

16

**BULLETIN
OF THE SLOVAK
SEISMOGRAPHIC
STATIONS**

CENTRE SÍSTÉM
EUROPEO-MEDITERRANEO



**BRATISLAVA
ŠROBÁROVÁ
HURBANOV
AND**

**SKALNATÉ PLESO
FOR THE YEAR 1972**

Slovak Academy of Sciences
Geophysical Institute

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Bulletin
of the Slovak Seismographic
Stations Bratislava, Šrobárová
Hurbanovo and Skalnaté Pleso
for the Year 1972

Editor

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I n t r o d u c t i o n

The seismological bulletin for the year 1972 contains the results of the interpretation of records from the network of seismograph stations on the territory of Slovakia: Bratislava /central station/, Šrobárová, Hurbanovo and Skalnaté Pleso.

The records from the network are collected at the Geophysical Institute of the Slovak Academy of Sciences in Bratislava, where they are analysed. The preliminary results of the interpretation were published in ten-day preliminary bulletins for stations Bratislava, Šrobárová and Skalnaté Pleso. The ten-day preliminary bulletins were exchanged with about twenty seismological institutions from various parts of the world. The times of the onsets of the important earthquake phases appearing on the Bratislava and Šrobárová seismograms were sent to the seismological centre in Strasbourg twice a week by telex. The earthquake data obtained from the Bratislava and Šrobárová seismograms were also punched on cards which were regularly supplied to the International Seismological Centre in Edinburgh.

This annual bulletin contains the final analysis of the records and the completed and revised parameters of earthquakes and explosions. The sources of information regarding epicentres, origin times, depth of foci and shock magnitudes, frequently quoted are as follows: Bulletin of ISC, Vol. 10, 1972; Bulletin of BCIS, 1972; Quarterly Bulletin of the Academy of Sciences of the U.S.S.R., 1972. The time standard used throughout is Greenwich Mean Time.

The epicentres of almost all earthquakes or explosions occurring in Czechoslovakia were determined at the Geophysical Institute of the Czechoslovak Academy of Sciences in Prague or at the Geophysical Institute of the Slovak Academy of Sciences in Bratislava.

The processing of data and numerical calculations were carried out according a program compiled by Mrs. K.Mrázová, using the computer CDC 3300 in the Computing Centre, Bratislava.

For calculating the surface-wave magnitudes the standard calibrating functions [5] were used. Station corrections were ignored, as were observations at distances less than 6° . Surface wave magnitudes were calculated for earthquakes with focal depths less or equal 80 km. The values of body-wave magnitudes from P waves in the distance interval $[16^\circ, 100^\circ]$ were calculated on the basis of Q-functions [6]. The values of the amplitudes of short period P-waves registered on the vertical component are given in nanometers while the values of AEW and ANS for calculating surface-wave magnitudes are given in micrometers.

An earthquake magnitude formula, giving the closest possible fit to surface-wave magnitudes determined by NEIS had been developed for the station Šrobárová [8]. The value of station correction for Šrobárová is -0.22 and the standard error ± 0.03 . For the determination of magnitudes the station correction was not taken into consideration.

For the measurements of microseisms the records of the Mainka horizontal seismograph at the station Hurbanovo were used. The maximum microseismic trace amplitudes were measured on the NS and EW components four times per day at 0 h, 06 h, 12 h, and 18 h G.M. Using a short computer program the trace amplitudes were converted into ground amplitudes /in micrometers/ and tabulated. The period was determined by measuring the length to 0.1 mm of 2-4 whole periods in a well developed maximum group. The periods are given in whole seconds. The trace amplitudes were measured from peak to peak, halved and the corresponding ground motion given to $0.1 \mu\text{m}$.

In preparing this bulletin the author has been in different parts assisted by Mrs. N.Hupková, Mrs. A.Miková, Mrs. Z.Ferechová and Mrs. A.Stranovská. The investigation of macroseismic observations of earthquakes felt on the territory of Slovakia was carried out by Mr. I.Brouček.

The content of this bulletin is in accordance with the recommendations given in [7].

The program has been written in USASI FORTRAN/MASTER [9]. It consists of one main program and 11 procedures. The theoretical travel-time tables /1-4/ of important phases /p.12, 13/ are stored on a mass storage file; each phase /except the phases Pg, Pb, Pn and Sg, Sb, Sn/ requires 14 blocks /the block size being 1536 characters/, one block for the case of surface focus and 13 blocks for focal depths expressed in fractions of an Earth's radius $/R = 6338 \text{ km}/$, measured from the base of the crust /Table 1/. The observed arrival times as well as amplitudes and periods of surface and body waves for all stations were punched on 80 column punched cards. When all punched cards were accumulated for the whole year, they were transferred and stored on a mass storage file.

The program contains the following procedures:

- "DIAZ" for calculating the epicentral distances and azimuths of the observing stations
- "USP" for arranging the epicentral distances into ascending order
- "PAG" for the layout of the Bulletin
- "HL" converts the depth of foci given in km into fraction of Earth's radius and according this value is then determined the number of block on the mass storage file, where the theoretical travel-times are stored
- "QML" for determination of surface-wave magnitudes according the "Prague" formula /Vaněk et al. 1962/. Station corrections are ignored, as are observations at distances less than 6° . MLH is calculated only when the focal depth $h < 80 \text{ km}$.

"QMPV" for calculation of body-wave magnitudes on the basis of Q-functions [6], stored on mass storage file in digital form. Body-wave magnitudes are calculated for the distance range [16°, 100°]

Subroutine designated as "PHI", for automatic phase identification. According this subroutines the travel-time for each phase is compared with all possible theoretical travel-times. From all possible phases it is determined and printed that one, which has the minimum value of /O-C/. In the case when the minimum value of /O-C/ ≥ 20.0 s the observed phase is printed without phase-identification, i.e. only the observed time is printed and designated by letter i or e. A disadvantage of this subroutines is, that in cases when no other phase fits better according /O-C/, there are printed two identical phases /except the P-phase/ e.g. two pP-phases. In these cases it should be considered as a real phase that one which has smaller residual /O-C/.

"PHI1" distance range [8°, 105°)

"PHI2" [0°, 8°) and h ≤ 33 km, or when there is no depth determination

"PHI3" Δ ≥ 110°

"PHI4" Δ < 8° and h > 33 km

"PHI5" 105° ≤ Δ < 110°

The listing of the whole program may be obtained on request from the author.

List of Seismic Phases

Phase		
In Bulletin	Usual	
PN,SN	Pn,Sn	longitudinal and transverse waves refracted below the crust
PG,SG	Pg,Sg	waves in the upper crust
PB,SB	Pb,Sb	waves in the lower crust
P,S	P,S	direct longitudinal or transverse waves propagating in the mantle
PKIKP	PKIKP	direct longitudinal wave propagating through the inner core, travel-time branch DF [1]
PKHKP	PKHKP	direct longitudinal wave refracted in the intermediate zone between the inner and outer core; phase symbol according to Bolt [4], travel-time branch GH
PKP2	PKP2	direct longitudinal wave propagating only through the outer core, travel-time branch AB [1]
PP	PP	P waves reflected once at the Earth's surface
PCP	PcP	P waves reflected at the Earth's core boundary
SCS	ScS	S waves reflected at the Earth's core boundary
SKS	SKS	S waves passing through the core as P waves,
SKSDE	SKS	transformed back into S waves in the mantle;

the letter DE designates the branch DE according to [1]

PKSAB	PKS	P wave transformed into S on the refraction
PKSBC	PKS	when leaving the core; AB, BC and DF designa-
PKSDF	PKS	tes the branches according to [1]
SKPAB	SKP	S wave transformed into P on the refraction
SKPBC	SKP	when leaving the core; AB, BC and DF designa-
SKPDF	SKP	tes the branches according to [1]
PS,SP	PS,SP	P and S waves reflected and transformed at the Earth's surface
SS	SS	S waves reflected once at the Earth's surface
AP	pP	P waves reflected from the surface as P waves, supposing deep focus earthquake
XP	sP	S waves reflected from the surface as P waves, supposing deep focus earthquake
XS	sS	S waves reflected from the surface as S waves, supposing deep focus earthquake
PDIF	Pdif	P waves diffracted on the core boundary
PKPEX	-	PKIKP waves /extrapolation of travel-times for the distance range (105,110) /
LMH,LMV	Lm	waves of maximum amplitude in the surface wave group, on the horizontal or vertical component

Table 1

Number of blocks on mass storage file	Phase	Distance range	Transformed distance range
1 - 14	P	0 - 105	1 - 106
15 - 28	PKIKP	106 - 180	1 - 75
29 - 42	PKP2	143 - 180	1 - 38
43 - 56	PKHKP	125 - 156	1 - 32
57 - 70	S	0 - 107	1 - 108
71 - 84	SKS	62 - 180	1 - 118
85 - 98	SKSDE	99 - 133	1 - 35
99 - 112	PP	0 - 180	1 - 181
113 - 126	pP	1 - 105	1 - 105
127 - 140	sP	1 - 105	1 - 105
141 - 154	PcP	0 - 100	1 - 101
155 - 168	PS	44 - 147	1 - 104
169 - 182	SP	44 - 147	1 - 104
183 - 196	SKPAB	131 - 148	1 - 18
197 - 210	SKPBC	130 - 140	1 - 11
211 - 224	SKPDF	104 - 180	1 - 77
225 - 238	PKSAB	131 - 148	1 - 18
239 - 252	PKSBC	130 - 140	1 - 11
253 - 266	PKSDF	104 - 180	1 - 77
267 - 280	SS	0 - 180	1 - 181
281 - 294	ScS	0 - 100	1 - 101
295 - 308	sS	19 - 100	1 - 82
309	Pg	0 - 8	1 - 9
310	Pb	0 - 8	1 - 9
311	Pn	0 - 8	1 - 9
312	Sg	0 - 8	1 - 9

313	Sb	0 - 8	1 - 9
314	Sn	0 - 8	1 - 9
315 - 328	Qfu	16 - 100	1 - 85
329	Sigfu	6 - 180	1 - 175
330 - 343	HKPKP	0 - 44	1 - 45 +++
344 - 357	pPKIKP	106 - 180	1 - 75
358 - 371	pPKP2	143 - 180	1 - 38
372 - 385	pPKHKP	125 - 156	1 - 32
386 - 399	Pdif	105 - 110	1 - 6
400 - 413	PKPEX	105 - 110	1 - 6

Remarks:

The line marked +++, here the interval 0 - 44 is not the distance range but $dt/d \Delta$, as HKPKP means the depth corrections for PKP. Sigfu ... the calibration functions /Vaněk et al. 1962/. Qfu ... Q-functions [6].

List of Abbreviations Used in this Bulletin

- A length of recording arm
- Az azimuth of station with respect to the epicentre
- Dc epicentral distance
- Dg damping constant of the galvanometer
- Ds damping constant of the seismometer
- e poorly defined beginning of a phase
- ζ : 1 damping ratio
- H origin time
- h depth of focus in km
- i impulsive beginning of a phase
- K characteristics of microseisms:
 - 1 disturbance showing microseisms in groups
 - 2 continuous disturbance
 - 3 disturbance of a mixed and irregular character
 - 0 no microseismic movement
 - 0.0 very weak microseismic movement, amplitude less than 0.1 micrometer
 - tt disturbance could not be measured because of earthquake
 - v disturbance could not be measured because of gusts of wind
 - ... disturbance could not be measured for other reasons
- K_G moment of inertia of the galvanometer
- K_S moment of inertia of the seismometer
- l reduced pendulum length
- NB body-wave magnitude given by ISC
- MLH surface-wave magnitude
- MPV body-wave magnitude calculated from short period P waves
- r max. deviation due to friction

σ^2 coupling coefficient
 T_g free period of the galvanometer
 T_s free period of the seismometer
 V_0 static magnification
 V_m max. dynamic magnification
 + and- compressional or dilatational motion in a longitudinal wave
 NE nuclear explosion
 u. underground

Station Instrumentation

Coordinates of the Seismographic Stations

Station	Latitude	Longitude	Altitude	Lithologic foundation
Bratislava	48°10'06''N	17°06'18''E	270 m	Granite
Šrobárová	47°48'48''N	18°18'48''E	150 m	Bed of Sand
Hurbanovo	47°52'25''N	18°11'34''E	115 m	Bed of Sand
Skalnate Pleso	49°11'20''N	20°14'32''E	1772 m	Granite

Constants for the Year 1972

HURBANOVO

"MAINKA", horizontal seismograph, M = 210 kg, air damping, mechanical registration

Month	Component	T_s (s)	V_0	r (mm)	ξ :1	Paper speed
January-April	N-S	8.2	50.7	0.8	4.6	30 mm/min
	E-W	9.9	56.4	0.9	3.4	
May-July	N-S	8.3	50.7	0.4	3.6	30 mm/min
	E-W	9.8	56.2	0.9	3.4	
August	N-S	8.4	51.5	0.8	3.9	30 mm/min
	E-W	9.7	51.1	0.8	4.1	
September-October	N-S	8.4	51.5	0.8	3.9	30 mm/min
	E-W	9.7	51.1	0.8	4.1	
November-December	N-S	8.3	55.8	0.6	3.4	30 mm/min
	E-W	9.7	57.8	1.3	3.4	

RATISLAVA

"VEGIK", electromagnetic seismograph with galvanometric registration

Component	Ts /s/	Tg /s/	Ds	Dg	σ^2	A /m/	l /m/	K1 /kg m ² /	K2 /kg m ² /.10 ⁻⁸	Paper speed
Z	1.78	1.91	0.87	1.05	0.114	1.12	0.0940	0.0098	1.35	15 mm/1 min
N-S	2.00	1.86	0.91	1.02	0.103	1.03	0.0934	0.0101	3.67	15 mm/1 min
E-W	2.00	1.92	0.90	1.08	0.104	1.03	0.0940	0.0100	3.70	15 mm/1 min

ŠROBÁROVÁ

"KIKNOS", electromagnetic seismograph with galvanometric registration, class "C" according [7]

Component	Ts /s/	Tg /s/	Ds	Dg	σ^2	A /m/	l /m/	K1 /kg m ² /	K2 /kg m ² /.10 ⁻⁹	Paper speed
Z	22.4	1.17	0.54	8.00	0.234	0.98	0.488	0.362	0.487	15 mm/1 min
N-S	22.7	1.25	0.47	7.70	0.277	0.98	0.488	0.358	0.531	15 mm/1 min
E-W	24.9	1.15	0.49	7.70	0.367	0.98	0.499	0.358	0.428	15 mm/1 min

SKALNATE PLESO

"VEGIK", electromagnetic seismograph with galvanometric registration

Component	Ts [s]	Tg [s]	Ds	Dg	σ^2	Vm /Tm = 1.3/	Paper speed
Z	1.9	1.9	0.97	0.90	0.12	4851.5	60 mm/min

List of Quoted Agencies Reporting Epicentral Parameters

Code	Agency
ATH	Athens, Seismological Institute, National Observatory, Athens
BCIS	Bureau Central International de Seismologie, Strasbourg
BRA	Bratislava, Geophysical Institute, Slovak Academy of Sciences, Bratislava, Czechoslovakia
ISC	International Seismological Centre, Newbury, United Kingdom
LJU	Ljubljana, Astronomical and Geophysical Observatory, University of Ljubljana, Ljubljana
MOS	Academy of Sciences of the U.S.S.R., Institute of Physics of the Earth, Moscow
NEIS	Natl. Earthquake Infor. Service, Denver, Colorado, U.S.A.
PRU	Prùhonice, Geophysical Institute, Czechoslovak Academy of Sciences, Prague, Czechoslovakia
UPP	Uppsala, Seismological Institute, Uppsala
USAEC	U.S. Atomic Energy Commission, Washington
VIE	Vienna, Zentralanstalt für Meteorologie und Geodynamik, Wien
WAR	Warsaw, Geophysical Institute of the Polish Academy of Sciences, Warsaw

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MICROSEISMIC ACTIVITY

JANUARY 1972

COMPONENT EW

GMT Date	00 h			06 h			12 h			18 h		
	K	T	A	K	T	A	K	T	A	K	T	A
1	1	3	4.1	1	3	4.1	2	3	8.2	1	3	5.2
2	1	3	4.1	0.0			0.0			2	2	4.3
3	0.0			0.0			3	3	4.1	3	3	4.1
4	2	2	8.5	2	4	9.8	2	6	6.8	2	5	3.7
5	0.0			0.0			0.0			0.0		
6	0.0			0.0			0.0			0.0		
7	0.0			0.0			0.0			0.0		
8	0.0			TT			2	6	4.3	2	6	4.3
9	1	5	3.7	1	5	3.7	2	6	4.3	2	6	4.3
10	2	6	3.4	2	6	5.1	2	7	3.9	2	6	6.8
11	2	4	3.9	2	6	3.4	2	6	6.8	2	6	4.3
12	2	8	5.7	2	6	3.4	2	6	8.5	0.0		
13	0.0			2	4	3.9	2	6	4.3	2	6	3.4
14	2	6	3.4	2	6	4.3	2	7	6.3	2	6	4.3
15	2	4	3.9	2	4	3.9	2	5	4.6	2	6	4.3
16	2	6	4.3	2	6	4.3	2	6	5.1	2	6	5.1
17	2	6	4.3	2	6	8.5	2	6	8.5	2	6	8.5
18	2	6	8.5	2	6	8.5	2	8	7.1	2	8	7.1
19	2	8	7.1	2	8	7.1	2	8	7.1	2	8	7.1
20	2	6	8.5	2	8	7.1	2	6	8.5	2	6	8.5
21	2	4	4.9	2	4	4.9	2	4	3.9	2	4	3.9
22	0.0			0.0			0.0			0.0		
23	0.0			0.0			2	4	3.9	2	4	2.0
24	2	6	3.4	2	6	3.4	2	4	3.9	2	4	3.9
25	2	6	3.4	2	6	3.4	2	4	3.9	2	4	3.9
26	2	6	3.4	2	6	4.3	2	6	4.3	2	6	4.3
27	2	6	3.4	2	6	6.8	2	6	5.1	2	6	6.8
28	2	4	3.9	2	6	4.3	2	6	3.4	2	6	3.4
29	0.0			0.0			0.0			0.0		
30	0.0			0.0			0.0			0.0		
31	0.0			0.0			0.0			0.0		



MICROSEISMIC ACTIVITY

JANUARY 1972

COMPONENT NS

GMT Date	00 h			06 h			12 h			18 h		
	K	T	A	K	T	A	K	T	A	K	T	A
1	1	3	4.5	1	3	4.5	1	3	9.1	1	3	6.8
2	1	3	4.5	0.0			0.0			0.0		
3	0.0			3	3	5.7	2	4	5.3	2	6	4.4
4	2	4	4.2	2	5	7.7	2	5	7.7	2	4	5.3
5	0.0			0.0			0.0			0.0		
6	0			3	6	3.5	1	4	4.2	0.0		
7	0			1	4	4.2	2	6	4.4	2	6	7.0
8	0.0			TT			0.0			1	6	8.7
9	1	4	5.3	1	6	8.7	1	4	4.2	1	7	4.0
10	1	6	7.0	1	6	8.7	1	6	7.0	1	6	5.2
11	0.0			1	5	9.7	2	6	8.7	2	6	8.7
12	2	4	5.3	2	4	6.3	2	6	7.0	2	6	4.4
13	0.0			2	8	7.5	2	6	8.7	2	6	8.7
14	2	6	8.7	2	4	5.3	2	8	7.5	2	6	8.7
15	2	4	5.3	2	5	4.8	2	4	5.3	2	4	4.2
16	0.0			1	4	5.3	2	4	4.2	2	4	5.3
17	2	6	4.4	2	6	8.7	2	7	7.9	2	7	7.9
18	2	7	7.9	2	7	7.9	2	6	8.7	2	6	8.7
19	2	6	7.0	2	6	7.0	2	8	7.5	2	6	8.7
20	2	4	5.3	2	4	5.3	2	6	5.2	2	4	4.2
21	0.0			2	4	4.2	2	4	4.2	2	3	3.4
22	0.0			0.0			0.0			0.0		
23	0.0			0.0			0.0			0.0		
24	2	4	2.1	2	4	4.2	2	4	4.2	2	4	4.2
25	2	4	3.2	1	6	8.7	1	4	4.2	1	4	4.2
26	0.0			1	6	4.4	2	6	8.7	2	6	8.7
27	2	4	3.2	2	4	5.3	2	6	8.7	2	6	8.7
28	2	4	3.2	2	4	3.2	2	4	3.2	2	4	3.2
29	0.0			0.0			0.0			0.0		
30	0.0			0.0			0.0			0.0		
31	0.0			0.0			0.0			0.0		

MICROSEISMIC ACTIVITY

FEBRUARY 1972

COMPONENT EW

GMT Date	00 h			06 h			12 h			18 h		
	K	T	A	K	T	A	K	T	A	K	T	A
1	2	6	4.3	2	8	3.6	2	6	4.3	2	6	4.3
2	2	6	3.4	2	6	5.1	2	6	6.8	2	6	8.5
3	2	6	4.3	2	6	8.5	2	7	7.8	2	7	7.8
4	2	7	6.3	2	6	8.5	2	7	6.3	2	6	4.3
5	3	6	4.3	3	4	2.9	2	4	2.0	2	4	2.0
6	2	4	2.0	2	4	2.0	0.0			0.0		
7	0.0			0.0			0.0			0.0		
8	0.0			0.0			1	4	2.0	0.0		
9	0.0			0.0			2	4	2.0	2	4	2.0
10	0.0			2	4	3.9	2	8	3.6	2	4	2.0
11	2	4	2.0	2	6	3.4	3	6	1.7	1	6	3.4
12	1	4	2.0	1	6	4.3	2	6	4.3	2	6	3.4
13	2	4	2.0	2	6	4.3	1	4	2.0	1	6	4.3
14	0.0			...			3	4	4.9	3	4	4.9
15	TT			0.0			2	4	2.0	2	4	2.0
16	2	4	2.0	2	4	4.9	2	4	4.9	2	4	4.9
17	2	6	1.7	2	6	1.7	1	6	1.7	0.0		
18	0.0			1	6	4.3	2	6	4.3	2	6	4.3
19	2	6	8.5	2	6	4.3	2	4	2.0	2	4	2.0
20	2	4	2.0	...			1	4	2.0	0.0		
21	0.0			1	4	2.0	0.0			0.0		
22	0.0			0.0			0.0			0.0		
23	0.0			0.0			0.0			0.0		
24	0.0			0.0			2	4	2.0	2	6	3.4
25	2	6	4.3	2	6	8.5	2	6	6.8	2	6	4.3
26	2	4	2.0	2	4	2.0	0.0			0.0		
27	0.0			0.0			2	4	2.0	0.0		
28	0.0			2	6	3.4	2	6	3.4	2	4	4.9
29	0.0			2	6	4.3	0.0			0.0		



International
Seismological
Centre
FEBRUARY 1972

MICROSEISMIC ACTIVITY

COMPONENT NS

GMT Date	00 h			06 h			12 h			18 h		
	K	T	A	K	T	A	K	T	A	K	T	A
1	2	4	2.1	2	8	13.4	2	6	7.0	1	6	4.4
2	0.0			1	7	6.3	1	4	10.6	1	8	7.5
3	1	4	2.1	1	6	7.0	2	6	17.5	2	6	8.7
4	2	6	4.4	2	6	4.4	3	7	7.9	3	6	4.4
5	0.0			0.0			0.0			0.0		
6	0.0			0.0			0.0			0.0		
7	0.0			0.0			0.0			0.0		
8	0.0			0.0			0.0			0.0		
9	0.0			0.0			1	6	3.5	0.0		
10	0.0			0.0			3	4	2.1	0.0		
11	0.0			3	6	3.5	2	4	2.1	3	4	2.1
12	3	4	2.1	3	4	4.2	2	4	2.1	2	6	1.7
13	2	4	2.1	2	4	3.2	0.0			0.0		
14	0.0			0.0			3	4	2.1	3	4	2.1
15	TT			3	4	2.1	2	4	2.1	2	4	2.1
16	0.0			...			2	6	4.4	3	4	5.3
17	3	4	2.1	3	6	4.4	1	4	2.1	1	4	5.3
18	0.0			1	4	2.1	2	6	8.7	0.0		
19	2	4	2.1	2	4	2.1	0.0			0.0		
20	0.0			0.0			0.0			0.0		
21	0.0			0.0			0.0			0.0		
22	0.0			0.0			2	4	2.1	0.0		
23	0.0			0.0			2	4	2.1	0.0		
24	1	6	1.7	2	6	1.7	0.0			0.0		
25	0.0			...			2	4	10.6	2	4	5.3
26	0.0			2	4	5.3	0.0			0.0		
27	0.0			0.0			0.0			0.0		
28	0.0			0.0			1	6	2.6	0.0		
29	0.0			1	6	4.4	0.0			0.0		

MICROSEISMIC ACTIVITY
COMPONENT EW

MARCH 1972

GMT Date	00 h			06 h			12 h			18 h		
	K	T	A	K	T	A	K	T	A	K	T	A
1	2	4	3.9	2	6	8.5	2	8	3.6	2	6	4.3
2	2	6	4.3	2	8	7.1	2	6	4.3	2	4	2.0
3	0.0			2	4	2.0	2	4	3.9	2	6	8.5
4	2	6	8.5	2	6	8.5	2	8	7.1	2	8	7.1
5	2	6	6.8	2	6	4.3	2	4	4.9	2	4	4.9
6	2	4	4.9	2	4	2.9	0.0			0.0		
7	0.0			2	4	4.9	2	8	7.1	2	6	6.8
8	2	4	2.0	2	4	4.9	2	4	4.9	0.0		
9	0.0			0.0			1	4	3.9	0.0		
10	0.0			0.0			2	4	2.0	2	4	4.9
11	2	4	4.9	2	6	4.3	2	6	4.3	2	6	4.3
12	2	6	4.3	2	6	4.3	2	6	6.8	2	6	4.3
13	2	6	4.3	2	6	8.5	2	6	12.8	2	6	8.5
14	2	6	4.3	2	6	6.8	2	6	8.5	2	6	6.8
15	2	4	4.9	2	4	4.9	0.0			0.0		
16	0.0			0.0			2	6	8.5	2	6	8.5
17	2	4	4.9	2	4	4.9	2	4	4.9	0.0		
18	0.0			0.0			0.0			0.0		
19	0.0			0.0			0.0			0.0		
20	0.0			0.0			0.0			0.0		
21	0.0			0.0			0.0			1	4	2.0
22	0.0			2	4	4.9	2	6	4.3	2	6	4.3
23	2	6	4.3	2	6	6.8	2	6	8.5	2	6	8.5
24	2	6	6.8	2	6	8.5	2	6	6.8	2	6	4.3
25	0.0			0.0			0.0			0.0		
26	0.0			0.0			0.0			2	6	1.7
27	0.0			2	4	4.9	2	4	4.9	2	6	4.3
28	0.0			2	4	3.9	2	6	4.3	2	4	3.9
29	0.0			0.0			0.0			0.0		
30	0			TT			0.0			0.0		
31	0.0			0.0			0.0			0.0		



MICROSEISMIC ACTIVITY
COMPONENT NS

MARCH 1972

GMT Date	00 h			06 h			12 h			18 h		
	K	T	A	K	T	A	K	T	A	K	T	A
1	2	6	3.5	2	6	4.4	2	8	3.7	2	4	3.2
2	0.0			2	4	5.3	2	4	5.3	2	4	3.2
3	2	4	5.3	2	6	4.4	2	6	7.0	2	6	4.4
4	2	4	5.3	2	6	8.7	2	6	8.7	2	6	4.4
5	2	4	5.3	2	4	4.2	0.0			0.0		
6	0.0			2	4	5.3	2	4	5.3	2	4	5.3
7	2	4	5.3	2	4	5.3	2	6	8.7	2	6	4.4
8	0.0			2	4	5.3	0.0			0.0		
9	0.0			0.0			1	4	4.2	0.0		
10	0.0			0.0			0.0			0.0		
11	0.0			0.0			2	4	5.3	2	4	5.3
12	2	4	5.3	2	7	4.0	2	6	4.4	2	6	4.4
13	2	6	7.0	2	6	8.7	2	6	8.7	2	6	8.7
14	2	6	7.0	2	6	8.7	2	6	8.7	2	4	5.3
15	2	4	5.3	2	4	4.2	0.0			0.0		
16	0.0			0.0			2	6	7.0	2	6	8.7
17	2	4	2.1	2	4	2.1	0.0			0.0		
18	0.0			0.0			0.0			0.0		
19	0.0			0.0			0.0			0.0		
20	0.0			0.0			0.0			0.0		
21	0.0			0.0			0.0			0.0		
22	1	4	2.1	0.0			2	4	4.2	2	4	4.2
23	0.0			2	6	4.4	2	6	8.7	2	6	10.5
24	2	4	5.3	2	6	8.7	2	6	8.7	2	6	4.4
25	0.0			2	4	2.1	0.0			0.0		
26	0.0			0.0			0.0			2	4	5.3
27	0.0			2	4	5.3	2	6	3.5	2	4	2.1
28	0.0			2	6	3.5	2	6	4.4	2	4	3.2
29	0.0			0.0			0.0			0.0		
30	0			TT			0.0			0.0		
31	0.0			0.0			0.0			0.0		

MICROSEISMIC ACTIVITY

APRIL 1972

COMPONENT EW

MICROSEISMIC ACTIVITY

APRIL 1972

COMPONENT NS

GMT Date	00 h			06 h			12 h			18 h	
	K	T	A	K	T	A	K	T	A	K	T
1	0.0			0.0			0.0			0.0	
2	0.0			0.0			0.0			0.0	
3	0.0			0.0			1	6	4.3	1	6
4	0.0			1	4	2.0	2	6	4.3	2	6
5	2	4	2.9	2	6	6.8	2	6	4.3	2	6
6	2	6	2.6	2	6	5.1	2	6	4.3	2	4
7	0.0			2	4	2.0	2	4	2.0	2	4
8	0			0			1	6	2.6	1	6
9	0			0.0			0.0			0.0	
10	0.0			0.0			2	6	1.7	2	6
11	2	6	2.6	2	6	4.3	2	6	2.6	2	4
12	0.0			0.0			2	4	2.0	2	6
13	0			0.0			1	8	3.6	1	6
14	0			0.0			2	6	4.3	2	6
15	0			0			0.0			0.0	
16	0			0.0			0			...	
17			2	6	3.4	0.0	
18	0			2	6	1.7	2	4	3.9	0.0	
19	0.0			0.0			
20	0			0.0			0.0			0.0	
21	0.0			1	6	2.6	2	6	4.3	2	6
22	0			0.0			0			0	
23	0			0			3	6	4.3	0	
24	0			0.0			3	4	2.0	0.0	
25	0.0			0.0			0.0			0.0	
26	0.0			3	4	2.0	2	6	4.3	2	4
27	0.0			2	6	1.7	2	6	4.3	0.0	
28	0.0			0.0			2	4	2.9	0.0	
29	0.0			0.0			0.0			0.0	
30	0.0			0.0			0.0			0.0	

GMT Date	00 h			06 h			12 h			18 h		
	K	T	A	K	T	A	K	T	A	K	T	A
1	0.0			0.0			0.0			0.0		
2	0.0			0.0			0.0			0.0		
3	0			0.0			1	6	1.7	1	6	1.7
4	1	6	1.7	1	4	2.1	2	4	4.2	2	4	4.2
5	1	8	2.2	1	6	7.0	2	6	7.0	2	6	7.0
6	0.0			2	6	1.7	2	4	3.2	2	4	3.2
7	0.0			0.0			2	4	2.1	2	4	2.1
8	0			0			0.0			0.0		
9	0			0.0			0.0			0.0		
10	0			2	4	3.2	2	6	3.5	2	6	4.4
11	2	6	4.4	2	4	5.3	2	6	4.4	2	6	4.4
12	0.0			2	4	3.2	0.0			2	4	2.1
13	0.0			0.0			1	6	2.6	1	6	2.6
14	0			0			2	4	2.1	0.0		
15	0			1	4	2.1	0			0		
16	0			0			0			0		
17	0			2	4	3.2	2	4	3.2	2	4	2.1
18	0.0			0.0			0.0			0.0		
19	0.0			0.0			2	4	3.2	...		
20	0			0.0			0.0			0.0		
21	0.0			0.0			0.0			0.0		
22	0.0			0.0			0.0			0.0		
23	0.0			0.0			3	4	5.3	0		
24	0			0.0			0.0			0.0		
25	0.0			0.0			0.0			0.0		
26	0.0			0.0			0.0			0.0		
27	0.0			0.0			2	4	2.1	0.0		
28	0.0			2	4	2.1	0.0			0.0		
29	0.0			0.0			0.0			0.0		
30	0.0			0.0			0			0		

