIA	76.01	332	Pc	38	46.20	0.2		1.1s	78.00nm					EBH	151.05	331	ePKP	46	51.10	6.0X
DL2	76.74	336	eP	38	50.80	0.8	CEY	144.93	304	ePKPc	46	35.00	-0.8		0.7s	58.00nm				
	1.0s	0.10nm			2.9mb	X	KHC	144.98	310	iPKPc	46	35.40	-0.4	EBL	151.18	330	ePKP	46	51.40	6.1X
XAN	77.80	325	Pc	38	56.50	0.4		1.0s	42.50nm					EAU	151.31	330	ePKP	46	51.80	6.3X
CD2	78.00	319	Pc	38	57.70	0.5				i	46	39.50			0.6s	57.00nm				
SNY	78.77	339	Pc	39	02.20	1.1	BNH	144.99	58	PKP	46	34.40	-1.5	EKA	151.52	329	PKPc	46	52.10	6.3X
TIY	79.23	329	Pc	39	04.40	0.5	DUI	145.14	297	PKPc	46	35.00	-1.3		0.7s	29.30nm				
BJI	79.70	333	eP	39	07.00	0.8	VOY	145.27	305	iPKPc	46	36.00	-0.4	LOR	151.74	310	ePKP	46	53.20	6.8X
	1.0s	127.00nm			5.9mb		SCH	145.38	39	ePKPc	46	35.30	-0.9	LBF	151.75	309	ePKP	46	53.00	6.5X
			e	39	11.00			1.0s	73.00nm					SMF	151.95	309	ePKP	46	53.40	6.6X
MDJ	79.78	344	eP	39	07.50	0.9	TRI	145.40	304	iPKPd	46	36.00	-0.5	SSF	152.03	310	ePKP	46	53.80	6.9X
CN2	80.05	341	iPc	39	09.00	0.9	KBA	145.50	307	iPKPc	46	36.00	-0.9	AVF	152.22	309	ePKP	46	54.00	6.9X
	1.2s	0.10nm			2.7mb	X		1.0s	58.00nm					BGF	152.62	309	ePKP	46	55.40	7.7X
			pP	39	13.00	13kmX				i	46	40.20		MAF	152.92	308	ePKP	46	55.90	7.8X
			eS	49	15.00		KIC	145.59	225	PKP	46	37.34	-0.5	TCF	153.13	309	ePKP	46	56.40	7.9X
LZH	81.95	323	Pc	39	19.50	1.1	SDI	145.62	297	PKPc	46	36.20	-0.9	LSF	153.59	309	ePKP	46	57.20	8.1X
	1.6s	117.00nm			5.7mb		LIC	145.65	224	PKPc	46	37.46	-0.4	CAF	153.64	306	ePKP	46	58.00	8.8X
			pP	39	23.50	13kmX		0.7s	110.00nm					LDF	153.71	315	ePKP	46	57.40	8.2X
HHC	82.23	330	eP	39	21.00	1.3	AOI	145.71	300	ePKP	46	37.56	0.4	FLN	153.85	315	ePKP	46	57.80	8.5X
KOD	82.51	287	eP	39	22.00	0.1	ALP	145.77	299	ePKP	46	36.86	-0.6	RJF	153.90	307	ePKP	46	58.20	8.7X
BTO	82.67	329	eP	39	23.00	1.0	SSO	145.85	300	e(PKP)	46	38.39	1.0	DMU	154.10	330	ePKP	46	58.00	8.5X

GRR	154.24	315	ePKP	46 58.80	8.9X
LPO	154.31	306	ePKP	46 59.40	9.3X
DLE	154.37	329	ePKP	46 58.40	8.5X
LPF	154.51	314	ePKP	46 59.50	9.3X
LFF	154.53	307	ePKP	46 59.80	9.5X
MFF	154.54	311	ePKP	46 59.30	9.0X
DCN	154.64	330	ePKP	46 58.90	8.7X
	1.0s		116.00nm		

S.D. = 1.0 on 132 of 213 obs.

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* DEC 27, 1989 23h 29m 15.09± 1.09s
39.026 N ±10.0km 21.874 E ±10.3km
DEPTH = 10.0km (geophysicist)
GREECE (364)

NEO	1.09	75	ePb	29 36.00	0.5
LIT	1.17	24	ePd	29 36.40	-0.6
KZN	1.28	356	ePb	29 37.80	-1.1
VLS	1.32	230	ePb	29 39.00	-0.4
OHR	2.24	339	ePn	29 54.50	1.7
KNT	2.27	20	eP	29 53.10	-0.2

S.D. = 1.3 on 6 of 6 obs.

DEC 28, 1989 00h 22m 28.49± 0.66s
37.945 N ± 8.5km 14.845 E ± 5.8km
DEPTH = 10.0km (geophysicist)
SICILY (398)

MNO	0.12	263	Pd	22 31.30	-0.4
			eSg	22 33.60	
ATN	0.53	66	Pc	22 39.50	0.2
			eSg	22 47.60	
MSI	0.62	65	Pd	22 41.10	0.2
			eSg	22 50.40	
GIB	0.65	274	P	22 42.00	0.5
			eSg	22 52.00	
MEU	0.84	175	Pd	22 44.80	-0.1
CZI	1.62	38	P	22 56.70	-0.5
ACI	1.76	37	P	22 54.40	-4.8X

S.D. = 0.5 on 6 of 7 obs.

% DEC 28, 1989 01h 29m 00.39± 0.86s
60.050 N ±11.1km 73.427 W ±12.2km
DEPTH = 10.0km (geophysicist)
4.0mb (1 obs.)
NORTHERN QUEBEC (443)

FRB	4.37	30	eP	30 08.00	-0.2
SCH	6.35	143	eP	30 36.40	0.1
FFC	16.21	263	eP	32 45.00	-4.4X
MBC	22.57	333	eP	34 02.50	1.0
	0.7s		4.00nm	4.0mb	
EDM	22.70	270	ePd	34 03.00	0.0
INK	26.36	313	eP	34 37.00	-0.8

S.D. = 0.9 on 5 of 6 obs.

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* DEC 28, 1989 01h 35m 48.20± 1.86s
43.515 N ±13.5km 7.511 E ± 8.2km
DEPTH = 10.0km (geophysicist)
NEAR SOUTH COAST OF FRANCE (379)
ML 1.7 (GEN).

SBF	0.35	351	Pg	35 55.80	0.3
			Sg	36 00.40	
IMI	0.48	35	P	35 58.07	0.1
			S	36 04.25	
FRF	0.63	274	Pg	36 00.90	0.0
			Sg	36 09.40	
ENR	0.71	355	P	36 01.87	-0.5
			S	36 10.89	
STV	0.74	350	P	36 02.46	-0 3
			S	36 11.81	
ROB	0.82	18	P	36 04.22	0.1
			S	36 14.21	
FIN	0.86	36	P	36 04.73	0.0
			S	36 15.40	
PZZ	1.03	343	P	36 08.12	0.3
			S	36 21.35	

S.D. = 0.3 on 8 of 8 obs.

DEC 28, 1989 01h 40m 11.60± 1.00s
34.819 N ± 6.8km 24.337 E ± 5.5km
DEPTH = 30.8 ± 7.9 km
4.0mb (3 obs.)
CRETE (370)
ML 3.8 (ATH).

VAM	0.60	349	ePb	40 23.20	-0.4
NPS	1.14	67	ePn	40 34.00	2.6X
VLI	2.21	329	ePn	40 48.50	1.6
KAP	2.44	72	ePn	40 53.40	3.3X
APE	2.45	23	ePn	40 50.00	-0.3
ITM	3.06	321	ePn	40 59.50	0.5
ATH	3.19	351	ePn	41 01.80	1.1
YER	3.95	53	iPn	41 12.40	0.8
NEO	4.57	349	ePn	41 19.00	-1.4
PRK	4.68	19	ePn	41 20.00	-1.9
ELL	4.92	65	ePn	41 25.70	0.2
KHL	5.44	49	iPn	41 32.70	-0.1
LIT	5.47	345	eP	41 32.80	-0.3
BCK	5.70	61	iP	41 36.70	0.2
KZN	5.84	340	ePn	41 40.00	1.5
LSK	6.09	332	ePn	41 41.00	-1.0
SRN	6.12	327	ePn	41 41.30	-0.9
ALT	6.26	46	eP	41 44.00	-0.4
KBN	6.43	335	ePn	41 52.70	6.1X
KNT	6.43	350	ePc	41 46.90	0.2
TPE	6.46	329	ePn	41 44.00	-3.0X
VAY	6.64	348	ePn	41 49.40	-0.1
MMB	6.78	356	eP	41 50.00	-1.5
BERA	6.82	331	ePn	41 55.20	3.1X
RZN	6.86	2	iP	41 53.00	0.1
OHR	6.87	337	ePn	41 50.00	-2.9X
KKB	7.11	352	iP	41 57.00	0.9
SKO	7.49	343	ePn	42 04.50	3.0X
PHP	7.51	337	ePn	42 11.60	9.9X
VTS	7.81	354	eP	42 05.00	-1.1
CZI	7.89	306	P	42 05.70	-1.4
KOT	7.99	126	ePn	42 07.50	-1.0
			eSn	43 33.50	
CSI	8.10	310	P	42 12.30	2.3X
BBTK	8.37	51	eP	42 15.00	1.1
SHMJ	9.74	99	P	42 34.00	1.3
DSI	9.80	106	eP	42 30.00	-3.5X
MASJ	10.01	105	P	42 36.00	-0.5
PRNI	10.04	113	e(P)	42 35.00	-1.8
KBA	14.78	329	eP	43 45.00	4.8X
	0.6s		3.50nm	3.9mb	
KHC	16.36	334	P	44 02.00	1.5
			e	44 08.80	
PRU	16.77	338	eP	44 05.00	-0.6
CLL	18.41	337	eP	44 24.00	-1.9
			e	45 19.00	
HFS	26.26	348	eP	45 42.30	-3.3X
	0.4s		2.10nm	4.1mb	
NB2	27.56	346	P	45 53.80	-3.7X
	0.6s		1.80nm	3.9mb	
KIC	38.99	230	P	47 38.30	1.3

S.D. = 1.1 on 32 of 45 obs.

DEC 28, 1989 02h 02m 09.89± 1.42s
43.529 N ±10.8km 7.507 E ± 7.8km
DEPTH = 10.0km (geophysicist)
NEAR SOUTH COAST OF FRANCE (379)
ML 1.9 (GEN).

SBF	0.34	351	Pg	02 17.00	0.1
			Sg	02 21.80	
IMI	0.47	36	P	02 19.73	0.3
			S	02 25.61	
FRF	0.63	273	Pg	02 22.00	-0.5
			Sg	02 30.40	
ENR	0.70	355	P	02 23.54	-0.2
			S	02 32.24	
STV	0.73	350	P	02 24.03	-0 2
			S	02 33.09	
ROB	0.81	19	P	02 25.68	0.1
			S	02 35.65	
LRG	0.84	265	Pg	02 26 50	0.4
			Sg	02 37.60	
FIN	0.85	37	P	02 25.98	-0.3
			S	02 37.24	
PZZ	1.02	343	P	02 29.56	0.3
			S	02 42.60	

S.D. = 0.4 on 9 of 9 obs.

? DEC 28, 1989 03h 07m 12.99± 3.96s
44.299 N ±18.6km 7.055 E ±31.0km
DEPTH = 10.0km (geophysicist)
NORTHERN ITALY (545)
ML 1.6 (GEN).

STV	0.20	106	P	07 17.82	0.4
			S	07 20 80	
PZZ	0.21	9	P	07 17.70	0.1
			S	07 20.61	
ENR	0.27	105	P	07 19.05	0.3
			S	07 22.82	
ROB	0.59	90	P	07 24.41	-0.5
IMI	0.72	123	P	07 26.91	-0.2

S.D. = 0.5 on 5 of 5 obs.

DEC 28, 1989 03h 14m 07.62± 2.39s
1.089 N ± 6.5km 78.832 W ±29.2km
DEPTH = 14.9 ± 5.7 km
COLOMBIA-ECUADOR BORDER REGION (106)

COTA	0.90	147	iPd	14 24.40	-0.3
			S	14 34.00	
GGP	1.28	169	iPd	14 31.60	0.3
			S	14 46.30	
OUR	1.29	166	P	14 31.70	0.3
			S	14 45.80	
CAYA	1.31	140	iPd	14 31.30	-0.5
			S	14 45.70	
PURC	2.76	64	eP	14 53.80	1.3
ANCC	3.11	39	eP	14 56.55	-0.5
			eS	15 29.50	
HOQC	3.23	43	eP	14 58.65	-0.3
CLMC	3.58	39	eP	15 03.90	-0.1
HOBC	4.22	40	eP	15 12.65	-0.3
			eS	15 58.20	

S.D. = 0.7 on 9 of 9 obs.

? DEC 28, 1989 03h 58m 29.58± 4.21s
38.929 N ±11.7km 15.001 E ±40.4km
DEPTH = 10.0km (geophysicist)
SICILY (398)

ATN	0.85	155	Pc	58 45.90	-0.1
			eSg	59 02.60	
CZI	0.93	72	P	58 48.10	0.8
			eS	59 02.70	
MMN	1.23	38	P	58 53.20	0.8
			eS	59 10.00	
TDS	1.27	55	P	58 51.90	-1.2
			eSg	59 12.70	
CSI	1.31	49	P	58 53.40	-0.4
			eS	59 11.20	

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

DEC 28, 1989 05h 02m 50.35± 1.13s
43.492 N ± 8.5km 7.574 E ± 6.3km
DEPTH = 10.0km (geophysicist)
NEAR SOUTH COAST OF FRANCE (379)
ML 2.9 (LDG), 2.8 (GEN).

SBF	0.38	345	Pg	02 58.40	0.1
IMI	0.48	29	Pd	03 00.92	0.9
			S	03 06.39	
FRF	0.68	276	Pg	03 03.50	-0.3
			Sg	03 11.60	
ENR	0.74	351	Pd	03 04.81	-0.2
			S	03 13.57	
STV	0.77	347	Pd	03 05.26	-0.2
			S	03 14.50	
LMR	0.79	259	Pg	03 05.80	0.1
			Sg	03 15.70	
ROB	0.83	15	Pc	03 06.89	0.4
			S	03 16.96	
FIN	0.85	32	Pc	03 07.19	0.4
			S	03 17.88	
LRG	0.88	268	Pg	03 07.60	0.3
			Sg	03 18.80	
DOI	1.04	347	Pd	03 10.10	0.1
			eSg	03 23.10	
CKI	1.06	28	P	03 10.40	0.0
			eSg	03 24.40	
PZZ	1.07	342	P	03 10.51	-0.1
			S	03 23.21	
PCP	1.26	33	P	03 13.23	-0.6
			S	03 30.02	
RRL	1.54	339	P	03 18.34	0.3
			S	03 37.40	
RSP	1.68	352	P	03 18.50	-1.4
			S	03 37.90	
BNI	1.69	338	P	03 20.90	0.7
			eSg	03 41.20	
LSD	1.99	351	P	03 23.83	-0.8
LPL	2.11	344	Pn	03 27.60	1.2
ORX	2.16	8	P	03 25.99	-1.0

28d 05h

S.D. = 0.7 on 19 of 19 obs.

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* DEC 28, 1989 05h 34m 30.11± 2.35s
22.991 N ±15.9km 121.608 E ±16.5km
DEPTH = 10 0km (geophysicist)
TAIWAN REGION (243)

TWF1	0.46	322	iPc	34 39.40	-0.1
			eS	34 46.50	
TWG	0.52	251	iPd	34 40.70	0.0
			eS	34 49.40	
TWC	1.63	8	eP	34 58.60	-0.2
TWZ	2.10	359	ePd	35 05.10	-0.6
ANP	2.18	358	iPc	35 08.00	0.9

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

? DEC 28, 1989 05h 35m 09.57± 2.55s
16.164 N ±12.0km 62.149 W ±34.1km
DEPTH = 80.0km (geophysicist)
LEEWARD ISLANDS (92)
MD 3.3 (TRN).

PAG	0.47	106	eP	35 25.60	2.3
			S	35 44.50	
SEG	0.66	69	eP	35 26.30	1.3
MGG	0.84	107	iP	35 27.70	0.8
BBL	0.91	134	eP	35 27.70	-0.1
BPA	0.92	18	iP	35 27.87	-0.1
			eS	35 46.11	
ANG	1.03	17	iP	35 28.50	-0.7
			eS	35 42.39	
DEG	1.06	82	eP	35 27.80	-1.8
			S	35 47.00	
MDN	1.11	139	eP	35 29.61	-0.6
DPMT	1.16	141	eP	35 29.89	-1.0

S.D. = 1.5 on 9 of 9 obs.

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* DEC 28, 1989 06h 26m 23.10± 1.05s
18.221 N ± 8.4km 100.100 W ±10.2km
DEPTH = 29 6 ± 9.0 km
GUERRERO, MEXICO (59)

III	0.62	76	iP	26 35.50	-0.1
			iS	26 44.50	
CRX	1.24	19	eP	26 45.50	0.7
			(S)	27 07.00	
ACX	1.36	170	iP	26 46.00	-0.3
			iS	27 00.00	
PPM	1.63	59	eP	26 49.50	-1.1
MRX	1.80	325	eP	26 52.00	-0.6
IIT	1.88	65	(P)	26 58.00	4.0X
IISM	2.69	73	eP	27 05.00	-0.3
OXX	3.41	109	iP	27 16.00	0.2

S.D. = 0.8 on 7 of 8 obs.

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* DEC 28, 1989 07h 54m 42.04± 2.02s
43.551 N ±14.4km 7.471 E ± 9.9km
DEPTH = 10.0km (geophysicist)
NEAR SOUTH COAST OF FRANCE (379)
ML 1.4 (GEN).

SBF	0.31	355	Pg	54 49.00	0.4
			Sg	54 53.70	
IMI	0.47	40	P	54 51.60	0.0
			S	54 57.30	
FRF	0.60	271	Pg	54 54.20	0.0
			Sg	55 02.00	
ENR	0.68	357	P	54 55.00	-0 5
			S	55 04.41	
STV	0.70	351	P	54 56.00	0.1
			S	55 05 23	
ROB	0.80	21	P	54 57 70	0.1
			S	55 07.69	
PZZ	0.99	344	P	55 00.82	-0.1
			S	55 14.26	

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

? DEC 28, 1989 08h 07m 14.56± 1.11s
37.005 N ±14.7km 28.999 E ± 8.5km
DEPTH = 10.0km (geophysicist)
TURKEY (366)

YER	0.59	283	iPg	07 26.60	0.1
			iSg	07 35.10	
ELL	0.77	109	ePn	07 29.70	0.0
BCK	1.35	70	ePn	07 44.20	4.8X
KHL	1.38	17	ePn	07 40.00	0.1
IZM	1.96	316	ePn	07 48.00	-0.2

S.D. = 0.2 on 4 of 5 obs.

% DEC 28, 1989 08h 33m 47.31± 2.52s
39.566 N ±12.2km 24.331 E ±19.2km
DEPTH = 5.0km (geophysicist)
AEGEAN SEA (365)
ML 2.5 (THE).

PAIG	0.62	306	ePg	33 59.40	-0.3
			eSg	34 06.10	
OUR	0.81	341	ePgc	34 03.70	0.2
SOH	1.46	329	ePb	34 13.70	-0.7
LIT	1.51	291	ePb	34 15.20	0.1
AGG	1.64	251	ePb	34 16.90	-0.1
			eSb	34 40.40	
SRS	1.65	340	ePb	34 16.70	-0.3
KNT	1.93	326	ePn	34 21.70	0.5
			eSn	34 47.50	
GRG	2.03	314	ePn	34 23.10	0.6

S.D. = 0.5 on 8 of 8 obs.

& DEC 28, 1989 09h 13m 17.33s
19.333 N 155.212 W
DEPTH = 8.5km
5.0mb (14 obs.) 4.5Msz (1 obs.)
HAWAII (613)
<HVO-P>. ML 5.0 (HVO). Slight damage in the southeastern part of Howaii. Felt (V) at Kamuela and (IV) at Hakalau, Hawoii National Park, Hilo, Honokaa, Honomu, Mountain View, Pohala, Papoikou and Pepeekeo. Felt throughout much of the Island of Hawaii.

PUH	0.04	352	iPd	13 19.11	-0.2
PWH	0.05	194	iPc	13 19.18	-0.1
MKA	0.06	53	iPd	13 19.20	-0.2
AHA	0.06	309	iPd	13 19.53	0.0
KNH	0.07	272	iPd	13 19.62	0.0
ESR	0.08	342	iPd	13 19.73	0.0
KAE	0.09	120	iPc	13 19.69	0.0
OUT	0.09	310	iPd	13 19.78	0.0
RIM	0.09	317	iPd	13 19.85	0.0
HLP	0.10	250	iPd	13 20.07	0.2
NPH	0.11	320	iPd	13 19.93	-0.1
UWE	0.12	320	iP	13 20.02	-0.2
			iS	13 21.60	
CPK	0.13	299	iPd	13 20.25	-0.1
WHA	0.15	90	iPc	13 20.64	-0.1
DES	0.17	271	iPd	13 20.87	-0.2
MLX	0.18	315	iPd	13 21.18	-0.1
HTC	0.20	242	iPd	13 21.88	0.2
KFH	0.21	294	iPd	13 22.07	0.1
MVH	0.22	40	iPd	13 21.89	-0.1
MLH	0.23	314	iPd	13 22.24	-0.1
HUL	0.24	69	eP	13 21.89	-0.4
AIN	0.24	280	iPd	13 22.42	0.0
WOH	0.29	254	iPd	13 23.28	0.0
PPL	0.30	234	iPc	13 23.57	0.2
PLL	0.31	310	iPd	13 23.36	-0.4
TRH	0.33	284	iPd	13 24.02	-0.2
HBH	0.36	56	iPc	13 24.62	0.0
POH	0.36	70	iPc	13 24.61	-0.1
HMH	0.37	316	iPd	13 24.61	-0.4
WIH	0.38	291	iPd	13 24.69	-0.4
KPO	0.39	64	iPc	13 24.90	-0.3
SWH	0.39	288	iPd	13 24.72	-0.7
KHU	0.39	258	iPd	13 24.74	-0.7
MWH	0.40	293	iPd	13 24.98	-0.5
HIL	0.40	17	iPd	13 25.46	0.0
			iS	13 31.46	
WOB	0.41	300	iPc	13 25.18	-0.5
DAH	0.43	273	iPd	13 25.18	-1.0
HPU	0.50	333	iPc	13 26.70	-0.9
KIH	0.55	289	iPd	13 27.34	-1.1
SPT	0.55	231	ePc	13 26.94	-1.6
KKU	0.57	347	iPc	13 28.33	-0.5
KUH	0.63	264	ePc	13 27.97	-1.9
WKH	0.67	321	ePc	13 29.12	-1.8
CPH	0.68	283	iPc	13 28.94	-2.1
HUH	0.69	301	iPc	13 29.68	-1.6
KOH	0.95	326	iPd	13 32.77	-3.0
HON	3.29	307	eP	14 04.50	-5.6
OPA	3.52	312	eP	14 08.50	-4.9
GCC	33.95	52	ePc	20 14.00	10.8
ARN	34.41	51	eP	20 06.00	-1.3
ORV	35.31	48	eP	20 14.00	-0.9
CMB	35.51	51	e(P)	20 16.00	-0.7
MIN	35.58	47	ePc	20 17.20	-0.2
PLM	36.88	60	eP	20 24.00	-4.4
KVN	37.55	50	eP	20 33.30	-0.7
TNP	37.87	52	eP	20 35.90	-0.8
GLA	38.49	61	eP	20 42.50	0.7
LON	38.65	37	eP	20 43.30	0.4
PNT	41.30	35	eP	21 05.00	0.3
MSU	41.80	53	eP	21 09.50	0.2
PMR	42.43	4	eP	21 13.00	-0.8
	1.0s		27.50nm		4.9mb
DAU	42.98	51	eP	21 19.50	0.4
TTA	43.56	359	eP	21 22.10	-1.1
	1.2s		35.98nm		5.0mb
LRM	43.94	43	eP	21 26.20	-0.5
BW06	44.88	48	eP	21 33.10	-1.2
	1.2s		6.16nm		4.4mb
ALQ	45.65	60	eP	21 39.20	-1.3
	1.5s		18.75nm		4.8mb
ANMO	45.65	60	eP	21 40.50	0 0
	1.4s		13.08nm		4.7mb
FBA	45.81	4	eP	21 39.40	-1.6
	1.0s		23.75nm		5.1mb
SES	46.66	38	eP	21 47.00	-1.0
EDM	46.70	33	ePd	21 46.60	-1.7
IMA	46.72	1	eP	21 46.00	-2.4
GOL	47.22	53	eP	21 52.00	-0.9
	1.2s		16.39nm		5.0mb
INK	50.82	10	eP	22 18.00	-1.9
	1.1s		48.00nm		5.3mb
FFC	53.42	35	eP	22 37.00	-2.7
	1.2s		18.00nm		4.9mb
TUL	54.40	59	e(P)	22 45.90	-1.3
	1.4s		23.20nm		5.0mb
RSON	57.31	41	eP	23 05.00	-3.0
	1.0s		16.37nm		5.0mb
MBC	59.82	9	eP	23 23.00	-2.1
	1.0s		29.00nm		5.4mb
MAT	60.17	302	eP	23 27.00	-1.1
	0.8s		18.66nm		5.3mb
MDJ	66.26	311	eP	24 06.50	-1.6
CN2	69.30	310	Pc	24 24.60	-2.6
	Z 20s		0.30um		4.5Msz
FRB	71.39	28	eP	24 32.00	-7.5
BJI	76.80	308	eP	25 10.00	-1.3
TIA	77.02	304	eP	25 11.20	-1.5
WB5	79.25	244	eP	25 26.10	1.0
WRA	79.30	244	Pc	25 26.70	1.3
	1.0s		2.40nm		4.2mb
HHC	79.97	310	eP	25 28.10	-0.8
TIY	80.23	306	eP	25 28.00	-2.3
WHN	80.78	299	Pd	25 33.00	-0.2
XAN	84.08	304	P	25 49.00	-1.3
LZH	87.26	307	P	26 05.00	-1.1
			pP	26 08.00	9kmX
GTA	88.91	312	Pd	26 14.00	0.1
WMQ	94.83	320	eP	26 41.10	-0.1
SHL	100.99	302	ePdiff	27 08.00	-1.5
BCAO	155.60	15	ePKPc	33 13.40	-0.3
	0.8s		10.00nm		
			ic	33 38.20	

94 obs. assaciated

& DEC 28, 1989 09h 16m 36.07s
19.325 N 155.207 W
DEPTH = 9.4km
HAWAII (613)
<HVO-P>. MD 4.4 (HVO). Felt in the southern holf of the Island of Hawoii.

PWH	0.04	202	iPc	16 37.99	-0.1
PUH	0.05	348	iPd	16 37.95	-0.3
MKA	0.06	44	iPd	16 38.02	-0.3
AHA	0.07	311	iPd	16 38.38	-0.1
KAE	0.08	117	iPc	16 38.48	0.1
KNH	0.08	277	iPd	16 38.47	-0.1
ESR	0.09	341	iPd	16 38.59	-0.1
OUT	0.10	312	iPd	16 38.64	-0.1
RIM	0.10	318	iPd	16 38.71	-0.1
HLP	0.10	255	iPd	16 38.93	0.2
NPH	0.11	321	iPd	16 38.78	-0.2
CPK	0.13	301	iPd	16 39.11	-0.2
WHA	0.15	87	iPc	16 39.42	0.0

DES	0.17	274	iPd	16 39.72	-0.2
MLX	0.19	316	iPc	16 40.19	-0.1
HTC	0.20	245	iPd	16 40.70	0.2
KFH	0.22	296	iPd	16 40.93	0.0
HUL	0.23	67	ePd	16 40.63	-0.4
			eS	16 44.05	
MLH	0.24	315	iPd	16 41.11	-0.2
			eS	16 44.67	
AIN	0.24	282	iPd	16 41.29	0.0
			eS	16 45.18	
WOH	0.29	255	iPd	16 42.04	-0.1
PPL	0.29	236	iPc	16 42.40	0.2
PKL	0.30	64	ePc	16 41.80	-0.5
PLL	0.32	311	iPd	16 42.24	-0.5
TRH	0.34	286	iPc	16 42.99	-0.1
HBH	0.36	55	iPd	16 43.30	-0.1
POH	0.36	68	ePc	16 42.93	-0.5
HMH	0.38	317	iPd	16 43.46	-0.5
WIH	0.38	292	ePd	16 43.54	-0.5
KPO	0.39	63	iPc	16 43.65	-0.3
KHU	0.40	259	iPc	16 43.69	-0.5
MWH	0.40	294	ePc	16 43.86	-0.5
HIL	0.41	16	iPc	16 44.86	0.5
			iS	16 50.76	
NGH	0.41	24	iPc	16 44.38	-0.1
WOB	0.41	301	iPd	16 43.98	-0.6
DAH	0.44	274	iPd	16 44.02	-1.0
HPU	0.51	332	iPd	16 45.50	-1.0
SPT	0.55	232	ePc	16 45.73	-1.5
			eS	16 53.15	
KIH	0.56	289	iPc	16 46.12	-1.3
KKU	0.58	347	iPc	16 47.17	-0.6
KUH	0.63	265	ePc	16 46.78	-2.0
WKH	0.68	321	iPc	16 47.96	-1.8
CPH	0.69	284	iPc	16 47.64	-2.2
HUH	0.70	301	iPc	16 48.68	-1.4
KOH	0.96	326	iPc	16 51.55	-3.0

45 obs. associated

& DEC 28, 1989 09h 41m 08.10s
34.190 N 117.390 W
DEPTH = 15.0km
SOUTHERN CALIFORNIA (43)
<PAS-P>. ML 4.5 (PAS), 4.2 (BRK). Felt (IV) at Blue Jay, Cedarpines Park, Corona, Covino, Crestline, Fawnskin, Hemet, Lake Arrowhead, Lo Palma, Lokewood, Loma Linda, Lytle Creek, Moreno Valley, Oro Grande, Pinon Hills, Rancho Cucamonga, Redlands, Rialto and Wrightwood. Felt in Los Angeles, Orange, Riverside and San Bernardino Counties.

RVR	0.20	176	iPc	41 12.50	-0.4
PEC	0.35	147	iPc	41 15.10	-0.5
MWC	0.55	274	iPc	41 18.70	-0.4
SBB	0.61	324	iPc	41 19.50	-0.5
PLM	0.94	152	iPd	41 25.20	-0.5
TPC	1.12	94	iPc	41 28.80	0.2
CIS	1.15	227	iPd	41 28.30	-0.9
GSC	1.21	23	iPd	41 30.30	0 1
CPE	1.33	169	iPd	41 30.90	-1.1
SCI	1.55	219	iPd	41 34.20	-0.9
BAR	1.62	158	iPd	41 36.00	-0.2
CLC	1.63	354	iPc	41 35.80	-0.6
ABL	1.65	294	ePc	41 36.50	-0.3
SYP	2.17	280	iPc	41 43.50	-0.8
GLA	2.42	117	eP	41 46.50	-1.3
BCH	2.43	295	ePc	41 47.10	-0.9
BLP	2.52	279	eP	41 47.80	-1.3
PKEM	2.91	311	eP	41 54.40	-0.2
PHAM	2.97	304	eP	41 54.50	-0.9
PRI	3.31	307	ePd	41 59.30	-1.2
FRI	3.37	327	ePc	42 00.50	-0.7
			iS	42 51.70	
LLA	3.78	311	ePc	42 05.20	-1.9
TNP	3.89	2	eP	42 08.30	-0.4
PRS	3.89	304	ePc	42 06.00	-2.7
SAO	4.19	309	eP	42 11.00	-1.8
CMB	4.54	329	ePc	42 16.60	-1.2
			eS	43 24.50	
MHC	4.67	314	ePc	42 17.40	-2.5
GCC	4.70	308	ePc	42 17.90	-2.2
KVN	4.88	353	eP	42 22.30	-0.6
PCC	5.23	311	ePc	42 24.90	-2.6
BKS	5.38	315	iPd	42 27.60	-2.1
BRK	5.39	314	ePd	42 27.60	-2.3
ZSP	5.44	315	ePd	42 28.70	-1.8
ORV	6.29	330	eP	42 41.50	-1.0
MIN	7.00	333	eP	42 53.00	0.3
ALQ	9.05	82	eP	43 20.40	-0.9
	1.0s		11.00nm		5.1mb
			pP	45 55.00	
TUL	17.77	78	eP	45 23.00	6.6
	0.8s		4.30nm		3.6mb

37 obs. associated

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* DEC 28, 1989 09h 49m 54.65± 0.80s
40.714 N ± 6.5km 122.356 W ± 6.2km
DEPTH = 5.0km (geophysicist)
NORTHERN CALIFORNIA (36)
ML 2.5 (BRK).

WDC	0.19	226	iPd	49 59.10	0.5
			iS	50 02.30	
LTCM	0.54	161	eP	50 05.40	0.0
MIN	0.68	123	ePd	50 08.00	-0.3
			eS	50 17.80	
LBFM	0.72	29	eP	50 09.40	0.3
FHC	1.24	275	e(P)	50 17.70	-0.5
ORV	1.33	150	e(P)	50 12.50	-7.2X

S.D. = 0.6 on 5 of 6 obs.

% DEC 28, 1989 09h 56m 59.99± 1.13s
40.465 N ± 9.8km 21.979 E ± 8.1km
DEPTH = 10.0km (geophysicist)
GREECE (364)
ML 2.5 (THE).

LIT	0.53	133	ePgc	57 10.70	-0.1
GRG	0.59	33	ePg	57 11.80	-0.1
THE	0.77	77	ePg	57 15.70	0.7
OHR	1.10	306	ePn	57 20.80	0.0
SOH	1.11	71	ePb	57 20.20	-0.6

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

& DEC 28, 1989 10h 00m 44.40s
34.190 N 117.380 W
DEPTH = 14.0km
SOUTHERN CALIFORNIA (43)
<PAS-P>. ML 3.1 (PAS). Felt at Burbonk.

RVR	0.20	179	iPc	00 48.70	-0.4
PEC	0.35	148	iPc	00 51.20	-0.6
MWC	0.56	274	iPc	00 55.00	-0.6
SBB	0.62	324	iPc	00 55.80	-0.7
PAS	0.66	267	iPc	00 56.40	-0.7
PLM	0.94	152	iPd	01 01.30	-0.8
TPC	1.11	94	iPc	01 05.00	0.2
GSC	1.21	23	iPd	01 06.60	0.0
BAR	1.62	158	iPd	01 12.20	-0.4
CLC	1.63	354	iPc	01 12.10	-0.7
ABL	1.66	294	eP	01 12.90	-0.4
ISA	1.72	329	iPc	01 13.80	-0.4
GLA	2.41	117	eP	01 22.80	-1.3
BCH	2.44	295	eP	01 23.70	-0.8
BLP	2.53	279	eP	01 24.50	-1.1
PHAM	2.97	304	eP	01 30.70	-1.3
TNP	3.89	2	eP	01 52.50	7.4
CMB	4.54	328	e(P)	01 53.00	-1.3
KVN	4.89	353	eP	01 59.00	-0.3

19 obs. associated

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* DEC 28, 1989 10h 50m 56.29± 2.50s
10.631 S ±13.0km 165.866 E ±15.8km
DEPTH = 47.8 ± 19.8 km
5.0mb (3 obs.)
SANTA CRUZ ISLANDS (184)

HNR	5.95	281	eP	52 24.00	-0.1
			eS	53 24.00	
DZM	11.39	177	iPc	53 39.00	-0.3
BRS	20.73	215	iPc	55 35.80	0.4
	0.9s		4.00nm		3.8mb X
			i	56 10.00	
			i	59 41.00	
CTA	21.10	241	iPc	55 39.10	-0.1
	1.1s		48.10nm		4.8mb
RMQ	22.58	223	iPd	55 54 80	0.9
WB5	31.70	249	eP	57 17.80	-0 1
ASPA	33.09	243	iPd	57 29.60	-0.4
	0.9s		26.00nm		5.1mb
	Z 17s		0.38um		4.2MszX
			LR	10 35.50	
MBC	96.67	13	eP	04 23.00	0.9
	1.1s		7.00nm		5.1mb
BCAO	147.05	262	ePKPd	10 33.10	-1.3
	0.9s		27.00nm		
			id	10 43.00	

S.D. = 0.9 on 9 of 9 obs.

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* DEC 28, 1989 10h 51m 35.20± 0.60s
8.730 N ± 8.5km 127.166 E ±11.9km
DEPTH = 33.0km (normal)
4.4mb (4 obs.)
PHILIPPINE ISLANDS REGION (248)

MNI	7.60	198	eP	53 29.50	3.0
GUMO	18.02	73	eP	55 44.00	-0.9
	Z 22s		0.20um		
			eS	59 36.50	
MTN	21.79	170	eP	56 26.00	-0.4
NNT	27.22	281	eP	57 17.60	-0.7
NST	27.29	287	eP	57 19.00	0.1
CHTO	29.14	293	eP	57 34.80	-0.8
	1.1s		3.53nm		4.0mb
MBL	30.56	194	eP	57 47.00	-1.2
BJI	32.69	344	eP	58 08.50	1.9
WARB	34.71	181	iPd	58 24.50	0.2
SHL	37.48	301	iP	58 56.00	8.0X
MRWA	39.23	196	iPd	59 01.90	-0.5
FORR	39.36	179	iPc	59 03.30	0.0
BAL	40.38	194	iPd	59 11.50	-0.3
KLB	41.09	192	eP	59 17.00	-0.6
RKG	43.64	192	iPd	59 43.20	4.8X
GBA	48.96	280	Pc	00 18.60	-2.2
	0.9s		3.20nm		4.4mb
INK	85.38	22	eP	04 15.00	4.8X
NUR	88.57	331	eP	04 27.00	1.2
HFS	93.81	333	eP	04 50.80	0.7
	0.6s		2.40nm		4.8mb
NB2	94.52	334	P	04 54.00	0.5
	0.7s		1.40nm		4.5mb

S.D. = 1.3 on 17 of 20 obs.

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* DEC 28, 1989 11h 16m 18.64± 0.69s
8.949 N ±11.1km 126.388 E ±21.7km
DEPTH = 33.0km (normal)
4.6mb (2 obs.)
MINDANAO, PHILIPPINE ISLANDS (259)

MTN	22.16	168	eP	21 15.00	1.5
SSE	22.56	348	eP	21 19.00	1.7
WB5	29.70	165	eP	22 22.90	-1.2
WRA	29.76	165	Pd	22 23.50	-1.1
	0.5s		1.70nm		4.1mb
SHL	36.71	301	iP	23 23.90	-1.0
FORR	39.60	178	eP	23 49.00	0.2
COOL	39.92	187	eP	23 52.60	1.1
GBA	48.17	280	P	24 58.00	-0.1
INK	85.46	22	eP	28 53.00	-1.0
MBC	86.97	13	ePd	29 01.20	-0.1
	0.9s		10.00nm		5.0mb

S.D. = 1.3 on 10 of 10 obs.

& DEC 28, 1989 11h 18m 14.03s
60.264 N 153.706 W
DEPTH = 177.6km
SOUTHERN ALASKA (2)
<AGS-P>.

RED	0.49	71	eP	18 38.08	0.8
PDB	0.54	207	iP	18 37.90	-1.0
RDT	0.72	64	iP	18 39.13	-0.8
			eS	19 00.09	
NNL	1.23	99	eP	18 43.44	-0.2
SPU	1.23	41	iP	18 42.88	-0.8
SVW	1.27	313	eP	18 42.80	-1.2
			eS	19 05.16	
XLV	1.29	128	eP	18 42.80	-1.3
CDD	1.34	179	eP	18 43.69	-0.9
			eS	19 06.22	
CNPM	1.45	120	eP	18 44.68	-1.0
			eS	19 08.05	
SLKM	1.75	80	eP	18 46.68	-2.0
SUA	1.88	49	eP	18 48.74	-1.4
SKT	2.02	31	eP	18 50.86	-0.7
SEW	2.13	92	eP	18 51.27	-1.4

28d 11h

PMS 2.26 62 eP 18 52.29 -2.0
CUT 2.71 36 eP 18 58.63 -0.9
GHO 2.78 55 eP 18 57.72 -2.7
GLI 3.32 76 eP 19 05.36 -1.7
FID 3 61 79 eP 19 08.59 -2.0
VZW 3.61 74 eP 19 08.55 -2.2
NCA 3.76 60 eP 19 10.53 -2.1
20 obs. associated

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* DEC 28, 1989 11h 25m 28.21± 0.89s
36.005 N ± 8.0km 27.027 E ± 9.8km
DEPTH = 10.0km (geophysicist)
DODECANESE ISLANDS (369)

KAP 0.47 165 ePb 25 38.00 0.3
YER 1.51 42 iPn 25 51.40 -4.0X
APE 1.61 312 ePn 25 56.20 -0.5
SMG 1.71 355 ePb 25 58.80 0.7
KSL 2.07 86 ePn 26 02.90 -0.6
ELL 2.44 71 ePn 26 09.00 0.1
S.D. = 0.8 on 5 of 6 obs.

% DEC 28, 1989 11h 59m 17.33± 0.56s
40.593 N ± 4.9km 23.261 E ± 5.0km
DEPTH = 10.0km (geophysicist)
GREECE (364)
ML 1.9 (THE).

THE 0.23 280 ePg 59 21.80 -0.4
iSg 59 25.30
SOH 0.24 17 ePgc 59 22.60 0.1
eSg 59 26.10
SRS 0 58 26 ePg 59 29.60 0.5
OUR 0.61 115 ePg 59 29.30 -0.3
eSg 59 37.60
KNT 0.63 334 ePgc 59 29.50 -0.5
eSg 59 38.30
PAIG 0 74 154 ePg 59 31.60 -0.2
GRG 0 75 299 ePgc 59 32.10 0.1
eSg 59 42.50
LIT 0 77 230 ePg 59 33.00 0.7
S.D. = 0.5 on 8 of 8 obs.

? DEC 28, 1989 13h 14m 39.71± 6.22s
9.370 S ±39.3km 112.887 E ±63.0km
DEPTH = 33.0km (normal)
4.8mb (4 obs.)
SOUTH OF JAVA (282)

NANU 13.36 169 eP 17 49.50 -0.1
0.3s 10.00nm 5.3mb
eS 20 14.00
MBL 13.50 151 eP 17 51.40 0.0
0.3s 6.00nm 5.0mb
eS 20 16.00
WB5 23 23 119 eP 19 45.20 0.1
WRA 23.24 119 Pd 19 44.90 -0.3
0.6s 5.50nm 4.2mb
ASPA 24.61 128 iPc 19 58.60 0.2
0.4s 6.00nm 4.5mb
Z 17s 0.07um 3.2MszX
LR 30 02.30
STK 34.78 134 iPd 21 29.40 0.0
S.D. = 0.2 on 6 of 6 obs.

