DEUTSCHE AKADEMIE DER WISSENSCHAFTEN ZU BERLIN

Veröffentlichungen des Instituts
für Geodynamik Jena

Reihe B: Seismologische Bulletins
Herausgegeben von Heinz Stiller

Seismological Bulletin 1966
Station Moxa

By

Peter Bormann and Johannes Stelzner

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with 13 Figures

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PREFACE

This "Seismological Bulletin 1966 Station Moxa" continues the "Series B" of the "Publications of the Institute of Geodynamics Jena".

The equipment of Station Moxa has recently been extended. Since the beginning of 1966 two linear strain seismographs installed in NS- and EW-direction have been working in the station. The instruments measure the variations in the distance of two piers by comparison with length standard of fused-quartz tubes. This rod is 25.8 m in length. The two electromagnetic transducers at the end of each rod are coupled with a short- and a long-period galvanometer.

In order to prove methods for increasing the precision in magnitude determination two electromagnetic long-period horizontal seismographs HSJ-I have been coupled with short-period galvanometers. The instruments record the velocity of the ground motion in the range of periods from 0.3 to 20 seconds. A ground velocity of 10^{-3} mm/s gives a deviation of 1 mm on the seismogram.

This Seismological Bulletin has been developed from the provisional evaluations of the Seismological Service under the direction of JOHANNES STELZNER who was assisted by DOROTHEA GÜTH.

Final interpretations of the registrations were done by PETER BORMANN according to the principles applied in the Bulletin for the year 1965. Control of the instruments of the Station Moxa was carried out under CHRISTIAN TEUPSER.

A contribution concerning Jeffreys-Bullen travel-time residuals of P-wave onsets at the Station Moxa by PETER BORMANN is added to the Bulletin.

Jena, December 1968

H. STILLER

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Preliminary notes for the interpretation of seismograms

In the Bulletin the international code is used:

Pg — direct longitudinal wave in near epicentral distances ($D < 10°$).

Pb, Pn — guided longitudinal head waves along the CONRAD- or MOHOROVIČIĆ-discontinuity ($D < 10°$).

P — direct longitudinal wave travelled through the earth mantle

PKIKP — direct longitudinal wave travelled through the inner core (Travel-time branch DF)

PKHKP — direct longitudinal wave refracted in the intermediary zone between inner and outer core. Phase symbol according to BOLT [1] (Traveltime branch GH)

PKP2 — direct longitudinal wave only travelled through the outer core (Travel-time branch AB)

PKP — first noticeable onset of longitudinal core phase, not identified

PP, PPP — waves reflected on the earth surface with permanent longitudinal character

PKKP — core phase reflected within the core once at the outer core boundary

PKPPKP — longitudinal core phase reflected at the earth surface

Sg — direct transversal wave in near epicentral distances ($D < 10°$)

Sb, Sn — guided transversal head waves along the CONRAD- or MOHOROVIČIĆ discontinuity ($D < 10°$)

S — direct transversal wave travelled through the earth mantle

SKS — direct wave travelled transversal through the mantle and longitudinal through the core

SS, SSS — waves reflected on the earth surface with permanent transversal character

SKKS — wave travelled transversal through the mantle, longitudinal through the core and reflected within the core at the outer core boundary

PcP, ScS, PcS, ScP — longitudinal and transversal waves with steady or changing character reflected at the outer core

PS, SP, PPS — longitudinal and transversal waves with changing character reflected at the surface of the earth

pP, sP, pPP, sPP, pPKIKP, sPKP2, pS — phases of deep-focus earthquake of longitudinal or transversal waves with steady or changing character. p; s — reflected near the epicentre

pPKP, sPKP — phases of deep focus earthquakes of longitudinal core waves not exactly to be coordinated

SKP, PKS — core phases with different character before and after the direct transit of the core

SKSP — SKS wave with longitudinal character after the reflection at the surface of the earth

Pn, Sn — teleseismic Pn and Sn-waves in the epicentral distances $23° < D < 40°$ after BÅTH [2]

Pa, Sa — probably guided waves in the astenosphere channel or higher modes of surface waves

PL — leaking modes, normal dispersed train of waves of periods greater than about 10 s, beginning at or near the time of initial P-wave

Li, Lg1, Lg2, Rg — guided waves in the continental crust, probably higher modes of surfaces waves

L(3.20), R(2.90) — guided waves in the continental crust, probably higher modes of surface waves with the apparent horizontal velocity of 3.20 km · s^{-1} and 2.90 km · s^{-1} respectively

LQ — beginning of LOVE waves

LR — beginning of RAYLEIGH waves

LmV, LmH — maximum of the vertical respectivly horizontal component of longperiodical surface waves

MPV, MPPV — magnitude of the vertical component V of adequate body waves

MPPH, MSH — magnitude of the horizontal component H of adequate body waves

MLV — magnitude of the vertical component V of the maximum of surface waves

MLH — magnitude of the horizontal component of the maximum of surface waves

i — sharp onsets (impetus)

e — emersion of motion (emersio)

D — epicentral distances in degrees (°), calculated according to geocentric coordinates, the maximum error of the own calculations amounts to $\pm$ 0.1°

Az — azimuth: clockwise measured angle between north direction in epicentre and the connecting line from epicentre to station Moxa

h — depth of focus in km, our data for depth of focus are based on the travel-time curves for deep focus earthquakes after GUTENBERG and RICHTER [3]

H — origin time in GMT (Greenwich Mean Time)

\+ — compression

— — dilatation

USCGS — United States Coast and Geodetic Survey, Washington

BCIS — Bureau Central International de Séismologie, Strasbourg

ANUSSR — Academia Nauk USSR, Moscow

UPP — Seismological Institute Uppsala, Sweden

Round brackets indicate uncertainties in interpretation of phase, time, depth of focus and epicentral distances.

All dates of amplitudes of the true ground motion, given in length unit nanometer (1 nm = 10^{-6} mm) were calculated from the registrations of short-period vertical broad-band seismographs of the type: "Modified Krumbach" or "Seismograph Kirnos Modernised-III" (SKM-III). All dates of amplitudes of the true ground motion, given in length unit micrometer (1 µm = 10^{-3} mm) were calculated from registrations of long-period broad-band "Seismic Station Apparatus Type Jena-I" (SSJ-I).

The evaluation of amplitudes and periods of the different phases are given in column "Remarks" and indicated in the following manner:

PV — first P-respectively PKP-onsets (vertical component)

PV1, PV2, PV3 — multiple P-respectively PKP-onsets interpreted or not interpreted corresponding to temporal sequence

LmH, LmV — maximum of long periodical surface waves (horizontal or vertical component).

The symbols to characterize the amplitude and period evaluation of all further interpreted phases are used analogically. In the case of multiplicity of the phase the nummer of the onset is added (e.g.: PV, SH2, SPV, SSH, etc.). The following

evaluation of amplitudes and periods were used for calculations of magnitudes on the basis of the relation

$$M = \log\left(\frac{A}{T}\right) + \sigma(D) + S$$

for PV, PH, PPV, PPH, SH, LmH, LmV. The σ(D)-standard calibrating functions [4] were used for body waves PV, PH, PPH and SH of shallow earthquakes ($h < 60$ km) and for their surface waves ($h < 100$ km). The value of magnitude for PPV waves as well as for all the other body waves of earthquakes with focal depth $h > 60$ km are calculated on the basis of Q-functions [5]. No magnitudes were calculated from the surface waves of earthquakes with $h > 100$ km. The station correction S was not yet taken into consideration. The sources of all dates in the column "Remarks", which were not the result of own findings, are given in brackets, e.g.: (USCGS), (BCIS).

[1] Bolt, A., The velocity of seismic waves near the earths center. Bull. Seism. Soc. Am. **54** (1964) 1, 191—208.

[2] Båth, M., Propagation of Sn and Pn teleseismic distances. Pure and Applied Geophysics, **64** (1966/II) 19—30.

[3] Gutenberg, B. and Richter, C. F., Materials for the study of deep-focus earthquakes. Bull. Seism. Soc. Am., **26** (1936) 4, 341—390.

[4] Kárnik, V., Kondorskaja, N. V. u. a., Standardization of the earthquake magnitude scale. Stud. Geophys. et Geodet., Prague **6** (1962) 41—48.

[5] Gutenberg, B. and Richter, C. F., Magnitude and energy of earthquakes. Annali di Geofisica, **9** (1956) 1, 1—15.

Seismological Station Moxa (MOX) of the Institute of Geodynamics, Jena

Altitude above the mean sea level: 455 m
Foundation: clay slate of the lower carboniferous formation
Longitude: $\lambda = 11°36'58''$ E
Latitude: $\varphi = 50°38'46''$ N

Seismographs and their Parameters 1966

Explanation of the abbreviations:

T_0 — seismometer free period
T_g — galvanometer free period
D_s — seismometer damping
D_g — galvanometer damping
V_0 — magnification factor
N — north-south component
E — east-west component
Z — vertical component

Type	Comp.	T_s [s]	T_g [s]	D_s	D_g	V_0
Krumbach (modif.)	Z	2.0	0.20	0.54	3.58	23000
Krumbach	Z	2.0	2.0	0.95	1.0	2000*)
SKM-III	N	1.53	0.34	0.5	2.23	19000
	E	1.45	0.35	0.5	2.08	23000
	Z	1.49	0.35	0.5	2.12	19000
SSJ-I	N	20	1.13	0.48	8.79	220
		20	1.15	0.48	8.59	1100
	E	20	1.13	0.51	8.83	210
		20	1.16	0.51	8.63	1030
	Z	20	1.13	0.51	8.83	210
		20	1.26	0.51	7.83	1010
SSJ-I/L	N	30	70.7	1.24	0.5	1500
	E	30	79.1	1.3	0.5	1200
	Z	30	77.2	1.3	0.5	1300
SSJ-I/V	N	20	0.37	0.52	0.50	17000
	E	20	0.35	0.52	0.50	19000
Krumbach	N	2.5		0.40		2000
	E	2.5		0.40		2000
Strain	N		48.6		0.60	55**)
			1.68		0.71	21000**)
	E		53.4		0.69	74**)
			1.29		0.75	22000**)
Wiechert 1200 kp	N	7.0		0.25		200
	E	7.7		0.28		175
Mainka 150 kp	N	21.0		0.30		51
Mainka 200 kp	E	22.0		0.48		50

*) maximum magnification
**) for wave velocity 5 km · s^{-1}

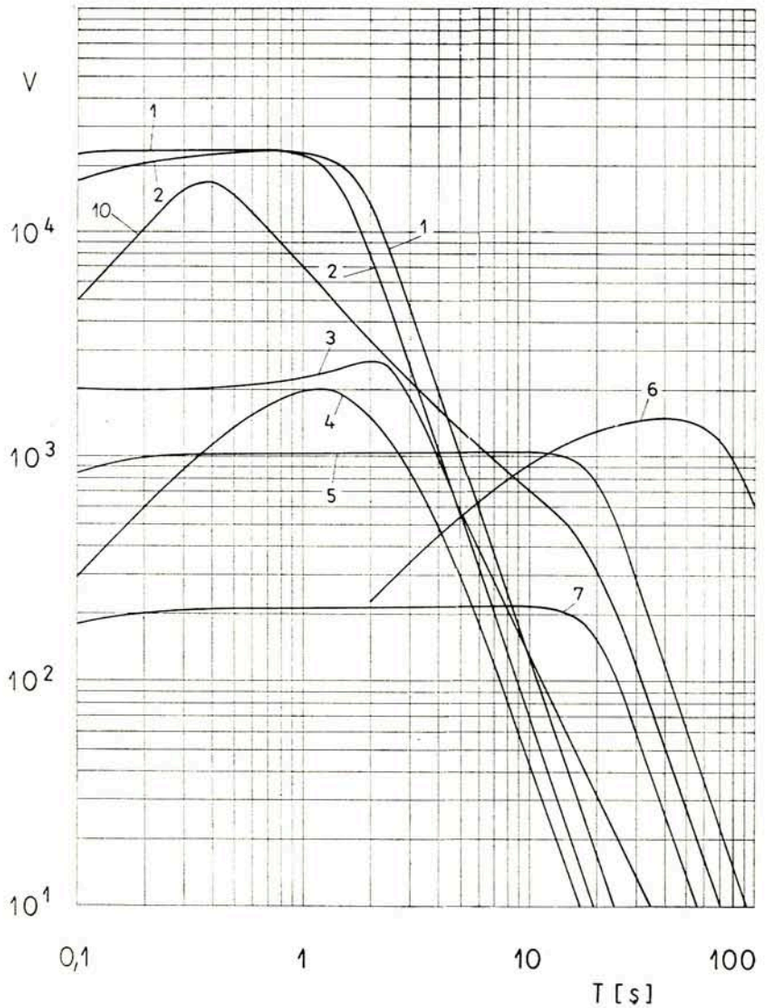

Fig. 1. Mean amplitude characteristics of the electromagnetic and optical seismographs of the station Moxa in 1966

1 — Modified Krumbach Seismograph (Z-component)
2 — Seismograph Kirnos Modernised-III (SKM-III) (NS-, EW- and Z-component)
3 — Krumbach Seismograph (NS- and EW-component)
4 — Krumbach Seismograph (Z-component)
5 — Seismic Station Apparatus Type Jena I/1000 (SSJ-I/1000), (NS-, EW- and Z-component)
6 — Seismic Station Apparatus Type Jena I/L (SSJ-I/L) (NS-, EW- and Z-component)
7 — Seismic Station Apparatus Type Jena I/200 (SSJ-I/200) (NS-, EW- and Z-component)
10 — Seismic Station Apparatus Type Jena I/Velocity (SSJ-I/V)

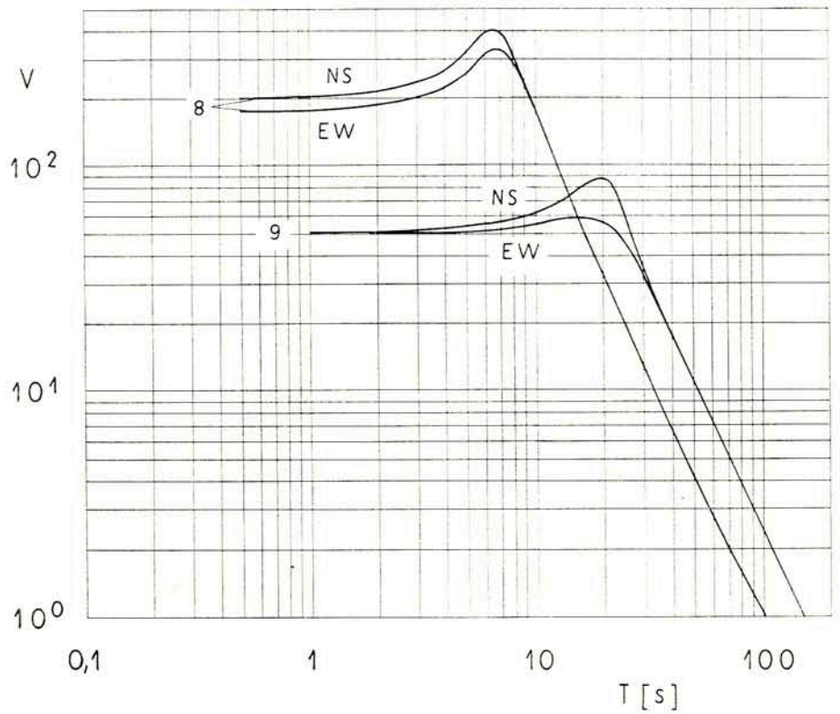

Fig. 2. Mean amplitude characteristics of the mechanical seismographs of the station Moxa in 1966

8 — Wiechert Seismograph (NS- and EW-component)
9 — Mainka Seismograph (NS- and EW-component)

Seismological Recordings at Station Moxa 1966

Day	Phase	h m s	Remarks
2.	ePKP	15 06 44.5	Tonga Islands 17.08°S 171.98°W H = 14 47 06.3 h = 39 km MAG=4.9 D = 146.4° Az = 355.9° (USCGS) PV:1.6s 36.9nm
2.	eP	23 16 00	South of Greece 37.53°N 23.38°E
	e	16 27	H = 23 12 18.8 h = 22 km MAG=4.9
	e	16 41.5	D = 15.6° Az = 331.1° (USCGS)
	eLg2(3.38)	20 54	Lg2H:13s 2.4/um
3.	ePKIKP	13 52 15	Fiji Islands 20.28°S 178.49°W
	ePKHKP	52 20.5	H = 13 33 32.6 h = 537 km MAG=5.3 (USCGS)
	ePKP2	52 27	D = 149.6°
			PV2:1.8s 132nm PV3:1.6s 60.5nm
3.	+ePKIKP	16 03 49	New Hebrides Islands 18.94°S 169.36°E H = 15 44 44.9 h = 249 km MAG=5.4 D = 143.8° Az = 335.9° (USCGS) PV:1.4s 76.2nm
3.	eP	18 28 31	Colombia 4.72°N 75.99°W
	epP	28 57	H = 18 16 05.9 h = 103 km MAG=4.8 (USCGS)
	e	30 11.5	D = 84.8° h = 105 km PV:1.7s 36.1nm MPV=5.0
4.	eP	07 58 49.5	Andaman Islands 11.76°N 95.00°E
	epP	58 58	H = 07 47 00.0 h = normal MAG=5.1 D = 76.8° Az = 319.5° (USCGS); h = 26 km PV:1.2s 27.2nm MPV=5.3
5.	eP1	17 33 13	Andaman Islands 13.21°N 95.48°E
	eP2	33 18	H = 17 21 28.4 h = 37 km MAG=5.3
	eP3	33 24	D = 76.0° Az = 319.3° (USCGS)
	eP4	33 29	PV2:2.6s 195nm PV3:1.6s 147nm
	LmH	18 14.3	PV4:1.6s 232nm

Day	Phase	h m s	Remarks
cont.			
5.	LmV	18 14.3	LmH:16s 2.2/um LmV:15s 3.2/um MLH=5.6 MLV=5.8 The time differences eP2 - eP1 and eP4 - eP3 are equal. The first onset-pair is relativly longperiodical, the second one has clearly shorter periods. The amplitude-ratios P4/P3 and P2/P1 are also equal. It seems possible to attribute this two onset pairs to two shocks in the same focus with different dynamical features.
5.	eP	18 27 33	PV:2.0s 66.5nm
7.	eP	07 56 53	Off East Coast of Kamchatka
	ei	56 56.5	52.64°N 160.02°E
	ei	57 09	H = 07 45 27.3 h = 92 km MAG=5.1 (USCGS)
			D = 73.7°
7.	ePg	12 00 35.5	Explosion/CSSR 50.4°N 13.8°E
	iSg	00 55.5	D = 1.4°
7.	eP	15 01 15	PV:0.8s 26.1nm
7.	e(PKIKP)	15 16 39	New Britain Region 5.22°S 152.62°E
			H = 14 57 43.8 h = 47 km MAG=5.3 (USCGS)
			D = 124.2°
8.	eP	22 51 34	Near Coast of Honshu/Japan
	epP	51 38	37.25°N 138.34°E
			H = 22 39 17.9 h = 10 km MAG=5.6 (USCGS)
			D = 80.9° h = 15 km
			PV:1.5s 60.0nm
			MPV=5.5
10.	eP	01 32 02.5	Mindoro/Philippine Islands
	epP	32 40.5	13.94°N 120.78°E
	e	32 52	H = 01 19 12.1 h = 134 km MAG=5.5
	ePP	35 42	D = 91.1° Az = 323.0° (USCGS);

Day	Phase	h m s	Remarks
cont.			
10.	LmH	02(06)	h = 152 km; PV:1.3s 46.5nm PPV:1.7s 38.9nm MPV=5.5 MPPV=5.5
11.	+eP	14 28 57	Near Coast of Honshu/Japan
	ePP	32 09	33.68°N 137.18°E
	ePPP	34 06	H = 14 16 32.2 h = normal MAG=5.3
	eS	39 24	D = 83.3° Az = 328.6° (USCGS)
	e	44(16)	PV:2.2s 164nm
	LmV	15 11.3	LmH:13.6s 8.6/um LmV:12s 11/um
	LmH	11.8	MPV=5.8 MLH=6.4 MLV=6.5
11.	i	14 54 16.8	France 44.5°N 6.7°E
	e(Sg)	54 24	H = 14 50 36 (BCIS)
	e	54 32	D = 7.0°
13.	eP	01 48 16	Turkey 38.60°N 29.20°E
	e	48 27	H = 01 44 14.8 h = 42 km MAG=4.3
			D = 17.3° Az = 319.8° (USCGS)
			PV:1.6s 40nm
13.	e	09 13 14	
13.	+iP	10 52 57	Near Islands/Aleutian Is.
	i(sP)	53 05.5	52.91°N 172.01°E
	e(PP)	55 45.5	H = 10 41 11.0 h = 14 km MAG=5.6 (USCGS)
	ePS	11 03 20	D = 75.6° (h = 24 km)
	eSS	07 36	PV:1.8s 250nm
	LmV	24	LmH:17.5s 2.7/um LmV:22s 2.5/um
	LmH	29	MPV=6.0 MLH=5.6 MLV=5.5
			e 55 30.5
14.	eP	18 43 59	Crete 34.74°N 26.96°E
			H = 18 39 31.5 h = normal MAG=4.8
			D = 19.4° Az = 329.6° (USCGS)
			PV:1.2s 20.5nm

Day	Phase	h m s	Remarks
15.	e(PKHKP)	11 16 24.5	Tonga Islands 20.31°S 174.52°W
	e	16 32	H = 10 56 36.2 h = normal MAG=4.7
			D = 149.3° Az = 352.3° (USCGS)
			PV:1.6s 31.5nm
15.	eP	12 10 59	Gulf of Alaska 59.47°N 144.60°W
	ePP	13(34)	H = 11 59 58.6 h = normal MAG=5.1 (USCGS)
	eS	20 06	D = 68.4°
	ePPS	20 42	PV:1.8s 43.7nm SH:9.5s 0.9/um
	eSoS	21 00	LmH:14s 1.0/um LmV:14s 1.6/um
	LmH	47.0	MPV=5.4 MSH=5.9 MLH=5.3 MLV=5.4
	LmV	47.8	e 11 04 e 24 12
15.	eP	18 11 34	Greece 36.70°N 23.12°E
	LmH	18	H = 18 07 46.3 h = 35 km MAG=4.7
	LmV	19	D = 16.2° Az = 332.9° (USCGS)
15.	LmH	20 35	LmH:19s 1.6/um LmV:19s 2.3/um
	LmV	35.0	
16.	LmV	01 47.7	LmH:20s 1.2/um LmV:20s 2.2/um
	LmH	50.5	
16.	iPg	03 45 58.5	Explosion?
	e	46 31	
	e	46 38	
16.	e	06 53 52	Belgium 50.45°N 4.25°E
	eSg	54 09	H = 06 51 35 (BCIS)
	e	54 20	D = 4.8°
16.	eP	07 20 00.5	Nicobare Islands 9.19°N 93.79°E
	e	20 05.5	H = 07 07 56.9 h = normal MAG=5.2
			D = 78.0° Az = 319.8° (USCGS)
			PV1:1.6s 23.8nm PV2:2.0s 66.6nm
16.	+iP	09 23 33.5	Near Islands/Aleutian Is.
	e	23 45	52.85°N 171.94°E
	LmV	54	H = 09 11 50.0 h = 25 km MAG=5.7

Day	Phase	h m s	Remarks
cont.			
16.	LmH	09 59.8	D = 75.5° Az = 347.2° (USCGS)
			PV:1.6s 79.0nm
			LmH:19s 1.1/um LmV:24s 1.2/um
			MPV=5.6 MLH=5.2 MLV=5.2
16.	ePn	12 34 01.5	Belgium 50.45°N 4.25°E
	e(Pg)	34 18	H = 12 32 51 M=4.4 (BCIS)
	e	34 21	D = 4.8°
	eSn	34 52	LmH:6.5s 2.5/um
	i(Sg)	35 25	MLH=4.0
	LmH	35.6	e 34 36 i 35 08.0 i 35 13.0
16.	eP	18 56 36.5	South of Crete 33.24°N 26.24°E
	e	56 39	H = 18 52 00.8 h = normal MAG=5.0
	iPP	56 55	D = 20.5° Az = 332.6° (USCGS)
	iPPP	57 01.5	PV1:1.0s 13nm PV2:1.5s 40nm
	eS	19 00 22	MPV1=4.3 MPV2=4.5
	LmH	04	
16.	eiP	19 56 08	Komandorsky Islands 54.93°N 165.79°E
			H = 19 44 39.5 h = 15 km MAG=5.6 (USCGS)
			D = 72.7°
			PV:1.1s 26.6nm
			MPV=5.3
16.	eP	20 19 39.5	Crete 35.59°N 26.05°E
			H = 20 15 27.4 h = 35 km MAG=4.7
			D = 18.3° Az = 329.7° (USCGS)
16.	e	22 04 47	Fiji Islands 17.39°S 176.78°W
			H = 21 45 48.7 h = 359 km MAG=4.3
			D = 146.1° Az = 350.4° (USCGS)
16.	e	23 22 46	
17.	ePg	08 00 34	Explosion.
	i(Sg)	00 49.7	(D = ca. 1.2°)

Day	Phase	h m s	Remarks
17.	eP	08 42 36	Greece-Albania Border Region
	LmH	46.7	40.21°N 20.57°E
	LmV	48.5	H = 08 39 41.4 h = 34 km MAG=4.3
			D = 12.2° Az = 332.0° (USCGS)
17.	ePKIKP	18 08 42.5	Fiji Islands 20.82°S 178.49°W
	-iPKHKP	08 47.0	H = 17 49 59.3 h = 543 km MAG=5.7 (USCGS)
	ePKP2	08 54	D = 149.3° h = ca. 570 km
	ep(PKHKP)	11 01	PV2:1.7s 145nm PV3:1.4s 57.0nm
			e 09 16 e 09 24
17.	iP	19 08 09.5	Fox Islands/Aleutian Is. 52.0°N 171.2°W
			H = 18 56 15.6 h = 46 km MAG=4.8 (USCGS)
			D = 79.5°
18.	eP	01 25 44.5	Ryukyu Islands 29.34°N 130.35°E
	LmH	02 08.0	H = 01 13 15.8 h = normal MAG=5.3 (USCGS)
	LmV	08.0	D = 83.8°
			LmH:17s 2.2/um LmV:16s 2.6/um
			MLH=5.7 MLV=5.8
18.	ePKIKP	06 46 13	Fiji Islands 18.63°S 177.75°W
	iPKHKP	46 15.2	H = 06 27 12.7 h = 364 km MAG=5.3 (USCGS)
	iPKP2	46 18.4	D = 146.9° (h = ca. 430 km)
	e(pPKP)	47 55	
18.	e	18 47 18.5	
18.	eP	20 23 01.5	Rumania 45.99°N 26.88°E
			H = 20 20 24.3 h = 63 km MAG=4.4 (USCGS)
			D = 11.2°
18.	iP	21 24 08.0	Crete 34.98°N 23.73°E
			H = 21 20 00.3 h = 52 km MAG=4.9
			D = 18.0° Az = 334.3° (USCGS)
19.	e	07 02 23	France 45.8°N 6.7°E
	e(Pg)	02 29	H = 07 00 32 (BCIS)
	e(Sg)	03 42	D = 5.9°

Day	Phase	h m s	Remarks
19.	ePKHKP	14 04 44	Fiji Islands 20.68°S 178.48°W
			H = 13 46 02.2 h = 593 km MAG=4.7
			D = 149.1° Az = 347.5° (USCGS)
20.	eP	00 42 29.5	Aegean Sea 39.19°N 24.39°E
			H = 00 39 01.6 h = 25 km MAG=4.3
			D = 14.6° Az = 326.0° (USCGS)
20.	eP	01 56 57	Honshu/Japan 37.93°N 138.04°E
			H = 01 44 49.5 h = normal MAG=5.5
			D = 80.0° Az = 328.7° (USCGS)
			PV:1.8s 81.0nm
			MPV=5.6
20.	e	08 57 43	Probably Ethiopia 5.2°N 38.8°E
	e	57 50.5	H = 08 48 20 MAG=5 (ANUSSR)
			D = 50.7°
			P must be 25 s earlier than the first given onset.
20.	eP	14 57 48	Near Islands/Aleutian Is.
	e(pP)	57 57	52.98°N 171.78°E
			H = 14 46 06.2 h = 29 km MAG=5.4 (USCGS)
			D = 75.8° (h = 33 km)
			PV:1.0s 26.0nm
			MPV=5.3
20.	ePKP	15 21 28	Samoa Islands 15.32°S 172.96°W
			H = 15 01 53.4 h = normal MAG=5.3
			D = 144.6° Az = 355.0° (USCGS)
			PV:1.1s 17.8nm
20.	eP	16 44 15	Fox Islands/Aleutian Is. 52.36°N 169.57°W
			H = 16 32 19.9 h = 19 km MAG=5.3 (USCGS)
			D = 77.6°
			PV:1.0s 17.4nm
			MPV=5.1

Day	Phase	h m s	Remarks
20.	eP	23 49 29	Taiwan 22.87°N 121.22°E
			H = 23 37 02.3 h = 64 km MAG=4.9
			D = 84.2° Az = 322.9° (USCGS)
22.	eP	00 28(00)	Turkey 37.69°N 29.97°E
	i	28 05	H = 00 23 42.7 h = 23 km MAG=5.0 (USCGS)
	e	28 10	D = 18.4°
	e(PP)	28 18	PV1:2.1s 91.5nm PV2:2.0s 89.1nm
	eS	31(28)	PV3:2.2s 109nm
	eLg1(3.53)	33.4	SH:8.5s 1.3/um
	eLg2(3.32)	34.0	LmH:15s 3.6/um LmV:9s 2.2/um
	LmH	34.3	MLH=4.8 MLV=4.9
	LmV	36.2	e 31 32 e 31 40
22.	iPg	07 45 02.6	Explosion
	iSg	45 16.5	D = ca. 1.1°
22.	eP	07 49 17.5	Chiapas/Mexico 17.44°N 94.12°W
			H = 07 36 49.3 h = 139 km MAG=4.9 (USCGS)
			D = 86.3°
			PV:1.1s 40.0nm
			MPV=5.2
22.	ePKIKP	11 19(40)	Fiji Islands 17.92°S 178.50°W
	iPKHKP	19 41.5	H = 11 01 05.3 h = 598 km MAG=5.3 (USCGS)
			D = 146.5°
			PV2:1.9s 140nm
22.	+iP	14 38 36.5	South of Alaska 55.97°N 153.69°W
	ipP	38 46.2	H = 14 27 07.9 h = normal MAG=5.8
	eS	48 05	D = 73.0° Az = 9.7° (USCGS); h = 36 km
	e(SoS)	48 40	PV1:1.8s 200nm PV2:1.4s 138nm
	eSS	53.0	SH:16s 5.1/um
	LmV	15 16.3	LmH:17s 10.2/um LmV:18s 14.3/um
	LmH	17	MPV=5.9 MSH=6.4 MLH=6.2 MLV=6.4
			e 41 00 e 41 13

Day	Phase	h m s	Remarks
22.	ePKHKP	19 56 21	Tonga Islands 21.04°S 174.23°W
			H = 19 36 32.4 h = normal MAG=5.0
			D = 150.1° Az = 352.5° (USCGS)
			PV:1.5s 45nm
23.	eS	01 20.8	Oaxaca/Mexico 16.32°N 94.88°W
	LmH	52	H = 00 57 21.8 h = 32 km MAG=4.6 (USCGS)
	LmV	52	D = 87.6°
			LmH:15s 1.1/um LmV:15s 1.0/um
			MLH=5.4 MLV=5.4
23.	ePn	01 32 37.5	Northern Italy 45.93°N 12.24°E
	iPg	32 58.0	H = 01 31 28.9 h = normal MAG=3.8
	iSn	33 31.5	D = 4.7° Az = 355.2° (USCGS)
	eSg	33(58)	e 32 42 i 33 04.0 i 33 16.0
	iLg1	34 09	i(Sb1) 33 44.5 i(Sb2) 33 49.8
			i 34 00.6 i 34 04.0
23.	eP	02 08 35.5	New Mexico 36.96°N 106.90°W
	LmH	44.0	H = 01 56 38.0 h = 10 km MAG=5.5 (USCGS)
	LmV	44.0	D = 77.2°
			PV:1.5s 50.0nm
			LmV:15s 0.9/um
			MPV=5.4 MLV=5.2
23.	LmH	12 01.5	Probably Honshu/Japan (USCGS)
23.	e	14 50 10.5	
23.	eP	23 21 35.5	Near East Coast of Honshu/Japan
			35.94°N 140.45°E
			H = 23 09 17.9 h = 70 km MAG=4.8 (USCGS)
			D = 82.7°
24.	-eP	02 23 37.0	Afghanistan 32.70°N 67.65°E
	e	23 41	H = 02 15 27.7 h = 33 km MAG=5.2
	ePP	25 27	D = 44.4° Az = 311.0° (USCGS)
	LmH	44.5	PV:1.4s 33.4nm
	LmV	(48)	MPV=5.1

Day	Phase	h m s	Remarks
24.	+eP	07 31 45	West Pakistan 29.94°N 69.68°E
	e	32 07	H = 07 23 07.6 h = 12 km MAG=5.8
	ePP	33 36	D = 47.5° Az = 312.9° (USCGS)
	eS	38 39	PV:1.6s 94.7nm
	e	39 00	LmH:14s 2.9/um LmV:14s 3.5/um
	LmH	56.5	MPV=5.6 MLH=5.4 MLV=5.5
	LmV	56.7	
24.	eP	15 41 27	West Pakistan 29.89°N 69.77°E
	LmH	16(08)	H = 15 32 48.1 h = 4 km MAG=5.3
	LmV	(08)	D = 47.6° Az = 312.9° (USCGS)
			PV:1.8s 37.5nm
			MPV=5.2
25.	e	04 10 13.5	
25.	e(P)	06 01 08.5	
	e	01 52	
25.	LmH	18(55)	
26.	e	12 39 17.5	
26.	eP	13 33 41.5	Greece 38.95°N 21.44°E
			H = 13 30 27.9 h = 45 km MAG=4.4
			D = 13.6° Az = 332.5° (USCGS)
27.	eP	12 12 27.5	Japan 40.16°N 140.48°E
			H = 12 00 29.1 h = 65 km MAG=5.1 (USCGS)
			D = 79.1°
28.	e(Pg)	02 48 57.5	
	e	49(12)	
28.	ePKIKP	04 55 21.5	Fiji Islands 17.55°S 176.94°E
	iPKHKP	55 22.5	H = 04 36 46.1 h = 558 km MAG=5.6
	iPKP2	55 24.5	D = 145.0° Az = 343.7° (USCGS);
	epPKP	57 35	h = ca. 590 km
	e	57 42	PV1:0.7s 21.8nm PV2:1.5s 165nm

Day	Phase	h m s	Remarks
28.	e	06 01(44)	New Hebrides Islands 17.1°S 168.8°E
	e	01 47	H = 05 42 18 MAG=6¼
	i(PKHKP)	01 49.6	D = 141.8° (ANUSSR)
	-i(PKIKP)	01 52.0	PV4:2.0s 133/um (The earlier onsets are
	e	02(10)	clear but much smaller.)
	e	04 29	LmV:20s 10.4/um LmH:20s 8.7/um
	LmV	07 08.5	MLH=6.5 MLV=6.6
	LmH	08.6	
28.	eP	09 00 08	Tadzhik-Sinkiang Border Region
	e	00 11.5	39.31°N 73.07°E
	ePP	01 51.5	H = 08 52 02.2 h = 20 km MAG=5.4
	ePcP	01 55.5	D = 43.7° Az = 306.0° (USCGS)
	e(PPPP)	02 41	PV:1.3s 34.8nm
	LmH	19.8	LmH:14s 1.1/um LmV:12s 1.2/um
	LmV	22.7	MPV=5.1 MLH=4.9 MLV=5.1
28.	ePKP	09 46 13.5	Fiji Islands 17.89°S 178.52°W
			H = 09 27 34.3 h = 579 km MAG=5.4
			D = 146.3° Az = 348.3° (USCGS)
			PV:1.1s 31.0nm
28.	e	17 54 19	Switzerland 46.6°N 7.6°E
	i	54 50.8	H = 17 52 49 (BCIS)
	eiSg	55 26.5	D = 4.8°
	i	55 33	e 54 22 e 54 29
28.	-eP	22 49 36.5	Kamchatka 51.56°N 157.03°E
	e	49 42	H = 22 38 12.2 h = 107 km MAG=5.6 (USCGS)
	eS	59 00	D = 74.1°
	LmH	23(27)	PV:1.6s 63.2nm
	LmV	(28)	MPV=5.2
29.	eP	08 04 05	Kurile Islands 45.79°N 151.51°E
	epP	04 17.5	H = 07 52 08.8 h = normal MAG=5.1 (USCGS)
			D = 78.0° h = 47 km
			PV2:1.5s 35nm

Day	Phase	h m s	Remarks
29.	iP	14 53 05.2	Mexico-Guatemala Border Region
	e	53 18.5	16.58°N 91.24°W
			H = 14 40 26.5 h = 7 km MAG=5.3
			D = 85.2° Az = 38.5° (USCGS)
			PV2:2.0s 66.6nm
29.	eP	16 21(17)	Near Coast of Northern California
			41.51°N 127.11°W
			H = 16 09 01.4 h = normal MAG=4.9
			D = 81.4° Az = 25.1° (USCGS)
30.	eP	06 50(20)	Greece 38.78°N 21.67°E
	e	50 23	H = 06 47 02.8 h = 47 km MAG=4.4
			D = 13.8° Az = 332.3° (USCGS)
30.	e(PKHKP)	11 24 40.5	Loyalty Islands 22.12°S 170.03°E
	i	24 47	H = 11 05 02.3 h = 46 km MAG=5.3
	e	25 30	D = 146.9° Az = 334.6° (USCGS)
			PV:1.5s 45.0nm
31.	eP	02 46 01.5	China 27.90°N 99.58°E
			H = 02 35 05.8 h = normal MAG=5.6
			D = 67.7° Az = 316.6° (USCGS)
			PV:1.3s 18.6nm
			MPV=5.1
31.	ePKP	06 27 41	Loyalty Islands 21.90°S 169.99°E
			H = 06 08 03.3 h = normal (USCGS)
			D = 146.6°
31.	eP	14 15 09.5	Argentina 24.76°S 64.42°W
	ePP	19 16.5	H = 14 01 25.4 h = 43 km MAG=5.8
	LmH	15 00	D = 100.5° Az = 38.9° (USCGS)
	LmV	00	
31.	eP	19 32 16	Fox Islands/Aleutian Is. 51.53°N 170.75°W
	e	32 30	H = 19 20 18.6 h = normal MAG=4.6
			D = 78.2° Az = 358.5° (USCGS)

Day	Phase	h m s	Remarks
2.	eiPn	02 26 29.5	Northern Italy 46.17°N 12.81°E
	e	26 45.5	H = 02 25 22.0 h = normal
	iPg	26 48.5	D = 4.5° Az = 350.3° (USCGS)
	e	26 52	PgV:1.0s 48.2nm SgV:1.3s 100nm
	i(Sn)	27 18.0	SgH:1.2s 102nm
	i(Sg)	27 42.0	i 27 44.0 i 27 49.5
2.	ePg	02 33 37.5	Probably Northern Italy (aftershock to
	eSg	34 33	the preceeding earthquake)
			SgV:1.3s 19nm SgH:(1.3s 20nm)
2.	ePKP	05 53 42	Tonga Islands 17.78°S 173.15°W
	+i	53 47.5	H = 05 34 01.8 h = normal MAG=5.2
	+i	53 54.5	D = 147.0° Az = 354.4° (USCGS)
	i	54 10.0	PV1:2.0s 100nm PV2:1.6s 96nm
	e	54 20	PV3:2.0s 213nm
	LmV	07 10	e 54 28 e 54 38 e 55 10 e 55 36
			e 56 24
2.	eP	09 28 39	West Pakistan 33.92°N 73.03°E
	ePcP	30 13.5	H = 09 20 07.5 h = 26 km MAG=5.3
			D = 47.0° Az = 310.2° (USCGS)
2.	-eiPKHKP	17 29 59	Fiji Islands 21.58°S 176.70°W
			H = 17 10 34.5 h = 231 km
			D = 150.3° Az = 349.3° (USCGS)
			PV:1.4s 105nm
3.	+ePKHKP	02 30 51	Fiji Islands 20.93°S 178.33°W
	ePKP2	30 58	H = 02 11 57.5 h = 489 km MAG=4.6 (USCGS)
	ei	31 13.3	D = 149.3°
			PV1:1.8s 37.5nm
3.	+eP	06 01 53.5	Northern Celebes 0.13°N 123.46°E
	e(pP)	02 35.5	H = 05 48 06.1 h = 131 km MAG=5.9
	e(sP)	02 55	D = 103.6° Az = 322.6° (USCGS);
	+iPP	06 15.2	(h = 170 km)
	i	06 28	PV:1.6s 40.0nm PPV:2.2s 143nm
	i	06 49	MPV=5.9 (MPPV=6.2)

Day	Phase	h m s	Remarks
3.	-eiP	12 11 21.5	Philippine Islands 16.60°N 119.97°E
	e(pP)	11 52	H = 11 58 35.3 h = 69 km MAG=5.8
			D = 88.5° Az = 322.8° (USCGS);
			(h = 120 km)
			PV:1.0s 43.5nm
			MPV=5.7 (for h = 120 km MPV=5.4)
3.	eP	13 26 18.5	Sicily 38.56°N 14.84°E
	e	26 54	H = 13 23 29.3 h = 254 km MAG=4.4
			D = 12.3° Az = 350.3° (USCGS)
			PV:1.0s 21.7nm
3.	eP	17 23 46	Taiwan 23.99°N 121.85°E
	e	23 49	H = 17 11 17.2 h = 24 km MAG=5.2
	LmH	18 05	D = 83.7° Az = 323.1° (USCGS)
3.	eP	17 33 32.5	Taiwan 24.35°N 121.75°E
	LmH	18 15	H = 17 21 10.0 h = 55 km MAG=4.9
			D = 83.3° Az = 323.0° (USCGS)
			LmH:17s 1.8/um
			MLH=5.5
3.	eSg	17 42 02	Black Forest/GFR 47.9°N 7.8°E
			H = 17 40 04 (BCIS)
			D = 3.7°
3.	eP	18 10 08	Taiwan 24.13°N 122.03°E
	e	10 22	H = 17 57 42.2 h = 38 km MAG=4.8
	LmH	18 51.5	D = 83.6° Az = 323.1° (USCGS)
	LmV	52.5	LmH:18s 1.6/um LmV:16s 2.1/um
			MLH=5.4 MLV=5.6
4.	eP	02 59 29	
4.	-ePKP	04 22 20	Tonga Islands 15.23°S 173.38°W
	+i	22 28.0	H = 04 02 45.8 h = normal MAG=5.0 (USCGS)
			D = 144.3°
			PV:2.6s 125nm

Day	Phase	h m s	Remarks
4.	e(PKIKP)	05 24 14.5	Tonga Islands 21.43°S 174.13°W
	e	24 17.5	H = 05 04 24.1 h = 26 km MAG=4.6 (USCGS)
	e	25 08	D = 150.6°
	e	25 44	PV1:1.2s 18nm PV2:1.2s 23nm
4.	eP	08 42 18.5	Crete 34.35°N 23.95°E
	e	42 26	H = 08 38 01.1 h = 21 km MAG=4.8
	-ePP	42 33	D = 18.6° Az = 334.8° (USCGS)
	e	42 46.3	LmH:14s 2.2/um LmV:14s 2.2/um
	e	42 54	MLH=4.6 MLV=4.7
	LmH	51.2	e 43 02 e 43 15
	LmV	51.2	
4.	eP	10 10 50	
	e	10 59	
4.	ePKHKP	10 58 15	New Hebrides Islands 15.88°S 167.91°E
	ePKIKP	58 19	H = 10 39 12.2 h = 190 km MAG=6.0
	e(pPKHKP)	59 07	D = 140.4° Az = 336.3° (USCGS);
	i(pPKIKP)	59 10.5	(h = ca. 200 km)
	ePP	11 01 21	PPV:2.7s 172nm SKPV:2.2s 272nm
	+iSKP	01 39.0	(SKP2)V:2.3s 150nm
	i(SKP2)	01 52.5	MPPV=5.7
	ePS	12.0	e 58 22 e 58 39 (V:2.0s 74nm) i 59 13.8
	eSS	19.5	-i 59 32.5 (V:1.2s 109nm) i 59 45.0
	ePSPS	20.4	e 01 03 e 01 49 e 02 08 e 03 00
	LmH	(46)	
	LmV	(46)	
4.	i(P)	14 57 17.0	
4.	ePKHKP	15 56 21	Tonga Islands 21.29°S 174.34°W
	ePKP2	56 28	H = 15 36 30.8 h = 27 km MAG=5.0
	e	56 40	D = 150.3° Az = 352.3° (USCGS)
			PV:2.2s 91.0nm
4.	e	21 04 15.5	

Day	Phase	h m s	Remarks
5.	-eP	02 04 57	Greece 39.21°N 22.05°E
	i	04 59	H = 02 01 48.3 h = 38 km MAG=5.8 (USCGS)
	Pmax	05 04	D = 13.6°
	iS	07 26	PV:1.9s 66nm PVmax:1.3s 256nm
	iSS	07 40	LmH:14s 129/um LmV:14s 163/um
	iSSS	07 54	MLH=6.1 MLV=6.4
	eLi(3.73)	08 34	+i 05 05.5 -i 05 09.5 -i 05 22.7
	eLg2(3.34)	09 20	+i 05 36.0 i 07 40 i 07 55
	iLR	10 40	
	LmH	10.8	
	LmV	10.8	
5.	eP	03 01 09	Greece 39.1°N 21.6°E
	e	01 21.5	H = 02 57 59 h = normal MAG=ca.5
	LmH	07.0	D = 13.5° (ANUSSR)
	LmV	07.1	LmH:13s 5.9/um LmV:12s 4.7/um
			MLH=4.8 MLV=4.7
5.	-iP	14 36 14.0	Near East Coast of Kamchatka
			52.80°N 158.76°E
			H = 14 24 45.0 h = 44 km MAG=5.2 (USCGS)
			D = 73.3°
			PV:1.2s 31.8nm
			MPV=5.3
5.	-eP1	15 23 49	China 26.09°N 103.14°E
	-iP2	23 53.0	H = 15 12 29.1 h = 15 km MAG=6.1 (USCGS)
	ePP	26 25	D = 71.2°
	eS	33 07	PV1:2.4s 182nm PV2:1.8s 370nm
	e(ScS)	33 44	SSH:30s 2.4/um SaH:38s 6.8/um
	eSS	37 49	LmH:22s 26.6/um LmV:17s 14.3/um
	i(SSS)	40 55	MPV1=5.8 MPV2=6.2 MLH=6.5 MLV=6.3
	iSa(4.57)	41 20	i 23 59.0 e 24 31 i 24 43.5
	LQ	43	e(SSS) 40 55
	LmH	52.2	
	LmV	16 00.8	
5.	+eP	16 27 33	Kurile Islands 50.21°N 155.08°E
	-iP	27 34	H = 16 16 00.8 h = 98 km MAG=5.8 (USCGS)

Day	Phase	h m s	Remarks
cont.			
5.	epP	16 28 00	D = 74.7° h = 108 km
	eisP	28 12	PV2:2.0s 785nm
	e	28 27.5	MPV2=6.2
6.	eP	09 24 41	China 26.24°N 103.13°E
			H = 09 13 19.6 h = 5 km MAG=5.4
			D = 71.1° Az = 317.7° (USCGS)
6.	e	13 28 01.5	Greece 39.01°N 21.71°E
			H = 13 24 38.3 h = 36 km MAG=4.2
			D = 13.6° Az = 331.8° (USCGS)
			The first onset of P must be 10 s earlier.
6.	e	17 59 31	
6.	+iP	23 39 02.5	South of Alaska 60.2°N 151.8°W
	+i	39 06.8	H = 23 28 00 h = normal
	e	39 30	D = 68.7° (ANUSSR)
			PV1:1.3s 70.0nm PV2:1.5s 50.0nm
			PV3:1.6s 52.6nm
			MPV1=5.7
7.	+eP1	04 34 46	West Pakistan 29.83°N 69.68°E
	+iP2	34 47.5	H = 04 26 13.9 h = normal MAG=6.0
	-iP3	34 50.5	D = 47.6° Az = 313.0° (USCGS)
	iP4	34 55.0	PV2:1.6s 79.0nm PV3:1.8s 306nm
	iP5	35 00.3	PV4:1.3s 487nm PV5:2.0s 1050nm
	ePcP	36 20	SH4:6.0s 2.8/um
	ePP	36 40	LmH:14s 28/um LmV:15s 36/um
	iS(4)	41 48	MPV2=5.6 MPV3=6.1 MPV4=6.4 MPV5=6.6
	eSS	45 14	MSH4=6.5 MLH=6.4 MLV=6.5
	LmH	05 01.3	i 35 11.5 (V:2.0s 890nm)
	LmV	01.3	i 35 30.0 (V:1.8s 420nm)
			i 36 09 i 41 58
			Multiple P. Successive shocks in the same focus?

Day	Phase	h m s	Remarks
7.	eP1	05 30 22	West Pakistan 30.01°N 69.91°E
	+iP2	30 24.5	H = 05 21 44.6 h = 10 km MAG=5.4
	i	30 28.0	D = 47.6° Az = 312.8° (USCGS)
	-i	30 30.0	PV2:1.8s 68.7nm
			MPV2=5.4
			Multiple P.
7.	+iP	05 38 51.3	West Pakistan 30.00°N 69.57°E
	e	38 54.5	H = 05 30 19.2 h = 48 km MAG=5.3
	e	39 13	D = 47.4° Az = 312.9° (USCGS)
			PV1:2.0s 52.6nm PV2:1.4s 48.5nm
			MPV1=5.3 MPV2=5.4
			Multiple P.
7.	eP	05 48 05	
	e	48 08	
7.	eP	08 46 50	West Pakistan 29.98°N 69.93°E
			H = 08 38 11.3 h = 15 km MAG=4.8
			D = 47.7° Az = 312.9° (USCGS)
7.	e	09 33 05	Yugoslavia 45.0°N 17.3°E
	e	33 22	H = 09 29 43 (BCIS)
	e(Sg)	33 26	D = 6.8°
7.	+iP1	23 15 10.5	West Pakistan 30.24°N 69.84°E
	+iP2	15 12.4	H = 23 06 34.5 h = 10 km MAG=5.8
	-i	15 19.5	D = 47.4° Az = 312.7° (USCGS)
	-i	15 31.7	PV2:1.7s 340nm PV3:1.4s 248nm
	eS	22 06	LmH:15s 24.1/um LmV:13s 21.7/um
	eSS	25 29	MPV2=6.2 MLH=6.3 MLV=6.3
	LmH	38.7	e 22 27 e 26 06 i 27 00
	LmV	41.5	Multiple P.
8.	eSn	01 19 27	Apennines/Italy 44.2°N 10.0°E
	eSg	20 05	H = 01 16 46 (BCIS)
			D = 6.2°

Day	Phase	h m s	Remarks
8.	-iPKHKP	10 20 59.0	Fiji Islands 21.17°S 178.52°W
	-iPKP2	21 06.2	H = 10 02 09.0 h = 525 km MAG=5.1 (USCGS)
			D = 149.5°
			PV1:1.5s 55.0nm PV2:1.2s 41.0nm
8.	eP	13 20 36	Rhodos/Mediterranean Sea 36.3°N 28.2°E
	i	20 44.5	H = 13 16 21.8 h = 80 km MAG=5.4 (USCGS)
	ei	20 47.5	D = 18.7°
			PV:1.8s 175nm
8.	e	20 11 24	Greece-Bulgaria Border Region
	e	11 42	41.39°N 25.10°E
	LmH	15.8	H = 20 08 06.2 h = normal MAG=4.9 (USCGS)
	LmV	17	D = 13.2°
			The first onset of P must be 10 s earlier
			than the first given onset.
9.	LmH	01 49.5	
	LmV	51.5	
9.	eSKS	05 05.7	South Sandwich Islands Region
	eS	07 28	56.75°S 25.72°W
	iPS	09 11	H = 04 40 28.4 h = 27 km MAG=5.9 (USCGS)
	e	14.8	D = 111.3°
	iSS	15 38	
	eSSS	19	
	LQ	26	
	LmH	44.5	
9.	eP	08 30 54	West Pakistan 29.82°N 69.81°E
	e	30 57.5	H = 08 22 17.9 h = 29 km MAG=5.2
			D = 47.7° Az = 313.0° (USCGS)
			PV1:2.0s 59.2nm PV2:2.0s 67.6nm
			MPV1=5.4
9.	ePKP	14 17(06)	Easter Island Cordillera
	e	17 16	35.32°S 106.03°W
	e	20 08	H = 13 57 48.7 h = normal MAG=5.4
	LmH	15 02	D = 133.3° Az = 50.8° (USCGS)

Day	Phase	h m s	Remarks
9.	eP	15 27 11	Near Coast of Peru 15.20°S 75.19°W
	e	27 22	H = 15 13 30.1 h = 54 km MAG=5.5 (USCGS)
	LmH	16 09.2	D = 99.5°
	LmV	09.2	LmH:20s 0.8/um LmV:20s 1.6/um
			MLH=5.3 MLV=5.5
9.	eP	23 45 38.5	South of Honshu/Japan 32.59°N 141.60°E
			H = 23 33 00.6 h = 50 km MAG=4.7 (USCGS)
			D = 86.3°
10.	ePKP2	01 44 44	Kermadec Islands 29.86°S 178.54°W
	e	44 49	H = 01 24 15.1 h = normal MAG=4.7 (USCGS)
	e	45 19	D = 157.8°
	e	45 42	
10.	eP	05 42 00	South of Honshu/Japan 31.08°N 141.63°E
	e	42 29	H = 05 29 13.3 h = normal MAG=5.3 (USCGS)
	e	42 40	D = 87.6°
	ePP	45 24	LmH:15s 2.0/um LmV:14s 1.7/um
	LmH	06 26.8	MLH=5.6 MLV=5.6
	LmV	31.0	
10.	e	06 12 06	
10.	e	09 47 40.5	
10.	e	12 50 08.5	
10.	eP	12 50 17	Kodiak Islands 56.65°N 153.33°W
	e	50 26	H = 12 38 49.1 h = 12 km MAG=4.5 (USCGS)
			D = 72.2°
			PV:1.1s 26.7nm
			MPV=5.3
10.	eP	13 25(02)	Greece 39.06°N 21.81°E
	e	25 17	H = 13 21 45.5 h = normal MAG=4.5
			D = 13.6° Az = 331.5° (USCGS)

Day	Phase	h m s	Remarks
10.	eP1	14 34 46	Mariana Islands 20.80°N 146.28°E
	eP2	34 50	H = 14 21 10.9 h = 43 km MAG=6.2
	iP3	35 02.0	D = 98.4° Az = 332.8° (USCGS)
	eP4	35 07	PV2:1.8s 50nm PV3:1.2s 45.5nm
	iPP1	38 47.5	PV4:8s 0.7/um PPV1:2.2s 155nm
	i(PP2)	38 51.5	PPV3:2.6s 278nm PPV4:2.3s 320nm
	iPP3	39 01.0	SKSH3:8s 1.7/um SKSH4:10.5s 1.5/um
	iPP4	39 08.5	SH3:8s 1.0/um SH4:16s 2.6/um
	ePPP	40 59	SPV1:11s 1.4/um SPV4:14s 3.1/um
	eSKS1	45 26	SPH4:16s 3.0/um SSH4:(16s 6.3/um)
	eSKS3	45 40	LmH:24s 15.2/um LmV:18.5s 9.9/um
	eSKS4	45 48	MPV2=5.7 MPV3=6.0 MPV4=6.3 MPPV1=6.1
	eS1	46 08	MPPV3=6.2 MPPV4=6.4 MLH=6.4 MLV=6.3
	eS3	46 22	Multiple onsets of body waves. Successive
	eS4	46 29	shocks in the same focus?
	eSP1	47 36	
	eSP4	47 56	
	ePKKP	51 14	
	eSS1	52 52	
	iSS4	53 10	
	LmH	15 12.7	
	LmV	22.7	
10.	-ePKP	15 17 52	Tonga Islands 19.36°S 173.09°W
	+e	18 07	H = 14 58 04.2 h = 10 km MAG=5.1
	e	18 13	D = 148.6° Az = 354.3° (USCGS)
	e	18 42	
10.	+iP	20 25 06.5	Kurile Islands 47.18°N 150.76°E
	+e	25 11.5	H = 20 13 33.0 h = 162 km MAG=5.3 (USCGS)
	-e(PoP)	25 17	D = 76.5°
	e	25 26	PV1:2.0s 81.5nm PV2:1.4s 33.3nm
	i	25 50.0	PV3:1.4s 23.8nm
			MPV=5.1
11.	eP	06 53 01.5	Greece 39.9°N 22.8°E
	LmH	57.3	H = 06 49 49 h = normal
	LmV	58.6	D = 13.3° (ANUSSR)
11.	e	07 19 21	

Day	Phase	h m s	Remarks
11.	e	13 29 27	Probably explosion.
	e	29 33	
	e	29 40	
12.	i(Pg)	11 01 38.0	Explosion.
	i(Sg)	01 57.5	D = ca. 1.5°
12.	ePKP	11 58 46.5	Tonga Islands 18.32°S 174.79°W
	ei	58 49	H = 11 39 25.5 h = 190 km MAG=5.6 (USCGS)
	i	58 57	D = 147.3° (h = ca. 180 km)
	e(pPKP)	59 35	PV2:1.6s 94.7nm PV3:1.2s 36.4nm
	ei	12 00 37	
12.	i	12 07 11.0	
12.	eP	13 39 35	Greece 38.94°N 21.39°E
	e	39 50	H = 13 36 20.2 h = normal MAG=4.5
	e	40 19.5	D = 13.6° AZ = 332.6° (USCGS)
	e	43 13	LmH:12.5s 1.85/um LmV:12s 2.3/um
	e	44 41	MLH=4.3 MLV=4.6
12.	eP	16 42 04.5	Afghanistan-USSR Border Region
			36.56°N 71.50°E
			H = 16 34 11.3 h = 188 km MAG=4.9
			D = 44.4° Az = 308.1° (USCGS)
			PV:1.0s 21.8nm
			MPV=4.6
12.	e(Sn)	23 44 42	Switzerland 46.8°N 8.9°E
	e	45 03.5	H = 23 42 46 (BCIS)
			D = 4.5°
13.	+iP	05 05 46.3	Eastern Kazakh SSR 49.82°N 78.13°E
	+iPn	07 19.0	H = 04 57 57.7 h = 0 km MAG=6.3 (USCGS)
	-iPP	07 22.5	D = 41.3°
	eLg2	20.0	PV:0.8s 847nm
	LmV	24.0	LmV:9s 0.9/um
			MPV=6.7 MLV=5.0
			Underground explosion.

Day	Phase	h m s	Remarks
13.	eP	10 55 59	China 26.13°N 103.23°E
	e	56 03	H = 10 44 41.0 h = normal MAG=5.7 (USCGS)
	e	56 24	D = 71.1°
	eS	11 05 16	PV2:2.0s 178nm SH:11s 1.4/um
	eScS	06(00)	LmH:20s 6.7/um LmV:17s 4.0/um
	eSS	09 56	MPV2=5.8 MSH=6.0 MLH=5.9 MLV=5.8
	eSSS	13 36	
	LmH	24.3	
	LmV	33.0	
13.	eP	13 28 49	Unimak Island 53.77°N 163.32°W
			H = 13 17 00.5 h = 10 km MAG=4.3 (USCGS)
			D = 75.7°
13.	eP	19 18 21.5	West Pakistan 29.84°N 69.67°E
	e	18 25.5	H = 19 09 47.4 h = normal MAG=5.1
	e	18 48	D = 47.6° Az = 313.0° (USCGS)
	LmH	43.2	PV1:1.5s 25.0nm PV2:1.6s 36.8nm
	LmV	43.3	LmH:14s 1.2/um LmV:14s 1.3/um
			MPV1=5.1 MLH=5.0 MLV=5.1
14.	eP	05 49 43	West Pakistan 29.29°N 69.47°E
	e	49 47	H = 05 41 06.5 h = 44 km MAG=4.8
			D = 47.8° Az = 313.3° (USCGS)
14.	e(PKP)	06 32 34	South of Australia 50.68°S 139.69°E
			H = 06 12 48.4 h = normal MAG=5.0
			D = 147.6° Az = 290.5° (USCGS)
14.	eP	18 02 13	Eastern Mediterranean Sea
	-i	02 15.0	34.99°N 27.19°E
	LmH	10.2	H = 17 57 50.0 h = 46 km MAG=5.0 (USCGS)
	LmV	11.2	D = 19.0°
			PV2:1.1s 84.5nm
			LmH:12s 1.3/um LmV:12s 1.7/um
			MPV2=4.9 MLH=4.5 MLV=4.7
14.	eP	20 20 15	Greece 38.95°N 21.91°E
	e	20 21.5	H = 20 17 00.5 h = 73 km MAG=4.3

Day	Phase	h m s	Remarks
cont.			
14.	LmH	20 26.0	D = 13.8° Az = 331.5° (USCGS)
	LmV	26.1	LmH:12s 1.2/um LmV:11s 1.6/um
			MLH=4.1 MLV=4.5
15.	eP	01 40 49.5	Ryukyu Islands 27.87°N 128.85°E
			H = 01 28 16.9 h = normal MAG=4.7 (USCGS)
			D = 84.2°
15.	ePKHKP	10 16 23	Fiji Islands 22.68°S 176.22°W
	ePKP2	16 31	H = 09 56 29.8 h = normal MAG=5.0 (USCGS)
	e(pPKP)	16 40	D = 151.4°
			PV2:1.0s 30.4nm
15.	e	22 53 16	
15.	e	22 55 23	Probably Fiji Islands 26.48°S 178.23°E
	e	55 38	H = 22 34 05.4 h = 593 km MAG=5.6 (USCGS)
			D = 153.7°
16.	-iPKP	03 37 54	New Hebrides Islands 17.68°S 167.95°E
	e	37 58.5	H = 03 18 27.2 h = 31 km MAG=6.5 (USCGS)
	ePP	41 06	D = 142.0°
	+iSKP	41 32	PV1:2.5s 160nm PV2:2.2s 246nm
	eSKKS	47 53	PPV:7.3s 2.7/um SKKSH:9s 3.6/um
	iPPS	53 26	LmH:24s 13.5/um LmV:24s 15/um
	eSS	59 40	MPPV=6.7 MLH=6.6 MLV=6.7
	LmH	04 37.5	e 38 01.5 e 46 00
	LmV	37.5	
16.	eP	11 05 43	Southern Algeria
	e	05 48.5	H = 11 00 00 (UPP)
	e(PP)	06 19	D = 26.7°
			PV:1.2s 34nm
			MPV=4.9
			Probably underground explosion.