MICROSEISMIC ACTIVITY

MAY 1972

COMPONENT EW

GMT Date	00 h			06 h			12 h			18 h		
	K	T	A	K	T	A	K	T	A	K	T	A
1	0.0			0.0				
2			2	6	2.6	2	6	2.6
3	0.0			2	4	2.0	2	4	4.9	2	4	4.9
4	0			2	4	2.0	2	4	2.0	0		
5	0			2	4	4.9	2	6	3.4	2	6	2.6
6	0.0			2	4	2.0	2	4	2.9	2	4	4.9
7	0.0			0.0			0			0		
8	0			0			0			0		
9	0			0			0.0			0.0		
10	0.0			0.0			2	4	4.9	2	6	1.7
11	0.0			2	4	2.0	2	6	4.3	2	6	3.4
12	0.0			2	6	2.6	2	6	4.3	2	6	4.3
13	0.0			2	6	3.4	1	4	4.9	0.0		
14	0			0			0			0		
15	0			0			2	6	2.6	2	6	2.6
16	0.0			2	6	4.3	0.0			0.0		
17	0.0			0.0				
18			0.0			0.0		
19	0			2	4	2.0		
20	0			0			0.0			0.0		
21	0.0			0.0			1	4	4.9	0.0		
22	0			0.0			2	4	2.9	0.0		
23	0.0			0.0			2	4	2.0	0.0		
24	0.0			0.0				
25	2	4	4.9	2	6	4.3	2	6	4.3	2	6	4.3
26	0.0			2	6	2.6	2	6	4.3	2	6	4.3
27	1	6	5.8	2	4	2.0	0.0			0.0		
28	0.0			0.0			2	4	4.9	2	6	4.3
29	0.0			2	6	2.6	2	4	4.9	2	6	4.3
30	2	4	2.0	2	6	1.7	2	4	4.9	2	6	4.3
31	0.0			0.0			2	6	2.6	0.0		
							0.0			0.0		



MICROSEISMIC ACTIVITY

MAY 1972

COMPONENT NS

GMT Date	00 h			06 h			12 h			18 h		
	K	T	A	K	T	A	K	T	A	K	T	A
1	0.0			0.0			0.0			0		
2	0			0				
3			0.0			0.0		
4	0.0			0.0			0.0			0.0		
5	0.0			0.0			0.0			0.0		
6	0.0			0.0			1	4	2.1	0		
7	0			0			0			0		
8	0			0			0			0		
9	0			0			1	4	2.1	1	4	2.1
10	0			0.0			0.0			2	4	2.1
11	0			0.0			2	4	2.1	2	4	2.1
12	0			0.0			0.0			0.0		
13	0.0			0.0			1	4	5.3	0.0		
14	0			0.0			0			0		
15	0			0			2	4	5.3	2	4	2.1
16	0			2	4	2.1	1	4	5.3	2	4	2.1
17	0			0.0			2	6	2.6	2	6	2.6
18	0			0.0			0.0			0.0		
19	0			0.0			...			0		
20	0			0			0.0			0.0		
21	0			0.0			0			0		
22	0			0			2	4	5.3	2	4	5.3
23	0			0.0			2	4	5.3	0.0		
24	0.0			0.0			2	4	5.3	2	6	4.4
25	0.0			2	6	4.4	2	6	4.4	2	6	4.4
26	0.0			2	4	3.2	2	4	3.2	2	4	8.5
27	0.0			2	4	2.1	2	4	5.3	2	4	5.3
28	0.0			0.0			2	4	5.3	2	4	3.2
29	2	4	5.3	2	4	5.3	2	6	4.4	2	6	4.4
30	2	4	5.3	2	4	5.3	2	4	2.1	2	4	2.1
31	2	4	2.1	2	4	2.1	0.0			0.0		

MICROSEISMIC ACTIVITY
COMPONENT EW

JUNE 1972

GMT Date	00 h			06 h			12 h			18 h		
	K	T	A	K	T	A	K	T	A	K	T	A
1	0.0			0.0			0.0			0.0		
2	0.0			0.0			0.0			0.0		
3	0.0			0.0			0.0			2	4	2.0
4	0.0			0.0			0.0			0.0		
5	0.0			2	4	2.9	2	4	2.9	2	4	2.9
6	0			2	6	1.7	2	4	4.9	2	4	2.0
7	0.0			0.0			0.0			0.0		
8	0			2	4	2.0	0.0			0.0		
9	0.0			0.0			0.0			0.0		
10	0.0			0.0			0.0			0.0		
11	0.0			0.0			0.0			TT		
12	0.0			0.0			0.0			0.0		
13	0.0			0.0			0.0			0.0		
14	0.0			0.0			0.0			TT		
15	0.0			0.0			0.0			0.0		
16	0.0			0.0			0.0			0.0		
17	0.0			0.0			2	4	2.0	2	4	2.9
18	0			2	4	2.9	2	4	2.0	2	4	2.0
19	-	5	2.8	2	4	2.9	0.0			0.0		
20	0.0			2	6	1.7	0.0			0.0		
21	0.0			0.0			0.0			0.0		
22	0.0			0.0			0.0			0.0		
23	0			2	4	2.0	0.0			2	6	1.7
24	2	4	2.0	0.0			0.0			0.0		
25	0.0			0.0			0.0			0.0		
26	0.0			0.0			2	4	4.9	0.0		
27	0.0			2	6	1.7	0.0			0.0		
28	0			0.0			2	6	2.6	2	4	2.0
29	0.0			2	6	1.7	0.0			0.0		
30	0.0			0.0			0.0			0.0		



MICROSEISMIC ACTIVITY
COMPONENT NS

JUNE 1972

GMT Date	00 h			06 h			12 h			18 h		
	K	T	A	K	T	A	K	T	A	K	T	A
1	0.0			0.0			0.0			0.0		
2	0.0			0.0			0.0			0.0		
3	0.0			0.0			0.0			2	4	3.2
4	0.0			0.0			0.0			0.0		
5	0.0			2	4	2.1	2	4	2.1	0.0		
6	0			1	6	4.4	2	6	4.4	2	6	4.4
7	0			0.0			2	4	2.1	2	4	3.2
8	0			0.0			2	4	2.1	2	4	2.1
9	0.0			0.0			2	4	2.1	2	4	2.1
10	0.0			0.0			0.0			0.0		
11	0.0			0.0				
12			2	4	3.2	2	4	3.2
13	0.0			2	4	2.1	2	4	2.1	2	4	3.2
14	0.0			2	4	3.2	0.0			TT		
15	0.0			0.0			1	4	2.1	0.0		
16	0.0			1	4	3.2	2	4	2.1	2	4	2.1
17	2	4	2.1	2	4	3.2	0.0			0.0		
18	0.0			0.0			0.0			0.0		
19	0.0			0.0			0.0			0.0		
20	0.0			0.0			0.0			0.0		
21	0.0			0.0			2	4	2.1	2	4	2.1
22	0.0			2	4	2.1	2	4	2.1	2	4	5.3
23	0.0			2	4	2.1	0.0			2	4	2.1
24	0.0			0.0			0.0			0.0		
25	0.0			0.0			2	4	2.1	0.0		
26	2	4	2.1	2	4	2.1	2	4	2.1	2	4	2.1
27	2	4	2.1	2	4	2.1	0			0		
28	0			0			0.0			0.0		
29	0			0.0			2	4	3.2	0.0		
30	0			0			0.0			0.0		

MICROSEISMIC ACTIVITY
COMPONENT EW

JULY 1972



MICROSEISMIC ACTIVITY
COMPONENT NS

JULY 1972

GMT Date	00 h			06 h			12 h			18 h		
	K	T	A	K	T	A	K	T	A	K	T	A
1	0			0			0			0		
2	0			0			0			0.0		
3	0.0			0.0			0.0			0.0		
4	0.0			0.0			0.0			0.0		
5	0.0			0.0			0.0			0.0		
6	0.0			0.0			0.0			0.0		
7	0.0			0.0			2	4	2.0	2	4	2.9
8	2	4	2.0	2	4	2.0	2	4	2.0	0.0		
9	2	6	3.4	2	4	2.0	0.0			0.0		
10	0.0			0.0			2	4	2.0	0.0		
11	0.0			2	4	2.0	2	4	2.0	2	4	2.9
12	0.0			2	4	2.0	0.0			0.0		
13	0.0			0.0			0.0			0.0		
14	0.0			0.0			0.0			0.0		
15	0.0			0.0			0.0			0.0		
16	0.0			0.0			0.0			0.0		
17	0.0			0.0			0.0			0.0		
18	0.0			0.0			0.0			0.0		
19	2	4	2.0	0.0			0.0			0.0		
20	0.0			0.0			0.0			0.0		
21	1	6	1.7	1	4	2.0	0.0			0.0		
22	0.0			0.0			2	6	1.7	0.0		
23	0.0			0.0			0.0			0.0		
24	0.0			0.0			0.0			0.0		
25	0.0			0.0			0.0			0.0		
26	0.0			1	6	1.7	2	4	2.0	2	4	4.9
27	2	4	2.0	2	6	1.7	0.0			0.0		
28	2	6	1.7	2	6	1.7	0.0			0.0		
29	0.0			2	6	1.7	2	4	2.9	2	4	2.9
30	0.0			2	6	1.7	0.0			0.0		
31	0.0			0.0			0.0			0.0		

GMT Date	00 h			06 h			12 h			18 h		
	K	T	A	K	T	A	K	T	A	K	T	A
1	0			0			0			0		
2	0			0			0			0		
3	0			0			0.0			0.0		
4	0			1	6	1.8	0.0			0.0		
5	0.0			0.0			1	4	2.1	0		
6	0			0			0.0			0.0		
7	0.0			0.0			0.0			0.0		
8	0.0			0.0			1	4	2.1	1	4	2.1
9	0.0			0.0			0.0			0.0		
10	0.0			0.0			2	4	2.1	2	4	2.1
11	2	4	2.1	2	4	2.1	0.0			1	4	2.1
12	0.0			2	4	2.1	0.0			0.0		
13	0.0			0.0			0.0			0.0		
14	0.0			0.0			1	6	4.4	2	4	3.2
15	0			0.0			0.0			0.0		
16	0.0			0.0			0.0			0.0		
17	0.0			2	4	2.1	0.0			0.0		
18	0.0			0.0			0.0			2	4	2.1
19	0			0.0			0.0			0.0		
20	0.0			0.0			0.0			0.0		
21	1	4	4.2	1	4	2.1	2	4	2.1	2	4	2.1
22	2	4	2.1	2	4	2.1	0			0		
23	0			0			0			0		
24	1	4	5.3	0.0			2	4	2.1	0.0		
25	0.0			0.0			2	4	2.1	2	4	2.1
26	0.0			2	4	2.1	2	4	2.1	2	4	2.1
27	0.0			2	6	2.6	2	4	2.1	2	4	2.1
28	2	4	5.3	2	4	3.2	2	4	2.1	2	6	1.8
29	0.0			2	4	2.1	2	4	2.1	2	4	2.1
30	0.0			0.0			2	4	2.1	2	4	2.1
31	0.0			0.0			0.0			0.0		

MICROSEISMIC ACTIVITY

AUGUST 1972

COMPONENT EW

GMT Date	00 h			06 h			12 h			18 h		
	K	T	A	K	T	A	K	T	A	K	T	A
1	0.0			0.0			0.0			0.0		
2	0			2 4 2.3			2 4 2.3			2 4 2.3		
3	2 6 2.0			2 4 2.3			0.0			0.0		
4	2 4 2.3			2 6 3.0			0.0			TT		
5	2 6 5.0			2 6 2.0			2 6 3.0			2 4 2.3		
6	2 4 2.3			2 6 3.0			0.0			0.0		
7	0.0			2 4 2.3			0.0			0.0		
8	0.0			0.0			0.0			0.0		
9	0.0			0.0			2 4 2.3			0.0		
10	0.0			0.0			0.0			0.0		
11	0.0			0.0			2 4 2.3			2 5 3.2		
12	0.0			0.0			0.0			0.0		
13	2 4 2.3			0.0			0.0			0.0		
14	0.0			2 4 5.7			0.0			0.0		
15	0.0			0.0			0.0			0.0		
16	0.0			0.0			3 4 5.7			3 4 2.3		
17	0.0			2 4 2.3			2 4 2.3			2 4 2.3		
18	TT			2 4 2.3			2 6 3.0			2 4 2.3		
19	2 4 2.3			2 6 2.0				
20			2 6 3.0			2 6 5.0		
21	2 6 3.0			2 4 5.7			2 8 4.3			2 8 4.3		
22	2 6 3.0			2 6 2.0			0.0			0.0		
23	0.0			2 6 2.0			2 6 2.0			0.0		
24	0.0			2 6 2.0			0.0			0.0		
25	0.0			2 4 2.3			0.0			0.0		
26	0.0			0.0			0.0			0.0		
27	0.0			0.0			0.0			0.0		
28	0.0			TT			0.0			0.0		
29	0.0			0.0			0.0			0.0		
30	0			0.0			0.0			0.0		
31	0			0.0			0.0			0.0		



MICROSEISMIC ACTIVITY

AUGUST 1972

COMPONENT NS

GMT Date	00 h			06 h			12 h			18 h		
	K	T	A	K	T	A	K	T	A	K	T	A
1	0.0			0.0			2 4 2.2			2 4 2.2		
2	2 4 2.2			2 4 3.2			2 4 2.2			2 4 2.2		
3	0.0			2 6 1.8			2 4 5.4			0.0		
4	0.0			0.0			2 4 5.4			TT		
5	2 4 2.2			2 4 3.2			2 4 2.2			0.0		
6	0.0			0.0			0.0			0.0		
7	0.0			2 4 2.2			0.0			0.0		
8	0.0			0.0			0.0			0.0		
9	0.0			0.0			2 6 4.5			2 4 2.2		
10	2 4 2.2			2 4 3.2			3 4 2.2			2 4 2.2		
11	0.0			2 4 2.2			2 4 5.4			2 6 4.5		
12	0.0			2 6 1.8			0.0			0.0		
13	0.0			0.0			0.0			0.0		
14	0.0			0.0			2 4 3.2			2 4 3.2		
15	0.0			2 4 2.2			2 4 2.2			2 5 2.0		
16	0.0			2 4 3.2			2 4 2.2			2 4 2.2		
17	2 4 2.2			2 4 3.2			2 4 3.2			0.0		
18	TT			2 4 2.2			2 6 2.7			2 6 3.6		
19	2 4 2.2			2 4 3.2			2 6 4.5			2 6 2.7		
20	2 4 3.2			2 4 5.4			2 4 2.2			2 4 2.2		
21	2 4 2.2			2 6 4.5			2 6 2.7			2 6 4.5		
22	2 6 2.7			2 4 5.4			2 4 2.2			2 4 2.2		
23	0.0			2 4 2.2			0.0			0.0		
24	0.0			0.0			0.0			0.0		
25	0.0			0.0			0			0		
26	0			0.0			0			1 4 2.2		
27	0.0			0.0			0.0			0.0		
28	0.0			TT			0.0			0.0		
29	0.0			0.0			0.0			0.0		
30	0			0.0			0.0			0.0		
31	0.0			0.0			0.0			0.0		

COMPONENT EW



COMPONENT NS

GMT Date	00 h			06 h			12 h			18 h		
	K	T	A	K	T	A	K	T	A	K	T	A
1	0.0			0.0			0.0			0.0		
2	0.0			2	6	2.0	2	6	2.0	2	4	3.4
3	0.0			2	4	2.3	0.0			0.0		
4	0.0			0.0			0.0			TT		
5	2	6	2.0	0.0			0.0			0.0		
6	0			0.0			0.0			0.0		
7	0.0			0.0			0.0			0.0		
8	0.0			0.0			0.0			0.0		
9	0			2	6	2.0	2	4	2.3	2	4	2.3
10	2	4	2.3	0.0			0.0			0.0		
11	0.0			0.0			2	6	3.0	0.0		
12	0.0			0.0			0.0			0.0		
13	0.0			0.0			...			0.0		
14			0.0		
15	0.0			0.0			0.0			0.0		
16	0.0			0.0			0.0			0.0		
17	0.0			0.0			2	6	2.0	0.0		
18	2	6	2.0	0.0			2	6	2.0	0.0		
19	0.0			2	4	2.3	0.0			2	4	2.3
20	0.0			0.0			0.0			0.0		
21	0.0			0.0			0.0			0.0		
22	1	6	5.0	0.0			0.0			0.0		
23	2	4	2.3	2	6	3.0	0.0			0.0		
24	0.0			0.0			2	6	3.0	2	6	3.0
25	2	4	3.4	2	4	2.3	2	6	2.0	2	4	3.4
26	0.0			2	6	5.0	2	4	2.3	2	6	2.0
27	2	4	3.4	2	6	3.0	2	6	10.0	2	6	10.0
28	0.0			2	6	2.0	2	6	5.0	2	6	5.0
29	0.0			0.0			2	4	2.3	0.0		
30	0.0			0.0			0.0			0.0		

GMT Date	00 h			06 h			12 h			18 h		
	K	T	A	K	T	A	K	T	A	K	T	A
1	0.0			0.0			2	4	2.2	0.0		
2	2	4	2.2	2	4	5.4	2	4	2.2	2	6	2.7
3	0.0			2	4	2.2	0.0			0.0		
4	0.0			2	4	2.2	2	4	3.2	TT		
5	0.0			0.0			2	4	2.2	2	4	2.2
6	2	4	2.2	0.0			0.0			0.0		
7	2	4	2.2	2	4	2.2	2	4	2.2	0.0		
8	0			0.0			TT			0		
9	0			0			2	4	5.4	2	4	5.4
10	2	4	2.2	2	4	2.2	0			0		
11	0.0			2	4	3.2	0.0			0.0		
12			0.0			0.0		
13			2	4	2.2	2	4	2.2
14	0			0			0.0			0.0		
15	0.0			0.0			2	4	2.2	0.0		
16	0.0			2	4	2.2	0.0			0.0		
17	0.0			0.0			0.0			0.0		
18	0.0			0.0			2	6	5.4	0.0		
19	0.0			2	4	2.2	2	4	2.2	2	4	5.4
20	0.0			2	4	2.2	2	4	2.2	0.0		
21	2	4	3.2	2	4	2.2	0.0			0.0		
22	0.0			0.0			2	4	2.2	2	4	2.2
23	2	4	2.2	2	6	2.7	2	4	2.2	2	4	3.2
24	2	4	2.2	0.0			0.0			0.0		
25	1	4	3.2	2	4	2.2	2	4	2.2	2	4	2.2
26	2	4	2.2	2	6	7.3	2	6	7.3	2	6	7.3
27	2	6	4.5	2	4	3.2	2	6	4.5	2	6	4.5
28	2	4	3.2	2	4	3.2	2	6	4.5	2	4	2.2
29	2	4	2.2	2	4	2.2	0.0			0.0		
30	0.0			2	4	2.2	0.0			0.0		

MICROSEISMIC ACTIVITY

OCTOBER 1972

COMPONENT EW

GMT Date	00 h			06 h			12 h			18 h		
	K	T	A	K	T	A	K	T	A	K	T	A
1	2	4	2.3	2	4	2.3	2	4	2.3	2	4	2.3
2	2	6	2.0	2	4	2.3	2	6	5.0	2	6	3.0
3	0			0.0			2	4	2.3	2	4	2.3
4	2	4	2.3	2	6	3.0	2	6	5.0	2	6	6.0
5	2	6	5.0	2	6	10.0	2	6	10.0	2	6	10.0
6	2	6	5.0	2	6	10.0	2	6	5.0	2	6	3.0
7	2	4	2.3	2	4	5.7	2	6	10.0	2	6	10.0
8	2	4	5.7	2	4	2.3	2	4	2.3	0.0		
9	0.0			2	4	2.3	0.0			0.0		
10	0.0			0.0			2	4	3.4	2	4	2.3
11	0.0			2	4	2.3	2	4	2.3	0.0		
12	2	6	4.0	2	6	5.0	2	6	5.0	2	6	5.0
13	0.0			2	4	2.3	2	4	2.3	2	4	2.3
14	2	4	2.3	2	6	3.0	2	4	2.3	2	4	2.3
15	2	4	2.3	2	4	5.7	0.0			0.0		
16	2	4	2.3	2	4	2.3	2	6	5.0	2	6	3.0
17	2	6	5.0	2	6	5.0	2	6	5.0	2	6	5.0
18	2	6	10.0	2	6	5.0	2	6	5.0	2	6	5.0
19	2	4	3.4	2	4	5.7	2	6	8.0	2	6	10.0
20	2	6	10.0	2	6	5.0	2	6	5.0	2	6	5.0
21	2	6	2.0	2	6	5.0	2	4	2.3	0.0		
22	0.0			0.0			0.0			0.0		
23	0.0			0.0			2	4	5.7	2	6	6.0
24	2	6	10.0	2	6	5.0	2	6	3.0	2	4	2.3
25	0.0			0.0			2	4	2.3	2	4	2.3
26	2	4	2.3	2	4	2.3	2	4	5.7	2	4	5.7
27	2	4	3.4	2	4	5.7	2	4	5.7	2	6	5.0
28	2	4	2.3	0.0			2	4	2.3	2	4	2.3
29	2	4	2.3	2	4	2.3	2	4	2.3	0.0		
30	2	4	2.3	2	4	5.7	2	4	2.3	0.0		
31	2	4	2.3	2	4	2.3	2	4	2.3	0.0		



MICROSEISMIC ACTIVITY

OCTOBER 1972

COMPONENT NS

GMT Date	00 h			06 h			12 h			18 h		
	K	T	A	K	T	A	K	T	A	K	T	A
1	2	4	2.2	2	4	2.2	2	4	2.2	2	4	2.2
2	2	6	1.8	2	6	1.8	2	4	2.2	2	4	2.2
3	0			2	4	2.2	2	4	2.2	2	4	2.2
4	2	4	2.2	2	6	2.7	2	6	4.5	2	6	9.1
5	2	6	4.5	2	6	9.1	2	6	9.1	2	6	9.1
6	2	6	9.1	2	6	9.1	2	6	9.1	2	6	9.1
7	2	4	2.2	2	6	4.5	2	6	9.1	2	6	9.1
8	2	4	2.2	2	4	2.2	2	4	2.2	0.0		
9	0.0			2	4	2.2	2	4	2.2	2	4	2.2
10	0.0			2	4	2.2	2	4	5.4	2	4	5.4
11	2	4	2.2	2	4	2.2	2	4	5.4	2	4	5.4
12	2	4	3.2	2	4	2.2	2	4	2.2	2	4	2.2
13	0.0			2	4	2.2	2	4	3.2	2	4	3.2
14	0.0			2	4	3.2	2	4	5.4	2	4	2.2
15	2	4	2.2	2	4	3.2	0.0			0.0		
16	2	4	2.2	2	4	2.2	2	4	5.4	2	4	5.4
17	0.0			2	6	2.7	2	6	9.1	2	6	9.1
18	2	6	9.1	2	6	4.5	2	6	4.5	2	6	4.5
19	2	4	2.2	2	6	4.5	2	6	9.1	2	6	9.1
20	2	6	4.5	2	6	4.5	2	4	3.2	2	4	6.5
21	0.0			0.0			2	4	2.2	2	4	2.2
22	0.0			0.0			0.0			2	4	2.2
23	0.0			2	4	2.2	2	6	4.5	2	6	9.1
24	2	6	4.5	2	6	4.5	2	4	2.2	2	4	2.2
25	0.0			0.0			2	4	2.2	2	4	2.2
26	2	4	5.4	2	4	5.4	2	4	5.4	2	4	5.4
27	2	4	2.2	2	4	5.4	2	6	4.5	2	6	5.4
28	0.0			2	4	3.2	2	4	2.2	2	4	2.2
29	0.0			2	4	2.2	2	4	2.2	2	4	2.2
30	2	4	2.2	2	4	2.2	2	4	2.2	0.0		
31	0.0			2	4	2.2	2	4	2.2	2	4	2.2

MICROSEISMIC ACTIVITY

NOVEMBER 1972

COMPONENT EW

GMT Date	00 h			06 h			12 h			18 h		
	K	T	A	K	T	A	K	T	A	K	T	A
1	0.0			0.0			0.0			2	4	1.9
2	2	6	1.6	2	6	4.1	2	6	4.1	2	6	4.1
3	2	4	2.9	2	6	4.1	2	4	1.9	2	4	2.9
4	2	4	1.9	2	4	1.9	2	4	4.8	2	4	2.9
5	2	4	4.8	2	4	4.8	2	6	4.1	2	6	4.1
6	2	4	1.9	2	4	2.9	2	4	1.9	2	4	1.9
7	0.0			2	6	4.1	2	6	4.1	2	6	2.5
8	2	6	1.6	2	6	4.1	2	6	8.2	2	6	6.6
9	2	4	4.8	2	4	5.7	2	6	8.2	2	6	8.2
10	2	6	4.1	2	6	4.9	2	6	8.2	2	6	8.2
11	2	6	8.2	2	6	8.2	2	6	8.2	2	6	8.2
12	2	6	4.1	2	6	4.1	2	4	1.9	TT		
13	2	6	1.6	2	4	4.8	2	6	4.1	2	6	4.1
14	2	4	1.9	2	4	2.9	2	4	1.9	2	4	1.9
15	0.0			0.0			0.0			0.0		
16	0.0			0.0			2	4	1.9	2	4	1.9
17	2	4	1.9	2	4	1.9	2	6	1.6	2	4	1.9
18	2	4	1.9	2	4	2.9	2	6	1.6	2	6	1.6
19	2	4	1.9	2	4	1.9	2	6	4.1	2	6	4.1
20	2	6	4.1	2	6	4.1	2	6	8.2	2	6	4.9
21	2	6	4.1	2	4	2.9	2	4	4.8	2	4	4.8
22	0.0			2	4	1.9	2	4	1.9	0.0		
23	0.0			0.0			0.0			0.0		
24	0			0.0			0.0			0.0		
25	0.0			0.0			0.0			0.0		
26	0.0			0.0			0.0			0.0		
27	0.0			0.0			2	4	1.9	0.0		
28	0.0			0.0			2	4	1.9	2	6	2.5
29	2	4	1.9	2	6	2.5	2	6	6.6	2	6	4.1
30	2	4	1.9	2	4	2.9	2	4	1.9	2	4	1.9



MICROSEISMIC ACTIVITY

NOVEMBER 1972

COMPONENT NS

GMT Date	00 h			06 h			12 h			18 h		
	K	T	A	K	T	A	K	T	A	K	T	A
1	2	4	1.9	2	4	1.9	2	4	1.9	2	4	1.9
2	0.0			2	6	2.3	2	6	3.9	2	6	3.9
3	2	6	1.6	2	6	2.3	2	6	3.9	2	6	1.6
4	2	4	1.9	2	4	2.8	2	6	2.3	2	6	2.3
5	2	4	2.8	2	4	4.7	2	4	4.7	2	4	4.7
6	2	4	1.9	2	4	2.8	2	4	4.7	2	4	4.7
7	0.0			2	4	1.9	2	6	3.9	2	6	6.2
8	2	6	1.6	2	6	3.9	2	6	3.9	2	6	3.9
9	2	4	1.9	2	4	4.7	2	6	7.8	2	6	7.8
10	2	6	6.2	2	4	7.6	2	6	7.8	2	6	7.8
11	2	6	7.8	2	6	7.8	2	6	9.3	2	6	9.3
12	2	6	6.2	2	6	3.9	2	4	1.9	TT		
13	2	4	1.9	2	4	4.7	2	6	3.9	2	4	4.7
14	2	4	1.9	2	4	1.9	2	4	1.9	2	4	1.9
15	0.0			0.0			2	4	1.9	0.0		
16	0.0			2	4	1.9	2	5	1.7	2	4	1.9
17	0.0			2	4	1.9	2	4	1.9	2	4	1.9
18	2	4	1.9	2	4	1.9	2	4	1.9	2	4	1.9
19	2	4	1.9	2	4	1.9	2	6	3.9	2	6	2.3
20	2	4	4.7	2	4	4.7	2	6	7.8	2	6	7.8
21	2	4	4.7	2	4	2.8	2	6	6.2	2	6	7.8
22	2	4	1.9	2	4	1.9	2	4	1.9	2	4	1.9
23	0.0			0.0			0.0			0.0		
24	0.0			0.0			0.0			0.0		
25	0.0			0.0			0.0			0.0		
26	0.0			0.0			0.0			0.0		
27	0.0			0.0			2	4	1.9	2	4	1.9
28	0.0			2	4	1.9	2	6	6.2	2	4	4.7
29	2	4	1.9	2	4	1.9	2	4	1.9	2	4	1.9
30	2	4	4.7	2	4	4.7	2	4	4.7	2	4	4.7

MICROSEISMIC ACTIVITY
 COMPONENT EW

DECEMBER 1972

GMT Date	00 h			06 h.			12 h			18 h.		
	K	T	A	K	T	A	K	T	A	K	T	A
1	2	4	1.9	2	4	1.9	2	4	1.9	2	4	1.9
2	TT			2	4	1.9	2	6	4.1	2	6	2.5
3	2	4	4.8	2	4	4.8	2	6	4.1	2	6	4.1
4	2	6	1.6	2	6	2.5	2	6	4.1	2	4	4.8
5	2	4	4.8	2	4	4.8	2	4	4.8	2	4	4.8
6	2	4	1.9	2	4	2.9	2	6	6.6	2	6	4.9
7	2	6	2.5	2	6	4.1	2	6	8.2	2	6	8.2
8	2	4	4.8	2	4	2.9	2	4	1.9	2	4	1.9
9	2	4	1.9	2	4	1.9	2	4	1.9	2	4	1.9
10	0.0			2	4	1.9	2	4	1.9	0.0		
11	0.0			2	4	1.9	2	6	2.5	2	6	2.5
12	2	6	1.6	2	6	2.5	2	6	4.1	2	8	2.1
13	2	6	2.5	2	6	4.1	2	6	4.1	2	6	6.6
14	2	6	1.6	2	4	4.8	2	4	4.8	2	4	4.8
15	0.0			2	4	2.9	2	4	1.9	2	4	1.9
16	0.0			2	4	1.9	2	4	1.9	2	4	1.9
17	0.0			2	4	1.9	2	4	1.9	0.0		
18	0.0			0.0			2	4	1.9	2	4	1.9
19	2	6	1.6	2	4	1.9	2	6	2.5	2	6	2.5
20	0.0			2	4	2.9	2	6	1.6	2	6	1.6
21	2	6	1.6	2	6	1.6	2	6	4.1	2	6	4.1
22	2	6	4.1	2	6	4.1	2	6	4.9	2	6	8.2
23	2	6	2.5	2	6	4.1	2	6	4.1	2	6	4.1
24	2	6	4.1	2	6	4.1	2	6	4.1	2	4	4.8
25	2	4	4.8	2	4	4.8	2	4	4.8	2	4	4.8
26	2	4	4.8	2	4	4.8	2	4	4.8	2	4	4.8
27	2	6	4.1	2	4	4.8	2	6	4.1	2	6	4.1
28	2	4	1.9	2	4	1.9	2	6	4.1	2	4	4.8
29	2	6	1.6	2	6	2.5	2	6	4.1	2	4	2.9
30	2	6	8.2	2	6	4.1	2	6	4.1	2	6	4.1
31	2	4	1.9	2	4	1.9	2	6	4.1	2	6	4.1



MICROSEISMIC ACTIVITY
 COMPONENT NS

DECEMBER 1972

GMT Date	00 h			06 h			12 h			18 h		
	K	T	A	K	T	A	K	T	A	K	T	A
1	2	4	1.9	2	4	1.9	2	4	1.9	2	4	1.9
2	TT			2	4	1.9	2	6	2.3	2	4	1.9
3	0.0			2	4	1.9	2	4	4.7	2	4	1.9
4	2	4	4.7	2	6	1.6	2	6	2.3	2	4	2.8
5	2	4	2.8	2	6	3.9	2	6	3.9	2	6	3.9
6	2	6	1.6	2	4	2.8	2	6	3.9	2	6	3.9
7	2	4	1.9	2	6	3.9	2	6	7.8	2	6	6.2
8	2	6	3.9	2	6	2.3	2	6	7.8	2	6	6.2
9	2	4	1.9	2	4	1.9	2	4	1.9	2	4	1.9
10	0.0			0.0			0.0			0.0		
11	0.0			2	4	1.9	2	6	3.9	2	6	3.9
12	2	4	1.9	2	6	2.3	2	6	6.2	2	6	7.8
13	2	6	3.9	2	6	3.9	2	6	3.9	2	6	3.9
14	2	6	1.6	2	4	4.7	2	4	5.7	2	4	9.5
15	2	6	1.6	2	4	1.9	2	6	2.3	2	6	3.9
16	0.0			2	4	1.9	2	4	1.9	2	4	1.9
17	0.0			2	4	1.9	2	4	1.9	2	4	2.8
18	0.0			0.0			0.0			0.0		
19	0.0			0.0			2	4	1.9	2	4	1.9
20	0.0			0.0			2	6	2.3	2	6	2.3
21	2	4	1.9	2	4	1.9	2	6	3.9	2	6	3.9
22	0.0			2	6	2.3	2	6	3.9	2	6	3.9
23	2	4	1.9	2	6	3.9	2	6	3.9	2	6	3.9
24	2	4	1.9	2	4	2.8	2	4	4.7	2	4	4.7
25	2	4	4.7	2	4	4.7	2	6	3.9	2	4	2.8
26	2	4	4.7	2	4	1.9	2	4	4.7	2	4	4.7
27	2	4	4.7	2	4	4.7	2	6	7.8	2	6	7.8
28	2	4	4.7	2	4	4.7	2	4	4.7	2	4	4.7
29	2	4	2.8	2	4	1.9	2	4	4.7	2	4	4.7
30	0.0			2	4	4.7	2	6	3.9	2	6	3.9
31	2	6	3.9	2	6	3.9	2	6	3.9	2	6	3.9