DEC 28, 1989 13h 41m 15.51± 0.19s
16.526 S ± 3.9km 69.423 W ± 5.1km
DEPTH = 210 2km (21 depth phases)
5.0mb (52 obs.)
PERU-BOLIVIA BORDER REGION (118)

LPB 1.27 90 iPd 41 49.10 0.1
ZOBO 1.27 79 iPd 41 49.00 -0.2
CNCB 1.41 102 iPd 41 51.00 0.7
ARE 1.99 272 iPc 41 50.30 -5.0X
eS 42 18.00
YJA 6.72 147 ePc 42 52.20 -1.2
S 44 10.00
PT06 7 19 291 iPc 43 43.60 44.6X
iS 44 04.40
ANT 7.20 187 iPc 42 54.00 -5.2X
PT08 8.27 302 iPd 43 09.70 -3.8X
eS 44 40.80
SLA 8.95 156 ePc 43 19.10 -3.0X
CFA 15 05 176 ePd 44 37.50 -1.7
TCA 15.39 164 ePc 44 40.50 -2.9X
JACH 16 12 184 ePd 44 50.50 -1.8

MRA 16.17 169 eP 44 52 00 -0.7
ITB1 16.22 122 e(P) 44 53.10 -0.3
PEL 16.59 184 iPc 44 56.40 -1.4
0.5s 70.42nm 5.3mb
ITB7 16.61 123 eP 44 53.40 -4.8X
FCH 16.75 183 iPd 44 58.70 -1.3
SAN 16.89 184 eP 44 59.00 -2.4X
LCCH 16.99 186 iPc 45 00.40 -2.0
PCH 17.05 183 iPc 45 01.60 -1.6
TACH 17.11 184 eP 45 02.50 -1.3
CHCH 17.37 183 eP 45 04.50 -2.0
LNV 17 45 186 ePd 45 04.00 -3.2X
RFA 18.19 177 ePd 45 14.10 -1.1
SDV 25.28 357 eP 46 22.90 -1.7
CEOS 25.41 3 eP 46 24.00 -1.7
TOV 26.15 359 eP 46 30.80 -1.6
OLLA 26.50 6 iPd 46 34.50 -1.1
LLAV 26.95 6 iP 46 38.50 -1.2
SVV 30.74 16 eP 47 12.49 -0.7
SSV 30.76 16 eP 47 11.17 -2.2
SLB 31.27 16 eP 47 16.76 -1.1
PORP 34.47 5 P 47 43.00 -2.3
JSC 51.76 348 P 50 01.00 -2.6
PRM 51.81 346 P 50 01.60 -2.5
GBTN 53.76 345 P 50 15.00 -3.4X
RSCP 54.06 344 P 50 17.10 -3.5X
0.9s 55.76nm 5.2mb
PWLA 54.20 341 P 50 17.50 -4.0X
BLA 54.44 349 P 50 18.80 -4.5X
NAV 54.61 349 P 50 22.00 -2.5
CVL 54.88 351 P 50 23.80 -2.5
NA2 54.92 352 P 50 23.90 -2.7
OLY 55.81 338 P 50 29.80 -3.3X
pP 51 17 40 211km
LST 56 14 340 P 50 32.60 -2.8
POW 56.29 339 P 50 33.40 -3.1X
FVM 57.70 340 P 50 43.10 -3.2X
pP 51 30.40 208km
LNO 57.82 335 e(P) 50 45.50 -1.6
TUL 57.82 335 eP 50 45.40 -1.8
0.9s 19.70nm 4.8mb
e 50 53.50 27kmX
SIO 57.89 334 ePd 50 46.50 -1.2
MEO 58.07 332 iPd 50 47.70 -1.3
HBVT 60.68 357 P 51 04.00 -2.6
pP 51 52.40 211km
BNH 60.84 358 P 51 05.90 -1.8
RSNY 60.95 356 P 51 06.60 -1.9
0.8s 15.76nm 4.8mb
pP 51 49.00 182kmX
ALQ 62.10 326 iPd 51 16.00 -0.5
0.9s 9.45nm 4.6mb
ANMO 62.11 326 P 51 16.20 -0.3
CBM 63.17 1 P 51 21.80 -1.2
pP 52 10.20 209km
GLD 65.18 330 P 51 36.30 -0.1
1.2s 25.25nm 4.9mb
GOL 65.21 330 P 51 35.90 -0.8
0.9s 18.94nm 4.9mb
GLA 65 66 319 eP 51 40.00 0.6
e 52 28.00 205km
BAR 66 60 318 eP 51 46.00 0.6
TPC 67 12 319 eP 51 49 00 0.3
e 52 40.00 218km
PLM 67 15 318 P 51 50.00 1.0
LIC 67.56 76 Pc 51 51 36 -0.3
0.5s 52.00nm 5.5mb
PEC 67.68 318 P 51 52.90 0.7
TIC 67.72 76 Pc 51 52.42 -0.3
MSU 67.84 325 P 51 53.40 0 1
KIC 67.88 76 P 51 53.52 -0.1
RVR 67.89 318 eP 51 54.00 0.6
e 52 42.00 204km
LKO 68.24 72 Pc 51 56.66 0.7
0.6s 68.00nm 5.5mb
GSC 68.37 320 eP 51 57.00 0.6
e 52 48.00 217km
MWC 68.47 318 eP 51 58.00 0.8
e 52 47.00 208km
SBB 68.62 319 eP 51 58.00 0.1
e 52 48.00 213km
DAU 68.71 327 P 51 59.00 0.3
pP 52 48.20 209km
CLC 69.19 320 eP 52 02.00 0.6
e 52 52 00 212km
DUG 69.38 326 P 52 02.80 0 3
0.8s 8.33nm 4.5mb

pP 52 52.20 209km
BW06 69.59 330 P 52 03.00 -0.9
ABL 69.61 318 P 52 03.40 -0.8
ISA 69.64 319 eP 52 05.00 0.8
BLP 70.20 317 P 52 08.30 0.9
BCH 70.37 318 P 52 09.80 1.1
pP 53 00.40 214km
RSON 70.40 344 P 52 06.00 -2.3
0.8s 14.02nm 4.7mb
TNP 70.43 322 P 52 09.70 0.6
0.8s 14.61nm 4.8mb
pP 52 59.80 212km
PHAM 70.97 318 P 52 13.40 1.3
PTI 71.06 328 P 52 12.60 -0.1
SCH 71.09 2 eP 52 11.00 -1.4
IMW 71.10 330 P 52 13.10 0.0
pP 53 02.40 208km
FRI 71.25 319 e(P) 52 15.70 2.0
PRI 71.33 318 eP 52 15.20 0.8
KVN 71.59 322 P 52 16.00 0.0
pP 53 05.00 206km
WEGH 71.74 78 iPc 52 17.00 -0.1
LLA 71.80 318 ePd 52 18.00 1.0
e 53 05.90 201km
LEGH 71.90 78 iPc 52 18.20 0.2
PRS 71.90 318 ePd 52 18.60 1.0
KUK 71.90 78 iPc 52 17.70 -0.3
KOGH 71.98 78 iPc 52 18.70 0.1
SHGH 72.12 78 iPc 52 19.60 0.3
CMB 72.33 320 ePd 52 20.80 0.7
e 53 10.00 207km
ARN 72.62 319 P 52 23.00 1.2
MHC 72.68 319 eP 52 23.20 0.9
GCC 72.72 318 ePd 52 23.30 1.0
LRM 73.25 330 eP 52 26.10 0.6
BKS 73.38 319 eP 52 27.50 1.3
0.7s 33.00nm 5.2mb
ORV 73.95 321 ePd 52 30.60 1.2
e 53 21.50 214km
NWRM 74.14 319 P 52 31.80 1.3
MIN 74.50 321 eP 52 32.40 -0.4
RUV 74.53 258 iP 52 34.80 1 6
1.6s 100.00nm 5.3mb
VAH 74.75 258 iP 52 36.00 1.5
1.6s 90.00nm 5.3mb
TPT 74.80 259 iP 52 36.50 1.8
1.6s 115.00nm 5.4mb
PMO 75.05 259 iP 52 37.90 1.7
1.6s 100.00nm 5.3mb
WDC 75.21 321 ePd 52 35.20 -1.4
LBFM 75.29 322 P 52 37.90 0.6
SES 76.01 334 ePc 52 41.00 0.0
0.8s 42.00nm 5.2mb
FFC 76.19 341 iPc 52 41.20 -0.6
0.9s 30.00nm 5.0mb
VGB 77.28 326 P 52 49.40 1.3
DPW 77.49 329 P 52 50.00 0.8
LON 78.62 326 P 52 56.10 0.7
RMW 79.07 327 P 52 57.80 0.0
EDM 79.07 335 iPc 52 57.50 -0.2
0.7s 87.00nm 5.6mb
PNT 79.16 329 eP 52 59.00 0.8
0.7s 23.00nm 5.0mb
BMW 79.21 325 P 52 59.60 1.0
GMW 79.64 326 P 53 01.40 0.6
FRB 80.02 0 eP 53 01.00 -1.3
MCW 80.37 327 P 53 05.80 1.2
ATEJ 81.32 47 iPd 53 11.50 1 5
ALOJ 81.35 47 iPc 53 11.50 1.4
AAPN 81.43 47 iPd 53 12.00 1.5
APHE 81.57 48 iPd 53 12.40 1.1
ASMO 81.72 47 eP 53 13.50 1.5
TOL 82.70 45 iPd 53 19.00 2.1
1.6s 333.33nm 5.8mb
HVD 85.86 121 eP 53 26.00 -7.2X
i 54 19.00 217km
BLF 86.86 119 iPd 53 40.00 1.9
0.3s 5.00nm 4.8mb
EPF 87.07 44 eP 53 39.90 1.4
LFF 88.16 42 eP 53 44.10 0.5
0.8s 21 40nm 5.0mb
SEK 88.30 119 iPd 53 46.50 1.5
0.6s 10.00nm 4.9mb
MFF 88.32 40 eP 53 44.70 0.4
1.0s 41.60nm 5.3mb
LPO 88.33 42 eP 53 44.20 -0.3
0.8s 10 70nm 4.8mb

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LPF     88.42   39 eP     53 44.80    0.1
        1.2s     35.70nm            5.1mb
KSR     88.42  116 eP     53 41.30   -4.3X
        0.7s      6.00nm            4.6mb
PRY     88.60  118 eP     53 46.80    0.4
GRR     88.69   38 eP     53 45.80   -0.2
        1.2s     65.40nm            5.4mb
RJF     88.81   42 eP     53 47.20    0.5
        1.0s     12.00nm            4.8mb
CAF     89.00   42 eP     53 48.10    0.4
        1.0s     14.00nm            4.8mb
FLN     89.08   38 eP     53 48.10    0.3
        1.2s     55.90nm            5.4mb
LDF     89.22   38 eP     53 48.50    0.0
        1.2s     47.60nm            5.3mb
LSF     89.22   41 eP     53 48.10   -0.5
        1.0s     16.00nm            4.9mb
BCAO    89.29   85 iPc    53 50.70    1.0
        0.8s     16.00nm            5.0mb
                   ic      54 40.00  199kmX
SLR     89.65  117 iPd    53 53.10    1.8
        0.6s     10.00nm            4.9mb
TCF     89.66   41 eP     53 50.70    0.0
        0.8s      6.70nm            4.6mb
MAF     89.86   41 iPc    53 51.80    0.2
        1.1s     19.50nm            4.9mb
BGF     90.17   41 iPc    53 53.00    0.0
        0.9s     16.30nm            5.0mb
AVF     90.59   41 eP     53 55.10    0.3
        0.8s      5.30nm            4.6mb
SSF     90.79   41 eP     53 55.60   -0.2
        0.7s      4.80nm            4.6mb
SMF     90.84   41 eP     53 56.40    0.4
        1.0s     22.00nm            5.1mb
LBF     91.06   41 eP     53 56.70   -0.4
        0.9s      6.50nm            4.6mb
LOR     91.09   41 eP     53 57.20    0.0
        0.9s      4.90nm            4.5mb
LMR     91.33   45 eP     53 59.40    1.1
        1.0s     24.00nm            5.2mb
BUL     91.67  111 iPd    54 16.40   15.7X
        1.0s     12.50nm
                   ipP     55 05.90  199kmX
LPG     92.28   43 iPc    54 04.30    1.2
        1.1s     26.80nm            5.2mb
DOU     92.64   38 Pc     54 05.10    0.9
BSF     93.15   41 eP     54 07.10    0.3
        0.9s      6.50nm            4.7mb
CDF     93.66   41 eP     54 09.20    0.1
        1.0s      8.00nm            4.8mb
INK     96.12  340 eP     54 20.00    0.2
KBA     97.11   43 e(P)   54 25.00    0.0
MBC     97.28  349 eP     54 26.00    1.1
        0.9s      6.00nm            4.9mb
KHC     97.84   41 P      54 29.40    1.4
CLL     98.09   39 iP     54 29.80    0.8
        1.1s     11.00nm            5.2mb
BRG     98.54   40 eP     54 32.50    1.4
        1.3s     11.00nm            5.1mb
ASPA   134.01  210 ePKP   00 10.20    0.2
WRA    136.89  214 PKP    00 06.00   -9.6X
        0.7s      1.00nm
WB5    136.93  214 ePKP   00 16.00    0.4
MTN    144.44  216 ePKP   00 28.00   -1.0
POO    144.96   81 iPKPd  00 30.50    0.6
WMO    146.59   31 PKP    00 34.20    2.3X
NDI    147.03   63 ePKP   00 35.40    2.4X
KOD    147.22   97 ePKP   00 36.00    1.9
MDJ    147.73  334 PKPc   00 37.80    4.2X
GBA    147.89   91 PKPc   00 33.90   -0.8
        0.8s      9.10nm
MAT    148.43  314 ePKP   00 40.00    5.0X
        0.8s     33.58nm
HYB    149.38   84 iPKPd  00 38.50    1.5
        1.0s     30.00nm
                   e       00 42.50
CN2    150.03  338 PKPc   00 42.20    5.0X
GTA    155.34   20 ePKP   00 47.50    2.5X
XAN    162.50    5 PKP    00 55.20    2.0
      S.D. = 1.2  on 156 of 182 obs.
-----------------------------------------
   DEC  28, 1989  13h 41m 51.69± 0.76s
   40.961 N ± 7.1km   29.086 E ± 6.0km
   DEPTH =  10.0km  (geophysicist)
 TURKEY                              (366)

ISK     0.11  349 ePg    41 54.70    0.2
                   eSg     41 58.00
GBZT    0.32  122 ePg     41 58.50    0.1
                   iSg     42 03.00
YLV     0.45  151 iPg     42 00.50   -0.4
CTT     0.53  291 ePg     42 01.90   -0.5
BNT     1.07  236 ePn     42 12.00    0.1
EDC     1.11  237 ePn     42 13.00    0.4
      S.D. = 0.5  on   6 of   6 obs.
-----------------------------------------
*  DEC  28, 1989  13h 45m 56.99± 1.67s
   42.562 N ± 7.4km   24.472 E ±18.2km
   DEPTH =  10.0km  (geophysicist)
 BULGARIA                            (359)
      ML 2.9 (THE).

SRS     1.59  205 ePbc    46 25.30    0.1
                   iSg     46 46.10
KNT     1.83  221 ePbc    46 28.40   -0.3
                   eSb     46 51.80
VAY     1.88  229 ePn     46 29.00   -0.5
SOH     1.93  206 ePbd    46 30.20    0.0
                   eSb     46 55.40
GRG     2.23  225 ePn     46 34.50   -0.1
                   eSn     47 04.20
OUR     2.26  190 ePn     46 35.10    0.2
SKO     2.33  256 ePn     46 36.50    0.6
MLR     3.11   19 eP      46 52.00    4.8X
BZS     3.68  327 ePc     46 55.00   -0.1
      S.D. = 0.4  on   8 of   9 obs.
-----------------------------------------
   DEC  28, 1989  14h 29m 28.87± 0.23s
   40.350 N ± 5.5km   63.313 E ± 3.5km
   DEPTH =  33.0km  (normol)
   4.7mb ( 24 obs.)
 UZBEK SSR                           (339)

MAIO    5.04  218 iPnc    30 43.50   -0.7
        0.7s     65.76nm            5.2mb
                   eSn     31 41.00
KSH     9.78   91 eP      31 45.50   -4.9X
QUE    10.56  163 eP      31 56.50   -4.7X
                   eS      35 26.00
NDI    16.31  131 eP      33 16.50   -0.4
        0.6s     16.67nm            4.3mb
                   eS      36 06.00
WMO    18.41   71 P       33 42.00   -1.2
RYD    20.95  227 eP      34 11.00   -0.4
OASM   21.75  235 eP      34 19.30   -0.1
HRI    23.12  261 e(P)    34 36.00    3.0X
POO    23.56  154 eP      34 14.50  -22.8X
DSI    24.17  258 e(P)    34 45.00    2.0
LSA    25.05  106 P       34 54.20    2.1
PRNI   25.07  255 eP      34 54.00    2.3
AYN    25.13  251 eP      34 57.50    5.2X
ELL    26.28  273 eP      35 04.00    0.9
HYB    26.38  146 iPd     35 04.20    0.1
VRI    27.11  294 ePd     35 11.00    0.5
MLR    27.67  293 ePc     35 17.00    1.3
GTA    27.91   80 eP      35 17.40   -0.5
SHL    27.99  113 eP      35 19.00    0.1
NUR    31.16  323 eP      35 46.50    0.0
        0.6s      8.50nm            4.7mb
SUF    31.46  328 eP      35 48.30   -0.8
        0.6s     14.80nm            5.0mb
SOD    33.71  335 iP      36 10.00    1.3
CD2    33.95   93 eP      36 11.00   -0.2
PRU    35.15  303 P       36 21.10   -0.1
                   e       36 23.50
BRG    35.48  304 iPd     36 24.40    0.3
        1.2s     17.00nm            4.9mb
KHC    35.83  301 iP      36 27.90    0.8
CZI    35.94  284 P       36 27.30   -0.7
CLL    36.06  305 eP      36 29.00    0.1
KBA    36.22  298 eP      36 30.00   -0.6
        0.5s      2.80nm            4.4mb
HFS    36.28  320 eP      36 29.70   -1.0
        0.7s     14.90nm            5.0mb
XAN    36.55   85 Pd      36 33.00   -0.4
NB2    37.64  321 P       36 41.00   -1.2
        0.5s      6.60nm            4.8mb
TIY    37.86   78 Pd      36 44.00   -0.3
GYA    38.37   98 P       36 48.60   -0.2
BSF    40.48  300 eP      37 05.90   -0.2
        0.6s      2.50nm            4.1mb
LPG    41.01  297 eP      37 11.80    1.2
        0.8s     9.90nm             4.6mb
WHN    42.21   87 eP      37 20.50    0.3
LBF    42.53  299 eP      37 22.10   -0.7
        0.9s      4.90nm            4.2mb
LOR    42.54  300 eP      37 22.20   -0.6
        0.8s      4.00nm            4.2mb
SMF    42.70  299 eP      37 23.70   -0.4
        0.9s      9.80nm            4.5mb
SSF    42.83  300 eP      37 24.70   -0.4
        0.9s      3.20nm            4.1mb
AVF    42.99  299 eP      37 26.20   -0.3
        0.9s      9.80nm            4.5mb
MAF    43.66  299 eP      37 31.70   -0.2
        0.5s      5.10nm            4.6mb
TCF    43.88  299 eP      37 33.90    0.2
        0.7s      6.40nm            4.5mb
LFF    45.25  297 eP      37 44.30   -0.4
        0.6s      5.40nm            4.6mb
EKA    45.28  313 Pd      37 41.80   -3.0X
        1.8s     39.90nm            5.0mb
CN2    45.30   64 eP      37 46.60    1.5
BCAO   53.81  240 iPc     38 50.00   -0.7
        0.6s      9.00nm            5.0mb
MBC    63.68    1 eP      39 58.50   -0.1
        1.0s      9.00nm            4.8mb
KIC    69.21  260 P       40 33.60   -1.0
        0.7s      7.50nm            4.9mb
TIC    69.24  261 P       40 33.40   -1.4
LIC    69.52  261 P       40 35.40   -1.1
        0.7s      7.00nm            4.8mb
INK    70.93    7 eP      40 44.00   -0.2
EDM    86.76  358 eP      42 11.00    0.4
WB5    89.11  117 eP      42 22.00   -0.3
WRA    89.14  117 Pd      42 22.60    0.2
        0.7s      2.40nm            4.6mb
SES    89.50  356 eP      42 25.00    1.2
      S.D. = 0.9  on  51 of  57 obs.
-----------------------------------------
   DEC  28, 1989  14h 30m 46.27± 0.67s
   44.417 N ± 9.4km    7.243 E ± 8.1km
   DEPTH =  10.0km  (geophysicist)
 NORTHERN ITALY                      (545)
      ML 1.9 (GEN).

PZZ     0.13  311 P       30 49.63    0.0
                   S       30 52.57
STV     0.18  161 P       30 49.95   -0.5
                   S       30 52.88
ENR     0.23  146 P       30 51.16   -0.1
                   S       31 54.93
FOUF    0.35  289 ePd     30 54.83    1.4
ROB     0.47  105 P       30 56.73    1.0
                   S       31 05.12
RRL     0.60  327 P       30 57.12   -1.4
                   S       31 05.76
IMI     0.69  137 P       30 59.24   -0.7
                   S       31 08.78
FIN     0.72  106 P       31 00.88    0.4
      S.D. = 1.1  on   8 of   8 obs.
-----------------------------------------
?  DEC  28, 1989  16h 01m 22.93± 1.16s
   26.456 N ± 9.0km  140.896 E ±32.7km
   DEPTH = 475.1 ± 12.5 km
   4.0mb (  5 obs.)
 BONIN ISLANDS REGION                (212)

IIDJ    9.35  345 eP      03 35.40    0.7
CHJJ    9.70  351 P       03 38.20   -0.1
                   eS      05 24.90
KAKJ    9.74  357 P       03 38.10   -0.6
                   S       05 24.50
MTMJ   10.44  346 P       03 46.50    0.2
NIIJ   10.87  352 eP      03 50.50   -0.3
                   eS      05 50.00
WB5    46.49  188 eP      09 08.00    0.2
WRA    46.56  189 Pc      09 08.10   -0.2
        0.5s      2.10nm            3.9mb
INK    64.09   24 eP      11 11.00    0.4
KEV    73.20  341 eP      12 22.00   16.6X
SUF    77.27  335 iP      12 28.40    0.3
        0.4s      8.20nm            4.6mb
NUR    79.11  333 iP      12 38.20    0.3
        0.3s      1.50nm            4.0mb
HFS    83.55  336 eP      13 00.20   -0.5
        0.4s      1.70nm            4.1mb
NB2    83.77  338 P       13 01.40   -0.5
        0.7s      2.80nm            4 0mb
      S.D. = 0.5  on  12 of  13 obs.
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28d 16h

? DEC 28, 1989 16h 06m 49.57± 3.37s
20.424 S ±44.2km 178.426 W ±39.5km
DEPTH = 509.4 ± 22.8 km
4.5mb (5 obs.)
FIJI ISLANDS REGION (181)

SGE	4.46	309	iPc	08 13.00	-0.3
BRS	27.19	250	iPc	11 55.30	1.9
	0.7s	3.00nm		4.0mb	
CTA	33.10	264	iPd	12 45.40	1.2
	0.7s	27 40nm		4.9mb	
ASPA	44.15	257	iPc	14 14.40	0.3
	0.7s	19.00nm		4.7mb	
Z	18s	0.05um		3.4Msz	
		eS	20 15.80		
		LR	23 23.50		
WB5	44.20	262	eP	14 14.10	-0.4
WRA	44.21	262	Pd	14 14.20	-0.4
	0.4s	3.00nm		4.2mb	
COOL	54.89	246	eP	15 32.80	-0.9
MBL	57.39	257	eP	15 50.00	-1.1
KLB	57.72	245	eP	15 52.40	-0.8
NANU	61.03	255	iPc	16 15.30	-0.1
BDT	89.22	289	eP	18 52.00	0.1
CHG	89.84	290	eP	18 54.50	-0.4
	0.8s	8.02nm		4.7mb	
PRU	148.75	344	ePKP	25 35.20	-0.3
kHC	149.79	344	PKPc	25 38.40	1.2
S.D. = 1.0		on	14 of	14 obs.	

DEC 28, 1989 17h 12m 48.03± 0.42s
6.786 S ± 7.8km 112.454 E ±11.3km
DEPTH = 33.0km (normal)
4.9mb (6 obs)
JAVA (277)

NANU	15.96	170	eP	16 29.50	-2.3
		eS		19 15 00	
MBL	15.97	154	eP	16 28.00	-4.0X
		eS		19 14.00	
IPM	16.05	314	ePd	16 34.00	1.0
MRWA	22.56	172	eP	17 48.00	1.2
NNT	23.03	327	eP	17 51.20	-0.2
WB5	24.94	124	eP	18 10.00	0.1
WRA	24.94	124	Pc	18 10.00	0.0
	0.8s	27.50nm		4.9mb	
NST	25.43	331	eP	18 15.00	0.4
ASPA	26.58	131	iPd	18 25.00	-0.2
	0.6s	30 00nm		5.1mb	
Z	22s	0.07um		3.1MszX	
		LR	28 24.00		
BDT	27.33	331	eP	18 32 00	0.0
CHG	28.71	333	eP	18 44.30	-0.3
GYA	33.52	351	P	19 27.80	0.8
CTA	35.34	115	iPd	19 43.00	0.3
	1.0s	29 00nm		5.2mb	
STK	36.90	136	iPd	19 56.90	1.2
WHN	37.16	3	eP	20 00.00	2.3
CD2	38.40	348	eP	20 08.00	-0.2
GBA	40.24	300	Pc	20 24.90	1.2
	0.8s	2 70nm		4.1mb	
XAN	40.74	356	P	20 27.20	-0.4
LSA	41.66	332	eP	20 36.20	0.5
TIA	42.99	6	eP	20 45.70	-0.3
BRS	43.37	123	iPc	20 50.80	1.5
	1.0s	5.00nm		4.2mb	
		ipP	21 08 00	69kmX	
LZH	43.41	350	P	20 50.00	0.5
		pP	20 53 00	10kmX	
BJI	46.72	4	eP	21 15.50	-0.2
HHC	47.41	359	eP	21 20 40	-0.9
GTA	47.43	347	eP	21 21.20	-0.4
SNY	49.44	11	iPd	21 34.60	-2.3
CN2	51.71	12	Pd	21 52 80	-1.3
WMQ	55.13	338	P	22 19.00	-0.6
BCAO	94.40	274	ePd	26 05.00	-1.6
	0.3s	5.00nm		5.4mb	
		id	26 08.40		
S.D. = 1.1		on	28 of	29 obs.	

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* DEC 28, 1989 17h 47m 09.65± 1.41s
10.840 N ±12.0km 62.305 W ± 9.2km
DEPTH = 66.3 ± 38.4 km
NEAR COAST OF VENEZUELA (97)
MD 3 6 (TRN).

TCE	0.56	105	eP	47 23.00	0.1
			eS	47 32.90	
TRN	0.91	102	ePd	47 26.71	-0.3
			eS	47 38.80	
TPP	0.99	122	eP	47 28.19	0.1
			eS	47 40.71	
CUM	1.87	259	iP	47 40.00	0.0
			iS	48 04.80	
FCV	2.53	24	eP	47 49.05	-0.1
			eS	48 19.22	
SVB	2.63	23	eP	47 50.51	-0.1
			eS	48 19.61	
SVV	2.68	23	eP	47 51.73	0.4
			eS	48 24.66	
SSV	2.70	24	eP	47 52.08	0.4
			eS	48 25.85	
SLB	3.21	22	eP	47 59.02	0.1
			eS	48 35.65	
BIM	3.85	18	eP	48 07.91	0.2
			S	48 51.30	
MVM	3.94	20	eP	48 09.11	0.1
FDF	4.03	16	eP	48 09.70	-0.6
	0.1s	0.35nm			
			S	48 54.00	
CRM	4.12	19	eP	48 11.36	-0.2
S.D. = 0.3		on	13 of	13 obs.	

? DEC 28, 1989 18h 00m 05.81± 1.37s
35.940 N ±13.1km 26.756 E ±15.4km
DEPTH = 10.0km (geophysicist)
CRETE (370)

KAP	0.52	139	iPc	00 16.60	0.3
			eS	00 24.20	
APE	1.50	319	eP	00 32.20	-0.6
YER	1.71	45	ePn	00 32.60	-3.3X
SMG	1.77	2	eP	00 37.60	1.0
ELL	2.67	71	ePn	00 49.00	-0.7
S.D. = 1.4		on	4 of	5 obs.	

? DEC 28, 1989 18h 06m 02.25±16.55s
41.663 N ±119.km 12.710 E ±102.km
DEPTH = 10.0km (geophysicist)
SOUTHERN ITALY (390)

RDP	0.10	3	Pc	06 04.90	-0.1
			eSg	06 05.90	
RMP	0.15	358	Pc	06 05.60	-0.1
			eSg	06 07.10	
MNS	0.72	358	P	06 16.50	0.0
			eSg	06 25.70	
SDI	0.83	87	P	06 18.30	0.0
			(Sg)	06 30.70	
S.D. = 0.1		on	4 of	4 obs.	

? DEC 28, 1989 19h 27m 18.17± 2.11s
42.183 N ±15.5km 143.909 E ±22.8km
DEPTH = 46.8 ± 13.9 km
4.6mb (13 obs.)
HOKKAIDO, JAPAN REGION (224)

HOOJ	0.50	294	iPd	27 29.80	0.5
			S	27 36.70	
MAT	7.16	220	eP	29 02.00	-0.9
	0.7s	13.70nm		4.8mb	
			(S)	30 28.00	
CHG	44.55	253	eP	35 28.10	0.8
INK	48.94	29	eP	36 01 00	-0.1
GBA	63 59	264	P	37 47.00	0.5
SUF	64.26	333	iP	37 49.20	-1.1
	0.6s	3.90nm		4.6mb	
NUR	66.32	332	eP	38 02 30	-1.2
	0.4s	6.90nm		5.0mb	
FFC	68.36	35	eP	38 17.00	0.5
	0.7s	6.00nm		4.7mb	
KVN	70.16	55	eP	38 40.30	12.2X
NB2	70.18	338	P	38 26.90	-0.6
	0.8s	3.00nm		4.3mb	
HFS	70.18	336	eP	38 26.10	-1.4
	0.7s	3.00nm		4.4mb	
TNP	71.31	55	eP	38 47.50	12.5X
LPG	84.71	331	eP	39 46.30	-2.2
	0.6s	1.80nm		4.4mb	
SMF	84.71	334	eP	39 48.50	0.4
	0.7s	3.30nm		4.6mb	
AVF	84.74	334	eP	39 48 50	0.2
	0.7s	3.30nm		4.6mb	
MAF	85.50	334	eP	39 53.00	0.9
	0.6s	3.90nm		4.8mb	
CAF	86.81	334	eP	40 00.00	1.4
	0.8s	4.00nm		4.7mb	
LFF	87.22	335	eP	40 01.70	1.1
	0.8s	8.00nm		5.0mb	
LPO	87.31	334	eP	40 02.10	1.1
	0.8s	2.60nm		4.5mb	
S.D. = 1.2		on	17 of	19 obs.	

? DEC 28, 1989 19h 58m 29.29± 5.86s
41.598 N ±27.9km 12.467 E ±31.0km
DEPTH = 10.0km (geophysicist)
SOUTHERN ITALY (390)

RDP	0.25	49	P	58 34.30	-0.3
			eSg	58 36.40	
RMP	0.28	40	P	58 34.90	-0.2
			eSg	58 37.60	
MNS	0.80	11	P	58 44.90	0.0
			eSg	58 55.60	
AZI	0.82	61	P	58 46.00	0.8
SDI	1.02	83	P	58 48.20	-0.4
			eSg	59 01.20	
S.D. = 0.7		on	5 of	5 obs.	

DEC 28, 1989 20h 50m 07.96± 0.32s
46.013 N ± 3.2km 15.478 E ± 2.9km
DEPTH = 10.2 ± 2.5 km
3.6mb (1 obs.)
YUGOSLAVIA (383)
ML 3.9 (VKA), 3.8 (KBA). MD 3.9 (ROM), 3.8 (LJU). Felt (VI) at Krsko.

PTJ	0.35	108	iPgc	50 14.20	-1.1
			iSg	50 20.00	
ZAG	0.40	119	iPgd	50 15.10	-1.1
			iSg	50 20.70	
VBY	0.53	197	iPgd	50 16.20	-2.5
			iSg	50 23.40	
LJU	0.66	273	ePg	50 20.90	-0.2
			eSg	50 29.60	
CEY	0.78	250	iPg	50 22.30	-0.9
			iSg	50 34.00	
RIY	1.02	229	iPg	50 26.10	-1.1
			iSg	50 41.80	
VOY	1.10	272	iPg	50 28.30	-0.4
			eSg	50 44.00	
TRI	1.24	256	iPgd	50 30.70	-0.2
			iSg	50 50.70	
BLY	1.74	136	Pn	50 40.00	1.6
			Sn	51 03.50	
KBA	1.82	307	ePn	50 41.00	1.3
			iPgc	50 43.30	
			i	50 44.40	
			iSn	51 05.10	
			i	51 07.30	
			iSg	51 08.10	
SOP	1.83	24	eP	50 42.80	3.2X
FVI	1.96	288	P	50 42.90	1.4
VKA	2.33	14	iPnc	50 48.10	1.3
			i(Pg)	50 54.10	
			iSn	51 16.30	
			i(Sg)	51 22.90	
			i	51 26.10	
ZST	2.45	26	iPn	50 48 40	-0.2
	0.4s	0.30nm			
			iPb	50 55.00	
			i	51 02.90	
			i(Sn)	51 28.50	
SRO	2.65	46	iPn	50 51.90	0.5
			i(Sn)	51 44.30	
CTI	2.67	272	P	50 51.70	-0.1
AOI	2.80	209	eP	51 01.00	7.4X
BUD	2.85	58	e(P)	51 01.00	6.8X
HVAR	2.92	166	iPn	50 54.80	-0.4
			iSg	51 39.00	
ARV	3.10	217	P	51 02.90	5.2X
CIO	3.27	211	eP	51 03.25	2.9X
SFI	3.32	232	P	51 05.50	4.6X
KHC	3.37	338	iPn	51 02.50	0.7
			Pg	51 07.50	
			Sg	52 01.60	
CRE	3.46	228	P	51 02.50	-0.5
SAL	3.49	265	P	51 03 50	0.2
			eSn	52 02.80	
ALP	3.51	204	eP	51 13.03	9.3X

ASS	3.56	215	P	51	08.80	4.3X
			eSn	52	06.90	
PSZ	3.58	56	eP	51	04.00	-0.6
BEO	3.70	107	iP	51	20.00	13.6X
FIR	3.74	235	ePn	51	10.50	3.6X
			i(Sn)	51	54.50	
BRY	3.81	144	ePn	51	08.00	0.0
			eSn	51	53.00	
PLE	3.87	132	ePn	51	08.90	0.0
			eSn	51	54.00	
BDI	3.97	242	P	51	17.00	6.8X
PRU	4.03	351	Pn	51	11.40	0.5
			Pg	51	25.30	
			Sg	52	23.20	
MNS	4.15	210	P	51	15.20	2.5X
HCY	4.17	148	ePn	51	14.20	1.2
			eSn	52	02.50	
PII	4.20	239	P	51	17.20	3.8X
BZS	4.31	93	ePd	51	14.00	-1.0
DUI	4.41	190	P	51	18.50	2.0
BOB	4.43	256	P	51	21.00	4.3X
BDV	4.44	146	ePn	51	17.40	0.6
			eSn	52	09.50	
SDI	4.47	196	P	51	18.00	0.7
TTG	4.50	141	ePn	51	17.40	-0.2
			eSn	52	10.00	
SPC	4.53	44	eP	51	39.30	21.1X
VAI	4.68	271	P	51	19.70	-0.6
KSP	4.86	6	eP	51	20.50	-2.4
	1.1s		58.00nm			
			iPg	51	38.50	
			eS	52	38.50	
BRG	4.97	349	ePn	51	25.50	1.2
			ePg	51	43.00	
			eSn	52	21.00	
			eSg	52	50.00	
			eSg	59	18.10	
KRA	5.03	35	eP	51	45.90	20.7X
			e	52	54.20	
MOX	5.30	332	iPn	51	28.50	-0.6
			iSn	52	29.00	
			eSg	52	57.50	
CKI	5.33	255	P	51	29.50	0.1
SGO	5.45	181	P	51	30.50	-0.7
CLL	5.55	344	ePn	51	33.00	0.5
			ePg	51	57.00	
			eSg	53	05.00	
			eSg	59	36.00	
CDF	6.08	296	Pn	51	35.40	-4.7X
SBF	6.10	252	Pn	51	41.10	0.8
LPG	6.13	268	Pn	51	41.00	0.0
LPL	6 14	268	Pn	51	41.20	0.2
BSF	6.22	290	Pn	51	38.40	-3.7X
			Sn	52	48.00	
BNI	6.26	264	P	51	42.60	-0.1
HAU	6.55	291	Pn	51	42.40	-4.3X
			Sn	52	56.40	
WLF	7.26	304	eP	52	14.00	17.4X
DOU	8.36	303	eP	52	32.50	20.6X
AVF	8.42	280	Pn	52	10.60	-2.2
BGF	8.77	278	Pn	52	15.50	-2.1
MAF	8.97	276	Pn	52	17.80	-2.7X
NB2	15.26	352	P	53	50.60	5.7X
	0 8s		2.50nm		3.6mb	
	S.D. = 1.1		on 42 of 65 obs.			

DEC 28, 1989 20h 52m 05.10± 0.52s
45.803 N ± 7.0km 15.520 E ± 3.9km
DEPTH = 10.0km (geophysicist)
YUGOSLAVIA (383)
MD 3.4 (LJU), 3.1 (TRI) ML 3.3 (KBA). Felt at Krsko.

PTJ	0.32	72	ePg	52	11.80	0.0
			iSg	52	16.10	
ZAG	0.32	87	i(Pg)	52	12.00	0.2
			iSg	52	17.80	
VBY	0.35	212	iPg	52	12.00	-0.3
			iSg	52	20.30	
LJU	0.73	290	ePg	52	18.00	-1.4
			eSg	52	28.60	
CEY	0.77	266	ePg	52	20.00	-0.1
			eSg	52	31.50	
RIY	0.92	240	iPg	52	23.30	0.7
			iSg	52	37.20	
VOY	1.16	282	ePg	52	26.10	-0.7
			eSg	52	42.20	
TRI	1.23	266	iPgd	52	28.00	0.0
			iSg	52	47.00	
KBA	1.97	311	iPg	52	40.70	1.6
			iSg	53	05.30	
FVI	2.06	294	P	52	41.10	1.0
VKA	2.52	12	ePn	52	46.00	-0.8
			eSn	53	14.50	
HVAR	2.71	165	i(Pn)	52	44.30	-5.1X
			i(Sn)	53	29.30	
CMP	6.71	91	ePc	53	46.00	-0.1
	S.D. = 0.9		on 12 of 13 obs.			

DEC 28, 1989 20h 56m 40.84± 0.45s
45.839 N ± 4.9km 15.453 E ± 3.4km
DEPTH = 10.0km (geophysicist)
YUGOSLAVIA (383)
MD 3.3 (LJU). ML 3.1 (KBA), 2.9 (VKA). Felt at Krsko.

PTJ	0.36	80	iPgd	56	48.90	0.7
			iSg	56	54.50	
VBY	0.36	202	ePg	56	48.40	0.1
			iSg	56	56.60	
ZAG	0.37	93	iPgd	56	47.80	-0.7
			iSg	56	53.60	
LJU	0.67	288	ePg	56	53.80	-0.4
			eSg	57	03.70	
CEY	0.73	262	ePg	56	55.00	-0.1
			eSg	57	07.00	
VOY	1.11	281	ePg	57	01.30	-0.4
			eSg	57	16.90	
TRI	1.19	264	P	57	03.50	0.5
			eSg	57	22.50	
KBA	1.91	311	ePn	57	14.50	0.5
			iPgc	57	15.90	
			iSg	57	40.70	
FVI	2.00	293	P	57	18.00	3.0X
			eSn	57	44.00	
VKA	2.50	13	ePn	57	22.00	-0.2
			i(Pg)	57	28.90	
			iSn	57	50.00	
CTI	2.66	276	P	57	24.50	-0.1
KHC	3.53	340	Pn	57	37.00	0.2
			Sn	58	15.80	
			Sg	58	34.40	
PRU	4.20	352	Pn	57	46.10	-0.2
			e	57	58.00	
	S.D. = 0.5		on 12 of 13 obs.			

DEC 28, 1989 20h 59m 36.98± 0.59s
45.879 N ± 7.7km 15.515 E ± 4.0km
DEPTH = 10 0km (geophysicist)
YUGOSLAVIA (383)
ML 2.7 (KBA). MD 2.6 (TRI).

PTJ	0.31	86	ePg	59	43 00	-0.5
			iSg	59	48.60	
ZAG	0.33	101	iPg	59	44.20	0.3
			iSg	59	49.50	
VBY	0.42	206	ePg	59	45.30	-0.2
			iSg	59	52.90	
LJU	0.70	284	ePg	59	50.00	-0.9
			eSg	59	59.90	
CEY	0.77	260	e(Pg)	59	52.50	0.4
			eSg	00	03.50	
RIY	0.96	236	ePg	59	55 60	0.4
			iSg	00	08.90	
			i	00	10 30	
VOY	1.14	278	ePg	59	58 10	-0.3
			eSg	00	14.50	
TRI	1.24	263	iPg	59	59.70	-0.2
			iSg	00	18.70	
KBA	1.92	309	ePgc	00	11.10	0.9
			iSg	00	35.90	
VKA	2.45	13	e(Pg)	00	22.50	4.9X
PRU	4.16	351	P	00	54.30	12.4X
	S.D. = 0.6		on 9 of 11 obs.			

* DEC 28, 1989 21h 20m 33.84± 1.86s
43.517 N ±13.5km 7.510 E ± 8.2km
DEPTH = 10.0km (geophysicist)
NEAR SOUTH COAST OF FRANCE (379)
ML 1.9 (GEN).

SBF	0.35	351	Pg	20	41.60	0.5
			Sg	20	46.40	
IMI	0.48	35	P	20	43 91	0.3
			S	20	49.54	
FRF	0.63	274	Pg	20	46.60	0.1
			Sg	20	55.20	
ENR	0.71	355	P	20	47.61	-0.3
			S	20	56.32	
STV	0.74	350	P	20	48.09	-0.3
			S	20	57.65	
ROB	0.82	18	P	20	49.76	0.0
			S	20	59.80	
FIN	0.86	36	P	20	50.17	-0.2
			S	21	01.04	
PZZ	1.03	344	P	20	53.34	-0.1
			S	21	06.16	
	S.D. = 0.4		on 8 of 8 obs.			

* DEC 28, 1989 21h 51m 37.05± 0.83s
6.139 S ±20.2km 104.222 E ±22.1km
DEPTH = 33.0km (normal)
4.6mb (3 obs.)
SUNDA STRAIT (276)

BDT	23.80	348	eP	56	48.00	0.1
CHG	25.33	348	eP	57	03.30	0.6
WRA	32.31	118	Pd	58	05.40	-0.1
	1.0s		7.20nm		4.5mb	
WB5	32.31	118	eP	58	05.00	-0.5
GBA	33.05	307	Pd	58	11.90	0.1
	0.5s		1.50nm		4.1mb	
SHL	33.72	340	iP	58	17.20	-0.6
STK	43.27	131	eP	59	38.00	0.6
			i	59	52.50	
NDI	43.31	324	iPd	59	37.50	-0.2
	0.5s		21.13nm		5.1mb	
MGR	92.89	310	P	04	56.60	8.5X
			eSg	05	00.40	
	S.D. = 0.5		on 8 of 9 obs.			

% DEC 28, 1989 22h 08m 45.40± 1.51s
44.310 N ±13.3km 7.034 E ±11.3km
DEPTH = 10.0km (geophysicist)
NORTHERN ITALY (545)
ML 1.9 (GEN).

PZZ	0.20	14	P	08	50.06	0.2
			S	08	52.99	
STV	0.22	107	P	08	50.37	0.2
			S	08	53.20	
FOUF	0.28	321	ePc	08	51.39	0.0
			e	08	53.38	
ENR	0.29	107	P	08	51.56	0.1
			S	08	55.25	
ROB	0.60	91	P	08	57.39	-0.2
			S	09	04.83	
RRL	0.64	344	P	08	58.19	-0.1
			S	09	06.84	
FIN	0.85	96	P	09	01.69	-0.1
	S.D. = 0.2		on 7 of 7 obs.			

* DEC 28, 1989 22h 22m 47.47± 1.01s
45.740 N ± 7.5km 27.051 E ±10.6km
DEPTH = 33.0km (normal)
ROMANIA (358)

VRI	0.26	300	iPd	22	53.00	-1.8
ISR	0.70	211	ePc	23	03.00	2.0
MLR	0.82	253	iPc	23	04.00	1.3
CMP	1.49	252	ePd	23	14.00	1.7
IAS	1.50	13	ePc	23	13.00	0.7
PSN	2.21	158	eP	23	23.00	0.5
PVL	2.81	207	iPd	23	33.00	2.0
BZS	3.81	270	eP	23	44.50	-0.7
DMK	3.95	172	ePn	23	46.10	-1.2
PLD	4.01	206	eP	23	47.00	-1.1
VTS	4.19	223	iP	23	50.00	-0.8
KDZ	4.26	197	iPd	23	52.00	0.4
RZN	4.39	203	iPd	23	53.00	-0.7
MMB	4.80	211	ePd	23	59.00	-0.3
KKB	4.82	218	iPd	23	59.00	-0.6
KNT	5.48	215	iPd	24	07.40	-1.6
	S.D. = 1.4		on 16 of 16 obs.			

* DEC 28, 1989 22h 52m 45.54± 0.95s
11.580 N ±11.3km 86.373 W ±10.2km
DEPTH = 48.9 ± 11.7 km
4.8mb (6 obs.) 4.1Msz (2 obs.)
NEAR COAST OF NICARAGUA (74)

28d 22h

SRA 2.41 128 eP 53 23.20 -0.2
SJS 2 80 125 eP 53 29.20 0.2
BUS 3.26 128 eP 53 35.00 -0.9
OXX 11.42 300 (P) 55 2B.50 -0.6
PPM 13.96 304 (P) 56 03.00 -0.1
III 14.34 300 (P) 56 07.50 -0.2
JSC 23.07 11 P 57 51.50 3.BX
PWLA 23.35 356 P 57 52.30 1.9
LHS 23.35 12 P 57 53.80 3.4X
UYO 23.66 343 iPd 57 54.30 0.8
RSCP 23.92 2 P 57 58.20 2.2
0.8s 168.27nm 5.6mb X
GBTN 24.06 4 P 58 00.40 3.1X
POW 24.85 351 P 58 05.20 0.3
LST 25.02 354 P 58 07.30 0.8
MEO 25.63 336 e(P) 58 12.70 0.4
TUL 25.68 342 eP 58 12.50 -0.2
1.1s 41.90nm 4.9mb
Z 22s 0.46um 4.0Msz
LR 06 41.00
LNO 25.68 342 e(P) 58 12.00 -0.6
SIO 25.69 341 e(P) 58 12.00 -0.B
FVM 26.54 353 P 58 20.30 -0.3
ALQ 29.57 325 iPd 58 48.50 0.2
0.9s 4.41nm 4.2mb
ZOBO 33.04 147 eP 59 22.00 2.7
Z 18s 0.40um 4.2Msz
LR 12 30.00
PLM 35.32 313 P 59 39.80 1.4
PHAM 39.09 314 P 00 11.00 1.1
KVN 39.27 320 P 00 11.50 -0.1
RSON 39.62 353 P 00 12.50 -1.5
0 8s 21.03nm 5.0mb
ARN 40.63 315 P 00 23.30 0.7
LRM 40.71 332 eP 00 23.50 0.2
e 02 25.60
SES 43.68 337 eP 00 47.00 -0.3
FFC 44.77 347 iPc 00 55.20 -0.8
0.7s 13.00nm 4.9mb
PNT 46.60 330 eP 01 10 00 -0.5
0.5s 6.00nm 4.8mb
INK 64.35 342 eP 03 16.00 -2.2
pP 03 37.00 81kmX
MBC 67.02 352 eP 03 34.00 -1.2
1.0s 9.00nm 4.8mb
WB5 140.01 253 ePKP 12 08.80 -2.5X
WRA 140.03 253 PKPc 12 09.30 -2.0X
0.7s 1.80nm
HYB 147.57 28 ePKP 12 23.00 -1.2
CHG 149.35 350 ePKP 12 30.60 3.6X
LOE 150.11 344 ePKP 12 33 00 4.9X
GBA 150.27 33 PKP 12 28.00 -0.4
BDT 150.87 349 ePKP 12 28.20 -1.0
S.D. = 1.1 on 32 of 39 obs.

& DEC 28, 1989 22h 54m 53.86s
61.725 N 148.232 W
DEPTH = 0.0km
SOUTHERN ALASKA (2)
<AGS-P>.

GHO 0.33 278 iP 55 01.04 0.5
PME 0.39 256 eP 55 01.50 -0.2
eS 55 06.79
NCA 0.72 67 eP 55 07.78 -0.4
GLI 1.01 147 eP 55 13.10 -0.8
eS 55 25.97
TOA 1.05 68 eP 55 13.80 -0.8
eS 55 28.53
VZW 1.05 129 eP 55 14.15 -0.5
KLU 1.13 101 eP 55 14.54 -1.5
CUT 1.18 306 eP 55 16.00 -0.7
FID 1.29 138 eP 55 17.93 -0.8
SLKM 1.56 219 eP 55 21.86 -1.1
SKT 1.58 281 eP 55 22.66 -0.6
RND 1.71 351 eP 55 25.77 0.6
SEW 1.73 201 eP 55 25.47 0.1
PAX 1.80 45 eP 55 25.45 -1.0
CGLM 1.86 259 eP 55 28.08 0.8
GLB 2.13 96 eP 55 30.22 -1.1
TGL 2.79 108 eP 55 41.08 0.4
BALM 2.92 101 eP 55 42.35 -0.2
18 obs. ossociated

DEC 28, 1989 23h 13m 30.17± 0.54s
39.924 N ± 4.9km 29.259 E ± 5.5km
DEPTH = 10.0km (geophysicist)

TURKEY (366)

DST 0.58 237 iPg 13 40.70 -1.3
YLV 0.65 8 iPg 13 42.30 -0.9
GBZT 0.88 9 iPnc 13 47.20 0.2
iSg 14 02.50
GPA 0.88 65 iPn 13 46.60 -0.6
ALT 1.09 143 iPn 13 50.50 -0.2
BNT 1.11 293 iPn 13 49.30 -1.8
EDC 1.15 292 iPn 13 51.00 -0.7
ISK 1.15 352 ePn 13 50.90 -0.8
CTT 1.38 333 ePn 13 54.00 -1.4
KHL 1.61 173 iPn 14 08.50 9.7X
IZM 2.18 226 ePn 14 12.00 5.0X
DMK 2.21 329 iPn 14 08.10 0.7
EZN 2.26 268 iPn 14 07.10 -1.0
BCK 2.67 157 ePn 14 14.40 0.3
BBTK 2.70 91 eP 14 21.00 6.5X
iS 14 59.00
YER 2.89 196 ePn 14 22.40 5.3X
ELL 3.21 171 ePn 14 22.70 0.9
KDZ 3.39 302 iPd 14 26.00 1.8
PVL 4.42 319 eP 14 40.00 1.3
MMB 4.52 293 eP 14 42.00 1.8
VTS 5.28 302 eP 14 52.00 0.8
VRI 6.23 343 ePd 15 05.00 0.7
S.D. = 1.2 on 18 of 22 obs.

% DEC 29, 1989 00h 19m 07.63± 2.20s
44.287 N ±13.5km 6.991 E ±16.4km
DEPTH = 10.0km (geophysicist)
FRANCE (538)
ML 1.8 (GEN).

PZZ 0.23 20 P 19 12.94 0.3
S 19 15.88
STV 0.24 100 P 19 13.10 0.2
S 19 16.07
ENR 0.31 101 P 19 14.33 0.1
S 19 17.82
ROB 0.63 89 P 19 19.68 -0.7
S 19 27.66
RRL 0.65 347 P 19 20.69 -0.1
IMI 0.75 120 P 19 22.41 0.1
S 19 32.58
FIN 0.88 95 P 19 24.63 0.1
S.D. = 0.4 on 7 of 7 obs.

% DEC 29, 1989 00h 20m 22.67± 2.72s
44.213 N ±13.1km 8.581 E ±17.9km
DEPTH = 10.0km (geophysicist)
NORTHERN ITALY (545)
ML 1.9 (GEN).

FIN 0.27 269 P 20 28.95 0.6
S 20 33.86
PCP 0.33 356 P 20 29.65 0.1
S 20 34.78
ROB 0.52 279 P 20 33.14 0.0
S 20 41.55
IMI 0.58 239 P 20 34.44 -0.1
S 20 42.68
ENR 0.83 271 P 20 38.87 0.0
PZZ 1.10 286 P 20 42.81 -0.6
S.D. = 0.5 on 6 of 6 obs.

DEC 29, 1989 00h 22m 11.60± 0.97s
30.306 S ± 8.5km 69.378 W ± 8.1km
DEPTH = 33.0km (normol)
CHILE-ARGENTINA BORDER REGION (127)

RTRS 0.15 332 i(P) 22 18.00 0.3
RTCB 1.28 157 e(P)c 22 33.00 -0.3
RTLL 1.29 143 ePc 22 33.50 0.1
RTBS 1.35 183 iPc 22 34.50 0.2
ZON 1.37 154 iPd 22 34.50 -0.2
eS 22 51.00
RTCV 1.71 155 iPd 22 40.80 1.2
PEL 3.04 201 eP 22 58.50 -0.1
i 23 03.70
iS 23 38.20
FCH 3.11 194 eP 23 01.20 1.4
i 23 41.50
iS 23 45.50
PCH 3.44 196 eP 23 04.50 0.2
iS 23 47.00
TACH 3.59 201 eP 23 05.50 -0.8

LCCH 3.67 210 eP 23 07.70 0.3
CHCH 3.77 196 eP 23 09.50 0.6
iS 23 53.50
MRA 3.78 125 ePc 23 08.00 -0.9
LNV 4.03 205 eP 23 10.50 -2.0
S.D. = 0.9 on 14 of 14 obs.

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* DEC 29, 1989 01h 05m 12.39± 1.23s
14.156 N ± 7.7km 61.110 W ±31.5km
DEPTH = 33.0km (normol)
WINDWARD ISLANDS (95)
ML 2.0 (FDF).

SLB 0.33 168 eP 05 20.66 0.0
eS 05 25.67
BIM 0.36 6 eP 05 20.77 -0.2
S 05 26.00
MVM 0.45 28 iPc 05 22.15 -0.1
S 05 28.60
FDF 0.58 356 iPc 05 24.20 0.1
0.1s 0.45nm
S 05 31.90
CRM 0.62 18 eP 05 24.99 0.2
S.D. = 0.3 on 5 of 5 obs.

? DEC 29, 1989 01h 54m 09.65± 1.60s
44.366 N ±14.7km 7.164 E ±17.4km
DEPTH = 10.0km (geophysicist)
NORTHERN ITALY (545)
ML 1.9 (GEN).

PZZ 0.15 342 P 54 13.18 0.0
S 54 16.17
STV 0.17 136 P 54 13.48 -0.1
S 54 16.48
ENR 0.23 127 P 54 14.72 0.1
S 54 18.43
ROB 0.51 98 P 54 20.03 0 0
S 54 27.81
S.D. = 0.1 on 4 of 4 obs.

DEC 29, 1989 02h 39m 52.82± 0.46s
44.238 N ± 4.8km 7.527 E ± 3.3km
DEPTH = 10.0km (geophysicist)
NORTHERN ITALY (545)
ML 1.8 (GEN), 1.7 (LDG).

ENR 0.08 261 P 39 55.49 0.1
S 39 57.07
STV 0.15 272 P 39 56.35 0.1
S 39 58.40
ROB 0.25 77 P 39 58.92 0.7
S 40 02.92
SBF 0.38 190 Pg 40 00.50 -0.2
Sg 40 05.20
PZZ 0.41 311 P 40 00.87 -0.3
S 40 06.51
IMI 0.42 141 P 40 01.17 -0.2
S 40 06.92
FIN 0.49 93 P 40 02.61 -0.2
S 40 09.07
PCP 0.79 67 P 40 07.90 -0.3
FRF 0.93 224 Pg 40 10.80 0.2
Sg 40 23.20
LRG 1.15 228 Pg 40 14.40 0.1
S.D. = 0.4 on 10 of 10 obs

DEC 29, 1989 02h 50m 09.30± 0 82s
40.784 N ± 8.7km 21.607 E ± 6.7km
DEPTH = 10.0km (geophysicist)
GREECE (364)
ML 2.5 (SKO), 2.2 (THE).