Day	Phase	h m s	Remarks
16.	eP	12 10 09	Fox Islands/Aleutian Is.
	e(pP)	10 20	52.41°N 169.57°W
			H = 11 58 14.2 h = 47 km MAG=4.8 (USCGS)
			D = 77.4° (h = 42 km)
16.	ePKP	23 56 57	Tonga Islands 18.13°S 173.80°W
	e	57 04	H = 23 37 04.6 h = normal MAG=5.2
	e	57 23	D = 147.3° Az = 353.6° (USCGS)
17.	eP	12 01 51	Mid-Indian Rise 32.22°S 78.87°E
	e	05 15	H = 11 48 00.8 h = normal MAG=6.4
	ePP	06 04	D = 101.6° Az = 323.2° (USCGS)
	eSKS	12 32	PV1:2.0s 44.4nm PV2:2.4s 91nm
	eS	13 32	LmH:16s 3.8/um LmV:16s 4.8/um
	ePS	15 06	MPV=5.8 MLH=6.0 MLV=6.1
	e	16 24	
	ePKKP	17(36)	
	eSS	20(40)	
	eSSS	24(40)	
	LmH	13 02.2	
	LmV	04.5	
17.	e(Pg)	12 18 45	Northern Italy 44.9°N 10.9°E
	e(Sn)	19 23	H = 12 16 57 (BCIS)
	eSg	20 05	D = 5.9°
	e	20 12.5	
	e	20 18	
17.	ePKHKP	18 39 24.5	South of Fiji Islands 23.47°S 179.87°W
	iPKP2	39 36.0	H = 18 20 32.4 h = 548 km MAG=5.6 (USCGS)
	ipPKP	41 38	D = 151.7° (h = 587 km)
18.	+iP	00 40 08.0	East Coast of Honshu/Japan
			36.70°N 140.43°E
			H = 00 27 53.6 h = 65 km MAG=5.1
			D = 82.1° Az = 329.9° (USCGS)
			PV:0.9s 21.8nm
			MPV=5.1

Day	Phase	h m s	Remarks
18.	iP	01 12 08.0	
18.	eiP	03 56 35	China 26.31°N 103.02°E H = 03 45 15.4 h = 35 km MAG=5.0 D = 71.0° Az = 317.7° (USCGS)
18.	eP	07 12 41	Mindanao/Philippine Islands
	ePP	16 42	6.93°N 124.03°E
	eSS	31.0	H = 06 59 05.0 h = 57 km MAG=5.5 (USCGS)
	LmH	54.7	D = 98.6°
	LmV	08 04.7	
18.	eP	19 14 18	Hokkaido/Japan 44.30°N 143.13°E
	e	15 12.5	H = 19 02 51.5 h = 225 km MAG=5.2 D = 76.5° Az = 330.6° (USCGS); h = 230 km PV:1.0s 15.4nm MPV=4.7
19.	eP	12 58 53	Hindu Kush 35.29°N 70.86°E
	epP	59 07	H = 12 50 42.1 h = 59 km MAG=5.1
	esP	59 15.5	D = 44.8° Az = 309.0° (USCGS);
	e	13 01 01	h = 63 km PV1:1.4s 24nm PV2:2.0s 37.0nm MPV=5.0
20.	iP	06 09 38.5	Near East Coast of Kamchatka
	epP	09 51.5	53.09°N 159.75°E
	esP	09 56	H = 05 58 09.6 h = 44 km MAG=4.9 D = 73.2° Az = 339.4° (USCGS); h = 45 km PV:1.0s 19.0nm MPV=5.2
20.	ePKP	06 30 31	Fiji Islands 17.94°S 178.53°W H = 06 11 54.4 h = 583 km D = 146.4° Az = 348.3° (USCGS) PV:1.2s 12.8nm

Day	Phase	h m s	Remarks
20.	+eP	18 27 40	Kurile Islands 47.97°N 154.98°E
	epP	27 50.5	H = 18 15 50.0 h = normal MAG=5.1 (USCGS)
	esP	27 54	D = 77.0° h = 40 km PV:1.1s 40.0nm MPV=5.5
20.	iP	18 28 45.0	Kurile Islands PV:1.6s 50.0nm MPV=5.4 Probably the seoond shock in the same focus.
21.	e	00 36 54	
21.	e	00 41(32)	Probably South Sandwich Islands Region
	e	57.0	55.62°S 26.91°W
	LmH	01(10)	H = 00 22 29.7 h = normal MAG=5.9 (USCGS) D = 110.5°
21.	-iP	13 31 07.2	Northeast of Taiwan 26.25°N 125.73°E
	e	31 18	H = 13 18 47.0 h = 103 km MAG=5.6
	e	31 30	D = 83.9° Az = 324.2° (USCGS)
	ePP	34 18	PV:2.0s 126nm
	e	34 48	MPV=5.5
	LmH	14 01	
21.	eP	14 25 49	Near East Coast of Kamchatka
	e	26 02.5	55.59°N 162.94°E H = 14 14 29.6 h = normal MAG=4.9 D = 71.5° Az = 341.2° (USCGS)
22.	e(Sg)	00 23 06	Switzerland 46.3°N 7.4°E H = 00 20 16 (BCIS) D = 5.1°
22.	eP	05 18 12	New Britain Region 5.40°S 151.55°E
	+ePKIKP	21 32.5	H = 05 02 37.2 h = 28 km MAG=6.2
	e	21 35.5	D = 123.9° Az = 330.4° (USCGS)
	ePP	23 19	PV2:1.2s 95.5nm PPV:28s 7.8/um
	ePPP	25(54)	PPH:28s 6.3/um PSH:28s 14.0/um

Day	Phase	h m s	Remarks
cont.			
22.	ePKKP	05 31 20	LmV:20s 47.8/um LmH:20s 28.9/um
	ePS	33 12	MPPV=6.6 MPPH=6.6 MLV=7.2 MLH=6.9
	LmV	19.0	e 21 40 e 21 49 e 22 05.5 e 24 42
	LmH	20.2	
22.	ePKIKP	18 37 30	New Britain Region 5.60°S 151.48°E
	LmH	19 29	H = 18 18 36.4 h = 58 km MAG=5.5
	LmV	34	D = 124.0°
23.	ePg	13 48 47	Switzerland 46.3°N 7.4°E
	eSg	49 54	H = 13 47 06 (BCIS)
	e	50 05.5	D = 5.2°
23.	e	16 31 52	
24.	eP	00 27 10	Eastern India 26.39°N 91.51°E
	e	27 19	H = 00 16 40.5 h = 47 km MAG=5.1
			D = 63.8° Az = 315.7° (USCGS)
24.	i	09 26 29.0	
24.	eP	21 31 37.5	Central Mid-Atlantic Ridge
	epP	31 45	1.63°N 29.45°W
	esP	31 50	H = 21 21 32.2 h = normal MAG=4.7
			D = 59.9° Az = 28.9° (USCGS);
			h = 33 km
25.	e	03 04 15	
25.	ePKP	23 10 20.5	Tonga Islands 15.10°S 173.19°W
	eipPKP	10 33	H = 22 50 47.1 h = normal MAG=5.5 (USCGS)
	LmH	00 18.5	D = 144.3° h = 45 km
	LmV	18.5	
26.	+eiP	00 45 34	Near Islands/Aleutian Is.
			52.44°N 173.62°E
			H = 00 33 50.1 h = 51 km MAG=5.3
			D = 76.2° Az = 348.3° (USCGS)
			PV:1.4s 54.8nm
			MPV=5.5

Day	Phase	h m s	Remarks
26.	eP	03 08 47	
26.	ePKP	11 41 21	Tonga Islands 15.40°S 173.37°W
	e	41 27.5	H = 11 21 56.8 h = 127 km MAG=4.9
	e	41 29.5	D = 144.6° Az = 354.5° (USCGS)
27.	eP	16 42 05	Rat Islands/Aleutian Is. 52.13°N 175.06°E
	LmH	17 10	H = 16 30 17.9 h = 52 km MAG=5.2 (USCGS)
			D = 76.5°
27.	e(PKP2)	16 46 15	Kermadec Islands 30.69°S 179.48°E
			H = 16 26 37.5 h = 502 km MAG=5.0
			D = 158.2°
27.	eP	20 54 43	Unimak Island 53.92°N 164.00°W
	LmH	21 30	H = 20 43 00.3 h = 40 km MAG=5.0
			D = 75.7° Az = 2.9° (USCGS)
27.	eP	20 57 50	Michoacan/Mexico 18.79°N 102.58°W
			H = 20 44 59.0 h = 94 km MAG=5.3
			D = 90.0° Az = 35.5° (USCGS)
27.	i	22 16 38	
27.	eP	22 27 02	PV:2.0s 44.5nm
28.	e(Sg)	01 10 57	Alps of Swabia/GFR 48.2°N 9.7°E
			H = 01 09 27 (BCIS)
			D = 2.7°
28.	-iP	02 13 35.7	West of Hokkaido/Japan 43.74°N 139.56°E
	-i	13 37.8	H = 02 02 13.6 h = 225 km MAG=5.5
	e	13 40	D = 75.7° Az = 328.8° (USCGS)
	+ePcP	13 48.5	PV1:1.6s 126nm PV2:1.2s 141nm
	epP	14 24	PV3:1.3s 88.5nm PcPV:1.0s 43.5nm
	e(PP)	16 24	MPV1=5.4
	eiS	22 58.5	-i 13 44.0 e 14 21 e 14 31 e 14 44
	LmH	(50)	e 16 12.5
	LmV	(50)	

Day	Phase	h m s	Remarks
28.	iPg	13 10 56.0	Explosion.
	iSg	11 10.5	D = ca. 1.1°
28.	+iP	13 48 06.5	Ryukyu Islands 29.20°N 130.13°E
	e(pP)	48 16.5	H = 13 35 39.0 h = normal MAG=5.5
	e	48 23.5	D = 83.8° Az = 325.8° (USCGS); (h = 37 km)
	eS	58(30)	PV1:1.5s 95.0nm PV2:2.1s 92.0nm
	eScS	58 44	LmH:16.5s 4.3/um LmV:16.5s 6.0/um
	eSS	14 04(30)	MPV=5.7 MLH=6.0 MLV=6.1
	LmH	29.7	
	LmV	29.7	
28.	ePKP	18 12 50.5	Loyalty Islands 21.70°S 170.49°E
	e	13 27	H = 17 53 19.8 h = 106 km
	e	13 32	D = 146.7° Az = 335.2° (USCGS)
			PV:1.2s 20.4nm

Day	Phase	h m s	Remarks
1.	e	07 33 51	
1.	e	10 10 10.5	
1.	e	12 47 29	Probably explosion.
	e	47 54.5	
2.	eP	01 44 42	
2.	eP	02 42 20	East Caucasus 42.99°N 45.81°E
	+iP	42 23.2	H = 02 37 02.3 h = 24 km MAG=5.3
	i(PP)	42 57.2	D = 24.4° Az = 300.2° (USCGS)
	i(PPP)	43 06.5	PV2:1.2s 45.5nm
	e(S)	46(40)	LmH:13s 1.6/um LmV:14.5s 1.7/um
	e	46 52	MPV2=5.0 MLH=4.7 MLV=4.8
	eLi(3.70)	49 17	i 42 26.0 e 42 29.5 i 42 38.5
	iLg(3.38)	50 26	i 42 47.5 i 43 13.5 e 47 16
	iRg(3.09)	51 40	The first P-movement is very small,
	LmH	53.3	followed by a sharp and much bigger
	LmV	53.3	onset 3 s later. Well developed
			higher modes of surface waves.
2.	eP	06 06 50	North of Svalbard 85.99°N 19.02°E
	e	06 56	H = 05 59 54.5 h = normal MAG=4.6
			D = 35.5° Az = 188.1° (USCGS)
2.	LmH	08 38	Probably Ceram (USCGS)
2.	e	11 40 45	Rock burst/Upper Silesia
	e	40 51	e 41 10 e 41 14.5 e 41 20
	e(Sg)	41 07	
2.	iP	12 03 05.7	Near Islands/Aleutian Is.
	epP	03 17.5	52.44°N 172.34°E
			H = 11 51 20.7 h = 40 km MAG=5.3 (USCGS)
			D = 76.2° h = 45 km
			PV:1.3s 27.9nm
			MPV=5.2

Day	Phase	h m s	Remarks
3.	+iP	03 37 14.4	Kurile Islands 48.32°N 154.31°E
	e	37 17	H = 03 25 28.0 h = 45 km MAG=5.9 (USCGS)
	e	37 22	D = 76.2°
	eS	46 52	PV:1.4s 167nm
	eSS	52.0	LmH:20s 2.8/um LmV:21s 4.0/um
	eP'P'	04 04(36)	MPV=6.0 MLH=5.6 MLV=5.7
	LmH	14.3	e 37 29 e 37 32
	LmV	14.2	
3.	e(S)	10 35.0	Northatlantic Ridge 19.98°N 45.70°W
	LmV	47.3	H = 10 17 50.6 h = normal MAG=5.0 (USCGS)
	LmH	47.5	D = 54.2°
			LmH:16s 0.7/um LmV:16s 0.9/um
			MLH=4.8 MLV=5.0
3.	iPg	15 21 17.3	Probably explosion.
	i(Sg)	21 39.5	
	e	21 46	
3.	ePKP	21 48 16	Fiji Islands 20.54°S 178.71°W
			H = 21 29 35.7 h = 605 km MAG=4.8 (USCGS)
			D = 148.6°
4.	ePKP	02 00 27.5	Fiji Islands 17.95°S 178.25°W
			H = 01 41 46.1 h = 532 km MAG=3.7 (USCGS)
			D = 146.3°
4.	eP	06 09 41	West Pakistan 29.98°N 70.00°E
	e	09 47	H = 06 01 05.0 h = normal MAG=4.4
	e	10 07.5	D = 47.7° Az = 312.9° (USCGS)
4.	e	11 05 48.5	
	e	05 52	
4.	eP	11 37 22	
4.	eP	11 50 15.5	

Day	Phase	h m s	Remarks
5.	+ePKIKP	00 18 56	North Island/New Zealand
	+ePKP2	19 50	38.76°S 177.92°E
	ePP	23 35	H = 23 58 55.9 h = 27 km MAG=6.1 (USCGS)
	e(PPP)	27(40)	D = 164.6°
	e(PcPP')	29 00	PV1:2.0s 44.5nm PV2:2.0s 81.5nm
	ePSKS	34 00	LmH:24s 1.7/um LmV:24s 2.3/um
	eSPP	37 25	MLH=5.8 MLV=5.9
	eSS	44.0	
	eSSS	50.7	
	LmH	01 30.5	
	LmV	42.1	
5.	-ePKP	16 04 38	Fiji Islands 17.56°S 176.17°E
	epPKP	04 43.5	H = 15 45 05.0 h = normal MAG=5.4
	e(sPKP)	04 47	D = 144.7° Az = 342.9° (USCGS);
			h = ca. 20 km
			PV1:1.8s 40.5nm PV2:1.6s 31.6nm
5.	eP	21 04 24	North of Ascension Island 0.03°N 17.98°W
	e(pP)	04 34	H = 20 54 45.7 h = normal MAG=5.2 (USCGS)
	e	04 50	D = 56.3° (h = 40 km)
	eS	12 20	PV1:1.8s 25.0nm PV2:2.0s 66.5nm
	eLQ	18.0	SH:19s 1.3/um
	LmH	25.5	LmH:16s 1.4/um LmV:16s 1.4/um
	LmV	29.5	MPV1=5.0 MSH=5.6 MLH=5.2 MLV=5.2
5.	ePKIKP	23 09 19	Tonga Islands 21.48°S 175.31°W
	+iPKHKP	09 24.5	H = 22 49 34.9 h = 40 km MAG=5.1
	+iPKP2	09 31.0	D = 150.4° Az = 351.1° (USCGS);
	e(pPKHKP)	09 37.5	(h = 48 km)
	LmV	00 23	PV2:1.6s 60.5nm PV3:1.5s 45.0nm
	LmH	25	PV4:1.4s 54.7nm
6.	-eP	02 20 14.5	Tibet 31.57°N 80.53°E
	e	20 20	H = 02 10 56.8 h = 35 km MAG=5.4 (USCGS)
			D = 53.1°
			PV:1.8s 50.0nm
			MPV=5.3

Day	Phase	h m s	Remarks
6.	-eP	02 25 12.5	Tibet 31.58°N 80.46°E
	e	25 19.5	H = 02 15 56.7 h = 44 km MAG=6.1 (USCGS)
	e	25 25.5	D = 52.9°
	e(PcP)	26 26.5	PV1:2.4s 261nm PV:6.5s 1.7/um
	e	26 29	(PcP)V:1.7s 278nm PPV2:15s 3.3/um
	ePP1	27 13	PPH2:14s 2.3/um SH2:18s 8.8/um
	ePP2	27 24	LmH:20s 115/um LmV:17s 45.3/um
	ePPP	28 18	MPV1=5.9 MPV=6.3 MPPV2=6.2 MPPH2=6.4
	e(S1)	32 40	MSH2=6.6 MLH=6.9 MLV=6.6
	eS2	32 52	Successive P-onsets with increasing
	eSS	36 28	amplitude seem typical for earthquakes
	eSSS	38 30	from Tibet-China region. Interpretation
	LmH	46.5	as deep-phases for P and
	LmV	50.2	or in terms of focal mechanisms of this
	eP'P'	55 48	region is open.
6.	ePKP	18 21 42	South of Fiji Islands 24.14°S 176.93°W
	e	21 46	H = 18 01 50.0 h = normal MAG=5.4
	e	21 50	D = 152.7° Az = 348.1° (USCGS)
	e	22 54	LmH:20s 0.9/um LmV:18s 1.2/um
	LQ	19 04.6	MLH=5.6 MLV=5.7
	LmH	37.7	
	LmV	39.4	
6.	e	23 36 53	
	e	37 07	
7.	e(P)	00 10 16.5	
7.	-eP	01 21 21.5	Turkey 39.12°N 41.74°E
	e	21 28	H = 01 16 05.8 h = 13 km MAG=5.5
	e	21 31	D = 24.1° Az = 308.5° (USCGS)
	eS	25 40	PV1:1.4s 42.8nm PV2:1.8s 200nm
	eSS	26 20	SH:14.5s 6.0/um
	LmH	33.1	LmH:15s 13.8/um LmV:15.5s 9.1/um
	LmV	33.1	MPV1=4.9 MPV2=5.4 MSH=5.8 MLH=5.6
			MLV=5.5

Day	Phase	h m s	Remarks
7.	ePKHKP	02 54 09	Fiji Islands 20.53°S 178.44°W
	e(PKP2)	54 16.5	H = 02 35 27.6 h = 601 km MAG=4.9
			D = 148.9° Az = 347.6° (USCGS)
			PV:1.5s 45.0nm
7.	eP	17 17 18.5	Eastern Caucasus 42.95°N 45.96°E
			H = 17 11 59.9 h = normal MAG=4.6 (USCGS)
			D = 24.0°
7.	i(Pg)	21 22 47	Austria 47.1°N 14.4°E
	iSg	23 51.5	H = 21 21 41 (BCIS)
			D = 4.0°
7.	eP	21 40 23.5	Northeastern China 37.24°N 114.84°E
	e(pP)	40 32	H = 21 29 17.0 h = normal MAG=5.8 (USCGS)
	e(PcP)	40 47	D = 69.4° (h = 32 km)
	e(pPcP)	40 55.5	PV:2.5s 179nm (PcP)V:2.4s 216nm
	ePP	43(02)	MPV=5.8 MLH=7.3
	eS	49 32	Successive P-onsets with increasing
	eSS	54 00	amplitude. Interpretation as given or in
	eSSS	57.5	terms of successive temporal stress-
	eLQ	58.6	release in the focal region for north-
	LmH	22 12.8	eastern China-earthquakes is open. The
			remarkable difference between magnitudes
			from body and surface waves seems to be
			typical for registrations of northeastern
			China-earthquakes at our station.
7.	eP	22 46 52.5	Tibet 29.25°N 98.59°E
	epP	46 57	H = 22 36 03.2 h = 17 km MAG=5.2
	e	47 02	D = 66.2° Az = 316.0° (USCGS);
	e	47 10	h = 17 km
			PV:1.3s 28.0nm
			MPV=5.3
8.	ePKIKP	00 37 52.5	Tonga Islands 18.89°S 173.28°W
	iPKHKP	37 56.0	H = 00 18 09.8 h = normal MAG=5.3
	e	38 04	D = 148.1° Az = 354.1° (USCGS)
			PV2:2.0s 96.5nm

Day	Phase	h m s	Remarks
8.	ePKIKP	01 33 03	New Hebrides Islands 13.86°S 166.56°E
	e	33 21.5	H = 01 13 42.3 h = 37 km MAG=5.8 (USCGS)
	ePP	35 50	D = 138.0°
	e	36 32	PV:1.9s 46.6nm SKPV:1.0s 50.0nm
	+iSKP	36 44.0	The phase interpreted as SKP is very
	LmH	02 26.5	well developed only in the registrations
	LmV	26.5	of the shortperiod vertical instruments.
8.	eP	05 55 06	Molucca Passage 1.86°N 126.35°E
	epP	55 16	H = 05 41 04.5 h = normal MAG=5.9 (USCGS)
	ePP	59 28	D = 104.1° h = 36 km
	e	59 40	PV:2.8s 120nm SKSH:11.5s 1.3/um
	eSKS	06 05 38	LmH:18.5s 6.4/um LmV:19s 8.3/um
	eS	06 56	MLH=6.2 MLV=6.3
	LmH	47.2	
	LmV	47.2	
8.	e(Pg)	12 44 56	Explosion/GDR
	e(Sg)	45 11.5	D = 1.2°
8.	eP	18 54 59	Greece 38.91°N 21.35°E
	LmH	59.8	H = 18 51 47.2 h = 48 km MAG=5.1
	LmV	19 00.9	D = 13.6° Az = 332.8° (USCGS)
			LmH:12.5s 1.4/um LmV:9.5s 1.4/um
			MLH=4.2 MLV=4.5
8.	e(P)	20 59 50	Chile-Bolivia Border Region
	e	59 52.5	19.99°S 68.91°W
	ePP	21 03 41	H = 20 46 12.0 h = 122 km MAG=5.9 (USCGS)
	eSKS	10 16	D = 99.4°
	LmH	(36)	PV2:1.4s 16.7nm SKSH:8s 0.6/um
	LmV	(36)	e 00 10 e 03 34
			First motion of P, which must be 11 s
			earlier, is not detectable.
8.	e	21 16 33.5	

Day	Phase	h m s	Remarks
8.	ePKP	23 35 36	Tonga Islands 21.47°S 175.21°W
	e	35 45	H = 23 15 45.1 h = normal MAG=4.7
	e	35 49	D = 150.4° Az = 351.2° (USCGS)
			PV:1.2s 18.2nm
9.	e(P)	11 00 43	
9.	i	15 00 35	
9.	ePKP	16 03 06	Easter Island Cordillera 55.19°S 126.70°W
	e	03 26	H = 15 43 11.1 h = normal MAG=5.0
			D = 154.7° Az = 82.9° (USCGS)
10.	-eiP	04 38 12	South of Honshu/Japan 32.20°N 137.54°E
	epP	39 43	H = 04 26 19.6 h = 382 km MAG=5.6
	ePP	41 31	D = 84.7° Az = 328.8° (USCGS);
	eiS	48 00	h = 400 km
	LmH	05 17.3	PV:2.0s 89.0nm SH:6.0s 1.75/um
	LmV	19	LmH:12s 0.7/um LmV:12s 0.6/um
			MPV=5.6 MSH=5.9
			e 39 52 i 41 12.5 e 50 46
10.	e(P)	06 52 52.5	
10.	eP	11 24 06	Turkey 39.3°N 41.6°E
	e	25 43	H = 11 18 56 (BCIS)
	e	26 21	D = 23.8°
	e	27 35.5	
10.	ePKHKP	12 34 28	Fiji Islands 19.33°S 177.02°W
	epPKHKP	35 50	H = 12 15 19.4 h = 320 km MAG=5.5
			D = 148.0° Az = 349.6° (USCGS);
			h = 335 km
10.	e	16 16 43	
11.	e	02 06 06	

Day	Phase	h m s	Remarks
11.	e(Sg)	04 11 51	Explosion?
	e	12 04	
	e	12 15	
11.	ePKHKP	08 14 21	Easter Island Cordillera 55.19°S 126.61°W
			H = 07 54 17.0 h = normal MAG=5.3
			D = 154.7° Az = 82.9° (USCGS)
			PV:1.4s 19.0nm
11.	+eP	20 06 03	Crete 34.40°N 24.44°E
	e	06 07	H = 20 01 43.8 h = 22 km MAG=5.1
	ePP	06 15	D = 18.7° Az = 333.9° (USCGS)
	ePPP	06 27	PV:1.5s 50.0nm
	LmH	15.0	LmH:16s 1.7/um LmV:(16s) 1.7/um
	LmV	15.0	MLH=4.5 MLV=4.5
11.	eP	20 14 02	
11.	e(P)	23 22 03.5	North Atlantic Ridge 28.37°N 43.83°W
			H = 23 13 27.2 h = normal MAG=5.0 (USCGS)
			D = 47.0°
11.	eP	23 24 12.5	North Atlantic Ridge 28.24°N 43.91°W
			H = 23 15 42.3 h = normal MAG=5.0
			D = 47.1° Az = 45.8° (USCGS)
			PV:1.8s 43.7nm
			MPV=5.2
11.	eiP	23 45 12	North Atlantic Ridge 28.46°N 43.99°W
			H = 23 36 42.7 h = normal MAG=5.1
			D = 47.0° Az = 45.9° (USCGS)
			PV:1.8s 31.2nm
			MPV=5.1
12.	ePKP2	01 25 56	Kermadec Islands 30.81°S 178.53°W
			H = 01 05 34.6 h = 94 km MAG=5.4 (USCGS)
			D = 158.9°
			PV:1.6s 31.6nm
12.	e(P)	11 08 19	

Day	Phase	h m s	Remarks
12.	e(PKP)	12 28 46	Probably Kermadec Islands (USCGS)
12.	ePKP	14 39 10	Samoa Islands 14.99°S 173.62°W
			H = 14 19 38.0 h = 35 km MAG=5.1
			D = 144.2° Az = 354.3° (USCGS)
			PV:2.0s 48.0nm
12.	iPKP	14 46 32.0	Tonga Islands 15.65°S 173.04°W
			H = 14 26 57.6 h = normal MAG=5.2 (USCGS)
			D = 144.9°
12.	+iP1	16 43 47.5	Taiwan 24.12°N 122.61°E
	+iP2	43 55	H = 16 31 21.8 h = 63 km MAG=6.7
	eiPP	47 04	D = 84.0° Az = 323.3° (USCGS)
	e(PPP)	48 45	PV1:4.5s 1.2/um PV2:15s 100/um
	e(Pa)	50 45	PPV:14s 35/um SH2:13s 98.5/um
	iS1	54 08	LmH:20s 590/um LmV:20s 670/um
	iS2	54 14	MPV1=6.3 MPV2=7.7 MPPV=7.7 MSH2=7.8
	eP'P'1	17 10 11	MLH=8 MLV=8
	+iP'P'2	10 20.0	Double shock. Much bigger P2-onset
	eSKPP'1	13 25	followed by P1 after 7.5 s.
	eSKPP'2	13 32	
	LmH	26.5	
	LmV	27	
12.	eP	18 12 02	Taiwan 24.39°N 122.78°E
	e	12 05.5	H = 17 59 38.9 h = 83 km MAG=5.7 (USCGS)
			D = 84.0°
12.	eP	18 26 06	Probably Taiwan.
12.	eP	19 26 20	Probably Taiwan.
12.	eP	19 35 29	Taiwan 24.00°N 122.91°E
	e	35 31.5	H = 19 23 01.8 h = 63 km MAG=4.9
			D = 84.2° Az = 323.4° (USCGS)
			PV:1.8s 31.2nm
			MPV=5.1

Day	Phase	h m s	Remarks
12.	e(P)	21 43 46	
	e	43 52	
12.	eP	22 13 14	
12.	eP	22 16 41	Taiwan 24.29°N 122.72°E
			H = 22 04 17.7 h = normal MAG=4.6 (USCGS)
			D = 83.8°
12.	eP	22 50 25	Western Mediterran Sea 39.3°N 05.7°E
	e	50 38	H = 22 47 33 (BCIS)
			D = 11.2°
13.	eP	01 45 10	North Atlantic Ridge 28.29°N 43.81°W
			H = 01 36 34.0 h = normal MAG=4.9 (USCGS)
			D = 46.9°
13.	eP	03 30 25	
13.	eP	15 06 15	Taiwan 23.80°N 122.71°E
	LmH	48.2	H = 14 53 47.6 h = 51 km MAG=5.0
			D = 84.3° Az = 323.3° (USCGS)
			LmH:14s 0.6/um
			MLH=5.1
13.	ePKIKP	18 18 26.5	Easter Island Cordillera
	ePKHKP	18 35	54.95°S 126.41°W
	ePKP2	18 51	H = 17 58 35.6 h = normal MAG=5.4
	LmH	19 20	D = 154.5° Az = 82.2° (USCGS)
	LmV	25	PV2:1.8s 25.0nm PV3:2.2s 81.8nm
13.	iPKHKP	19 00 23.0	Tonga Islands 20.89°S 175.42°W
	epPKHKP	00 44	H = 18 40 40.7 h = 65 km MAG=5.2
	e	00 55	D = 149.8° Az = 351.1° (USCGS);
			h = 75 km
			PV1:1.4s 52.5nm PV2:1.8s 106nm
13.	eP	19 39(11)	Greece 38.94°N 21.57°E
	e	39 20	H = 19 35 51.5 h = 11 km MAG=4.3 (USCGS)
			D = 13.7°

Day	Phase	h m s	Remarks
14.	eP	03 31 36	Central Mid-Atlantic Ridge
	e(pP)	31 42.5	0.88°N 27.68°W
	e	31 47	H = 03 21 31.7 h = normal MAG=5.2
			D = 59.7° Az = 27.8° (USCGS); h = 25 km
			PV1:2.0s 44.5nm PV2:1.9s 63.5nm
			PV3:2.0s 52.0nm
14.	e(P)	04 28 48	
14.	eP	04 53 19	Tibet 32.43°N 97.39°E
			H = 04 42 50.4 h = normal MAG=4.9 (USCGS)
			D = 63.3°
14.	iP	06 50 20.5	Honshu/Japan 37.14°N 140.83°E
	e(pP)	50 35	H = 06 38 06.5 h = 63 km MAG=4.8 (USCGS)
			D = 81.7°
14.	LmH	10 16	Taiwan 23.81°N 122.32°E
	LmV	16	H = 09 21 49.2 h = 43 km MAG=4.8 (USCGS)
			D = 84.0°
14.	e(P)	12 22 54.5	
14.	e	13 41 26	
14.	eP	14 11 50.5	Greece 39.17°N 21.36°E
	e	11 58	H = 14 08 40.7 h = 48 km MAG=4.4
	LmH	16.4	D = 13.4° Az = 332.2° (USCGS)
	LmV	17.7	LmH:13s 2.7/um LmV:13s 1.25/um
			MLH=4.5 MLV=4.3
15.	e(P)	09 23 08	West Pakistan 29.93°N 69.72°E
	e	23 14.5	H = 09 14 29.3 h = 36 km MAG=4.7
	e	23 17	D = 47.6° Az = 312.9° (USCGS)
15.	LmH	11 24	
	LmV	27.2	

Day	Phase	h m s	Remarks
15.	eP	11 26 25	Taiwan 24.22°N 122.69°E
			H = 11 14 00.9 h = 65 km MAG=5.2
			D = 83.9° Az = 323.3° (USCGS)
15.	ePKHKP	16 29 10	South of Fiji Islands 22.12°S 79.39°W
	ePKP2	29 19	H = 16 10 25.0 h = 588 km MAG=4.4 (USCGS)
			D = 150.1°
			PV1:1.3s 23.2nm PV2:1.3s 18.6nm
15.	eP	23 44 15	Taiwan 24.41°N 122.67°E
	LmH	00 26.8	H = 23 31 46.1 h = 22 km MAG=5.6 (USCGS)
	LmV	25.9	D = 84.0°
			LmH:16.5s 1.5/um LmV:15s 1.7/um
			MLH=5.5 MLV=5.6
16.	ePKP	00 03 03	Fiji Islands 17.99°S 178.20°W
			H = 23 44 27.6 h = 606 km MAG=4.5 (USCGS)
			D = 146.4°
16.	eSg	01 24 03	Belgium 50.5°N 4.2°E
			H = 01 21 30 (BCIS)
			D = 4.7°
16.	i	11 25 26.0	Switzerland 47.4°N 8.2°E
	eSg	25 52	H = 11 23 46 (BCIS)
			D = 3.9°
16.	ePKIKP	12 32 43.5	Tonga Islands 21.20°S 174.32°W
	ePKHKP	32 48.5	H = 12 13 02.4 h = 66 km MAG=5.4
	e	32 52	D = 150.2° Az = 352.4° (USCGS)
	e	33 01.5	PV2:1.5s 75.0nm PV3:1.7s 116nm
	LmH	13 50	LmH:16s 0.5/um LmV:16s 0.45/um
	LmV	50	MLH=5.4 MLV=5.4
16.	iPn	13 28 07.0	Austria 47.4°N 11.5°E
	iPb	28 12.5	H = 13 27 16 (BCIS)
	iPg	28 18	D = 3.2°
	iSn	28 45	
	iSg	29 00	

Day	Phase	h m s	Remarks
16.	iPg	15 52 02.6	Austria 47.4°N 11.5°E
	e	52 13.5	H = 15 51 00 (BCIS)
	eSn	52 28	D = 3.2°
	eSg	52 45	
16.	eP	20 51 47	Sulu Sea 9.52°N 121.95°E
	eS	21 03 05	H = 20 38 23.5 h = 24 km MAG=5.4
	LmH	38.5	D = 95.2° Az = 323.2° (USCGS)
	LmV	42.3	PV:1.5s 25.0nm
			LmH:16s 0.6/um LmV:16s 0.9/um
			MPV=5.4 MLH=5.2 MLV=5.4
17.	e	04 11 40	
17.	-iPKIKP	16 09 06.5	Fiji Islands 21.08°S 179.18°W
	-iPKHKP	09 12.5	H = 15 50 32.2 h = 626 km MAG=6.2 (USCGS)
	-iPKP2	09 19.5	D = 149.4° h = ca. 670 km
	epPKP	11 40	PV1:2.3s 1140nm PV2:2.2s 6050nm
	esPKP	12 36	PV3:1.7s 1780nm pPKPV:5.5s 2.2/um
	ePP	12 56	sPKPV:7s 4.7/um PPV:12s 3.0/um
	esPP	16 02	sPPV:12s 2.7/um
	ePSKS	23.0	MPPV=6.2
	eSS	32.0	
	esSS	35.0	
17.	eP	16 45 42	
18.	e(P)	03 04 44.5	
	e	04 55	
	e	05 36.5	
	e	06 20	
18.	e(P)	14 26 13	Andreanof Islands/Aleutian Is.
			51.82°N 174.71°W
			H = 14 14 13.9 h = 56 km MAG=4.7 (USCGS)
			D = 77.8°
			The first onset of P must be 7 s earlier than e(P).

Day	Phase	h m s	Remarks
18.	+iP	18 22 07.5	South of Alaska 60.34°N 146.60°W
	e	22 12	H = 18 11 09.4 h = 34 km MAG=4.9 (USCGS)
	e	22 14	D = 68.0°
	LmV	54.3	PV:1.1s 28.8nm
	LmH	56.7	MPV=5.4
18.	ePKP	21 05 48.5	New Hebrides Islands 20.72°S 169.72°E
	ipPKP	06 12.5	H = 20 46 19.4 h = 78 km MAG=5.1
	isPKP	06 25.5	D = 145.5° Az = 335.2° (USCGS);
			h = ca. 90 km
			PV1:1.2s 31.8nm PV2:1.4s 23.8nm
			PV3:1.0s 39.1nm
19.	eP	08 23 42	Hokkaido/Japan 43.26°N 145.76°E
	e	23 47	H = 08 11 40.3 h = 11 km MAG=5.6 (USCGS)
	e	24 07	D = 78.4°
	e	24 14	PV:1.8s 31.2nm
			MPV=5.1
19.	eP	15 12(05)	Taiwan 23.78°N 122.51°E
	e	12 26	H = 14 59 37.0 h = 42 km MAG=5.7
	e	12 49	D = 84.2° Az = 323.3° (USCGS)
	e	12 56	
19.	e	17 30(52)	Southwest of Africa 52.73°S 19.93°E
	e	34 54	H = 17 16 40.9 h = normal MAG=5.4 (USCGS)
	e	35 18.5	D = 103.0°
	LmH	18 23.4	LmH:18s 1.9/um LmV:18s 2.4/um
	LmV	23.4	MLH=5.7 MLV=5.8
			First-motion of P is not detectable.
19.	LmH	17 40.2	Northeastern China 37.38°N 114.82°E
	LmV	44.2	H = 16 59 41.7 h = normal MAG=4.9 (USCGS)
			D = 69.4°
			LmH:13.5s 1.7/um LmV:14.5s 2.1/um
			MLH=5.5 MLV=5.5

Day	Phase	h m s	Remarks
20.	e	00 10 11	Belgium 50.0°N 4.2°E
	e(Sn)	10 15	H = 00 08 14 (BCIS)
	e	10 32	D = 4.8°
	eSg	10 48	
	e	10 53	
20.	-iP1	01 51 58.0	Uganda 0.58°N 30.16°E
	-iP2	51 59.2	H = 01 42 49.9 h = 36 km MAG=6.1
	+i	52 12.0	D = 52.3° Az = 345.2° (USCGS)
	e	52 13	PV2:2.2s 573nm PV3:2.0s 785nm
	ePcP	53 12	PPV:15s 12/um PPH:15s 9/um
	ePP	54 00	SH:19s 47/um
	eS	59 20	LmH:19.5s 228/um LmV:19s 294/um
	e(ScS)	02 01 52	MPV2=6.3 MPPV=6.6 MPPH=6.9 MSH=7.2
	eSS	02 56	MLH=7.3 MLV=7.4
	e	05(40)	P1 is a small-amplitude precursor.
	LmH	16.3	
	LmV	16.3	
	eP'P'	22 40	
20.	+iP	05 57 47.0	Kazakh SSR 50.0°N 78.0°E
	ePn	59 18.5	H = 05 50 00 (BCIS)
	iPP	59 22.0	D = 41.1°
	eLg(3.43)	06 12(12)	PV:1.0s 344nm PPV:1.6s 89.6nm
	LmV	15.8	LmH:8s 1.3/um LmV:8s 1.5/um
	LmH	16.3	MPV=6.2 MPPV=5.4 MLH=5.2 MLV=5.3
			Underground explosion
20.	ePKP	08 07 16.5	Tonga Islands 16.97°S 174.26°W
	-iPKP	07 18.0	H = 07 47 50.2 h = 117 km MAG=5.7
	epPKP	07 52	D = 146.1° Az = 353.3° (USCGS);
			h = 124 km
			PV2:1.6s 374nm
20.	eP	09 04 48	Republic of the Congo 0.78°N 29.79°E
	e	05 03.5	H = 08 55 35.5 h = 12 km MAG=5.3 (USCGS)
			D = 52.0°
20.	ePKIKP	09 24 08	Tonga Islands 21.03°S 174.52°W
	+ePKHKP	24 13.5	H = 09 04 31.8 h = 95 km MAG=5.2

Day	Phase	h m s	Remarks
cont.			
20.	e	09 24 23	D = 150.1° Az = 352.2° (USCGS)
	i	24 29.5	PV2:1.6s 155nm PV4:1.8s 194nm
	LmH	10 41.7	LmH:16s 1.7/um LmV:16s 1.9/um
	LmV	41.7	MLH=5.9 MLV=6.0
20.	LmH	19 22	Probably Santa Cruz Islands (USCGS)
20.	eP	21 54 54	Jan Mayen Island 71.80°N 2.50°W
	e	55 00	H = 21 50 00.0 h = normal MAG=4.8
	e	55 04.5	D = 22.2° Az = 155.7° (USCGS)
	e	55 29.5	PV:1.6s 68.4nm
			MPV=4.8
20.	eP	22 33 43	Jan Mayen Island 71.15°N 5.81°W
			H = 22 28 49.9 h = normal MAG=4.3
			D = 22.1° Az = 149.5° (USCGS)
21.	eP	00 15 26	Taiwan 23.82°N 122.86°E
	LmH	48	H = 00 02 55.6 h = normal MAG=4.9 (USCGS)
			D = 84.3°
			PV:1.0s 13.1nm
			MPV=5.0
21.	eP	01 39 50	Uganda 0.77°N 30.03°E
	LmH	02 06.5	H = 01 30 41.6 h = normal MAG=5.2 (USCGS)
			D = 52.1°
			PV:2s 44.5nm
			MPV=5.2
21.	eP	06 41 40	Ryukyu Islands 26.09°N 129.10°E
	LmH	07 17.6	H = 06 29 01.3 h = normal MAG=5.5
	LmV	25.2	D = 85.8° Az = 325.5° (USCGS)
			PV:2.0s 37.0nm
			LmH:18s 1.7/um LmV:16s 1.0/um
			MPV=5.2 MLH=5.5 MLV=5.4

Day	Phase	h m s	Remarks
21.	eP	09 33 01.5	Uganda 0.77°N 30.01°E
			H = 09 23 53.2 h = normal MAG=4.8 (USCGS)
			D = 52.0°
			PV:1.8s 28.1nm
			MPV=5.1
21.	e(P)	13 03 02.5	
21.	iP	20 50 09.5	Taiwan 21.77°N 121.08°E
			H = 20 37 37.4 h = 53 km MAG=4.8 (USCGS)
			D = 84.8°
21.	i	21 43 03.5	Yugoslavia 43.52°N 17.70°E
	e	43 18	H = 21 39 01.6 h = 21 km (USCGS)
	eSg	43 30	D = 8.2°
	e	43 37	
22.	eSn	02 47 16	Yugoslavia 43.4°N 17.7°E
	eSg	48 12	H = 02 43 41 (BCIS)
	e	48 21	D = 8.2°
22.	eP	08 22 43	Northeastern China 37.54°N 115.02°E
			H = 08 11 33.7 h = 11 km MAG=6.0 (USCGS)
			D = 69.3°
			PV:2.0s 59.3nm
			MPV=5.4
22.	eP1	08 30 40	Northeastern China 37.50°N 115.11°E
	+iP2	30 44.0	H = 08 19 33.8 h = normal MAG=6.0 (USCGS)
	+iP3	30 49.0	D = 69.5°
	ePP	33 16	PV:9s 5.8/um PV1:1.6s 26.5nm
	ePPP	34 58	PV2:1.2s 92.3nm PV3:1.6s 204nm
	eS	39 48	PPV:9.5s 3.5/um PPH:9.5s 2/um
	ePS	40 16	SH:12s 12.5/um
	ePPS	40 28	LmH:15s 293/um LmV:16s 315/um
	eSS	44 20	MPV=6.8 MPPV=6.6 MPPH=6.6 MSH=6.9
	LmH	59	MLH=7.7 MLV=7.7
	LmV	09 04	Such great differences between magnitudes from body waves and surface waves and

Day	Phase	h m s	Remarks
cont.			
22.			successive P-onsets with increasing amplitude seem to be typical for earthquakes from northeastern China region, registered at our station. Compare 7. March 21 40, 26. March 15 30.
22.	e	10 37 05.5	
22.	eP	11 19 45	Northeastern China 38.06°N 114.96°E
	e	19 49	H = 11 08 40.1 h = normal MAG=5.3
	e	20 25	D = 69.1° Az = 318.4° (USCGS)
			PV:1.8s 37.5nm
			MPV=5.3
23.	+eP	00 17 03	Taiwan 23.79°N 122.85°E
	+iP	17 03.8	H = 00 04 34.7 h = 51 km MAG=6.3
	i	17 05.0	D = 84.4° Az = 323.4° (USCGS);
	e	17 17	h = 67 km
	epP	17 21	PV2:1.4s 679nm PV:5s 4.8/um
	ePP	20 16	PH:4.5s 1.9/um SH:12s 2.0/um
	ePPP	22 03	LmH:16s 8.7/um LmV:18s 9.3/um
	eS	27 16	MPV2=6.6 MPV=6.9 MPH=7.1 MSH=6.2
	esS	27 48	MLH=6.3 MLV=6.3
	eSS	33.8	
	ePKKP	35 17	
	eLQ	38.7	
	eP'P'	43 21	
	eSKPP'	46 35	
	LmV	59.2	
	LmH	01 01.3	
23.	ePKP	04 30 24	Near Coast of Central Chile
	e	30 40	38.10°S 73.56°W
			H = 04 11 36.1 h = normal MAG=5.3 (USCGS)
			D = 109.8°
23.	eP	05 23 49.5	Caribean Sea 16.76°N 85.90°W
	e	24 14	H = 05 11 32.5 h = normal MAG=5.3 (USCGS)
			D = 81.8°

Day	Phase	h m s	Remarks
23.	ePKP	08 21 04	Tonga Islands 21.47°S 174.03°W
	e	21 07	H = 08 01 13.3 h = normal MAG=4.9
			D = 150.5° Az = 352.7° (USCGS)
			PV2:2.4s 79.5nm
23.	ePKP	11 41 07	South of Kermadec Islands
			32.79°S 178.48°W
			H = 11 20 30.1 h = 44 km MAG=4.8 (USCGS)
			D = 160.7°
23.	e	17 41 25	Northeastern China 37.47°N 114.99°E
	LmH	18 07.5	H = 17 28 01.5 h = normal MAG=5.2 (USCGS)
	LmV	11.5	D = 69.4°
23.	e	20 31 42	
24.	ePKIKP	04 24 20	Fiji Islands 21.47°S 176.44°W
	ePKHKP	24 25	H = 04 04 55.5 h = 191 km MAG=5.2
	e	24 30	D = 150.2° Az = 349.7° (USCGS);
	i	24 39	h = 190 km
	epPKHKP	25 15	PV2:1.6s 63.0nm
24.	e(P)	14 59 19	
	e	59 27.5	
25.	LmH	07 13.8	Northeastern China 37.64°N 115.25°E
	LmV	18.0	H = 06 33 22.7 h = normal MAG=4.6 (USCGS)
			D = 69.3°
			LmH:13s 0.75/um LmV:13s 1.2/um
			MLH=5.1 MLV=5.3
25.	eP	13 06 51	Andreanof Islands/Aleutian Is. 51.48°N 179.60°W
	e	06 58.5	H = 12 54 55.7 h = normal MAG=4.9
			D = 77.8° Az = 352.7° (USCGS)
25.	eP	23 21 21	Turkey 38.87°N 29.15°E
			H = 23 17 20.0 h = normal MAG=4.4
			D = 17.1° Az = 319.2° (USCGS)

Day	Phase	h m s	Remarks
26.	eP	09 53 29	Southern Rhodesia 18.47°S 26.17°E
			H = 09 42 17.8 h = 16 km MAG=5.2 (USCGS)
			D = 70.0°
26.	e	12 35 11.5	Iceland Region 63.08°N 24.28°W
			H = 12 29 54.6 h = normal MAG=4.7
			D = 22.9° Az = 106.2° (USCGS)
			First P-movement, which must be 15 s earlier, is not detectable.
26.	eP	14 21 49	Philippine Islands 19.85°N 120.69°E
	e	22 02	H = 14 09 06.3 h = 12 km MAG=5.2
	e	22 06	D = 86.3° Az = 322.9° (USCGS)
			PV:1.8s 18.7nm
			MPV=5.0
26.	+iP	15 30 10.0	Northeastern China 37.64°N 115.18°E
	+i	30 18.0	H = 15 19 03.2 h = normal MAG=5.5 (USCGS)
	eS	39 16	D = 69.4°
	eSS	43 50	PV2:2.3s 110nm SH:9s 1.2/um
	eSa(4.57)	47 09	SSH:28s 0.8/um SaH:(36s) 2.8/um
	LmH	59.7	LmH:14s 30/um LmV:16s 20.3/um
	LmV	16 03.8	MPV2=5.6 MSH=6.0 MLH=6.7 MLV=6.5
			Successive P-onsets with increasing amplitude.
26.	eP	18 25 29	Northeastern China 37.74°N 114.92°E
	LmH	53.8	H = 18 14 22.6 h = normal MAG=4.9 (USCGS)
	LmV	59	D = 69.3°
			LmH:16s 6.3/um LmV:15s 4.6/um
			MLH=6.0 MLV=5.9
27.	eP	01 50 05	Arabian Sea 14.58°N 56.68°E
			H = 01 40 59.4 h = normal
			D = 51.1° Az = 324.6° (USCGS)
27.	eP	01 52 44	Greece 38.00°N 23.92°E
			H = 01 49 14.2 h = 179 km MAG=4.2 (USCGS)
			D = 15.4°

Day	Phase	h m s	Remarks
27.	+eP	19 06 21	Costa Rica 8.85°N 83.42°W
	+i	06 23.6	H = 18 53 41.3 h = 40 km MAG=5.6
	+i	06 28.5	D = 86.4° Az = 39.5° (USCGS)
	e	06 34	PV1:2.0s 126nm PV2:2.4s 216nm
	eSKS	16(50)	PV3:2.5s 244nm
	ePS	18(00)	MPV1=5.8 MPV2=5.9
	eSS	23 00	
	LmH	39	
	LmV	40	
27.	LmH	21 37	Northeastern China (USCGS)
28.	i	12 19 57.0	Explosion?
	i	20 24.0	
28.	eP	15 42 39.5	Peru-Ecuador Border Region
	eSKS	53(20)	3.92°S 80.88°W
	eS	53 52	H = 15 29 18.4 h = 19 km MAG=5.1 (USCGS)
	ePS	55(20)	D = 94.6°
	eSS	16 00 40	PV:2.0s 66.7nm
	LmH	22.5	LmH:20s 1.3/um LmV:20s 2.3/um
	LmV	22.5	MPV=5.7 MLH=5.4 MLV=5.7
			e 42 59 e 43 24
28.	eP	17 56 06	Peru-Ecuador Border Region 4.04°S 80.83°W
	eS	18 07 20	H = 17 42 47.6 h = 52 km MAG=5.3 (USCGS)
	LmH	35.8	D = 94.6°
	LmV	36.0	PV:1.8s 62.5nm
			LmH:20s 1.2/um LmV:20s 1.4/um
			MPV=5.7 MLH=5.4 MLV=5.5
29.	eP	02 30 51	Vulcan Islands 23.66°N 142.10°E
	epP	31 14	H = 02 17 38.5 h = 79 km MAG=5.9 (USCGS)
	ePP	34 35	D = 94.2° h = 85 km
	eiSKS	41 12	PV2:1.9s 56.6nm SKSH:7s 1.2/um
	eS	41 48	SH:6.5s 1.0/um
	eiPS	43 04	LmH:20s 2.2/um LmV:18s 1.3/um
	eSS	48 08	MLH=5.6 MLV=5.5
	LmH	03 11.6	
	LmV	16.5	

Day	Phase	h m s	Remarks
29.	eP	06 23 07	Northeastern China 37.42°N 114.87°E
	ePcP	23 29	H = 06 12 00.4 h = 34 km MAG=5.5 (USCGS)
	e	23 34	D = 69.3°
	eS	32 20	PV:2.0s 74.0nm
	eSa(4.58)	40.0	LmH:14.5s 6.8/um LmV:14s 6.2/um
	LmH	52.1	MPV=5.5 MLH=6.1 MLV=6.0
	LmV	55.5	
29.	iPKIKP	11 01 50.3	Tonga Islands 20.04°S 175.31°W
	ePKHKP	01 54	H = 10 42 15.1 h = 95 km MAG=5.1 (USCGS)
	epPKHKP	02 38	D = 148.7° h = 165 km
	esPKHKP	02 54	
29.	LmH	16 25	Northeastern China (USCGS)
30.	eP	04 27(20)	Arabian Sea 21.85°N 62.24°E
	eiP	27 26	H = 04 18 38.1 h = normal MAG=5.6
	eS	34 24	D = 48.7° Az = 319.0° (USCGS)
	eScS	37 12	PV2:1.6s 36.8nm
	eSSS	39 08	LmH:18s 0.9/um
	LmV	53.0	MPV2=5.2 MLH=5.8
	LmH	53.6	e 27 30 e 27 34 e 27 44
			The first motion of P is very small.
30.	e	08 06 40	
30.	eP	08 27 36	Ryukyu Islands Region 29.24°N 131.32°E
			H = 08 15 03.7 h = 20 km MAG=5.1 (USCGS)
			D = 84.1°
30.	eP	12 51 41	Vancouver Island 49.83°N 129.72°W
	e	51 59	H = 12 40 01.0 h = normal MAG=5.3 (USCGS)
	eS	13 01 20	D = 74.8°
	eScS	01 45	SH:9s 0.9/um
	LmH	25.2	LmH:16.5s 2.6/um LmV:13.5s 2.8/um
	LmV	26.6	MSH=5.9 MLH=5.7 MLV=5.8
30.	e	16 08 36	Explosion?

Day	Phase	h m s	Remarks
30.	ePKP2	21 01 25	South of Kermadec Islands
			32.52°S 178.04°W
			H = 20 40 44.1 h = 16 km MAG=4.8 (USCGS)
			D = 160.6°
31.	ePKP	05 25 23.5	New Hebrides Islands 17.29°S 167.83°E
	e	25 28	H = 05 05 54.7 h = 34 km MAG=5.4 (USCGS)
	e	26 23	D = 141.6°
	e	27 31.5	LmH:16s 0.9/um LmV:14.5s 0.7/um
	ePP	28(34)	MLH=5.7 MLV=5.5
	LmV	06 34.8	
	LmH	35.5	
31.	iSg	11 42 47.5	Probably explosion.
31.	eP	17 16 39	
31.	eP	20 56 12.5	
	e	56 22	
	e	56 29.5	
31.	+eP	23 45 49.5	Hindu Kush Region 36.42°N 70.81°E
	e	45 51	H = 23 38 00.5 h = 200 km MAG=5.6 (USCGS)
	e	46 12	D = 44.0° h = 214 km
	epP	46 35	PV1:0.8s 30.4nm PV2:1.4s 38.0nm
	esP	46 58	MPV1=4.8
	eS	52 05	e 48 23 e 48 39
	eSS	55(30)	
31.	eP	23 51 02	PV:1.5s 35.0nm

Day	Phase	h m s	Remarks
1.	eP	03 02 55	Rat Islands/Aleutian Is.
	e	02 57	51.74°N 176.38°E
			H = 02 51 08.2 h = 73 km MAG=5.3
			D = 77.2° Az = 350.1° (USCGS)
1.	eS	03 59 32	South Atlantic Ridge 53.47°S 3.14°W
	ePS	04 01 00	H = 03 33 28.9 h = normal MAG=5.8 (USCGS)
	ePPS	01 56	D = 103.4°
	eSS	06 40	LmH:18s 1.3/um LmV:19s 1.2/um
	LmH	04 36.4	MLH=5.5 MLV=5.5
	LmV	35.5	
1.	eP	13 18 20	Greece 38.71°N 21.52°E
	e	18 28.5	H = 13 15 05.4 h = 43 km MAG=4.8
	e(PP)	18 31	D = 13.8° Az = 332.8° (USCGS)
	e	18 37	LmH:16s 4.1/um
	eLQ	21.3	MLH=4.6
	LmH	24.5	
1.	LmH	13 56	
2.	iP	02 05 30	Oaxaca/Mexico 16.45°N 97.40°W
	e	05 40	H = 01 52 38.3 h = 42 km MAG=5.6
	e	06 36	D = 89.0° Az = 37.0° (USCGS)
	LmH	46.5	LmH:19s 0.75/um LmV:17s 0.7/um
	LmV	47.9	MLH=5.2 MLV=5.2
2.	eSg	08 31 30	Explosion
	e	31 37	
2.	e(Pg)	11 57 14	Probably explosion.
	e(Sg)	57 29	
	e	57 31	
	e	57 45	
2.	eP	22 55 33	Near East Coast of Honshu/Japan
	epP	55 46	38.68°N 141.94°E
	LmH	23 34.5	H = 22 43 21.4 h = 39 km MAG=4.6 (USCGS)
	LmV	34.5	D = 81.0° h = 48 km
			PV:1.6s 39.5nm MPV=5.3

Day	Phase	h m s	Remarks
2.	ePKP	22 58 45	Tonga Islands 16.02°S 173.36°W
			H = 22 39 10.8 h = normal MAG=4.4
			D = 145.2° Az = 354.4° (USCGS)
			PV:1.2s 31.8nm
3.	+iP	04 55 56.8	Near East Coast of Honshu/Japan
	epP	56 10	36.74°N 140.80°E
	esP	56 15	H = 04 43 41.1 h = 68 km MAG=5.7 (USCGS)
	i	56 22.0	D = 81.4° h = 48 km
	eS	05 06 06	PV1:1.5s 105nm PV2:1.5s 55.0nm
	LmH	35.8	PV3:1.8s 81.1nm
	LmV	37.5	LmH:14s 0.6/um LmV:15s 0.9/um
			MPV=5.8 MLH=5.2 MLV=5.3
			e 56 49 e 58 43 e 59 02.5 e 59 16
3.	e	05 15 12	
3.	eP	05 15 20	Algeria 36.15°N 2.91°E
	LmH	21.5	H = 05 11 39.0 h = normal MAG=4.3
	LmV	23.5	D = 15.8° Az = 20.7° (USCGS)
			LmH:12s 0.6/um LmV:10s 0.6/um
			MLH=4.1 MLV=4.3
3.	eP	11 39 39	Greece 38.97°N 21.48°E
	ePP	39 51	H = 11 36 24.8 h = 25 km MAG=5.1
	e	42 41	D = 13.6° Az = 332.4° (USCGS)
	eLi(3.73)	43(10)	LmH:12s 6.4/um LmV:12s 7.0/um
	eLg1(3.55)	43(30)	MLH=4.9 MLV=5.1
	eLg2(3.32)	44 00	e 39 48 e 40 00 e 40 14.5
	LmH	45.6	
	LmV	45.7	
3.	ePKP	16 14 55	Fiji Islands 16.26°S 177.01°W
			H = 15 55 20.4 h = normal MAG=4.9
			D = 145.0° Az = 350.4° (USCGS)
3.	eP	23 07 34	Jan Mayen Island 71.91°N 2.40°W
			H = 23 02 38.9 h = normal MAG=4.2 (USCGS)
			D = 22.3°

Day	Phase	h m s	Remarks
4.	e(P)	01 57 57.5	
4.	eP	02 29 06	Andaman Islands Region 11.85°N 92.59°E
			H = 02 17 18.1 h = normal MAG=5.0 (USCGS)
			D = 75.2°
4.	eP	03 03(23)	Andaman Islands Region 12.04°N 92.65°E
	e	03 26.5	H = 02 51 39.0 h = normal MAG=5.0
			D = 75.1° Az = 319.4° (USCGS)
			PV2:1.5s 37.5nm
			MPV2:5.3
4.	ePKHKP	05 57 45	West of Macquarie Island
	ePKP2	57 58	54.67°S 146.22°E
			H = 05 37 49.7 h = normal MAG=5.4
			D = 152.5° Az = 280.5° (USCGS)
4.	ePKP	06 36 39.5	New Britain Region 5.50°S 151.62°E
			H = 06 17 45.1 h = 47 km MAG=5.3 (USCGS)
			D = 124.0°
4.	eP	06 53 57	Andaman Islands Region 12.06°N 92.69°E
	e(pP)	54 03.5	H = 06 42 13.9 h = normal MAG=5.0
	e(PcP)	54 10	D = 75.1° Az = 319.7° (USCGS);
	e	54 25	(h = 22 km)
	eS	07 03 32	PV:1.6s 42.0nm (PP)V:1.5s 32.5nm
	LmH	27.0	(PcP)V:1.6s 47.3nm
	LmV	33.9	LmH:20s 1.8/um LmV:18s 2.3/um
			MPV=5.3 MLH=5.4 MLV=5.6
4.	e	10 52 23	
4.	eP	20 02 40	El Salvador 13.77°N 89.68°W
	epP	03 03	H = 19 50 07.6 h = 108 km MAG=5.5
			D = 86.4° Az = 38.4° (USCGS);
			h = 92 km
			PV:1.6s 36.9nm
			MPV=5.1

Day	Phase	h m s	Remarks
4.	eP	20 55 10	Azores Islands Region 38.22°N 31.30°W
			H = 20 48 38.8 h = normal MAG=4.9 (USCGS)
			D = 32.5°
4.	e(P)	20 58 35	
5.	eP	05 09 35	Kurile Islands 43.97°N 147.70°E
	e	09 39.5	H = 04 57 36.5 h = normal MAG=5.0 (USCGS)
	epP	09 58	D = 78.6°
			ANUSSR gives: 45.0°N 147.3°E
			H = 04 57 49 h = 92 km
			D = 77.3°
			Our finding of pP-Phase coincides with
			depth-calculation of the ANUSSR.
5.	eP	06 19(10)	Northern Rhodesia 16.40°S 28.52°E
	e	19 15	H = 06 08 09.4 h = 27 km
	e	19 23	D = 68.4° Az = 348.5° (USCGS)
	e	19 40	e 20 09 e 20 44
5.	eP	09 03 34	Honshu/Japan 36.96°N 138.18°E
	LmH	40.6	H = 08 51 16.4 h = 4 km MAG=5.1
	LmV	41.5	D = 80.9° Az = 328.8° (USCGS)
			PV:1.6s 34.2nm
			LmH:14s 2.1/um LmV:14s 1.0/um
			MPV=5.2 MLH=5.7 MLV=5.4
5.	e	12 17 46	Macquarie Island Region 55.05°S 158.42°E
	e	17 52	H = 11 57 36.9 h = 5 km MAG=5.6 (USCGS)
	ePKP2	18 15	D = 159.6°
5.	LmH	17 10	Northeastern China 37.81°N 115.28°E
	LmV	14	H = 16 29 41.7 h = normal MAG=4.8 (USCGS)
			D = 69.3°
6.	eSg	00 50 36	Explosion.
6.	eP	02 00 15	West Pakistan 34.98°N 72.97°E
	e	00 27	H = 01 51 51.8 h = 38 km MAG=5.1
	LmH	19	D = 46.3° Az = 309.4° (USCGS)

Day	Phase	h m s	Remarks
6.	ePKIKP	03 17 51	Southeast Indian Rise 45.79°S 96.13°E
	ePP	19 25	H = 02 59 01.7 h = normal MAG=5.8 (USCGS)
	eS	27 16	D = 120.7°
	ePS	29 18	LmH:17.5s 2.5/um LmV:18s 3.6/um
	eSS	35 32	MLH=6.0 MLV=6.1
	eSSS	40	The phase interpreted as S is the
	LQ	47	diffracted S-wave around the core.
	LR	54	
	LmV	04 15	
	LmH	21	
6.	i(Pg)	14 41 56.5	Explosion.
	i(Sg)	42 16.0	(D = 1.5°)
6.	eP	19 58(20)	Kyushu/Japan 30.66°N 130.74°E
	eS	20 08 44	H = 19 45 59.2 h = 68 km MAG=5.0 (USCGS)
	e(SS)	14 20	D = 82.9°
	LmH	20 35.2	LmH:17s 2.0/um LmV:14s 2.7/um
	LmV	40.2	MLH=5.6 MLV=5.8
6.	+iP	22 40 04.0	Kodiak Island 56.60°N 154.47°W
	i(pP)	40 11.5	H = 22 28 38.7 h = normal MAG=5.5
	e(sP)	40 14.5	D = 72.5° Az = 9.2° (USCGS);
	e	40 19	(h = 30 km)
	e	40 49	PV1:1.1s 60.0nm (pP)V:1.0s 30.4nm
			(sP)V:1.7s 50.0nm
			MPV=5.6
7.	LmH	01 16.2	New Guinea Region 1.78°S 134.22°E
			H = 00 14 55.9 h = 35 km MAG=5.1 (USCGS)
			D = 111.5°
			LmH:18s 1.1/um
			MLH=5.6
7.	eP	03 29 11.5	Southern Greece 37.81°N 21.12°E
	e	29 14	H = 03 25 46.3 h = 36 km MAG=4.8
	e	29 18.5	D = 14.5° Az = 335.2° (USCGS)
	ePP	29 23	PV2:1.1s 22.2nm PV3:1.5s 45.0nm
	e	29 32	LmH:12s 1.1/um LmV:10s 0.9/um
	i	29 44	MLH=4.2 MLV=4.3

Day	Phase	h m s	Remarks
cont.			
7.	LmH	03 34.3	First motion of P is very small, followed
	LmV	35.8	by onsets with successive increasing
			amplitude.
7.	ePKP	05 22(30)	Tonga Islands 15.52°S 174.12°W
	e	22 35	H = 05 02 56.7 h = normal MAG=4.9
			D = 144.7° Az = 353.7° (USCGS)
			PV2:1.3s 23.2nm
			First motion of PKP is very small with
			doubtful onset-time.
7.	ePn	08 08(56)	Southern GFR 48.2°N 9.1°E
	ePb	09 02	H = 08 08 10 h = 4 km (BCIS)
	iPg	09 07.0	D = 2.9°
	i	09 09.0	
	iSn	09 29.5	
	iSg	09 39.8	
7.	+iP	09 55 04.5	Ryukyu Islands 26.15°N 127.42°E
	iPcP	55 08.5	H = 09 42 32.1 h = 46 km MAG=5.7
	ipP	55 17.2	D = 84.9° Az = 324.9° (USCGS);
	eS	10 05 23	h = 46 km
	LmH	31.3	PV1:1.6s 105nm PV2:1.2s 31nm
	LmV	38.2	PV3:2.4s 31.8nm
			LmH:17s 2.3/um LmV:15s 2.2/um
			MPV=5.8 MLH=5.7 MLV=5.7
7.	ePn	10 13 53.0	Explosion/GFR 49.57°N 12.36°E
	e	14 08.5	H = 10 13 30.13 Yield: 4 t
	iSg	14 10.0	(Institute for Exploration Geophysics,
			München)
			D = 1.2°
7.	ePKIKP	14 56 16.5	South of Tonga Islands 24.09°S 175.17°W
	ePKHKP	56 25	H = 14 36 29.1 h = normal MAG=5.2
	ePKP2	56 36.5	D = 153.0° Az = 350.5° (USCGS)
			ANUSSR gives: Tonga Islands 22.5°S 175.4°W
			H = 14 37 21 h = 489 km
			D = 151.4°

Day	Phase	h m s	Remarks
7.	ePg	18 58(50)	Piemont/Italy 44.2°N 7.4°E
	e	59 15.5	H = 18 56 26 (BCIS)
	eSn	59 37	D = 7.1°
	eSg	19 00 22	
7.	ePn	19 40(42)	Piemont/Italy 44.2°N 7.4°E
	ePg	41 21	H = 19 38 59 (BCIS)
	iSn	41 57.0	D = 7.1°
	e(Sg)	42 54	e 40(50) e 41 11 e 42 16
8.	eP	00 06 52.5	Sumatra 1.9°S 100.5°E
			H = 23 53 46 (ANUSSR)
8.	+iP	01 58 20.0	Near East Coast of Kamchatka
	i	58 26.5	51.21°N 157.70°E
	i(pP)	58 34.0	H = 01 46 44.9 h = 47 km MAG=5.9
	ePP	02 01(12)	D = 74.5° Az = 338.4° (USCGS);
	ePPP	03(00)	(h = 53 km)
	iS	07 48	PV:5s 2.0/um PV1:2.6s 6.80nm
	ePS	08 16	PV2:1.6s 168nm PV3:2.4s 284nm
	LmH	36.4	SH:16s 1.8/um PSH:16s 3.2/um
	LmV	36.4	LmH:16s 15/um LmV:16s 19/um
			MPV=6.5 MPV1=6.3 MSH=6.0 MLH=6.4
			MLV=6.5
8.	iP	02 32 28.5	
8.	eP	05 36 20	Near East Coast of Kamchatka
	e	36 37	51.19°N 157.79°E
			H = 05 24 44.6 h = 48 km MAG=5.3 (USCGS)
			D = 74.9°
			PV:1.6s 31.6nm
			MPV=5.2
8.	+iP	05 58 26.0	North Atlantic Ocean 52.72°N 33.23°W
	ei	58 29.5	H = 05 52 40.4 h = normal MAG=5.5
	ePP	59 12	D = 27.5° Az = 76.1° (USCGS)
	eS	06 03 07	PV:1.4s 85.6nm
	ei	03 48	LmH:15s 3.0/um LmV:14s 2.8/um

Day	Phase	h m s	Remarks
cont.			
8.	LmH	06 08.0	MPV=5.3 MLH=5.0 MLV=5.1
	LmV	09.6	
8.	eP	09 30 32	Kodiak Island 56.86°N 151.96°W
	e(pP)	30 38	H = 09 19 09.6 h = normal MAG=4.7
	e(sP)	30 40	D = 72.0° Az = 10.9° (USCGS);
	e(PoP)	30 49	(h = 22 km)
	LmV	10 09	
	LmH	13	
8.	e(P)	09 52 12	
8.	i(PKIKP)	10 51(12)	Salomon Islands 8.21°S 156.38°E
	-i	51 19.5	H = 10 32 06.9 h = 31 km MAG=5.1
			D = 128.6° Az = 332.0° (USCGS)
			The first onset is doubtful, the second
			onset small but very clear.
8.	ePKP	11 29 54	Samoa Islands 14.96°S 175.31°W
	e	30 00.5	H = 11 10 21.5 h = normal MAG=5.2
	e	30 11.5	D = 144.0° Az = 352.5° (USCGS)
	LmH	12(32)	
	LmV	(32)	
8.	eP	13 51 25	Eastern Mediterranean Sea 35.83°N 30.87°E
	e	51 30.5	H = 13 46 49.8 h = 38 km MAG=4.5
	e	51 38	D = 20.3° Az = 322.8° (USCGS)
	LmH	58.6	PV1:2.2s 68.2nm PV2:1.7s 50.0nm
	LmV	14 00.6	PV3:2.2s 96.3nm
			MPV1=4.5
			BCIS gives for h = 100 km.
8.	LmH	15(15)	Easter Island Region 26.23°S 114.37°W
	LmV	(16)	H = 14 07 53.9 h = normal MAG=5.4 (USCGS)
			D = 132.5°
8.	-eP	22 22 23	Kodiak Island Region 56.78°N 151.89°W
	e	22 29	H = 22 10 59.3 h = normal MAG=5.1
	e	22 35	D = 72.1° Az = 11.0° (USCGS)

Day	Phase	h m s	Remarks
cont.			
8.	e(PcP)	22 22 39.5	PV:1.4s 57.1nm
	eS	31 40	LmH:17s 1.4/um
	LmH	56.9	MPV=5.5 MLH=5.3
	LmV	23 01.3	e 22 46 e 23 01.5 e 23 11
8.	e	23 22 18	Iceland 67.49°N 18.72°W
			H = 23 17 10.8 h = normal MAG=4.4
			D = 22.6° Az = 123.2° (USCGS)
			First motion of P, which must be about
			9 s earlier, is not detectable.
8.	e(P)	23 50 24	
8.	eP	23 58 37	Near Islands/Aleutian Is.
	epP	58 48	52.32°N 173.51°E
			H = 23 46 50.8 h = 45 km MAG=4.9 (USCGS)
			D = 76.2° h = 41 km
9.	+iP	02 47 03.3	Costa Rica 9.44°N 84.18°W
	epP	47 13.5	H = 02 34 23.0 h = 40 km MAG=5.3
			D = 86.4° Az = 39.4° (USCGS);
			h = 38 km
			PV:1.6s 79.0nm
			MPV=5.7
9.	+eiP	02 54 49.5	Costa Rica 9.59°N 84.14°W
	-ipP	54 58.0	H = 02 42 08.7 h = 30 km MAG=5.7
	ePP	58(08)	D = 86.3° Az = 39.4° (USCGS);
	eS	03 05 25	h = 31 km
	e	08.0	PV:1.9s 267nm
	eSS	11.0	LmH:18s 1.8/um LmV:18s 1.5/um
	eSSS	14.5	MPV=6.1 MLH=5.6 MLV=5.6
	LmH	03 35.4	
	LmV	35.8	
9.	ePKIKP	15 08 49	New Hebrides Islands 14.05°S 166.68°E
	ePP	11 45	H = 14 49 22.8 h = 47 km MAG=5.4
	eSKP	12 19	D = 138.3° Az = 336.2° (USCGS)

