KONINKLIJK NEDERLANDS METEOROLOGISCH INSTITUUT

SEISMIC RECORDS
AT DE BILT

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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

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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. J. Oldeman, scientific officer, and Mr. G. Houtgast, Scientific assistant.

The Director in Chief of
the Royal Netherlands Meteorological Institute,

Dr. M.W.F. Schregardus.

De Bilt, april 1970

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°6.1 N and 5°10.6 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: a set of seismographs (two horizontal and one vertical) with galvanometric recording according to GALITZIN.

THE GALITZIN SEISMOGRAPHS AT DE BILT. Below are given: the period of the galvanometer T1, the reduced pendulum length l, the distance A1 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 1965.

	NS comp.	EW comp.	Z comp.
Period of galvanometer T1	24.43 sec	24.96 sec	12.0 sec
Reduced length of pendulum l	123 mm	123 mm	406 mm
Distance A1	1380 mm	1380 mm	1380 mm
Period of pendulum T	25 sec	25 sec	12 sec
Dampint constant μ	0.0	0.0	0.0
Multiplying factor k	11.0	11.0	175

SEISMOLOGICAL STATION HEERLEN (HEE)

The geographic coordinates of the seismological station are: 50°53'0 N and 5°59'0 E.

The instrument, a horizontal seismograph, 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 1965 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° 48'8 N and 6°40'1 E.

The instruments, a GRENET vertical seismograph with galvanometric record, and one vertical and two horizontal PRESS-EWING seismographs, are placed at a height of 2 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 PRESS-EWING seismographs are:
T seismograph 30 sec., T galvanometer 90 sec., l is 360 mm, A is 1000 mm, μ is 0, V max. is 500, T max is 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.
PPPP = P-wave three time reflected.
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.
SSSS = S-wave three 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 travelling 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 maximal amplitudes measured from the medium line. The amplitudes have been calculated by means of the formula:

$$V = \frac{A_1 \; k \; T_b}{\pi \; l} \cdot \frac{1}{\left\{1 + \left(\frac{T_b}{T}\right)^2\right\}^2}$$

In this formula Al 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 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 - ½ mm	0 - 1½ μ
1	½ - 2 "	1½ - 5 "
2	2 - 4 "	5 - 10 "
3	> 4 "	> 10 "

Seismic Records at De Bilt

Character of the microseismic movement

Date 1965	Jan.	Febr.	March	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	3 2	2 1	1 2	1	1 0	1 0	1	0	1	0 1	3	3 2
2	2 1	1	2	1	0	0 1 0	1	0 1	1	1	3	2 3
3	1 2	1	2 3	1	0 1	0 1 0	1	1	1 3	1	3 2	3
4	2 3	1	3	1 3	1 3	0 1	1	1	3 1	1	2	3 2
5	3	1	3 2	3 1	3 2	1	1	1	1	1 0	2	2 3
6	3	1	2 1	1	2	1 2 1	1	1	1	0	2	3 2
7	3 2	1	1 2	1	2	1	1 0	1 0	1	0 1	2 1	2 1
8	2 3	1	2 3	1	2	1	0 1	0	1 3	1	1	1 2
9	3	1 2	3	1 2	2	1	1	0 1	3 1	1	1	2 3
10	3	2 1	3 2	2 3	2 1	1	1	1 0	1	1	1 2	3
11	3	1	2	3	1 2 1	1	1 2 1	0	1 0	1	2	3 2
12	3	1 3	2 1	3 2	1 2 1	1 2 1	1	0 1	0	1	2 1	2 1
13	3	3	1	2 1	1 0	1	1 0	1	0	1	1 2	1 2
14	3	3	1	1	0 1	1	0	1 0	0	1 2	2 3	2
15	3	3 2	1 2	1	1	1	0 1	0	0	2 1	3	2 3
16	3	2 1	2 3	1	1	1	1	0	0 1	1	3	3
17	3	1	3	1 2	1	1 2	1 0	0	1 2	1	3 2	3
18	3	1	3	2	1	2 3	0	0 1	2 1	1	2 1	3
19	3	1	3	2 1	1	3 2	0 1	1	1	1	1	3 2
20	3	1	3	1	1 2	2 1	1 0	1 2 1	1 2	1	1 2	2 1
21	3	1	3	1	2 3 2	1 0	0	1 2	2 1	1	2 1	1 2
22	3	1	3 2	1	2	0 1	0 1	2 1	1	1	1	2
23	3	1	2	1 2	2 1	1 2	1	1 0	1	1	1 3	2
24	3 2	1	2 3	2 3 2	1	2 1	1 2 1	0 1	1	1	3 2	2 3
25	2	1	3	2 1	1 0	1	1	1 2 1	1	1	2 3	3 2
26	2 1	1 2	3	1 3 2	0	1	1	1	1	1	3 2	2
27	1	2 1	3 2	2 1	0	1 0	1	1	1	1	2 3	2 3
28	1	1	2 1	1	0 1	0	1 2	1	1	1 2	3	3 2
29	1 2		1	1	1	0	2 3 2	1	1 0	2 3	3	2 3
30	2 3		1	1	1	0 1	2 1	1	0	3	3	3
31	3 2		1 2 1		1		1 0	1		3		3

Seismic Records at De Bilt

Date 1965	Phase	G.M. Time h	m	s	First motion	Period s	Amplitude μ Z	NS	EW	Magnitude De Bilt	Remarks Data without indication are from USCGS; d.b.m. means disturbed by microseisms
Jan. 1	eL	21	46			12			33	5¾	d.b.m. 35.7N 4.4E, H: 21 38 29.2, h 10 km, M 5.2. Algeria
	F	22	20								
	WIT eP	21	42	35							
Jan. 2	eL	14	32								d.b.m. 19.1N 145.4E, H: 13 44 18.9, h 142 km, M 6.1. Mariana Islands
	F	15.0									
	WIT ePP	14	02	34							
Jan. 5	WIT ePKP	18	25	47							20.3S 174.1W, H: 18 05 58.6, h 33 km, M 6.0. Tonga Islands.
Jan. 8	eL	22.0									d.b.m. 13.2S 112.0W, H: 21 08 06.0, h 33 km, M 4.9. North of Easter Islands.
	F	22.3									
Jan. 10	ePP	13	58	46							d.b.m. 13.5S 166.6E, H: 13 36 30.7, h 32 km, M 6.5. New Hebrides Islands.
	ePPP	14	12.4								
	eSS	14	17.0								
	eL	14	41			25		47		7	
	F	15.5									
	WIT ePKP	13	55	42							
	iPP	13	58	40							
Jan. 12	WIT ePKP	05	01.0								21.1S 174.7W, H: 04 41 17.6, h 123 km, M 4.9, Tonga Islands.
Jan. 12	eL	14	06								d.b.m. 27.6N 88.0E, H: 13 32 24.0, h 23 km, M 6.1. Nepal.
	F	14	16								
	WIT iP	13	42	55	+						
Jan. 15	WIT iP	06	08	05.5							49.9N 79.0E, H: 05 59 58.5, h 0 km, M 6.3. Eastern Kazakh SSR. Underground Nuclear Explosion.
	ePP	06	09	48							
Jan. 15	eL	23	55								d.b.m. 35.7N 4.3E, H: 23 47 27.8, h 31 km, M 4.7. Algeria.
	F	24	05								
											No Galitzin-records from Jan. 19 07h 30m - Jan. 20 15h 00m.
Jan. 21	eL	14	02								d.b.m. 34.6N 86.9E, H: 13 31 29.4, h 33 km, M 5.0. Tibet.
	F	14	10								
Jan. 24	eP	00	26	00							d.b.m. 2.4S 126.0E, H: 00 11 12.1, h 6 km, M 6.6. Ceram Sea.
	ePKP	00	30	14							
	iPP	00	30	38							
	iPPP	00	33	12							
	eS	00	38	26							
	ePS	00	40	11							
	eL					22		381		8	
	F	04.5									
	WIT.eP	00	26	00							
	HEE ePKP	00	30	38							
Jan. 29	e	00	54								d.b.m. 23.9N 108.7W, H: 00 11 22.1, h 33 km, M 5.4. Gulf of California.
	F	01	09								
Jan. 29	WIT iP	09	46	42.0	+						54.8N 161.7E, H: 09 35 25.7, h 33 km, M 5.8. Near east coast of Kamchatka.

Date 1965	Phase	G.M. Time h	m	s	First motion	Period s	Amplitude μ Z	NS	EW	Magnitude De Bilt	Remarks Data without indication are from USCGS; d.b.m. means disturbed by microseisms
Jan. 30	WIT iPKP	18	00	27.0							13.0S 169.4E, H: 17 42 12.3, h 647 km, M 5.2. Santa Cruz Island region.
Feb. 1	WIT iPKP	05	45	51.5	+						18.6S 178.1W, H: 05 27 04.5, h 472 km, M 5.6, Fiji Islands.
Feb. 2	eSS	16	16	00							37.5N 73.4E, H: 15 56 51.0, h 33 km, M 5.8. Tadzhik SSR.
	eL	16	21			22		32		6¼	
	F	16	50								
	WIT eP	16	05.5								
	eSS	16	15	54							
Feb. 4	WIT ePKP	03	44	50							51.8S 139.7E, H: 03 25 00.8. h 33 km, M 5.9, Southern Australia.
Feb. 4	iP	05	13	11.0	+	5	4				51.3N 178.6E, H: 05 01 21.8, h 40 km, M 6.0. Aleutian Islands.
	iZ	05	13	30							
	iS	05	22	48						8	
	F	in next shock									
	WIT eP	05	13	09							
	HEE eP	05	13.6								
	eS	05	23.8								
Feb. 4	WIT iP	06	48	42.5							52.6N 172.0E, H: 06 37 05.4, h 35 km, M 5.7, Aleutian Islands.
Feb. 4	WIT iP	06	51	14.5							51.7N 175.8E, H: 06 39 30.1, h 30 km, M 5.9. Aleutian Islands.
Feb. 4	WIT iP	07	23	11.5	-						51.1N 177.7E, H: 07 11 22.7, h 35 km, M 5.9. Aleutian Islands.
Feb. 4	WIT iP	07	26	41.5	+						52.0N 173.9E, H: 07 14 58.7, h 25 km, M 5.8. Aleutian Islands.
Feb. 4	WIT iP	07	35	02.0							51.9N 173.2E, H: 07 23 12.3, h 25 km, M 5.5. Aleutian Islands.
Feb. 4	WIT eP	08	45	22							51.9N 174.0E, H: 08 33 40.9, h 30 km, M 5.7. Aleutian Islands.
Feb. 4	WIT iP	08	52	29.0	-						51.3N 179.5E, H: 08 40 40.9, h 40 km, M 6.4. Aleutian Islands.
Feb. 4	WIT iP	09	47	12.0	-						51.8N 176.6E, H: 09 35 20.3, h 30 km, M 5.2. Aleutian Islands.
Feb. 4	WIT iP	10	03	49.0							51.5N 175.9E, H: 09 52 02.9, h 30 km, M 5.6. Aleutian Islands.
Feb. 4	iP	12	17	46.5	+	6	6.2				52.6N 172.1E, H: 12 06 04.3, h 25 km, M 5.8. Aleutian Islands
	eS	12	27	24							
	eSS	12	32	20							
	eL	12	42			22		29		6½	
	F	14.0									
	WIT iP	12	17	42.5	+						