GRG 0.63 74 ePgd 50 21.60 -0.3
eSg 50 31.50
OHR 0.69 298 iPgc 50 22.90 -0.2
iSg 50 34.00
LIT 0.96 135 ePg 50 26.40 -1.2
eSg 50 40.40
THE 1.04 98 ePg 50 29.10 0.1
KNT 1.05 68 ePb 50 29 40 0.3
eSb 50 44.90
PAIG 1.80 118 ePb 50 41.10 0.5
AGG 1.B5 162 ePb 50 42.00 0.7
S.D. = 0.8 on 7 of 7 obs.

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* DEC 29, 1989 03h 53m 34.55± 0.87s

63.266 N ± 9.2km 150.960 W ±10.6km
DEPTH = 33.0km (normal)
CENTRAL ALASKA (1)
ML 3.0 (PMR).

PWA	1.70	162	iPc	54 02.10	-0.2
PMR	1.88	152	eP	54 04.50	-0.5
FBA	2.15	39	iPc	54 10.20	1.4
TTA	2.32	264	eP	54 12.40	1.1
TOA	2.50	116	eP	54 13.60	-0.2
IMA	3.05	339	iPc	54 19.90	-1.8

S.D. = 1.5 on 6 of 6 obs.

DEC 29, 1989 04h 20m 29.84± 0.33s
28.791 N ± 7.5km 67.256 E ± 5.0km
DEPTH = 15.4km (3 depth phases)
4.7mb (19 obs.)
PAKISTAN (710)

QUE	1.42	349	eP	20 50.50	-4.6X
			eS	25 44.00	
NDI	8.75	88	iPd	22 37.00	-1.6
	0.6s	106.67nm		6.3mb	X
			eS	24 14.00	
MAIO	9.94	321	eP	22 57.00	1.8
			eS	25 11.00	
BOM	11.08	151	eP	23 05.00	-5.7X
			eS	25 28.80	
POO	11.86	148	eP	23 20.00	-1.3
			iS	25 37.00	
KSH	12.85	32	P	23 33.00	-1.7
HYB	15.35	135	eP	24 06.70	-0.9
			eS	27 13.00	
GBA	17.83	146	P	24 40.70	1.8
			S	28 06.70	
KOD	20.80	151	eP	25 16.00	2.6X
LSA	20.87	82	Pc	25 15.50	1.3
E	10s	0.67um			
QASM	21.22	268	eP	25 15.30	-2.0
SHL	22.13	93	iP	25 27.00	0.3
			iS	29 25.00	
WMQ	22.19	42	P	25 28.00	1.0
Z	16s	1.00um		4.3MszX	
			sS	29 40.60	
KMSA	22.30	253	eP	25 28.50	0.3
PRNI	28.05	281	e(P)	26 23.00	0.4
GTA	28.83	60	eP	26 30.00	0.4
Z	14s	0.40um		4.2MszX	
BBTK	30.38	300	eP	26 44.00	0.6
CHTO	30.56	102	eP	26 44.80	-0.3
	1.0s	8.00nm		4.5mb	
LZH	31.59	67	eP	26 51.50	-2.7
Z	16s	1.00um		4.6MszX	
			pP	26 54.50	10km
CD2	31.64	77	eP	26 55.00	0.4
KMI	31.77	88	Pd	26 56.50	0.6
GYA	34.89	84	iPd	27 23.20	0.3
XAN	35.76	71	Pc	27 30.00	-0.1
BTO	36.75	60	eP	27 40.00	1.5
N	13s	0.40um			
E	13s	0.30um			
HHC	37.94	60	P	27 46.00	-2.5
TIY	38.51	65	Pc	27 53.10	-0.1
E	12s	0.40um			
WHN	40.73	76	Pc	28 13.00	1.4
			ipP	28 18.20	18km
BJI	41.42	61	eP	28 18.00	0.8
Z	23s	0.31um		4.1MszX	
TIA	42.32	67	P	28 26.00	1.3
NUR	42.61	330	eP	28 26.00	-0.6
SUF	43.11	334	eP	28 29.10	-1.6
NJ2	44.27	72	Pc	28 41.60	1.1
K8A	45.32	309	e(P)	28 53.00	4.0X
	1.0s	6.70nm		4.5mb	
			e	28 58.50	18km
BRG	45.33	314	eP	28 48.60	-0.2
	2.0s	26.00nm		4.8mb	
KHC	45.35	312	eP	28 50.10	1.1
SOD	45.61	339	eP	28 49.00	-1.7
MOX	46.77	314	e(P)	29 00.00	-0.2
HFS	47.49	327	eP	29 03.20	-2.5
	0.4s	2.20nm		4.6mb	
N82	48.91	328	P	29 14.00	-2.8
	1 2s	8.50nm		4.7mb	
SBF	49.46	305	eP	29 17.50	-3.8X
	0 7s	13.20nm		5.1mb	
LPG	49.87	307	eP	29 24.30	-0.4
	0.8s	8.00nm		4.8mb	
LBF	51.72	309	eP	29 39.90	1.4
LOR	51.79	309	eP	29 41.30	2.4
	0.7s	2.20nm		4.2mb	
SMF	51.84	308	eP	29 41.00	1.7
	0.8s	4.00nm		4.4mb	
SSF	52.04	309	eP	29 43.20	2.4
	0.7s	4.40nm		4.5mb	
BCAO	52.11	252	iPd	29 41.30	-0.4
	0.9s	25.00nm		5.1mb	
CAF	53.21	306	eP	29 50.40	0.8
	1.0s	6.80nm		4.6mb	
LDF	54.38	311	eP	30 00.70	2.7X
FLN	54.60	311	eP	30 03.50	3.8X
EKA	55.85	319	Pc	30 11.00	2.3
	1.0s	8.90nm		4.7mb	
BUL	61.31	222	eP	31 02.50	15.2X
	0.9s	4.62nm			
KIC	71.19	267	P	31 49.44	-1.0
TIC	71.31	267	P	31 50.10	-1.0
LIC	71.51	267	P	31 51.26	-1.1
	1.0s	13.00nm		5.0mb	
MBC	75.14	2	ePc	32 11.80	-0.7
	1.0s	15.00nm		5.0mb	
IMA	80.39	16	eP	32 41.20	-0.6
	1.0s	9.20nm		4.7mb	
WB5	80.83	119	eP	32 44.30	-0.4
WRA	80.85	119	Pd	32 44.80	0.0
	0.9s	3.20nm		4.3mb	
FRB	81.42	342	eP	32 46.00	-1.0
INK	81.97	8	eP	32 49.50	-0.3
TTA	82.32	18	P	32 51.80	-0.1
ASPA	82.66	122	iPc	32 53.80	-0.4
	0.6s	3.00nm		4.6mb	
Z	17s	0.06um		4.0MszX	
			LR	39 56.50	
FBA	82.71	14	eP	32 53.50	-0.3
PWA	85.01	17	eP	33 05.40	-0.1
PMR	85.25	17	P	33 06.20	-0.5
	0.8s	9.91nm		5.1mb	
ZOBO	137.18	277	ePKP	39 53.00	-2.5
LPB	137.26	277	(PKP)	39 55.00	-0.5
CNCB	137.28	276	PKP	39 56.00	0.3
PMO	144.76	75	iPKP	40 09.40	1.2
	1.0s	25.00nm			
TPT	144.99	74	iPKP	40 10.20	1.6
	1.0s	20.00nm			
VAH	145.10	75	iPKP	40 10.40	1.6
	1.0s	20.00nm			
RUV	145.29	75	iPKP	40 11.00	1.9
	1.0s	25.00nm			

S.D. = 1.3 on 64 of 72 obs.

% DEC 29, 1989 04h 45m 14.92± 1.07s
31.011 S ±12.1km 68.226 W ± 9.6km
DEPTH = 33.0km (normal)
SAN JUAN PROVINCE, ARGENTINA (137)

RTLL	0.38	213	iPc	45 27.50	3.7X
RTCB	0.68	226	iPd	45 29.00	0.8
			S	45 40.00	
RTCV	0.89	197	iPc	45 31.50	0.4
			S	45 44.00	
RTBS	1.23	238	e(P)	45 34.50	-1.4
			S	45 50.00	
RTRS	1.35	308	iPc	45 38.00	0.3
TCA	3.13	97	iPc	46 03.00	-0.2
			S	46 41.80	

S.D. = 1.2 on 5 of 6 obs.

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* DEC 29, 1989 05h 24m 29.91± 2.82s
33.219 S ± 6.3km 71.991 W ±21.7km
DEPTH = 10.0km (geophysicist)
NEAR COAST OF CENTRAL CHILE (135)

LCCH	0.44	126	iPd	24 39.80	1.0
			iS	24 45.00	
ROCH	0.86	74	iPc	24 46.50	-0.1
LNV	0.88	147	iPd	24 46.50	-0.3
			iS	24 59.80	
TACH	0.98	116	iPd	24 48.60	0.0
			iS	25 01.00	
PEL	1.10	86	iPd	24 50.80	0.2
			iS	25 05.00	
SAN	1.14	102	iP	24 51.00	-0.2
			iS	25 08.30	
JACH	1.29	66	iPc	24 53.60	-0 3
			iS	25 12.50	
PCH	1.30	108	iPd	24 53.50	-0.5
CHCH	1.32	123	iPc	24 54.10	-0.3
			iS	25 12.00	
FCH	1.43	95	iPd	24 56.20	0.0
			iS	25 16.00	
RTBS	2.65	55	e(P)	25 13.00	-0.4
RTCV	3.22	66	e(P)	25 20.00	-1.5
ZON	3.26	60	eP	25 24.00	1.8
RFA	3.31	119	e(P)	25 25.00	2.1X
RTLL	3.53	59	e(P)	25 30.20	4.3X
CFA	3.56	64	eP	25 26.80	0.5
			S	26 19.00	
RTRS	3.73	36	ePd	25 29.50	0.8X

S.D. = 0.8 on 14 of 17 obs.

DEC 29, 1989 05h 29m 03.23± 0.42s
44.443 N ± 3.2km 7.333 E ± 4.4km
DEPTH = 13.8 ± 4.3 km
NORTHERN ITALY (545)
ML 1.9 (LDG), 1.8 (GEN).

DOI	0.09	314	Pc	29 06.50	0.1
			iSg	29 08.50	
PZZ	0.18	291	P	29 07.68	0.0
			S	29 09.97	
STV	0.20	182	P	29 07.89	-0.1
			S	29 10.16	
ROB	0.41	111	P	29 12.08	0.2
			S	29 17.53	
SBF	0.58	173	Pg	29 14.60	-0.2
			Sg	29 22.20	
RRL	0.62	321	P	29 15.16	-0.3
			S	29 23.56	
IMI	0.67	143	P	29 16.32	0.1
			S	29 24.89	
FIN	0.67	110	P	29 16.48	0.2
			S	29 25.30	
RSP	0.71	356	P	29 16.89	-0.1
LSD	1.02	353	P	29 22.46	0.1
LPG	1.13	339	Pg	29 24.80	0.5
LPL	1.16	339	Pg	29 25.10	0.5
LRG	1.21	216	Pg	29 25.80	0.4

S.D. = 0.3 on 13 of 13 obs.

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* DEC 29, 1989 05h 49m 19.14± 0.99s
39.403 N ±13.9km 107.202 E ± 9.2km
DEPTH = 33.0km (normal)
3.8mb (1 obs.)
NORTHERN CHINA (323)
ML 4.0 (BJI).

BTO	2.47	60	ePn	50 02.30	4.2X
			Pg	50 08.00	
			Sn	50 35.60	
			Sg	50 46.00	
HHC	3.64	65	ePn	50 15.00	0.3
			Pg	50 29.00	
			Sg	51 19.50	
LZH	4.25	220	ePg	50 29.00	5.7X
			Sg	51 23.50	
TIY	4.43	111	Pnd	50 26.00	0.1
			Pg	50 42.20	
			Sn	51 19.30	
			Sg	51 38.00	
XAN	5.53	165	Pn	50 42.00	0.7
			Pg	51 02.70	
			Sg	52 06.10	
GTA	5.72	272	Pn	50 44.40	0.2
			Pg	50 58.00	
BJI	6.95	82	Pg	51 30.00	28.8X
			Sg	52 58.50	
WRA	64.26	152	P	59 52.00	-1.3
	0.5s	0.40nm		3.8mb	

S.D. = 1.1 on 5 of 8 obs.

& DEC 29, 1989 08h 39m 39.40s
36.967 N 121.763 W
DEPTH = 16.0km
CENTRAL CALIFORNIA (39)
<BRK>. ML 3.1 (BRK). Felt (IV)
at Gilroy and (III) at Aromas.

GCC	0.20	289	iPc	39 43.70	-0.5
			eS	39 47.00	
SAO	0.33	128	iPd	39 45.40	-1.0
MHC	0.39	14	iPd	39 47.30	-0.2

29d 08h

ARN	0.42	26	iPd	39	47.80	-0.3
PRS	0.71	153	iPd	39	52.40	-0.5
PCC	0.73	317	iPd	39	52.60	-0.6
LLA	0.75	118	iPd	39	52.90	-0.7
BKS	0.98	338	ePd	39	56.30	-1.3
BRK	0.99	337	eP	39	55.90	-1.7
PRI	1.21	133	eP	40	00.90	-0.6
CMB	1.53	45	ePc	40	04.60	-1.5
FRI	1.65	89	eP	40	05.70	-2.0
NWRM	1.73	329	eP	40	09.50	0.5
BCH	2.24	142	eP	40	14.30	-2.2
KVN	3.56	53	eP	40	33.50	-1.9

15 obs. associated

% DEC 29, 1989 08h 58m 37.59± 1.76s
44.094 N ±11.4km 7.085 E ± 9.4km
DEPTH = 10.0km (geophysicist)
NORTHERN ITALY (545)
ML 2.0 (GEN).

STV	0.23	49	P	58	42.71	0.2
			S	58	45.39	
ENR	0.28	61	P	58	43.62	0.2
PZZ	0.41	2	P	58	45.95	-0.1
			S	58	51.16	
FOUF	0.49	334	e(Pg)d	58	47.51	0.0
			e(Sg)	58	53.21	
ROB	0.60	70	P	58	49.72	0.0
			S	58	56.95	
IMI	0.61	107	P	58	50.01	0.1
			S	58	58.12	
FIN	0.82	81	P	58	53.34	-0.1
PCP	1.14	66	P	58	58.70	-0.3

S.D. = 0.2 on 8 of 8 obs.

? DEC 29, 1989 09h 03m 58.41± 0.90s
39.125 N ± 7.9km 29.700 E ± 8.1km
DEPTH = 10.0km (geophysicist)
TURKEY (366)

ALT	0.33	102	iPg	04	04.90	-0.3
KHL	0.81	190	ePg	04	14.50	0.3
			iSg	04	27.20	
DST	0.96	300	iPn	04	16.40	-0.3
GPA	1.25	22	ePn	04	22.10	0.4

S.D = 0.6 on 4 of 4 obs.

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* DEC 29, 1989 10h 15m 05.12± 1.07s
38.723 N ± 8.4km 22.091 E ±13.3km
DEPTH = 10.0km (geophysicist)
GREECE (364)
MD 3 0 (ATH).

NEO	1.06	56	ePb	15	24.70	-0.4
LIT	1.41	13	ePd	15	31.40	0.6
KZN	1.60	351	ePb	15	34.00	0.4
VLI	2.11	161	ePn	15	41.00	0.1
OHR	2.58	338	ePn	15	47.00	-0.7

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

& DEC 29, 1989 10h 17m 39.87s
59.206 N 153.630 W
DEPTH = 102.6km
SOUTHERN ALASKA (2)
<AGS-P>.

AUL	0.20	29	eP	17	54.28	1 2
CDD	0.28	181	iP	17	53 91	0 5
PDB	0.65	334	iP	17	56.33	-1.0
CNPM	1.27	74	eP	18	02.80	-1.0
RED	1.29	19	eP	18	03 33	-0.9
			eS	18	22 09	
NNL	1.45	54	eP	18	06.17	0.1
RDT	1.50	24	eP	18	05.81	-1.0
			eS	18	26.04	
KDC	1.58	157	eP	18	05.37	-2.2
SPU	2.13	21	eP	18	13.46	-1.4
			eS	18	41.47	
SLKM	2.16	51	eP	18	14.18	-1.0
SEW	2.31	65	eP	18	15.98	-1.1
SUA	2.68	31	eP	18	21.20	-1.0
			eS	18	52.89	
PMS	2.88	43	eP	18	23.32	-1.6
SKT	2.97	20	eP	18	24.32	-1.7
GHO	3.47	40	eP	18	29 95	-3.0
CUT	3.61	26	eP	18	33.01	-1.7
FID	3.91	64	eP	18	35.40	-3.5
VZW	4.00	59	eP	18	37.27	-2.8
TOA	4.68	48	eP	18	46.90	-2.6

19 obs. associated

DEC 29, 1989 10h 18m 04.54± 1.05s
43.527 N ± 8.3km 7.531 E ± 6.4km
DEPTH = 10.0km (geophysicist)
NEAR SOUTH COAST OF FRANCE (379)
ML 2.5 (LDG).

SBF	0.34	348	Pg	18	11.80	0.1
			Sg	18	16.60	
IMI	0.46	34	P	18	14.23	0.3
			S	18	19.79	
FRF	0.64	273	Pg	18	17.00	-0.4
			Sg	18	25.10	
ENR	0.70	353	P	18	18.13	-0.4
			S	18	27.01	
STV	0.73	348	P	18	18.61	-0.4
			S	18	27.78	
LMR	0.77	256	Pg	18	19.60	0.1
			Sg	18	29.20	
ROB	0.81	18	P	18	20.18	0.0
			S	18	29.83	
FIN	0.84	35	P	18	20.56	-0.2
			S	18	31.38	
LRG	0.86	266	Pg	18	21.20	0.2
			Sg	18	32.40	
PZZ	1.03	343	P	18	23.98	0.0
			S	18	36.93	
PCP	1.25	35	P	18	27.77	-0.1
RRL	1 49	339	P	18	32.57	1.0

S.D. = 0.4 on 12 of 12 obs.

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* DEC 29, 1989 10h 56m 08.38± 0.87s
4.969 S ±13.1km 152.622 E ±13.6km
DEPTH = 33.0km (normal)
4.2mb (3 obs.) 3.7Msz (1 obs.)
NEW BRITAIN REGION (192)

KD8	7.03	230	eP	57	50.00	-1.6
GUMO	19.98	337	eP	00	46.90	5.9X
DZM	21.64	143	iPc	00	57.90	-0.2
WB5	23.14	229	eP	01	14.00	1.1
WRA	23.20	229	Pd	01	13.80	0.3
	0.7s		2.50nm			3.8mb
ASPA	25.91	222	eP	01	40.10	0.7
	0.5s		4.00nm			4.3mb
	Z 21s		0.22um			3.7Msz
			eS	06	15.50	
			LR	10	56.20	
CHTO	57.90	296	eP	06	00.20	0.2
	0.9s		2.98nm			4.3mb
SHL	66.24	301	eP	06	55.80	-0.2
INK	88.68	21	ePc	08	58.90	-0.4
ZDBO	134.51	118	PKP	15	27.00	0.3X

S.D. = 1.0 on 8 of 10 obs.

DEC 29, 1989 11h 09m 50.87± 0.33s
31.405 N ± 7.5km 60.534 E ± 4.4km
DEPTH = 33.0km (normal)
4.7mb (17 obs.) 4.3Msz (2 obs.)
IRAN (348)

MAIO	4.96	350	iPnc	11	05.20	0.1
	0.7s		12.71nm			
			eSn	12	22.00	
QUE	5	65	101 eP	11	06.00	-8.9X
KER	11	67	288 eP	12	49.00	10.8X
TAB	13.43	304	e(P)	13	14.00	12.3X
BHD	13	78	282 ePc	13	08.00	1.9
			eS	17	30.00	
MSL	15.26	294	ePd	13	22.50	-3.0X
			eS	18	08.50	
QASM	15.82	255	eP	13	31 30	-1.5
BOM	16.68	135	eP	13	43.00	-0.6
POO	17.58	134	iPc	13	54.00	-1.1
GBA	23.56	135	P	15	01.00	1.8
WMQ	24 71	52	iPd	15	11 00	0.7
	Z 20s		0.90um			4.3Msz
ELL	25.86	290	eP	15	22 00	0.7
MLR	30.27	308	ePc	16	03.00	1.9
GTA	32.79	65	eP	16	22.40	-0.9
	Z 16s		0.60um			4.4MszX
	E 12s		0 40um			
KRA	35.42	314	eP	16	45.60	0.0
LZH	36.09	71	P	16	51.00	-0.7
	Z 20s		0.50um			4.3Msz
CHG	36.79	101	ePc	16	56.90	-0.6
	1.1s		25.32nm			5.0mb
KMI	37.53	89	Pc	17	04.00	0.1
KSP	37.87	314	eP	17	06.00	-0.3
KBA	39.13	307	eP	17	17.00	-0.1
	1.3s		22.40nm			4.8mb
KHC	39 25	311	P	17	18.00	0.1
BRG	39.33	313	e(P)	17	18.50	0.0
	1.9s		38.00nm			4.8mb
CLL	40.00	314	iPd	17	26.00	2.0
GYA	40.45	85	P	17	30.20	2.1
XAN	40.50	73	P	17	26.60	-1.8
BTO	40.61	63	eP	17	29.00	-0.3
MOX	40.75	313	e(P)	17	30.50	0.3
HHC	41.77	62	eP	17	41 00	2.2
HFS	42.13	327	eP	17	29.00	-12.3X
	0.3s		1.00nm			
TIY	42.75	67	eP	17	45.50	-1.4
	N 13s		0.30um			
SBF	43.16	302	eP	17	49.10	-1.0
	0.8s		5.30nm			4.3mb
CDF	43.33	309	eP	17	50.40	-1.0
NB2	43.59	328	P	17	52.60	-0.7
	1.1s		8.20nm			4.4mb
LPG	43.62	305	eP	17	53.50	-0.6
	0.8s		8.00nm			4.5mb
HAU	43.93	308	eP	17	55.80	-0.4
DOU	45.16	311	P	18	07.40	1.3
LBF	45.53	307	eP	18	08.30	-0.8
	1.0s		6.80nm			4.5mb
LOR	45.60	307	eP	18	08.90	-0.7
	1.0s		14.00nm			4.8mb
SMF	45.63	306	eP	18	09.40	-0.4
	1.0s		18.00nm			4.9mb
SSF	45.85	307	eP	18	11.10	-0.4
	1.0s		14.00nm			4.8mb
AVF	45.96	307	eP	18	11.80	-0.6
	1.0s		8.00nm			4.6mb
MAF	46.52	306	eP	18	16.60	-0.3
	1.0s		10.00nm			4.7mb
TIA	46.71	68	eP	18	19.60	1.1
TCF	46.77	306	eP	18	18.50	-0.4
	1.0s		10.00nm			4.8mb
CAF	46.95	304	eP	18	20.10	-0.3
	1 2s		8.90nm			4.6mb
BCAO	47.67	244	iPd	18	27.80	1.5
	0.6s		5.00nm			4.7mb
CN2	51.67	57	eP	18	58.00	1.4
	Z 17s		0.50um			4.6MszX
MBC	72.61	360	eP	21	16.00	-0.3
	1.2s		18.00nm			4.9mb
FRB	77.02	339	eP	21	41.00	-0.7
IMA	79.34	13	eP	21	54.30	-0.3
	0.9s		6.70nm			4.6mb
INK	80 04	5	eP	21	57.00	-1.1
FBA	81.49	12	eP	22	06.00	0.2
PWA	84.05	14	eP	22	19.10	0.0
PMR	84.26	14	eP	22	20.10	0.0

S.D. = 1.0 on 49 of 54 obs.

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* DEC 29, 1989 11h 10m 58.71± 1.40s
7.046 S ±10.7km 130.096 E ±14.8km
DEPTH = 82.3 ± 20.8 km
4.8mb (4 obs.)
TANIMBAR ISLANDS REGION (281)

AAI	3.84	330	eP	11	56.10	-0.5
MTN	5.85	170	iPc	12	26.90	2.2
KNA	8.75	188	iPc	13	05.20	0.6
			eS	14	39.00	
WB5	13.41	162	eP	14	05.00	-2.0
			eS	16	25.00	
			iPcP	19	15.80	
WRA	13.47	163	Pc	14	05.70	-2.0
	0.6s		22.80nm			4.9mb
ASPA	16.93	168	iPd	14	50.60	-1.3
	0.5s		65.00nm			5.1mb
	Z 17s		0.20um			3.7Msz
			iS	17	52.40	
			LR	21	53.20	
KDB	17.06	99	eP	14	54.50	1.0
MBL	17.19	214	eP	14	55.20	0.1
WARB	19.31	189	eP	15	22.00	1.9
	0.6s		13.00nm			4.4mb
			eS	18	52.00	
CTA	20 34	131	iPc	15	32.00	1.2

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        0.9s    42.86nm          4.8mb
                  i     20 14.00
                  i     21 18.90
STK    26.94 158 eP     16 34.00   -0.2
                  e     17 00.00
                  e     21 43.00
BRS    29.54 136 iPc    16 57.30   -0.5
BWA    32.06 151 iPc    17 19.00   -0.9
CAN    33.07 151 iPc    17 29.10    0.5
CNC8  150.31 143 iPKPc  30 44.00    5.9X
LPB   150.46 143 ePKP   30 46.00    7.8X
ZOBO  150.64 142 PKP    30 44.00    5.3X
        1.0s     7.50nm
     S.D. = 1.5  on  14 of  17 obs.
-----------------------------------------
*  DEC 29, 1989  11h 41m 03.79± 1.92s
   23.018 N ±12.4km  121.314 E ±17.3km
   DEPTH =  10.0km  (geophysicist)
 TAIWAN                              (244)

TWG     0.30 229 iPc    41 10.40    0.4
                 eS     41 16.30
TWF1    0.33 357 iPc    41 11.90    1.2
                 eS     41 18.00
TWK     0.80 288 iPd    41 18.80   -0.6
                 eS     41 30.70
TWO     1.33 341 iPc    41 27.60   -0.7
TWC     1.66  17 eP     41 31.50   -1.5
ANP     2.16   5 eP     41 41.50    1.1
     S.D. = 1.4  on   6 of   6 obs.
-----------------------------------------
   DEC 29, 1989  14h 18m 54.76± 1.83s
   15.430 N ± 7.6km   61.204 W ±22.5km
   DEPTH = 141.5 ± 18.5 km
 LEEWARD ISLANDS                     ( 92)

MDN     0.22 239 eP     19 14.79   -0.5
BBL     0.28 289 iPc    19 15.07   -0.4
MGG     0.50 347 iPc    19 15.64    0.3
                 S     19 30.30
FDF     0.69 176 iPd    19 16.73    0.1
      0.1s     0.74nm
                 S     19 33.10
DOG     0.72 326 iPc    19 17.04    0.3
CRM     0.73 157 eP     19 16.43   -0.4
PAG     0.75 323 eP     19 17.54    0.5
                 S     19 33.30
DEG     0.89   9 iPc    19 18.29    0.2
BIM     0.92 172 iPd    19 18.31    0.0
                 S     19 34.50
MVM     0.92 161 iPc    19 18.08   -0.2
SEG     1.01 343 eP     19 19.30    0.2
                 S     19 36.70
SLB     1.60 174 eP     19 25.69    0.5
                 eS     19 48.10
BPA     1.73 339 eP     19 26.19   -0.4
                 eS     19 49.29
ANG     1.82 341 eP     19 27.22   -0.4
                 eS     19 52.00
SKI     2.40 322 eP     19 27.17   -7.5X
                 eS     19 49.64
     S.D. = 0.4  on  14 of  15 obs.
-----------------------------------------
   DEC 29, 1989  14h 36m 47.19± 0.95s
   18.817 S ± 8.6km  175.371 W ± 4.3km
   DEPTH = 261.9 ±  9.6 km
   4.8mb ( 34 obs )
 TONGA ISLANDS                       (173)