Day	Phase	h m s	Remarks
cont.			
9.	LmH	16 11.5	
	LmV	12	
9.	iP	19 02 44	Southern Alaska 60.22°N 147.15°W
	epP	02 51.5	H = 18 51 45.0 h = 34 km MAG=4.7 (USCGS)
			D = 68.3° h = 29 km
			PV2:1.1s 26.7nm
			iP is a small-amplitude precursor.
9.	+eP	20 20 02.5	Kodiak Island Region 56.66°N 152.03°W
	e	20 05	H = 20 08 38.6 h = normal MAG=5.5
	e	20 09.5	D = 72.2° Az = 10.9° (USCGS)
	e	20 39	PV:1.1s 40.0nm
	LmH	56	MPV=5.5
	LmV	59	
9.	eP	20 29 09	Kodiak Island Region 56.56°N 152.22°W
			H = 20 17 44.5 h = normal MAG=5.1 (USCGS)
			D = 72.1°
10.	eP	10 51 34	Near Islands/Aleutian Is.
			53.08°N 171.00°E
			H = 10 39 51.0 h = 20 km MAG=5.2
			D = 75.2° Az = 346.6° (USCGS)
10.	e	16 54(48)	Near Coast of Central Chile
	eiPP	55 08	31.47°S 71.21°W
	e	55 48	H = 16 36 14.6 h = 64 km MAG=5.7 (USCGS)
	ePS	17 04 32	D = 109.3°
	eSS	10.5	LmH:18s 2.1/um LmV:18s 2.5/um
	eSSS	14.3	MLH=5.7 MLV=5.8
	LmH	39.6	First P-onset, which must be approximate
	LmV	39.6	10 s earlier than e 16 54(48), is not
			detectable.
10.	e(P)	17 06 15	
10.	e(P)	22 39(16)	Off Coast of Northern California
	e	39 25	41.41°N 125.51°W

Day	Phase	h m s	Remarks
cont.			
10.	e	22 39 31	H = 22 27 01.8 h = normal MAG=5.6 (USCGS)
	LmH	23 15	D = 80.8°
			Onsets of P-waves are very small and onset-time of the first motion is doubtful.
11.	eP	16 17 27.5	Near Islands/Aleutian Is.
			52.51°N 172.97°E
			H = 16 05 41.6 h = 29 km MAG=5.2 (USCGS)
			D = 76.2°
11.	eP	16 50 49	Afghanistan-USSR Border Region
	epP	50 55.5	38.84°N 70.61°E
	ePP	52 32	H = 16 42 53.5 h = 29 km MAG=4.8 (USCGS)
	LmH	17 10.5	D = 42.5° h = 30 km
	LmV	10.5	PV1:2.1s 58.3nm PV2:1.8s 56.3nm
			LmH:13s 1.1/um LmV:12s 1.2/um
			MPV=5.1 MLH=4.9 MLV=5.0
11.	eP	17 30 29	Michoacan/Mexico 18.35°N 102.31°W
	epP	30 38	H = 17 17 33.8 h = 72 km MAG=5.7 (USCGS)
	esP	30 43	D = 90.4° h = 35 km
	eS	41 28	PV:2.2s 155nm
	LmH	18 13.3	LmH:17s 0.8/um LmV:16s 1.0/um
	LmV	13.4	MPV=6.0 MLH=5.2 MLV=5.4
11.	eP	18 37 34	Kodiak Island Region 57.15°N 153.46°W
	e(pP)	37 39	H = 18 26 11.8 h = normal MAG=4.9 (USCGS)
	e	37 48	D = 72.1° (h = 19 km)
			PV1:1.0s 21.8nm PV2:1.3s 25.6nm
			MPV=5.2
11.	+iP	23 11 48.0	Kodiak Island Region 56.65°N 151.97°W
	ipP	11 53.0	H = 23 00 24.0 h = normal MAG=5.4 (USCGS)
	isP	11 54.8	D = 72.6° h = 19 km
	iS	21 12	PV:1.8s 144nm SH:5s 0.8/um
	eSS	26 00	LmH:16s 1.4/um LmV:17.5s 2.2/um
	LmV	50.7	MPV=5.8 MSH=6.1 MLH=5.4 MLV=5.5
	LmH	53.7	

Day	Phase	h m s	Remarks
12.	e(Pg)	06 45 39	Probably Italy
	e(Sn)	46 18	(D = 6.3°)
	eSg	47 04	
12.	e	12 36 30	Southern GFR 47.8°N 8.7°E
	e	36 37	H = 12 34 48 (BCIS)
	eSg	36 43	D = 3.4°
12.	ePKP	23 34 56	New Hebrides Islands 17.89°S 167.97°E
	e	35 03	H = 23 15 29.6 h = 30 km MAG=5.3
			D = 142.3° Az = 335.3° (USCGS)
12.	ePKIKP	23 56(22)	Central Chile 38.07°S 72.96°W
	e	56 28	H = 23 37 42.1 h = 44 km MAG=5.7 (USCGS)
	ePP	57 22	D = 115.2°
	ePPP	59 44	PV:10s 0.8/um SH:20s 1.3/um
	eSKS	00 03 10	PSH:20s 5.3/um PSV:20s 3.5/um
	eSKKS	04 18	PPSV:22s 4.0/um
	eS	05 08	LmH:18s 18/um LmV:18s 21/um
	eSP	07 05	MLH=6.7 MLV=6.8
	ePS	07 10	e 56 45.5 e 57 24 e 57 41 e 57 55
	ePPS	08 20	The phase interpreted as S is the
	eSS	13 12	diffracted S around the core.
	LmH	45.3	
	LmV	45.7	
13.	eP	00 43 26	Kodiak Island 56.81°N 151.82°W
			H = 00 31 58.2 h = normal MAG=4.8 (USCGS)
			D = 72.3°
13.	ePKIKP	03 53 54	Near Coast of Central Chile
	ePP	54 55	38.20°S 73.16°W
	ePPP	57 18	H = 03 35 16.3 h = 40 km MAG=5.8 (USCGS)
	eSKS	04 00 50	D = 115.2°
	eSKKS	02 08	LmH:19s 4.4/um LmV:18s 4.0/um
	ePS	04 44	MLH=6.1 MLV=6.0
	eSS	10 45	e 54 54 e 54 48 e 55 07
	LmH	43.0	
	LmV	45.7	

Day	Phase	h m s	Remarks
13.	+iPKIKP	04 46 41	South of Fiji Islands 23.58°S 179.85°W
	ePKHKP	46 47	H = 04 27 54.8 h = 550 km MAG=5.2 (USCGS)
	+iPKP2	46 58.5	D = 151.6° h = ca. 580 km
	ipPKP	48 59.2	PV1:1.5s 32.5nm PV2:1.4s 81.0nm
	ePP	50 47	PV3:1.4s 47.5nm
			e 46 51
14.	iPg	13 06 29.5	Explosion
	iSg	06 46.0	D = 1.2°
14.	iP	18 55 59.0	Crete 34.51°N 24.02°E
	e	56 02.5	H = 18 51 45.8 h = normal MAG=5.0 (USCGS)
	LmH	19 03.1	D = 18.5°
	LmV	03.6	LmH:13s 2.6/um LmV:12s 1.5/um
			MLH=4.7 MLV=4.7
14.	+eP	21 14 11	Afghanistan-USSR Border Region
	e	14 15	38.86°N 70.61°E
	iPP	15 54	H = 21 06 17.4 h = normal MAG=5.2 (USCGS)
	LmH	34	D = 42.2°
	LmV	35	PV:1.4s 42.8nm
			MPV=5.2
15.	ePKHKP	06 54 19	Tonga Islands 21.68°S 174.35°W
	ePKP2	54 29	H = 06 34 31.2 h = 53 km MAG=4.5
			D = 150.7° Az = 352.2° (USCGS)
15.	iPg	14 09 44.5	Explosion/Southern GDR 51.4°N 12.9°E
	eSg	10 01	D = 1.2°
15.	eP	18 11 53	Near East Coast of Honshu/Japan
	epP	12 06	36.63°N 140.95°E
			H = 17 59 35.0 h = 53 km MAG=4.8 (USCGS)
			D = 82.2° h = 48 km
16.	+iP	01 38 38.0	Kodiak Island Region 56.98°N 153.56°W
	e	38 42	H = 01 27 15.3 h = normal MAG=5.7 (USCGS)
	e(pP)	38 53	D = 72.5° (h = 59 km)
	ePP	41 16	PV1:1.6s 248nm PV2:1.5s 190nm
	eS	48 00	(pP)V:2.0s 282nm SH:15s 3.2/um
	ePS	48 36	LmH:17s 4.8/um LmV:17s 5.6/um

Day	Phase	h m s	Remarks
cont.			
16.	eSS	01 52 55	MPV=6.1 MSH=6.2 MLH=6.1 MLV=6.1
	LmH	02 14.1	
	LmV	19.6	
16.	+iP	10 25 53.0	Off East Coast of Honshu/Japan
	epP	26 06	34.98°N 141.48°E
	e	26 15	H = 10 13 27.7 h = 63 km MAG=5.2 (USCGS)
	LmH	11 05.7	D = 83.8° h = 50 km
	LmV	09.1	PV:1.5s 25.0nm
			LmH:16s 2.7/um
			MPV=5.1 MLH=5.7
16.	eP	11 43 13.5	Dominican Republic 18.99°N 70.44°W
	epP	43 27	H = 11 32 01.1 h = 46 km MAG=4.7
			D = 70.6° Az = 42.0° (USCGS); h = 50 km
16.	iPg	14 11 51.0	Explosion/Southern GDR 51.25°N 12.66°E
	iSg	12 05.0	D = 1° Yield: 5 t
16.	+iP	14 52 29.5	Republic Congo 0.84°N 29.90°E
	LmH	15 13.5	H = 14 43 20.5 h = normal MAG=5.3 (USCGS)
			D = 51.8°
16.	+iPKIKP	15 42 15.5	Fiji Islands Region 21.08°S 178.62°W
	iPKHKP	42 21.5	H = 15 23 29.3 h = 511 km MAG=5.4
	e	42 24.5	D = 149.4° Az = 347.2° (USCGS)
	e(PKP2)	42 32.5	PV2:1.0s 87.0nm
			e 42 27 e 42 37
17.	e	06 10 40	
17.	ePKP	06 57 44	Tonga Islands 15.23°S 173.18°W
	e	57 49	H = 06 38 06.0 h = normal MAG=4.8
	e	59 27.5	D = 144.5° Az = 354.7° (USCGS)
18.	eP	08 22 53	Eastern Gulf of Aden 12.92°N 48.31°E
	e	22 57	H = 08 14 18.8 h = 57 km MAG=5.4
	ePP	24 48	D = 48.0° Az = 329.2° (USCGS)
	e	24 51	PV:1.6s 34.2nm

Day	Phase	h m s	Remarks
cont.			
18.	eS	08 29 50	MPV=5.2
	LmH	46.3	
	LmV	46.3	
18.	eP	10 02 43	Greece 39.0°N 21.9°E
	LmH	08.5	H = 09 59 25 (BCIS)
	LmV	08.5	D = 13.8°
			LmV:12s 0.8/um
			MLV=4.0
18.	ePKHKP	10 52 50	Fiji Islands Region 20.06°S 178.73°W
			H = 10 34 04.0 h = 540 km MAG=4.4
			D = 148.4° Az = 347.4° (USCGS)
18.	e(P)	14 48 26	PV:1.4s 16.7nm
19.	e	15 15 37	
	e	15 44	
19.	i	23 10 10.0	
19.	ePKP2	23 11(17)	Kermadec Islands 31.67°S 179.51°W
			H = 22 51 00.9 h = 169 km MAG=4.6 (USCGS)
			D = 159.3°
20.	ePP	02 50 48	Mariana Islands 18.84°N 146.99°E
	e	50 56	H = 02 32 49.7 h = 12 km MAG=5.0
	eSKS	57(24)	D = 100.5°
	ePS	59(52)	LmH:16s 1.2/um LmV:16s 1.9/um
	eSS	03 05 10	MLH=5.5 MLV=5.7
	LmH	38.0	
	LmV	37.5	
20.	ePP	06 18 33	Mariana Islands 18.95°N 146.79°E
	LmH	07 05.3	H = 06 00 39.4 h = normal MAG=5.1 (USCGS)
	LmV	05.3	D = 100.3°
			LmH:17s 1.3/um LmV:16s 1.6/um
			MLH=5.5 MLV=5.6

Day	Phase	h m s	Remarks
20.	LmH	14 09	Northeastern China 37.02°N 115.14°E
	LmV	11.5	H = 13 28 10.9 h = normal MAG=4.8 (USCGS)
			D = 69.8°
			LmH:16s 0.6/um LmV:16s 0.6/um
			MLH=5.0 MLV=5.0
20.	ePP	14 19 24	Mariana Islands 18.83°N 146.91°E
			H = 14 01 26.7 h = 28 km MAG=5.2 (USCGS)
			D = 100.5°
20.	eP	14 42 32	Northeastern China 37.11°N 114.78°E
	LmH	15 14.8	H = 14 31 25.6 h = normal MAG=4.9
	LmV	14.8	D = 69.7° Az = 318.6° (USCGS)
			LmH:14s 1.25/um LmV:14s 1.5/um
			MLH=5.3 MLV=5.4
20.	e	14 47 04	
20.	ePP	16 44 11	Mariana Islands 18.80°N 146.88°E
	LmH	17 31.0	H = 16 26 21.2 h = 55 km MAG=5.4 (USCGS)
	LmV	31.0	D = 100.5°
			PPV:2.6s 139nm
			LmH:16s 2.3/um LmV:16s 3.0/um
			MPPV=6.1 MLH=5.8 MLV=5.9
20.	eP1	16 47 42.5	Eastern Caucasus 41.68°N 48.19°E
	iP2	47 49.0	H = 16 42 03.7 h = 19 km MAG=5.5
	iP3	47 53.0	D = 26.6° Az = 302.2° (USCGS)
	eS	52 12	PV2:1.2s 60.5nm PV3:1.4s 186nm
	eSS	53(24)	LmH:16s 9.7/um LmV:18s 10/um
	eLg1(3.44)	56(24)	MPV2=5.2 MPV3=5.6 MLH=5.4 MLV=5.5
	eLg(3.18)	57(36)	Multiple P-phases with successive
	LmH	59.2	increasing amplitude. P2 and P3 are
	LmV	17 00.0	considerably greater than P1. Well
			developed higher modes of surface waves.
21.	+iP	04 05 47.0	Eastern Kazakh SSR 49.81°N 78.05°E
	ePn	07 18.5	H = 03 57 58.0 h = 0 km MAG=5.5
	ePP	07(25)	D = 41.2° Az = 297.6° (USCGS)
			PV:0.7s 95.5nm MPV=5.8
			Underground explosion.

Day	Phase	h m s	Remarks
21.	eP	06 49 47	Crete 34.83°N 25.96°E
	LmH	59.0	H = 06 45 28.6 h = 52 km MAG=5.1
	LmV	59.0	D = 18.9° Az = 330.9° (USCGS)
			PV:2.2s 63.7nm
			LmH:13s 1.1/um LmV:13s 1.4/um
			MLH=4.4 MLV=4.6
21.	eP	15 57 51	Near East Coast of Honshu/Japan
	epP	57 58	36.15°N 141.77°E
	eS	16 08 10	H = 15 45 25.4 h = 30 km MAG=5.5
	eSS	13 36	D = 83.1° Az = 330.6° (USCGS); h = 26 km
	LmH	39.7	pPV:2.6s 153nm
	LmV	41.0	LmH:14.5s 11.6/um LmV:15s 10.9/um
			MLH=6.5 MLV=6.4
21.	ePKHKP	16 31 34.5	Fiji Islands Region 20.37°S 177.99°W
			H = 16 12 45.1 h = 511 km MAG=4.5
			D = 148.8° Az = 348.1° (USCGS)
			PV:1.1s 26.7nm
21.	eP	17 49 17	Off East Coast of Honshu/Japan
	epP	49 25	35.53°N 142.03°E
	e(S)	59 35	H = 17 36 50.0 h = 46 km MAG=5.1
	LmH	18 30.2	D = 83.7° Az = 330.8° (USCGS); h = 29 km
	LmV	32.5	pPV:2.0s 51.8nm
			LmH:14s 3.6/um LmV:13s 4.8/um
			MLH=5.9 MLV=6.1
			The amplitude of pP-onset is approximately 2.5 times greater than the amplitude of P.
22.	e(P)	03 03 20	Southwestern Russia 47.86°N 47.72°E
			H = 02 58 03.6 h = normal MAG=4.9
			D = 23.6° Az = 290.3° (USCGS)
22.	e	03 27 26	Near Coast of Central Chile
	eS	34.0	37.81°S 73.37°W
	ePS	36 00	H = 03 06 32.3 h = 18 km MAG=5.7 (USCGS)
	eSS	42 08	D = 115.2°
	LmH	04 16.2	LmH:18s 3.2/um LmV:18s 5.2/um

Day	Phase	h m s	Remarks
cont. 22.	LmV	04 16.2	MLH=6.0 MLV=6.2
			The first motion of P, which must be approximately 10 s earlier, than e 03 27 26 is not detectable. The phase interpreted as S is the diffracted S-phase around the earth core.
22.	+iP	10 27 12.5	Kodiak Island Region 56.89°N 151.79°W
	ipP	27 18	H = 10 15 50.6 h = normal MAG=4.9 (USCGS)
	e(PcP)	27 29	D = 71.8° h = 21 km
			PV1:1.1s 26.7nm PV2:1.3s 30.2nm
			PV3:1.4s 23.8nm
			MPV=5.3
22.	e	11 26 33	
	e	26 38	
22.	iPg	15 05 20.5	Explosion/Hilders, GFR 10.04°E 50.54°N
	iSg	05 35.5	H = 15 05 00.0
			D = 1.1° Yield: 12 t
22.	ePKP	17 13 48	Fiji Islands Region 17.99°S 178.44°W
			H = 16 55 07.9 h = 542 km MAG=4.2 (USCGS)
			D = 146.4°
22.	e	23 18 21	
22.	-iP	23 38 41	Kodiak Island Region 57.52°N 152.05°W
	i(pP)	38 47.5	H = 23 27 20.5 h = 22 km MAG=5.9 (USCGS)
	i	38 54.8	D = 71.5° (h = 25 km)
	ePP	41 26	PV1:1.9s 440nm PV2:2.0s 519nm
	iS	47 57	PV3:1.5s 150nm
	eSS	52.5	LmH:18s 1.8/um LmV:16s 2.3/um
	LmH	00 12.3	MPV=6.3 MLH=5.4 MLV=5.6
	LmV	16.6	
23.	eP	00 23 34	Northern Celebes 0.90°S 122.43°E
	ePPKP	27 46	H = 00 09 34.4 h = 45 km MAG=6.0
	iPP	27 56	D = 103.8° Az = 322.2° (USCGS)

Day	Phase	h m s	Remarks
cont.			
23.	eSKS	00 34 16	PV:2.5s 128nm
	eS	35 16	LmH:23s 18.3/um LmV:20s 15.4/um
	ePKKP	39 33	MLH=6.6 MLV=6.6
	eSS	42 40	e 23 39 e 24 31 e 26 55 e 27 08
	LmH	01 11.2	i 28 04.0
	LmV	18.6	PPKP is probably reflected below the earth crust.
23.	eP	01 08 27	Greenland Sea 73.63°N 8.65°E
	e	08 36	H = 01 03 23.0 h = normal MAG=4.6
			D = 23.1° Az = 175.2° (USCGS)
23.	e(PKIKP)	03 48(08)	Tonga Islands 23.78°S 175.66°W
	e(PKHKP)	48 16	H = 03 28 24.7 h = 54 km MAG=5.1
	e(PKP2)	48 27	D = 152.6° Az = 349.9° (USCGS)
23.	ePKIKP	07 09 49	Cook Strait/New Zealand 41.56°S 174.37°E
	e	10 18	H = 06 49 38.6 h = 15 km MAG=5.8
	e	10 46	D = 165.0° Az = 313.1° (USCGS)
	ePKP2	10 50	e 11 18 e 11 35
23.	eP	09 10 38.5	Northern Celebes 0.47°S 122.18°E
	i	10 47.0	H = 08 56 45.8 h = 79 km MAG=5.8
	ePP	14 59	D = 103.3° Az = 322.2° (USCGS)
	ePPP	17 16	LmH:16s 2.8/um LmV:20s 3.8/um
	eS	22 24	MLH=5.9 MLV=5.9
	eSS	29 44	e 11 39 e 14 18.5 e 15 11 e 15 21
	eSSS	33 48	
	LmV	10 04.5	
	LmH	06.5	
23.	eP	11 11 20	Greece 39.08°N 21.42°E
	e	11 31	H = 11 08 10.1 h = 41 km MAG=4.5
	e	11 40.5	D = 13.5° Az = 332.3° (USCGS)
	LmH	(16)	
23.	eP	18 16 03	Fox Islands/Aleutian Is. 52.78°N 167.82°W
			H = 18 05 12.6 h = normal MAG=4.8 (USCGS)
			D = 76.7°

Day	Phase	h m s	Remarks
23.	ePKHKP	18 40(41)	Tonga Islands 23.84°S 175.46°W
	ePKP2	40 54	H = 18 20 47.5 h = normal MAG=4.7
	e	41 09	D = 152.7° Az = 350.2° (USCGS)
24.	ePKHKP	07 21 03	Fiji Islands Region 21.05°S 179.24°W
	ePKP2	21 10	H = 07 02 24.2 h = 642 km MAG=4.9 (USCGS)
			D = 149.3°
			PV1:1.2s 34.1nm PV2:1.1s 20.0nm
25.	iPKP	08 53 28.0	Tonga Islands 19.01°S 175.11°W
			H = 08 34 06.3 h = 223 km MAG=4.4
			D = 148.0° Az = 351.9° (USCGS)
25.	eP	09 32 14.5	Ascension Island 6.88°S 11.72°W
			H = 09 22 04.9 h = normal MAG=4.5
			D = 60.7° Az = 16.8° (USCGS)
25.	ePKIKP	11 00 39.5	Fiji Islands Region 21.03°S 178.71°W
	ePKHKP	00 44	H = 10 41 58.2 h = 561 km MAG=5.3
	ePKP2	00 52	D = 149.3° Az = 347.1° (USCGS)
			PV2:1.6s 105nm
25.	eP	14 43 52	
	e	43 54.5	
25.	eP	23 30 28.5	Taschkent/Uzbek SSR 41.20°N 69.30°E
	e	31 36	H = 23 22 52.6 h = normal MAG=5.0
	LmH	48	D = 40.3° Az = 303.7° (USCGS)
	LmV	50	PV:1.5s 20.0nm
			LmH:17s 0.8/um
			MPV=4.8 MLH=4.7
26.	eP	10 56 32	Burma 24.81°N 96.46°E
	e	56 35.5	H = 10 45 32.8 h = normal MAG=4.8
	LmH	11 25	D = 68.1° Az = 316.9° (USCGS)
26.	ePKHKP	19 52 44.5	Fiji Islands Region 20.01°S 178.30°W
	ePKP2	52 50	H = 19 34 00.3 h = 551 km MAG=4.6 (USCGS)
			D = 148.3°

Day	Phase	h m s	Remarks
27.	eP	00 44 15.5	Kurile Islands 46.98°N 152.71°E
			H = 00 32 26.6 h = 65 km MAG=5.0 (USCGS)
			D = 76.9°
27.	e	07 37 13	
27.	eP	19 54 15	Turkey 38.17°N 42.68°E
	e	54 17.5	H = 19 48 49.8 h = 25 km MAG=4.9 (USCGS)
	e	54 20.5	D = 25.6°
	ePP	55 00	PV2:1.5s 45.0nm PV3:1.6s 60.5nm
	e	56 06	SH:15s 2.4/um
	eS	58 48	LmH:17s 3.5/um LmV:18s 4.0/um
	e	59 40	MPV2=4.9 MPV3=5.0 MSH=5.5 MLH=5.0
	LmH	20 05.2	MLV=5.2
	LmV	06.3	P is multiple with a very small first-onset, followed by much larger phases.
27.	ePKHKP	21 52 17.5	South of Fiji Islands 25.16°S 179.78°E
	ePKP2	52 31	H = 21 33 17.7 h = 499 km MAG=4.5 (USCGS)
			D = 152.8°
28.	iPKHKP	00 36 35	Fiji Islands Region 21.79°S 179.23°W
			H = 00 17 51.1 h = 600 km MAG=4.8
			D = 150.0° Az = 346.2° (USCGS)
28.	ePKP2	01 36 22	Auckland Island Region 49.05°S 164.15°E
	e	36 28	H = 01 15 34.2 h = 3 km MAG=5.8 (USCGS)
	e	37 14	D = 162.3°
28.	eP	10 52(03)	Near Coast of Oaxaca/Mexico
	e	52 13.5	15.25°N 94.89°W
			H = 10 39 07.3 h = normal MAG=5.1 (USCGS)
			D = 88.5°
			The first onset of P must be 6 s earlier than e(P).
28.	eP	11 50(44)	Greece 39.02°N 21.38°E
	e	55 34	H = 11 47 34.1 h = 54 km MAG=4.3 (USCGS)
			D = 13.6°

Day	Phase	h m s	Remarks
28.	iPg	14 20 28.1	Explosion/Southern GDR 51.29°N 12.73°E
	iSg	20 44	D = 1.2° Yield: 3.3 t
28.	ePKP	17 16 06	Tonga Islands 19.06°S 173.55°W
	e	16 11	H = 16 56 20.0 h = 27 km MAG=5.2 (USCGS)
	e	16 17	D = 148.6°
	e	16 30	PV:1.5s 35.0nm
	e	17 10	LmH:18s 1.6/um LmV:18s 1.6/um
	LmH	18 26.8	MLH=5.9 MLV=5.8
	LmV	26.8	ANUSSR gives: Cook Islands Region
			11.3°S 167.5°W
			H = 16 56 38 MAG=5½
			D = 140.8°
28.	+ePKP	17 33 17	Tonga Islands 19.30°S 173.48°W
	LmH	18 46	H = 17 13 31.6 h = normal MAG=5.2 (USCGS)
	LmV	46	D = 148.3°
			PV:1.8s 75.0nm
			LmH:17s 0.9/um LmV:17s 1.05/um
			MLH=5.6 MLV=5.7
28.	e	18 19 41	Probably Carlsberg Ridge (USCGS)
	e	19 56	The P first motion, which must be 18 s earlier, is not detectable.
28.	eP	22 42 11	Off Coast of Oregon 43.97°N 127.76°W
	e	42 17	H = 22 30 05.1 h = 18 km MAG=5.0 (USCGS)
			D = 79.3°
29.	-iP	01 58 25	South of Alaska 53.84°N 157.78°W
	-ipP	58 35	H = 01 46 42.6 h = normal MAG=5.2 (USCGS)
	e	58 40	D = 75.8° h = 38 km
	LmH	02(25)	PV1:1.4s 66.6nm PV2:1.2s 36.4nm
			MPV=5.6
29.	ePg	11 21 06	Explosion/Southern GDR 51.29°N 12.73°E
	eSg	21 20	D = 1.1° Yield: 2.4 t

Day	Phase	h m s	Remarks
29.	e	22 55 55	Near earthquake?
	e	57 03	
	e	57 12	
29.	eP	23 15 14.5	Off East Coast of Kamchatka
	e	15 18	52.22°N 160.53°E
	e	15 32	H = 23 03 39.7 h = normal MAG=4.5 (USCGS)
	LmH	(47)	D = 74.6°
			PV:1.3s 18.6nm
			MPV=5.1
30.	eP	13 49 02	Kirgiz SSR 41.01°N 72.06°E
	ePP	50(41)	H = 13 41 09.1 h = 19 km MAG=5.1
	LmH	14 08.2	D = 42.1° Az = 304.3° (USCGS)
	LmV	08.2	PV:1.7s 27.8nm
			LmH:12s 2.8/um LmV:12s 4.0/um
			MPV=4.9 MLH=5.4 MLV=5.6
30.	LmH	13(58)	Off Coast of Jalisco/Mexico
	LmV	(58)	18.83°N 106.70°W
			H = 13 01 18.5 h = 54 km MAG=5.2 (USCGS)
			D = 92.3°
			LmH:16s 0.8/um LmV:14s 0.7/um
			MLH=5.3 MLV=5.3

Day	Phase	h m s	Remarks
1.	e	10 34 07	
1.	LmH	14 28	Near North Coast of New Guinea
	LmV	29	3.51°S 142.98°E
			H = 13 14 47.4 h = normal MAG=4.6 (USCGS)
			D = 117.8°
1.	-iP	16 35 57.4	Peru-Brazil Border Region
	+ipP	36 37.0	8.49°S 74.25°W
	esP	36 56	H = 16 22 56.3 h = 165 km MAG=5.7 (USCGS)
	e(pPP)	40 12	D = 94.0° h = 158 km
	eiSKS	46 20	PV:8s 0.75/um PV1:1.8s 150nm
	eSKKS	46 30	pPV:1.8s 81.2nm sPV:2.0s 74.2nm
	eiS	46 50	SKSH:9s 3.7/um SH:16s 2.8/um
	esS	47 55	MPV=6.5 MPV1=6.0 MSH=6.4
	eSS	53 10	
	LmH	17 03	
	LmV	08	
1.	eP	18 43 18	South of Honshu/Japan 30.64°N 140.61°E
	epP	43 45	H = 18 30 41.8 h = 114 km MAG=5.0 (USCGS)
	ePP	46 42	D = 87.5° h = 106 km
			PPV:1.7s 38.8nm
			MPPV=5.7
1.	eiP	22 32 22	North Atlantic Ridge 23.83°N 45.23°W
	ei	32 25	H = 22 23 21.5 h = 33 km MAG=4.9
	ei	32 30.5	D = 51.1° Az = 43.3° (USCGS)
	e	32 42	LmV:18s 0.6/um
	eS	39.7	MLV=4.7
	LmH	50.5	
	LmV	50.5	
1.	eP	22 41 20.5	Costa Rica 9.51°N 83.93°W
			H = 22 28 46.3 h = 76 km MAG=5.4
			D = 86.2° Az = 39.4° (USCGS)
2.	ePKIKP	10 11 41	New Britain Region 5.98°S 149.72°E
	e	12 03	H = 09 52 48.5 h = 52 km MAG=5.2 (USCGS)
	ePP	13 24	D = 123.5°

Day	Phase	h m s	Remarks
cont.			
2.	ePPP	10 16 00	PPV:8s 0.5/um
	ePS	23 24	LmH:21s 4.1/um LmV:20s 5.7/um
	ePPS	24(50)	MPPV=5.9 MLH=6.1 MLV=6.3
	eSS	30.7	
	LmH	11 06.3	
	LmV	06.3	
2.	ePKIKP	11 12 07	Fiji Islands Region 18.01°S 178.31°W
	iPKHKP	12 10	H = 10 53 28.4 h = 537 km MAG=4.9
	ePKP2	12 12	D = 146.5° Az = 348.5° (USCGS)
	e	12 18	
2.	ePn	11 30 24.5	Explosion/Northwestern CSSR
	ePg	30 28	D = 1.6° Yield: 19 t
	iSg	30 49.5	
2.	iP	14 00 25.5	Turkey 38.14°N 42.70°E
	i	00 29	H = 13 55 03.6 h = 54 km MAG=4.7
	LmH	10	D = 25.3° Az = 309.7° (USCGS)
	LmV	12	
2.	eP	16 53 41	Bali Island Region 8.59°S 114.94°E
	e	57 46	H = 16 39 44.4 h = 103 km MAG=5.8 (USCGS)
	ePP	58 04	D = 105.1°
2.	e(P)	20 16 17	
	e	16 21	
2.	e	20 46 26	Probably Turkey (USCGS)
			The first onset of P must be 20 s earlier.
2.	eP	23 17 47.5	Turkey 37.99°N 42.57°E
	e	17 50	H = 23 12 22.9 h = 41 km MAG=4.8 (USCGS)
	e(pP)	18 00	D = 25.2° (h = 68 km)
	e	18 05	SH:11s 0.8/um
	eS	22(20)	LmH:15s 1.4/um LmV:16s 1.5/um
	e(SS)	23 14	MLH=4.6 MLV=4.6
	LmH	28.8	e 18 16 e 18 30 e 23 34 e 24 16
	LmV	29.8	

Day	Phase	h m s	Remarks
3.	e	04 10 45.5	
3.	e	07 43 18	
	e	43 41	
3.	e	09 59 21.5	
	e	59 34.5	
3.	ePKIKP	19 27 31.5	Near S. E. Coast of Australia
	epPKIKP	27 36	37.12°S 147.21°E
			H = 19 07 55.0 h = 37 km MAG=3.8 (USCGS)
			D = 145.9° h = 25 km
			PV1:1.1s 13.3nm PV2:1.7s 27.8nm
3.	LmH	20 50	Turkey
4.	LmH	02 38	Honshu/Japan 36.73°N 137.58°E
			H = 01 48 56.4 h = 103 km MAG=4.2 (USCGS)
			D = 80.8°
			LmH:14s 0.2/um
			MLH=4.6
			Our clear registration of surface waves from this earthquake makes the USCGS-depth-calculation doubtful.
4.	iP	06 40 07.5	Greece 39.09°N 21.80°E
	i	40 11.0	H = 06 36 59.8 h = 41 km MAG=5.0 (USCGS)
	ePP	40 18	D = 13.6°
	i(sP)	40 22	LmH:13s 8.7/um LmV:(11s) 9.6/um
	i	40 28.0	MLH=5.0 (MLV=5.3)
	eLQ	43(05)	e 40 34 e 43 16 ei 44 50
	LmH	46.2	P is multiple.
	LmV	46.3	
4.	eP	07 42 04	Greece 39.00°N 21.79°E
	e	42 24	H = 07 38 58.9 h = 47 km MAG=4.2 (USCGS)
	e	42 25.5	D = 13.7°

Day	Phase	h m s	Remarks
4.	iP	08 56 43.7	Iceland Region 61.51°N 27.12°W
	e	56 46	H = 08 51 30.2 h = normal MAG=4.3 (USCGS)
			D = 23.8°
4.	eP	11 05 20	PV1:1.7s 27.8nm PV2:1.8s 40.6nm
	e	05 28	PV3:1.6s 34.2nm PV:1.8s 40.6nm
	e	05 39	World data centres give no epicentre
	e	05 47	determination. Seismic station Kasperske
			Hory (KHC)/CSSR gives eiP 11 05 23.6
			ei 05 37.7.
4.	+iPKP	20 38 29.5	Tonga Islands 15.97°S 173.90°W
	e	38 35	H = 20 19 02.8 h = 107 km MAG=5.0 (USCGS)
	e(pPKP)	39 04	D = 144.2° (h = 128 km)
	e	39 29	PV:1.3s 27.9nm
4.	eP1	21 53 03	Turkey 37.74°N 27.93°E
	-eiP2	53 07	H = 21 48 58.2 h = 14 km MAG=4.7 (USCGS)
	eS1	56 20	D = 17.4°
	eiS2	56 28	PV1:1.6s 68.5nm PV2:2.5s 423nm
	e	57 14	PV:5s 1.3/um PH:4.5s 1.1/um
	eLi(3.74)	57 36	SH2:9s 1.1/um SV2:8s 1.9/um
	eLg1(3.57)	58 00	LmH:13.5s 6.0/um LmV:11s 5.9/um
	eL(3.37)	58 32	MLH=5.1 MLV=5.2
	LmH	59.1	The phase L(3.37) has the velocity of the
	LmV	22 00.6	Lg2-phase, but begins with long periods
			(T ca. 20 s) and shows very clear normal
			dispersion. This is not typical for
			"channel waves" or higher mode surface
			waves. It seems to be better, to inter-
			pret this phase as LQ.
5.	eP	04 07 47	
5.	eP	06 51 00	Rat Islands/Aleutian Is. 51.59°N 176.81°E
	epP	51 08	H = 06 39 12.0 h = 75 km MAG=4.9 (USCGS)
			D = 77.8° h = 30 km

Day	Phase	h m s	Remarks
5.	iP1	14 33 45.2	Taiwan Region 24.37°N 122.57°E
	+iP2	33 49.0	H = 14 21 22.7 h = 60 km MAG=5.7
	epP1	34 00	D = 83.8° Az = 323.3° (USCGS); h = 60 km
	eipP2	34 05	PV1:2.0s 59.2nm PV2:2.2s 218nm
	ePP	37 00	PV:5.0s 1.6/um SH:9.5s 2.6/um
	ePPP	38(55)	LmH:18s 13.8/um LmV:15.5s 13.7/um
	iS	44 06	MPV1=5.4 MPV2=5.9 MPV=6.4 MSH=6.4
	ePPS	45 20	MLH=6.4 MLV=6.5
	eSS	49 35	ei 34 16 ei 34 44
	LmH	15 09.6	P is multiple.
	LmV	15.5	
5.	eP	15 21 43	Iceland Region 61.41°N 27.47°W
	e	21 51	H = 15 16 31.9 h = normal MAG=5.0
	e	21 57	D = 24.0° Az = 98.8° (USCGS)
			PV:2.2s 146nm
			MPV=5.2
5.	eP	15 30 24.5	Iceland Region 61.48°N 27.39°W
	e	30 31	H = 15 25 12.4 h = normal MAG=4.9
	e	30 36	D = 23.9° Az = 99.1° (USCGS)
	LmH	41	PV:2.0s 81.5nm
	LmV	41	LmH:14s 2.2/um LmV:15s 2.5/um
			MPV=5.0 MLH=4.8 MLV=4.9
5.	ePKHKP	15 42 19	Fiji Islands Region 21.71°S 179.32°W
	e	42 25	H = 15 23 35.5 h = 604 km MAG=4.7
	ePKP2	42 27.5	D = 149.9° Az = 346.1° (USCGS)
5.	eiP	15 57 53	Iceland Region 61.53°N 27.47°W
	i	57 57.0	H = 15 52 41.1 h = normal MAG=5.0
	e	16 01 00	D = 24.0° Az = 99.1° (USCGS)
	eS	02 18	PV1:2.8s 448nm PV2:2.4s 398nm
	LmV	08.3	PV:5s 1.7/um PH:4.5s 1.3/um
	LmH	08.7	LmH:14.5s 3.1/um LmV:17s 5.7/um
			MPV1=5.6 MPV=5.9 MPH=6.1 MLH=4.9
			MLV=5.2

Day	Phase	h m s	Remarks
6.	e	00 19 33	Taiwan Region 21.9°N 119.6°E
	LmH	01 06.5	H = 00 05 55 (ANUSSR)
	LmV	10.5	D = 84.1°
			LmH:16s 0.7/um LmV:14s 0.5/um
			MLH=5.2 MLV=5.1
6.	-iP	02 48 01.8	Malawi/Africa 15.73°S 34.43°E
	+ipP	48 06.8	H = 02 36 56.8 h = normal MAG=5.5
	ePcP	48 25.5	D = 69.1° Az = 344.7° (USCGS); h = 19 km
	epPcP	48 30.5	PV:1.1s 40.0nm pPV:1.5s 72.5nm
	eiS	57 12	MPV=5.6
	LmH	03 25.5	e 48 34 i 50 21
	LmV	25.5	
6.	iP	04 05 24.5	Taiwan Region 23.81°N 122.96°E
	LmH	47.3	H = 03 52 51.0 h = normal MAG=4.8 (USCGS)
	LmV	47.3	D = 84.4°
			LmH:12s 0.5/um LmV:12s 0.5/um
			MLH=5.1 MLV=5.2
6.	ePKIKP	07 33 07.5	South of Fiji Islands 25.00°S 179.57°E
	ePKHKP	33 15	H = 07 14 13.5 h = 488 km MAG=5.3
	ePKP2	33 27.5	D = 152.8° Az = 343.1° (USCGS)
6.	e(P)	10 20 33	Honshu/Japan 36.95°N 137.68°E
	e(pP)	20 42	H = 10 08 30.7 h = 148 km MAG=4.3 (USCGS)
	LmH	57.5	D = 80.7° (h = 33 km)
			LmH:12s 0.6/um
			MLH=5.5
			Our finding of surface waves from this earthquake makes the USCGS-depth-calculation doubtful. The P onsets are very small and in the noise level.
6.	eP	15 12 17	Nevada
	e	12 30	H = 15 00 00
	e	12 40	D = 81.2° (UPP)
			PV:1.3s 20.9nm
			MPV=5.1
			Underground explosion.

Day	Phase	h m s	Remarks
6.	ePP	16 25 32	Mariana Islands Region 18.09°N 145.26°E
			H = 16 08 09.7 h = 328 km MAG=5.2 (USCGS)
			D = 100.3°
			PPV:1.8s 37.5nm
			MPPV=5.1
			ANUSSR gives: 16.6°N 145.8°E
			H = 16 07 29 h = normal
			D = 102.0°
			The total absence of surface waves in our sensitive longperiod registrations corresponds to the USCGS-interpretation as an deep earthquake.
6.	ePKP	20 13 25	Tonga Islands 19.43°S 173.74°W
	e	13 30.5	H = 19 53 47.0 h = 112 km MAG=4.9
	e	13 41.5	D = 148.6° Az = 353.5° (USCGS)
	e	13 43.5	
7.	e(Sn)	00 04 18	Yugoslavia 44.0°N 18.5°E
	eSg	05 10	H = 00 01.0 (BCIS)
			D = 8.1°
7.	e(Pb)	00 41 19	Italy 44.6°N 10.3°E
	ePg	41 31.5	H = 00 39 37 (BCIS)
	eSn	42 10	D = 6.2°
	eSg	42 54	e 42 33 e 43 07 e 43 39
7.	e	04 00 36	
7.	eP	04 05(47)	Eastern Kazakh SSR 49.74°N 77.90°E
	ePP	07 22	H = 03 57 58.0 h = 0 MAG=4.9 (USCGS)
			D = 41.2°
			Underground explosion.
7.	iPKHKP	05 28 51.2	South of Fiji Islands 22.08°S 179.52°E
			H = 05 10 07.7 h = 600 km MAG=4.2 (USCGS)
			D = 150.0°

Day	Phase	h m s	Remarks
7.	i(Pg)	12 58 32	Austria?
	ei	58 35	(D = 3.3°)
	e	59 12.5	Kasperske Hory (KHC) gives: D = 2.6°
	ei	59 13.5	Vienna (VIE) gives: (D = 2.0°)
	eSg	59 15.5	
7.	eiP1	13 12 20	Turkey 37.80°N 27.92°E
	iP2	12 23.2	H = 13 08 16.0 h = 12 km MAG=5.2
	iP3	12 27.0	D = 17.3° Az = 323.1° (USCGS)
	e	12 39	PV1:1.3s 27.9nm PV2:1.8s 312nm
	e	12 52.5	PV3:2.0s 430nm PV:4.5s 1.8/um
	eS	15 40	SH:11s 2.4/um
	e	15 46	LmH:13s 10.1/um LmV:11s 9.8/um
	eLi(3.70)	16 56	MLH=5.4 MLV=5.5
	eLg1(3.56)	17 19	Well developed higher modes of surface
	eL(3.35)	17 50	waves. eL begins with long periods
	eRg(3.01)	18 53	(T = 20 s) and shows very clear normal
	LmH	18.5	dispersion (compare Turkey earthquake
	LmV	19.7	from 4. May 21 53 GMT). P is multiple.
			The amplitude of the second onset is
			more than ten times greater.
7.	LmH	21 37	Northeastern China 37.20°N 115.05°E
	LmV	37.5	H = 20 52 12.5 h = normal MAG=4.8 (USCGS)
			D = 69.6°
			LmV:16s 0.4/um
			MLV=4.8
7.	iP	22 13 27.0	Black Sea 42.13°N 35.77°E
	e(sP)	13 34	H = 22 09 06.8 h = 13 km MAG=4.6
	e(PP)	13 42.5	D = 18.7° Az = 305.4° (USCGS)
8.	eP	01 37 16	Kurile Islands Region 44.78°N 150.46°E
	eipP	37 29	H = 01 25 19.5 h = 45 km MAG=4.7 (USCGS)
	LmH	02 14	D = 78.1° h = 48 km
	LmV	15	LmV:15s 0.4/um
			MLV=4.8

Day	Phase	h m s	Remarks
8.	e	03 52 08	Greece 39.04°N 21.31°E
			H = 03 48 48.0 h = 49 km MAG=4.1 (USCGS)
			D = 13.5°
			The first onset of P must be 10 s earlier.
8.	e(P)	06 26 14	Greece (UPP)
	e	26 24	
	e	26 38	
8.	eP	08 41 55	Kurile Islands Region 44.90°N 150.52°E
	e	42 04	H = 08 29 57.1 h = normal MAG=4.6
	e	42 07.5	D = 78.4° Az = 334.7° (USCGS)
	LmH	09 19.5	
	LmV	19.5	
9.	+eiP1	00 47 20	Crete 34.54°N 26.53°E
	iP2	47 28.5	H = 00 42 55.6 h = normal MAG=5.5 (USCGS)
	iP3	47 34.0	D = 19.4°
	eS1	50 58	PV1:7s 3.3/um PH1:6s 2.5/um
	eS2	51 06	PV2:2s 630nm SH2:8s 3.0/um
	eS3	51 12	SH4:6s 12.6/um SV4:14s 7.0/um
	eS4	51 16	LmH:12.5s 30.6/um LmV:16s 27.9/um
	LmH	55.2	MPV1=5.7 MPH1=5.8 MSH2=5.4 MSH4=6.2
	LmV	56.5	MLH=5.9 MLV=5.8
			Multiple P- and S-phases.
9.	+iP	03 55 27.5	Turkey 37.20°N 31.21°E
	epP	55 48	H = 03 51 09.4 h = 125 km MAG=5.1 (USCGS)
	esP	56(00)	D = 19.4° h = 115 km
	e	56 05	PV:1.4s 370nm SH:8s 1.0/um
	eS	59 00	MPV=5.5 MSH=5.6
	e	59 08	
9.	eP	04 40 03	Turkey 38.01°N 42.19°E
	e	41 15	H = 04 34 41.8 h = normal MAG=4.5 (USCGS)
			D = 25.0°

Day	Phase	h m s	Remarks
9.	eiP	06 12 55	Crete 34.50°N 26.59°E
	e	13 00	H = 06 08 28.5 h = normal MAG=5.0
	LmH	23	D = 19.5° Az = 330.4° (USCGS)
			PV2:1.5s 35.0nm
9.	e(Sn)	10 14 39	Probably Italy 43.5°N 12.7°E
	e(Sg)	15 29	H = 10 11 42 (BCIS)
			D = 7.2°
9.	ePKP	15 34(42)	Tonga Islands 15.52°S 174.62°W
	e	34 49	H = 15 15 13.9 h = 59 km MAG=4.7 (USCGS)
	e	34 55	D = 142.4°
9.	ePKP	20 25(47)	Tonga Islands 15.45°S 175.16°W
	e	25 52	H = 20 06 18.3 h = 70 km MAG=4.6
	LmH	21(28)	D = 144.5° Az = 352.6° (USCGS)
	LmV	(28)	PV:1.7s 27.8nm
9.	ePKP	21 50(24)	Tonga Islands 15.05°S 174.63°W
			H = 21 30 41.4 h = 35 km MAG=4.8 (USCGS)
			D = 144.2°
10.	eP	02 52 12	Crete 34.51°N 26.58°E
	e	52 30	H = 02 47 45.3 h = normal MAG=4.5
	LmH	59	D = 19.5° Az = 330.4° (USCGS)
	LmV	03 01	
10.	ePKP	05 51 55	New Hebrides Islands 16.49°S 167.33°E
			H = 05 32 26.7 h = normal MAG=4.8 (USCGS)
			D = 140.8°
10.	eP	10 20 54	Hokkaido/Japan Region 41.81°N 141.94°E
			H = 10 08 56.6 h = 43 km MAG=4.9 (USCGS)
			D = 78.1°
10.	e(P)	11 54 22.5	

Day	Phase	h m s	Remarks
10.	LmH	12 18.5	Eastern China 36.56°N 115.73°E
	LmV	22.5	H = 11 37 56.4 h = normal MAG=4.9 (USCGS)
			D = 70.5°
			LmH:14s 0.9/um LmV:14s 0.65/um
			MLH=5.2 MLV=5.1
10.	eP	21 13 13	USSR-Mongolia Border Region
	epP	13 18.5	51.81°N 99.03°E
	esP	13 22	H = 21 04 04.0 h = 2 km MAG=4.9
	ePPP	16 11	D = 51.5° Az =305.7° (USCGS); h = 23 km
	eS	20 40	PV:1.4s 33.4nm pPV:2s 88.9nm
	eSS	24 25	LmH:15s 3.6/um LmV:15s 4.7/um
	LmH	37.0	MPV=5.3 MLH=5.5 MLV=5.7
	LmV	37.0	
11.	eP	01 27 16	Crete 34.55°N 26.50°E
	e	27 19	H = 01 22 55.5 h = 94 km MAG=4.7
	e	27 24	D = 19.4° Az = 330.5° (USCGS)
	e	27 30	PV2:1.6s 34.2nm
	LmH	35	MPV2=4.3
	LmV	36.5	
11.	e	01 39 17.5	
11.	eP	02 02 08	Afghanistan 34.63°N 69.85°E
	e	02 12.5	H = 01 53 56.7 h = 27 km MAG=5.1
	e	02 17	D = 44.6° Az = 309.5° (USCGS)
	e	02 42	PV2:1.4s 26.2nm
	LmH	21.5	MPV2=5.0
	LmV	24.5	The first onset of P is very small, followed by very larger onsets.
11.	eP	10 26 12	Crete 34.50°N 26.36°E
	e	26 20	H = 10 21 42.5 h = 11 km MAG=4.7
	e	26 23	D = 19.4° Az = 330.8° (USCGS)
11.	+iP	14 29 25.0	Kurile Islands Region 48.86°N 156.21°E
	ei	29 27	H = 14 17 34.1 h = 13 km MAG=5.8 (USCGS)
	e(pP)	29 37	D = 76.2° (h = 45 km)
	eS	39 08	PV1:1.0s 126nm PV2:1.0s 218nm

Day	Phase	h m s	Remarks
cont.			
11.	ePS	14 39 42	(pP)V:2.2s 918nm SH:12.5s 2.2/um
	LmH	15 02.7	PSV:15s 1.4/um PSH:14s 1.8/um
	LmV	08.5	LmH:18s 20/um LmV:16s 13.5/um
			MPV1=6.0 MPV2=6.2 MSH=6.2 MLH=6.5
			MLV=6.4
			Multiple P. pP has an unusually longer
			periode than P.
11.	+iP	14 38 28.5	Kurile Islands Region 48.98°N 156.21°E
	e(pP)	38 41	H = 14 26 41.6 h = normal MAG=5.5 (USCGS)
	eS	48 12	D = 76.2° (h = 46 km)
	e(PS)	49 07	PV:1.5s 140nm (pP)V:2.3s 350nm
	LmH	15 11.6	SH:14s 1.7/um
	LmV	19.3	LmH:15.5s 9.6/um LmV:16s 8.7/um
			MPV=5.9 MSH=6.0 MLH=6.2 MLV=6.2
11.	+eP	15 10 28.5	Crete 34.44°N 26.50°E
	e	10 32	H = 15 06 02.1 h = 34 km MAG=4.9
	e	14 05	D = 19.5° Az = 330.7° (USCGS)
	eS	14 18	PV1:1.6s 36.8nm PV2:1.8s 81.2nm
			SH:2s 78.9nm SV:2.2s 54.5nm
			MPV1=4.4 MPV2=4.6 MSH=4.6
11.	eP	18 12 18	Kurile Islands Region 48.53°N 156.50°E
			H = 18 00 29.0 h = normal MAG=4.6
			D = 76.7° Az = 337.9° (USCGS)
			PV:1.0s 13.0nm
			MPV=5.0
11.	ePKHKP	21 17 47	Fiji Islands Region 21.78°S 176.86°W
			H = 20 58 19.7 h = 222 km MAG=4.7 (USCGS)
			D = 150.5°
11.	+iP	21 51 24.5	Kurile Islands Region 48.77°N 156.31°E
	epP	51(36)	H = 21 39 35.3 h = 28 km MAG=5.7 (USCGS)
	-i	51 36.8	D = 76.3° h = 42 km
	eS	22 01 05	PV:1.3s 144nm pPV:1.5s 170nm
	ePS	01 44	LmH:18s 9.1/um LmV:18s 3.3/um

Day	Phase	h m s	Remarks
cont.			
11.	LmH	22 24.5	MPV=5.9 MLH=6.2 MLV=5.7
	LmV	30.6	
11.	ePKP2	23 41 43	Kermadec Islands 30.65°S 179.47°W
	epPKP2	43 09	H = 23 21 47.9 h = 329 km MAG=4.4 (USCGS)
			D = 158.3° h = 340 km
12.	iPKHKP	01 35 49.5	Fiji Islands Region 21.32°S 179.62°W
			H = 01 17 04.7 h = 609 km MAG=4.1
			D = 149.4° Az = 345.9° (USCGS)
			PV:0.8s 13.0nm
12.	eP	06 43 36.5	Taiwan Region 24.20°N 122.29°E
	e	44 08	H = 06 31 11.9 h = 57 km MAG=4.8 (USCGS)
			D = 83.7°
12.	ePKP	08 36 26	Loyalty Islands 20.70°S 168.94°E
	e	36 32	H = 08 16 59.7 h = 69 km MAG=4.1 (USCGS)
	e	36 41	D = 149.0°
12.	eP	11 51 12.5	Southern Sinkiang Prov./China
	LmH	12 13	40.22°N 78.39°E
	LmV	14.5	H = 11 42 46.2 h = normal MAG=4.7
			D = 46.5° Az = 306.2° (USCGS)
			PV:1.2s 15.9nm
			MPV=5.0
12.	eP	12 28 49.5	Kurile Islands Region 48.66°N 156.34°E
	e	28 59	H = 12 16 59.2 h = 26 km MAG=4.9
	e	29 02	D = 76.5° Az = 337.8° (USCGS)
			PV:1.0s 17.4nm
			MPV=5.1
12.	e(P)	13 49 28.5	PV:0.9s 10.9nm
12.	e	14 04 31	
12.	ePg	14 09 13	Explosion/GDR 51.37°N 12.89°E
	iSg	09 29	D = 1.1° Yield: 2.1 t

Day	Phase	h m s	Remarks
12.	ePg	15 05 31	Explosion/GFR 57.97°N 13.22°E
	eSg	05 51	H = 15 05 00.98
			D = 1.5° Yield: 4.5 t
12.	eP	20 34 42	Aegean Sea 38.62°N 25.75°E
	e	34 46	H = 20 31 02.2 h = normal MAG=4.4
	e	35 09	D = 15.6° Az = 324.8° (USCGS)
	e	35 12	LmH:11s 1.0/um LmV:10s 1.1/um
	LmH	40.2	MLH=5.2 MLV=5.3
	LmV	41.5	
13.	eP	10 20 47.5	Eastern Mediterranean Sea (UPP)
	e	20 51	
13.	eP	13 10 02	Crete 34.57°N 26.63°E
	e	10 07	H = 13 05 31.7 h = 8 km
	e	10 17	D = 19.4° Az = 330.3° (USCGS)
13.	eP	13 16 16	Crete 34.79°N 26.98°E
	e	16 20.5	H = 13 11 51.1 h = 31 km MAG=4.8 (USCGS)
	LmH	25.2	D = 19.4°
	LmV	25.4	PV1:2.0s 29.6nm PV2:1.8s 62.5nm
			LmH:15s 0.9/um LmV:14s 1.1/um
			MPV1=4.2 MPV2=4.5 MLH=4.2 MLV=4.5
13.	eP	13 42 18	Nevada
			H = 13 30 00 (UPP)
			D = 81.2°
			PV:1.3s 39.5nm
			MPV=5.4
			Underground explosion.
13.	eP	14 11 04.5	Kurile Islands Region 49.89°N 157.31°E
			H = 13 59 18.5 h = 12 km MAG=4.3 (USCGS)
			D = 75.7°
			PV:1.2s 13.6nm
			MPV=5.0

Day	Phase	h m s	Remarks
13.	eP	14 31 12	Kurile Islands Region 49.89°N 157.26°E
			H = 14 19 29.4 h = normal MAG=4.3 (USCGS)
			D = 75.7°
			PV:1.2s 22.8nm
			MPV=5.2
13.	i	14 43 24.0	Probably explosion.
	e	43 36	
13.	eP	23 21 12.5	West Pakistan 29.79°N 69.91°E
	e	21 48.5	H = 23 12 34.4 h = 27 km MAG=4.0 (USCGS)
	ePP	23 08	D = 47.8°
	LmH	(42)	
14.	LmH	00 23.5	Afghanistan 32.7°N 68.2°E
			H = 23 54 01 MAG=4¾ (ANUSSR)
			D = 44.8°
14.	eP	06 55 11	
14.	eP	13 59 14	PV:2.0s 29.6nm
14.	eP	17 12 24	Japan 35.4°N 138.5°E
	e	12 33	H = 16 59 58 h = 12 km MAG=5¼
			D = 82.4° (ANUSSR)
14.	eP	17 16 24	Near S. Coast of Honshu/Japan
	e	16 29	34.17°N 138.89°E
			H = 17 03 56.5 h = normal MAG=4.9 (USCGS)
			D = 83.6°
14.	eP	20 38 52.5	Near Coast of Venezuela 10.45°N 63.00°W
	epP	38 57.5	H = 20 27 27.4 h = 16 km MAG=5.5 (USCGS)
			D = 72.2° h = 18 km
			pPV:2.0s 44.5nm
14.	eP	23 04 22	Southern Greece 36.79°N 22.28°E
	e	04 30	H = 23 00 42.5 h = normal MAG=4.4
			D = 15.8° Az = 334.4° (USCGS)

Day	Phase	h m s	Remarks
15.	iP	02 21 12.0	Southern Sinkiang Prov./China
	ei	23 16	39.64°N 74.05°E
			H = 02 13 02.8 h = 51 km MAG=4.9
			D = 44.2° Az = 305.9° (USCGS)
			PV:1.1s 17.8nm
			MPV=4.9
15.	eP	07 45 32	
15.	eP	08 32(50)	Greece 38.9°N 21.2°E
	e	33 02	H = 08 29 35 (ANUSSR)
			D = 13.6°
			The first onset is very small.
15.	eP	10 15 30	Dodecanese Islands 35.14°N 27.15°E
	e	15 36	H = 10 11 07.9 h = 45 km MAG=4.5
	e	15 44.3	D = 19.2° Az = 328.7° (USCGS)
	ei	15 50.5	PV2:1.7s 33.3nm
			The first onset is very small.
15.	+eiP	14 58 02	Andreanof Islands/Aleutian Is.
	ePP	15 00 54	51.48°N 178.44°W
	ePPP	02 53	H = 14 46 06.5 h = 31 km MAG=5.8 (USCGS)
	e(Pa)	04.3	D = 78.1°
	eS	07 52	PV:1.6s 105nm PPV:10s 0.8/um
	eiScS	08 16	SH:10s 0.7/um ScSH:11s 1.2/um
	ePPS	08 40	LmH:17s 3.8/um LmV:20s 5.4/um
	eSS	12 58	MPV=5.7 MPPV=5.8 MSH=5.8 MLH=5.8
	ePKPPKP	24(58)	MLV=5.9
	LmV	36.8	
	LmH	37.6	
16.	ePKIKP	03 04 55	Banda Sea 6.90°S 129.39°E
	e	05 30	H = 02 46 42.4 h = 212 km MAG=5.9 (USCGS)
	ei(PP)	05 53	D = 112.7°
	e(pPP)	06 50	PV:1.2s 18.2nm
16.	e(Pg)	12 41 34	Probably explosion.
	e	41 42.5	
	iSg	41 57	

Day	Phase	h m s	Remarks
16.	eP	13 18 56.5	Kyushu/Japan 30.60°N 130.18°E
	LmH	14 00	H = 13 06 38.1 h = 68 km MAG=5.1 (USCGS)
	LmV	00	D = 82.5°
			LmH:16s 0.4/um LmV:16s 0.5/um
			MLH=4.9 MLV=5.0
16.	eP	17 35 20	Crete 34.43°N 26.57°E
	e	35 24	H = 17 30 53.5 h = 32 km MAG=4.8
	i	35 30.0	D = 19.5° Az = 330.6° (USCGS)
	eS	39 14	PV2:2.0s 74.0nm PV3:2.0s 111nm
	LmH	44.4	SH:4s 0.6/um
	LmV	44.9	LmH:13s 0.9/um LmV:14s 1.0/um
			MPV2=4.6 MPV3=4.7 MSH=5.1 MLH=4.3
			MLV=4.4
16.	eP	20 07 34	Iceland Region 61.90°N 26.80°W
	e	07 43	H = 20 02 24.9 h = normal MAG=4.4
	e	07 49	D = 23.7° Az = 100.6° (USCGS)
	LmH	(18)	LmV:14s 0.3/um
	LmV	18	MLV=3.8
17.	+eP	01 11 24	Near East Coast of Honshu/Japan
	epP	11 38	35.78°N 140.50°E
	e	12 04	H = 00 59 06.3 h = 68 km MAG=5.3
	LmH	51	D = 82.9° Az = 330.0° (USCGS); h = 54 km
	LmV	51.3	PV:1.3s 30.2nm pPV:1.5s 30.0nm
			MPV=5.1
17.	eP	07 12 40	Uganda 0.74°N 30.11°E
	ePcP	13 52	H = 07 03 29.4 h = 12 km MAG=6.3 (USCGS)
	ePP	14 40	D = 52.0°
	eS	20 04	PV:2.3s 130nm
	ePS	20 14	LmH:18s 2.1/um LmV:19s 3.3/um
	eSS	23 44	MPV=5.7 MLH=5.3 MLV=5.4
	LmH	36.8	e 13 08 e 13 40 e 13 54 e 14 48
	LmV	36.8	e 22 40
17.	e(P)	17 16 19	
	e	16 30	

Day	Phase	h m s	Remarks
17.	ePKIKP	17 17 06.5	Off Coast of Southern Chile
	LmH	18 08	44.01°S 75.21°W
	LmV	08	H = 16 58 17.0 h = normal MAG=5.7 (USCGS)
			D = 120.4°
			LmV:18s 0.9/um
			MLV=5.5
17.	eP	22 29 13	
	e	29 18.5	
18.	ePKP2	00 18 48	Kermadec Islands 29.52°S 176.68°W
			H = 23 58 20 h = normal (USCGS)
			D = 158.0°
18.	eP	01 55 42.5	Republic of the Congo 0.71°N 29.94°E
			H = 01 46 34.5 h = normal (USCGS)
			D = 52.2°
18.	ePKHKP	04 01 07.5	Tonga Islands 20.67°S 174.38°W
	ePKP2	01 14	H = 03 41 17.9 h = normal MAG=4.1 (USCGS)
			D = 149.7°
18.	eP	07 44 59	Gulf of California 25.01°N 109.04°W
	eS	55 44	H = 07 32 07.3 h = normal MAG=5.3
	eSS	08 01 32	D = 88.3° Az = 33.2° (USCGS)
	eSSS	08 28	LmH:15s 3.4/um LmV:16s 4.9/um
	LmH	26.2	MLH=5.9 MLV=6.0
	LmV	26.3	e 07 45 08.5 e 45 15
18.	e	12 50 48	
18.	eP	17 39 10	Borneo 5.92°N 116.61°E
	e	39 15	H = 17 25 51.9 h = 48 km MAG=5.4
			D = 94.9° Az = 321.9° (USCGS)
			PV:1.5s 10.0nm
			MPV=5.0

Day	Phase	h m s	Remarks
19.	eP	06 07 05	Southern Sinkiang Prov./China
			39.77°N 78.08°E
			H = 05 58 40.3 h = normal MAG=5.1
			D = 46.6° Az = 306.5° (USCGS)
19.	eP	07 18 11	Unimak Island Region 54.11°N 164.05°W
	-i	18 12.2	H = 07 06 26.8 h = 28 km MAG=5.8 (USCGS)
	epP	18 19	D = 75.5° h = 30 km
	esP	18 22	PV:1.7s 239nm sPV:2.0s 119nm
	ePP	21 02	LmH:18s 3.5/um LmV:17s 3.7/um
	ePPP	22(50)	MPV=6.1 MLH=5.8 MLV=5.8
	eS	27 46	e 18 32 e 18 40.5 e 18 45
	ePPS	28 34	
	LmH	08 01.8	
	LmV	01.9	
19.	+eP	14 08 46	Nevada
	e(PcP)	08 55	H = 13 56 28 (UPP)
	ePP	11 49	D = 81.2°
			PV1:1.6s 84.3nm PV2:1.6s 42.1nm
			MPV1=5.7
			The PP-onset is approximately 6 s earlier
			than expected from the travel time tables.
			Underground explosion.
19.	ePg	22 23 35	Northern Italy 44.40°N 11.04°E
	e	23 41.5	H = 22 21 32.9 h = normal
	e(Sn)	24 12	D = 6.3° Az = 3.4° (USCGS)
	e(Sg)	24 56	e 23 45 e 24 26 e 24 35
20.	e	00 56 14	Pyrenees 42.96°N 0.26°W
	ePb	56 22	H = 00 53 00.0 h = normal MAG=4.2
	ePg	56 36	D = 11.2° Az = 42.5° (USCGS)
	eS	57 42	LmH:8.5s 0.45/um LmV:10s 0.65/um
	eLi(3.79)	58 29	MLH=3.7 MLV=4.0
	eLg1(3.56)	58 50	e 56 17 e 58 44 e 58 56
	eLg2(3.30)	59 18	
	LmH	01 00	
	LmV	00.1	

Day	Phase	h m s	Remarks
20.	e(P)	03 06 10.5	
20.	eP	03 06 23	Ryukyu Islands 25.42°N 128.27°E
	epP	06 36	H = 02 53 47.4 h = 58 km MAG=5.2
	e	07 10	D = 85.9° Az = 325.2° (USCGS); h = 50 km
	e	07 34.5	PV:1.8s 31.3nm
	LmH	51.0	LmH:15s 1.1/um LmV:15s 1.3/um
	LmV	51.0	MPV=5.2 MLH=5.4 MLV=5.5
20.	e	07 39 22.5	Upper Silesia 50.3°N 19.0°E
	e	40 13	H = 07 38 00 (BCIS)
	eSg	40 31	D = 4.7°
20.	eP	09 23 35	Crete 34.36°N 26.55°E
			H = 09 19 08.2 h = 37 km MAG=3.9
			D = 19.6° Az = 330.7° (USCGS)
20.	e	09 32 06	Mariana Islands 13.88°N 146.10°E
	ePP	33 08	H = 09 14 49.2 h = 66 km MAG=6.0 (USCGS)
	eSKS	39 28	D = 104.5°
	eS	40 40	PPV:1.8s 50nm SKSH:11s 1.2/um
	ePS	42 16	PSV:11s 1.1/um
	ePPS	43 08	LmH:17s 4.3/um LmV:17.5s 4.7/um
	LmH	10 21.3	MPPV=5.8 MLH=6.1 MLV=6.1
	LmV	23.5	e 33 13 e 33 22.5
20.	eP	11 55(58)	Komandorsky Islands Region
	ePP	58 33.5	54.99°N 165.73°E
	LmH	12 29.5	H = 11 44 28.8 h = 46 km MAG=5.2 (USCGS)
	LmV	30.2	D = 72.5°
			PV:1.6s 18.4nm PPV:1.6s 26.3nm
			LmH:16s 0.7/um
			MPV=5.0 MPPV=5.2 MLH=5.1
20.	eP	18 15 18	Philippine Islands Region
	e	15 31	19.59°N 122.04°E
	epP	15 43	H = 18 02 41.4 h = 96 km MAG=5.6
	ePP	18 46	D = 87.3° Az = 323.3° (USCGS); h = 96 km
	eS	25(50)	PV:2.0s 52.0nm