Seismic Records at De Bilt

Date 1965	Phase	G.M. Time h	m	s	First motion	Period s	Amplitude μ Z	NS	EW	Magnitude De Bilt	Remarks Data without indication are from USCGS; d.b.m. means disturbed by microseisms
Feb. 4	iP	14	30	07	+	6	3.4				53.0N 171.0E, H: 14 18 27.9, h 30 km, M 5.7. Aleutian Islands.
	iS	14	39	42							
	eL	14	55			22		15		6¼	
	F	16									
	WIT iP	14	30	02.5							
Feb. 4	WIT iP	16	02	58.0	-						53.1N 170.8E, H: 15 51 25.5, h 40 km, M 5.7. Aleutian Islands.
Feb. 4	eP	19	53.7								13.3N 44.8W, H: 19 44 05.6, h 33 km, M 5.4. North Atlantic Ocean.
	eS	20	01	44							
	eSSS	20	06	15							
	eL	20	40			20		5.3		5½	
	F	21.0									
	WIT iP	19	53	46.0							
Feb. 5	WIT eP	06	51	30							51.8N 175.1E, H: 06 39 49.6, h 25 km, M 5.7. Aleutian Islands.
Feb. 5	eP	09	43	51	(+)						52.3N 174.3E, H: 09 32 09.3, h 41 km, M 5.9. Aleutian Islands.
	iZ	09	44	05							
	eS	09	53	31							
	eL	10	09			28		10		6	
	F	11.0									
	WIT iP	09	43	47.7	+						
Feb. 5	eP	20	59	00	(-)						51.9N 174.6E, H: 20 47 13.3, h 35 km, M 5.7. Aleutian Islands.
	eS	21	08	44							
	e(ScS)	21	08	50							
	eL	21	24								
	F	21	50								
	WIT eP	20	58	55	-						
Feb. 6	iP	01	52	12.0	-	4	11				53.2N 161.9W, H: 01 40 33.2, h 33 km, M 6.4. Alaska.
	iS	02	01	48							
	ePS	02	03	32							
	eSS	02	06	47							
	eL	02	15			28			20	6¼	
	F	03	50								
	WIT iP	01	52	08.0	-						
	eS	02	01	38							
Feb. 6	iP	04	14	38.0	+	4	4				52.1N 175.7E, H: 04 02 52.7, h 35 km, M 5.9. Aleutian Islands.
	ePPP	04	19	22							
	eS	04	24	36							
	eSS	04	29	48							
	eL	04	40			30		11		6	
	F	05	25								
	WIT eP	04	14	33	+						
	eS	04	24	11							
Feb. 6	WIT iP	12	34	09.5							51.8N 175.3E, H: 12 22 26.2, h 35 km, M 5.4. Aleutian Islands.
Feb. 6	iP	17	02	08.8		7	7				53.3N 61.8W, H: 16 50 28.6, h 33 km, M 6.1. Southern Alaska.
	ePP	17	04	40							
	iS	17	11	45							
	eL	17	27			30			21	6¼	
	F	19	50								
	WIT iP	17	02	03.5	-						
	eS	17	11	34							

Seismic Records at De Bilt

Date 1965	Phase	G.M. Time h	m	s	First motion	Period s	Amplitude μ Z	NS	EW	Magnitude De Bilt	Remarks Data without indication are from USCGS; d.b.m. means disturbed by microseisms
Feb. 7	iP	02	28	58.0		6	4				51.4N 173.4E, H: 02 17 09.2, h 40 km, M 6.0. Aleutian Islands.
	eS	02	38	44							
	eL	02	55								
	F	03	40								
	WIT iP	02	28	54.0	+						
Feb. 7	eS	04	33.0								51.9N 175.3E, H: 04 11 19.3, h 25 km, M 5.5. Aleutian Islands.
	eL	04	49								
	F	05	25								
	WIT eP	04	23	02.5	-						
Feb. 7	eP	09	07	40							51.4N 179.1E, H: 09 25 51.1 h 30 km, M 5.3. Aleutian Islands.
	eS	09	48.0								
	eL	10	03								
	F	10	50								
Feb. 8	e	16	25								55.1N 165.7E, H: 15 46 49.9, h 40 km, M 5.6. Komandorsky Islands region.
	F	17	10								
	WIT iP	15	58	06.8	+						
Feb. 9	WIT iP	17	48	50.3	-						52.8N 171.9E, H: 17 37 15.9, h 41 km, M 5.7. Aleutian Islands.
Feb. 9	eH	20	48.5								37.7N 20.3E, H: 20 38 45.3, h 51 km, M 4.5. Ionian Islands, Greece.
	F	20	55								
Feb. 11	WIT iPKP	02	52	57.5	+						21.8S 176.4W, H: 02 33 29.3, h 174 km, M 5.8. Fiji Islands.
Feb. 11	e	05	10								1.3S 14.4W, H: 04 42 00.7, h 33 km, M 5.1. North of Ascension Island.
	F	05	20								
Feb. 12	eP	00	55.0								51.5N 175.8E, H: 00 43 17.1, h 33 km, M 5.4. Aleutian Islands.
	eS	01	04	54							
	F	in next shock									
	WIT eP	00	55	00							
Feb. 12	eP	01	06	52							52.2N 172.8E, H: 00 55 06.2, h 25 km, M 5.5. Aleutian Islands.
	eS	01	16	40							
	ePS	01	16.9								
	eSS	01	21	50							
	eL	01	32								
	F	02	50								
	WIT iP	01	06	46.5							
	eS	01	16	36							
Feb. 15	eS	10	00.0								d.b.m. 0.4N 19.2W, H: 09 42 22.3, h 33 km, M 4.7. Mid Atlantic Ridge.
	eL	10	07								
	F	10	30								
Feb. 16	eL	13	06								39.5N 141.8E, H: 12 24 08.8, h 33 km, M 5.6. Honshu, Japan.
	F	13	40								
	WIT eP	12	36	18							
Feb. 17	eL	11	00								51.8N 176.6E, H: 10 18 51.3, h 44 km, M 5.6. Aleutian Islands.
	F	11	30								
	WIT eP	10	30	29							
Feb. 17	HEE i	21	36	34	S						Local shock.
Feb. 18	WIT eP	04	37	54							25.0N 94.3E, H: 04 26 33.5, h 36 km, M 5.4. Burma-India border.

Seismic Records at De Bilt

Date 1965	Phase	G.M. Time h	m	s	First motion	Period s	Amplitude μ Z	NS	EW	Magnitude De Bilt	Remarks Data without indication are from USCGS; d.b.m. means disturbed by microseisms
Feb. 18	e	23	46								51.4N 179.1E, H: 23 13 36.3, h 28 km, M 5.4. Aleutian Islands.
	F	24	30								
	WIT iP	23	25	23.0	-						
Feb. 21	e	12	27								15.1S 173.2W, H: 11 14 15.1, h 33 km, M 5.7, Tonga Islands
	F	12	40								
	WIT ePKP	11	33	48							
Feb. 23	eP	22	25	55							25.7S 70.5W, H: 22 11 50.2, h 80 km, M 6.2. Near coast of Northern Chile,
	eSKS	22	37	15							
	ePS	22	38	52							
	eL	22	57			24		37		6¾	
	F	24.5									
	WIT eP	22	25	44							
Feb. 24	eP	08	21	44							14.0N 92.2W, H: 08 09 17.2, h 56 km, M 5.0. Near coast of Chiapas, Mexico.
	eS	08	31	12							
	eL	08	50								
	F	09	25								
	WIT iP	08	21	45.0							
Feb. 25	ePKP	05	10	28							5.5S 152.0E, H: 04 51 27.8, h 35 km, M 5.9. New Britain.
	ePP	05	12	20							
	eSS	05	30								
	F	in next shock									
	WIT ePKP	05	10.4								
Feb. 25	eP	05	34	00	(-)						52.1N 173.2E, H: 05 22 14.5, h 35 km, M 5.6. Aleutian Islands.
	eS	05	43	43							
	eL	05	52			20			16	6¼	
	F	07	45								
	WIT iP	05	33	54.2	+						
Feb. 25	eL	16	54								19.2N 121.2E, H: 16 04 45.7, h 13 km, M 5.1. Philippine Islands.
	F	17	05								
Feb. 26	WIT iPKP	05	02	12.3	-						18.8S 176.1W, H: 04 42 28.3, h 33 km, M 5.3. Fiji Islands
Feb. 26	WIT ePKP	05	55	37							18.9S 176.3W, H: 05 36 01.1, h 61 km, M 5.4. Fiji Islands
Feb. 26	eL	09	50								6.7S 102.7E, H: 08 55 42.2, h 33 km, M 6.1. Southwest of Sumatra.
	F	10	25								
Feb. 27	eL	08	20			26		16		6½	28.5N 112.1W, H: 07 46 29.1, h 33 km, M 5.3. Gulf of California.
	F	09	15								
Mar. 1	eL	08	25								5.5S 152.1E, H: 07 20 55.3, h 35 km, M 5.7. New Britain
	F	09	35								
Mar. 1	eP	21	44	26							d.b.m. 15.4N 92.5W, H: 21 32 11.8, h 93 km, M 5.9. Mexico-Guatemala border.
	eS	21	54	30							
	eL	22	10								
	F	23	00								
	WIT eP	21	44	28							
Mar. 1	WIT ePKP	22	10	55							23.5S 179.0E, H: 21 52 04.4, h 541 km, M 5.2. Fiji Islands.
Mar. 2	eP	22	04	50							d.b.m. 38.6N 28.3E, H: 22 00 07.8, h 45 km, M 5.2. Turkey.
	iS	22	08	56							
	eL	22	11.0			16		21		5¾	
	F	22	40								
	WIT eP	22	04	44							
	eS	22	08	49							

Seismic Records at De Bilt

Date 1965	Phase	G.M. Time h	m	s	First motion	Period s	Amplitude μ Z	NS	EW	Magnitude De Bilt	Remarks Data without indication are from USCGS; d.b.m. means disturbed by microseisms
Mar. 3	ePP	15	35.0								d.b.m. 5.5S 151.9E, H: 15 14 09.7, h 44 km, M 6.0. New Britain.
	ePPP	15	36.8								
	eSS	15	52								
	eL	16	19			22		15		7	
	F	17	40								
	WIT iPKP	15	33	07.3	-						
Mar. 3	WIT iP	16	59	01.0	+						53.1N 171.2E, H: 16 47 25.7, h 23 km, M 5.6. Aleutian Islands.
Mar. 4	WIT e	00	49.0								BCIS: 47.6N 0.6W, H: 00 47 11. France.
	HEE e	00	50	10							
Mar. 4	WIT iP	02	13	13.5	+						51.5N 176.3E, H: 02 01 27.1, h 25 km, M 5.1. Aleutian Islands.
Mar. 4	WIT iPKP	04	12	57.5	-						20.9S 174.8W, H: 03 53 15.0, h 52 km, M 5.1. Tonga Islands.
Mar. 5	WIT iP	13	54	25.5	+						52.3N 174.9E, H: 13 42 44.1, h 35 km, M 5.3. Aleutian Islands.
Mar. 5	WIT iP	18	10	52.2	+						52.3N 174.2E, H: 17 59 13.5, h 35 km, M 5.7. Aleutian Islands.
Mar. 5	WIT iP	23	40	50.0	-						53.0N 171.1E, H: 23 29 23.2, h 45 km, M 5.4. Aleutian Islands.
Mar. 6	WIT iP	08	31	11.0	+						52.4N 174.2E, H: 08 19 30.5, h 25 km, M 5.1. Aleutian Islands.
Mar. 6	eL	21	10			16		6.5		6	20.1N 121.3E, H: 20 23 49.5, h 8 km, M 5.8. Philippine region.
	F	21	35								
	WIT eP	20	36	43							
Mar. 7	ePKP	02	03	00							30.3S 177.9W, H: 01 43 11.4, h 60 km, M 5.6. Kermadec Islands region.
	eL	03	00								
	F	04	00								
	WIT ePKP	02	03	03							
	epPKP	02	03	33							
Mar. 7	eZ	07	56.8								12.1N 46.3E, H: 07 42 31.2, h 33 km, M 5.3. Gulf of Aden.
	F	08	35								
	WIT iP	07	51	30.7	(-)						
Mar. 7	WIT eP	11	16	20							51.8N 176.4E, H: 11 04 39.3, h 35 km, M 5.2. Aleutian Islands.
Mar. 9	iP	18	02	09.0	+	5	6				39.4N 24.0E, H: 17 57 53.7, h 18 km, M 5.7. Aegean Sea.
	iS	18	05	40							
	eL	18	06.5			15		389		6½	
	F	19	20								
	WIT iP	18	02	06.5							
	eS	18	05	32							
	HEE e	18	02	28							
Mar. 9	e	19	57	20							d.b.m. 39.3N 23.9E, H: 19 46 58.2, h 19 km, M 4.7. Aegean Sea.
	F	20	05								