Macroseismic Observations
of Earthquakes on the Territory
of Slovakia in the Year 1972

Date	Origin time	Location	Latitude North	Longitude East	Focal depth /km/	Shaken ₂ area /km ² /	Epiceutral Int. /MCS/	Felt at
January 5	04 57 /BRA/	Austria Wiener Neustadt	47.9°	16.2°			6°	I = 4° Bratislava /District of Brno/ Bosonohy, Breclav, Pohorelice, Ivančice I = 3° Znojmo, Brno, Třebíč I = 2° /District of Tnava/ Cífer
April 16	10 10 /BRA/	Austria Seebenstein	47.4°	16.1°			7°	I = 4° Bratislava I = 4.5° Stupava, Trnava, Žitavy, Partizánske I = 4° /District of Bratislava/ Báhoň, Bernolákovo, Borinka, Čataj, Devínska Nová Ves, Jur pri Bratislave, Dolany, Chorvátsky

Date	Origin time	Location	Latitude North	Longitude East	Focal depth /km/	Shaken ₂ area /km ² /	Epiceutral Int. /MCS/	Felt at
								Grob, Jablňov, Kostolište, Limbach, Modra, Most na Ostrove, Pezinok, Slovenský Grob, Stupava, Senkvice, Záhorská Ves /District of Dunajská Streda/ Gabčíkovo, Horné Mýto, Samorín /District of Galanta/ Kostolná pri Dunaji, Hoste p. Abraham /District of Komárno/ Zemianska Olča /District of Senica/ Borský Peter, Gbely, Rohožník, Unín, Velké Leváre Banská Bystrica, Nitra, Trnava I = 3.5° /District of Bratislava/ Bernolákovo, Dubová, Ivánka pri Dunaji, Vajnory, Zohor /District of Dunajská Streda/ Ohrady /District of Galanta/ Sereď



Date	Origin time	Location	Latitude North	Longitude East	Focal depth / km	Shaken area / km ²	Epiceutral Int. / MCS	Felt at
April 19	22 07 /BRA/	East Slovakia	48.7°	21.6°				<p>I = 3°</p> <p>/District of Bratislava/ Nová Dedinka, Most na Ostrove, Senec</p> <p>/District of Trenčín/ Nové Mesto nad Váhom</p> <p>/District of Trnava/ Piešťany</p> <p>/District of Senica/ Borský Peter, Kopčany, Myjava, Veľké Leváre</p> <p>Banská Bystrica, Levice, Nitra, Topoľčany</p>
October 26	10 20 /BRA/	Middle Slovakia	48.7°	19.3°			4°	<p>I = 4°</p> <p>/District of Trebišov/ Sečovce</p>
							3.5°	<p>I = 3.5°</p> <p>Banská Bystrica</p>



Earthquake Observations

International
Seismological
Centre

at the Stations B r a t i s l a v a
 Š r o b á r o v á
 H u r b a n o v o
 S k a l n a t é P l e s o

No.	Date	STA Code	Phase	GMT		RES O-C	Z		E-W		N-S		MPV	MLH	Delta	Azimuth	Remarks
				h	m		A	T	A	T	A	T					
1	JAN 1	BRA	EPKP2 EAPKIP I EPP LMH	22 25 22 25 22 26 22 28 23 30	28.0 43.0 12.0 28.0 0.0	-0.6 10.0 -18.5								143.85	37.85	Fiji Islands Region 16.85 S 174.90 E H = 22 5 54.0 DEPTH = 11 km MB = 5.8 /ISC/	
2	JAN 1	BRA	EAPKIP	23 4	43.0	2.0								143.70	38.85	Fiji Islands Region 16.97 S 174.27 E H = 22 44 59.0 DEPTH = 31 km MB = 5.2 /ISC/	
3	JAN 2	BRA	EXP EPP	22 10 22 14	22.0 6.0	1.4 -2.0								94.09	299.47	Near Coast of Guerrero, Mexico 16.10 N 98.29 W H = 21 56 58.0 DEPTH = 4 km MB = 5.5 /ISC/	
4	JAN 4	BRA	EAP E E ESKS LMH	3 29 3 29 3 30 3 31 3 39 4 2	19.0 49.0 22.0 22.0 37.0 0.0	-0.8 1.0					15.0	239.0	7.7	82.95	54.19	Taiwan Region 22.50 N 122.07 E H = 3 16 50.7 DEPTH = 6 km MB = 5.9 /ISC/	
5	JAN 5	BRA	IPS ISG	4 57 4 58	53.0 5.0	-2.5 0.3								0.71	243.69	Austria 47.85 N 16.16 E H = 4 57 41.3 DEPTH = 11 km MB = 3.9 /ISC/	
6	JAN 5	BRA	IPKIP IPP E ESKPDF	0 48 0 50 0 51 0 52	52.0 33.0 26.0 14.0	-0.5 0.1 3.1								121.94	56.53	New Britain Region 4.60 S 151.86 E H = 0 30 18.0 DEPTH = 166 km MB = 5.9 /ISC/	
7	JAN 8	BRA	EAPKIP IAPKP2 E EPP EAPKP2	3 27 3 27 3 28 3 31 3 27	41.0 53.0 23.0 29.0 50.0	2.5 2.9 10.4 -0.3								149.64	19.42	North of New Zealand 18.90 S 173.12 W H = 3 7 51.0 DEPTH = 2 km MB = 5.4 /ISC/	
8	JAN 8	BRA SRC	IPG ISG ESG	4 45 4 45 4 45	4.0 17.0 41.0	-1.7 -0.2 3.1								0.88 1.51	230.32 262.69	Austria 47.60 N 16.10 E H = 4 45 48.0 /ISC/	

No.	Date	SRO	STA Code	Phase	GMT		RES O-C	Z		E-W		N-S		MPV	MLH	Delta	Azimuth	Remarks
					h	m		A	T	A	T	A	T					
9	JAN 8	BRA	EXP IP IXP IPP LMH	5 40 5 40 5 40 5 43 6 20	38.0 16.0 41.0 26.0 0.0	9.1 -0.6 9.0 -3.5	1070	1.5					6.8	82.41 83.01	67.30 66.49	Philippine Islands Region 20.95 N 120.26 E H = 5 27 53.7 DEPTH = 36 km MB = 6.1 /ISC/		
10	JAN 8	BRA	IAPKIP EPP	11 53 11 53	24.0 48.0	-8.0 -8.0								110.41	215.67	South Sandwich Islands Region 55.72 S 28.75 W H = 5 27 53.7 DEPTH = 56 km MB = 6.2 /ISC/		
11	JAN 12	SRO BRA	EP E EAP	13 54 13 57 13 54	22.0 49.0 44.0	-7.5 -2.2								13.39 14.01	160.90 157.41	Crete 35.01 N 23.61 E H = 11 34 49.7 DEPTH = 46 km MB = 4.9 /ISC/		
12	JAN 12	SRO BRA	IP IPP EP IXP EPP EPOP I	18 45 18 46 18 45 18 45 18 46 18 47 18 47	5.0 49.0 12.0 46.0 47.0 11.0 25.5	-0.3 1.8 0.5 0.3 -7.8 12.6								42.03 42.79	82.36 81.98	Tadzhikistan-Sinkiang Border R. 37.68 N 75.07 E H = 18 37 21.9 DEPTH = 96 km MB = 5.3 /ISC/		
13	JAN 13	BRA	IP E	17 34 17 36	51.0 47.0	0.8								53.17	23.97	Eastern Siberia 61.94 N 147.04 E H = 17 24 23.2 DEPTH = 33 km MB = 5.3 /ISC/		
14	JAN 15	BRA SRO	EPKP2 EPP	3 58 3 58	56.0 50.0	1.2 -4.8								148.75 148.75	21.79 24.14	North of New Zealand 18.33 S 174.59 W H = 3 39 21.5 DEPTH = 171 km MB = 5.6 /ISC/		
15	JAN 15	SRO BRA	EP EAP EXP EPP LMH	20 29 20 29 20 30 20 31 20 52	38.0 58.0 3.0 50.0 0.0	-12.8 -1.2 2.7 9.3								43.30 44.01	76.89 76.55	Sinkiang Province 40.17 N 78.96 E H = 20 21 47.0 DEPTH = 9 km MB = 5.4 /ISC/		
16	JAN 16	SRO BRA	ESN IPB	11 0 11 0	58.0 29.0	12.2 0.3								1.38 1.51	14.48 48.85	Czechoslovakia /ex.140T/ 49.15 N 18.84 E H = 11 0 0.0 /FRU/		
17	JAN 17	BRA	EP	4 30	44.0	1.9								77.45	32.00	Kurile Islands 45.88 N 149.33 E H = 4 18 59.0 DEPTH = 124 km MB = 4.9 /ISC/		

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No.	Date	STA Code	Phase	GMT		RES O-C	Z		E-W		N-S		MPV	MLH	Delta	Azimuth	Remarks
				h	m		A	T	A	T	A	T					
18	JAN 17	BRA	EP EXP	21 55	14.0	1.8								86.42	96.88	Southern Sumatra H = 21 42 31.0 DEPTH = 27 km MB = 5.1 /ISC/	
19	JAN 18	BRA	EP	0 25	26.0	-1.3								75.12	354.44	Kodiak Island Region 56.76 N 153.11 W H = 0 17 44.9 DEPTH = 21 km MB = 5.1 /ISC/	
20	JAN 18	BRA	EP EXP	12 54 12 55	59.0 14.0	1.1 -1.3								73.33	20.70	Near East Coast of Kamchatka 54.57 N 161.55 E H = 12 43 28.8 DEPTH = 42 km MB = 5.6 /ISC/	
21	JAN 18	BRA	EAPKIP EPP	22 14 22 15	8.0 26.0	-0.0 4.9							118.22	63.03	Near North Coast of New Guinea 4.84 S 145.10 E H = 21 55 15.0 DEPTH = 23 km MB = 5.8 /ISC/		
22	JAN 18	BRA	EPW ESG	23 28 23 30	0.0 14.0	-3.7 -1.3							7.35	240.81	Northern Italy 44.22 N 8.17 E H = 23 26 12.5 DEPTH = 25 km MB = 4.1 /ISC/		
23	JAN 19	SRO BRA	E LMH EPKIP EAPKIP	15 20 16 0 15 19 15 20	30.0 0.0 44.0 14.0	7.4 9.7	16.0	20.0	19.0	20.0			117.68 118.25	64.25 62.99	Near North Coast of New Guinea 4.84 S 145.14 E H = 15 1 1.2 DEPTH = 100 km MB = 5.9 /ISC/		
24	JAN 19	BRA	EAPKIP EAPKIP2	20 41 20 42	49.0 4.0	-1.5 -1.3							150.76	131.26	West of Macquarie Island 59.92 S 150.30 E H = 20 21 56.6 DEPTH = 33 km MB = 5.3 /ISC/		
25	JAN 20	SRO BRA	IP IAP IPP IP IAP IPP IS ISCS	11 43 11 44 11 45 11 43 11 44 11 45 11 49 11 53	44.0 30.0 20.0 46.0 19.0 26.0 44.0 28.0	1.5 2.1 -1.6 -3.0 -15.4 -3.3 1.9 -1.8	321	1.5				5.8	39.81 40.60	86.91 86.49	Hindu Kush Region 36.39 N 70.72 E H = 11 36 28.7 DEPTH = 214 km MB = 5.8 /ISC/		

26	JAN 21	BRA	IP IAP	19 31 19 33	18.0 21.0	0.6 -1.8							94.20	254.76	Western Brazil 6.67 S 71.82 W H = 19 18 58.1 DEPTH = 571 km MB = 5.4 /ISC/
27	JAN 22	BRA SRO	EP EXP IP LMH	13 21 13 22 13 21 13 59	45.0 18.0 52.0 0.0	-0.8 -3.4 2.1			1.3	20.0	2.1	20.0	91.35 92.24	292.70 293.60	Guatemala 14.02 N 91.05 W H = 13 8 49.4 DEPTH = 94 km MB = 5.5 /ISC/
28	JAN 22	SRO BRA	IPKP2 LMH -IPKP2 I	22 10 23 2 22 10 22 11	18.0 0.0 18.0 15.0	0.3 -1.0			5.0	20.0	2.0	20.0	145.80 146.12	45.84 43.72	New Hebrides Region 20.43 S 172.85 E H = 21 50 39.6 DEPTH = 33 km MB = 5.7 /ISC/
29	JAN 22	BRA	EPKIP	22 57	12.0	4.9							148.66	21.64	New Zealand 18.22 S 174.54 W H = 22 37 46.1 DEPTH = 185 km MB = 5.1 /ISC/
30	JAN 23	SRO BRA	EPKHP EPKIP IPP	21 36 21 37 21 40	59.0 12.0 0.0	0.7 0.2 1.9							136.40 136.76	48.44 46.69	New Hebrides 13.18 S 166.32 E H = 21 17 52.6 DEPTH = 33 km MB = 5.8 /ISC/
31	JAN 23	BRA	EAPKHP	21 54	0.0	-3.5							136.66	46.64	New Hebrides 13.08 S 166.30 E H = 21 34 42.0 DEPTH = 69 km MB = 5.4 /ISC/
32	JAN 24	BRA	EPKIP	4 7	27.0	1.4							146.10	43.71	New Hebrides Region 20.41 S 172.84 E H = 3 47 52.8 DEPTH = 56 km MB = 5.2 /ISC/
33	JAN 24	BRA	EPKIP EAPKHP	19 57 19 58	50.0 19.0	0.7 -0.7							155.33	32.23	South of Fiji 26.17 S 177.24 W H = 19 38 6.2 DEPTH = 84 km MB = 5.5 /ISC/
34	JAN 25	SRO HRB BRA	IP EXP ESKS LMH IPOP IPP ESKS LMH	2 18 2 19 2 29 2 54 2 18 2 22 2 29 2 52	38.0 0.0 0.0 0.0 50.0 11.0 0.0 0.0	-6.3 2.8 0.7 -2.3 10.7 -3.0	1042.0	18.0	712.0	18.0		8.3	82.50 82.55	64.75 64.67	Taiwan Region 22.56 N 122.37 E H = 2 6 23.0 DEPTH = 29 km MB = 6.2 /ISC/
							750.0	911.9	20.0		8.3		83.08	63.94	

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No.	Date	STA Code	Phase	GMT h m s	RES O-C	Z			E-W			N-S			MPV	MLH	Delta	Azimuth	Remarks
						A	T		A	T		A	T						
35	JAN 25	BRA	IP	3 53 7.0	2.1											82.57	63.77	Taiwan Region 23.06 N 122.14 E H = 3 41 24.0 DEPTH = 34 km MB = 6.0 /ISC/	
36	JAN 25	BRA	EP	5 49 14.0	1.1											40.48	88.15	Hindu Kush Region 35.57 N 69.84 E H = 5 41 42.2 DEPTH = 96 km MB = 5.2 /ISC/	
37	JAN 25	BRA	EPN IPG ISB ISG ESN	20 25 55.0 20 26 20.0 20 27 5.0 20 27 26.0 20 26 45.0	1.2 2.2 -5.7 2.1 -14.3											5.11	211.18	Central Italy 43.74 N 13.46 E H = 20 24 35.2 MB = 4.3 /ISC/	
38	JAN 25	BRA	EPN ISN ISG EPB ISN	23 23 35.0 23 24 43.0 23 25 14.0 23 23 51.0 23 24 35.0	-2.3 5.0 7.4 -0.4 -8.2											5.11	212.06	Central Italy 43.77 N 13.36 E H = 23 22 17.6 DEPTH = 33 km /ISC/	
39	JAN 26	BRA	EPN ISG	10 51 33.0 10 53 3.0	3.1 3.6											5.13	214.32	Central Italy 43.86 N 13.11 E H = 10 50 10.0 DEPTH = 21 km MB = 4.0 /ISC/	
40	JAN 26	SRO	IPKHKP ESKPDF ESKS IPKP2 ISKPDF	23 18 57.0 23 21 31.0 23 24 55.0 23 19 9.0 23 21 36.0	1.4 1.7 -7.3 -0.9 6.6											149.12	32.77	P1j1 Region 20.19 S 178.89 W H = 23 0 22.1 DEPTH = 637 km MB = 5.7 /ISC/	
41	JAN 25	BRA	IPKHKP	23 51 12.0	6.0											149.33	30.29	P1j1 Region 20.25 S 178.80 W H = 23 32 33.9 DEPTH = 659 km MB = 5.2 /ISC/	
42	JAN 28	BRA	IFKIKP EAFKIKP IFKSDP	1 35 44.0 1 36 28.0 1 39 13.0	2.7 12.4 -2.5											143.43	48.01	New Hebrides 19.38 S 169.13 E H = 1 16 22.0 DEPTH = 127 km MB = 6.1 /ISC/	
43	JAN 31	BRA	IFS	13 24 27.0														Local /probably ex./	

44	FEB 1	BRA	IP	0 36 30.0	-0.7											79.09	12.13	Rat Islands 51.75 N 177.72 E H = 0 24 32.3 DEPTH = 70 km MB = 5.1 /ISC/
45	FEB 2	BRA	IP EXP	21 22 13.0 21 22 43.0	-0.3 11.0											9.87	160.42	Greece 38.78 N 21.32 E H = 21 19 51.7 DEPTH = 63 km MB = 4.5 /ISC/
46	FEB 3	BRA	IP IXP I IS	2 34 28.0 2 34 50.0 2 35 25.0 2 38 28.0	-0.9 5.7 -7.9											23.46	96.76	Eastern Caucasus 40.74 N 48.45 E H = 2 29 22.3 DEPTH = 40 km MB = 5.1 /ISC/
47	FEB 4	BRA	EPN EPG ESB LMH ESG LMH ISN ISG	2 43 35.0 2 44 2.0 2 44 52.0 2 47 0.0 2 45 20.0 2 48 0.0 2 44 25.0 2 45 31.0	-3.5 1.0 -2.9 5.7 -19.3 16.4											5.13	211.22	Central Italy 43.72 N 13.44 E H = 2 42 18.6 DEPTH = 25 km MB = 4.5 /ISC/
48	FEB 4	BRA	EPN EPN EPG ESN ESN ESB LMH IPB IPG	9 19 41.0 9 19 52.0 9 20 22.0 9 20 34.0 9 20 44.0 9 21 10.0 9 22 0.0 9 20 3.0 9 20 27.0	-9.3 1.7 9.2 -17.3 -7.3 3.2 -1.4 10.1											5.15	211.77	Central Italy 43.73 N 13.37 E H = 9 18 30.1 DEPTH = 25 km MB = 4.3 /ISC/
49	FEB 4	BRA	IPN IPB ESG LMH IPG ISB	17 21 8.0 17 21 23.0 17 22 47.0 17 23 12.0 17 21 39.0 17 22 31.0	-2.3 2.0 6.6 2.0 -2.2											5.16	211.78	Central Italy 43.72 N 13.36 E H = 17 19 50.0 DEPTH = 2 km MB = 4.0 /ISC/
50	FEB 4	BRA	IPB ISG EPN ESG	18 18 55.0 18 20 26.0 18 18 34.0 18 20 19.0	-0.2 12.6 -13.5 -0.9											5.08	211.22	Central Italy 43.76 N 13.47 E H = 18 17 25.4 /ISC/
51	FEB 4	BRA	EPN ESB ESG EPB	19 4 20.0 19 5 29.0 19 5 47.0 19 4 31.0	5.2 -1.5 3.4 13.2											5.09	211.76	Central Italy 43.78 N 13.41 E H = 19 2 55.5 DEPTH = 33 km /ISC/
		SRO		19 4 31.0	2.2											5.29	222.15	

No.	Date	STA Code	Phase	GMT		RES O-C	Z			E-W			N-S			MLH	Delta	Asimuth	Remarks
				h	m		s	A	T		A	T		A	T				
52	FEB 4	BRA	ESG	19	32	41.0	-0.1									5.29	222.15	Central Italy 43.82 N 12.93 E H = 19 29 48.3 /ISC/	
53	FEB 5	BRA	EAPKIKP	0	36	8.0	12.1									157.82	238.08	South Pacific Cordillera 55.42 S 128.70 W H = 0 15 52.2 DEPTH = 33 km MB = 4.8 /ISC/	
54	FEB 5	BRA	IPN IPB ISN ISB ISG LMH IPN IPG ISG	1 1 1 1 1 1 1 1 1	27 28 28 29 29 30 27 28 29	47.0 5.0 43.0 5.0 23.0 0.0 35.0 28.0 27.0	-3.1 4.2 -8.1 -1.7 3.0 -18.0 11.3 0.4											Central Italy 43.72 N 13.40 E H = 1 26 30.0 DEPTH = 17 km MB = 4.3 /ISC/	
55	FEB 5	BRA	EP	4	28	53.0	-1.9									60.78	258.87	North Atlantic Ridge 14.56 N 45.07 W H = 4 18 43.9 DEPTH = 33 km MB = 5.0 /ISC/	
56	FEB 5	BRA	EPN ISN ISG I I	5 5 5 5 5	7 8 8 9 10	8.0 17.0 50.0 14.0 17.0	-0.2 7.7 11.8 -4.3 10.0											Central Italy 43.72 N 13.38 E H = 5 5 48.0 DEPTH = 2 km MB = 3.9 /ISC/	
57	FEB 5	BRA	EPN EPN ISN ISB LMH ESG LMH IPN ESN	7 7 7 7 7 7 7 7 7	9 9 10 10 11 11 12 9 10	26.0 35.0 14.0 44.0 0.0 18.0 0.0 29.0 33.0	-5.8 3.2 -18.7 -4.3 10.0 -5.7 -4.9											Central Italy 43.74 N 13.37 E H = 7 8 11.8 DEPTH = 33 km MB = 4.4 /ISC/	
58	FEB 5	BRA	EPN ISG	12 12	35 36	11.0 38.0	0.7 -1.1											Central Italy 43.89 N 13.15 E H = 12 33 51.0 DEPTH = 33 km /ISC/	

59	FEB 5	BRA	IP IPB IS I I LMH E LMH	15 15 15 15 15 15 15 15	16 16 16 17 17 18 18 19	5.0 11.0 35.0 5.0 35.0 0.0 2.0 0.0	1.8 3.5 1.5											Central Italy 43.64 N 13.41 E H = 15 14 48.0 DEPTH = 35 km MB = 4.3 /ISC/
60	FEB 6	BRA	IPN IPN IPB IPG ISN ISG ESG	1 1 1 1 1 1 1	35 35 37 51 16 42 37	3.0 3.0 1.5 16.0 2.1 7.0 20.0	-5.9 -1.9 1.5 14.6 2.1 -1.7 5.1											Central Italy 43.71 N 13.43 E H = 1 34 18.8 DEPTH = 30 km MB = 4.3 /ISC/
61	FEB 6	BRA	IPN IPS ISG	21 21 21	45 46 47	46.0 22.0 19.0	0.4 13.8 3.2											Central Italy 43.75 N 13.26 E H = 21 44 25.1 /ISC/
62	FEB 7	BRA	IP	5	20	5.0	1.2											Off East Coast of Honshu 39.68 N 143.45 E H = 5 7 51.4 DEPTH = 17 km MB = 4.9 /ISC/
63	FEB 7	BRA	EXP	19	28	1.0	1.2											Off Coast of Costa Rica 8.52 N 84.05 W H = 19 14 48.3 DEPTH = 14 km MB = 5.6 /ISC/
64	FEB 8	BRA	IP IPP	3 3	50 53	26.0 47.0	0.6 1.7											Philippine Islands Region 19.36 N 122.06 E H = 3 37 52.0 DEPTH = 45 km MB = 5.8 /ISC/
65	FEB 8	BRA	ESG	12	21	58.0	-3.0											Central Italy 43.67 N 13.40 E H = 12 19 9.6 MB = 4.4 /ISC/
66	FEB 9	BRA	EP	11	27	33.0	1.7											Eastern Caucasus 42.91 N 45.89 E H = 11 22 53.0 DEPTH = 58 km MB = 4.4 /ISC/
67	FEB 9	BRA	EFKIKP	21	3	36.0	0.2											Near Coast of Southern Chile 51.78 S 74.10 W H = 20 44 36.5 DEPTH = 33 km MB = 5.7 /ISC/

No.	Date	STA Code	Phase	h	m	s	RES O-C	Z		E-W		N-S		MPV	MLH	Delta	Azimuth	Remarks
								A	T	A	T	A	T					
58	FEB 10	BRA	EXP	5	10	34.0	3.9									39.33	62.62	Eastern Kazakhstan u. expl. /UPP/ 50.52 N 78.94 E H = 5 2 57.6 MB = 5.4 /ISC/
59	FEB 11	BRA	EXP	17	24	18.0	5.9									59.35	226.56	Central Mid-Atlantic Ridge 1.00 S 21.56 W H = 17 14 2.0 DEPTH = 14 km MB = 4.7 /ISC/
70	FEB 12	BRA	IPKP2 IPKP2 IPKP2	19	11	41.0	-0.4									146.18	18.24	North of New Zealand 15.36 S 173.30 W H = 18 51 57.3 DEPTH = 5 km MB = 5.8 /ISC/
71	FEB 13	BRA	IP	10	12	12.0	2.6									54.53	158.99	Tanzania 4.50 S 34.14 E H = 10 2 42.4 DEPTH = 33 km MB = 5.0 /ISC/
72	FEB 13	SRO BRA	EAPKHP EKP2	13	21	35.0	-4.7									145.98 146.23	41.33 39.17	South of Fiji 19.33 S 175.28 E H = 13 1 52.3 DEPTH = 73 km MB = 4.8 /ISC/
73	FEB 13	BRA	EP	18	7	48.0	2.4									79.05	359.03	South of Alaska 53.15 N 161.32 W H = 17 55 42.5 DEPTH = 29 km MB = 4.9 /ISC/
74	FEB 13	BRA	IP EP EPCP EPCP IP EPP ESP	21	33	32.0	-4.4									51.20	234.47	Central Mid-Atlantic Ridge 0.98 N 28.39 W H = 21 23 22.6 DEPTH = 33 km MB = 5.4 /ISC/
75	FEB 14	BRA	E	21	57	21.0												No determination of epicenter

76	FEB 14	SRO	IPKIKP IPP LMH EPP ESKS LMH EPKIKP IAPKIKP IPP E LMH	23	48	58.0	-0.9									134.93	47.11	Santa Cruz Islands 11.43 S 166.37 E H = 23 29 51.6 DEPTH = 101 km MB = 6.2 /ISC/
77	FEB 20	BRA	EKP2 IAPKIKP	14	29	36.0	-0.9									145.44	49.50	Loyalty Islands Region 21.55 S 169.50 E H = 14 9 59.0 DEPTH = 26 km MB = 4.7 /ISC/
78	FEB 21	BRA	IPS	15	35	56.0												Small local shock
79	FEB 21	BRA SRO	IP IAP IP IXP IPP	19	46	36.0	1.2									76.22	357.33	Alaska Peninsula 55.91 N 158.28 W H = 19 34 47.4 DEPTH = 29 km MB = 5.7 /ISC/
80	FEB 22	BRA	EP EAP EPP	1	22	6.0	-0.9									40.44	86.53	Hindu Kush Region 36.46 N 70.54 E H = 1 14 47.8 DEPTH = 213 km MB = 5.2 /ISC/
81	FEB 23	BRA SRO	EKP2 E IPKP2 I	18	38	43.0	0.3									146.33	17.32	Samoa Region 15.40 S 172.75 W H = 18 19 5.0 DEPTH = 53 km MB = 5.6 /ISC/
82	FEB 24	BRA	EKP2	16	10	55.0	-1.0									147.24	47.16	Loyalty Islands Region 22.37 S 171.72 E H = 15 51 12.4 DEPTH = 34 km MB = 5.7 /ISC/
83	FEB 25	BRA	EPKIKP IPP	1	35	50.0	0.9									113.76	201.41	South Sandwich Islands Region 60.59 S 25.50 W H = 1 17 14.8 DEPTH = 40 km MB = 5.9 /ISO/
84	FEB 26	SRO	IAP IPP LMH	23	40	0.0	1.3									49.27	55.67	Mongolia Border Region 50.55 N 97.10 E H = 23 31 1.0 DEPTH = 36 km MB = 5.3 /ISC/



No.	Date	STA Code	Phase	GMT		RES O-C	Z		E-W		N-S		MPV	MLH	Delta	Azimuth	Remarks
				h	m		A	T	A	T	A	T					
85	FEB 27	BRA	EP EXP	10 10	32.0	-0.4								39.64	2.97	North of Franz Joseph Land 86.95 N 55.20 E H = 10 3 0.2 DEPTH = 20 km MB = 4.8 /ISC/	
86	FEB 27	BRA	IP	12 19	12.0	-0.4								23.55	244.99	West of Gibraltar 34.79 N 8.99 W H = 12 14 5.9 DEPTH = 50 km MB = 4.7 /ISC/	
87	FEB 28	BRA	EXP	10 55	55.0	0.6								12.23	152.66	Southern Greece 37.06 N 24.09 E H = 10 52 48.0 DEPTH = 32 km MB = 4.7 /ISC/	
88	FEB 28	BRA	ISG	15 44	24.0	-0.4								6.01	284.67	Germany 49.35 N 8.20 E H = 15 41 6.0 DEPTH = 10 km /ISC/	
89	FEB 29	BRA	IPOP	7 43	53.0	-8.6								58.51	354.01	Central Alaska 63.24 N 150.50 W H = 7 32 45.6 DEPTH = 118 km /ISC/	
90	FEB 29	SRO BRA	IP ISKS IP IS LMH	9 35 9 45 9 35 9 45 10 19	28.0 40.0 29.0 53.0 0.0	1.2 -2.3 0.6 3.0 -0.4		218.8	18.0	249.0	18.0		7.8	84.25 84.57	45.07 44.26	South of Honshu 33.38 N 140.97 E H = 9 22 59.3 DEPTH = 50 km MB = 6.5 /ISC/	
91	FEB 29	BRA	EP	9 55	14.0	4.7								84.52	44.15	Off East Coast of Honshu 33.48 N 141.05 E H = 9 42 40.6 DEPTH = 52 km MB = 5.9 /ISC/	
92	FEB 29	SRO BRA	EPB ISG EPB IPG ISG	20 56 20 57 20 56 20 56 20 57	4.0 44.0 4.0 25.0 46.0	-2.6 1.4 -4.5 1.3 -0.4							6.20 6.32	200.68 191.77	Southern Italy 41.97 N 15.38 E H = 20 54 17.7 MB = 4.5 /ISC/		
93	FEB 29	BRA	E	21 35	43.0									6.29	193.06	Adriatic Sea 42.02 N 15.20 E H = 21 32 18.6 DEPTH = 57 km MB = 4.1 /ISC/	



