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**KONINKLIJK NEDERLANDS
METEOROLOGISCH INSTITUUT**

SEISMIC RECORDS
AT DE BILT

VOLUME 55
1967

DE BILT-1972

PRIJS F 3.—



International
Seismological
Centre

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K O N I N K L I J K N E D E R L A N D S
M E T E O R O L O G I S C H I N S T I T U U T

Seismic Records
at De Bilt

Volume 55
1967

De Bilt, 1972



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P R E F A C E

This seismic Yearbook was composed under the supervision of Dr. J. Veldkamp, director of the Geophysical Section. The records have been reduced by Mr. G. Houtgast, Scientific head assistant.

The Director in Chief of
the Royal Netherlands Meteorological Institute,

Dr. M.W.F. Schregardus.

De Bilt, april 1972

I N T R O D U C T I O N

SEISMOLOGICAL STATION DE BILT

The geographic coordinates of the seismological station are $52^{\circ}06'06.0''$ N and $5^{\circ}10'36.0''$ E. The instruments are placed at a height of 3 m above mean sea-level on a subsoil consisting of sand (pleistocene).

The instruments are: two sets of seismographs (two horizontal and one vertical) with galvanometric recording according to GALITZIN and PRESS-EWING.

Below are given: the period of the galvanometer T_1 , the reduced pendulum length l , the distance A between the mirror of the galvanometer and the recording paper, and the rough values for the natural period of the undamped pendulum T , of the damping constant and of the multiplying factor k for the year 1967.

GALITZIN seismographs	NS comp.	EW comp.	Z comp.
Period of galvanometer T_g	24.43 sec	24.96 sec	12.0 sec
Reduced length of pendulum l	123 mm	123 mm	406 mm
Distance A	1380 mm	1380 mm	1380 mm
Period of pendulum T_s	25 sec	25 sec	12 sec
Damping constant	0.0	0.0	0.0
Multiplying factor k	11.0	11.0	175

PRESS-EWING seismographs NS, EW, Z comp.

Period of galvanometer T_g	90 sec
Reduced length of pendulum l	360 mm
Distance A	1000 mm
Period of pendulum T_s	30 sec
Damping constant galvanometer	0.025
Damping constant pendulum	0.470
Multiplying factor k	147

SEISMOLOGICAL STATION HEERLEN (HEE)

The geographic coordinates of the seismological station are: $50^{\circ}53'09.7''$ N and $5^{\circ}58'57.4''$ E.

The instrument, a horizontal seismograph, EW-component $M = 450$ kg, is placed at a height of 100 m above mean sea-level on a subsoil consisting of loess.

The mean values of the constants for the year 1967 are:

T	E	V	V max.	T max.
2	3	400	600	2

SEISMOLOGICAL STATION WITTEVEEN (WIT)

The geographic coordinates of the seismological station are: $52^{\circ}48'48.0''$ N and $6^{\circ}40'06.0''$ E.

The instruments, a GRENET vertical seismograph with galvanometric record, and one vertical and one horizontal WILLMORE seismograph, are placed at a height of 17 m above mean sea-level on a subsoil consisting of pleistocene sand.

The period of the GRENET seismograph is 2.3 sec, the period of the galvanometer is 0.8 sec. The maximum amplification is 6500 for a period of about 1 sec.

The constants for the WILLMORE seismographs are: T seismograph 2 sec., T galvanometer 0,25 sec.,

EXPLANATION OF THE TABLES

The data given in this Yearbook have mostly been obtained from the GALITZIN records. The velocity of the recording paper is 30 mm per minute, allowing a good time-accuracy.

The data from the seismographs at Heerlen and Witteveen are also mentioned. The time is Greenwich mean time.

In the column "first motion" + means an upward movement of the soil (compression) - means a downward movement (dilatation). Uncertain data have been given in parentheses. The following symbols were used for the phases.

- P = normal first phase, or first longitudinal tremor.
- pP = P-wave once reflected at the earth's surface near the epicentre.
- PP = P-wave reflected halfway between epicentre and station.
- PPP = P-wave two times reflected at the earth's surface.
- S = Second phase, arrival of the transversal tremor.
- SS = S-wave reflected at the earth's surface near the epicentre.
- PS = wave changed from longitudinal to transversal oscillation through reflection at the earth's surface.
- PPS = wave twice reflected, having been transversal on one branch of the path.
- SS = S-wave reflected halfway between epicentre and station.
- SSS = S-wave two times reflected at the earth's surface.
- PcP = P-wave reflected at the core boundary.
- ScS = S-wave reflected at the core boundary.
- P' = PKP = wave having penetrated the core.
- S' = SKS = transversal wave, having been longitudinal within the core.
- PKS = alternating wave having penetrated the core.
- pP' = P'-wave reflected near the epicentre.
- sS' = S'-wave reflected near the epicentre.
- SKKS = alternating wave which has been reflected within the core.
- L = long wave or surface waves.
- M = maximum of the surface waves.
- L' = surface waves traveling around the major arc.
- M' = maximum of these waves.
- i = sudden beginning of the phase.
- e = gradual beginning of the phase.
- F = end of discernable movement.
- H = time of the shock at point of origin.
- h = depth of the origin.

The indices H, N, E and Z refer to horizontal, north-south, east-west and vertical components of the movement.

The distance of the epicentre and the depth of origin have been calculated by means of curves constructed with the aid of the time tables of Jeffreys and Bullen (1940).

The data given in the column "amplitude" are the maximum amplitudes measured from the medium line (GALITZIN records). The amplitudes have been calculated by means of the formula:

$$V = \frac{A k T}{\pi l b} \frac{1}{\left\{ 1 + \left(\frac{T}{b} \right)^2 \right\}^2}$$

In this formula A is the distance between galvanometer mirror and recording paper, k is the multiplying factor, T_b the period of the wave, l the reduced length of the pendulum, T the free period of the undamped seismograph, and V the magnification. The period of the galvanometer is assumed to be equal to the free period of the undamped seismograph.

For the horizontal components of the GALITZIN records the following mean values were used: k = 11,0 and T = 24,5 sec, and for the vertical component k = 175 and T = 12,0 sec.

Whenever it was possible the amplitudes and periods of the first P- and S-waves have been given. As the movement of these waves is irregular in general, the accuracy of these data is small. The amplitudes of the maxima of L-waves have been calculated in case of very strong earthquakes.

The magnitudes have been calculated by means of the formula:

$$M = \log \frac{A}{T} + 1.66 \log \Delta + 3.3$$

A: maximum amplitude of the L-wave in microns (measured from the medium line)
 T: the period of the concerning L-wave in seconds

Δ : distance in degrees.

Seismic Records at De Bilt

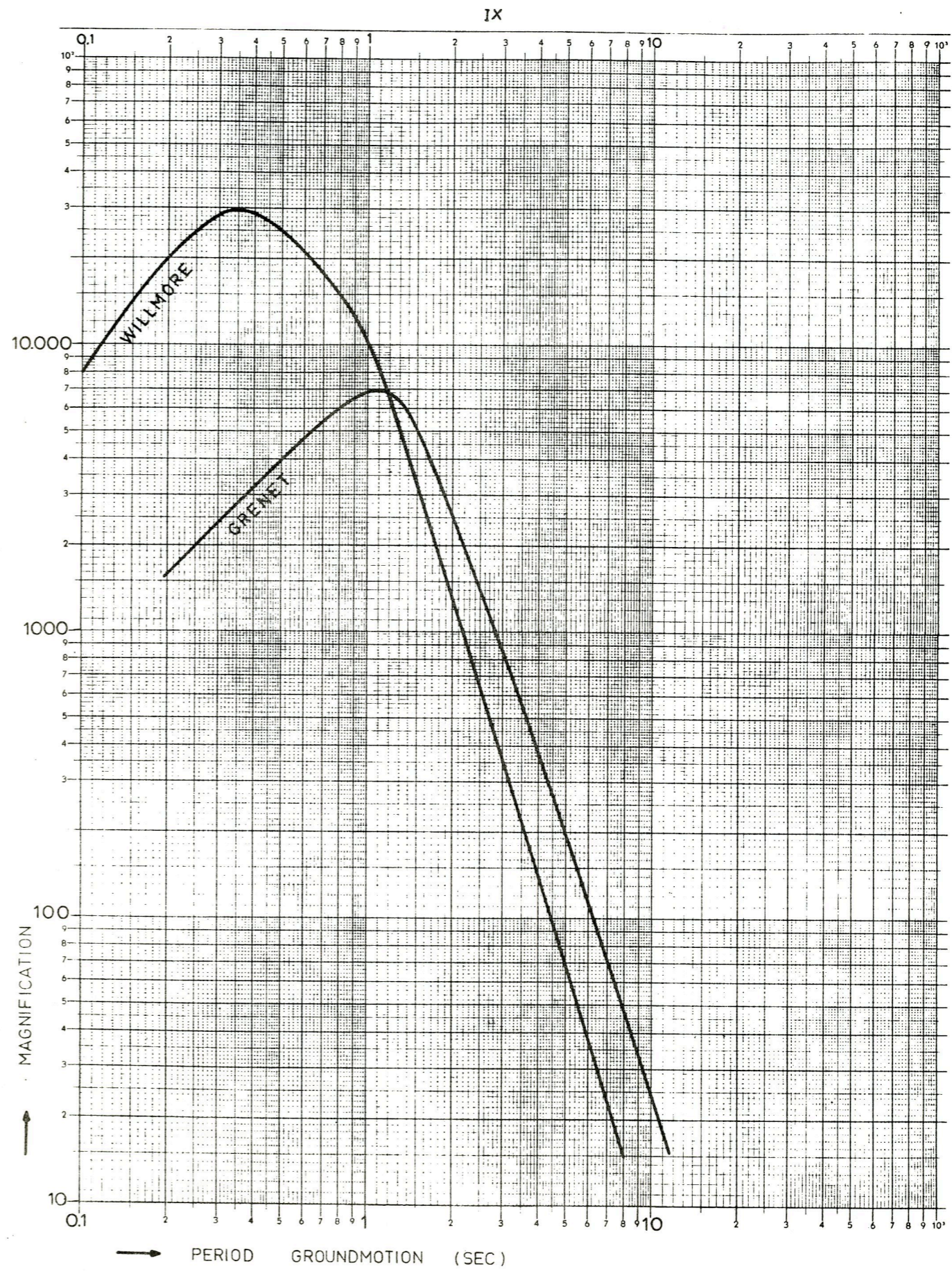
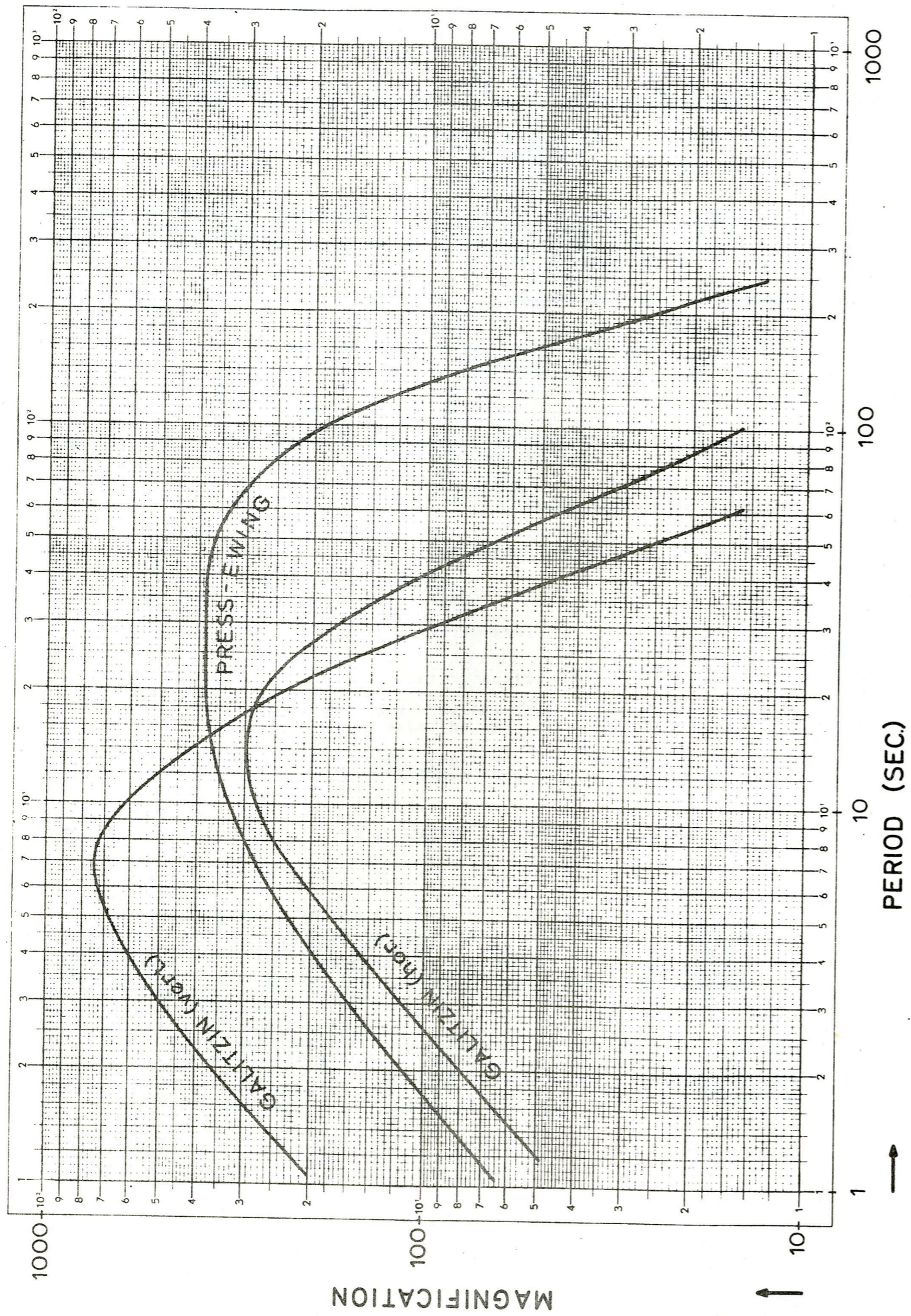
THE MICROSEISMIC ACTIVITY