Day	Phase	h m s	Remarks
cont.			
20.	LmH	18 54.0	LmH:15s 0.9/um LmV:14s 1.1/um
	LmV	19 02.0	MPV=5.2 (MLH=5.3) (MLV=5.4)
21.	e	00 09 20	
21.	e(P)	00 10 32	Vancouver Island Region 50.23°N 129.66°W
			H = 23 58 51.7 h = 37 km MAG=5.0 (USCGS)
			D = 74.3°
			e(P) is a small but very clear onset.
			The first onset of P must be 5 s earlier.
21.	ePKHKP	08 27 27	South of Fiji Islands 24.30°S 179.84°E
	ePKP2	27 39	H = 08 08 30.6 h = 518 km MAG=5.1
	epPKHKP	29 30	D = 152.2° Az = 343.8° (USCGS);
	epPKP2	29 39.5	h = ca. 525 km
			PV1:1.2s 18.2nm PV2:1.2s 18.2nm
21.	ePKHKP	11 10 42.5	Tonga Islands 20.90°S 175.31°W
	ePKP2	10 50	H = 10 50 59.8 h = 75 km MAG=5.1
	e	10 54	D = 149.8° Az = 351.2° (USCGS)
			PV:1.4s 23.8nm
21.	ePKP	22 58 20	New Hebrides Islands 19.09°S 169.53°E
			H = 22 39 14.8 h = 238 km MAG=5.0
			D = 144.0° Az = 336.0° (USCGS)
			PV:1.6s 52.6nm
			ANUSSR gives:
			New Hebrides Islands 20.3°S 169.8°E
			H = 22 38 38 h = normal
			D = 145.2°
22.	ePKIKP	03 11 10	Solomon Islands 7.39°S 155.53°E
	e	11 21	H = 02 52 12.7 h = 83 km MAG=5.6
			D = 127.5° Az = 331.8° (USCGS)
22.	ePKIKP	03 44 15.5	Solomon Islands 7.37°S 155.71°E
			H = 03 25 19.8 h = 100 km MAG=5.3
			D = 127.6° Az = 331.9° (USCGS)

Day	Phase	h m s	Remarks
22.	e	06 51 36	
	e	51 44	
22.	eP	07 41 23	Turkey 38.70°N 28.15°E
	e	41 25.5	H = 07 37 29.2 h = 40 km MAG=4.6
	e	41 27.5	D = 16.7° Az = 321.0° (USCGS)
	LmH	48.4	LmH:11s 1.8/um LmV:10.5s 1.7/um
	LmV	48.4	MLH=4.5 MLV=4.7
22.	eP	07 45 05	Greece (UPP)
	e	45 30	
	e	45 48	
22.	e(P)	07 48 27	
	e	48 44	
22.	LmH	08 38.5	Revilla Gigedo Islands Region
	LmV	38.5	21.19°N 108.72°W
			H = 07 42 49.9 h = 53 km MAG=5.5 (USCGS)
			D = 91.3°
			LmH:16.5s 1.1/um LmV:16s 1.5/um
			MLH=5.4 MLV=5.6
22.	eP	16 19 38.5	North Atlantic Ocean 57.91°N 32.88°W
	e	19 49	H = 16 14 05.8 h = normal MAG=4.9
	LmH	30.5	D = 26.6° Az = 86.5° (USCGS)
	LmV	30.5	LmH:14s 0.4/um LmV:14s 0.75/um
			MLH=4.1 MLV=4.5
22.	e	20 23 48.5	Probably Crete 34.38°N 26.51°E
	e	24 05	H = 20 16 51.7 h = 39 km MAG=3.5 (USCGS)
			D = 19.5°
			The P onset must be 30 s earlier.
23.	eP	01 31 47	North Atlantic Ocean 52.79°N 33.59°W
	e	32 11	H = 01 25 58.4 h = normal MAG=4.0
			D = 27.7° Az = 76.1° (USCGS)
23.	eP	01 34 42	North Atlantic Ocean 52.57°N 33.92°W
	e	34 45.5	H = 01 28 53.2 h = normal MAG=4.6

Day	Phase	h m s	Remarks
cont.			
23.	e	01 34 52	D = 28.0° Az = 75.5° (USCGS)
	e	35 09	LmH:14s 0.9/um LmV:15s 1.0/um
	LmV	43.2	MLH=4.5 MLV=4.6
	LmH	43.9	
23.	e	04 50 07	
23.	LmH	07 20.5	Tonga Islands 15.95°S 174.47°W
			H = 05 58 54.7 h = normal MAG=4.8 (USCGS)
			D = 145.0°
			LmH:24s 0.3/um
			MLH=5.0
23.	LmH	07 57	South of Japan (USCGS)
23.	ePKP	08 07(11)	Tonga Islands 16.57°S 173.18°W
	e	07 16	H = 07 47 28.3 h = normal MAG=4.8
	e	07 19.5	D = 145.8° Az = 354.6° (USCGS)
	e	07 25	
23.	eS	09 03 10	South of Honshu/Japan 30.02°N 139.79°E
	LmH	30.7	H = 08 39 44.4 h = 28 km MAG=5.5 (USCGS)
	LmV	36	D = 87.5°
			LmH:14.5s 2.0/um LmV:14s 1.2/um
			MLH=5.7 MLV=5.5
23.	LmH	12 47.3	Revilla Gigedo Islands Region
	LmV	47.3	21.41°N 108.72°W
			H = 11 51 29.6 h = 58 km MAG=5.6 (USCGS)
			D = 91.2°
			LmH:16s 1.9/um LmV:17s 2.4/um
			MLH=5.7 MLV=5.8
23.	ePP	14 40 54	South of Mariana Islands 13.78°N 146.37°E
	eSKS	47 16	H = 14 22 32.5 h = 39 km MAG=5.9 (USCGS)
	eS	48 25	D = 104.7°
	eSS	55.3	LmH:16s 2.0/um LmV:16s 2.0/um
	LmH	15 29.6	MLH=6.0 MLV=6.0
	LmV	29.7	

Day	Phase	h m s	Remarks
23.	LmH	21 36.7	South of Honshu/Japan 30.18°N 139.77°E
			H = 20 45 47.5 h = 25 km MAG=4.8 (USCGS)
			D = 87.3°
			LmH:18s 0.7/um
			MLH=5.1
24.	eP	09 43 01	Southern Greece 37.36°N 22.08°E
	i	43 09	H = 09 39 26.0 h = 34 km MAG=4.9 (USCGS)
	eS	45 48	D = 15.2°
	eL1(3.77)	46 56	PV1:1.2s 22.7nm PV2:1.2s 50.0nm
	eLg1(3.53)	47 28	LmH:13s 6.3/um LmV:13s 2.4/um
	eLg2(3.33)	47 56	MLH=4.9 MLV=4.7
	LmH	48.4	
	LmV	49.8	
24.	eP	11 12 57.5	Southern Greece 37.45°N 22.01°E
	e	13 03	H = 11 09 26.0 h = 47 km MAG=4.9
	e	13 10	D = 15.1° Az = 333.9° (USCGS)
	LmH	18.3	LmH:13s 1.6/um LmV:8s 0.5/um
	LmV	19.8	MLH=4.3 MLV=4.2
24.	iPg	12 32 26	Probably Explosion
	iSg	32 53	D = 2.1°
24.	eP	14 50 37	Crete 34.08°N 26.35°E
	e	50 41	H = 14 46 10.0 h = 53 km MAG=4.4
	LmH	58	D = 19.8° Az = 331.4° (USCGS)
24.	ePKIKP	15 48 51	South of Fiji Islands 25.61°S 177.41°W
	ePKP2	49 14.5	H = 15 29 12.4 h = 112 km MAG=5.3
	e	49 20	D = 154.1° Az = 346.8° (USCGS)
24.	eP	17 47 45	Crete 34.91°N 24.81°E
	e	48 34	H = 17 43 32.1 h = 45 km MAG=4.9 (USCGS)
	LmH	56	D = 18.4°
	LmV	56.0	LmV:15s 0.8/um
			MLV=4.2

Day	Phase	h m s	Remarks
24.	LmH	21 15.2	Revilla Gigedo Islands 21.31°N 108.71°W
	LmV	15.2	H = 20 19 40.7 h = 57 km MAG=4.9 (USCGS)
			D = 91.2°
			LmH:16s 0.7/um LmV:16s 1.0/um
			MLH=5.2 MLV=5.4
25.	e	08 48 19.5	Tanimbar Islands Region 6.40°S 131.11°E
	ePP	48 27	H = 08 28 58.6 h = 39 km MAG=5.8 (USCGS)
	LmH	09(40)	D = 113.4°
	LmV	43	PPV:1.6s 21.0nm
			MPPV=5.6
25.	eP	09 09 44	Albania 40.47°N 19.92°E
	i	09 46	H = 09 06 58.5 h = normal MAG=5.3
	e	11 16	D = 11.7° Az = 333.1° (USCGS)
	eLg(3.21)	13 44	PV1:1.1s 26.6nm PV2:0.8s 65.0nm
	LmH	15.4	LmH:12s 1.4/um LmV:11s 1.8/um
	LmV	15.5	MLH=4.1 MLV=4.4
25.	ePKP	12 26 41.5	Loyalty Islands Region 21.57°S 169.87°E
	eiPKP2	26 45	H = 12 07 04.8 h = 35 km MAG=5.5
	eipPKP	26 51.5	D = 146.3° Az = 334.8° (USCGS);
	eisPKP	26 56	h = ca. 38 km
	LmH	13 35.5	PV1:2.2s 182nm PV3:2.0s 89.0nm
	LmV	35.5	LmH:21s 0.8/um LmV:21s 0.8/um
			MLH=5.5 MLV=5.5
			e 27 19 e 27 40
25.	ePKIKP	13 40 51	Macquarie Island Region 52.89°S 160.02°E
	eiPKP2	41 34.5	H = 13 20 56.2 h = normal MAG=6.6
	ePP	45 16	D = 160.4° Az = 276.2° (USCGS)
	eSKKS	52 08	PV1:2.6s 243nm PV2:2.8s 448nm
	ePSKS	55 34	PPV:8s 3.3/um
	ePKPScS	56 22	LmH:18s 2.8/um LmV:16s 3.1/um
	eSS	14 05 32	MPPV=6.5 MLH=6.2 MLV=6.2
	ePSS	06 35	ei 13 45 24 ei 45 32
	LmH	15 05.4	
	LmV	14.2	

Day	Phase	h m s	Remarks
25.	eP	23 02(05)	Southern Honshu/Japan 35.61°N 136.22°E
			H = 22 49 47.2 h = normal MAG=4.5 (USCGS)
			D = 81.2°
26.	ePKP	00 40 33.5	Fiji Islands Region 17.52°S 178.61°W
	e	40 35.5	H = 00 21 51.2 h = 514 km MAG=4.4 (USCGS)
			D = 146.1°
26.	e(Pn)	08 12 11	Alps of Venezia/Italy 46.4°N 12.9°E
	e(Pg)	12 25	H = 08 11 04 (BCIS)
	e(Sn)	12 56.5	D = 4.3°
	e	13 14	Taking the distance, corresponding the
	e(Sg)	13 16	BCIS-epicentre-calculation, all our
			phases come too early. Our interpretion
			corresponds to a distance of approxima-
			tely 3.9°.
26.	e(P)	11 36 02	PV:1.2s 18.2nm
26.	iPg	12 01 42.5	Explosion/CSSR 50.6°N 14.0°E
	iSg	02 03.0	D = 1.5° Yield: 10.3 t
26.	ePKIKP	12 45 21.5	South of Fiji Islands 25.55°S 179.81°W
	ePKHKP	45 30	H = 12 26 23.8 h = 455 km MAG=5.0 (USCGS)
	ePKP2	45 45	D = 153.2° h = ca. 470 km
	ep(PKHKP)	47 22	
	ep(PKP2)	47 33	
26.	e	17 59 14	Northern Italy 44.8°N 10.7°E
	e	59 38	H = 17 57 06 (BCIS)
	eSg	18 00 35	D = 6.2°
26.	e(Sn)	18 09 52	Northern Italy 44.5°N 11.2°E
	e	10 20	H = 18 07 14 (BCIS)
	e(Sg)	10 40	D = 6.2°
26.	+ePKIKP	18 49 26.5	Fiji Islands Region 21.22°S 176.90°W
	+iPKHKP	49 32.0	H = 18 30 07.4 h = 230 km MAG=5.4
			D = 149.9° Az = 349.2° (USCGS)
			PV1:1.5s 30.0nm PV2:1.4s 143nm

Day	Phase	h m s	Remarks
26.	e	20 10 33.5	
26.	e(P)	23 11 40	Ryukyu Islands 28.62°N 130.28°E
	e	11 45	H = 22 59 03.2 h = normal MAG=4.9
	e	12 05	D = 84.3° Az = 325.8° (USCGS)
			The first onset of P must be 7 s earlier.
27.	e	01 33 08.5	
27.	e(Sg)	11 56 42.5	
	e	56 50	
27.	e(Sg)	13 32 31.5	
27.	ePg	14 06 20.5	Explosion/GDR
	eSg	06 36	D = 1.2° Yield: 7 t
27.	ePg	15 49 42.5	Explosion
	eSg	49 58	D = 1.2°
	e	50 03.5	
	e	50 07	
27.	eP	19 08 41.5	North of Svalbard 82.42°N 6.97°W
	e	08 50	H = 19 02 13.0 h = normal MAG=4.4
			D = 32.4° Az = 157.7° (USCGS)
			PV1:1.4s 19.0nm PV2:1.8s 43.7nm
			MPV1=4.8 MPV2=5.1
27.	eP	22 19 39.5	Andreanof Islands/Aleutian Is.
			51.40°N 178.50°E
			H = 22 07 43.4 h = 33 km MAG=5.2
			D = 78.0° Az = 353.4° (USCGS)
			PV:1.4s 28.6nm
			MPV=5.2
27.	eP	22 23 17.5	India-West Pakistan Border Region
	e	23 20	24.42°N 68.69°E
	e	23 27.5	H = 22 14 14.1 h = 5 km MAG=5.1 (USCGS)
			D = 50.8°
			PV:1.4s 54.8nm MPV=5.5

Day	Phase	h m s	Remarks
27.	e(P)	23 30 10	
	e	30 16.5	
	e	31 02.5	
28.	eP	00 16 24	Taiwan Region 24.38°N 122.49°E
	ePP	19 36	H = 00 03 56.8 h = normal MAG=5.7
	eS	26 44	D = 83.7° Az = 323.2° (USCGS)
	ePPS	28 00	PV:5.0s 0.8/um
	eSS	32.0	LmH:17s 3.7/um LmV:16s 3.4/um
	LmH	52.2	MPV=6.1 MLH=5.8 MLV=5.8
	LmV	58.3	
28.	ePKP	02 28(39)	South of Fiji Islands 22.18°S 179.65°W
	e	30 11	H = 02 09 53.4 h = 600 km MAG=4.9 (USCGS)
	e(pPKP)	30 57	D = 150.2°
28.	e	05 33 50	Honshu/Japan 36.78°N 138.02°E
	e	33 52	H = 05 21 23.8 h = 18 km MAG=4.5
	LmH	06 10.8	D = 81.0° Az = 328.7° (USCGS)
	LmV	11.5	LmH:14s 1.3/um LmV:15s 0.7/um
			MLH=5.5 MLV=5.2
			The first onset of P must be 11 s earlier.
28.	eP	06 05 57	Southwestern Ryukyu Islands
	LmH	49	23.75°N 125.08°E
	LmV	49	H = 05 53 15.1 h = 12 km MAG=5.2 (USCGS)
			D = 85.6°
			LmH:16s 0.5/um LmV:16s 0.7/um
			MLH=5.0 MLV=5.2
28.	eP	07 33 13	Ryukyu Islands 28.66°N 130.23°E
	LmH	08 15	H = 07 20 42.1 h = normal MAG=4.6
	LmV	15	D = 84.3° Az = 325.8° (USCGS)
28.	eP	22 02 06	Andreanof Islands/Aleutian Is.
	e	02 08	51.54°N 178.35°W
			H = 21 50 12.2 h = normal MAG=5.2 (USCGS)
			D = 77.8°

Day	Phase	h m s	Remarks
29.	eP	04 07 48	Kurile Islands 46.45°N 153.17°E
	e	08 05	H = 03 55 53.0 h = normal MAG=4.7 (USCGS)
			D = 77.7°
29.	e(P)	10 44 25	
29.	ePKIKP	14 03 19	Fiji Islands Region 21.57°S 178.69°W
	ePKHKP	03 24.5	H = 13 44 32.9 h = 516 km MAG=5.2
	ePKP2	03 32.5	D = 149.9° Az = 346.9° (USCGS);
	epPKHKP	05 28.5	h = ca. 540 km
			PV1:2.0s 37.0nm PV2:1.8s 244nm
			PV3:1.3s 102nm PV4:1.9s 113nm
30.	eP	03 22 00	Northern Columbia 7.62°N 76.96°W
	e	22 12	H = 03 09 34.4 h = 32 km MAG=5.3
	e	22 26	D = 83.3° Az = 39.9° (USCGS)
30.	eP	14 57 58	Jan Mayen Island Region 71.30°N 7.12°W
	e	58 04.5	H = 14 53 00.8 h = normal MAG=4.5
	LmH	15(08)	D = 22.4° Az = 147.6° (USCGS)
	LmV	09	
30.	eP	19 40 03.5	Tonga Islands 15.17°S 174.10°W
			H = 19 20 36.2 h = 74 km MAG=4.6 (USCGS)
			D = 144.5°
31.	eP	07 54 52.5	Fox Islands/Aleutian Is. 52.27°N 169.70°W
	e	55 05	H = 07 42 59.5 h = normal MAG=4.7 (USCGS)
			D = 77.3°
31.	ePKIKP	19 10 32.5	New Hebrides Islands 19.33°S 167.81°E
			H = 18 51 01.5 h = normal MAG=5.0
			D = 143.5° Az = 334.4° (USCGS)

Day	Phase	h m s	Remarks
1.	eP	02 45 52	Rat Islands/Aleutian Is. 51.51°N 176.24°E
			H = 02 33 56.3 h = 15 km MAG=5.1 (USCGS)
			D = 78.0°
1.	ePKIKP	04 07 42	New Britain Region 5.82°S 151.24°E
			H = 03 48 49.2 h = 61 km MAG=5.5 (USCGS)
			D = 124.2°
1.	ePKIKP	10 34 03	New Hebrides Islands 13.82°S 166.64°E
	e	34 08	H = 10 14 43.2 h = 48 km MAG=5.5 (USCGS)
			D = 137.2°
1.	ePKIKP	12 07 21	Tonga Islands Region 23.38°S 174.95°W
	iPKHKP	07 28.0	H = 11 47 33.1 h = 24 km MAG=5.9 (USCGS)
	i	07 42.5	D = 152.3°
	ePP	11 10	PV:7s 0.7/um PV1:2.0s 51.8nm
	ePPP	14 40	PV2:2.0s 148nm PV3:2.0s 104nm
	LmH	13 22.8	PPV:6.5s 0.4/um
	LmV	22.8	LmH:20s 1.3/um LmV:20s 2.1/um
			MPPV=5.7 MLH=5.9 MLV=5.9
1.	ePKP	12 53 50	New Hebrides Islands 15.19°S 167.23°E
			H = 12 34 33.5 h = 93 km MAG=5.6 (USCGS)
			D = 139.5°
1.	e	16 03 08	
	e	03 14	
2.	-iP	03 39 48.0	Rat Islands/Aleutian Is. 51.08°N 175.97°E
	e	39 50	H = 03 27 53.3 h = 41 km MAG=6.0 (USCGS)
	ePcP	39 57	D = 77.7° h = 46 km
	+epP	40 00.5	PV1:1.8s 156nm PV2:2.0s 142nm
	ePP	42 44	PcPV:1.4s 23.8nm pPV:2.0s 96.3nm
	ePPP	44 28	LmH:18s 1.1/um LmV:20s 1.6/um
	eS	49 34	MPV1=5.8 MLH=5.2 MLV=5.4
	eSPP	50 32	e 40 09
	LmH	04 18.5	
	LmV	18.5	

Day	Phase	h m s	Remarks
2.	e	07 17 00.5	Explosion?
	e	17 05.5	
2.	eP	07 21 48.5	Northern Celebes 0.04°N 123.23°E
	epP	22 23.5	H = 07 08 08.4 h = 185 km MAG=5.8 (USCGS)
			D = 103.7° h = 137 km
			Our finding of pP-phase is in very good
			agreement with ANUSSR-depth-calculation
			for this earthquake (h = 139 km).
2.	eP	08 18 04	Fox Islands/Aleutian Is. 52.94°N 167.03°W
			H = 08 06 15.9 h = 37 km MAG=4.2 (USCGS)
			D = 76.8°
2.	eP	08 34 46.5	Fox Islands/Aleutian Is. 53.08°N 166.54°W
			H = 08 23 03.9 h = 90 km MAG=4.6 (USCGS)
			D = 76.6°
2.	e(Sg)	08 37 51	Explosion?
2.	+eP	15 42 18	Nevada 37°N 116°W
	e	42 20.5	H = 15 30 00 h = 0 km (UPP)
	e	45 23	D = 81.2°
			PV:1.2s 45.5nm
			MPV=5.5
			Underground explosion.
2.	ePKP	17 13 40	Tonga Islands 18.60°S 173.44°W
	LmV	18 31	H = 16 53 56.6 h = normal MAG=5.0
			D = 147.8° Az = 354.0° (USCGS)
			ANUSSR gives: 16.1°S 171.5°W
			H = 16 54 06 h = normal
			D = 145.5°
2.	e	18 43 44	
2.	eP	22 55 19	Turkey 38.51°N 27.41°E
	e	55 22	H = 22 51 27.2 h = 33 km MAG=4.5 (USCGS)
	LmH	23 01	D = 16.5°

Day	Phase	h m s	Remarks
cont.			
2.	LmV	23 02.2	LmH:13s 0.95/um LmV:10s 0.36/um
			MLH=4.2 MLV=4.0
3.	ePn	03 17 17	Austria 47.4°N 11.0°E
	ePg	17 30.5	H = 03 16 26 (BCIS)
	eSn	17 54.5	D = 3.3°
	eSg	18 11.5	e 18 19
3.	+eP	14 12 18	Nevada
	e	12 28	H = 14 00 00 h = 0 km (UPP)
	e	12 32	D = 81.2°
	e	15 16	PV:1.2s 54.5nm
	ePP	15 23	MPV=5.6
			Underground explosion.
3.	eP	18 53 43.5	Southern Sumatra 1.81°S 100.42°E
	e	53 51.5	H = 18 40 41.4 h = normal MAG=4.2
			D = 90.6° Az = 320.5° (USCGS)
4.	LmH	02 31.1	Taiwan 23.03°N 121.37°E
	LmV	31.5	H = 01 36 37.0 h = 45 km MAG=4.3 (USCGS)
			D = 84.2°
			LmH:13s 0.36/um LmV:16s 0.53/um
			MLH=4.9 MLV=5.0
4.	+iP	05 19 42.5	Hindu Kush Region 36.34°N 70.80°E
	epP	20 29	H = 05 11 54.2 h = 207 km MAG=5.7 (USCGS)
	esP	20 53	D = 43.8° h = 220 km
	ePP	21 29.5	PV:1.4s 66.7nm
	e(sPP)	22 36	MPV=4.9
4.	iP	06 20 34	Mediterranean Sea 36.63°N 20.98°E
	e	20 43	H = 06 16 57.4 h = 80 km MAG=5.1 (USCGS)
	e	20 48	D = 15.4° h = 78 km
	esP	20 57	PV:0.7s 60.9nm
	LmH	25.5	

Day	Phase	h m s	Remarks
4.	ePKP2	21 58 20.5	Kermadec Islands Region 29.92°S 178.85°W
			H = 21 38 16.3 h = 214 km MAG=4.2 (USCGS)
			D = 158.1°
5.	+eP	00 00 11.5	Kurile Islands 46.54°N 152.51°E
	epP	00 22.5	H = 23 48 17.8 h = 27 km MAG=5.9 (USCGS)
	esP	00 27	D = 77.5° h = 42 km
	e(Pa)	06 12	PV:1.6s 126nm pPV:1.6s 92.0nm
	eS	09 52	sPV:2.2s 382nm
	ePS	10 22	LmH:16.5s 5.9/um LmV:17s 4.5/um
	ePKPPKP	27 18	MPV=5.8 MLH=6.0 MLV=5.8
	LmH	34.6	
	LmV	37.7	
5.	LmH	05 38	Taiwan Region 24.67°N 122.33°E
	LmV	42.8	H = 04 49 53.2 h = normal MAG=4.7 (USCGS)
			D = 83.3°
			LmH:16s 0.6/um LmV:16s 0.6/um
			MLH=5.1 MLV=5.1
5.	eP	09 18 06	Turkey 39.06°N 29.58°E
	LmH	24	H = 09 14 05.6 h = 39 km MAG=4.4 (USCGS)
	LmV	25.2	D = 17.4°
5.	eP	20 55 39	Southern Greece 37.24°N 22.08°E
	e	55 48	H = 20 52 01.4 h = normal MAG=4.4
	LmH	21 01.1	D = 15.3° Az = 334.1° (USCGS)
	LmV	02.2	LmH:9s 0.85/um LmV:10s 0.35/um
			MLH=4.3 MLV=4.0
6.	ePKIKP	02 05 06	New Hebrides Islands 14.89°S 167.82°E
	e	05 11	H = 01 45 45.5 h = 37 km MAG=5.5
	ePP	08 02	D = 139.5° Az = 336.7° (USCGS)
6.	eP	05 09 33	Turkmen SSR 40.30°N 53.01°E
			H = 05 03 20.3 h = 27 km MAG=4.8
			D = 30.4° Az = 303.8° (USCGS)

Day	Phase	h m s	Remarks
6.	+iP1	07 54 05.5	Afghanistan-USSR Border Region
	iP2	54 08.7	36.32°N 71.16°E
	ipP	54 54	H = 07 46 16.2 h = 225 km MAG=6.3 (USCGS)
	eisP	55 14	D = 44.3°
	iPP	55 55	PV1:2s 666nm PV:7s 14.5/um
	epPP	56 31	PH:7s 6.9/um pPV:4.8s 4.8/um
	esPP	56 55	sPV:(10s) 14/um sPH:10s 7.8/um
	eS	08 00 24	sPPV:8s 37.5/um sPPH:8s 30.8/um
	esS	01 43	SH:19s 18.2/um sSH:16s 26.8/um
	eSS	03 40	MPV=6.6 MPH=6.5 MSH=6.5
	esSS	04 48	ei 04 00 i 04 22 ei 05 00
	ePKPPKP	26 10	iP1 and iP2 are clearly separated in the shortperiod components only. The amplitude of P1 is approximately 4 times smaller than that of P2.
6.	+eP	21 00 43	Mindanao/Philippine Islands
	epP	00 53.5	9.63°N 126.36°E
	ePP	04 40	H = 20 47 11.5 h = 45 km MAG=5.7 (USCGS)
	ePPP	06 48	D = 97.8° h = 38 km
	eSKS	11 26	PV:6.5s 0.5/um PV1:2.0s 51.8nm
	eS	12 12	pPV:2.0s 51.8nm SKSH:9.5s 0.7/um
	LmH	51.3	SH:14s 0.9/um
	LmV	53.1	LmH:17s 4.3/um LmV:15.5s 5.1/um
			MPV=6.2 MPV1=5.7 MLH=6.0 MLV=6.1
7.	LmH	00 11.5	Mindanao/Philippine Islands
	LmV	13.5	9.74°N 126.64°E
			H = 23 07 30.4 h = 45 km MAG=5.3 (USCGS)
			D = 97.9°
			LmH:16s 0.5/um LmV:16s 0.5/um
			MLH=5.1 MLV=5.1
7.	+eP	01 13 28	Near Coast of Peru 14.95°S 75.84°W
	ePP	17 32	H = 00 59 46.6 h = 48 km MAG=5.5 (USCGS)
	eiSKS	24 12	D = 100.0°
	eS	25 08	PV:15s 1.3/um PPV:12s 1.4/um
	ePS	26 38	SKSH:18s 2.6/um SH:20s 1.8/um
	eSPP	27 20	PSH:18s 2.9/um SPPV:18s 3.2/um
	eSS	31 48	LmH:17.5s 6.5/um LmV:18s 11.8/um

Day	Phase	h m s	Remarks
cont.			
7.	LQ	01 41	MPV=6.3 MPPV=6.4 MLH=6.2 MLV=6.5
	LmH	59.7	e 13 47.5 e 14 24
	LmV	59.7	
7.	eP	11 57(18)	Taiwan 24.21°N 122.54°E
	e	57 21	H = 11 44 51.5 h = 41 km MAG=5.7
	eS	12 07 36	D = 83.9° Az = 323.3° (USCGS)
	LmH	39.7	LmH:15s 0.8/um LmV:15s 0.9/um
	LmV	39.8	MLH=5.3 MLV=5.3
7.	eP	14 13 32.5	West Caroline Islands 11.34°N 139.55°E
	-iP	13 34.2	H = 13 59 36.0 h = 50 km MAG=6.5 (USCGS)
	-i	13 39.0	D = 103.6°
	e	13 47	PV1:1.3s 25.6nm PV2:1.6s 190nm
	+iPP	17 52.5	PV3:1.8s 181nm PV4:3.0s 500nm
	ePPP	20 04	PPV:1.8s 312nm PPSH:20s 12.8/um
	eSKS	24 20	PKKPV:2.0s 66.6nm SSH:23s 17.9/um
	eSP	27(04)	LmH:19s 58.8/um LmV:19s 85.3/um
	ePPS	28 00	MPPV=7.6 MLH=7.1 MLV=7.3
	ePKKP	29 27	e 29 34 e 29 42
	eSS	32.8	
	ePKPPKP	37 44	
	LmH	15 03.1	
	LmV	04.3	
7.	ePKHKP	19 24 30	Fiji Islands Region 21.35°S 179.27°W
	ePKP2	24 37.5	H = 19 05 47.4 h = 606 km MAG=5.2
	epPKP	26 52.5	D = 149.5° Az = 346.3° (USCGS);
			h = ca. 610 km
			PV1:1.4s 23.8nm PV2:1.3s 30.1nm
8.	eP	06 36 21	Kurile Islands 46.33°N 152.31°E
			H = 06 24 25.8 h = normal MAG=4.5 (USCGS)
			D = 77.4°
8.	eP	10 58 40	Taiwan Strait 24.4°N 120.4°E
	LmH	11 41.5	H = 10 46 19 h = normal MAG=5 (ANUSSR)

Day	Phase	h m s	Remarks
cont.			
8.	LmV	11 41.5	D = 82.5° LmH:17s 0.55/um LmV:17s 0.9/um MLH=5.0 MLV=5.2
8.	eP	15 10 38	Near Coast of Peru 15.22°S 75.77°W
	LmH	(57)	H = 14 56 54.0 h = 39 km MAG=4.4 (USCGS)
	LmV	57.2	D = 100.0° LmV:15s 0.33/um MLV=5.0
8.	+eP	20 08 03.5	Near Islands/Aleutian Is. 53.09°N 171.12°E
	ipP	08 11	H = 19 56 21.3 h = 20 km MAG=5.4
	ePP	10 56	D = 75.2° Az = 346.7° (USCGS); h = 28 km
	ePS	18 16	PV:1.6s 100nm pPV:1.5s 50nm
	LmH	44.0	PPV:2.4s 62.5nm
	LmV	48.2	LmH:16s 0.7/um LmV:16s 0.6/um MPV=5.7 MPPV=5.3 MLH=5.1 MLV=5.0
9.	eP	00 24 13	Nicobare Islands 7.60°N 94.12°E
	e(pP)	24 18	H = 00 12 12.1 h = 55 km MAG=5.3
	e(sP)	24 20.5	D = 79.4° Az = 320.0° (USCGS);
	ePS	34(52)	(h = 20 km)
	LmH	01 07	LmH:16s 0.8/um LmV:16s 0.8/um
	LmV	07.2	MLH=5.2 MLV=5.2 e 24 25.5 e 25 04
9.	eP	02 09 14	Kurile Islands 44.97°N 146.42°E H = 01 57 38.0 h = 160 km MAG=4.9 D = 77.0° Az = 332.4° (USCGS) PV:1.3s 18.6nm MPV=4.7 ANUSSR gives: 44.2°N 147.8°E H = 01 57 17 h = normal D = 78.1°
9.	e	03 30 52.5	
	e	31 11	

Day	Phase	h m s	Remarks
9.	+iP	07 05 18.5	North of Severnaya Zemlya 85.28°N 92.95°E
	e	05 22	H = 06 57 51.5 h = normal MAG=4.9 (USCGS)
	LmH	29.6	D = 39.0°
	LmV	29.6	PV:1.0s 28.2nm LmV:14s 0.3/um MPV=5.1 MLV=4.3
9.	eP	07 22 33	North of Severnaya Zemlya 85.05°N 93.86°E H = 07 15 06.1 h = normal MAG=4.5 D = 39.1° Az = 268.3° (USCGS)
9.	ePP	11 37 40	South of Honshu/Japan 30.01°N 142.06°E
	eS	44 52	H = 11 21 15.8 h = 35 km MAG=4.8 (USCGS)
	LmH	12 14.8	D = 88.5°
	LmV	21	LmH:16s 0.4/um LmV:16s 0.3/um MLH=4.9 MLV=4.8
9.	ePg	14 18 50	Switzerland 46.6°N 7.3°E
	e(Sn)	19 24	H = 14 17 10 (BCIS)
	e(Sb)	19 45	D = 4.9°
	eSg	19 53.5	e 19 12 e 19 47.5
9.	-eP	15 51 15	Kurile Islands 44.33°N 147.60°E
	e	51 21.5	H = 15 39 27.8 h = 110 km MAG=5.5 (USCGS)
	e	51 28.5	D = 78.0°
	eS	16 01 00	PV:1.8s 194nm SH:5.5s 0.7/um
	LmH	31	LmH:14s 0.35/um LmV:16s 0.35/um
	LmV	31	MPV=5.6 MSH=5.9
9.	eP	22 29 16	South of Honshu/Japan 30.11°N 142.25°E
	e	29 28	H = 22 16 22.1 h = 12 km MAG=5.1 (USCGS)
	ePP	32 43	D = 88.5°
	eS	40 00	PV2:2.0s 25.9nm SH:8s 0.6/um
	eSS	46 04	LmH:15.5s 1.5/um LmV:14s 1.1/um
	LmH	23 10.0	MPV2=5.1 MSH=5.9 MLH=5.5 MLV=5.4
	LmV	16.0	P first motion is very small.
9.	eP	22 32(04)	Southern Iran 27.59°N 52.52°E
	e	32 06.5	H = 22 24 39.0 h = 8 km MAG=4.9 (USCGS) D = 38.5°

Day	Phase	h m s	Remarks
10.	+iP	04 37 04.0	Near Islands/Aleutian Is. 52.02°N 174.98°E
	LmH	05 14	H = 04 25 14.3 h = normal MAG=4.9
			D = 76.7° Az = 349.2° (USCGS)
			PV:1.8s 21.8nm
			MPV=5.0
10.	e(P)	09 14(33)	Rumania 44.9°N 24.9°E
	e	14 41	H = 09 11 57 (BCIS)
			D = 10.6°
10.	eP	09 15 23	Rumania 44.9°N 24.9°E
	e	15 28	H = 09 12 44 (BCIS)
	e	16 03	D = 10.6°
	LmH	20.2	LmV:13s 0.4/um
	LmV	20.2	e 17 01.5 e 17 23
10.	LmH	09 13.7	Near Coast of Peru 14.81°S 76.04°W
	LmV	13.7	H = 08 13 25.8 h = 22 km MAG=5.0 (USCGS)
			D = 99.9°
			LmH:19s 0.4/um LmV:19s 0.55/um
			MLH=5.0 MLV=5.1
10.	LmH	10 48	North Atlantic Ridge 45.27°N 27.93°W
	LmV	48	H = 10 32 45.7 h = normal MAG=4.5 (USCGS)
			D = 26.8°
			LmV:16s 0.3/um
			MLV=4.0
10.	eP	10 52 34	North Atlantic Ridge 45.55°N 28.25°W
	LmH	11 03	H = 10 46 53.0 h = normal MAG=4.3
	LmV	03.0	D = 26.9° Az = 64.5° (USCGS)
			LmH:16s 0.4/um LmV:16s 0.65/um
			MLH=4.1 MLV=4.3
10.	LmH	13 28.5	New Britain Region 6.11°S 149.81°E
	LmV	28.5	H = 12 15 05.7 h = 53 km MAG=5.0 (USCGS)
			D = 123.6°
			LmH:22s 0.6/um LmV:22s 1.0/um
			MLH=5.2 MLV=5.4

Day	Phase	h m s	Remarks
10.	eP	14 23 30.5	Alaska Peninsula 57.44°N 155.68°W
	e	23 35	H = 14 12 14.6 h = 67 km MAG=5.2
	e(pP)	23 54	D = 71.8° Az = 8.5° (USCGS);
	e(sP)	24 05	(h = 94 km)
10.	eP	16 51 52	PV:1.0s 17.4nm
10.	eP	19 23 04	Near Islands/Aleutian Is. 52.51°N 173.62°E
	e	23 37.5	H = 19 11 71.1 h = 45 km MAG=4.9 (USCGS)
			D = 76.1°
10.	eP	22 22 25.5	North Atlantic Ridge 32.88°N 39.83°W
	eS	28 44	H = 22 14 37.3 h = 8 km MAG=5.2
	eSS	31 55	D = 41.4° Az = 48.9° (USCGS)
	LmH	37.1	SH:16s 0.5/um
	LmV	37.5	LmH:18s 1.1nm LmV:17s 1.8nm
			MSH=5.3 MLH=4.8 MLV=5.1
10.	eP	22 51 25	Mongolia 45.12°N 99.68°E
	e	51 39	H = 22 41 48.5 h = normal MAG=5.1
	e	51 45	D = 56.0° Az = 309.8° (USCGS)
	LmH	23 14.8	LmH:13.5s 1.0/um LmV:13s 0.6/um
	LmV	15	MLH=5.1 MLV=4.9
10.	eP	23 35 53	Norwegian Sea 72.62°N 3.13°E
	e	35 57	H = 23 30 55.4 h = normal MAG=4.6
	e	36 02.5	D = 22.4° Az = 165.7° (USCGS)
	e	36 36.5	PV1:1.4s 23.8nm PV3:1.6s 47.5nm
			MPV1=4.5
11.	eP	03 13 31.5	Taiwan Region 23.58°N 119.89°E
	epP	13 37	H = 03 01 08.7 h = normal MAG=5.2
	esP	13 39	D = 82.9° Az = 322.5° (USCGS); h = 20 km
	eS	23 50	LmH:16.5s 3.8/um LmV:15s 2.3/um
	LmH	48.5	MLH=5.9 MLV=5.7
	LmV	54.5	

Day	Phase	h m s	Remarks
11.	LmH	03 36.2	Revilla Gigedo Islands 19.24°N 108.12°W
	LmV	36.5	H = 02 37 38.7 h = 45 km MAG=5.3 (USCGS)
			D = 92.5°
			LmV:16s 0.6/um
			MLV=5.2
11.	eP	10 25 08.5	Greece 38.81°N 21.70°E
	eS	27(52)	H = 10 21 56.5 h = 62 km MAG=4.7
	eL1(3.71)	28 50	D = 13.8° Az = 332.2° (USCGS)
	eLg1(3.52)	29 12	LmH:12s 2.6/um LmV:12s 3.0/um
	eLg2(3.31)	29 40	MLH=4.5 MLV=4.7
	LmH	29.9	e 25 11.5 e 25 21.5
	LmV	31.1	
11.	eP	12 08 30	Southern Greece 37.46°N 21.19°E
	i	08 37.3	H = 12 05 03.2 h = 51 km MAG=4.8
	eS	11 16	D = 14.8° Az = 335.6° (USCGS)
	eLg1(3.48)	12 56	PV1:1.0s 21.7nm PV2:1.6s 74.0nm
	eLg(3.20)	13 38	LmH:12s 1.0/um LmV:13.5s 1.5/um
	LmH	15.4	MLH=4.2 MLV=4.4
	LmV	15.4	e 10 18 e 12 40
11.	eP	18 25 34	Andreanof Islands/Aleutian Is.
	e	26 18	51.56°N 178.41°W
	ePP	28 30	H = 18 13 40.6 h = 60 km MAG=5.9
	e	28 42	D = 77.8° Az = 353.5° (USCGS)
	LmH	19(04)	PV:1.4s 19.0nm
	LmV	(04)	MPV=5.0
12.	e	00 55 32	Near West Coast of Honshu/Japan
	e	55 41.5	37.23°N 138.16°E
	LmH	01 32.5	H = 00 43 21.2 h = 99 km MAG=4.7 (USCGS)
			D = 80.7°
			LmH:14s 0.5/um
			MLH=5.1
			Well developed surface waves in our sensitive longperiod records make the USCGS depth-calculation doubtful.

Day	Phase	h m s	Remarks
12.	ePKHKP	16 52 49	South of Fiji Islands 22.75°S 178.66°W
	ePKP2	52 59	H = 16 33 42.3 h = 402 km MAG=4.5
			D = 151.0° Az = 346.4° (USCGS)
12.	eP	20 31 28	South Atlantic Ocean 2.95°S 28.21°W
	e	31 43	H = 20 20 58.1 h = 18 km MAG=5.0
			D = 63.3° Az = 27.1° (USCGS)
			PV:1.6s 18.4nm
			MPV=5.0
12.	e	21 32 33	
12.	eP	22 00 20	PV:1.4s 14.3nm
	e	00 29	
	e	02 13	
13.	LmH	01 29	Iran (USCGS)
13.	eP	03 00 47	South of Panama 7.6°N 82.6°W
	e	01 02.5	H = 02 48 06.1 h = 45 km MAG=4.2 (USCGS)
	ePP	04 16	D = 86.8°
13.	ePKP	04 19 39.5	Tonga Islands 16.79°S 174.02°W
	e	19 52.5	H = 04 00 02.3 h = 39 km MAG=4.9
	e(pPKP)	20 05	D = 145.9° Az = 353.6° (USCGS);
			(h = 91 km)
			PV1:1.0s 13.0nm PV3:1.5s 17.5nm
13.	ePKP	07 52 53	New Hebrides Islands 21.25°S 174.09°E
	ei	53 11	H = 07 33 13.4 h = 49 km MAG=5.9 (USCGS)
	e	53 56	D = 147.7°
	e	54 38	LmH:20s 3.7/um LmV:20s 4.7/um
	LmH	08 56.7	MLH=6.2 MLV=6.3
	LmV	56.7	e 08 21 12
13.	eP	12 48 34	Greece (UPP)
	e	48 43	

Day	Phase	h m s	Remarks
13.	eP	13 11 06	Greenland Sea 73.84°N 8.66°E
	e	11 09	H = 13 06 00.0 h = normal MAG=4.4
			D = 23.3° Az = 175.2° (USCGS)
13.	eP	13 22 11.5	Norwegian Sea
			H = 13 17 04 (UPP)
13.	+iP	13 24 37.5	Greenland Sea 73.06°N 7.16°E
	e	24 42	H = 13 19 35.1 h = normal MAG=4.7
	LmH	34.2	D = 22.6° Az = 172.6° (USCGS)
	LmV	34.2	PV1:1.0s 21.8nm PV2:1.6s 47.4nm
			LmH:16s 0.2/um LmV:14s 0.3/um
			MPV1=4.6 MPV2=4.7 MLH=3.7 MLV=4.0
13.	eP	14 19 03	Greenland Sea 79.87°N 4.99°E
	e	19 18.5	H = 14 13 00.4 h = normal MAG=4.2
	e	19 23	D = 29.4° Az = 171.4° (USCGS)
	eS	24 00	LmH:14s 0.4/um LmV:14s 0.4/um
	LmH	32.9	MLH=4.2 MLV=4.2
	LmV	32.9	
13.	i	14 47 12.5	
13.	eP	14 52 22.5	Greenland Sea 73.29°N 7.41°E
	e	52 28.5	H = 14 47 21.6 h = normal MAG=4.3
			D = 22.8° Az = 173.1° (USCGS)
13.	+ePKP	18 27 21.5	Santa Cruz Islands 12.17°S 167.11°E
	iPKIKP	27 32.0	H = 18 08 38.4 h = 259 km MAG=6.2 (USCGS)
	epPKIKP	28 33	D = 136.8° h = 243 km
	iPP	30 12	PV1:1.8s 87.5nm PV2:5s 4.3/um
	epPP	31 07	PV3:9s 2.0/um PPV:7s 4.7/um
	ePa(8.25)	39 40	LmV:18s 3.1/um
	eSPP	41 40	MPPV=6.5
	eSS	47 56	e 27 28 ei 30 17 e 31(30) i 32 36
	LmV	19 20.2	e 44 56
			PKP is a small amplitude precursor.

Day	Phase	h m s	Remarks
14.	eP	02 51 24	Turkey 38.13°N 42.76°E
	e	51 57	H = 02 45 57.0 h = 38 km MAG=4.7
	eS	56(00)	D = 25.3° Az = 309.7° (USCGS)
	LmH	03 02.4	LmH:15.5s 1.4/um LmV:17s 0.85/um
	LmV	03.6	MLH=4.6 MLV=4.4
14.	ePKHKP	02 57 24.5	Fiji Islands Region 20.82°S 178.62°W
	ePKP2	57 32	H = 02 38 37.2 h = 545 km MAG=4.6
			D = 149.2° Az = 347.2° (USCGS)
			PV:1.3s 20.9nm
14.	eP	12 04 52	Mid-Atlantic Ridge 8.14°N 37.27°W
	e	05 07	H = 11 54 57.8 h = normal MAG=4.7
	LmV	25.5	D = 58.5° Az = 34.2° (USCGS)
			LmV:24s 0.6/um
			MLV=5.7
14.	ePP	16 57 45	Banda Sea 5.30°S 124.45°E
	e	57 50	H = 16 39 50.5 h = 656 km MAG=5.4 (USCGS)
	e	17 00 14	D = 108.5°
14.	eP	21 15 47	South of Honshu/Japan 30.75°N 138.73°E
	epP	17 21	H = 21 03 48.3 h = 397 km MAG=5.1
	e	17 23	D = 86.5° Az = 329.4° (USCGS); h = 410 km
	e	17 31	PV:1.6s 26.3nm
	e	19 15	MPV=4.8
15.	ePKIKP	01 19 01	Solomon Islands 10.41°S 160.82°E
	e	19 12	H = 00 59 45.8 h = 31 km MAG=6.1
	iPP	21 30	D = 132.6° Az = 333.7° (USCGS)
	eSKP	22 28	PV1:2.8s 258nm PV2:2.2s 164nm
	ePKS	22 34	PPV:10.5s 10.2/um PKSH:10s 11.7/um
	iPPP	24 16	SKPV:12s 16/um
	eSS	39(16)	LmH:21s 240/um LmV:21s 357/um
	LmH	02 19.6	MPPV=7.0 MLH=7.9 MLV=8.0
	LmV	19.6	ei 20 10 ei 21 24
15.	e(PKP)	01 31 26	
15.	e(PKP)	01 32 03	Solomon Islands (UPP)

Day	Phase	h m s	Remarks
15.	e(PKP)	01 32 38	Solomon Islands
			H = 01 13(25) (UPP)
15.	ePKP	01 52 07	Solomon Islands 10.18°S 161.07°E
	ePP	54 41	H = 01 32 55.5 h = normal MAG=6.2
	e	54 44	D = 132.5° Az = 334.0° (USCGS)
	eSKP	55 31	
15.	eP	02 32 29	Chiapas/Mexico 17.24°N 94.85°W
			H = 02 19 47.8 h = 43 km MAG=4.3 (USCGS)
			D = 86.8°
15.	ePKIKP	03 22 46	Solomon Islands 10.21°S 160.71°E
	eSKP	26 11	H = 03 03 34.2 h = normal MAG=5.7 (USCGS)
			D = 132.3°
15.	e(PKP)	04 46 30	
15.	e	06 23 05	
	e	23 55	
15.	ePKIKP	06 33 02	Solomon Islands 10.14°S 160.97°E
	e	33 09	H = 06 13 52.3 h = 39 km MAG=5.9
	ePP	35 32	D = 132.4° Az = 333.9° (USCGS)
	eSKP	36 40	PPV:6.5s 0.55/um
	e	43 36	LmH:20s 1.2/um LmV:20s 1.5/um
	LmH	07 33.9	MPPV=5.8 MLH=5.6 MLV=5.7
	LmV	33.9	e 48 00 e 49 08
15.	ePKP	08 13 19	Solomon Islands 10.34°S 161.25°E
			H = 07 54 10.8 h = normal MAG=4.7
			D = 132.7° Az = 334.0° (USCGS)
15.	ePKP	16 55(38)	Solomon Islands 10.26°S 160.71°E
	e(PP)	58 15	H = 16 36 24.1 h = 18 km MAG=5.8 (USCGS)
	e	58 50	D = 132.3°
	e(SKP)	59 07.5	LmH:19s 0.75/um LmV:19s 1.0/um
	eSS	17 15 40	MLH=5.4 MLV=5.5
	LmH	55.2	
	LmV	55.2	

Day	Phase	h m s	Remarks
15.	eP	18 15 05	Nevada
			H = 18 02 47 (UPP)
			D = ca. 81°
			Underground explosion.
15.	eP	23 37 25.5	Kurile Islands 44.18°N 149.05°E
			H = 23 25 27.0 h = 40 km MAG=4.9
			D = 78.6° Az = 333.9° (USCGS)
16.	ePg	04 34 13	Yugoslavia 43.5°N 20.0°E
	e(Sn)	35 10	H = 04 30 59 (BCIS)
	eSg	36 29.5	D = 9.1°
	e	37 05	
16.	eP	10 15 21	Off Coast of Michoacan/Mexico
	LmH	11(05)	15.47°N 104.26°W
			H = 10 14 04.1 h = normal MAG=4.5 (USCGS)
			D = 93.6°
16.	e	14 48 58	
	e	49 48	
16.	e(PP)	14 52 58	Solomon Islands 10.23°S 160.87°E
	LmH	15 50	H = 14 31 28.0 h = 38 km MAG=5.1 (USCGS)
	LmV	50.5	D = 132.4°
			LmH:21s 0.4/um LmV:22s 0.6/um
			MLH=5.1 MLV=5.2
16.	eP	17 10 17	Greenland Sea 71.6°N 2.8°W
	e	10 19	H = 17 05 21 (BCIS)
	e	10 24	D = 22.0°
	eS	14 20	PV2:1.8s 46.8nm PV3:2.2s 118nm
	LmH	20.9	LmH:13.5s 0.5/um LmV:13.5s 0.6/um
	LmV	20.9	MPV2=4.6 MLH=4.1 MLV=4.2
16.	eP	18 11(00)	North Atlantic Ridge 12.86°N 44.51°W
	e	11 08	H = 18 01 01.8 h = 30 km MAG=4.8 (USCGS)
	eS	19(15)	D = 59.0°
	LmH	31.4	LmH:24s 0.75/um LmV:23s 1.7/um
	LmV	31.4	MLH=4.8 MLV=5.1 e 11 18 e 11 34

Day	Phase	h m s	Remarks
17.	e	01 04 28	Solomon Islands 10.32°S 160.83°E
	ePP	06 51	H = 00 45 02.9 h = normal MAG=5.5 (USCGS)
	LmH	02 03.5	D = 132.5°
	LmV	03.5	LmV:24s 0.6/um
			MLV=5.2
17.	eP	09 00 25.5	Hokkaido/Japan 42.38°N 142.86°E
	e	00 32	H = 08 48 33.2 h = 67 km MAG=4.8 (USCGS)
			D = 78.3°
17.	ePKHKP	10 22 52	Fiji Islands Region 21.90°S 178.83°W
			H = 10 04 02.2 h = 544 km MAG=4.8
			D = 150.2° Az = 346.6° (USCGS)
17.	+eP	18 41 03	Republic of the Congo 0.80°N 29.99°E
	e	41 31.5	H = 18 31 55.1 h = normal (USCGS)
	e	42 16	D = 52.0°
	LmH	19(09)	
17.	LmH	23(44)	Taiwan Region 25.08°N 122.39°E
	LmV	46	H = 22 52 28.3 h = 69 km MAG=4.7 (USCGS)
			D = 82.5°
			LmH:24s 0.8/um
			MLH=5.0
18.	e(Pg)	08 00 03	Explosion
	eSg	00 23	(D = 1.5°)
18.	e(P)	14 33 13	LmH:17s 0.4/um
	e	33 19	
	LmH	15 10.3	
	LmV	16	
18.	ePKP	19 34 15	Near North Coast of New Guinea
	e	34 19	3.26°S 143.19°E
	ePP	35 28	H = 19 15 24.4 h = 17 km MAG=5.2
	ePS	45.2	D = 117.7° Az = 327.4° (USCGS)
	eSS	51.8	PV2:1.8s 18.7nm
	LmH	20 30.5	LmH:16s 0.7/um LmV:16.5s 0.9/um
	LmV	30.5	MLH=5.4 MLV=5.5 e 35 38 e 36 10

Day	Phase	h m s	Remarks
18.	e(P)	00 15 45	
18.	iP	00 18 57.6	Southeastern Alaska 59.46°N 137.69°W
			H = 00 07 59.0 h = 27 km MAG=4.5 (USCGS)
			D = 67.3°
19.	ePn	04 13 24.5	Yugoslavia 46.13°N 14.13°E
	ePg	13 41.5	H = 04 12 12.5 h = normal MAG=3.7
	iSn	14 17.0	D = 4.8° Az = 340.6° (USCGS)
	iSg	14 46.0	i 13 28.0 e 14 23 e 14 34
19.	ePKP	08 11 28	East New Guinea Region 149.51°E 8.84°S
	ePP	13 23	H = 07 52 20.2 h = 54 km MAG=5.4 (USCGS)
	LmH	09 08	D = 125.8°
	LmV	08	PV:1.4s 23.8nm
			LmV:20s 0.6/um
			MLV=5.3
19.	eP	17 59 23	Turkey 38.58°N 27.37°E
	e	59 27	H = 17 55 32.3 h = 31 km MAG=4.6
	e	59 32.5	D = 16.4° Az = 322.3° (USCGS)
	e	59 40	PV2:1.7s 44.5nm PV3:1.6s 52.6nm
	e	18 00 22	LmH:12s 2.3/um LmV:11s 1.7/um
	eS	00 32	MLH=4.6 MLV=4.6
	LmH	05.0	
	LmV	06.4	
19.	eP	19 40 36	Andreanof Islands/Aleutian Is.
	e	41 04	51.68°N 176.24°W
	LmH	20 19	H = 19 28 43.1 h = 57 km MAG=5.2 (USCGS)
	LmV	25	D = 77.7°
			LmH:18s 0.3/um LmV:16s 0.3/um
			MLH=4.7 MLV=4.7
20.	e	01 36 44	Andreanof Islands/Aleutian Is.
	LmH	02 15	51.49°N 178.61°W
			H = 01 24 12.9 h = 34 km MAG=5.1 (USCGS)
			D = 77.8°

Day	Phase	h m s	Remarks
20.	ePKP	09 11 40	Tonga Islands 16.20°S 173.07°W
	e	11 58	H = 08 52 02.9 h = normal MAG=4.8
			D = 145.4° Az = 354.7° (USCGS)
			PV1:1.7s 27.8nm PV2:1.5s 40.0nm
20.	ePKHKP	19 28 48	Tonga Islands 20.51°S 174.07°W
	e	28 58	H = 19 08 57.1 h = normal MAG=4.5
			D = 149.6° Az = 352.8° (USCGS)
21.	ePKIKP	01 02 29	Santa Cruz Islands 10.89°S 165.28°E
	e(PP)	05 08	H = 00 43 13.5 h = 25 km MAG=5.3 (USCGS)
	eSKP	06 00	D = 134.9°
	eSKSP	15 10	LmH:18s 1.1/um LmV:18s 1.4/um
	ePS	15 32	MLH=5.6 MLV=5.7
	LmH	02 05.5	e 02 41.5 e 05 23
	LmV	05.5	
21.	ePP	04 06 52	Bonin Islands Region 28.63°N 142.66°E
	LmH	44	H = 03 50 19.2 h = 15 km MAG=4.9 (USCGS)
	LmV	49	D = 90.0°
21.	ePKHKP	07 31 46	Tonga Islands 20.16°S 174.31°W
	LmH	08 44.5	H = 07 11 54.3 h = normal MAG=4.8 (USCGS)
	LmV	47	D = 149.3°
			PV:1.7s 27.8nm
21.	LmH	13 54.7	Honshu/Japan 36.77°N 138.02°E
			H = 13 05 17.2 h = normal MAG=4.7 (USCGS)
			D = 81.0°
			LmH:12s 0.25/um
			MLH=4.8
21.	LmH	14 00	Probably South Sandwich Island Region
21.	LmH	14 45	New Guinea 5.20°S 144.56°E
	LmV	45	H = 13 32 48.8 h = 42 km MAG=5.5 (USCGS)
			D = 120.1°
			LmH:21s 0.25/um LmV:21s 0.25/um
			MLH=4.9 MLV=5.0

Day	Phase	h m s	Remarks
21.	eP	15 59 35	Hokkaido/Japan 42.13°N 142.46°E
			H = 15 47 42.5 h = 72 km MAG=4.7 (USCGS)
			D = 77.9°
21.	eP	18 24 26	Oaxaca/Mexico 16.28°N 94.82°W
	epP	24 46	H = 18 11 43.0 h = 62 km MAG=5.2 (USCGS)
	LmH	19 05	D = 87.7° h = 75 km
	LmV	05	
21.	+iP	23 18 11	Kurile Islands 50.13°N 157.76°E
	e	18 22	H = 23 06 25.9 h = 14 km MAG=5.8
	LmH	51.4	D = 75.5° Az = 338.5° (USCGS)
	LmV	52.6	PV1:1.0s 65.1nm PV2:1.4s 35.7nm
			LmH:18s 1.0/um LmV:21s 0.8/um
			MPV1=5.7 MLH=5.2 MLV=5.0
22.	ePKP	02 09 28.5	New Hebrides Islands 17.49°S 167.19°E
			H = 01 49 52.8 h = 13 km MAG=5.1 (USCGS)
			D = 141.6°
22.	e(P)	06 51 19.5	
22.	eP	07 23(38)	Near Coast of Chiapas/Mexico
	e	24 18	14.68°N 92.09°W
	e	24 22	H = 07 11 00.8 h = 87 km MAG=5.1 (USCGS)
	LmH	08 02	D = 87.2°
	LmV	02	
22.	ePg	09 11 37	Valais/Switzerland 46.3°N 7.5°E
	eSg	12 41	H = 09 09 53 (BCIS)
	e	12 49	D = 5.2°
22.	eP	11 10 33	Greenland Sea 73.25°N 7.49°E
	e	10 38	H = 11 05 30.4 h = normal MAG=4.2
			D = 22.8° Az = 173.2° (USCGS)
22.	eP	11 49 43.5	Southern Alaska 61.36°N 147.57°W
	ipP	49 52.0	H = 11 38 53.7 h = 53 km MAG=5.2
	i	50 04.0	D = 67.1° Az = 14.2° (USCGS); h = 35 km
			PV1:1.2s 31.8nm PV2:1.1s 66.7nm
			MPV1=5.4

Day	Phase	h m s	Remarks
22.	eP	19 02 20	Kurile Islands 45.35°N 149.24°E
			H = 18 50 25.6 h = normal MAG=5.3
			D = 77.6° Az = 333.9° (USCGS)
			ANUSSR gives: h = 120 km
22.	eP	20 42 41	Banda Sea 7.20°S 124.59°E
	epP	44 37	H = 20 29 03.6 h = 507 km MAG=6.1 (USCGS)
	ePKIKP	46 36	D = 110.2° h = 525 km
	ePP	47 30	PV2:15s 1.7/um PPV:8s 1.2/um
	epPP	49 10	pPPV:12s 8.7/um SKSH:10s 3.0/um
	eSKS	52 32	PKKP1V:1.8s 144nm PKKP2V:2.0s 356nm
	eSP	55 55	PKPPKPV:1.9s 93.4nm
	ePKKP1	57 46.5	MPPV=6.2
	-iPKKP2	58 00.0	e 47 20 e 47 44 e 54 16 e 54 50
	ePKPPKP	21 01 51	
	LmH	35	
	LmV	38.6	
23.	-iP	05 13 06	Eastern Sea of Japan 43.81°N 139.85°E
	e	13 11.5	H = 05 01 42.4 h = 218 km MAG=5.5 (USCGS)
	ePcP	13 20	D = 76.2° h = 213 km
	epP	13 34	PV1:1.4s 143 nm PV2:1.2s 45.5nm
			MPV1=5.9
23.	eP	05 51 11.5	Near West Coast of Honshu/Japan
			38.46°N 139.50°E
			H = 05 39 17.5 h = 143 km MAG=4.7 (USCGS)
			D = 80.1°
23.	eP	09 47 48	Angola 14.36°S 21.83°E
			H = 09 37 02.9 h = normal MAG=5.3 (USCGS)
			D = 65.5°
23.	e(P)	11 13 21.5	
23.	epP	22 04 25	Near East Coast of Honshu/Japan
	e	04 48.5	38.16°N 141.43°E
			H = 21 51 57.4 h = 92 km MAG=5.0 (USCGS)
			D = 81.2°

Day	Phase	h m s	Remarks
24.	ePKIKP	08 37 25	South of Fiji Islands 26.73°S 177.34°W
	ePKHKP	37 34.5	H = 08 17 49.1 h = 146 km MAG=5.3
	ePKP2	37 50	D = 155.2° Az = 346.4° (USCGS)
			PV1:1.7s 38.8nm PV2:1.5s 27.5nm
			PV3:1.6s 73.7nm
24.	ePg	13 07 04	Explosion
	iSg	07 18.5	D = 1.1°
24.	iPg	14 06 02.5	Explosion
	eiSg	06 18.2	D = 1.2°
24.	ePKP	14 06(26)	South of Fiji Islands 24.24°S 178.68°E
	epPKP	08 50	H = 13 47 50.0 h = 619 km MAG=4.3 (USCGS)
			D = 151.9°
24.	ePg	15 01 57	Explosion
	eSg	02 13.5	D = 1.3°
24.	ePn	15 08 39	Mid-Italy 43.30°N 13.44°E
	ePg	09 15	H = 15 06 50.9 h = normal MAG=4.9
	iSn	09 59.5	D = 7.5° Az = 351.0° (USCGS)
	eSg	10 52	
	eLg2(3.36)	10 59.5	
	eRg(3.03)	11(25)	
24.	eP	22 37 39	Greece 38.84°N 21.60°E
	eS	40 16	H = 22 34 24.7 h = 25 km MAG=4.6
	eLg1(3.52)	41(40)	D = 13.8° Az = 332.3° (USCGS)
	eLg2(3.30)	42 10	e 37 48 e 38 12 e 38 36 e 42 26
25.	eP	01 59 00	South of Honshu/Japan 29.56°N 142.10°E
	e	59 07	H = 01 46 10.4 h = 49 km MAG=5.5
	epP	59 14	D = 88.9° Az = 331.0° (USCGS); h = 50 km
	ePP	02 02 33	PV:2.0s 44.5nm
	epPP	02 46	LmH:17s 1.9/um LmV:17s 1.6/um
	eS	09 46	MPV=5.3 MLH=5.6 MLV=5.5
	eSS	15 48	
	LmH	02 40.3	
	LmV	42.5	

Day	Phase	h m s	Remarks
25.	+iPKP	10 51 19.5	New Hebrides Islands 19.67°S 169.54°E
	epPKP	52 10	H = 10 32 07.6 h = 199 km MAG=4.8
	esPKP	52 28.5	D = 144.5° Az = 335.7° (USCGS); h = 195 km
25.	eP	17 37 16	Near Coast of Guatemala 13.69°N 91.16°W
	epP	37 37	H = 17 24 38.9 h = 119 km MAG=5.3 (USCGS)
			D = 87.4° h = 80 km
25.	ePKIKP	18 57 19	New Britain Region 5.00°S 151.36°E
			H = 18 38 35.7 h = 123 km MAG=5.6 (USCGS)
			D = 123.4°
26.	LmH	00(11)	Oaxaca/Mexico 16.02°N 96.49°W
	LmV	(11)	H = 23 17 06.1 h = 40 km MAG=4.8 (USCGS)
			D = 88.7°
26.	ePKHKP	07 09 06.5	Tonga Islands 21.24°S 174.32°W
			H = 06 49 17.6 h = normal MAG=5.0
			D = 150.3° Az = 352.4° (USCGS)
26.	LmH	08 24.5	Honshu/Japan 36.79°N 138.11°E
	LmV	25	H = 07 34 55.8 h = normal MAG=4.4 (USCGS)
			D = 81.0°
			LmH:13s 0.4/um
			MLH=5.0
26.	eP	11 06 45	Eastern India 26.32°N 92.97°E
			H = 10 56 08.8 h = 48 km MAG=5.0
			D = 64.8° Az = 315.9° (USCGS)
26.	e(P)	12 33 35	
26.	eP	13 21 59	Turkey 37.01°N 36.13°E
	e	22 07	H = 13 16 58.8 h = normal MAG=4.5 (USCGS)
	LmH	(32)	D = 22.2°
	LmV	32	
26.	LmH	15 35	Taiwan Region 24.00°N 122.33°E
	LmV	36	H = 14 40 43.8 h = normal (USCGS)
			D = 83.8°

Day	Phase	h m s	Remarks
26.	eP	23 41 47	Szechwan Province/China 31.90°N 104.01°E
	LmH	24 12.3	H = 23 30 52.5 h = normal MAG=5.2
	LmV	12.3	D = 67.5° Az = 316.5° (USCGS)
27.	ePn	05 17(56)	Italy 44.4°N ± 0.2° 12.3°E ± 0.2°
	ePg	18 30	H = 05 16 22 (BCIS)
	e(Sb)	19 27	D = 6.3°
	eSg	19 54	e 18 09 e 20 15
	LmH	20.8	
27.	i	07 57 27	Near earthquake?
	e	08 28 04	
	e	29 15	
27.	e(PKHKP)	08 58 34	Tonga Islands 22.71°S 175.84°W
	i(pPKHKP)	58 49.4	H = 08 38 45.8 h = 60 km MAG=5.3
			D = 151.5° Az = 350.0° (USCGS);
			(h = 55 km)
			PV2:1.4s 66.6nm
			The amplitude of the first onset is
			much smaller than the amplitude of
			the second onset.
27.	+iP	10 50 37.5	Nepal-India Border Region
	ePP	52 40	29.70°N 80.87°E
	e	53 46	H = 10 41 08.6 h = 37 km MAG=6.1
	eS	58 18	D = 54.8° Az = 313.2° (USCGS)
	e	58 58	PV1:1.4s 252nm PV:10s 4.4/um
	eSS	11 02 06	PH:10s 2.2/um PPH:8s 1.7/um
	LmH	16.5	PPV:8s 2.3/um SH:15s 3.3/um
	LmV	16.5	LmH:16s 14.5/um LmV:15s 1.6/um
	ePKPPKP	21(04)	MPV1=6.2 MPV=6.5 MPH=6.6 MPPH=6.5
			MPPV=6.3 MSH=6.1 MLH=6.2 MLV=6.3
27.	eP	10 59 18	Nepal-India Border Region
			29.76°N 80.66°E
			H = 10 49 50.0 h = normal MAG=5.8
			D = 54.6° Az = 313.2° (USCGS)
			PV:1.2s 72.7nm
			MPV=5.7

Day	Phase	h m s	Remarks
27.	+iP	11 08 46.5	Nepal-India Border Region
	ei	08 51	29.68°N 80.99°E
	ei	09 00	H = 10 59 18.1 h = 40 km MAG=6.0
	iPP	10 54	D = 54.9° Az = 313.3° (USCGS)
	LmH	34.7	PV1:1.4s 228nm PV2:2.3s 1330nm
	LmV	34.7	PPV:12s 4.0/um
	ePKPPKP	39 13	LmH:13s 28.0/um LmV:14s 39.1/um
			MPV1=6.1 MPV2=6.7 MPPV=6.4 MLH=6.5
			MLV=6.7
27.	eP	11 31 12	Nepal-India Border Region
			29.68°N 80.79°E
			H = 11 21 43.3 h = normal MAG=5.4
			D = 54.8° Az = 313.2° (USCGS)
			PV:1.0s 19.6nm
			MPV=5.2
27.	ePKP	12 33 39.5	Tonga Islands 16.40°S 174.83°W
	epPKP	34 02.5	H = 12 14 04.9 h = 80 km MAG=4.6
			D = 145.4° Az = 352.8° (USCGS); h = 86 km
			PV:1.2s 20.5nm
27.	+eP	14 05 21	Nepal-India Border Region
	e	05 25	29.61°N 80.82°E
	e	05 33	H = 13 55 51.9 h = 35 km MAG=5.4
			D = 54.8° Az = 313.3° (USCGS)
			PV:1.4s 50.0nm
			MPV=5.4
27.	e(Sg)	16 19 48	Vienna (VIE) gives: Triest
	e	20 21	
	e	20 34.5	
27.	e	16 49 57	
27.	ePKIKP	22 06 58	North Island/New Zealand
	-iPKP2	07 53.0	38.04°S 177.19°E
	epPKP2	08 20	H = 21 47 05.5 h = 54 km MAG=5.7
	ePP	11 36	D = 163.8° Az = 325.5° (USCGS); h = 93 km
			PV2:1.1s 55.5nm

Day	Phase	h m s	Remarks
28.	eP	04 21 28	Central California 35.85°N 120.60°W
	e(sP)	21 33	H = 04 08 54.7 h = 5 km MAG=5.0
	e	21 37.5	D = 84.1° Az = 28.3° (USCGS);
			(h = 14 km)
			PV2:1.6s 47.3nm
28.	eP	04 38(48)	Central California 35.91°N 120.55°W
	e	38 51	H = 04 26 12.4 h = 4 km MAG=5.3
	e	39 03.5	D = 84.1° Az = 28.3° (USCGS)
	e	39 57	PV2:1.6s 73.6nm PV3:2.1s 125nm
	eS	49 14	PV4:2.3s 120nm
	eSS	54 40	LmH:24s 19.4/um LmV:17s 11.8/um
	LmH	05 12.0	MPV2=5.6 MLH=6.4 MLV=6.4
	LmV	20.1	
28.	e	12 41 07	Near earthquake?
	e	41 14	
	e	41 40	
28.	eP	17 00 07	Northeast of Taiwan 27.01°N 125.94°E
	e	00 08	H = 16 47 49.4 h = 100 km MAG=5.0
			D = 83.4° Az = 324.3° (USCGS)
			PV:1.8s 50.0nm
			MPV=5.3
29.	eP	00 52(17)	Albania 41.24°N 20.41°E
	e	52 24	H = 00 49 34.2 h = 17 km MAG=4.3
	e	52 27	D = 11.2° Az = 330.0° (USCGS)
	e	52 31.5	e 54 40.5 e 55 50 e 57(00)
29.	+iP	07 05 46.5	Kazakh SSR 49.93°N 78.01°E
	ePn	07 18.5	H = 06 57 58.1 h = 0 km MAG=5.7
	ePP	07 22.5	D = 41.1° Az = 297.5° (USCGS)
			PV:0.7s 148nm
			MPV=6.0
			Probably underground explosion.
29.	ePKP	07 57 57	Tonga Islands 19.40°S 174.25°W
	e	58 08	H = 07 38 14.0 h = 50 km MAG=4.5
			D = 148.5° Az = 352.9° (USCGS)

Day	Phase	h m s	Remarks
29.	iPn	15 05 23.0	Explosion/GFR 9.86°E 51.22°N
	iPg	05 24.0	H = 15 05 00
	iSg	05 40.3	D = 1.2° Yield: 16.5 t
29.	eP	20 05 58	Central-California 35.84°N 120.53°W
	e	06 04.5	H = 19 53 24.1 h = 5 km MAG=4.9
	LmH	40.5	D = 84.1° Az = 28.3° (USCGS)
	LmV	45	LmH:18s 0.65/um
			MLH=5.1
29.	ePKIKP	22 06 16	New Hebrides Islands 13.75°S 166.72°E
	ePP	09 05	H = 21 46 54.5 h = 35 km MAG=6.2
	ePKS	09 52	D = 138.0° Az = 336.4° (USCGS)
	LmH	23 09.8	LmH:21s 1.1/um LmV:19s 1.6/um
	LmV	15.5	MLH=5.6 MLV=5.8
29.	eP	23 03 51	Taiwan Region 24.22°N 122.55°E
	e	04 02	H = 22 51 22.7 h = normal MAG=5.2 (USCGS)
	e	04 10	D = 83.8°
	LmH	45.5	LmH:16s 0.7/um LmV:16s 0.8/um
	LmV	45.5	MLH=5.2 MLV=5.2
30.	ePKHKP	06 26 12.5	Fiji Islands Region 21.02°S 176.28°W
	e	26 18	H = 06 06 42.3 h = 169 km MAG=4.5
			D = 149.8° Az = 350.0° (USCGS)
30.	-eiP	09 10 30.5	Near Vladivostok/USSR 43.59°N 132.18°E
	e	10 43	H = 08 59 48.3 h = 454 km MAG=5.4
	e	12 56	D = 72.9° Az = 325.0° (USCGS)
			PV:1.1s 62.0nm
			MPV=5.1
30.	eP	12 41 15	Mindanao/Philippine Islands
	e	41 21	9.57°N 126.67°E
	e	41 43	H = 12 27 41.9 h = 44 km MAG=5.4
	eS	52 42	D = 98.0° Az = 324.4° (USCGS)
	LmH	13 25.0	SH:12s 0.3/um
	LmV	33.6	LmH:17s 1.2/um LmV:17s 1.9/um
			MLH=5.5 MLV=5.7

Day	Phase	h m s	Remarks
30.	-eP	15 57 50.5	Taiwan Region 24.38°N 122.15°E
	e	57 58	H = 15 45 26.0 h = 47 km MAG=5.4
	LmH	16 33.7	D = 83.5° Az = 323.1° (USCGS)
	LmV	39.3	PV:1.4s 24.8nm
			LmH:15s 0.5/um LmV:18s 0.8/um
			MPV=5.1 MLH=5.1 MLV=5.2
30.	e	19 23 27	Near earthquake.
	e	23 38	
30.	eP	19 24 16	Yugoslavia-Albania Border Region
	e	24 28.5	41.2°N 21.0°E
	LmH	28.0	H = 19 21 28 (BCIS)
	LmV	29.2	D = 11.5°
			LmH:12.5s 1.5/um LmV:12s 0.7/um
			MLH=4.1 MLV=4.0
30.	+iP	22 27 17.0	Nevada
	e	28 00	H = 22 15 00 (UPP)
	e	28 21	D = ca. 81°
	ePP	30 22.5	PV:1.2s 136nm PPV:1.4s 57.1nm
	LmH	23 05	LmV:16s 0.9/um
	LmV	05.2	MPV=6.0 MPPV=5.6 MLV=5.3
			Underground explosion.