94	MAR 1	BRA SRO	EPKP2 IAPKHP	9 24 9 24	36.0 31.0	0.6 3.1								149.55 149.58	20.53 22.93	North of New Zealand 18.94 S 173.72 W H = 9 4 39.0 MB = 5.9 /ISC/
95	MAR 2	SRO BRA	IP IXP IP IAP	20 22 20 22 20 22 20 22	36.0 54.0 35.0 49.0	1.3 -2.3 -1.2 -2.7								84.21 84.52	45.01 44.20	Off East Coast of Honshu 33.45 N 141.00 E H = 20 10 7.8 DEPTH = 54 km MB = 5.8 /ISC/
96	MAR 3	SRO	IPN IPS ISN ISG ESG IPH ISN	21 27 21 27 21 28 21 28 21 28 21 27 21 28	43.0 51.0 20.0 44.0 40.0 49.0 24.0	1.4 -2.1 -1.5 8.4 2.3 0.9 -9.2								3.24 3.31 3.71	179.03 177.56 165.65	Yugoslavia 44.57 N 18.39 E H = 21 26 48.4 MB = 4.7 /ISC/
97	MAR 4	BRA	EPKHP IPKP2 EAPKP2	3 17 3 17 3 19	11.0 25.0 40.0	-0.0 -1.6 2.6								150.57	32.66	Fiji Region 21.85 S 179.48 W H = 2 58 29.3 DEPTH = 591 km MB = 5.4 /ISC/
98	MAR 4	BRA	IP IXP IPP	19 17 19 18 19 18	53.0 4.0 34.0	1.3 0.9 2.7	43			4.9				25.51	343.69	Jan Mayen Island Region 71.41 N 5.05 W H = 19 12 24.0 DEPTH = 28 km MB = 4.9 /ISC/
99	MAR 6	SRO BRA	I I E	19 0 19 0 19 4	51.0 55.0 5.0									97.10 97.42	45.14 44.14	Sea of Okhotsk 22.50 N 148.80 E H = 18 50 16.8 DEPTH = 569 km MB = 5.4 /ISC/
100	MAR 7	SRC BRA	IPKIKP IPP IPKIKP IPKP2 IAPKP2	8 4 8 9 8 4 8 5 8 6	53.0 7.0 53.0 26.0 17.0	-0.5 1.7 -0.8 -0.9 4.3								156.60 156.81	39.34 36.45	Kermadec Islands Region 28.25 S 178.27 W H = 7 45 20.7 DEPTH = 181 km MB = 6.1 /ISC/
101	MAR 7	BRA	E	14 10	23.0											No determination of epicenter
102	MAR 9	BRA	E E E	5 8 5 9 5 12	51.0 15.0 12.0									144.99	22.98	Fiji Region 14.86 S 176.29 W H = 4 49 25.0 DEPTH = 109 km MB = 4.9 /ISC/
103	MAR 14	BRA	EP E	0 59 1 0	44.0 5.0	-1.2								84.67	44.28	Off East Coast of Honshu 33.28 N 141.02 E H = 0 47 14.1 DEPTH = 38 km MB = 5.4 /ISC/

No.	Date	STA Code	Phase	GMT		RES O-C	Z		E-W		N-S		MPV	MLH	Delta	Azimuth	Remarks
				h	m		A	T	A	T	A	T					
104	MAR 14	HRB BRA	LMH IP IXP IS LMH	14 12 14 8 14 9 14 11 14 13	0.0 44.0 2.0 20.0 0.0	-1.5 3.2 14.9			1.0	3.0	2.0	3.0		5.0	11.82 12.56	132.21 130.21	Turkey 39.32 N 29.47 E H = 14 5 46.6 DEPTH = 38 km MB = 5.3 /ISC/
105	MAR 14	ERA	ESG	23 6	38.0	0.4									5.14	212.02	Central Italy 43.75 N 13.35 E H = 23 3 47.9 DEPTH = 33 km /ISC/
106	MAR 17	BRA	IPKIKP IPKHKP IPKP2 ISKPDF	0 40 0 40 0 41 0 43	27.0 35.0 6.0 18.0	-0.3 2.5 14.7 -2.0									153.22	35.50	South of Fiji 24.83 S 179.63 W H = 0 21 26.2 DEPTH = 415 km MB = 5.5 /ISC/
107	MAR 18	BRA	IP IP EPP EKS	23 30 23 30 23 33 23 40	12.0 15.0 29.0 49.0	1.4 4.4 0.9 -4.0	214	1.5					6.1		84.58	43.85	Off East Coast of Honshu 33.60 N 141.38 E H = 23 17 39.9 DEPTH = 37 km MB = 5.9 /ISC/
108	MAR 19	BRA	IP IXP	16 9 16 10 16 12 16 19	47.0 17.0 41.0 41.0	0.2 2.6 -7.1 3.4								78.84	39.38	Near East Coast of Honshu 40.84 N 141.98 E H = 15 57 50.0 DEPTH = 72 km MB = 5.9 /ISC/	
109	MAR 20	BRA	IP IXP	23 43 23 44	54.0 18.0	-0.7 5.6								79.96	10.32	Andeanof Islands 51.27 N 179.21 W H = 23 31 48.5 DEPTH = 43 km MB = 6.0 /ISC/	
110	MAR 21	BRA	EPKHKP IPKP2 IAPKP2 EPP	0 1 0 2 0 4 0 5	51.0 14.0 9.0 48.0	-1.8 2.1 3.4 -0.7								153.06	35.45	South of Fiji 24.68 S 179.68 W H = 23 42 55.5 DEPTH = 497 km MB = 5.0 /ISC/	
111	MAR	HRB	E EAP EPP E LMH	10 35 10 39 10 42 10 48 11 4	19.0 47.0 5.0 15.0 0.0	-2.8 -5.3		0.7	16.0	0.6	16.0			76.03	28.42	North Kurile Islands 49.05 N 153.60 E H = 10 27 42.1 DEPTH = 135 km /ISC/	
112	MAR 28	BRA	IPKIKP IPKP2 EPP	14 17 14 18 14 21	37.0 16.0 54.0	-1.0 -0.8 -5.5								158.37	42.86	Kermadec Islands Region 30.81 S 179.84 W H = 13 58 22.2 DEPTH = 345 km MB = 5.6 /ISC/	

113	MAR 30	HRB BRA	EPKP2 EPKPDF IPKIKP IPKP2 I	5 54 5 57 5 53 5 54 6 3	9.0 20.0 47.0 17.0 44.0	-1.1 2.2 1.8 5.9								153.44	40.10	South of Fiji 25.69 S 179.58 E H = 5 34 50.4 DEPTH = 479 km MB = 6.1 /ISC/	
114	MAR 31	BRA	IPN	9 8	47.0												No determination of epicentre
115	APR 1	BRA	IPN ISN ISG	5 52 5 53 5 54	42.0 45.0 21.0	-16.1 -5.5 7.6								4.37	190.93	Adriatic Sea 43.87 N 15.96 E H = 5 51 48.9 /ISC/	
116	APR 1	BRA	E	8 38	4.0									8.77	159.93	Greece 39.86 N 21.00 E H = 8 33 37.0 DEPTH = 9 km /ISC/	
117	APR 2	BRA	IPKIKP IPKP2 IPP E	0 11 0 11 0 15 0 18	17.0 47.0 32.0 46.0	0.5 -6.1 -2.5								158.29	105.54	Auckland Islands Region 49.35 S 164.09 E H = 23 51 23.0 DEPTH = 33 km MB = 6.2 /ISC/	
118	APR 2	BRA	IAPKP2	0 59	38.0	-2.7								158.28	115.66	Auckland Islands Region 49.39 S 164.05 E H = 0 39 0.2 DEPTH = 33 km MB = 5.5 /ISC/	
119	APR 2	BRA	EPKHKP ESKPC ESKPC	5 8 5 9 5 10	50.0 44.0 5.0	-0.8 -8.4 12.6								147.16	47.32	Loyalty Islands Region 22.35 S 171.60 E H = 4 49 16.5 DEPTH = 39 km MB = 5.2 /ISC/	
120	APR 2	BRA	IPKP2 EPKP2 I EPP	9 21 9 21 9 21 9 24	5.0 14.0 43.0 26.0	-1.6 7.4 -5.4								146.92	18.00	Samoa Region 16.06 S 173.00 W H = 9 1 19.0 DEPTH = 1 km MB = 5.9 /ISC/	
121	APR 2	BRA	EPKP2	14 52	11.0	-1.2								146.95	17.49	Samoa Region 16.03 S 172.71 W H = 14 32 27.0 DEPTH = 17 km MB = 5.0 /ISC/	
122	APR 2	BRA	IPKP2 E	15 56 15 57	24.0 14.0	-1.5								147.10	17.84	Samoa Region 16.22 S 172.87 W H = 15 36 48.0 DEPTH = 79 km MB = 5.3 /ISC/	

No.	Date	STA Code	Phase	GMT		RES O-C	Z			E-W			N-S			MLH	Delta	Azimuth	Remarks
				h	m		A	T	A	T	A	T	A	T					
123	APR 2	BRA	EFKHP IPP E LHM	21 49 21 52 22 2 22 57	26.0 9.0 44.0 0.0	0.1 -2.5										136.65	46.87	New Hebrides 13.15 S 166.16 E H = 21 30 2.0 DEPTH = 3 km MB = 5.9 /ISC/	
124	APR 3	BRA	EP	8 12	49.0	2.2										33.71	112.59	Southern Iran 28.54 N 52.72 E H = 8 6 9.0 DEPTH = 57 km MB = 4.5 /ISC/	
125	APR 3	BRA	IP	9 14	28.0	7.2										36.78	108.31	Southern Iran 28.13 N 57.17 E H = 9 7 18.5 DEPTH = 73 km MB = 5.0 /ISC/	
126	APR 3	BRA	IP E	18 59 19 0	29.0 47.0	-1.9	130	1.5								32.64	300.72	North Atlantic Ocean 54.28 N 35.14 W H = 18 52 59.8 DEPTH = 32 km MB = 5.3 /ISC/	
127	APR 3	BRA	IP E IPP IXS LMH	20 42 20 43 20 44 20 48 20 56	53.0 35.0 14.0 13.0 0.0	-1.0 11.0 -2.1										32.66	300.82	North Atlantic Ocean 54.33 N 35.20 W H = 20 36 20.0 DEPTH = 13 km MB = 5.1 /ISC/	
128	APR 4	BRA	I E I I I I I	22 56 22 58 23 0 23 1 23 1 23 6 23 10	45.0 28.0 52.0 10.0 28.0 48.0 10.0										107.82	81.13	Banda Sea 7.47 S 125.56 E H = 22 43 6.7 DEPTH = 375 km MB = 6.1 /ISC/		
129	APR 5	BRA	EP EPOP	0 37 0 38	19.0 4.0	0.2 -4.0										57.39	123.35	Carlsberg Ridge 5.22 N 62.06 E H = 0 27 34.0 DEPTH = 58 km MB = 5.1 /ISC/	
130	APR 5	BRA	IP IPCP I	7 55 7 56 7 58	46.0 34.0 24.0	-5.1 -6.2										57.56	123.32	Carlsberg Ridge 5.09 N 62.18 E H = 7 46 1.0 DEPTH = 24 km MB = 4.7 /ISC/	
131	APR 6	BRA	EP EXP	0 49 0 50	55.0 25.0	0.2 3.9										77.33	27.48	Kurile Islands 48.13 N 154.89 E H = 0 38 5.9 DEPTH = 68 km MB = 4.9 /ISC/	

132	APR 7	BRA	EAPKHP E	0 23 0 24	11.0 14.0	-2.0										155.63	117.01	Macquarie Island Region 53.52 S 159.10 E H = 0 3 5.3 DEPTH = 33 km /ISC/
133	APR 7	BRA	EP EXP E	0 40 0 41 0 42	41.0 14.0 8.0	-1.9 12.1										57.39	123.38	Carlsberg Ridge 5.20 N 62.04 E H = 0 30 57.0 DEPTH = 48 km MB = 4.9 /ISC/
134	APR 7	BRA	EP E	3 27 3 27	35.0 12.0	-1.2										71.72	354.64	Southern Alaska 60.15 N 152.69 W H = 3 16 22.8 DEPTH = 97 km MB = 4.9 /ISC/
135	APR 7	BRA	EFKP2	23 39	18.0	0.3										151.78	22.52	North of New Zealand 21.36 S 174.10 W H = 23 18 15.3 DEPTH = 33 km MB = 5.0 /ISC/
136	APR 8	BRA	EP EXP EPP	5 5 5 5 5 7	21.0 41.0 41.0	-1.7 5.6 0.3										61.66	248.82	Central Mid Atlantic Ridge 8.09 N 38.87 W H = 4 55 5.3 DEPTH = 30 km MB = 5.3 /ISC/
137	APR 8	BRA	IAP EXP	6 35 6 37	48.0 8.0	-0.2 18.8										84.00	333.74	Off Coast of Oregon 42.62 N 126.30 W H = 6 24 13.4 DEPTH = 8 km MB = 5.4 /ISC/
138	APR 9	BRA	+IP IXP IPP I LMH	4 19 4 19 4 21 4 21 4 36	17.0 36.0 8.0 45.0 45.0	-0.4 9.8 1.2										46.61	71.11	Northern Sinkiang Province 42.09 N 84.58 E H = 4 10 48.9 DEPTH = 21 km MB = 5.8 /ISC/
139	APR 9	BRA	IPKHP IAPKHP	20 59 20 59	25.0 30.0	2.7 2.2										149.46	20.30	North of New Zealand 18.83 S 173.62 W H = 20 39 38.4 DEPTH = 17 km MB = 5.1 /ISC/
140	APR 10	BRA	IP IXP IPP IPCP I LMH	2 13 2 13 2 14 2 16 2 18 2 30	33.0 51.0 48.0 15.0 24.0 0.0	-1.3 11.3 0.4 1.8		66.0	12.0							33.85	112.71	Southern Iran 28.39 N 52.78 E H = 2 6 50.0 DEPTH = 13 km MB = 6.0 /ISC/



No.	Date	STA Code	Phase	GMT		RES O-C	Z			E-W			N-S			MPV	MLH	Delta	Azimuth	Remarks
				h	m		s	A	T	A	T	A	T	A	T					
141	APR 10	BRA	EFKP2 EAFKP2	16 7	19.0	-1.2										147.52	17.13	Samoa Region 16.55 S 172.39 W H = 15 47 35.3 DEPTH = 33 km MB = 4.7 /ISC/		
142	APR 11	BRA	IPCP IPCP IPP I ISCS IMH EPCP E E ESCS	2 31 2 31 2 32 2 35 2 39 2 55 2 31 2 32 2 33 2 40	28.0 40.0 19.0 13.0 55.0 0.0 36.0 2.0 47.0 3.0	-9.3 2.7 -5.7 -18.6 -3.2 -14.2			32.0	15.0	68.0	15.0			6.8	52.18	241.89	Central Mid Atlantic Ridge 11.99 N 28.30 W H = 2 21 10.9 DEPTH = 0 km MB = 6.0 /ISC/		
143	APR 11	BRA	E E	11 17 11 18	10.0 40.0											9.38	159.66	Greece 39.29 N 21.29 E H = 11 12 13.4 DEPTH = 39 km MB = 4.3 /ISC/		
144	APR 12	BRA	EFKP2 EAFKIKP	15 8 15 8	3.0 9.0	-3.5 -0.2										149.64	25.05	Fiji Region 19.66 S 176.02 W H = 14 48 15.0 DEPTH = 49 km MB = 4.9 /ISC/		
145	APR 12	BRA	EP	18 44	24.0	-0.6										34.09	112.38	Southern Iran 28.35 N 53.12 E H = 18 37 43.6 DEPTH = 58 km MB = 4.9 /ISC/		
146	APR 12	BRA	IP I	23 14 23 14	33.0 42.0	0.5 9.5										33.95	112.29	Southern Iran 28.48 N 53.05 E H = 23 7 56.5 DEPTH = 96 km MB = 5.0 /ISC/		
147	APR 14	BRA	IP	11 6	45.0	-0.8										78.20	30.07	Kurile Islands 46.17 N 152.22 E H = 10 54 46.0 DEPTH = 20 km MB = 5.1 /ISC/		
148	APR 14	BRA	IPG	11 51	45.0													Small local shock		

149	APR 15	BRA	EFKP2 EAFKIKP	7 47 7 48	52.0 40.0	0.1 9.0										145.93	48.06	Loyalty Islands Region 21.52 S 170.52 E H = 7 28 28.7 DEPTH = 161 km MB = 5.3 /ISC/
150	APR 16	BRA	E E E	0 5 0 6 0 7	12.0 27.0 15.0											6.89	109.17	Romania 45.52 N 26.38 E H = 0 3 32.4 DEPTH = 131 km MB = 4.4 /ISC/
151	APR 16	BRA	IPS	10 10	19.0	-1.5										0.81	242.51	Austria 47.79 N 16.04 E H = 10 10 4.3 DEPTH = 18 km MB = 4.7 /ISC/
152	APR 16	BRA	EPG EPN ESG LMH	10 40 10 40 10 40 10 40	18.0 21.0 26.0 32.0	-0.6 0.6 -4.0										0.88	238.17	Austria 47.70 N 16.00 E H = 10 40 1.0 /VIE/ /BCIS/
153	APR 16	BRA	ISN E	11 1 11 1	42.0 57.0	12.1										0.75	236.68	Austria 47.75 N 16.17 E H = 11 1 0.0 /BCIS/
154	APR 16	BRA	EPG	11 5	0.0	-1.1										0.82	242.12	Austria 47.78 N 16.03 E H = 11 4 44.7 DEPTH = 19 km MB = 4.1 /ISC/
155	APR 16	BRA	IPN	13 58	9.0	0.7										0.46	216.59	Austria 47.80 N 16.70 E H = 13 57 55.0 /ISC/
156	APR 16	BRA	EPG	14 1	53.0	-2.4										0.82	235.63	Austria 47.70 N 16.10 E H = 14 1 39.0 /ISC/
157	APR 17	BRA	IP IS	1 41 1 42	15.0 12.0	-10.9 8.9										5.23	178.99	Adriatic Sea 42.94 N 17.23 E H = 1 39 56.7 DEPTH = 45 km MB = 4.4 /ISC/
158	APR 17	BRA	E	9 54	54.0													No determination of epicenter

No.	Date	STA Code	Phase	GMT		RES O-C	Z		E-W		N-S		MPV	MLH	Delta	Azimuth	Remarks
				h	m		A	T	A	T	A	T					
176	APR 25	SPC SRC TRA	IPCP ESCS +YP LMH IP I EXP EPT ESKS EPS LMH	19 42 19 53 19 42 20 38 19 43 19 43 19 43 19 46 19 53 19 55 20 26	44.0 27.0 57.0 0.0 0.0 2.0 18.0 36.0 24.0 0.0 0.0	-2.5 0.5 1.2 1.1 3.1 2.3 5.5 1.0 7.3		47.7 277.0	20.0 10.0	55.0 277.0	20.0 18.0		7.1 7.9	86.47 80.10 89.75	73.73 72.24 71.37	Mindoro 13.38 N 120.34 E H = 19 30 8.0 DEPTH = 38 km MB = 6.4 /ISC/ Fiji Region 18.23 S 173.01 E H = 1 33 18.9 DEPTH = 602 km MB = 5.1 /ISC/ Turkey 39.43 N 26.36 E H = 6 30 23.2 DEPTH = 18 km MB = 5.0 /ISC/ South of Fiji 23.27 S 179.12 E H = 12 21 55.4 DEPTH = 573 km MB = 5.3 /ISC/ Turkey 39.45 N 26.33 E H = 15 59 44.9 DEPTH = 25 km MB = 4.8 /ISC/ Austria 47.70 N 16.00 E H = 15 42 0.0 DEPTH = 7 km /ISC/ Mindoro 13.55 N 120.63 E H = 1 29 36.1 DEPTH = 68 km MB = 5.3 /ISC/	
177	APR 26	SPC	IPKIKP ESKPDF	1 51 1 54	38.0 24.0	1.4 2.8								142.10	45.08		
178	APR 26	SRC BRA	IP LMH EP E	6 32 6 33 6 33 6 36	53.0 23.0 0.0 15.0	1.0 -2.8		6.4	10.0	8.3	10.0		5.0	10.20 10.99	142.27 139.22		
179	APR 26	SRC BRA	IPKIKP EPKIKP EPKHKP	12 40 12 40 12 40	44.0 39.0 45.0	3.7 1.5 4.2								151.11 151.33	38.74 36.28		
180	APR 26	SRO BRA	EAP LMH EP	16 2 15 5 16 6 16 2	19.0 5.0 0.0 21.0	0.1 -2.4								10.19 10.95	142.32 139.26		
181	APR 26	BRA	EPG ESC	16 42 16 42	12.0 26.0	-5.6 -3.0								0.88	238.17		
182	APR 27	SRO BRA	EP EPP ESCS LMH EPCP EPP	1 42 1 46 1 53 2 27 1 42 1 46	27.0 3.0 12.0 0.0 23.0 9.0	4.4 10.4 7.8 -0.1		2.2	20.0	2.1	20.0		5.7	86.15 88.81	71.92 71.04		

183	APR 27	BRA	EPB ESN	2 48 2 48	10.0 22.0	0.6 -1.0								0.68	219.18		Austria 47.64 N 16.47 E H = 2 47 55.0 DEPTH = 14 km /ISC/ Southern Sumatra 0.53 S 99.63 E H = 5 51 6.5 DEPTH = 55 km MB = 5.2 /ISC/
184	APR 27	BRA	EP	6 3	38.0	-1.1								85.40	95.92		Taiwan Region 24.09 N 122.59 E H = 19 20 51.0 DEPTH = 12 km MB = 5.5 /ISC/ South of Fiji 23.23 S 179.12 E H = 19 42 13.8 DEPTH = 571 km MB = 5.3 /ISC/ Solomon Islands 5.13 S 154.23 E H = 23 32 10.6 DEPTH = 413 km MB = 6.0 /ISC/
185	APR 27	SPC	EPS	19 43	58.0	10.6								79.74	65.14		Crete 34.80 N 24.66 E H = 18 29 38.3 DEPTH = 48 km MB = 5.1 /ISC/ Mindoro 13.57 N 120.55 E H = 15 15 35.0 DEPTH = 60 km MB = 5.6 /ISC/
186	APR 27	SPC SRO BRA	EPKHKP EPKHKP E EPKIKP	20 0 20 1 20 13 20 0	58.0 6.0 10.0 56.0	4.3 7.2 -0.1								149.20 151.08 151.29	40.35 38.71 36.25		
187	APR 28	SPC SRO BRA	EPKIKP EPP IPKIKP EPKIKP IPP I LMH IPKIKP EPKIKP IPP I LMH	23 50 23 52 23 50 23 52 23 53 23 58 0 23 50 23 50 23 52 23 58 0	18.0 2.0 22.0 11.0 30.0 26.0 0.0 19.0 30.0 29.0 32.0 0.0	2.4 4.8 2.9 1.1 15.7 -1.0 10.0 15.9		9.7	20.0	8.3	10.0			121.39 123.22 123.69	57.09 55.93 54.53		
188	APR 29	SPC	EP	18 33	9.0	3.6								14.74	165.59		
189	APR 30	BRA	EP EPP	15 28 15 32	23.0 2.0	-0.3 6.9								88.75	71.09		
190	MAY 4	SRO BRA	IPCP IAP I IS E LMH IP	4 3 4 3 4 4 4 13 4 29 4 4 4 2	0.0 8.0 24.0 20.0 31.0 0.0 58.0	-1.2 -2.2 2.6 -0.6								84.21 84.52	44.89 44.08	Off East Coast of Honshu 33.52 N 141.12 E H = 3 50 29.0 DEPTH = 44 km MB = 5.4 /ISC/	



No.	Date	STA Code	Phase	GMT		RES O-C	Z		E-W		N-S		MPV	MLH	Delta	Azimuth	Remarks
				h	m		A	T	A	T	A	T					
191	MAY 4	BRA	EPP	4	29	37.0	-6.5							102.26	92.38	South of Java 10.73 S 113.65 E H = 4 11 36.4 DEPTH = 42 km MB = 5.6 /ISC/	
192	MAY 4	SPC	EPKHKP EAPKHKP EPP	8	7	29.0	4.5 -5.6 5.5							137.48	50.29	New Hebrides 15.94 S 167.53 E H = 7 48 17.6 DEPTH = 46 km MB = 6.3 /ISC/	
193	MAY 4	SPC	IPPP I LMH	8	10	29.0	-9.3							139.35	49.09		
194	MAY 4	SPC	EAPKHKP	9	29	25.0	-1.7							149.94	27.17	North of New Zealand 21.28 S 173.95 W H = 9 9 35.8 DEPTH = 22 km MB = 5.1 /ISC/	
195	MAY 4	SRO	IPG	15	4	52.0										Small local shock	
196	MAY 5	SPC	+IP	10	28	18.0	3.0							13.24	160.91	Crete 35.15 N 23.56 E H = 21 39 57.0 DEPTH = 14 km MB = 5.9 /ISC/	
197	MAY 5	SPC	+IPKHKP EPP E	23	35	20.0	4.5 0.7							13.87	157.39	Taiwan 23.04 N 121.40 E H = 10 16 10.0 DEPTH = 47 km MB = 5.4 /ISC/	
198	MAY 7	SRO	IPS	6	2	15.0								119.80	57.97	New Britain Region 4.22 S 152.71 E H = 23 16 29.0 DEPTH = 37 km MB = 5.8 /ISC/	

199	MAY 7	BR4	I	9	23	46.0								7.90	248.33	France 44.77 N 6.78 E H = 9 17 16.2 /ISC/
200	MAY 7	SRO	EP I I I I E I I	14	45	5.0	-13.5							4.77	184.00	Yugoslavia 43.05 N 17.86 E H = 14 43 46.1 DEPTH = 57 km /ISC/
201	MAY 7	SRO	IPS ISG	18	43	21.0 32.0								5.15	173.82	Small local shock
202	MAY 7	BRA	EPKHKP EPKIP2 EPP E EAPKHKP EPKIP2 EPP ESS LMH	22	26	31.0 16.0 1.0 31.0 27.0 1.0 49.0	1.4 0.4 1.2 1.0 2.1 -3.5 8.8 -4.9 -2.8 -1.9							161.21	241.93	South Pacific 53.77 S 134.29 W H = 22 6 30.0 DEPTH = 15 km MB = 5.4 /ISC/
203	MAY 8	SRO	E E E	9	1	31.0								7.37	147.32	Greece-Bulgaria Border Region 41.48 N 23.60 E H = 8 58 16.3 DEPTH = 51 km /ISC/
204	MAY 8	SRO	EPN ESB ISG IPN ESB EPN IPN ISG LMH	9	22	43.0 35.0 7.0 55.0 3.0 52.0 28.0 29.0 0.0	-1.1 2.3 14.1 1.5 10.4 -2.8 -5.9 10.9							7.20	146.30	Greece-Bulgaria Border Region 41.69 N 23.64 E H = 9 20 55.0 DEPTH = 12 km MB = 4.9 /ISC/

No.	Date	STA Code	Phase	GMT		RES O-C	Z		E-W		N-S		MPV	MLH	Delta	Azimuth	Remarks
				h	m		A	T	A	T	A	T					
205	MAY 8	SRO	IAPKP2 I ISKPDF LMH	16 35 16 36 16 38 17 35 16 35 16 35 16 37	15.0 21.0 15.0 0.0 1.0 49.0 46.0	-5.5 -5.5 -3.7 10.6			1.5	24.0	2.0	24.0		5.9	149.42 149.46	27.63 25.23	Fiji Region 19.52 S 176.17 W H = 16 15 14.7 DEPTH = 55 km MB = 5.7 /ISC/
206	MAY 9	SPC BRA	+IFKP2 E EKSAB IFKP2 IFKP2 IFP	12 38 12 42 12 39 12 39 12 42	58.0 53.0 4.0 16.0 46.0	-1.6 -9.1 -3.4 8.6 9.9								145.13 147.07	32.92 28.68	Fiji Region 17.83 178.79 W H = 12 20 22.3 DEPTH = 565 km MB = 5.8 /ISC/	
207	MAY 9	SPC BRA SRO	-IFKP2 EAPKIKP IFKIKP IFKP2 IAPKIKP EKP2 EAPKIKP E	13 29 13 30 13 29 13 29 13 30 13 30 13 29 13 30 13 39	4.0 8.0 7.0 19.0 13.0 11.0 15.0 5.0	0.2 -2.9 1.1 9.5 -0.9 0.4 1.0								144.34 146.10 146.13	25.48 20.95 23.16	North of New Zealand 15.64 S 174.84 W H = 13 9 58.8 DEPTH = 267 km MB = 5.4 /ISC/	
208	MAY 9	SRO SPC BRA	ES I I EP E EAP ES E I LMH	17 44 17 45 17 46 17 42 17 44 17 43 17 44 17 46 17 47 17 48	27.0 31.0 7.0 57.0 28.0 4.0 52.0 34.0 16.0 0.0	-20.0 -1.0 -0.4 -14.3					0.5	4.0	0.7	4.0	10.18 10.67 10.97	142.14 153.49 139.09	Turkey 39.46 N 26.37 E H = 17 40 22.0 DEPTH = 10 km /ISC/
209	MAY 10	BRA	E	12 20	6.0												No determination of epicenter
210	MAY 10	BRA E	E E	12 57 12 57	12.0 17.0												No determination of epicenter

211	MAY 11	SFC SRO BRA	+IF EXP IAP EPP I LMH EP EAP E	0 56 0 57 0 56 0 57 0 59 1 6 1 33 0 56 0 58	43.0 20.0 53.0 11.0 39.0 43.0 0.0 52.0 12.0 13.0	1.6 14.0 1.1 1.7 -12.2 -1.0 1.6											Hokkaido Region 42.73 N 144.60 E H = 0 44 57.9 DEPTH = 63 km MB = 5.5 /ISC/
212	MAY 11	SPC SRO BRA	+IFKHKP IFKHKP IAPKP2 IFKIKP IFKSDP EKSDF +IFKIKP IFKP2 IAPKIKP E	21 37 21 37 21 39 21 37 21 40 21 41 21 37 21 38 21 39 21 47	40.0 47.0 22.0 39.0 55.0 27.0 37.0 9.0 10.0 13.0	-1.4 5.6 -0.4 1.0 -15.6 16.4 -1.3 -1.2 6.3								153.96 155.84 156.07	41.69 40.10 37.29	Kermadec Islands Region 27.74 S 178.99 W H = 21 18 25.0 DEPTH = 341 km MB = 5.8 /ISC/	
213	MAY 12	SPC SRO BRA	EP EAP E IAP ECP EAP EXP EPP	1 33 1 33 1 36 1 33 1 33 1 33 1 34 1 36	27.0 45.0 54.0 51.0 46.0 54.0 10.0 59.0	0.2 1.2 -2.2 0.3 -2.2 6.9 11.7								78.84 80.59 81.16	65.47 63.90 63.12	Taiwan 24.56 N 121.67 E H = 1 21 28.8 DEPTH = 61 km MB = 5.4 /ISC/	
214	MAY 12	BRA	IPG	11 59	31.0												Small local shock
215	MAY 12	BRA	ESG	13 1	46.0	-0.1									3.21	310.24	Czechoslovakia /ex.17.0T/ 50.18 N 13.29 E H = 13 0 0.0 /PRU/
216	MAY 13	SPO	EP	16 43	46.0	0.8									32.70	281.72	North Atlantic Ridge 45.19 N 28.17 W H = 16 37 13.7 DEPTH = 33 km MB = 4.7 /ISC/
217	MAY 13	BRA SRO SPO	EP EP IPCP IAP LMH EP EPP	16 46 16 46 16 49 16 58 16 46 16 47	38.0 46.0 30.0 8.0 55.0 6.0	-0.1 0.2 -7.0 16.8 0.8 -1.7									30.85 31.72 32.69	281.59 282.77 281.65	North Atlantic Ridge 45.16 N 28.14 W H = 16 40 22.8 DEPTH = 33 km MB = 4.9 /ISC/



No.	Date	STA Code	Phase	h	GMT m	RES O-C	Z			E-W			N-S			MPV	MLH	Delta Azimuth	Remarks
							A	T		A	T		A	T					
218	MAY 14	SRO	IAP IXS LMH EP E ESCS	12 13 12 23 12 53 12 13 12 16 12 23	30.0 34.0 0.0 27.0 54.0 48.0	-1.2 -1.5 -0.1 0.2											79.70 79.94	39.47 38.73	Off East Coast of Honshu 40.28 N 143.47 E H = 12 17.4 DEPTH = 17 km MB = 5.2 /ISC/
219	MAY 15	SPC	EFKHKP EFKP2 EAPKP2 SRO EFKHKP EPKSDP BRA IFKHKP EFKP2 EPP	9 51 9 51 9 53 9 51 9 55 9 51 9 52 9 55	41.0 46.0 54.0 42.0 14.0 43.0 2.0 25.0	2.7 -6.5 -0.3 -1.2 1.5 -0.7 0.8 -11.2											149.91 151.79 151.99	39.32 37.61 35.10	South of Fiji 23.63 S 175.08 E H = 9 32 53.4 DEPTH = 539 km MB = 5.7 /ISC/
220	MAY 17	SRO	IAP IFPP IS LMH EP EPP ES LMH	5 40 5 44 5 51 6 18 5 40 5 44 5 51 6 17	42.0 10.0 18.0 0.0 45.0 21.0 21.0 0.0	-1.8 1.4 -3.1 1.9 7.1 -6.3		3.0	16.0		5.0	16.0					87.93 88.59	72.47 71.59	Mindoro 13.36 N 120.05 E H = 5 27 49.0 DEPTH = 12 km MB = 5.3 /ISC/
221	MAY 17	BRA	ISB	8 16	41.0	4.5											5.45	274.73	Germany 48.33 N 8.95 E H = 8 13 50.7 DEPTH = 33 km /ISC/
222	MAY 17	BRA	EP EPCP	10 14 10 15	3.0 51.0	-0.8 -1.1											42.83	89.52	Pakistan 33.45 N 71.50 E H = 10 6 5.0 DEPTH = 17 km MB = 5.0 /ISC/
223	MAY 17	BRA	EP	14 22	29.0	0.3											76.04	26.45	Kurile Islands 49.73 N 155.33 E H = 14 10 49.8 DEPTH = 92 km MB = 5.0 /ISC/
224	MAY 17	BRA	IPG	15 33	41.0														Small local shock