The table on page 1 shows the character of the microseismic activity (see also 1915 p. 101 and 1916 p. 101). The numbers 0, 1, 2 and 3 mean:

- 0 = very weak and weak
- 1 = moderate
- 2 = strong
- 3 = very strong

For measuring the microseismic activity the records of the horizontal GALITZIN seismograph were used. The table below gives the amplitudes of the oscillations (measured from the medium line) and the corresponding amplitudes of the movement of the surface.

Character	Ampl. record	Ampl. surface
0	0 - 1/2 mm	0 - 1 1/2 u
1	1/2 - 2 "	1 1/2 - 5 "
2	2 - 4 "	5 - 10 "
3	4 "	10 "



Seismic Records at De Bilt

Character of the microseismic movement

Date 1967	Jan.	Febr.	March	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	2	1	3	1 2	1	1 0	1	1 0	1	1 2	1 3	2 1
2	2 3	1 2	3	2	1	0	1	0	1	2 3	2 1	2
3	3	2	3	2	1 3	0 1	1	0 1	1 2	2 2	1 2	3
4	3 2	2	3	2	3 2	1	1 0	1	2 3	2	1 3	2
5	2 1	2 3	3	2 3	2 1	1	0	1	3 2	2 1	1 2	3
6	1	3	3	3 1	1	1	0	1	2 1	1	1 2 1	3
7	1	3 2	3 2	1	1	1	0	1	1 0	1 2 1	1 3	2
8	1	2 1	2 3	1 0	1 0	1	0 1	1 0	0	1 2 1	1 2 1	2 1
9	1	1 2	3	0 1	0	1 0	1 0 1	0	0	1	1	1 2
10	1	2 3	3	1	0	0 1	1 0 1	0	0	1	1	2 1
11	1	3	3	1 0	0	1 0	1 0 1	0 1	0	1 2 1	2 1	1
12	1	3 2	3	0	0	0	1 0	1	0	2	2	1
13	1 2 1	2 1	3	0 1 0	0	0	0 1	1	0 1	2 1	2 3	1
14	1	1 3	3	0 1	0	0 1	1	1 2 1	1	1 3	3	1
15	1 2	3	3	1 0	1	1	1	1 2 1	1 0	3 2	3 2	1 2
16	2	3	3	1	1 0	1	1	1	0 1	2 3	2 1	2 3
17	2	3	3	1 2	0 1	1	1	1	1	3	1 3	2
18	2 3	3	3	2 1	1	1	1 0	1	1	3	1 2	2 1
19	3	3	3	1 3	2	1	0	1 0	1 2 1	3	2	1
20	3	3	3 2	3 2	2 3 2	1	0	0	1 3	2	2	1
21	3	3	2	2 1	2 1 2	1	0	0	1 2	1	2 1	2
22	3	3	2	1 0	2	1	0	0	1	1	2 1	2 3
23	3	3	2	0 1	2 1	1	0	0	1 1	2	1 3	2
24	3	3	2	1	1	1	0 1	0	1 2	1	1	2
25	3	3	2	1 2 1	1	1	1 0	0	1 1	3 1	2	2
26	3	3 2	2 3	1 2 1	1	1 0	0 1	0	1 3	2 2	1 2	1
27	3	2 3	3 2	1	1 0	0	1	0 1	1 2	1	2 1	1
28	3	3	2	1	0 1	0 1	1	1 0	1 2	2 3	1	2
29	3		2 1	1 0	1 0	1	1	0	1 2	1	3	2
30	3		1	0 1	0	1	1	0 1	1 1	3 2	2	2
31	3 1		1		0 1		1	1		1		2

Seismic Records at De Bilt

Date 1967	Phase	G.M. Time			First motion	Period s	Amplitude			Magnitude De Bilt	Remarks Data without indication are from USCGS; d.b.m. means disturbed by microseisms
		h	m	s			Z	NS	EW		
Jan. 1	eL F WIT ePKP	08 09 07	13 10 25	19							15.3S 173.6W, H: 07 05 48.6, h 33 km, M 6.0. Tonga Islands.
Jan. 3	eL F	06 07	33 55								11.2S 165.5E, H: 05 52 51.8, h 33 km, M 5.3. Santa Cruz Islands.
Jan. 4	eL F	04 04	30 40								20.3N 120.0E, H: 03 41 36.4, h 33 km, M 5.6. Philippine Islands region.
Jan. 4	eS eL F	06 06 06	06 09 14	40							38.6N 22.1E, H: 05 58 54.1, h 7 km, M 5.2. Greece.
Jan. 5	iP ePP eS eSS M F WIT eP HEE eL	00 00 00 00 00 04.5 00 00	24 28 32 36 48 5 24 40	34.9 00 40 39 29.0	+	4	13				48.1N 102.8E, H: 00 14 40.4 h 33 km M 6.4. Mongolia.
Jan. 5	eL F	10 10	34 42								39.4N 72.9E, H: 10 07 58.3 h 11 km M 5.3. Kirghiz, SSR.
Jan. 6	eP eS eL F WIT iP	00 00 00 01 00	16 26 43 30 16	10 20 02.5		30		8	6.1		41.8N 143.3E H: 00 04 02.7, h 35 km, M 5.5. Hokkaido, Japan region.
Jan. 6	eL	00	30			14		9.7	5.9		48.1N 102.9E, H: 23 58 21.4, h 33 km, M 5.4. Mongolia.
Jan. 7	e F	13 13	36 43								48.2N 102.8E, H: 13 03 44.9 h 33 km, M 5.0. Mongolia.
Jan. 7	e F	18 18	07 20								11.9S 166.1E, H: 16 41 03.0, h 33 km, M 5.1. Santa Cruz Islands.
Jan. 8	eP ePS eL F WIT eP	05 05 05 06.5 05	14 23.9 45 5 14	10 03							56.0N 162.9E, H: 05 02 52.1, h 33 km, M 5.1. Near east coast of Kamchatka.
Jan. 9	WIT eP	02	03	17.5							27.7N 54.5E, H: 01 55 13.6 h 17 km, M 5.3. Iran.
Jan. 9	WIT eP	18	20	45							5.1N 77.6W, H: 18 08 23.9, h 40 km, M 5.2. Near west coast of Colombia.
Jan. 11	eL F WIT iP	11 11 11	36 55 27	23.5							34.1N 45.7E H: 11 20 45.7, h 34 km, M 5.6. Iran-Iraq border region.
Jan. 13	eL F	14 15	57 20								10.6S 161.4E, H: 13 48 11.7, h 32 km, M 5.7, Solomon Islands.
Jan. 14	eL F	14 15	58 50								43.4S 39.1E, H: 14 06 48.3 h 33 km, M 5.3. Prince Edward Island region.

Date 1967	Phase	G.M. Time			First motion	Period s	Amplitude			Magnitude De Bilt	Remarks Data without indication are from USCGS; d.b.m. means disturbed by microseisms
		h	m	s			Z	NS	EW		
Jan. 15	eL F	20 20	33 40								55.7N 110.7E H: 19 58 45.6, h 32 km M 5.1. Lake Baikal region.
Jan. 16	ePKP ePP F WIT ePKP	14 14 16 14	46.1 48.6 30 45								11.2S 165.7E, H: 14 26 22.9, h 6 km, M 5.3. Santa Cruz Islands.
Jan. 17	WIT iP epP ePP	01 01 01	20 22 24	39.3 50 51	-						27.4S 63.3W, H: 01 07 54.3 h 590 km, M 5.5. Argentina.
Jan. 17	iP iPP iS eH eL F WIT iP	12 12 12 12 12 13 12	11 15 22 23 35 50 11	50.6 00 07 05	+	6	6				38.3N 142.1E, H: 11 59 31.5, h 44 km, M 5.9. Near east coast of Honshu, Japan.
Jan. 18	iP iS eSS eL F WIT iP	05 05 05 06 07 05	44 52 56 04 25 44	39.0 50 40 30.5	(-)	8	6				56.6N 120.8E, H: 05 34 32.6, h 11 km, M 6.1. Eastern Russia.
Jan. 18	eL F WIT iP	08 09 08	55 40 30	03.2	-						d.b.m. 52.5N 168.3W H: 08 18 22.0 h 37 km, M 5.7. Fox Islands, Aleutian Islands.
Jan. 19	eSS eH eL F WIT ePKP	13 13 13 15.0 12	21 27 42 0 59	30 47							d.b.m. 14.8S 178.8W, H: 12 40 12.6, h 18 km, M 6.6. Fiji Islands region.
Jan. 20	eP ePP ePPP eL F WIT iP	02 02 02 02 03.5 02	07 09 10 26 5 07	15 27 43 240 08.0	-						d.b.m. 48.0N 102.9E, H: 01 57 23.1, h 33 km, M 6.1. Mongolia.
Jan. 21	WIT ePKP	03	13	31							49.8S 114.8W H: 02 54 00.8, h 33 km, M 5.3. Easter Island Cordillera.
Jan. 24	WIT iP	03	17	35.8	-						41.4N 141.9E, H: 03 05 39.0, h 69 km, M 5.7. Hokkaido, Japan.
Jan. 24	eS eL F WIT iP	09 09 11 09	47.1 54 11 39	19.3	-						d.b.m. 0.6S 21.0W, H: 09 29 12.3, h 33 km, M 4.9. Central Mid-Atlantic Ridge.
Jan. 24	HEE i	19	40	29							
Jan. 25	WIT iP	01	58	26.6	+						36.6N 71.6E, H: 01 50 19.4. h 281 km, M 5.7. Afghanistan- USSR border region.
Jan. 28	iP ePP eS eSS eL F WIT eP	14 14 14 14 14 16.0 14	04 07 14 19.4 25 0 04	52.5 34 26 26 38	+	5	11				d.b.m. 52.4N 169.5W, H: 13 52 58.3, h 47 km. Fox Islands, Aleutian Islands.