Day	Phase	h m s	Remarks
1.	+iP	06 02 55.0	Taiwan Region 24.80°N 122.47°E
	e	03 12	H = 05 50 39.2 h = 117 km MAG=6.4
	+ipP	03 25.0	D = 83.4° Az = 323.2° (USCGS);
	esP	03 38	h = 120 km
	-i(PP)	06 04.5	PV1:1.5s 395nm PV:5.5s 4.9/um
	-ePP	06 07	PH:5s 1.5/um PPV:1.7s 77.8nm
	eipPP	06 32	SH:14.5s 3.7/um PKKPV:1.4s 47.6nm
	eisPP	06 45	PKPPKPV:2.2s 52.5nm
	eiS	13 04	PKPPKPPKPV:2.6s 57.1nm
	esS	13 49	LmH:14s 4.3/um LmV:14s 4.9/um
	eiSS	18 28	MPV1=6.0 MPV=6.6 MPH=6.4 MSH=6.4
	eisSS	19 10	
	iPKKP	21 14.5	
	epPKKP	21 45	
	eSSS	22 05	
	ePKPPKP	29 15	
	epPKPPKP	29 46	
	LmH	44.3	
	LmV	44.3	
	ePKPPKPPKP	49 40	
1.	eP	19 17 11	Near Islands/Aleutian Is.
	LmH	(50)	52.26°N 174.18°E
	LmV	(50)	H = 19 05 26.5 h = 56 km MAG=5.0
			D = 76.4° Az = 348.7° (USCGS)
			PV:1.3s 16.3nm
			MPV=5.0
1.	ePKHKP	19 39 19	South of Fiji Islands 23.74°S 179.88°W
	e	39 26	H = 19 20 21.9 h = 496 km MAG=4.1 (USCGS)
	ePKP2	39 30.5	D = 151.6°
1.	eP	20 30 08	El Salvador 13.68°N 88.44°W
			H = 20 17 49.3 h = 201 km MAG=5.3 (USCGS)
			D = 85.7°
			PV:1.1s 15.6nm
			MPV=5.1
2.	e	07 56 15	

Day	Phase	h m s	Remarks
2.	iP	11 30 44.5	Uganda 0.87°N 30.09°E
	i	31 21.0	H = 11 21 30.4 h = normal MAG=4.8 (USCGS)
			D = 52.0°
3.	eP	04 07 04	Fox Islands/Aleutian Is. 52.55°N 170.24°W
	ePcP	07 14	H = 03 55 15.7 h = 69 km MAG=5.3
	epP	07 25.5	D = 77.2° Az = 358.8° (USCGS); h = 82 km
3.	ePKIKP	04 29 19	Tonga Islands 21.11°S 174.23°W
	-iPKP2	29 30.5	H = 04 09 30.0 h = normal MAG=5.0 (USCGS)
	-i(pPKP2)	29 36.0	D = 150.3° (h = 20 km)
	LmH	05 37.5	PV1:2.6s 118nm PV2:2.0s 77.8nm
	LmV	37.5	PV3:1.8s 106nm
			LmH:20s 0.5/um LmV:20s 0.7/um
			MLH=5.3 MLV=5.4
4.	eiPKIKP	00 23 03	Drake Passage 58.85°S 69.25°W
	e(pPKIKP)	23 13.5	H = 00 03 54.6 h = normal MAG=4.8 (USCGS)
			D = 127.4° (h = 37 km)
4.	+iP	03 07 28.0	Rat Islands/Aleutian Is. 51.81°N 176.42°E
	e	07 33	H = 02 55 35.9 h = 28 km MAG=5.7
	-i(pP)	07 43.5	D = 77.1° Az = 350.1° (USCGS);
	e	07 54	(h = 60 km)
	e	08 17	PV:1.1s 40.0nm
	LmH	44.5	LmH:20s 0.3/um LmV:20s 0,45/um
	LmV	44.5	MPV=5.5 MLH=4.6 MLV=4.8
4.	ePKIKP	07 41 04.5	South of Fiji Islands 22.13°S 179.63°W
	-iPKHKP	41 10	H = 07 22 25.6 h = 600 km MAG=4.7
	ePKP2	41 19	D = 150.2° Az = 345.5° (USCGS)
	epPKP	43 32	PV2:1.3s 55.7nm PV3:1.3s 32.8nm
4.	eP	12 21 25	Azores Islands Region 37.54°N 24.76°W
	ePP	22 20	H = 12 15 28.1 h = normal MAG=5.5 (USCGS)
	eS	26(12)	D = 29.0°
	iS	26 18	PV:2.0s 148nm SH:13.5s 2.6/um
	LmH	32.2	LmH:16s 4.8/um LmV:18s 6.8/um
	LmV	32.2	MPV=5.5 MSH=5.7 MLH=5.2 MLV=5.4

Day	Phase	h m s	Remarks
4.	eP1	18 45 32.5	Rat Islands/Aleutian Is. 51.74°N 179.89°E
	-eP2	45 38	H = 18 33 35.7 h = 13 km MAG=6.2 (USCGS)
	-iP3	45 42.5	D = 77.7°
	+iP4	45 48.0	PV1:2.0s 40.7nm PV3:2s 260nm
	+iPP1	48 33	PV4:2.3s 930nm PPV1:2.0s 260nm
	+iPP3	48 44	SH4:11s 10/um
	+iPP4	48 48.5	LmH:16s 68/um LmV:16s 44.4/um
	eS1	55 22	MPV1=5.2 MPV3=5.8 MPV4=6.5 MPPV1=6.0
	eS2	55 28	MSH4=6.9 MLH=7.1 MLV=6.9
	eS3	55 32	Successive P-onsets with increasing
	eS4	55 37	amplitude. PP-onsets are very sharp in
	ePKPPKP	19 12 47	the shortperiod records and show con-
	LmH	24.5	stante amplitudes over a duration of
	LmV	29.7	about 27 s.
4.	eP	19 02 18	Andreanof Islands/Aleutian Is.
			51.69°N 178.98°W
			H = 18 50 25.2 h = normal MAG=5.4 (USCGS)
			D = 77.5°
5.	eP	02 28 22	Azores Islands 37.49°N 24.62°W
	LmH	39.1	H = 02 22 23.9 h = 27 km MAG=4.8
	LmV	39.1	D = 28.9° Az = 51.2° (USCGS)
			LmH:13s 0.55/um LmV:16s 0.65/um
			MLH=4.3 MLV=4.4
5.	iP1	02 33 33	Andreanof Islands/Aleutian Is.
	eP2	33 38	52.22°N 178.36°W
	iP3	33 47.4	H = 02 21 43.8 h = 66 km MAG=4.9
	LmH	03 13.1	D = 77.2° Az = 353.5° (USCGS)
	LmV	17.9	PV2:1.4s 35.7nm PV3:1.7s 139nm
			LmH:17.5s 3.0/um LmV:16s 2.0/um
			MPV2=5.3 MPV3=5.8 MLH=5.7 MLV=5.4
			Multiple and clearly separated P-onsets
			with increasing amplitude. PV1 is very
			small.

Day	Phase	h m s	Remarks
5.	eiPKP	03 41 50.5	Tonga Islands 15.22°S 174.95°W
			H = 03 22 45.2 h = 252 km MAG=5.1 (USCGS)
			D = 144.4°
			PV:1.6s 100nm
5.	+eiP	05 15 04	Azores Islands 37.59°N 24.64°W
	-ei	15 13.5	H = 05 09 03.6 h = 12 km MAG=5.1 (USCGS)
	eS	19(58)	D = 28.5°
	LmH	25.8	PV1:1.8s 50.0nm PV2:2.0s 63.0nm
	LmV	25.8	LmH:14.5s 1.4/um LmV:16s 1.8/um
			MPV1=5.0 MLH=4.7 MLV=4.8
5.	e(P)	16 00 38.5	
6.	e(P)	04 14 57	
6.	eP	04 27 09	Southern Italy 40.87°N 15.69°E
	eSn	28 57	H = 04 24 40.5 h = 25 km MAG=4.3
	ei	29 30	D = 10.2° Az = 345.2° (USCGS)
	eLg2(3.26)	30 28	
6.	e(P)	11 03 24.5	PV:0.9s 17.4nm
6.	eP	12 05 23	Northern Pamir 38.9°N 71.3°E
	e	05 34	H = 11 57 26 h = normal MAG=ca.5 (ANUSSR)
	e	07 20	D = 42.8°
	e	07 37	
6.	LmH	14 33	Sinkiang Prov./China (USCGS)
6.	e(PP)	19 43(00)	Northern Easter I. Cordillera
	e	43 14	4.40°S 104.91°W
	e	43 20	H = 19 23 37.8 h = normal MAG=4.8 (USCGS)
	e	43 28	D = 110.0°
	LmH	20 29	LmH:20s 0.4/um LmV:18s 0.45/um
	LmV	29	MLH=5.0 MLV=5.1
6.	eP	20 34 29	Ryukyu Islands 25.81°N 128.00°E
	eS	44(58)	H = 20 21 43.5 h = 23 km MAG=5.3
	LmH	21 11.4	D = 85.5° Az = 325.1° (USCGS)

Day	Phase	h m s	Remarks
cont.			
6.	LmV	21 17.8	PV:1.6s 58.0nm
			LmH:16s 1.1/um LmV:17s 1.1/um
			MPV=5.5 MLH=5.4 MLV=5.3
7.	LmH	00 31.4	Ryukyu Islands 29.46°N 129.02°E
	LmV	37.6	H = 23 43 33.6 h = 31 km MAG=4.8 (USCGS)
			D = 83.0°
			LmH:16s 0.5/um LmV:14s 0.3/um
			MLH=5.0 MLV=4.8
7.	ePKP	23 41 46	Tonga Islands 17.80°S 173.60°W
			H = 23 22 07.3 h = 26 km MAG=5.3
			D = 147.0° Az = 353.9° (USCGS)
8.	ePKP	22 32 10	Tonga Islands 19.04°S 174.49°W
	e	32 34	H = 22 12 23.2 h = 5 km MAG=5.3
			D = 148.1° Az = 352.6° (USCGS)
9.	ePn	10 06 38	Yugoslavia 43.25°N 18.75°E
	ePg	07 23	H = 10 04 32 (BCIS)
	e(Sb)	08 54	D = 8.9°
	eSg	09 20	e 08 45 e 09 41
9.	-eiPKHKP	14 33 25.5	Fiji Islands 20.09°S 178.37°W
	ePKP2	33 31	H = 14 14 41.6 h = 559 km MAG=5.1
			D = 148.5° Az = 347.8° (USCGS)
			PV:1.8s 50.0nm
9.	e(P)	18 21 51.5	
	e	22 04	
10.	ePKP	01 40 42	Fiji Islands 17.38°S 178.71°W
			H = 01 22 02.9 h = 532 km MAG=5.8
			D = 145.8° Az = 348.3° (USCGS)
10.	eSg	03 47 48	Eastern French 47.4°N 6.4°E
	e	48 04	H = 03 4[illegible] 15 (BCIS)
			D = 4.7°

Day	Phase	h m s	Remarks
10.	ePKIKP	10 20 32	Kermadec Islands 30.46°S 177.80°W
	e	20 40	H = 10 00 39.1 h = 40 km MAG=5.8
	ePKP2	21 08	D = 158.6° Az = 343.4° (USCGS);
	e(pPKP2)	21 20	(h = 43 km)
	ePP	24 43	PV1:2.2s 59.0nm PV3:1.6s 68.5nm
	LmH	11 27.5	
	LmV	32	
10.	ePn	13 31 22	Alps 46.4°N 13.4°E
	ePg	31 37.5	H = 13 30 15 (BCIS)
	eSn	32 14	D = 4.4°
	eSg	32(38)	e 31 53 e 32 26 e 32 31
10.	+iP	16 25 17.0	Southwestern Ryukyu Islands
	-ipP	25 27.0	24.24°N 125.18°E
	e(PP)	28 48	H = 16 12 41.5 h = 28 km MAG=5.9
	ePPP	30 30	D = 85.3° Az = 324.2° (USCGS); h = 37 km
	ePPPP	32 10	PV:2.3s 380nm SH:16s 2.2/um
	eSKS	35 40	LmH:18s 15.5/um LmV:15.5s 24/um
	eS	35 48	MPV=6.2 MSH=6.1 MLH=6.5 MLV=6.7
	ePS	36 40	
	eSS	41 34	
	e(Sa)(4.75)	45 55	
	LmH	17 08.2	
	LmV	08.2	
10.	eP	19 10 53	Ryukyu Islands
			H = 18 58 06.8 h = 40 km (UPP)
10.	iP	22 16 55.0	Southwestern Ryukyu Islands
	LmH	23 59.7	24.78°N 125.27°E
	LmV	59.7	H = 22 04 24.4 h = 58 km MAG=5.4
			D = 84.9° Az = 324.2° (USCGS)
			PV:1.8s 112nm
			LmH:17s 0.4/um LmV:17s 0.55/um
			MPV=5.7 MLH=4.9 MLV=5.0

Day	Phase	h m s	Remarks
11.	e(Pg)	16 15 34	Tirol/Austria 47.2°N 10.8°E
	ei(Sn)	15 58	H = 16 14 29 (BCIS)
	i(Sb)	16 13.5	D = 3.5°
	i(Sg)	16 20.5	
11.	+eiPKHKP	23 05 41	Tonga Islands 19.19°S 173.57°W
	e	06 00	H = 22 46 05.7 h = 120 km MAG=5.6
	ei(pPKP2)	06 19	D = 148.3° Az = 353.7° (USCGS);
	ePS	19 46	(h = 120 km)
	LmH	00 16.3	PV1:1.6s 63.0nm PV3:2.3s 190nm
	LmV	18.3	LmH:20s 1.3/um LmV:18s 1.0/um
			MLH=5.8 MLV=5.7
			ANUSSR gives: h = normal
12.	eP	00 09 21	Turkey 38.87°N 41.33°E
			H = 00 04 11.9 h = 64 km MAG=4.6
			D = 24.0° Az = 309.1° (USCGS)
12.	eP	03 00 23	Mediterranean Sea 35.52°N 22.44°E
	e	00 30.5	H = 02 56 23.5 h = 15 km MAG=4.9
	e	00 48	D = 17.0° Az = 335.9° (USCGS)
	eS	03(36)	LmH:10.5s 2.7/um LmV:13.5s 2.0/um
	LmH	07.8	MLH=4.7 MLV=4.7
	LmV	07.9	e 03 46 e 04 06
12.	+iPKP	17 56 55.0	Loyalty Islands 21.49°S 170.51°E
	e	57(37)	H = 17 37 27.3 h = 134 km MAG=5.3
			D = 146.3° Az = 335.4° (USCGS)
			PV:1.4s 57.1nm
			ANUSSR gives: h = normal
12.	-iP	18 57 19.5	Black Sea 44.59°N 37.41°E
	+e	57 24	H = 18 53 08.5 h = 26 km MAG=5.9 (USCGS)
	eS	19 00 38	D = 18.1°
	e	00 48	PV:2.0s 51.9nm SH2:11.5s 2.9/um
	e	02 30	LmH:21.5s 8.5/um LmV:17s 9.1/um
	iLg2(3.28)	03 22	MLH=5.0 MLV=5.2
	LmH	05.0	Between P and S are very long waves
	LmV	05.5	(T ca.45s), superimposed by shorter waves
			(T ca.2-6s) in our longperiod records.

Day	Phase	h m s	Remarks
cont. 12.			LQ begins with periods from T ca.60s and shows very clear normal dispersion, superimposed by more high-frequency motion (T ca.3-10s). Well developed higher-mode surface waves.
12.	ePKHKP	21 59 46	Tonga Islands 20.57°S 174.39°W
	e	59 49	H = 21 39 57.8 h = normal MAG=4.6
			D = 149.6° Az = 352.4° (USCGS)
13.	iPKHKP	07 05 48.5	South of Fiji Islands 23.35°S 179.87°E
	iPKP2	05 59.0	H = 06 46 55.8 h = 540 km MAG=4.8 (USCGS)
			D = 151.2°
13.	eP	08 33 33	Near Coast of Nicaragua 12.63°N 87.73°W
	epP	33 49	H = 08 20 59.4 h = 61 km MAG=5.3 (USCGS)
	esP	33 55	D = 86.0° h = 60 km
	e	34 20	sPV:1.2s 72.6nm
	eS	43 54	LmH:21s 0.65/um LmV:21s 0.85/um
	LmH	09 08.0	MLH=5.0 MLV=5.2
	LmV	08.0	
13.	eP	10 39 48	North Atlantic Ocean 56.84°N 34.12°W
	LmH	50.5	H = 10 34 02.8 h = 24 km MAG=4.9
	LmV	51.7	D = 27.3° Az = 83.4° (USCGS)
			PV:1.4s 28.5nm
			LmH:13s 0.7/um LmV:13s 0.5/um
			MPV=4.8 MLH=4.3 MLV=4.3
13.	e(pPP)	14 58 55	Northern Celebes 0.10°S 122.80°E
			H = 14 40 25.6 h = 126 km MAG=5.0 (USCGS)
			D = 103.4°
			PV:1.7s 33.3nm
14.	eP	06 31 06	Near S. Coast of Honshu/Japan
	eS	41 24	35.57°N 139.98°E
	e(sS)	42 00	H = 06 18 47.6 h = 71 km MAG=5.0 (USCGS)
	ePPS	42 50	D = 82.6°
	LmH	07 15.5	PV:1.4s 28.6nm

Day	Phase	h m s	Remarks
cont.			
14.	LmV	07 15.5	LmH:17s 0.6/um LmV:17s 0.85/um MPV=5.2 MLH=5.1 MLV=5.2 e 31 15 e 31 19
14.	ePKP	07 43 21	Tonga Islands 15.06°S 174.23°W H = 07 24 06.1 h = 189 km MAG=4.6 D = 144.2° Az = 353.6° (USCGS)
14.	eP	10 09 57	Kurile Islands 45.72°N 151.76°E H = 09 58 00.0 h = normal MAG=4.7 D = 78.0° Az = 335.3° (USCGS)
14.	eP	12 29 41	Gulf of Alaska 56.25°N 149.79°W
	e	29 48	H = 12 18 17.0 h = normal MAG=5.2 D = 72.4° Az = 12.3° (USCGS) PV:1.0s 34.8nm MPV=5.4
14.	e	15 56 12	Polonia-CSSR Border Region
	ePg	56 15	50.0°N 18.3°E
	e	56 28	H = 15 54 48 (BCIS)
	eSg	57 12	D = 4.3°
14.	e(P)	16 24 21	
14.	eP	18 18 45	Near Islands/Aleutian Is.
	epP	18 52	53.11°N 171.06°E
	e	19 18	H = 18 07 04.1 h = 29 km MAG=5.2 D = 75.2° Az = 346.6° (USCGS); h = 26 km PV:1.0s 26.1nm MPV=5.3
14.	eP	18 20 26	Near Islands/Aleutian Is.
	e	20 33	53.11°N 170.94°E
	e	20 49	H = 18 08 45.7 h = 29 km MAG=4.9 (USCGS) D = 75.2°
15.	eP	08 10 52.5	Leeward Islands 16.93°N 61.46°W
	e	11 29.5	H = 08 00 00.7 h = 89 km MAG=5.4 (USCGS)

Day	Phase	h m s	Remarks
cont.			
15.	e	08 11 35	D = 66.4°
	LmH	35	LmH:20s 0.25/um LmV:20s 0.45/um
	LmV	35	MLH=4.4 MLV=4.7
15.	ePg	13 57 54	Explosion/CSSR 49.6°N 13.7°E
	eSg	58 18	D = 1.7° Yield: 20 t
15.	e	23 53 35	Greece 38.8°N 21.5°E
	LmH	58.1	H = 23 50 08 h = normal (BCIS)
	LmV	00 00	D = 13.8° P must be 11 s earlier than the given first motion.
16.	ePKIKP	07 39 08	Santa Cruz Islands 10.88°S 165.92°E
	LmV	08 40	H = 07 19 55.8 h = 68 km MAG=5.2° (USCGS) D = 135.2°
16.	LmH	20 08.0	Kirgiz-Sinkiang Border Region
	LmV	11.0	40.67°N 74.22°E H = 19 43 27.4 h = normal MAG=4.8 (USCGS) D = 43.7° LmH:15.5s 0.75/um LmV:12s 0.65/um MLH=4.7 MLV=4.8
17.	+iPKP	02 43 42	Loyalty Islands 21.62°S 169.86°E
	e	43 56	H = 02 24 06.9 h = 63 km MAG=5.2
	e	44 01	D = 146.4° Az = 334.8° (USCGS) PV:1.2s 77.3nm
17.	eP	08 57 08	Southern Alaska 61.91°N 152.01°W H = 08 46 25.8 h = 103 km MAG=4.8 D = 67.0° Az = 11.2° (USCGS)
17.	eP	10 20 22	
17.	iPKP	16 23 59.5	Tonga Islands 19.62°S 175.67°W H = 16 04 37.1 h = 220 km MAG=4.9 (USCGS) D = 148.4°

Day	Phase	h m s	Remarks
17.	e(P)	16 58 25	
17.	e	20 59(34)	
	e	21 00 52	
18.	eiPKIKP	01 07 09	South of Fiji Islands 23.09°S 176.76°W
	eiPKHKP	07 16	H = 00 47 36.2 h = 138 km MAG=4.7 (USCGS)
	ei	07 20	D = 151.8°
18.	eP	02 04 48	Carlsberg Ridge 8.36°N 58.50°E
	eS	12 46	H = 01 55 02.1 h = normal MAG=4.9
	LmV	33	D = 57.2° Az = 326.4° (USCGS)
			PV:2.4s 68.2nm
			MPV=5.3
18.	eP	04 51 33	Near East Coast of Honshu/Japan
			38.42°N 141.53°E
			H = 04 39 23.9 h = 74 km MAG=4.7 (USCGS)
			D = 81.0°
18.	eP	10 08 24	Arabian Sea 13.10°N 57.60°E
	eS	15 52	H = 09 59 10.0 h = normal MAG=5.1
	LmH	(35)	D = 52.8° Az = 324.9° (USCGS)
	LmV	(35)	PV:2.4s 91.0nm
			MPV=5.5
18.	e(P)	13 10 28	
18.	eP	19 47 28	Carlsberg Ridge 7.6°N 58.5°E
	e	47 38	H = 19 37 37 h = normal (ANUSSR)
	e	47 44	D = 57.8°
18.	ePKIKP	22 34 42	West Chile Rise 38.30°S 93.74°W
	e	35 23	H = 22 15 38.3 h = normal MAG=5.1
	e	35 28.5	D = 127.5° Az = 50.7° (USCGS)
	e	35 37.5	PV:1.8s 22nm
	LmV	23 23.9	LmH:20s 0.4/um LmV:17s 0.5/um
	LmH	28	MLH=5.1 MLV=5.3

Day	Phase	h m s	Remarks
19.	eP	00 26 02	North Atlantic Ocean 55.50°N 35.37°W
	eS	30 52	H = 00 20 11.0 h = normal MAG=4.6 (USCGS)
	LmV	38.6	D = 28.2°
	LmH	39.3	LmH:13s 0.6/um LmV:14s 0.9/um
			MLH=4.4 MLV=4.6
19.	LmH	01 37.1	LmH:15s 0.8/um LmV:14s 0.4/um
	LmV	39.2	
19.	-eP	01 52 13	Komandorsky Islands 56.20°N 164.90°E
	eS	02 01 32	H = 01 40 53.9 h = 18 km MAG=5.4
	eSP	01 53	D = 71.2° Az = 342.4° (USCGS)
	ePPS	02 12	PV:5.5s 0.6/um SSH:15s 2.2/um
	eSS	06 06	LmH:15.5s 16/um LmV:16.5s 13/um
	eSSS	09 20	MPV=5.9 MLH=6.4 MLV=6.3
	LQ	14.6	
	LmH	26.3	
	LmV	30.0	
19.	eP	02 10 56	North Atlantic Ocean 55.35°N 34.85°W
			H = 02 05 06.4 h = normal MAG=4.5 (USCGS)
			D = 27.9°
19.	e	11 21 33.5	
19.	+eP	19 32 28	Andreanof Islands/Aleutian Is.
	-ipP	32 40.5	51.73°N 173.30°W
	e	32 54	H = 19 20 33.4 h = 47 km MAG=5.5
	eS	42(18)	D = 77.9° Az = 356.8° (USCGS); h = 47 km
	eSS	47.6	PV:1.6s 105nm pPV:1.6s 110nm
	LmH	20 16.2	LmH:18.5s 1.5/um LmV:18.5s 1.5/um
	LmV	16.3	MPV=5.7 MLH=5.4 MLV=5.4
20.	e(P)	10 19(19)	Greece 38.86°N 21.38°E
	e	19 28	H = 10 16 07.2 h = 32 km MAG=4.7
	e	19 37	D = 13.7° Az = 332.8° (USCGS)
	LmH	25.3	
20.	e(Sg)	11 27 47	

Day	Phase	h m s	Remarks
20.	LmH	11 55.5	Northern Easter Is. Cordillera (USCGS)
20.	LmH	14 25.5	Northern Easter Is. Cordillera
	LmV	26	13.31°S 111.40°W
			H = 13 22 54.0 h = normal MAG=5.0 (USCGS)
			D = 120.9°
			LmH:22s 0.4/um
			MLH=5.1
21.	ePKIKP	03 53 05	Macquarie Island 52.77°S 160.29°E
	ePKHKP	53 23.5	H = 03 33 09.6 h = 34 km MAG=5.6
	ePKP2	53 47	D = 160.5° Az = 276.3° (USCGS)
			ANUSSR gives: 53.1°S 150.9°E
			H = 03 33 19 h = normal MAG=5½
			D = 155.0°
21.	+iP	04 05 47	Eastern Kazakh SSR 49.71°N 77.92°E
	ePn	07 18.5	H = 03 57 57.8 h = 0 km MAG=5.6
	ePP	07 22	D = 41.2° Az = 297.7° (USCGS)
			PV:1.1s 66.0nm
			MPV=5.5
			Probably underground explosion.
21.	LmH	07 36	Probably Macquarie Islands
			52.66°S 160.54°E
			H = 05 50 01.1 h = normal MAG=5.2 (USCGS)
			D = 160.8°
21.	eP	09 14 22	Fox Islands/Aleutian Is. 52.05°N 170.04°W
			H = 09 02 27.2 h = 30 km MAG=5.3
			D = 77.7° Az = 358.9° (USCGS)
21.	eP	10 14 43.5	Andreanof Is./Aleutian Is. 51.53°N 173.28°W
			H = 10 02 48.3 h = 47 km MAG=4.7
			D = 78.1° Az = 356.8° (USCGS)
21.	-ePKIKP	18 48 49	Fiji Islands 17.80°S 178.60°W
	eiPKHKP	48 51	H = 18 30 14.9 h = 591 km MAG=5.6 (USCGS)
	eSS	19 10.3	D = 146.3°
			PV1:1.5s 35.0nm PV2:1.7s 203nm

Day	Phase	h m s	Remarks
22.	e	03 25 26.5	
22.	eP	03 48 43	Northern Sinkiang Prov./China
	e	49 20	42.78°N 84.53°E
	ePP	50 34	H = 03 39 59.7 h = normal MAG=5.2 (USCGS)
	LmH	04 10.1	D = 48.6°
	LmV	10.1	LmH:12s 0.8/um LmV:13s 1.2/um
			MLH=5.0 MLV=5.1
22.	ePKIKP	08 44(56)	New Hebrides Islands 15.99°S 167.95°E
	e	45 30.5	H = 08 25 54.7 h = 187 km MAG=5.5 (USCGS)
	e	45 52	D = 140.7°
	ePP	48(00)	
22.	eP	09 07 37	
22.	+iP	10 29 16.5	Andreanof Is./Aleutian Is. 51.70°N 173.55°W
	i	29 18.0	H = 10 17 22.5 h = 56 km MAG=5.6 (USCGS)
	eS	39 10	D = 78.0°
	ePS	39 52	PV1:1.2s 59.0nm PV2:1.5s 210nm
	eSPP	40 14	LmH:19.5s 3.0/um
	eSS	44(25)	MPV1=5.6 MPV2=6.1 MLH=5.7
	LmH	11 12.4	
22.	e(P)	13 31 18	PV:1.2s 22.8nm
23.	e	01 55 36	Northwest of Cornwall/GB 50.5°N 5.5°W
	eSg	55 58.5	H = 01 50 00 (BCIS)
	e(Lg2)	56 09	D = 10.8°
	e	56 21	
23.	eP	03 49 51	Andreanof Is./Aleutian Is. 51.72°N 173.57°W
	epP	50 03	H = 03 37 55.8 h = 41 km MAG=4.7
	e	50 11	D = 77.9° Az = 356.6° (USCGS); h = 46 km
			PV:1.2s 22.7nm
			MPV=5.2

Day	Phase	h m s	Remarks
23.	e	05 34(43)	Greece 39.0°N 21.8°E
	e	35 05	H = 05 28 28.5 (Athen)
	LmH	(38)	D = 13.7°
	LmV	(38)	e 35 52 e 36 26 e 36 45
23.	eP	08 38 05	Andreanof Is./Aleutian Is. 51.86°N 173.52°W
	epP	38 13	H = 08 26 10.1 h = 33 km MAG=4.7
	e	38 14	D = 77.8° Az = 356.7° (USCGS); h = 30 km
	LmH	09(21)	
23.	e(P)	11 54 18	
23.	+eP	14 43 45	Andreanof Is./Aleutian Is. 51.70°N 173.46°W
	ePcP	43 55	H = 14 31 51.2 h = 55 km MAG=5.3
	epP	44 02	D = 77.9° Az = 356.7° (USCGS); h = 65 km
	esP	44 09	PV:1.4s 85.6nm
	eS	53 34	LmH:17s 2.1/um LmV:18.5s 0.8/um
	e(PS)	54 22	MPV=5.8 MLH=5.6 MLV=5.1
	eSS	58.6	e 43 50.5 e 43 58.5
	LmH	15 27.1	
	LmV	27.6	
23.	eP	15 38 12	Andreanof Is./Aleutian Is. 51.65°N 173.56°W
	e	38 21.5	H = 15 26 16.1 h = 51 km MAG=4.3 (USCGS)
	epP	38 25.5	D = 77.8°
23.	eP	20 23 56	Andreanof Is./Aleutian Is. 51.84°N 173.47°W
	epP	24 08	H = 20 12 00.1 h = 36 km MAG=4.9 (USCGS)
			D = 78.1° h = 44 km
			PV1:1.0s 21.7nm PV2:1.2s 20.5nm
			MPV=5.2
24.	eP	05 16 18	West Pakistan 30.09°N 69.93°E
			H = 05 07 39.5 h = 9 km MAG=4.3
			D = 47.6° Az = 312.8° (USCGS)
24.	e	06 49 04	
	e	49 56	
	e	50 18	

Day	Phase	h m s	Remarks
24.	ePKP	09 11 49	Samoa Islands 16.34°S 172.77°W
	e	12 00	H = 08 52 13.4 h = 49 km MAG=4.8
	e	12 14	D = 145.6° Az = 355.1° (USCGS)
	LmH	10 23.5	LmH:17s 0.25/um LmV:18s 0.3/um
	LmV	23.5	MLH=5.1 MLV=5.1
24.	ePKIKP	17 37 49.5	Tonga Islands 20.40°S 175.81°W
	-ePKHKP	37 53.5	H = 17 18 17.6 h = 112 km MAG=5.2
	ePKP2	37 58.5	D = 149.3° Az = 350.7° (USCGS)
	epPKP	38 30	PV2:1.4s 81.0nm PV3:1.3s 37.2nm
	esPKP	38 46	
25.	eP	09 30 32	Fox Islands/Aleutian Is. 52.09°N 169.95°W
	e	30 44	H = 09 18 36.7 h = 31 km MAG=4.3 (USCGS)
	e	30 53	D = 78.0°
			ANUSSR gives: Bering Sea 53.9°N 172.1°W
			H = 09 19 17 h = 280 km
			D = 74.5°
25.	e	12 43 02	
26.	eP	03 59 47	Komandorsky Islands 56.15°N 164.57°E
	epP	59 54	H = 03 48 28.8 h = normal MAG=4.8 (USCGS)
			D = 71.4° h = 26 km
26.	ePKP	06 03 06	Fiji Islands 17.99°S 178.46°W
			H = 05 44 30.9 h = 596 km MAG=4.3
			D = 146.4° Az = 348.4° (USCGS)
26.	eP	13 02 14	Andreanof Is./Aleutian Is. 51.97°N 173.48°W
			H = 12 50 19.3 h = 36 km MAG=4.8
			D = 77.7° Az = 356.7° (USCGS)
26.	ePKIKP	22 59 24	Kermadec Islands 27.54°S 177.89°W
	ePKHKP	59 34	H = 22 39 47.8 h = 143 km MAG=5.2
	ePKP2	59 52	D = 155.8° Az = 345.1° (USCGS)
	e	23 00 16	
	e	00 32	

Day	Phase	h m s	Remarks
27.	eP	05 02 58	Chile 24.2°S 70.3°W
	ePP	07 10	H = 04 48 59.4 h = 35 km MAG=6.0 (USCGS)
	eSKS	13 40	D = 103.5°
	ePS	16 24	LmH:23s 0.8/um LmV:24s 1.6/um
	ePPS	17(25)	MLH=5.2 MLV=5.5
	LmH	46.5	e 07 14 e 07 36
	LmV	46.5	
27.	eP	14 55 33	West Iran 32.58°N 48.80°E
	e	55 37	H = 14 49 02.0 h = 36 km MAG=5.5
	e	55 46	D = 32.7° Az = 314.6° (USCGS)
	e(Pn)	56 13	LmH:14s 0.8/um LmV:15s 0.7/um
	eS	15 00 48	MLH=4.6 MLV=4.5
	LmH	11.6	
	LmV	12.1	
28.	ePKP	01 37 59.5	New Hebrides Islands 17.20°S 167.74°E
	e	38 06	H = 01 18 27.4 h = 17 km MAG=5.3 (USCGS)
	e	38 11	D = 141.5° Az = 335.5°
	eSKP	41 37	LmV:20s 0.6/um
	LmH	02(45.5)	MLV=5.4
	LmV	57	
28.	ePn	02 01 21	Yugoslavia 43.1°N 18.0°E
	ePg	02 08	H = 01 59 17 (BCIS)
	eSn	02 57	D = 8.8°
	e(Sg)	04(00)	e 02 20 e 03 52 e 04 08
28.	e(P)	08 08 28	
28.	ePKIKP	12 27 41	Kermadec Islands 29.04°S 177.47°W
	ePKP2	28 13	H = 12 07 52.5 h = 59 km MAG=5.4
	epPKP2	28 35	D = 157.4° Az = 344.9° (USCGS); h = 75 km
	LmV	13 33.5	PV2:1.4s 38.1nm
28.	ePKP	20 19 06.5	New Hebrides Islands 19.56°S 168.74°E
			H = 19 59 37.5 h = 52 km MAG=4.6
			D = 144.1° Az = 335.0° (USCGS)

Day	Phase	h m s	Remarks
29.	eP	06 38 03.5	Ryukyu Islands 28.96°N 129.38°E
	LmH	07 13.5	H = 06 25 35.2 h = 21 km MAG=4.9 (USCGS)
			D = 82.8°
			LmH:17s 1.0/um
			MLH=5.3
29.	ePKP	12 05 26	Solomon Islands 10.50°S 162.82°E
	ePP	07 54	H = 11 46 15.6 h = 75 km MAG=5.4 (USCGS)
			D = 133.5°
29.	iPg	15 05 20.5	Explosion/GFR 50.54°N 10.04°E
	iSg	05 36	H = 15 05 00 Yield: 15 t
			D = 1.0°
29.	eP	20 00 03	Kurile Islands 46.50°N 152.63°E
			H = 19 48 09.9 h = normal MAG=4.6 (USCGS)
			D = 77.5°
30.	ePn	05 21 30	Yugoslavia 43.01°N 17.79°E
	ePg	22 14	H = 05 19 24.5 h = 31 km MAG=4.3
	eSn	23 06	D = 8.7° Az = 333.2° (USCGS)
	e(Sg)	24 03	e 23 34 e 23 59 e 24 15
30.	eP	17 52 53	Mindanao/Philippine Is. 9.13°N 126.64°E
			H = 17 39 18.8 h = 36 km MAG=5.4 (USCGS)
			D = 98.4°
30.	eP	20 39 36	North of Severnaya Zemlja 84.50°N 104.23°E
			H = 20 32 00.7 h = 29 km MAG=4.8
			D = 40.1° Az = 279.2° (USCGS)
31.	e(PKP)	12 07 07	
	e(PP)	09(02)	
	e	09 07	
31.	eP	15 26 28	Uganda 0.66°N 30.07°E
			H = 15 17 18.8 h = normal MAG=4.8 (USCGS)
			D = 52.2°

Day	Phase	h m s	Remarks
1.	e	03 44 30	Solomon Islands 10.19°S 161.07°E
	ePP	44 36	H = 03 23 03.1 h = 70 km MAG=5.7 (USCGS)
	e	44 40	D = 132.5°
	LmH	04 41	
	LmV	41	
1.	iP	06 37 50.0	Rat Islands/Aleutian Is. 51.53°N 177.59°E
			H = 06 25 57.6 h = 43 km MAG=5.2
			D = 77.5° Az = 350.9° (USCGS)
			PV:0.8s 26.0nm
			MPV=5.4
1.	eP	12 03 11.5	Mariana Islands 21.70°N 142.93°E
	e	03 26	H = 11 50 15.5 h = 313 km MAG=4.8 (USCGS)
			D = 96.2°
1.	e(P)	16 08 24.5	PV:1.1s 22.3nm
1.	+eiP	19 18 26	West Pakistan 29.89°N 68.84°E
	ipP	18 32.0	H = 19 09 55.1 h = normal MAG=5.8 (USCGS)
	isP	18 35.0	D = 47.0° h = 26 km
	+eiPP	20 20	PV:1.2s 59.1nm
	eS	25 16	LmH:14.5s 13.3/um LmV:13s 12.3/um
	eSS	29 00	MPV=5.5 MLH=6.1 MLV=6.1
	eLQ	29.9	i 18 35.0 i 18 42.0 e 29 10
	LmH	43.0	
	LmV	43.4	
1.	eiP	19 29 08	West Pakistan
			H = 19 20 37.9 (UPP)
1.	ePKHKP	20 05 03.5	Tonga Islands 19.67°S 174.33°W
			H = 19 45 17.3 h = normal MAG=5.0
			D = 148.7° Az = 352.7° (USCGS)
1.	+iP	20 39 26.0	West Pakistan 29.95°N 68.60°E
	epP	39 34	H = 20 30 57.0 h = normal MAG=5.7 (USCGS)
	esP	39 38	D = 46.8° h = 35 km
	ePP	41 16	PV:1.7s 139nm SH:11s 1.2/um
	e(PPP)	42 08	MPV=5.8 MSH=5.8

Day	Phase	h m s	Remarks
cont.			
1.	eS	20 46 12	ei 39 28.5 e 39 42 e 39 50.5
	eiS	46 22	
	eSS	49.8	
	eLQ	50.9	
1.	+iP	20 44 01.8	Kurile Islands 44.56°N 150.39°E
	+i	44 04.0	H = 20 32 01.3 h = 24 km MAG=5.2 (USCGS)
	i	44 09.0	D = 78.7°
	i	44 11.5	PV1:1.2s 50.0nm PV2:1.7s 145nm
	i	44 14.5	MPV1=5.5 MPV2=5.8
	e	44 20	
1.	e(P)	20 57 11	
	e	57 19	
	e	57 22	
1.	+eP1	21 11 27.5	West Pakistan 30.0°N 68.7°E
	-iP2	11 29.5	H = 21 02 59.6 h = 33 km MAG=6.2 (USCGS)
	iP3	11 34.0	D = 47.0°
	eP4	11 40	PV1:1.6s 52.7nm PV2:2.0s 378nm
	ePP1	13 16	PV3:2.1s 1070nm PV4:11s 6.0/um
	ePP4	13 30	LmH:14.5s 65.2/um LmV:15s 86.0/um
	eS1	18 20	MPV1=5.4 MPV2=6.1 MPV3=6.6 MPV4=6.6
	eS4	18 34	MLH=6.8 MLV=6.9
	LmH	36.8	The body wave onsets are multiple with
	LmV	36.8	successively increasing amplitude
1.	eP	21 44 13	West Pakistan 29.87°N 69.02°E
	e	44 15	H = 21 35 40.8 h = 29 km MAG=4.8 (USCGS)
			D = 47.2°
1.	eP	22 39 24.5	West Pakistan 29.97°N 68.90°E
	e	40 32.5	H = 22 30 54.8 h = normal MAG=5.2 (USCGS)
			D = 46.9°
			PV:1.6s 52.7nm
			MPV=5.4

Day	Phase	h m s	Remarks
1.	ePKHKP	23 55 08	West of Macquarie Island 55.86°S 146.95°E
	epPKHKP	55 15	H = 23 35 08.1 h = normal MAG=4.9 (USCGS)
			D = 153.3° h = 25 km
2.	eP	05 50 06.5	West Pakistan 29.97°N 68.76°E
	e	50 10	H = 05 41 37.4 h = 32 km MAG=5.2
	e(pP)	50 15.5	D = 46.9° Az = 312.9° (USCGS);
			(h = 39 km)
2.	eP	09 27 30.5	West Pakistan 29.89°N 69.21°E
	e	27 33	H = 09 18 57.6 h = 21 km MAG=5.1
			D = 47.3° Az = 313.0°
			PV1:1.1s 15.5nm PV2:1.0s 36.9nm
			MPV1=5.0 MPV2=5.4
2.	e	14 11 07	
2.	eP	19 00 52	Honshu/Japan 36.49°N 138.11°E
	e	01 02	H = 18 48 33.8 h = 2 km MAG=4.9
	LmH	38	D = 81.3° Az = 328.8° (USCGS)
	LmV	38.9	PV2:1.8s 22nm
			LmH:13.5s 1.3/um LmV:14.5s 0.7/um
			MLH=5.5 MLV=5.2
			The first onset of P is very small.
3.	eP	04 37 41.5	Kurile Islands 45.03°N 150.08°E
	e(pP)	37 57	H = 04 25 43.8 h = 31 km MAG=4.5
	LmH	05 15.5	D = 78.1° Az = 334.4° (USCGS);
	LmV	15.5	(h = 60 km)
			PV1:1.9s 58.9nm PV2:1.7s 30.5nm
			LmV:20s 0.5/um
			MPV=5.4 MLV=4.9
3.	e	11 42 23	
	e	42 26.5	

Day	Phase	h m s	Remarks
3.	LmH	11 48.5	Ryukyu Islands 27.00°N 127.17°E
	LmV	55.5	H = 11 00 19.1 h = 48 km MAG=5.2 (USCGS)
			D = 84.0°
			LmH:18s 0.6/um LmV:16s 0.5/um
			MLH=5.0 MLV=5.0
4.	eiP	22 37 54	West Pakistan 29.84°N 68.58°E
	e	37 59	H = 22 29 27.8 h = 54 km MAG=4.9 (USCGS)
			D = 46.8°
5.	eP	01 12 09.5	Kashmir-Tibet Border Region
	i	12 11.5	32.60°N 79.64°E
	e(S)	19 38	H = 01 03 04.4 h = 55 km MAG=5.3
	e	23 40	D = 52.1° Az = 311.5° (USCGS)
	LmH	36.3	PV2:1.9s 66.6nm
	LmV	36.3	LmH:14s 0.75/um LmV:14s 0.9/um
			MPV2=5.4 MLH=4.9 MLV=5.0
5.	+iP	04 05 46.5	Eastern Kazakh SSR 49.90°N 78.02°E
	ePn	07 18.5	H = 03 57 58.1 h = 0 km MAG=5.7
	ePP	07 22	D = 41.1° Az = 297.5° (USCGS)
	LmH	23.8	PV:0.8s 76.0nm PPV:1.6s 26.4nm
	LmV	23.8	MPV=5.7 MPPV=4.8
			Probably underground explosion.
5.	e(PP)	04 54 41	Solomon Islands 10.95°S 162.32°E
	e	54 51	H = 04 33 07.4 h = 93 km MAG=5.7 (USCGS)
	LmH	05(58)	D = 133.7°
	LmV	59.2	LmV:17s 0.85/um
			MLV=5.5
5.	ePn	17 50 03.5	Yugoslavia 42.35°N 19.19°E
	ePg	50 55	H = 17 47 42.9 h = normal MAG=5.2
	eSn	51 52	D = 9.8° Az = 330.5° (USCGS)
	e	52 12	PV:1.2s 22.7nm
	eSg	53 07	LmH:7.5s 0.85/um LmV:7.5s 0.4/um
	LmH	53.6	MLH=4.0
	LmV	54.5	i 50 22.0 e 52 50

Day	Phase	h m s	Remarks
5.	iP	20 12 10.5	Bonin Islands 28.55°N 139.64°E
			H = 20 00 04.9 h = 437 km MAG=4.9 (USCGS)
			D = 88.8°
			PV:1.4s 14.3nm
			MPV=4.9
6.	-ePn	02 33 27	Yugoslavia 42.25°N 18.77°E
	eiPg	34 18.5	H = 02 31 07.8 h = normal MAG=5.3
	eiSn	35 20	D = 9.7° Az = 332.1° (USCGS)
	iSb	35 56.5	PV:1.4s 95.0nm
	iSg	36 30	LmH:7.5s 4.6/um
	LmH	36.9	MLH=4.7
	LmV	37	ei 34 03 ei 35 03
6.	e	05 27 33	Near earthquake?
	i	28 37.0	
	e	28 57	
6.	+iPn	05 54 19.5	Yugoslavia 42.21°N 18.77°E
	eiPg	55 10	H = 05 51 56.7 h = 11 km MAG=5.4
	eSn	56 11	D = 9.8° Az = 332.1° (USCGS)
	eSb	56(50)	PV:1.3s 32.6nm
	eiSg	57 20	LmH:7s 1.7/um LmV:10s 1.0/um
	LmH	57.8	MLH=4.3
	LmV	58.3	i 54 23.0 ei 57 05
6.	eP	18 36 06	Southern Greece 37.89°N 22.29°E
	e	36 08.5	H = 18 32 34.2 h = 55 km MAG=4.4 (USCGS)
	e	36 13.5	D = 14.9°
	e	36 18	PV2:1.2s 15.9nm PV3:1.2s 27.3nm
	LmH	42.3	PV4:1.7s 41.6nm
	LmV	42.3	LmH:10.5s 0.4/um LmV:10.5s 0.4/um
			MLH=3.8 MLV=4.0
6.	eP	18 42 04	Norwegian Sea
	epP	42 13.5	H = 18 37 03 (UPP)
	esP	42 18	D = ca. 23° h = 35 km

Day	Phase	h m s	Remarks
6.	eP	19 45 20	Kurile Islands 44.91°N 150.20°E
	epP	45 29	H = 19 33 22.3 h = 36 km MAG=5.0
	esP	45 33	D = 78.3° Az = 334.5° (USCGS); h = 35 km
	e	45 42	PV:1.9s 60.0nm
	LmH	20 22.5	LmH:15s 0.5/um LmV:16s 0.7/um
	LmV	27	MPV=5.4 MLH=5.0 MLV=5.1
6.	eP	20 17 33	Greenland Sea 73.51°N 7.60°E
	e	17 37	H = 20 12 31.7 h = normal MAG=4.6
	epP	17 42	D = 23.0° Az = 173.4° (USCGS); h = 33 km
	esP	17 47	PV1:1.2s 20.4nm PV2:1.4s 23.8nm
			pPV:1.6s 39.4nm sPV:1.6s 36.8nm
			MPV=4.5
6.	eP	20 31 28	Kurile Islands 44.83°N 150.21°E
	i	31 34.5	H = 20 19 30.1 h = 41 km MAG=4.7
			D = 78.3° Az = 334.5° (USCGS)
			PV:1.3s 20.9nm
			MPV=5.1
6.	e(P)	22 56 25	
7.	-iP	02 25 07.5	Aleutian Islands 50.58°N 171.33°W
	-i	25 08.0	H = 02 13 05.1 h = 39 km MAG=6.5
	i	25 09.5	D = 79.1° Az = 358.1° (USCGS);
	-i(pP)	25 36	(h = 110 km)
	ePP	28 05	PV1:0.5s 28.2nm PV2:1.2s 127nm
	ePPP	29 56	PV3:2.2s 1960nm PV:8s 11.8/um
	eS	35(00)	PH:6s 4.1/um SH:10s 14/um
	iS	35 07	LmH:19.5s 15.1/um LmV:17s 13.2/um
	iSP	35 44	MPV1=5.6 MPV2=5.9 MPV3=6.9 MPV=7.1
	iSS	40 12	MPH=7.1 MSH=7.0 MLH=6.4 MLV=6.3
	ePKPPKP	52 00	ei 25 15 e 25 40 ei 35 52
	LmH	03 03.8	Relatively small surface waves. It seems
	LmV	13.5	to be possible, that the USCGS-depth-
			calculation gives a too small depth of
			the focus. The interpretation of -i 25 36
			as pP-phase would coincide very well with
			the ANUSSR-depth-calculation (h = 120 km).

Day	Phase	h m s	Remarks
7.	ePKHKP	14 01 02	South of Fiji Islands 23.97°S 179.86°W
	ePKP2	01 13.5	H = 13 42 07.8 h = 537 km MAG=4.7
			D = 151.9° Az = 344.4° (USCGS)
			PV2:1.2s 20.5nm
7.	iP	14 22 55.5	Gulf of Alaska 59.63°N 144.42°W
	e	23 01	H = 14 11 51.2 h = 4 km MAG=5.5
	i	23 04.5	D = 68.4° Az = 16.1° (USCGS)
	eS	32 00	PV:1.0s 32.6nm
	LmH	59	LmH:16s 0.35/um LmV:15s 0.45/um
	LmV	59.5	MPV=5.4 MLH=4.7 MLV=4.8
7.	eP	14 34 32	Southern Greece 36.45°N 22.23°E
	e	34 34	H = 14 30 47.0 h = 54 km MAG=4.5
	e	34 40	D = 16.1° Az = 335.0° (USCGS)
	LmH	41.7	LmH:14s 0.75/um LmV:12s 0.75/um
	LmV	41.7	MLH=4.0 MLV=4.2
7.	e(P)	17 49(01)	Gulf of California 31.76°N 114.45°W
	eP	49 07	H = 17 36 26.7 h = normal MAG=6.3 (USCGS)
	e	49 14	D = 85.1°
	e	49 19	PV1:10s 0.55/um PV2:2.3s 45nm
	eS	59 35	PV3:2.5s 116nm PV4:2.1s 117nm
	ePS	18 00 28	SH:14s 3.8/um
	eSS	05 05	LmH:16s 23.7/um LmV:17s 33.6/um
	eLQ	11.4	MPV1=5.7 MPV2=5.2 MPV3=5.6 MSH=6.4
	LmV	25.7	MLH=6.7 MLV=6.8
	LmH	27.3	e 49 27 e 49 35 e 49 51 i 50 09.5
			i 50 30.0
7.	ePKP	19 41 54	Loyalty Islands 20.27°S 168.61°E
			H = 19 22 21.6 h = normal
			D = 144.7° Az = 334.5° (USCGS)
7.	+iP	20 30 35.0	Hokkaido/Japan 42.34°N 143.01°E
	e(pP)	30 58	H = 20 18 41.5 h = 66 km MAG=5.1 (USCGS)
	e	31 11	D = 78.4° (h = 90 km)
			PV:1.0s 21.7nm
			MPV=5.2

Day	Phase	h m s	Remarks
8.	LmH	01 27	Honshu/Japan 36.59°N 138.03°E
	LmV	27.5	H = 00 37 22.4 h = 49 km MAG=4.5 (USCGS)
			D = 81.0°
			LmH:13s 0.8/um LmV:13.5s 0.4/um
			MLH=5.3 MLV=4.9
8.	e	02 08 36	Probably Yugoslavia
	e	09 20	Vienna (VIE) gives: D = 6.5°
	e	09 34	
8.	eP	08 15(56)	Revilla Gigedo Islands 19.33°N 108.13°W
	ePP	19 38	H = 08 02 45.8 h = normal MAG=5.4
	eSKS	26 32	D = 92.6° Az = 33.6° (USCGS)
	ePPS	28 14	PPV:8.0s 0.35/um
	eSS	33 10	LmH:15.5s 2.4/um LmV:15s 3.2/um
	LmH	09 01.7	MPPV=5.8 MLH=5.8 MLV=5.9
	LmV	01.8	e 16 10 e 19 40
8.	ePKP	22 57 15	Loyalty Islands 20.1°S 168.5°E
	e	57 20	H = 22 37 41.9 h = 37 km MAG=4.1 (USCGS)
	e	57 26	D = 144.5°
			PV:1.2s 15.9nm
9.	ePn	01 07 57	Yugoslavia 42.23°N 18.96°E
	ePg	08 50	H = 01 05 35.5 h = normal MAG=4.2
	eSn	09 49	D = 9.8° Az = 331.5° (USCGS)
	e(Sg)	10 51	LmH:7s 0.55/um
	LmH	11.4	MLH=3.8
	LmV	12.5	
9.	iPn	03 37 03	Albania 40.29°N 19.85°E
	e	38 53	H = 03 34 14.3 h = normal MAG=5.0
	e	39 48	D = 11.9° Az = 333.6° (USCGS)
	eLg2(3.29)	40 56	LmH:11.5s 1.7/um LmV:12s 2.1/um
	LmH	42.8	MLH=4.3 MLV=4.5
	LmV	42.8	

Day	Phase	h m s	Remarks
9.	eP	11 25 18	Costa Rica 9.35°N 83.79°W
	epP	25 26.5	H = 11 12 39.4 h = 35 km MAG=5.0
			D = 86.3° Az = 39.4° (USCGS); h = 31 km
			PV1:1.5s 15.0nm PV2:1.8s 25.0nm
9.	e(P)	15 24 36	PV:1.0s 13.0nm
9.	e(P)	15 35 49	PV:1.0s 13.0nm
9.	+iPKHKP	17 50 23	Tonga Islands 20.75°S 175.28°W
			H = 17 30 35.9 h = normal MAG=4.9
			D = 149.7° Az = 351.3° (USCGS)
10.	e(P)	02 49 57.5	
10.	-ePKIKP	05 20 43	Tonga Islands 20.13°S 175.33°W
	-ePKHKP	20 48	H = 05 01 09.4 h = 96 km MAG=5.8
	i	20 52.5	D = 149.1° Az = 351.4° (USCGS);
	+ipPKP	21 16.5	h = ca. 100 km
			PV1:1.6s 79.0nm PV2:1.8s 705nm
			PV4:1.6s 147nm
10.	iPg	12 00 57.0	Explosion/CSSR
	iSn	01 16.0	D = 1.5° Yield: 21.9 t
	iSg	01 17.0	
	i	01 21.5	
10.	ePP	12 54(25)	New Britain Region 5.52°S 151.82°E
	ePS	13 04 20	H = 12 33 42.2 h = 40 km MAG=5.3 (USCGS)
	ePPS	05 45	D = 124.1°
	e(PKKS)	06.5	LmH:19s 1.9/um LmV:19s 3.3/um
	eSS	11.5	MLH=5.8 MLV=6.0
	LmH	50.2	
	LmV	50.2	
10.	eP	15 26 26	Southern Greece 36.20°N 22.25°E
	e	26 35	H = 15 22 34.8 h = 7 km MAG=4.7
	LmH	33.6	D = 16.4° Az = 335.3° (USCGS)
	LmV	33.6	LmH:11s 0.8/um LmV:12s 1.2/um
			MLH=4.3 MLV=4.4

Day	Phase	h m s	Remarks
10.	e(P)	16 35 36	PV:1.6s 18.5nm
10.	+iP	22 13 29.0	Tadzhik SSR 38.40°N 69.59°E
	e	13 42.5	H = 22 05 35.0 h = 4 km MAG=5.5
	e	13 47.5	D = 42.1° Az = 306.3° (USCGS)
	ePP	15 11	PV:1.2s 50.0nm
	LmH	34.4	LmH:12s 0.7/um LmV:14s 0.85/um
	LmV	34.4	MPV=5.3 MLH=4.8 MLV=4.8
11.	eP	00 27 06.5	Ionian Sea 37.75°N 20.95°E
	e	27 12	H = 00 23 40.4 h = 43 km MAG=4.5
	i	27 56.5	D = 14.5° Az = 335.7° (USCGS)
	LmH	33.8	PV2:1.1s 20.0nm
	LmV	33.8	LmH:10s 0.65/um LmV:12s 0.5/um
			MLH=4.0 MLV=4.0
11.	eP	04 37 32	Greece 38.93°N 21.81°E
	e	37 38	H = 04 34 17.2 h = normal MAG=4.5
	e(SS)	39 36	D = 13.8° Az = 331.7° (USCGS)
	eLi(3.72)	41 10	PV2:1.4s 19.0nm
	eLg2(3.28)	42 04	LmH:11.5s 2.2/um LmV:12s 2.2/um
	LmH	42.2	MLH=4.5 MLV=4.6
	LmV	44.2	e 37 59 e 38 24
11.	+eiPKIKP	05 32 23.5	Tonga Islands 19.30°S 173.94°W
	+iPKHKP	32 27.5	H = 05 12 42.2 h = normal MAG=5.5
	ep(PKHKP)	32 35	D = 148.4° Az = 353.2° (USCGS);
	e	32 38	(h = 27 km)
	i	33 11	PV1:1.3s 65.0nm PV2:1.7s 172nm
	LmH	06 43.1	PV3:2.0s 185nm
	LmV	43.7	LmH:18s 1.4/um LmV:18s 1.4/um
			MLH=5.8 MLV=5.8
11.	eiP	10 57 47.5	Fox Islands/Aleutian Is. 52.76°N 169.74°W
			H = 10 45 59.6 h = 61 km MAG=5.3 (USCGS)
			D = 77.3°
			PV:1.6s 31.6nm
			MPV=5.2

Day	Phase	h m s	Remarks
11.	ePKHKP	20 59 51	Tonga Islands Region 23.46°S 175.90°W
	e	59 59	H = 20 39 55.9 h = 32 km MAG=5.3 (USCGS)
	e	21 00 13	D = 152.2°
	LmH	22 16.5	PV:1.8s 37.5nm
	LmV	18.0	LmH:20s 0.5/um LmV:18s 0.6/um
			MLH=5.3 MLV=5.4
11.	ePKHKP	22 36 10	Tonga Islands 23.26°S 175.79°W
			H = 22 16 15.8 h = normal MAG=4.8 (USCGS)
			D = 152.0°
11.	ePKIKP	23 45 24	Tonga Islands 23.39°S 175.93°W
	ePKHKP	45 31.5	H = 23 25 37.9 h = 37 km MAG=5.3 (USCGS)
	ePKP2	45 42	D = 152.0°
	e(SKP)	49 05	LmH:19s 1.5/um LmV:19s 2.2/um
	eSKSP	59 24	MLH=5.8 MLV=6.0
	LmH	01 03.6	i 45 38.0 e 45 57 e 49 10
	LmV	03.6	
12.	ePKHKP	00 32 32.5	Tonga Islands 23.25°S 175.88°W
	e	32 39	H = 00 12 37.9 h = normal MAG=5.2 (USCGS)
	ePKP2	32 43.5	D = 152.0°
12.	iPKIKP	04 19 22	South of Fiji Islands 22.39°S 176.17°W
	+iPKHKP	19 28.5	H = 03 59 50.1 h = 128 km MAG=5.4 (USCGS)
	iPKP2	19 37.5	D = 151.0° h = 130 km
	epPKIKP	19 57.5	PV1:1.0s 13.0nm PV2:1.7s 161nm
	epPKHKP	20 03.5	PV5:1.7s 61.1nm
12.	ePKIKP	14 57 40	Tonga Islands 23.63°S 175.97°W
	ePKHKP	57 46	H = 14 37 56.0 h = 63 km MAG=5.0
	ePKP2	57 57	D = 152.4° Az = 349.5° (USCGS)
	e	58 05	
12.	eP	15 42 09.5	North Atlantic Ocean 53.70°N 35.14°W
	LmH	53	H = 15 36 16.5 h = normal MAG=4.7 (USCGS)
	LmV	53.3	D = 28.3°
			PV:2.4s 28.4nm
			LmH:14s 0.75/um LmV:16s 1.0/um
			MPV=4.6 MLH=4.4 MLV=4.6

Day	Phase	h m s	Remarks
12.	eP	16 12 20	North Atlantic Ocean 53.6°N 35.4°W
	LmV	23.0	H = 16 06 27.3 h = normal MAG=4.6 (USCGS)
	LmH	23.2	D = 28.6°
			LmH:16.5s 1.0/um LmV:18s 1.2/um
			MLH=4.5 MLV=4.6
12.	-iP	19 34 15.0	Near S. Coast of Honshu/Japan
	i	37 32	33.97°N 137.18°E
			H = 19 22 24.2 h = 324 km MAG=4.9 (USCGS)
			D = 83.1°
			PV:1.2s 45.5nm
			MPV=5.2
12.	LmH	20 26	South of Africa 53.38°S 25.40°E
	LmV	26	H = 19 24 05.6 h = normal MAG=4.9 (USCGS)
			D = 104.3°
			LmV:20s 0.3/um
			MLV=4.9
12.	-eP	20 28 50.5	South of Alaska 52.87°N 161.61°W
	-iP	28 51.5	H = 20 16 59.8 h = 31 km MAG=5.6 (USCGS)
	eipP	29 01	D = 77.0° h = 35 km
	eS	38 36	PV2:1.4s 133nm PV3:1.1s 112nm
	LmH	21(10)	MPV2=5.9
	LmV	(10)	i 28 55 ei 29 06.5 e 29 10 e 29 19
13.	ePKP	02 43 43	Loyalty Islands 22.29°S 170.20°E
	e	43 49	H = 02 24 01.6 h = 11 km MAG=4.7
			D = 147.1° Az = 331.3° (USCGS)
13.	e(P)	07 04 03	
13.	iPKP	12 31 12.5	Loyalty Islands 21.82°S 170.57°E
			H = 12 11 31.2 h = normal MAG=4.7 (USCGS)
			D = 146.6°
13.	ePKP	20 13 35	Loyalty Islands 21.59°S 170.82°E
			H = 19 53 52.5 h = normal (USCGS)
			D = 146.5°