Seismic Records at De Bilt

Date 1965	Phase	G.M. Time h	m	s	First motion	Period s	Amplitude μ Z	NS	EW	Magnitude De Bilt	Remarks Data without indication are from USCGS; d.b.m. means disturbed by microseisms
Mar. 9	e	21	30.0								d.b.m. 39.2N 23.8E, H: 21 20 04.9, h 13 km, M 4.7. Aegean Sea.
	F	21	40								
Mar. 9	e	22	45.6								39.2N 23.7E, H: 22 35 16.3, h 31 km, M 4.8. Aegean Sea.
	F	22	53								
Mar. 10	e	01	46.5								39.2N 23.9E, H: 01 36 07.3, h 33 km, M 4.7. Aegean Sea.
	F	01	54								
Mar. 10	WIT iPKP	16	12	23.3							21.9S 179.6E, H: 15 53 37.8, h 547 km, M 5.7. South of Fiji Islands.
Mar. 13	iP	04	13	45.8	+	4	2				39.1N 23.9E, H: 04 08 40.5, h 12 km, M 5.5. Aegean Sea.
	eZ	04	13	54							
	eS	04	17	25							
	eL	04	18.5			14		19		5½	
	F	04	40								
	WIT eP	04	13	50							
Mar. 13	WIT iP	07	44	59.0	+						53.1N 162.2W, H: 07 33 23.0, h 37 km, M 5.5. Aleutian Islands.
Mar. 13	WIT iPKP	14	13	24.0	-						20.4S 177.6W, H: 13 54 33.0, h 470 km, M 5.7. Fiji Islands.
Mar. 14	iP	16	01	24.7	+						36.3N 70.7E, H: 15 53 06.6, h 219 km, M 6.6. Hindu Kush.
	ipP	16	02	10							
	iS	16	08	05							
	isS	16	09	25							
	eL					12		460		7½	
	F	20									
	WIT iP	16	01	17.0	+						
	HEE eP	16	01	42							
Mar. 15	e	02	50								22.4N 121.4E, H: 02 02 08.9, h 33 km, M 4.7. Formosa.
	F	03	10								
Mar. 16	eP	16	58.5								d.b.m. 40.8N 142.9E, H: 16 46 15.5, h 34 km, M 5.6. Near east coast of Honshu, Japan.
	eS	17	08.5								
	eL	17	24			20			52	6¾	
	F	18	15								
	WIT iP	16	58	21.0	(+)						
Mar. 17	WIT iP	14	38	49.0							52.8N 171.9W, H: 14 27 12.4, h 23 km, M 6.0. Near Islands, Aleutian Islands.
Mar. 18	WIT ePKP	06	41	29.5	-						19.9S 176.1W, H: 06 22 02.9, h 151 km, M 5.5. Tonga Islands region.
	epPKP	06	42	26							
Mar. 18	WIT ePKP	16	34	36							17.7S 178.9W, H: 16 15 56.1, h 507 km, M 5.1. West of Tonga Islands.
Mar. 19	eL	17	20			20		7		6¼	d.b.m. 2.0S 119.8E, H: 16 20 51.4, h 46 km, M 5.0. Celebes.
	F	17	45								
Mar. 21	ePP	11	26.6								d.b.m. 1.5S 126.5E, H: 11 08 16.2, h 33 km, M 6.2. Molucca Sea.
	ePS	11	37	00							
	eSS	11	42								
	eL	12	04			20		14		6½	
	F	12.5									
	WIT ePP	11	26.3								
Mar. 22	eL	03	40								d.b.m. 15.3S 173.4W, H: 02 44 47.5, h 51 km, M 5.9. Tonga Islands.
	F	05.0									
	WIT ePKP	03	04	16							
Mar. 22	eL	23	49								d.b.m. 31.9S 71.5W, H: 22 56 26.5, h 46 km. M 6.0. Near coast of Central Chile.
	F	24	20								
Mar. 24	eL	01	00								d.b.m. 15.2S 173.5W, H: 23 54 14.7, h 130 km, M 5.7. Tonga Islands.
	F	02	15								
	WIT ePKP	00	13.6								
Mar. 24	eL	08	50								d.b.m. 16.3S 167.9E, H: 07 59 39.0, h 189 km, M 5.6. New Hebrides Islands.
	F	09	05								
Mar. 26	WIT iPKP	00	39	36.4	-						20.0S 178.1W, H: 00 20 56.3, h 567 km, M 5.6. Fiji Islands.
Mar. 26	WIT eP	20	34	22							36.8N 30.9E, H: 20 29 25, h 110 km, M 5.3. Turkey.
Mar. 28	eP	13	34.0								55.1N 162.1E, H: 13 22 57.6, h 33 km, M 5.5. Near east coast of Kamchatka.
	eL	13	57								
	F	14	40								
	WIT iP	13	34	11.5	+						
Mar. 28	eP	16	47	24	+	5	4				32.4S 71.2W, H: 16 33 14.6, h 61 km, M 6.4. Near coast of Central Chile.
	iPP	16	51	53							
	ePPP	16	54	06							
	eSKS	16	58	01							
	iS	16	59	15							
	ePS	17	01.0								
	eSS	17	07.0								
	eSSS	17	11.5								
	eL	17	18			22		118		7½	
	F	20.0									
	WIT eP	16	47	33							
	ePS	17	01	14							
	HEE eL	17	30								
Mar. 29	iP	10	59	47.0	+	4	5				40.8N 142.8E, H: 10 47 37.6, h 33 km, M 6.1. Near east coast of Honshu, Japan.
	ePP	11	02	52							
	eS	11	09	52							
	ePS	11	11	07							
	eL	11	27			20		37		6¾	
	F	13.0									
	WIT iP	10	59	42.2	+						
	eS	11	09	35							
Mar. 30	ePKP	00	40	45							20.0S 173.9W, H: 00 21 00.2, h 33 km, M 5.5. Tonga Islands.
	F	in next shock									
	WIT ePKP	00	40	42.0	+						
Mar. 30	iP	02	39	03.0	-	8	35				50.6N 177.9E, H: 02 27 07.2, h 51 km, M 5.7. Rat Islands. Aleutian Islands.
	iS	02	48	58							
	eL					20		302		7¾	
	F	07.0									
	WIT iP	02	38	57.6	+						
	HEE eP	02	39	38							
Mar. 30	eL	16	44								41.0N 142.7E, H: 15 59 34.1, h 32 km, M 5.7. Near east coast of Honshu, Japan.
	F	17.1									
	WIT eP	16	11	53							

Seismic Records at De Bilt

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Mar. 31	iP	09	51	38.5	+	6	90				38.6N 22.4E, H: 09 47 30.7, h 78 km, M 6.3. Greece.
	iS	09	55	01							
	eL	09	56.0			28		390		$6\frac{3}{4}$	
	F	12.0									
	WIT iP	09	51	36.7	+						
	eS	09	55	01							
	HEE eP	09	51	24							
Mar. 31	eL	20	19								39.4N 24.1E, H: 20 08 25.6, h 33 km, M 4.3. Aegean Sea.
	F	20	30								
Apr. 1	eL	22	33			20			3.6	6	50.0S 114.1W, H: 21 20 43.8, h 33 km, M 5.3. Easter Island, Cordillera.
	F	23	20								
Apr. 2	eL	22	50								36.8N 66.6E, H: 22 26 47.3, h 38 km, M 5.5. Hindu Kush.
	F	23	00								
	WIT iP	22	34	55							
Apr. 3	WIT iP	02	49	40.5	-						51.6N 175.8E, H: 02 37 56.1, h 38 km, M 4.5. Rat Islands, Aleutian Islands.
Apr. 3	eP	11	33	23	(-)						16.0N 97.9W, H: 11 20 43.5, h 16 km, M 5.5. Near coast of Oaxaca, Mexico.
	ePP	11	36	40							
	eS	11	44	03							
	eSS	11	49.5								
	eL	12	03								
	F	13.0									
	WIT eP	11	33	24							
Apr. 3	eP	11	41	48							16.1N 97.8W, H: 11 29 13.0, h 45 km, M 5.5. Near coast of Oaxaca, Mexico.
	eS	11	52.4								
	eSS	11	58.0								
	F	13.0									
	WIT eP	11	41	53							
Apr. 4	e	14	20								51.9N 175.2E, H: 13 30 37.8, h 40 km, M 5.7. Rat Islands, Aleutian Islands.
	F	14	40								
	WIT eP	13	42	20							
Apr. 5	eP	03	17	12							d.b.m. 37.7N 21.8E, H: 03 12 54.2, h 34 km, M 5.7. Southern Greece.
	eS	03	20	52							
	eL	03	22								
	F	04	10								
	WIT eP	03	17	10	(-)						
	iS	03	20	44							
	HEE eP	03	17	08							
Apr. 5	eL	14	35								44.6N 151.1E, H: 13 52 13.4, h 81 km, M 5.7. Kurile Islands.
	F	15	00								
	WIT iP	14	04	07.3	+						
Apr. 6	WIT iP	05	44	17.1	+						36.1N 139.6E, H: 05 31 59.7, h 69 km, M 5.7. Honshu, Japan.
Apr. 6	ePP	10	01.0								d.b.m. 0.5S 119.9E, H: 09 42 28.2, h 33 km, M 5.3. Northern Celebes.
	ePPP	10	03.2								
	eS	10	08.6								
	eL	10	30			20			5.3	6	
	F	11	15								
	WIT ePP	10	00	53							
Apr. 6	WIT eP	13	30	48							51.3N 179.8W, H: 13 19 02.2, h 46 km, M 5.2. Aleutian Islands.
Apr. 7	WIT iPKP	18	07	41.9	-						21.0S 178.8W, H: 17 48 59.7, h 568 km, M 5.5. Fiji Islands.
Apr. 8	WIT iPKP	13	10	02.0	+						17.6S 178.7W, H: 12 51 27.8 h 575 km, M 5.2. Fiji Islands.
Apr. 8	eP	13	55	32							d.b.m. 52.2N 173.5E, H: 13 43 52.8, h 46 km, M 5.4. Aleutian Islands.
	eS	14	05	25							
	eL	14	25			18		6.8		6	
	F	15.5									
	WIT eP	13	55	31							
Apr. 9	ePKP$_2$	11	06.0								d.b.m. 32.6S 178.3W, H: 10 45 29.4, h 52 km, M 5.1. Kermadec Islands.
	eSS	11	30.0								
	eL	12	17								
	F	13.0									
Apr. 10	iP	00	01	53.7	+	4	7				d.b.m. 35.1N 24.3E, H: 23 57 03.2, h 51 km, M 6.0. Crete.
	iS	00	05	54							
	eL	00	08.5			18		112		$6\frac{1}{4}$	
	F	01	15								
	WIT iP	00	01	51.5	+						
	iS	00	05	49							
	HEE iP	00	01	43							
Apr. 10	WIT iP	00	24	50.3	(-)						35.0N 24.2E, H: 00 20 01.1, h 59 km, M 4.5. Crete.
Apr. 10	eL	14	38								37.6N 73.4E, H: 14 11 22.0, h 33 km, M 5.5. Tadzhik SSR.
	F	14	45								
Apr. 10	iPKP	22	51	25.7	+	6	6				17.8S 178.8W, H: 22 32 46.6, h 543 km, M 5.9. Fiji Islands.
	F	23	00								
	WIT iPKP	22	51	21.4	+						
Apr. 11	WIT ePKP	00	32	28.0	(-)						42.7S 173.9E, H: 00 11 08.8, h 7 km, M 6.2. New Zealand.
Apr. 11	WIT iPKP	19	10	31.8	+						26.2S 178.5E, H: 18 51 38.1, h 581 km, M 5.6. South of Fiji Islands.
Apr. 12	eL	21	58								32.3S 178.5W, H: 20 26 15.3, h 167 km, M 5.9. Kermadec Islands.
	F	22	10								
Apr. 15	WIT iP	05	22	06.4	-						24.9N 122.6E, H: 05 09 51.1, h 190 km, M 5.4. Formosa region.
Apr. 15	WIT ePKP	23	59	29							17.6S 173.4W, H: 23 39 54.6, h 45 km, M 4.8. Tonga Islands.
Apr. 16	WIT iPKP	00	35	31.4							22.3S 175.5W, H: 00 15 52.3, h 120 km, M 4.8, Tonga Islands.
Apr. 16	eP	23	32	50							d.b.m. 64.7N 160.1W, H: 23 22 18.6, h 5 km, M 5.8. Central Alaska.
	eS	23	41	12							
	eL	23	58			24		7.4		$5\frac{3}{4}$	
	F	24	05								
	WIT eP	23	32	46	+						
	eS	23	41	10							