Date 1967	Phase	G.M. Time			First motion	Period S	Amplitude			Magnitude De Bilt	Remarks Data without indication are from USCGS; d.b.m. means disturbed by microseisms
		h	m	s			Z	NS	EW		
Jan. 28	WIT iP	16	43	04.0	-						52.3N 169.3W, H: 16 31 21.1, h 32 km, M 5.6. Fox Islands.
Jan. 28	eL F WIT iP	18 18.9 17	30 53	42.1	-						52.4N 169.4W, H: 17 42 01.5 h 50 km, M 5.6. Fox Islands.
Jan. 29	e F WIT i HEE e	00 00 00 00	16 20 14 14	18 09.5 48							47.9N 14.3E, H: 00 12 13.6, h 25 km, M 4.6. Austria.
Jan. 29	e F WIT eP i	08 08 08 08	11 40 04 04	38 51.4 56.1							26.5N 55.2E, H: 07 56 39.2, h 38 km, M 5.2. Southern Iran.
Jan. 30	e F	01 01	34 45								41.0N 44.2E, H: 01 20 31.7, h 33 km, M 5.0. Caucasus.
Feb. 2	ePS eL F	06 07 08	54.7 20 20			21		7.3	6.3		d.b.m. 57.9S 25.7W, H: 06 25 49.8, h 81 km, M 5.8. South Sandwich Islands.
Feb. 2	WIT iP	16	36	18.2	+						41.6N 139.7E H: 16 24 39.1, h 176 km, M 5.4. Hokkaido, Japan.
Feb. 7	WIT iP	15	04	22.0							56.7N 157.2W, H: 14 53 13.9, h 67 km, M 5.6. Alaska Peninsula.
Feb. 8	WIT iPKP	00	07	55.5							17.8S 178.5W, H: 23 49 21.8, h 571 km, M 3.9. Fiji Islands region.
Feb. 9	iP eS eL F WIT iP	14 14 14 14 14	12 15 16.5 40 12	10.0 20 13.5		3 12	4 26			5.5	40.0N 20.3E, H: 14 08 18.7, h 3 km, M 5.6. Greece. Albania border region.
Feb. 9	iP iS eSS eSSS eL F WIT iP HEE iP	15 15 15 15 16 19 15 15	37 47 52 56 00 19 37 37	00.8 10 25 08 06.5 08		6 22	15		260	7.5	No records from 15.39 - 15.43. 2.9N 74.9W, H: 15 24 47.2, h 58 km, M 6.3. Colombia.
Feb. 13	iP iS eL F WIT iP HEE eP i	23 23 23 01.5 23 23 23	19 23 26 53 19 19 19	34.6 53 41.5 49 51		5 12	7		500	6.8	52.7N 34.1W, H: 23 14 19.6, h 10 km, M 6.3. North Atlantic Ocean.
Feb. 14	eP ePP eS eSS eSSS eL F WIT eP	01 01 01 02 02 02 02 04.5 01	48 51 58 04.0 07.5 15 15 48	24 27 40 09							13.7N 96.5E, H: 01 36 04.7, h 27 km, Andaman Islands region.
Feb. 14	WIT iPKP	18	32	56.0	+						19.4S 172.8W, H: 18 13 14.4, h 33 km, M 4.9, Tonga Islands region.

Date 1967	Phase	G.M. Time			First motion	Period S	Amplitude			Magnitude De Bilt	Remarks Data without indication are from USCGS; d.b.m. means disturbed by microseisms
		h	m	s			Z	NS	EW		
Feb. 15	WIT iP	16	23	10.2	-						9.0S 71.3W, H: 16 11 11.8, h 597 km, M 6.2. Peru-Brazil border.
Feb. 17	eP eL F WIT iP	10 11 12.5 10	30 30 30	44 40.8							23.7S 175.2W, H: 10 10 51.5 h 19 km, M 6.4. Tonga Islands region.
Feb. 18	WIT ePKP	02	58	21							5.9S 153.2E, H: 02 39 19.4, h 41 km, M 5.4. New Ireland region.
Feb. 19	WIT ePP	22	33	14							9.2S 113.1E, H: 22 14 35.3, h 80 km, M 6.2. South of Java.
Feb. 21	HEE e i	13 13	21 21	50 55							19.5S 169.0E, H: 18 26 46.7, h 87 km, M 5.6. New Hebrides.
Feb. 22	WIT iPKP	18	46	12.0	-						d.b.m. 26.1N 128.5E, H: 20 38 56.3, h 30 km, M 5.4. Ryukyu Islands.
Feb. 23	eL F	21 21	35 40								49.8N 78.1E, H: 03 57 57.7, h 0 km, M 6.0. Semipalatinsk, Kazakstan SSR.
Feb. 26	WIT iP	04	06	01.6							32.7N 141.7E H: 09 37 18.0, h 23 km, M 5.5. Off east coast of Honshu, Japan.
Feb. 28	eL F	10 10	25 40								5.2S 129.7E, H: 11 54 32.0, h 229 km, M 5.2. Banda Sea.
Feb. 28	WIT iPKP	12	12	08.9	+						0.3S 78.7W, H: 02 47 31.7, h 121 km, M 5.8. Ecuador.
Mar. 2	WIT iP epP	03 03	00 00	07.0 41	+						21.4N 121.8E, H: 05 09 24.2, h 134 km, M 5.5. Taiwan region.
Mar. 4	eL F	05 06	55 10								18.5S 175.4W H: 06 16 21.9, h 225 km, M 5.7. Tonga Islands.
Mar. 4	iP eS eL F WIT iP HEE i	18 18 18 19 18 no time	02 05 06.9 30 02 signals	24.6 59		6 15	100		455	6.7	39.2N 24.6E, H: 17 58 06.4, h 33 km, M 5.9. Aegean Sea.
Mar. 9	eL F	08 08	00 40								d.b.m. 10.6S 166.3E, H: 06 58 35.7, h 30 km, M 6.0. Santa Cruz Islands.
Mar. 9	WIT iPKP	21	44	52.0	+						21.5S 176.3W, H: 21 25 34.6 h 283 km, M 4.8. Fiji Islands region.
Mar. 14	e eL F	07 07 08,5	33 40			12			20	6.4	28.4N 94.3E, H: 06 58 04.6, h 24 km, M 5.9. India-China border region.

Date	Phase	G.M. Time			First motion	Period s	Amplitude			Magnitude De Bilt	Remarks Data without indication are from USCGS; d.b.m. means disturbed by microseisms
		h	m	s			Z	NS	EW		
Mar. 14	WIT iPKP	23	43	27.7	+						23.0S 178.7E, H: 23 24 47.8, h 650 km, M 4.9. South of Fiji Islands.
Mar. 15	HEE i	12	38	20							
Mar. 17	eSS eL F	12 04 12 20 12.8				20	12		6.5		d.b.m. 3.6S 150.9E, H: 11 24 45.7 h 33 km, New Ireland region.
Mar. 19	iP eS eL F WIT eP	04 13 04 23 04 36.0 07 04 13 32	40.0 34		+	4 20	8 64		7.0		d.b.m. 45.4N 151.3E, H: 04 01 36.7, h 33 km, Kurile Islands
Mar. 20	eL F WIT iP	14 10 15.0 13 43 28.3			+						d.b.m. 45.6N 151.4E, H 13 31 34.0, h 51 km, M 5.7. Kurile Islands.
Mar. 20	WIT eP	13 52 45									45.6N 151.5E, H: 13 40 52.8, h 53 km, M 5.3. Kurile Islands.
Mar. 20	WIT eP	14 04 04									45.6N 151.5E, H: 13 52 05.5, h 32 km, M 5.4. Kurile Islands.
Mar. 20	WIT iPKP	19 27 06.8			+						22.1S 170.6E, H: 19 07 25.2, h 28 km, M 5.5. Loyalty Islands region.
Mar. 21	WIT iPKP	11 44 36.7			+						23.8S 175.2W, H: 11 24 44.6, h 33 km, M 5.4. Tonga Islands region.
Mar. 24	eSKS eS ePS ePPS eSS F	09 23 10 09 24 31 09 26 10 09 27 15 09 32 10 10 30									d.b.m. 6.0S 112.3E, H: 09 00 19.5, h 600 km, M 6.0. Java Sea.
Mar. 24	eSg F WIT eP _n HEE iP _g	17 41 30 17 45 17 40.0 17 39 57									d.b.m. 46.6N 7.7E, H: 17 38 18.2, h 33 km, M 4.2. Switzerland.
Mar. 25	WIT iP	06 06 02.7			+						BCIS: 50.0N 78.0E, H: 05 58 00. Probably underground explosion. Kazakstan, SSR.
Mar. 25	eL F WIT iP	23 25 24.2 22 59 44.0									d.b.m. 45.5N 151.4E, H: 22 47 58.4, h 41 km, M 5.5. Kurile Islands.
Mar. 27	eL F WIT eP	09 36 10 20 09 09 45				18	30		6.6		d.b.m. 38.4N 116.5E, H: 08 58 25.5, h 61 km, M 5.4. Northeastern China.
Mar. 27	eL F	11 17 11.7				22	13		6.6		16.5S 168.1E H: 10 01 42.0, h 11 km, M 5.5. New Hebrides Islands.
Mar. 28	WIT iP _n iP _g iS _g HEE iS _g	15 50 09.7 15 50 19.7 15 51 07.0 15 49 49									50.5N 4.1E, H: 15 49 23.4, h 18 km, M 3.9. Belgium.

Date 1967	Phase	G.M. Time			First motion	Period s	Amplitude			Magnitude De Bilt	Remarks Data without indication are from USCGS; d.b.m. means disturbed by microseisms
		h	m	s			Z	NS	EW		
Mar. 30	ePP eL F	02 27 16 02 55 03 40									d.b.m. 11.0S 115.5E, H: 02 08 02.4 h 33 km, M 6.0. South of Bali Island.
Apr. 1	iP ePP eS eL F WIT iP iPP	06 06 19.7 06 09 21 06 16 15 06 29 07 25 06 06 13.2 06 09 00.2			-	5 20	3 14				45.8N 151.8E, H: 05 54 19.1, h 40 km, M 5.7. Kurile Islands.
Apr. 1	eL F	11 30 11 50									4.6S 105.8W, H: 10 41 00.2, h 33 km, M 5.0. West of Galapagos Islands.
Apr. 1	eP eSS eL F WIT iP	12 35 34 12 51 13 06 14.0 12 35 29.0			+	20	11		6.2		45.7N 151.8E H: 12 23 35.5, h 40 km, M 5.9. Kurile Islands.
Apr. 2	eL F	18 54 19 05									d.b.m. 6.3S 148.8E, H: 17 40 38.8, h 37 km, M 5.0. New Britain region.
Apr. 3	ePKP e F WIT ePKP	13 18 38 14 23 15 10 13 18 23									20.2S 173.7W, H: 12 58 40.9, h 48 km, M 5.3. Tonga Islands.
Apr. 3	WIT eP	16 39.0									44.9N 10.6E, H: 16 36 19.8, h 33 km, M 4.7. Northern Italy.
Apr. 4	e F	01 40 02 05									d.b.m. 2.3S 138.7E, H: 00 37 26.1, h 11 km, M 5.6. West Irian.
Apr. 4	HEE e	18 05 28									39.1N 24.5E, H: 17 55 02.2, h 33 km, Aegean Sea.
Apr. 5	e F	03 15 04 05									d.b.m. 20.0N 147.1E, H: 02 34, 11.1, h 50 km, M 5.9. Mariane Islands region.
Apr. 7	e F	00 15 00 30									d.b.m. 34.3N 139.1E, H: 23 28 51.0, h 15 km, M 5.1. Near South coast of Honshu, Japan.
Apr. 7	e F	17 25 17 32									d.b.m. 37.4N 36.1E, H: 17 07 h 49 km, M 4.8. Turkey.
Apr. 7	eP eS eL F	18 39.2 18 44.0 18 48 19 00									d.b.m. 37.4N 36.2E, H: 18 33 31.3, h 39 km, M 5.0. Turkey.
Apr. 8	WIT iPKP	05 53 53.5			-						19.9S 178.6W H: 05 35 17.1, h 616 km, M 5.3. Fiji Islands region.
Apr. 9	eL F	01 00 01 35									4.0S 135.8E H: 00 05 07.0, h 15 km, M 5.1. West Irian.
Apr. 9	WIT ePKP	01 46 54									19.9S 178.0W, H: 01 27 57.6, h 415 km, M 4.5. Fiji Islands region.