225	MAY 18	SRO	I E L EP E E	2 54 3 4 3 34 2 49 2 54 2 54	30.0 58.0 0.0 57.0 31.0 42.0	0.6											35.14 36.02	110.79 109.96	Southern Iran 27.96 N 55.78 E H = 2 42 58.0 DEPTH = 49 km MB = 4.7 /ISC/	
226	MAY 18	BRA	E I I I I I	8 1+ 8 13 8 14 8 14 8 15 8 16	21.0 46.0 9.0 19.0 29.0 23.0												5.42 6.27	274.51 277.99	Germany 48.31 N 8.99 E H = 8 11 1.8 DEPTH = 57 km /ISC/	
227	MAY 19	BRA	EP	7 18	18.0	1.5												25.84	354.42	Greenland Sea 73.64 N 8.50 E H = 7 12 46.4 DEPTH = 33 km MB = 3.9 /ISC/
228	MAY 19	BRA	EPN EPG E	10 59 10 59 11 0	35.0 54.0 32.0	2.2 -3.1												5.44	177.71	Adriatic Sea 42.73 N 17.40 E H = 10 58 8.5 /ISC/
229	MAY 20	BRA SRO	EP EP EXP	21 38 21 38 21 38	9.0 11.0 29.0	0.7 0.7 3.7												78.77 79.14	358.23 358.97	South of Alaska 53.41 N 160.00 W H = 21 26 7.6 DEPTH = 35 km MB = 5.2 /ISC/
230	MAY 21	BRA	EFKIKP	6 21	38.0	-2.4												152.80	47.29	West of Tonga 27.10 S 174.97 E H = 6 1 54.3 DEPTH = 33 km MB = 5.6 /ISC/
231	MAY 21	BRA SRO	EP EAP EPP EPP	8 2 8 2 8 3 8 3	35.0 42.0 15.0 54.0 22.0	0.6 -0.1 0.1 4.5 1.1												25.77 26.21	354.04 353.36	Greenland Sea 73.53 N 8.00 E H = 7 57 4.2 DEPTH = 27 km MB = 4.3 /ISC/
232	MAY 22	SRO BRA	+IP IPP ISCS LMH IP IXP I ISCS LMH	6 16 6 20 6 27 6 56 6 16 6 17 6 20 6 27 7	43.0 7.0 28.0 0.0 44.0 17 4.0 34.0 29.0 5 0.0	-0.2 -1.5 4.7 -2.2 2.3 0.5		32.0	20.0		34.0	20.0						86.86 87.49	68.79 67.93	Luzon 16.60 N 122.19 E H = 6 4 1.1 DEPTH = 36 km MB = 5.9 /ISC/



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No.	Date	STA Code	Phase	h	GMT	RES	Z		E-W		N-S		MPV	MLH	Delta	Azimuth	Remarks
							A	T	A	T	A	T					
233	MAY 22	HRB BRA	E I I I I LMH	21 5 21 9 21 13 21 17 21 20 21 24 21 32	5 16.0 9 0.0 13.0 17.0 20.0 7.0 0.0									148.07 148.09 148.09	24.38 22.31 24.62	North of New Zealand 17.76 S 175.05 W H = 20 45 55.1 DEPTH = 208 km MB = 6.1 /ISC/	
234	MAY 23	SRO BRA	EPN ESG EXP E E	3 16 3 18 3 16 3 17 3 19	16 22.0 42.0 38.0 7.0 20.0	0.6 8.7 4.7								7.36 8.12	147.04 142.77	Greece-Bulgaria Border Region 41.50 N 23.64 E H = 3 14 30.0 DEPTH = 5 km MB = 4.4 /ISC/	
235	MAY 23	BRA SRO	EP EP EPP	10 11 10 11 10 11	47.0 45.0 22.0	-5.4 -14.4 -6.6								36.91 37.73	271.97 273.28	Azores Region 37.62 N 31.99 W H = 10 4 44.0 DEPTH = 26 km MB = 5.0 /ISC/	
236	MAY 23	SRO BRA	E E ES E E	11 8 11 10 11 8 11 9 11 10	8 45.0 29.0 14.0 33.0 10.0	-7.3								8.82 9.15	185.05 178.95	Southern Italy 39.02 N 17.32 E H = 11 4 26.8 DEPTH = 55 km /ISC/	
237	MAY 24	BRA	IPG	11 7	6.0												Small local shock
238	MAY 24	SRO BRA	IAPKHKP E E LMH IFKP2 IAPKIKP I E	11 45 11 46 11 52 12 38 11 45 11 45 11 46 11 51	45 45.0 33.0 16.0 0.0 42.0 54.0 14.0 11.0	-1.4 -1.7 3.7								146.58 146.96	49.79 47.67	Loyalty Islands Region 22.28 S 171.31 E H = 11 26 1.7 DEPTH = 38 km MB = 5.5 /ISC/	
239	MAY 27	SRO BRA	IP IPP I -IP	4 17 4 20 4 22 4 17	33.0 17.0 13.0 30.0	2.1 -1.0 -0.9								71.65 71.66	23.97 23.37	Kamchatka 54.97 N 156.33 E H = 4 6 49.6 DEPTH = 397 km MB = 5.7 /ISC/	

240	MAY 28	SRO BRA	IPCP IPP I I E LMH E E I LMH	4 17 4 20 2 9 2 13 2 15 3 0 2 9 2 13 2 16 2 56	45.0 16.0 25.0 41.0 21.0 0.0 21.0 42.0 33.0 0.0	1.4 -2.0								103.90 104.72	91.13 90.15	Sumbawa 11.05 S 116.97 E H = 1 55 23.3 DEPTH = 45 km MB = 6.1 /ISC/
241	MAY 28	BRA	EPG ESB	6 10 6 10	15.0 43.0	0.6 0.5								2.48	218.18	Yugoslavia 46.20 N 14.90 E H = 6 9 25.0 DEPTH = 6 km /ISC/
242	MAY 28	BRA	E	9 57	36.0									109.12	249.80	Near Coast of Northern Chile 27.66 S 71.40 W H = 9 46 15.4 DEPTH = 4 km MB = 4.6 /ISC/
243	MAY 28	BRA	IFKP2	18 31	12.0	-4.3								147.10	29.77	Fiji Region 18.06 S 179.36 W H = 18 12 36.3 DEPTH = 624 km MB = 5.2 /ISC/
244	MAY 29	BRA	EPP	19 16	54.0	-0.9								40.59	86.25	Hindu Kush Region 36.53 N 70.81 E H = 19 7 55.0 DEPTH = 221 km MB = 4.7 /ISC/
245	MAY 29	BRA SRO	E E E E I I I I I	20 0 20 1 20 4 20 0 20 1 20 2 20 2 20 2	12.0 42.0 15.0 29.0 9.0 49.0 25.0 37.0								5.19 5.33	207.43 217.83	Central Italy 43.51 N 13.82 E H = 19 58 43.6 DEPTH = 43 km /ISC/	
246	MAY 30	BRA	EPN ESG E ESG	23 57 23 59 23 59 23 59	38.0 12.0 32.0 29.0	-1.8 2.9								5.11 5.34	213.18 223.46	Central Italy 43.82 N 13.24 E H = 23 56 20.1 /ISC/
247	MAY 31	BRA	E	11 10	3.0	12.5								78.46	36.96	Hokkaido Region 42.47 N 144.33 E H = 10 59 15.5 DEPTH = 87 km /ISC/



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No.	Date	STA Code	Phase	GMT		RES O-C	Z			E-W			N-S			MPV	MLH	Delta	Azimuth	Remarks
				h	m		A	T	A	T	A	T	A	T						
248	MAY 31	BRA	IFG	11	12 11.0											2.44	27.69	Small local shock		
249	MAY 31	BRA	EPG ESC E	17 36 54.0 17 37 24.0 17 38 33.0	2.7 0.8											79.58 80.43	96.33 95.48	Poland 50.31 N 18.87 E H = 17 36 2.7 /WAR/ Northern Sumatera 3.49 N 96.64 E H = 22 50 45.0 DEPTH = 17 km MB = 5.4 /ISC/		
250	JUN 2	SRO BRA	EP EPCP +IP IFCP I	23 2 39.0 23 3 13.0 23 2 57.0 23 3 18.0 23 3 35.0	-13.8 11.9 -0.3 13.3															
251	JUN 3	BRA SRO	EP EAP	11 3 26.0 11 3 38.0	-1.4 -4.9															
252	JUN 3	BRA SRO	EP EPCP EP EPCP I	18 49 34.0 18 50 45.0 18 49 43.0 18 50 43.0 18 54 19.0	-1.3 -3.8 1.6 -8.8															
253	JUN 4	BRA	EP EPCP E	10 35 34.0 10 36 13.0 10 37 13.0	-2.4 3.8															
254	JUN 4	BRA SRO	EPKIKP E EAPKHKP IAPKIKP EAPKIKP	22 32 14.0 22 33 31.0 22 32 19.0 22 32 31.0 22 32 39.0	-0.1 0.3 8.6 16.6															
255	JUN 6	SRO	+IP ISP	5 34 11.0 5 40 58.0	1.2 1.4															
256	JUN 7	BRA	-IP	1 35 28.0	-0.3 1.20	1.2														



257	JUN 7	BRA E	E E	10 51 10.0 10 52 28.0												3.97	185.36	Yugoslavia 44.22 N 16.59 E H = 10 50 12.9 DEPTH = 57 km /ISC/	
258	JUN 7	BRA	EAPKIKP	11 59 24.0	2.2											160.26	40.92	South of Kermadec Islands 32.07 S 178.00 W H = 11 39 20.7 MB = 5.2 /ISC/	
259	JUN 8	BRA	EPP	8 13 45.0	0.9											108.45	80.08	Banda Sea 7.27 S 126.73 E H = 7 55 20.0 DEPTH = 332 km MB = 5.4 /ISC/	
260	JUN 8	SRO BRA	-EP LMH +IP EPP	9 26 29.0 10 0 0.0 9 26 32.0 9 29 39.0	0.6 0.4 -4.8	240	3.0												
261	JUN 8	BRA	EP IXP E	9 44 53.0 9 45 15.0 9 46 12.0	-1.4 3.1														
262	JUN 8	BRA	EPKHKP	16 35 11.0	5.8														
263	JUN 8	BRA	EP EPP	17 30 36.0 17 31 12.0	-1.1 9.2														
264	JUN 8	BRA	EPT E	18 15 17.0 18 16 12.0	-5.1														
265	JUN 8	BRA SRO	E EAPKIKP EPP E LMH E E LMH	19 8 17.0 19 12 26.0 19 12 53.0 19 13 8.0 19 13 41.0 20 2 0.0 19 12 8.0 19 13 57.0 19 14 25.0 19 16 21.0 20 3 0.0	1.6 -2.9 12.1 -5.3														

No.	Date	STA Code	Phase	GMT		RES O-C	Z		E-W		N-S		MPV	MLH	Delta	Azimuth	Remarks
				h	m		A	T	A	T	A	T					
266	JUN 8	BRA	EAPKFP EPP	19 40 19 41	35.0 14.0	-2.3 -8.9								111.46	247.99	Near Coast of Central Chile 30.52 S 71.95 W H = 19 22 7.3 DEPTH = 39 km MB = 5.4 /ISC/	
267	JUN 9	SRO BRA	EAPKFP EAPKHKP IAPKFP2	0 40 0 39 0 39	0.0 46.0 59.0	2.3 1.9 1.0								151.07 151.14	29.51 27.01	North of New Zealand 21.40 S 176.50 W H = 0 19 52.0 DEPTH = 41 km MB = 4.9 /ISC/	
268	JUN 9	SRO	IP I LMH EP	7 45 7 51 7 53 7 57	46.0 36.0 33.0 0.0	1.9 -0.4								14.45 15.16	151.78 148.88	Crete 34.73 N 26.55 E H = 7 42 20.5 DEPTH = 41 km MB = 4.9 /ISC/	
269	JUN 9	BRA	ESG	11 52	14.0	-1.2								3.13	325.50	Czechoslovakia /ex.16.5T/ 50.71 N 14.32 E H = 11 50 31.9 /ISC/	
270	JUN 10	BRA	IP	3 42	29.0	-0.8								69.18	348.63	Southern Yukon Territory 61.50 N 140.30 W H = 3 31 24.6 DEPTH = 33 km MB = 5.2 /ISC/	
271	JUN 10	BRA	E	8 37	22.0											No determination of epicenter	
272	JUN 10	SPC BRA	EPKFP2 EAPKHKP EPKFP2 EAPKFP2	12 41 12 42 12 41 12 42	54.0 5.0 59.0 21.0	-3.9 1.2 -6.5 -2.2							149.89 151.70	27.45 22.49	North of New Zealand 21.28 S 174.11 W H = 12 22 7.0 DEPTH = 62 km MB = 5.2 /ISC/		
273	JUN 10	BRA	IPG ISB	21 35 21 35	26.0 36.0	-0.8 2.6								0.29	201.24	Austria 47.90 N 16.95 E H = 21 35 21.0 DEPTH = 7 km MB = 2.6 /VIE/	
274	JUN 11	SPC BRA	IPKHKP IPKHKP IAPKFP2	14 49 14 49 14 50	38.0 41.5 9.0	5.3 3.9 -5.9							149.40 151.25	29.08 24.27	North of New Zealand 21.09 S 175.12 W H = 14 29 58.0 DEPTH = 84 km MB = 5.3 /ISC/		

275	JUN 11	SPC SRO BRA	IP LMH IP LMH IP IAP E IPP LMH	16 53 17 41 16 54 17 42 16 54 16 55 16 56 16 58 17 46	55.0 0.0 2.0 0.0 3.0 26.0 20.0 9.0 0.0	0.9 0.8 -1.4 2.0 -3.1	1400	1.5	0.6	20.0	2.2	20.0	7.1	96.20 97.78 98.47	76.85 75.53 74.56	Celebes Sea 3.86 N 124.26 E H = 16 41 2.7 DEPTH = 336 km MB = 6.2 /ISC/
276	JUN 12	SRO BRA	E E	1 4 1 4	37.0 39.0									136.07 136.41	46.95 45.20	Santa Cruz Islands 12.37 S 167.06 E H = 0 45 44.4 DEPTH = 230 km MB = 5.3 /ISC/
277	JUN 12	SPC BRA	EAPKHKP EPKIKP	9 50 9 50	17.0 13.0	0.6 -0.0							146.00 148.15	43.85 40.17	South of Fiji 21.30 S 175.70 E H = 9 30 34.0 DEPTH = 33 km MB = 4.9 /ISO/	
278	JUN 12	BRA SPO	EP EPCP I I	10 9 10 9 10 11 10 12	19.0 32.0 22.0 45.0	-0.8 2.2							89.64 91.55	277.40 279.77	South of Panama 5.25 N 78.17 W H = 9 56 22.6 DEPTH = 24 km MB = 5.5 /ISC/	
279	JUN 12	SPC BRA	EP EPCP	11 32 11 32	24.0 29.0	4.4 0.2								85.33 87.64	70.09 57.73	Luzon 16.61 N 122.45 E H = 11 19 45.6 DEPTH = 41 km MB = 5.1 /ISC/
280	JUN 12	BRA	E	12 27	18.0											No determination of epicenter
281	JUN 12	SPC SRO	EP EPP EIS IXS I	13 39 13 40 13 44 13 39 13 44	29.0 9.0 6.0 32.0 16.0	4.3 5.5 4.9 2.6 6.2								25.25 25.75 26.63	120.22 114.97 114.05	Iran-Iraq Border Region 32.98 N 46.25 E H = 13 34 0.3 DEPTH = 34 km MB = 5.3 /ISC/
282	JUN 12	SPC BRA	IP IAP IPP	13 45 13 45 13 45	25.0 40.0 32.0	3.7 -9.1 -2.3								24.64 26.03	120.31 114.03	Iran-Iraq Border Region 33.40 N 45.73 E H = 13 40 12.0 DEPTH = 134 km MB = 5.0 /ISC/



No.	Date	STA Code	Phase	GMT		RES O-C	Z			E-W			N-S			MPV	MLH	Delts	Azimuth	Remarks
				h	m		a	t	a	t	a	t	a	t						
		SFC	LMH EAP ES	0 39 0 36 0 38	28.0 6.0 5.0	-0.6 0.7										10.94	171.87			
296	JUN 15	BRA SRO	EPKIKP IFKHKP	1 33 1 33	23.0 17.0	1.5 -3.2										148.04 148.05	21.42 23.74		North of New Zealand 17.59 S 174.59 W H = 1 13 43.0 MB = 5.1 /ISC/ DEPTH = 36 km	
297	JUN 15	BRA	E	8 55	12.0														No determination of epicenter	
298	JUN 15	BRA	EP	15 33	13.0	0.6										78.06	37.86		Hokkaido Region 42.32 N 143.04 E H = 15 21 19.0 MB = 5.5 /ISC/ DEPTH = 64 km	
299	JUN 16	BRA	E	6 9	18.0														No determination of epicenter	
300	JUN 16	BRA	E	6 29	21.0														No determination of epicenter	
301	JUN 16	BRA	E	9 17	2.0														No determination of epicenter	
302	JUN 16	BRA E	EP E	9 26 9 26	11.0 47.0	-0.7										10.78	139.25		Turkey 39.60 N 26.20 E H = 9 23 33.0 /ISC/	
303	JUN 16	BRA	E	10 25	42.0														No determination of epicenter	
304	JUN 17	BRA I	I I	1 8 1 8	30.0 42.0											144.31	48.78		New Hebrides 20.37 S 169.22 E H = 0 48 59.8 DEPTH = 63 km MB = 5.0 /ISC/	
305	JUN 17	BRA SRO SFC	IPN ISN IPN IPG IPN	9 3 9 3 9 3 9 3 9 3	17.0 39.0 22.0 39.0 48.0	-1.7 -2.9 -9.1 -0.0 -1.0										1.74 2.61 3.87	278.61 284.41 260.38		Austria 48.40 N 14.52 E H = 9 2 47.0 DEPTH = 20 km /ISC/	

306	JUN 18	BRA	ISN ISG	23 33 23 34	40.0 2.0	-2.0 17.3										1.75	282.53		Austria 48.52 N 14.53 E H = 23 32 46.8 /ISC/
307	JUN 19	BRA	E	12 2	19.0														No determination of epicenter
308	JUN 19	BRA E	E E	14 5 14 5	0.0 19.0														No determination of epicenter
309	JUN 19	BRA	EP IXP	15 25 15 25	7.0 23.0	-1.4 1.6										81.83	7.02		Aleutian Islands Region 49.94 N 173.68 W H = 15 12 50.7 MB = 5.4 /ISC/ DEPTH = 30 km
310	JUN 20	SRO BRA	EPKIP2 EPP E EAPKIP	2 1 2 5 2 6 2 1	57.0 25.0 29.0 49.0	1.3 -3.1 -1.4										151.62 152.46	133.02 132.67		West of Macquarie Island 60.45 S 153.80 E H = 1 41 54.0 MB = 5.2 /ISC/ DEPTH = 33 km
311	JUN 20	BRA SRO	EAPKIP EAPKIP	17 22 17 22	31.0 29.0	3.1 1.1										145.79 145.84	19.04 21.24		North of New Zealand 15.08 S 173.84 W H = 17 2 40.4 MB = 4.6 /ISC/ DEPTH = 45 km
312	JUN 21	BRA	EPKIP	4 59	8.0	2.9										148.60	21.75		North of New Zealand 18.18 S 174.61 W H = 4 39 47.1 MB = 5.1 /ISC/ DEPTH = 209 km
313	JUN 21	BRA SRO	EPB ISG EPB ESG	15 8 15 9 15 8 15 10	20.0 45.0 29.0 3.0	-4.0 1.5 1.4 12.6										5.16 5.37	212.12 222.36		Central Italy 43.73 N 13.32 E H = 15 6 52.9 DEPTH = 4 km /ISC/
314	JUN 21	SRO BRA	EAP LMH EAP	15 42 16 22 15 42	9.0 0.0 12.0	-4.8 -4.0										80.64 81.06	52.18 51.41		Kyushu 32.04 N 131.72 E H = 15 29 51.0 MB = 5.3 /ISC/ DEPTH = 45 km
315	JUN 21	BRA	E	17 47	39.0														No determination of epicenter
316	JUN 22	BRA	EP	6 0	21.0	-4.2										29.80	284.47		North Atlantic Ridge 46.89 N 27.46 W H = 5 54 22.0 MB = 4.4 /ISC/ DEPTH = 62 km

No.	Date	STA Code	Phase	GMT		RES O-C	Z		E-W		N-S		MPV	MLH	Delta	Azimuth	Remarks
				h	m		A	T	A	T	A	T					
317	JUN 23	BRA	EP	9	0	47.0	-3.4							84.62	44.40	South of Honshu H = 8 48 22.1 DEPTH = 59 km MB = 4.9 /ISC/	
318	JUN 23	BRA	EP	14	24	24.0	-0.1							78.46	1.55	Fox Islands H = 53.73 N 165.45 W H = 14 12 23.8 DEPTH = 26 km MB = 4.8 /ISC/	
319	JUN 24	SRO	IPG	7	19	24.0	3.5							4.23	194.45	Yugoslavia H = 43.71 N 16.86 E H = 7 17 56.1 DEPTH = 33 km	
		BRA	EPN IPG ISG I	7	20	36.0	-0.6							4.46	182.28		
		BRA	EPN IPG ISG I	7	19	27.0	1.9										
		BRA	ISG I	7	20	33.0	9.4										
		BRA	ISG I	7	20	46.0											
320	JUN 24	BRA	EPKF2	10	4	25.0	-2.5							147.77	16.68	Samoa Region H = 16.75 S 172.09 W H = 9 44 41.6 DEPTH = 33 km MB = 4.3 /ISC/	
321	JUN 24	BRA	EPKKP IAPKPKP I	15	24	13.0	1.0							146.35	17.96	North of New Zealand H = 15.50 S 173.10 W H = 15 4 35.9 DEPTH = 33 km MB = 4.7 /ISC/	
		BRA	EPKKP IAPKPKP I	15	24	32.0	9.2										
		BRA	EPKKP IAPKPKP I	15	24	43.0											
322	JUN 24	SRO	IP	15	36	48.0	0.7										
		SRO	IPP	15	38	36.0	13.9										
		SRO	IXP	15	43	12.0	7.1										
		HRB	LMH	15	58	0.0	-4.6			27.5	16.0	27.9	16.0	6.3	87.78	Hindu Kush Region H = 36.28 N 69.69 E H = 15 29 22.3 DEPTH = 47 km MB = 5.9 /ISC/	
		HRB	EAP	15	36	56.0	-1.0										
		HRB	EPP	15	38	22.0	3.9										
		HRB	EKS	15	43	10.0											
		BRA	LMH	15	58	0.0	-0.9			0.7	8.0	0.5	7.0	5.0	87.76		
		BRA	IPP	15	36	53.0	2.3										
		BRA	IPP	15	38	33.0	5.2										
		BRA	IS	15	43	1.0											
		BRA	IS	15	44	20.0											
		BRA	LMH	15	58	0.0				33.6	12.0	17.7	12.0	6.5	87.35		
323	JUN 24	BRA	EAP	23	34	28.0	-2.7							102.40	73.51	Djailolo GILOLO /Halmahera/ H = 1.50 N 127.58 E H = 23 20 4.9 DEPTH = 215 km MB = 5.4 /ISC/	

324	JUN 25	BRA	IP I	5	0	20.0	-6.1							4.28	190.85	Adriatic Sea H = 43.96 N 15.99 E H = 4 59 17.0 DEPTH = 39 km /ISC/	
325	JUN 25	SPC BRA	EP EP EPP	8	3	3.0	4.1							37.81 39.91	90.93 87.35	Hindu Kush Region H = 36.32 N 69.62 E H = 7 55 45.9 DEPTH = 53 km MB = 4.8 /ISC/	
326	JUN 25	BRA SPC	ES EXP	17	13	20.0	16.2							5.88 8.19	235.64 239.98	Northern Italy H = 44.64 N 10.30 E H = 17 10 47.9 DEPTH = 50 km /ISC/	
327	JUN 26	SPC BRA	IP IP IPCP IPP E	10	17	10.0	2.6					5.8		72.54 74.37	26.90 24.97	Kamchatka H = 51.87 N 156.13 E H = 10 6 0.3 DEPTH = 197 km MB = 5.4 /ISC/	
		BRA	IP	16	14	16.0	-1.2							60.60	240.90	Central Mid-Atlantic Ridge H = 4.68 N 32.69 W H = 16 4 8.0 DEPTH = 38 km MB = 5.2 /ISC/	
		SRO	EPP IP	16	16	19.0	-13.9							61.14	242.18		
		SRO	IP	16	14	15.0	-5.9							60.65	240.79	Central Mid-Atlantic Ridge H = 4.57 N 32.65 W H = 16 31 9.0 DEPTH = 30 km MB = 5.0 /ISC/	
328	JUN 26	BRA	IP	16	14	16.0	-1.2							60.65	240.79		
329	JUN 26	BRA	IP	16	41	18.0	-1.7							5.19	213.98	Central Italy H = 43.79 N 13.10 E H = 2 45 51.3 /ISC/	
330	JUN 27	BRA	ESG	2	48	41.0	-1.8							5.19	213.98		
331	JUN 28	SRO BRA	ETH LMH EPN IPB ISN	1	45	15.0	2.7							4.95	160.02	Yugoslavia H = 43.14 N 20.62 E H = 1 43 55.0 DEPTH = 9 km MB = 3.9 /ISC/	
		BRA	IPB ISN	1	45	20.0	-1.5							5.60	152.62		
		BRA	IPB ISN	1	45	34.0	0.5										
		BRA	IPB ISN	1	46	26.0	-1.5										
332	JUN 28	SRO	IP	9	54	47.0	-16.3							27.96	148.27	Egypt H = 22.70 N 33.80 E H = 9 49 35.5 DEPTH = 17 km MB = 5.5 /ISC/	
		BRA	IP	9	55	11.0											
		BRA	IP	9	59	9.0											
		BRA	IP	10	1	15.0											
		BRA	IP	9	55	53.0	-10.9										
		BRA	IP	9	55	23.0											
		BRA	IP	9	59	36.0											
		BRA	IP	10	1	17.0											

No.	Date	STA Code	Phase	GMT h m s	RES O-C	Z		E-W		N-S		MPV	MLH	Delta	Azimuth	Remarks
						A	T	A	T	A	T					
333	JUL 30	SRO	EKPP2	12 58 39.0	-3.5									147.10	30.61	Fiji Region 17.88 S 178.57 W H = 12 39 58.4 DEPTH = 577 km MB = 5.5 /ISC/
334	JUL 1	ERA	ESB	11 10 38.5	2.5									3.10	321.07	Czechoslovakia /ex.36T/ 50.54 N 14.05 E H = 11 9 0.0 /FRU/
335	JUL 2	ERA	E	1 7 31.0										151.39	21.93	North of New Zealand 20.91 S 173.92 W H = 0 47 37.5 DEPTH = 33 km MB = 4.5 /ISC/
336	JUL 2	SPC SRO	E	13 2 21.0 13 2 23.0 13 7 23.0 13 18 0.0										30.03 30.59	118.08 113.56	Iran 30.09 N 50.87 E H = 12 56 6.4 DEPTH = 27 km MB = 5.4 /ISC/
337	JUL 3	ERA	EP	21 44 43.0	1.0									31.49	112.73	Iran 30.06 N 50.86 E H = 21 38 21.3 DEPTH = 35 km MB = 4.9 /ISC/
338	JUL 4	SPC SRO	IP EPOP EAP E LMH I I	1 16 35.0 1 16 47.0 1 16 57.0 1 18 7.0 1 56 0.0 1 16 46.0 1 17 25.0 1 18 28.0	1.1 0.2 -1.7 0.5 19.1									78.64 80.52	42.80 41.37	Near East Coast of Honshu 38.55 N 142.08 E H = 1 4 35.8 DEPTH = 51 km MB = 5.4 /ISC/
339	JUL 4	ERA	EP	1 53 22.0	0.2									84.60	44.24	Off East Coast of Honshu 33.36 N 141.01 E H = 1 40 51.5 DEPTH = 42 km MB = 4.7 /ISC/
340	JUL 4	SPC SRO	IP IPP IP IP IS EXS LMH	10 29 18.0 10 32 54.0 10 29 19.0 10 33 7.0 10 40 7.0 10 41 3.0 11 11 0.0	7.1 4.4 0.7 4.5 -7.1									90.87 92.48	74.62 73.20	Negros 9.42 N 122.54 E H = 10 16 13.1 DEPTH = 64 km MB = 5.7 /ISC/

No.	Date	STA Code	Phase	GMT h m s	RES O-C	Z		E-W		N-S		MPV	MLH	Delta	Azimuth	Remarks	
						A	T	A	T	A	T						
341	JUL 5	ERA	E E	10 29 21.0 10 33 7.0	-0.4 -0.9									93.15	72.28	No determination of epicenter	
342	JUL 5	SPC SRO	EP LMH EP IAP IPP ISCS ISS LMH	6 13 46.0 6 14 22.0 10 28 38.0 11 9 0.0 10 28 37.0 10 28 47.0 10 31 47.0 10 38 55.0 10 43 49.0 11 8 0.0	2.3 0.4 -1.3 7.0 -1.2 8.0									77.82 77.99 78.63	338.94 337.08 337.85	Vancouver Island Region 49.45 N 127.19 W H = 10 16 38.9 DEPTH = 26 km MB = 5.6 /ISC/	
343	JUL 7	ERA	E E	10 35 27.0 10 42 57.0													No determination of epicenter
344	JUL 8	SRO ERA	ES E EXP	5 49 38.0 5 50 30.0 5 48 45.0	19.1 18.9												Greece-Bulgaria Border Region 41.56 N 23.68 E H = 5 46 15.3 DEPTH = 38 km MB = 4.7 /ISC/
345	JUL 8	SPC SRO ERA	IP IP IP EPP	6 56 40.0 6 56 47.0 6 56 56.0 6 58 33.0	1.7 -2.3 0.2 -2.1												Afghanistan-USSR Border Region 36.43 N 71.42 E H = 6 49 21.3 DEPTH = 105 km MB = 5.6 /ISC/
346	JUL 8	ERA	E	11 24 5.0													No determination of epicenter
347	JUL 9	ERA	IP EPP	14 5 23.0 14 8 12.0	-1.6 -3.4												North-West of Kurile Islands 52.99 N 154.67 E H = 13 54 36.0 DEPTH = 400 km MB = 5.1 /ISC/
348	JUL 13	SRO SPC ERA	EP IS LMH EPOP IP	2 12 5.0 2 22 35.0 3 2 0.0 2 12 10.0 2 12 10.0	-1.2 -0.1 -0.9 -0.1												Atlantic Indian Ridge 28.27 S 63.03 E H = 1 59 29.0 DEPTH = 31 km MB = 5.4 /ISC/
349	JUL 16	SRO	EAP IPCP LMH	2 51 35.0 2 55 31.0 3 2 0.0	-5.2 -5.9												Turkey 38.23 N 43.36 E H = 2 46 51.7 DEPTH = 46 km MB = 4.9 /ISC/
350	JUL 16	SRO	EP ISCS	17 21 51.0 17 32 31.0	-0.1 -1.5												Southern Sumatra 3.06 S 101.01 E H = 17 9 1.2 DEPTH = 40 km MB = 5.5 /ISC/