SVA     5.90 276 ePc    38 15.60    0.7
                 eS     39 29.70
AFI     5.98  36 eP     38 07.00   -9.0X
                 S     39 07.00
SGE     6.49 280 ePc    38 23.00    0.6
PVC    15.54 271 iPc    40 16.00    1.2
DZM    17.35 256 iPc    40 33.80   -0.8
KRP    20.63 201 P      41 11.20    3.7X
AFR    24.34  91 iP     41 43.60    0.5
        0.7s    15.00nm          4.6mb
PAE    24.52  91 iP     41 44.30   -0.4
        0.7s    15.00nm          4.6mb
PPT    24.53  91 iP     41 44.60   -0.3
        0.7s    35.00nm          5.0mb
TBI    24.58 105 iP     41 46.40    1.1
        1.2s    80.00nm          5.1mb
PPN    24.67  91 iP     41 46.70    0.5
        0.7s    15 00nm          4.6mb
TVO    24.81  92 iP     41 48.00    0.4
        0.7s    20.00nm          4.7mb
KHZ    25.34 199 eP     41 54.40    2.3
HNR    25.66 288 ePc    41 55.00   -0.2
        0.6s    80.00nm          5.5mb
PMO    26.55  86 iP     42 02.50   -0.7
        0.7s    15.00nm          4.7mb
VAH    26.75  87 iP     42 03.90   -1.1
        0.7s    10.00nm          4.5mb
TPT    26.81  86 iP     42 04.70   -0.9
        0.7s    10.00nm          4.5mb
RUV    26.99  87 iP     42 06.20   -1.0
        0.7s    15.00nm          4.7mb
BRS    30.45 248 iPc    42 38.30    0.5
RMO    33.89 250 iPd    43 07.90    0.4
        0.5s    47.00nm          5.3mb
CAN    35.50 235 eP     43 21.10    0.1
BWA    35.69 237 eP     43 20.80   -1.8
CTA    36.15 262 iPd    43 25.80   -0.8
        0.8s    76.12nm          5.3mb
                  i     43 36.00
CMS    37.13 242 iPc    43 35.10    0.5
STK    40.76 243 eP     44 05.30    0.8
WB5    47.29 260 iPd    44 55.20   -1.5
                  i     46 24.20
WRA    47.31 260 Pc     44 55.90   -0.9
        0.8s    41.60nm          4.8mb
ASPA   47.33 255 iPd    44 56.30   -0.7
        0.9s   283.00nm          5.6mb
     Z  20s     0.06um          3.5Msz
                 iPcP   46 24.50
                 iPcS   50 18.40
                 iS     51 29.80
                 LR     55 33.70
GUA    50.65 307 eP     45 20.80   -1.5
        0.8s    77.61nm          5.2mb
GUMO   50.72 307 eP     45 21.60   -1.2
        0.6s    74.07nm          5.3mb
PJG    50.72 307 eP     45 21.50   -1.3
MTN    51.66 268 iPc    45 28.60   -1.3
FORR   52.20 245 iPc    45 33.00   -0 6
        0.3s    17.00nm          5.0mb
KNA    53.25 264 iPd    45 40.70   -0.8
WAR8   53.71 251 iPd    45 44.10   -0.8
        0.6s    23.00nm          4.8mb
COOL   58.18 245 eP     46 15.00   -1.4
        0.4s     5 00nm          4.5mb
M8L    60.56 256 iPd    46 31.70   -1.0
        0.4s    14.00nm          4.9mb
KLB    61.01 244 eP     46 35.00   -0.6
        0.7s    16.00nm          4.7mb
BAL    62.01 245 eP     46 41.30   -0.9
MRWA   62.78 246 eP     46 46.60   -0.8
NANU   64.24 254 iPd    46 56.80    0.0
        0.4s    40.00nm          5.5mb
MAT    70.38 322 iPd    47 33.30   -1.4
        1.1s    40.51nm          5.1mb
ADK    70.40 359 eP     47 32.50   -2.0
        0.9s    28.60nm          5.0mb
SPA    71.30 180 iPd    47 43.80    3.8X
        0.7s    14.45nm          4.8mb
OZH    77.60 302 Pc     48 16.50    0.3
SSE    78.55 308 P      48 22.00    0.7
        1.0s    25.00nm          4.9mb
KVN    78.60  42 P      48 21.80    0.1
TNP    78 61  43 P      48 21.50   -0.3
        0.7s     3.15nm          4.2mb
MDJ    80.60 324 eP     48 32.50    0.6
NJ2    80.75 308 Pc     48 34.00    1.1
CN2    82.52 321 Pd     48 40.80   -1.0
PMR    82.83  12 eP     48 42.40   -0.6
TTA    82.89   9 eP     48 43 70    0.3
WHN    83.47 305 eP     48 47.00    0.1
PNT    83.89  33 eP     48 49.00    0.4
ANMO   84.43  50 P      48 53.80    1.9
        1.0s     4.00nm          4.2mb
                  pP    50 02.00 287kmX
BW06   86.06  42 P      48 58.00   -1.8
        1.3s     4.92nm          4.2mb
FBA    86.09  11 ePd    48 58.60   -0.6
IMA    86.20   9 eP     48 59.90    0.0
        0.9s     9 60nm          4.6mb
BJI    86.47 314 eP     49 02.50    1.0
GOL    87.37  47 P      49 06.80    0.6
        0.7s     3.94nm          4.4mb
GYA    88.00 299 P      49 11 00    1.7
TIY    88.03 311 Pc     49 10.00    0.8
LOE    89.06 289 eP     49 15.60    1.3
XAN    89.11 306 P      49 15.30    1.0
HHC    89.98 313 Pc     49 20.00    1.8
KMI    90.81 296 Pd     49 25.00    2.4
BDT    91.46 288 eP     49 28.00    2.7X
        0.9s    54.40nm          5.5mb
CD2    91.99 302 eP     49 29.40    1.8
CHG    92.02 289 iPd    49 30.00    2.1
        1.0s    28.00nm          5.2mb
INK    92.02  14 ePd    49 26.70   -0.2
SUF   133.68 346 ePKP   55 35.00    1.4
NUR   135.97 346 ePKP   55 40.00    2.0
NB2   137.56 355 PKP    55 35.80   -5.4X
        0.8s     2.00nm
HFS   138.22 353 ePKP   55 29.80  -12.5X
        0.6s     1.30nm
DMU   143.87  12 ePKP   55 50.60   -1.9
DCN   144.32  12 ePKP   55 51.80   -1.4
DLE   144.52  12 ePKP   55 52.60   -1.0
WIT   146.04 358 ePKP   55 59.00    2.9X
KAS   146.49 318 ePKP   56 01.00    3.6X
KRA   146.51 342 ePKP   55 59.40    2.4X
KSP   146.73 346 iPKPd  56 00.00    2.7X
        0.9s    35.00nm
                  e     56 49.00
WTS   146.85 358 ePKP   56 00.50    3.1X
        1.0s    29.00nm
                  e     56 16.50
CLL   146.91 350 iPKPd  56 00.30    2.7X
        1.1s    50.00nm
                  e     56 15.00
BRG   147.17 349 iPKPd  56 01.10    3.1X
        1.2s    27.00nm
SPC   147.19 341 ePKP   56 01.80    3.4X
VRI   147.41 331 ePKPc  56 01.50    2.9X
MOX   147.76 352 ePKP   56 02.00    3.0X
        1.2s    28.00nm
PRU   147.90 348 PKPd   56 03.30    4.1X
        1.0s    21.70nm
                  e     56 05.90
MLR   148.06 331 ePKPc  56 04.00    4.2X
ENN   148.11 358 ePKP   56 05.00    5.5X
        0.7s     8.00nm
LWI   148.33 231 iPKPd  56 07.10    5.8X
HRI   148.70 304 iPKPd  56 06.50    5.3X
DOU   148.79   0 PKP    56 05.70    5.1X
                  i     56 09.00
KHC   148.91 349 ePKP   56 02.00    1.1
                  i     56 06.20
ZST   148.99 344 ePKP   56 06.10    5.1X
SRO   149.00 342 iPKP   56 06.10    5.1X
WLF   149.20 358 iPKP   56 06.00    4.8X
DSI   149.53 301 ePKPd  56 08.00    5.7X
BZS   149.79 336 ePKP   56 08.50    6.2X
FLN   149.84   7 ePKP   56 07.90    5.6X
LDF   150.05   6 ePKP   56 08.20    5.6X
ALT   150.11 318 ePKP   56 09.00    5.9X
GRR   150.17   7 ePKP   56 08.70    6.0X
PRNI  150.19 298 iPKPd  56 10.00    6.6X
CDF   150.40 356 ePKP   56 09.70    6.5X
LPF   150.50   8 ePKP   56 09.40    6.2X
HAU   150.85 358 ePKP   56 10.60    6.7X
KHL   150.90 317 ePKP   56 10.80    6.5X
KBA   150.92 348 i(PKP) 56 04.20    0.0
        0.5s    11.90nm
                  i     56 10.00
                  e     57 15.50
BSF   151.01 357 ePKP   56 10.90    6.7X
PTJ   151.41 343 ePKP   56 11.50    6.7X
LOR   151.62   1 ePKP   56 12.50    7.5X
LJU   151.64 345 ePKP   56 12.00    6.9X
VOY   151.80 346 ePKP   56 12.00    6.6X
SSF   151.82   2 ePKP   56 12.90    7.6X
LBF   151.90   1 ePKP   56 13.00    7.5X
CEY   151.95 345 ePKP   56 12.50    6.9X
VBY   151.96 344 ePKP   56 14.00    8.5X
MFF   152.01   7 ePKP   56 13.00    7.4X
AVF   152.08   2 ePKP   56 13.10    7.5X
SMF   152.24   1 ePKP   56 14.40    8.5X
BGF   152.30   3 ePKP   56 13.80    7.8X
LSF   152.52   5 ePKP   56 13.90    7.6X
TCF   152.53   4 ePKP   56 14.20    7.8X
MAF   152.62   3 ePKP   56 15.20    8.7X
LPG   153.34 357 ePKP   56 17.00    9.1X
BCAO  160.28 225 iPKPc  56 18.40    1.4
        0.6s     8.00nm
                  ic    57 00.70
```

29d 14h

S.D. = 1.1 on 75 of 128 obs.

% DEC 29, 1989 14h 42m 58.36± 0.69s
46.480 N ± 9.4km 2.890 E ± 6.6km
DEPTH = 10.0km (geophysicist)
FRANCE (538)
ML 1.7 (LDG).

BGF	0.08	339	Pg	43	00.80	-0.1
			Sg	43	02.40	
MAF	0.34	221	Pg	43	05.60	0.2
			Sg	43	10.50	
TCF	0.51	248	Pg	43	08.20	-0.5
			Sg	43	14.60	
SMF	0.68	75	Pg	43	11.50	-0.3
			Sg	43	21.00	
LBF	0.90	56	Pg	43	16.00	0.3
			Sg	43	27.50	
LSF	0.97	257	Pg	43	17.20	0.4

S.D. = 0.5 on 6 of 6 obs.

DEC 29, 1989 14h 54m 52.83± 0.47s
44 384 N ± 3.4km 6.905 E ± 4.3km
DEPTH = 10.0km (geophysicist)
FRANCE (538)
ML 2.3 (LDG), 2.2 (GEN).

FOUF	0.17	329	e(Pg)c	54	56.32	-0.3
			i(Sg)	54	58.53	
			e	54	58.67	
PZZ	0.19	49	P	54	57.52	0.5
			S	55	01.14	
STV	0.33	115	P	54	59.54	-0.2
			S	55	03.91	
ENR	0.40	113	P	55	00.74	-0.3
			S	55	06.37	
RRL	0.54	351	P	55	03.50	-0.4
			S	55	11.09	
SBF	0.65	144	Pg	55	06.20	0.4
			Sg	55	13.60	
ROB	0.70	97	P	55	06.16	-0.5
			S	55	15.91	
RSP	0.81	18	P	55	09.15	0.6
FRF	0.84	193	Pg	55	08.80	-0.3
			Sg	55	18.20	
IMI	0.85	123	P	55	09.34	0.0
			S	55	20.11	
FIN	0.95	100	P	55	11.09	0.1
LRG	1.01	203	Pg	55	12.40	0.5
			Sg	55	24.40	

S.D. = 0.4 on 12 of 12 obs.

DEC 29, 1989 15h 17m 01.88± 0.98s
6.321 S ± 6.2km 149.075 E ± 6.6km
DEPTH = 66.8 ± 8.8 km
4.5mb (3 obs)
NEW BRITAIN REGION (192)

LAT	2.09	261	iPd	17	35.50	0.2
KDB	3.66	211	iPc	17	57.90	0.6
			eS	18	31.00	
MNDI	5.39	271	eP	18	22.50	0.7
HNR	11.20	107	ePc	19	41.00	-0.6
CTA	13.96	191	eP	20	19.00	1.0
			i	20	40.00	
MTN	18.84	249	eP	21	18.00	-1.3
WB5	19.64	225	eP	21	26.70	-1.4
			eS	24	57.90	
			eScP	29	20.80	
WRA	19.70	225	Pd	21	27.80	-0.9
	0.8s		19.70nm			4.5mb
RMQ	20.06	181	iPd	21	32.00	-0.4
			i	21	46.70	
GUMO	20.22	348	eP	21	34.20	0.2
	0.6s		31.43nm			4.8mb
PJG	20.22	348	eP	21	34.00	0.0
BRS	21.25	171	iPd	21	44.30	-0.2
KNA	22.00	243	eP	21	51.00	-1.1
ASPA	22.59	219	iPc	21	58.90	1.0
	0.5s		8.00nm			4.4mb
	Z 20s		0.27um			3.7Msz
			iPcP	25	03.80	
			iS	26	00.50	
			LR	31	03.40	
			iScS	33	12.10	
DZM	22.95	135	iPc	22	01.40	0.0
MBL	31.92	240	eP	23	23.70	0.3
NANU	36.15	240	eP	24	00.00	0.2
MAT	43.84	347	(P)	25	01.00	-2.1
SPA	83.72	180	iPd	29	43.20	18.5X
	0.8s		10.83nm			
INK	91.20	21	eP	30	01.00	0.6
NB2	117.02	338	PKP	35	39.70	-0.8
	0.9s		2.30nm			
LPG	129.13	326	ePKP	36	05.20	0.6
	0.5s		2.10nm			
SBF	129.74	324	ePKP	36	05.60	0.1
	0.6s		4.30nm			
FRF	130.38	324	ePKP	36	07.00	0.4
	0.6s		3.60nm			
FLN	130.47	334	ePKP	36	07.30	0.7
	0.4s		2.20nm			
LRG	130.61	324	ePKP	36	08.00	1.0
	0.6s		5.40nm			
BCAO	130.74	270	iPKPd	36	08.00	-0.2
	0.5s		15.00nm			
TCF	131.00	330	ePKP	36	09.60	1.9
	0.6s		3.00nm			
LPF	131.26	334	ePKP	36	09.10	1.0
	0.4s		4.50nm			
ZOBO	136.89	122	ePKP	36	06.00	-14.4X
SDV	140.57	84	ePKP	36	18.80	-8.0X
LLAV	144.28	81	ePKP	36	30.00	-3.1X
OLLA	144.31	82	PKP	36	31.50	-1.6
PAG	148.37	70	ePKP	36	43.00	3.3X
MGG	148.73	70	ePKP	36	44.00	3.9X
DEG	148.87	69	ePKP	36	44.50	4.1X
KUK	149.63	271	iPKPd	36	46.30	4.7X
KIC	153.98	272	PKP	36	48.00	0.0
LIC	154.26	271	PKP	36	48.38	0.1

S.D. = 0.9 on 31 of 39 obs.

DEC 29, 1989 15h 51m 07.55± 0.79s
24.637 N ± 7.0km 94.518 E ± 6.7km
DEPTH = 95.3 ± 8.5 km
4.4mb (13 obs.)
BURMA-INDIA BORDER REGION (294)

SHL	2.56	292	iP	51	46.70	-1.5
			eS	52	14.00	
LSA	5.87	330	iP	52	33.20	-0.8
CHG	7.11	144	eP	52	50.00	-0.7
KMI	7.48	85	eP	52	58.00	1.9
BDT	8.46	149	eP	53	10.00	0.8
GYA	11.12	78	P	53	49.00	3.9X
LZH	13.95	33	eP	54	19.00	-3.4X
HYB	16.54	247	eP	54	56.50	1.4
GBA	19.49	239	Pd	55	31.00	1.3
	0.6s		2.50nm			3.7mb
WMQ	19.94	345	P	55	34.00	-0.2
TIY	20.08	45	eP	55	36.10	0.4
SUF	58.50	330	eP	00	56.00	0.3
	0.3s		3.30nm			4.9mb
WB5	58.84	135	eP	00	57.40	-1.2
WRA	58.87	135	Pc	00	57.30	-1.5
	0.5s		3.80nm			4.8mb
NUR	58.99	327	eP	00	59.00	-0.1
ASPA	61.35	138	iPc	01	14.00	-1.7
	0.6s		8.00nm			4.9mb
HFS	64.43	327	eP	01	35.40	-0.2
	0.5s		9.30nm			5.0mb
NB2	65.56	328	P	01	42.20	-0.6
	0.6s		2.00nm			4.2mb
LPG	71.36	312	eP	02	19.70	0.3
	0.6s		2.70nm			4.3mb
LBF	72.77	314	eP	02	27.20	-0.1
	0.4s		1.10nm			4.1mb
SMF	72.96	314	eP	02	28.40	0.0
	0.6s		5.40nm			4.6mb
SSF	73.05	314	eP	02	29.00	0.1
	0.6s		1.80nm			4.1mb
TCF	74.14	314	eP	02	36.00	0.7
	0.4s		1.70nm			4.2mb
LPO	75.36	313	eP	02	43.20	0.9
	0.4s		2.70nm			4.4mb
MBC	77.19	8	eP	02	52.50	0.5
	0.5s		3.00nm			4.4mb
BUL	78.04	241	iPc	03	13.20	15.5X
	0.6s		4.00nm			
INK	80.87	16	eP	03	12.00	0.1

S.D. = 1.0 on 24 of 27 obs.

DEC 29, 1989 17h 00m 58.87± 1.12s
15.765 N ± 4.8km 147 22? E ± 5.9km
DEPTH = 36.2 ± 9.9 km
5.0mb (16 obs.) 4.3Msz (6 obs.)
MARIANA ISLANDS REGION (215)
CENTROID, MOMENT TENSOR (HRV)
Doto Used: GDSN
L.P.B.: 10S, 19C
Centroid Locotion:
Origin Time 17:00:59.1 1.5
Lat 15.46N 0.22 Lon 147.64E 0.18
Dep 33.0 FIX Half-durotion 1.5
Moment Tensor; Scole 10**16 Nm
Mrr=-2.03 0.58 Mtt=-0.56 0.66
Mff= 2.59 0.65 Mrt= 0.18 1.24
Mrf= 2.97 1.32 Mtf= 1.67 0.69
Principol Axes:

T	Vol= 4.53	Plg=24	Azm=289
N	-0.93	18	190
P	-3.60	59	66

Best Double Couple:Mo=4.1*10**16

NP1:Strike=	51	Dip=27	Slip= -46
NP2:	184	71	-109

GUMO	3.15	227	eP	01	47.30	0.0
PJG	3.15	227	eP	01	47.40	0.1
GUA	3.15	226	eP	01	47.30	0.0
			eS	02	22.10	
MAT	22.20	340	(P)	05	51.00	-2.6
	0.9s		18.49nm			4.5mb
	Z 20s		0.71um			4.1Msz
			eS	09	53.00	
KDB	25.07	180	iPc	06	22.00	0.3
BAG	25.61	275	eP	06	28.50	1.6
SSE	28.25	307	eP	06	48.10	-2.7
	Z 20s		0.90um			4.4Msz
	E 16s		0.80um			
			eS	11	48.00	
WHN	33.47	302	Pd	07	37.00	0.1
			pP	07	48.00	40kmX
CN2	33.53	331	eP	07	37.80	0.6
	Z 18s		0.60um			4.4Msz
CTA	35.64	182	iPd	07	55.00	-0.6
	1.0s		21.00nm			5.0mb
BJI	36.27	318	eP	08	00.00	-0.7
	Z 20s		0.60um			4.4Msz
			eS	13	47.00	
WB5	37.61	200	eP	08	11.00	-1.1
TIY	37.67	312	eP	08	15.40	2.8X
	N 17s		0.50um			
WRA	37.68	200	Pc	08	12.10	-0.6
	0.7s		4.00nm			4.4mb
XAN	38.94	305	Pd	08	22.70	-0.6
GYA	39.16	293	P	08	26.60	1.3
BTO	40.63	315	eP	08	37.60	0.4
ASPA	41.30	199	iPd	08	43.10	0.4
	1.3s		8.00nm			4.3mb
	Z 20s		0.11um			3.7Msz
			eS	14	38.90	
			LR	18	15.80	
DZM	42.05	153	iPc	08	42.00	-7.0X
CD2	42.39	299	eP	08	51.60	-0.1
KMI	42.55	290	eP	08	55.00	1.7
BRS	43.23	173	iPc	08	59.60	1.1
LZH	43.52	306	Pc	09	01.00	0.0
	0.8s		0.03nm			2.1mb X
LOE	43.56	279	eP	09	01.50	0.2
NST	45.26	277	ePd	09	16.00	1.0
MBL	45.49	217	eP	09	16.00	-0.7
ADK	46.04	30	e(P)	09	21.40	0.7
CHG	46.09	281	iPc	09	21.90	0.3
	0.9s		20.59nm			5.1mb
BDT	46.17	279	ePd	09	23.00	0.8
	0.7s		36.30nm			5.4mb
WARB	46.25	206	eP	09	23.00	0.3
	0.4s		4.00nm			4 7mb
IPM	46.71	261	ePc	09	27.10	0.6
NANU	49.14	220	eP	09	45.10	-0.1
BWA	49.92	179	eP	09	50.70	-0.5
CAN	50.83	178	eP	09	57.30	-0.8
SHL	52.38	290	iP	10	09.50	-0.8
			eS	17	31.00	
LSA	53.09	295	iP	10	16.80	1.0
WMQ	57.34	312	P	10	46.00	0.1
	Z 20s		0.40um			4.5Msz
			S	18	42.80	
TTA	61.21	26	eP	11	12.60	0.2
IMA	63.37	23	eP	11	27.00	0.2
	1.2s		23.40nm			5.2mb

PMR 63.80 29 eP 11 28.50 -0.9
1.0s 34.60nm 5.4mb
BRW 64.59 17 eP 11 34.80 0.3
TOA 65.28 28 eP 11 39.50 0.3
FBA 65.30 25 eP 11 38.20 -0.9
HYB 65.50 282 ePd 11 40.70 -0.6
GBA 67.26 278 P 11 52.00 -0.4
INK 71.49 23 ePd 12 17.50 -0.1
0.9s 31.00nm 5.3mb
pP 12 37.00 73kmX
QUE 73.99 297 eP 12 29.00 -4.2X
MBC 75.62 14 eP 12 42.00 0.5
1.0s 29.00nm 5.2mb
MAIO 79.05 305 iPc 13 03.00 1.6
PNT 80.24 42 ePc 13 08.00 0.6
ORV 81.10 51 eP 13 12.50 0.4
CMB 82.30 53 eP 13 19.00 0.5
FRI 83.08 54 eP 13 23.80 1.4
KEV 85.16 342 eP 13 34.00 1.7
SES 85.29 39 ePd 13 34.10 0.7
1.1s 60.00nm 5.7mb
LRM 85.85 44 eP 13 37.00 0.4
SOD 86.60 341 eP 13 39.00 -0.5
FFC 88.76 33 eP 13 50.00 -0.1
1.1s 29.00nm 5.5mb
SUF 89.39 337 eP 13 53.00 0.0
ALQ 93.91 52 eP 14 09.70 -5.0X
1.0s 5.00nm 4.9mb
HFS 95.63 339 eP 14 19.90 -1.9
0.4s 0.80nm 4.5mb
NB2 95.82 340 P 14 22.40 -0.3
0.9s 2.90nm 4.7mb
FRB 96.06 15 eP 14 23.00 -0.7
KIC 144.59 306 PKP 20 32.78 -1.5
TIC 144.63 307 PKP 20 32.94 -1.4
0.7s 9.50nm
LIC 144.90 306 PKPc 20 33.98 -0.8
0.6s 17.50nm
ZOBO 146.04 96 PKP 20 38.20 0.8
1.0s 25.00nm
Z 16s 0.16um 4.9MszX
eLR 08 32.00
LPB 146.08 96 PKP 20 40.00 2.8X
1.0s 34.00nm
CNCB 146.21 97 PKP 20 41.00 3.4X
S.D. = 0.9 on 63 of 69 obs.

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* DEC 29, 1989 18h 59m 03.17± 1.79s
7.802 N ± 7.9km 126.965 E ±10.2km
DEPTH = 56.8 ± 17.2 km
4.4mb (4 obs.) 3.8Msz (1 obs.)
MINDANAO, PHILIPPINE ISLANDS (259)

DAV 1.55 243 eP 59 30.60 1.8
0.8s 2149.25nm
MNI 6.66 199 eP 00 40.50 -0.3
GUMO 18.50 70 eP 03 15.20 -2.0
QIZ 20.02 306 eP 03 32.00 -2.2
N 14s 0.60um
PP 03 56.00
KNA 23.47 176 eP 04 07.50 -1.0
LOE 26.38 294 eP 04 36.00 -0.2
e 04 43.00
WB5 28.46 165 eP 04 53.80 -1.2
WRA 28.51 165 Pc 04 59.30 3.8X
0.9s 5.30nm 4.2mb
CHTO 29.33 295 eP 05 01.00 -2.0
0.9s 2.56nm 3.9mb
XAN 30.96 330 eP 05 14.50 -2.7X
ASPA 32.00 168 eP 05 28.40 2.0
Z 18s 0.19um 3.8Msz
eS 10 33.10
LR 21 19.80
SNY 34.02 355 iPd 05 44.40 0.7
CN2 35.88 358 eP 05 59.40 -0.1
MDJ 36.74 3 Pc 06 08.50 1.7
SHL 37.79 302 iP 06 16.00 -0.1
eS 08 33.00
MRWA 38.29 196 eP 06 19.50 -0.5
BAL 39.44 194 eP 06 28.50 -1.0
LSA 40.04 308 eP 06 36.00 0.9
KLB 40.15 192 eP 06 34.60 -0.7
BRS 42.99 145 eP 06 59.00 0.2
BWA 46.65 155 eP 07 29.80 1.9
CAN 47.66 155 eP 07 39.70 3.8X
GBA 48.94 281 P 07 46.00 0.0
INK 86.31 22 eP 11 40.00 0.1

PRNI 87.80 300 eP 11 49.00 1.1
MBC 87.95 13 eP 11 50.00 2.3
0.9s 4.00nm 4.6mb
SUF 88.05 333 eP 11 48.00 -0.3
SLL 94.57 333 eP 12 17.50 -1.2
0.7s 7.00nm 5.2mb
S.D. = 1.4 on 25 of 28 obs.

DEC 29, 1989 19h 13m 03.01± 0.70s
29.084 S ± 5.1km 70.935 W ±11.7km
DEPTH = 33.0km (normal)
CENTRAL CHILE (136)

ZON 3.13 142 eP 13 53.00 1.7
CFA 3.43 138 ePd 13 57.00 1.5
ROCH 3.88 181 eP 14 02.00 0.0
PEL 4.05 177 iPc 14 04.70 0.4
i 14 06.50
iS 14 50.60
FCH 4.27 173 eP 14 11.00 3.4X
iS 15 01.50
SAN 4.36 177 eP 14 09.00 0 3
iS 14 58.70
LCCH 4.41 187 iP 14 08.50 -0.9
iS 14 59.60
PCH 4.54 176 iP 14 12.00 0.7
iS 15 02.50
i 15 15.00
TACH 4.56 180 iPd 14 11.00 -0 4
iS 15 01.50
CHCH 4.84 177 eP 14 17.00 1.5
iS 15 08.80
LNV 4.87 185 iPd 14 14.50 -1.4
iS 15 07.50
ANT 5.38 5 e(P) 14 22.50 -0.5
MRA 5.59 128 ePd 14 25.20 -0.8
TCA 5.93 114 iPd 14 29.30 -1.7
RFA 6.05 160 ePc 14 31.20 -1.3
SLA 6.51 49 ePc 14 43.30 4.1X
CNCB 12.52 13 P 16 07.80 5.6X
ARE 12.57 358 eP 16 07.00 4.3X
LPB 12.76 12 eP 16 06.00 0.7
ZOBO 13.01 12 P 16 09.00 0.2
S.D. = 1.1 on 16 of 20 obs.

? DEC 29, 1989 19h 43m 27.59± 3.16s
30.246 S ±15.0km 69.657 W ±35.2km
DEPTH = 33.0km (normal)
CHILE-ARGENTINA BORDER REGION (127)

RTRS 0.19 66 iPd 43 34.00 0.0
RTBS 1.42 173 e(P) 43 51.50 0.2
RTCB 1.44 149 iPd 43 51.00 -0.7
RTLL 1.49 137 ePc 43 52.80 0.5
RTCV 1.87 149 e(P) 43 58.00 0.0
S.D. = 0.6 on 5 of 5 obs.

DEC 29, 1989 20h 21m 14.96± 0.88s
13.815 N ± 2.8km 60.140 W ± 9.5km
DEPTH = 27.6 ± 2.6 km
WINDWARD ISLANDS (95)
ML 3.7 (FDF)

SLB 0.88 271 iP 21 31.12 -0.2
MVM 1.04 315 iPc 21 33.47 -0.2
S 21 45.50
SOA 1.07 246 eP 21 34.09 -0.1
SSV 1.13 245 iP 21 35.05 -0.1
eS 21 50.04
BIM 1.14 308 iPc 21 35.04 -0.1
S 21 47.60
SVV 1.16 245 iP 21 35.41 0.0
eS 21 48.32
CRM 1.20 321 iPc 21 36.01 0.1
S 21 49.50
SVB 1.21 244 iP 21 36.22 0.1
FCV 1.26 239 eP 21 36.84 0.1
eS 21 51.49
FDF 1.34 313 iPc 21 38.01 0.0
0.1s 2.30nm
S 21 53.00
DTMT 1.83 320 eP 21 45.38 0.2
DPMT 1.88 320 eP 21 45.58 -0.1
MDN 1.93 321 eP 21 46.94 0.5
BBL 2.14 323 ePc 21 49.98 0.5
S 22 16.50
MGG 2.38 332 ePc 21 52.88 0.0

S 22 19.90
DOG 2.63 327 eP 21 56.92 0 4
DEG 2.64 340 ePc 21 55.92 -0.7
PAG 2.66 326 eP 21 57.00 0.0
S 22 27.30
SEG 2.89 333 eP 22 00.62 0.5
TRN 3.38 202 eP 22 07.21 0.1
eS 22 46.16
TCE 3.48 207 eP 22 08.68 0.1
eS 22 45.65
BPA 3.61 333 eP 22 10.44 -0.1
ANG 3.70 334 eP 22 11.32 -0.3
SKI 4.30 325 eP 22 11.34 -8.9X
S.D. = 0.3 on 23 of 24 obs.

DEC 29, 1989 20h 43m 39.34± 0.35s
40.117 N ± 3.5km 24.517 E ± 2.8km
DEPTH = 10.0km (geophysicist)
AEGEAN SEA (365)
ML 3.6 (ATH).

PAIG 0.67 254 iPg 43 52.60 0.0
eSg 44 01.60
PLG 0.86 288 iPnd 43 56.40 0.5
SOH 1.13 309 iPbd 44 00.90 0.3
eSb 44 17.40
NEO 1.28 231 iPnc 44 02.40 -0.8
RDO 1.29 37 ePn 44 02.30 -0.9
THE 1.29 294 ePbd 44 03.20 -0 1
eSb 44 22.00
EZN 1.42 101 iPn 44 05.50 0.3
LIT 1.55 270 ePbd 44 06.90 -0.2
eSb 44 29.00
RZN 1.58 5 iP 44 08.00 0.4
iSg 44 39.00
MMB 1.59 338 iPgd 44 07.00 -0.6
PRK 1.61 122 ePn 44 08.50 0.6
KNT 1.61 311 ePbd 44 08.10 0 2
iSb 44 32.30
KDZ 1.68 24 iPc 44 08.00 -0.8
iSg 44 32.00
GRG 1.82 298 ePn 44 11.10 0 2
eSb 44 37.30
VAY 1.91 310 iPn 44 12.70 0.5
i 44 16.30
AGG 2.01 238 iPnc 44 13.20 -0.6
iSn 44 40.00
KKB 2.06 329 iP 44 14.00 -0.4
DIM 2.08 21 iPc 44 15.00 0.4
Sg 44 48.00
KZN 2.11 276 ePn 44 15.50 0.3
ATH 2.23 196 ePb 44 23.10 6 2X
PGB 2.44 354 iP 44 21.00 1.0
iSg 44 57.00
EDC 2.57 84 ePn 44 28.00 6 3X
BNT 2.62 84 ePn 44 27.70 5.3X
VTS 2.66 339 iPg 44 23.00 -0.2
iSg 45 05.00
SKO 2.97 310 ePn 44 16.50 -10.9X
DMK 2.99 54 ePn 44 28.00 0.4
OHR 3.00 291 ePn 44 28.20 0 4
PVL 3.16 11 iPc 44 29.00 -1.0
iSg 45 21.00
MLR 5.47 11 eP 45 03.00 0.0
S.D. = 0.6 on 25 of 29 obs.

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* DEC 29, 1989 21h 26m 08.99± 1.00s
24.209 N ± 9.1km 94.378 E ±10.0km
DEPTH = 88.5 ± 13.5 km
4.3mb (2 obs.)
BURMA-INDIA BORDER REGION (294)

SHL 2.64 301 iP 26 50.80 0.2
iS 27 20.00
LSA 6.18 333 Pn 27 40.80 0.9
Sn 28 48.20
CHG 6.85 141 eP 27 48.00 -0.7
BDT 8.17 147 eP 28 08.00 1.2
GYA 11.34 76 P 28 54.00 4.3X
GTA 15.84 16 eP 29 46.00 -2.2
NDI 16.00 290 eP 29 49.00 -1.1
eS 32 33.50
XAN 16.03 49 eP 29 50.00 -0.5
HYB 16.26 248 eP 29 57.50 4.1X
WHN 18.81 66 eP 30 25.50 1 1
WMQ 20.32 346 P 30 41.20 1.0
WB5 58.63 135 eP 35 58.30 -1 0

29d 21h

		e	36 21.90			
WRA	58 66	135 Pd	35 59.10	-0.4		
	0.5s	2.90nm		4.6mb		
HFS	64.72	327 eP	36 39.50	-0.1		
	0.4s	0.80nm		4.0mb		
NB2	65.85	328 P	37 07.80	20.9X		
	0.9s	4.30nm				
INK	81.32	16 eP	38 18.00	1.5		
S.D. = 1.3 on 13 of 16 obs.						

? DEC 29, 1989 22h 37m 36.91±15.77s
7.402 S ±144.km 128.641 E ±21.5km
DEPTH = 199.6 ± 53.2 km
4.4mb (3 obs.)
BANDA SEA (280)

MTN	5.94	156 iP	39 04.10	0.0		
KNA	8.30	179 eP	39 35.00	0.0		
	0.3s	66.00nm		5.5mb X		
		eS	41 00.00			
WB5	13.59	156 eP	40 42.90	0.0		
		eS	43 03.00			
WRA	13.64	157 Pc	40 43.60	0.1		
	0.2s	2.00nm		4.2mb		
MBL	16.11	211 eP	41 14.00	0.0		
	0.3s	4.00nm		4.4mb		
		eS	44 04.00			
ASPA	16.94	163 iPd	41 28.50	4.4X		
	0.3s	7.00nm		4.6mb		
Z	19s	0.07um		3.7Msz		
		eS	44 27.30			
		iPcP	45 44.60			
		LR	47 35.60			
S.D = 0.1 on 5 of 6 obs.						

DEC 30, 1989 00h 22m 48.19± 0.32s
24.132 S ± 3.7km 68.958 W ± 8.2km
DEPTH = 88.4km (4 depth phases)
4.7mb (3 obs.)
CHILE-ARGENTINA BORDER REGION (127)

ANT	1.40	287 iPc	23 13.30	0.3		
		i(S)	23 28.50			
SLA	3.21	101 ePc	23 42.20	4.6X		
CNCB	7.34	7 P	24 35.00	-0.2		
ZON	7.39	178 ePd	24 36.00	0.7		
CFA	7.47	175 ePd	24 36.00	-0.5		
LPB	7.60	6 eP	24 39.00	0.3		
	1.0s	80.00nm		5.3mb X		
ZOBO	7.86	6 P	24 42.20	-0.1		
ARE	7.99	342 eP	24 39.00	-4.9X		
		iS	26 36.00			
TCA	8.15	153 ePd	24 46.00	0.2		
MRA	8.73	162 eP	24 53.00	-0.6		
PEL	9.11	189 eP	25 02.00	3.2X		
		i(S)	26 57.10			
PCH	9.55	188 eP	25 04.70	-0.2		
LCCH	9.59	193 eP	25 12.00	6.7X		
LNV	10.02	192 eP	25 11.00	-0.1		
RFA	10.61	178 e(P)	25 16.00	-3.2X		
TUL	64.89	336 eP	33 19.00	-1.1		
	1.1s	8.40nm		4.6mb		
		e	33 42.00	90km		
SIO	64.93	336 eP	33 19.40	-1.0		
		e	33 41.50	86km		
ALQ	68.67	328 iPd	33 39.90	-4.4X		
	0 7s	8.05nm		4.7mb		
LIC	69.18	73 P	33 47.70	0.1		
KIC	69.50	73 Pd	33 49.70	0.1		
	0.6s	9.00nm		4.8mb		
KUK	73.26	75 iPc	34 11.70	-0.3		
LRM	80 04	331 eP	34 50.10	0 5		
		e	35 13.50	88km		
SES	83.01	334 ePc	35 05.20	0.5		
		pP	35 29.00	89km		
BUL	88.51	111 eP	35 48.00	15.3X		
ASPA	127.56	207 ePKP	41 25.80	-19.4X		
GBA	146.60	102 PKP	42 21.60	1.6		
HYB	148.95	96 ePKP	42 28 70	4.9X		
		e	42 53 50			
S.D. = 0.7 on 18 of 27 obs.						

? DEC 30, 1989 01h 48m 02.41± 1.46s
40.570 N ±16.3km 14.928 E ±15.1km
DEPTH = 10.0km (geophysicist)
SOUTHERN ITALY (390)

SGO	0.29	92 Pd	48 08.20	-0.3		
		eSg	48 13.00			
MGR	0.65	132 P	48 15.60	0.3		
		eSg	48 26.80			
DUI	1.15	342 P	48 24.50	0.6		
SDI	1.41	324 P	48 27.60	-0.6		
S.D. = 0.9 on 4 of 4 obs.						

& DEC 30, 1989 02h 46m 17.40s
32.380 N 115.260 W
DEPTH = 6.0km (geophysicist)
CALIFORNIA-MEXICO BORDER REGION (45)
<PAS-P>. ML 3.5 (PAS).

GLA	0.76	28 iP	46 31.10	-1.6		
IKP	0.76	291 ePd	46 32.10	-0.6		
BAR	1.23	284 eP	46 39.10	-1.6		
PLM	1.66	306 eP	46 44.60	-2.8		
PEC	2.19	314 eP	46 53.50	-1.5		
TNP	5.91	345 e(P)	47 56.50	8.7		
KVN	7.05	342 e(P)	48 20.00	16.2		
7 obs. associated						

DEC 30, 1989 03h 13m 26.38± 1.06s
36.668 N ±10.6km 20.569 E ± 4.5km
DEPTH = 10.0km (geophysicist)
MEDITERRANEAN SEA (400)
ML 3.3 (THE).

ITM	1.20	64 eP	13 49.20	0.4		
VLI	1.90	88 eP	13 58.70	-0.5		
AGG	2.73	30 ePn	14 12.50	1.4		
		eSn	14 44.40			
NEO	3.37	38 eP	14 19.60	-0.5		
LIT	3.74	23 ePn	14 26.10	0.6		
		eSn	15 07.50			
KZN	3.75	14 eP	14 27.00	1.4		
LCI	4.20	332 P	14 30.90	-0.9		
ATN	4.33	292 Pd	14 34.30	0.5		
CZI	4.33	307 P	14 34.70	0.9		
THE	4.38	25 ePn	14 34.70	0.3		
OHR	4.44	2 ePn	14 35.00	-0.3		
GRG	4.51	18 ePn	14 35.80	-0.5		
		eSn	15 25.30			
MEU	4.54	277 P	14 36.10	-0.7		
CSI	4.58	314 P	14 39.00	1.7		
SOH	4.68	27 ePnc	14 38.70	-0.1		
KNT	4.84	21 ePn	14 40.30	-0.7		
BRT	4.96	329 P	14 41.80	-0.8		
MGR	5.24	313 P	14 46.50	-0.2		
SKO	5.34	7 ePn	14 46.50	-1.5		
SGO	5.66	315 P	14 52.00	-0.5		
S.D. = 0.9 on 20 of 20 obs.						

DEC 30, 1989 03h 46m 21.15± 1.03s
36.700 N ± 9.5km 20.574 E ± 4.7km
DEPTH = 10.0km (geophysicist)
MEDITERRANEAN SEA (400)
ML 3.3 (THE). MD 3.7 (ATH).

ITM	1.18	66 eP	46 43.00	-0.3		
VLI	1.90	89 eP	46 53.70	-0.2		
AGG	2.70	30 ePn	47 07.10	1.6		
		eSn	47 39.70			
NEO	3.34	38 eP	47 13.00	-1.5		
LSK	3.44	0 ePn	47 14.40	-1.6		
TPE	3.62	353 ePn	47 16.90	-1.5		
LIT	3.71	23 ePn	47 20.40	0.6		
		eSn	48 02.70			
KZN	3.72	14 eP	47 20.80	0.8		
BERA	4.03	353 ePn	47 25.50	1.4		
LCI	4.17	331 Pc	47 25.50	-0.7		
CZI	4.32	307 P	47 27.90	-0.4		
ATN	4.32	291 P	47 29.00	0.6		
THE	4.35	25 ePn	47 29.10	0.4		
OHR	4.41	2 ePn	47 30.20	0.5		
GRG	4.48	18 ePn	47 30.10	-0.6		
MEU	4.54	277 P	47 31.20	-0.4		
SOH	4.65	27 ePn	47 33.80	0.7		
		eSn	48 26.10			
KNT	4.81	21 ePn	47 34.90	-0.4		
		eSn	48 29.10			
VAY	4.87	18 ePn	47 36.40	0.3		
LACI	4.97	353 ePn	47 36.60	-1.0		
PHP	4.98	359 ePn	47 37.00	-0.7		
MGR	5.23	313 P	47 41.50	0.3		
SKO	5.31	7 ePn	47 44.00	1.6		
PUK	5.36	355 ePn	47 42.30	-0.8		
SDA	5.37	351 ePn	47 43.00	-0.3		
SGO	5.64	315 P	47 48.20	1.2		
S.D. = 1.0 on 26 of 26 obs.						

DEC 30, 1989 04h 42m 51.16± 0.13s
16.177 S ± 3.1km 167.967 E ± 3.6km
DEPTH = 183.8km (19 depth phases)
5.5mb (24 obs.)
VANUATU ISLANDS (186)
CENTROID, MOMENT TENSOR (HRV)
Data Used: GDSN
L.P.B.: 16S, 39C
Centroid Location:
Origin Time 04:42:58.6 0.4
Lat 15.95S 0.04 Lon 167.53E 0.04
Dep 179.8 1.2 Half-duration 3.0
Moment Tensor; Scale 10**17 Nm
Mrr= 0.33 0.11 Mtt= 2.68 0.17
Mff=-3.01 0.17 Mrt=-4.38 0.12
Mrf= 0.67 0.12 Mtf= 1.28 0.16
Principal Axes:

T	Val= 6.08	Plg=37	Azm=175
N	-1.74	37	299
P	-4.35	32	57

Best Double Couple:Mo=5.2*10**17
NP1:Strike=203 Dip=37 Slip= 176
NP2: 297 87 53

PVC	1.59	168 iPd	43 25.00	0.4		
		iS	43 50.00			
DZM	6.04	194 iPc	44 20.00	0.4		
		iS	45 29.10			
SGE	9.63	100 ePd	45 09.10	2.1		
HNR	10.30	310 eP	45 16.00	0.5		
		eS	47 11.00			
BRS	17.97	229 iPc	46 51.30	0.9		
	0.9s	54.00nm		4 9mb		
		i	47 00.00			
		i	47 10.00			
		i	47 14.00			
		iS	50 08.00			
		i	50 48.00			
		iPcP	51 17.00			
		iScP	54 36.00			
		eScS	58 18.00			
AFI	19.69	86 eP	47 09.00	0.6		
RMQ	20.60	237 iPc	47 18.70	1.2		
	0.5s	161.00nm		5.8mb		
		i	47 22.70	15kmX		
		i	54 42.60			
CTA	20.99	256 iPd	47 22.30	0 9		
	0.9s	168.07nm		5.5mb		
		i	47 53.20			
		iS	51 06.00			
		iScP	54 42.00			
		iScS	58 27.00			
KDB	21.34	286 iPd	47 26.00	1.2		
LAT	22.60	292 eP	47 38.00	1.0		
KRP	22.67	164 P	47 39.50	2.0		
HBZ	23.21	159 P	47 43.10	0.4		
TAZ	23.22	163 P	47 45.10	2.2		
OLP	24.36	241 iPc	47 54.30	0.5		
MNG	25.21	166 P	48 00.70	-0.8		
	0.3s	24.00nm		5.3mb		
BWA	25.27	220 eP	48 00.00	-2.1		
CMS	25.27	229 iPc	48 02.30	0.1		
		e	48 33.00	150kmX		
KIW	25.33	168 P	48 01.80	-0.8		
PGZ	25.40	165 P	48 02.00	-1.2		
CAN	25.51	218 iPc	48 04.20	-0.2		
TCW	25.54	169 eP	48 04.00	-0.5		
MRW	25.64	168 P	48 04.50	-0.9		
WEL	25.70	168 P	48 05.00	-1.0		
		(sP)	48 58.00			
		eS	52 22.70			
WDW	25.73	168 P	48 04.90	-1.3		
MTW	25.73	167 P	48 05 00	-1.3		
MNDI	25.81	290 eP	48 08.50	1.0		
BLW	25.93	167 P	48 06.90	-1.2		
MOW	25.93	167 P	48 06.80	-1.3		
KHZ	26.59	171 P	48 12.50	-1.5		
MSZ	28.40	180 P	48 30.20	-0.1		
	1.4s	416.00nm		6.0mb		
STK	28.61	232 iPc	48 32.60	0.2		
	0 8s	97.00nm		5.6mb		
		e	48 45.00	48kmX		

			e	49	13.00		TIA	70.86	318	Pd	53	48.90	-1.0	KVN	88.09	48	P	55	22.20	-0.1
			e	51	38.00		CN2	71.22	329	iPd	53	51.60	-0.3				pP	56	07.20	180km
MHZ	28.82	178	P	48	33.20	-1.0		0.6s		0.20nm			3.0mb X	TNP	88.36	50	P	55	23.40	-0.3
WB5	32.13	258	iPc	49	01.90	-1.5				pP	54	31.00	163kmX		1.2s		24.19nm			5.0mb
			iPP	50	15.50					sP	54	50.00		GLA	88.37	55	eP	55	24.00	0.4
			eS	53	48.50					ScS	03	31.00					e	56	10.00	185km
			iScP	55	15.20		GYA	73.09	305	iPd	54	03.00	-0.4	LON	88.71	40	P	55	24.60	-0.3
WRA	32.16	258	Pc	49	02.00	-1.6		1.2s		0.10nm			2.4mb X				pP	56	10.00	182km
	0.6s		50.60nm			5.4mb				S	03	17.00		RMW	89.01	40	P	55	25.60	-0.7
ADE	32.17	229	iPc	49	03.40	-0.2				sS	04	31.00					pP	56	11.80	185km
	0.7s		90.41nm			5.6mb	BJI	73.81	321	Pd-	54	07.00	-0.1	PNT	91.11	39	eP	55	35.00	-0.9
ASPA	32.82	251	iPc	49	08.60	-0.8		1.8s		217.00nm			5.6mb	INK	94.04	19	eP	55	47.00	-1.9
	0.7s		931.00nm			6.6mb X				epP	54	46.00	159kmX	HYB	94.19	287	ePd	55	50.40	-0.3
Z	21s		1.58um			4.7Msz				esP	55	08.00			1.0s		35.00nm			5.5mb
			iPP	49	29.80					eScP	56	51.00		GBA	94.21	283	P	55	51.40	0.6
			iS	54	09.90					eScP	00	40.50		WMQ	94.22	314	iPd	55	51.00	0.6
			iScP	55	17.30					eS	03	21.00		ALQ	95.56	55	eP	55	56.90	-0.1
			iScS	59	15.00					eScS	04	00.00			1.0s		3.25nm			4.6mb
			LR	00	25.80					esS	04	28.00		ZOBO	115.96	118	PKP	01	14.00	-1.2
MTN	35.78	270	iPd	49	34.30	-0.3	SPA	73.93	180	iPc	54	08.20	0.6	Z	18s		0.16um			4.7Msz
GUA	37.30	321	eP	49	46.00	-1.2		1.2s		159.86nm			5.6mb				LR	12	00.00	
	0.5s		84.51nm			5.7mb	NST	74.04	292	eP	54	10.20	1.3	FRB	118.93	25	ePKP	01	16.50	-2.2
GUMO	37.36	321	eP	49	46.90	-0.9	TIY	74.77	317	Pd	54	12.50	-0.3	KEV	121.29	345	iPKP	01	22.30	-0.7
	0.6s		105.50nm			5.7mb		1.5s		0.10nm			2.3mb X		1.0s		44.00nm			
			eS	56	29.00					pP	54	55.00	175km	TBR	121.34	51	PKP	01	23.30	-0.7
PJG	37.36	321	eP	49	46.80	-1.0				sP	55	19.00		SEK	121.43	221	iPKPc	01	24.00	-0.8
WARB	39.65	248	iPc	50	07.30	0.5	BSI	75.02	280	eP	54	15.50	1.0		0.5s		7.04nm			
	0.7s		97.00nm			5.5mb	XAN	75.16	313	Pd	54	14.90	-0.2	BLF	121.78	220	iPKPd	01	25.50	0.1
COOL	45.03	242	iPc	50	49.50	-0.8	KMI	75.64	302	Pd	54	19.00	0.8		0.4s		6.82nm			
	0.6s		60.00nm			5.3mb				pP	54	33.00	49kmX	HBVT	121.79	48	PKP	01	20.50	-4.2X
MBL	45.74	256	eP	50	56.00	0.1				sP	55	02.00		PRY	122.49	222	iPKPc	01	26.00	-0.8
KLB	48.00	242	iPc	51	12.50	-1.0				S	03	48.00			0.5s		5.41nm			
BAL	48.80	243	eP	51	18.50	-1.2	BDT	75.64	293	eP	54	19.20	1.2	SLR	122.77	224	iPKPc	01	26.50	-0.9
RKG	48.94	239	iPd	51	21.10	0.4	CHTO	76.28	294	iP	54	22.00	0.4		0.7s		11.64nm			
	0.3s		13.00nm			4.9mb		1.2s		49.31nm			5.1mb	KIM	122.89	219	ePKP	01	27.50	0.0
MRWA	49.31	245	iPc	51	23.10	-0.5				i	55	05.50	179km	BFS	122.96	222	iPKPd	01	25.00	-2.7X
	0.7s		96.00nm			5.5mb	HHC	77.12	320	Pd	54	26.60	0.7		0.5s		26.41nm			
NANU	49.68	254	iPc	51	26.50	0.1	CD2	77.42	308	eP	54	28.00	0.3	SOD	123.07	343	iPKP	01	25 80	-0.7
	0.5s		91.00nm			5.6mb	BTO	77.95	319	iPd	54	31.00	0.5	KSR	123.60	223	ePKP	01	27.00	-2.1
HON	50.02	43	P	51	28.20	-0.8	LZH	79.78	312	Pd	54	41.00	0.4	SUF	126.42	339	iPKP	01	32.50	-0.7
OPA	50.28	43	P	51	31.70	0.7		2.0s		0.20nm			2.5mb X		0.6s		15.30nm			
DRV	53.70	193	iP	51	55.60	-0.2				pP	55	18.00	148kmX	NUR	128.45	338	iPKP	01	36.00	-1.1
KKM	55.76	289	ePc	52	11.50	-0.1				sP	55	38.50			0.6s		27.40nm			
			e	52	51.50	174km	TTA	83.72	16	eP	54	59.60	-0.7	NB2	132.19	345	PKP	01	44.00	-0.3
KAKJ	58.35	334	P	52	28.00	-1.2	GTA	84.15	314	iPd	55	03.80	0.8		0.9s		7.80nm			
CHJJ	58.73	333	P	52	30.60	-1.3		1.2s		0.10nm			2.5mb X	HFS	132.30	343	ePKP	01	25.40	-19.0X
IIDJ	58.75	331	P	52	30.80	-1.2				SKS	05	09.50			0.4s		0.70nm			
WKYJ	58.83	329	eP	52	31.60	-1.1	PMS	84.24	19	eP	55	01.70	-1.1	BBTK	134.56	310	ePKP	01	51.00	1.5
TKSJ	59.43	327	eP	52	35.30	-1.4		0.7s		18.60nm			5.0mb	MLR	136.85	321	ePKP	01	51.00	-2.7X
MAT	59.49	332	iPd	52	35.30	-1.8	PRS	84.63	50	eP	55	05.70	0.4	SPC	137.90	328	ePKP	01	55.90	0.2
	1.1s		140.51nm			5.7mb				epP	55	52.20	189km	KSP	138.62	333	ePKP	01	46.30	-10.4X
			(S)	01	11.00		PMR	84.64	19	P	55	00.10	-4.6X				e	01	56.50	
TSRJ	59.70	330	P	52	37.80	-0.7				pP	55	48.10	195kmX				e	04	48.70	
MTMJ	59.71	332	P	52	37.30	-1.3	ARN	84.93	49	P	55	06.80	0.0				e	05	14.00	
NIIJ	59.73	333	P	52	37.50	-1.1	LLA	85.06	50	eP	55	07.70	0.3	BZS	139.34	323	ePKP	01	50.00	-8.1X
YAMJ	60.08	335	eP	52	41.00	-0.1				epP	55	52.40	180km	BRG	139.60	335	ePKP	01	49.50	-8.9X
OFUJ	60.22	337	P	52	41.00	-1.0	WDC	85.58	46	ePd	55	09.50	-0.4		0.7s		22.00nm			
YONJ	60.67	328	eP	52	43.70	-1.4				epP	55	54.60	182km				i	01	53.60	
SHNJ	61.11	325	eP	52	46.40	-1.6	ORV	85.87	47	eP	55	10.80	-0.6	CLL	139.64	336	ePKP	01	50.00	-8.4X
SBA	61.70	180	iPc	52	52.10	0.6				epP	55	57.50	189km	PRU	140.01	333	ePKP	01	51.00	-8.2X
SSE	65.03	316	P	53	10.00	-3.7X	CMB	86.04	49	ePd	55	11.80	-0.5				e	01	53.80	
	1.4s		90.00nm			5.4mb				epP	55	56.00	178km	KHC	141.07	333	PKP	01	55.00	-6.2X
Z	22s		0.50um			4.7Msz	FRI	86.12	50	ePd	55	12.30	-0.3				i	01	57.00	
			pP	53	55.00	192km				epP	55	58.00	184km	SKO	141.46	319	iPKPc	01	56.30	-5.7X
			eS	01	40.00		MIN	86.13	46	eP	55	11.90	-0.9	DMU	142.15	355	ePKP	01	58.80	-4.0X
			sS	02	52.00		PAS	86.17	53	eP	55	13.00	0.1	PTJ	142.25	328	e(PKP)	01	59.00	-4.4X
QIZ	67.03	299	P	53	27.20	0.5	MWC	86.29	53	eP	55	14.00	0.3	OHR	142.32	318	ePKP	01	56.70	-7.0X
			eS	01	57.00		LBFM	86.36	45	P	55	14 00	0.0		0.8s		56.70nm			
NJ2	67.18	316	Pc	53	27.00	-0.4	ISA	86.52	51	eP	55	14.00	-0.7	ENN	142.59	341	ePKP	02	01.00	-2.7X
IPM	69.32	281	ePd	53	40.90	-0.1				e	56	03.00	199kmX		1.0s		19.00nm			
			e	54	28.50	201kmX				e	58	38.00		KBA	142.70	331	iPKPd	01	58.80	-5.5X
WHN	69.41	312	eP	53	38.50	-2.7X	SBB	86 64	53	eP	55	15.00	-0 3		0.6s		35.80nm			
	1.5s		0.15nm			2.5mb X				e	56	05.00	203kmX				ic	01	59.80	
			S	02	32.00		RVR	86.72	53	eP	55	15.00	-0.6				i	02	04.30	
DL2	69.85	323	iPd	53	43.50	-0.2				e	56	05.00	203kmX				ePP	05	24.50	
	2.0s		0.70nm			3.1mb X	BAR	86.79	55	eP	55	15.00	-1.0	DLE	142.72	355	ePKP	02	01.50	-2.3
			pP	54	28.00	187km	PEC	86.85	54	P	55	16.30	0.0	DCN	142.73	355	ePKP	02	00.00	-3.8X
			sP	54	48.00		PLM	86.89	54	eP	55	16.00	-0.7	LJU	142.87	329	ePKP	02	00.50	-3.9X
MDJ	69.87	332	Pd	53	43.70	0.0				e	56	03.00	190km				ePP	05	26.00	
			epP	54	25.00	172kmX	LSA	86.89	302	iP	55	19.00	1.9	VBY	142.88	328	ePKPd	02	01.00	-3.4X
			esP	54	45.50		CLC	87.23	52	eP	55	18.00	-0.1				i	02	03.50	
PSI	70.71	279	iPc	53	49.00	-0.4	FBA	87.52	17	eP	55	16.10	-2.7X				iPP	05	27.00	
SNY	70.78	326	iPd	53	48.00	-1.2	GSC	87.64	52	eP	55	20.00	-0.1	UCC	143.03	343	PKP	02	01.00	-3.4X
	0.6s		0.05nm			2.5mb X				e	56	07.00	189km	CEY	143.14	329	ePKPd	02	01.60	-3.3X
			pP	54	32.00	184km				e	58	46.00		VOY	143.20	329	ePKP	02	01.00	-4.0X
			sP	54	53.00		TPC	87.79	54	eP	55	21.00	0.2	ETA	143.27	354	ePKP	02	05.00	0.2
			eS	02	42.00					e	56	08 00	189km	FVI	143.32	331	PKPd	02	01.30	-3.7X

30d 05h

WLF	143.48	340	iPKPc	02	02.00	-3.2X
			e	05	19.00	
			i	05	26.00	
TRI	143.49	329	iPKPd	02	02.40	-3.0X
DOU	143.59	342	PKP	02	02.60	-2.8X
			e	05	27.10	
ECB	143.65	355	ePKP	02	02.50	-2.9X
HVAR	143.77	324	iPKPc	02	03.00	-3.0X
ECP	143.80	354	ePKP	02	02.80	-2.9X
CDF	144.16	338	ePKP	02	04.60	-2.0
VAL	144.29	358	iPKP	02	05.00	-1.5
BRT	144.72	320	PKPd	02	07.00	-0.7
BSF	144.83	338	ePKP	02	06.60	-1.2
HAU	144.84	338	ePKP	02	06.90	-0.8
SAL	145.10	332	PKPd	02	07.70	-0.4
MDI	145.33	333	PKP	02	07.40	-1.1
SSO	145.36	326	e(PKP)	02	08.91	0.3
FG2	145.37	323	PKP	02	08.97	0.3
RSM	145.41	328	PKP	02	10.02	1.3
	0.7s		66.70nm			
ARV	145.46	327	PKPd	02	09.60	0.7
CIO	145.57	327	iPKPc	02	09.11	0.0
ALP	145.62	326	ePKP	02	09 07	-0.2
VAI	145.66	334	PKP	02	08.30	-0.7
SFI	145.72	329	PKP	02	10.90	1.7
PGD	145.82	329	PKP	02	11.00	1.4
ROI	145.87	319	PKP	02	11.20	1.5
DUI	145.87	323	PKP	02	10.70	1.0
CRE	145.88	328	PKP	02	10.50	0.8
ASS	145.91	327	PKP	02	09.57	-0.1
	1.0s		70.20nm			
CSI	145.93	319	PKP	02	11.10	1.3
TDS	145.96	319	PKPd	02	11.00	1.2
MMN	146.05	320	PKP	02	09.60	-0.3
SGO	146.06	321	PKPd	02	10.70	0.8
MME	146.08	330	PKP	02	11.35	1.2
FIR	146.12	329	iPKPc	02	09.50	-0.4
FLN	146.15	346	ePKP	02	10.50	0.7
MGR	146.17	320	PKPd	02	10.70	0.6
ORX	146.18	334	PKP	02	10.52	0.4
ORO	146.19	334	PKP	02	10.50	0.4
SDI	146.21	324	PKPd	02	09.10	-1.1
BOB	146.23	332	PKPd	02	11.40	1.2
LDF	146.23	346	ePKP	02	10.60	0.7
BDI	146.23	330	PKPd	02	10.20	0.0
AZI	146.23	325	PKPd	02	11.80	1.7
LOR	146.32	340	ePKP	02	11.80	1.6
CZI	146.35	319	PKP	02	11.10	0.7
MNS	146.37	326	PKP	02	11.30	0.9
PII	146.52	330	PKPd	02	10.90	0.4
LBF	146.53	340	ePKP	02	12.10	1.6
GRR	146.59	346	ePKP	02	12.00	1.5
SSF	146.61	341	ePKP	02	12.70	2.1
LSD	146.66	335	PKP	02	13.29	2.2
RMP	146.75	325	PKPd	02	12.70	1.7
RDP	146.78	325	PKP	02	13.20	2.1
LPG	146.79	336	ePKP	02	13.30	2.0
PCP	146.81	333	PKP	02	12.27	1.2
RSP	146.87	335	PKP	02	11.86	0.6
SMF	146.87	340	ePKP	02	12.60	1.6
AVF	146.90	340	ePKP	02	12.80	1.8
LPF	146.97	346	ePKP	02	13.20	2.1
CKI	147.02	333	PKPd	02	12.60	1.3
GMB	147 12	317	PKP	02	14.30	2.4X
	0.5s		77.60nm			
BNI	147.19	335	PKPd	02	14.50	2.7X
FIN	147.22	333	PKP	02	13.19	1.5
RRL	147.25	335	PKP	02	14 63	2.6X
BGF	147.27	341	ePKP	02	14.00	2.3X
ROB	147.30	333	PKP	02	13.50	1 6
ATN	147.38	318	PKPd	02	14.00	1 9
DOI	147.40	334	PKPd	02	12.60	0 5
PZZ	147 46	334	PKP	02	13.40	1 2
ENR	147.55	333	PKP	02	13.29	1.0
FOUF	147.57	335	ePKPc	02	12.43	0.3
			e	02	15.26	
STV	147.57	334	PKP	02	13.40	1.1
IMI	147.60	333	PKP	02	14.73	2.4X
MAF	147.66	341	ePKP	02	15.10	2.8X
TCF	147.71	341	ePKP	02	15.50	3.1X
BCAO	147.80	252	iPKPd	02	12.70	-0.8
	0.3s		155.00nm			
			ic	02	16.50	
			id	03	02.50	
			ic	03	37.60	
SBF	147.83	333	ePKP	02	15.00	2.3X
LSF	147.95	342	ePKP	02	15.80	3.0X
MNO	148.01	318	PKPd	02	16.90	3.5X
MFF	148.09	344	ePKP	02	16.20	3.2X
MEU	148.33	316	PKP	02	17.60	3.8X
PZI	148.38	316	PKP	02	17.57	3.8X
	1.1s		81.80nm			
FRF	148.42	334	ePKP	02	16.60	3.0X
LRG	148.62	334	ePKP	02	17.90	4.0X
LMR	148.66	334	ePKP	02	17.70	3.7X
RJF	148.81	341	ePKP	02	18.20	4.0X
CAF	148.97	340	ePKP	02	18.60	4.1X
LFF	149.37	342	ePKP	02	19.70	4.7X
LVI	149.46	320	PKP	02	19.80	4.5X
LPO	149.47	341	ePKP	02	20.10	4.9X
EPF	151.22	341	ePKP	02	23.60	5.7X
ECRI	152.42	345	ePKP	02	27.30	7.6X
STS	153.21	354	ePKP	02	28.80	8.1X
ETOR	153.97	343	ePKP	02	30.70	8.8X
GUD	154.68	346	ePKP	02	32.50	9.6X
KIC	167.91	217	PKP	02	36.70	-0.4
LIC	167.96	216	PKP	02	36.54	-0.6
TIC	168.30	217	PKP	02	36.82	-0.5
LKO	170.90	224	PKP	02	38.96	0.2

S.D. = 1.0 on 207 of 266 obs.

DEC 30, 1989 05h 06m 24.89± 0.73s
45.854 N ± 9.7km 15.514 E ± 5.1km
DEPTH = 10.0km (geophysicist)
YUGOSLAVIA (383)
MD 2.8 (LJU), 2.6 (TRI). ML 2.5 (KBA). Felt (IV) at Krsko.

PTJ	0.31	81	iPgc	06	30.70	-0.8
			iSg	06	36.10	
ZAG	0.33	96	iPg	06	32.20	0.5
			iSg	06	37.20	
VBY	0.39	207	ePg	06	33.00	0.1
			iSg	06	40.60	
LJU	0.71	286	iPg	06	37.40	-1 5
			iSg	06	46.50	
CEY	0.77	262	e(Pg)	06	41.40	1.5
			eSg	06	51.50	
RIY	0.94	238	ePg	06	42.70	-0.1
			iSg	06	57.00	
VOY	1.14	280	ePg	06	45.50	-0.9
			eSg	07	00.50	
TRI	1.23	264	ePg	06	47.30	-0.5
			iSg	07	04.70	
KBA	1.94	310	ePn	07	00.00	1.7
			iPgc	07	01.50	
			i	07	24.10	
			iSg	07	25.90	

S.D. = 1.2 on 9 of 9 obs.

DEC 30, 1989 05h 09m 20.41± 0.67s
39.304 N ± 5.8km 23.403 E ± 5.8km
DEPTH = 10.0km (geophysicist)
AEGEAN SEA (365)
ML 2.9 (ATH), 2.9 (THE).

NEO	0.14	271	iPgd	09	24.40	0.7
PAIG	0.66	19	ePg	09	33.20	-0.3
			iSg	09	44.00	
AGG	0.88	252	iPgc	09	36.20	-1.1
			eSg	09	49.10	
LIT	1.06	319	iPbc	09	40.70	0.3
			eSb	09	57.40	
PLG	1.07	2	ePb	09	40.40	-0 2
OUR	1.12	23	ePb	09	40.30	-1.1
			eSb	09	57.20	
ATH	1.35	169	ePb	09	44.30	-0.9
THE	1.37	346	ePb	09	45.30	-0.2
			eSb	10	04.40	
SOH	1.52	359	ePb	09	46.90	-0.7
			eSb	10	16.40	
KZN	1.61	309	ePb	09	49.20	0.2
GRG	1.82	335	ePn	09	51.40	-0.6
			eSn	10	16.40	
KNT	1.90	348	ePn	09	52.70	-0.4
			eSn	10	18.00	
VAY	2.11	343	ePn	09	56.50	0.3
PRK	2.23	91	ePb	10	00.00	2.1
RDO	2.46	41	ePn	10	01.00	-0.2
VLI	2.61	188	ePb	10	07.70	4.4X
OHR	2.69	313	ePn	10	06.80	2.2

S.D. = 1 1 on 16 of 17 obs.

DEC 30, 1989 05h 11m 30.07± 0.84s
45.889 N ±10.1km 15.517 E ± 5.8km
DEPTH = 10.0km (geophysicist)
YUGOSLAVIA (383)
ML 1.5 (KBA). Felt at Krsko.

PTJ	0.31	88	ePg	11	35.70	-0.8
			eSg	11	40.90	
ZAG	0 33	102	iPg	11	37.50	0.5
			iSg	11	42.00	
V8Y	0.43	206	e(Pg)	11	39.10	0.3
			iSg	11	45.30	
RIY	0.96	236	e(Pg)	11	48.30	-0.1
			iSg	12	03.00	
VOY	1.14	278	ePg	11	50.20	-1.3
			eSg	12	06.80	
KBA	1.92	309	ePg	12	04.50	1.3
			eSg	12	29.00	

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

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* DEC 30, 1989 05h 16m 15.03± 1.14s
45.916 N ±12.5km 15.544 E ± 7.3km
DEPTH = 10.0km (geophysicist)
YUGOSLAVIA (383)
MD 2.6 (LJU). Felt at Krsko.

PTJ	0.29	93	ePg	16	21.20	0.1
			eSg	16	26.30	
VBY	0.46	206	ePg	16	23.50	-0.9
			eSg	16	30.60	
LJU	0.72	281	eP	16	29.50	0.4
			eSg	16	37.50	
RIY	0.99	235	eP	16	35.30	1.5
			iSg	16	48.80	
VOY	1.16	276	ePg	16	35.70	-1.0
			eSg	16	52.10	

S.D. = 1.4 on 5 of 5 obs.

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* DEC 30, 1989 06h 36m 40.34± 0.82s
23.598 N ± 7.0km 121.626 E ±13.1km
DEPTH = 47.8 ± 12.3 km
3.9mb (1 obs.)
TAIWAN (244)

TWF1	0.39	231	iPc	36	49.40	-0.8
			eS	36	56.10	
TWD	0.48	357	iPc	36	50.60	-0.6
			eS	36	58.00	
TWG	0.93	213	ePc	36	58.00	0.8
TWQ	0.99	313	iPc	36	58.70	0.6
TWK	1.10	253	ePc	37	00.40	0.8
			eS	37	15.00	
TWZ	1.49	358	iPc	37	05.60	0.5
ANP	1.58	356	iPc	37	07.00	0.6
	0.7s		904.11nm			
			eS	37	18.00	
QZH	3.08	296	Pnc	37	26.20	-1.4
			iSn	37	58.50	
SSE	7.48	357	eP	38	26.00	-3.5X
			eLg	40	47.00	
NJ2	8.77	344	Pc	38	44.50	-2.9X
WHN	9.48	318	eP	38	53.00	-4.1X
			eS	40	33.50	
WB5	44.96	163	eP	44	52.50	-0.2
WRA	45.02	163	Pc	44	53.00	-0 2
	0.4s		0.80nm			3.9mb

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

? DEC 30, 1989 08h 11m 05.68± 6.77s
33.266 S ±17.1km 70.620 W ±21.3km
DEPTH = 89.6 ± 57.4 km
CHILE-ARGENTINA BORDER REGION (127)

PEL	0.13	336	iPc	11	18.60	-0.2
			iS	11	28.00	
SAN	0.19	191	eP	11	19.00	0.1
			iS	11	28.70	
FCH	0.28	103	iPd	11	20.00	0.4
			iS	11	30.50	
PCH	0.36	166	iPd	11	19.60	-0.1
			iS	11	30.00	
ROCH	0.44	312	iPc	11	20.20	-0.2
			iS	11	32.00	
TACH	0.47	214	iPc	11	20.60	0.2
			iS	11	32.10	
CHCH	0.67	182	iPd	11	21.80	-0.3
			iS	11	34.50	
LCCH	0.82	255	iPc	11	23.90	0.3

		iS	11 38.00		
LNV	0.95	224 iPc	11 25.00	-0.1	
		iS	11 39.00		
S.D. = 0.3		on	9 of 9 obs.		

% DEC 30, 1989 08h 55m 42.92± 0.78s
15.476 N ±11.0km 93.098 W ± 7.5km
DEPTH = 33.0km (normal)
NEAR COAST OF CHIAPAS, MEXICO (69)

TPX	0.99	125 iPc	56 00.46	0.0	
		eS	56 19.30		
SCX	1.33	20 eP	56 05.32	0.0	
		eS	56 21.00		
OXX	3.83	295 iPc	56 43.87	2.7X	
		iS	57 32.08		
IISM	5.38	311 eP	57 02.73	-0.2	
		iS	58 01.50		
IIT	6.10	306 iP	57 13.50	0.1	
PPM	6.37	305 iPc	57 17.93	0.4	
ACX	6.64	283 (P)	57 21.00	0.2	
		(S)	58 44.00		
III	6.74	296 iPc	57 22.00	-0.4	
S.D. = 0.3		on	7 of 8 obs.		

? DEC 30, 1989 09h 19m 13.76± 2.09s
44.355 N ±15.6km 7.146 E ±20.6km
DEPTH = 10.0km (geophysicist)
NORTHERN ITALY (545)
ML 1.6 (GEN).

PZZ	0.15	348 P	19 17.43	0.0	
		S	19 20.31		
STV	0.17	131 P	19 17.66	0.0	
		S	19 20.61		
ENR	0.24	123 P	19 18.86	0.0	
		S	19 22.61		
ROB	0.52	96 P	19 24.38	0.0	
		S	19 31.99		
S.D. = 0.0		on	4 of 4 obs.		

* DEC 30, 1989 10h 51m 21.41± 0.86s
26.546 S ± 8.2km 178.312 E ±11.5km
DEPTH = 629.6 ± 11.4 km
4.8mb (9 obs.)
SOUTH OF FIJI ISLANDS (171)

SGE	8.92	358 eP	53 29.30	-1.4	
HBZ	11.02	180 P	53 47.60	-3.0X	
KRP	11.59	191 P	53 57.90	1.9	
DZM	11.70	290 iPc	53 58.30	1.0	
		iS	56 09.00		
HITZ	12.32	189 eP	54 04.20	1.1	
HATZ	12.45	188 eP	54 03.30	-1.1	
RATZ	12.47	189 eP	54 04.60	0.0	
PGZ	14.14	186 eP	54 19.40	-1.1	
MNG	14.23	189 eP	54 20.10	-1.4	
MTW	14.76	188 eP	54 25.80	-0.8	
		eS	56 57.90		
CAW	14.77	190 P	54 26.90	0.2	
MRW	14.95	191 eP	54 29.60	1.3	
		eS	56 59.90		
WEL	14.99	190 eP	54 29.50	0.8	
TCW	15.01	192 P	54 30.20	1.3	
		eS	57 02.50		
MHZ	19.85	199 P	55 12.60	-1.5	
BRS	22.77	262 iPd	55 40.80	0.3	
BRS	22.77	262 iPd	55 50.80	10.3X	
		e	58 05.00		
		e	01 45.00		
RMQ	26.42	263 iPd	56 13.90	1.3	
	0.6s	79.00nm		5.5mb	
CAN	26.55	244 eP	56 14.20	0.6	
BWA	26.86	246 eP	56 15.10	-1.3	
CMS	28.77	252 iPc	56 33.50	0.7	
CTA	30.08	276 iPd	56 44.10	0.1	
	0.8s	61.19nm		5.3mb	
STK	32.38	252 iPc	57 04.60	1.3	
ASPA	40.17	264 iPd	58 07.10	0.0	
	1.0s	91.00nm		5.2mb	
		eS	03 30.90		
WB5	40.78	270 iPd	58 11.20	-0.7	
		ePcP	59 57.80		
		eScP	03 38.00		
		eS	04 01.00		
WRA	40.78	270 Pd	58 11.10	-0.8	
	0.7s	40.50nm		5.0mb	

WARB	46.03	258 eP	58 51.00	-1.6	
	0.4s	7.00nm		4.5mb	
COOL	49.87	251 eP	59 19.90	-1.2	
	0.3s	8.00nm		4.6mb	
KLB	52.59	249 iPc	59 40.00	-0.7	
	0.6s	12.00nm		4.4mb	
BAL	53.67	250 eP	59 47.10	-1.2	
MRWA	54.57	252 eP	59 53.70	-1.0	
SSE	79.12	313 P	02 26.60	3.0X	
	1.0s	17.00nm		4.5mb	
WHN	83.43	309 eP	02 45.50	0.1	
BJI	87.90	317 eP	03 08.00	1.4	
TIY	88.88	314 Pc	03 12.00	0.8	
CHTO	89.19	291 iP	03 14.80	1.8	
	1.1s	8.83nm		4.6mb	
BUL	125.06	215 ePKP	09 28.50	14.7X	
	0.7s	3.42nm			
SUF	139.42	341 ePKP	09 32.00	-7.4X	
	0.4s	2.50nm			
NUR	141.58	339 ePKP	09 39.00	-4.3X	
UPP	144.13	343 iPKP	09 47.00	-0.6	
NB2	144.42	349 PKP	09 48.40	0.2	
	0.5s	4.00nm			
HFS	144.79	347 ePKP	09 48.80	0.0	
	0.3s	14.80nm			
BCAO	150.72	225 iPKPd	10 05.90	6.4X	
	0.5s	29.00nm			
		id	10 16.30		
KSP	152.12	335 iPKPd	10 09.00	8.6X	
		e	10 21.70		
BRG	152.93	338 ePKP	10 10.70	9.2X	
	1.1s	12.00nm			
S.D. = 1.1		on	36 of 45 obs.		

DEC 30, 1989 10h 52m 15.66± 0.41s
45.029 N ± 2.9km 6.715 E ± 4.6km
DEPTH = 10.0km (geophysicist)
FRANCE (538)
ML 2.5 (LDG).

BNI	0.04	310 Pc	52 17.10	-0.8	
		eSg	52 18.40		
RRL	0.12	156 P	52 18.45	-0.4	
		S	52 20.16		
RSP	0.40	72 P	52 24.46	0.5	
		S	52 30.87		
LPG	0.47	3 Pg	52 25.50	0.2	
		Sg	52 32.10		
LPL	0.49	1 Pg	52 25.80	0.2	
		Sg	52 32.40		
LSD	0.53	36 P	52 26.45	0.0	
		S	52 33.75		
PZZ	0.59	152 P	52 26.73	-1.0	
		S	52 34.77		
STV	0.90	151 P	52 32.54	-0.4	
		S	52 44.52		
ENR	0.95	148 P	52 33.03	-0.8	
		S	53 45.34		
ORX	1.08	56 P	52 36.31	0.3	
		S	52 50.98		
ROB	1.10	131 P	52 36.56	0.1	
SBF	1.28	156 Pn	52 40.40	1.0	
		Pg	52 42.80		
		Sg	52 59.00		
FIN	1.35	127 P	52 39.78	-0.7	
PCP	1.39	110 P	52 41.07	-0.1	
IMI	1.40	143 P	52 41.18	-0.1	
FRF	1.47	182 Pg	52 42.90	0.7	
		Sg	53 04.10		
LRG	1.59	189 Pg	52 45.50	1.5	
		Sg	53 07.60		
BGF	3.11	301 Pn	53 05.20	-0.4	
S.D. = 0.7		on	18 of 18 obs.		

? DEC 30, 1989 10h 57m 13.91± 2.08s
30.604 S ±17.2km 179.425 E ±27.5km
DEPTH = 532.3 ± 21.5 km
5.2mb (3 obs.)
KERMADEC ISLANDS REGION (177)

HBZ	7.04	187 eP	59 01.90	-0.5	
	0.3s	114.00nm		5.5mb X	
KRP	7.98	203 P	59 15.80	4.0X	
HITZ	8.63	199 P	59 20.30	1.8	
RATZ	8.78	199 P	59 21.20	1.2	
PGZ	10.32	194 P	59 35.80	0.1	
	0.4s	45.00nm		5.2mb	

MNG	10.49	197 P	59 36.90	-0.7	
	0.3s	108.00nm		5.7mb	
		S	01 38.60		
KIW	10.87	198 P	59 40.90	-0.5	
MTW	11.00	196 P	59 42.00	-0.8	
CAW	11.06	197 eP	59 42.40	-1.0	
BLW	11.21	195 P	59 44.90	0.0	
WDW	11.23	197 eP	59 44.90	-0.2	
MRW	11.27	199 eP	59 44.90	-0.6	
		eS	01 53.00		
WEL	11.31	198 eP	59 47.00	1.1	
		eS	01 55.00		
MOW	11.31	196 eP	59 45.40	-0.6	
TCW	11.38	200 P	59 46.20	-0.4	
KHZ	12.70	200 P	00 01.10	0.9	
	0.3s	19.00nm		5.0mb	
DZM	14.40	303 iPc	00 17.20	-0.3	
ASPA	40.88	268 eP	04 32.30	21.3X	
WRA	41.89	274 Pc	04 26.00	7.1X	
	0.6s	3.10nm		4.0mb X	
WB5	41.89	274 eP	04 19.00	0.1	
BCAO	148.34	218 iPKPd	16 03.30	5.5X	
	0.6s	8.00nm			
NB2	148.57	349 PKP	15 57.60	0.9	
	0.6s	2.10nm			
HFS	148.95	346 ePKP	15 56.70	-0.6	
	0.4s	0.60nm			
S.D. = 0.9		on	19 of 23 obs.		

% DEC 30, 1989 11h 20m 03.58± 0.50s
46.204 N ± 5.6km 2.690 E ± 4.6km
DEPTH = 10.0km (geophysicist)
FRANCE (538)
ML 1.7 (LDG).

MAF	0.09	282 Pg	20 06.50	0.3	
		Sg	20 08.60		
TCF	0.34	284 Pg	20 10.60	-0.1	
		Sg	20 15.40		
BGF	0.37	17 Pg	20 11.50	0.3	
		Sg	20 17.00		
AVF	0.74	38 Pg	20 18.20	0.0	
		Sg	20 28.00		
LSF	0.81	274 Pg	20 18.80	-0.4	
		Sg	20 29.60		
SMF	0.91	61 Pg	20 20.90	-0.1	
		Sg	20 32.40		
SSF	1.03	33 Pg	20 22.80	-0.2	
		Sg	20 36.40		
LBF	1.18	48 Pg	20 25.60	-0.1	
		Sg	20 41.20		
RJF	1.22	223 Pg	20 26.40	0.1	
		Sg	20 41.30		
CAF	1.35	199 Pg	20 28.50	0.0	
		Sg	20 45.20		
S.D. = 0.3		on	10 of 10 obs.		

DEC 30, 1989 12h 38m 11.24± 0.95s
26.209 S ± 3.9km 70.507 W ± 6.7km
DEPTH = 32.1 ± 7.0 km
5.3mb (17 obs.) 5.0Msz (5 obs.)
NEAR COAST OF NORTHERN CHILE (122)
Felt (IV) at Copiopo.
CENTROID, MOMENT TENSOR (HRV)
Data Used: GDSN
L.P.B.: 15S, 30C
Centroid Location:
Origin Time 12:38:17.3 0.3
Lat 26.57S 0.08 Lon 71.42W 0.03
Dep 39.1 3.4 Half-duration 2.1
Moment Tensor; Scale 10**17 Nm
Mrr= 1.63 0.11 Mtt= 0.72 0.18
Mff=-2.35 0.11 Mrt= 0.46 0.17
Mrf=-0.12 0.16 Mtf= 0.00 0.12
Principal Axes:

T	Val= 1.83	Plg=67	Azm= 4
N	0.52	23	179
P	-2.35	2	270

Best Double Couple:Mo=2.1*10**17
NP1:Strike= 21 Dip=48 Slip= 121
NP2: 159 51 60

ANT	2.49	2 iP+	38 50.30	-0.2	
		iS	39 22.00		
RTRS	4.05	167 iPc	39 16.50	3.9X	
SLA	4.76	73 Pc	39 29.20	6.4X	
RTLL	5.41	161 iPc	39 30.20	-1.6	

30d 12h

ZON		5.55	164	eP	39	36.00	2.1	GSC		75.23	322	eP	49	54.00	1.3			1.0s	84.00nm		5.2mb
RTCV		5.89	163	e(P)	39	41.00	2.4	MSU		75.28	327	P	49	53.80	0.7		Z	20s	0.90um		4.2Msz
YJA		6.09	50	e(P)	39	46.60	4.8X	SHGH		75.30	76	eP	49	53.70	0.3		N	12s	0.70um		
				i	39	50 00		SBB		75.34	321	eP	49	53.00	-0.4		E	12s	0.80um		
ROCH		6.75	184	eP	39	52.50	1.6	ISA		76.42	322	eP	50	01.00	1.6				sP	51	25.00	
MDZ		6.81	168	iP	40	03.90	12.4X	DUG		76.91	328	P	50	03.20	1.0				S	55	12.00	
				iS	41	20.20		TNP		77.51	324	P	50	06.10	0.5				sS	55	28.00	
PEL		6.91	181	iPc	39	51.00	-2.0			0.8s		5.88nm			4.7mb	KGM		24.35	257	eP	51	07.00	3.1X
				i(S)	41	20.00		KVN		78.69	324	P	50	12.00	-0.1	NJ2		25.13	343	Pc	51	12.00	0.9
FCH		7.10	179	eP	39	56.00	0.2	CMB		79.19	322	P	50	21.90	7.3X			4.0s	0.70nm			2.6mb X
				iS	41	30.80		RSON		79.42	345	P	50	14.30	-1.2		Z	10s	0.80um			4.5MszX
TCA		7.28	136	iPc	39	59.00	0.8			0.9s		34.85nm			5.4mb		N	10s	0.50um			
LCCH		7.30	187	eP	39	54.50	-3.8X	BKS		80.11	321	iPc	50	15.80	-3.7X		E	10s	0.40um			
				iS	41	18.50		SCH		80.75	2	eP	50	23.00	0.5	IPM		26.08	264	ePd	51	27.00	6.8X
PCH		7.39	180	eP	39	59 00	-0.7	ORV		80.88	323	eP	50	24.30	0.7	SNG		26.20	270	eP	51	21.10	-0.3
				iS	41	37.60		LRM		81.18	332	eP	50	25.70	0.4				eS	55	37.00	
TACH		7.43	183	eP	39	56.50	-3.7X	HVD		81.87	120	iPc	50	24.00	-5.3X	LOE		26.38	293	eP	51	23.00	0.0
				iS	41	35.00		KIM		82.10	118	eP	50	30.60	0.1	NNT		27.24	282	eP	51	34.20	3.3X
MRA		7.46	147	ePc	40	02.30	1.7	WDC		82.16	323	eP	50	29.30	-0.9	NST		27.40	289	eP	51	33.70	1.4
CHCH		7.70	181	eP	40	02.50	-1.5	LBFM		82.35	324	P	50	31.60	0.1	WB5		28.61	165	eP	51	41.80	-1.4
				iS	41	46.00		TIO		82.94	51	iP	50	38.50	3.9X				i	51	48.50	23km
LNV		7.76	186	eP	40	00.00	-4.8X	BLF		83.05	119	iPd	50	35.40	0.0				e	57	15.80	
				i	41	26.10				0.7s		30.00nm			5.5mb	WRA		28.67	166	P	51	43.00	-0.7
				iS	41	45.50		SES		84.29	335	eP	50	41.00	0.1			1.3s	9.60nm			4.3mb
RFA		8.71	169	eP	40	16.00	-2.1	BFS		84.50	117	iPd	50	40.50	-2.3	KMI		28.77	309	eP	51	44.50	-0.4
CNCB		9.64	15	P	40	31.90	0.5			0.7s		34.25nm			5.6mb		Z	20s	2.00um			4.7Msz
ARE		9.74	354	eP	40	29.00	-3.5X	SEK		84.53	119	iPd	50	43.50	0.6				eS	56	38.00	
LPB		9.89	14	P	40	36.00	1.4			0.6s		8.00nm			5.1mb				sS	57	00.00	
		1.1s		278.48nm			6.4mb X	PRY		85.04	117	eP	50	45.50	0.0	BDT		28.83	291	eP	51	46.00	0.8
	Z	20s		19.15um			5.6Msz	KSR		85.05	116	iPd	50	45.20	-0.4	CHG		29.33	294	eP	51	49.50	-0.2
				LR	44	14.00				0.8s		7.50nm			4.9mb	TIA		29.52	344	eP	51	50.00	-1.2
ZOBO		10.14		13 Pc	40	37.00	-1.2	IFR		85.91	50	iPc	50	51.50	1.9				S	56	44.50	
	Z	18s		4.35um				SLR		86.22	117	eP	50	49.40	-2.0	MAT		30.19	18	eP	51	56.00	-1.3
				LR	44	10 00				0.7s		10.27nm			5.2mb			0.8s	10.45nm			4.7mb
ITB1		14.65	87	e(P)	41	38.20	0.2		Z	18s		2.75um			5.7Msz		Z	20s	0.71um			4.3Msz
ITB7		14.77	89	e(P)	41	38.00	-1.6	PNT		86.98	330	eP	50	55.00	0.8				eS	58	19.00	
NNA		15.36	336	eP	41	56.00	8.6X			0.8s		11.00nm			5.1mb	XAN		30.84	330	P	52	01.00	-2.0
		1.0s		25.00nm			4.4mb	EDM		87.41	336	eP	50	53.50	-2.8X	DL2		31.17	352	eP	52	07.00	1 3
	Z	20s		1.24um			4.4Msz	BUL		89.05	112	iPc	51	20.00	14.9X			1.0s	0.10nm			2.6mb X
				eS	44	44.00				0.8s		11.19nm					Z	16s	0.60um			4.4MszX
PSO		28.03	345	eP	44	04.50	2.5X	BCAO		91.07	86	iPc	51	15.70	1.3		N	10s	0.60um			
BOG		30.84	353	eP	44	32.00	4.9X			0.7s		21.00nm			5.6mb		E	10s	0.70um			
UPA		36.06	345	(P)	45	09.00	-2.9X					ic	51	30.00					epP	52	17.00	36km
	Z	22s		1.11um			4.6Msz	KRP		91.12	226	P	51	25.60	11.4X				eS	57	10.00	
PPM		52.64	326	iP	47	27.50	2.2	RMQ		115.37	219	ePdiff	53	22.00	18.6X	CD2		31.52	319	eP	52	07.00	-2.0
SGS		59.83	350	P	48	14.80	-1.1	KLB		121.98	188	ePdiff	53	24.40	-8.3X		Z	16s	0.90um			4.5MszX
JSC		61.01	350	P	48	22.60	-1.3	BAL		123.09	187	ePdiff	53	18.50	-19.1X		N	12s	0.90um			
LHS		61.14	350	P	48	23.20	-1.6	WRA		128.17	210	PKPd	57	16.80	0.3	TIY		32.42	338	eP	52	15.50	-1.3
RSCP		63.11	346	P	48	36.00	-1.9			0.7s		11.10nm					N	11s	0.70um			
SPA		63.94	180	iPc	48	43.40	0.0	GUA		144.51	256	ePKP	57	45.20	-1.6				S	57	31.00	
		0.7s		38 67nm			5.6mb			0.9s		87.39nm				BJI		33.37	345	ePKP	52	24.00	-0.9
CVL		64 29	353	P	48	45.00	-0.6	AAI		145.20	214	ePKP	57	46.50	-1.5			1.2s	49.00nm			5.3mb
TUL		66.24	338	eP	48	56.80	-1.4	KOD		145.81	112	ePKP	57	51.00	1.6		Z	22s	0.62um			4.3Msz
		0.7s		25.80nm			5.4mb	GBA		147.45	106	PKPc	57	52.30	0.7				e	57	44.00	
	Z	20s		0.25um			4.4Msz			0.8s		31.90nm				CTA		33.70	146	iPd	52	27.50	-0.6
				LR	12	00.00		HYB		150.03	101	ePKP	57	56.00	0.4			1.0s	61.00nm			5.5mb
LNO		66.24	338	eP	48	56.50	-1.6			1.0s		70.00nm							iS	57	50.00	
SIO		66.27	337	eP	48	57.20	-1.2					e	58	01.80		SNY		33.84	355	Pc	52	28.50	-0.5
FVM		66.53	343	P	48	58 60	-1 5	MAT		153.50	300	(PKP)	58	09.00	8.9X			1.0s	0.10nm			2.7mb X
TBR		67.10	357	P	49	05.60	2 1			0.9s		23.53nm					Z	20s	1.60um			4.7Msz
DHN		69 05	354	P	49	14.60	-1.2			S.D. = 1.2 on 79 of 103 obs.							N	19s	1.00um			
ALO		69.70	329	iPd	49	19.90	-0 2			----------									pP	52	40.60	45kmX
		0.9s		10.50nm			4.9mb			DEC 30, 1989 12h 45m 47.64± 0.29s									S	57	51.00	
	Z	20s		0 98um			5.0Msz			7.986 N ± 5.4km 127.041 E ± 7.2km						WARB		33.97	181	eP	52	30.50	0.2
RSNY		70.51	357	P	49	24 00	-0.6			DEPTH = 33.3km (12 depth phases)								0.8s	32.00nm			5.3mb
		0.9s		21.69nm			5.2mb			5.2mb (14 obs.) 4.6Msz (10 obs.)						LZH		35.08	326	Pc	52	39.00	-1.0
LIC		71.13	73	P	49	29 22	0 2			PHILIPPINE ISLANDS REGION					(248)			1.6s	0.04nm			2.1mb X
		0.5s		20.50nm			5.4mb										Z	19s	2.00um			4.9Msz
	Z	20s		2.00um			5.4Msz	DAV		1.71	239	iPc+	46	21.00	5.5X		N	11s	0.80um			
TIC		71.35	73	P	49	30 64	0.3	QCP		8.82	319	eP	47	54.00	-1.9	HHC		35.51	340	P	52	43.00	-0.5
KIC		71.45	73	P	49	31.20	0 3	BAG		10.49	324	eP	48	26.00	7.0X		Z	18s	1.40um			4.8Msz
LKO		72.35	70	P	49	37.20	0.9	KKM		10.92	261	eP	48	13.00	-11.8X		N	12s	0.40um			
		0.8s		44.00nm			5.5mb	AAI		11.65	174	eP	48	35.00	0.3	CN2		35.70	358	eP	52	48.00	3.1X
GLA		72.46	322	P	49	38.40	1.8	ANP		17.90	344	eP	50	02.00	6.2X		Z	18s	0.80um			4.5Msz
GOL		73.19	333	P	49	40.90	-0.1	GUMO		18.37	71	eP	50	00.30	-1.3				epP	52	56.40	28km
		0.9s		9.47nm			4.8mb			1.3s		215.69nm			5.2mb				eS	58	18.00	
BAR		73.22	321	eP	49	43.00	1.9					eS	53	33.00		BTO		35.85	338	eP	52	43.00	-3.4X
PLM		73.82	321	P	49	44.20	-0.6	QZH		18.69	335	Pc	50	08.00	2.5		N	15s	1.00um			
TPC		73.92	322	eP	49	46 00	0.8		Z	16s		1.20um					E	15s	0.80um			
PEC		74.39	321	P	49	47.40	-0.4		N	16s		1.20um				MDJ		36.56	3	eP	52	53.90	1.8
RVR		74.58	321	eP	49	50.00	1.1	QIZ		19.98	305	P	50	19.00	-1.3		Z	20s	0.90um			4.5Msz
WEGH		74.89	76	eP	49	51.30	0.2		N	16s		1.70um							epP	53	02.80	30km
LEGH		75.04	76	eP	49	52.20	0.2		E	17s		2.40um							S	58	34.00	
MWC		75.14	321	eP	49	55.00	2.6X					PP	50	36.00		HNR		37.06	117	eP	52	55.00	-1.8
KUK		75.14	75	eP	49	51.00	-1.5					S	53	53.00		MRWA		38.49	196	eP	53	09.10	0.6
TEGH		75.20	76	eP	49	53 00	0.2	MTN		21.09	169	eP	50	31.00	-0.7	GTA		39.69	326	eP	53	18.00	-0.6
KOGH		75.20	75	eP	49	53.30	0.4	SSE		23.63	347	P	50	58.00	1.3		Z	18s	0.90um			4.7Msz