Data 1967	Phase	G.M. Time			First motion	Period S	Amplitude			Magnitude De Bilt	Remarks Data without indication are from USCGS; d.b.m. means disturbed by microseisms
		h	m	s			Z	NS	EW		
Apr. 9	WIT ePKP	09	16	03							7.2S 155.8E, H: 08 56 59.7, h 40 km, M 5.1. Solomon Islands.
Apr. 10	WIT ePP	03	36	47							40.7N 125.7W, H: 03 21 36.8, h 33 km, M 4.4. Northern California region.
Apr. 10	eL F	06	04								7.4S 155.7E, H: 04 59 53.9, h 37 km, M 5.5. Solomon Islands.
Apr. 10	eL F WIT iPKP	16	05								7.3S 155.8E, H: 15 02 42.2, h 29 km, M 5.6. Solomon Islands.
Apr. 10	eL F	18	10								63.6S 167.3W, H: 16 47 49.7, h 33 km, M 5.4. Southern Pacific.
Apr. 11	eL F	06	08								7.4S 155.7E, H: 04 52 48.3, h 86 km, M 5.5. Solomon Islands.
Apr. 11	e F	13	12								18.8N 62.7W, H: 12 42 47.7, h 49 km, M 5.2. Leeward Islands.
Apr. 12	iP ePP iS eSS eL F WIT eP	05	04	20.0	4	2					5.3N 96.5E, H: 04 51 40.2, h 55 km, M 6.1. Northern Sumatra.
Apr. 13	WIT iP	20	06	19.3							27.3N 128.7E, H: 19 53 42.3, h 38 km, M 6.0. Ryukyu Islands.
Apr. 13	WIT iP	20	12	23.6							18.5N 100.2W, H: 19 59 51.9, h 86 km, M 5.6. Guerrero Mexico.
Apr. 16	WIT iPKP	07	37	47.5							19.4S 175.9E, H: 07 18 11.8, h 38 km, M 5.3. Fiji Islands region.
Apr. 16	WIT ePKP	07	49	30							BCIS: 21.6S 176.1W, H: 07 29 48. Tonga Islands.
Apr. 16	e F WIT eP	10	58								46.4N 153.3E, H: 10 10 06.7, h 24 km, M 5.3. Kurile Islands.
Apr. 17	e F	11	54								24.9N 122.2E, H: 11 07 12.9, h 31 km, M 5.0. Taiwan.
Apr. 21	eL F	09	11								d.b.m. 5.9N 125.9E, H: 08 52 54.8, h 93 km, M 4.6. Mindanao Philippine Islands.
Apr. 23	eL F	09	39								36.3N 2.4E, H: 09 30 22.0, h 33 km, M 4.8. Algeria.
Apr. 24	eL F WIT eP	09	19								37.4N 72.7E, H: 08 51 10.9, h 31 km, M 5.6. Tadzhik SSR.
Apr. 27	eL F	23	43								41.7N 82.3E, H: 23 15 19.7, h 33 km, M 5.0. Sinkiang Province, China.

Date 1967	Phase	G.M. Time			First motion	Period S	Amplitude			Magnitude De Bilt	Remarks Data without indication are from USCGS; d.b.m. means disturbed by microseisms
		h	m	s			Z	NS	EW		
Apr. 28	HEE i i i	03	17	49							Felt in Valkenburg.
Apr. 29	eL F	00	40								51.2N 130.4W, H: 00 04 41.8, h 6 km, M 5.1. Vancouver Island region.
Apr. 29	eL F WIT iP	04	30								51.4N 178.3W, H: 03 55 20.8, h 50 km, M 6.0. Andreanof Islands.
May 1	iP iS eL F WIT iP	07	13	00	+	7	5				39.7N 21.3E, H: 07 09 00.5, h 15 km, M 5.6. Greece. (9 killed)
May 1	e F	09	59.5								39.8N 21.5E, H: 09 47 42.9, h 27 km, M 4.7. Greece.
May 1	HEE i	20	09	43							Felt in Valkenburg.
May 4	WIT ePKP	10	38.7								19.7S 176.2W, H: 10 18 58.0, h 33 km, M 4.9. Fiji Islands region.
May 9	eL F	04	16								39.6N 27.0E, H: 04 05 11.2, h 29 km, M 4.5. Northwestern Turkey.
May 9	eP eS ePS eL F WIT eP	06	26	55							44.2N 149.0E, H: 06 14 57.1, h 40 km, M 5.3. Kurile Islands.
May 9	eP eL F	12	47	40							56.6N 152.6W, H: 12 36 36.8, h 33 km, M 5.0. Kodiak Island region.
May 11	eP eS eSS eL F WIT eP i	14	59	41							39.4N 73.8E, H: 14 50 58.8, h 21 km, M 5.6. Tadzhik-Sinkiang border region.
May 12	e F WIT e	17	58	06							44.7N 10.4E, H: 17 53 23.1, h 39 km, M 4.2. Northern Italy.
May 13	eP eS eL F WIT eP	05	30	08							56.5N 152.6W, H: 05 18 55.4, h 33 km, M 5.3. Kodiak Island region.
May 14	eP eS eL F WIT eP	04	20	08							37.7N 21.2E, H: 04 16 01.7, h 66 km, M 4.8. Southern Greece.

Date 1967	Phase	G.M. Time			First motion	Period S	Amplitude			Magnitude De Bolt	Remarks Data without indication are from USCGS; d.b.m. means disturbed by microseisms
		h	m	s			Z	NS	EW		
May 14	eP eS eL F	09	09	46		20		5	5.5		39.2N 73.9E, H: 09 00 54.8, h 33 km, M 5.0. Tadzhik- Sinkiang border region.
May 15	eS eL F WIT iP	02	51.0								32.5N 141.4E, H: 02 27 36.0, h 40 km, M 5.4. South of Honshu, Japan.
May 15	eP eS eL F WIT eP	08	18	08		14		7.4	5.2		34.6N 26.7E, H: 08 12 57.1, h 33 km, M 4.9. Southeast of Crete.
May 16	eP eS eL F	13	10	25							13.5N 90.6W, H: 12 58 09.5, h 95 km, M 4.8. Near coast of Guatemala.
May 16	eL F	16	21								63.7N 19.1W, H: 16 11 22.2, h 4 km, M 4.2. Iceland.
May 16	WIT iP	19	37	39.5							32.4N 141.3E H: 19 24 58.6, h 36 km, M 5.3. South of Honshu, Japan.
May 17	eL F	04	39	05.0							38.7N 44.2E, H: 04 28 51.9, h 39 km, M 4.6. Turkey-Iran border.
May 17	eL F	10	36	10 50							24.4N 122.1E, H: 09 50 09.4, h 50 km, M 4.9. Taiwan.
May 17	eP eL F WIT eP	17	58	24							19.7N 38.7E, H: 17 50 39.6, h 38 km, M 5.3. Red Sea.
May 18	eL F	04	48	05 10							41.9N 144.6E, H: 04 06 54.7, h 44 km, M 4.7. Hokkaido, Japan.
May 19	WIT eP	16	01	06.5							14.5N 40.3E, H: 15 52 34.2, h 13 km, M 5.1. Ethiopia.
May 20	WIT iP	15	11	59.5							BCIS: 37.4N 116.0W, H: 15 00 00. Nevada, nuclear explosion.
May 20	WIT e	23	27								66.4N 33.4E, H: 23 18 11.7, h 17 km, M 4.6. Northwestern, Russia.
May 21	eL F	07	58	08.5							d.b.m. 27.9N 111.3W, H: 07 18 12.8, h 33 km, M 4.7. Gulf of California.

Date 1967	Phase	G.M. Time			First motion	Period S	Amplitude			Magnitude De Bolt	Remarks Data without indication are from USCGS; d.b.m. means disturbed by microseisms
		h	m	s			Z	NS	EW		
May 21	epP ePP epPP iSKS eS ess eSS eL F WIT iP ipP	18	59	00							d.b.m. 1.0S 101.5E, H: 18 45 11.7, h 173 km, M 6.3. Southern Sumatra.
May 23	e F WIT iP	02	42								d.b.m. 44.6N 150.5E, H: 01 52 39.1 h 22 km, M 4.9. Kurile Islands region.
May 23	WIT iP	14	11	59.5							BCIS: 37.5N 116.3W, H: 14 00 00. Nevada, nuclear explosion.
May 23	eSP eL F	19	46.0								d.b.m. 56.2S 27.3W, H: 19 17 47.5 h 130 km, M 5.9. Sandwich Islands region.
May 27	eL F	02	03.5								d.b.m. 35.8N 0.3W, H: 01 54 26.0, h 28 km, M 4.7. Algeria.
May 27	eL F	02	14	02 25							39.9N 77.3E, H: 01 42 47.1, h 33 km, M 5.4. Sinkiang Province, China.
May 27	iP ePP ePPP eS ePS eSS eL F WIT iP	17	34	46.4		4	4				51.9N 176.1E, H: 17 22 58.7, h 34 km, M 5.8. Rat Islands, Aleutian Islands.
May 27	iP ePP ePPP eS eSS eL F WIT eP	19	15	01							36.1N 77.8E, H: 19 05 48.5, h 35 km, M 5.4. Kashmir-Sinkiang border.
May 28	eL F WIT iP	04	35.6								BCIS: 50.0N 78.0E, H: 04 08 00. Kazakstan. SSR.
May 29	WIT iP	21	13	35.6							43.3N 145.7E, H: 21 01 44.3, h 88 km, M 5.3. Hokkaido region, Japan.
June 1	eP eS eSS eL F	03	47	55							53.7N 165.6W, H: 03 36 19.0, h 60 km, M 5.7. Fox Islands.

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		h	m	s			Z	NS	EW		
Juni 1	eP eS eL F WIT eP	10	44	24							36.9N 29.2E, H: 10 39 22.8, h 36 km, M 5.0. Turkey.
June 2	eP ePPP eS eL F WIT eP	06	41	32							0.9N 28.4W, H: 06 31 28.2, h 33 km, M 5.0. Central Mid- Atlantic Ridge.
June 3	eL F	07	00								10.8S 79.0W, H: 06 11 07.8. h 33 km, M 4.6. Near coast of Peru.
June 3	eP eS eL F WIT eP i	09	20	00							58.4N 151.2W, H: 09 08 56.4, h 32 km, M 5.5. Kodiak Island region.
June 3	WIT eP	13	20	59							8.5S 74.4W, H: 13 08 06.8, h 152 km, M 5.2. Peru-Brasil border region.
June 4	WIT iP	05	38	21.5	-						51.4N 159.3E, H: 05 26 44.6, h 9 km, M 4.8. Near east coast of Kanchatka.
June 5	ePKP eSS eL F WIT iPKP	01	41	08							21.3S 174.5W, H: 01 21 20.2, h 33 km, M 5.2. Tonga Islands.
June 7	eL F	17	30								49.4N 97.2E, H: 17 01 12.9, h 33 km, M 5.0. USSR-Mongolia border.
June 8	WIT iPKP	13	41	46.3	-						21.4S 170.3E, H: 13 22 13.7, h 90 km, M 5.3. Loyalty Islands region.
June 10	iP ePP eS eL F	05	55	44							3.6S 12.1W, H: 05 45 52.8, h 12 km, M 5.1. North of Ascension Island.
June 10	WIT iPKP ipPKP	14	17	29.8							19.3S 178.2W, H: 13 58 53.3, h 596 km, M 5.1. Fiji Islands region.
June 12	WIT ePKP	01	08	47.5							21.1S 174.4W, H: 00 48 59.2, h 13 km, M 5.1. Tonga Islands.
June 12	eP eS eL F	02	55	24							38.2N 22.7E, H: 02 51 05.5, h 33 km, M 4.8. Greece.
June 12	ePP eSKS ePS eSS eL F	05	39.2								44.9S 35.7E, H: 05 21 10.6, h 36 km, M 5.6. Prince Edward Islands region.