No.	Date	STA Code	Phase	GMT h m s	RES O-C	Z			E-W			N-S			MPV	MLH	Delta	Azimuth	Remarks
						A	T		A	T		A	T						
351	JUL 16	SRO	EAPKIKP	18 28 51.0	0.1										151.02	28.01	North of New Zealand 21.10 S 175.79 W H = 18 8 59.0 DEPTH = 18 km MB = 5.0 /ISC/		
352	JUL 18	SRO BRA E E	EP I EP E E	12 46 24.0 12 50 0.0 12 46 12.0 12 50 12.0 12 51 38.0	-2.4 -16.3										102.28 102.71	53.11 52.04	Marianas 13.87 N 144.74 E H = 12 32 45.6 DEPTH = 138 km MB = 4.9 /ISC/		
353	JUL 20	BRA	EP	17 28 31.0	-9.5										85.35	324.34	Southern Nevada nuclear ex. 37.22 N 116.18 W H = 17 16 0.2 DEPTH = 0 km MB = 4.9 /AEC/		
354	JUL 21	BRA	EP	5 23 39.0	-1.7										94.20	303.81	Guerrero, Mexico 18.60 N 102.00 W H = 5 10 24.0 DEPTH = 33 km MB = 4.4 /ISC/		
355	JUL 21	SPC SRO BRA	EPKP2 EPKP2 EPKHKP IFKP2 IAPKIKP E	8 56 51.0 8 56 56.0 8 56 49.0 8 57 6.0 8 57 22.0 9 1 8.0	-4.4 -7.1 0.9 2.6 -3.2										149.90 151.74 151.80	31.31 29.12 26.58	Fiji Region 21.96 S 176.06 W H = 8 37 15.0 DEPTH = 150 km MB = 5.4 /ISC/		
356	JUL 21	BRA	E E	15 26 54.0 15 26 58.0													No determination of epicenter		
357	JUL 22	BRA	EPP EPP	5 14 7.0 5 14 28.0	-1.7 19.3										14.09	95.48	South-Western Russia 45.02 N 37.08 E H = 5 10 34.5 MB = 4.9 /ISC/		
358	JUL 22	SPC SRO	EP IP IXS E LMH EP EPP	16 50 36.0 16 50 47.0 16 58 41.0 17 2 37.0 17 16 0.0 16 50 50.0 16 53 17.0	0.4 0.5 -3.8 -1.6 16.5				1.5	16.0	3.6	16.0			55.10 56.61 57.33	80.77 78.56 78.00	Tibet 31.38 N 91.41 E H = 16 41 2.1 DEPTH = 17 km MB = 5.4 /ISC/		
359	JUL 23	BRA	EPN ISN I	10 16 34.0 10 16 49.0 10 17 7.0	1.6 4.5										0.74	220.10	Austria 47.60 N 16.40 E DEPTH = 5 km H = 10 16 15.0 /ISC/		

No.	Date	STA Code	Phase	GMT h m s	RES O-C	Z			E-W			N-S			MPV	MLH	Delta	Azimuth	Remarks
						A	T		A	T		A	T						
360	JUL 23	BRA	EP	11 4 34.0	4.7											77.86	338.51	Vancouver Island Region 50.11 N 129.09 W H = 10 52 33.4 DEPTH = 33 km MB = 4.8 /ISC/	
361	JUL 23	BRA SRO	IP EXP IXP I LMH IP IXP I I LMH	19 25 0.0 19 25 17.0 19 25 31.0 19 28 34.0 20 0 0.0 19 25 10.0 19 28 34.0 19 36 14.0 20 4 0.0	-5.2 -1.6 12.4 1.4 16.0				19.1	15.0	68.0	15.0	5.9			77.92 78.55 339.39	338.63	Vancouver Island Region 50.10 N 129.30 W H = 19 13 8.6 DEPTH = 31 km MB = 5.8 /ISC/	
362	JUL 24	BRA	EP	10 26 43.0	-2.4											18.96	108.37	Turkey 39.54 N 40.60 E H = 10 22 25.0 DEPTH = 40 km MB = 4.2 /ISC/	
363	JUL 24	BRA SRO	E EP EPCP E	11 2 49.0 11 3 35.0 11 4 0.0 11 5 22.0	-2.7 7.7											77.28 78.10	271.80 272.77	Near Coast of Venezuela 10.68 N 65.61 W H = 10 51 41.0 DEPTH = 7 km MB = 4.7 /ISC/	
364	JUL 25	SRO BRA	EP I I EP ESS E E	1 58 22.0 2 1 38.0 2 2 18.0 1 58 31.0 1 59 34.0 2 1 10.0 2 2 44.0	-1.5 -0.5 17.6											9.37 9.95	164.65 159.85	Greece 38.73 N 21.47 E H = 1 56 8.4 DEPTH = 50 km MB = 4.7 /ISC/	
365	JUL 25	BRA	EAPKIKP IPKHKP	8 49 29.0 9 40 2.1	0.0 6.4											156.74	31.26	Kermadec Islands Region 27.32 S 176.21 W H = 8 29 31.0 DEPTH = 7 km MB = 5.1 /ISC/	
366	JUL 25	SRO BRA	IPKHKP IPKHKP IPKHKP IPKP2 E	9 39 55.0 9 40 2.0 9 44 34.0 9 39 55.0 9 40 13.0 9 44 52.0	-0.6 6.4 -0.8 2.4											151.20 151.27	29.36 26.86	Fiji Region 21.50 S 176.38 W H = 9 20 29.9 DEPTH = 198 km MB = 5.4 /ISC/	
367	JUL 24	SRO	IPP	11 49 38.0	15.2											8.47	267.63	France 46.79 N 5.95 E H = 11 47 8.3 /ISC/	

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No.	Date	STA Code	Phase	GMT		RES O-C	Z		E-W		N-S		MPV	MLH	Delta	Azimuth	Remarks
				h	m		A	T	A	T	A	T					
368	JUL 27	ERA SRO	EPK EPG	0 10	12.0	3.4								5.17	211.87	Central Italy 43.71 N 13.34 E H = 0 8 48.0 DEPTH = 33 km	/ISC/
369	JUL 27	ERA	EXP I PGP	0 32	46.0	0.5								76.87	24.23	Kurile Islands Region 49.94 N 158.89 E H = 0 20 49.9 MB = 5.2	/ISC/
370	JUL 27	DRA	EP	16 54	10.0	2.7								85.56	56.26	Ryukyu Islands Region 25.50 N 130.55 E H = 16 41 31.2 DEPTH = 33 km	MB = 4.9 /ISC/
371	JUL 28	ERA SRO	+IP EP	9 0	59.0	1.0								77.63	14.65	Near Islands 52.54 N 173.24 E H = 8 49 1.0 DEPTH = 23 km	MB = 5.3 /ISC/
372	JUL 29	SRO	IPP ISKS	5 22	8.0	6.8								100.09	78.67	Northern Sulawesi 0.06 N 123.44 E H = 5 4 21.7 DEPTH = 151 km	MB = 5.7
373	JUL 30	ERA	IP	5 1	28.0	0.5								78.85	12.92	Rat Islands 51.80 N 176.41 E H = 4 49 26.8 DEPTH = 39 km	MB = 5.0 /ISC/
374	JUL 30	ERA	EPK I KP	17 59	16.0	2.3								122.15	56.17	New Britain Region 4.60 S 152.23 E H = 17 40 22.8 DEPTH = 38 km	MB = 5.3 /ISC/
375	JUL 30	ERA	EAP I KP	20 32	54.0	2.7								122.19	56.16	New Britain Region 4.64 S 152.26 E H = 20 13 54.0 DEPTH = 2 km	MB = 5.4 /ISC/
376	JUL 30	ERA	+IP IAP IPP I LMH EP	21 56	43.0	-1.9	3.0					6.2		73.04	344.86	Eastern Alaska 56.77 N 135.91 W H = 21 45 15.8 DEPTH = 29 km	MB = 6.2 /ISC/
		HRB		21 56	48.0	0.4		302.6	12.0	620.2	12.0	8.2		73.51	345.48		



377	JUL 31	SRO	EPP +IP I	21 59	24.0	-9.5								73.59	345.55	South of Honshu 30.71 N 141.82 E H = 3 28 28.2 DEPTH = 19 km	MB = 5.8 /ISC/
		SRO	IPGP IPP ISCS I PGP IXP IPP E EIS	3 41	12.0	0.8								86.77	46.04	South of Honshu 30.75 N 141.72 E H = 15 56 9.3 DEPTH = 35 km	MB = 5.5 /ISC/
378	JUL 31	SRO	+IPGP I ISCS LMH EP EXP	16 8	56.0	2.2								87.10	45.19	No determination of epicenter	
379	AUG 1	ERA	IPG	11 2	23.0									99.46	75.25	Molucca Passage 2.35 N 127.56 E H = 19 6 33.8 DEPTH = 91 km	MB = 5.8 /ISC/
380	AUG 1	SPC	EPKP EAP ES	19 20	33.0	1.4								101.06	73.99		
		SRO	EP EP IPP ISKSDE LMH EP	19 20	12.0	-2.7								101.74	72.98		
		ERA	EAP EP EPP ESKSDE	19 20	23.0	5.3	.5	15.0	2.6	15.0				147.80	24.30	North of New Zealand 18.78 S 173.14 W H = 1 11 0.5 DEPTH = 48 km	MB = 5.2 /ISC/
381	AUG 2	SPC	EPKP EPK I KP	1 30	43.0	-1.7								149.52	19.40		
		ERA	EAP I KP EPK I KP	1 31	39.0	-0.8								149.57	21.80		
		SRO	EAP I KP EPK I KP	1 31	18.0	12.1								153.24	37.57	South of Fiji 26.24 S 177.55 W H = 19 48 52.4 DEPTH = 179 km	MB = 5.3 /ISC/
382	AUG 2	SPC	EPK I KP EPK I KP	20 8	28.0	2.3								70.75	20.99	Off East Coast of Kamchatka 55.98 N 163.26 E H = 21 38 50.6 DEPTH = 30 km	MB = 5.5 /ISO/
		ERA	EPK I KP EPK I KP	20 8	25.0	1.4								72.49	19.79		
383	AUG 2	SPC	IP EPP LMH +IP	21 50	10.0	4.1											
		SRO	EPP LMH +IP	21 52	38.0	-6.8											
		SRO	+IP	21 50	18.0	1.8											

No. Date	STA Code	Phase	GMT		RES O-C	Z		E-W		N-S		MPV	MLH	Delta	Azimuth	Remarks
			h	m		A	T	A	T	A	T					
384	AUG 3	SPC IP ES LMH SRO +IP EPP IS LMH	21 52 21 59 22 27	58.0 33.0 0.0	-3.5 -4.2			4.7	16.0	8.0	16.0	6.1	78.76	11.67	Andreevof Islands 51.20 N 178.13 W H = 4 40 52.9 DEPTH = 24 km MB = 5.7 /ISC/	
395	AUG 3	SRO EP LMH	4 52 5 2 5 33 4 53 4 56 5 3 5 34	58.0 53.0 0.0 4.0 22.0 4.0 0.0	2.8 2.9 0.2 13.5 -2.8			5.5	16.0	8.9	16.0	6.3	14.55	127.91	Turkey 37.85 N 32.81 E H = 21 39 25.6 DEPTH = 34 km MB = 4.5 /ISC/	
386	AUG 4	SPS IP EPP EXS BRA IP IAP EPP IS LMH SRO IXP IXS LMH	11 49 11 52 11 59 11 49 11 49 11 52 11 59 12 54 11 49 11 59 12 25	39.0 26.0 12.0 41.0 47.0 27.0 24.0 0.0 54.0 22.0 0.0	0.2 2.3 -1.3 -0.5 -0.2 -0.3 5.6 1.5 -2.7										South-Eastern Alaska 56.19 N 135.42 W H = 11 38 8.0 DEPTH = 18 km MB = 5.5 /ISC/	
387	AUG 4	SPC EPOP EPP EXS HRB EP LMH SRO IP IS LMH BRA IP IAP ISP LMH	18 2 18 3 18 5 18 12 18 3 18 33 18 3 18 12 18 32 18 3 18 3 18 13 18 42	52.0 5.0 50.0 35.0 4.0 0.0 2.0 49.0 0.0 5.0 16.0 22.0 0.0	1.8 0.7 9.6 -10.3 3.5 1.5 6.5 4.2 1.6 0.1			3.1	16.0	5.3	16.0	6.0	74.90	28.36	Kurile Islands 49.13 N 155.96 E H = 17 51 12.6 DEPTH = 47 km MB = 5.8 /ISC/	
					220	1.5	12.6	16.0	8.0	16.0	6.0	6.4	76.70	26.98		
							12.9	15.0	34.0	15.0	6.8	76.72	27.05			
												76.76	26.36			

No. Date	STA Code	Phase	GMT		RES O-C	Z		E-W		N-S		MPV	MLH	Delta	Azimuth	Remarks
			h	m		A	T	A	T	A	T					
389	AUG 4	SPC EPP SRO IAPKIKP LMH EPPKIP ESKPDF	22 49 22 52 22 49 23 50 22 49 22 53	51.0 15.0 54.0 0.0 52.0 22.0	-0.0 10.7 -0.6 2.5 -0.3											Solomon Islands 11.10 S 162.05 E H = 22 30 35.0 DEPTH = 18 km MB = 5.8 /ISC/
389	AUG 5	SRO ERA EPPKIP	14 10 14 10	54.0 16.0	1.7 0.6											Kermadec Islands Region 29.77 S 176.93 W H = 13 50 20.0 DEPTH = 24 km MB = 4.9 /ISC/
390	AUG 6	SRO ERA EP	1 20 1 20	26.0 37.0	-2.7 1.0											Southern Iran 25.04 N 61.22 E H = 1 12 50.5 DEPTH = 36 km MB = 5.4 /ISC/
391	AUG 6	SRO IPKIKP ISS LMH IPKIKP IPKIP	7 33 7 36 7 54 8 25 7 33 7 36	58.0 22.0 8.0 0.0 57.0 28.0	-1.4 -1.4 7.6 0.1 2.1											Solomon Islands 11.09 S 162.17 E H = 7 14 41.0 DEPTH = 10 km MB = 5.9 /ISC/
392	AUG 6	BRA EPPKIP	10 34	51.0	1.9											Solomon Islands 11.22 S 162.15 E H = 10 15 37.2 DEPTH = 36 km MB = 5.4 /ISC/
393	AUG 6	BRA EP	15 45	20.0	0.7											Arabian Sea 14.71 N 55.72 E H = 15 37 0.0 DEPTH = 65 km MB = 4.6 /ISC/
394	AUG 6	SRO ERA EP	16 2 16 2	6.0 18.0	-5.1 -0.1											Arabian Sea 14.73 N 55.62 E H = 15 53 56.0 DEPTH = 33 km MB = 5.0 /ISC/
395	AUG 6	BRA EP	16 53	2.0	0.7											Arabian Sea 14.62 N 55.57 E H = 16 44 40.0 DEPTH = 45 km MB = 5.0 /ISC/
396	AUG 7	SRO ESB	1 39	34.0	-10.5											Southern Italy 41.25 N 15.08 E H = 1 36 14.0 /BCIS/

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No.	Date	STA Code	Phase	GMT		RES O-C	Z			E-W			N-S			MPV	MLH	Delta	Azimuth	Remarks
				h	m		A	T	A	T	A	T	A	T						
397	AUG 7	SPC BRA SRO	+IAPKIKP ESKPDF +IAPKHKP IAPKP2 I +IAPKHKP I ISKPDF LMH	9 43 9 47 9 43 9 44 9 45 9 43 9 46 9 47 10 45	56.0 21.0 57.0 12.0 54.0 58.0 34.0 22.0 0.0	-1.3 -1.4 -1.1 4.9 -0.3 -3.0														
398	AUG 7	SPC BRA	EPKIKP EAPKIKP EPCIKP	23 35 23 36 23 35	48.0 34.0 51.0	1.1 -2.9 0.2														
399	AUG 8	SPC BRA	EAP EP	9 57 9 57	42.0 47.0	-5.1 0.5														
400	AUG 9	SPC	EP EXP	0 9 0 9	26.0 45.0	0.9 1.5														
401	AUG 9	SPC SRO BRA	EP EPCP EPCP +IXP LMH +IP IPCP IPOP E	4 29 4 29 4 29 4 29 5 9 4 29 4 29 4 29 4 32	10.0 22.0 27.0 20.0 0.0 20.0 33.0 45.0 45.0	0.6 -3.8 1.2 0.2 -0.8 -1.3 10.7														
402	AUG 9	SPC BRA	EP EPCP EP	13 0 13 0 13 0	14.0 29.0 27.0	1.0 -0.2 2.6														
403	AUG 9	SPC SRO BRA	EPCP EPCP EPCP ESP -IPOP IPOP	15 46 15 47 15 47 15 58 15 47 15 47	52.0 6.0 12.0 16.0 3.0 15.0	0.4 14.4 12.2 -7.5 1.5 13.5														

No.	Date	STA Code	Phase	GMT		RES O-C	Z			E-W			N-S			MPV	MLH	Delta	Azimuth	Remarks
				h	m		A	T	A	T	A	T	A	T						
404	AUG 9	SPC	EP EPP	19 51 19 53	28.0 15.0	4.3 -7.3														
405	AUG 9	SRO SPC	ESB E LMH ESN	20 1 20 3 20 7 20 1	36.0 33.0 0.0 44.0	-2.8 -3.5														
406	AUG 10	SRO BRA	IPKHKP IPKP2 IPKHKP IAPKP2 EPP	15 51 15 51 15 51 15 51 15 55	12.0 28.0 12.0 36.0 3.0	-0.2 0.9 -0.2 -3.2 3.3														
407	AUG 11	BRA	EP	2 31	55.0	2.8														
408	AUG 11	BRA	EPKIKP EPKP2 ESKPDF	7 50 7 51 7 53	36.0 2.0 19.0	0.5 0.9 -11.6														
409	AUG 11	BRA	IP IAP E	13 36 13 36 13 37	15.0 21.0 17.0	1.2 -4.4														
410	AUG 11	SRO BRA	EAPKHKP EAPKHKP I	16 49 16 49 16 50	36.0 38.0 6.0	-2.0 -0.6														
411	AUG 12	BRA SRO	IP IPOP IPP IP IPP LMH	9 54 9 54 9 57 9 54 9 55 10 23	12.0 21.0 30.0 16.0 10.0 20.0	-0.9 0.4 13.8 2.1 2.1														
412	AUG 12	BRA	EP	12 46	21.0	0.8														



No.	Date	STA Code	Phase	GMT			RES O-C	Z			E-W			N-S			MPV	MLH	Delta	Azimuth	Remarks
				h	m	s		A	T		A	T		A	T						
413	AUG 12	BRA	EPOP	13	29	0.0	0.5										92.78	280.58	South of Panama 5.01 N 82.65 W H = 13 15 49.1 DEPTH = 39 km MB = 5.7 /ISC/		
414	AUG 12	SRO	IPN IPG ISG IP ISS I LMH EXP ESS E	23 23 23 23 23 23 23 23 23 23	49 50 52 49 50 52 53 50 50 52	54.0 20.0 16.0 16.0 16.0 24.0 0.0 5.0 21.0 20.0	4.1 -5.6 13.4 0.6 -6.8 0.0 -4.4										7.40 8.11 8.27	153.42 148.57 167.05	Yugoslavia 41.10 N 22.69 E H = 23 47 57.9 DEPTH = 12 km MB = 4.6 /ISC/		
415	AUG 13	SPC BRA	EP EPOP EP	8 8 8	18 18 18	12.0 37.0 20.0	3.8 13.5 0.3										72.67 74.70 76.63	36.09 34.06 276.34	Sea of Okhotsk 47.16 N 144.76 E H = 8 7 22.0 DEPTH = 407 km MB = 4.7 /ISC/		
416	AUG 14	BRA	EP	10	57	48.0	-0.4												Caribbean Sea 14.20 N 68.46 W H = 10 45 57.0 DEPTH = 18 km MB = 4.7 /ISC/		
417	AUG 14	SPC BRA	EKP2 EKP2	12 12	5 5	23.0 27.0	-0.7 -4.5										145.36 147.30	32.52 28.25	Fiji Region 17.96 S 178.48 W H = 11 46 49.2 DEPTH = 606 km MB = 4.8 /ISC/		
418	AUG 14	SPC	EPKIKP EAPKIKP E EPS	22 22 22 22	48 48 49 59	13.0 22.0 46.0 14.0	5.6 1.3 15.1										116.67	66.91	New Guinea 6.29 S 144.46 E H = 22 29 27.8 DEPTH = 43 km MB = 5.9 /ISC/		
419	AUG 15	SPC BRA SRO	EKP2 EAPKIKP EAPK2	10 10 10	41 41 41	38.0 36.0 44.0	2.6 2.9 1.6										146.77 148.46 148.53	23.15 18.30 20.63	Tonga Region 17.61 S 172.81 W H = 10 21 48.2 MB = 5.1 /ISC/		
420	AUG 15	SPC BRA	-IP -IP IPOP	11 11 11	7 7 8	44.0 42.0 6.0	1.3 -3.4 4.2										72.96 73.42	346.18 344.52	South-Eastern Alaska 56.31 N 135.57 W H = 10 56 13.2 DEPTH = 23 km MB = 5.4 /ISC/		

421	AUG 16	SRO	ES	10	47	43.0	-17.8										73.84	18.99	Komandorsky Islands Region 55.04 N 165.43 E H = 10 26 54.0 DEPTH = 11 km MB = 4.3 /ISC/
422	AUG 17	SRO HRB BRA	IPKIKP IPP LMH EPP E E IPKIKP IAPKIKP IPP IPP LMH	23 0 0 0 0 23 0 0 0 0 1	59 3 4 48 7 59 3 3 4 5 1	8.0 1.0 44.0 0.0 47.0 5.0 40.0 6.0 22.0 49.0 10.0 0.0	-2.3 -4.2 -1.4 1.7 9.2 -2.6 18.4 0.9 14.7										7.0 28.5 18.0 17.8 18.0	57.84 57.69 56.46	New Britain Region 6.04 S 152.90 E H = 23 44 8.6 DEPTH = 26 km MB = 6.3 /ISC/
423	AUG 20	SRO	IXP IPP I	3 3 3	4 5 5	32.0 4.0 32.0	0.9 14.7										19.68	74.27	Western Kazakhstan u. expl. /UFP/ 49.40 N 48.06 E H = 2 59 57.8 DEPTH = 0 km MB = 5.7 /ISC/
424	AUG 21	SRO BRA	-IP IAP IPP IS -IP IPCP IAP EPP	6 6 6 6 6 6 6 6	34 36 37 43 34 34 36 37	26.0 27.0 19.0 11.0 26.0 50.0 26.0 21.0	1.4 2.8 -1.3 2.4 0.7 11.9 1.0 -0.2										73.47 73.59	32.05 31.41	Sea of Okhotsk 49.47 N 147.08 E H = 6 23 48.6 DEPTH = 573 km MB = 5.9 /ISC/
425	AUG 23	BRA	EP	8	58	44.0	-1.0	215	1.5								73.68	354.84	Kodiak Island Region 58.23 N 153.51 W H = 8 47 15.9 DEPTH = 60 km MB = 5.5 /ISC/
426	AUG 23	SRO BRA	ES IP ES I	18 18 18 18	2 3 2 3	14.0 18.0 20.0 45.0	5.3 14.1 -1.9										6.10 6.98	106.27 106.36	Romania 45.79 N 26.70 E H = 18 0 32.5 DEPTH = 90 km MB = 4.9 /ISC/
427	AUG 24	BRA	IPG	15	35	49.0													Local shock
428	AUG 24	SRO BRA	ISB ESG E EPG ESB	19 19 19 19 19	14 15 16 14 15	50.0 10.0 10.0 32.0 6.0	-1.6 12.5 1.8 -2.5										2.95 3.52	170.48 157.50	Yugoslavia 44.90 N 19.00 E H = 19 13 20.0 /ISC/

1972

No.	Date	STA Code	Phase	GMT		RES O-C	Z			E-W			N-S			MPV	MLH	Delta	Azimuth	Remarks
				h	m		A	T	A	T	A	T	A	T						
429	AUG 28	SFC BRA	ESG E	19 15 29.0 19 16 29.0	12.7											28.54 30.21	19.89 20.38	Novaya Zemlya 73.39 N 54.55 E H = 5 59 56.8 MB = 6.3 /ISC/		
				6 6 0.0 6 11 1.0 6 6 13.0 6 7 23.0 6 11 17.0 6 6 12.0 6 21 0.0 6 6 14.0 6 7 14.0 6 11 2.0 6 20 0.0	3.8 17.3 1.8 13.4 6.6 0.6 2.3 3.7 -9.3										19.84 19.76					
430	AUG 28	BRA	IP	15 33 8.0	0.5				10.6	8.0	7.6	8.0				79.94	10.33	Andreanof Islands 51.29 N 179.23 W H = 15 21 1.9 DEPTH = 47 km MB = 5.4 /ISC/		
431	AUG 28	BRA	EAPKHP IAPKP2 E EAPKHP I	19 17 48.0 19 18 6.0 19 22 14.0 19 17 46.0 19 19 34.0	0.6 5.9 -0.9											150.41 151.12	329.43 331.27	North of New Zealand 21.31 S 147.27 W H = 18 57 58.0 DEPTH = 1 km MB = 5.6 /ISC/		
432	AUG 29	BRA	EAPKHP IPKP2 EAPKP2	6 18 31.0 6 18 37.0 6 19 23.0	1.4 -5.8 -3.0											150.32	23.75	North of New Zealand 20.12 S 175.15 W H = 5 59 2.8 DEPTH = 169 km MB = 5.4 /ISC/		
433	AUG 30	SRO BRA	EPB ESN IPN	0 9 36.0 0 10 10.0 0 9 24.0	-0.1 -8.5 -6.2											4.18 4.31	201.16 188.44	Yugoslavia 43.90 N 16.23 E H = 0 8 21.9 DEPTH = 33 km /ISC/		
434	AUG 30	SRO BRA	+IPKHP IPKSDP IPS LMH EAPKHP E	10 48 18.0 10 52 18.0 10 59 26.0 11 31 0.0 10 48 40.0 10 51 7.0	-16.7 7.9 1.6 -1.0				4.4	20.0	6.2	20.0	6.3			116.49 117.06	63.55 62.30	Near North Coast of New Guinea 3.51 S 144.92 E H = 10 29 51.4 DEPTH = 16 km MB = 5.6 /ISC/		
435	AUG 30	SRO BRA	EP EP EXP	15 23 50.8 15 23 52.8 15 24 16.8	-1.4 -1.8											56.54 57.18	70.57 70.08	Chinghai Province 36.65 N 96.35 E H = 15 14 7.5 DEPTH = 17 km MB = 5.5 /ISC/		

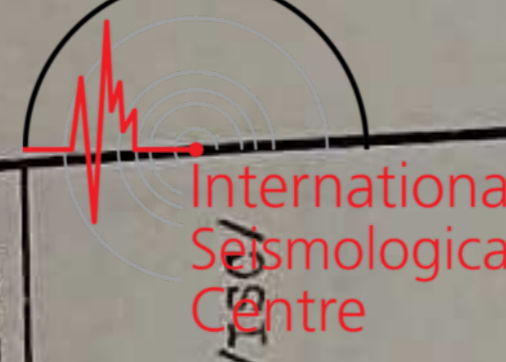
436	AUG 30	SFC SRO BRA	+IAP IXP I IP E IP EAP	18 57 17.0 18 57 24.0 19 1 8.0 18 57 26.0 19 2 18.0 18 57 29.0 18 57 34.0	-0.7 4.4 1.3 -0.3 -0.2											54.94 56.59 57.24	72.72 70.66 70.16	Chinghai Province 36.56 N 96.35 E H = 18 47 40.3 DEPTH = 16 km MB = 5.5 /ISC/	
437	AUG 31	BRA	EP	2 37 7.0	0.6												90.52	290.30	E1 Salvador 13.12 N 88.60 W H = 2 24 11.7 DEPTH = 76 km MB = 5.2 /ISC/
438	AUG 31	SFC BRA	EP EP	8 19 26.0 8 19 34.0	3.9 -0.1												78.25 80.47	47.90 45.67	Southern Honshu 35.94 N 136.72 E H = 8 7 24.4 DEPTH = 36 km MB = 5.3 /ISC/
439	AUG 31	SFC SRO BRA	IAP IPP IP EPOP E IP IXP IPP	14 11 39.0 14 13 21.0 14 11 53.0 14 13 21.0 14 29 29.0 14 11 53.0 14 12 13.0 14 13 46.0	-2.6 -1.6 3.1 0.4 -0.4 10.8 1.4											45.59 47.43 47.88	56.05 54.23 54.03	Central Russia 52.36 N 95.31 E H = 14 3 14.9 DEPTH = 21 km MB = 5.5 /ISC/	
440	SEP 1	BRA	IPKHP IAPKHP	13 6 26.0 13 7 1.0	0.6 2.5												138.79	46.81	New Hebrides 14.99 S 167.30 E H = 12 47 13.6 DEPTH = 122 km MB = 5.8 /ISC/
441	SEP 2	SRO BRA	+IP IAP IPP IS LMH +IAP I ISKS LMH	2 1 56.0 2 2 12.0 2 5 4.0 2 12 4.0 2 44 0.0 2 1 58.0 2 3 31.0 2 12 13.0 2 44 0.0	1.0 2.3 -1.5 -0.2 0.7 1.0 3.3			2.0								82.10 82.55	54.57 53.78	Ryukyu Islands 29.41 N 130.64 E H = 1 49 38.5 DEPTH = 51 km MB = 6.1 /ISC/	
442	SEP 2	BRA	+IP IAP	2 54 13.0 2 54 28.0	-0.9 1.7												77.22	26.31	Kurile Islands Region 48.74 N 156.34 E H = 2 42 22.5 DEPTH = 42 km MB = 5.1 /ISC/



No.	Date	STA Code	Phase	GMT		RES O-C	Z			E-W			N-S			MPV	MLH	Delta	Azimuth	Remarks
				h	m		A	T	A	T	A	T	A	T						
443	SEP 2	BRA	EP ESP	3 54 4 5	46.0 25.0	-9.0 -3.5											78.38	26.09	Kurile Islands Region 47.80 N 157.40 E H = 3 42 57.0 DEPTH = 40 km MB = 4.6 /ISC/	
444	SEP 2	BRA	IPKIKP	5 46 5 46	52.0	-1.2											145.97	49.33	Loyalty Islands Region 21.94 S 169.90 E H = 5 27 18.0 DEPTH = 35 km /ISC/	
445	SEP 2	SPC BRA	EAP EP	10 43 10 43	12.0 23.0	-6.0 -0.6													Turkmeniya 39.92 N 53.65 E H = 10 37 41.5 DEPTH = 6 km MB = 5.1 /ISC/	
446	SEP 2	SRO	+IP IPP IPP I LMH EPP ESS -IXP ISS LMH IXP E LMH	14 57 14 57 14 58 14 59 15 5 14 57 15 0 14 57 15 7 15 7 14 58 15 0 15 6	40.0 56.0 12.0 36.0 0.0 54.0 58.0 50.0 2.0 0.0 5.0 0.0	-1.5 0.8 16.8 -1.9 -7.5 2.6 -9.4 1.6		8.0	12.0	9.0	12.0								Near Coast of Libya 31.39 N 16.09 E H = 14 53 48.0 DEPTH = 6 km MB = 5.1 /ISC/	
447	SEP 3	BRA	BAFKIP EPP	6 50 6 52	20.0 6.0	-2.6 11.2											122.39	57.78	New Britain Region 5.58 S 151.24 E H = 6 31 21.0 DEPTH = 26 km MB = 5.6 /ISC/	
448	SEP	SRO BRA	EP LMH IP IAP I I	8 41 8 45 8 41 8 41 8 45 8 46	20.0 8.0 36.0 45.0 39.0 9.0	-6.5 -1.6 0.9													Turkey 39.16 N 27.98 E H = 8 38 46.3 DEPTH = 30 km MB = 4.6 /ISC/	
449	SEP 3	SRO	+IP IAP IPP ISS LMH EP	16 56 16 56 16 57 17 5 17 19 16 56	16.0 24.0 56.0 36.0 0.0 20.0	-0.5 -4.7 -1.1 3.5 2.9		8.0	12.0	9.0	12.0								North-Western Kashmir 35.94 N 73.33 E H = 16 48 29.5 DEPTH = 45 km MB = 6.2 /ISC/	

450	SEP 3	SRO	IP	23 11	42.0	2.1													North-Western Kashmir 35.96 N 73.24 E H = 23 3 53.6 DEPTH = 46 km MB = 5.6
451	SEP 4	BRA	IPG	11 4	46.0														No determination of epicenter
452	SEP 4	SRO BRA	+IP IPP IPCP IP IPCP I	13 50 13 51 13 52 13 50 13 52 13 52	9.0 45.0 9.0 13.0 1.0	2.3 -2.5 6.7 -0.1 -3.9													North-Western Kashmir 35.91 N 73.35 E H = 13 42 20.7 DEPTH = 57 km MB = 5.7 /ISC/
453	SEP 4	SRO	-IAPKHP IPP I LMH EPP EPPSAB EAPKHP IAPKIP IPP LMH	18 30 18 32 18 46 19 24 18 33 18 34 18 30 18 30 18 33 19 32	28.0 56.0 36.0 0.0 7.0 10.0 28.0 46.0 12.0 0.0	-1.4 -9.3 1.6 8.0 -2.4 1.8 4.7		18.0	24.0	31.0	24.0								Santa Cruz Islands 11.78 S 166.31 E H = 18 11 12.5 DEPTH = 64 km MB = 6.1 /ISC/
454	SEP 4	SRO	IPKHP I BRA E	21 43 21 47 21 43 21 47	8.0 38.0 6.0 37.0	4.7 2.5													Fiji Region 18.03 S 178.24 W H = 21 24 28.6 DEPTH = 586 km MB = 5.2 /ISC/
455	SEP 5	SRO BRA	IPKHP +IPKIP2 E	2 59 2 59	7.0 24.0	-7.0 2.1													Loyalty Islands Region 21.75 S 169.84 E H = 2 39 46.1 DEPTH = 51 km MB = 4.8 /ISC/
456	SEP 5	BRA	EKIKP EPP	5 41 5 42	5.0 4.0	-18.8 0.1													Banda Sea 6.95 S 129.72 E H = 5 23 3.4 DEPTH = 94 km MB = 5.7 /ISC/
457	SEP 5	SRO BRA	IP IPP EPP E	17 32 17 36 17 32 17 36 17 37	8.0 16.0 11.0 29.0 6.0	1.6 -5.6 1.7 2.2													Djailolo Gilolo /Halmahera/ 1.90 N 128.20 E H = 17 18 29.5 DEPTH = 154 km MB = 5.9 /ISC/