Seismic Records at De Bilt

Date 1965	Phase	G.M. Time h	m	s	First motion	Period s	Amplitude μ Z	NS	EW	Magnitude De Bilt	Remarks Data without indication are from USCGS; d.b.m. means disturbed by microseisms
Apr. 18	eL	10	30								d.b.m. 59.8S 26.8W, H: 09 39 18.7, h 29 km, M 5.9. South of Sandwich Islands.
	F	11	10								
Apr. 18	eL	13	40								d.b.m. 59.7S 26.4W, H: 12 41 54.9, h 25 km, M 5.8. South of Sandwich Islands.
	F	14	00								
Apr. 19	eL	24	25			18		10		6¼	34.9N 138.0E, H: 23 41 58.8, h 36 km, M 5.6. Near South coast of Honshu, Japan.
	F	25	00								
	WIT iP	23	54	23.8	-						
Apr. 22	WIT eP	18	47	44							51.8N 176.1E, H: 18 36 01.2, h 37 km, M 5.1. Aleutian Islands.
Apr. 24	eL	22	52								11.4N 140.1E, H: 21 55 26.5, h 59 km, M 5.7. Caroline Islands.
	F	23.2									
Apr. 25	eL	01	50								24.5N 142.7E, H: 01 00 11.6, h 15 km, M 5.6. Volcano Islands region.
	F	02	30								
	WIT eP	01	13.5								
Apr. 25	eL	22	18								29.7N 130.7E, H: 21 28 40.5, h 28 km, M 4.9. Ryukyu Islands.
	F	22	30								
Apr. 26	eL	02	35								58.9N 142.7W, H: 01 57 14.4, h 33 km, M 5.3. Gulf of Alaska.
	F	02	45								
	WIT eP	02	08	13							
Apr. 26	WIT iP	20	40	33.6	+						54.5N 162.6W, H: 20 29 07.4, h 53 km, M 5.9. Alaska.
Apr. 26	eP	22	28	32							21.1N 120.7E, H: 22 15 42.5, h 33 km, M 5.9. Formosa region.
	eS	22	39	20							
	eL	23	00			17		20		6½	
	F	23	45								
	WIT iP	22	28	26.1	-						
Apr. 27	eP	14	13	50							35.7N 23.5E, H: 14 09 07.1, h 50 km, M 5.5. Crete.
	eS	14	17	48							
	eL	14	20			20		14		5½	
	F	15	15								
	WIT iP	14	13	47.8	+						
Apr. 29	iP	15	40	00	-	3	6				47.4N 122.4W, H: 15 28 43.3, h 57 km, M 6.5. Washington.
	iS	15	49	15							
	eL	16	02			23		53		7	
	F	17.5									
	WIT iP	15	39	59.5	-						
	iS	15	49	15							
May 1	eL	02	11								37.1N 27.0E, H: 01 59 47.3, h 33 km, M 4.4. Turkey.
	F	02	22								
May 1	eL	02	35								33.4N 138.7E, H: 02 16 11.4, h 230 km, M 4.6. Off east coast of Honshu, Japan.
	F	02	48								
May 1	eL	04	59								30.9N 141.7E, H: 04 11 19.1, h 38 km, M 4.6. Off east coast of Honshu, Japan.
	F	05	20								
May 2	eP	07	26	24							28.9N 128.9E, H: 07 13 42.0, h 30 km, M 5.0. Ryukyu Islands.
	ePP	07	29	41							
	eS	07	36	50							
	eSS	07	42	40							
	eL	07	55.5			15		12		6¼	
	F	08	45								

Date 1965	Phase	G.M. Time h	m	s	First motion	Period s	Amplitude μ Z	NS	EW	Magnitude De Bilt	Remarks Data without indication are from USCGS; d.b.m. means disturbed by microseisms
May 3	eS	10	24	15							13.5N 89.3W, H: 10 01 35.2, h 23 km, M 5.1. El Salvador.
	ePS	10	25	08							
	eSS	10	29.5								
	eSSS	10	33.3								
	eL	10	37			18		5.1		6	
	F	12.0									
May 4	eSS	08	54.5								d.b.m. 41.7N 79.4E, H: 08 34 39.8, h 6 km, M 5.7. Kirgiz-Sinkiang border region
	eL	08	58			16		23		6	
	F	09.0									
											No records at Witteveen from 6 May 7 h 44 m - May 28 12h 19m.
May 7	eL	08	18								30.2N 129.0E, H: 07 31 46.5, h 131 km, M 4.8. East China Sea.
	F	08	35								
May 12	ePP	10	53.4								6.2S 130.3E, H: 10 33 43.5, h 125 km, M 5.7. Banda Sea.
	ePS	11	02	42							
	eSS	11	09.0								
	eL	11	32								
	F	12.0									
May 16	eL	00	55								4.1S 135.1E, H: 23 58 34.4, h 33 km, M 5.8. West New Guinea region.
	F	02.0									
May 16	eP	11	48								5.3N 125.7E, H: 11 35 46.0, h 36 km, M 6.2. Mindanao, Philippine Islands.
	eL	12	38								
	F	15.5									
May 17	iP	17	32	11.5	+	4	2				22.5N 121.3E, H: 17 19 25.9, h 21 km, M 6.2. Taiwan region.
	ipP	17	32	41							
	iPP	17	35	39							
	ipPP	17	35	58							
	eS	17	42	56							
	eSS	17	48	40							
	eL	18	00			16		72		7	
	F	19.5									
May 18	eL	12	57								29.3N 128.3E, H: 12 08 51.4, h 34 km, M 4.8. Ryukyu Islands.
	F	13	10								
Mat 20	ePKP	00	59	38							14.7S 167.4E, H: 00 40 10.9, h 16 km, M 5.6. New Hebrides Islands
	ePP	01	02	44							
	ePPS	01	15.1								
	eSS	01	21.0								
	eSSS	01	26.3								
	eL	01	40			23		87		7¼	
	F	04.0									
May 22	iPKP	10	50	26.0	-						21.1S 178.7W, H: 10 31 39.5, h 578 km, M 5.8. Fiji Islands region.
	epPKP	10	52	34							
May 23	iP	23	58	00.0		4	4				52.2N 175.0E, H: 23 46 12.0, h 22 km, M 6.1. Rat Islands, Aleutian Islands.
	ePP	00	00	50							
	ePPP	00	02	39							
	eS	00	07	36							
	eSS	00	12.5								
	eL	00	22			30		5.9		6	
	F	01.5									

Seismic Records at De Bilt

Date 1965	Phase	G.M. Time h	m	s	First motion	Period s	Amplitude μ Z	NS	EW	Magnitude De Bilt	Remarks Data without indication are from USCGS; d.b.m. means disturbed by microseisms
May 24	eP	23	34	42							13.0N 124.5E, H: 23 21 10.6, h 33 km, M 5.9. Samar, Philippine Islands.
	ePP	23	38	36							
	ePS	23	47	28							
	eSS	23	52	26							
	eSSS	23	56	10							
	eL	24	05.5			20		5.3		6	
	F	25	05								
May 25	iP	13	19	39.6							51.3N 178.7E, H: 13 07 49.7, h 40 km, M 5.5. Rat Islands, Aleutian Islands.
	eS	13	29	29							
	eSS	13	34.5								
	eL	13	45								
	F	14	45								
May 25	ePKP	18	54	12							17.0S 175.9E, H: 18 34 28.4, h 16 km, M 5.2. Fiji Islands region.
	ePP	18	57	33							
	eL	19	45								
	F	20.5									
May 26	ePP	20	03	35							56.1S 27.6W, H: 19 44 10.9, h 120 km, M 6.7. South Sandwich Islands region.
	ePS	20	12	30							
	eSS	20	19.0								
	eL	20	34								
	F	21	05								
May 29	eL	17	00								57.8S 147.3W, H: 15 36 31.9, h 33 km, M 5.5. South Pacific Cordillera.
	F	17.5									
May 31	eP	02	14	13							32.6N 78.2E, H: 02 04 42.9, h 33 km, M 5.3. Kashmir-Tibet border region.
	eL	02	30.5			20		3.9		5½	
	F	02	50								
	WIT eP	02	14	05							
May 31	e	11	58								7.5S 128.7E, H: 11 38 28.0, h 37 km, M 6.0. Banda Sea.
	F	13.1									
June 1	WIT eP	04	44	12							20.2N 94.9E, H: 04 32 45.3, h 57 km, M 5.5. Burma.
June 1	eL	08	26								28.5N 83.2E, H: 07 52 26.1, h 33 km, M 5.2. Nepal.
	F	08	40								
June 1	eP	15	24	16							37.8N 26.6W, H: 15 18 31.2, h 5 km, M 4.9. Azores Islands.
	eS	15	29	(08)							
	eL	15	31								
	F	16.0									
June 2	WIT iPKP	05	31	51.0							23.5S 180.0E, H: 05 12 59.1, h 539 km, M 5.6. South of Fiji Islands.
	ipPKP	05	33	59							
June 2	iPKP	15	04	27.7	+	4	2				17.9S 179.5W, H: 14 45 55.8, h 637 km, M 5.1. Fiji Islands region.
	epPKP	15	06	45							
	F	12	20								
	WIT iPKP	15	04	23.9	+						
June 2	WIT iPKP	15	17	01.8	-						18.0S 179.4W, H: 14 58 31.9, h 621 km, M 5.1. Fiji Islands region.
June 2	iP	23	49	50.0	-	3	2				16.0N 46.8W, H: 23 40 24.4, h 33 km, M 5.6. North Atlantic Ridge.
	iS	23	57	34							
	iH	23	58	26							
	eL	24	07			20		8.9		5½	
	F	25	15								
	WIT iP	23	49	49.0	-						
	eS	23	57	52							

Seismic Records at De Bilt

Date 1965	Phase	G.M. Time h	m	s	First motion	Period s	Amplitude μ Z	NS	EW	Magnitude De Bilt	Remarks Data without indication are from USCGS; d.b.m. means disturbed by microseisms
June 3	eL	11	30								18.5N 70.3W, H: 10 57 08.8, h 27 km, M 5.3. Dominican Republic region.
	F	11	45								
June 3	eL	18	41								39.7N 23.2E, H: 18 31 50.5, h 33 km, M 4.7. Aegean Sea.
	F	18	55								
June 8	eL	14	22								23.3N 108.5W, H: 13 39 58.2, h 33 km, M 5.1. Gulf of California.
	F	14.9									
June 10	WIT iPKP	04	55	05	+						18.3S 174.6W, H: 04 35 40.3, h 131 km, M 4.6. Fiji Islands region.
June 10	HEE i	16	54	54							Local shock.
June 10	eP	20	38	38							46.4N 27.6W, H: 20 33 59.3, h 33 km, M 4.9. Mid Atlantic Ridge.
	eZ	20	38	52							
	eS	20	42	54							
	eL	20	44.5			12		5.3		5	
	F	21	00								
	WIT eS	20	43	11							
June 11	eP	02	49	22							51.8N 174.1E, H: 02 37 34.7, h 35 km, M 5.5. Near Islands, Aleutian Islands.
	eS	02	59	10							
	F	in next shock									
	WIT iP	02	49	18.0	-						
June 11	eP	03	45	45		4	4				44.7N 148.7E, H: 03 33 44.9, h 47 km, M 6.0. Kurile Islands.
	eS	03	55	37							
	eL	04	21			20		110		7¼	
	F	07	20								
	WIT iP	03	45	39.6	+						
	HEE eL	04	17								
June 11	WIT iP	03	52	59							44.5N 149.0E, H: 03 41 02.3, h 33 km, M 5.7. Kurile Islands.
June 11	WIT iP	03	56	29							44.2N 149.5E, H: 03 44 30.7, h 33 km, M 5.4. Kurile Islands.
June 11	WIT eP	04	04	53							44.4N 149.5E, H: 03 52 55.3, h 33 km, M 5.4. Kurile Islands.
June 11	WIT iP	04	26	47							44.3N 149.0E, H: 04 14 51.4, h 48 km, M 5.2. Kurile Islands.
June 11	WIT iP	04	56	51							44.5N 149.2E, H: 04 44 53.1, h 52 km, M 5.4. Kurile Islands.
June 11	eL	08	05								44.4N 149.2E, H: 07 11 05.7, h 50 km, M 5.5. Kurile Islands.
	F	09.0									
	WIT eP	07	23	00							
June 11	WIT eP	07	39	44	-						44.1N 149.4E, H: 07 27 45.5, h 61 km, M 5.2. Kurile Islands.
June 11	e	09	30								44.3N 149.0E, H: 08 41 01.1, h 54 km, M 5.1. Kurile Islands.
	F	10	00								
	WIT iP	08	52	58.0	(-)						

Seismic Records at De Bilt

Date 1965	Phase	G.M. Time h	m	s	First motion	Period s	Amplitude μ Z	NS	EW	Magnitude De Bilt	Remarks Data without indication are from USCGS. d.b.m. means disturbed by microseisms
June 11	eL	11	08								44.4N 149.3E, H: 10 16 37.3, h 29 km, M 5.0. Kurile Islands.
	F	11	30								
	WIT eP	10	28	36							
June 11	eP	12	12	06	(+)						44.2N 149.1E, H: 12 00 00.8, h 33 km, M 5.2. Kurile Islands.
	eL	12	42								
	F	13	15								
	WIT eP	12	12	06							
June 12	WIT iP	05	40	38.4	-						44.2N 149.8E, H: 05 28 40.3, h 41 km, M 5.7. Kurile Islands.
June 12	eP	05	53	02							44.0N 149.1E, H: 05 41 00.3, h 64 km, M 5.6. Kurile Islands.
	eL	06.3									
	F	07.4									
	WIT eP	05	52	56							
June 12	WIT eP	06	15	32	-						44.3N 149.0E, H: 06 03 34.8, h 48 km, M 5.2. Kurile Islands.
June 12	ePP	19	07	24							20.3S 68.9W, H: 18 50 11.3, h 103 km, M 5.8. Chile-Bolivia border.
	eL	19	30								
	F	20	05								
	WIT eP	19	03	38							
	ePP	19	07	33							
	eSKS	19	14	07							
	eSS	19	21	20							
June 12	WIT eP	22	28	43							44.2N 149.0E, H: 22 16 46.3, h 48 km, M 5.3. Kurile Islands.
June 13	WIT eP	02	32	49							44.1N 149.3E, H: 02 20 52.0, h 50 km, M 5.3. Kurile Islands.
June 13	iP	07	18	20.0	+	4	2				41.9N 143.4E, H: 07 06 13.6, h 32 km, M 5.7. Hokkaido, Japan.
	eS	07	28	20							
	eL	07	45			18		10		6¼	
	F	08	30								
	WIT eP	07	18	13							
	eS	07	28	09							
June 13	eP	20	06	44		5	2				37.8N 29.4E, H: 20 01 48.1, h 18 km, M 5.3. Anatolia, Turkey.
	eS	20	10	55							
	eL	20	12.5			12		36		6	
	F	20	50								
	WIT iP	20	06	41.4							
	eS	20	10	41							
June 14	eL	08.4									39.8S 45.8E, H: 07 30 43.6, h 33 km, M 5.5. Atlantic-Indian ridge.
	F	08.9									
June 14	eL	10.3									44.6N 129.5W, H: 09 40 09.5, h 33 km, M 5.5. Off coast of California.
	F	10.6									
June 14	WIT eP	13	27	07.5	(+)						32.0N 87.7E, H: 13 17 01.7, h 37 km, M 5.1. Tibet.
June 14	WIT iP	16	57	10.0	(+)						8.0N 37.9, H: 16 47 21.4, h 33 km, M 5.2. Central Mid-Atlantic Ridge.