```
LSA    39.99 307 Pc     53 23.00    1.4
                S      59 28.00
BRS    43.10 146 iPd    53 46.50   -0.1
       1.2s      5.00nm            4.1mb
                 e      53 56.60   34km
                 i      55 18.50
ADE    44.12 166 ePd    53 55.20    0.4
       0.8s     31.34nm            5.2mb
BWA    46.79 156 eP     54 17.50    1.5
                 e      54 28.80   40km
CAN    47.80 156 eP     54 24.70    0.7
                 e      54 35.90   39km
HYB    48.10 286 eP     54 25.00   -1.6
DZM    48.83 129 iPc    54 32.00   -0.2
KOD    48.96 277 eP     54 35.00    1.4
GBA    48.98 281 P      54 34.00    0.7
                 e      55 58.00 422kmX
                 e      57 53.00
WMO    49.49 323 P      54 38.00    1.0
     Z  16s      1.10um            5.0MszX
NDI    51.15 300 eP     54 48.00   -1.8
                 eS     58 04.00
KSH    55.30 313 eP     55 22.00    1.4
OUE    60.22 300 eP     55 50.00   -5.4X
MAIO   67.24 306 iPc    56 41.00   -0.3
TTA    76.99  27 eP     57 41.10    2.4X
BRW    78.07  19 eP     57 47.40    3.1X
                 i      57 57.40   32km
IMA    78.40  24 eP     57 48.10    1.7
                 e      57 59.20   36km
PMR    80.09  29 eP     57 56.70    1.3
       0.9s     16.80nm            5.0mb
                 e      58 06.70   32km
KVT    85.56 311 iP     58 22.40   -1.7
INK    86.12  22 eP     58 28.00    1.8
                 pP     58 39.00   35km
SOD    86.68 338 eP     58 28.00   -1.0
DSI    87.28 301 ePc    58 34.00    1.4
MBC    87.76  13 eP     58 36.50    2.4X
       1.5s     65.00nm            5.7mb
                 pP     58 47.50   35km
PRNI   87.77 300 eP     58 36.00    0.9
SUF    87.92 333 eP     58 35.00   -0.1
NUR    89.15 331 eP     58 40.00   -1.0
SLL    94.44 333 eP     59 05.10   -0.4
       0.9s     16.70nm            5.5mb
KRA    94.72 322 eP     59 07.70    0.8
NB2    95.13 334 P      59 06.30   -2.4
       1.1s      9.30nm            5.1mb
KSP    96.65 323 eP     59 16.00    0.3
PRU    98.00 323 eP     59 23.50    1.7
BRG    98.01 324 eP     59 22.40    0.6
       1.4s     19.00nm            5.4mb
PNT    98.77  37 eP     59 27.00    1.7
KHC    98.91 322 eP     59 27.10    1.1
UPA   148.61  58 iPKPc   05 36.20    6.1X
       1.2s     68.75nm
PCH   149.77 150 ePKP    05 38.50    7.0X
PEL   150.07 149 ePKP    05 38.50    6.6X
     S.D. = 1.2  on  62 of  78 obs.
-------------------------------------
?  DEC  30, 1989  13h 03m 34.58± 1.05s
   7.405 S ±14.5km  146.362 E ±12.5km
   DEPTH =  86 0 ± 19.8 km
   3.5mb (  1 obs.)
 EAST PAPUA NEW GUINEA REGION     (207)

LAT     0.98  40 eP     03 54.00    0.0
KDB     2.20 159 eP     04 09.90    0.0
HNR    13.59  99 P      06 45.00    0.0
WB5    17.00 222 eP     07 28.20   -0.3
WRA    17.07 222 Pd     07 29.50    0.3
       0.3s      0.90nm            3.5mb
     S.D. = 0.4  on   5 of   5 obs.
-------------------------------------
*  DEC  30, 1989  13h 12m 52.19± 1.62s
   40.962 N ± 8.4km  142.398 E ± 8.8km
   DEPTH =  82.0 ± 14.3 km
   4.6mb ( 13 obs.)
 NEAR EAST COAST OF HONSHU, JAPAN(228)

MAT     5.50 218 eP     14 13.00   -0.2
       0.7s     31.51nm            4.7mb
                 eS     15 22.00
MDJ    10.10 295 eP     15 16.20   -0.1
CN2    12.85 288 eP     15 54.00    1.1
BJI    19.94 276 eP     17 16.00   -3.9X
TIY    23.35 272 eP     17 50.60   -3.3X
     Z  18s      0.70um            4.2Msz
WHN    24.93 254 Pd     18 11.00    2.0
XAN    27.33 266 eP     18 29.00   -2.1
GYA    32.81 255 P      19 19.00   -0.8
WMQ    39.89 293 P      20 19.20   -0.2
     Z  30s      0.90um            4.4MszX
LSA    42.75 271 eP     20 44.20    0.7
IMA    42.94  33 P      20 44.00   -0.2
       0.9s     10.42nm            4.7mb
PMR    45.05  39 P      21 00.90   -0.1
INK    50.56  29 iPc    21 43.50   -0.2
WB5    60.99 189 eP     22 58.80   -0.3
WRA    61.05 189 Pd     22 59.30   -0.2
       0.6s      1.70nm            4.3mb
SOD    61.66 337 eP     23 07.00    3.8X
GBA    62.34 264 P      23 08.00   -0.3
SUF    64.83 333 iP     23 22.60   -1.4
       0.4s      2.90nm            4.6mb
NUR    66.86 332 eP     23 36.00   -0.9
LRM    70.83  46 eP     24 02.40    0.3
HFS    70.83 336 eP     24 00.00   -1.5
       0.5s      5.30nm            4.7mb
NB2    70.87 337 P      24 00.40   -1.3
       0.7s      4.00nm            4.4mb
KVN    71.80  54 eP     24 09.00    1.1
FRB    72.78  14 eP     24 12.00   -0.9
KSP    77.17 328 eP     24 38.40    0.2
KHC    79.60 329 eP     24 52.40    0.9
KBA    81.34 328 eP     25 01.50    0.6
                 e      25 17.00
LOR    84.74 333 eP     25 19.20    1.0
       1.0s      6.00nm            4.5mb
LBF    84.94 333 eP     25 19.20    0.0
       1.0s      6.00nm            4.5mb
LPG    85.22 330 eP     25 21.40    0.5
       0.6s      5.40nm            4.7mb
AVF    85.33 333 eP     25 21.40    0.3
       0.6s      2.10nm            4.3mb
MAF    86.09 333 eP     25 25.60    0.7
       0.8s      8.00nm            4.8mb
LSF    86.41 334 eP     25 27.20    0.7
       0.8s      8.00nm            4.8mb
MFF    86.65 335 eP     25 28 50    0.9
       1.0s     12.00nm            4.9mb
     S.D. = 1.0  on  31 of  34 obs.
-------------------------------------
?  DEC  30, 1989  13h 50m 06.79± 1.69s
   44.361 N ±15.2km   7.160 E ±18.0km
   DEPTH =  10.0km  (geophysicist)
 NORTHERN ITALY                   (545)
     ML 1.7 (GEN).

PZZ     0.15 344 P      50 10.39    0.0
                 S      50 13.38
STV     0.17 135 P      50 10.63    0.0
                 S      50 13.70
ENR     0.23 126 P      50 11.82    0.0
                 S      50 15.64
ROB     0.51  97 P      50 17.23    0.0
     S.D. = 0.0  on   4 of   4 obs.
-------------------------------------
*  DEC  30, 1989  16h 08m 33.07± 0.82s
   10.036 N ±11.2km  126.110 E ±26.4km
   DEPTH =  33.0km  (normal)
   4.7mb (  3 obs.)
 PHILIPPINE ISLANDS REGION        (248)

SSE    21.45 348 P      13 22.00    1.3
       1.0s     14.00nm            4.3mb
                 pP     13 30 00   29kmX
                 S      17 17.00
                 sS     17 28.00
MTN    23.27 168 eP     13 41.00    2.2
XAN    28.62 329 P      14 27 00   -1.7
TIY    30.18 338 eP     14 43.00    0.3
WB5    30.82 165 eP     14 47.40   -1.0
HHC    33.28 340 eP     15 10.60    0.8
WARB   36.00 179 eP     15 32.00   -1.2
       0.4s      4.00nm            4.7mb
GTA    37.48 326 eP     15 45.00   -0.6
KLB    42.16 191 eP     16 24.00   -0.2
HYB    46.68 284 eP     17 01.20    0.3
GBA    47.72 279 P      17 10.00    1.0
SLL    92.21 333 eP     21 39.40   -1.2
       0.7s      4 20nm            5.0mb
     S.D. = 1 3  on  12 of  12 obs.
-------------------------------------
?  DEC  30, 1989  19h 10m 41.85± 4.43s
   23.255 S ±33.5km  178.796 W ±55.3km
   DEPTH = 597.4 ± 41.6 km
   4.6mb (  2 obs.)
 SOUTH OF FIJI ISLANDS            (171)

DZM    13.68 272 iPc    13 37.20    0.1
PGZ    17.80 192 eP     14 17.40    0.8
MNG    17.97 194 eP     14 16.50   -1.8
       0.3s     29.00nm            5.3mb
KIW    18.34 195 eP     14 22.10    0.4
MTW    18.48 194 eP     14 22.30   -0.7
CAW    18.53 195 eP     14 23.20   -0.3
WDW    18.70 195 eP     14 25.40    0.4
MRW    18.74 195 eP     14 25.10   -0.2
MOW    18.79 194 P      14 27.30    1.4
TCW    18.83 196 P      14 26.10   -0.1
HNR    24.55 301 eP     15 18.00    0.0
WB5    43.55 265 eP     17 56.00    0.0
WRA    43.56 265 Pc     17 56.00    0.0
       0.4s      1.50nm            3.9mb
HFS   142.12 350 ePKP   29 15.20    7.4X
       0.4s      1.40nm
     S.D. = 0.9  on  13 of  14 obs.
-------------------------------------
%  DEC  30, 1989  20h 09m 14.45± 1.76s
   41.721 N ±18.4km   12.788 E ± 8.6km
   DEPTH =  10.0km  (geophysicist)
 SOUTHERN ITALY                   (390)

RDP     0.07 305 P      09 16.80    0.0
                 eSg    09 17.50
RMP     0.11 325 P      09 17.60    0.3
                 eSg    09 18.90
AZI     0.55  61 P      09 25.90    0.3
                 eSg    09 35.30
MNS     0.67 353 P      09 27.40   -0 4
                 eSg    09 39.10
SDI     0.77  91 Pc     09 29.30   -0.2
                 eSg    09 41.20
     S.D  = 0.4  on   5 of   5 obs.
-------------------------------------
*  DEC  30, 1989  20h 16m 01.99± 0.54s
   0.993 N ±12.9km   30.180 W ± 9.4km
   DEPTH =  10.0km  (geophysicist)
   4.9mb ( 25 obs.)  5.3Msz (  3 obs.)
 CENTRAL MID-ATLANTIC RIDGE       (406)
      CENTROID, MOMENT TENSOR     (HRV)
      Data Used: GDSN
      L.P.B.: 10S, 25C
      Centroid Location:
      Origin Time        20:16: 9.2 0.7
      Lat  0.85N 0.06 Lon  29.65W 0.07
      Dep  15.0 FIX Half-duration  1.5
      Moment Tensor;   Scale 10**16 Nm
        Mrr= 0.74 0.34  Mtt= 5.99 0.37
        Mff=-6.73 0.52  Mrt= 0.00 0.00
        Mrf= 0.00 0.00  Mtf= 2.54 0.32
      Principal Axes:
        T  Val=  6.48  Plg= 0  Azm=169
        N         0.74       90       180
        P        -7.22        0        79
      Best Double Couple:Mo=6.8*10**16
       NP1:Strike=214 Dip=90 Slip=-180
       NP2:        304     90         0

LIC    25.63  78 P      21 32.92   -0.6
     Z  20s      3.00um            4.8Msz
                 TT     42 00.00
TIC    25.71  77 P      21 33.20   -1.2
TIO    36.85  34 eP     23 20.00    7 4X
AVE    38.60  31 iP     23 29.00    2.0
IFR    39.99  33 iPd    23 41.50    2.7X
ZOBO   41.19 244 P      23 49.00   -0.4
       1.6s     72.06nm            5.2mb
     Z  22s      4.91um            5.3Msz
                 LR     36 04.00
CNCB   41.26 243 P      23 49.90    0.0
LPB    41.26 243 P      23 51.00    1.2
     Z  19s      5.90um            5.5Msz
                 LR     36 06.00
TOL    45.43  28 eP     24 23.00    0.1
GUD    45.98  28 eP     24 28.00    0.6
BCAO   48.77  85 iPd    24 49.20   -0.3
       0.7s     15.00nm            5.1mb
                 ic     25 04.50
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30d 20h

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EPF     49.96  29 eP     25 00.30    2.0
         1.2s    29.70nm          5.1mb
LFF     51.59  28 eP     25 11.70    1.2
         1.0s    21.60nm          5.0mb
LPO     51.60  28 eP     25 11.70    1.0
         1 0s    12.00nm          4.8mb
CAF     52.20  29 eP     25 16.20    1.0
         1.0s    16.00nm          4.9mb
RJF     52.22  28 eP     25 15.80    0.4
         1.0s     8.00nm          4.6mb
LSF     52.94  27 eP     25 21.40    0.7
         1.0s    16.00nm          4.9mb
LPF     53.21  24 eP     25 23.00    0.4
         1.0s    20.00nm          5.0mb
MAF     53 40  28 eP     25 24.60    0.5
         1.0s    14.00nm          4.9mb
BGF     53.78  28 eP     25 27.40    0.6
         1.0s    10.00nm          4.8mb
SMF     54.31  28 eP     25 31.60    0.9
         1.0s    10.00nm          4.8mb
SSF     54.45  28 eP     25 32.20    0.4
         1.0s     6.80nm          4.6mb
DOI     54.53  32 P      25 34.00    1.4
BNI     54.60  31 P      25 35.00    1.9
LBF     54.62  28 eP     25 33.50    0.4
         1.0s    14.00nm          4.9mb
LOR     54.77  28 eP     25 34.50    0.3
         0.8s     4.00nm          4.5mb
LPG     54.94  31 eP     25 36.10    0.3
         1.0s    10.00nm          4.8mb
BOB     55.90  33 P      25 44.50    2.1
BDI     56.10  35 P      25 42.00   -1.9
VAI     56.24  32 P      25 44.00   -0.8
HAU     56.47  29 eP     25 46.60    0.1
         1.0s    12.00nm          4.9mb
BSF     56.57  29 eP     25 47.30    0.0
         0.8s     5.30nm          4.6mb
PGD     56.63  35 P      25 48.00    0.2
SDI     56.63  39 P      25 49.00    1.2
ASS     56.70  37 P      25 48.00   -0.3
SGO     56.96  40 P      25 49.50   -0.5
DUI     57.01  39 P      25 50.50    0.0
SAL     57.02  33 P      25 50.00   -0.4
CDF     57.20  29 eP     25 51.60   -0.2
         1 0s    8.00nm           4.7mb
FVI     58.86  33 P      26 01.00   -2.2
VOY     59.15  34 eP     26 03.70   -1.7
CEY     59.28  35 e(P)   26 06.00   -0.2
KBA     59.47  33 e(P)   26 02.00   -5.7X
         1.5s    25.00nm          5.1mb
                 e       26 07.00
                 i       26 26.90
LJU     59.52  35 e(P)   26 05.50   -2.3
VBY     59.63  36 e(P)   26 08.40   -0.2
ZAG     60.22  36 eP     26 12.00   -0.6
PTJ     60.25  35 eP     26 12.70   -0.3
KHC     60.83  31 P      26 15.80   -1.0
         1.4s    15.00nm          4.9mb
                 e       26 24.00
SKO     61.68  42 eP     26 11.50  -11.2X
PRU     61.85  31 eP     26 23.00   -0.7
CLL     61.90  29 e(P)   26 22.00   -2.0
BRG     62.09  30 e(P)   26 39.20   13.9X
         1.8s    27 00nm
ZST     62.18  34 eP     26 24.30   -1.6
SRO     62.66  35 eP     26 28.70   -0.3
                 e       28 38.40
KSP     63.26  31 eP     26 34.00    1.0
PSZ     63.62  35 eP     26 35.80    0 3
SPC     64.47  34 eP     26 40.10   -1.1
KRA     64.76  33 eP     26 42.30   -0.5
                 e       26 52.90
NB2     67.66  20 P      27 00.20   -1.0
         1.2s    16 80nm          5.1mb
PRNI    68.19  58 e(P)   27 00.00   -5.1X
FRB     68.65 343 eP     27 05.00   -2.3
HRI     69.44  55 e(P)   27 15.00    2.1
ALQ     78.19 305 eP     28 04.30    0.4
         1.7s    33.65nm          5 1mb
FFC     78.74 326 eP     28 05.00   -1.2
         1.1s    22.00nm          5.1mb
SES     83.40 320 ePc    28 31.00    0 0
LRM     83.90 316 eP     28 34.60    0.8
EDM     85.11 323 eP     28 37.50   -2.0
MBC     88.85 346 eP     28 58.00    0 8
         1.1s     7.00nm          4.9mb
MAIO    89.16  54 eP     29 03.00    3.4X
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CMB     89.56 308 e(P)   29 17.00   15.6X
INK     94.00 339 eP     29 21.00   -0.2
CAN    145.84 179 ePKP   35 44.70    1.5
        S.D. = 1.1  on  64 of  72 obs.
-------------------------------------------
*  DEC  30, 1989  20h 16m 42.00± 0.94s
   40.444 N ± 7.2km   29.363 E ± 8.8km
   DEPTH =  10.0km  (geophysicist)
 TURKEY                              (366)

GBZT     0.35  10 ePg    16 49.40    0.2
                 iSg     16 54.40
DST      1.01 214 iPn    17 01.80    0.6
                 eSg     17 16.80
BNT      1.11 266 iPn    17 02.80    0.0
EDC      1.15 266 ePn    17 03.00   -0.5
ALT      1.50 157 iPn    17 08.70   -0.4
        S.D. = 0.6  on   5 of   5 obs
-------------------------------------------
*  DEC  30, 1989  20h 54m 55.27± 1.18s
   26.077 S ± 6.6km   70.974 W ±22 9km
   DEPTH =  33.0km  (normal)
 NEAR COAST OF NORTHERN CHILE        (122)

ANT      2.42  12 iPc    55 34.30    1.0
                 i       55 48.00
                 iS      56 12.40
RTRS     4.29 162 e(P)    56 05.00    5.1X
SLA      5.13  76 e(P)    56 13.30    1.2
ZON      5.81 160 e(P)d   56 22.00    0.5
CFA      6.01 157 ePd     56 22.00   -2.3
                 S       57 39.50
RTCV     6.15 160 e(P)    56 24.80   -1.4
PEL      7.05 178 eP      56 40.00    1.2
                 i(S)    58 06.00
MRA      7.81 145 ePd     56 46.80   -2.6X
RFA      8.93 167 e(P)    57 06.00    0.9
CNCB     9.63  17 eP      57 14.00   -1.2
LPB      9.87  16 eP      57 12.00   -6.3X
ZOBO    10.11  16 P       57 20.90   -1.0
GBA    147.89 107 PKPc    14 37.10    0.9
         0.7s     1.60nm
        S.D. = 1.5  on  10 of  13 obs.
-------------------------------------------
%  DEC  30, 1989  21h 25m 35.64± 0.75s
   41.858 N ± 7.4km   12.791 E ± 6.6km
   DEPTH =  10.0km  (geophysicist)
 SOUTHERN ITALY                      (390)

RMP      0.08 235 P       25 38.00   -0.1
                 eSg     25 38.80
RDP      0.11 209 P       25 38.80    0.2
                 eSg     25 40.40
AZI      0.50  75 P       25 46.00    0.2
MNS      0.53 351 P       25 46.40    0.0
                 eSg     25 56.50
SDI      0.78 101 P       25 50.60   -0.3
                 eSg     26 03.80
        S.D. = 0.3  on   5 of   5 obs.
-------------------------------------------
%  DEC  30, 1989  21h 56m 44.74± 2.20s
   23.176 N ±12.9km  121.793 E ±15 3km
   DEPTH =  10.0km  (geophysicist)
 TAIWAN                              (244)

TWF1     0.49 291 iPc    56 55.20    0.5
                 eS      57 01.10
TWG      0.75 242 ePd     56 59.70    0.2
                 eS      57 10.20
TWD      0.92 349 ePd     57 02.30    0.0
TWK      1.20 275 eP      57 06.60   -0.6
TWQ      1.40 321 iPc     57 10.00   -0.3
TWC      1.43   2 ePc     57 10.80    0.1
        S.D. = 0.5  on   6 of   6 obs.
-------------------------------------------
    DEC  30, 1989  21h 57m 58.88± 1.27s
     5.858 S ± 6.7km   153.417 E ±12.3km
    DEPTH =  30.0 ±  8.0 km
    4.5mb (  1 obs.)  4.7Msz (  1 obs.)
 NEW IRELAND REGION                  (190)

RAB      2.07 323 iPd    58 33.00    0.7
KDB      7.17 240 eP     59 43.00   -1.3
HNR      7.38 119 eP     59 59.00   11.6X
                 eS      01 35.00
CTA     15.77 206 iPc    01 46.00    5.5X
         1.2s    39.06nm          4.5mb
```

```
DZM     20.46 143 iPc    02 37.10    0.2
RMQ     20.99 192 iPc    02 43.00    0.7
GUA     21.04 336 eP     02 40.80   -2.1
         1.2s   225.00nm          5.5mb X
BRS     21.42 182 iP     02 46.00   -0.7
WB5     23.18 231 eP     03 03.80   -0.3
WHN     52.04 316 eP     07 11.00    2.9X
CN2     55.51 336 eP     07 32.60   -0.9
BJI     57.11 326 eP     07 44.50   -0.5
TIY     57.73 322 eP     07 48.60   -0.9
CHG     59.00 296 eP     07 59.00    0.4
CD2     59.89 311 P      08 04.50   -0.1
HHC     60.26 324 eP     08 07.00    0.0
BTO     61.01 323 eP     08 12.00   -0.1
LZH     62.41 316 P      08 21.50   -0.3
         1.5s     0.03nm          2.2mb X
       Z 20s      0.50um          4.7Msz
GTA     66.84 317 eP     08 51.00    0.5
LSA     69.34 305 P      09 07.60    1.0
WMQ     76.93 317 P      09 51.80    1.4
INK     89.22  21 eP     10 52.00   -0.8
        S.D. = 0.9  on  19 of  22 obs.
-------------------------------------------
*  DEC  30, 1989  22h 39m 37.47± 0.91s
   35.958 N ±10.1km   27.309 E ± 9.9km
   DEPTH =  10.0km  (geophysicist)
 DODECANESE ISLANDS                  (369)
     MD 3.5 (ATH).