Date 1967	Phase	G.M. Time			First motion	Period S	Amplitude			Magnitude De Bilt	Remarks Date without indication are from USCGS; d.b.m. means disturbed by microseisms
		h	m	s			Z	NS	EW		
June 12	eP eS eL F WIT iP	23	34	36							47.4N 154.3E, H: 23 22 45.3, h 56 km, M 5.4. Kurile Islands.
June 14	eL F	05	55								15.2S 173.6W, H: 05 06 16.3, h 11 km, M 5.9. Loyalty Islands.
June 14	eP eL F	08	17	50							47.5N 154.4E, H: 08 05 58.6, h 55 km, M 5.3. Kurile Islands.
June 17	e F	00	50								40.7N 89.6E, H: 00 19 07.9, h 0 km, M 4.6. Sinkiang Province, China. Nuclear explosion.
June 17	eP epP ePKP ePP epPP iSKS isSKS iPS ePPS eSSS eL F WIT ePKP	05	14.7								58.3S 26.6W, H: 05 00 11.8, h 140 km, M 6.1. South Sandwich Islands region.
June 18	e F	01	51	25							35.2N 87.6E, H: 01 20 21.6, h 33 km, M 3.9. Tibet, China.
June 19	iP eS eL F WIT iP	17	19	27.8							52.7N 166.9W, H: 17 07 45.4, h 33 km, M 5.7. Fox Islands.
June 20	eP eS eL F WIT eP	07	50	29							52.8N 167.1W, H: 07 38 44.9, h 11 km, M 5.2. Fox Islands.
June 21	eL F	07	28								2.2S 77.6W, H: 06 49 56.6, h 49 km, M 5.3. Peru-Ecuador border region.
June 21	eL F	16	34								12.7N 123.1E H: 15 45 28.3, h 56 km, M 5.2. Philippine Islands.
June 21	WIT eP	18	15	10.7							64.8N 147.4W, H: 18 04 49.5, h 17 km, M 5.4. Central Alaska..
June 21	eL F WIT eP	18	40								64.8N 147.4W, H: 18 13 02.9, h 17 km, M 5.6. Central Alaska.
June 21	WIT eP	18	35	04							64.8N 147.4W, H: 18 24 45.7, h 17 km, M 5.4. Central Alaska.
June 21	WIT iPKP	19	29	21.2							23.5S 180.0E, H: 19 10 31.1, h 546 km, M 5.0. South of Fiji Islands.

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		h	m	s			Z	NS	EW		
June 21	eL F	21	00								25.2S 70.5W, H: 20 09 28.4, h 23 km, M 5.7. Near coast of Northern Chile.
June 23	eL F	10	21								40.8N 33.6E, H: 10 06 54.1, h 14 km, M 4.8. Turkey.
June 23	eL F	13	22								35.7N 49.5E, H: 13 15 10.2, h 52 km, M 4.4. Western Iran.
June 24	ePP ePS eSS eL F	21	19	00							12.5N 141.6E, H: 21 00 23.9, h 18 km, M 5.5. South of Mariana Islands.
June 25	eSS eL F	23	51	27							12.4N 141.8E, H: 23 18 04.3, h 42 km, M 5.6. South of Mariana Islands.
June 26	eSKS eL F	02	46	00							18.4N 105.2W, H: 02 22 34.8, h 45 km, M 5.0. Off coast of Jalisco, Mexico.
June 26	WIT ePKP	09	28	26							18.0S 178.3W, H: 09 09 42.4, h 477 km, M 4.3. Fiji Islands region.
June 27	WIT iP	20	44	47.2	-						51.3N 180.0W H: 20 32 59.3, h 26 km, M 5.1. Andean of Islands.
June 28	WIT iP	01	21	55.1	+						46.0N 151.5E, H: 01 10 03.9, h 33 km, M 5.4. Kurile Islands.
June 28	eL F	16	10	17.0							47.0S 165.8E, H: 14 34 04.5, h 37 km, M 5.6. South of New Sealand.
July 1	eS eL F	07	53	15							0.8S 98.7E, H: 07 28 57.6, h 26 km, M 5.5. Southern Sumatra.
July 1	iP iS eSS eL F WIT iP	23	21	36	-	4	2				54.4N 158.0W, H: 23 10 07.2, h 33 km, M 6.2. South of Alaska.
July 2	eP eS eL F WIT eP	07	16	14							8.7N 93.8E, H: 07 03 52.9, h 33 km, M 5.7. Nicobar Islands region.
July 2	WIT iP	20	46	42.7	-						31.2N 130.1E, H: 20 34 36.2, h 181 km, M 4.9. Kyushu, Japan.
July 3	eL F	03	00	40							44.2N 19.2E, H: 02 53 47.9, h 60 km, M 4.3. Yugoslavia.
July 4	ePKP ePP ePS eL F	14	35.5	16							38.1S 73.4W, H: 14 16 51.6, h 28 km, M 5.4. Near coast of Central Chile.

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		h	m	s			Z	NS	EW		
July 4	eS ePS F WIT iP	24	03	35							No vertical record. 43.2N 142.5E, H: 23 42 13.7, h 110 km, M 5.6. Hokkaido region, Japan.
July 5	eP eS eL F	00	57	45							No vertical record. 36.8N 21.3E, H: 00 53 14.2, h 22 km, M 4.8. Ionean Sea.
July 5	eP eS eL F	16	54	03							36.9N 21.3E, H: 16 49 35.9, h 41 km, M 4.3. Ionean Sea.
July 6	eP eS eL F	08	26	20							36.7N 21.4E, H: 08 21 50.3, h 35 km M 4.5. Ionean Sea.
July 6	iP eS eL F WIT iP	13	54	09.2	+	4	3				52.6N 168.2W, H: 13 42 22.5, h 14 km, M 5.9. Fox Islands.
July 6	eP eS eL F WIT eP	18	42	42							18.9N 61.9W, H: 18 32 15.1, h 57 km, M 5.1, Leeward Islands.
July 6	eP eS eL F WIT eP	19	29	29							8.1N 38.5W, H: 19 19 48.4, h 33 km, M 4.9. Central Mid-Atlantic Ridge.
July 7	WIT iPKP	10	00	52.7	-						20.3S 177.7W, H: 09 42 08.0, h 540 km, M 4.6. Fiji Islands region.
July 8	eL F	00	20								35.5N 87.8E, H: 23 49 23.6, h 33 km, Tibet.
July 8	WIT iPKP	01	18	08.3	-						15.4S 167.5E, H: 00 58 54.7, h 137 km, M 5.2. New Hebrides Islands.
July 8	WIT iPKP	13	32	13.7	+						19.9S 178.1W, H: 13 13 29.1, h 520 km, M 4.3. Fiji Islands region.
July 11	e F	12	47.5								BCIS: 44.5N 17.3E, H: 12 41 19, Yugoslavia.
July 12	eP eS eSS eL F WIT eP	21	12	58							5.6N 82.6W, H: 21 00 20.9, h 33 km. South of Panama.
July 13	eP eL F	02	14	22							35.5N 0.1W H: 02 10 20.0 h 13 km, M 5.0. Algeria.

Date 1967	Phase	G.M. Time			First motion	Period s	Amplitude			Magnitude De Bilt	Remarks Data without indication are from USCGS; d.b.m. means disturbed by microseisms
		h	m	s			Z	NS	EW		
July 13	ePKP WIT iPKP	10	23	54	-						20.4S 169.3E, H: 10 04 19.0, h 46 km, M 5.0. New Hebrides Islands.
July 13	e F	14	47								40.7N 19.5E, H: 14 38 53.9, h 23 km, M 4.4. Albania.
July 16	ePP eSP eL F	13	54	00		21		20	6.5		0.8S 132.6E, H: 13 34 29.9, h 33 km, West Irian region.
July 16	HEE eP i	14	05	56							BCIS: 47.3N 5.4E, H: 14 04 11, h 20 km, France.
July 17	WIT eP	11	40	03							51.1N 169.3W, H: 11 28 13.4, h 33 km, M 5.0. Fox Islands.
July 19	eS eL F	09	15	15		16		6	5.0		37.9N 29.0E, H: 09 06 19.0, h 28 km, M 4.7. Turkey.
July 19	WIT iPKP	13	00	08.6	+						20.3S 178.2W, H: 12 41 28.8, h 518 km, M 4.5. Fiji Islands region.
July 20	eP ePP eS eSP ePPS eSS eL F	15	50	35							7.7N 134.9E, H: 15 36 20.1, h 8 km, West Caroline Islands.
July 22	ePKP ePP eSS eL F WIT ePKP i	04	18	00		18		2.7	6.0		33.5S 179.0W, H: 03 58 02.4, h 39 km, M 5.0. South of Kermadec Islands.
July 22	e WIT e e i HEE i	11	01								51.4N 1.3E, H: 10 59 04.7, h 0 km, M 4.7. Off east coast of Britain. Explosion "Kielce".
July 22	iP iS M F WIT iP HEE iP	17	01	39.4	-	8	23				40.7N 30.8E, H: 16 56 53.3, h 4 km, M 6.0. Turkey. (173 killed).
July 22	WIT eP	17	52	45							40.6N 30.7E, H: 17 48 06.0, h 26 km, M 5.0. Turkey.
July 22	WIT eP	18	14	30							40.8N 30.4E, H: 18 09 55.7, h 33 km, M 5.0. Turkey.
July 23	e F	14	09								56.2S 158.3E, H: 13 48 05.8, h 33 km, M 5.1. Macquarie Island region.
July 25	e F	08	48								41.9N 24.6E, H: 08 37 25.7, h 33 km, M 4.2. Greece-Albania border.

Date 1967	Phase	G.M. Time			First motion	Period s	Amplitude			Magnitude De Bilt	Remarks Data without indication are from USCGS; d.b.m. means disturbed by microseisms
		h	m	s			Z	NS	EW		
July 26	ePKP eL F	08	34	40							22.0S 170.1E, H: 08 14 56.3, h 30 km, M 5.0. Loyalty Islands region.
July 26	iP eS eL F WIT iP	18	58	46.5	+	4	3				39.5N 40.4E, H: 18 53 01.3, h 33 km, M 5.6. Turkey. (92 killed).
July 26	WIT iPKP	19	11	58.6	-						17.4S 174.0W, H: 18 52 21.2, h 15 km, M 5.0. Tonga Islands.
July 27	eP eS eL F WIT eP	05	22	00							64.0N 20.7W, H: 05 17 54.0, h 33 km, M 5.0. Iceland.
July 28	WIT iPKP	14	44	34.1	+						20.7S 178.5W, H: 14 25 50.1, h 555 km, M 4.7. Fiji Islands region.
July 28	eL F	15	44			12		3.6			63.9N 20.5W, H: 15 35 03.4, h 31 km, M 4.6. Iceland.
July 29	eL F	02	30			14		2.6			64.0N 20.6W, H: 02 21 09.5, h 33 km, M 4.7. Iceland.
July 29	iP ipP iPP epPP iS iSS eL F WIT eP epP	10	36	04.0	+	6	7				6.8N 73.0W, H: 10 24 24.6, h 161 km, M 6.0. Northern Colombia.
July 30	iP ePP ePPP eS eSS eL F WIT eP	00	11	25.0	+	6	2				10.6N 67.3W, H: 23 59 58.7, h 10 km. Near coast of Venezuela. (236 killed).
July 30	iP eS eL F WIT iP	01	35	43.8	-	3	3				40.7N 30.4E, H: 01 31 01.7, h 16 km, M 5.6. Turkey.
July 30	e F	12	20								56.2S 146.9E, H: 10 49 32.8, h 33 km, M 5.1. West of Macquarie Island.
July 30	e F	14	34								5.3S 153.6E, H: 13 35 14.4, h 50 km, M 5.2. New Ireland region.
July 30	WIT iPKP	17	43	18.4	+						17.8S 178.8W, H: 17 24 43.1, h 564 km, M 5.1. Fiji Islands region.