Day	Phase	h m s	Remarks
14.	ePKP	05 10 46	Loyalty Islands 21.91°S 170.03°E
	e	10 55.5	H = 04 51 04.5 h = 18 km MAG=5.1
	e	11 03	D = 146.7° Az = 334.7° (USCGS)
14.	e	21 30 45	Italy 45.0°N 10.5°E
	e(Sn)	31 19	H = 21 28 32 (BCIS)
	e(Sg)	31 56	D = 5.7°
	e	32 06	
	e	32 17	
15.	-iP	02 24 57	Northern India 28.66°N 78.93°E
	+e	25 03.5	H = 02 15 33.8 h = 50 km MAG=5.8
	LmH	47	D = 54.3° Az = 313.7° (USCGS)
	LmV	52.2	PV1:1.4s 71.5nm PV2:1.4s 23.8nm
			LmV:14s 0.8/um
			MPV=5.6 MLV=5.0
15.	eP	02 58 42	Mindoro/Philippine Islands
	e	59 05	13.29°N 121.31°E
	eSKS	03 09 18	H = 02 45 32.3 h = 14 km MAG=5.7
	eS	09 45	D = 91.9° Az = 323.1° (USCGS)
	e(PS)	10(50)	PV1:1.3s 23.3nm PV2:1.5s 37.5nm
	eSS	16(00)	LmH:14s 7.0/um LmV:15s 6.9/um
	LmH	40.7	MPV=5.3 MLH=6.3 MLV=6.3
	LmV	48.1	e 58 47
15.	e(P)	06 36 43	
15.	-eP	10 31 13.5	Carlsberg Ridge 3.82°N 64.00°E
	ePP	33 36	H = 10 20 42.2 h = 37 km MAG=5.6 (USCGS)
	eS	39 48	D = 64.5°
	e	39 56	PV:2.3s 130nm PPV:2.8s 129nm
	ePPS	40 11	PPH:5s 0.5/um SH2:12s 11.5/um
	eSS	44(00)	LmH:19s 1.2/um LmV:18s 1.45/um
	eLQ	47.0	MPV=5.5 MPPV=5.9 MPPH=6.5 MSH2=6.8
	LmV	11 02.3	MLH=5.0 MLV=5.2
	LmH	04.9	e 31 20.5 e 31 24.5 e 33 47

Day	Phase	h m s	Remarks
15.	+iP	13 47 23.5	Southern Alaska 60.35°N 146.00°W
	ipP	47 28.5	H = 13 36 23.7 h = 9 km MAG=5.3 (USCGS)
	ePcP	47 48.5	D = 67.9° h = 19 km
	e	48 21.5	PV:1.0s 69.5nm pPV:1.3s 93.0nm
	ePP	49 52	SH:12s 0.5/um
	eS	56 20	LmH:16s 0.6/um LmV:16s 0.7/um
	LmH	14 21.4	MPV=5.8 MSH=5.5 MLH=4.9 MLV=5.0
	LmV	21.5	
15.	e(P)	19 48 20	
16.	+iP	02 24 10.0	Hindukush 36.42°N 70.90°E
	epP	24 51	H = 02 16 19.7 h = 199 km MAG=5.7
	esP	25 12	D = 44.0° Az = 308.1° (USCGS); h = 192 km
	eX	25 50	PV:1.8s 415nm PPV:1.8s 150nm
	+iPP	25 56.0	ScPV:1.8s 113nm
	ePa(8.1)	26 24	MPV=5.6 MPPV=5.4
	eScP	29 22	X is probably the PP-wave reflected at
	eS	30(25)	the base of the earth crust.
	esS	31(40)	
16.	eP	02 52 41	Jan Mayen Island 71.24°N 6.28°W
	ePP	53 07	H = 02 47 45.0 h = normal MAG=4.3
	ePPP	53 17	D = 22.2° Az = 148.9° (USCGS)
	e	53 37	PV:1.3s 20.9nm
	LmH	03 02.5	MPV=4.4
	LmV	03.8	
16.	eP	03 31 40	Albania 40.0°N 20.0°E
	e	31 42	H = 03 28 40 (BCIS)
	e	34 25	D = 12.2°
	eLg2(3.26)	35 38	PV:0.7s 21.8nm
	e	35 46	LmH:12.5s 1.0/um
	LmH	37.1	MLH=4.0
	LmV	37.1	
16.	eP	03 56 30	Albania 40.27°N 19.89°E
	i	56 31.0	H = 03 53 42.9 h = normal MAG=4.9
	i	56 32.5	D = 11.9° Az = 333.6° (USCGS)
	eLg1(3.56)	59 54	PV2:0.9s 32.6nm PV3:0.8s 84.8nm

Day	Phase	h m s	Remarks
cont.			
16.	eLg2(3.33)	04 00 20	LmH:10.5s 3.5/um LmV:14s 4.5/um
	eLg(3.20)	00 36	MLH=4.6 MLV=4.7
	LmH	02.2	ei 56 40.5 e 58 27 ei 59 06
	LmV	02.2	
16.	eP	14 34 22	Kamtchatka 52.2°N 159.4°E
	e	34 37	H = 14 22 50 h = normal MAG=ca.5 (ANUSSR)
			D = 74.0°
16.	ePKP2	18 07 37	Kermadec Islands 27.74°S 178.19°W
			H = 17 47 41.9 h = 192 km MAG=4.9 (USCGS)
			D = 155.8°
16.	eP	18 14 47.5	Southern Nevada 37.40°N 114.19°W
	e	15 22	H = 18 02 36.1 h = normal MAG=6.1 (USCGS)
	e	16 14	D = 80.3°
	eS	24 55	PV:1.5s 50.0nm
	eScS	25 16	LmH:16s 3.9/um LmV:16s 4.2/um
	eLQ	36	MPV=5.4 MLH=5.9 MLV=5.9
	LmH	51.4	e 15 13 e 18 18 e 18 35
	LmV	51.4	
16.	ePKP	20 05 16	Loyalty Islands 21.40°S 171.35°E
	i	05 18.5	H = 19 45 38.7 h = 36 km MAG=5.3
	i	05 20	D = 146.8° Az = 336.3° (USCGS)
	i	05 27.0	LmH:22s 4.0/um LmV:21s 3.7/um
	eSS	27.6	MLH=6.2 MLV=6.1
	LmH	21 10.6	i 05 30.2 i 05 38.0 e 06(16)
	LmV	10.6	
16.	eP	22 22 52	Jan Mayen Island 71.38°N 2.83°W
			H = 22 18 00.2 h = normal MAG=4.3
			D = 21.8° Az = 154.7° (USCGS)
17.	ePKP	01 13 28	Loyalty Islands 21.51°S 171.23°E
	e	13 37.5	H = 00 53 43.2 h = 51 km MAG=4.7
			D = 146.8° Az = 336.1° (USCGS)

Day	Phase	h m s	Remarks
17.	iPn	05 17 29.0	Italy 44.5°N 11.9°E
	ePg	18 00	H = 05 16 00 (BCIS)
	eSn	18 38	D = 6.2°
	eSg	19 23	e 18 58 e 19 09
17.	eP	17 50 12	Southeastern Kurile Islands
	e	50 24	48.7°N 155.2°E
	LmH	18 28	H = 17 38 27 h = normal MAG=4½
	LmV	28	D = 76.2° (ANUSSR)
			PV:1.2s 18.2nm
			MPV=5.1
17.	eP	21 10 25	Near Islands/Aleutian Is. 52.29°N 174.90°E
	epP	10 37	H = 20 58 35.9 h = 32 km MAG=5.6 (USCGS)
	eS	20 08	D = 76.7° h = 45 km
	ePS	20 46	LmH:20s 0.9/um LmV:22s 0.85/um
	ePPS	21 08	MLH=5.1 MLV=5.1
	eSS	25.2	
	LmH	42.4	
	LmV	42.4	
17.	eP	23 20 14.5	Southern Nevada 37.34°N 114.09°W
	e	20 34	H = 23 07 58.9 h = normal MAG=5.2
	e	20 49	D = 80.2° Az = 31.6° (USCGS)
	e	20 54	LmV:14s 0.4/um
	e	21 30	MLV=4.9
	LmH	58	
	LmV	58	
17.	LmH	23 32	LmV:15s 0.3/um
	LmV	32	
18.	-eP	00 18 08	Southern Sumatra 1.65°S 100.60°E
	e	18 24	H = 00 05 04.9 h = 19 km MAG=5.3
			D = 90.6° Az = 320.5° (USCGS)
			PV:1.6s 26.3nm
			MPV=5.2
18.	-eP	06 49 57	Rat Islands/Aleutian Is. 51.50°N 177.77°E
	e	50 23	H = 06 38 03.5 h = 44 km MAG=5.3 (USCGS)

Day	Phase	h m s	Remarks
cont.			
18.	LmH	07 30	D = 77.3°
	LmV	32	PV:1.3s 27.9nm
			MPV=5.2
18.	eP1	10 45 55	Guatemala 14.55°N 91.65°W
	+iP2	45 56.2	H = 10 33 16.5 h = 76 km MAG=5.9
	ipP	46 13.2	D = 87.1° Az = 38.4° (USCGS); h = 78 km
	eiPP	49 20	PV2:1.3s 107nm PV:10s 1.6/um
	ipPP	49 36.5	pPV:1.4s 76.2nm SH:16s 1.1/um
	eS	56 19	LmH:20s 4.2/um LmV:21s 6.7/um
	esS	56 56	MPV2=5.7 MPV=6.2 MSH=5.9 MLH=5.9
	ePPS	57 47	MLV=6.0
	eSS	11 02 25	e 46 30 e 59 05
	LmH	22.4	
	LmV	22.4	
18.	eP	14 48 02.5	Molucca Sea 0.17°S 125.14°E
	-i	48 04.0	H = 14 33 59.8 h = 56 km MAG=6.3
	e	48 07	D = 104.9° Az = 322.8° (USCGS)
	ePP	52 25	PV2:1.5s 75.0nm PV3:1.3s 32.6nm
	eSKS	58 36	PPV:1.9s 73.4nm
	eS	59 52	MPPV=6.0
	ePS	15 01 40	e 52 33 e 52 40 e 52 50
			Multiple P and PP-phases.
18.	+eP	14 51 57	Molucca Sea 0.06°S 125.15°E
	+ePP	56 19	H = 14 37 52.6 h = normal MAG=6.3
	e	56 26	D = 104.8° Az = 322.9° (USCGS)
	e	56 34	PV:1.6s 73.6nm PPV:2.0s 70.4nm
	e	56 44	MPPV=5.9
			Multiple PP-phases.
18.	ePKP	15 21 59	Loyalty Islands 21.7°S 169.8°E
	e	22 03	H = 15 02 17.1 h = 20 km MAG=5.2 (USCGS)
	e	22 09	D = 146.4°
			PV2:1.1s 13.6nm PV3:1.1s 15.5nm

Day	Phase	h m s	Remarks
18.	eP	22 13 03	Dodecanese Islands 36.22°N 26.38°E
	e	13 36	H = 22 09 00.2 h = 122 km MAG=4.3
			D = 17.9° Az = 328.2° (USCGS)
			PV:1.3s 16.6nm
19.	eP	03 21 05	Gulf of Alaska 59.53°N 144.64°W
	e	21 10	H = 03 10 04.2 h = normal MAG=4.6
	e	22 17	D = 68.5° Az = 16.0° (USCGS)
	LmH	56	PV:1.3s 23.3nm
	LmV	56.6	LmV:16s 0.35/um
			MPV=5.2 MLV=4.7
19.	iP	04 00 46.0	Eastern Kazakh SSR 50.43°N 77.87°E
			H = 03 53 01.0 h = 0 km MAG=4.8
			D = 40.8° Az = 296.9° (USCGS)
			Probably underground explosion.
19.	iPg	04 08 10	Italy 45.6°N 11.4°E
	iSn	08 43.0	H = 04 06 32 (BCIS)
	i	09 10.0	D = 5.1°
	e(Sg)	09 18	e 09 13 e 09 24
19.	e	04 40 30	Probably Yugoslavia (after Vienna)
	e(Sg)	43 03	e 42 52 e 43 18
19.	eP	11 35(57)	Fox Islands/Aleutian Is. 53.65°N 167.62°W
	e	35 03	H = 11 23 13.5 h = 54 km MAG=5.1
	e	35 23	D = 76.1° Az = 0.5° (USCGS)
	LmV	12 13.5	LmV:19s 0.4/um LmH:20s 0.5/um
	LmH	14.2	MLV=4.8 MLH=4.8
19.	LmH	11 41	Southern Nevada 37.36°N 114.13°W
	LmV	41	H = 10 51 38.5 h = 11 km MAG=4.5 (USCGS)
			D = 80.1°
			LmV:16s 0.3/um
			MLV=4.8

Day	Phase	h m s	Remarks
19.	LmV	12 07.5	Southern Nevada 37.35°N 114.17°W H = 11 17 47.7 h = normal MAG=4.4 (USCGS) D = 80.1° LmV:20s 0.37/um MLV=4.8
19.	+iP1	12 27 22.5	Turkey 39.20°N 41.65°E
	-iP2	27 29.0	H = 12 22 09.6 h = 26 km MAG=6.1
	i	27 47	D = 24.0° Az = 308.4° (USCGS)
	ePP2	28 04	PV1:1.3s 205nm PV2:8.5s 27.5/um
	eiS2	31 40	PH2:9.5s 19.2/um SH2:14s 30.5/um
	iS3	31 53	SH3:14.5s 172/um
	LmH	39.0	LmH:17s 315/um LmV:18s 234/um
	LmV	39.2	MPV1=5.5 MPV2=6.8 MPH2=6.8 MSH2=6.5 MSH3=7.3 MLH=6.9 MLV=6.8 Possibly a double shock. The second P-onset is much greater than the first one.
19.	eP	12 58 46	E. Coast of Honshu/Japan 36.45°N 141.73°E H = 12 46 23.7 h = 28 km MAG=5.5 D = 82.8° Az = 330.6° (USCGS) PV:1.8s 46.8nm MPV=5.3
19.	eP	13 13 50	Turkey H = 13 08 37 (UPP)
19.	eP	13 20 20	Turkey 39.22°N 41.14°E H = 13 15 10.1 h = normal MAG=5.1 D = 23.7° Az = 308.6° (USCGS)
19.	e(P)	13 20 51	
	i	20 57.0	
19.	e(P)	13 21 47	
19.	eP	13 33 23	Turkey H = 13 28 12 (UPP)

Day	Phase	h m s	Remarks
19.	eP	13 38 06	Turkey H = 13 32 53 (UPP)
19.	eP	13 45 18.5	Turkey H = 13 40 07 (UPP)
19.	eP1	13 59 38.5	Turkey 38.86°N 41.71°E
	iP2	59 42.5	H = 13 54 24.9 h = 33 km MAG=5.3 (USCGS)
	i	59 48	D = 24.8°
	e	14 02 20	PV1:1.3s 18.6nm PV2:1.9s 227nm MPV1=4.5 MPV2=5.4 Possibly a double earthquake. The second event is greater than the first one.
19.	eP	14 09(09)	Turkey 39.20°N 41.31°E
	e	09 28	H = 14 03 57.8 h = normal MAG=4.6 D = 23.8° Az = 308.5° (USCGS)
19.	ePKP	14 16 02	Fiji Islands 18.98°S 177.37°W H = 13 57 22.9 h = 566 km D = 147.6° Az = 349.3° (USCGS)
19.	eP	14 23 06	Turkey 39.23°N 41.13°E
	e	23 11	H = 14 17 57.5 h = 47 km MAG=5.1
	e	23 23	D = 23.6° Az = 308.6° (USCGS)
	e	24 15	PV1:1.8s 56.2nm PV2:2.1s 66.6nm
19.	eP	18 46 27	Turkey 39.10°N 41.38°E
	e	46 32	H = 18 41 16.0 h = normal MAG=4.9
	e	46 37	D = 23.9° Az = 308.7° (USCGS)
	LmH	57.8	LmH:13s 0.55/um LmV:14s 0.65/um
	LmV	58.7	MLH=4.2 MLV=4.4
20.	eP	02 49 04	Turkey H = 02 43 52 (UPP)
20.	eP	04 50 37	Turkey 38.6°N 41.4°E H = 04 45 22 h = normal D = 24.2° (ANUSSR)

Day	Phase	h m s	Remarks
20.	-eP	07 56 23.5	Peru-Ecuador Border Region 3.16°S 77.22°W
	ei	56 31	H = 07 43 27.6 h = 116 km MAG=5.6
	epP	56 52	D = 91.7° Az = 39.6° (USCGS); h = 112 km
			PV:1.5s 30.0nm
			MPV=5.3
20.	-iP	09 44 06.0	Hokkaido/Japan 43.11°N 140.55°E
	+i	44 09.5	H = 09 32 31.7 h = 161 km MAG=5.8
	ipP	44 48.0	D = 76.6° Az = 329.4° (USCGS); h = 174 km
	ei(PP)	46 52	PV1:1.2s 100nm PV2:1.5s 140nm
	ePP	47 04	pPV:1.3s 44.2nm SH:10s 1.3/um
	eiS	53 38	MPV=5.4 MSH=5.9
	LmH	10(18)	e 44 42 e 44 56 are registered only in
	LmV	24	our longperiod broadband records. Inter-
			preting this phases as pP respectively sP
			we get a focus depth of h = 145 km.
20.	-eP	12 04 19	Turkey 39.31°N 40.92°E
	i	04 25.5	H = 11 59 12.1 h = 37 km MAG=5.4
	iS	08 27	D = 23.5° Az = 308.5° (USCGS)
	i	08 46	PV:2.3s 120nm SH2:15s 17.7/um
	LmH	14.8	LmH:16.5s 57.8/um LmV:14s 40.5/um
	LmV	17.8	MPV=5.3 MSH2=6.2 MLH=6.1 MLV=6.2
20.	eiP	12 06 50	Turkey 39.0°N 40.9°E
	i	07 00	H = 12 01 43.4 h = normal MAG=5.4 (USCGS)
			D = 23.6°
20.	ePn	13 10(36)	Yugoslavia 42.2°N 18.3°E
	e(Pg)	11 38	H = 13 08 13.1 h = normal MAG=4.4 (USCGS)
	eSn	12 19	D = 9.6°
	e(Sb)	12 51	e 13 23 e 13 42
	e(Sg)	13 32	
20.	e(P)	17 59 12	Turkey 39.26°N 41.16°E
	e	59 19	H = 17 54 03.3 h = normal MAG=4.4
	e	59 24	D = 23.6° Az = 308.5° (USCGS)
	LmH	18 11	

Day	Phase	h m s	Remarks
20.	ePn	19 10 40	Yugoslavia 42.28°N 18.87°E
	eSn	12 33	H = 19 08 21.4 h = 20 km MAG=4.9
	eLg1(3.54)	13 25	D = 9.7° Az = 331.6° (USCGS)
	eLg2(3.32)	13 44	LmH:11.5s 1.7/um LmV:8s 0.9/um
	LmH	13.9	MLH=4.1
	LmV	14.7	
20.	ePKIKP	23 14 47.5	South of Fiji Islands 23.44°S 176.03°W
	ePKHKP	14 55	H = 22 55 03.0 h = 57 km MAG=5.6 (USCGS)
	e(PP)	18 32	D = 152.2°
	e	18 38	PV2:1.3s 53.5nm
	LmH	00 33.3	LmH:17s 2.5/um LmV:18s 2.9/um
	LmV	33.6	MLH=6.1 MLV=6.1
20.	e(P)	23 28 18	
	e	28 21	
20.	e(PKP)	23 33 13	
	e	33 20	
	i	33 37	
21.	eP	00 20 16.5	Turkey 39.19°N 41.75°E
			H = 00 15 04.1 h = normal MAG=4.8
			D = 24.0° Az = 308.3° (USCGS)
21.	i(P)	00 58 19.5	PV:0.6s 21.7nm
21.	eP	01 34 16.5	Turkey 40.33°N 27.45°E
	e	34 19	H = 01 30 45.2 h = normal MAG=4.9
	e	34 24	D = 15.1° Az = 318.3° (USCGS)
	e	34 29	PV3:1.8s 81.2nm PV4:1.8s 128nm
	e(S)	37 00	LmH:15s 10.4/um LmV:12s 8.5/um
	eLi(3.71)	38 20	MLH=5.1 MLV=5.2
	eLg1(3.47)	38 48	e 34 34.5 e 37 19 e 37 24
	eLg2(3.33)	39 07	Successive P-onsets with increasing
	LmH	39.5	amplitude.
	LmV	42.9	

Day	Phase	h m s	Remarks
21.	eP	02 30 19	Turkey 39.3°N 41.9°E
			H = 02 25 08.5 h = normal MAG=4.7 (USCGS)
			D = 24.0°
21.	ePKHKP	02 33 56	Tonga Islands 23.57°S 175.92°W
	ePKP2	34 07	H = 02 14 01.3 h = normal MAG=4.7
			D = 152.3° Az = 349.6° (USCGS)
			PV2:1.5s 25.0nm
21.	+eiP	05 14 00.5	Mindanao/Philippine Is. 8.55°N 126.69°E
	i(pP)	14 12.0	H = 05 00 26.8 h = 67 km MAG=6.0
	ePP	18 00	D = 98.8° Az = 324.3° (USCGS);
	eSKS	24 35	(h = 42 km)
	eS	25 24	PV:1.6s 89.5nm
	ePPS	28(40)	LmH:22s 2.0/um LmV:19s 1.6/um
	LmH	06 03.0	MPV=6.1 MLH=5.6 MLV=5.6
	LmV	06.1	e 14 14.5 e 14 21.5 e 14 37 e 18 26
21.	e(P)	10 14 15	
21.	ePn	11 53 02	Yugoslavia 42.09°N 18.59°E
	eSn	54 50	H = 11 50 40.4 h = normal
	eSb	55 39	D = 9.8° Az = 333.1° (USCGS)
	eSg	56 01	LmH:8s 0.25/um
	LmH	56.2	MLH=3.4
	LmV	56.8	e 54 40 e 56 09
21.	eP	15 23 05	Turkey 39.2°N 41.7°E
			H = 15 17 51 h = normal (ANUSSR)
			D = 23.9°
21.	eP	20 38 09	East of Ryukyu Islands 28.86°N 132.00°E
	e	38 14	H = 20 25 36.2 h = 34 km MAG=5.4
	e	38 52	D = 85.0° Az = 326.5° (USCGS)
	LmH	21 21.9	PV:1.7s 33.3nm
	LmV	23.4	LmH:14s 0.6/um LmV:13s 0.65/um
			MPV=5.2 MLH=5.1 MLV=5.2

Day	Phase	h m s	Remarks
21.	eP	22 41 47	Turkey 39.4°N 41.5°E
			H = 22 36 37 h = normal (ANUSSR)
			D = 23.7°
22.	-eP	14 31 40	Sea of Okhotsk 50.31°N 147.60°E
	+ipP	33 51.0	H = 14 21 13.7 h = 628 km MAG=5.2 (USCGS)
	eS	40 12	D = 72.7° h = 673 km
			PV:1.4s 52.5nm pPV:1.8s 87.5nm
			MPV=4.9
22.	ePKIKP	17 20 39	West New Guinea Region 1.84°S 134.22°E
	ePP	21 24	H = 17 02 03.5 h = 13 km MAG=5.9 (USCGS)
	eSKS	27.3	D = 111.6°
	eSP	30 40	e 21 40 ePPS 31.9
	eSS	32.0	
22.	ePKIKP	18 01 48.5	Loyalty Islands 22.43°S 170.57°E
	iPKHKP	01 51.2	H = 17 42 10.6 h = 39 km MAG=5.5 (USCGS)
	ePP	05 20	D = 147.4°
	ePSKS	15 32	LmH:21s 6.6/um LmV:21s 8.6/um
	eSS	24 26	MLH=6.4 MLV=6.5
	LmH	19 08.1	i 01 54.2 i 01 57.0 e 20 30
	LmV	08.5	
22.	ePKIKP	20 51(38)	Loyalty Islands Region 22.5°S 170.5°E
	iPKHKP	51 40	H = 20 31 58.2 h = normal MAG=5.2 (USCGS)
	e(pPKP)	51 51.5	D = 147.5° (h = ca. 40 km)
	e	52 25	PV2:1.0s 21.8nm PV3:1.2s 22.8nm
	e	52 36	
22.	eP	21 54 26	Jan Mayen Island 71.86°N 11.43°W
	e	54 32	H = 21 49 17.4 h = normal MAG=4.3
	e	54 40	D = 23.7° Az = 141.6° (USCGS)
	eS	58(40)	SH:10s 0.8/um
	e	59(12)	LmH:16s 1.2/um LmV:16s 0.8/um
	LmH	22 04.3	MSH=5.1 MLH=4.5 MLV=4.4
	LmV	04.5	

Day	Phase	h m s	Remarks
23.	ePKHKP	00 13 16.5	Loyalty Islands Region 22.34°S 170.53°E
	e(pPKP)	13 34	H = 23 53 36.4 h = 45 km MAG=4.5 (USCGS)
			D = 147.3° (h = ca. 60 km)
23.	e	01 41 02	
	e	41 42	
23.	e(P)	02 44 18	
	e	44 25	
23.	+iP	18 34 47.0	Southwestern Ryukyu Islands
	e	35 03	23.81°N 123.24°E
	eS	45 12	H = 18 22 16.7 h = 37 km MAG=5.6 (USCGS)
	LmV	17.5	D = 84.6°
	LmH	17.8	PV:1.5s 55.0nm
			LmH:17s 0.85/um LmV:18s 1.3/um
			MPV=5.5 MLH=5.2 MLV=5.4
23.	iPKP	22 18 40.0	Loyalty Islands Region 22.15°S 169.55°E
	e	18 43.5	H = 21 59 04.2 h = normal MAG=4.5 (USCGS)
	i	18 46.5	D = 146.7°
23.	ePKP	22 54 38	Tonga Islands 16.31°S 173.24°W
	ipPKP	54 52	H = 22 35 02.0 h = normal MAG=5.0
			D = 145.5° Az = 354.5° (USCGS); h = 50 km
			PV1:1.5s 42.5nm PV2:1.5s 30.0nm
24.	ePKP2	02 11 36	Kermadec Islands Region 30.08°S 177.49°W
			H = 01 51 07.3 h = 21 km MAG=4.6 (USCGS)
			D = 158.4°
24.	eP	06 59 43	West Pakistan 30.0°N 68.7°E
			H = 06 51 15 h = normal MAG=4¾-5
			D = 46.9° (ANUSSR)
24.	epP	07 31 17	Northern Chile 19.87°S 69.17°W
	ePP	34 50	H = 07 17 17.8 h = 100 km MAG=5.5
	e	35 24	D = 99.5° Az = 39.6° (USCGS)
	eSKS	41 24	P must be 26 s earlier than pP.

Day	Phase	h m s	Remarks
cont.			
24.	eS	07 42 12	
	e	44 25	
24.	e(P)	16 14 16	
24.	e(P)	16 59 23	
24.	ePg	20 49 19	France 44.95°N 5.70°E
	eSg	50(55)	H = 20 47 04 (BCIS)
	e	51 05	D = 7.0°
	e	51 18	
25.	LmH	01 25.1	Shikoku/Japan 32.14°N 132.33°E
			H = 00 32 49.5 h = 34 km MAG=4.4 (USCGS)
			D = 82.3°
			LmH:14s 0.7/um
			MLH=5.2
25.	e(P)	07 42 29	
25.	ePKP	12 05 32	Tonga Islands 18.69°S 173.88°W
			H = 11 45 46.0 h = normal MAG=4.7 (USCGS)
			D = 147.6°
25.	eSKS	23 43 03	Northern Chile 22.43°S 68.59°W
	eS	43(58)	H = 23 18 50.8 h = 112 km MAG=5.3 (USCGS)
			D = 101.0°
26.	LmH	00 23.5	Northeastern China 37.57°N 115.06°E
	LmV	27.5	H = 23 42 54.8 h = normal MAG=4.9 (USCGS)
			D = 69.3°
			LmH:15s 0.5/um LmV:16s 0.45/um
			MLH=4.9 MLV=4.8
26.	ePKIKP	01 11 38	Kermadec Islands 27.53°S 177.26°W
	ePKP2	12 06	H = 00 51 51.3 h = 59 km MAG=5.7
	e	12 23	D = 155.9° Az = 346.1° (USCGS); h = 67 km
	epPKP2	12 25	PV1:1.8s 40.6nm PV2:1.5s 50.0nm

Day	Phase	h m s	Remarks
cont.			
26.	e	01 12 52	PV3:1.1s 26.7nm PV4:1.4s 52.4nm
	LmV	02(22)	
26.	e(P)	03 27 21	PV:1.2s 18.3nm
26.	eP	06 00 46.5	Portugal 38.06°N 8.40°W
	e(S)	04 10	H = 05 56 24.3 h = normal MAG=4.7
	e	06 10	D = 19.0° Az = 42.1° (USCGS)
	LmH	07.4	LmH:13s 1.1/um
			MLH=4.4
26.	ePKP	09 26 29	Loyalty Islands Region 22.11°S 170.02°E
	e	26 31	H = 09 06 50.4 h = 33 km MAG=5.6 (USCGS)
	e	26 33	D = 146.9°
	e	26 39	PV2:1.2s 22.8nm PV3:1.4s 33.3nm
	LmH	10 34.6	PV4:1.5s 85.0nm
	LmV	35.1	LmH:20s 1.0/um LmV:19s 1.4/um
			MLH=5.6 MLV=5.7
26.	e	09 32 20	
	e	32 24	
26.	eP	10 30(00)	Alaska 67.11°N 161.86°W
	e	30 05	H = 10 19 34.8 h = 14 km MAG=5.2
			D = 62.5° Az = 4.7° (USCGS)
26.	e(P)	13 47 53	
26.	ePKP	13 52 03	Loyalty Islands Region 22.25°S 169.81°E
	i	52 05.7	H = 13 32 26.6 h = 69 km MAG=4.1
	ei	52 11	D = 146.9° Az = 334.3° (USCGS)
	e	52 29	
	LmH	15 01	
	LmV	01	
26.	e(PKHKP)	22 44 39	Tonga Islands Region 23.56°S 175.81°W
	e(PKP2)	44 49	H = 22 24 45.3 h = normal MAG=4.9
			D = 152.4° Az = 349.8° (USCGS)

Day	Phase	h m s	Remarks
26.	e	23 30 28	
27.	i	02 54 42	
27.	ePKHKP	03 22 24	Tonga Islands Region 23.65°S 175.75°W
	ePKP2	22 36.5	H = 03 02 32.9 h = 63 km MAG=4.9 (USCGS)
	e	22 50	D = 152.3°
27.	ePKP	10 46 29	Fiji Islands 17.85°S 178.40°W
			H = 10 27 50.0 h = 550 km MAG=4.6
			D = 146.3° Az = 348.5° (USCGS)
27.	iP	13 10 57.0	Honshu/Japan 39.46°N 141.08°E
			H = 12 58 56.3 h = 95 km (USCGS)
			D = 80.0°
27.	LmH	18 08.8	Luzon/Philippine Is. 13.95°N 123.57°E
	LmV	09.5	H = 17 10 44.2 h = 13 km MAG=4.9 (USCGS)
			D = 92.7°
			LmH:19s 0.65/um LmV:23s 0.95/um
			MLH=5.1 MLV=5.2
28.	ePn	04 20 32	Yugoslavia 42.22°N 18.70°E
	ePg	21 24	H = 04 18 13.3 h = 39 km MAG=4.6
	i	22 26.0	D = 9.7° Az = 332.4° (USCGS)
	eiSg	23 29	LmH:12s 1.9/um
	eLg2(3.31)	23 38	MLH=4.1
	LmH	23.7	
28.	LmH	04 58.6	Honshu/Japan 36.61°N 138.08°E
	LmV	59.7	H = 04 09 24.3 h = 24 km MAG=4.5 (USCGS)
			D = 81.1°
			LmH:12s 1.85/um LmV:14s 1.0/um
			MLH=5.7 MLV=5.3
28.	-iPKIKP	07 49 22.5	Off E. Coast of N.-New Zealand
	-iPKP2	50 11.5	35.80°S 178.54°E
	i(pPKIKP)	50 24.5	H = 07 29 34.7 h = 94 km MAG=5.8
	e(pPKP2)	51 12.5	D = 162.4° Az = 331.5° (USCGS);

Day	Phase	h m s	Remarks
cont.			
28.	ePP	07 53 55	(h = 237 km) PV1:(2.2s 59nm) PV2:1.4s 119nm PV3:1.5s 25nm PV4:1.6s 43.7nm ANUSSR gives: h = 109 km
28.	-eiPKIKP	10 21 06	Solomon Islands 4.62°S 155.18°E
	epPKIKP	23 09	H = 10 03 03.0 h = 509 km MAG=5.6 (USCGS) D = 125.3° h = 548 km PV1:1.6s 57.8nm PV2:1.5s 37.5nm
28.	e(P)	10 30 49	
28.	LmH	10 33.8	
	LmV	33.8	
28.	eP	10 50 53	Hindukush 36.35°N 70.92°E
	eipP	51 33	H = 10 43 01.0 h = 173 km MAG=4.9 (USCGS)
	e	52 39	D = 44.0° h = 188 km
	e	53 11	PV:1.8s 25.0nm pPV:1.6s 84.1nm
	eS	57(10)	MPV=4.4
	eScS	11 00 45	
28.	eP	12 43(30)	Adria 41.30°N 18.67°E
	i	45 49.5	H = 12 41 01.7 h = normal
	e(Sg)	46 30	D = 10.1° Az = 333.5° (USCGS)
	e	46 36	PV:1.2s 27.4nm
28.	ePKP	13 40 37	Tonga Islands 18.65°S 175.60°W
			H = 13 21 13.5 h = 179 km MAG=4.7
			D = 147.6° Az = 351.4° (USCGS)
			PV:1.2s 27.4nm
28.	eP	15 48 34	Honshu/Japan 36.65°N 138.16°E
	LmH	16 25.7	H = 15 36 18.5 h = 17 km MAG=5.0 (USCGS)
	LmV	26.5	D = 81.1°
			LmH:14s 1.2/um LmV:15s 0.5/um
			MLH=5.4 MLV=5.0

Day	Phase	h m s	Remarks
28.	eP	19 09 13	Mindoro/Philippine Is. 13.73°N 120.71°E
			H = 18 56 19.1 h = 110 km MAG=5.1 (USCGS)
			D = 91.5°
28.	LmV	23 35.7	Halmahera 2.32°N 128.41°E
			H = 22 30 55.1 h = 75 km (USCGS)
			D = 104.8°
			LmV:20s 0.5/um
			MLV=5.1
29.	eP	13 40 10.5	Kurile Islands 46.45°N 152.62°E
	e	40 26.5	H = 13 28 18.3 h = 53 km MAG=4.7 (USCGS)
			D = 77.6° Az = 335.8°
29.	LmH	14 53.2	Balleny Islands Region 65.18°S 176.94°E
	LmV	53.5	H = 13 10 27.0 h = normal MAG=5.5 (USCGS)
			D = 163.6°
			LmH:19s 0.7/um LmV:19s 0.7/um
			MLH=5.6 MLV=5.5
29.	LmH	20 23	South of Panama 6.80°N 82.61°W
	LmV	23	H = 19 31 23.7 h = 28 km MAG=5.1 (USCGS)
			D = 87.2°
			LmV:18s 0.3/um
			MLV=4.8
29.	eP	22 41 49	Kodiak Island 56.35°N 153.11°W
	e	41 55.5	H = 22 30 22.8 h = normal MAG=4.7
			D = 72.6° Az = 10.1° (USCGS)
30.	iP	06 19 58.5	Lake Baikal 51.65°N 104.37°E
	i	20 07.0	H = 06 10 33.4 h = normal MAG=5.0
	eS	27 36	D = 54.3° Az = 308.4° (USCGS)
	LmH	45.8	LmH:14s 4.0/um LmV:13.5s 5.9/um
	LmV	45.8	MLH=5.6 MLV=5.9
30.	ePKP2	08 56(49)	South of Kermadec Islands 33.10°S 179.24°W
	e	56 56	H = 08 36 04.5 h = 43 km MAG=4.5 (USCGS)
			D = 160.8°

Day	Phase	h m s	Remarks
30.	eP	12 53 26.5	Mindoro/Philippine Is. 13.39°N 120.70°E
	e	53 44.5	H = 12 40 27.5 h = 81 km MAG=5.5
	epP	53 49	D = 91.4° Az = 323.0° (USCGS); h = 84 km
	ePP	57 06	LmH:20s 0.4/um LmV:19s 0.6/um
	eS	13 04(20)	MLH=4.9 MLV=5.1
	LmH	39.5	
	LmV	40.5	
30.	ePKP	13 57 20	Tonga Islands 17.72°S 173.31°W
	e	57 26	H = 13 37 38.7 h = normal MAG=4.8
	e	57 44	D = 146.9° Az = 354.3° (USCGS)
30.	LmH	14(10)	
	LmV	(10)	
30.	-iP	20 31 45.5	Southern Alaska 61.31°N 147.48°W
	+ipP	31 54.6	H = 20 20 54.0 h = 36 km MAG=5.9
	isP	31 58.5	D = 67.1° Az = 14.3° (USCGS); h = 35 km
	ePP	34(16)	PV:1.2s 95.5nm pPV:1.6s 124nm
	eS	40 38	LmH:19s 1.2/um LmV:17s 1.0/um
	iS	40 41	MPV=5.9 MLH=5.1 MLV=5.1
	eSS	44(55)	i 32 04.3 i 32 09.2 i 34 19.5
	eLQ	48.4	
	LmH	21 06.0	
	LmV	06.0	
30.	eP	20 34 10	Southern Alaska 61.47°N 147.50°W
			H = 20 23 18.2 h = normal MAG=5.4 (USCGS)
			D = 67.0°
			PV:1.4s 26.2nm
			MPV=5.2
31.	eS	00 01.5	Off E. Coast of Jalisco/Mexico
	eSS	07 40	18.73°N 107.01°W
	eLQ	14.7	H = 23 37 19.4 h = 54 km MAG=5.3 (USCGS)
	LmH	29.3	D = 92.5°
	LmV	29.3	LmH:19s 0.7/um LmV:19s 0.8/um
			MLH=5.2 MLV=5.2

Day	Phase	h m s	Remarks
31.	e(P)	01 27 11	Afghanistan-USSR Border Region
	e	27 39	36.50°N 71.42°E
			H = 01 19 00.5 h = 80 km MAG=5.0 (USCGS)
			D = 44.4°
			P must be 5 s earlier than e(P).
31.	e(P)	09 11 15	
31.	+iP	18 20 32.2	Jan Mayen Island 71.59°N 2.67°W
	ei	20 37.5	H = 18 15 39.5 h = normal MAG=5.1
	eS	24(36)	D = 22.0° Az = 155.2° (USCGS)
	LmV	30.9	PV1:1.8s 206nm PV2:2.1s 275nm
	LmH	31.7	SH:12s 1.1/um
			LmH:13s 1.3/um LmV:14s 1.2/um
			MPV=5.3 MSH=5.0 MLH=4.5 MLV=4.5
31.	ePKP	23 55 47	Easter Island Cordillera 49.53°S 116.47°W
			H = 23 36 07.7 h = normal MAG=5.1
			D = 147.2° Az = 67.8° (USCGS)

Day	Phase	h m s	Remarks
1.	+iP	01 43 26	Jan Mayen Islands Region 71.77°N 2.75°W
	i	43 29.0	H = 01 38 29.9 h = 17 km MAG=4.9
	e(sP)	43 32	D = 22.2° Az = 155.2° (USCGS);
	ePP	43 54	(h = 19 km)
	eS	47 32	PV1:1.5s 75.0nm PV2:1.4s 50.0nm
	eLQ	48.0	PV3:1.9s 187nm SH:9.5s 0.5/um
	eLR	49.0	LmH:13s 0.7/um LmV:13s 0.8/um
	LmV	53.8	MPV=4.9 MSH=4.8 MLH=4.3 MLV=4.5
	LmH	54.7	e 43 36.5 e 43 42 e 43 46.5
1.	eP	03 05 15	Jan Mayen Islands Region 71.81°N 2.56°W
	e	05 21	H = 03 00 20.7 h = normal MAG=4.0
			D = 22.2° Az = 155.6° (USCGS)
1.	eP	14 26 33	Southern Greece 37.50°N 22.13°E
	i	26 34.2	H = 14 22 57.0 h = 17 km MAG=5.3
	ei	26 37.5	D = 15.1° Az = 333.6° (USCGS)
	ei	26 45	PV2:1.0s 54.3nm PV3:1.2s 159nm
	e	27 30	PV4:1.7s 471nm SH2:9.5s 2.8/um
	eS	29 26	LmH:13s 14.3/um LmV:13s 16.6/um
	iS	29 34	MLH=5.3 MLV=5.5
	e	30 00	Successive P-onsets with increasing
	eLi(3.71)	30 30	amplitude in the shortperiod records.
	eLg1(3.58)	30(46)	In the longperiod broadband registra-
	iLg2(3.31)	31 16	tions we find a clear superposition of
	LmH	33.2	longperiod PL-waves (T ca. 18 s) and
	LmV	33.2	shortperiode P-waves. e 27 30 is a very
			clear onset in all seismographs and with
			very long period (T = 36 s) in the SSJ-1/L
			components. Well developed higher modes
			of surface waves.
1.	e(PKHKP)	15 44 51	Tonga Islands 20.59°S 175.40°W
	e(PKP2)	44 58.5	H = 15 24 59.2 h = normal MAG=5.2
			D = 149.5° Az = 351.2° (USCGS)
1.	+iP	19 22 55	Jan Mayen Islands 71.59°N 2.91°W
	i	22 58.5	H = 19 18 00.6 h = normal MAG=5.2
	eS	27 00	D = 22.0° Az = 154.8° (USCGS)

Day	Phase	h m s	Remarks
cont.			
1.	LmV	19 33.4	PV:1.4s 234nm SH:10s 0.6/um
	LmH	34.2	LmH:13s 0.7/um LmV:14s 0.5/um
			MPV=5.4 MSH=4.8 MLH=4.2 MLV=4.3
			Clear superposition of short- and long-
			period (T ca. 20 s) P-waves in the long-
			period broadband seismographs.
1.	e(P)	21 15 10.5	North Atlantic Ocean 58.40°N 32.83°W
	e	15 23	H = 21 09 42.3 h = normal MAG=4.4 (USCGS)
	LmH	25.8	D = 26.3°
	LmV	26	For the USCGS epicentre-calculation the
			P-onset must be 7 s later, but our first
			onset interpreted as e(P) is clear and
			the greatest onset in this minute.
1.	eP	21 33 13	North Atlantic Ocean 58.28°N 32.64°W
	LmH	43.8	H = 21 27 38.6 h = normal MAG=4.7
	LmV	43.9	D = 26.4° Az = 87.4° (USCGS)
			PV:1.3s 30.2nm
			LmH:15s 1.2/um LmV:16s 1.3/um
			MPV=4.8 MLH=4.5 MLV=4.7
1.	eP	21 36 42	North Atlantic Ocean 58.34°N 32.49°W
	e	36 50	H = 21 31 06.7 h = normal MAG=4.5 (USCGS)
			D = 26.5°
1.	ePg	23 18 56	Italy 45.9°N 10.9°E
	eSn	19 31	H = 23 17 27 (BCIS)
	i	19 42.5	D = 4.8°
	iSg	19 59	i 20 05
1.	eP	23 29 56	Southern Alaska 61.77°N 149.60°W
	epP	30 08.5	H = 23 19 09.8 h = 77 km MAG=5.2
	ePcP	30 23	D = 66.9° Az = 12.9° (USCGS); h = 48 km
	epPcP	30 35	PV:1.0s 26.1nm pPV:1.3s 35.0nm
	e	30 46	PcPV:1.2s 18.2nm
			MPV=5.4

Day	Phase	h m s	Remarks
2.	eP	01 06 40.5	Rat Islands/Aleutian Is. 51.02°N 177.88°E
	epP	06 51.5	H = 00 54 40.7 h = 14 km MAG=5.2
	eS	16 40	D = 78.0° Az = 351.1° (USCGS); h = 40 km
	eSS	21(50)	LmH:17s 0.5/um LmV:16s 0.4/um
	LmH	44.5	MLH=4.9 MLV=4.9
	LmV	47.5	
2.	ePKP	08 17(35)	Northern Easter Is. Cordillera
	ePP	18 13	4.47°S 105.92°W
	eSKS	24 20	H = 07 59 05.7 h = normal MAG=5.1 (USCGS)
	eSKKS	25(16)	D = 110.6°
	ePS	27 40	LmH:16.5s 1.1/um LmV:18.5s 1.5/um
	eSS	33(40)	MLH=5.5 MLV=5.6
	LmV	09 07.3	e 17 44 e 18 27 e 25 55
	LmH	12.2	
2.	eP	10 50 08.5	Eastern Gulf of Aden 12.93°N 50.95°E
	e	50 12	H = 10 41 21.4 h = normal MAG=4.8
	e(pP)	50 17	D = 49.3° Az = 327.9° (USCGS);
			(h = 35 km)
			PV1:1.2s 15.8nm PV2:1.4s 19.0nm
			PV3:1.4s 14.3nm
			MPV=5.0
2.	e(Sg)	14 30 16	Probably Yugoslavia (UPP)
	e	30 25	
2.	eP	22 57 38	Southern Alaska 60.25°N 146.91°W
	epP	57 45	H = 22 46 39.5 h = 31 km MAG=4.9
			D = 68.1° Az = 14.6° (USCGS); h = 27 km
			PV:1.0s 17.4nm
			MPV=5.2
3.	eP	08 23 34	Kurile Islands 43.24°N 146.46°E
	e(pP)	23 45	H = 08 11 38.8 h = 69 km MAG=4.4
			D = 78.6° Az = 332.6° (USCGS); h = 40 km
			PV1:1.0s 10.9nm PV2:1.6s 21.0nm
			MPV=4.9
3.	e	08 30 48	PV:0.9s 13.1nm

Day	Phase	h m s	Remarks
3.	ePS	16 50 50	Off Coast of Mexico 10.16°N 104.19°W
	eSS	56 00	H = 16 24 20.7 h = 47 km MAG=5.3 (USCGS)
	LmH	17 24.7	D = 97.8°
	LmV	25.0	LmH:16s 0.5/um LmV:18s 0.8/um
			MLH=5.2 MLV=5.3
3.	ePKIKP	20 04 25	Fiji Islands Region 20.70°S 178.91°W
	ePKHKP	04 29	H = 19 45 47.6 h = 600 km MAG=4.7 (USCGS)
			D = 149.0°
4.	eP	04 48 46	Andaman Islands Region 12.19°N 93.08°E
			H = 04 37 04.5 h = normal MAG=5.4
			D = 75.3° Az = 319.4° (USCGS)
			PV:1.6s 31.6nm
			MPV=5.2
4.	LmH	10 43.1	West New Guinea 2.48°S 138.76°E
	LmV	53.4	H = 09 41 23.8 h = 39 km MAG=6.0 (USCGS)
			D = 114.7°
			LmH:21.5s 1.8/um LmV:19.0s 1.3/um
			MLH=5.7 MLV=5.6
4.	eSS	22 44.5	Columbia 4.55°N 73.96°W
	LmV	23 06	H = 22 14 49.0 h = 5 km MAG=5.2 (USCGS)
	LmH	07	D = 90.5°
5.	ePKIKP	00 27 31	Fiji Islands Region 21.70°S 176.45°W
	ePKHKP	27 39	H = 00 08 05.1 h = 212 km MAG=4.7
	e	27 41.5	D = 150.4° Az = 349.6° (USCGS);
	ePKP2	27 48.5	h = ca. 195 km
	ep(PKHKP)	28 30	PV1:1.0s 21.8nm PV2:1.6s 47.5nm
5.	eP	09 00 10	Rat Islands/Aleutian Is. 51.80°N 176.54°E
			H = 08 48 20.3 h = 59 km MAG=4.8 (USCGS)
			D = 77.0°
5.	LmH	19 26.8	New Hebrides 15.85°S 167.42°E
			H = 17 58 31.0 h = 38 km MAG=5.4 (USCGS)
			D = 140.2°
			LmH:(10s) 0.6/um MLH=5.7

Day	Phase	h m s	Remarks
5.	e	22 37(39)	Greece 38.53°N 21.91°E
	LmH	42.5	H = 22 34 14.1 h = normal MAG=4.3 (USCGS)
			D = 14.2°
6.	eP	12 35 54.5	Dodecanese Islands 36.68°N 26.61°E
			H = 12 31 57.9 h = 161 km MAG=4.6
			D = 17.6° Az = 327.1° (USCGS)
			PV:1.4s 28.6nm
			MPV=4.4
6.	ePn	12 41 30.5	Yugoslavia 42.17°N 18.92°E
	ePg	42 26	H = 12 39 08.3 h = normal MAG=4.4
	eSn	43 22	D = 9.9° Az = 331.8° (USCGS)
	eSg	44 31	e 41 34 e 41 51
6.	eP	17 55(17)	Kurile Islands Region 47.61°N 155.24°E
	e(pP)	55(28)	H = 17 43 23.2 h = normal MAG=4.5 (USCGS)
			D = 77.2° (h = 41 km)
7.	e	02 53 15	
7.	iP	03 59 46	Eastern Kazakh SSR
	ePn	04 01 17	H = 03 52 00 h = 0 (UPP)
			D = ca. 41°
			Probably underground explosion.
7.	ePKIKP	16 14 03	Solomon Islands 5.15°S 154.71°E
	e	14 05	H = 15 55 11.5 h = 77 km MAG=5.5
			D = 125.2° Az = 332.1° (USCGS)
7.	eP	16 32 12	Honshu/Japan 36.89°N 138.87°E
			H = 16 19 58.8 h = 43 km MAG=4.9 (USCGS)
			D = 81.2°
8.	eP	12 19 31	South Atlantic Ridge 22.51°S 10.75°W
			H = 12 07 49.7 h = normal MAG=5.4
			D = 75.5° Az = 14.5° (USCGS)
			PV:1.4s 23.8nm
			MPV=5.1

Day	Phase	h m s	Remarks
8.	+iP	21 29 50	Halmahera 2.40°N 128.44°E
	e(pP)	30 12	H = 21 15 52.8 h = 96 km MAG=6.9
	e(sP)	30 24	D = 104.8° Az = 324.0° (USCGS);
	-iPP	34 12	(h = 90 km)
	e(sPP)	34 46	PV1:9s 2.7/um PV2:2.0s 118.5nm
	ePPP	36 26	PPV:8s 9.1/um PPH:8s 4.2/um
	eSKS	40(10)	SPPV:12s 5.6/um SPPH:12s 2.7/um
	eSKKS	40 44	LmH:23s 19.1/um LmV:22s 22.4/um
	eS	41 24	MPV=7.3 MPPV=7.5 MPPH=7.3 MLH=6.6
	eSP	43 00	MLV=6.7
	eSPP	44 16	e 33 45 e 34 37 e 35 55
	ePKKP	45 35	
	eSS	48 50	
	eSSS	52 56	
	ePKPPKP	53(45)	
	LmH	22 17.0	
	LmV	19.7	
8.	iPKHKP	21 37 04	Fiji Islands Region 21.72°S 176.25°W
	i	37 41.5	H = 21 17 21.4 h = 80 km MAG=5.7 (USCGS)
			D = 150.5°
			PV:2.5s 346nm
8.	+eP	22 07 35	Kurile Islands 45.42°N 150.50°E
	e	07 39.5	H = 21 55 40.1 h = 32 km MAG=5.6
	e	07 47.5	D = 77.9° Az = 334.6° (USCGS)
			PV:1.4s 57.1nm
			MPV=5.5
9.	ePn	11 59(45)	Italy 44.0°N 9.9°E
	ePg	12 00 14	H = 11 58 04 (BCIS)
	eSn	00 54	D = 6.7°
	eSg	01 41.5	e 59 49 i 01 04.5 e 01 47
9.	iPg	14 09 26.0	Explosion/GDR 51.37°N 12.89°E
	iSg	09 42.0	D = 1.0° Yield: 4.25 t
9.	eP	18 51 48.5	Venezuela 10.82°N 69.47°W
	e	52 17.5	H = 18 39 58.2 h = 12 km MAG=5.0 (USCGS)
	e	52 35	D = 76.2°

Day	Phase	h m s	Remarks
cont.			
9.	LmH	19 22.5	LmH:20s 0.5/um LmV:18s 0.6/um
	LmV	23.8	MLH=4.8 MLV=4.9
9.	iP	20 50 49.5	Eastern Gulf of Aden 14.68°N 52.29°E
	ePP	52 45	H = 20 42 06.3 h = 28 km MAG=4.9
	eSS	21 01.6	D = 48.6 Az = 326.4° (USCGS)
	LmH	(12)	e 50 51.5 e 50 56
	LmV	(15)	
9.	iP	23 24 02.5	Kurile Islands Region 48.76°N 156.33°E
	epP	24 15	H = 23 12 15.1 h = 29 km MAG=4.8
			D = 76.5° Az = 337.8° (USCGS); h = 46 km
10.	iP	02 38 54	Sea of Okhotsk 46.59°N 144.12°E
	e	40 16	H = 02 27 47.7 h = 335 km MAG=5.2 (USCGS)
	e	40 38	D = 75.0°
			PV:1.1s 13.3nm
			MPV=4.6
10.	eP	10 14 59	Turkey 39.20°N 41.44°E
	e	15(10)	H = 10 09 50.9 h = normal (USCGS)
	e	15 13	D = 23.7°
	LmH	10 28	
	LmV	28	
10.	eP	10 59 18	Dodecanese Islands 36.52°N 26.87°E
			H = 10 55 16.7 h = 144 km MAG=4.2 (USCGS)
			D = 18.2°
			PV:1.5s 45.0nm
			MPV=4.6
10.	eSg	11 03 51	Explosion?
10.	LmH	15(17)	Easter Island Cordillera 26.43°S 115.07°W
	LmV	(17)	H = 14 04 53.2 h = normal MAG=4.5 (USCGS)
			D = 132.9°

Day	Phase	h m s	Remarks
10.	iPKIKP	17 50 49.0	South of Fiji Islands 23.33°S 179.82°E
	iPKHKP	50 55.5	H = 17 32 03.0 h = 550 km MAG=5.0 (USCGS)
	ePKP2	51 06	D = 151.2° h = 559 km
	epPKHKP	53 02.5	PV2:1.1s 22.2nm PV3:1.1s 13.3nm
			PV4:1.3s 27.9nm
11.	LmH	02 35	Gulf of California 27.85°N 111.14°W
	LmV	35.5	H = 01 42 10.5 h = normal MAG=4.8 (USCGS)
			D = 86.8°
			LmV:16s 0.2/um
			MLV=4.7
11.	e	05 24 51	
11.	eP	16 06 13	Burma-India Border Region 26.98°N 95.76°E
			H = 15 55 20.0 h = 37 km MAG=5.0 (USCGS)
			D = 65.8°
11.	eiP	17 50 03	Northern Columbia 6.78°N 72.92°W
	e	50 05.5	H = 17 38 04.2 h = 167 km MAG=5.9
	epP	50 44	D = 81.3° Az = 39.9° (USCGS); h = 170 km
	e	50 47	PV:1.1s 33.3nm
	esP	51 02	MPV=5.0
	ei	52 20	ei 51 31.5 e 51 36.5 e 52 51.5
	eS	59 54	e 53 03.5 ei 53 30 e 53 50 e 54 03
	esS	18 01 04	e 54 13
11.	eP	18 19 54	PV:2.0s 29.6nm
12.	LmH	02 11	New Hebrides Islands 15.90°S 166.96°E
	LmV	11	H = 00 42 25.5 h = 62 km MAG=4.3 (USCGS)
			D = 140.2°
			LmH:16s 0.3/um LmV:16s 0.3/um
			MLH=5.1 MLV=5.2
12.	eP	09 40 35.5	Greece 39¾4°N 20.0°E
	e	40 54	H = 09 37 39 (BCIS)
	e	44 06	D = 12.4°
	e	45 00	

Day	Phase	h m s	Remarks
12.	e	11 10 06	
	e(Sg)	10 23	
12.	e(P)	11 38 42	PV:1.0s 17.4nm
12.	-ePKIKP	11 49 18	Loyalty Islands Region 23.07°S 170.59°E
	iPKHKP	49 23	H = 11 29 40.3 h = 49 km MAG=6.1
	i(pPKP)	49 44	D = 148.0° Az = 334.5° (USCGS);
	ePP	52 52	(h = 68 km)
	ePSKS	12 03 04	PV1:3.2s 1.6/um PV2:9.5s 17.2/um
	eSP	03 44	LmH:18s 6.1/um LmV:18s 6.6/um
	eSS	12 05	MLH=6.4 MLV=6.5
	eSSS	17 48	i 49 28.5 e 49 35
	LmH	13 08.1	
	LmV	11.8	
12.	ePKP	12 59 49	Loyalty Islands Region 23.07°S 170.57°E
	e	59 52.5	H = 12 40 06.3 h = normal MAG=4.8
			D = 148.0° Az = 334.5° (USCGS)
			PV2:1.2s 13.6nm
12.	ePKP	13 33 59	Loyalty Islands Region 23.02°S 170.67°E
			H = 13 14 13.3 h = normal MAG=4.2 (USCGS)
			D = 148.0°
12.	ePKP	14 25 03	Loyalty Islands Region 22.84°S 170.37°E
	e(pPKP)	25 14	H = 14 05 20.6 h = normal MAG=4.9
	e(sPKP)	25 17.5	D = 147.7° Az = 334.4° (USCGS)
	e	25 27	
12.	eP	16 53 18	Northern California 39.39°N 120.13°W
	i	53 49	H = 16 41 01.7 h = 8 km MAG=5.4
	eS	17 03 28	D = 80.9° Az = 28.8° (USCGS)
	eSS	08 44	LmH:18s 12.4/um LmV:20s 5.7/um
	LmH	27.3	MLH=6.3 MLV=6.0
	LmV	27.3	
13.	ePKP	00 51 17	Loyalty Islands 23.04°S 170.50°E
			H = 00 31 30.9 h = 31 km
			D = 147.9° Az = 334.4° (USCGS)

Day	Phase	h m s	Remarks
13.	ePKHKP	01 10 27	Loyalty Islands Region 23.03°S 170.61°E
	eiPKP2	10 30	H = 00 50 42.8 h = 28 km MAG=5.0 (USCGS)
	LmH	02(19)	D = 148.0°
	LmV	(19)	PV2:1.0s 39.1nm
13.	ePKP	09 58 42	Loyalty Islands Region 23.10°S 170.61°E
	epPKP	58 51	H = 09 38 56.5 h = normal MAG=4.9 (USCGS)
			D = 148.0° h = 32 km
			PV:1.2s 18.2nm
13.	ePKP	10 00 10	Probably Loyalty Islands Region (USCGS)
	epPKP	10 19.5	PV:1.2s 15.9nm
13.	e(P)	20 28(58)	Turkey 38.91°N 40.62°E
	i	29 15	H = 20 23 50.5 h = normal MAG=4.5
	eS	33 10	D = 23.5° Az = 309.4° (USCGS)
	LmH	39.2	LmH:18s 0.7/um
	LmV	(42)	MLH=4.1
13.	ePKHKP	23 13 51	South of Tonga Islands 24.07°S 175.42°W
	e	14 07	H = 22 53 57.9 h = 46 km MAG=5.5
	LmH	00 31	D = 152.9° Az = 350.1° (USCGS)
	LmV	33	LmV:18s 0.5/um
			MLV=5.4
13.	eP	23 52 32.1	North Atlantic Ocean 53.59°N 35.22°W
	LmH	00 03.5	H = 23 46 38.1 h = normal MAG=4.7 (USCGS)
	LmV	03.5	D = 28.4°
			LmV:16s 0.3/um
			MLV=4.1
14.	LmH	00(10)	
	LmV	(10)	
14.	ePKP	00 32 14	Loyalty Islands Region 23.15°S 170.68°E
	epP	32 23	H = 00 12 25.1 h = 19 km MAG=4.8 (USCGS)
			D = 148.2° h = 32 km

Day	Phase	h m s	Remarks
14.	iPKP	00 40 45.0	Loyalty Islands Region 23.24°S 170.64°E
	epPKP	40 56	H = 00 21 01.3 h = 51 km MAG=5.0 (USCGS)
	e	41 03.5	D = 148.2° h = 39 km
	e	41 09	
14.	iP	00 56 05	Arabian Sea 14.55°N 56.44°E
	e	56 10	H = 00 47 03.6 h = 23 km MAG=5.0 (USCGS)
			D = 51.1°
14.	LmH	02 04	Honshu/Japan 36.37°N 138.02°E
			H = 01 14 22.8 h = 64 km MAG=4.6 (USCGS)
			D = 81.2°
			LmH:12s 0.4/um
			MLH=5.0
14.	eP	23 33 32	South Sandwich Islands Region
	ePKIKP	37 18	60.13°S 27.04°W
	ePP	38 16	H = 23 18 41.6 h = normal MAG=6.2 (USCGS)
	ePPP	40 32	D = 114.6°
	eSKS	44 06	PV:16s 1.2/um SPH:16s 5.9/um
	eS	46 18	SPV:16s 9.3/um
	eSP	47 52	LmH:18.5s 30.4/um LmV:19s 49.3/um
	ePKKP1	48 04	MLH=6.9 MLV=7.1
	ePKKP2	48 11	e 48 16 e 57(35)
	eSS	54 12	The S-phase is the diffracted S around
	LmV	00 22.0	the core. ePKKP1 and ePKKP2 can be
	LmH	24.2	attributed to two different branches of
			the PKKP travel time curve.
15.	e	00 12 30	Italy 46.25°N 13.25°E
	e	12 52	H = 00 10 41 (BCIS)
	e	12 57.5	D = 4.5°
	eSg	13 04	
15.	ePKP	04 26 56	Tonga Islands Region 23.60°S 175.77°W
	e	27 02	H = 04 07 04.8 h = 67 km MAG=5.3
	LmH	05 40	D = 152.4° Az = 349.8° (USCGS)
	LmV	40	e 27 06 e 27 16.5 e 28 09

Day	Phase	h m s	Remarks
15.	ePP	12 11 32	South Sandwich Islands Region
	eS	19 24	60.27°S 26.74°W
	eSP	21 10	H = 11 51 55.7 h = normal MAG=5.7 (USCGS)
	eSS	27 28	D = 114.6°
	e	31 00	LmH:17.5s 7.0/um LmV:19s 12.3/um
	LmV	55.6	MLH=6.3 MLV=6.5
	LmH	57.3	The S-phase is the diffracted S around
			the core.
15.	ePKP	14 34 05	Loyalty Islands Region 23.06°S 170.79°E
	ipPKP	34 13.5	H = 14 14 19.4 h = 26 km MAG=5.0
	e	34 26	D = 148.0° Az = 334.7° (USCGS); h = 30 km
	e	34 52	PV:1.2s 31.8nm
15.	eP	17 23 15	Taiwan 22.85°N 121.37°E
	e	23 21	H = 17 10 46.8 h = 47 km MAG=5.5
	ePP	26 32	D = 84.3° Az = 323.0° (USCGS)
	eS	33 34	PV:1.4s 47.6nm
	ePS	34 28	LmH:15s 7.8/um LmV:16s 16.9/um
	LmH	18 05.7	MPV=5.4 MLH=6.3 MLV=6.6
	LmV	06.1	e 23 29 e 23 35 e 23 39
15.	eP	17 37 14	Taiwan Region 22.9°N 121.3°E
			H = 17 24 45.6 h = 49 km MAG=4.8 (USCGS)
			D = 84.2°
16.	LmH	02 57	Taiwan Region 22.7°N 121.2°E
	LmV	57.2	H = 02 01 57.1 h = normal MAG=5.0 (USCGS)
			D = 84.3°
			LmH:16.5s 0.3/um LmV:15s 0.7/um
			MLH=4.8 MLV=5.2
16.	-iP	03 00 04.0	Unimak Island Region 54.05°N 163.46°W
			H = 02 48 21.8 h = 39 km MAG=5.3
			D = 75.6° Az = 3.2° (USCGS)
			PV:1.0s 52.3nm
			MPV=5.6

Day	Phase	h m s	Remarks
16.	LmH	08 52.6	West New Guinea Region 1.82°S 134.25°E H = 07 50 39.7 h = 21 km MAG=5.4 (USCGS) D = 111.5° LmH:16s 0.7/um MLH=5.4
16.	ePKP	13 31 39	Loyalty Islands Region 22.99°S 170.58°E H = 13 11 54.5 h = normal MAG=5.1 D = 147.9° Az = 334.5° (USCGS); h = normal PV:0.9s 13.0nm
	epPKP	31(48)	
16.	ePKP	15 14 09	Samoa Islands Region 16.16°S 171.65°W H = 14 54 32.3 h = normal MAG=4.7 D = 145.5° Az = 356.3° (USCGS) PV:1.2s 22.7nm
16.	eP	17 22 23	Unimak Islands Region 53.77°N 163.08°W H = 17 10 39.0 h = 34 km MAG=4.9 D = 75.9° Az = 3.5° (USCGS); h = 38 km PV:1.1s 35.6nm pPV:1.6s 31.6nm MPV=5.4
	epP	22 33.5	
16.	ePKP	17 24 32	New Hebrides Islands 18.66°S 169.00°E H = 17 05 25.2 h = 212 km MAG=5.9 D = 143.4° Az = 335.8° (USCGS) PV:1.2s 27.4nm
17.	ePKHKP	04 03 47	Tonga Islands Region 23.37°S 175.27°W H = 03 43 54.5 h = normal MAG=4.9 (USCGS) D = 152.3°
17.	ePKHKP	20 37(28)	Kermadec Islands 27.69°S 176.60°W H = 20 17 26.0 h = 37 km MAG=5.2 (USCGS) D = 156.2° LmH:18.5s 1.0/um LmV:18s 0.8/um MLH=5.7 MLV=5.5
	ePKP2	37 45	
	ePP	41(20)	
	eSS	21 01 14	
	LmH	55.7	
	LmV	56	

Day	Phase	h m s	Remarks
17.	+ePKIKP	21 24 49.5	Fiji Islands Region 20.73°S 176.27°W H = 21 05 26.8 h = 220 km MAG=4.6 D = 149.5° Az = 350.1° (USCGS); h = 220 km PV2:0.8s 39.1nm PV3:1.0s 39.1nm
	-iPKHKP	24 51	
	+iPKP2	24 55.7	
	epPKHKP	25 48	
	epPKP2	25 52.5	
18.	eP	05 34 22.5	Hokkaido/Japan Region 42.3°N 142.8°E H = 05 22 31.2 h = 73 km MAG=5.1 (USCGS) D = 77.9°
18.	eP	12 07 46	Arabian Sea 13.03°N 57.60°E H = 11 58 28.5 h = normal D = 52.8° Az = 324.9° (USCGS)
18.	LmH	13 03	Burma-China Border Region (USCGS)
18.	eP	14 27 28	Junan Prov./China 22.6°N 102.1°E H = 14 15 57.2 h = normal MAG=5.4 (USCGS) D = 73.2° LmH:18s 1.2/um LmV:17s 1.0/um MLH=5.3 MLV=5.2
	e	27 31	
	e	27 39	
	LmH	57.4	
	LmV	15 00.6	
18.	LmH	16 16.8	South Sandwich Islands Region 60.38°S 26.96°W H = 15 14 24.9 h = normal MAG=5.4 (USCGS) D = 111.1° LmH:20s 0.7/um LmV:20s 1.5/um MLH=5.3 MLV=5.6
	LmV	17.5	
18.	eP	19 56 57	Taiwan 23.04°N 121.22°E H = 19 44 30.4 h = 53 km MAG=4.8 (USCGS) D = 84.0° LmV:16s 0.6/um MLV=5.1
	e	57 57	
	LmH	20 39	
	LmV	39.4	
18.	+iP	20 51 23.5	Southern Iran 27.84°N 54.31°E H = 20 43 53.3 h = 16 km MAG=6.2 D = 39.4° Az = 317.2° (USCGS) PV1:1.2s 141nm PV:6.5s 0.55/um PPV:10s 0.7/um PPH:11s 0.5/um
	ePP	52 56	
	ePcP	53(36)	
	e	57(08)	
	i(PcS)	57 19	