No.	Date	STA Code	Phase	GMT		RES O-C	Z		E-W		N-S		MPV	MLH	Delta	Azimuth	Remarks	
				h	m		A	T	A	T	A	T						
471	SEP 13	SRO	IP	4 15	44.0	-2.5	7000	2.0							10.29	161.71	Southern Greece 37.96 N 22.38 E H = 4 13 19.7 DEPTH = 75 km MB = 5.8 /ISC/	
			I	4 16	32.0													
			IS	4 17	36.0													
			LMH	4 21	0.0													
			HRB	4 15	47.0													
472	SEP 13	BRA	EP	4 17	45.0	-0.7												Loyalty Islands 20.33 S 168.79 E H = 6 22 22.1 DEPTH = 40 km MB = 5.1 /ISC/
			ES	4 20	0.0													
			LMH	4 16	0.0													
			BRA	4 16	0.0													
			EXP	4 16	13.0													
473	SEP 13	BRA	EXP	4 16	30.0	-3.5												Loyalty Islands 20.38 S 168.74 E H = 12 52 17.0 DEPTH = 29 km MB = 5.0 /ISC/
			I	4 16	59.0													
			IS	4 17	58.0													
			LMH	4 20	0.0													
			SPC	4 18	12.0													
474	SEP 13	BRA	LMH	4 21	0.0	5.9												Loyalty Islands 20.36 S 168.76 E H = 13 6 53.5 DEPTH = 48 km MB = 4.9 /ISC/
			EPKHKP	6 42	1.0													
			BRA	6 42	1.0													
			EPKHKP	6 42	1.0													
			EPKHKP	6 42	1.0													
475	SEP 13	SRO	EPKHKP	13 11	36.0	-8.3												Loyalty Islands 20.36 S 168.89 E H = 14 33 37.7 DEPTH = 30 km MB = 5.8 /ISC/
			I	13 12	10.0													
			ISS	13 15	32.0													
			LMH	13 15	32.0													
			BRA	13 15	32.0													
476	SEP 14	SRO	EPKHKP	14 53	8.0	-0.9												Loyalty Islands 20.36 S 168.76 E H = 13 6 53.5 DEPTH = 48 km MB = 4.9 /ISC/
			I	14 55	8.0													
			ISS	15 10	18.0													
			LMH	15 15	16.0													
			BRA	15 58	0.0													
477	SEP 15	SRO	EPKHKP	14 53	23.0	2.7												Loyalty Islands 20.36 S 168.89 E H = 14 33 37.7 DEPTH = 30 km MB = 5.8 /ISC/
			I	14 53	23.0													
			ISS	14 54	23.0													
			LMH	14 57	47.0													
			BRA	15 59	0.0													
478	SEP 15	SRO	EPKHKP	9 43	39.0	-1.9												Loyalty Islands 20.48 S 168.87 E H = 9 24 12.6
			I	9 43	39.0													
			ISS	9 43	46.0													
			LMH	9 43	43.0													
			BRA	9 43	43.0													



International
Seismological
Centre

No.	Date	STA Code	Phase	GMT		RES O-C	Z		E-W		N-S		MPV	MLH	Delta	Azimuth	Remarks	
				h	m		A	T	A	T	A	T						
477	SEP 15	SRO	EPKHKP	9 45	27.0	4.9											DEPTH = 35 km MB = 5.4 /ISC/	
			I	9 44	1.0													
			ISS	6 24.0	0.4													
			LMH	6 23.0	-0.3													
			BRA	6 23.0	-0.6													
478	SEP 15	SRO	EPKHKP	18 7	19.0	-0.6											Loyalty Islands 20.38 S 168.59 E H = 17 46 52.4 DEPTH = 36 km MB = 5.3 /ISC/	
			I	18 6	23.0													
			ISS	18 6	40.0													
			LMH	18 7	5.0													
			BRA	18 7	38.0													
479	SEP 16	SRO	EPKHKP	22 2	17.0	5.3											Fiji Region 17.36 S 178.82 W H = 21 43 32.5 DEPTH = 525 km MB = 5.3 /ISC/	
			I	22 2	16.0													
			ISS	3 55	21.0													
			LMH	3 55	59.0													
			BRA	3 57	25.0													
480	SEP 16	SRO	EPKHKP	3 55	25.0	9.0											Albania 40.28 N 19.73 E H = 3 53 26.4 DEPTH = 15 km MB = 5.0 /ISC/	
			I	3 59	0.0													
			ISS	3 56	32.0													
			LMH	3 57	44.0													
			BRA	3 55	26.0													
481	SEP 16	SRO	EPKHKP	3 56	13.0	13.9											Near Coast of Oaxaca, Mexico 15.23 N 96.26 W H = 9 14 32.9 DEPTH = 20 km MB = 6.0 /ISC/	
			I	3 57	13.0													
			ISS	3 59	0.0													
			LMH	3 55	38.0													
			BRA	3 55	38.0													
482	SEP 16	SRO	EPKHKP	9 27	48.0	-0.9	240	1.2										Solomon Islands 10.64 S 161.39 E H = 12 11 22.0 DEPTH = 17 km MB = 5.4 /ISC/
			I	9 31	36.0													
			ISS	9 39	11.0													
			LMH	9 27	55.0													
			BRA	9 31	43.0													
483	SEP 16	SRO	EPKHKP	10 9	0.0	2.4											North of Ascension Island 0.90 S 12.97 W H = 13 53 31.3 DEPTH = 28 km MB = 5.0 /ISC/	
			I	9 27	58.0													
			ISS	9 31	48.0													
			LMH	9 27	58.0													
			BRA	9 31	48.0													

No.	Date	STA Code	Phase	GMT		RES O-C	Z			E-W			N-S		MLH	Delta Azimuth	Remarks			
				h	m		A	T	A	T	A	T								
497	SEP 20	SPC SXS ESS IF SRO BRA IAP EPP ES	IAP SXS ESS IF SRO BRA IAP EPP ES	20 53 21 0 21 3 20 53 20 53 20 55 21 0	18.0 6.0 23.0 19.0 22.0 28.0 11.0 7.0	-4.2 -2.4 13.4 3.7 -0.1 -3.1 -1.0 -2.9										45.71 45.97 46.85	126.68 123.42 122.39	Arabian Sea 14.36 N 56.57 E H = 20 44 53.1 DEPTH = 30 km MB = 5.2 /ISC/		
498	SEP 20	SPC E BRA IXP	IXP EPCP E IF IXP	22 22 22 22 22 25 22 22 22 22	18.0 28.0 24.0 16.0 20.0	0.7 8.8 -0.3 4.1											76.94 78.48	16.38 14.41	Near Islands 51.79 N 173.99 E H = 22 10 15.3 DEPTH = 22 km MB = 5.0 /ISC/	
499	SEP 21	SPC SRO ES BRA +IP EPCP ES	IF IXP IF ES +IP EPCP ES	0 22 0 22 0 22 0 32 0 22 0 22 21 0	17.0 27.0 19.0 19.0 23.0 31.0 7.0	3.6 -1.5 -0.1 2.0 -0.6 0.1											78.52 79.60 80.45	98.88 97.14 96.29	Northern Sumatra 2.94 N 96.06 E H = 0 10 14.0 DEPTH = 36 km MB = 5.3 /ISC/	
500	SEP 21	SRO BRA IP	EP IP	0 58 0 58	47.0 50.0	0.9 -0.6												79.61 80.46	97.07 96.22	Northern Sumatra 2.98 N 96.12 E H = 0 46 44.0 DEPTH = 62 km MB = 4.9 /ISC/
501	SEP 21	SPC EP	EP	9 4	40.0	3.2												20.22	69.38	Western Russia 52.19 N 51.94 E H = 9 0 1.4 DEPTH = 28 km MB = 5.0 /ISC/
502	SEP 21	BRA IXP	IXP	15 42	40.0	0.4												85.45	324.16	Southern Nevada nuc.ex. Oscuro 37.05 N 116.04 W H = 15 29 58.9 MB = 5.6 /ISC/
503	SEP 22	SPC BRA +IP EPP SRO -IP EPP SRO	-IP EAPKIP +IP I EPP -IP EPP SRO	12 4 5 21 12 4 12 5 12 8 12 4	32.0 21.0 34.0 47.0 2.0 34.0	3.3 6.9 -1.5 0.5 -1.6												145.27 147.02 147.05	25.30 20.69 22.95	North of New Zealand 16.50 S 174.46 W H = 11 45 10.5 DEPTH = 182 km MB = 5.6 /ISC/



504	SEP 22	BRA EP	EP	14 21	32.0	-2.2												84.51	44.40	South of Honshu 33.35 N 140.79 E H = 14 9 7.0 DEPTH = 64 km MB = 4.9 /ISC/	
505	SEP 22	SRO E ISKS LMH +IAP IXS LMH	+IP E ISKS LMH +IAP IXS LMH	20 9 20 15 20 20 20 45 20 9 20 20 21 3	36.0 54.0 2.0 0.0 50.0 8.0 0.0	-9.5 0.4 -1.1 -0.5	2.0											81.91 82.50	65.72 64.92	Taiwan Region 22.37 N 121.16 E H = 19 57 24.0 DEPTH = 8 km MB = 5.7 /ISC/	
506	SEP 23	BRA IAPKIP	IAPKIP	1 29	52.0	0.5													144.41	50.09	Loyalty Islands 20.87 S 168.59 E H = 1 10 13.0 DEPTH = 2 km MB = 4.9 /ISC/
507	SEP 23	SRO E SRO EPP SRO BRA IP ISKS LMH	EPP E SRO EPP SRO BRA IP ISKS LMH	1 55 1 57 1 55 1 55 2 26 2 29 2 25 2 37 3 2 2 25 2 37 3 8	14.0 46.0 40.0 16.0 41.0 43.0 46.0 58.0 2.0 0.0 50.0 6.0 0.0	5.4 8.0 -1.4 -2.9 0.5 2.5 2.3 1.5 2.2												7.45 7.79 8.28	135.76 151.08 132.61	Bulgaria 42.25 N 25.31 E H = 1 53 16.0 DEPTH = 25 km MB = 4.6 /ISC/	
508	SEP 23	SRO E SRO EPP SRO BRA IP ISKS LMH	EPP E SRO EPP SRO BRA IP ISKS LMH	2 26 2 29 2 26 2 29 2 25 2 37 3 2 2 25 2 37 3 8	41.0 43.0 46.0 58.0 2.0 0.0 50.0 6.0 0.0	-2.9 0.5 2.5 2.3 1.5 2.2												80.32 82.05	67.26 65.70	Taiwan Region 22.28 N 121.28 E H = 2 14 26.1 DEPTH = 26 km MB = 5.6 /ISC/	
509	SEP 24	SRO EPP SRO E SRO EPP SRO BRA IP ISKS LMH	EPP E SRO EPP SRO BRA IP ISKS LMH	20 24 20 28 20 38 21 18 20 24 20 28 20 38 21 10	14.0 42.0 14.0 30.0 9.0 45.0 20.0 0.0	11.0 0.8 10.3 -1.1 9.2												109.85 110.56	76.94 75.85	Tanimbar Islands Region 6.22 S 131.15 E H = 20 9 36.2 DEPTH = 33 km MB = 6.0 /ISC/	
510	SEP 26	BRA IPG	IPG	8 26	49.0															Small local shock	
511	SEP 26	BRA E IPP EPP LMH	E IPP EPP LMH	21 23 21 24 21 24 22 13	56.0 41.0 47.0 0.0	-8.0 -6.1													109.43 110.03	245.28 245.94	San Juan Province, Argentina 30.91 S 68.21 W H = 21 5 43.0 DEPTH = 7 km MB = 5.8 /ISC/

No.	Date	STA Code	Phase	GMT		RES	Z			E-W			N-S			MPV	MLH	Delta	Azimuth	Remarks
				h	m		a	A	T	A	T	A	T	A	T					
512	SEP 27	BRA	IPKIKP IAPKP2 I I IAPKIKP IAPKP2 I I	9 21 9 21 9 22 9 23 9 21 9 22 9 23	23.0 32.0 22.0 49.0 26.0 5.0 5.0	0.3 -0.6 -0.2 9.0											147.48 147.57	16.72 19.00	Samoa Region 16.47 S 172.17 W H = 9 1 41.0 DEPTH = 10 km MB = 5.8 /ISC/	
513	SEP 27	SRO BRA	EP EP	18 7 18 7	5.0 7.0	0.0 -1.0											81.99 82.58	65.79 64.99	Taiwan Region 22.26 N 121.16 E H = 17 54 48.9 DEPTH = 50 km MB = 5.2 /ISC/	
514	SEP 29	SRO BRA	IPKHKP IAPKP2 LMH IPKIKP IPKHKP IAPKP2	6 57 6 57 7 1 8 3 6 57 6 57 6 57	29.0 59.0 1.0 0.0 17.0 26.0 54.0	6.5 6.3 8.0 -2.9 3.4 1.3		1.0	20.0					5.7		151.61 151.62	25.64 23.10	North of New Zealand 21.29 S 174.43 W H = 6 37 38.0 DEPTH = 53 km MB = 5.7 /ISC/		
515	SEP 29	SRO	E	16 53	23.0														No determination of epicenter	
516	OCT 1	BRA E	ES E	0 58 1 1	4.0 9.0	-19.9											6.90	106.84	Romania 45.77 N 26.56 E H = 0 56 26.1 DEPTH = 145 km MB = 4.4 /ISC/	
517	OCT 1	SRO BRA	IPB IPG ISB ISG IPN IPB ISN ISG	4 33 4 33 4 34 4 34 4 33 4 33 4 34 4 35	22.0 45.0 29.0 43.0 25.0 39.0 33.0 9.0	-4.5 7.4 0.3 2.0 -2.1 -0.1 0.1 3.8										4.85 5.58	151.13 144.76	Yugoslavia 43.52 N 21.53 E H = 4 32 0.8 DEPTH = 2 km MB = 4.8 /ISC/		
518	OCT 2	SPC SRO BRA	IPCP IP IP	0 1 0 1 0 1	50.0 54.0 56.0	3.0 -0.0 -1.1											93.14 94.75 95.43	74.93 73.55 72.61	Mindanao 7.46 N 123.77 E H = 23 49 37.5 DEPTH = 632 km MB = 6.0 /ISC/	

No.	Date	STA Code	Phase	GMT		RES	Z			E-W			N-S			MPV	MLH	Delta	Azimuth	Remarks
				h	m		a	A	T	A	T	A	T	A	T					
519	OCT 3	SPC SRO BRA	IP ES IXP IPP IS IP IXP I	9 3 9 7 9 4 9 4 9 7 9 4 9 4 9 5	52.0 4.0 12.0 20.0 20.0 18.0 27.0 33.0	-1.7 5.5 1.0 -5.8 -10.1 -2.4 6.6											16.62 18.00 18.76	88.71 83.15 83.60	Southwestern Russia u. expl. /UPP/ 46.86 N 44.87 E H = 8 59 57.8 MB = 6.2 /ISC/	
520	OCT 3	BRA	IP	10 26	16.0	-0.5											77.91	28.40	Kurile Islands 47.20 N 154.10 E H = 10 14 20.4 DEPTH = 34 km MB = 5.3 /ISC/	
521	OCT 3	SRO BRA	EPKP2 EFPK2	18 24 18 24	40.0 35.0	-1.7 -6.8											151.72 151.73	25.65 23.11	North of New Zealand 21.39 S 174.40 W H = 18 4 43.0 DEPTH = 61 km MB = 5.0 /ISC/	
522	OCT 4	SRO HRB BRA	IAP I LMH LMH EAP ESS E	8 51 8 54 8 55 8 55 8 51 8 53 8 54	12.0 8.0 0.0 0.0 21.0 19.0 43.0	-2.2 -0.3 -3.5										9.73 9.80 10.24	170.70 170.20 165.70	Greece 38.19 N 20.30 E H = 8 48 46.5 DEPTH = 33 km MB = 4.3 /ISC/		
523	OCT 5	BRA	EPCP	11 1	21.0	2.4											91.60	292.67	Near Coast of Guatemala 13.81 N 91.19 W H = 10 48 17.4 DEPTH = 72 km MB = 5.2 /ISC/	
524	OCT 5	BRA	EP E	18 42 18 44	44.0 32.0	-18.9											5.65	231.79	Northern Italy 44.50 N 10.90 E H = 18 41 13.0 DEPTH = 59 km /ISC/	
525	OCT 6	SPC SRO BRA	EPKIKP EFPKIP EPP LMH EFPKIP	17 1 17 1 17 3 17 53 17 1	42.0 42.0 4.0 53.0 44.0	3.8 0.3 -14.1 0.0 1.3		4.0	20.0								119.68 121.47	61.90 60.81	New Britain Region 6.08 S 149.83 E H = 16 42 54.5 DEPTH = 57 km MB = 5.6 /ISC/	
526	OCT 6	BRA BRA	IP IXP	20 34 20 34	9.0 56.0	-0.7 -6.1											121.99 81.83	59.47 94.23	Northern Sumatra 3.27 N 98.50 E H = 20 22 5.6 DEPTH = 146 km MB = 5.1 /ISC/	

No.	Date	STA Code	Phase	GMT		RES O-C	Z			E-W			N-S			MLH	Delta	Azimuth	Remarks
				h	m		a	A	T	A	T	A	T	A	T				
527	OCT 7	BRA	EPKHKP EPKHKP	5 52 5 52	13.0 21.0	-1.1 6.9									150.86	29.11	Fiji Region 21.48 S 177.63 W H = 5 33 5.3 DEPTH = 338 km MB = 5.0 /ISC/		
528	OCT 7	SRO BRA SPC	IP I IP IP EP E	8 33 8 34 8 33 8 33 8 33 8 33	18.0 20.0 25.0 33.0 45.0 26.0	-13.1 -14.1 -6.1 5.9								3.01 3.49 4.57	178.83 164.66 196.72	Yugoslavia 44.80 N 18.40 E H = 8 32 35.0 DEPTH = 50 km /ISC/			
529	OCT 10	SRO	EPP EPP ESKSDS	23 0 23 0 23 7	10.0 28.0 4.0	-10.8 7.2 -17.7								102.80	254.26	Chile-Bolivia Border Region 20.12 S 68.88 W H = 22 42 16.0 DEPTH = 103 km MB = 5.5 /ISC/			
530	OCT 11	BRA	IPG	11 5	6.0											No determination of epicenter			
531	OCT 12	SRA BRA	IPP E EPP	18 7 18 8 18 7	46.0 44.0 53.0	0.7 2.9								101.41 102.09	74.42 73.41	Djailolo Gilolo /Halmahera/ 1.81 N 127.46 E H = 17 49 52.6 DEPTH = 119 km MB = 5.8 /ISC/			
532	OCT 13	BRA SRO	IP IAP EPP ESCS -IP I IPP ISP	4 58 4 58 5 1 5 8 4 58 4 59 5 1 5 8	14.0 26.0 20.0 42.0 16.0 0.0 26.0 52.0	-0.2 0.9 4.4 11.2 -0.1 7.6 -6.5								79.23 79.58	0.05 0.80	South of Alaska 52.98 N 162.98 W H = 4 46 11.0 DEPTH = 35 km MB = 6.0 /ISC/			
533	OCT 14	BRA	IP IAP IXP	0 11 0 12 0 13	26.0 54.0 12.0	-0.5 3.0 -17.7								75.14	31.04	North-West of Kurile Islands 48.34 N 148.77 E H = 0 0 23.0 DEPTH = 375 km MB = 5.5 /ISC/			
534	OCT 15	BRA	IPKIKP IFKP2 E	0 12 0 12 0 13	2.0 47.0 11.0	0.4 0.5								160.87	43.58	South of Kermadec Islands 33.06 S 178.50 W H = 23 52 1.9 DEPTH = 12 km MB = 5.4 /ISC/			

535	OCT 15	BRA I I		1 20 1 20	0.0 38.0										160.92	43.15	South of Kermadec Islands 33.02 S 178.33 W H = 0 59 56.8 DEPTH = 12 km MB = 5.4 /ISC/
536	OCT 15	BRA	EAFKLP EAFKP2	5 41 5 42	22.0 4.0	2.0 -1.3								161.02	42.81	South of Kermadec Islands 33.05 S 178.15 W H = 5 21 16.2 DEPTH = 12 km /ISC/	
537	OCT 15	SPG SRO BRA	IFKP2 EKSAB IFKP2 I I IPP IFKP2 IFKP2 IFKHKP I ISKPDF	10 47 10 51 10 47 10 48 10 49 10 51 10 47 10 47 10 48 10 49 10 50	36.0 33.0 40.0 12.0 36.0 4.0 39.0 43.0 10.0 15.0 58.0	3.0 -1.3 -0.1 1.7 -0.7 -2.6 1.4 -1.3 3.1								144.60 146.47 146.85	50.87 49.77 47.66	Loyalty Islands Region 22.18 S 171.25 E H = 10 28 12.8 DEPTH = 144 km MB = 5.6 /ISC/	
538	OCT 15	SRO BRA	EP ES E EP ES	22 5 22 7 22 8 22 5 22 7	20.0 10.0 6.0 20.0 23.0	2.2 0.5 -5.2 0.2								10.02 10.57	167.57 162.85	Southern Greece 37.99 N 21.03 E H = 22 2 54.3 DEPTH = 67 km MB = 4.5 /ISC/	
539	OCT 17	BRA	IPG	11 42	50.0											No determination of epicenter	
540	OCT 19	BRA	EFKP2	22 36 22 38	6.0 7.0	-1.5								143.18	116.15	South of Australia 50.68 S 139.38 E H = 22 16 38.7 DEPTH = 33 km MB = 5.3 /ISC/	
541	OCT 20	BRA SRO	IP IXP I IPP ISP LMH IP IAP IPP ISP LMH	4 42 4 42 4 43 4 44 4 49 4 57 4 42 4 42 4 44 4 49 4 57	13.0 31.0 29.0 12.0 6.0 0.0 22.0 33.0 13.0 13.0 0.0	-1.7 0.6 8.2 0.2 2.2 2.1 2.8 -2.1		9.0	20.0	9.3	20.0		46.43 47.09	250.46 251.92	North Atlantic Ocean 20.60 N 29.69 W H = 4 33 49.9 DEPTH = 39 km MB = 5.7 /ISC/		

No.	Date	STA Code	Phase	h	GMT m	RBS O-C	Z		E-W		N-S		MPV	MLH	Delta Azimuth	Remarks
							A	T	A	T	A	T				
542	OCT 20	BRA	EP EXP ESKS LMH	8 31 8 31 8 42 8 18	16.0 34.0 1.0 0.0	-0.7 2.0 11.5			8.0	16.0	23.0	16.0		96.63	307.62	Off Coast of Jalisco, Mexico 18.79 N 106.74 W H = 8 17 49.2 DEPTH = 35 km MB = 5.6 /ISC/
		SRO	IAP IPP ESKS LMH	8 31 8 35 8 42 9 15	0.0 29.0 37.0 0.0	-2.8 16.2 11.0		4.0	6.0	6.0	4.0		6.8	308.54		No determination of epicenter
543	OCT 20	BRA	IPG	8 48	7.0											
544	OCT 20	BRA	I	8 58	28.0									2.65	335.77	Czechoslovakia /ex. 8.6T/ 50.57 N 15.40 E H = 8 56 6.0 /FRU/
545	OCT 21	SPC	IPKHKP EAPKIKP EAPKFP2	9 27 9 27 9 27	16.0 20.0 31.0	4.0 -2.6 -4.1			149.95					27.41		North of New Zealand 21.33 S 174.07 W H = 9 7 29.6 DEPTH = 35 km MB = 5.2 /ISC/
546	OCT 21	SPC	EP	20 2	48.0	-3.2								67.77	355.73	Central Alaska 63.17 N 151.02 W H = 19 52 5.0 DEPTH = 126 km MB = 5.3 /ISC/
547	OCT 24	BRA	IPG	11 36	5.0											No determination of epicenter
548	OCT 25	BRA	EP EXP	1 14 1 14	8.0 26.0	0.4 4.0			84.43					334.91		Off Coast of Oregon 43.61 N 127.45 W H = 1 1 42.2 DEPTH = 33 km MB = 5.4 /ISC/
549	OCT 25	SPC	IXP IXP IPP IXP IXP LMH LMH IXP	18 31 18 31 18 32 18 31 18 31 18 31 18 44 18 31	22.0 33.0 2.0 23.0 37.0 30.0 31.0	2.9 13.9 5.0 1.3 15.3 3.8			25.19					339.51		Jan Mayen Island Region 70.94 N 6.72 W H = 18 25 50.5 MB = 5.3 /ISC/

No.	Date	STA Code	Phase	h	GMT m	RBS O-C	Z		E-W		N-S		MPV	MLH	Delta Azimuth	Remarks
							A	T	A	T	A	T				
550	OCT 25	BRA	I IP LMH	21 57 21 58 22 0	33.0 38.0 0.0	18.0			9.0	3.0	12.0	3.0		5.3	236.45	Northern Italy 44.50 N 9.87 E H = 21 56 11.3 DEPTH = 67 km MB = 4.8 /ISC/
		HRB	E LMH	21 58 22 0	50.0 0.0											
		SRO	I I IS IP LMH IP IXP	21 57 21 58 21 58 21 58 22 0 21 58 21 58	51.0 5.0 15.0 45.0 0.0 16.0 44.0	-10.2 14.6 1.7 10.4		4.0	6.0	6.0	4.0		4.8	240.49		
551	OCT 26	SPC	IPCP IAP IPCP IP IXP I	17 17 17 17 17 17 17 17 17 17 17 18	17.0 32.0 29.0 25.0 50.0 14.0	-2.9 1.6 1.2 0.1 0.5								80.61	58.74	Ryukyu Islands 27.48 N 128.57 E H = 17 5 5.6 DEPTH = 63 km MB = 6.0 /ISC/
552	OCT 26	SPC	EPAKIP EPAKIP I	23 7 23 7 23 7	43.0 43.0 42.0	7.1 3.7 2.0								135.95 137.82 138.18	49.44 48.20 46.41	New Hebrides 14.32 S 167.22 E H = 22 48 34.0 DEPTH = 160 km MB = 5.4 /ISC/
553	OCT 27	SPC	EAPKHP EPAKIP I	9 42 9 42 9 43	38.0 40.0 55.0	-0.7 0.2								141.52 143.77	51.92 48.86	New Hebrides 19.94 S 168.87 E H = 9 23 8.3 DEPTH = 34 km MB = 5.5 /ISC/
554	OCT 28	SPC	EAPKIP EPP EPAKIP	2 46 2 47 2 46	6.0 37.0 4.0	4.6 12.5 -1.2								118.92 121.23	65.50 63.16	Eastern New Guinea Region 7.33 S 146.83 E H = 2 27 10.4 DEPTH = 2 km MB = 5.8 /ISC/
555	OCT 28	SPC	EPAKIP E EPP EPAKIP IPKIP IPP IPKIP E	3 36 3 37 3 38 3 36 3 36 3 39 3 40	3.0 17.0 48.0 4.0 12.0 3.0 45.0	3.4 -0.1 0.2 8.2 0.5 3.4								136.92 139.15	49.85 46.81	New Hebrides 15.30 S 167.49 E H = 3 16 52.2 DEPTH = 129 km MB = 5.7 /ISC/
556	OCT 28	BRA	EAP	18 6	56.0	-8.5								84.25	44.90	South of Honshu 33.29 N 140.13 E H = 17 54 16.6 DEPTH = 99 km MB = 4.8 /ISC/



No.	Date	STA Code	Phase	h	GMT m s	RES O-C	Z			E-W			N-S			MLH	Delta	Azimuth	Remarks
							A	T		A	T		A	T					
557	OCT 30	BRA	EFKP2	10 49	12.0	-1.1									145.36	48.18	Loyalty Islands Region 21.07 S 170.13 E H = 10 29 52.3 DEPTH = 163 km MB = 5.1 /ISC/		
558	OCT 30	BRA	E	14 21	14.0												No determination of epicenter		
559	OCT 30	SRO	IXP I LMH E LMH IP IS I SPC	14 34 14 37 14 38 14 37 14 38 14 34 14 36 14 37 14 34 14 37 14 37 14 37	41.0 13.0 0.0 14.0 0.0 39.0 15.0 33.0 53.0 7.0 15.0	3.9 -0.5 -19.7 0.5 0.7 8.7		4.0	10.0		7.4	10.0		4.9	9.64 9.72 10.16 10.91	170.39 169.89 165.37 179.56	Greece 38.28 N 20.35 E H = 14 32 10.7 DEPTH = 13 km MB = 5.2 /ISC/		
560	OCT 30	SRO BRA	E LMH E	17 20 17 59 17 20	25.0 0.0 19.0			2.0	24.0		3.0	24.0		5.9	124.48 124.95	56.18 54.76	Solomon Islands 6.30 S 154.77 E H = 16 48 11.3 DEPTH = 69 km MB = 5.7 /ISC/		
561	NOV 1	SRO	EAPKIKP EPP	6 49 6 53	33.0 9.0	-4.1 -3.5									150.70	23.50	North of New Zealand 20.10 S 173.67 W H = 6 29 43.3 DEPTH = 33 km MB = 5.0 /ISC/		
562	NOV 1	BRA	IPG	11 3	11.0												Small local shock		
563	NOV 1	BRA	E	14 9	51.0												No determination of epicenter		
564	NOV 1	BRA	IPG	14 13	18.0												Small local shock		
565	NOV 1	SPC BRA	EAP EXP E EAP EXP E	15 36 15 36 15 39 15 36 15 36 15 39	18.0 35.0 13.0 27.0 51.0 27.0	2.7 11.7 -0.3 15.8									73.36 75.44	38.24 36.18	Hokkaido Region 45.41 N 142.90 E H = 15 24 30.3 DEPTH = 70 km MB = 5.3 /ISC/		

566	NOV 1	BRA	EFKIKP EPP	21 41 21 42	2.0 30.0	1.6 4.9									119.00	64.69	New Guinea 6.35 S 144.41 E H = 21 22 15.4 DEPTH = 36 km MB = 5.6 /ISC/
567	NOV 1	BRA	EAP	22 4	32.0	-2.2									63.85	78.93	Burma 26.44 N 96.37 E H = 21 53 45.8 DEPTH = 93 km MB = 5.2 /ISC/
568	NOV 2	SPC SRO BRA	IXP EXS IXP LMH -IXP IXP IPCP	1 34 1 40 1 34 1 48 1 34 1 34 1 36	15.0 6.0 28.0 10.0 32.0 48.0 24.0	2.7 6.4 1.0 0.2 16.2 -16.1									37.18 38.93 39.50	65.94 63.61 63.55	Eastern Kazakhstan v. expl. /UFP/ 49.91 N 78.85 E H = 1 26 57.8 MB = 6.1 /ISC/
569	NOV 2	SPC SRO HRB BRA	EAPKIKP IPKIKP LMH EAPKHKP EPP IPKIKP IAPKIKP I LMH	20 14 20 14 21 19 20 14 20 14 20 14 20 15 20 18 20 25 21 16	53.0 54.0 0.0 58.0 10.0 56.0 26.0 10.0 3.0 0.0	-1.3 0.1 -1.5 0.1 1.4 19.6 -2.1		24.0	20.0		28.8	20.0		7.1	141.62 143.48 143.50 143.87	51.95 50.87 50.64 48.89	Loyalty Islands 20.03 S 168.91 E H = 19 55 23.3 DEPTH = 37 km MB = 6.0 /ISC/
570	NOV 2	BRA SRO	EAPKIKP EPPK2	23 29 23 29	39.0 34.0	-0.4 -1.2		21.0	24.0		173.0	24.0		7.7	147.27 147.34	17.64 19.91	Samoa Region 16.36 S 172.72 W H = 23 9 51.0 DEPTH = 33 km MB = 4.8 /ISC/
571	NOV 3	BRA	IPG	11 53	2.0												Small local shock
572	NOV 3	BRA	E	14 2	49.0												No determination of epicenter
573	NOV 3	BRA	EFKIKP	16 34	37.0	0.6									143.85	49.02	Loyalty Islands 20.05 S 168.83 E H = 16 15 4.0 DEPTH = 29 km MB = 5.4 /ISC/
574	NOV 3	SRO BRA	EPKHKP EPPK2	23 2 23 2	6.0 11.0	1.0 -0.0									143.35 143.73	49.82 47.84	New Hebrides 19.58 S 169.39 E H = 22 42 40.0 DEPTH = 31 km MB = 5.3 /ISC/