Date 1967	Phase	G.M. Time			Amplitude			Remarks Date without indication are from USCGS; d.b.m. means disturbed by microseisms
		h	m	s	Z	NS	EW	
Aug. 1	e F	00	24					40.8N 30.4E, H: 00 13 35, h 33 km, M 4.5. Turkey.
Aug. 1	e F	10 11	40 15					60.0S 159.2E H: 09 05 49.3, h 33 km, M 5.5. South of New Sealand.
Aug. 2	e F	07 07	21 40					23.6N 121.4E, H: 06 34 19.3, h 40 km, M 4.4. Taiwan.
Aug. 2	WIT iP	00	56	21.0				44.6N 146.E, H: 00 44 41.4, h 149 km, M 5.0. Kurile Islands.
Aug. 2	eP eS eL F WIT eP	11 11 11 12 11	11 15 15.7 30 11	10 00				71.2N 8.0W, H: 11 06 38.7, h 33 km, M 5.0. Jan Mayen Island region.
Aug. 2	iP eS eL F WIT iP	14 14 14 15 14	10 14 15.5 40 10	50.2 40				71.2N 8.5W H: 14 06 17.8, h 33 km, M 5.3. Jan Mayen Island region.
Aug. 2	e F	16 17	53 15					BCIS: 71.0N 80E, H: 16 47 03 Jan Mayen.
Aug. 4	eL F	06 06	26 45					7.4N 36.3W, 06 01 09.9, h 33 km, M 5.0. Mid Atlantic Ridge.
Aug. 4	WIT eP	22	54	24				17.7S 173.2W, H: 22 34 47.7, h 33 km, M 4.8. Tonga Islands.
Aug. 10	eP eS ePS eL F WIT iP	11 11 11 11 12 11	33 43.0 43.7 58 40 33	22				45.4N 150.3E, H: 11 21 22.3, h 37 km, M 5.7. Kurile Islands.
Aug. 12	ePKP ePP ePPP iSKKS esSKKS eSKSP F WIT iPKP ipPKP	09 10 10 10 10 10 11 09 10	59 03 06 09 10 13 11.5 59 00	31 13 40 51 32 22				24.7S 177.5W, H: 09 39 44.3 h 134 km, M 5.8. South of Fiji Islands.
Aug. 12	WIT eP	10	52	06.5				53.7N 160.4E, H: 10 40 43.9, h 25 km, M 5.0. Near coast of Kamchatka.
Aug. 13	eL F	17 18.0	27					50.9S 29.1E, H: 16 33 04.0, h 33 km, M 5.4. South of Africa.
Aug. 13	iP epP ePP iS ePS epS eL F WIT iP epP	20 20 20 20 20 20 20 21 20 20	18 19 21 28 29 30 46 30 18 19	36.5 56 51 21.5 10 10				35.3N 135.3E, H: 20 06 50.6, h 357 km, M 6.0. Southern Honshu.

Date 1967	Phase	G.M. Time			First motion	Period s	Amplitude			Magnitude De Bilt	Remarks Data without indication are from USCGS; d.b.m. means disturbed by microseisms	
		h	m	s			Z	NS	EW			
Aug. 13	i M F WIT eP HEE ePg	22 22 22 22	11 13.5 6	29.5		5			84	5.6	43.2N 0.5W, H: 22 07 47.5, h 15 km, M 5.3. Pyrenees.	
Aug. 13	eL F	23 01.0	12								4.4S 152.5E, H: 22 15 09.6, h 29 km, M 5.3. New Britain region.	
Aug. 14	WIT iP*	10	18	10.5	-						46.9N 10.4E, H: 10 16 18.1, h 20 km, M 4.3. Northern Italy.	
Aug. 15	e F	09 10	55 10								31.1N 93.7E, H: 09 21 02.3, h 33 km, M 5.7. Tibet.	
Aug. 15	WIT iP	15	47	31.2	-						44.8N 132.4E, H: 15 36 06.6, h 33 km, M 5.3. North easter China.	
Aug. 17	e F	13 13	15 40								0.8S 21.1W, H: 12 49 08.9, h 40 km, M 4.5. Mid Atlantic Ridge.	
Aug. 18	WIT iP	03	48	05.7	+						27.8N 127.7E, H: 03 35 40.5, h 94 km, M 5.4. Ryukyu Islands.	
Aug. 19	eP ePP eSKS ePS eL F	15 15 15 15 16 17	41 45 52 54 09 15	50.0 56 34 55		20			8.9	6.3	10.4N 126.0E, H: 15 28 08.5, h 58 km, M 5.6. Philippine Islands.	
Aug. 19	WIT iPKP	16	01	07.5	-						12.4S 166.6E, H: 15 41 53.3, h 86 km, M 5.4. Santa Cruz Islands.	
Aug. 20	eP eS eL F WIT iP ePP	02 02 02 03.0 02 02	10 17 25	48 38		16			16	6.0	45.3N 80.1E, H: 02 02 05.2, h 33 km, M 5.1. Kazakh- Sinkiang border region.	
Aug. 21	iP ePP ePPP eS eSS eL F WIT iP	07 07 07 07 08 08 10.5 07	45 49 51.1 56 02.1 12 45	47.0 15 25		5	5				3.6N 95.8E, H: 07 33 00.6, h 33 km, M 5.9. Off west coast of Northern Sumatra.	
Aug. 22	eP ePP ePS eL F	13 13 13 13 16.5	17 21 31 50	00 52 35		19				28	6.5	60.8S 24.6W, H: 13 02 06.8, h 33 km, M 6.1. South Sandwich region.
Aug. 22	e F	23 24.0	38								56.2N 112.6E, H: 23 12 18.9, h 22 km, M 5.0. Lake Baikal region.	
Aug. 23	eL F	05 05	31 37								54.4S 22.4W, H: 04 19 32.8, h 33 km, M 4.5. South Sandwich Islands region.	

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		h	m	s			Z	NS	EW		
Aug. 24	WIT eP	03	33	12.6	+						43.5N 147.5E, H: 03 21 17.6, h 70 km, M 5.4. Kurile Islands.
Aug. 24	WIT iPKP	05	48	40.8	-						21.0S 179.4W, H: 05 30 05.8, h 672 km, M 4.7. Fiji Islands.
Aug. 24	ePKP ePP eL F	10 10 11.8 12.5	52 55	18 13							14.9S 166.9E, H: 10 32 52.6, h 23 km, M 5.3. New Hebrides Islands.
Aug. 26	eP ePP eSKS ePS eSS eSSS eL F WIT eP ePP e	00 00 01 01 01 01 01 03.5 00 00 00	50 55 01 04 10 14.1 26 5 50 55 55	48 15 34 22 20 14.1 26 45 04 13		20	23	6.5			12.2N 140.7E, H: 00 36 42.1, h 33 km, M 6.1. West Caroline Islands.
Aug. 26	eL F WIT ePKP	19 20.0 18	44 0 39	39							15.4S 172.7W, H: 18 19 58.2, h 37 km, M 5.0. Samoa Islands.
Aug. 27	eP epP ePP epPP eS esS eSS esSS F WIT eP epP ePP	13 13 13 13 13 13 13 13 15.0 13 13 13	20 24 24 24 30 32 36.2 37.2 0 20 21 24	51 36 03 46 45 05 05 37.2 57 43 13	(+)						12.3N 86.2W, H: 13 08 55.9, h 183 km, M 5.2. Nicaragua.
Aug. 27	WIT eP	13	46	11							50.2N 130.0W, H: 13 34 52.6, h 24 km, M 5.1. Vancouver Island region.
Aug. 27	WIT iPKP	22	28	54.0							20.4S 178.1W, H: 22 10 11.6, h 545 km, M 4.3. Fiji Islands region.
Aug. 28	eL F	16 16	07 30								50.4N 129.6W, H: 15 07 11.7, h 33 km, M 4.5. Vancouver Island region.
Aug. 28	eL F WIT eP	16 17 16	56 15 31	28							50.4N 129.8W, H: 16 20 06.6, h 33 km, M 5.1. Vancouver Island region.
Aug. 28	eL F	21 21	28 40								31.5N 6.1W, H: 21 15 35.7, h 33 km, M 4.6. Marocco.
Aug. 29	e eL F	07 08 09	47 26 30	08							BCIS: 7.2S 123.5E, H: 07 27 35 Banda Sea. Change of papers: 7.48 - 7.56
Aug. 30	iP i ePP eS eSS eSSS eL F WIT eP ePP	04 04 04 04 04 04 04 07.0 04 04	33 33 35 42 47.0 50.0 57 0 33 35	09.2 12.7 43 14 14 50.0 57 03 03	- +	20	142	6.5			31.7N 100.3E, H: 04 22 01.5, h 3 km, M 6.1. Szechwan Province, China.

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		h	m	s			Z	NS	EW			
Aug. 30	eP eS eL F WIT eP	11 11 11 12 11	19 28 40 30 19	54 58 46							31.6N 100.3E, H: 11 08 49.6, h 33 km, M 5.1. Szechwan Province, China.	
Aug. 30	eP eS eL F WIT iP	13 13 14 15 13	45 55 10 30 45	27 23 21.6							45.4N 151.5E, H: 13 33 26.4, h 33 km, M 5.5. Kurile Islands.	
Aug. 31	WIT iPKP i epPKP	19 19 19	12 12 13	30.8 54.6 49	+						17.5S 175.2W, H: 18 53 25.2, h 277 km, Tonga Islands.	
Sep. 3	iP ePP eS ePS ePPS eSS eSSS eL F WIT eP	21 21 21 21 21 21 21 21 24.0 21	20 24 32 33 34 38 42 51 0 21	53.0 34 05 22 07 40 05 01	+	6	7				d.b.m. 10.6S 79.8W, H: 21 07 30.8, h 38 km, M 6.5. Off coast Peru.	
Sep. 6	e F	08 08	18 30						19	92	7.2	d.b.m. 14.7N 93.6E, H: 07 30 10.8, h 33 km, M 5.6. Andaman Islands region.
Sep. 7	ePP eL F	07 08 08	31 06 30	44							2.7N 124.3E, H: 07 12 36.6, h 274 km, M 5.8. Celebes Sea.	
Sep. 7	eS F	14 14	16 22	50							37.9N 15.3E, H: 14 09 02.8, h 53 km, M 4.3. Italy.	
Sep. 8	e F	02 02	13 30								40.7N 20.2E, H: 02 04 49.1, h 30 km, M 4.7. Albania.	
Sep. 8	eP ePP ePPP eSKS eSP eSS eL F	22 22 22 23 23 23 23 24.5	51 56 58 02 05 11 30 5	50 11 28 33 34 06		20	6.7	6.2			12.2N 140.8E, H: 22 37 39.5, h 27 km, M 5.3. West Caroline Islands.	
Sep. 9	iP epP iPP ipPP ePPP eS ePS eSS esPS F WIT eP i ePP	10 10 10 10 10 12.0 10 10 10 10	19 22 23 25 26 30 31 33.9 35 19 19 23	26.0 35 35 28 20 07 35 18 29 31.6 43	-	6	3				27.7S 63.1W, H: 10 06 44.1, h 578 km, M 5.8. Argentina.	

Date 1967	Phase	G.M. Time			First motion	Period s	Amplitude			Magnitude De Bilt	Remarks Data without indication are from USCGS; d.b.m. means disturbed by microseisms
		h	m	s			Z	NS	EW		
Sep. 9	eP	14	58.1							12.3N 140.7E, H: 14 43 57.7, h 33 km, M 5.4. West Caroline Islands.	
	ePP	15	02.5								
	eS	15	09.1								
	ePS	15	11	44							
	ePPS	15	12	30							
	eSS	15	17.1								
	eL F	15 16.5	35								
Sep. 9	ePKP1	17	12	06	20	6.7	6.5			54.8S 136.0W, H: 16 52 01.3, h 33 km, M 5.4. South Pacific Cordillera.	
	ePKP2	17	12	20							
	ePKS	17	15.0								
	eSS	17	36.0								
	eSSS	17	42.0								
	eL	18	08								
	F	19.7									
Sep. 11	ePKP	04	57	00	-					21.4S 169.7E, H: 04 37 16.4, h 11 km, M 5.0. Loyalty Islands region.	
	WIT iPKP	04	56	57.0							
Sep. 11	e	07	10							36.4N 2.8E, H: 07 00 28.7, h 33 km, M 4.6. Algeria.	
	F	07	30								
Sep. 11	eL	13	25							45.0N 99.3E, H: 12 53 34.6, h 33 km, M 4.8. Mongolia.	
	F	13	35								
Sep. 12	eP	00	35	18						22.8S 10.5W H: 00 23 27.7, h 33 km, M 4.9. South Atlantic Ridge.	
	ePPP	00	39	54							
	eL	01	01								
	F	01	50								
Sep. 12	WIT iP	02	55	29.8	-					44.6N 149.8E, H: 02 43 23.1, h 25 km, M 5.1. Kurile Islands.	
	iPPP	02	59	54.0							
Sep. 12	ePP	22	10.6							5.5S 151.7E, H: 21 49 47.6, h 50 km, M 5.2. New Britain region.	
	ePPS	22	22	15							
	eSS	22	27								
	eSSS	22	32								
	eL	22	43								
	F	24	20								
Sep. 13	eL	19	18							52.7N 172.5E, H: 18 41 15.4, h 34 km, M 5.7. Near Islands. Aleutian Islands.	
	F	19	45								
	WIT iP	18	52	50.5							
				(+)							
Sep. 14	eL	15	00							28.4N 57.1E H: 14 49 41.9, h 33 km, M 4.7. Iran.	
	F	15.4									
Sep. 15	eP	00	41.2							35.6N 140.4E, H: 00 28 39.8, h 59 km, M 5.2. Near east coast of Honshu, Japan.	
	eS	00	51	28							
	eH	00	51	52							
	eL	01	12								
	F	02.2									
	WIT iP	00	41	02.5							
				(+)							
Sep. 15	eP	10	43	44						27.4N 91.8E, H: 10 32 48.7, h 57 km, M 5.8. Bhutan.	
	eS	10	52	30							
	eL	11	08								
	F	12.0									
	WIT iP	10	43	32.0							