Seismic Records at De Bilt

Date 1965	Phase	G.M. Time h	m	s	First motion	Period s	Amplitude μ Z	NS	EW	Magnitude De Bilt	Remarks Data without indication are from USCGS; d.b.m. means disturbed by microseisms
June 15	WIT iP	04	58	04.3	+						50.1N 178.2E, H: 04 46 13.1, h 28 km, M 5.5. Rat Islands, Aleutian Islands.
June 15	ePKP	23	30	10							20.9S 173.7E, H: 23 10 25.2, h 22 km, M 5.7. New Hebriden Islands region.
	eL	24	17			20		5.7		6¼	
	F	25.5									
	WIT ePKP	23	30	10							
June 17	eS	03	06	53							37.7N 29.3E, H: 02 58 22.5, h 21 km, M 4.9. Turkey.
	eL	03	10								
	F	03	20								
June 17	eL	20	42			18		10		6	32.0N 87.8E, H: 20 14 48.6, h 8 km, M 5.4. Tibet.
	F	21	20								
June 17	HEE i	22	13	06							Local shock.
June 19	WIT iP	06	49	49.0	-						52.3N 172.0E, H: 06 38 12.6, h 54 km, M 5.5. Near Islands, Aleutian Islands.
June 19	eL	11	22								55.6N 35.0W, H: 11 09 03.6, h 33 km, M 4.5. North Atlantic Ocean.
	F	11	30								
June 20	eP	02	09.4								44.6N 149.2E, H: 01 57 24.8, h 40 km, M 5.4. Kurile Islands.
	eL	02	42								
	F	03.2									
	WIT iP	02	09	20.7	+						
June 20	eL	18	42								42.8N 126.5W, H: 18 04 35.7, h 33 km, M 5.6. Off coast of Oregon.
	F	19	10								
June 20	e	20	00								25.4N 109.4W, H: 19 16 21.2, h 33 km, M 5.8. Gulf of California.
	F	20	15								
June 21	eP	00	29	25							28.1N 56.0E, H: 00 21 14.5, h 28 km, M 6.0. Southern Iran.
	eS	00	36	00							
	eL	00	42			16		4.9		5½	
	F	01	30								
	WIT iP	00	29	19.2	-						
	eS	00	35	49							
June 23	eP	00	01	54							7.1N 123.5E, H: 23 48 07.1, h 60 km, M 5.6. Mindanao, Philippine Islands.
	ePP	00	05	54							
	ePS	00	15.2								
	eL	00	40			18		6.8		6	
	F	02.0									
	WIT iP	00	01	49.0							
June 23	iP	11	20	29.8	+	6	4				56.6N 152.9W, H: 11 09 15.3, h 36 km, M 5.7. Kodiak Islands.
	iS	11	29	43							
	eSS	11	34.3								
	eL	11	45			20		28		6½	
	F	13	15								
	WIT iP	11	20	26.2	+						
	eS	11	29	26							
June 24	eL	08	39								7.0N 126.2E, H: 07 45 13.6, h 50 km, M 6.0. Mindanao, Philippine Islands.
	F	09	10								
June 24	WIT iPKP	14	28	15.2	+						23.6S 176.7W, H: 14 08 31.2, h 91 km, M 5.5. Fiji Islands.

Seismic Records at De Bilt

Date 1965	Phase	G.M. Time h	m	s	First motion	Period s	Amplitude μ Z	NS	EW	Magnitude De Bilt	Remarks Data without indication are from USCGS; d.b.m. means disturbed by microseisms
June 24	eL	23	57								20.1N 120.8E, H: 23 08 40.4, h 33 km, M 5.0. Philippine Islands region.
	F	24.3									
June 27	eP	11	19	36							60.3N 141.2W, H: 11 08 55.9, h 12 km, M 5.3. Alaska.
	eS	11	28	31							
	eL	11	45			16		16.4		6½	
	F	13.1									
June 27	eL	22	55								30.2N 132.7E, H: 21 59 35.0, h 10 km, M 5.2. Southeast of Shikoku, Japan.
	F	23	10								
June 28	ePKP	03	52	36							5.1S 153.0E, H: 03 33 36.5, h 50 km, M 6.1. New Ireland.
	ePP	03	54	31							
	eSKP	03	55	55							
	eL	04	34			20		1.8		5½	
	F	05	50								
	WIT iPKP	03	52	36.0	+						
June 28	e	16	30								23.9N 121.6E, H: 15 44 53.8, h 33 km, M 5.7. Taiwan.
	F	16	50								
June 28	WIT iPKP	18	16	22	+						21.0S 178.9W, H: 17 57 39.7, h 562 km, M 5.3. Fiji Islands region.
June 29	WIT e	00	45.5								47.3N 10.1E, H: 00 43 44.2, h 18 km, M 4.0. Germany.
	e	00	47.1								
June 29	WIT eP	02	16	20							44.4N 149.4E, H: 02 04 22.6, h 33 km, M 5.5. Kurile Islands.
June 29	eS	04	36	12							36.5N 12.2W, H: 04 27 57.4, h 33 km, M 4.8. Off coast of Portugal, North Atlantic Ocean.
	F	04	50								
	WIT eP	04	32	43							
June 30	ePP	03	12	22							1.6S 126.7E, H: 02 53 14.0, h 33 km, M 5.2. Molucca Sea.
	eSKS	03	12,5								
	eSPP	03	22.3								
	eL	03	52								
	F	04	30								
June 30	eP	08	45	18							51.7N 176.5E, H: 08 33 31.8, h 60 km, M 6.0. Rat Islands, Aleutian Islands.
	eS	08	55	20							
	eL	09	12								
	F	09	50								
	WIT iP	08	45	12.2	+						
July 1	WIT iP	17	53	11.5	+						50.0N 158.9E, H: 17 41 34.3, h 66 km, M 5.0. Kurile Islands region.
July 1	ePKP	23	32	48							63.0S 163.7W, H: 23 12 45.4, h 33 km, M 5.5. South Pacific Cordillera.
	eZ	23	34.5								
	ePP	23	37	47							
	eSS	23	58	35							
	eL	24	40			18		3.4		6¼	
	F	01.5									
July 2	HEE i	16	01	30							Local shock
July 2	iP	21	10	17.7	+	4	15				53.2N 167.7W, H: 20 58 40.0, h 59 km, M 6.6. Rat Islands, Aleutian Islands.
	ePP	21	13	12							
	eS	21	19	50							
	eL	21	34			38		55		6½	
	F	24.5									
	WIT iP	21	10	13.0	+						
	eS	21	19	52							
	HEE eP	21	10	29							

Seismic Records at De Bilt

Date 1965	Phase	G.M. Time h	m	s	First motion	Period s	Amplitude μ Z	NS	EW	Magnitude De Bilt	Remarks Data without indication are from USCGS; d.b.m. means disturbed by microseisms
July 3	iP	02	27	14.4	(+)	4	3				52.7N 32.1W, H: 02 22 18.6, h 36 km, M 5.3. North Atlantic Ocean.
	eS	02	31	26							
	eL	02	33.0			11		18.5		5¾	
	F	03	05								
	WIT eP	02	27	23							
	eS	02	31	36							
July 3	eS	11	47.5								22.6N 101.4E, H: 11 26 11.6, h 33 km, M 5.2. China-Burma border.
	eL	12	07			18		6.8		6	
	F	12	50								
	WIT eP	11	37	54							
July 5	iP	08	37	10.1	+	4	3				52.9N 34.2W, H: 08 31 58.9, h 33 km, M 5.7. North Atlantic Ocean.
	eS	08	41	33							
	eL	08	43.7			14		9.7		5½	
	F	09	30								
	WIT iP	08	37	17.8							
July 6	iP	03	22	58.5		6	30				38.7N 22.6E, H: 03 18 44.6, h 28 km, M 5.9. Greece.
	eS	03	26	28							
	eL	03	27.7			10		332		6¾	
	F	06.0									
	WIT eP	03	22	58.0							
	eS	03	26	23							
	HEE eP	03	22	48							
July 6	ePP	18	56	31							4.5S 155.1E, H: 18 36 47.3, h 510 km, M 6.5. Solomon Islands.
	epPKP	18	56	54							
	eZ	18	57	22							
	ePPP	18	59	48							
	epPPP	19	01	14							
	eSKKS	19	03	00							
	eSP	19	05	56							
	F	20.0									
July 7	WIT iP	21	51	04.7	-						32.7N 138.7E, H: 21 38 50.5, h 218 km, M 5.6. Southern Honshu, Japan.
July 8	eZ	00	18	20							72.0N 1.6W, H: 00 13 53.9, h 33 km, M 4.4. Jan Mayen Island.
	eL	00	24								
	F	00	35								
July 8	WIT e	23	22.3								47.3N 11.3E, H: 23 20 04.6, h 33 km, M 4.4. Austria.
July 10	eL	05	08								55.3N 162.6E, H: 04 26 41.9, h 33 km, M 5.0. Kamchatka.
	F	05.7									
July 12	e	10	03								37.7N 29.4E, H: 09 51 45.8, h 22 km, M 4.6. Southern Turkey.
	F	10	08								
July 13	e	14	30								37.5N 27.8E, H: 14 18 58.2, h 16 km. Turkey.
	F	14	38								
July 14	WIT iP	18	07	35.8	-						52.6N 168.6W, H: 17 55 51.1, h 8 km, M 5.3. Fox Islands, Aleutian Islands.
July 15	eL	19	10								7.7N 123.8E, H: 18 33 29.9, h 588 km, M 5.8. Mindanao, Philippine Islands.
	F	19.5									
	WIT iP	18	46	14.2							
July 17	eL	08	30								9.7S 159.8E, H: 07 20 30.5, h 23 km, M 6.4. Solomon Islands.
	F	09	00								