KAP      0.42 195 iPc    39 46.70    0.6
                 eS      39 54.50
YER      1.41  33 ePn    40 02.00   -1.2
NPS      1.55 244 eP      40 03.60   -1.5
                 eS      40 22.90
APE      1.81 308 eP      40 10.50    1.5
ELL      2.24  69 ePn    40 16.00    0.7
VAM      2.59 259 eP      40 20.00   -0.1
BCK      3.03  59 iPn    40 32.40    6.0X
        S.D. = 1.5  on   6 of   7 obs.
-------------------------------------------
    DEC  30, 1989  23h 15m 36.09± 0.28s
     3 404 S ± 4.4km   146.287 E ± 6.2km
    DEPTH =  42.0km  (  3 depth phases)
    5.1mb ( 16 obs.)
 BISMARCK SEA                        (203)

LAT      3.30 168 eP     16 26.50   -0.1
MNDI     3.79 224 eP     16 35.50    1.8
KDB      6.09 172 iPc    17 04.70   -1.3
HNR     14.83 114 ePc+   19 04.00   -0.8
CTA     16.58 180 iPc    19 30.90    3.6X
         1.3s   369.23nm          5.4mb
                 iS      22 28.00
GUA     16.89 355 eP     19 31.50    0.4
         1.3s   338.46nm          5.3mb
                 eS      22 35.00
GUMO    16.94 355 eP     19 31.50   -0.3
         1.2s   200.00nm          5.1mb
MTN     17.68 237 iPc    19 38.50   -2.5
AAI     18.06 269 ePc    19 47.00    1.3
                 eS      23 00.00
WB5     20.09 214 eP     20 06.90   -2.2
                 i       20 07.80
WRA     20.15 214 Pc     20 08.60   -1.2
         0.9s   130.70nm          5.3mb
RMQ     23.08 174 iPc    20 40.20    1.2
                 e       23 55.00
DAV     23.15 297 eP     20 42 00    2.2
BRS     24.65 166 iPc    20 54.00   -0.3
         0.6s    16.50nm          4.8mb
                 i       20 55.80
                 i       21 03.00
                 i       22 46.40
PVC     25.87 125 iP     21 07.00    1.2
DZM     26.96 135 iPc    21 15.10   -0.9
CMS     27.94 181 e(P)   21 33.70    9.1X
                 e       24 42.00
STK     28.67 188 e(P)   21 32.00    0.8
                 e       21 39.00
                 e       24 48.00
                 e       24 51.00
WARB    29.46 218 eP     21 38.00   -0.5
         0.4s     7.00nm          4.7mb
OCP     30.75 306 eP     22 02.00   12.1X
BWA     30.93 177 eP     21 50.00   -1.3
CAN     31.86 176 eP     22 02.20    2.7
BAG     32.14 309 eP     21 52.00  -10.4X
```

ADE	32.18	192	eP	22	04.80	2.5
	0.8s	22.39nm			5.1mb	
MRWA	38.54	225	eP	22	56.00	-0.6
MAT	40.45	350	(P)	23	11.00	-1.3
	1.8s	254.55nm			5.7mb	
HKC	40.47	311	P	23	20.00	7.4X
SSE	41.83	327	eP	23	22.50	-1.1
QIZ	42.22	303	eP	23	26.60	-0.4
KRP	43.54	146	P	23	38.90	1.4
NJ2	43.84	326	eP	23	35.20	-4.8X
WHN	45.49	320	Pc	23	55.00	1.7
SNG	46.78	283	eP	24	03.80	0.1
DL2	47.86	334	eP	24	12.80	1.0
	1.3s	0.10nm			2.7mb	X
		pP		24	24.00	39km
		eS		31	08.00	
TIA	47.91	328	eP	24	11.70	-0.6
GYA	48.46	310	P	24	18.60	1.7
LOE	48.58	297	eP	24	18.00	0.2
		e		27	33.00	
NNT	48.90	290	eP	24	19.80	-0.4
NST	49.44	294	eP	24	25.00	0.7
SNY	49.53	338	Pc	24	26.20	1.5
Z	25s	62.30um			6.5MszX	
N	18s	23.00um				
E	21s	34.60um				
MDJ	50.09	344	eP	24	28.50	-0.4
		epP		24	40.00	41km
		S		31	39.00	
CN2	50.59	341	eP	24	32.00	-0.8
KMI	50.88	306	Pc	24	35.00	-0.5
Z	32s	69.20um			6.5MszX	
N	14s	9.40um				
		S		31	56.00	
BDT	50.97	295	eP	24	35.30	-0.7
	0.5s	32.20nm			5.6mb	
XAN	51.25	320	P	24	37.50	-0.5
BJI	51.31	330	eP	24	37.00	-1.2
	2.0s	83.00nm			5.4mb	
CHG	51.55	297	ePc	24	41.00	0.5
	1.1s	18.35nm			5.0mb	
TIY	51.57	326	eP	24	39.30	-1.1
HHC	54.27	328	P	25	00.60	0.2
		pP		25	13.50	46km
BTO	54.93	327	P	25	05.00	-0.3
LZH	55.80	319	eP	25	11.50	-0.2
	2.5s	0.14nm			2.5mb	X
GTA	60.31	320	eP	25	43.60	0.4
LSA	62.13	306	P	25	57.00	0.8
KOD	69.84	282	eP	26	46.00	0.6
HYB	69.91	290	eP	26	44.00	-1.4
GBA	70.34	286	P	26	46.00	-2.1
WMQ	70.38	319	P	26	47.80	-0.1
NDI	73.43	301	eP	27	07.00	0.7
POO	74.50	290	eP	27	14.00	1.3
KSH	77.11	312	eP	27	27.00	-0.2
TTA	78.95	23	P	27	38.00	1.1
	1.0s	17.50nm			5.0mb	
PMS	80.86	26	e(P)	27	47.00	0.0
		e		37	56.00	
PMR	81.19	26	P	27	47.00	-1.6
	1.0s	18.75nm			5.0mb	
IMA	81.40	21	e(P)	27	51.40	1.5
	1.4s	13.40nm			4.7mb	
		e		27	59.50	
FBA	83.09	23	P	27	57.50	-1.0
	0.9s	13.02nm			5.0mb	
MAIO	89.41	306	eP	28	43.00	12.8X
INK	89.52	21	eP	28	31.00	1.1
WDC	93.08	50	eP	28	48.60	1.6
LON	93.76	44	P	28	48 00	-2.0
MBC	94.32	14	eP	28	56.00	4.0X
	1.5s	13 00nm			5.1mb	
KSP	116.90	327	e(PKP)	34	35.00	17.1X
		e		37	49.00	
		e		39	00.00	
KHC	119.29	326	ePKP	34	27.00	4.4X
BCAO	127.87	273	iPKPc	34	44.00	3.9X
	1.1s	15.00nm				
CNCB	140.64	122	ePKP	35	04.00	-0.7
		i		35	10.50	
LPB	140.67	121	ePKP	35	05.00	0.5
ZOBO	140.77	121	ePKP	35	00.00	-4.9X
	1.2s	10.14nm				
SHGH	146.35	276	ePKP	35	13.00	-0.8
LEGH	146.50	275	ePKP	35	13.00	-1.1
KOGH	146.54	276	ePKP	35	15.50	1.3
WEGH	146.65	275	ePKP	35	17.00	2.7X
KUK	146.66	276	ePKP	35	15.00	0.6
WIGH	146.95	275	ePKP	35	12.80	-2.0
KIC	150.99	277	PKP	35	27.08	6.0X
TIC	151.24	278	PKP	35	27.68	6.2X
LIC	151.28	277	PKP	35	27.58	6.1X

S.D. = 1.2 on 69 of 85 obs.

DEC 30, 1989 23h 18m 51.64± 0.20s
3.406 S ± 4.6km 145.966 E ± 5.2km
DEPTH = 38.3km (5 depth phases)
5.6mb (24 obs.) 6.6Msz (24 obs.)
NEAR N COAST OF PAPUA NEW GUINEA(200)
Ms 7.0 (BRK), 6.4 (PAS).
Mo=1.6*10**19 Nm (PPT). Felt
(III) on Korkar and Manam.
CENTROID, MOMENT TENSOR (HRV)
Data Used: GDSN
L.P.B.: 15S, 35C M.W.: 16S, 42C
Centroid Location:
Origin Time 23:18:54.5 0.2
Lat 3.26S 0.01 Lon 146.38E 0.02
Dep 15.0 FIX Half-durotion 6.7
Moment Tensor; Scale 10**18 Nm
Mrr=-0.17 0.10 Mtt=-1.72 0.09
Mff= 1.89 0.10 Mrt= 4.47 0.43
Mrf=-5.19 0.53 Mtf= 8.64 0.08
Principal Axes:
T Val= 9.13 Plg=10 Azm=125
N 3.33 59 18
P -12.46 29 221
Best Double Couple:Mo=1.1*10**19
NP1:Strike=259 Dip=62 Slip= -14
NP2: 356 77 -152

LAT	3.39	162	P	19	39.40	-4.0X
MNDI	3.57	220	eP	19	50.00	3.8X
PMG	6.08	169	P	20	17.20	-4.3X
KDB	6.14	169	eP	20	18.50	-3.9X
HNR	15.12	114	iPc+	22	17.00	-7.4X
		iS		25	40.00	
CTA	16.58	179	iPc	22	44.90	1.8X
	1.2s	585.94nm			5.6mb	
		iS		25	44.00	
GUA	16.87	356	eP	22	50.70	4.1X
	1.3s	815.38nm			5.7mb	
Z	20s	88.23um			4.2MszX	
		e(S)		25	52.00	
GUMO	16.92	356	eP	22	50.80	3.5X
	1.3s	954.25nm			5.8mb	
PJG	16.92	356	eP	22	50.70	3.4X
MTN	17.41	237	eP	22	52.50	-1.0
WB5	19.91	214	iPd	23	21.50	-1.5
		i		27	08.00	
WRA	19.97	214	Pd	23	23.90	0.2
	1.3s	624.70nm			5.8mb	
DAV	22.87	297	eP	23	53.00	0.0
ASPA	23.27	209	P	23	57.50	0.6
BRS	24.72	165	iPc	24	09.30	-1.6
		i		24	14.80	20kmX
		i		24	22.80	
		e		24	39.00	
		i		25	49.60	
		e		28	42.00	
PVC	26.13	125	iPc	24	20.50	-3.7X
DZM	27.19	135	iPc	24	31.00	-3 0
TSM	28.89	285	eP	24	51.50	2.2
WARB	29.27	217	eP	24	53.00	0.4
	0.8s	216 00nm			5.9mb	
QCP	30.49	307	eP	25	15.50	12.0X
MBL	30.94	233	eP	25	06.00	-1.5
	0.6s	35.00nm			5 3mb	
BWA	30.95	176	eP	25	06.80	-0.6
KKM	31.16	287	eP	25	09.50	-0.1
CAN	31.88	175	eP	25	14.70	-0.9
BAG	31.90	309	eP	25	15.00	-1.1
ADE	32.12	191	iPc-	25	17.00	-0.7
	1.1s	126.58nm			5.7mb	
ANP	37.02	321	eP+	26	02.00	2.1
		eS		31	26.00	
KAGJ	37.28	338	eP	25	59.90	-2.0
MRWA	38.32	225	eP	26	11.00	0.4
KUMJ	38.52	339	eP	26	11.00	-1.3
WKYJ	38.68	346	eP	26	12.60	-1.1
QZH	38.74	318	Pc	26	15.00	0.8
	1.0s	0.20nm			2.9mb	X
Z	32s	98.30um			6.4MszX	
		E	32s	103.00um		
TKSJ	38.85	344	eP	26	14.00	-1.0
IIDJ	39.41	350	P	26	17.80	-1.9
KAKJ	39.77	353	P	26	21.70	-0.9
CHJJ	39.79	351	P	26	21.50	-1.3
TSRJ	39.85	347	eP	26	20.80	-2.5X
SHNJ	39.87	341	eP	26	21.30	-2.2
SHNJ	39.87	341	P	26	22.90	-0.6
YONJ	40.14	344	eP	26	25.00	-0.7
HKC	40.23	311	iP	26	28.00	1.4
		S		32	30.00	
MAT	40.39	350	eP	26	26.00	-1.8
	1.9s	710.53nm			6.1mb	
		eS		32	27.00	
MTMJ	40.51	350	P	26	26.90	-1.9
RKG	40.71	218	eP	26	34.00	3.6X
NIIJ	40.95	352	P	26	31.10	-1.2
GZH	41.30	311	P	26	37.00	1.6
Z	37s	60.20um			6.2MszX	
N	12s	12.90um				
E	14s	10.00um				
SSE	41.65	327	P	26	38.20	0.1
	1.8s	326.00nm			5.8mb	
N	18s	82.50um				
E	13s	14.20um				
		pP		26	48.00	33km
		i		27	00.00	
		i		29	48.00	
		PcP		32	24.00	
		S		32	58.00	
		sS		33	20.00	
		SS		36	04.00	
		ScS		36	32.00	
YAMJ	41.73	353	eP	26	37.40	-1.3
QIZ	41.95	303	P	26	42.50	1.7
N	13s	10.90um				
		sP		26	56.50	
		PP		28	15.00	
OFUJ	42.46	355	P	26	43.10	-1.5
AFI	42.98	107	eP	26	50.00	0 6
NJ2	43.67	326	Pd	26	55.00	0.5
Z	20s	40.90um			6.3Msz	
N	17s	30.50um				
E	14s	18.20um				
		iS		33	23.00	
KRP	43.72	146	P	26	52.80	-2.1
AOMJ	44.05	354	eP	26	56.90	-0.6
WHN	45.29	320	iPc	27	08.00	0.4
	1.0s	0.06nm			2.4mb	X
MSZ	45.41	158	P	27	06.00	-2.4
TCW	45.43	150	P	27	06.00	-2 6
IPM	45.60	280	ePd	27	12.00	1.6
	1.1s	41.80nm			5.3mb	
HOOJ	45.64	357	eP	27	09.20	-1.0
WEL	45.73	150	P	27	08.00	-3.0
Z	18s	57.73um			6.6Msz	
		e		29	30.00	
		S		33	48.00	
MRRJ	45.83	355	P	27	10.30	-1.4
WDW	45.83	149	P	27	08.10	-3.7X
MTW	46.01	149	P	27	09.40	-3.8X
PGZ	46.03	148	P	27	09.90	-3.4X
BLW	46.15	149	P	27	10.80	-3.5X
KUSJ	46.30	359	eP	27	13.50	-1.9
SNG	46.46	283	eP	27	28.30	11.1X
	1.2s	190.63nm				
ASAJ	47.40	357	eP	27	23.30	-0.8
DL2	47.72	334	eP	27	26.00	-0.7
	1.4s	0.40nm			3.2mb	X
Z	34s	50.40um			6.3MszX	
N	18s	35.80um				
		pP		27	35.00	30km
		eS		34	19.00	
TIA	47.74	328	eP	27	25.50	-1.4
Z	20s	56.40um			6.5Msz	
N	17s	24.00um				
E	14s	18.00um				
GYA	48.22	310	P	27	32.40	1.4
Z	36s	26.30um			6.0MszX	
N	18s	15.80um				
E	18s	13.80um				
NNT	48.60	290	eP	27	34.60	0.7
NST	49.14	294	eP	27	39.70	1.7
SNY	49.41	338	eP	27	37.40	-2.3
Z	23s	66.50um			6.6MszX	
N	16s	14.20um				
E	14s	10 60um				

30d 23h

```
S 34 47.00
MDJ 50.00 345 Pd 27 43.50 -0.8
Z 24s 32.20um 6.2MszX
E 22s 48.70um
epP 27 55.00 41km
S 34 50.00
CN2 50.49 341 eP 27 46.40 -1.5
6.0s 2.90nm 3.5mb X
Z 18s 36.00um 6.4Msz
N 17s 22.90um
pP 27 58 60 44km
PP 29 42.00
S 35 00.00
KMI 50.62 307 Pc 27 50.00 0.4
Z 18s 27.00um 6.3Msz
E 16s 12.10um
pP 28 06.00 62kmX
S 35 10.00
XAN 51.04 320 P 27 52.00 -0.4
N 16s 17.80um
E 15s 11.50um
BJI 51.15 331 eP 27 51.00 -2.0
1.0s 48.00nm 5.4mb
Z 22s 48.60um 6.5Msz
N 20s 36.80um
E 20s 26.60um
eS 35 10.00
CHG 51.27 297 ePc 27 55.40 1.1
1.2s 69.53nm 5.5mb
eS 35 34.00
BSI 51.38 280 eP 28 01.50 6.3X
CD2 52.75 313 eP 28 04.70 -0.6
Z 44s 48.50um 6.2MszX
N 12s 8.50um
PP 30 05.80
SS 39 07.60
HHC 54.10 328 iPd 28 15.00 -0.1
Z 38s 121.00um 6.7MszX
N 18s 18.70um
E 19s 26.70um
pP 28 23.00 26kmX
sS 36 02.00
SS 39 26.00
BTO 54.75 327 eP 28 19.50 -0.5
E 17s 17.20um
PP 30 18.00
S 35 55.50
SS 39 39 00
RAR 55.58 113 P 28 24.00 -2.1
S 36 06.00
LZH 55.59 319 Pc 28 21.00 -5.2X
2.0s 0.22nm 2.8mb X
Z 30s 33.60um 6.2MszX
N 12s 7.70um
E 23s 41.30um
pP 28 33.50 44km
S 36 07.00
HON 60.08 63 P 29 10.00 12.3X
Z 20s 35.11um 6.5Msz
GTA 60.10 320 Pc 28 57.70 -0.1
1.0s 0.10nm 2.9mb X
Z 42s 33.60um 6.2MszX
E 24s 13.90um
pP 29 05.00 24kmX
S 37 08.00
LSA 61.88 306 iP 29 11.20 0.8
sP 29 24.00
DRV 63.28 183 eP 29 08.20 -10.2X
AFR 64.45 108 eP 29 28.00 1.1
1.2s 55.00nm 5.5mb
TVO 64.97 108 eP 29 32 00 1.6
1 2s 70.00nm 5.6mb
PMO 66.08 105 iP 29 38.70 1.2
1.2s 100.00nm 5.8mb
TPT 66.35 105 iP 29 40.20 1.0
1.2s 75.00nm 5.6mb
VAH 66.35 105 iP 29 40.00 0.8
1.2s 40.00nm 5.4mb
RUV 66.59 105 iP 29 41.70 1.0
1.2s 70.00nm 5.6mb
KOD 69.53 282 eP 30 00.80 1.3
iS 39 02.00
HYB 69.60 290 eP 29 58.00 -1.6
1.0s 70.00nm 5.6mb
eS 39 10.00
GBA 70.03 286 P 30 01.00 -1.2
WMQ 70.17 319 iPc 30 02.20 -0.4
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Z 36s 31.40um 6.3MszX
N 14s 3.70um
E 14s 6.50um
SDN 73.11 29 P 30 30.00 10.2X
Z 20s 45.00um 6.7Msz
NDI 73.16 301 eP 30 24.00 3.3X
eS 39 12.00
POO 74.20 290 iP 30 26.20 -0.8
iS 40 00.00
BOM 75.23 290 eP 30 30.00 -2.8X
eS 40 12.00
KSH 76.87 312 P 30 44.00 2.1
Z 24s 24.10um 6.4MszX
N 16s 12.70um
KDC 78.15 29 eP 30 49.40 1.0
TTA 79.08 23 eP 30 54.80 1.3
PMR 81.33 26 eP 31 06.00 0.6
1.3s 67.40nm 5.5mb
Z 20s 45.00um 6.8Msz
IMA 81.52 21 eP 31 07.50 1.0
1.8s 65.80nm 5.3mb
QUE 82.23 301 eP 31 06.50 -4.5X
eS 41 25.50
FBA 83.21 23 P 31 12.90 -2.2
1.5s 175.68nm 5.9mb
SPA 86.62 180 eP 31 44.80 12.5X
1.8s 98.15nm
Z 19s 5.82um 6.0Msz
SIT 86.71 32 P 31 40.00 7.3X
Z 20s 57.50um 7.0Msz
MAIO 89.15 306 eP 31 46.00 1.0
e 35 23.00
INK 89.63 22 eP 31 47.00 0.5
1.1s 66.00nm 5.8mb
WDC 93.33 50 ePc 32 06.50 2.4X
e 33 04.80 239kmX
GMW 93.33 43 P 32 06.60 2.6X
BRK 93.47 52 ePc 32 06.80 2.0
Z 20s 56.00um 7.0Msz
BKS 93.49 52 ePc 32 06.50 1.6
Z 20s 57.00um 7.0Msz
N 20s 34.00um
E 20s 28.00um
iLR 00 56.00
iS 42 58.00
iPS 44 30.00
i(SS) 48 50.00
iLQ 56 40.00
GCC 93.66 53 eP 32 06.30 0.7
MHC 93.95 53 ePc 32 09.50 2.3X
Z 20s 44.00um 6.9Msz
N 20s 7.00um
E 20s 46.00um
eLR 01 15.00 697kmX
e 34 36.00
e 35 16.00
ePP 35 47.00
eSKS 42 47.00
eS 43 22.00
i 44 40.00
e 46 26.00
i 48 52.00
eSS 49 32.00
iPSPS 49 56.00
eLQ 57 08.00
LON 93.98 44 P 32 03.00 -4.1X
RMW 94.00 43 P 32 09.80 2.7X
MIN 94.04 50 e(P) 32 11.00 3.4X
ORV 94.10 51 e(P) 32 09.50 1.8
PRS 94.14 54 ePc 32 09.90 2.0
MBC 94.40 14 eP 32 07.00 -1.3
1.1s 33.00nm 5.7mb
LLA 94.49 54 e(P) 32 11.70 2.1
PRI 94.71 54 e(P) 32 13.00 2.3X
CMB 94.95 52 ePc 32 13.50 1.8
e 33 11.70 238kmX
FRI 95.49 53 ePc 32 15.70 1.6
KVN 96.74 51 P 32 21.00 1.0
PAS 96.75 56 eP 32 21.00 1.1
eLR 00 01.00
ePP 37 22.00
eSKS 43 06.00
eS 43 36.00
ePS 45 07.00
e 49 49.00
eSS 50 22.00
eSSS 54 08.00
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eLg 57 16.00
SBB 97.03 56 eP 32 23.00 1.8
RVR 97.41 56 eP 32 24.00 1.1
PLM 97.85 57 eP 32 32.00 6.9X
GSC 97.86 55 eP 32 33.00 8.0X
BAR 98.02 58 eP 32 27.00 1.3
TPC 98.51 56 eP 32 33.00 5.1X
GLA 99.57 57 eP 32 41.00 8.3X
TAB 99.68 308 e(P) 32 34.00 0.7
e 38 44.00
SES 100.89 39 ePdiff32 40.00 1.7
MSL 102.33 306 ePdiff32 48.00 3.0X
e 37 26.00
e 45 45.00
ALQ 106.34 55 ePdiff33 01.40 -1.7
Z 20s 15.60um 6.6Msz
ANMO 106.34 55 Pdiff 33 10.00 6.9X
Z 20s 6.91um 6.2Msz
GOL 106.50 50 Pdiff 33 03.00 -0.8
Z 20s 15.75um 6.6Msz
GLD 106.60 50 Pdiff 33 03.00 -1.2
Z 20s 24.50um 6.8Msz
BBTK 109.91 311 ePdiff33 34.00 15.2X
RSON 111.42 36 PKP 37 25.80 2.4X
Z 20s 45.76um 7.1Msz
BLF 113.91 236 ePKP 37 35.00 5.9X
SPC 115.27 324 ePKP 37 38.00 6.8X
e 38 35.30
BZS 115.94 320 ePKP 37 34.00 1.8
SRO 117.04 323 ePKP 37 43.30 9.0X
e 38 42.00
BRG 117.97 328 ePKP 37 36.00 0.0
1.3s 22.00nm
Z 20s 14.00um 6.6Msz
N 24s 19.00um
E 24s 6.00um
e 37 53.00
e 38 11.00
e 38 54.00
e 39 11.00
e 48 12.00
VKA 118.00 324 (PKP) 37 40.50 4.4X
5.0s 896.00nm
Z 22s 8.10um 6.3Msz
LR 27 12.00
e 38 56.00
e 39 01.50
CLL 118.23 329 ePKP 37 37.00 0.6
Z 19s 13.50um 6.6Msz
MOX 119.33 329 ePKP 37 39.00 0.4
Z 20s 18.20um 6.7Msz
N 20s 14.70um
E 19s 9.00um
e 39 02.00
e 39 30.00
ZAG 119.39 322 ePKP 37 38.00 -0.8
VBY 119.99 322 e(PKP)37 41.50 1.5
LJU 120.16 323 e(PKP)37 40.00 -0.3
KBA 120.34 324 ePKPd 37 41.50 0.7
1.2s 8.60nm
e 39 06.50
ePP 39 25.00
FVI 120.92 324 PKP 37 42.00 0.3
CTI 121.87 324 PKP 37 54.00 10.3X
ARV 122.42 321 PKP 37 46.00 1.3
RSCP 122.69 49 PKP 37 43 60 -1.9
Z 20s 33 90um 7.0Msz
WLF 122.71 330 PKP 37 46.00 1.1
e 39 46.00
SDI 122.73 319 PKP 37 45.00 -0.4
SAL 122.77 324 PKP 37 55.00 9.8X
ASS 122.81 321 PKP 37 46.00 0.5
AZI 122.85 319 PKP 37 48.00 2.5X
SFI 122.88 322 PKP 37 42.00 -3 5X
CRE 122.97 322 PKP 37 48.00 2.1
PGD 122.99 322 PKP 37 46.00 0.0
MNS 123.14 320 PKP 37 47.50 1.4
FIR 123.33 322 e(PKP)37 47.00 0.7
BSF 123.54 328 ePKP 37 46.40 -0.5
BDI 123.58 323 PKP 37 42.00 -5.0X
VAI 123.64 325 PKP 37 45.90 -1.0
HAU 123.67 328 ePKP 37 46.40 -0.6
BOB 123.88 324 PKP 37 51.00 3.4X
LPG 125.00 326 ePKP 37 50 10 0.1
BNI 125 31 325 PKP 37 53.20 2.8X
LOR 125.43 329 ePKP 37 50.30 -0.1
LBF 125.56 329 ePKP 37 50.10 -0.6
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SSF	125.75	329	ePKP	37	50.90	-0.2
BLA	125.82	45	PKP	38	05.00	13.4X
SMF	125.85	329	ePKP	37	51.20	-0.1
TCF	126.93	329	ePKP	37	53.30	-0.1
BCAO	127.55	273	iPKPd	37	56.80	1.3
	1.1s		35.00nm			
			ic	38	11.30	
			id	40	02.90	
LPO	128.54	328	ePKP	38	00.00	3.5X
NNA	134.78	110	ePKP	38	15.50	6.3X
	0.7s		2.05nm			
	Z 20s		0.53um			5.3MszX
ARE	138.05	119	ePKP	38	17.00	1.3
IFR	139.69	321	iPKP	38	18.50	0.4
CNCB	140.91	122	PKP	38	06.50	-14.7X
LPB	140.94	121	ePKP	38	04.00	-17.0X
			SS	00	34.00	
			LR	25	20.00	
			e	38	22.00	
BMG	140.96	83	ePKP	38	36.00	15.2X
ZOBO	141.04	121	ePKP	38	08.00	-13.4X
			LR	25	36.00	
			i	38	22.00	
			SS	59	50.00	
TIO	142.76	320	ePKP	38	25.00	1.5
			i	38	33.00	
PORP	144.91	63	(PKP)	38	24.00	-3.3X
TEGH	146.01	275	ePKP	38	30.70	1.4
SHGH	146.03	276	ePKP	38	19.20	-10.2X
LEGH	146.18	275	ePKP	38	30.00	0.4
KOGH	146.23	276	ePKP	38	30.00	0.3
WEGH	146.33	275	ePKP	38	30.00	0.1
KUK	146.34	276	ePKP	38	30.00	0.1
WIGH	146.63	275	ePKP	38	31.00	0.7
CUM	149.29	75	ePKP	38	34.00	-0.5
PAG	150.06	63	ePKP	38	40.00	4.3X
KIC	150.67	277	PKP	38	41.50	4.9X
TIC	150.92	278	PKP	38	42.00	5.0X
LIC	150.96	277	PKP	38	42.10	5.0X
LKO	151.10	284	PKP	38	43.38	6.1X
TRN	151.92	74	ePKP	38	44.54	6.1X
TPP	151.94	74	ePKP	38	46.66	8.2X
	S.D. = 1.3		on 144 of 214 obs.			

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* DEC 30, 1989 23h 20m 25.98± 1.60s
24.035 N ± 9.4km 121.753 E ±18.0km
DEPTH = 46.4 ± 18.8 km
TAIWAN (244)

TWD	0.15	287	iPc	20	33.60	0.0
			eS	20	39.40	
TWC	0.58	9	iPc	20	38.40	0.4
			eS	20	47.60	
TWF1	0.80	212	ePd	20	41.00	0.0
			eS	20	53.10	
TWO	0.87	286	iPd	20	42.10	0.0
TWZ	1.07	352	iPc	20	44.20	-0.6
ANP	1.16	349	eP	20	46.50	0.3
TWK	1.39	237	ePc	20	49.50	0.2
	S.D. = 0.4		on 7 of 7 obs.			

DEC 31, 1989 00h 00m 07.25± 0.73s
40.984 N ± 5.7km 20.460 E ± 7.2km
DEPTH = 10.0km (geophysicist)
GREECE-ALBANIA BORDER REGION (392)
ML 2.5 (SKO).

OHR	0.29	63	iPgc	00	14.40	1.1
			iSg	00	19.50	
TIR	0.58	309	ePg	00	18.50	-0.4
PHP	0.70	359	iPgd	00	20.60	-0.5
TPE	0.77	207	ePg	00	22.50	0.3
LSK	0.84	173	ePg	00	23.10	-0.4
LACI	0.86	319	ePg	00	23.30	-0.5
PUK	1.14	338	ePg	00	31.90	3.3X
SKO	1.23	36	ePn	00	29.00	-1.2
			eSn	00	48.00	
SDA	1.26	325	ePg	00	32.30	1.7
	S.D. = 1.1		on 8 of 9 obs.			

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* DEC 31, 1989 00h 11m 24.66± 0.55s
3.248 S ± 7.9km 146.716 E ±11.3km
DEPTH = 33.0km (normol)
4.9mb (5 obs.)
BISMARCK SEA (203)

LAT	3.39	175	eP	12	16.00	-0.6
MNDI	4.20	226	eP	12	28.50	0.3
KDB	6.20	176	eP	12	52.00	-4.3X
HNR	14.51	116	eP	14	50.00	0.4
CTA	16.74	182	iPc	15	20.20	1.8
	1.2s		117.19nm			4.9mb
			iS	18	37.00	
WB5	20.46	215	eP	15	56.70	-5.6X
WRA	20.52	215	P	16	04.00	1.0
	0.9s		58.30nm			4.9mb
RMO	23.19	175	eP	16	29.00	-0.6
ASPA	23.78	210	iPc	16	33.90	-1.5
	1.3s		72.00nm			5.0mb
			eS	20	53.60	
DZM	26.77	136	iPc	17	04.10	0.4
WHN	45.65	320	Pc	19	47.50	3.5X
CN2	50.59	340	Pd	20	23.80	1.5
BJI	51.38	330	eP	20	30.00	1.6
CHG	51.86	297	ePd	20	33.90	1.5
	1.1s		17.09nm			4.9mb
CD2	53.18	313	eP	20	43.40	1.3
HHC	54.37	327	eP	20	49.00	-1.7
LZH	55.96	318	P	21	03.50	1.0
	1.5s		0.04nm			2.2mb X
GTA	60.47	319	eP	21	32.50	-1.4
HYB	70.26	290	eP	22	36.00	-1.2
GBA	70.71	286	Pd	22	40.00	0.1
	1.0s		7.20nm			4.7mb
QUE	82.79	301	eP	23	45.00	-2.6
INK	89.21	21	eP	24	18.00	-0.2
ZOBO	140.48	120	ePKP	30	53.00	-1.1
KIC	151.39	277	PKP	31	21.60	10.2X
	S.D. = 1.4		on 20 of 24 obs.			

DEC 31, 1989 01h 04m 56.98± 0.83s
40.713 N ± 7.1km 21.549 E ± 9.2km
DEPTH = 10.0km (geophysicist)
GREECE (364)
MD 3.2 (ATH). ML 3.9 (SKO).

KZN	0.44	157	ePg	05	04.70	-1.3
OHR	0.69	305	iPg	05	10.80	0.1
			iSg	05	22.50	
LIT	0.94	130	ePd	05	15.40	0.4
VAY	0.98	52	ePn	05	14.60	-1.0
SKO	1.26	356	ePn	05	20.60	0.2
			eSn	05	38.00	
			iSg	05	39.60	
			LQ	05	43.10	
			LR	05	43.40	
PLG	1.48	103	ePb	05	24.50	0.7
NEO	1.90	137	ePn	05	30.70	0.9
	S.D. = 1.0		on 7 of 7 obs.			

? DEC 31, 1989 01h 59m 56.87± 0.96s
42.527 N ± 7.3km 12.804 E ±21.2km
DEPTH = 10.0km (geophysicist)
CENTRAL ITALY (381)

MNS	0.17	213	Pd	00	00.70	-0.1
			eSg	00	03.30	
ASS	0.55	349	P	00	08.20	0.1
			eSg	00	15.60	
CIO	0.71	20	e(Pg)	00	10.92	-0.1
			iSg	00	22.69	
RMP	0.72	186	P	00	08.20	-2.8X
			eSg	00	22.70	
RDP	0.77	185	P	00	12.00	0.0
			eSg	00	23.80	
	S.D. = 0.1		on 4 of 5 obs.			

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* DEC 31, 1989 02h 45m 49.62± 0.74s
3 413 S ±10 1km 146.327 E ±14.2km
DEPTH = 33.0km (normol)
4.8mb (5 obs.) 4.9Msz (3 obs)
BISMARCK SEA (203)

LAT	3.29	168	eP	46	40.70	0.7
MNDI	3.81	224	eP	46	54.00	6.4X
KDB	6.08	172	iPc	47	18.10	-1.4
HNR	14.79	114	eP	49	18 00	-0.3
CTA	16.57	180	iPc	49	45.00	3.7X
	1.2s		62.50nm			4.6mb
			iS	52	46.00	
MTN	17.71	237	eP	49	57.00	1 5
WB5	20.10	215	iPd	50	23.00	-0.5
WRA	20.17	215	Pd	50	23.90	-0.3
	1.4s		130.30nm			5.1mb
RMO	23.06	174	eP	50	54.00	0.7
ASPA	23.44	210	iPd	50	58.30	1.2
	1.7s		121.00nm			5.1mb
	Z 20s		4.30um			4.9Msz
			eS	55	21.30	
			LR	00	29.20	
BRS	24.63	166	iPd	51	11.20	2.7X
DZM	26.93	135	iPc	51	28.30	-1.8
WHN	45.52	320	eP	54	09.00	1.0
	Z 20s		0.63um			4.6Msz
	E 15s		0.83um			
BJI	51.33	330	eP	54	50.00	-2.9X
	1.5s		13.00nm			4.7mb
CHG	51.59	297	eP	54	57.00	1.7X
CHTO	51.59	297	eP	54	55.00	-0.3
	1.5s		16.89nm			4.8mb
TIY	51.60	326	eP	54	52.50	-2.7X
	N 11s		0.30um			
CD2	53.01	313	eP	55	05.40	-0.4
HHC	54.30	328	eP	55	13.40	-1.8
BTO	54.96	327	eP	55	19.00	-1.0
LZH	55.83	319	P	55	25.50	-1.0
	1.5s		0.04nm			2.2mb X
	Z 22s		1.30um			5.0Msz
			sP	55	40.00	
GTA	60.34	320	eP	55	57.00	-1.0
WMO	70.41	319	P	57	02.00	-0.7
	Z 12s		0.60um			5.1MszX
INK	89.51	21	eP	58	50.00	5.5
KIC	151.03	277	PKP	05	45.30	9.5X
	S.D. = 1.8		on 18 of 25 obs.			

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* DEC 31, 1989 02h 52m 05.11± 0.66s
3.353 S ± 7.0km 146.639 E ±12.0km
DEPTH = 33.0km (normol)
4.9mb (5 obs.) 4.9Msz (2 obs.)
BISMARCK SEA (203)

LAT	3.30	174	eP	52	55.00	-0.7
MNDI	4.07	227	eP	53	11.00	4 1X
KDB	6.10	175	eP	53	35.00	-0.4
CTA	16.64	181	iPc	56	02.80	5.3X
	1.2s		89.06nm			4.8mb
			iS	59	18.00	
MTN	18.01	238	ePc	56	14.50	-0.1
WB5	20.33	215	eP	56	40.00	-1.4
WRA	20.39	215	Pc	56	45.40	3.3X
	0.8s		57.60nm			5.0mb
ASPA	23.65	210	eP	57	15.40	0.8
	0.9s		50.00nm			5.0mb
	Z 20s		3.51um			4.8Msz
			eS	01	34.30	
			LR	06	45.60	
BRS	24.61	167	iPc	57	25.10	1.3
DZM	26.75	136	iPc	57	43.80	-0.2
WARB	29.72	218	iPc	58	11.60	0.9
	0.7s		17.00nm			4.9mb
COOL	36.45	219	eP	59	09.00	0.0
ANP	37.40	321	e(P)	59	18.00	0.9
TIA	48.05	328	eP	00	43.30	-0.1
LOE	48.87	297	eP	00	50.00	0.0
BJI	51.44	330	P	00	53.50	-15.7X
TIY	51.73	325	eP	01	10.00	-1.6
	Z 20s		1.50um			5.0Msz
CHG	51.84	297	eP	01	13.00	0.3
CD2	53.20	313	eP	01	22.90	0.2
GBA	70.67	286	P	03	24.00	3.9X
	0.7s		2.00nm			4.3mb
KIC	151.33	277	PKP	12	00.20	8.4X
	S.D. = 0.9		on 15 of 21 obs.			

DEC 31, 1989 05h 46m 12.80± 0.37s
38.792 N ± 4.3km 118.792 W ± 3.2km
DEPTH = 10.0km (geophysicist)
CALIFORNIA-NEVADA BORDER REGION (40)
ML 4.2 (BRK). Felt (III) at
Howthorne, Nevado.

KVN	0.60	64	iPc	46	25.00	0.0
SVP	1.33	144	iPc	46	37.50	0.0
TNP	1.42	119	iPc	46	38.60	-0.3
CMB	1.46	239	iPd	46	39.10	-0.2
			eS	46	57.90	
PPK	1.53	153	iPc	46	40.60	0.2
MGM	1.69	142	eP	46	42.50	-0.3
LCH	1.80	149	eP	46	43.90	-0.3
FRI	1.94	202	iPd	46	46.00	-0.1

31d 05h

		i	46 47.90		
		eS	47 12.50		
ORV	2.24	291 eP	46 49.60	-0.9	
ARN	2.60	237 eP	46 55.20	-0.4	
MIN	2.67	306 ePd	46 56.70	-0.1	
MHC	2.67	238 eP	46 56.80	0.0	
		eSg	47 36.80		
PANV	2 74	150 eP	46 57.40	-0.4	
YMT3	2.75	136 P	46 57.00	-0.8	
LLA	2.76	219 eP	46 58.00	0.1	
ZSP	2.85	254 eP	47 04.20	5.0X	
BKS	2.86	252 iPc	47 04.40	5.1X	
		iS	47 40.50		
		i	47 44.30		
BRK	2.88	252 e(P)	47 03.70	4.2X	
SAO	2.92	227 eP	46 59.80	-0.3	
PKEM	2.92	201 eP	47 01.00	0.9	
LTCM	2.94	300 e(P)	47 01.50	1.1	
PRI	3.04	210 e(P)	47 04.00	2.1	
		e	47 06.70		
GCC	3.09	236 eP	47 01.70	-0.7	
PRS	3.20	221 eP	47 03.60	-0.5	
PRN	3.26	114 P	47 03.00	-2.1	
WDC	3.40	303 eP	47 06.10	-0.8	
		e	47 13.30		
LBFM	3.49	318 eP	47 09.00	0.6	
EMN	4.31	130 P	47 22.00	2.1	
DUG	4.83	71 eP	47 28.00	0.5	
MSU	5.19	91 eP	47 33.30	0.7	
LRM	8.45	32 eP	48 48.00	29.7X	

S.D. = 0.9 on 27 of 31 obs.

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* DEC 31, 1989 05h 54m 33.62± 1.92s
38.068 S ±13.5km 176.197 E ±12.0km
DEPTH = 208.7 ± 15.3 km
NORTH ISLAND, NEW ZEALAND (159)

UTU	0 11	182 P	55 00.80	-0.2	
TAZ	0.30	124 Pc	55 00.80	-0.4	
KRP	0 54	285 P	55 02.00	0.1	
TUTZ	0.66	194 Pc	55 02.70	0.0	
HITZ	0.72	208 Pc	55 03.20	0.2	
HATZ	0.83	186 Pc	55 03.30	-0.2	
RATZ	0.87	203 P	55 03.90	0.1	
KETZ	1.12	202 P	55 05.80	0.3	
HBZ	1.73	75 P	55 10.60	0.2	
PGZ	2.55	179 P	55 19.30	0.4	
MNG	2.61	192 iPd	55 20.00	0.4	
		S	55 50.90		
KIW	2.96	199 P	55 23.70	0.0	
MTW	3.13	190 Pc	55 25.50	-0.2	
CAW	3.16	196 P	55 26.00	0.0	
WDW	3.33	196 Pd	55 27.70	-0.3	
BLW	3.34	189 Pc	55 28.00	-0.2	
MRW	3.36	200 P	55 28.30	-0.1	
		eS	56 07.50		
WEL	3.40	198 P	55 28.80	0.0	
MOW	3.43	192 P	55 28.90	-0.3	
TCW	3.47	205 P	55 29.60	-0.1	
CCW	3.98	202 P	55 36.40	0.4	

S.D. = 0.3 on 21 of 21 obs.

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* DEC 31, 1989 06h 03m 01.02± 2.74s
11.655 S ±12.6km 166 229 E ±20.1km
DEPTH = 71.2 ± 20.4 km
4.6mb (4 obs.)
SANTA CRUZ ISLANDS (184)

HNR	6.56	289 iPd	04 37.40	0.4	
		eS	05 50.00		
DZM	10.36	179 iPc	05 28.80	-0.5	
		iS	07 19.00		
BRS	20.12	217 iPc	07 33.20	1.5	
RMQ	22.10	226 iPc	07 53.00	1.2	
WB5	31.69	251 eP	09 19 00	-1.2	
WRA	31.73	251 Pc	09 19.60	-0.9	
	1.2s	15.00nm	4.7mb		
ASPA	32.95	244 iPc	09 29.90	-1.3	
	0.9s	10 00nm	4.6mb		
Z	23s	0 21um	3.8MszX		
		LR	20 52.40		
CN2	66.50	329 eP	13 44.00	-1.3	
TIY	70.33	317 eP	14 09.20	0.0	
CHG	72.90	294 eP	14 25.50	0.6	
SPA	78 42	180 iPc	14 54.50	-1.0	
	0.9s	7 73nm	4.6mb		
GTA	79 82	314 eP	15 04.10	0.6	
GBA	91.54	283 Pc	16 01.50	-0.1	
	0.9s	2.80nm	4.7mb		
BCAO	147.24	260 iPKPc	22 38.30	1.8	
	0.4s	30.00nm			
		id	22 52.50		

S.D. = 1.2 on 14 of 14 obs.

& DEC 31, 1989 06h 48m 50.60s
36.953 N 121.612 W
DEPTH = 6.0km
CENTRAL CALIFORNIA (39)
<BRK>. ML 3.0 (BRK).

SAO	0.23	144 iPd	48 55.60	0.3	
GCC	0.32	284 iPc	48 56.80	-0.2	
		eS	49 01.60		
MHC	0.39	357 iPd	48 58.60	0.1	
ARN	0.40	9 iPd	48 58.80	0.1	
PCC	0.82	312 ePd	49 05.70	-1.2	
BKS	1.05	332 iPc	49 09.70	-1.0	
		iS	49 23.40		
BRK	1.05	331 ePc	49 09.40	-1.4	
PRI	1.11	136 eP	49 11.40	-0.5	
ZSP	1.12	333 ePc	49 11.10	-0.8	
		i	49 12.10		
		eS	49 28.40		
CMB	1.46	42 iPc	49 16.00	-1.5	
PHAM	1.48	138 eP	49 16.30	-1.6	
PKEM	1.50	126 eP	49 17.70	-0.4	
FRI	1.53	88 eP	49 16.40	-2.0	
BCH	2.16	144 eP	49 25.70	-2.0	
KVN	3.48	52 eP	49 44.50	-2.0	

15 obs. ossocioted

DEC 31, 1989 08h 04m 33.75± 0.59s
36.103 N ± 6.0km 27.083 E ± 4.7km
DEPTH = 40.7 ± 9.6 km
3.9mb (9 obs.)
DODECANESE ISLANDS (369)
MD 4.1 (HLW). ML 4.0 (ATH).

KAP	0.56	172 iPgd	04 43.70	-1.6	
YER	1.41	43 iPn	04 56.00	-1.4	
NPS	1.46	235 ePg	05 01.00	2.9X	
APE	1.58	308 ePb	04 59.00	-0.7	
SMG	1.61	353 ePb	04 58.70	-1.5	
KSL	2.02	89 ePb	05 06.60	0.5	
ELL	2.37	73 iPn	05 12.50	1.4	
VAM	2.45	254 ePn	05 15.00	2.9X	
KHL	2.95	41 ePn	05 18.00	-1.3	
BCK	3.12	63 ePn	05 23.50	1.7	
PRK	3.20	349 ePn	05 24.00	1.2	
ATH	3.28	306 ePn	05 25.50	1.6	
VLI	3.40	282 ePn	05 26.00	0.4	
DST	3.70	19 ePn	05 33.00	3.0X	
EZN	3.76	351 ePn	05 31.00	0.2	
ALT	3.80	38 ePn	05 31.90	0.4	
ITM	4.28	286 ePn	05 41.30	3.1X	
NEO	4.43	317 ePn	05 39.50	-0.8	
RDO	5.18	347 ePn	05 50.50	-0.3	
CSS	5.22	101 eP	05 50 50	-0.9	
		eS	06 51.00		
BBTK	5.83	49 eP	06 01.00	0.8	
KOT	7.33	146 ePn	06 17.50	-3.5X	
		eSn	07 38.00		
DSI	8.25	121 eP	06 30.00	-3.8X	
		eS	08 01.00		
CZI	9.22	293 P	06 47.00	-0.2	
CSI	9.28	297 P	06 50.10	2.0	
KBA	15.01	321 eP	08 04.30	-0.5	
	0.7s	6.70nm	4.0mb		
		i	08 12.20		
		i	08 15.70		
KHC	16.35	327 Pc	08 25.50	3.7X	
LPG	17.99	308 eP	08 47.00	4.4X	
	0.7s	5.50nm	3.8mb		
CDF	19.07	316 eP	08 56.90	1.4	
	0.6s	2.50nm	3.6mb		
HAU	19.39	314 eP	08 58.20	-0.9	
	0.6s	3.60nm	3.8mb		
LBF	20.35	309 eP	09 08.30	-1.0	
	0.9s	4.90nm	3.8mb		
LOR	20.54	310 eP	09 10.50	-0.7	
	0.9s	3.90nm	3.8mb		
SSF	20.68	309 eP	09 12.10	-0.5	
	0.9s	11.40nm	4.2mb		
HFS	25.55	344 eP	09 59.50	-0.6	
	1.1s	13.20nm	4.4mb		
BCAO	32.49	196 iPd	11 03.40	0.7	
	0.7s	8.00nm	4.7mb		
KIC	41.54	232 P	12 19.70	0.7	

S.D. = 1.1 on 28 of 36 obs.

& DEC 31, 1989 08h 13m 09.60s
36.953 N 121.618 W
DEPTH = 10.0km
CENTRAL CALIFORNIA (39)
<BRK>. ML 3.0 (BRK).

SAO	0.23	143 eP	13 14.30	-0.3	
GCC	0.31	284 iPc	13 15.60	-0.5	
		eS	13 20.40		
MHC	0.39	357 iPd	13 17.50	-0.1	
ARN	0.40	10 iPd	13 17.60	-0.2	
LLA	0.64	122 iPc	13 21.70	-0.7	
PRS	0.65	162 iPd	13 21.90	-0.7	
PCC	0.82	312 eP	13 24.40	-1.0	
BKS	1.04	332 iPc	13 28.50	-0.8	
		iS	13 42.30		
BRK	1.05	331 eP	13 28.30	-1.1	
ZSP	1.11	333 iPc	13 29.90	-0.6	
		i	13 31.00		
		eS	13 47.20		
PRI	1.12	136 eP	13 30.50	-0.1	
CMB	1.46	42 ePc	13 35.00	-1.0	
PHAM	1.49	138 eP	13 35.60	-0.8	
PKEM	1.51	126 eP	13 36.50	-0.1	
FRI	1.53	88 ePc	13 35.50	-1.5	
BCH	2.16	144 eP	13 44.50	-1.7	
KVN	3.48	52 eP	14 04.20	-0.9	
TNP	3.68	71 eP	14 09.00	1.1	

18 obs. ossocioted

DEC 31, 1989 08h 17m 44.87± 3.60s
36.088 N ±34.0km 71.128 E ±19.6km
DEPTH = 155.6 ± 50.5 km
4.5mb (5 obs.)
AFGHANISTAN-USSR BORDER REGION (717)

QUE	6.85	212 eP	19 24.00	-0.1	
		eS	20 50.00		
NDI	9.00	143 iPd	19 53.00	0.4	
	0.6s	20.00nm	4.9mb X		
		eS	21 30.60		
MAIO	9.41	275 iPd	19 57.50	-0.6	
		eS	21 40.00		
HYB	19.73	159 iPd	22 10.50	5.9X	
	1.0s	25.00nm	4.6mb		
NUR	38.22	325 iP	24 51.50	0.8	
SUF	38.33	328 eP	24 52.00	0.4	
BRG	42.96	309 iP	25 32.90	3.2X	
	0.9s	12.00nm	4.5mb		
HFS	43.45	322 eP	25 34.40	0.8	
	0.5s	10.70nm	4.7mb		
NB2	44.77	323 P	25 44.40	0.2	
	0.7s	5.90nm	4.3mb		
MBC	67.74	3 eP	28 26.00	-0.9	
	0.9s	5.00nm	4.3mb		
INK	74.30	9 eP	29 05.00	-1.1	

S.D. = 0.9 on 9 of 11 obs.

% DEC 31, 1989 08h 24m 50.55± 0.95s
39.950 N ±12.9km 113.783 E ± 8.7km
DEPTH = 33.0km (normol)
NORTHEASTERN CHINA (658)
ML 3.6 (BJI).

BJI	1.84	86 ePn	25 21.00	0.7	
		Pg	25 22.00		
		Sn	25 45.00		
		Sg	25 47.00		
HHC	1.92	299 ePn	25 21.40	-0.2	
		iPg	25 25.60		
		Sn	25 48.50		
		Sg	25 52.80		
TIY	2.47	206 Pnc	25 30.40	1.0	
		iPg	25 33.30		
		Sn	26 01.40		
		Sg	26 05.80		
BTO	2.95	284 Pn	25 43.60	7.3X	
		Pg	25 47.40		
		Sg	26 22.50		
TIA	4.57	144 ePn	25 58.00	-1.2	
		Pg	26 12.50		

		Sg	27 08.00		
GTA	10.78	272 eP	27 25.60	-0.2	
S.D. = 1.2	on	5 of	6 obs.		

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* DEC 31, 1989 10h 15m 49.93± 1.03s
5.795 S ± 6.2km 130.122 E ±13.8km
DEPTH = 164.0 ± 11.2 km
4.8mb (8 obs.)
BANDA SEA (280)

AAI	2.84	317 ePd	16 36.90	0.5	
		eS	17 24.60		
MTN	7.08	172 iP	17 32.50	0.5	
WB5	14.60	164 eP	19 08.80	-1.1	
		eS	21 42.00		
WRA	14.65	164 P	19 09.00	-1.6	
	0.3s	2.40nm		4.0mb	
ASPA	18.14	169 iPd	19 53.60	1.1	
	0.7s	76.00nm		5.2mb	
		eS	23 07.70		
KKM	18.19	310 ePc	19 52.00	-1.2	
MBL	18.24	212 iPd	19 53.30	-0.3	
	0.3s	9.00nm		4.6mb	
NANU	21.83	219 eP	20 31.00	1.1	
	0.5s	12.00nm		4.6mb	
FORR	25.00	184 iPd	21 01.20	1.1	
COOL	26.34	198 eP	21 13.00	0.5	
MRWA	26.85	208 eP	21 17.00	-0.1	
BDT	38.33	307 eP	22 56.80	0.2	
	0.7s	39.10nm		5.2mb	
WHN	39.16	338 eP	23 04.70	1.4	
CHG	39.27	309 ePc	23 04.90	0.5	
	0.9s	31.51nm		5.0mb	
MAT	42.79	10 eP	23 33.00	0.1	
	1.0s	29.00nm		4.8mb	
BJI	47.39	345 eP	24 09.00	-0.3	
SNY	47.77	353 eP	24 12.50	0.3	
LZH	48.41	331 P	24 17.00	-0.5	
GTA	52.98	331 eP	24 52.00	0.1	
GBA	55.74	291 Pc	25 09.80	-2.3	
	0.6s	1.30nm		4.0mb	
S.D. = 1.1	on	20 of	20 obs.		