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		h	m	s			Z	NS	EW		
Sep. 16	eL	00	43							24.1N 120.7E, H: 23 57 30.1, h 50 km, M 5.0. Taiwan.	
	F	00	50								
Sep. 17	WIT ePKP	01	41	09.4						18.6S 175.0W, H: 01 21 52.4, h 200 km, M 4.1. Tonga Islands.	
Sep. 17	WIT eP	08	08.8							17.2N 94.1W, H: 07 56 22.7, h 45 km, M 5.2. Chiapas, Mexico.	
Sep. 18	eL	16	35							5.9S 146.6E, H: 15 33 06.5, h 39 km, M 5.5. East New Guinea.	
	F	17	45								
Sep. 19	iP	11	08	07.4	+	4	4			43.0N 145.2E, H: 10 56 08.6, h 84 km, M 5.9. Hokkaido, Japan.	
	ipP	11	08	29							
	iS	11	18	00							
	esS	11	18	36							
	eL	11	32								
	F	12	15								
	WIT iP	11	08	02.0							
Sep. 20	ePKP	09	59	28						49.8S 163.4E, H: 09 39 15.2, h 30 km, M 6.1. Auckland Islands region.	
	ePP	10	04	10							
	ePS	10	15.0								
	eSS	10	25.0								
	eSSS	10	31								
	eL	10	58								
	F	13.0									
Sep. 20	WIT iPKP	10	56	34.6	+					20.8S 169.8E, H: 10 37 20.3, h 129 km, M 5.9. New Hebrides.	
	ipPKP	10	57	31.5							
Sep. 22	eSS	08	28.5							0.7S 20.1W, H: 08 08 04.3, h 33 km, M 5.3. Central Mid- Atlantic Ridge.	
	eL	08	40								
	F	09.5									
Sep. 22	eP	10	30	00						d.b.m. 44.5N 149.4E, H: 10 17 59.9, h 60 km, M 5.6. Kurile Islands.	
	ePS	10	40.0								
	eSS	10	44								
	eL	11	02								
	F	12.5									
Sep. 23	WIT ePKP	03	41	34.4						17.7S 178.7W, H: 03 22 59.7, h 567 km, M 5.0. Fiji Islands region.	
Sep. 23	WIT iPKP	07	15	27.7	-					21.8S 179.7W, H: 06 56 43.6, h 595 km, M 5.4. Fiji Islands region.	
Sep. 23	WIT ePKP	07	58.2							22.1S 179.6W, H: 07 39 47.8, h 600 km, M 4.6. South of Fiji Islands.	
Sep. 25	e	09	19							17.0N 145.4E, H: 09 11 37.7, h 252 km, M 5.1. Mariana Islands.	
	F	09	35								
Sep. 26	eP	16	25.5							30.0S 71.5W, H: 16 11 23.9, h 55 km. Near coast of Central Chile.	
	ePP	16	29	50							
	eS	16	37	45							
	eL	16	58								
	F	18.0									

Date 1967	Phase	G.M. Time			First motion	Period s	Amplitude			Magnitude De Bilt	Remarks Data without indication are from USCGS; d.b.m. means disturbed by microseisms
		h	m	s			Z	NS	EW		
Sep. 27	WIT iP	17	11	59.5							37.0N 116.0W, H: 17 00 00, Nevada, nuclear explosion.
Sep. 28	eL F	03 03	18 35		18		6		5.6		42.0N 79.5E, H: 02 53 48.4, h 33 km, M 4.8. Alma Ata region.
Sep. 28	ePKP ePP ePKS eSS eL F WIT iPKP	05 05 05 05 05 08.0 05	16.0 17 19 35 54 54 15		34		15		6.5		6.6S 153.4E, H: 04 56 56.3, h 44 km, M 5.9. New Britain region.
Sep. 28	eP eS eL F WIT eP	15 16 16 17.5 15	55 04 16 55 55	31 35	18		7		6.0		59.5N 147.1W, H: 15 44 55.7, h 28 km, M 5.6. Gulf of Alaska.
Sep. 28	eL F	22 22	32 40								
Sep. 30	eL F	02 03.0	43		14	3.2			4.6		63.6N 22.8W, H: 02 34 38.7, h 33 km, M 4.3. Iceland region.
Sep. 30	eL F	04 05.0	25		14	4.5			4.8		63.7N 22.9W, H: 04 19 43.2, h 33 km, M 4.4. Iceland region.
Sep. 30	eL F	08 09	45 15		16	6.5			6.0		28.9N 129.9E, H: 07 57 19.9, h 32 km, M 5.5. Ryukyu Islands.
Oct. 2	WIT iPKP epPKP	00 00	31 33	32.6 55	-						21.0S 178.8W, H: 00 12 52.8, h 604 km, M 5.2. Fiji Islands region.
Oct. 3	eP eS ePS eSS eL F	18 18 18 18 18 20.0	28 38 39 44 53 20.0	24 45 35 00	18		18		6.1		10.9N 85.9W, H: 18 16 03.2, h 21 km, M 5.8. Costa Rica.
Oct. 4	ePP ePKS eSKS ePS eSS eSSS eL F	17 17 17 17 17 18 18 20.0	42 43.5 47.6 52.0 59.5 04 12 20.0	25	25		40		7.0		d.b.m. 5.7S 153.9E, H: 17 21 20.7, h 52 km, M 5.5. New Ireland region.
Oct. 4	eL F	21 22	58 01		14	6.4			4.9		63.7N 19.0W, H: 21 47 53, h 33 km, M 4.5. Iceland.
Oct. 7	WIT iP	08	39	43.0	+						49.2N 156.2E, H: 08 28 01.2, h 33 km, M 5.3. Kurile Islands.
Oct. 7	WIT eP	09	18	33							49.2N 156.3E, H: 09 06 52.3, h 33 km, M 4.9. Kurile Islands.
Oct. 7	WIT iPKP	10	51	42.2	+						17.3S 178.9W, H: 10 33 08.2, h 563 km, M 4.9. Fiji Islands region.

Date 1967	Phase	G.M. Time			First motion	Period s	Amplitude			Magnitude De Bilt	Remarks Data without indication are from USCGS; d.b.m. means disturbed by microseisms
		h	m	s			Z	NS	EW		
Oct. 9	WIT iP	14	21	32.0							54.1N 155.1E, H: 14 10 57.4, h 393 km, M 5.2. Kamchatka.
Oct. 9	iPKP ipPKP ePP epPP iPS F WIT iPKP ipPKP HEE iPKP	17 17 17 17 17 20.0 17 17 17	40 42 43 47 54 20.0 40 42 39	20.5 54.5 56 25 20	-						21.1S 179.3W, H: 17 21 49.5, h 654 km, M 6.3. Fiji Islands region.
Oct. 9	WIT iPKP	18	51	47	(-)						21.3S 179.3W, H: 18 33 08.2, h 619 km, M 5.1. Fiji Islands region.
Oct. 11	WIT iP	16	05	09.0	+						30.4N 142.6E, H: 15 52 16.8, h 32 km, M 5.5. South of Honshu, Japan.
Oct. 12	WIT iP	06	53	43.8	-						21.1S 179.2W, H: 06 35 06.7, h 636 km, M 5.6. Fiji Islands region.
Oct. 12	WIT iP	13	04	20.8	-						52.2N 152.5E, H: 12 53 46.9, h 476 km, M. 5.5. Northwest of Kurile Islands.
Oct. 12	WIT iPKP	18	50	17.8	(-)						7.1S 129.8E, H: 18 31 37.1, h 45 km, M 6.2. Banda Sea.
Oct. 14	e F WIT iP	03 04 03	58 30 41		(+)						17.3N 60.8W, H: 03 31 04.5, h 29 km, M 5.3. Leeward Islands.
Oct. 15	iP iPP eS ePS eL F WIT iP ePP	08 08 08 08 08 10.0 08 08	12 15 22 23 37 10.0 12 16	52.0 59 48 38	+	11	20				d.b.m. 11.9N 86.0W, H: 08 00 50.3, h 162 km, M 6.2. Near coast of Nicaragua.
Oct. 16	eL F	13 14	58 20		24			7.8	6.0		d.b.m. 49.3N 129.1W, H: 13 27 35.6, h 33 km, M 5.2. Vancouver Island region.
Oct. 18	eL F	01 02.0	25		28		29		5.9		d.b.m. 79.8N 2.4E, H: 01 11 44.8, h 33 km, M 5.7. Greenland Sea.
Oct. 20	eL F	02 02	00 15								58.6S 25.0W, H: 01 02 43.8, h 12 km, M 5.6. South of Sand- wich Islands.
Oct. 20	WIT iPKP	16	15	17.7	-						20.6S 178.1W, H: 15 56 33.4, h 556 km, M 5.0. Fiji Islands region.

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		h	m	s			Z	NS	EW		
Oct. 21	eL F	03	34								27.7S 71.8W, H: 02 35 12.3, h 13 km, M 5.4. Near coast of Northern Chile.
Oct. 21	WIT iP	05	05	58.1	+						73.4N 54.8E, H: 04 59 58.1, h 0 km, M 5.9. Novaya Zemlya. Nuclear explosion.
Oct. 21	WIT iPKP	18	59	31.8	-						24.8S 177.3W, H: 18 39 40.3, h 107 km, M 4.8. South of Fiji Islands.
Oct. 22	WIT iP	23	16	50.5							27.4N 128.3E, H: 23 04 14.2, h 34 km, M 5.2. Ryukyu Islands.
Oct. 25	iP ePP eS eSS eL F WIT eP	01 01 01 01 01 04.0 01	11 15 22 28.0 36 04.0 11	58.0 09 30 28.0 36 04.0 52	+	8	11				24.5N 122.2E, H: 00 59 22.6, h 65 km, M 6.0. Taiwan region.
Oct. 26	WIT eP	05	00	31		18		160	7.5		37.3N 29.1E, H: 04 55 38.3, h 35 km, M 5.1. Turkey.
Oct. 31	eP eS eL F WIT eP	21 21 21 21 21	12.0 15 15.5 40 12	06 06 07		16		6.5	4.8		37.8N 14.6E, H: 21 08 07.2, h 33 km, M 4.8. Sicily, Italy.
Nov. 2	HEE i i	22 22	11 14	36 26							d.b.m. 18.7S 169.0E, H: 07 32 50.1, h 230 km, M 5.3. New Hebrides.
Nov. 3	WIT ePKP	07	51	57							17.8S 179.0W, H: 10 17 14.7, h 573 km, M 5.4. Fiji Islands region.
Nov. 4	WIT iPKP	10	35	50.2	+						37.4N 141.6E, H: 13 26 47.7, h 46 km, M 5.7. Near east coast of Honshu, Japan.
Nov. 4	eL F WIT eP	14 14 13	10 50 39	05		20		9	6.2		d.b.m. 43.5N 144.1E, H: 14 30 37.5, h 30 km, M 5.8. Hokkaido region, Japan.
Nov. 4	eS eL F WIT eP	14 15 16 14	52 07 15 42	40 48		30		48	6.8		2.8N 77.7W, H: 16 26 48.2, h 99 km, M 6.0. Peru-Ecuador border region.
Nov. 4	WIT iP ipP	16 16	39 39	34 59	+						51.1N 178.5E, H: 17 09 27.1, h 29 km, M 5.3. Rat Islands.
Nov. 8	WIT eP	17	21	15							51.1N 178.4E, H: 17 22 32.1, h 10 km, M 5.2. Rat Islands.
Nov. 8	WIT eP	17	34	32							7.2S 123.6E, H: 02 18 45.5 h 560 km, M 5.8. Banda Sea.
Nov. 9	WIT ePKP	02	36	19.4							