Day	Phase	h m s	Remarks
cont.			
18.	eS	20 57 30	SH:10s 0.9/um
	eSS	21 00 10	LmH:16s 1.4/um LmV:16s 1.6/um
	LmH	09.9	MPV1=5.8 MPV=6.6 MPPV=5.5 MPPH=5.5
	LmV	12.2	MSH=5.7 MLH=4.9 MLV=5.0
19.	eP	02 09 02	Turkey 38.4°N 42.7°E
	e	10 56	H = 02 03 39 h = 35 km MAG=4.9 (USCGS)
	LmH	20	D = 25.2°
19.	eP	04 35 50	Kurile Islands 47.62°N 153.83°E
	i	36 39.5	H = 04 24 05.1 h = 80 km MAG=5.1
			D = 76.9° Az = 336.4° (USCGS)
19.	eP	05 14 59	Burma-China Border Region 23.87°N 97.58°E
	LmH	43	H = 05 03 46.6 h = 15 km MAG=5.1 (USCGS)
	LmV	50	D = 69.4°
			LmH:16s 0.5/um LmV:16s 0.6/um
			MLH=4.8 MLV=4.9
19.	LmH	07 18	Near North Coast of New Guinea
	LmV	18	3.66°S 144.23°E
			H = 06 06 37.8 h = 19 km MAG=5.2 (USCGS)
			D = 118.7°
			LmH:20s 0.4/um LmV:20s 0.4/um
			MLH=5.1 MLV=5.1
19.	ePKIKP	07 20 51	Fiji Islands Region 20.66°S 178.44°W
	ePKHKP	20 56	H = 07 02 12.8 h = 580 km MAG=5.3
	ePKP2	21 02.5	D = 149.0° Az = 347.5° (USCGS);
	ep(PKHKP)	23 14.5	h = ca. 650 km
	ep(PKP2)	23 21	PV1:1.0s 17.4nm PV2:1.1s 111nm
			PV3:1.0s 47.9nm
20.	ePKP	06 57 38.5	Tonga Islands Region 18.13°S 172.37°W
	e	57 50	H = 06 37 56.6 h = normal MAG=4.6
			D = 147.4° Az = 355.3° (USCGS)

Day	Phase	h m s	Remarks
20.	LmH	10 23	South Sandwich Islands Region
	LmV	23	60.6°S 26.2°W
			H = 09 24 02.8 h = normal MAG=5.5 (USCGS)
			D = 115.2°
			LmH:25s 0.3/um
			MLH=4.8
20.	ePKP2	17 52 23	Kermadec Islands 28.01°S 176.64°W
	LmH	19 10	H = 17 32 06.9 h = 68 km MAG=5.1 (USCGS)
	LmV	13	D = 156.5°
			LmH:15s 0.6/um LmV:16s 0.7/um
			MLH=5.5 MLV=5.5
20.	eP	20 44 39	Kurile Islands Region 44.73°N 150.37°E
	e(PcP)	44 48	H = 20 32 41.8 h = 45 km MAG=4.7
	e(pP)	44 53	D = 78.5° Az = 334.6° (USCGS);
	LmH	21 22.7	(h = 50 km)
	LmV	22.7	LmH:20s 0.7/um LmV:20s 0.9/um
			MLH=5.0 MLV=5.1
20.	eP	23 11 39	Greenland Sea 73.21°N 7.63°E
	e	12 09	H = 23 06 37.8 h = normal MAG=4.3
			D = 22.7° Az = 173.4° (USCGS)
			PV:1.2s 18.2nm
			MPV=4.8
20.	eP	23 48(28)	Burma-China Border Region 24.14°N 97.60°E
	e	48 43	H = 23 37 21.8 h = 28 km MAG=5.2
	LmH	00 23.5	D = 69.2° Az = 317.2° (USCGS)
	LmV	23.5	LmH:16s 0.4/um LmV:16s 0.6/um
			MLH=4.8 MLV=4.9
21.	e	13 51 26	Explosion?
	e(Sg)	51 31	
22.	eP	00 15 56	Off E. Coast of Kamchatka 52.59°N 159.49°E
	e	16 23	H = 00 04 28.0 h = 61 km MAG=5.2
	e	16 57	D = 73.6° Az = 339.3° (USCGS)
	LmH	(50)	PV:1.4s 33.3nm
	LmV	54.5	MPV=5.1

Day	Phase	h m s	Remarks
22.	e(P)	04 27 46	Probably Near West Coast of Honshu/Japan (USCGS)
			P-first onset must be 6 s earlier.
22.	eP	19 09 46	Southern Nevada 37.38°N 114.20°W
	e	09 57	H = 18 57 36.5 h = normal MAG=5.3
	e	10 04	D = 80.3° Az = 31.6° (USCGS)
	e	10 09	LmH:17s 1.1/um LmV:16s 1.4/um
	LmH	46.3	MLH=5.3 MLV=5.4
	LmV	46.3	
22.	ePKP	21 54 54	Samoa Islands Region 16.95°S 172.81°W
	i	55 04.5	H = 21 35 09.2 h = 10 km MAG=4.4
	e	55 10	D = 146.2° Az = 354.9° (USCGS)
	LmV	23 10	LmH:18s 0.3/um LmV:18s 0.6/um
	LmH	10.5	MLH=4.7 MLV=5.0
22.	eP	22 05 38	Eastern China 26.24°N 104.42°E
			H = 21 54 12.1 h = 9 km MAG=5.3 (USCGS)
			D = 71.8°
23.	eP	01 41 47	Kurile Islands Region 44.72°N 150.33°E
	e	42 02	H = 01 29 47.2 h = 34 km MAG=5.2
	eS	51 40	D = 78.5° Az = 334.6° (USCGS)
	e(PS)	52 12	PV:2.0s 66nm
	LmV	02 20.0	LmH:18.5s 2.5/um LmV:19.5s 3.4/um
	LmH	20.4	MPV=5.4 MLH=5.6 MLV=5.7
23.	eP	02 18 29	East Coast of Kamchatka 52.89°N 159.74°E
			H = 02 07 02.4 h = 68 km MAG=4.9
			D = 73.4° Az = 339.5° (USCGS)
			PV:1.2s 15.3nm
			MPV=4.8
23.	iP	07 40 57	Crete 35.11°N 24.17°E
			H = 07 36 52.2 h = 139 km
			D = 18.0° Az = 333.4° (USCGS)

Day	Phase	h m s	Remarks
23.	LmH	19 26	South Sandwich Islands Region
	LmV	26	59.55°S 26.25°W
			H = 18 25 53.0 h = normal MAG=5.6 (USCGS)
			D = 113.9°
			LmV:24s 0.8/um
			MLV=5.3
23.	eP	20 45 20	Eastern Mediterranean Sea 34.17°N 27.17°E
	e	45 25	H = 20 40 59.0 h = 178 km
	e	45 31	D = 20.0° Az = 330.1° (USCGS)
	ei	45 34.5	LmV:12s 0.4/um
	LmH	54.8	MLV=4.1
	LmV	54.8	
23.	LmH	23 57	Greece 38.64°N 22.06°E
	LmV	57.1	H = 23 48 03.0 h = 88 km MAG=4.4 (USCGS)
			D = 14.1°
			LmV:10s 0.4/um
			MLV=4.0
24.	eP	10 08 17	Southern Iran 27.37°N 54.53°E
	ePP	09 48	H = 10 00 46.4 h = normal MAG=5.4 (USCGS)
	ePcP	10 22	D = 39.6°
	eS	14 24	LmH:18s 0.8/um LmV:14s 1.0/um
	LmV	30.0	MLH=4.6 MLV=4.8
	LmH	30.4	e 08 38 ei 08 53 e 10 31.5
24.	ePKP	17 08 02	Loyalty Islands Region 22.36°S 171.57°E
			H = 16 48 31.7 h = 127 km MAG=5.1
			D = 147.7° Az = 335.9° (USCGS)
25.	-eiP	06 15 18	Guerrero/Mexico 18.28°N 100.83°W
	+epP	15 38.5	H = 06 02 26.4 h = 60 km MAG=6.1 (USCGS)
	eSKS	25 48	D = 89.4° h = 77 km
	eS	26 10	PV1:1.9s 141nm PV2:2.0s 93.5nm
	eSP	27 10	LmH:20s 0.7/um LmV:17s 0.9/um
	eSS	32 15	MPV=5.9 MLH=5.1 MLV=5.3
	LmH	56.6	e 15 23 e 40 48
	LmV	58.3	

Day	Phase	h m s	Remarks
25.	ePKP	06 52 40	Loyalty Islands Region 21.38°S 170.37°E
			H = 06 33 18.1 h = 179 km MAG=4.7 (USCGS)
			D = 146.4°
25.	ePKP	08 56 04	Loyalty Islands Region 22.89°S 170.51°E
	e	56 15	H = 08 36 19.4 h = normal MAG=4.9
			D = 147.8° Az = 334.5° (USCGS)
25.	+iP	20 31 10.5	Off East Coast of Kamchatka
	e	31 28	52.97°N 159.75°E
	LmH	21 02	H = 20 19 42.5 h = 48 km MAG=5.3 (USCGS)
	LmV	02	D = 73.2°
			PV:1.0s 37.9nm
			MPV=5.3
26.	eP	00 01 19	Near East Coast of Honshu/Japan
	e(pP)	01 32.5	35.44°N 140.49°E
	LmH	(35)	H = 23 49 00.6 h = 76 km MAG=4.7 (USCGS)
	LmV	41	D = 82.9° (h = 50 km)
26.	eP	04 35 16	Taiwan Region 22.31°N 117.89°E
	e(pP)	35 22	H = 04 22 51.2 h = 19 km MAG=5.5
	e	35 30	D = 82.8° Az = 322.0° (USCGS);
	e	36 26	(h = 22 km)
	LmH	05(11)	LmH:14s 0.4/um
	LmV	(16)	MLH=5.2
26.	+eP	05 21 28	India-China Border Region 27.50°N 92.63°E
	-epP	21 33	H = 05 10 58.1 h = normal MAG=5.6 (USCGS)
	ePcP	22 02	D = 63.8° h = 19 km
	eS	30 00	PV:1.2s 51.1nm pPV:1.2s 48.5nm
	eSS	34 08	PcPV:1.6s 37.9nm
	LmH	52.1	LmH:15s 2.6/um LmV:14s 3.8/um
	LmV	52.1	MPV=5.6 MLH=5.5 MLV=5.7
			e 22 22
26.	e	19 52 10	
	e	52 15	

Day	Phase	h m s	Remarks
26.	LmH	19 52.5	Honshu/Japan 36.26°N 138.40°E
	LmV	53.5	H = 19 03 20.7 h = normal MAG=4.3 (USCGS)
			D = 81.5°
			LmH:14s 0.5/um LmV:14s 0.3/um
			MLH=5.0 MLV=4.9
27.	LmH	11 05	Probably Greece (USCGS)
27.	eP	15 12 18	Svalbard Region 76.37°N 9.75°E
	e	12 21	H = 15 06 48.1 h = normal MAG=4.8
	e	12 24	D = 25.8° Az = 177.3° (USCGS)
27.	e(P)	16 19 53	
27.	LmH	18(33)	South of Mariana Islands (USCGS)
28.	eP	14 11 22	Junnan Province/China 27.43°N 100.07°E
	e	11 25	H = 14 00 22.9 h = normal MAG=6.2 (USCGS)
	ePP	13 52	D = 68.5°
	ePPP	15 38	PV2:2.8s 607nm PPPV:8s 1.3/um
	eS	20 24	SH:15s 3.3/um ScSH:7.5s 1.5/um
	ePS	20 54	LmH:20s 14.7/um LmV:17s 11.0/um
	ePPS	21 06	MPV2=6.2 MSH=6.2 MLH=6.3 MLV=6.2
	eScS	21 28	The first P-onset is much smaller than
	ePKPPKP	39 42	the second one.
	LmH	41.6	
	LmV	48.0	
29.	ePKHKP	03 03 38	Fiji Islands Region 19.95°S 176.22°W
	ep(PKHKP)	04 40	H = 02 44 19.0 h = 246 km MAG=5.5
	eSKP	07 06	D = 148.7° Az = 350.4° (USCGS);
			h = ca. 230 km
			PV:1.6s 91.0nm
30.	eP	06 07 14	Uzbekh SSR 38.9°N 64.5°E
	e	07 17	H = 05 59 48 (BCIS)
	e	07 32	D = 38.5°
	LmH	31.7	LmH:18s 1.0/um
			MLH=4.7

Day	Phase	h m s	Remarks
30.	eP	09 42 38	Northern Chile 18.26°S 69.70°W
	epP	43 10	H = 09 29 11.6 h = 122 km MAG=5.2 (USCGS)
	eSKS	53 05	D = 98.6° h = 125 km
	eS	53 55	
	LmH	10 23.5	
	LmV	23.5	

Day	Phase	h m s	Remarks
1.	eP	07 46 46	West Pakistan 34.83°N 71.00°E
	e	48 59	H = 07 38 29.0 h = 25 km MAG=5.3 (USCGS)
	ePPP	49(12)	D = 45.2°
			PV:1.6s 15.2nm
			MPV=4.8
1.	e	08 54 49	Explosion
	iPg	54 51	D = ca. 1.4°
	iSg	55 10	
1.	i	11 34 51	Explosion/CSSR 50.6°N 14.0°E
	iPg	34 52.5	D = 1.5° Yield: 18.3 t
	iSg	35 12.5	
2.	eP	02 36(06)	Northeastern China 43.71°N 125.23°E
	LmH	03 05.6	H = 02 24 57.1 h = normal MAG=4.5 (USCGS)
	LmV	07.0	D = 69.7°
			LmH:14.5s 1.3/um LmV:13.5s 0.5/um
			MLH=5.3 MLV=5.0
2.	eP	07 35 31.5	Andreanof Is./Aleutian Is. 51.59°N 174.51°W
	ei	35 33	H = 07 23 35.3 h = 34 km MAG=5.1 (USCGS)
	epP	35 47	D = 77.8° h = 59 km
	eS	45 25	PV2:1.8s 62.5nm
	ePPS	46 24	LmH:18s 1.9/um LmV:16s 1.4/um
	eSS	50(32)	MPV2=5.4 MLH=5.5 MLV=5.4
	LmH	08 16.8	
	LmV	19.2	
2.	-eP	11 24 19.5	Rumania 45.70°N 26.49°E
	ei	24 21.5	H = 11 21 44.9 h = 140 km MAG=5.3 (USCGS)
	eS	26 22	D = 11.1°
	eSS	26 36	PV2:1.6s 25.8nm PV:6s 1.0/um
	LmH	27.5	PH:6s 0.95/um
	LmV	27.5	e 24 28 e 24 39 e 25 07 e 25 16
2.	eiP	12 19 55	Andreanof Is./Aleutian Is. 51.63°N 174.65°W
			H = 12 08 00.6 h = 56 km MAG=4.5 (USCGS)
			D = 77.9°

Day	Phase	h m s	Remarks
2.	iPKP	20 01 55	West of Macquarie Islands 53.65°S 140.10°E H = 19 42 09.6 h = 57 km MAG=5.2 (USCGS) D = 148.8°
3.	e(Sg)	20 29 19	Austria 47.4°N 13.5°E H = 20 27.5 (BCIS) D = 3.5°
4.	e(PKP2)	16 19 13	West of Macquarie Islands 53.72°S 140.50°E
	e	19 25	H = 15 59 22.7 h = 43 km (USCGS)
	e	19 45	D = 149.0°
4.	eP	17 08 19	
5.	iP	08 43 54.0	Congo 0.14°N 29.97°E
	epP	44 01	H = 08 34 40.6 h = normal MAG=5.4
	eS	51(24)	D = 52.7° Az = 345.4° (USCGS); h = 29 km
	eSS	55 20	PV2:2.0s 66.5nm PV3:2.0s 59.2nm
	LmH	09 11	LmH:16s 0.8/um
	LmV	11	MLH=4.9
5.	ePKHKP	10 25 32.5	Tonga Islands 20.17°S 175.56°W H = 10 06 08.1 h = 196 km MAG=4.5 D = 149.1° Az = 351.1° (USCGS)
6.	eP	14 00 11	East Coast of Kamchatka 51.35°N 159.56°E
	LmH	35.2	H = 13 48 33.2 h = normal MAG=4.6 D = 74.8° Az = 339.5° (USCGS)
7.	ePg	14 06 04	Explosion/GFR 47.63°N 11.15°E
	eSg	06 41	H = 14 05 01.1 D = 3.0°
7.	iPg	15 05 20.5	Explosion/GFR 50.55°N 10.05°E
	i	05 35.8	H = 15 05 01.0
	iSg	05 36.5	D = 1.0° Yield: 8.4 t
7.	+iPKIKP	16 14 32.5	Loyalty Islands 21.61°S 170.54°E
	+iPKHKP	14 35.0	H = 15 55 10.8 h = 161 km MAG=6.4 (USCGS)
	ePP	17 50	D = 146.7°

Day	Phase	h m s	Remarks
cont.			
7.	ePPP	16 21 10	PV1:1.6s 68.4nm PV2:1.6s 1500nm
	iSKKS	24 35	PPH:15s 3.1/um PPV:16s 6.9/um
	eSKSP	27 40	SKKSH:10s 5/um SKSPV:10s 4/um
	ePPS	30 40	LmH:22s 6.5/um LmV:24s 6.4/um
	eSS	36 50	MPPV=6.6 MPPH=6.6
	LmH	17 08.5	ei 14 44 i 15 20 i 15 25 ei 15 48
	LmV	17.7	e 17 36 e 31 48 e 41 25
7.	-iP	21 06 45.5	South Alaska 61.62°N 150.15°W
	ei	06 49	H = 20 55 56.0 h = 56 km MAG=5.7 (USCGS)
	i	06 52.5	D = 67.1°
	ei	07 01	PV1:1.2s 150nm PV2:0.9s 61.0nm
	ei	07 03.5	MPV=6.1
8.	ePKP	00 31 51	Fiji Islands 16.42°S 177.56°W
	-ei	31 55	H = 00 12 18.1 h = normal MAG=5.7 (USCGS)
	e	31 59.5	D = 145.1°
	e	32 28	PV2:2.4s 193nm
	e	34 52	LmH:20s 2.8/um LmV:18s 2.3/um
	LmV	01 38.3	MLH=6.0 MLV=6.0
	LmH	38.5	ePKP is a small-amplitude precursor.
8.	ePKP	02 41 17	Tonga Islands 19.40°S 175.44°W
	e	41 19.5	H = 02 21 56.4 h = 241 km MAG=5.0
	e	41 55	D = 148.3° Az = 351.4° (USCGS)
	e	42 09.5	PV:1.3s 35nm
8.	ePKP	02 53 48	Fiji Islands 16.48°S 177.47°W
	e	53 52	H = 02 34 16.1 h = 57 km MAG=4.9 (USCGS)
	e	54 00	D = 145.2°
	LmH	04 00.0	PV2:1.8s 56.5nm
	LmV	00.0	LmH:19s 2.2/um LmV:20s 2.6/um
			MLH=6.0 MLV=6.0
8.	eiP	03 18 03	Kodiak Island 57.69°N 151.56°W
	ipP	18 09	H = 03 06 46.4 h = 32 km MAG=5.0
	e	18 26	D = 71.1° Az = 11.2° (USCGS); h = 23 km
			ANUSSR gives: Kodiak Island 58.5°N 152.7°W
			H = 03 07 21 h = 310 km
			D = 70.4°

Day	Phase	h m s	Remarks
8.	e	04 10 04.5	Probably Mariana Islands Region
	e	10 14.5	17.61°N 147.30°E
	e(PP)	10 26	H = 03 52 23.8 h = 30 km MAG=5.0 (USCGS)
	e	10 36	D = 101.7°
8.	eP	12 14(28)	Near East Coast of Honshu/Japan
	LmH	(55)	35.45°N 140.20°E
	LmV	(55)	H = 12 02 08.9 h = 65 km MAG=4.9 (USCGS)
			D = 82.8°
8.	ePKP	15 02 40	Fiji Islands 15.60°S 177.78°W
			H = 14 43 53.9 h = 420 km MAG=4.8
			D = 144.2° Az = 349.8° (USCGS)
			PV:1.4s 35.8nm
8.	eP	17 55 52	Andreanof Is./Aleutian Is. 51.64°N 173.83°W
	epP	56 06	H = 17 43 56.1 h = 35 km MAG=5.5 (USCGS)
	e	56 09.5	D = 78.0° h = 50 km
	e	56 16	PV:1.4s 43.0nm pPV:1.6s 31.6nm
	eSS	18 11 11	LmH:18s 0.3/um LmV:18s 0.3/um
	LmH	41.2	MPV=5.4 MLH=4.7 MLV=4.7
	LmV	41.2	
8.	eP	21 09 29	Kurile Islands 46.44°N 153.05°E
			H = 20 57 33.4 h = normal MAG=4.2 (USCGS)
			D = 77.8°
9.	ePKIKP	02 25 05	Fiji Islands 17.83°S 178.18°W
	iPKHKP	25 07	H = 02 06 35.3 h = 639 km MAG=4.8
	ePKP2	25 09	D = 146.3° Az = 348.7° (USCGS);
	e(pPKP)	26 08	(h = ca. 250 km)
			PV2:1.1s 40.0nm
			e(pPKP) is a small but very clear onset.
9.	eP	06 56 24	Sudan 12.60°N 30.84°E
	i	56 50.0	H = 06 48 40.3 h = 11 km MAG=5.1 (USCGS)
	ePP	58 04.5	D = 41.0°
	eScP	07 02(16)	PV:1.2s 45.5nm PPV:9s 0.6/um
	eS	02 36	SH:13s 3.0/um
	eSS	05 20	LmH:17s 7.9/um LmV:18s 8.3/um

Day	Phase	h m s	Remarks
cont. 9.	eLR	07 07 20	MPV=5.6 MPPV=5.4 MSH=6.1 MLH=5.6
	LmH	13.0	MLV=5.7
	LmV	15.5	e 57 26 e 58 31 e 58 40 e 07 20
			Higher-mode surface waves are registered.
9.	eP	08 23 02	Gulf of California 31.32°N 114.31°W
	e	23 06	H = 08 10 28.0 h = normal MAG=5.0
	LmH	09 02.1	D = 85.5° Az = 31.1° (USCGS)
	LmV	03.4	LmH:15.5s 0.85/um LmV:16s 0.75/um
			MLH=5.3 MLV=5.2
			ANUSSR gives: USA 35.0°N 112.6°W
			H = 08 10 48 h = normal
			D = 81.6°
9.	eP	10 36 09	Sudan 12.64°N 31.06°E
	e	36 29	H = 10 28 27.8 h = 44 km MAG=4.2
	eS	42 20	D = 41.1° Az = 341.2° (USCGS)
	eSS	45(18)	LmH:17s 0.9/um LmV:17s 1.0/um
	LmH	54.2	MLH=4.7 MLV=4.8
	LmV	55.2	
10.	LmH	21 24.5	La Rioya Prov./Argentina 29.83°S 67.42°W
	LmV	24.5	H = 20 25 37.9 h = 52 km MAG=4.8 (USCGS)
			D = 105.8°
			LmH:20s 0.3/um LmV:20s 0.4/um
			MLH=4.9 MLV=5.0
10.	eP	21 28 38	Southeastern Alaska 57.41°N 136.19°W
			H = 21 17 34.5 h = normal MAG=4.8
			D = 69.1° Az = 21.3° (USCGS)
			PV:1.4s 28.6nm
			MPV=5.3
11.	ePKP	00 17 56	Samoa Islands 15.86°S 172.71°W
	e	18 09	H = 23 58 23.8 h = normal MAG=4.6
	e	18 19	D = 145.1° Az = 355.2° (USCGS)
	LmH	01(30)	
	LmV	(30)	

Day	Phase	h m s	Remarks
11.	e(P)	02 58 17.5	Probably Yugoslavia or Albania (after Vienna)
	LmH	03 01.6	
	LmV	01.7	e 58 19 e 00 46.5 e 00 53
11.	iPn	03 30 54.5	Austria 47.4°N 13.5°E
	eSn	31 36	H = 03 30 00 (BCIS)
	eiSg	31 51.5	D = 3.4°
11.	ePKIKP	06 44 31	South Sandwich Islands 60.26°S 26.03°W
	ePP	45 30	H = 06 25 55.1 h = 37 km MAG=5.9 (USCGS)
	e(PS)	55 16	D = 114.6°
	e(PPS)	56 28	LmH:21s 1.9/um LmV:23s 3.8/um
	eSS	07 01 44	MLH=5.7 MLV=5.9
	LmV	28.8	e 44 35 e 01 16
	LmH	31.8	
11.	ePP	08 19 18	South Sandwich Islands 60.38°S 26.15°W
			H = 07 59 41.8 h = 35 km MAG=5.3 (USCGS)
			D = 114.7°
11.	eP	10 17 32	Szechwan Prov./China 28.00°N 103.79°E
	LmH	45.0	H = 10 06 19.9 h = 31 km MAG=4.7
	LmV	50.5	D = 70.2° Az = 317.5° (USCGS)
			PV:1.8s 31.3nm
			LmH:18s 0.6/um LmV:12s 0.4/um
			MPV=5.2 MLH=4.9 MLV=5.0
11.	ePKP2	21 01(26)	South of Kermadec Islands 32.62°S 178.72°W
	ePP	05 08	H = 20 40 39.8 h = normal MAG=5.1 (USCGS)
	eSS	25.2	D = 160.4°
	eSSS	31.5	LmH:19s 0.7/um LmV:18s 0.9/um
	LmH	22 22.5	MLH=5.5 MLV=5.6
	LmV	23.1	e 01 37 e 01 50
12.	iPKIKP	00 25 10.0	South of Timor 11.85°S 121.75°E
	ePP	25 55	H = 00 06 37.8 h = normal MAG=5.7
	eSKS	31 52	D = 111.8° Az = 319.9° (USCGS)
	eSKKS	32 54	SPV:12s 1.5/um SPH:11s 0.9/um
	eS	33 40	LmH:20s 1.2/um LmV:20s 1.5/um
	eSP	35 22	MLH=5.5 MLV=5.6

Day	Phase	h m s	Remarks
cont.			
12.	iPKKP	00 36 06	i 25 36.5 e 25 41 e 26(00) e 46 32
	eSPP	36 30	
	eSS	41.1	
	LmH	01 17.7	
	LmV	18.0	
12.	ePKP2	04 42 58	Kermadec Islands 31.21°S 177.75°W
	ePS	56(52)	H = 04 22 14.0 h = 14 km MAG=5.2 (USCGS)
	eSS	05 06 32	D = 159.5°
	eSSS	12 40	LmH:17s 0.6/um LmV:17.5s 1.1/um
	LmH	06 09.5	MLH=5.5 MLV=5.7
	LmV	09.5	e 04 42 43 e 42 50 e 43 03
12.	eP	08 31 35	Southern Alaska 60.41°N 144.96°W
	epP	31 42	H = 08 20 38.4 h = 25 km MAG=4.4 (USCGS)
			D = 67.5° h = 27 km
12.	LmH	16(48)	South Sandwich Islands (USCGS)
	LmV	(52)	
12.	eP	20 32(50)	Near Coast of Nicaragua 11.21°N 86.19°W
	e	31 18	H = 20 20 06.8 h = 43 km MAG=5.6 (USCGS)
	LmH	21 10.3	D = 87.7°
	LmV	10.9	LmH:17.5s 0.7/um LmV:18s 1.4/um
			MLH=5.2 MLV=5.4
13.	eP	01 28 15	Dodecanese Islands 36.23°N 27.91°E
	e	28 21.5	H = 01 23 58.5 h = 46 km MAG=4.4
	ei	28 41	D = 18.6° Az = 325.9° (USCGS)
	LmH	36.2	
	LmV	36.2	
13.	eP	02 26 49	Gulf of Alaska 59.49°N 145.20°W
	e	26 54	H = 02 15 45.2 h = 10 km MAG=5.0
	LmH	03 03	D = 68.6° Az = 15.6° (USCGS)
			PV:1.5s 27.5nm
			LmH:14s 0.3/um LmV:14s 0.4/um
			MPV=5.2 MLH=4.7 MLV=4.8

Day	Phase	h m s	Remarks
13.	i(P)	15 58 17.5	Peru-Brazil Border Region 8.75°S 74.35°W
			H = 15 45 15.6 h = 155 km MAG=5.3 (USCGS)
			D = 80.8°
			First onset of P must be 4 s earlier.
13.	eP	18 56 28	Aleutian Islands 53.1°N 172.0°E
	eSKS	19 06 24	H = 18 45 04 h = 174 km
	e	07 04	D = 75.3° (ANUSSR)
	e	07 24	SKSH:14s 0.8/um
	LmH	39.0	LmH:14.5s 2.0/um LmV:16s 1.9/um
	LmV	39.1	Well developed surface waves. Focal depth
			given from ANUSSR seems to great.
14.	eP	01 14 10	Southern Sinkiang Prov./China
	e	14 15	36.42°N 87.46°E
	e	14 19	H = 01 04 43.3 h = 24 km MAG=5.2
	eS	21 48	D = 54.4° Az = 310.6° (USCGS)
	ePP	22 06	PV1:1.6s 36.8nm PV2:1.9s 113nm
	eSS	25 30	PV:8s 0.95/um
	eLg1(3.49)	33 38	LmH:16.5s 5.7/um LmV:14s 3.0/um
	eLg2(3.28)	35 24	MPV1=5.3 MPV2=5.7 MPV=5.7 MLH=5.7
	LmH	36.2	MLV=5.5
	LmV	42.0	e(sa) 26(25) e 34 32
			Well developed higher mode surface waves.
			P is multiple.
14.	iP	01 20 29	Southern Sinkiang Prov./China
	i	20 31.5	39.39°N 80.18°E
			H = 01 11 51.6 h = normal MAG=4.8
			D = 48.1° Az = 307.2° (USCGS)
			PV2:1.3s 18.6nm
			MPV2=5.0
14.	e(PKP)	02 52 14	Tonga Islands 15.09°S 173.47°W
	e	56 40	H = 02 32 31.8 h = normal MAG=4.8 (USCGS)
	LmH	04(00)	D = 144.4°
	LmV	(00)	PV:1.5s 17.5nm
14.	LmH	23 19.5	

Day	Phase	h m s	Remarks
15.	-eP	07 01 54	Rumania 45.66°N 26.31°E
	+i	01 56.0	H = 06 59 16.9 h = 120 km MAG=4.8 (USCGS)
	ePP	02 02.5	D = 11.0°
	LmH	07.1	PV2:2.0s 163nm
	LmV	07.1	e 02 32 i 02 50 i 03 10 e 03 31
			e 04 17.5 e 04 32 e 04 50
15.	e(P)	07 02 20	Probably Eastern Gulf of Aden
	e(PP)	04 04	13.02°N 50.53°E
	e	10 08	H = 06 54 20.2 h = normal MAG=4.7 (USCGS)
	e	13 55	D = 44.0°
	LmH	(25)	P-waves from this quake are superimposed
	LmV	(28)	from the waves of the Rumania earthquake.
15.	ePKP	08 49 28	Fiji Islands 17.98°S 178.42°W
	ei	49 30.5	H = 08 30 51.3 h = 576 km MAG=4.8 (USCGS)
			D = 146.6°
			PV:1.4s 38.1nm
15.	eiP	18 12 04	Hokkaido/Japan Region 41.84°N 142.90°E
	ei	12 15	H = 18 00 07.3 h = 61 km MAG=5.1 (USCGS)
	LmH	41.5	D = 78.6°
15.	LmH	22(05)	Probably Tonga Islands Region (USCGS)
15.	e	22 59 55	
16.	LmV	07 44.3	Near Coast of Northern Chile
	LmH	45	19.70°S 70.37°W
			H = 06 48 38.6 h = 45 km MAG=5.0 (USCGS)
			D = 100.0°
			LmH:20s 0.24/um LmV:22s 0.5/um
			MLH=4.7 MLV=5.0
16.	ePP	09 29 52.5	South of Honshu/Japan 29.61°N 142.35°E
	eS	37 00	H = 09 13 31.0 h = 56 km MAG=5.5 (USCGS)
	e	37 24	D = 89.0°

Day	Phase	h m s	Remarks
16.	eP	09 35 06	West Pakistan 30.01°N 68.62°E
	e	35 09	H = 09 26 36.5 h = normal MAG=4.9
	e	35 24.5	D = 46.8° Az = 312.9° (USCGS)
	eS	42 00	PV2:2.2s 82.0nm PV3:2.0s 80.0nm
	LmH	59.6	LmH:13s 0.8/um LmV:13s 0.53/um
	LmV	10 00.6	MPV2=5.5 MLH=4.9 MLV=4.8
			i 35 35.5 e 53 40
16.	iPn	09 50 29	Central Italy 42 ½°N 13 ¼°E
	e	52 12.5	H = 09 48 29 (BCIS)
	e	52 41	D = 8.2°
	e(Sg)	52 54	e 53 41
16.	eSP	13 24.0	South Sandwich Islands Region
	LmH	(52)	56.08°S 27.05°W
			H = 12 55 30.8 h = 101 km MAG=5.6 (USCGS)
			D = 111.4°
17.	LmH	05-07	Probably Santa Cruz Islands (USCGS)
17.	iPKP2	07 49 15.0	South of Fiji Islands 23.53°S 179.97°E
	epPKP2	51 09	H = 07 30 07.1 h = 497 km MAG=5.1
			D = 151.5° Az = 344.4° (USCGS); h = 494 km
17.	ePKP	10 35(05)	Santa Cruz Islands 10.99°S 166.72°E
	ePP	37 40	H = 10 15 40.6 h = 55 km MAG=5.5
	eSKP	38 30	D = 135.5° Az = 337.5° (USCGS)
	eSS	55 30	LmH:16s 1.6/um LmV:24s 2.1/um
	LmH	11 26.2	MLH=5.8 MLV=5.7
	LmV	32.2	e 35 34 e 39 00 e 39 20
17.	eP	13 21 29.5	Unimak Island 53.20°N 163.83°W
			H = 13 09 40.2 h = normal MAG=4.9
			D = 76.5° Az = 3.0° (USCGS)
			PV:1.8s 31.2nm
			MPV=5.1
17.	LmH	14 53	Santa Cruz Islands

Day	Phase	h m s	Remarks
17.	ePKHKP	15 00 34	Tonga Islands 21.00°S 175.40°W
			H = 14 40 42.5 h = 8 km MAG=4.9
			D = 149.9° Az = 351.1° (USCGS)
17.	ePKIKP	18 38 43.5	South of Fiji Islands 22.31°S 179.12°E
	-iPKHKP	38 49.0	H = 18 20 07.8 h = 635 km MAG=5.0 (USCGS)
	ePKP2	38 58	D = 150.2° h = ca. 660 km
	e	39 29	PV2:1.4s 143nm PV3:1.8s 94.0nm
	epPKHKP	41 16	ANUSSR gives: 23.1°S 178.8°W
	e(pPKP2)	41 23	H = 18 18 58 h = normal
			D = 151.3°
17.	+eP1	21 55 31.5	Near Coast of Peru 10.72°S 78.70°W
	eP2	55 37.5	H = 21 41 56.3 h = 38 km MAG=6.3 (USCGS)
	e	59 20	D = 98.4°
	ePP	59 32	PV1:2.0s 96.3nm PV2:3.0s 1085nm
	eSKS	22 06 16	PV:18s 33.4/um PH:18s 7.9/um
	eS	06 56	PPV:18s 39.2/um PPH:16.5s 17.8/um
	eSS	13 32	LmH:17s 408/um LmV:17s 625/um
	ePKPPKP	20 22	MPV1=6.2 MPV2=7.1 MPV=7.8 MPH=7.6
	LmH	45.0	MPPV=7.5 MPPH=7.6 MLH=7.9 MLV=8.2
	LmV	45.5	P is multiple. The first P-onset is much smaller than the second one. Probably two shocks in the same focus.
18.	ePKHKP	04 22 02	South of Fiji Islands 23.16°S 179.31°E
	ePKP2	22 12.5	H = 04 03 09.0 h = 520 km MAG=4.8
			D = 150.9° Az = 343.8° (USCGS)
			PV1:1.4s 24.8nm
18.	ePKP	22 46 58	Tonga Islands 15.16°S 174.01°W
			H = 22 27 29.0 h = 62 km MAG=5.5
			D = 144.3° Az = 353.9° (USCGS)
19.	+iP	04 05 46.5	Eastern Kazakh SSR 49.75°N 78.03°E
	i	05 50.0	H = 03 57 57.7 h = 0 km MAG=5.6
	ePn	07 18.5	D = 41.2° Az = 297.7° (USCGS)
	ePP	07 22.5	PV:0.9s 113nm
			MPV=5.8
			Underground explosion.

Day	Phase	h m s	Remarks
19.	+eiP1	08 11 16	North of Aszension Island 1.55°S 15.48°W
	iP2	11 27.0	H = 08 01 33.8 h = normal MAG=6.2 (USCGS)
	iP3	11 33.5	D = 56.7°
	ei(PP)	13 10	PV1:1.5s 335nm PV2:1.9s 646nm
	ePa(8.03)	14 40	PV3:2.1s 1780nm SH1:11s 12.3/um
	eS1	19 08	SH3:19s 47.4/um
	eS3	19(25)	LmH:17s 137/um LmV:16s 208/um
	LmH	37.5	MPV1=6.2 MPV2=6.4 MPV3=6.8 MSH1=6.9
	LmV	37.5	MSH3=7.2 MLH=7.2 MLV=7.4
			Multiple P and S waves with successively increasing amplitudes. Multiple shocks in the same focus?
19.	ePKP	11 41 14	Santa Cruz Islands 12.62°S 167.16°E
			H = 11 22 14.7 h = 218 km MAG=5.1 (USCGS)
			D = 137.1°
			PV:1.4s 19.1nm
19.	eSKS	18 02 12	Near Coast of Peru 10.80°S 78.99°W
	ePS	04 32	H = 17 37 56.1 h = 41 km MAG=4.8 (USCGS)
	eSS	09 48	D = 98.7°
	LmV	41	LmV:16s 0.5/um
	LmH	41.5	MLV=5.1
19.	eP	19 37 18	Off East Coast of Kamchatka
	epP	37 28	51.19°N 159.19°E
			H = 19 25 38.8 h = normal MAG=4.2
			D = 74.9° Az = 339.3° (USCGS); h = 38 km
19.	eP	19 48 04	Off East Coast of Kamchatka
	e	48 06	51.16°N 159.08°E
	epP	48 14	H = 19 36 24.9 h = 34 km MAG=4.6
	e	48 33	D = 74.9° Az = 339.2° (USCGS); h = 38 km
	LmH	20 27.0	PV2:1.4s 31.0nm pPV:1.3s 27.9nm
	LmV	27.0	LmH:14s 0.8/um LmV:14s 1.1/um
			MPV2=5.2 MLH=5.2 MLV=5.3

Day	Phase	h m s	Remarks
19.	iP	20 47 18	Off East Coast of Kamchatka
			51.21°N 159.08°E
			H = 20 35 40.1 h = normal MAG=4.9
			D = 74.8° Az = 339.2° (USCGS)
			PV:0.8s 17.4nm
			MPV=5.2
20.	eP	01 02 38	Kashmir-Tibet Border Region 33.56°N 78.53°E
	e	02 42	H = 00 53 38.7 h = 27 km MAG=5.0
	ePP	04(40)	D = 50.7° Az = 310.9° (USCGS)
	eS	09 52	PPV:2.0s 51.8nm
	eSS	13 22	LmH:16s 1.3/um LmV:14s 2.1/um
	LmH	22.8	MPPV=5.1 MLH=5.0 MLV=5.3
	LmV	26.3	
20.	e(Pn)	05 00 32	Yugoslavia 43 1/4°N 17 3/4°E
	e	00 34	H = 04 58 24 (BCIS)
	e(Pb)	00 56	D = 8.5°
	e(Sg)	03 02	PV2:1.4s 33.4nm
	LmH	03.3	e 00 38 e 02 30 e 02 36 e 02 50
	LmV	04.0	e 03 12 i 03 20
20.	ePn	09 40 09.5	Northern Italy 44.16°N 11.99°E
	ePg	40 42	H = 09 38 33.7 h = normal MAG=4.4
	iSn	41 23	D = 6.5° Az = 357.9° (USCGS)
	eSb	41 52	LmH:22s 0.6/um
	eiSg	42 06.5	MLH=3.1
	eLg2(3.31)	42 12	e 40 14 e 41 06 e 41 20 e 42 16
	LmH	42.8	
20.	ePKIKP	13 55 02	New Hebrides Islands 15.51°S 167.69°E
			H = 13 35 50.5 h = 139 km MAG=4.8
			D = 140.0° Az = 336.3° (USCGS)
20.	LmH	16 16.5	Bismarck Sea 3.47°S 146.05°E
	LmV	16.5	H = 15 03 46.9 h = 34 km MAG=5.2 (USCGS)
			D = 119.4°
			LmH:16s 0.3/um LmV:16s 0.5/um
			MLH=5.1 MLV=5.2

Day	Phase	h m s	Remarks
cont.			
25.	e	08 06 30	D = 145.4° Az = 355.2° (USCGS)
			PV:1.6s 18.4nm
25.	eiP	10 15 31.5	West Pakistan 29.94°N 68.90°E
	i(pP)	15 36.5	H = 10 06 58.1 h = 6 km MAG=5.3
	i(sP)	15 39.5	D = 47.0° Az = 312.9° (USCGS);
	ei	15 48	(h = 18 km)
	ePcP	17 04	PV1:1.4s 33.4nm PV2:1.2s 41.0nm
	eS	27(26)	PV3:1.4s 66.8nm PV4:1.5s 50.0nm
	LmH	40.8	PcPV:1.3s 32.5nm
	LmV	43.1	LmH:14.5s 1.4/um LmV:11.5s 1.4/um
			MPV=5.3 MLH=5.1 MLV=5.2
25.	+eP	18 16 25	Honshu/Japan 36.78°N 138.22°E
	e	16 36	H = 18 04 11.8 h = 28 km MAG=5.2
	eS	26(40)	D = 81.1° Az = 328.8° (USCGS)
	LmH	53.7	PV:1.8s 50.0nm
	LmV	57.6	LmH:11s 1.5/um LmV:10s 0.7/um
			MPV=5.4 MLH=5.6 MLV=5.3
26.	eiPKIKP	18 48 23.5	New Hebrides Islands 18.36°S 167.63°E
	LmH	19(50)	H = 18 28 54.1 h = 36 km MAG=5.6
	LmV	(50)	D = 142.5° Az = 334.8° (USCGS)
			PV:1.4s 28.6nm
26.	eP	19 35 49.5	Dodecanese Islands 35.06°N 27.00°E
	e	35 53.5	H = 19 31 27.5 h = 36 km
	e	36 16	D = 19.2° Az = 329.0° (USCGS)
27.	+iP	06 04 03	Novaya Zemlya 73.44°N 54.75°E
	ePcP	07 10	H = 05 57 58.0 h = 0 km MAG=6.3
	eS	08 50	D = 29.3° Az = 242.8° (USCGS)
	e	09 37	PV:1.5s 625nm
	e	12 50	LmH:13s 20.7/um LmV:8.0s 7.7/um
	eLg1(3.52)	13 24	MPV=6.2 MLH=6.0 MLV=5.8
	iL(3.19)	14 52	Probably underground explosion. Clear
	LmH	16.0	Love-waves and higher-mode surface waves
	LmV	19.4	in the longperiod registrations.

Day	Phase	h m s	Remarks
27.	i	06 37 23.0	
	i	37 26.5	
	i	37 30	
27.	-eP	14 34 34	North Pacific Ocean 22.18°N 145.87°E
	epP	34 42.5	H = 14 21 04.8 h = 29 km MAG=6.0
	ePP	38 27	D = 97.0° Az = 332.6° (USCGS); h = 31 km
	e(PPP)	40 50	PV:1.9s 127nm pPV:1.8s 87.5nm
	eSKS	45 10	PPV:7s 1.15/um SPV:12s 0.95/um
	ePS	47 12	PSH:16s 1.4/um
	ePPS	48 00	LmH:17s 5.3/um LmV:18s 5.1/um
	eSS	52 25	MPV=6.1 MPPV=6.4 MLH=6.1 MLV=6.1
	LmH	15 17.3	e 38 31 e 38 55 e 40 09 e 40 19
	LmV	20.2	e 41 28 e 45 40
27.	+eP	23 58 42.5	Hokkaido/Japan 41.69°N 141.87°E
	epP	59 01.5	H = 23 46 47.7 h = 71 km MAG=5.3 (USCGS)
			D = 78.4° h = 78 km
			PV:1.2s 22.7nm
			MPV=5.0
28.	LmV	03 03.8	Solomon Islands 9.64°S 159.77°E
	LmH	04.5	H = 01 41 19.1 h = 32 km MAG=5.5 (USCGS)
			D = 131.4°
			LmH:17s 0.4/um LmV:18s 0.5/um
			MLH=5.2 MLV=5.2
28.	LmH	04 25.5	
	LmV	25.5	
28.	eP	13 32 46	Near S. Coast of Honshu/Japan
	e	32 50	35.77°N 139.95°E
	e	33 22	H = 13 20 30.6 h = 83 km MAG=4.8 (USCGS)
	e	33 28	D = 82.5°
			PV1:1.4s 23.8nm PV2:2.0s 37.0nm
			MPV=4.9
28.	LmH	15 50.1	LmH:12s 0.6/um LmV:11s 0.4/um
	LmV	51.4	

Day	Phase	h m s	Remarks
28.	eP	17 46 47	Off East Coast of Kamchatka
	e	46 58.5	51.08°N 159.14°E
	e	47 29	H = 17 35 07.4 h = normal MAG=4.4
	LmH	18 25	D = 75.0° Az = 339.3° (USCGS)
	LmV	25	LmH:16s 0.3/um LmV:16s 0.2/um
			MLH=4.7 MLV=4.6
28.	LmH	19 24.5	LmH:12s 0.4/um LmV:14s 0.5/um
	LmV	24.5	
28.	-iPKP	22 31 22.5	Loyalty Islands 20.08°S 168.79°E
	e1pPKP	31 29	H = 22 11 47.6 h = 19 km MAG=5.3 (USCGS)
	i	31 41.5	D = 144.5° h = 23 km
	e	31 45	PV1:1.4s 143nm PV2:1.6s 126nm
	e	32 17	LmH:18s 0.5/um LmV:18s 0.6/um
	LmH	23 44	MLH=5.3 MLV=5.4
	LmV	44.5	e 32 37 e 32 47
28.	ePKHKP	23 43 57	Loyalty Islands 22.51°S 170.85°E
	e	44 03.5	H = 23 24 14.5 h = 25 km MAG=4.9
	e	44 12	D = 147.6° Az = 335.1° (USCGS)
	e	44 34	PV:1.2s 27.3nm
29.	eP	00 57 19	Off East Coast of Kamchatka
	epP	57 28	51.09°N 159.07°E
	LmH	01 35.3	H = 00 45 39.7 h = 33 km MAG=4.3 (USCGS)
	LmV	35.3	D = 75.0° h = 33 km
			LmH:15s 0.6/um LmV:16s 0.6/um
			MLH=5.1 MLV=5.1
29.	+eP	02 42 38	Greece 39.24°N 21.25°E
	eS	45 06	H = 02 39 29.4 h = 20 km MAG=5.7 (USCGS)
	eLg1(3.46)	46 37	D = 13.3°
	eLg2(3.24)	47 07	PV:1.0s 261nm PLV:12s 0.6/um
	eLR	48(00)	LmH:12s 55.5/um LmV:10.5s 60/um
	LmH	48.5	MLH=5.8 MLV=6
	LmV	49.2	i 42 45.0 i 42 54 e 45 16 e 45 56
			PL-waves are well developed in our long-period registrations. The S-onset is very small.

Day	Phase	h m s	Remarks
29.	iP	09 08 03.2	Pakistan 27.5°N 65.6°E
	i(pP)	08 16.2	H = 08 59 36 MAG=5
	i(sP)	08 25.2	D = 46.6° (ANUSSR)
	LmH	31	PV1:1.0s 19.6nm PV2:0.9s 32.6nm
			PV3:1.2s 68.2nm
29.	iP	10 58 05.2	PV:1.3s 23.2nm
29.	eP	12 17 32	Eastern Mediterranean Sea 34.85°N 27.80°E
	e	17 35	H = 12 13 06.0 h = 59 km MAG=4.9
	e	17 38	D = 19.7° Az = 328.2° (USCGS)
	LmH	26.5	LmV:10s 0.4/um
	LmV	26.5	MLV=4.1
29.	+eiP	14 44 42	Hokkaido/Japan Region 41.77°N 144.11°E
	epP	44 51.5	H = 14 32 41.2 h = 41 km MAG=5.0 (USCGS)
	eS	54 40	D = 79.1° h = 35 km
	LmH	15 23.5	PV:1.4s 38.1nm pPV:1.5s 40.0nm
	LmV	23.5	LmH:16s 1.4/um LmV:18s 1.1/um
			MPV=5.3 MLH=5.4 MLV=5.3
29.	eP	14 54 54	Hindu Kush Region 36.71°N 69.81°E
			H = 14 46 57.0 h = 73 km MAG=4.9 (USCGS)
			D = 43.3°
29.	eSKS	15 56 35	Off Coast of Peru 10.67°S 79.01°W
	eS	57 30	H = 15 32 18.9 h = 22 km MAG=5.0 (USCGS)
	ePS	58 55	D = 98.5°
	eSS	16 04 14	LmH:19s 0.9/um LmV:18s 1.2/um
	eSSS	08 00	MLH=5.3 MLV=5.4
	LmH	31.1	
	LmV	31.1	
30.	eP	02 13 31.5	Greece 38.98°N 21.78°E
	e	13 41	H = 02 10 15.3 h = normal MAG=4.5 (USCGS)
	e	13 46.5	D = 13.7°
	e	13 56	PV:1.1s 13.3nm
	LmH	20.1	LmH:10s 0.7/um LmV:10s 0.7/um
	LmV	20.2	MLH=4.0 MLV=4.2
			e 14 06 e 14 20

Day	Phase	h m s	Remarks
30.	+iP	05 15 14.0	Lake Tangayika Region 3.46°S 30.04°E
	LmH	41.8	H = 05 05 31.5 h = 6 km MAG=4.7 (USCGS)
	LmV	46.7	D = 56.2°
			PV:1.2s 20.5nm
			LmH:14s 0.4/um LmV:11s 0.3/um
			MPV=5.1 MLH=4.7 MLV=4.7
30.	eP	17 45 06	Eastern Caucasus 42.63°N 45.94°E
	e	45 12	H = 17 39 48.2 h = normal MAG=4.5
	e	45 21.5	D = 24.7° Az = 300.8° (USCGS)
	LmH	55.7	LmH:14s 0.4/um
			MLH=4.0
30.	eP	19 16 36	Near East Coast of Honshu/Japan
	e	16 47.5	35.65°N 140.36°E
	LmH	50	H = 19 04 18.1 h = 76 km MAG=4.5 (USCGS)
			D = 82.8°

Day	Phase	h m s	Remarks
1.	eP	07 12 44	Hokkaido/Japan 43.2°N 143.4°E
	epP	13 16	H = 07 01 00.4 h = 127 km MAG=4.8 (USCGS)
	e	15 12	D = 77.5° h = 130 km
	e(PP)	15 57	PV:2.0s 120nm pPV:2.0s 150nm
	e(pPP)	16 27	MPV=5.3
			e(PP) and e(pPP) are clear onsets in the registrations of the shortperiod vertical components (T = 2.5 s), but PP and pPP must be about 10 s earlier.
1.	eP	22 26 31	Crete 35.08°N 23.84°E
	e(sP)	26 51	H = 22 22 26.5 h = 70 km MAG=5.0 (USCGS)
			D = 18.0° (h = 50 km)
2.	eP	12 03(08)	Bonin Islands Region 28.78°N 139.35°E
	e(pP)	04 54	H = 11 50 56.7 h = 421 km MAG=4.3 (USCGS)
			D = 88.5° (h = 475 km)
3.	ePKIKP	03 48 21.5	New Hebrides Islands 15.05°S 167.38°E
			H = 03 29 16.3 h = 153 km MAG=5.0 (USCGS)
			D = 140.6°
			ANUSSR gives: 15.7°S 165.9°E
			H = 03 29 02 h = normal
			D = 139.5°
3.	e(PP)	08 21 50	Probably Bolivia 17.57°S 63.65°W
			H = 08 04 53.6 h = 35 km MAG=4.4 (USCGS)
			D = 94.5°
3.	e	11 48 58	Mona Passage 19.13°N 67.86°W
	ePP	50 58	H = 11 37 22.7 h = 47 km MAG=5.2 (USCGS)
	e	51 29	D = 68.8°
	eS	57 28	LmH:20s 0.7/um LmV:20s 0.7/um
	ePS	57 54	MLH=4.9 MLV=4.9
	eSS	12 01(58)	
	LmH	13.8	
	LmV	13.8	
3.	e(P)	12 17 21	
	e	17 54	

Day	Phase	h m s	Remarks
3.	i(Pg)	12 32 17.0	Probably explosion.
	iSg	32 39.5	
3.	-eP	16 35 34	Mona Passage 19.20°N 67.95°W
	ePcP	36(00)	H = 16 24 31.0 h = 22 km MAG=5.6 (USCGS)
	ePP	38 11	D = 68.7°
	ePa(8.2)	40 02	PV1:2.0s 111nm PV2:2.1s 83.5nm
	eS	44 32	PV:10s 1.8/um PH:10s 0.8/um
	iS	44 40	SH2:13s 2.9/um ScSH:17.5s 3.8/um
	eScS	45 36	LmH:20s 12.9/um LmV:20s 13.5/um
	eSS	49.0	MPV1=5.7 MPV=6.2 MPH=6.2 MSH2=6.2
	eLR	56.7	MLH=6.2 MLV=6.2
	LmH	17 01.0	e 35 37.5 e 35 45 i 36 03.5 e 36 14
	LmV	01.1	e 36 20 e 38 30 e 39 22
3.	eP	21 53 12.5	Carlsberg Ridge 6.45°N 60.46°E
	e	53 28	H = 21 43 10.7 h = normal MAG=4.8
	e	54 00	D = 59.8° Az = 326.3°
	LmH	22(17)	
4.	eP	07 34 02	Ryukyu Islands 28.42°N 130.40°E
			H = 07 21 30.8 h = normal MAG=4.7
			D = 84.5° Az = 325.9° (USCGS)
4.	eiPKHKP	16 02 59	South of Fiji Islands 25.88°S 178.28°E
	iPKP2	03 13.2	H = 15 43 09.0 h = 620 km MAG=4.7 (USCGS)
			D = 153.3°
4.	e	17 34 09	Austria 47.4°N 11.4°E
	ePg	34 16	H = 17 33 16 (BCIS)
	i	34 38	D = 3.2°
	iSg	34 59.0	
4.	e	20 01 33	
	e	01 46	
5.	eSS	02 48.2	Mid Indian Rise 41.80°S 80.14°E
	eLQ	58.7	H = 02 13 51.2 h = normal MAG=5.5 (USCGS)
	LmH	03(19)	D = 109.7°

Day	Phase	h m s	Remarks
5.	e	02 49 46	New Hebrides Islands 19.18°S 169.22°E
	ePKIKP	49 51	H = 02 30 15.0 h = 29 km MAG=5.3 (USCGS)
	e	49 54	D = 143.9°
	LmH	03(53)	ANUSSR gives: 19.7°S 172.0°E
	LmV	(59)	H = 02 30 15 h = normal
			D = 145.5°
5.	ePKP	13 04 46	Tonga Islands 15.26°S 175.18°W
	e(pPKP)	04 52	H = 12 45 13.9 h = 38 km MAG=5.3
	e	04 57	D = 144.3° Az = 352.6° (USCGS);
	eSS	26(45)	(h = 21 km)
	ePSS	27 20	LmH:19s 3.4/um LmV:22s 4.5/um
	eSSS	32.0	MLH=7.2 MLV=7.2
	eLQ	43	
	LmV	14 06.5	
	LmH	11	
6.	eP	04 02 06	Kurile Islands 45.74°N 150.96°E
			H = 03 50 10.6 h = normal MAG=4.5
			D = 77.8° Az = 334.9° (USCGS)
6.	+iP	08 34 36.0	North Atlantic Ocean 59.77°N 29.98°W
	e	34 48	H = 08 29 14.3 h = normal MAG=4.8
	e	34 58	D = 25.0° Az = 92.8° (USCGS)
	e	35 25	LmH:14s 1.9/um LmV:14s 2.6/um
	LmH	45.5	MLH=4.7 MLV=5.0
	LmV	45.5	
6.	ePn	18 54 08	Yugoslavia 42.15°N 18.97°E
	ePg	54 55	H = 18 51 44.1 h = 34 km MAG=4.4
	eSn	55 54	D = 9.9° Az = 331.7° (USCGS)
	eLi(3.74)	56 38	e 54 12 e 54 23 e 55 47 e 56 30
	eLg1(3.49)	56 59	e 56 47 e 57 12
	eSg	57 07	
	iLg2(3.28)	57 19	
7.	eP	04 17(22)	Tibet 33.81°N 80.74°E
	e	17 34.5	H = 04 08 12.0 h = normal MAG=5.1 (USCGS)
	LmH	37.2	D = 52.0°

Day	Phase	h m s	Remarks
7.	LmH	09 45	Philippine Islands (USCGS)
7.	ePKP	17 57 14	Tonga Islands 15.14°S 173.57°W
	e	57 19	H = 17 37 41.2 h = 45 km MAG=5.0 (USCGS)
	e	57 29	D = 144.3°
	LmH	19(04)	
8.	eP	11 47 42	Near Islands/Aleutian Is. 52.44°N 172.99°E
	e	47 48	H = 11 35 57.0 h = 41 km MAG=4.9 (USCGS)
			D = 76.0°
8.	e	14 27 28	Yugoslavia 43 ¾°N 19 ¾°E
	e	27 58	H = 14 23 10 (BCIS)
	e(Sg)	28 07	D = 8.9°
	e	28 18	
8.	e(P)	14 40 47	Burma 25.92°N 96.61°E
	e	40 52	H = 14 30 03.0 h = 51 km MAG=4.2 (USCGS)
			D = 67.3°
9.	eP	02 46 31	Gulf of Alaska 57.08°N 150.78°W
	e	46 33	H = 02 35 12.2 h = normal MAG=4.5
			D = 71.7° Az = 11.7° (USCGS)
9.	i(P)	09 00 15.5	
9.	LmH	12 15.3	Northeast of Taiwan 26.91°N 125.47°E
	LmV	20.9	H = 11 26 24.7 h = 39 km MAG=5.4 (USCGS)
			D = 83.2°
			LmH:15.5s 0.6/um LmV:16s 0.9/um
			MLH=5.1 MLV=5.3
9.	eP	14 21 37	Andreanof Is./Aleutian Is. 51.86°N 173.75°W
	e	21 44	H = 14 09 44.4 h = 47 km MAG=4.8
	LmH	53.5	D = 77.8° Az = 356.5° (USCGS)
9.	e(P)	15 15 28	

Day	Phase	h m s	Remarks
9.	eP	15 15 34.5	Greece-Albania Border Region
	ePPP	15 50.5	39.18°N 20.63°E
	e	19 05	H = 15 12 27.0 h = 30 km MAG=5.2
	eLg2(3.29)	19 50	D = 13.1° Az = 333.9° (USCGS)
	LmH	20.2	LmH:14.5s 2.0/um LmV:13s 1.2/um
	LmV	21.7	MLH=4.3 MLV=4.3
9.	eS	22 15(44)	Mona Passage 19.27°N 67.88°W
	ePPS	16(30)	H = 21 55 36.7 h = 14 km MAG=4.6 (USCGS)
	e	16 48	D = 68.7°
	LmH	32	LmH:22s 0.55/um LmV:22s 0.9/um
	LmV	32	MLH=4.7 MLV=4.9
10.	ePP	03 21 12	San Juan/Argentina 31.94°S 68.36°W
	epPP	21 38	H = 03 02 32.5 h = 113 km MAG=6.0
	eSKKS	28(05)	D = 108.2° Az = 41.3° (USCGS); h = 108 km
	eS	28 45	PPV:2.5s 77.0nm
	ePS	30 44	MPPV=5.8
	eSS	36.0	ANUSSR gives: h = normal
	eSSS	40.2	
11.	iPKP	10 06 59.2	New Hebrides Islands 18.82°S 168.89°E
			H = 09 47 36.7 h = 81 km MAG=4.9
			D = 143.5° Az = 335.6° (USCGS)
11.	+iP	15 42 58.0	Fox Islands/Aleutian Is. 52.28°N 169.11°W
	eipP	43 09	H = 15 31 04.2 h = 38 km MAG=5.4
	esP	43 13.5	D = 77.4° Az = 359.5° (USCGS); h = 42 km
	eS	52 50	PV:1.7s 128nm pPV:1.7s 144nm
	eSS	58.0	sPV:1.7s 83.2nm
	eLQ	16 03	LmH:18s 1.2/um
	LmH	27.5	MPV=5.8 MLH=5.3
11.	eP	16 15 03	Kurile Islands 50.25°N 155.47°E
			H = 16 03 38.1 h = 145 km MAG=4.9
			D = 74.9° Az = 337.1° (USCGS)
			PV:1.8s 56.0nm
			MPV=5.4
			ANUSSR gives: h = normal

Day	Phase	h m s	Remarks
11.	eiPn	16 17 40	Yugoslavia 45.57°N 15.81°E
	i	17 43.0	H = 16 16 13.7 h = 19 km MAG=5.0
	e(Pg)	18 07	D = 5.8° Az = 332.6° (USCGS)
	eSn	18 47	LmH:7s 1.7/um
	e	19 19	MLH=3.9
	i(Sg)	19 24.0	i 18 31.8 i 19 21.2 i 19 27.0 ei 19 32
	LmH	19.7	
11.	ePKP	18 16 39	Fiji Islands Region 17.52°S 177.18°W
			H = 17 57 43.4 h = 390 km MAG=4.7
			D = 146.2° Az = 349.9° (USCGS)
			PV:1.7s 39.0nm
11.	eP	18 33 26	Off Coast of Northern California
	LmH	10.5	40.32°N 127.13°W
			H = 18 21 05.4 h = normal MAG=4.5 (USCGS)
			D = 82.5°
11.	e	20 56 58	Near earthquake?
	e	57 08	
	e	57 13	
12.	eP	04 20 09	Costa Rica 8.69°N 83.56°W
			H = 04 07 27.0 h = 35 km MAG=4.4
			D = 86.7°
12.	e	08 31 02	
12.	e	10 11 20	
	e	11 32	
12.	eP	12 25 39	West Pakistan 25.02°N 67.96°E
	epP	25 42	H = 12 16 43.5 h = 5 km MAG=5.1
	LmH	47.2	D = 49.9° Az = 316.1° (USCGS); h = 12 km
			PV:1.1s 22.2nm
			LmH:16s 2.2/um
			MPV=5.2 MLH=5.2
			ANUSSR gives: Afghanistan 31.2°N 66.7°E
			H = 12 18 10 h = 517 km
			D = 44.8°

Day	Phase	h m s	Remarks
12.	+iP	13 01 46.0	Hokkaido/Japan 41.80°N 144.08°E
	+ipP	01 55.4	H = 12 49 43.6 h = normal MAG=5.8
	eS	11 42	D = 79.0° Az = 331.4° (USCGS); h = 35 km
	e(SS)	16 52	PV:1.6s 290nm pPV:1.7s 189nm
	e	17 32	LmH:26s 18.5/um LmV:18s 11.5/um
	LmH	33.3	MPV=6.5 MLH=6.3 MLV=6.3
	LmV	40.4	
12.	e	19 04 14	New Hebrides Islands 15.64°S 167.26°E
	ei	04 24	H = 18 45 01.0 h = 40 km MAG=5.2
	eiPKIKP	04 26	D = 139.9° Az = 335.9° (USCGS)
	e	04 32	PV3:1.8s 93.8nm SKPV:1.5s 195nm
	e	04 40	LmH:21s 11.3/um LmV:20s 9.1/um
	e	04 50	MLH=6.6 MLV=6.5
	ePP	07 26	The first onset e 19 04 14 is clearly
	iSKP	08 06.0	developed only in the longperiod records.
	e	08 26	ei 04 24 is a shortperiod small-amplitude
	ePKPS	17 40	precursor of PKIKP. The phase interpreted
	eSPP	19 35	as iSKP is the greatest onset in the
	LmH	20 08.7	shortperiod records but not detectable
	LmV	09	in the longperiod records.
12.	LmH	23 55.5	Hokkaido/Japan 41.69°N 144.22°E
	LmV	55.5	H = 23 04 58.8 h = normal MAG=4.7 (USCGS)
			D = 79.2°
13.	eP	03 02 34.5	Leeward Islands 17.14°N 61.89°W
	epP	02 53	H = 02 51 50.6 h = 65 km MAG=5.5
	e(PcP)	03 01	D = 66.5° Az = 41.7° (USCGS); h = 72 km
	e	03 11	PV:2.2s 82.0nm
	LmH	(27)	MPV=5.5
	LmV	(27)	
13.	eP	03 08 30.5	Hokkaido/Japan 41.42°N 144.26°E
	e	09 32	H = 02 56 30.2 h = 63 km MAG=4.3 (USCGS)
			D = 79.5°
13.	LmH	12 17	Leeward Islands 17.25°N 61.30°W
	LmV	17	H = 11 42 25.9 h = 52 km MAG=5.1 (USCGS)
			D = 66.5°

Day	Phase	h m s	Remarks
13.	eP	14 37 38	Peru-Brazil Border Region 8.28°S 74.16°W
			H = 14 24 40.1 h = 176 km MAG=4.8 (USCGS)
			D = 94.3°
13.	eP	15 07 17	Crete 34.30°N 23.19°E
	e	07 26	H = 15 03 03.4 h = normal MAG=4.6 (USCGS)
			D = 18.5°
13.	e(P)	22 56 10	
14.	iP	03 20 57.5	Northern Sumatra 2.01°N 99.10°E
	epP	20 31	H = 03 08 31.3 h = 181 km MAG=5.3 (USCGS)
			D = 86.9° h = 178 km
			ANUSSR gives: h = normal
15.	iP	00 20 02.0	Andreanof Is./Aleutian Is. 51.37°N 179.94°W
			H = 00 08 07.1 h = 43 km MAG=5.0 (USCGS)
			D = 78.1°
15.	iPg	09 00 20.0	Explosion/CSSR 50.02°N 13.17°E
	iSg	00 34.0	D = 1.1° Yield: 5.75 t
15.	eP	16 31 03	Andreanof Is./Aleutian Is. 51.25°N 176.60°W
	e	31 30	H = 16 19 07.4 h = 48 km MAG=5.0 (USCGS)
	e	31 36	D = 78.5°
	e	31 51	
15.	eP	16 58 08.5	PV:2.1s 58.5nm
16.	iP	02 12 35.0	Fox Islands/Aleutian Is. 51.30°N 170.44°W
			H = 02 00 35.9 h = normal MAG=4.7
			D = 78.4° Az = 358.7° (USCGS)
16.	ePKP	06 18 08	Fiji Islands Region 19.54°S 176.30°W
	e	18 16	H = 05 58 30.3 h = 48 km MAG=5.0
	e	18 26	D = 148.3° Az = 350.4° (USCGS)