Seismic Records at De Bilt

Date 1965	Phase	G.M. Time h	m	s	First motion	Period s	Amplitude μ Z	NS	EW	Magnitude De Bilt	Remarks Data without indication are from USCGS; d.b.m. means disturbed by microseisms
July 17	eZ	13	19								27.2S 177.6W, H: 12 59 10.7, h 27 km, M 5.4. Kermadec Islands.
	F	13	45								
July 20	WIT iP	11	31	35.2							48.7N 155.6E, H: 11 19 47.3, h 4 km, M 5.4. Kurile Islands.
July 20	e	14	10								7.5N 124.3E, H: 13 18 27.4, h 45 km, M 5.8. Mindanao, Philippine Islands.
	F	14	40								
	WIT eP	13	32	11							
July 21	ePKP	03	11	20							20.8S 175.8W, H: 02 51 39.0, h 57 km, M 5.7. Tonga Islands.
	eSS	03	36.4								
	eL	04	00								
	F	05.0									
	WIT ePKP	03	11	26							
July 21	iP	18	04	08							53.3N 170.4E, H: 17 52 30.5, h 26 km, M 5.7. Aleutian Islands.
	F	18	30								
	WIT iP	18	04	04.0	-						
July 25	eP	13	45	18							41.3N 146.6E, H: 13 33 05.2, h 33 km, M 5.9. Off coast of Hokkaido.
	eSP	13	56.5								
	F	14	10								
	WIT iP	13	45	15.2	+						
July 25	eP	21	58	34							51.4N 176.0E, H: 21 46 45.3, h 37 km, M 5.3. Rat Islands, Aleutian Islands.
	eS	22	08	20							
	eL	22	30								
	F	23.2									
	WIT iP	21	58	31.5	-						
	eS	22	08	14							
July 29	iP	08	41	20.6	-	5	20				51.2N 171.3W, H: 08 29 22.1, h 23 km, M 6.4. Fox Islands, Aleutian Islands.
	iS	08	51	13							
	eL	09	06			20		64		7	
	F	10	30								
	WIT iP	08	41	13.3	-						
	HEE e	08	41	50							
July 31	eL	08	21			14	4.2			5¾	35.9N 142.2E, H: 07 36 31.5, h 52 km, M 4.8. East coast of Honshu, Japan.
	F	08	55								
July 31	eL	17	45								32.7N 93.1E, H: 17 07 52.6, h 33 km, M 4.7. Tibet.
	F	17	55								
July 31	eL	22	20								32.7N 93.1E, H: 21 44 47.8, h 21 km, M 4.9. Tibet.
	F	22	32								
Aug. 1	WIT iP	15	13	53.0	-						46.9N 143.8E, H: 15 02 56.1, h 400 km, M 5.7. Sakhalin Island.
Aug. 1	WIT iP	16	51	46.9	-						52.7N 153.4E, H: 16 41 13.7, h 462 km, M 5.1. Northwest of Kurile Islands.
Aug. 1	e	20	43								32.6N 93.3E, H: 20 09 17.9, h 32 km, M 5.3. Tibet.
	F	20	57								
Aug. 2	ePKP	13	40	02							56.2S 158.2E, H: 13 19 54.7, h 33 km, M 6.7. Macquarie Island.
	ePP	13	44	27							
	eL	14	38			20		21		7	
	F	16.0									
	WIT e	13	41								

Seismic Records at De Bilt

Date 1965	Phase	G.M. Time h	m	s	First motion	Periode s	Amplitude μ Z	NS	EW	Magnitude De Bilt	Remarks Data without indication are from USCGS; d.b.m. means disturbed by microseisms
Aug. 4	e	11	55								43.9N 12.3E, H: 11 49 56.1, h 33 km, M 4.6. Italy.
	F	12	03								
Aug. 4	HEE i	20	16	53							Local shock.
Aug. 5	ePKP	00	26	51							5.3S 151.7E, H: 00 07 50.5, h 47 km, M 6.3. New Britain region.
	ePP	00	28	34							
	ePPP	00	31	30							
	eSP	00	38.5								
	ePPS	00	40	16							
	eL	01	10			20			7.1	6¼	
	F	02.5									
	WIT iPKP	00	26	47.6							
Aug. 6	eL	02	25								0.5S 19.6W, H: 01 58 40.8, h 33 km, M 5.1. Central Mid-Atlantic Ridge.
	F	02	45								
	WIT eP	02	08	29							
Aug. 9	ePcP	10	29	52							48.0N 27.7W, H: 10 20 52.7, h 33 km, M 4.9. North Atlantic Ridge.
	F	10	40								
Aug. 11	ePKP	04	00	20	-	8	6				15.4S 166.9E, H: 03 40 56.2, h 26 km, M 6.3. New Hebrides Islands.
	ePP	04	03	27							
	ePKS	04	04	08							
	eL	04	43			24			45	7¼	
	F	07.0									
	WIT ePKP	04	00	19							
Aug. 11	ePKP	20	11	52	-	8	3				15.7S 167.1E, H: 19 52 29.8, h 33 km, M 5.6. New Hebrides Islands.
	ePP	20	15	01							
	ePKS	20	15	41							
	eL	20	52			20			21	6¾	
	F	in next shock									
	WIT ePKP	20	11	53							
Aug. 11	ePKP	22	51	11	-	8	5				15.8S 167.2E, H: 22 31 48.9, h 33 km, M 6.4. New Hebrides Islands.
	ePP	22	54	21							
	eL					21			129	7¾	
	F	04.0									
	WIT ePKP	22	51	11							
Aug. 12	WIT ePKP	01	44	50							22.9S 175.8W, H: 01 25 00.8, h 33 km, M 5.3. Tonga Islands region.
Aug. 12	WIT iPKP	04	58	24.2	+						17.7S 178.7W, H: 04 39 49.1, h 545 km, M 4.4. Tonga Islands region.
Aug. 12	ePKP	08	21	02							15.9S 167.5E, H: 08 01 43.3, h 25 km, M 6.3. New Hebrides Islands.
	ePP	08	24	16							
	ePKS	08	25.1								
	eL	09	04			24			16	6¾	
	F	11.0									
	WIT ePKP	08	21	03							
Aug. 12	ePKP	13	16	08							5.3S 152.2E, H: 12 57 09.7, h 41 km, M 5.9. New Britain region.
	ePP	13	18	10							
	ePPS	13	29.5								
	eL	13	58			24			31	7	
	F	15.5									
	WIT ePKP	13	16	07							
Aug. 12	ePKP	18	24.3								16.0S 167.4E, H: 18 04 56.1, h 45 km, M 5.3. New Hebrides Islands.
	ePP	18	27.3								
	eL	19	20								
	F	20.2									
	WIT ePKP	18	24.3								

Seismic Records at De Bilt

Date 1965	Phase	G.M. Time h	m	s	First motion	Period s	Amplitude μ Z	NS	EW	Magnitude De Bilt	Remarks Data without indication are from USCGS; d.b.m. means disturbed by microseisms
Aug. 13	ePP	11	47.0								No vertical record. 16.0S 167.0E, H: 11 24 51.8, h 33 km, M 5.5. New Hebrides Islands.
	ePKS	11	48.0								
	F	12	50								
Aug. 13	ePKP	12	59	56							No vertical record. 15.9S 166.8E, H: 12 40 08.3, h 33 km, M 5.6. New Hebrides Islands.
	ePP	13	03	04							
	ePKS	13	03	42							
	eL	13	38			24		66		7½	
	F	15.8									
	WIT ePKP	12	59	51							
Aug. 13	ePKP	18	16.0								16.6S 167.6E, H: 17 56 27.6, h 39 km, M 5.4. New Hebrides Islands.
	ePP	18	18	36							
	eL	19.0									
	F	20.4									
Aug. 13	ePP	22	18.4								6.4S 148.5E, H: 21 57 38.7, h 51 km, M 5.2. Bismarck Archipelago.
	eL	23.0				20		5.3		6¼	
	F	24.4									
Aug. 14	ePKP	11	27	16							15.8S 166.8E, H: 11 07 47.1, h 33 km, M 5.5. New Hebrides Islands.
	ePP	11	29	52							
	F	13.0									
Aug. 16	eP	04	44.4								35.2N 35.6W, H: 04 36 37.7, h 33 km, M 4.8. North Atlantic Ridge.
	eS	04	48	38							
	eL	04	51.5			14		4.5		5¼	
	F	05	40								
	WIT eP	04	43	20							
	eS	04	48	51							
Aug. 16	eP	12	29	18							5.2N 77.5W, H: 12 16 49.9, h 15 km, M 5.1. Near west coast of Colombia.
	eS	12	39	38							
	F	in next shock									
	WIT eP	12	29	20							
	eS	12	39	48							
Aug. 16	iP	12	46	05.2	+	4	8				0.6S 19.9W, H: 12 36 23.3, h 33 km, M 6.1. Central Mid-Atlantic Ridge.
	iS	12	54	00							
	eL	13	01			18		25		6¼	
	F	14	20								
	WIT iP	12	46	12.7	+						
	eS	12	54	10							
Aug. 16	eS	20	05	15							35.9N 35.0W, H: 19 53 17.7, h 33 km, M 4.6. Mid-Atlantic Ridge.
	eL	20	09								
	F	20	30								
Aug. 17	eS	00	34	30							35.1N 35.2W, H: 00 22 23.9, h 33 km, M 4.6. Mid-Atlantic Ridge.
	eL	00	38								
	F	01	00								
Aug. 17	eP	10	47	45							5.3N 96.2E, H: 10 35 04.1, h 33 km, M 5.3. Northern Sumatra.
	eS	10	58	11							
	eL	11	14			18		8.5		6¼	
	F	12.5									
	WIT eP	10	47	41							
	eS	10	58	08							
Aug. 17	WIT iPKP	22	38	26							20.4S 168.8E, H: 22 18 52.5, h 33 km, M 5.2. New Hebrides Islands region.
Aug. 18	ePKP	14	34	40							23.3S 175.3W, H: 14 14 28.6, h 20 km, M 5.0. Tonga Islands.
	WIT ePKP	14	34.3								

Seismic Records at De Bilt

Date 1965	Phase	G.M. Time h	m	s	First motion	Period s	Amplitude μ Z	NS	EW	Magnitude De Bilt	Remarks Data without indication are from USCGS; d.b.m. means disturbed by microseisms
Aug. 18	ePKP	15	11	00							16.0S 167.0E, H: 14 51 29.3, h 5 km, M 5.7. New Hebrides Islands.
	ePP	15	14	00							
	eL	15	50			22		5.7		6¼	
	F	17	15								
	WIT ePKP	15	10	58							
	ePP	15	14	00							
Aug. 20	ePKP	06	13	50							5.7S 128.6E, H: 05 54 50.0, h 326 km, M 6.2. Banda Sea.
	ePP	06	15	18							
	ePPP	06	17	54							
	eL	06	52			23		10		6½	
	F	08	20								
	WIT ePKP	06	14								
Aug. 20	ipP	09	56	32.0	(+)						19.0S 69.1W, H: 09 42 48.5, h 129 km, M 6.0. Northern Chile.
	eZ	09	59	55							
	eSKS	10	06	25							
	eH	10	08.5								
	F	11									
	WIT eP	09	56	07							
	epP	09	56	39							
	eSKS	10	06	44							
Aug. 20	ePKP	21	41	35							22.9S 176.3W, H: 21 21 50.9, h 77 km, M 6.2. South of Fiji Islands.
	ePP	21	45	38							
	eSKS	21	52	30							
	eL	22	12								
	F	23	30								
	WIT iPKP	21	41	35.0							
Aug. 23	iP	14	13	15.3							40.5N 26.1E, H: 14 08 58.1, h 33 km, M 5.2. Turkey.
	eS	14	16	46							
	eL	14	48			12		40		5¾	
	F	15.0									
	WIT eP	14	13	09							
	eS	14	16	41							
Aug. 23	iP	19	58	38.3	+	9	75				16.3N 95.8W, H: 19 46 02.9, h 28 km, M 6.7. Oaxaca, Mexico.
	iPP	20	01	41							
	iS	20	09	10							
	eL					22		344		8	
	F	02.5									
	WIT iP	19	58	35.5							
	eS	20	09	15							
	HEE eP	19	58	42							
Aug. 24	eP	13	23.2								59.4N 145.6W, H: 13 12 19.4, h 19 km, M 5.4. Alaska.
	eL	13	50								
	F	14.6									
Aug. 25	e	00	08								40.2N 26.3E, H: 23 57 36.6, h 39 km, M 4.2. NW-Turkey.
	F	00	15								
Aug. 25	e	05	10								34.7N 25.1E, H: 04 57 47.5, h 26 km, M 4.7. Crete.
	F	05	18								
Aug. 27	WIT iP	18	34	00							44.6N 148.9E, H: 18 22 02.8, h 38 km, M 5.3. Kurile Islands.
Aug. 29	WIT iPKP	14	15	54.9	+						17.7S 178.9W, H: 13 57 20.2, h 570 km, M 5.4. Fiji Islands region..
Aug. 30	ePKP	03	51	46							16.9S 167.4E, H: 03 32 02.2, h 15 km, M 5.5. New Hebrides Islands.
	eL	04.8									
	F	05.5									