No.	Date	STA Code	Phase	GMT h m s	RES O-C	Z			E-W			N-S			MPV	MLH	Delta	Azimuth	Remarks
						A	T		A	T		A	T						
575	NOV 4	SRO BRA	EP IPP E IAP EXP IPP E	0 5 38.0 0 7 20.0 0 19 14.0 0 5 50.0 0 6 5.0 0 7 29.0 0 8 14.0	0.5 5.1 -5.0 5.5 6.0														Afghanistan 34.11 N 69.63 E H = 23 58 1.7 DEPTH = 38 km MB = 5.2 /ISC/
576	NOV 4	SRO BRA	+IPKIKP IAPKIKP E LMH +IPKP2 IAPKHKP	4 9 26.0 4 9 38.0 4 26 18.0 5 9 0.0 4 9 26.0 4 9 38.0	0.2 -2.6 -0.1 2.5			1.7	20.0			6.0						New Hebrides 20.07 S 169.14 E H = -3 49 56.4 DEPTH = 49 km MB = 5.6 /ISC/	
577	NOV 4	SPC SRO BRA	E EPKIKP EPKIKP EPKIKP	10 5 32.0 10 5 38.0 10 6 4.0 10 5 59.0	-17.3 8.7 2.6													Near North Coast of New Guinea 4.82 S 144.57 E H = 9 47 20.3 DEPTH = 89 km MB = 5.6 /ISC/	
578	NOV 4	SPC	EPCP EPP ES EPCP IPP EP IPP	21 49 26.0 21 53 23.0 22 0 27.0 21 49 30.0 21 53 30.0 21 49 31.0 21 53 35.0	3.6 0.1 -7.5 2.2 -1.9 -0.4 -3.1													Jawa 8.19 S 112.27 E H = 21 35 58.5 DEPTH = 99 km MB = 5.7 /ISC/	
579	NOV 5	SRO BRA	EPKP2 IPKIKP IAPKIKP	0 7 54.0 0 7 56.0 0 8 16.0	-0.4 -0.2 11.3													Loyalty Islands 20.18 S 168.93 E H = 23 48 23.0 DEPTH = 26 km MB = 5.3 /ISC/	
580	NOV 5	SPC SRO BRA	EPDIFF EPP EPDIFF E IPP LMH IPP E	0 20 6.0 0 24 23.0 0 20 14.0 0 23 10.0 0 24 34.0 1 11 0.0 0 24 35.0 0 25 35.0	9.7 2.5 11.7 3.5 -1.5			1.5	16.0			5.8						Savu Sea 9.82 S 122.17 E H = 0 5 51.7 DEPTH = 45 km MB = 5.7 /ISC/	
581	NOV 5	NOV 5	EXP EP IPP E	19 29 22.0 19 35 30.0 19 29 6.0 19 29 16.0 19 33 9.0	13.9 -0.7													Crete 35.03 N 24.77 E H = 19 25 42.6 DEPTH = 32 km MB = 5.1 /ISC/	

No.	Date	STA Code	Phase	GMT h m s	RES O-C	Z			E-W			N-S			MPV	MLH	Delta	Azimuth	Remarks
						A	T		A	T		A	T						
582	NOV 5	NOV 5	EPKIKP E	20 26 27.0 20 28 39.0	1.5														Eastern New Guinea Region 5.40 S 146.70 E H = 20 8 3.0 DEPTH = 229 km MB = 5.4 /ISC/
583	NOV 5	NOV 5	IPKP2	22 26 32.0	-2.3														Loyalty Islands 20.05 S 168.78 E H = 22 7 3.6 DEPTH = 35 km MB = 5.3 /ISC/
584	NOV 7	NOV 7	BRA EPP	5 53 44.0	-12.5														La Rioja Province, Argentina 28.82 S 67.17 W H = 5 35 19.3 DEPTH = 115 km MB = 5.4 /ISC/
585	NOV 7	NOV 7	BRA EP	12 12 19.0	-0.2														North Atlantic Ocean 49.06 N 39.42 W H = 12 5 14.3 DEPTH = 36 km MB = 5.1 /ISC/
586	NOV 7	NOV 7	BRA IPKP2	15 34 22.0	-1.8														Loyalty Islands Region 22.08 S 170.00 E H = 15 14 44.2 DEPTH = 32 km /ISC/
587	NOV 7	NOV 7	BRA EAPKIKP	20 49 52.0	2.2														Loyalty Islands Region 22.19 S 169.87 E H = 20 30 5.0 DEPTH = 22 km /ISC/
588	NOV 8	NOV 8	BRA IPG	11 3 49.0															Small local shock
589	NOV 8	NOV 8	SRO ES BRA EPOP	14 37 55.0 14 47 44.0 14 38 7.0	-2.2 -18.3 0.6														Taiwan 23.90 N 121.60 E H = 14 25 44.5 DEPTH = 36 km MB = 5.5 /ISC/
590	NOV 9	NOV 9	SPC BRA EPKIKP IPKIKP IPKHKP IPP	8 28 22.0 8 28 20.0 8 28 27.0 8 28 37.0 8 32 10.0	4.2 -0.9 4.4 -0.3 -0.5														Fiji Region 20.99 S 179.01 W H = 8 2 44.0 DEPTH = 606 km MB = 5.7 /ISC/
591	NOV 9	NOV 9	BRA IPKIKP	16 56 28.0	0.1														New Hebrides 19.58 S 169.33 E H = 16 36 56.1 DEPTH = 31 km MB = 5.6 /ISC/



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No.	Date	STA Code	Phase	h	GMT	RES	Z			E-W			N-S			MLH	Delta	Azimuth	Remarks
							A	T		A	T		A	T					
592	NOV 9	SPC BRA	EP IP IXP EPP	18 53 18 53 18 53 18 56	21.0 31.0 43.0 31.0	2.4 0.1 2.5 -8.8												Taiwan 23.87 N 121.61 E H = 18 41 13.0 DEPTH = 22 km MB = 5.9 /ISC/	
593	NOV 10	BRA	EP	15 9	58.0	-5.7												Near Coast of Oaxaca, Mexico 15.69 N 95.83 W H = 14 56 51.0 DEPTH = 23 km MB = 5.4 /ISC/	
594	NOV 12	SPC	IP IPP EXS	18 4 18 5 18 10	15.0 59.0 30.0	5.1 13.2 -14.0												Tadzhikistan-Sinkiang Border R. 38.33 N 73.17 E H = 17 56 52.9 DEPTH = 111 km MB = 5.9 /ISC/	
595	NOV 13	BRA	IP IAP IPP	4 56 4 57 5 0	56.0 10.0 26.0	-0.1 1.7 -14.4												Near Coast of Oaxaca, Mexico 15.63 N 95.10 W H = 4 43 47.6 DEPTH = 40 km MB = 5.6 /ISC/	
596	NOV 13	SRO	ES ESS	4 57 5 9	7.0 31.0	-5.4 7.4												Bonin Islands Region 27.93 N 140.14 E H = 8 11 49.3 DEPTH = 374 km MB = 5.6 /ISC/	
597	NOV 13	SPC BRA	EP E EXP	23 45 23 47 23 45	30.0 43.0 50.0	1.2 -1.4												Adaman Islands Region 12.44 N 95.23 E H = 23 34 11.8 DEPTH = 24 km MB = 5.0 /ISC/	
598	NOV 14	SPC BRA	EP IP IAP EXP E	4 37 4 37 4 37 4 43 4 37	13.0 13.0 17.0 32.0 39.0	2.4 -0.1 -7.3 2.3 0.4												Jan Mayen Island Region 71.13 N 7.70 W H = 4 31 44.2 DEPTH = 43 km MB = 5.1 /ISC/	
599	NOV 14	SPC	EPP	22 45	21.0	12.4												Molucca Sea 1.04 S 126.99 E H = 22 27 5.0 DEPTH = 35 km MB = 5.4 /ISC/	
600	NOV 16	SPC SRO	IP EPP IXP IPP	12 51 12 51 12 50 12 51 12 52	19.0 42.0 28.0 6.0 8.0	3.1 -8.5 1.5 -1.9 4.2												Hindu Kush Region 35.67 N 69.91 E H = 12 43 4.9 DEPTH = 120 km MB = 5.6 /ISC/	
601	NOV 17	SPC BRA	IAP EXP EP IAP	9 16 9 16 9 16 9 16	21.0 41.0 22.0 37.0	-2.6 7.9 3.9 -0.2												Southern Iran 27.40 N 59.14 E H = 9 9 1.7 DEPTH = 79 km MB = 5.2 /ISC/	
602	NOV 19	BRA	EP	7 51	4.0	2.7												Carlsberg Ridge 10.00 N 57.46 E H = 7 42 5.0 DEPTH = 68 km MB = 4.7 /ISC/	
603	NOV 19	SPC BRA	IXP EPP IP IXP IPP	20 17 20 18 20 17 20 17 20 17	25.0 41.0 27.0 34.0 45.0	4.1 12.8 -0.7 8.7 6.5												North of Svalbard 80.49 N 2.40 W H = 20 10 47.8 MB = 5.4 /ISC/	
604	NOV 20	BRA	EP EAP	3 32 3 36 3 32	42.0 9.0 57.0	-1.2 1.7												Greece 39.42 N 21.68 E H = 3 30 27.0 DEPTH = 26 km MB = 4.8 /ISC/	
605	NOV 20	BRA	EP EAP	13 26	26.0	0.5												South of Fiji 24.84 S 177.24 W H = 13 6 50.3 DEPTH = 182 km MB = 5.2 /ISC/	
606	NOV 21	SPC BRA	IXP EPP IP IXP IPP	1 45 1 42	25.0 27.0	2.1 -3.7												Fiji Region 17.57 S 178.82 W H = 1 23 45.3 DEPTH = 564 km MB = 5.2 /ISC/	
607	NOV 21	SPC	IF	2 59	24.0	2.6												Taiwan 23.87 N 121.66 E H = 27 km MB = 5.5 /ISC/	



No.	Date	STA Code	Phase	h	GMT	RES	Z			E-W			N-S			MLH	Delta	Azimuth	Remarks
							A	T		A	T		A	T					
599	NOV 14	SPC	EPP	22 45	21.0	12.4												Molucca Sea 1.04 S 126.99 E H = 22 27 5.0 DEPTH = 35 km MB = 5.4 /ISC/	
600	NOV 16	SPC SRO	IP EPP IXP IPP	12 51 12 51 12 50 12 51 12 52	19.0 42.0 28.0 6.0 8.0	3.1 -8.5 1.5 -1.9 4.2												Hindu Kush Region 35.67 N 69.91 E H = 12 43 4.9 DEPTH = 120 km MB = 5.6 /ISC/	
601	NOV 17	SPC BRA	IAP EXP EP IAP	9 16 9 16 9 16 9 16	21.0 41.0 22.0 37.0	-2.6 7.9 3.9 -0.2												Southern Iran 27.40 N 59.14 E H = 9 9 1.7 DEPTH = 79 km MB = 5.2 /ISC/	
602	NOV 19	BRA	EP	7 51	4.0	2.7												Carlsberg Ridge 10.00 N 57.46 E H = 7 42 5.0 DEPTH = 68 km MB = 4.7 /ISC/	
603	NOV 19	SPC BRA	IXP EPP IP IXP IPP	20 17 20 18 20 17 20 17 20 17	25.0 41.0 27.0 34.0 45.0	4.1 12.8 -0.7 8.7 6.5												North of Svalbard 80.49 N 2.40 W H = 20 10 47.8 MB = 5.4 /ISC/	
604	NOV 20	BRA	EP EAP	3 32 3 36 3 32	42.0 9.0 57.0	-1.2 1.7												Greece 39.42 N 21.68 E H = 3 30 27.0 DEPTH = 26 km MB = 4.8 /ISC/	
605	NOV 20	BRA	EP EAP	13 26	26.0	0.5												South of Fiji 24.84 S 177.24 W H = 13 6 50.3 DEPTH = 182 km MB = 5.2 /ISC/	
606	NOV 21	SPC BRA	IXP EPP IP IXP IPP	1 45 1 42	25.0 27.0	2.1 -3.7												Fiji Region 17.57 S 178.82 W H = 1 23 45.3 DEPTH = 564 km MB = 5.2 /ISC/	
607	NOV 21	SPC	IF	2 59	24.0	2.6												Taiwan 23.87 N 121.66 E H = 27 km MB = 5.5 /ISC/	

No.	Date	STA Code	Phase	GMT		RES O-C	Z			E-W			N-S			MLH	Delta	Azimuth	Remarks
				h	m		a	A	T		A	T		A	T				
626	DEC 1	BRA	+IP EPP	11 45 11 46	35.0 53.0	0.5 9.6									32.57	97.69		Ircan 35.48 N 57.92 E H = 11 39 3.0 DEPTH = 25 km MB = 5.2 /ISC/	
627	DEC 2	SRO HRB BRA	IPCP EPCP E IP IAP IPP ESKS EPS	0 33 0 33 0 37 0 46 0 33 0 33 0 37 0 43 0 46	19.0 20.0 44.0 48.0 21.0 45.0 21.0 57.0 20.0	0.3 1.0 -0.4 3.3 -2.9 5.7 3.5								97.38 97.44	72.07 71.97		Mindanao 6.41 N 126.52 E H = 0 19 52.0 DEPTH = 73 km MB = 6.0 /ISC/		
628	DEC 2	BRA	E	12 1	18.0													No determination of epicenter	
629	DEC 2	SRO BRA	EAP EPP	13 31 13 31	51.0 54.0	1.0 0.3									14.12 14.85	149.33 146.50		Dodecanese Islands 35.28 N 27.06 E H = 13 28 22.8 DEPTH = 36 km MB = 5.1 /ISC/	
630	DEC 3	BRA	EAPK2	10 53	7.0	5.7									154.08	27.12		Tonga 24.20 S 175.50 W H = 10 32 44.0 MB = 4.7 /ISC/	
631	DEC 3	BRA	EP	22 20	49.0	0.7									81.18	51.50		Kyushu 31.89 N 131.72 E H = 22 8 36.9 DEPTH = 54 km MB = 5.0 /ISC/	
632	DEC 4	SPC SRO HRB BRA	EPCP ES +IPCP EPCP ESCS +IP IPP ISKS	10 28 10 38 10 28 10 28 10 39 10 28 10 32 10 38	34.0 20.0 40.0 40.0 2.0 39.0 0.0 48.0	0.6 -17.3 -1.5 -1.6 -4.4 -0.0 3.2 -5.8								82.33 84.21 84.23 84.53	46.66 45.20 45.12 44.39		South of Honshu 33.34 N 140.82 E H = 10 16 11.5 DEPTH = 62 km MB = 6.7 /ISC/		
633	DEC 4	BRA	EP	12 3	7.0	0.1									84.73	44.44		South of Honshu 33.15 N 140.90 E H = 11 50 38.0 DEPTH = 59 km MB = 5.2 /ISC/	

No.	Date	STA Code	Phase	GMT		RES O-C	Z			E-W			N-S			MLH	Delta	Azimuth	Remarks
				h	m		a	A	T		A	T		A	T				
634	DEC 4	SPC BRA	EPCP IP E	15 3 15 3 15 12	18.0 24.0 52.0	-1.7 -1.3									82.40 84.60	46.65 44.38		South of Honshu 33.29 N 140.87 E H = 14 50 56.9 DEPTH = 57 km MB = 5.4 /ISC/	
635	DEC 5	BRA	EP ESS	12 2 12 4	39.0 18.0	-2.6 11.7									10.19	149.97		Egean Sea 39.14 N 23.64 E H = 12 0 15.0 DEPTH = 43 km MB = 4.5 /ISC/	
636	DEC 5	SPC BRA	EPCP EP EPCP	14 16 14 16 14 16	1.0 3.0 12.0	-1.2 -4.9 0.3									82.53 84.73	46.24 43.97		Off East Coast of Honshu 33.41 N 141.36 E H = 14 3 37.0 DEPTH = 42 km MB = 5.2 /ISC/	
637	DEC 5	SPC BRA	EAPK2 E EAPKHP E	19 51 19 52 19 51 19 52	28.0 19.0 27.0 18.0	-2.9 5.8									151.66 153.56	31.65 26.75		Tonga Region 23.66 S 175.52 W H = 19 31 23.7 MB = 5.1 /ISC/	
638	DEC 6	BRA	EAPKHP EPP	2 2 2 3	14.0 3.0	1.6 8.8									113.19	67.01		West Irian 3.01 S 139.18 E H = 1 43 26.1 DEPTH = 44 km MB = 5.4 /ISC/	
639	DEC 6	BRA	EP EAP	4 16 4 16	2.0 17.0	-0.2 -3.6									84.48	44.67		South of Honshu 33.22 N 140.51 E H = 4 3 35.4 DEPTH = 66 km MB = 4.6 /ISC/	
640	DEC 6	BRA	EP	5 43	5.0	-3.5									72.23	127.19		Mid-Indian Ridge 9.19 S 67.31 E H = 5 31 42.0 DEPTH = 15 km MB = 5.6 /ISC/	
641	DEC 6	BRA	EP EPCP EXP	20 24 20 24 20 25	36.0 43.0 3.0	-0.6 2.5 4.8									84.62	44.38		South of Honshu 33.27 N 140.88 E H = 20 12 7.7 DEPTH = 54 km MB = 5.3 /ISC/	
642	DEC 6	SPC	EPCP	23 53	35.0	-3.7									77.97	40.68		Off East Coast of Honshu 40.28 N 143.81 E H = 23 41 28.1 DEPTH = 8 km MB = 5.1 /ISC/	
643	DEC 7	SPC BRA	IP +IP	19 30 19 30	40.0 43.0	5.7 -0.3									75.10 76.68	17.77 15.85		Near Islands 53.11 N 170.95 E H = 19 18 50.0 DEPTH = 8 km MB = 5.4 /ISC/	

No.	Date	STA Code	Phase	GMT			RES O-C	Z			E-W			N-S			MPV	MLH	Delta	Azimuth	Remarks
				h	m	s		A	T	A	T	A	T	A	T						
644	DEC 8	SPC BRA	EPCP EPP EP	4 24 4 27 4 24	14.0 36.0 19.0	1.5 14.3 0.3												83.44 85.64	46.54 44.26	South of Honshu 32.49 N 141.68 E H = 4 11 41.0 DEPTH = 25 km MB = 4.9 /ISC/	
645	DEC 8	BRA	I PCP	8 1	24.0	-1.0												86.42	96.83	Southern Sumatra 1.91 S 99.63 E H = 7 48 41.0 DEPTH = 28 km MB = 5.4 /ISC/	
646	DEC 8	SPC BRA	IFKP2 EPAKHP IFKHP IFKP2	18 21 18 21 18 21 18 21	9.0 3.0 9.0 20.0	-1.4 -0.6 5.4 1.2												148.38 150.39	35.85 31.53	Fiji Region 21.47 S 179.00 W H = 18 2 21.7 DEPTH = 594 km MB = 5.3 /ISC/	
647	DEC 8	SPC SRO BRA	IAP IP I PCP	18 25 18 25 18 25	44.0 42.0 48.0	0.9 1.2 0.1												84.55 85.62 86.47	99.25 97.67 96.80	Southern Sumatra 1.92 S 99.69 E H = 18 13 3.0 DEPTH = 24 km MB = 5.6 /ISC/	
648	DEC 8	SPC	EAP	20 30	48.0	-2.5												96.73	73.39	Philippine 5.65 N 127.26 E H = 20 17 10.8 DEPTH = 39 km MB = 5.3 /ISC/	
649	DEC 9	BRA	IP	6 18	39.0	1.0												84.81	44.49	South of Honshu 33.05 N 140.91 E H = 6 6 7.5 DEPTH = 49 km MB = 5.2 /ISC/	
650	DEC 9	BRA	IP	6 54	48.0	-1.2												60.33	259.47	North Atlantic Ridge 15.25 N 45.15 W H = 6 44 40.0 DEPTH = 25 km MB = 5.5 /ISC/	
651	DEC 10	SRO BRA	IP IXP IP IXP	4 34 4 34 4 34 4 34	32.0 44.0 27.0 42.0	-5.2 6.8 -14.9 0.1												38.97 39.54	63.49 63.42	Eastern Kazakhstan u.expl. 49.97 N 78.95 E H = 4 27 7.6 MB = 6.0 /ISC/	
652	DEC 10	SRO BRA	EXP I EP	12 16 12 20 12 16	10.0 7.0 6.0	-6.1 -3.7												10.59 11.14	167.00 162.51	Southern Greece 37.45 N 21.29 E H = 12 13 30.0 DEPTH = 42 km MB = 4.3 /ISC/	

653	DEC 10	SPC SRO BRA	IAP EPP I EXP IP I PCP	18 38 18 41 18 38 18 38 18 48 18 38 18 38	4.0 1.0 7.0 41.0 12.0 10.0 26.0	0.2 8.6 -2.1 0.7 0.1 6.6												76.50 78.36 78.50	34.69 33.32 32.60	Kurile Islands 44.68 N 149.37 E H = 18 26 7.8 DEPTH = 16 km MB = 5.9 /ISC/
654	DEC 11	SPC SRO BRA	EXP EPCP EPCP	1 47 1 47 1 47	30.0 27.0 31.0	-0.8 -1.7 -1.4												84.47 85.54 86.39	99.22 97.64 96.76	Southern Sumatra 1.84 S 99.66 E H = 1 34 48.0 DEPTH = 25 km MB = 5.2 /ISC/
655	DEC 13	SRO SPC BRA	EP E EP EP I E	3 0 3 3 3 3 3 0 3 0 3 3 3 5	40.0 4.0 4.0 58.0 52.0 28.0 37.0	-11.7 -2.9 -0.1												7.40 8.00 8.18	144.15 158.83 140.16	Greece-Bulgaria Border Region 41.66 N 24.09 E H = 2 58 53.1 DEPTH = 41 km MB = 4.3 /ISC/
656	DEC 13	SPC BRA	EAP EP	16 14 16 14	6.0 12.0	-0.6 1.2												77.40 78.91	15.65 13.66	Rat Islands 51.56 N 175.31 E H = 16 2 6.0 DEPTH = 13 km MB = 5.0 /ISC/
657	DEC 14	BRA	EPCP	8 54	24.0	-0.6												84.27	44.67	South of Honshu 33.40 N 140.37 E H = 8 41 55.8 DEPTH = 74 km MB = 4.9 /ISC/
658	DEC 14	BRA	EPP	17 53	3.0	0.2												10.43	165.88	Ionian Sea 38.00 N 20.31 E H = 17 50 21.7 DEPTH = 10 km MB = 4.4 /ISC/
659	DEC 14	BRA	EPCP	21 1	45.0	-2.5												79.12	104.40	South Indian Ocean 1.34 S 89.17 E H = 20 49 35.4 DEPTH = 29 km MB = 5.3 /ISC/
660	DEC 15	BRA	EP	6 27	53.0	0.6												84.80	44.04	Off East Coast of Honshu 33.31 N 141.34 E H = 6 15 20.7 DEPTH = 38 km MB = 5.2 /ISC/
661	DEC 15	BRA	EP	14 53	33.0	1.8												78.73	32.63	Kurile Islands 44.47 N 149.49 E H = 14 41 31.0 DEPTH = 37 km MB = 5.0 /ISC/

No.	Date	STA Code	Phase	GMT		RES O-C	Z			E-W			N-S			MPV	MLH	Delta	Azimuth	Remarks
				h	m		a	A	T	A	T	A	T							
662	DEC 15	BRA	EPKIKP	11	49	14.0	2.2									126.10	54.17	Solomon Islands 7.00 S 155.81 E H = 11 30 19.0 DEPTH = 83 km MB = 5.9 /ISC/		
663	DEC 16	BRA	EKPK2	16	43	37.0	-2.3									147.12	15.98	Samoa Region 16.03 S 171.84 W H = 16 24 0.0 DEPTH = 65 km MB = 4.9 /ISC/		
664	DEC 16	BRA	EKPKP	20	48	19.0	-3.1									153.70	27.52	Tonga Region 23.90 S 175.82 W H = 20 28 45.0 DEPTH = 114 km MB = 4.7 /ISC/		
665	DEC 17	SPC	IP	0	30	25.0	4.0									76.53	34.79	Kurile Islands 44.60 N 149.28 E H = 0 18 32.8 DEPTH = 36 km MB = 5.6 /ISC/		
		SRC	IP	0	33	30.0	15.2									78.39	33.41			
		BRA	IXP	0	40	27.0	4.0									78.54	32.70			
		BRA	IXP	0	30	24.0	1.9													
		BRA	ES	0	40	31.0	6.4													
666	DEC 17	BRA	EAP	12	49	15.0	-0.8									15.47	150.54	Crete 34.27 N 26.22 E H = 12 44 30.7 DEPTH = 39 km MB = 4.6 /ISC/		
667	DEC 17	BRA	EKPK2	14	31	18.0	-1.0									147.24	47.60	Loyalty Islands Region 22.50 S 171.51 E H = 14 11 35.6 DEPTH = 36 km MB = 5.0 /ISC/		
668	DEC 17	BRA	EP	18	55	53.0	-1.6									57.01	220.77	North of Ascension Island 1.20 S 16.12 W H = 18 46 9.7 DEPTH = 33 km MB = 4.8 /ISC/		
669	DEC 17	BRA	IXP	21	2	50.0	0.9									57.09	220.44	North of Ascension Island 1.39 S 15.90 W H = 20 52 58.7 MB = 5.0 /ISC/		
670	DEC 18	BRA	EXP	0	5	44.0	2.0									64.17	43.46	Off East Coast of Honshu 34.16 N 141.50 E H = 23 53 1.0 DEPTH = 24 km MB = 4.7 /ISC/		



671	DEC 18	BRA	EP	1	29	38.0	-1.1									65.32	168.43	Zambia 16.71 S 28.07 E H = 1 18 53.4 DEPTH = 2 km MB = 5.3 /ISC/	
672	DEC 18	SPC	EPCP	14	9	40.0	1.3									84.48	99.08	Southern Sumatra 1.76 S 99.77 E H = 13 57 4.0 DEPTH = 33 km MB = 5.5 /ISC/	
		SRC	EPP	14	13	2.0	10.2									85.55	97.51		
		BRA	ISCS	14	20	16.0	-0.0									86.40	96.63		
		BRA	IP	14	9	45.0	0.8												
673	DEC 19	BRA	IPN	15	41	31.0	-5.9									4.07	182.08	Yugoslavia 44.10 N 16.90 E H = 15 40 32.0 /ISC/	
674	DEC 19	SRC	EP	19	37	56.0	3.8									14.35	147.27	Dodecanese Islands 35.29 N 27.74 E H = 19 34 29.9 DEPTH = 41 km MB = 4.7 /ISC/	
		BRA	ES	19	38	32.0	17.2									14.95	155.56		
		BRA	EAP	19	38	3.0	3.0									15.10	144.58		
675	DEC 20	SPC	EKPK2	18	12	3.0	-3.4									148.51	36.82	Fiji Region 21.80 S 179.44 W H = 17 53 17.5 DEPTH = 588 km MB = 5.4 /ISC/	
		BRA	EKHKP	18	12	6.0	6.6									150.54	32.55		
676	DEC 20	SPC	IFKPK2	21	31	10.0	-2.5									148.53	38.97	South of Fiji 22.31 S 179.48 E H = 21 12 21.8 DEPTH = 569 km MB = 4.8 /ISC/	
		BRA	EKPKP	21	31	4.0	0.7									150.60	34.83		
677	DEC 21	BRA	EP	0	33	47.0	-2.1									86.78	133.63	Mid-Indian Rise 24.95 S 69.86 E H = 0 21 6.0 DEPTH = 26 km MB = 4.9 /ISC/	
678	DEC 22	BRA	ESN	0	37	6.0	-7.4									6.07	209.78	Central Italy 42.82 N 13.01 E H = 0 34 29.0 /ISC/	
679	DEC 22	BRA	E	9	2	54.0												No determination of epicenter	
		BRA	E	9	3	0.0													
680	DEC 22	SPC	EAPKPKP	9	13	30.0	0.4									146.28	22.76	Tonga Region 17.08 S 172.73 W H = 8 53 46.4 DEPTH = 33 km MB = 4.9 /ISC/	
		BRA	EKPK2	9	13	33.0	-0.1									147.96	17.94		

No.	Date	STA Code	Phase	GMT			RES O-C	Z			E-W			N-S			MPV	MLH	Delta	Azimuth	Remarks
				h	m	s		A	T		A	T		A	T						
681	DEC 22	BRA	E	12	37	9.0	-9.1 -1.4 -11.3 6.9 6.1 1.1 -3.0													South Sandwich Islands Region 55.58 S 26.29 W H = 12 19 0.0 DEPTH = 26 km MB = 5.7 /ISC/	
			EPP	12	38	0.0															
			ESP	12	47	27.0															
682	DEC 22	SRO	EPKIKP	12	37	18.0	-1.7													Samoa Region 16.18 S 172.48 W H = 16 22 8.0 DEPTH = 33 km MB = 5.5 /ISC/	
			EPKSAB	12	38	22.0															
			EFS	12	47	38.0															
683	DEC 22	SPC	SPKIKP	12	37	34.0	-0.5													Samoa Region 16.16 S 172.35 W H = 18 40 26.0 DEPTH = 1 km MB = 5.1 /ISC/	
			EPP	12	38	18.0															
			I	16	41	50.0															
684	DEC 22	BRA	IPKP2	16	41	50.0	12.2													Samoa Region 16.05 S 172.41 W H = 19 53 59.0 DEPTH = 4 km MB = 4.9 /ISC/	
			EPKP2	19	0	14.0															
			I	20	14	0.0															
685	DEC 23	BRA	EPOP	6	42	45.0	0.7													Nicaragua 12.33 N 86.13 W H = 6 29 42.9 DEPTH = 5 km MB = 5.5 /ISC/	
			E	6	44	42.0															
			ESKS	6	53	11.0															
686	DEC 23	BRA	E	7	53	38.0	-0.6													No determination of epicenter	
			E	7	53	38.0															
			E	7	53	38.0															
687	DEC 27	SPC	EP	23	8	25.0	2.1													Queen Elizabeth Islands 76.75 N 107.00 W H = 22 59 27.2 DEPTH = 16 km MB = 4.9 /ISC/	
			BRA	23	8	27.0															
			EP	23	8	27.0															
688	DEC 28	SPC	EPKP2	3	0	24.0	0.0													Loyalty Islands Region 21.59 S 169.81 E H = 2 40 54.0 DEPTH = 30 km MB = 5.5 /ISC/	
			SRP	3	0	32.0															
			IAPKIKP	3	0	38.0															
689	DEC 28	BRA	IPKIKP	3	0	30.0	0.6													Philippine Islands Region 5.61 N 127.10 E H = 5 54 9.2 DEPTH = 57 km MB = 5.4 /ISC/	
			BRA	3	0	30.0															
			EPGP	6	7	49.0															

690	DEC 28	BRA	IPKP2	9	19	28.0	0.7													New Hebrides 20.56 S 169.32 E H = 8 59 56.7 DEPTH = 56 km MB = 5.4 /ISC/	
			IAPKHKP	9	19	40.0															
691	DEC 28	SPC	EXP	14	45	1.0	2.0													Queen Elizabeth Islands 76.73 N 106.40 W H = 14 36 1.6 MB = 4.8 /ISC/	
			BRA	14	45	4.0															
692	DEC 28	SPC	IP	17	5	12.0	2.8														Afghanistan 34.69 N 70.37 E H = 16 57 45.8 DEPTH = 69 km MB = 5.4 /ISC/
			IAP	17	5	28.0															
			IP	17	5	22.0															
			I	17	6	22.0															
			I	17	9	32.0															
693	DEC 29	BRA	IP	17	5	28.0	1.7													Atlantic Indian Ridge 30.94 S 59.34 E H = 2 26 6.4 DEPTH = 17 km MB = 4.6 /ISC/	
			EAP	17	5	43.0															
694	DEC 29	BRA	EP	2	38	55.0	1.1													Near Coast of Central Chile 30.51 S 71.08 W H = 4 51 2.0 DEPTH = 61 km MB = 5.9 /ISC/	
			EP	2	38	55.0															
695	DEC 29	BRA	EAPKIKP	5	9	52.0	6.0													Loyalty Islands Region 21.59 S 169.75 E H = 19 5 25.6 DEPTH = 54 km MB = 5.2 /ISC/	
			EP	5	9	52.0															

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