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* DEC 31, 1989 10h 28m 03.15± 1.76s
8.312 S ±25.4km 119.921 E ±13.5km
DEPTH = 33.0km (normal)
4.2mb (4 obs.)
FLORES ISLAND REGION (286)

TRT	7.24	274 ePd	29 49.50	0.1	
	1.6s	362.40nm		6.1mb X	
MTN	11.90	113 eP	31 04.00	10.4X	
		eS	33 19.00		
MBL	12.77	180 eP	31 13.00	7.7X	
NANU	14.78	196 eP	31 37.10	5.4X	
	0.5s	11.00nm		4.5mb X	
WB5	18.11	131 iPd	32 14.80	0.9	
		eS	35 35.80		
WRA	18.13	131 Pc	32 14.40	0.2	
	0.5s	3.40nm		3.7mb	
MEKA	18.25	184 eP	32 15.70	0.0	
	0.3s	7.00nm		4.4mb	
WARB	18.89	161 iPc	32 23.70	0.2	
	0.3s	4.00nm		4.1mb	
ASPA	20.31	140 eP	32 37.80	-1.4	
	0.3s	13.00nm		4.8mb	
		e	33 02.00		
		eS	36 13.30		
S.D. = 1.0	on	6 of	9 obs.		

% DEC 31, 1989 10h 30m 08.37± 1.22s
35.297 N ±16.5km 26.112 E ± 6.9km
DEPTH = 10.0km (geophysicist)
CRETE (370)
MD 3.7 (ATH).

NPS	0.41	265 ePb	30 16.70	-0.1	
KAP	0.90	73 ePn	30 25.70	0.0	
VAM	1.57	275 ePn	30 36.20	-0.1	
APE	1.83	345 ePn	30 40.00	-0.1	
VLI	2.94	300 ePn	30 56.20	0.2	
S.D. = 0.2	on	5 of	5 obs.		

? DEC 31, 1989 11h 54m 10.50±17.10s
43.690 N ±123.km 7.555 E ±18.5km
DEPTH = 10.0km (geophysicist)
NEAR SOUTH COAST OF FRANCE (379)
ML 1.4 (GEN).

SBF	0.19	333 Pg	54 14.70	-0.1	
		Sg	54 19.60		
IMI	0.33	48 P	54 17.30	0.0	
		S	54 23.50		
ROB	0.65	21 P	54 23.50	0.0	
		S	54 33.56		
PZZ	0.88	338 P	54 27.61	0.1	
		S	54 40.33		
S.D. = 0.2	on	4 of	4 obs.		

? DEC 31, 1989 11h 55m 18.13± 3.84s
41.706 N ±30.6km 12.735 E ±20.1km
DEPTH = 10.0km (geophysicist)
SOUTHERN ITALY (390)

RDP	0.05	345 Pc	55 20.30	-0.1	
		eSg	55 20.70		
RMP	0.11	347 Pc	55 21.20	0.2	
		eSg	55 22.40		
AZI	0.59	61 P	55 30.20	0.1	
		eSg	55 37.40		
MNS	0.68	357 P	55 31.50	-0.1	
		eSg	55 41.50		
SDI	0.81	90 P	55 33.80	-0.1	
		eSg	55 44.30		
S.D. = 0.2	on	5 of	5 obs.		

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* DEC 31, 1989 12h 44m 37.33± 1.32s
22 612 N ±10.9km 94.237 E ±15.8km
DEPTH = 52.6 ± 12.9 km
4.4mb (7 obs.)
BURMA (296)

CHG	5.80	130 eP	46 03.00	0.0	
BDT	6.97	139 eP	46 19.10	-0.2	
LSA	7.58	339 P	46 27.80	-0.5	
NDI	16.49	295 iPd	48 29.00	2.4X	
	0.6s	33.33nm		4.6mb	
GTA	17.41	15 eP	48 38.60	0.5	
KSH	22.88	321 eP	49 39.20	1.9	
WB5	57.61	134 eP	54 25.30	0.8	
WRA	57.64	134 Pc	54 24.60	-0.1	
	0.7s	0.90nm		4.0mb	
SUF	60.12	330 iP	54 41.10	-0.3	
	0.6s	4.70nm		4.8mb	
NUR	60.55	328 eP	55 01.00	16.7X	
HFS	65.99	327 eP	55 19.10	-1.0	
	0.4s	2.40nm		4.6mb	
NB2	67.13	328 P	55 26.40	-1.1	
	0.8s	2.40nm		4.3mb	
LPG	72 53	313 eP	56 01.20	0.2	
	0.8s	5.30nm		4.5mb	
LBF	73.99	315 eP	56 09.40	0.2	
SMF	74.18	314 eP	56 10.00	-0.2	
	0.4s	1.30nm		4.2mb	
SSF	74.28	315 eP	56 10.90	0.1	
AVF	74.46	315 eP	56 11.80	0.0	
INK	82.88	16 eP	56 57.00	-0.2	
S.D. = 0.8	on	16 of	18 obs.		

& DEC 31, 1989 12h 53m 51.40s
33.480 N 116.440 W
DEPTH = 8.0km
SOUTHERN CALIFORNIA (43)
<PAS-P>. ML 3.0 (PAS).

PLM	0.37	250 iPc	53 58.70	-0.4	
TPC	0.70	27 iPc	54 04.40	-1.1	
HAY	0.71	71 iPd	54 04.90	-0.7	
PEC	0.73	305 iPc	54 04.80	-1.1	
CPE	0.82	223 iPc	54 06.10	-1.3	
BAR	0.82	194 iPc	54 06.50	-1.0	
IKP	0.87	161 iPd	54 07.90	-0.6	
		eS	54 19.30		
GLA	1.42	107 eP	54 18.00	0.5	
TNP	4.64	352 eP	55 01.50	-2.0	
KVN	5.72	347 eP	55 20.00	1.1	
10 obs. associated					

? DEC 31, 1989 13h 20m 36.31± 1.15s
6.713 N ±17.0km 126.559 E ±34.2km
DEPTH = 33.0km (normal)
4.3mb (2 obs)
MINDANAO, PHILIPPINE ISLANDS (259)

QCP	9.54	326 eP	22 54.00	-0.5	
BAG	11.27	329 eP	23 20.00	1.6	
MTN	19.96	167 eP	25 09.00	0.3	
SSE	24.77	349 P	26 03.50	7.0X	
		S	30 17.00		
NST	27.38	291 eP	26 30.00	9.2X	
CHG	29.44	297 eP	26 36.80	-2.7X	
CHTO	29.44	297 eP	26 39.00	-0.5	
	1.0s	2.00nm		3.8mb	
TIY	33.42	339 eP	27 13.50	-0.8	
BJI	34.47	346 eP	27 23.00	-0.1	
CN2	36.95	359 eP	27 54.80	10.6X	
MDJ	37.85	4 Pc	28 01.20	9.5X	
GTA	40.48	328 eP	28 17.50	3.6X	
BRS	42.34	144 eP	28 35.00	5.9X	
		i	28 51.80		
MAIO	67.60	306 eP	31 40.00	7.7X	
MBC	89.10	13 eP	33 34.00	4.8X	
	0.9s	5.00nm		4.8mb	
		pP	33 45.00	35kmX	
S.D. = 1.1	on	6 of	15 obs.		

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* DEC 31, 1989 13h 20m 55.12± 1.69s
6.801 N ± 6.6km 126.681 E ±12.6km
DEPTH = 63.6 ± 15.0 km
4.8mb (8 obs.)
MINDANAO, PHILIPPINE ISLANDS (259)

DAV	1.14	285 ePc+	21 15.40	0.1	
	2.0s	*******nm			
TRT	20.10	224 ePd	25 27.80	1.5	
LOE	26.54	296 eP	26 28.00	-1.0	
NNT	27.16	284 eP	26 37.80	3.1X	
WB5	27.57	164 eP	26 40.00	1.7	
		e	27 05.70		
WRA	27.62	164 Pc	26 38.60	-0.2	
	0.6s	2.50nm		4.0mb	
CHTO	29.51	296 e(P)	26 54.50	-1.3	
	1.0s	5.00nm		4.1mb	
ASPA	31.09	167 eP	27 09.20	-0.5	
WARB	32.79	180 eP	27 24.00	-0.5	
MEKA	34.14	193 eP	27 36.50	0.3	
MRWA	37.26	196 eP	28 03.40	0.8	
BAL	38.40	194 eP	28 12.00	-0.2	
BWA	45.87	155 eP	29 11.80	-1.2	
		e	29 23.00		
CAN	46.88	155 e(P)	29 19.10	-1.9	
		e	29 30.00		
GBA	48.87	282 Pd	29 40.80	4.1X	
	1.2s	15.40nm		4.9mb	
TTA	78.20	27 eP	32 49.60	0.4	
BRW	79.30	19 eP	32 55.70	0.8	
IMA	79.62	24 eP	32 57.50	0.6	
	0.9s	9.60nm		4.7mb	
PMR	81.29	29 eP	33 05.30	-0.3	
	0.8s	17.10nm		5.0mb	
FBA	81.98	25 eP	33 08.80	-0.4	
INK	87.34	22 eP	33 37.00	1.0	
SOD	87.63	338 eP	33 37.00	-0.4	
SUF	88.81	333 iP	33 43.70	0.6	
	0.7s	9.20nm		5.1mb	
NUR	90.01	331 eP	33 50.00	1.2	
HFS	95.29	332 eP	34 12.90	-0.3	
	0.5s	1.10nm		4.6mb	
NB2	96.03	334 P	34 15.80	-0.8	
	1.0s	5.00nm		5.0mb	
KIC	129.80	284 PKP	40 05.20	5.2X	
TIC	130.00	285 PKP	40 05.60	5.2X	
LIC	130.11	284 PKP	40 05.80	5.2X	
UPA	149.53	59 ePKP	40 46.90	11.8X	
ZOBO	162.72	124 PKP	40 58.00	5.6X	
		i	41 49.50		
S.D. = 1.0	on	24 of	31 obs.		

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* DEC 31, 1989 13h 53m 29.60± 1.59s
36.664 N ±14.4km 20.540 E ± 7.3km
DEPTH = 33.0km (normal)
MEDITERRANEAN SEA (400)
ML 3.8 (ATH), 3.5 (THE).

VLS	1.51	1 ePb	53 56.00	1.4	
VLI	1.93	88 ePn	54 00.00	-0.7	
AGG	2.75	31 ePnd	54 13.70	1.4	
		eSn	54 43.90		
ATH	2.85	62 ePn	54 14.50	0.8	
IGT	2.87	357 ePn	54 14.20	0.2	
		eSn	54 56.40		

31d 13h

LIT	3.76	23	ePnd	54 26.90	0.3
			eSn	55 09.30	
KZN	3.76	14	ePn	54 28.50	1.7
PAIG	4.09	36	ePn	54 30.80	-0.5
LCI	4.19	332	P	54 32.10	-0.6
			eSn	55 16.30	
ATN	4.31	292	P	54 35.00	0.5
OHR	4.45	3	ePn	54 37.30	0.8
GRG	4.53	18	ePn	54 35.70	-1.9
			eSn	55 27.90	
CSI	4.57	314	P	54 44.10	5.9X
SOH	4.70	27	ePn	54 38.70	-1.3
KNT	4.85	22	ePn	54 41.00	-1.2
BRT	4.95	329	P	54 42.90	-0.7
			eSn	55 34.20	
SRS	5.04	27	ePn	54 44.00	-0.9
MGR	5.23	313	P	54 52.30	4.7X
SKO	5.35	7	ePn	54 54.00	4.8X
			i	55 09.00	
SGO	5.65	315	P	54 57.00	3.6X
HVAR	7.23	335	e(Pn)	55 14.50	-1.0

S.D. = 1.1 on 17 of 21 obs.

? DEC 31, 1989 14h 12m 58.16± 6.97s
43.722 N ±46.2km 7.511 E ±17.5km
DEPTH = 10.0km (geophysicist)
NEAR SOUTH COAST OF FRANCE (379)
ML 1.7 (GEN).

IMI	0.33	55	P	13 04.98	-0.1
			S	13 11.23	
ENR	0.51	353	P	13 08.67	0.2
			S	13 17.79	
STV	0.54	346	P	13 08.81	-0.3
			S	13 18.44	
ROB	0.63	24	P	13 10.92	0.1
			S	13 21.18	
FIN	0.70	46	P	13 12.05	0.0
PZZ	0.84	339	P	13 14.51	0.1
			S	13 27.33	

S.D. = 0.2 on 6 of 6 obs

• DEC 31, 1989 15h 00m 42.98± 0.47s
44.350 N ± 6 9km 9.810 E ± 4.1km
DEPTH = 18.2 ± 5.6 km
NORTHERN ITALY (545)

BOB	0.49	328	P	00 52.00	-0.8
			eSg	00 56.40	
BDI	0.64	117	Pc	00 55.40	0.1
			eSg	01 04.60	
MME	0.66	103	P	00 55.00	-0.8
			eSg	01 05.70	
PII	0.81	140	P	00 59.00	0.7
			eSg	01 09.00	
PCP	0.93	282	P	01 00.23	0.0
			S	01 11.15	
CKI	1.10	274	P	01 02.90	-0.3
			eSg	01 17.00	
FIN	1.16	264	P	01 03.93	-0.3
			S	01 18.38	
ROB	1.39	268	P	01 07.34	-0.2
			S	01 24.07	
IMI	1.45	253	P	01 08.30	-0.1
			S	15 25.15	
ENR	1.72	267	P	01 12.12	-0.2
			S	01 32.99	
SBF	1.78	255	Pn	01 13.50	0.3
			Sn	01 37.20	
STV	1.79	267	P	01 13.04	-0.3
			S	01 34.22	
ORX	1.82	315	P	01 15.15	1.3
			S	01 37.45	
PZZ	1.95	276	P	01 14.99	-0.7
			S	01 38.38	
RSP	1.99	295	P	01 16.74	0.5
			S	01 40.53	
LSD	2.19	301	P	01 19.92	0.7
RRL	2.23	286	P	01 22.27	2.4X

S.D. = 0.7 on 16 of 17 obs.

DEC 31, 1989 15h 43m 41.96± 1.42s
7.583 N ± 5 3km 126.945 E ± 7.9km
DEPTH = 43.3 ± 12.9 km
5.3mb (15 obs.) 4.2Msz (3 obs.)
MINDANAO, PHILIPPINE ISLANDS (259)

DAV	1.45	250	iPd-	44 07.00	1.0
QCP	9.07	321	eP	45 21.00	-32.3X
TSM	9.44	250	ePd	46 02.00	3.6X
BAG	10.76	325	eP	46 17.00	0.4
KKM	10.76	262	ePc	46 20.50	3.8X
AAI	11.26	174	eP	46 23.10	-0.3
GUMO	18.59	70	eP	48 03.00	5.0X
PJG	18.59	70	eP	48 03.20	5.2X
QIZ	20.14	306	Pd	48 15.70	0.4
	E 17s		1.70um		
			sS	52 12.00	
MTN	20.72	168	iPc	48 21.10	-0.2
TRT	20.84	224	ePc	48 22.00	-0.5
	0.8s		113.60nm	5.3mb	
SSE	24.00	348	P	49 01.50	7.8X
	Z 20s		0.50um	4.0Msz	
			eS	52 58.00	
			esS	53 07.00	
KGM	24.17	258	ePd	48 56.60	1.1
IPM	25.94	265	ePc	49 13.00	0.7
KDB	26.32	130	eP	49 14.50	-1.2
LOE	26.45	294	eP	49 18.00	1.0
NNT	27.24	283	eP	49 26.80	2.6X
WB5	28.25	165	eP	49 32.00	-1.3
WRA	28.31	165	Pc	49 32.50	-1.3
	0.5s		7.10nm	4.6mb	
BDT	28.89	292	eP	49 28.00	-11.1X
CHTO	29.41	295	eP	49 40.00	-3.8X
	1.1s		9.13nm	4.4mb	
XAN	31.14	330	P	49 58.00	-1.0
CD2	31.76	320	eP	50 03.80	-0.7
ASPA	31.79	168	iPc	50 03.00	-1.8
	0.4s		35.00nm	5.5mb	
	Z 17s		0.51um	4.3MszX	
			eS	55 10.70	
			LR	01 16.10	
NANU	31.98	200	eP	50 04.00	-2.3
	0.6s		47.00nm	5.5mb	
CTA	33.42	146	iPc	50 19.80	0.8
	0.9s		15.55nm	4.9mb	
WARB	33.56	180	iPc	50 20.70	0.6
	0.5s		37.00nm	5.5mb	
MEKA	34.96	193	iPc	50 31.90	-0.2
	0.3s		8.00nm	5.1mb	
LZH	35.36	327	eP	50 35.50	-0.2
	Z 20s		0.64um	4.4Msz	
MDJ	36.96	3	eP	50 47.50	-1.3
MRWA	38.08	196	iPc	50 58.60	0.2
	0.5s		48.00nm	5.6mb	
FORR	38.23	178	iPc	50 59.60	0.0
	0.3s		73.00nm	6.0mb	
COOL	38.65	188	eP	51 03.00	-0.2
BAL	39.22	194	iPc	51 08.30	0.4
RMQ	39.94	149	iPd	51 14.40	0.5
GTA	39.97	327	eP	51 13.60	-0.6
	Z 20s		0.40um	4.3Msz	
LSA	40.16	308	P	51 15.10	-1.2
STK	41.66	161	iPc	51 28.50	0.5
			i	51 33.10	
RKG	42.48	192	iPd	51 40.20	5.5X
BRS	42.83	145	iPd	51 36.80	-0.8
	1.0s		23.50nm	4.9mb	
			i	51 41.00	
			e	51 47.00	
ADE	43.75	166	iPc	51 46.10	1.0
	0.6s		68.00nm	5.6mb	
BWA	46.46	155	iPc	52 08.70	2.0
CAN	47.47	155	eP	52 15.30	0.6
			e	54 11.10	
DZM	48.65	128	iPc	52 24.90	0.8
GBA	48.96	281	P	52 25.00	-1.5
WMQ	49.75	323	P	52 33.00	0.8
	Z 12s		0.40um	4.6MszX	
QUE	60.34	300	eP	53 42.50	-6.9X
MAIO	67.39	306	eP	54 35.00	-0.5
DRV	74.66	175	eP	55 18.60	0.3
INK	86.52	22	eP	56 22.00	0.7
MBC	88.17	13	eP	56 29.50	0.3
	1.0s		27.00nm	5.5mb	
			pP	56 39.00	30kmX
SLL	94.76	333	eP	56 56.40	-3.6X
	0.7s		4.10nm	5.0mb	
NB2	95.45	334	P	56 59.00	-4.3X
	0.9s		2.60nm	4.7mb	
ALQ	114.26	46	ePKP	02 20.20	0.8
	1.0s		2.50nm		
UPA	148.90	59	ePKP	03 27.90	4.3X
PCH	149.47	150	ePKPd	03 29.20	5.1X
PEL	149.77	150	iPKPc	03 29.70	5.2X
	0.6s		20.00nm		
CNCB	162.78	124	ePKP	03 43.00	1.2
ZOBO	162.93	122	PKP	03 43.00	1.0
	1.5s		11.29nm		

S.D. = 1.0 on 43 of 59 obs.

DEC 31, 1989 15h 49m 28.25± 0.38s
38.606 N ± 4.2km 21.455 E ± 3.4km
DEPTH = 23.5 ± 4.1 km
3.8mb (9 obs.)
GREECE (364)
ML 3.8 (THE), 3.6 (ATH).

AGG	0.80	58	ePgd	49 42.20	-1.2
			eSn	49 51.60	
VLS	0.80	238	ePg	49 42.00	-1.5
IGT	1.27	317	ePbc	49 52.30	1.7
			eSb	50 15.40	
ITM	1.47	165	ePg	49 53.70	0.2
NEO	1.55	63	ePb	49 54.00	-0.6
LSK	1.68	337	iPnc	49 59.40	2.9X
LIT	1.69	28	ePbd	49 57.30	0.6
			eSb	50 21.50	
KZN	1.72	8	ePn	49 59.50	2.4X
ATH	1.89	109	ePb	49 59.50	0.0
PAIG	2.17	52	ePn	50 02.50	-1.1
			eSn	50 30.90	
VLI	2.22	148	ePn	50 04.00	-0.3
THE	2.34	29	ePn	50 06.70	0.8
PLG	2.34	40	ePn	50 05.00	-1.1
BERA	2.39	331	ePn	50 08.50	1.8
GRG	2.46	17	ePnc	50 08.60	0.9
OHR	2.55	349	iPn	50 11.00	1.9
OUR	2.61	48	ePn	50 09.20	-0.6
SOH	2.65	33	ePnc	50 10.50	0.0
			eSn	50 45.50	
KNT	2.78	23	ePnc	50 13.10	0.8
			eSn	50 48.40	
VAY	2.84	17	iPn	50 14.70	1.6
TIR	3.00	336	ePn	50 18.00	2.7X
SRS	3.00	33	ePn	50 15.20	-0.1
			eSn	50 48.50	
LCI	3.21	304	P	50 17.10	-1.3
LACI	3.31	337	ePb	50 21.30	1.6
SKO	3.36	360	ePn	50 22.00	1.5
	1.0s		176.00nm		
	E 10s		2.45um		
			iPb	50 25.70	
			i	50 34.60	
			iSn	50 57.50	
			iSb	51 04.50	
			eSg	51 10.20	
			LQ	51 20.20	
MMB	3.45	30	eP	50 21.00	-0.8
KKB	3.49	20	iP	50 23.00	0.7
APE	3.57	114	ePn	50 24.20	0.6
ULC	3.75	334	ePn	50 26.20	0.1
			eSn	51 06.00	
PRK	3.81	79	ePn	50 28.20	1.4
VAM	3.88	145	ePn	50 28.70	0.9
ROI	3.92	286	P	50 29.40	0.9
			eSn	51 13.00	
RZN	3.96	38	iP	50 28.00	-1.2
BRT	3.99	306	P	50 29.60	0.3
RDO	4.04	50	ePn	50 30.00	-0.1
TDS	4.12	286	P	50 33.40	2.2
			eSn	51 17.40	
PVY	4.14	345	ePn	50 34.20	2.5X
			eSn	51 20.00	
TTG	4.17	337	ePn	50 33.10	1.2
			eSn	51 17.00	
CSI	4.18	288	P	50 32.70	0.5
			eSn	51 15.50	
BDV	4.18	332	ePn	50 31.80	-0.4
			eSn	51 14.00	
CZI	4.20	280	P	50 34.20	1.9
BAI	4.33	307	P	50 32.00	-2.2
HCY	4.45	331	ePn	50 34.50	-1.4
NKY	4.60	337	ePn	50 38.00	-0.2
			eSn	51 30.00	
ATN	4.73	266	P	50 40.50	0.6
			eSn	51 31.50	
BRY	4.83	334	ePn	50 40.00	-1.4
			eSn	51 31.00	
SGO	5.13	294	P	50 46.70	1.1

MNO	5.36	265	P	50	48.80	-0.3
MEU	5.38	256	P	50	49.90	0.7
HVAR	5.94	322	iPnd	50	54.30	-2.6X
			iSn	52	00.40	
DUI	6.17	302	P	51	00.30	0.0
SDI	6.62	300	P	51	07.40	0.7
AZI	7.00	301	P	51	11.00	-0.9
BZS	7.01	1	eP	51	19.50	7.6X
ALP	7.29	307	iPn	51	14.46	-1.7
			eSn	52	35.83	
RDP	7.39	298	P	51	17.00	-0.5
RMP	7.42	298	P	51	17.00	-0.9
MLR	7.65	24	ePc	51	23.00	1.9
MNS	7.68	302	P	51	22.10	0.7
CIO	7.78	309	ePn	51	20.23	-2.8X
			eSn	52	47.35	
ASS	8.02	307	P	51	26.00	-0.2
ARV	8.08	310	P	51	24.30	-2.7X
VRI	8.24	27	ePd	51	30.50	1.2
ZAG	8.27	332	eP	51	35.50	5.9X
VBY	8.29	328	e(Pn)	51	28.40	-1.5
			iSn	52	59.60	
PTJ	8.35	333	eP	51	17.70	-13.1X
CRE	8.75	308	P	51	36.50	0.1
CEY	8.83	326	e(Pn)	51	34.50	-2.9X
			eSn	53	11.00	
PGD	9.02	309	P	51	38.50	-1.7
LJU	9.02	328	e(Pn)	51	37.20	-2.9X
			e(Sn)	53	11.00	
TRI	9.11	324	eP	51	37.70	-3.5X
			i	53	15.60	
			i	53	37.10	
VOY	9.29	325	eP	51	40.70	-3.1X
			eS	53	22.30	
FVI	10.22	324	P	51	54.50	-2.0
KBA	10.35	328	ePn	51	54.50	-3.9X
			i	52	09.30	
			i	53	52.50	
BOB	10.88	308	P	52	04.50	-1.2
KHC	11.95	334	P	52	26.90	6.8X
LPG	12.91	307	eP	52	33.60	0.4
	0.8s		4.00nm			4.6mb X
SMF	15.23	307	eP	53	07.80	4.4X
	0.8s		4.00nm			3.8mb
LBF	15.30	309	eP	53	08.30	4.0X
	0.8s		4.00nm			3.7mb
LOR	15.50	310	eP	53	07.80	0.9
	0.8s		4.00nm			3.7mb
AVF	15.60	307	eP	53	12.70	4.6X
	0.7s		1.50nm			3.3mb
SSF	15.62	309	eP	53	12.10	3.7X
	0.8s		5.30nm			3.8mb
NUR	22.02	4	eP	54	22.00	-0.3
HFS	22.10	350	eP	54	21.50	-1.7
	0.4s		1.50nm			3.8mb
NB2	23.35	347	P	54	34.40	-1.1
	0.8s		2.80nm			3.8mb
SUF	24.31	5	eP	54	43.00	-1.7
	0.3s		1.70nm			4.1mb
BCAO	34.12	185	ePd	56	17.40	4.0X
	0.4s		3.00nm			4.6mb

S.D. = 1.2 on 66 of 87 obs.

DEC 31, 1989 15h 55m 24.80± 0.31s
3.313 S ± 4.1km 146.380 E ± 7.5km
DEPTH = 20 0km (6 depth phases)
5.1mb (11 obs) 4.9Msz (11 obs.)
BISMARCK SEA (203)
CENTROID, MOMENT TENSOR (HRV)
Data Used: GDSN
L.P.B.: 12S, 24C
Centroid Location:
Origin Time 15:55:28.1 0.5
Lat 3.29S 0.06 Lon 146.52E 0.07
Dep 15.0 FIX Half-durotion 1.9
Moment Tensor; Scale 10**17 Nm
Mrr= 0.02 0.06 Mtt= 0.18 0.06
Mff=-0.20 0.09 Mrt=-0.10 0.22
Mrf=-0.45 0.23 Mtf= 1.18 0.06
Principal Axes:

	Val=	Plg=	Azm=
T	1.30	17	138
N	-0.03	69	357
P	-1.26	13	232

Best Double Couple:Mo=1.3*10**17
NP1:Strike=275 Dip=69 Slip= 3
NP2: 184 87 159

LAT	3.37	169	eP	56	17.20	-0.3
MNDI	3.91	224	eP	56	31.00	5.6X
RAB	5.84	99	eP	56	49.00	-3.5X
KDB	6.17	173	iPc	56	55.60	-1.5
HNR	14.78	115	eP	58	49.00	-5.7X
			eS	01	36.00	
CTA	16.67	180	iPc	59	21.30	2.3
	1.2s		371.88nm			5.4mb
			iS	02	22.00	
GUA	16.81	355	eP	59	20.00	-0.7
GUMO	16.86	355	eP	59	20.00	-1.4
	1.5s		369.37nm			5.3mb
PJG	16.86	355	eP	59	20.70	-0.7
MTN	17.81	237	eP	59	33.00	-0.3
AAI	18.16	268	eP	59	45.50	7.9X
WB5	20.21	215	iPd	00	00.50	-1.0
WRA	20.28	214	Pd	00	01.30	-0.9
	1.1s		118.00nm			5.2mb
RMQ	23.16	175	ePc	00	30.20	-0.8
ASPA	23.56	210	iPd	00	36.10	1.1
	1.3s		93.00nm			5.2mb
Z	20s		4.84um			4.9Msz
			e	00	42.00	21km
			iS	04	52.50	
			LR	10	06.50	
BRS	24.71	166	iPc	00	44.60	-1.5
	1.0s		8.50nm			4.3mb
			i	00	48.50	14km
DZM	26.96	135	iPc	01	03.00	-4.3X
WARB	29.59	218	iPc	01	31.40	0.5
	0.7s		26.00nm			5.1mb
BWA	31.01	177	eP	01	43.10	-0.3
			e	01	46.70	13km
KKM	31.52	287	eP	01	52.40	4.2X
CAN	31.94	176	eP	01	50.50	-1.1
			e	01	54.70	15km
ADE	32.29	192	e(P)	01	55.10	0.5
NANU	35.49	235	eP	02	22.30	-0.1
COOL	36.32	218	eP	02	29.00	-0.3
MRWA	38.67	225	eP	02	49.10	0.0
SSE	41.80	327	eP	03	12.50	-2.3
Z	20s		2.00um			5.0Msz
N	16s		0.90um			
			eS	09	37.00	
			sS	09	48.00	
			ScS	13	04.00	
QIZ	42.25	303	eP	03	18.00	-0.7
E	14s		0.90um			
NJ2	43.82	325	Pc	03	31.50	0.2
Z	20s		1.20um			4.8Msz
WHN	45.48	320	Pd	03	46.70	2.1
Z	20s		1.25um			4.8Msz
N	14s		0.77um			
E	16s		0.95um			
IPM	45.99	280	ePd	03	49.50	0.5
TIA	47.88	328	eP	04	02.20	-1.4
Z	22s		1.50um			4.9Msz
LOE	48.62	297	eP	04	10.50	0.9
NNT	48.95	290	eP	04	12.20	0.1
SNY	49.48	338	eP	04	16.00	0.2
Z	22s		1.90um			5.0Msz
N	24s		0.90um			
E	22s		1.10um			
			pP	04	25.00	30km
			S	11	16.00	
MDJ	50.03	344	eP	04	20.50	0.6
CN2	50.54	340	eP	04	26.00	2.2
KMI	50.90	306	Pc	04	28.00	0.8
Z	20s		1.20um			4.9Msz
			pP	04	36.50	28km
BDT	51.01	295	eP	04	29.00	1.2
XAN	51.24	320	Pc	04	28.50	-0.9
BJI	51.27	330	eP	04	28.00	-1.4
	1.5s		26.00nm			4.9mb
Z	20s		1.20um			4.9Msz
			eS	11	50.00	
TIY	51.55	326	eP	04	30.00	-1.7
			ScS	14	16.00	
CHG	51.59	297	iPc	04	33.50	1.2
	1.1s		21.52nm			5.0mb
CD2	52.98	313	eP	04	42.30	-0.3
Z	22s		0.90um			4.8Msz
			eS	12	10.20	
HHC	54.24	328	eP	04	50.50	-1.2
			e	04	51.00	2kmX
BTO	54.90	327	P	04	56.00	-0.6
N	17s		1.10um			
E	17s		0.80um			
			sP	05	07.00	
LZH	55.79	319	Pc	05	02.50	-0.7
	1.4s		0.07nm			2.5mb X
Z	25s		1.60um			5.0MszX
GTA	60.30	320	iPc	05	34.60	-0.1
Z	24s		0.64um			4.7MszX
LSA	62.16	306	P	05	48.40	0.5
KOD	69.91	282	eP	06	38.50	1.0
HYB	69.96	290	eP	06	39.00	1.6
WMQ	70.37	319	P	06	39.50	0.0
Z	20s		0.70um			4.9Msz
GBA	70.41	286	P	06	40.00	-0.1
NDI	73.46	301	eP	06	57.00	-1.2
KSH	77.12	312	eP	07	21.00	2.0
TTA	78.83	23	eP	07	27.00	-0.9
PMR	81.07	26	eP	07	39.90	0.2
	1.3s		37.70nm			5.3mb
IMA	81.28	21	eP	07	40.30	-0.7
	1.2s		16.20nm			4.9mb
QUE	82.54	301	eP	07	44.50	-3.8X
FBA	82.97	23	eP	07	46.90	-2.6
BRW	83.01	16	eP	07	50.50	0.8
INK	89.40	21	eP	08	22.00	0.9
MAIO	89.43	306	eP	08	22.00	0.0
WDC	92.95	50	eP	08	39.90	1.8
MHC	93.56	53	eP	08	43.70	2.6X
MIN	93.66	50	e(P)	08	41.70	0.1
ORV	93.72	51	eP	08	42.80	1.1
MBC	94.21	14	eP	08	44.00	0.8
	1.0s		4.00nm			4.8mb
CMB	94.57	52	eP	08	47.80	2.1
FRI	95.10	53	eP	08	49.30	1.3
BRG	118.11	328	e(PKP)	14	14.40	2.4X
KHC	119.27	326	PKP	14	14.90	0.5
VAI	123.80	325	PKP	14	21.00	-2.1
BCAO	127.96	273	ePKPc	14	36.00	3.9X
	0.5s		5.00nm			
CNCB	140.61	122	ePKP	14	50.00	-6 4X
LPB	140.64	121	ePKP	14	46.00	-10.3X
ZOBO	140.73	121	ePKP	14	48.00	-8.7X
	1.6s		28.20nm			
			LR	02	08.00	
KUK	146.75	276	ePKP	15	10.00	3.7X
KIC	151.07	277	PKP	15	17.84	4.8X
TIC	151.32	278	PKP	15	18.24	4.8X
LIC	151.36	277	PKP	15	18.30	4.8X
Z	20s		0.65um			5.4Msz

S.D. = 1.2 on 63 of 80 obs.

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* DEC 31, 1989 16h 33m 33.41± 0.53s
36.555 S ±13.6km 78.974 E ±10.7km
DEPTH = 10.0km (geophysicist)
4.9mb (5 obs.) 5.2Msz (5 obs.)
MID-INDIAN RISE (429)

SEK	43.68	266	e(P)	41	28.50	-11.8X
	1.0s		15.00nm			
SLR	44.26	269	eP	41	40.00	-5.1X
	0.7s		6.85nm			4.6mb
Z	20s		4.26um			5.4Msz
PRY	44.39	267	eP	41	41.50	-4.6X
HVD	44.47	261	iPc	41	48.20	1.5
BLF	44.51	264	eP	41	44.50	-2.5
BFS	44.95	267	eP	41	51.50	0.9
KSR	45.32	268	eP	41	45.50	-8.1X
	1.0s		15.00nm			4.9mb
BUL	46.71	276	iPc	42	18.20	13 6X
ASPA	48.63	91	eP	42	20.70	1.2
	1.5s		21.00nm			5.0mb
Z	20s		2.66um			5.2Msz
			LR	59	57.60	
GBA	49.91	358	Pd	42	39.30	10.2X
	1.1s		16.10nm			
WRA	50.83	87	Pd	42	36.40	0.0
	1.6s		21.00nm			4.8mb
WB5	50.89	87	eP	42	36.20	-0.6
SPA	53.63	180	eP	42	57.30	0.3
	1.9s		179.17nm			5.7mb
Z	20s		2.30um			5.2Msz
HYB	53.68	360	eP	42	57.00	-0.5
KMI	65.31	24	eP	44	17.50	-0.5
LSA	66.89	12	P	44	28.20	-0.1
CD2	71.02	22	eP	44	53.00	-0.3
MAIO	74.71	344	eP	45	16.00	1.0
XAN	75.58	25	Pd	45	20.00	0.0
GTA	77.99	16	eP	45	33.20	-0.2

31d 16h

TIY 80.12 26 eP 45 44.00 -1.0
Z 20s 0.50um 4.9Msz
TAB 80.15 334 eP 45 47.00 1.8
WMQ 80.39 6 eP 45 39.00 -7.2X
Z 20s 0.80um 5.1Msz
TIA 80.60 30 eP 45 48.00 0.6
BTO 81.90 23 eP 45 56.00 1.7
HHC 82.63 24 eP 45 57.50 -0.6
KIC 88.72 279 P 46 33.20 4.5X
INK 143.42 20 ePKP 53 07.00 -1.7
UPA 146.32 221 e(PKP) 53 23.00 7.8X
FRB 146.43 334 ePKP 53 13.00 -0.9
S.D. = 1.2 on 21 of 30 obs.

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* DEC 31, 1989 16h 38m 17.07± 0.92s
34.047 N ±12.7km 32.030 E ±14.7km
DEPTH = 10.0km (geophysicist)
4.6mb (1 obs.)
CYPRUS (372)

KDZ 9.21 327 eP 40 33.00 0.1
RZN 9.57 325 iPg 40 38.00 0.0
SRS 9.72 319 eP 40 40.90 0.9
MMB 9.99 321 ePg 40 40.00 -3.6X
KNT 10.14 317 eP 40 50.80 5.1X
eS 41 07.80
VAY 10.43 317 ePn 40 55.00 5.3X
KKB 10.52 320 iPg 40 50.00 -1.0
VTS 10.98 324 iP 41 00.00 2.6X
QUE 29.74 88 eP 44 26.00 0.0
BCAO 32.03 206 iPc 44 46.00 0.0
0.8s 7.00nm 4.6mb
ic 44 50.00
S.D. = 0.8 on 6 of 10 obs.

% DEC 31, 1989 17h 31m 52.64± 1.44s
43.996 N ±12.7km 7.589 E ± 9.5km
DEPTH = 10.0km (geophysicist)
NEAR SOUTH COAST OF FRANCE (379)
ML 1 6 (GEN).

IMI 0.23 111 P 31 57.70 0.0
S 32 01.29
ENR 0.26 332 P 31 58.32 0.1
S 32 02.01
STV 0.31 323 P 31 59.34 0.2
S 32 03.55
ROB 0.36 34 P 32 00.08 0.0
S 32 04.45
PZZ 0.62 326 P 32 04.88 -0.3
S 32 13.17
S D. = 0.3 on 5 of 5 obs.

DEC 31, 1989 18h 31m 20.83± 0.33s
7.628 N ± 8.4km 37.086 W ± 6.8km
DEPTH = 10.0km (geophysicist)
5.1mb (33 obs.) 4.6Msz (2 obs.)
CENTRAL MID-ATLANTIC RIDGE (406)
CENTROID, MOMENT TENSOR (HRV)
Dota Used: GDSN
L.P.B.: 13S, 21C
Centroid Locotion:
Origin Time 18:31:32.8 0.7
Lot 7.88N 0.05 Lon 36.49W 0.08
Dep 15.0 FIX Half-duration 1.5
Moment Tensor; Scale 10**16 Nm
Mrr= 0.33 0.41 Mtt= 0.77 0.40
Mff=-1.10 0.65 Mrt= 0.00 0.00
Mrf= 0.00 0.00 Mtf=-5.84 0.38
Principol Axes:
T Vol= 5.75 Plg= 0 Azm=220
N 0.33 90 180
P -6.08 0 130
Best Double Couple:Mo=5.9*10**16
NP1.Strike=265 Dip=90 Slip=-180
NP2: 355 90 0

LIC 31.85 90 P 37 46.20 -2.3
Z 20s 0.30um 4.0Msz
TIO 36.25 46 iP 38 26.00 -0.4
AVE 37.50 43 eP 38 36.50 -0.1
ZOBO 38.83 232 iPc 38 49.10 0.4
1.2s 51.35nm 5.1mb
S 45 00.00
LR 50 04.00
LPB 38.96 232 P 38 50.50 0.9
1 2s 112.50nm 5 4mb

Z 24s 2.33um 4.9MszX
LR 49 32.00
CNCB 39.03 231 P 38 50.00 -0.3
IFR 39.19 44 iPc 38 52.00 0.9
ARE 41.62 235 eP 39 10.00 -1.4
ATEJ 41.87 41 iPd 39 14.50 1.4
ALOJ 41.93 41 iPd 39 15.40 1.9
ACHM 42.11 41 eP 39 16.50 1.6
APHE 42.11 41 eP 39 15.50 0.5
ASMO 42.31 41 eP 39 17.50 0.9
TOL 43.64 37 eP 39 28.00 0.7
GUD 44.06 37 eP 39 32.00 1.2
EPF 48.17 37 eP 40 04.00 0.6
1.6s 68.40nm 5.5mb
LFF 49.54 35 eP 40 13.90 0.1
1.3s 28.80nm 5.1mb
LPO 49.64 35 eP 40 14.50 -0.1
1.3s 24.50nm 5.0mb
RJF 50 20 35 eP 40 18.20 -0.7
CAF 50.29 36 eP 40 19.30 -0.3
1.6s 62.10nm 5.3mb
LPF 50.53 31 eP 40 21.10 -0.2
1.0s 28.00nm 5.2mb
GRR 50.85 31 eP 40 23.40 -0.3
1.2s 35.70nm 5.2mb
TCF 51.17 34 eP 40 25.80 -0.5
1.4s 30.40nm 5.0mb
FLN 51.29 30 eP 40 26.40 -0.6
MAF 51.33 35 eP 40 26.80 -0.7
1.2s 8.90nm 4.6mb
LDF 51.36 31 eP 40 26.70 -0.9
PEL 51.61 216 iPd 40 33.50 3.7X
0.5s 14.08nm 5.1mb
BGF 51.69 34 eP 40 29.70 -0.4
1.4s 39.20nm 5.1mb
PCH 51 85 216 eP 40 32.00 0.3
AVF 52.11 34 eP 40 32.90 -0.4
1.4s 23.50nm 4.9mb
SMF 52.30 35 eP 40 34.50 -0.3
1.4s 17.40nm 4.8mb
SSF 52.35 34 eP 40 34.80 -0.3
1.4s 17.40nm 4.8mb
LBF 52.57 34 eP 40 36.20 -0.6
1.4s 26.10nm 5.0mb
LOR 52.67 34 eP 40 36.90 -0.6
0.9s 9.80nm 4.7mb
BNI 53.10 38 P 40 42.00 1.1
DOI 53.17 39 P 40 41.50 0.1
LPG 53.37 37 eP 40 43.10 0.0
1.3s 15.80nm 4.8mb
HAU 54.47 35 eP 40 49.90 -0.9
1.2s 32.10nm 5.2mb
BSF 54.63 35 eP 40 51.30 -0.8
1.2s 38.00nm 5.3mb
DOU 54.71 32 Pc 40 53.00 0.5
VAI 54.78 38 P 40 51.50 -1.5
CDF 55.21 35 eP 40 55.20 -1.1
1.2s 17.80nm 5.0mb
WLF 55.29 33 Pc 40 55.00 -1.7
BCAO 55.38 90 iPd 40 57.20 -0.8
0.7s 16.00nm 5.2mb
id 41 09.50
SDI 56.25 44 P 41 03.50 -0.4
DUI 56.68 45 P 41 08.00 1.0
WTS 56.96 31 eP 41 08.50 -0.1
1.0s 18.00nm 5.1mb
VOY 58.04 40 eP 41 16.00 -0.5
KBA 58.14 38 ePc 41 16.00 -1.3
1.3s 15.50nm 4 9mb
CEY 58.25 40 e(P) 41 18.00 0.1
LJU 58 45 40 e(P) 41 19.50 0.3
KHC 59.19 36 iPc 41 24.10 -0.3
1.2s 12.50nm 4.9mb
e 41 31.10
PTJ 59 30 40 eP 41 24.00 -1.3
CLL 59 88 34 eP 41 30.00 1.0
BRG 60.20 35 eP 41 31.00 -0.3
1.6s 25.00nm 5.1mb
TUL 60.33 307 eP 41 31.20 -1.2
1.0s 11.70nm 5.0mb
Z 22s 1.90um 5.2Msz
LR 59 27.00
SOP 60.38 39 eP 41 32.30 -0.2
FRB 60.39 345 eP 41 31.00 -1.3
VKA 60 46 38 ePc 41 33.00 -0 1
1.2s 48.50nm 5.5mb
ZST 60.92 38 iP 41 35.20 -1.0

OHR 61.02 47 eP 41 34.00 -3.1X
KSP 61.52 35 eP 41 40.00 -0.3
SRO 61.52 39 iP 41 40.70 0.4
SKO 61.72 46 eP 41 38.20 -3.6X
i 41 42.50
BUD 61.85 40 eP 41 42.00 -0.5
LIT 61.99 49 iPc 41 43.60 -0.1
VAY 62.36 47 eP 41 47.00 0.9
KNT 62.56 47 ePc 41 46.40 -1.0
KKB 62.87 47 iP 41 50.00 0.5
BZS 62.91 42 eP 41 51.50 1.9
VTS 63.15 46 iP 41 53.00 1.5
KRA 63.35 37 ePc 41 53.00 0.6
1.1s 57.00nm 5.7mb
e 41 59.50
PGB 63.82 46 eP 41 56.00 0.2
RZN 64.01 47 iP 41 58.00 0.8
NB2 64.14 24 P 41 57.20 -0.4
1.1s 21.30nm 5.2mb
KDZ 64.51 47 eP 42 01.00 0.7
HFS 64.67 25 eP 41 59.50 -1.4
1.6s 84.00nm 5.7mb
EZN 64.80 50 iP 42 02.80 0.7
MLR 65.80 43 ePd 42 09.40 0.8
VRI 66.42 43 eP 42 11.50 -0.9
LWI 66.45 96 eP 42 12.90 -0.5
KHL 66.99 52 eP 42 15.70 -0.6
ELL 67.06 53 eP 42 18.30 1.4
FFC 69.43 326 eP 42 30.00 -1.0
1.2s 25.00nm 5.3mb
LRM 74.37 315 eP 43 01.60 0.6
PNT 79.40 319 eP 43 35 00 6.3X
CMB 80.08 307 eP 43 33.00 0 3
PRI 80.38 305 e(P) 43 23.70 -10.7X
LLA 80.58 306 e(P) 43 24.10 -11.3X
MBC 80.80 346 eP 43 37.00 1.3
1.2s 18.00nm 5.0mb
MIN 80.94 310 ePc 43 37.60 0.2
WDC 81.65 310 e(P) 43 41.20 0.4
INK 85.35 338 eP 44 01.00 1.9
MAIO 90.81 53 eP 44 29.00 2 9
S.D. = 0.9 on 88 of 94 obs.

? DEC 31, 1989 18h 50m 55.13± 1.05s
16.288 N ±10.6km 61.140 W ± 8.0km
DEPTH = 10.0km (geophysicist)
LEEWARD ISLANDS (92)
ML 2.3 (FDF).

DEG 0.08 72 eP 50 57.55 -0.1
S 51 02.40
SEG 0.37 288 eP 51 03.00 0.3
S 51 11.80
MGG 0.41 205 eP 51 03.75 0.3
S 51 13.00
PAG 0.58 244 eP 51 06.30 -0.6
S 51 18.00
S.D. = 0.8 on 4 of 4 obs.

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* DEC 31, 1989 18h 51m 23.01± 1.18s
10.397 N ±13.5km 62.613 W ± 7.6km
DEPTH = 10.0km (geophysicist)
NEAR COAST OF VENEZUELA (97)
MD 3.9 (TRN).

TCE 0.90 71 iP 51 38.36 -1.8
eS 51 52 23
TPP 1.15 94 eP 51 44.66 0.2
eS 52 09.32
TRN 1.22 78 eP 51 44.09 -1.5
eS 52 02.74
TBH 1.52 87 eP 51 51.62 1.3
CUM 1.53 273 iPd 51 50 00 -0.4
iS 52 11.60
PIG 1.90 66 eP 51 56.81 1.1
GRW 1.99 28 eP 51 56.78 -0.3
eS 52 24.21
BOT 2.01 68 eP 51 58.30 0.9
SVB 3.15 25 eP 52 13.85 0.2
SSV 3.23 25 eP 52 15.24 0.4
S.D. = 1.2 on 10 of 10 obs.