Seismic Records at De Bilt

Date 1965	Phase	G.M. Time h	m	s	First motion	Period s	Amplitude μ Z	NS	EW	Magnitude De Bilt	Remarks Data without indication are from USCGS; d.b.m. means disturbed by microseisms
Aug. 31	eS	07	40.4								Change of papers from 7h30m-7h38m.
	eL	07	46			18			10	5¼	39.3N 40.9E, H: 07 29 47.4,
	F	08	30								h 22 km, M 5.1. Turkey.
	WIT iP	07	35	32.0							
Sep. 4	eL	10	55								46.6N 153.5E, H: 10 19 51.3,
	F	11	40								h 27 km, M 5.5. Kurile Is-
	WIT eP	10	31	44							lands.
Sep. 4	iP	14	44	00.0	-	8	12				58.2N 152.6W, H: 14 32 47.9,
	iPP	14	46	28							h 19 km, M 6.1. Kodiak Is-
	eS	14	52	56							land region.
	eSS	14	57	00							
	eSSS	15	00.5								
	eL	15	06			20			89	7	
	F	18.0									
	WIT iP	14	43	48.5	-						
	eS	14	52	50							
Sep. 6	eL	04	07			20			7	6	21.3N 121.4E, H: 03 18 40.0,
	F	04	35								h 46 km, M 5.1. Taiwan region.
Sep. 7	eL	06	25								35.3N 4.4E, H: 06 16 48.4,
	F	06	33								h 33 km, M 4.4. Marocco.
Sep. 8	e	03	58								57.5N 152.1W, H: 03 26 20.7,
	F	04	40								h 25 km, M 5.6. Kodiak Is-
											land region.
Sep. 8	e	11	58								55.7N 155.4W, H: 11 16 34.4,
	F	12	25								h 33 km, M 5.4. Kodiak Is-
											land region.
Sep. 9	eH	10	25	31							d.b.m. 6.5N 84.4W, H: 10 02
	eL	10	40			24			10	6¼	25.4, h 27 km, M 5.5. Off
	F	11	30								coast of Central America.
Sep. 11	ePP	07	14.0								d.b.m. 5.3S 153.0E, H: 06 53
	ePS	07	24.6								01.5, h 67 km, M 6.3. New
	ePPS	07	25.4								Britain region.
	eL	07	47			18			10	6½	
	F	09.5									
Sep. 12	iPKP	08	59	14.5							6.3S 151.6E, H: 08 40 12.8,
	ePP	09	01	12							h 48 km, M 6.2. New Britain
	eZ	09	02	16							region.
	ePPP	09	04.0								
	eL	09	38			20			5.3	6¼	
	F	11	15								
Sep. 12	iP	22	14	44.8	-	6	3				6.4S 70.8E, H: 22 02 34.3,
	iS	22	24	52							h 33 km, M 6.1. Chagos
	eH	22	30.0								Archipelago region.
	eL	22	40			16			4.2	6	
	F	24.0									
	WIT iP	22	14	41.0							
	iS	22	24	43							
Sep. 13	eP	13	19	17							55.5N 165.7E, H: 13 07 48.3,
	eS	13	28.5								h 23 km, M 5.4. Kommandorsky
	ePS	13	29.1								Islands region.
	eL	13	40								
	F	15.0									
	WIT eP	13	19	12							
	eS	13	28	19							

Seismic Records at De Bilt

Date 1965	Phase	G.M. Time h	m	s	First motion	Period s	Amplitude μ Z	NS	EW	Magnitude De Bilt	Remarks Data without indication are from USCGS; d.b.m. means disturbed by microseisms
Sep. 14	ePP	08	45	22							8.4N 126.8E, H: 08 27 15.9,
	eSKS	08	51	50							h 33 km, M 5.7. Mindanao,
	eL	09	20			18			3.7	6	Philippine Islands.
	F	10	15								
	WIT eSKS	08	51	40							
Sep. 16	e	04	20								40.4N 125.7W, H: 04 10 22.6,
	F	04	31								h 33 km, M 5.6. Off coast
											of California.
Sep. 17	WIT iPKP	08	38	43	-						23.3S 179.2E, H: 08 19 54.8,
											h 561 km, M 5.2. South of
											Fiji Islands.
Sep. 17	iP	11	26	21.0	-						1.4S 77.6W, H: 11 13 56.4,
	ePP	11	27	08							h 190 km, M 6.0. Ecuador.
	eS	11	36	30							
	esS	11	37.9								
	eSS	11	42.7								
	esSS	11	44.0								
	eL	11	53			20			5.3	6	
	F	12.5									
	WIT iP	11	26	26.5							
Sep. 17	WIT iP	15	30	58.7	+						36.3N 141.2E, H: 15 18 38.4,
											h 66 km, M 5.2. Near east
											coast of Honshu, Japan.
Sep. 17	iP	16	33	45.7	+						36.3N 141.1E, H: 16 21 21.9,
	iPP	16	37	02							h 72 km, M 5.8. Near east
	eS	16	44	10							coast of Honshu, Japan.
	esS	16	44	30							
	ePS	16	45.0								
	eSS	16	49.6								
	eL	16	59			18			102	7¼	
	F	19.0									
	WIT iP	16	33	42.0	+						
	eS	16	43	58							
Sep. 18	eL	21	25								59.5N 145.1W, H: 20 46 39.2,
	F	21	40								h 22 km, M 5.3. Kodiak Is-
											land region.
Sep. 18	eL	22	58								8.2N 126.8E, H: 22 03 18.8,
	F	23	30								h 85 km, M 5.6. Mindanao,
											Philippine Islands.
Sep. 19	eL	02	53								22.1S 174.9W, H: 01 26 52.5,
	F	03	08								h 33 km, M 5.4. Tonga Is-
											lands.
Sep. 19	e	04	03								53.1N 35.3W, H: 03 52 44.9,
	F	04	10								h 33 km, M 4.7. Mid-Atlantic
											Ridge.
Sep. 19	HEE eS	08	12	22							48.0N 8.3E, H: 08 10 41.8,
											h 33 km, M 4.0. Southern
											Germany.
Sep. 21	iP	01	50	45.0	-	7	13				29.1N 128.2E, H: 01 38 30.2,
	eS	02	00.9								h 197 km, M 6.0. East China
	esS	02	02.2								Sea.
	eSS	02	07.5								
	eL	02	18			13			20	6½	
	F	03.0									
	WIT iP	01	50	40.6	-						
	eS	02	00	47							

Seismic Records at De Bilt

Date 1965	Phase	G.M. Time h	m	s	First motion	Period s	Amplitude μ Z	NS	EW	Magnitude De Bilt	Remarks Data without indication are from USCGS; d.b.m. means disturbed by microseisms
Sep. 21	eS	03	40.1								40.7N 50.0W, H: 03 26 37.2, h 33 km, M 5.3. North Atlantic Ocean.
	eL	03	45.0								
	F	04	02								
	WIT eP	03	34	17							
											No records from Sep. 21 7h 16m - Sep. 22 13h 11m.
Sep. 22	eL	13	33								32.5N 131.4E, H: 12 49 42.9, h 6 km, M 5.0. Kyushyu, Japan.
	F	14.0									
Sep. 22	WIT ePKP	20	20	44							5.4S 151.5E, H: 20 01 49.3, h 57 km, M 6.5. New Britain region.
Sep. 22	iP	22	20	28.0	+	4	3				36.4N 141.3E, H: 22 08 01.1, h 44 km, M 5.6. Near east coast of Honshu, Japan.
	ipP	22	20	44							
	ePP	22	23	42							
	eS	22	30	48							
	esS	22	31	10							
	eSS	22	36	10							
	eL	22	45			20			20	6½	
	F	24.0									
	WIT iP	22	20	22.6	+						
Sep. 25	eL	00	51								13.1N 145.3E, H: 23 53 42.1, h 58 km, M 5.3. Marianas.
	F	01.0									
Sep. 25	eL	10	24								54.0N 35.4W, H: 10 11 29.1, h 33 km, M 4.3. Mid-Atlantic Ridge.
	F	10	32								
Sep. 25	e	15	21								39.7N 143.2E, H: 14 37 15.4, h 44 km, M 5.3. Off east coast of Honshu, Japan.
	F	16	30								
	WIT eP	14	49	27							
Sep. 25	WIT eP	15	05	46							39.6N 143.2E, H: 14 53 34.9, h 43 km, M 5.5. Off east coast of Honshu, Japan.
Sep. 25	eL	17	50								12.9N 145.3E, H: 16 52 09.6, h 42 km, M 5.1. Marianas.
	F	18	15								
Sep. 25	eP	20	15	23							54.1N 35.2W, H: 20 10 06.6, h 33 km, M 4.8. Mid Atlantic Ridge.
	eL	20	22			20			7.1	5¼	
	F	20	50								
Sep. 26	eP	10	08	42							54.3N 35.2W, H: 10 03 18.4, h 33 km, M 4.8. Mid Atlantic Ridge.
	eS	10	13	30							
	eL	10	15.0			18			6.8	5¼	
	F	10	35								
Sep. 26	eL	22	34								54.8S 38.3W, H: 21 33 54.3, h 33 km, M 6.1. South Georgia Island region.
	F	23.0									
Sep. 28	ePKP	05	27.0								28.0S 178.1W, H: 05 06 36.8, h 33 km, M 5.2. Kermadec Islands
	ePP	05	30.9								
	eSS	05	50.2								
	eL	06.4				20			11	6¾	
	F	07.5									
	WIT ePKP	05	26	42							
	eSS	05	50	20							
Sep. 29	eP	23	25	22							45.1N 28.2W, H: 23 20 19.0, h 33 km, M 5.4. North Atlantic Ridge.
	eS	23	29	42							
	eL	23	32	40		10	5.2			5	
	F	24	05								
	WIT eP	23	25	30							
	eS	23	30	00							

Seismic Records at De Bilt

Date 1965	Phase	G.M. Time h	m	s	First motion	Period s	Amplitude μ Z	NS	EW	Magnitude De Bilt	Remarks Data without indication are from USCGS; d.b.m. means disturbed by microseisms
Sep. 30	eP	23	58	37							59.7N 143.4W, H: 23 47 40.7, h 19 km, M 4.8. Gulf of Alaska.
	eS	24	07	39							
	eL	24	21			20			8.9	6	
	F	01	50								
	WIT eP	23	58	32							
	eS	24	07	42							
Oct. 1	iP	09	04	03.8	-	6	8				50.1N 178.3E, H: 08 52 05.8, h 22 km, M 6.3. Rat Islands, Aleutian Islands.
	ePP	09	07.0								
	ePPP	09	08.7								
	eS	09	13	59							
	eSS	09	19.0								
	eL	09	29.5			20			21	6½	
	F	11.5									
	WIT iP	09	03	59.5	-						
	iS	09	13	48							
Oct. 1	ePKP	13	41	11	(+)						20.0S 174.4E, H: 13 22 28.5, h 553 km, M 6.2. New Hebrides Islands.
	WIT iPKP	13	41	07.5	+						
Oct. 1	eL	23	35								60.7S 24.9W, H: 22 34 25.5, h 33 km, M 6.0. Sandwich Islands.
	F	23	40								
Oct. 3	iP	14	57	11.6	+	4	5				49.5N 165.5E, H: 14 45 26.8, h 33 km, M 5.9. Kurile Islands.
	ipP	14	57	31							
	eS	15	06	54							
	eL	15	25			20			6.8	6	
	F	16.0									
	WIT iP	14	57	07.2	+						
	eS	15	06	44							
Oct. 3	ePP	16	34.9								42.9S 75.4W, H: 16 14 54.9, h 28 km, M 6.0. Off coast of southern Chile
	eS	16	42.9								
	eSS	16	50.3								
	eL	17	08			18			10	6½	
	F	18.0									
	WIT ePKP	16	33	44							
Oct. 6	eZ	18	42.5								BCIS: 71½N 21W, H: 18 37.5. Iceland region.
	e	18	50								
	F	19	00								
Oct. 7	eZ	01	29.0								21.7S 174.3W, H: 01 09 07.2, h 48 km, M 5.1. Tonga Islands.
	F	01	35								
	WIT ePKP	01	28	52							
Oct. 7	eP	03	49	08							12.6N 114.5E, H: 03 35 59.6, h 17 km, M 5.9. China Sea.
	eS	04	00	14							
	eSS	04	06	30							
	eL	04	22								
	F	05.0									
	WIT iP	03	49	04.5							
	iS	04	00	00							
Oct. 7	WIT iPKP	07	17	22.0	-						24.5S 179.1W, H: 06 58 11.3, h 378 km, M 4.8. Tonga Islands region.
Oct. 10	e	11	11								26.3N 128.1E, H: 10 21 00.7, h 33 km, M 5.4. Ryukyu Islands.
	F	11	26								
Oct. 12	iP	13	52	17.0	-						56.3N 153.7W, H: 13 40 55.9, h 11 km, M 5.3. Kodiak Islands.
	ePP	13	54	50							
	eS	14	01	30							
	eL	14	22								
	F	15	15								
	WIT eP	13	52	10							
	iS	14	01	25							