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		h	m	s			Z	NS	EW		
Nov. 9	WIT iP	18	31	56	-						35.5N 140.1E, H: 18 19 35.0, h 68 km, M 5.3. Near east coast of Honshu, Japan.
Nov. 10	eL F	03 04	39 00								36.0N 53.8E, H: 02 50 56.0, h 33 km, M 5.0. Iran.
Nov. 10	WIT ePKP	13	29	51							18.0S 178.5W, H: 13 11 18.1, h 592 km, M 5.0. Fiji Islands.
Nov. 11	eP ePP eS eSS eL F	12 12 12 12 12 15.5	27 30 37.3 42.6 51 15.5	12 15							d.b.m. 6.0S 71.3E, H: 12 14 57.3, h 34 km, M 5.7. Chagos Archipelago region.
Nov. 12	WIT eP	02	39	11.5							44.8N 149.8E, H: 02 27 16.6, h 41 km, M 5.5. Kurile Islands.
Nov. 12	ePKP eL F WIT ePKP	10 11 12.5 10	56 45 25 56	26 25							17.2S 172.0W, H: 10 36 52.0 h 34 km, M 5.6. Tonga Islands region.
Nov. 13	eL F	07 07	02 10								37.9N 29.1E, H: 06 50 33.8, h 46 km, M 4.6. Turkey.
Nov. 14	WIT ePKP	20	03	53.5							18.0S 175.2W, H: 19 44 45.6 h 255 km, M 4.4. Tonga Islands.
Nov. 15	eSKS ePS eL F	21 21 22 23	57.0 59.5 17 35			23		16	6.2		d.b.m. 28.7S 71.2W, H: 21 31 51.5, h 15 km, M 6.2. Near coast of Central Chile.
Nov. 17	eS eSS eL F	05 05 05 06.0	13 17 18 06.0	25 40							28.5N 43.8W, H: 04 58 56.8, h 33 km, M 5.2. North Atlantic Ridge.
Nov. 17	e F	14 14	45 58								24.0N 122.3E, H: 13 58 35.3, h 36 km, M 5.1. Taiwan region.
Nov. 18	eL F WIT eP	02 02 02	43.0 51 36	20							35.2N 23.1E, H: 02 31 35.4, h 43 km, M 4.5. Crete.
Nov. 18	WIT ePKP	22	00.7								22.1S 179.6W, H: 21 41 58.3, h 553 km, M 4.3. South of Fiji Islands.
Nov. 19	eL F WIT iP	12 13 12	51 20 19	20.0	+						36.4N 141.1E, H: 12 06 59.5, h 41 km, M 5.5. Near east coast of Honshu, Japan.
Nov. 19	ePKP eL F WIT ePKP	17 18 20.0 17	49 45 20.0 49	08 02	-	25		10.7	6.6		d.b.m. 22.6S 170.9E, H: 17 29 20.9, h 33 km, M 5.2. Loyalty Islands region.
Nov. 20	WIT eP	11	01	09.5	(-)						32.0N 140.9E, H: 10 48 31.8, h 65 km, M 5.0. South of Honshu, Japan.

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		h	m	s			Z	NS	EW		
Nov. 21	eP eS eL F WIT eP	17	07.0	58		18	(5.1)	(4.8)		d.b.m. 72.7N 8.5E, H: 17 02 25.0, h 33 km, M 5.5. Norwegian Sea.	
Nov. 21	eL F WIT eP	22	01							48.2N 27.8W, H: 21 50 24.3, h 33 km, M 5.0. North Atlantic Ridge.	
Nov. 22	ePKP eL F WIT ePKP	15	39	11						22.7S 170.9E, H: 15 19 26.8, h 42 km, M 5.2. Loyalty Islands region.	
Nov. 23	eP eS eSS eL F WIT eP	08	45	15	-	8	7			14.5N 52.1E, H: 08 35 49.5, h 3 km, M 5.8. Gulf of Aden.	
Nov. 23	eP eS eL F WIT eP	13	48	(00) 45		4	3			80.2N 1.0W, H: 13 42 01.6, h 10 km, M 5.8. North of Svalbard.	
Nov. 24	WIT iPKP	06	01	00.4	-					16.4S 177.9W, H: 05 42 14.0, h 428 km, M 5.4. Fiji Islands region.	
Nov. 26	e(S) eL F WIT iP	00	31.3			19	11			d.b.m. 28.6N 130.0E, H: 00 08 09.8, h 33 km, M 5.7. Ryukyu Islands.	
Nov. 27	WIT ePKP	08	38.5							21.3S 174.3W, H: 08 18 42.4, h 33 km, M 5.4. Tonga Islands.	
Nov. 27	WIT eP	21	58	40						28.5N 129.6E, H: 21 46 02.9, h 17 km, M 5.0. Ryukyu Islands.	
Nov. 28	e F WIT iP ipP	03.3 03.6			+					32.1N 130.8E, H: 02 36 54.1, h 125 km, M 5.6. Kyushu, Japan.	
Nov. 30	eP eS eL F WIT eP ePP ePPP eSSS eL HEE eP	07	27	22 31	+	6	16			41.5N 20.5E, H: 07 23 51.5, h 29 km, M 6.0. Albania.	
Nov. 30	eH eL F	11	32.8								

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		h	m	s			Z	NS	EW		
Nov. 30	WIT iPKP	16	06	14	-						17.9S 178.3W H: 15 47 44.2, h 629 km, M 4.7. Fiji Islands region.
Dec. 1	iP eS eL F WIT eP	14	08	34	+	5	8				d.b.m. 49.5N 154.4E, H: 13 57 02.4, h 136 km, M 5.9. Kurile Islands.
Dec. 1	WIT iPKP	17	11	58							17.6S 178.5W, H: 16 53 08.8, h 504 km, M 4.2. Fiji Islands region.
Dec. 2	e F WIT eP	01	15								41.3N 20.6E, H: 00 24 15.7, h 29 km, M 5.1. Albania- Yugoslavia border region.
Dec. 2	e F WIT eP	12	52.5								d.b.m. 41.3N 20.3E, H: 12 44 42.7, h 17 km, M 5.4. Albania.
Dec. 2	eL F WIT eP	20	42			17	13.6				d.b.m. 37.8N 115.2E, H: 20 05 52.4, h 13 km, M 5.2. Northeastern China.
Dec. 6	WIT iPKP	05	22	25.5	-						21.3S 178.8W, H: 05 03 40.8, h 559 km M 5.1. Fiji Islands region.
Dec. 9	WIT iPKP	05	47	23.5	+						22.2S 179.4W, H: 05 28 38.9, h 588 km, M 4.9. South of Fiji Islands.
Dec. 10	eS eSS eL F WIT eP	12	28.6								40.5N 124.6W, H: 12 06 50.3, h 5 km, M 5.8. Near coast of northern California.
Dec. 10	iP ePP ePPP eS eSS eSSS eL F WIT eP	23	01	52.5	-	5	2				17.7N 73.9E, H: 22 51 24.3, h 33 km, M 6.0. India.
Dec. 11	WIT ePKP	20	00	38							20.6S 174.3W, H: 19 40 53.3, h 33 km, M 5.3. Tonga Islands.
Dec. 11	eL F	22	55								13.6N 51.6E, H: 22 30 18.3, h 33 km, M 5.6. Gulf of Aden.
Dec. 13	WIT iP	10	49	57.7	+						47.6N 152.6E, H: 10 38 23.4, h 124 km, M 5.5. Kurile Islands.
Dec. 13	ePKP eL F WIT iPKP	19	26	45	(+)						19.1S 168.7E, H: 19 07 14.4, h 51 km, M 5.7. New Hebrides Islands.

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		h	m	s			Z	NS	EW		
Dec. 13	WIT iPKP	21	53	47.0	+						17.7S 178.1W, H: 21 35 11.4, h 562 km, M 4.6. Fiji Islands region.
Dec. 14	e F	02 03	58 00								14.3N 53.7E, H: 02 20 27.9, h 33 km, M 4.9. Arabian Sea.
Dec. 14	eL F	19 19	53 56								38.2N 91.3E, H: 19 15 20.5, h 33 km, M 5.4. China.
Dec. 15	WIT ePKP	20	07	28							29.1S 177.6W, H: 19 47 13.5, h 61 km, M 5.3. Kermadec Islands region.
Dec. 16	eL F	21 22	33 0								51.2N 157.7E, H: 20 53 58.3, h 24 km, M 5.5. Near east coast of Kamchatka.
Dec. 18	eL F	14 14	45 55								12.1N 143.6E, H: 14 04 19.5, h 12 km, M 5.5. South of Mariana Islands.
Dec. 19	eL F	08 08	40 45								41.5N 20.4E, H: 08 32 30.9, h 19 km, M 4.8. Albania.
Dec. 21	iP iPP eSKS eH eSS eL F WIT eP	02 02 02 02 02 03 05	39 42 49 52 57.0 07 5	07 53 30 14 14 06	-	6	7				d.b.m. 21.8S 70.0W, H: 02 25 21.6, h 33 km, M 6.3. Near coast of northern Chile.
Dec. 22	WIT ePKP	23	29	25		19		163	7.2		29.9S 177.4W, H: 23 08 58.0, h 22 km, M 5.4. Kermadec Islands region.
Dec. 24	WIT ePKP	02	43	56							21.0S 178.0W, H: 02 24 58.4, h 428 km, M 5.0. Fiji Islands region.
Dec. 24	eP ePP eS ePS eScS eSS eL F WIT iP	20 20 20 20 20 20 20	13 16 21 22 23 26.2 30.5	35 00 54 12 31 12 5		4	4				d.b.m. 17.4N 61.1W, H: 20 03 10.9, h 24 km, M 6.4. Leeward Islands.
Dec. 24	eP eS eSS eL F WIT iP	21 21 21 22 23	42 51.2 55.2 01 0	53 53 53 01 0							d.b.m. 17.4N 61.3W, H: 21 32 31.3, h 20 km, M 5.9. Leeward Islands.
Dec. 25	ePKP ePP ePS eSS eL F WIT ePKP	01 01 01 02 02 04	42.6 44 54.5 01.5 18 5	31 55 55 55 18 31		24		115	7.2		d.b.m. 5.3S 153.7E, H: 01 23 33.6, h 64 km. New Ireland. region.

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		h	m	s			Z	NS	EW		
Dec. 25	eL F WIT eP i	11 12	20 0								21.5S 70.4W, H: 10 41 31.6, h 53 km, M 5.8. Near coast of northern Chile.
Dec. 26	eL F	09 10	55 05								44.5N 129.7W, H: 09 29 38.5, h 33 km, M 5.1. Off coast of Oregon.
Dec. 27	iP ePP ePP iSKS eSKKS ePS ePPS eSS eL F WIT eP	09 09 09 09 09 09 09 09 10 11	31 31 35.2 41 42 43 44.9 49.0 02 02	14 45 45 44 08 50 08 07 02 02							21.2S 68.3W, H: 09 17 55.7, h 135 km, M 6.4. Chile- Bolivia border region.
Dec. 27	ePKP ePP eSS eL F WIT iPKP	16 16 17 17 19	42 46 05.5 40 0	37 20 5 40 0		20		6.7	6.5		22.3S 174.8W, H: 16 22 48.5, h 33 km, M 6.1. Tonga Islands region.
Dec. 28	eL F	06 08	55 0			20		7.1	6.2		44.2N 128.8W, H: 06 26 15.8, h 33 km, M 5.4. Off coast of Oregon.
Dec. 29	WIT ePKP	20	49	32							22.8S 175.3W, H: 20 29 32.2, h 30 km, M 5.3. Tonga Islands.
Dec. 30	eS eL F WIT eP iPP HEE iPg	04 04 04 04 04 04	23.2 23 50 21 21 21	25 33 44 50		16		28	5.1		44.7N 12.2E, H: 04 19 21.2, h 33 km, M 5.3. Northern Italy.