% DEC 31, 1989 20h 04m 41.08± 0.66s
37.924 N ± 8.0km 14.864 E ± 5.7km
DEPTH = 10.0km (geophysicist)
SICILY (398)

```
MNO      0.13 273 P      04 44.80   0.3
                 eSg    04 48.10
ATN      0.53  63 P      04 51.70  -0.1
                 eSg    04 57.90
MSI      0.61  63 P      04 53.30  -0.1
GIB      0.67 276 P      04 54.00  -0.4
                 eSg    05 05.00
MEU      0.82 176 P      04 57.10   0.0
                 eSn    05 09.10
CSI      2.16  31 P      05 17.80   0.2
     S.D. = 0.3  on   6 of   6 obs.
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&  DEC  31, 1989  21h 14m 44.30s
   36 915 N          121.688 W
   DEPTH =  12.0km
 CENTRAL CALIFORNIA                ( 39)
      <BRK>. ML 2.7 (BRK).

SAO      0.25 127 iPd    14 49.20  -0.5
GCC      0.27 295 iPc    14 49.60  -0.6
MHC      0.43   5 iPd    14 52.90  -0.3
                 iS     14 59.40
PRS      0.64 156 iPd    14 56.30  -0.6
LLA      0.67 116 iPc    14 56.90  -0.5
PCC      0.80 317 iPc    14 58.80  -0.9
                 eS     15 10.40
BRK      1.06 335 eP     15 02.90  -1.2
ZSP      1.12 336 eP     15 03.80  -1.3
                 eS     15 21.70
PRI      1.13 133 eP     15 04.80  -0.5
                 i      15 10.30
CMB      1.52  42 e(P)   15 11.10  -0.3
                 eS     15 28.60
FRI      1.59  87 eP     15 12.00  -0.2
       11 obs. associated
-------------------------------------
*  DEC  31, 1989  21h 29m 49.57± 0.77s
   44 691 N ±19.6km  147.708 E ±11.0km
   DEPTH =  70.0km  (geaphysicist)
   4.2mb (  7 obs.)
 KURIL ISLANDS                     (221)

CN2     15.97 275 eP     33 31.60   0.4
BJI     23.67 270 eP     34 56.00   0.7
TIA     24.65 261 eP     35 04.40  -0.5
TIY     27.28 268 Pc     35 32.70   3.5X
BTO     27.86 275 eP     35 36.00   1.6
LZH     34.15 271 P      36 28.50  -1.5
GTA     35.54 279 eP     36 43.60   1.9
CD2     36.91 263 eP     36 52.00  -1.2
FBA     40.10  37 eP     37 20.50   1.1
        0.8s      6.90nm          4.6mb
INK     45.39  31 eP     38 04.00   1.8
CHTO    47.93 254 iP     38 21.20  -1.6
        0.8s      1.46nm          4.0mb
                  i      38 38.00
FFC     64.71  37 iPc    40 22.10   0.1
        0.5s     10.00nm          5.0mb
NUR     65.38 333 eP     40 32.00   5.8X
LRM     65.43  49 eP     40 27.20   0.0
WRA     65.47 194 Pd     40 28.60   1.4
        0.6s      0.30nm          3.4mb
KVN     66.47  58 iP     40 33.00  -0.9
TNP     67.62  58 iP     40 40.50  -0.6
        0.9s      4.88nm          4.5mb
FRB     68.16  16 eP     40 42.00  -1.8
NB2     68.87 339 P      40 48.60   0.3
        0.7s      1.70nm          4.1mb
HFS     68.98 337 eP     40 47.60  -1.3
        0.4s      0.70nm          3.9mb
     S.D. = 1.3  on  18 of  20 obs.
-------------------------------------
   DEC  31, 1989  23h 13m 13.86± 1.11s
    3.335 N ± 7.9km   97.409 E ± 6.7km
   DEPTH =  79.1 ±  9.4 km
   4.8mb ( 14 obs.)
 NORTHERN SUMATERA                 (706)

BSI      3.01 316 ePd    13 58.50  -1.7
IPM      3.81  71 ePd    14 10.90  -0.5
       0.5s     27.00nm
                  e      14 39.80
                  e      15 32.00
SNG      4.98  40 ePn    14 26.80  -0.9
                 ePg    14 32.20
                 eSg    15 06.00
KGM      6.05 102 eP     14 43.50   0.9
                  e      16 16.40
NNT      9.48  14 eP     15 28.20  -1.6
                 Sg     25 00.30
NST     12.55  12 eP     16 13.20   2.3
                  e      19 45.00
BDT     13.91   6 eP     16 18.50 -10.3X
LOE     14.61  17 eP     16 40.00   2.1
CHG     15.46   5 iPc    16 50.40   1.7
        1.1s    158.23nm          5.1mb
OIZ     19.78  37 eP     17 40.80   0.4
KOD     20.94 290 eP     17 53.80   1.1
GBA     22.21 299 P      18 05.80   0.8
KMI     22.26  13 eP     18 08.00   2.3X
HYB     23.19 308 iPd    18 15.50   0.9
        1.0s     60.00nm          5.0mb
LSA     26.88 348 P      18 48.00  -1.8
CD2     28.07  12 eP     18 58.60  -1.4
XAN     32.38  18 P      19 36.50  -1.6
GTA     35.97   3 eP     20 08.20  -0.8
BJI     40.29  22 eP     20 46.00   1.2
KSH     40.88 334 eP     20 50.90   1.0
WB5     43.01 124 eP     21 07.40   0.0
WRA     43.02 124 Pd     21 07.40  -0.1
        0.3s      1.20nm          4.2mb
ASPA    44.54 129 eP     21 19.50  -0.3
        0.5s      6.00nm          4.7mb
VRI     74.21 317 iPd    24 43.00  -1.0
SUF     78.52 334 eP     25 08.00   0.3
        0.3s      3.30nm          4.7mb
NUR     78.66 331 eP     25 08.00  -0.5
BCAO    78.67 274 iPc    25 10.10   0.5
        0.6s     12.00nm          5.0mb
SOD     79.60 338 iP     25 13.80   0.2
ZST     81.06 318 eP     25 22.20   0.6
KSP     81.81 321 eP     25 25.80   0.3
UPP     81.99 330 iP     25 25.70  -0.5
BRG     83.30 321 eP     25 33.90   0.7
        0.8s     10.00nm          4.8mb
HFS     83.99 330 eP     25 35.70  -0.8
        0.6s      8.50nm          4.9mb
NB2     85.25 331 P      25 42.30  -0.6
        0.8s      2.10nm          4.2mb
CDF     87.62 318 eP     25 53.30  -1.5
BSF     87.97 318 eP     25 55.80  -0.7
LPG     88.11 315 eP     25 57.40   0.0
        0.8s      8.00nm          4.9mb
HAU     88.26 318 eP     25 57.30  -0.4
        0.7s      6.60nm          4.9mb
LBF     89.93 317 eP     26 05.60  -0.1
LOR     89.99 317 eP     26 05.90   0.0
SMF     90.05 317 eP     26 06.20   0.0
        0.7s      2.20nm          4.5mb
AVF     90.37 317 eP     26 07.60  -0.1
BGF     90.74 317 eP     26 10.00   0.6
        1.1s     12.20nm          5.1mb
MAF     90.97 316 eP     26 11.00   0 6
        0.9s      3.90nm          4.7mb
TCF     91.21 316 eP     26 12.00   0.4
LSF     91.68 316 eP     26 14.10   0.4
     S.D. = 1.0  on  44 of  46 obs.
```
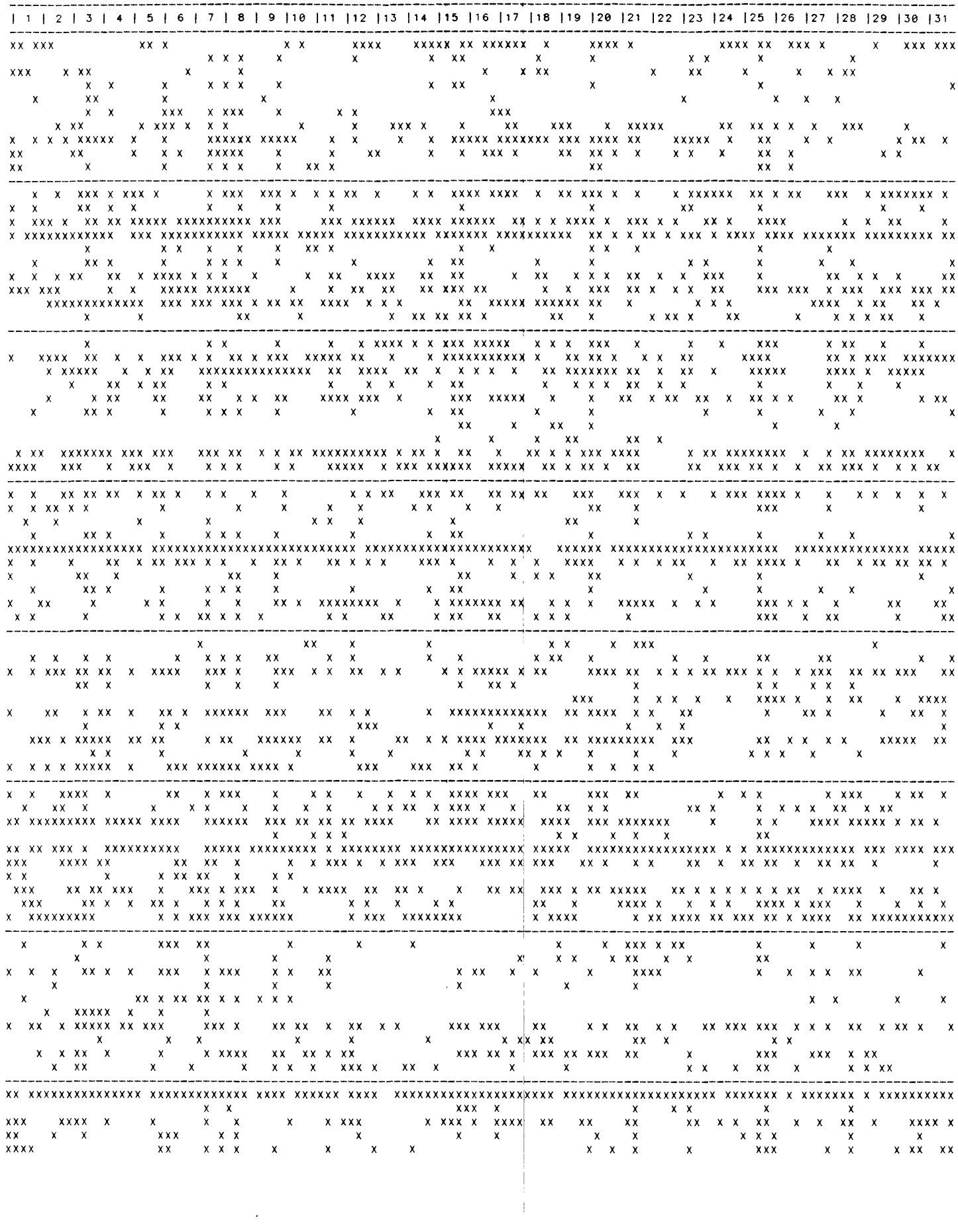
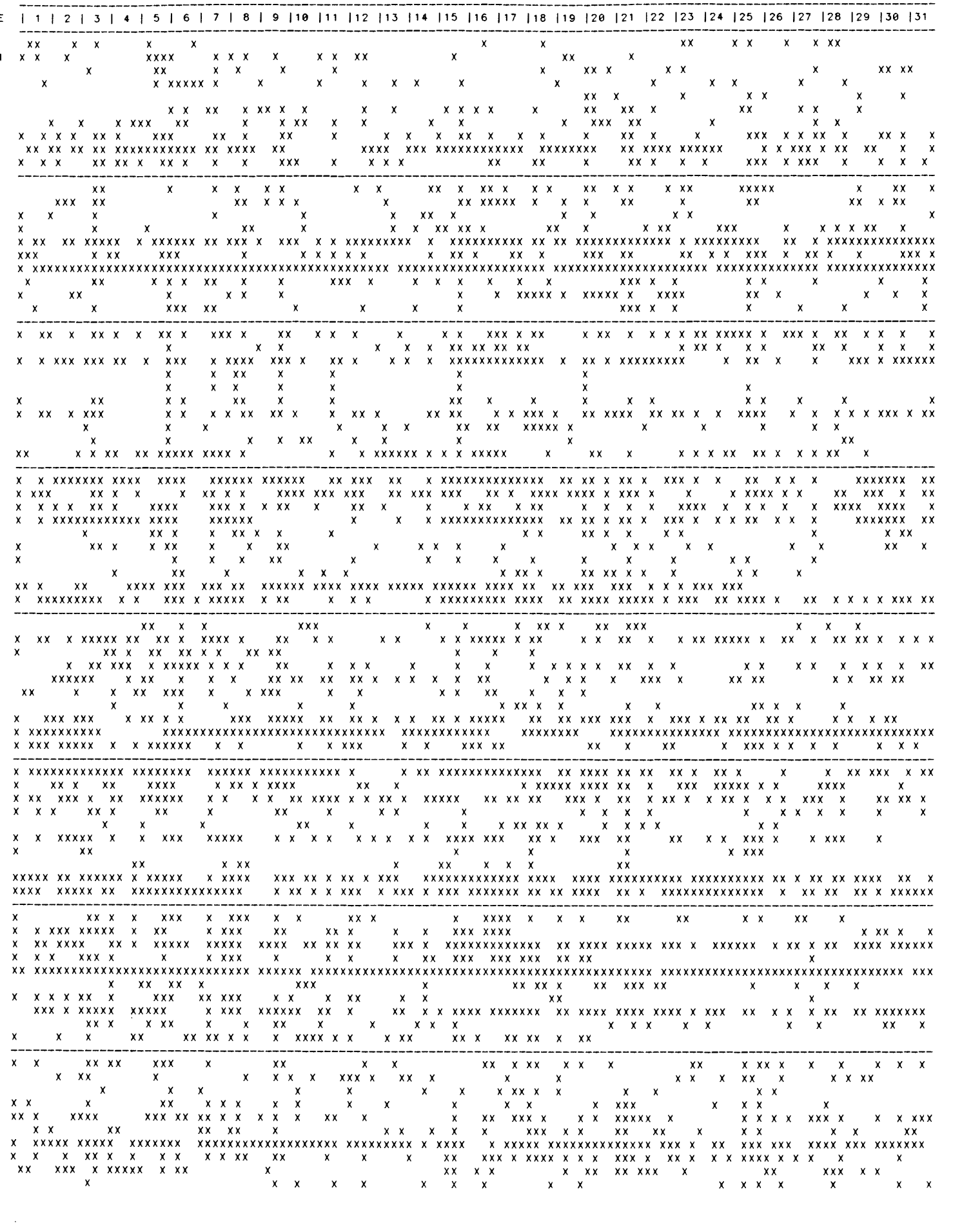

STATION DATA REPORT FOR DECEMBER, 1989

1313 stations reported 56504 reading arrival groups

X = data received for this 6-hour time period

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BLP
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BMG
BMR
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BNI
BNT
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BOG
BOM
BOT
BPA
BRG
BRK
BRS
BRT
BRW
BRY
BSF
BSI
BTO
BUC
BUC1
BUD
BUL
BURJ
BUS
BW06
BWA
BZS
CAF
CAN
CAW
CAYA
CBN
CCB
CCH
CD2
CDD
CDF
CER
CEY
CFA
CFR
CGLM
CHCH
CHG
CHJJ
CHTO
CIN
CIO
CKI
CKL
CLC
CLE
CLI
CLL
CMB
CMP
CMS
CN2
CNB
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CTT
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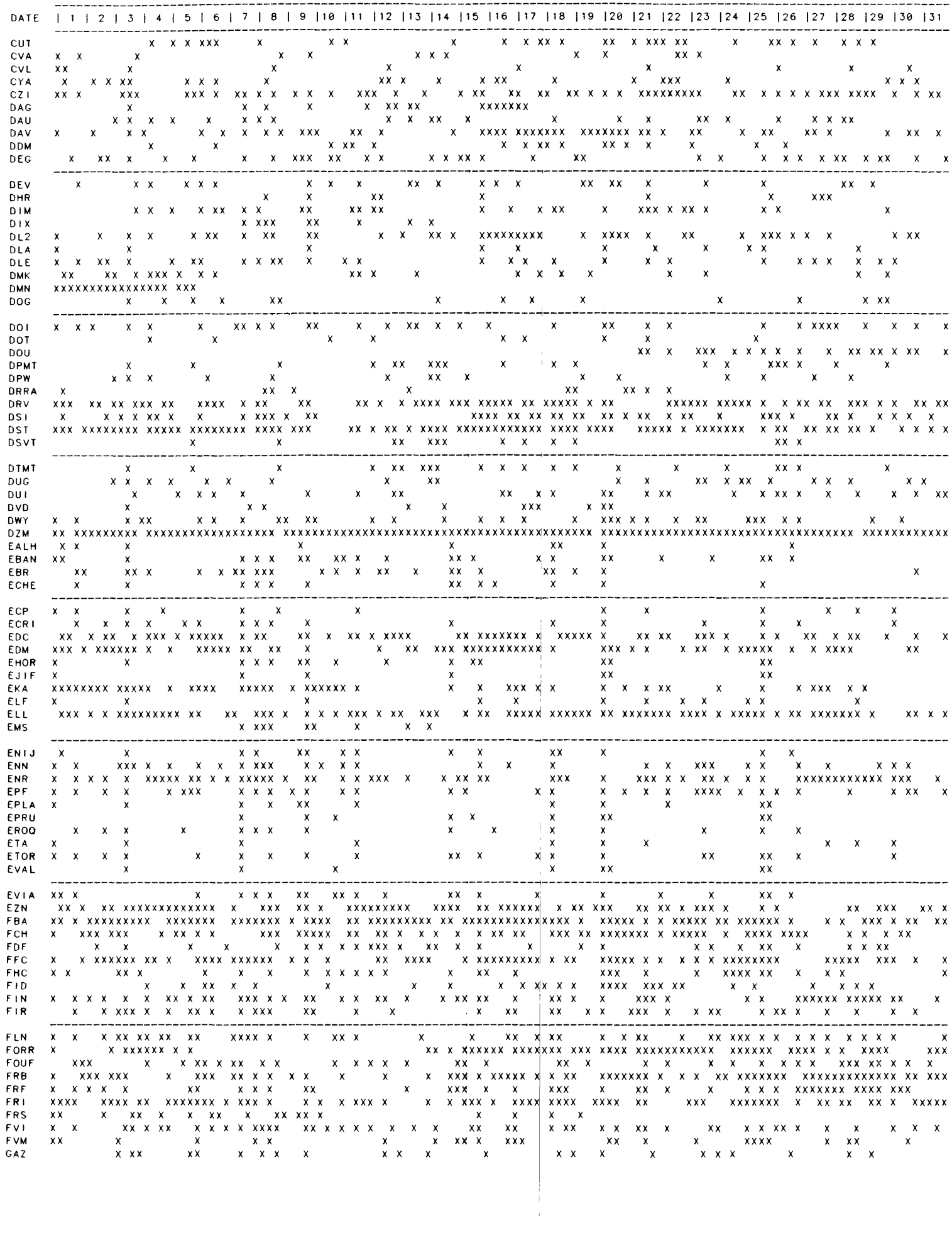
DATE
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CUT
CVA
CVL
CYA
CZI
DAG
DAU
DAV
DDM
DEG
DEV
DHR
DIM
DIX
DL2
DLA
DLE
DMK
DMN
DOG
DOI
DOT
DOU
DPMT
DPW
DRRA
DRV
DSI
DST
DSVT
DTMT
DUG
DUI
DVD
DWY
DZM
EALH
EBAN
EBR
ECHE
ECP
ECRI
EDC
EDM
EHOR
EJIF
EKA
ELF
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EMS
ENIJ
ENN
ENR
EPF
EPLA
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EROQ
ETA
ETOR
EVAL
EVIA
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FDF
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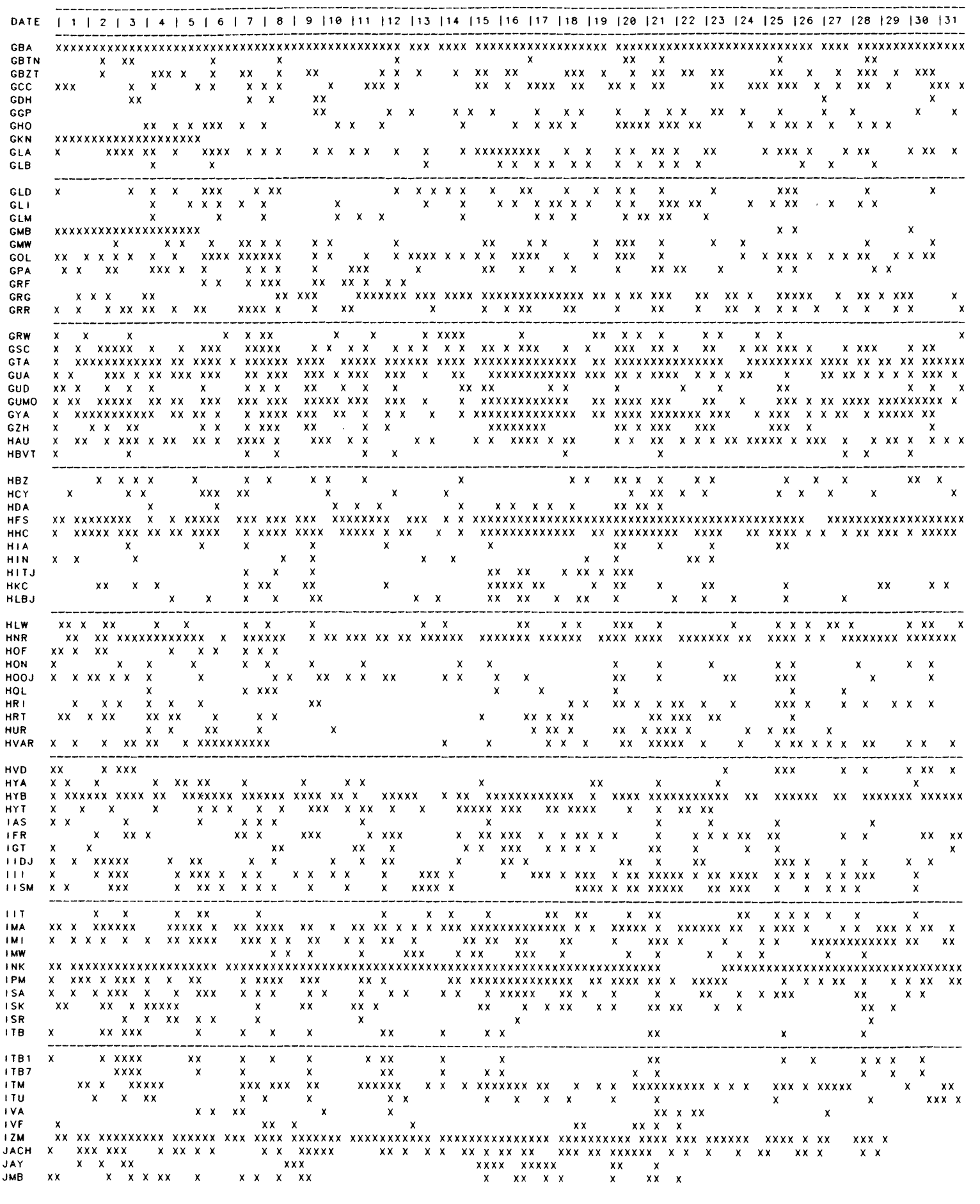
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JAY
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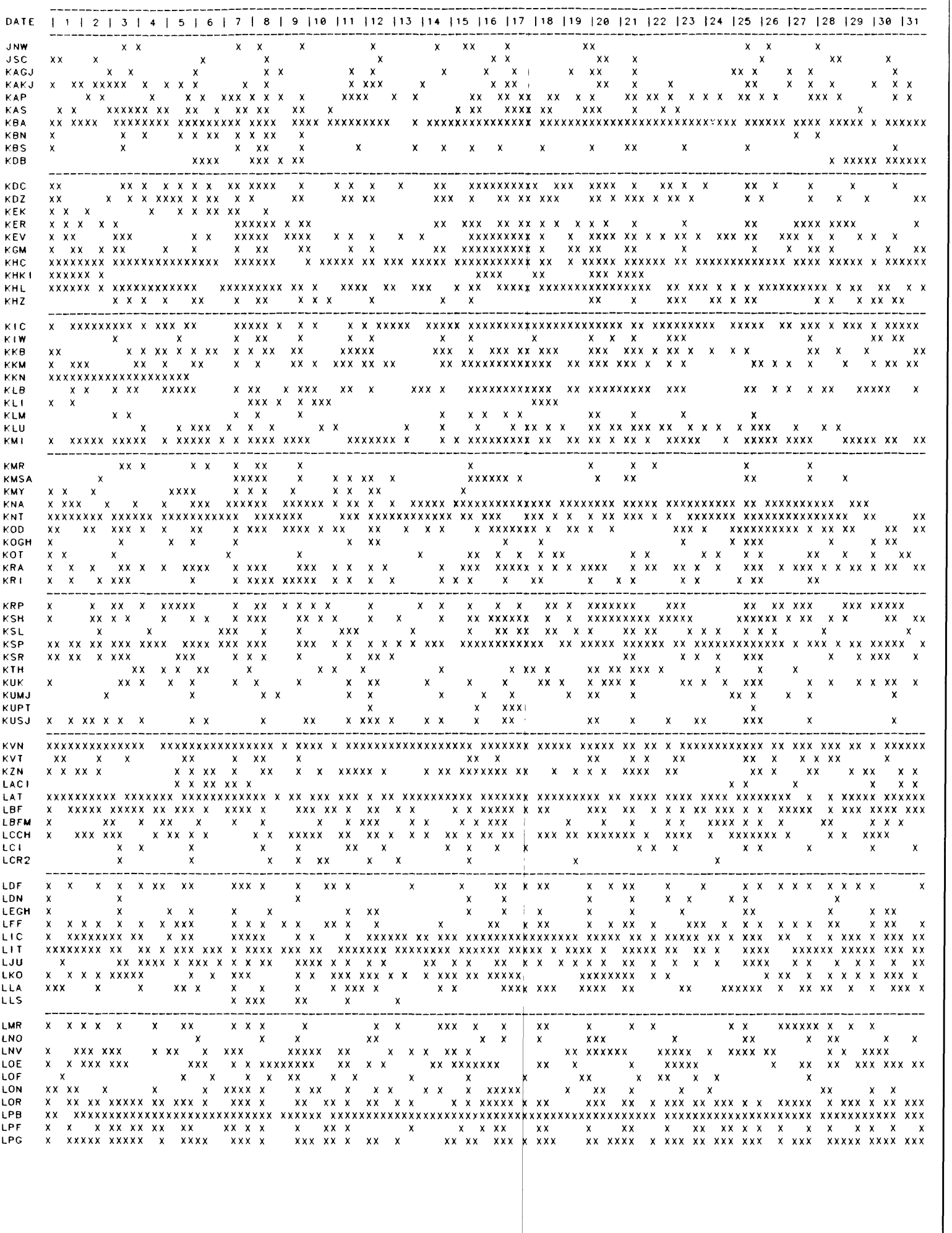
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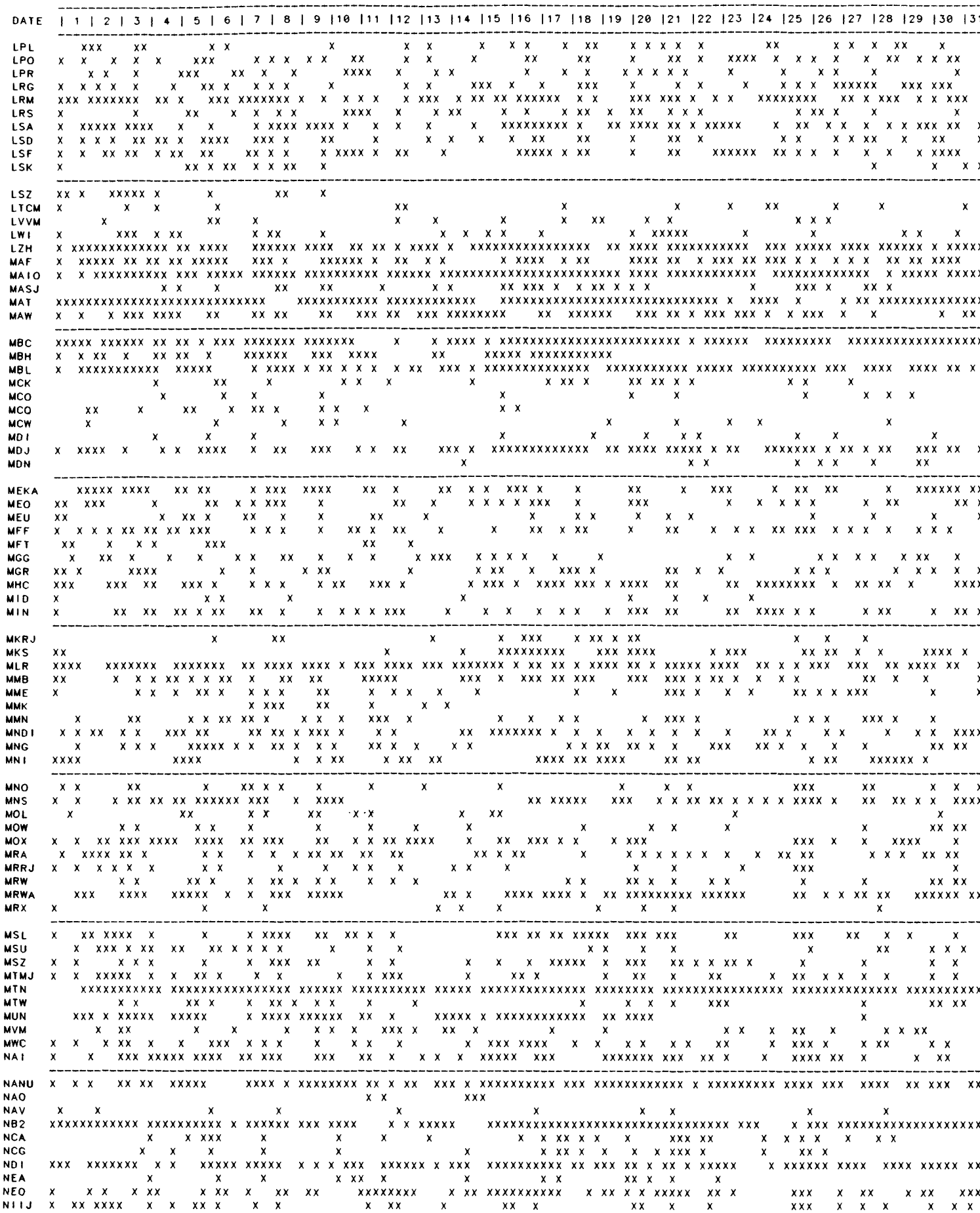
LPG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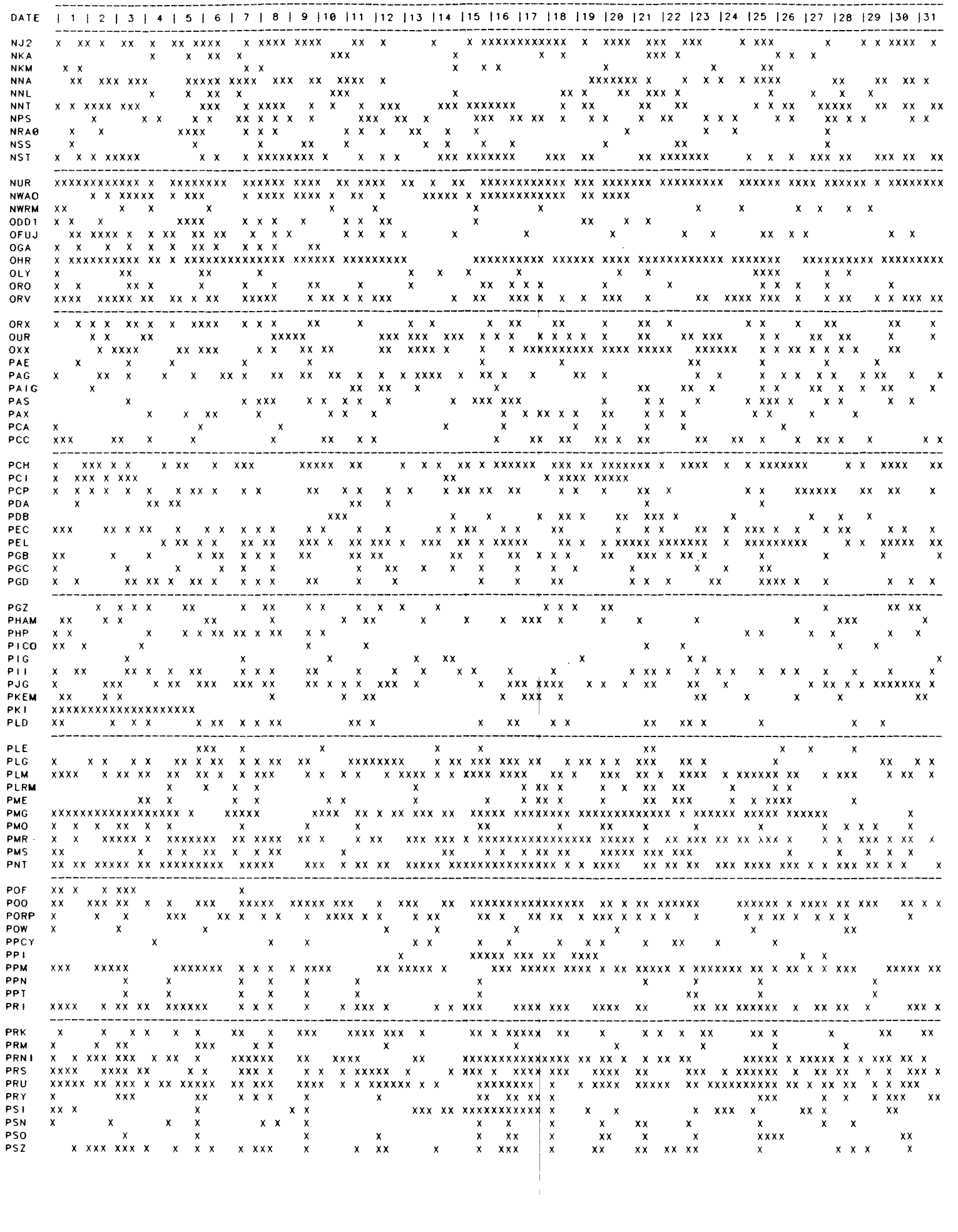
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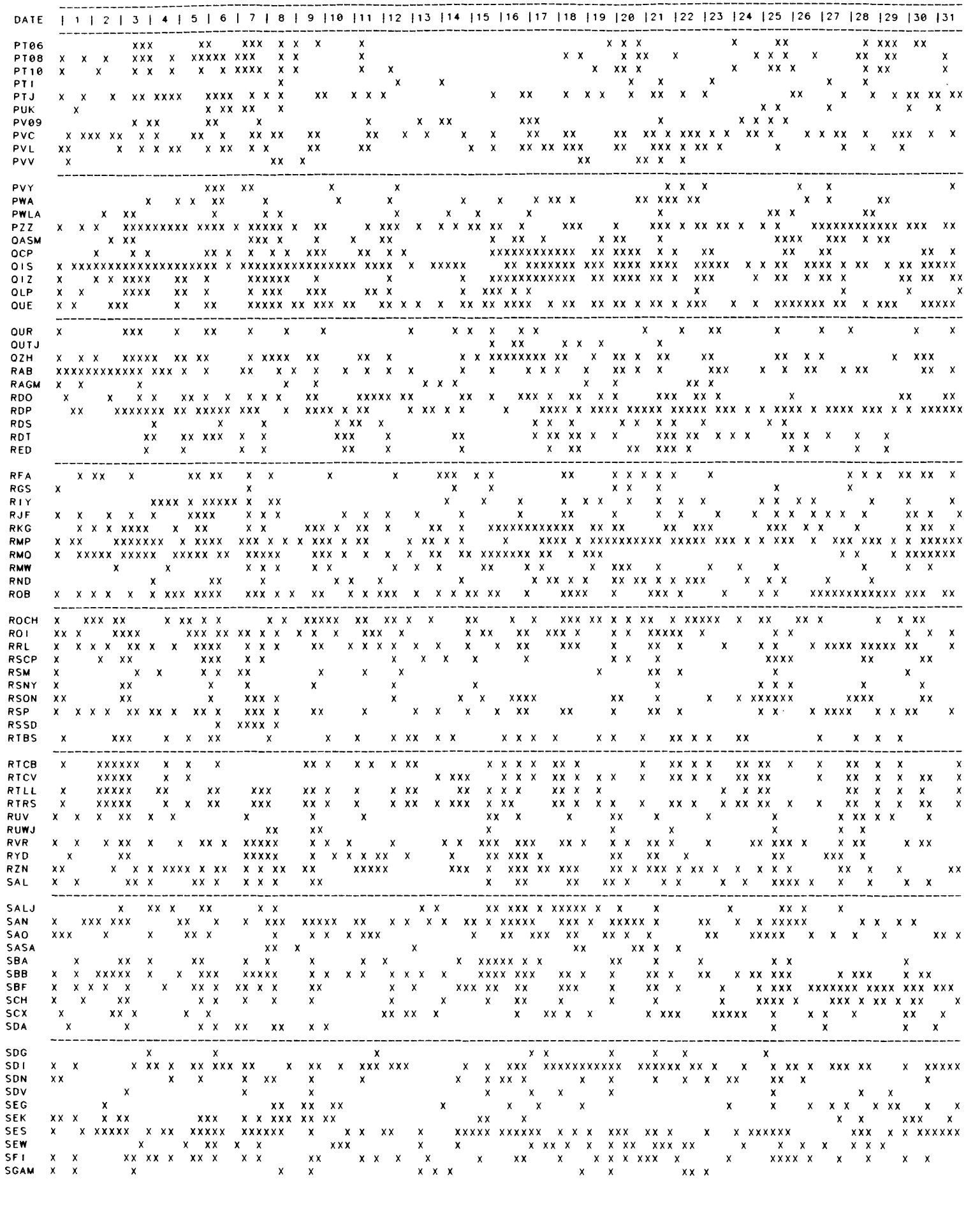
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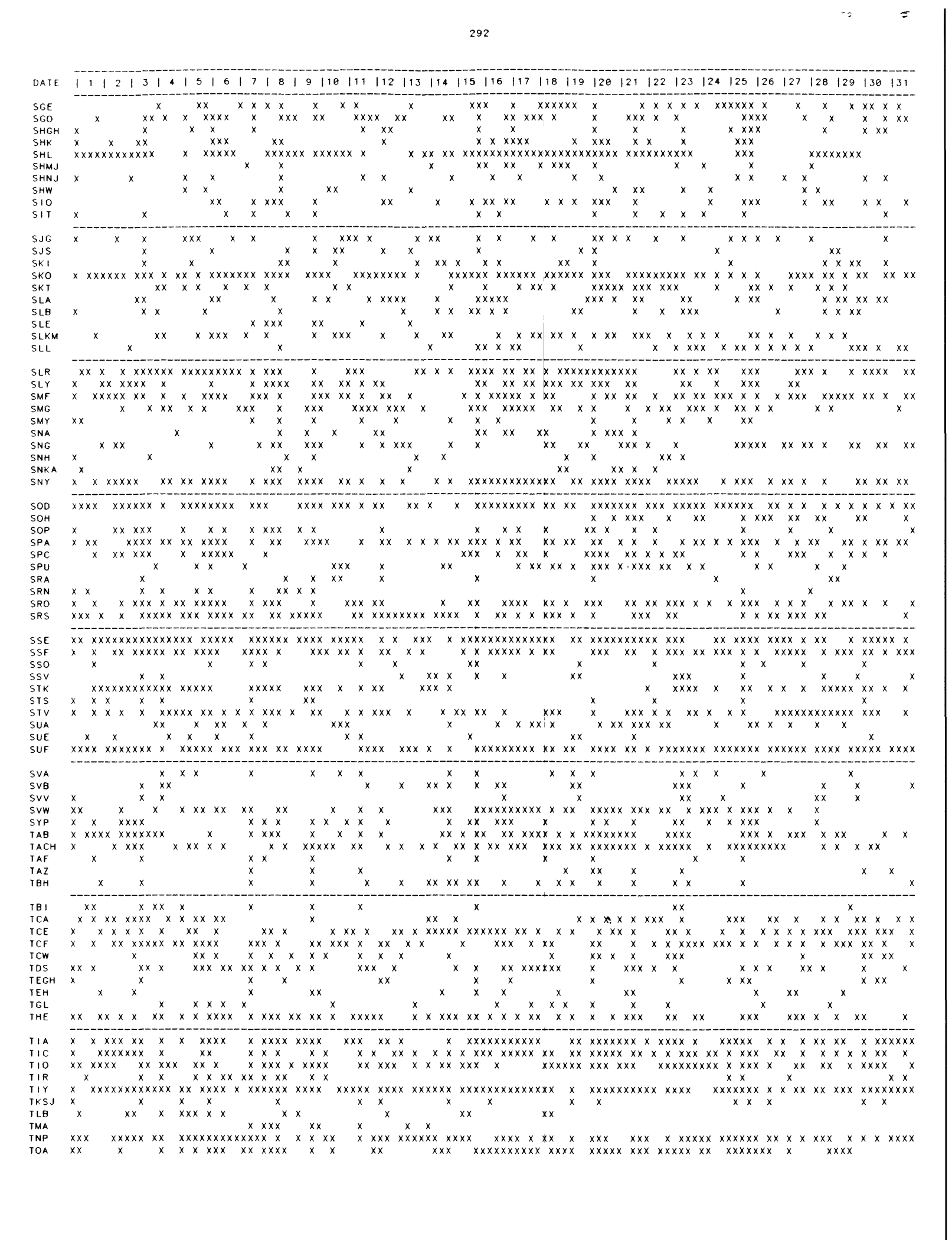
DATE
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31
SGE
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SNY
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SPA
SPC
SPU
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SRN
SRO
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SSE
SSF
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STV
SUA
SUE
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SVA
SVB
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SVW
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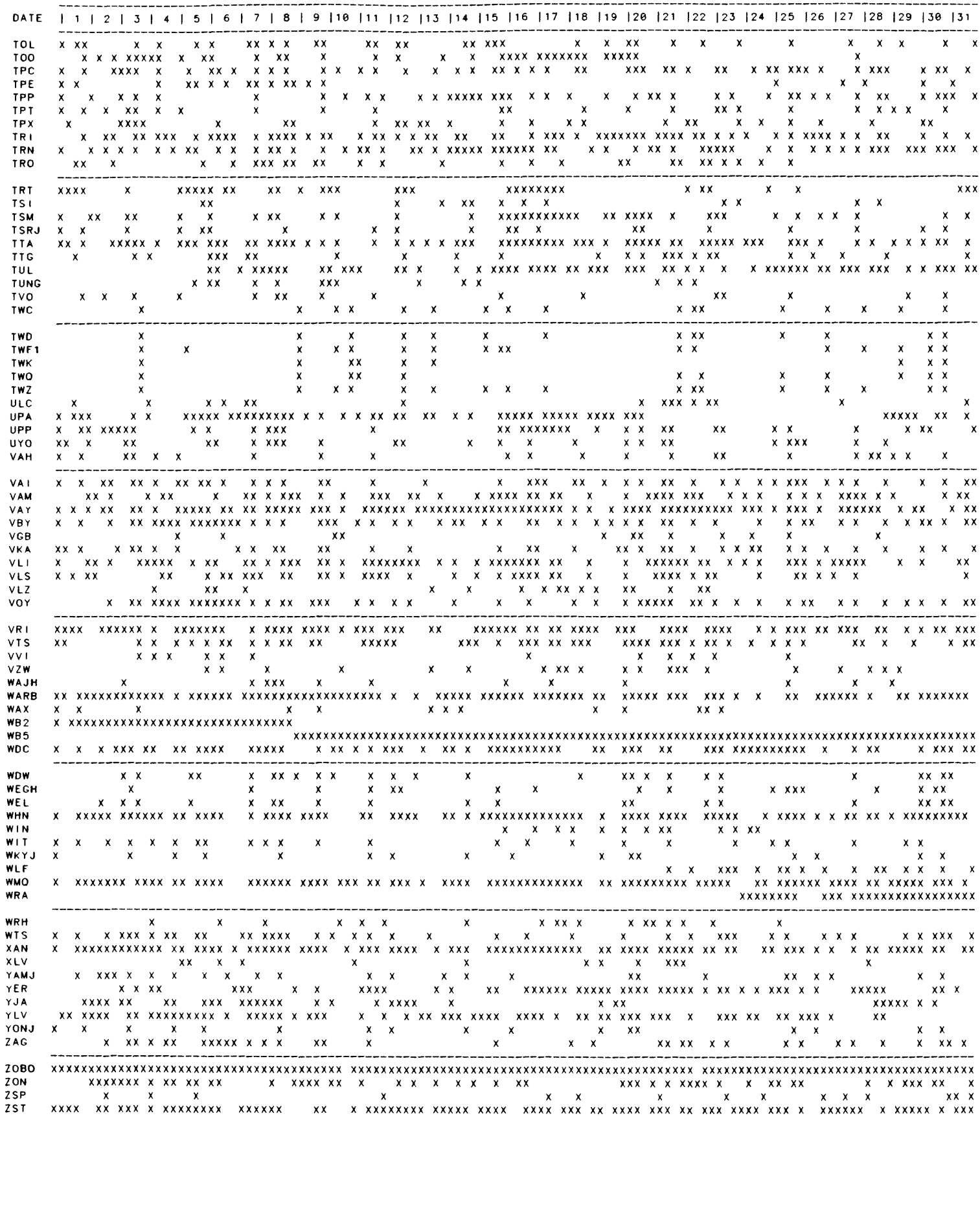
DATE
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31
TOL
TOO
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TRI
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WEGH
WEL
WHN
WIN
WIT
WKYJ
WLF
WMO
WRA
WRH
WTS
XAN
XLV
YAMJ
YER
YJA
YLV
YONJ
ZAG
ZOBO
ZON
ZSP
ZST

The following stations each reported less than 10 readings:

AAE	ABH	ACR	ACU	ADH	ADI	AGMR	AGRW	AGX	AHA	AIN	AKRL	AKSR	ALB	ALN	AMAN	ANCC	ANM
ANTO	AOMJ	APA	APM	APO	APW	ARO	ASR	ATA	ATZ	AUE	AVN	AVO	BAA	BADA	BALA	BCPM	BDF
BDH	BFS	BGB	BGM	BGMT	BIB	BIR	BJA	BKR	BLC	BLH	BLHA	BLN	BLS2	BLT	BNH	BRD	BRF
BRLK	BRVW	BTB	BTG	BUT	BVD	BVW	BWD	CAH	CALA	CAR	CBB	CBM	CBR	CBTI	CCW	CDFW	CEI
CEOS	CFTV	CIS	CLK	CLMC	CMG2	CMU	CMW	CNBA	COB	COI	COL	COP	COR	CPE	CPH	CPI	CPK
CPW	CR3	CR5	CR6	CR7	CRF	CROR	CRQ	CTFE	CVT	CVVD	CYK	CZM	DAF	DAH	DBN	DCN	DES
DGBT	DHH	DHN	DHW2	DIAC	DLB	DLG	DLM	DMU	DMW	DNZ	DPQ	DRA	DSH	EAB	EAU	EBG	EBH
EBI	EBL	ECB	EDB	EDI	EDR	EDU	EEO	ELC	ELO	EMEL	EMM	EMN	EMON	EMUT	EPH	ERC	ERK
ERUA	ESD	ESEL	ESK	ESR	ESY	ETB	ETER	ETW	EZAM	FAI	FAM	FAR	FCC	FCV	FEL	FG2	FIG
FISA	FKK	FL2	FMT	FMW	FRU	FUG	FUQ	FUR	GBI	GBL	GCG	GGC	GHW	GIB	GL2	GLH	GLK
GLR	GMO	GMR	GMTN	GNZ	GRM	GROR	GRT	GSM	GT2	GTO	GULW	GZR	HATZ	HAY	HBF	HBH	HDW
HIL	HITZ	HKL	HLD	HLP	HMH	HMT	HNB	HOBC	HOQC	HOR	HPI	HPO	HPU	HQN	HRV	HRY	HSR
HTC	HTW	HUH	HUL	HYF	ICR	IGL	IHA	IIC	IKP	IKZ	ILIM	ILT	IRK	ITG	IVY	JBO	JCW
JGI	JLK	JMI	JNE	JNL	JVI	KAE	KAO	KBR	KETZ	KFH	KFNJ	KHI	KHU	KIH	KIM	KIP	KIT
KKH	KKS	KKU	KLN	KMOR	KMZ	KNH	KNK	KOH	KONO	KOSW	KPO	KRO	KSI	KSU	KUG	KUH	LAC
LCCM	LCH	LHS	LIO	LIS	LLAV	LMW	LNOR	LPI	LSM	LST	LTMT	LVI	LVP	MAJO	MAN	MAO	MAP
MBU	MBW	MCA	MCMT	MCT	MDB	MDW	MDZ	MEM	MEMT	MEW	MEX	MGB	MGM	MHA	MHI	MHZ	MIM
MKA	MKT	MLH	MLX	MMG	MNB	MOE	MOO	MORO	MSG	MSI	MTH	MTI	MTMW	MTU	MUB	MVH	MWH
MXC	MZX	MZZ	NA2	NAB	NAC	NAH	NDE	NED	NEW	NGH	NGI	NKY	NLO	NLW	NOH	NPH	NPN
OBC	OBH	OBN	OCO	OFK	OHW	OLLA	ONR	OOW	OPA	OSD	OSP	OSS	OTR	OUT	OZB	PANV	PATW
PCT	PET	PFB	PFH	PGO	PGW	PHC	PKL	PLL	PMV	PN6	PNJ	POH	PPK	PPL	PRIN	PRN	PS4
PSG2	PTN	PTS	PTT	PTZ	PUH	PUL	PURC	PWH	PZI	QCR	QSM	RAO	RAR	RATZ	RBA	REC	RES
REY	RFI	RIM	RIV	RKT	RMN	RPW	RSW	RUP	RVC	RVW	SALC	SAP	SAW	SAX	SBG	SCI	SEN
SGB	SGH	SGS	SGV	SHB	SIM	SLP	SLW	SMW	SNB	SNZO	SOA	SOG2	SOSW	SPT	SPW	SQF	SRFA
SRG	SSR	SSS	STD	STU	STW	SUR	SVE	SVP	SWH	SXM	TAIF	TAU	TBM	TBR	TBT	TCO	TDD
TDH	TDL	THI	TID	TIK	TIM	TKL	TLE	TLG	TMBR	TMP	TMW	TOD	TOV	TPI	TPR	TRH	TUTZ
TWG	TWM1	TWW	UCC	UNM	USI	UTU	UWE	UZH	VAL	VBEM	VC1	VDL	VFP	VGZ	VHO	VIPM	VLL
VLMM	VLO	VNM	VTG	VTHM	WAH2	WAR	WER	WG2	WHA	WHB	WHC	WHH	WIGH	WIH	WIW	WKH	WOB
WOH	WPB	WPI	WRD	WTV	YAH	YAKW	YEL	YKA	YKU	YMT3	YMT5	YOU	YPDC	YPWB	YRH	YSA	YSS
ZLA	ZNT																