Seismic Records at De Bilt

Date 1965	Phase	G.M. Time h	m	s	First motion	Period s	Amplitude Z	NS	EW	Magnitude De Bilt	Remarks Data without indication are from USCGS; d.b.m. means disturbed by microseisms
Oct. 13	ePKP	15	06	12							22.8S 171.1E, H: 14 46 24.2, h 21 km, M 5.6. Loyalty Islands region.
	F	15	11								
	WIT ePKP	15	06	09							
Oct. 16	eL	20	45								56.1N 164.6E, H: 20 01 52.9, h 41 km, M 5.4. Komandorsky Islands region.
	F	21	05								
	WIT eP	20	13.0								
Oct. 16	eL	23	30								52.1N 160.4E, H: 22 46 28.6, h 33 km, M 4.9. Off east coast of Kamchatka.
	F	24.2									
Oct. 18	eL	10	48								42.0N 77.6E, H: 10 21 45.6, h 19 km, M 5.2. Alma-Ata region.
	F	11	00								
Oct. 18	ePP	22	09	10							1.2S 127.8E, H: 21 50 05.5, h 33 km, M 5.4. Halmahera.
	eSKS	22	15	20							
	ePS	22	18.8								
	eSS	22	25.0								
	eL	22	42			20			14	6½	
	F	24.5									
	WIT e	22	10								
Oct. 19	eP	21	00	32							52.3N 174.4E, H: 20 48 47.6, h 50 km, M 5.6. Near Islands, Aleutian Islands.
	ePPP	21	05	24							
	eSP	21	11.0								
	eL	21	25								
	F	22.0									
	WIT iP	21	00	25.5	+						
Oct. 21	eL	00	33								12.5N 87.3W, H: 23 54 30.4, h 72 km, M 5.4. Near coast of Nicaragua.
	F	00	50								
	WIT iP	00	07	04.6	-						
Oct. 21	e	16	29								43.8N 87.0E, H: 15 56 34.1, h 44 km, M 4.7. Northern Sinkiang Province, China.
	F	16	35								
Oct. 24	eZ	12	19.1								46.4N 7.4E, H: 12 16 57.7, h 33 km, M 4.7. Switzerland.
	eH	12	19	55							
	eL	12	21								
	F	12	28								
	WIT iP	12	18	32.8	(+)						
	HEE e	12	18								
Oct. 24	WIT iPKP	21	28	24.4	+						17.7S 178.5W, H: 21 09 44.3, h 515 km, M 4.7. Fiji Islands.
Oct. 25	iP	22	46	05.0	+	5	18				44.2N 145.3E, H: 22 34 24.4, h 181 km, M 6.2. Hokkaido, Japan.
	ipP	22	46	45							
	isP	22	47	05							
	ePP	22	49.0								
	epPP	22	49	46							
	eS	22	55	49							
	esS	22	57.0								
	eL	23	11			26			38	6½	
	F	24	45								
	WIT eP	22	45	59.5	+						
	eS	22	55	38							
Oct. 29	WIT iP	21	11	47.4	-						51.4N 179.2E, H: 21 00 00.1, h 0 km, M 6.1. Underground Nuclear Explosion "LONG-SHOT". Amchitka Island.

Seismic Records at De Bilt

Date 1965	Phase	G.M. Time h	m	s	First motion	Period s	Amplitude μ Z	NS	EW	Magnitude De Bilt	Remarks Data without indication are from USCGS; d.b.m. means disturbed by microseisms
Nov. 3	iP	01	50	59.0	(-)						d.b.m. 9.1S 71.4W, H: 01 39 03.1, h 593 km, M 6.2. Peru-Brazil border region.
	epP	01	53	04							
	eSKS	02	00	30							
	eS	02	00	55							
	ePS	02	02	00							
	esS	02	04	38							
	eL					20			11	6½	
	F	03.0									
	WIT eP	01	51	03							
	epP	01	53	10							
Nov. 3	e	08	05								d.b.m. 58.3N 32.4W, H: 07 53 12.6, h 33 km, M 4.8. Mid-Atlantic Ridge.
	F	08	15								
	WIT e	08	02.6								
Nov. 3	e	19	30								d.b.m. 22.3S 114.1W, H: 18 21 05.0, h 12 km, M 5.8. Easter Island region.
	F	19	45								
Nov. 6	e	09	40								d.b.m. 22.1S 113.8W, H: 09 21 48.6, h 33 km, M 6.2. Easter Island region.
	F	10	40								
Nov. 9	WIT e	15	38								44.6N 10.4E, H: 15 35 01.8, h 37 km, M 4.3. Northern Italy.
Nov. 11	WIT iPKP	01	52	40	-						22.8S 172.6E, H: 01 32 59.3, h 62 km, M 5.4. Tonga Islands.
Nov. 11	eL	04	24								d.b.m. 60.6S 153.7E, H: 02 51 25.7, h 33 km, M 5.1. West of Macquarie Island.
	F	04	50								
Nov. 11	WIT ePKP	09	05	33							18.4S 177.7W, H: 08 46 35.1, h 350 km, M 4.9. Fiji Islands.
Nov. 12	eP	18	05	19	+						d.b.m. 30.5N 140.2E, H: 17 52 24.1, h 40 km, M 6.6. South of Honshu, Japan.
	eS	18	16	00							
	eL	18	35			14		27		6½	
	F	19	40								
	WIT eP	18	05	11							
	eS	18	15	50							
Nov. 13	iP	04	43	06.8	+	5	10				43.8N 87.7E, H: 04 33 53.2, h 55 km, M 6.4. Northern Sinkiang Province, China.
	eP_cP	04	48	09							
	iS	04	50	36							
	eSS	04	54	18							
	eL	05	01			10		245		7¼	
	F	06.5									
	WIT eP	04	42	59							
	eS	04	50	20							
Nov. 13	HEE e	22	05	28							Local shock.
Nov. 14	WIT iP	06	06	34							36.8N 140.8E, H: 05 54 16.7, h 67 km, M 5.9. Honshu, Japan.
Nov. 15	WIT iP	11	28	38.4	-						0.3S 18.7W, H: 11 18 49.9, h 24 km, M 5.6. Mid Atlantic Ridge.
	eS	11	36	32							
Nov. 16	WIT e	01	13								36.4N 71.2E, H: 01 03 55.7, h 241 km, M 5.5. Hindu Kush.

Seismic Records at De Bilt

Date 1965	Phase	G.M. Time h	m	s	First motion	period s	Amplitude μ Z	NS	EW	Magnitude De Bilt	Remarks Data without indication are from USCGS; d.b.m. means disturbed by microseisms
Nov. 16	e	15	32								d.b.m. 31.0N 41.5W, H: 15 24 42.9, h 17 km, M 6.0. Mid Atlantic Ridge.
	eL	15	43			20			(14)	(5¾)	
	F	16	45								
	WIT eP	15	32	28							
Nov. 16	WIT eP	17	18	09							25.4N 125.2E, H: 17 05 37.9, h 77 km, M 6.0. Southwestern Ryukyu Islands.
Nov. 18	iPKP	20	19	16.0	+						18.8S 177.9W, H: 20 00 19.0, h 421 km, M 5.6. Fiji Islands region.
	epPKP	20	20	56							
	esPKP	20	21	37							
	F	20	50								
	WIT iPKP	20	19	11.5	+						
Nov. 18	eP	22	09	42							53.9N 160.7E, H: 21 58 12.4, h 12 km, M 6.0. Near east coast of Kamchatka.
	eS	22	19	00							
	eL	22	33								
	F	23.2									
	WIT iP	22	09	36.0	+						
Nov. 19	WIT iP	07	26	12							45.3N 150.9E, H: 07 14 13.2, h 13 km, M 5.6. Kurile Islands.
											No records at De Bilt from Nov. 19 7h 41m - 15h 47m.
Nov. 19	eL	23	17			20			3.9	5¾	23.6N 121.8E, H: 22 31 19.8, h 10 km, M 5.3. Taiwan.
	F	23	45								
Nov. 20	eL	09	20								43.8N 87.7E, H: 08 56 0.02, h 28 km, M 5.0. Northern Sinkiang Province, China.
	F	09	33								
Nov. 21	e	11.0									d.b.m. 6.1S 130.4E, H: 10 31 49.7, h 93 km, M 6.3. Banda Sea.
	F	11.5									
Nov. 22	eP	20	37	21							d.b.m. 51.3N 179.8W, H: 20 25 30.4, h 40 km, M 5.9. Andreanof Islands, Aleutian Islands.
	eS	20	47	12							
	eL	21	03			18			5.1	5¾	
	F	22.0									
	WIT iP	20	37	17.7	(-)						
Nov. 23	eL	02	10			20			11	6½	d.b.m. 3.0N 124.8E, H: 01 17 31.2, h 45 km, M 5.6. Celebes Sea.
	F	03	15								
Nov. 27	e	03	55								d.b.m. 30.6N 140.2E, H: 03 04 20.6, h 60 km, M 5.2. South of Honshu, Japan.
	F	04	15								
Nov. 28	e	04	53								45.6S 72.4W, H: 03 56 45.9, h 33 km, M 5.8. Near coast of Southern Chile.
	F	05	30								
Nov. 28	eL	05	35								36.3N 27.5E, H: 05 26 07.4, h 89 km, M 5.8. Dodecanese Islands
	F	05	50								
	WIT iP	05	30	56.0	+						
Dec. 4	WIT iP	02	23	41.4	-						51.3N 170.6W, H: 02 11 49.9, h 18 km, M 5.5. Aleutian Islands.
Dec. 5	HEE e	15	50	31							Local shocks.
	e	15	54	36							
	e	16	51	28							
	e	17	03	38							
	e	17	06	35							
	e	17	17	28							

Seismic Records at De Bilt

Date 1965	Phase	G.M. Time h	m	s	First Motion	Period S	Amplitude μ Z	NS	EW	Magnitude De Bilt	Remarks Data without indication are from USCGS; d.b.m. means disturbed by microseisms
Dec. 6	eS	11	58	40							No vertical record. d.b.m. 18.9N 107.1W, H: 11 34 53.7, h 37 km, M 5.9. Off coast of Jalisco, Mexico.
	eL	12	16			14			(32)	(6¾)	
	F	13.0									
											No records at De Bilt from Dec. 7 9h 23m - 16h 06m and Dec. 8 7h 30m - 15h 51m.
Dec. 9	eP	06	20	22							d.b.m. 17.3N 100.0W, H: 06 07 47.7, h 54 km, M 6.0. Guerrero, Mexico.
	eS	06	31.0								
	eSS	06	37.0								
	eL	06	49			18			22	6½	
	WIT eP	06	20	46							
											No records at De Bilt from Dec. 9 7h 23m - 15h 47m and Dec.10 7h 42m - 9h 26m.
Dec. 13	eP	11	04	10							d.b.m. 44.7N 150.1E, H: 10 52 08.5, h 35 km, M 5.7. Kurile Islands region.
	eL	11	30			18			8.5	6	
	F	12	05								
	WIT iP	11	04	05.6	+						
Dec. 13	eL	15	20								d.b.m. 44.7N 150.2E, H: 14 46 10.2, h 33 km, M 5.4. Kurile Islands region.
	F	15	55								
Dec. 15	WIT eP	12	08	09							50.5N 4.1E, H: 12 07 13.9, h 8 km, M 4.7. Belgium.
Dec. 15	HEE iP	14	02	54							50.5N 4.1E, H: 14 02 13, Belgium.
Dec. 15	eP	23	17	46	-						d.b.m. 7.5N 82.2W, H: 23 05 20.7, h 15 km, M 6.0. South of Panama.
	eS	23	28	00							
	eL	23	41			17			13	6½	
	F	24.5									
	WIT eP	23	17	51							
	eS	23	28	10							
Dec. 20	iP	00	12	27.5	+						d.b.m. 40.2N 24.8E, H: 00 08 15.2, h 33 km, M 5.3. Aegean Sea.
	eS	00	15	55							
	eL	00	17.5			10			56		
	F	00	50								
	WIT eP	00	12	22.5	(+)						
Dec. 21	iP	10	00	29							50.5N 5.7E, H: 10 00 05.2, h 33 km, M 4.3. Belgium.
	iS	10	00	51							
	F	10	08								
	WIT iP	10	00	39	+						
	HEE iP	10	00	10							
Dec. 22	eL	01	08								d.b.m. 52.4N 160.5E, H: 00 28 46.2, h 5 km, M 5.1. Off east coast of Kamchatka.
	F	01	45								
Dec. 22	eP	19	52	22	+	4	6				d.b.m. 58.4N 153.0W, H: 19 41 23.0, h 50 km, M 6.5. Kodiak Islands region.
	ePP	19	55.1								
	eS	20	01	23							
	eL	20	15								
	F	21	15								
	WIT iP	19	52	19.6	+						
Dec. 23	eL	21	20								d.b.m. 60.5N 141.0W, H: 20 47 37.5, h 33 km, M 5.4. Southern Alaska region.
	F	21	40								
	WIT eP	20	58.2								

Seismic Records at De Bilt

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Dec. 25	WIT iPKP	03	16	28.0	-						18.0S 179.2W, H: 02 57 57.9, h 625 km, M 5.5. West of Tonga.
Dec. 25	WIT iPKP	19	39	16.0	+						18.1S 179.2W, H: 19 20 45.1, h 620 km, M 5.4. Fiji Islands region.
Dec. 28	e	21	20								d.b.m. 27.8N 141.8E, H: 20 32 24.7, h 36 km, M 5.9. Bonin Islands region.
	F	21	40								