Day	Phase	h m s	Remarks
16.	eP	20 55 57	Kurile Islands 46.60°N 153.67°E
			H = 20 44 01.3 h = normal MAG=4.8
			D = 77.7° Az = 336.4° (USCGS)
			PV:1.0s 21.8nm
			MPV=5.2
16.	e(Sg)	23 00 16	
	e	00 22	
16.	iP	23 28 01.0	Fox Islands/Aleutian Is. 52.59°N 169.46°W
			H = 23 16 09.1 h = normal MAG=4.9
			D = 77.1° Az = 359.2° (USCGS)
			PV:1.1s 24.4nm
			MPV=5.2
17.	e	12 36 26	
17.	e(P)	14 55 14	Andreanof Is./Aleutian Is. 51.14°N 176.51°W
			H = 14 43 10.2 h = 45 km MAG=4.7 (USCGS)
			D = 78.2°
			The first motion of P must be 8 s earlier.
17.	eP	19 39 02	Kurile Islands 46.21°N 153.60°E
	i	39 03.5	H = 19 27 05.1 h = normal MAG=4.4
			D = 78.1° Az = 336.4° (USCGS)
			ANUSSR gives: Sea of Okhotsk 49.4°N 151.6°E
			H = 19 27 24 h = normal MAG=4½
			D = 74.6°
18.	e	03 15 19	
18.	e	09 38 03	
18.	ePKIKP	09 31 23	Southern Pacific Ocean 36.29°S 100.71°W
	e	50.0	H = 09 12 09.9 h = normal MAG=5.1 (USCGS)
	eSS	51 20	D = 130.6°
	e(SSS)	56.1	
	eLQ	10 06.5	
	eLR	14.7	

Day	Phase	h m s	Remarks
18.	e	14 59 17	Explosion (after Pruhonice)
	e(Sg)	15 00 35	e 00 14 e 00 26 e 00 56
18.	eP	18 12 54.5	Greenland Sea 73.39°N 6.84°E
	e	13 00	H = 18 07 54.0 h = normal MAG=4.6
	e	13 10	D = 22.9° Az = 172.2° (USCGS)
	e	13 15	PV:1.5s 50nm
			MPV=4.8
18.	eP	18 53 44	Greenland Sea 73.37°N 6.76°E
	e	53 45.5	H = 18 48 43.9 h = normal MAG=4.9
	i	53 51.5	D = 22.9° Az = 172.0° (USCGS)
	ePP	54 14	PV2:1.3s 51.2nm PV3:1.5s 175nm
	eS	57 50	LmH:15s 1.2/um LmV:15s 1.6/um
	LmH	19 03.3	MPV2=4.9 MLH=4.3 MLV=4.6
	LmV	03.3	
18.	eP	19 52 40	North Atlantic Ocean 24.03°N 46.29°W
	e	52 52	H = 19 43 35.2 h = normal MAG=4.7 (USCGS)
	eS	20 00(08)	D = 51.5°
	eLQ	05.3	
	eLR	07.5	
18.	e(P)	21 31 47	
18.	i(Sg)	23 00 23.5	Explosion?
	i	00 32.0	
19.	eiP	05 32 08.5	Near East Coast of Honshu/Japan
	epP	32 22	37.61°N 141.35°E
	e	32 26	H = 05 19 56.1 h = 67 km MAG=5.1 (USCGS)
	e	32 37	D = 81.5° h = 50 km
			PV:1.4s 33.3nm
			MPV=5.3
19.	eP	07 16 45	Crete 35.00°N 23.49°E
	-iP	16 46.5	H = 07 12 39.7 h = 33 km MAG=5.3
	eS	20(08)	D = 17.9° Az = 334.7° (USCGS)
	eLg1(3.56)	22.0	PV2:1.5s 105nm
	eiLg2(3.36)	22.6	LmH:15.5s 8.5/um LmV:17s 5.7/um

Day	Phase	h m s	Remarks
cont.			
19.	LmH	07 24.1	MLH=5.1 MLV=5.0
	LmV	25.5	i 16 51.0 i 16 56.5 e 17 06
			eP is a small-amplitude precursor.
19.	eP	07 43 19	Near East Coast of Honshu/Japan
	e	43 34.5	40.54°N 142.72°E
	e	43 40	H = 07 31 14.1 h = normal MAG=4.3
	LmH	08(20)	D = 79.6° Az = 330.8° (USCGS)
19.	eiP	07 53 48.5	Burma 18.40°N 95.31°E
	e(pP)	53 03	H = 07 42 28.2 h = 56 km MAG=5.4
	e(sP)	53 09	D = 72.0° Az = 318.3° (USCGS);
			(h = 56 km)
			PV:1.0s 30.4nm
			MPV=5.4
19.	e(Sg)	12 07 45	Probably near earthquake
	e	07 49	Vienna (VIE) gives: i(Pn) 12 05 36.0
	e	07 58	i(Sn) 06 11 i(Sg) 06 33
19.	eP	16 50 27	Kodiak Island Region 56.87°N 153.97°W
	ei(pP)	50 38.5	H = 16 39 03.2 h = normal MAG=4.5
	e	50 43	D = 72.2° Az = 9.6° (USCGS);
			(h = 43 km)
19.	eP	17 50 03	North Atlantic Ridge 24.25°N 46.38°W
	e	50 21	H = 17 40 58.2 h = normal MAG=4.8
	eS	57(36)	D = 51.5° Az = 43.6° (USCGS)
	LmH	18(09)	The first P onset is much smaller than
			the second one.
19.	eSKS	18 44 46	Off Coast of Peru 10.70°S 79.10°W
	eS	45 36	H = 18 20 30.0 h = 34 km MAG=4.8 (USCGS)
	ePS	47 04	D = 98.7°
	ePPS	47 46	LmH:17s 1.0/um
	eSS	52.4	MLH=5.4
	eSSS	56.3	
	LmH	19 19.0	

Day	Phase	h m s	Remarks
20.	eP	01 08 56.5	North Atlantic Ridge 24.15°N 46.41°W
			H = 00 59 51.0 h = normal MAG=4.9
			D = 51.6° Az = 43.6° (USCGS)
20.	ePKP	04 40 43	New Britain Region 6.41°S 153.81°E
			H = 04 21 51.5 h = 128 km MAG=5.0
			D = 125.8° Az = 331.2° (USCGS)
20.	e	08 40 29	
20.	iP	09 41 53.7	Andreanof Is./Aleutian Is. 51.45°N 176.55°W
	e	42 06	H = 09 29 59.1 h = 54 km MAG=5.1 (USCGS)
	e	42 43	D = 78.4°
20.	ePKIKP	17 07 28	South Pacific Cordillera 55.14°S 129.37°W
	ePKP2	07 56	H = 16 47 33.0 h = normal MAG=4.9 (USCGS)
	eSS	31.5	D = 156.2°
	e(SSS)	37.4	LmH:18s 1.2/um LmV:18s 1.5/um
	LmH	18(16)	MLH=5.8 MLV=5.8
	LmV	16.2	e 07 33 e 07 46 e 36.8
20.	e(PKIKP)	19 13 29	South Pacific Cordillera 55.25°S 128.74°W
	e	13 33	H = 18 53 31.8 h = normal MAG=4.7
	e(PKP2)	14 02	D = 155.9° Az = 84.4° (USCGS)
	LmV	20 19	
	LmH	(21)	
20.	e	23 14 19	
20.	eP	23 44 24	West Pakistan 27.57°N 67.67°E
			H = 23 35 46.4 h = 36 km MAG=4.8 (USCGS)
			D = 48.0°
21.	e	00 48 57.5	
	e	49 02	
21.	eP	12 31 19	Kurile Islands 46.68°N 152.46°E
	ei(pP)	31 39.5	H = 12 19 27.3 h = 40 km MAG=5.6
	e	34 08.5	D = 77.3° Az = 335.7° (USCGS);
	LmH	13 07.5	(h = 76 km)

Day	Phase	h m s	Remarks
cont.			
21.	LmV	13 08	PV:1.4s 62.0nm
			LmH:17s 0.6/um LmV:18s 0.7/um
			MPV=5.6 MLH=5.0 MLV=5.0
21.	i	12 48 26.5	Explosion?
21.	i	13 13 43.0	Explosion?
22.	+iP1	06 40 45.0	Sea of Okhotsk 48.16°N 146.68°E
	+iP2	40 48.5	H = 06 29 53.5 h = 453 km MAG=5.6
	+iPcP	40 57.0	D = 74.3° Az = 332.1° (USCGS); h = 456 km
	e	41 15	PV1:1.3s 190nm PV2:1.3s 88.5nm
	epP1	42 23	PcPV:1.3s 48.9nm pPV1:2.2s 123nm
	epP2	42 28	pPV2:2.1s 125nm SH:10s 0.9/um
	epPcP	42 43.5	MPV=5.5 MSH=5.3
	ePP	43 38	Two very clearly separated impulsive P-
	epPP	44 56	onsets, the first bigger than the second
	eiS	49 40	one. Two shocks in the same focus?
	esS	52 35	
	eSS	54 32	
	eSa(4.50)	07 00 25	
22.	e(PP)	07 20 30	South Sandwich Islands Region
	e	20 43	57.94°S 25.26°W
	e	21 00	H = 07 01 11.1 h = 38 km MAG=5.6 (USCGS)
	eSS	36 10	D = 112.2°
	eSSS	40.0	LmH:17s 0.9/um LmV:24s 2.3/um
	LmV	08 00.5	MLH=5.4 MLV=5.7
	LmH	06.5	
22.	eP	09 04 03.5	Near Islands/Aleutian Is. 52.10°N 172.66°E
	e	04 06	H = 08 52 18.2 h = 55 km MAG=4.9 (USCGS)
	e	04 33	D = 76.5°
	LmH	(45)	
	LmV	(45)	
22.	iPg	14 18 21.8	Explosion/GDR 51.37°N 12.89°E
	iSg	18 37.5	D = 1.2°

Day	Phase	h m s	Remarks
23.	ePKIKP	02 38 33	New Hebrides Islands 14.91°S 166.85°E
	e(PP)	43 26	H = 02 19 13.8 h = 48 km MAG=5.6
	eSKP	44 08	D = 139.1° Az = 336.0° (USCGS)
	eSS	59 50	LmH:18s 0.75/um LmV:18s 0.95/um
	eSSS	03 04(50)	MLH=5.5 MLV=5.6
	LmH	47.5	e 38 36 e 38 39 e 38 41.5 e 40 49
	LmV	47.5	e 41 14 e 43 20 e 43 54 e 44 18
23.	e(Sg)	14 55 59	Near earthquake?
	e	56 08	
23.	iPKP	18 36 52.3	Fiji Islands Region 20.11°S 177.71°W
			H = 18 17 59.0 h = 465 km MAG=4.2
			D = 148.6° Az = 348.6° (USCGS)
24.	eP	07 05 01.5	Kodiak Islands Region 56.53°N 152.87°W
	e(pP)	05 08	H = 06 53 37.1 h = normal MAG=4.8
	e(sP)	05 12	D = 72.4° Az = 10.3° (USCGS);
	e(PcP)	05 18	(h = 27 km)
			e 05 28 e 05 36 e 05 43
24.	ePKIKP	07 51 50	Kermadec Islands Region 30.59°S 177.89°W
	e	52 23	H = 07 31 51.8 h = 11 km MAG=5.0 (USCGS)
	ePKP2	52 28	D = 158.9°
			PV2:1.5s 40nm PV3:1.2s 45.5nm
			If e 52 23 is interpreted as PKP2 and e 52 28 as pPKP2, than the focal depth would be h = 18 km (see Bath: Seismological Bulletin Uppsala, Kiruna, a. o.) but e 52 23 is 5 s earlier than the expected onset time for PKP2 after the I.-B.-travel time tables.
24.	iPg	08 00 44.5	Explosion/GDR 51.33°N 12.66°E
	iSg	00 58.0	D = 1.0°
24.	e(P)	12 12 44	

Day	Phase	h m s	Remarks
24.	e	12 16 34	Explosion?
	e	16 37	
	e	16 45	
24.	eP	15 18 48	Kodiak Island Region 56.54°N 153.04°W
	e	19 03	H = 15 07 23.5 h = normal MAG=4.5
	e	19 16	D = 72.4° Az = 10.2° (USCGS)
24.	ePKP	17 04 54	West Chile Rise 38.31°S 92.05°W
	eSS	24.1	H = 16 45 47.1 h = normal MAG=4.7
	eSSS	29.0	D = 126.5° Az = 50.3° (USCGS)
	LmH	54.4	LmH:20s 0.9/um LmV:20s 1.6/um
	LmV	54.4	MLH=5.5 MLV=5.7
			e 04 59 e 05 14 e 05 30 e 05 48
25.	e	10 09 55	
	e	10 36	
25.	e(P)	15 10 43	
	e	10 57	
	e	11 04	
	e	11 10	
26.	LmH	02 15	
26.	LmH	03 19	Northern Chile (USCGS)
26.	eP	03 29 36	Svalbard Region 78.44°N 5.23°E
	e	29 44	H = 03 23 44.3 h = normal MAG=4.7
	e	30 06.5	D = 23.0° Az = 171.3° (USCGS)
	eS	34 20	LmH:14s 0.85/um LmV:14s 0.75/um
	LmH	43.2	MLH=4.5 MLV=4.5
	LmV	43.2	e 30 14 e 30 20.5
26.	eP	13 56 26.5	Iran-USSR Border Region 37.32°N 58.61°E
	e	57 03	H = 13 49 30.3 h = 29 km MAG=4.9
			D = 35.5° Az = 306.7° (USCGS)

Day	Phase	h m s	Remarks
26.	eP	17 17 04	Hokkaido/Japan Region 42.67°N 144.47°E
			H = 17 05 08.0 h = 54 km MAG=3.9
			D = 78.4° Az = 331.5° (USCGS)
27.	eP	04 21 43	Southern Alaska 60.13°N 146.22°W
	i	21 46.0	H = 04 10 42.8 h = 28 km MAG=4.6 (USCGS)
			D = 68.1°
			PV2:2.0s 74.0nm
			MPV2=5.5
			The first onset is about three times
			smaller than the second one.
27.	eP	04 26 32	Gulf of Alaska 59.99°N 146.37°W
	e	26 35	H = 04 15 30.8 h = 11 km MAG=4.3 (USCGS)
			D = 68.3°
			PV2:1.2s 27.2nm
			MPV2=5.2
			The first onset is about three times
			smaller than the second one.
27.	eiP	12 59 51.5	Kurile Islands 48.12°N 155.05°E
	LmH	13(30)	H = 12 48 01.5 h = 28 km MAG=4.5
			D = 76.7° Az = 337.1° (USCGS)
			PV:1.9s 36.6nm
			MPV=5.2
27.	-iP	20 18 52.0	Svalbard Region 78.52°N 6.43°E
	ipP	19 00.0	H = 20 13 01.5 h = normal MAG=5.6 (USCGS)
	e(PP)	19 37	D = 27.5° h = 45 km
	eS	23 36	PV:1.4s 105nm SH:14s 1.8/um
	LmH	32.1	LmH:14.5s 2.0/um LmV:14s 2.4/um
	LmV	35.8	MPV=5.4 MSH=5.5 MLH=4.8 MLV=5.0
			i 19 14.0 e 19 25 e 23(00)
28.	eP	07 45 39.5	South of Panama 6.62°N 82.66°W
	e	45 42	H = 07 32 53.4 h = normal MAG=5.5
	eSKS	56 13	D = 87.6° Az = 39.5° (USCGS)
	ePS	57 24	PV2:1.8s 87.4nm
	eSS	08 02 12	MPV2=5.6
	eSSS	05 45	i 45 49.0 e 56 30 e 58 46

Day	Phase	h m s	Remarks
cont.			
28.	eLQ	08 09.8	
	eLR	13.4	
	LmH	(15)	
	LmV	(15)	
28.	e	10 28 17	
29.	LmH	05 37	North Atlantic Ridge (USCGS)
29.	LmH	06 56.8	
	LmV	59.8	
29.	ePKP	08 19 02.5	Fiji Islands Region 15.88°S 176.76°W
	e	19 06	H = 08 00 09.6 h = 370 km MAG=4.6 (USCGS)
			D = 144.5°
			PV:1.5s 50.0nm
29.	eP	09 34 23.5	South Indian Ocean 9.81°S 90.57°E
			H = 09 21 22.8 h = normal
			D = 90.6° Az = 321.3° (USCGS)
29.	LmH	18 00	Japan (USCGS)
29.	e	22 36 32.5	New Hebrides Islands 14.67°S 167.43°E
	ePKIKP	36 39	H = 22 17 29.9 h = 161 km MAG=5.2 (USCGS)
	e(PP)	39 30	D = 139.0°
	eSKP	40 14	ANUSSR gives: 14.8°S 166.7°E
	eSS	58.2	H = 22 17 22 h = 90 km
	eSSS	23 03.3	D = 139.0°
	LmH	(42)	e 36 53 e 39 36 e 39 56 e 40 55
	LmV	(42)	e 22 36 32.5 is a small-amplitude
			precursor.
30.	e	00 40 15	
30.	eP	13 05 41	Greenland Sea 73.38°N 7.03°E
	e	05 47	H = 13 00 39.9 h = normal MAG=4.8
			D = 22.9° Az = 172.5° (USCGS)
			PV:1.5s 90.0nm MPV=5.1

Day	Phase	h m s	Remarks
30.	e	21 00 16	
	e	00 21	

Day	Phase	h m s	Remarks
1.	+iP	04 40 22.0	Southern Alaska 60.06°N 146.44°W
	+ipP	40 25.5	H = 04 29 23.3 h = 38 km MAG=4.6 (USCGS)
	e	40 28	D = 68.5° h = 14 km
	ePcP	40 45	PV1:1.2s 50.0nm PV2:1.4s 57.1nm
	epPcP	40 49	MPV=5.6
			Since surface waves from this quake are not detectable in our records, an alternative interpretation seems to be possible: iP1 40 22.0 iP2 40 25.5 epP1 40 45 epP2 40 49 with a focal depth of h = 95 km.
1.	+eiPKHKP	05 16 04	New Hebrides Islands 14.03°S 167.10°E
	+eiPKIKP	16 08	H = 04 56 58.2 h = 132 km MAG=6.1
	-i	16 10.5	D = 138.4° Az = 336.5° (USCGS); h = 134 km
	+ipPKIKP	16 44	PV2:6.5s 3.8/um PV3:2.0s 364nm
	iPP	19 01.5	SKP1V:8s 5.0/um (SKP2)V:2.2s 636nm
	iSKP1	19 29	PKS1H:11s 3.8/um XV:2.8s 1070nm
	ei(SKP2)	19 38	LmH:18s 4.1/um LmV:20s 5.1/um
	ePKS1	19 40	MLH=6.3 MLV=6.3
	iX	19 47	PKHKP is a small-amplitude precursor.
	LmV	06 20.3	ei(SKP2) and the unidentified onset iX
	LmH	24.4	are very great, but registered only in the shortperiod vertical instruments. SKP1 is the greatest body wave onset in the longperiod vertical seismograph but not detectable in the shortperiod components. SKP1 and SKP2 would refer to different branches of the SKP travel-time curve.
1.	eiP	19 08 02	Hokkaido/Japan Region 41.64°N 139.57°E
	i	08 10.0	H = 18 56 23.1 h = 173 km MAG=5.4 (USCGS)
	ipP	08 47.0	D = 77.3° h = 187 km
	i	10 46.0	
2.	iP	03 15 11	Southern Iran 28.23°N 53.19°E
	e	15 19	H = 03 07 54.0 h = 40 km MAG=5.2
	e	15 42	D = 38.5° Az = 317.2° (USCGS)

Day	Phase	h m s	Remarks
2.	LmH	10(28)	Halmahera (USCGS)
3.	eSn	07 48 18	CSSR-Poland Border Region 49½°N 18¾°E
	iSg	48 47.0	H = 07 46 10 (BCIS)
			D = 4.8°
3.	iPKIKP	14 32 17.5	South of Fiji Islands 24.67°S 179.86°E
	iPKHKP	32 24.5	H = 14 13 25.2 h = 492 km MAG=5.1
	i(PKP2)	32 38.5	D = 152.5° Az = 343.7° (USCGS)
	e	33 15	PV1:1.3s 32.6nm PV2:1.3s 51.1nm
	epPKP	34 26	PV3:1.7s 83.3nm
	eSKP	35 20	
4.	ePKP	18 21(48)	Tonga Islands 15.34°S 173.18°W
	e	22 41	H = 18 02 08.0 h = 21 km MAG=4.9 (USCGS)
			D = 144.6°
5.	e	07 25 50	
	e	26 42	
6.	eP	07 30 25	Kurile Islands Region 50.05°N 159.81°E
			H = 07 18 39.9 h = 27 km MAG=5.4 (USCGS)
			D = 76.0°
6.	ePKP	11 27 05	Tonga Islands 18.23°S 175.10°W
			H = 11 07 50.2 h = 244 km MAG=4.5
			D = 147.2° Az = 352.1° (USCGS)
6.	e	16 59 16	
	e	17 00 25	
7.	-eiP1	17 29 46	Kurile Islands Region 44.26°N 151.67°E
	eiP2	29 49	H = 17 17 42.0 h = 26 km MAG=5.8 (USCGS)
	i(pP)	29 58.5	D = 79.5° (h = 50 km)
	i(sP)	30 04.5	PV1:1.4s 73.8nm PV2:1.4s 61.9nm
	iX	30 07.5	XV:1.2s 154nm
	LmH	18 09.8	LmH:17.5s 1.7/um LmV:16s 1.75/um
	LmV	09.8	MPV1=5.6 MLH=5.5 MLV=5.5
			Multiple P-phases. The unambiguous interpretation as deep phases or distinct

Day	Phase	h m s	Remarks
cont. 7.			shocks in the same focus can not be decided with our data alone. The unidentified phase iX is the greatest one in the short-period components.
8.	eP	00 05 32	Mona Passage 18.31°N 68.51°W
	i	06 34	H = 23 54 35.9 h = 141 km MAG=5.0 (USCGS)
			D = 69.9°
8.	eP	02 15 46	West Pakistan 29.28°N 69.88°E
			H = 02 07 07.4 h = 37 km MAG=5.1 (USCGS)
			D = 48.1°
8.	e	04 44(35)	Explosion?
	e	44 38	
	i	44 41	
8.	ePn	11 33 39	Yugoslavia 42.15°N 18.89°E
	i	33 43.0	H = 11 31 18.0 h = 24 km MAG=5.0
	iSn	35 33.0	D = 9.9° Az = 331.9° (USCGS)
	e	36 25	LmH:9s 3.7/um
	i	36 35	MLH=4.6
	i(Sg)	36 41.0	
	LmH	37.1	
8.	e	18 45 17	Near earthquake.
	e	45 31	
	e	45 36	
	e	46 07	
8.	eP	23 29 08	Southern Alaska 60.10°N 146.49°W
	i	29 11.6	H = 23 18 09.4 h = 35 km MAG=4.5
			D = 68.2° Az = 14.8° (USCGS)
9.	ePg	12 51 40	Explosion/GDR
	iSg	51 55.5	D = 1.2°
9.	iPg	14 31 03.5	Explosion/GDR
	eSg	31 18	D = 1.1°

Day	Phase	h m s	Remarks
9.	-eiP	16 55 51	Near Islands/Aleutian Is. 51.66°N 174.61°E
	ei	55 55	H = 16 43 57.7 h = 21 km MAG=5.2
	e	56 07	D = 77.1° Az = 349.0° (USCGS)
			PV:1.5s 35.0nm
			MPV=5.3
10.	+iP	13 19 14.0	Guatemala 14.32°N 91.99°W
	e	19 18.5	H = 13 06 32.6 h = 70 km MAG=5.6 (USCGS)
	iS	29 42	D = 87.5°
			PV:16s 5.1/um
	iSS	35 40	LmH:17s 16.2/um LmV:17s 22:5/um
	eSSS	39 24	MPV=6.5 MLH=6.5 MLV=6.6
	LmV	14 03.7	e 19 43 e 29 18 e 35 10 e 39 20
	LmH	03.8	e 42 10
10.	-eP	17 12 42	Turkey 41.05°N 33.55°E
	eS	16 05	H = 17 08 32.2 h = 13 km MAG=4.9
	i(SS)	16 20	D = 18.0° Az = 309.6° (USCGS)
	eLg(3.39)	18 22	PV:2.5s 308nm SH:12s 2.8/um
	eL(3.20)	18 58	LmH:13s 6.0/um LmV:12s 4.0/um
	LmH	21.1	MLH=5.1 MLV=5.1
	LmV	22.6	e 16 10 e 17 50
			Clearly developed higher mode surface waves.
10.	ePP	18 28 22	Near North Coast of New Guinea
	ePS	38 05	3.63°S 145.39°E
	eSS	44 50	H = 18 08 14.4 h = normal MAG=5.7 (USCGS)
	eSSS	49	D = 119.3°
	LmH	19 20.9	LmH:18s 6.1/um LmV:18s 8.5/um
	LmV	20.9	MLH=6.4 MLV=6.6
			e 28 34 e 39 52
11.	eP	02 18 56.5	Unimak Island 53.6°N 163.6°W
			H = 02 07 12.1 h = 47 km MAG=4.2 (USCGS)
			D = 76.2°
11.	e	10 45 38	
11.	e	13 35 06	

Day	Phase	h m s	Remarks
11.	e	14 35 13	
	e	36 14	
11.	eP	19 59(30)	Hokkaido/Japan Region 42.89°N 144.59°E
	epP	59 44.5	H = 19 47 34.2 h = 57 km MAG=4.8 (USCGS)
			D = 78.2° h = 55 km
11.	ePP	20 10 34	Mariana Islands 13.42°N 145.85°E
	eSKS	16 48	H = 19 52 09.4 h = 59 km MAG=5.4 (USCGS)
	eS	17(55)	D = 104.8°
	ePS	18 48	LmH:17s 1.6/um LmV:18s 1.2/um
	eSSS	29	MLH=5.6 MLV=5.5
	LmH	59	e 10 40 e 19 30
	LmV	59	
11.	eP	20 12 32	Andreanof Is./Aleutian Is. 52.94°N 176.13°W
	e	13 30	H = 20 01 03.5 h = 216 km MAG=5.2
			D = 76.6° Az = 354.9° (USCGS)
11.	ePP	20 26 47	Mariana Islands 13.4°N 146.0°E
	LmV	21 14.5	H = 20 08 22.3 h = 50 km MAG=5.6 (USCGS)
	LmH	15.3	D = 105.0°
			PPV:2.2s 63.8nm
			LmH:16s 1.8/um LmV:18s 1.6/um
			MPPV=5.9 MLH=5.7 MLV=5.6
12.	iPg	07 37 49.0	Switzerland 46.4°N 7.4°E
	ei(Sn)	38 18	H = 07 36 13 (BCIS)
	iSb	38 42.0	D = 5.1°
	iSg	38 54.2	i 39 09.5
12.	e(P)	12 18 36	PV:2.2s 72.6nm
	e	18 50	
12.	LmH	13(22)	LmV:16s 0.7/um
	LmV	23	
13.	iSg	09 11 16.0	Yugoslavia 46.0°N 16.0°E
	e	11 25	H = 09 08 17
			D = 5.5°

Day	Phase	h m s	Remarks
13.	-iP	12 29 00.5	Afghanistan-USSR Border Region
	e	29 18	37.35°N 71.95°E
	ipP	29 28.5	H = 12 21 02.3 h = 126 km MAG=5.3
	eiPcP	30 45	D = 44.2° Az = 307.5° (USCGS); h = 128 km
	e	30 54	PV:1.5s 100nm
	ipPcP	31 17.2	MPV=5.3
14.	eiP	03 55 26.5	Andreanof Is./Aleutian Is. 52.86°N 177.62°W
	e	55 47	H = 03 44 01.9 h = 243 km MAG=5.3
	eipP	56 30.5	D = 76.8° h = 275 km
	e	57 12	PV1:1.4s 50.0nm pPV:1.2s 41.0nm
			MPV=5.0
			ANUSSR gives: 51.9°N 177.0°W
			H = 03 43 49 h = 185 km
			D = 77.5°
14.	eP	06 52 27	North Atlantic Ridge 11.03°N 43.09°W
	e	52 35	H = 06 42 24.3 h = normal MAG=4.7 (USCGS)
	eS	07 00(40)	D = 59.5°
	eSS	04.5	LmH:19s 0.55/um LmV:19s 0.7/um
	LmH	16	MLH=4.7 MLV=4.8
	LmV	16	e 52 40 e 52 45.5
14.	e	08 45 22	
	e	45 28	
14.	eP	11 16 39	Honshu/Japan 36.19°N 139.57°E
	epP	16 53	H = 11 04 25.3 h = 72 km MAG=4.6
			D = 82.3° h = 52 km
14.	ePKP2	11 35 55	Kermadec Islands 27.43°S 179.00°W
			H = 11 16 07.6 h = 296 km MAG=4.5 (USCGS)
			D = 155.3°
14.	eP	14 52 34	Rumania 45.59°N 26.36°E
	e	52 37	H = 14 49 59.8 h = 158 km MAG=4.8 (USCGS)
	e	52 48	D = 11.0°
	e	53 07.5	PV:1.1s 35.4nm
	eS	54 36	e 53 11 e 53 23

Day	Phase	h m s	Remarks
14.	ePKIKP	21 26 34.5	New Guinea 4.83°S 143.94°E
	e	26 37	H = 21 07 52.1 h = 74 km MAG=6.0 (USCGS)
	ePP	28 00	D = 119.2° h = 60 km
	epPP	28 16	PV1:0.9s 26.1nm PV2:1.2s 91.0nm
	eSKKS	34 48	LmH:22s 8.1/um LmV:20s 8.8/um
	eS	35 46	MLH=6.4 MLV=6.4
	ePKKP	36 52	e 26 56 e 27 02 e 40 56
	epPKKP	37 09	S is the diffracted S-wave around the core.
	ePS	37 28	
	ePPS	39 08	
	eSKKP	40 39.5	
	eSS	44 20	
	ePSPS	44 50	
	LmH	22 19.0	
	LmV	19.3	
15.	+iP	02 19 02.3	Burma 21.66°N 94.48°E
	ipP	19 25.2	H = 02 08 03.0 h = 81 km MAG=5.7 (USCGS)
	e	19 50	D = 69.0° h = 96 km
	e	20 17	PV:1.3s 65nm pPV:1.6s 47.4nm
	LmH	51.5	MPV=5.4
	LmV	55	
16.	ePn	05 03 57	Rock burst/CSSR 50.17°N 14.09°E
	ePg	04 02.5	H = 06 03 25.0 (BCIS)
	eSn	04 15	D = 1.7°
	eSg	04 19	e 04 03 e 04 17.5
16.	i(P)	09 39 24.2	PV:0.7s 13.0nm
16.	e	13 01 23	Probably explosion.
	eSg	01 39	
16.	+eP	21 01 46	Nepal 29.63°N 81.03°E
	i	01 49.0	H = 20 52 13.5 h = 9 km MAG=5.9 (USCGS)
	ePP	03 48	D = 54.8°
	eS	09 26	PV1:0.7s 21.3nm PV2:1.9s 200nm
	LmH	27.7	PV:9s 2.2/um PPV:8s 1.2/um
	LmV	27.7	LmH:13s 6.8/um LmV:13s 10/um
			MPV1=5.4 MPV2=5.9 MPV=6.3 MPPV=6.1
			MLH=5.9 MLV=6.1

Day	Phase	h m s	Remarks
17.	eP	06 04 17.5	Jan Mayen Island 70.73°N 13.95°W
	e	04 21.5	H = 05 59 10.2 h = 27 km MAG=5.0
	LmH	15.3	D = 23.4° Az = 136.1° (USCGS)
	LmV	16.7	PV:2.0s 133nm
			LmH:14s 1.0/um
			MPV=5.1 MLH=4.4
17.	e	09 34 48	
17.	e(P)	16 51 40	
17.	e(Sg)	18 54 12	Probably near earthquake.
	e	54 34	
	e	54 48	
18.	LmH	01 10	LmV:20s 1.0/um
	LmV	12	
18.	eSg	01 46 45.5	Austria 47.8°N 16.3°E
	e	46 49.5	H = 01 44.5 (BCIS)
	e	46 53	D = 4.1°
18.	+iP	05 05 44.0	Eastern Kazakh SSR 49.93°N 77.73°E
	i	05 45	H = 04 57 57.8 h = 0 km MAG=5.9
	e	05 50	D = 41.0° Az = 297.4° (USCGS)
	ePn	07 16	PV:0.7s 166nm
	ePP	07 19	MPV=6.1
			Underground explosion.
18.	eP	07 46 40.5	Dodecanese Islands 35.12°N 27.13°E
	e	46 45	H = 07 42 18.8 h = normal MAG=4.7 (USCGS)
	e	46 51	D = 19.0°
	e	46 58	**Successively increasing P-amplitudes.**
	LmH	(55)	
19.	LmH	01(03)	Near Coast of Peru 10.76°S 78.97°W
	LmV	03.5	H = 23 59 30.8 h = 19 km MAG=4.7 (USCGS)
			D = 98.6°
			LmV:18s 1.0/um
			MLV=5.4

Day	Phase	h m s	Remarks
19.	e(P)	07 00 55	
	e	01 12.5	
19.	e(P)	10 04 07	
	e	05 36	
20.	eP	00 36 46.5	Alaska 66.68°N 148.74°W
	ePcP	37 25.5	H = 00 26 27.8 h = normal MAG=4.8
			D = 62.1° Az = 14.0° (USCGS)
			PV:1.2s 15.4nm
			MPV=5.0
20.	-eP	01 08 12.5	Alaska 66.69°N 148.72°W
			H = 00 57 53.1 h = normal MAG=4.9
			D = 62.0° Az = 14.0° (USCGS)
			PV:1.8s 51.0nm
			MPV=5.4
20.	LmH	03(25)	Off Coast of Jalisco/Mexico
	LmV	25.5	18.68°N 106.51°W
			H = 02 27 03.4 h = normal MAG=4.4 (USCGS)
			D = 92.2°
			LmV:15s 0.8/um
			MLV=5.3
20.	e	09 50(20)	Probably near earthquake.
	e	50 26	
	e	50 35	
	eSg	51 25	
	LmH	54	
	LmV	54	
20.	e	11 06 02	Explosion?
20.	-eP	12 39 42.5	Santiago del Estero Prov./Argentina
	ePP	43 55.5	26.13°S 63.21°W
	e(pPP)	45 49	H = 12 26 55.0 h = 589 km MAG=5.7 (USCGS)
	eSKS	49 26	D = 100.5°
	eS	50 25	PV:2.0s 126nm PPV:2.6s 680nm
	eSP	51 50	MPV=6.0 MPPV=6.5

Day	Phase	h m s	Remarks
cont.			
20.	esSKS	12 53(20)	e 39 44 e 43 48 e 45 35 e 45 42
	esS	54(20)	ANUSSR gives (with data only from stations
	isSP	55 50	in D > 60°): Argentina 25.3°S 63.4°W
	eSS	57(35)	H = 12 25 53 h = normal MAG=5½
	eSKKP	58 27	Our interpretation completely coincides
	esSS	13 01	with the depth calculation of the USCGS.
	e(SSS)	02.0	
	esSSS	04.7	
	iSa(4.55)	07 57	
20.	e	14 18 23.5	Explosion
	e	18 32.5	
	e	18 41	
	e	18 49.5	
20.	+iP	15 42 17.2	Nevada
	e	42 20.5	H = 15 30 00
	e	42 23.5	D = 81.2°
	ePP	45 22	PV1:2.1s 409nm PV2:1.7s 161nm
	LmV	16 19.9	PPV:1.7s 155nm
	LmH	20.2	LmH:16s 2.1/um LmV:17.5s 2.9/um
			MPV=6.2 MPPV=6.0 MLH=5.6 MLV=5.7
			Underground nuclear explosion.
			The PP onset is approximately 4 s earlier
			than expected from the travel time tables
			for surface focus. Clearly developed Love-
			and Rayleighwaves.
20.	e	16 38 30	Banda Sea 7.15°S 126.06°E
	ePP	38 38	H = 16 20 05.8 h = 441 km MAG=5.4 (USCGS)
			D = 110.9°
			PPV:1.6s 31.6nm
			MPPV=5.3
			ANUSSR gives: Banda Sea 6.1°S 125.7°E
			H = 16 20 24 h = 584 km
20.	eP	18 52 51.5	Luzon/Philippine Is. 14.29°N 122.06°E
	e	52 54	H = 18 39 40.3 h = 37 km MAG=5.4
	e	53 01.5	D = 91.5° Az = 323.4° (USCGS)

Day	Phase	h m s	Remarks
cont.			
20.	ePP	18 56 25	PV1:1.8s 37.6nm PV2:1.8s 65.6nm
	eSKS	19 03 20	PPV:2.5s 77nm
	eSKKS	03 38	LmH:18s 4.1/um LmV:16s 4.2/um
	eS	03 55	MPV1=5.4 MPV2=5.6 MPPV=5.7
	eSS	09 50	MLH=6.0 MLV=6.0
	LmH	34.6	e 53 07.5 e 53 15 e 53 28 e 53 50
	LmV	36.6	e 56 44
			Multiple P-onsets.
21.	eSg	02 18 30	Explosion?
21.	eP	05 41 59	Off East Coast of Kamchatka
			52.09°N 159.53°E
			H = 05 30 23.0 h = normal MAG=4.2 (USCGS)
			D = 74.1°
21.	-iPKIKP	09 11 08.5	New Hebrides Islands 19.96°S 169.71°E
	+ipPKHKP	11 09.5	H = 08 52 00.2 h = 245 km MAG=5.6 (USCGS)
	i	11 20.5	D = 144.9° (h = 60 km)
	-i(pPKHKP)	11 26.5	PV2:1.8s 2690nm
	ePP	14 24	i 11 26.5 e 11 40 e 20 50 e 29.5
	eSKSP	24 14	ANUSSR gives: 19.9°S 170.3°E
	eSPP	26(50)	H = 08 51 42 h = 100 km
	eSS	33(14)	D = 145.0°
	LmH	10(10)	
21.	e	12 35 03	Explosion
	e(Sg)	35 13	
21.	e	13 49 55.5	Near earthquake.
	e(Sg)	50 03	
	e	50 22	
21.	iP	22 20 30.0	Nepal-India Border Region 29.36°N 80.97°E
	e	20 37	H = 22 10 58.8 h = 31 km MAG=5.4
			D = 55.1° Az = 313.4° (USCGS)

Day	Phase	h m s	Remarks
22.	e	03 25 19	
	e	25 24	
	e	25 29	
22.	e	04 30 28	Near earthquake?
	e(Sg)	30 34	
	i	30 52.5	
22.	e	10 02 03.5	Near earthquake?
	ei	02 28	
	e	02 47.5	
22.	e	13 45 20	
22.	i	15 07 18.0	
22.	eP	17 38 28.5	Kurile Islands 43.87°N 147.20°E H = 17 26 31.5 h = 38 km MAG=4.5 D = 78.2° Az = 332.9° (USCGS)
22.	eP	19 35 49	Kurile Islands 48.63°N 154.34°E H = 19 24 06.5 h = 77 km MAG=5.2 (USCGS) D = 76.0°
23.	eiPKP	01 29 53	Fiji Islands Region 17.87°S 178.65°W
	ei	29 55.5	H = 01 11 15.6 h = 575 km MAG=5.0 (USCGS) D = 146.5°
23.	e(P)	10 00 51	
23.	e(P)	10 52 03	
23.	iPg	12 19 13	Explosion/GDR
	iSg	19 27.5	D = 1.1°
23.	i(Sg)	13 37 42	Near earthquake.
	e	37 44	

Day	Phase	h m s	Remarks
23.	ePKIKP	16 09 14	East New Guinea Region 7.13°S 148.27°E
	-i	09 15.5	H = 15 50 20.4 h = 43 km MAG=6.4
	+ipPKIKP	09 35.5	D = 123.7° Az = 328.3° (USCGS); h = 75 km
	ePP	10 56	PV1:1.4s 47.6nm PV2:2.4s 454nm
	iSKKS	17 48	PV3:2.2s 318nm PPV:11s 3.3/um
	ePKKP	19 04	LmH:22s 24/um LmV:23s 28/um
	e(pPKKP)	19 28	MPPV=6.3 MLH=6.8 MLV=6.8
	iSP	20 50	e 09 23.5 i 11 24 e 19 16 e 22 05
	iSPP	22 20	e 23 17
	eSKKP	23 03	ANUSSR gives: 5.6°S 148.0°E
	iSS	27 46	H = 15 51 08 h = 418 km
	eiSSS	32.5	D = 122.3°
	LmV	17 03.2	
	LmH	04.0	
24.	eP	00 07 34	Near East Coast of Kamchatka 54.54°N 162.17°E H = 23 56 09.0 h = normal MAG=4.6 (USCGS) D = 72.2°
24.	eiSn	07 15 49	Alps 46½°N 13½°E
	ei	16 12	H = 07 13 58 (BCIS)
	iSg	16 13.5	D = 4.4°
24.	eSn	21 08 11	Yugoslavia 46.1°N 14.8°E
	e(Sb)	08 30.5	H = 21 06 00 (BCIS)
	eSg	08 42	D = 5.0°
24.	-eP	22 39 55.5	Southern Alaska 59.92°N 153.43°W
	e	40 08.5	H = 22 28 59.6 h = 113 km MAG=5.1
	epP	40 22	D = 69.1° Az = 10.1° (USCGS); h = 105 km
	e	40 29	PV:1.8s 62.5nm
			MPV=5.2
25.	eP	05 51 28	Arabian Sea 14.14°N 53.79°E
	e	51 36	H = 05 42 44.5 h = normal MAG=5.2 (USCGS)
	e	54 14	D = 48.9°
			ANUSSR gives: Gulf of Persia 27.4°N 52.4°E
			H = 05 44 26 h = normal MAG=4½
			D = 40.9° Our P-onset coincides not with the ANUSSR epicenter calculation.

Day	Phase	h m s	Remarks
25.	eP	11 59 24	North Atlantic Ocean 37.37°N 16.90°W
	e	59 34	H = 11 54 08.6 h = normal MAG=4.6
	e	59 39.5	D = 24.2° Az = 47.7° (USCGS)
	e	59 43	PV:1.3s 27.8nm
	e	59 49	MPV=4.7
	e	12 00 18.5	
25.	eP	19 56 09	Eastern Mediterranean Sea 35.09°N 28.01°E
	e	56 16.5	H = 19 51 41.2 h = 46 km MAG=4.6 (USCGS)
			D = 16.6°
25.	eP	23 15 12	Rat Islands/Aleutian Is. 51.80°N 176.09°E
	e	15 23	H = 23 03 22.8 h = 47 km MAG=4.8 (USCGS)
			D = 77.4°
26.	eiP	01 35 54	Hindu Kush Region 35.87°N 69.95°E
			H = 01 28 04.3 h = 180 km MAG=5.0
			D = 43.8° Az = 308.5° (USCGS)
			ANUSSR gives: h = 134 km
26.	eP	04 26(11)	Turkey 38.74°N 40.94°E
	e	26 16	H = 04 21 02.4 h = 55 km MAG=4.8 (USCGS)
	e	26 42	D = 23.9°
	e(S)	30(32)	LmH:16s 1.1/um
	LmH	36	MLH=4.4
	LmV	38.5	e 26 46
26.	e	13 55 49.5	Near earthquake?
	e	55 59	
	e	56 10.5	
	e	56 20.5	
27.	+iP	01 34 32.0	Honshu/Japan 37.14°N 140.99°E
	ePcP	34 38	H = 01 22 17.3 h = 60 km MAG=5.5 (USCGS)
	epP	34 50	D = 82.0° h = 70 km
	e	34 59	PV:1.3s 55.5nm PcPV:1.2s 20.5nm
	e	35 10	pPV:1.4s 39.4nm
	e(PP)	37 47	MPV=5.5
	e	45 08	e 34 46.5 e 35 22.5 e 36 15 e 37 29

Day	Phase	h m s	Remarks
cont.			
27.	LmH	02 15.2	
	LmV	15.2	
27.	ePKHKP	12 10 04	South of Fiji Islands 24.3°S 179.8°E
	e	10 16	H = 11 51 07.7 h = 520 km MAG=4.7 (USCGS)
			D = 152.2°
27.	e(P)	14 08 10	Greenland Sea 78.46°N 3.32°E
	e	08 20	H = 14 02 25.1 h = normal MAG=4.6 (USCGS)
			D = 28.0°
27.	eP	21 34 52	El Salvador 13.18°N 88.84°W
	e(pP)	35 17.5	H = 21 22 14.8 h = 66 km MAG=5.5 (USCGS)
	eSKS	45 10	D = 86.5° (h = 100 km)
	LmH	22 13	PV1:1.4s 18nm PV2:1.2s 10nm
	LmV	13	MPV=5.1
27.	ePKP	21 45 55	Tonga Islands 21.33°S 175.58°W
	LmH	22 50	H = 21 26 06.5 h = 14 km MAG=5.0
	LmV	50	D = 150.2° Az = 350.8° (USCGS)
			PKP has abnormal long periode of approxi-
			mately 4 s in the shortperiod vertical
			seismograph.
28.	+iP	08 32 10	Near Coast of Northern Chile
	+ipP	32 28	25.52°S 70.68°W
	isP	32 36	H = 08 18 07.4 h = 47 km MAG=6.9 (USCGS)
	ei	35 45	D = 104.7° h = 65 km
	-iPP	36 24	PV:13s 7.8/um PPV:10.4s 12.5/um
	-ipPP	36 40	PPH:10.4s 4.6/um
	isPP	36 48	LmH:20s 315/um LmV:20s 645/um
	eSKS	42 52	MPPV=7.3 MLH=7.9 MLV=8.2
	e(S)	43 54	The epicentral distance calculated from
	i	45 40	our PP-P and PKKP-P travel time differen-
	i(PPS)	46 06	ces is approximately 102° only. ei 35 45
	iPKKP1	48 13.5	is a strong unidentified phase 3 m 35 s
	iPKKP2	48 18.5	after P. Båth found in the registrations
	e(PKPPKP)	56 12	of Swedish seismic stations also a clear
	LmH	09 18.8	unidentified phase, on average 3 m 28 s

Day	Phase	h m s	Remarks
cont.			
28.	LmV	09 18.9	after P. He thinks that this is possibly another shock in the same location.
29.	LmH	02 45	Near Coast of Northern Chile 25.70°S 70.72°W H = 01 48 28.9 h = normal MAG=5.4 (USCGS) D = 104.8° LmH:24s 0.5/um MLH=5.0
29.	eP	06 32 39	Rumania 45.59°N 26.52°E H = 06 30 01.3 h = 123 km MAG=4.4 (USCGS) D = 11.2° PV:1.6s 19nm
29.	eP	07 45 50	Eastern Mediterranean Sea 35.94°N 30.49°E
	ei	45 53.5	H = 07 41 19.3 h = 63 km MAG=4.6 D = 20.0° Az = 323.1° (USCGS)
29.	eSS	12 36 12	Easter Island Cordillera 32.60°S 111.81°W
	LmV	13 19	H = 11 56 23.0 h = normal MAG=4.9 (USCGS)
	LmH	20	D = 135.1° LmH:18s 0.6/um LmV:18s 1.1/um MLH=5.4 MLV=5.6
29.	ei	13 19 23.5	
29.	eP	21 43 51.0	West Pakistan 29.86°N 68.27°E
	ei	43 58.5	H = 21 35 20.2 h = 14 km MAG=4.6 (USCGS) D = 46.8°
29.	ePKP	22 35 37	Easter Island Cordillera 32.79°S 111.68°W
	eiSS	56 10	H = 22 16 22.7 h = normal MAG=5.4 (USCGS)
	eiLQ	23 11 48	D = 135.2°
	LmH	34	LmH:18s 1.0/um LmV:17s 2.1/um
	LmV	38.8	MLH=5.7 MLV=5.9

Day	Phase	h m s	Remarks
30.	LmV	00 19	Scotia Sea 60.58°S 50.41°W
	LmH	20	H = 23 16 20.0 h = normal MAG=5.4 (USCGS) D = 121.5° LmH:18s 0.6/um LmV:18s 1.0/um MLH=5.3 MLV=5.5
30.	ePKP	01 18 52	Fiji Islands 17.83°S 178.90°E
	-i	18 54.5	H = 01 00 25.4 h = 658 km MAG=5.0
	ei	18 56	D = 145.7° Az = 345.6° (USCGS) PV2:1.6s 60.5nm PV3:1.3s 83.2nm
30.	e	08 26 46.5	
30.	e	10 14 27	Explosion?
	e	14 28.5	
30.	e	12 30 18	Near earthquake.
	e	30 20.5	
	i	30 23.0	
	i	30 25.5	
	e	30 29	
	e	30 33	
31.	e(P)	00 39 21	Lake Baikal Region 55.5°N 107.6°E
	e	39 24	H = 00 29 31 h = normal MAG=4¾4-5
	e	40 09	D = 54.6° (ANUSSR)
	LmH	01 03.7	The first onset of P must be about 22 s
	LmV	04.7	earlier and falls in the time mark.
31.	e(P)	00 56 23	
31.	e	03 47 29.5	
31.	e	18 42 28	Santa Cruz Islands 11.82°S 166.49°E
	ePKHKP	42 37.5	H = 18 23 03.9 h = normal MAG=5.5
	ePKIKP	42 44	D = 136.2° Az = 337.0° (USCGS)
	e	42 50.5	PPV:11.5s 19/um
	e	42 59	LmH:21s 428/um LmV:21s 479/um
	e	43 12	MPPV=7.1 MLH=8.2 MLV=8.2
	e	43 42	It seems to be possible that the phase

Day	Phase	h m s	Remarks
cont.			
31.	e	18 45 00	e 42 28 corresponds to the IJ branche of
	ePP	45 24	travel-time curves after Adams and
	LmH	19 44.3	Randall (1964). Another more likely solu-
	LmV	44.3	tion would be that e 42 28 is the PKIKP
			of a weaker foreshock and the USCGS epi-
			centre calculation and origin time is
			given for this foreshock. The abnormally
			small given magnitude for this quake
			mades also possible this idea.
31.	ePKP	19 12(34)	Santa Cruz Islands 11.61°S 165.93°E
	ePP	15(09)	H = 18 53 12.5 h = normal MAG=5.0 (USCGS)
	e	16 10.5	D = 135.8°
31.	ePKP	19 57(48)	Santa Cruz Islands 11.57°S 165.95°E
			H = 19 38 29.9 h = normal MAG=5.1 (USCGS)
			D = 135.8°
31.	+ePKP	22 34 38	Santa Cruz Islands 11.25°S 164.83°E
	e	34 42	H = 22 15 14.0 h = normal MAG=5.2
	e	34 47	D = 135.0° Az = 336.1° (USCGS)
	i	35 02	LmH:17s 44/um LmV:17s 63.5/um
	ePP	37(16)	MLH=7.3 MLV=7.4
	LmV	23 39.9	ANUSSR gives: 12.2°S 168.5°E
	LmH	40	H = 22 15 20 h = 97 km
			D = 137.2°

A Study of Relative Frequency Distribution of Travel-Time Residuals from P-Wave Observations at the Station MOXA

by

Peter Bormann

The programme controlled computers of the seismological World-Data-Centres in Washington (USCGS), Moscow (ANUSSR), Strasbourg (BCIS), and Edinburgh (ISC) receive the onset times of P waves as input information for the calculation of the epicentres and hypocentres of earthquakes from many stations. If the onset time t_i of a wave at the i^{th} station was exactly determined and if the Jeffreys-Bullen travel-time function $t(D, h)$, used in the calculations, exactly corresponded to the actual travel times of this wave, then the problem would only have one single solution satisfying the set of equations

$$\delta t_i \equiv t_i - \{t_0 + t(D_i, h)\} = 0 \qquad (1)$$

(δt_i — difference between the observed onset time and the one calculated according to the travel time for the i^{th} station, t_0 — origin time, D_i — epicentral distance of the i^{th} station, h — focal depth).

As actually t_i as well as $t(D, h)$ are afflicted with errors, a solution must be found in a trial and error process for a sufficiently great number n of stations for which the mean quadratic error of the focal time t_0

$$\Psi_0 = \left\{\frac{1}{n-1}\sum_{i=1}^{n}\delta t_i^2\right\}^{1/2} \qquad (2)$$

becomes a minimum.

Therefore, an investigation of the travel-time residuals δt_P of the P-wave observations at different stations is of interest in many respects. It can be expected that the character of the δt_P frequency distribution is influenced by the quality of the seismological survey of a station, by possible systematic travel-time errors due to abnormal conditions of the crust and the upper mantle within the area of a station, and possibly also by azimuthal travel-time differences along different wave paths. If we succeeded in taking error sources e.g. weighting factors or travel-time corrections into account for the data of the single stations, then the inner accuracy of the input data used for the epicentre determination at Data-Centres could be increased. In [1] it was critically investigated to what extent cause and amount of systematic real travel-time anomalies can be found out from the study of travel-time residuals based on calculated earthquake data. The relative frequency distributions of the travel-time residuals of P-wave onsets at the station MOXA calculated according to earthquake data of the World-Data-Centre B (ANUSSR, Moscow) were discussed at length in the paper mentioned above.

In this paper the frequency distributions of all δt_P values given in the "Epicenter Data Reports" of USCGS from 1st Jan. 1966 to 30th June 1967 for the station MOXA have been investigated, i.e. also including the residuals of a great number of very weak and indistinct P onsets. We proceeded in the same way in [1], where in most cases the same earthquakes of the same period were investigated. The frequency distributions determined in [1] and in this paper for the chiefly identical P-wave interpretations, however, on the base of epicentre calculations of different data centres, do not only represent the mean quality of the seismological survey of the station MOXA, but also demonstrate, when being compared, the extraordinarily great influence of the results of calculations of the data centres on the frequency distributions of the travel-time errors for one single station.

Fig. 3 shows the relative frequency distribution of the travel-time residuals δt_P for P-wave observations from all azimuths of quakes from epicentral distances $25° \leqq D \leqq 105°$. The travel-time residuals were comprised in different value intervals for the calculation of the relative frequency distributions. N is the number of the δt_P values in an interval and ΣN is the total number in all intervals. The calibrated quantity $N/\Sigma N$ was put down for each δt_P interval above the mean value of it. The relative frequency distributions were represented for the interval breadths 0.5 s (open circles) and 1 s (black dots). Earthquakes of the same distance and azimuth areas with application of earthquake data reports of ANUSSR resulted in a δt_P distribution of the following characteristic values:

$$\left(\frac{N}{\Sigma N}\right)_{max} = 0.354 \quad \text{for} \quad \delta t_P \approx +0.25 \text{ s}, \qquad \frac{1}{2}\left(\frac{N}{\Sigma N}\right)_{max} \quad \text{for} \quad \delta t_P = -0.9 \text{ s}$$

and + 1.5 s. The distinctly smaller maximum and the greater asymmetry and half-value breadth of this frequency distribution compared to the one shown in

fig. 3 are an evidence for the systematic differences in the calculation results of USCGS and of ANUSSR. The cause for them might be the different numbers and distribution of the stations the data of which are used for the calculation of the coordinates of the earthquake in both the centres. From that necessarily result different deviations of the calculated from the real epicentres. The quantity and tendency of possible errors depend both on the configuration and position of the station network used with regard to the earthquake focus [2] and on the quantity and character of azimuthal travel-time differences in comparison with the t(D, h) function used at the calculation [3]. The calculated epicentres can deviate from the real earthquake foci up to some 10 km [2, 3, 4]. As they are always shifted towards higher P-wave velocities in the crust and upper mantle, and that the strongest if the earthquake focus is not surrounded from all sides [3]. Therefore, it is impossible to interpret the slight shifts of the frequency maxima in the fig. 4, 5, 9 and 10 to negative and positive δt_P respectively, as real travel-time anomalies compared with the J.-B. tables along the different wave paths to the station MOXA.

For example, the δt_P frequency distribution for Aleutian quakes in fig. 9 shows a broad maximum for δt_P values between 0 and + 1 s. No travel-time residual was smaller than − 0.8 s for the 53 investigated P onset times. The subterranean nuclear explosion LONGSHOT however, which was fired on the Rat Islands (Aleutian Islands) on October 29th, 1965, and which was clearly recorded at the station MOXA, yielded $\delta t_P = -4.6$ s (!) — the epicentre position, epicentre distance, and origin time of the explosion were exactly known. (The possible reading error for the onset time of P in the given case is smaller than ± 0.2 s). For this explosion, the epicentre calculated by USCGS was located after SYKES [5] about 25 km north of the true place, the standard error of the calculation being only 4 km. A similar result was also obtained by solely using stations in epicentral distances of $D > 20°$.

After FEDOTOV and SLAVINA [7], the epicentres of the Aleutian quakes calculated by the World Data Centre B (Moscow) and published in the "Operative Seismological Bulletin" of the Academy of Sciences of the USSR are shifted generally towards the north-west compared to epicentres of this area by the USCGS. Supposing greatness and tendency of the calculation error for LONGSHOT to be approximately representative, then, as a rule, the epicentres calculated by the World Data Centre B diverge more from the true epicentres than the calculation results of USCGS. This will be intelligible, if one considers that the stations co-operating with the Data-Centre B, in respect of the Aleutians, are only in a small azimuth range. The tendency of shifting observed seems to correspond with the higher P-wave velocity in the upper mantle, which was noticed in the evaluations of the LONGSHOT experiment along the islandgroup towards the west.

Data about the true travel-time anomalies containing all influences of the possibly diverging velocity profiles of the focus and station areas as well as of the wave paths from the model taken as a basis can be found out

a) directly by a study of the wave onsets of strong (nuclear) explosions (e.g. CARDER, D. S. et al. [6]) or by quakes with wellknown focus coordinates and origin times, or

b) indirectly by an investigation of the δt differences between different pairs of stations suitably chosen in their position in respect of the epicentre of the quake [7].

Systematic influences of an abnormal station underground on the traveltime, however, will emerge most clearly after [1] and the above-mentioned by using calculated residuals in a summary δt_P distribution as shown in fig. 3. This proves right the more, because by calculating the focus data after formulae (1) and (2) by using a transversal isotropic velocity model, the real traveltime anomalies in the focus area and along the wave paths will be mostly smoothed out completely (compare fig. 9 and the explanations given). The approximately normal error distribution in fig. 3 with a distinct maximum at $\delta t_P = 0$ s does not suggest an abnormal influence. This cannot be expected for the station MOXA foundation: slate of the lower carboniferous, variscian basement, depth of the Moho about 30 km.

Fig. 4 shows a considerably asymmetric frequency distribution with a distinctly greater part of the residuals $\delta t_P > \delta t_{P\,max} = -1$ s. In [1] this was attributed to the character of the P-wave signals in the range of the regional transitory zone and the 20° discontinuity. Though less than 30—40 δt_P values are taken as basis for the frequency distributions of each figure from 10 to 13 and they, therefore, cannot be passed for sufficiently reliable, they are presented here for giving a first impression. The applicability of such investigations for the improvement of epicentre calculating of the Data Centres requires similar analyses at the co-operating stations.

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Figures 3—13. Relative frequency distributions for the traveltime residuals δt_P of the P-wave analyses of the station MOXA compared to the JEFFREYS-BULLEN travel-times. The δt_P data for the station MOXA are taken from the "Earthquake Data Reports" of USCGS for the period from 1. 1. 66 to 30. 6. 67

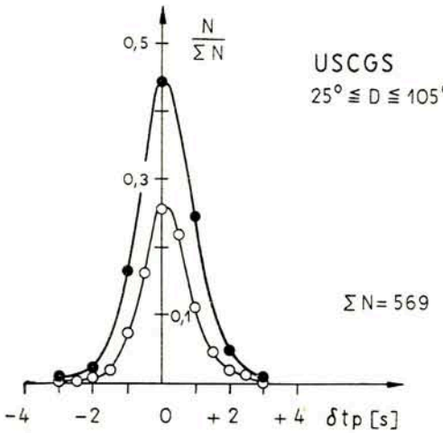

Fig. 3. δt_P distribution of earthquakes from all azimuths with epicentral distances $25° \leqq D \leqq 105°$

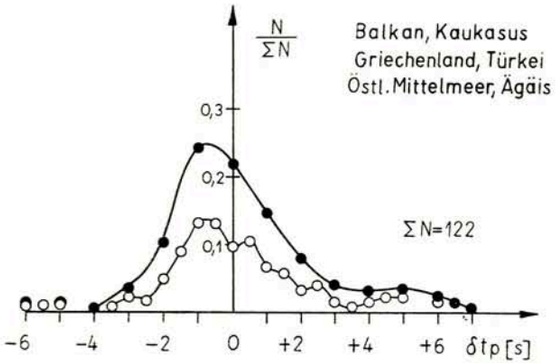

Fig. 4. δt_P distribution of earthquakes with epicentral distances $8° < D < 26°$ in the azimuth range $95° < Az < 155°$

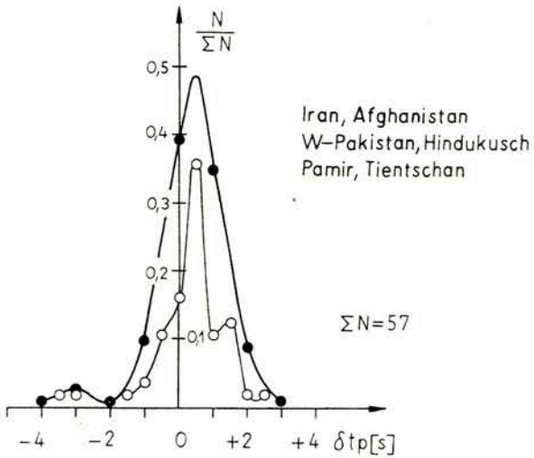

Fig. 5. δt_P distribution of earthquakes with epicentral distances $30° < D < 50°$ in the azimuth range $70° < Az < 110°$

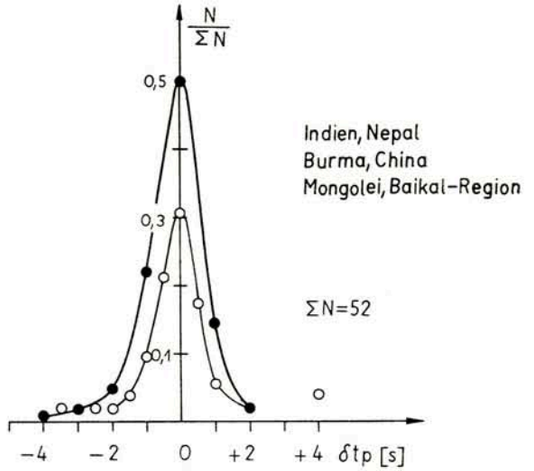

Fig. 6. δt_P distribution of earthquakes with epicentral distances $44° < D < 73.5°$ in the azimuth range $40° < Az < 85°$

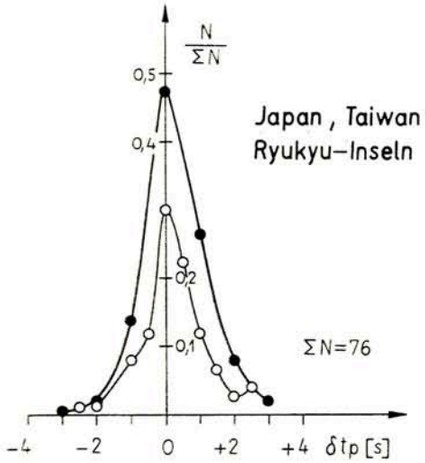

Fig. 7. δt_P distribution of earthquakes with epicentral distances $75° < D < 89°$ in the azimuth range $32° < Az < 62°$

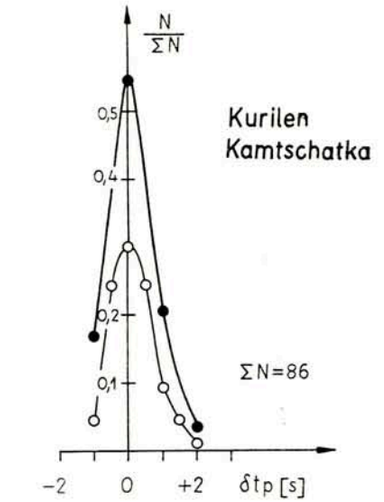

Fig. 8. δt_P distribution of earthquakes with epicentral distances $70.5° < D < 79°$ in the azimuth range $15° < Az < 31°$

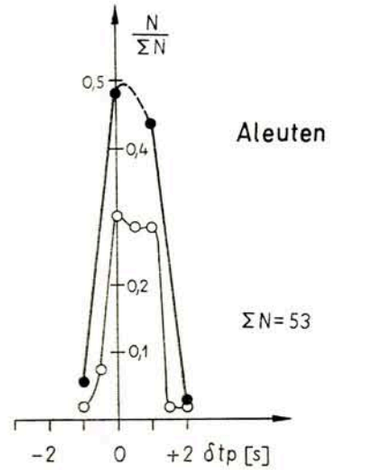

Fig. 9. δt_P distribution of earthquakes with epicentral distances $75° < D < 78.5°$ in the azimuth range $355° < Az < 13°$

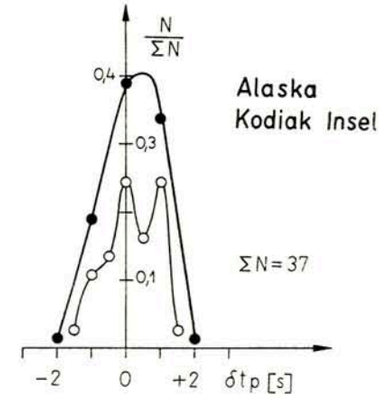

Fig. 10. δt_P distribution of earthquakes with epicentral distances $62° < D < 73°$ in the azimuth range $345° < Az < 360°$

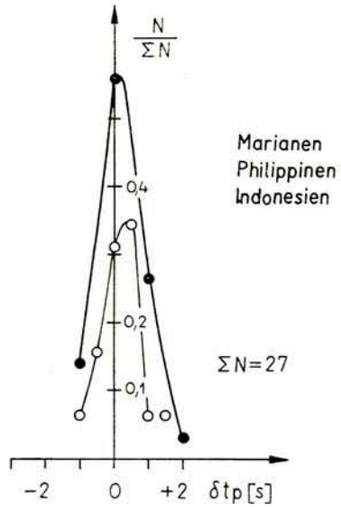

Fig. 11. δt_P distribution of earthquakes with epicentral distances $82.5° < D < 105°$ in the azimuth range $40° < Az < 92°$

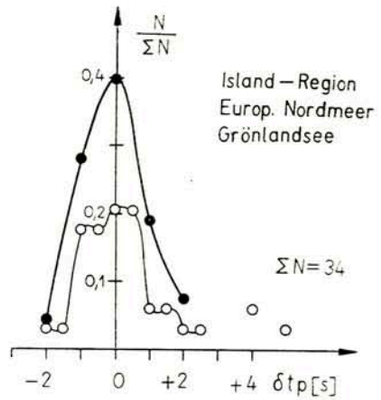

Fig. 12. δt_P distribution of earthquakes with epicentral distances $20.5° < D < 29°$ in the azimuth range $320° < Az < 360°$

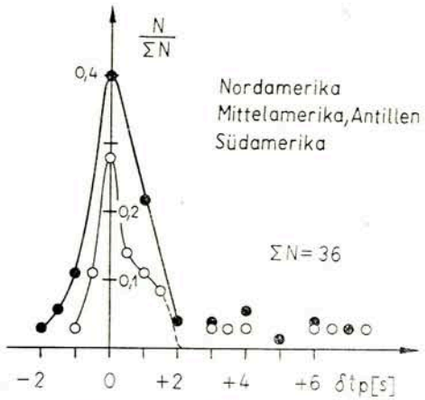

Fig. 13. δt_P distribution of earthquakes with epicentral distances $66.5° < D < 102°$ in the azimuth range $245° < Az < 320°$