

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 40

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De Bilt 1957

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 assistant.

The Director in Chief of
the Royal Netherlands Meteorological Institute,

Ir. C.J. Warners.

De Bilt, August 1957

INTRODUCTION



SEISMOLOGICAL STATION DE BILT

The geographic coordinates of the seismological station are: $52^{\circ}6'.1$ N and $5^{\circ}10'.6$ 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, one astatic horizontal seismograph according to WIECHERT, $M = 200$ kg, two horizontal pendulums according to BOSCH, $M = 25$ kg. THE GALITZIN SEISMOGRAPHS AT DE BILT. Below are given: the period of the galvanometer T_1 , the reduced pendulum length l , the distance A_1 between the mirror of the galvanometer and the rough values for the natural period T of the undamped pendulum, of the damping constant μ and of the multiplying factor k for the year 1952.

	NS comp.	EW comp.	Z comp.
Period of galvanometer T_1	24.43 sec	24.96 sec	12.0 sec
Reduced length of pendulum l	123 mm	123 mm	406 mm
Distance A_1	1380 mm	1380 mm	1380 mm
Period of pendulum T	25 sec	25 sec	12 sec
Damping constant μ	0.0	0.0	0.0
Multiplying factor k	11.0	11.0	175

THE WIECHERT AND BOSCH SEISMOGRAPHS AT DE BILT. The mean values of the natural period of the undamped pendulum T , of the damping ratio and of the static magnification V for the year 1952 are:

	T	ϵ	V
WIECHERT (NS comp.)	5.0 sec	4	170
" (EW comp.)	5.0 sec	4	170
BOSCH (NS comp.)	18.0 sec	4	20
" (EW comp.)	18.0 sec	4	20

SEISMOLOGICAL STATION HEERLEN

The geographic coordinates of the seismological station are: $50^{\circ}53'.0$ N and $5^{\circ}59'.0$ 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 1952 are:

T	ϵ	V	V max.	T max.
2	3	400	600	2

SEISMOLOGICAL STATION WITTEVEEN

The geographic coordinates of the seismological station are: $52^{\circ}48'.8$ N and $6^{\circ}40'.1$ E.

The instrument, a GRENET vertical seismograph with galvanometric record, is placed at a height of 2 m above mean sea-level on a subsoil consisting of pleistocene sand.

Recording started in April 1951.

The period of the 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.

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. Only when the earthquake was extraordinarily severe, so that the GALITZIN records could not be analyzed, the records of the WIECHERT and BOSCH seismographs were used. The velocity of the paper of these seismographs is 10 mm and 15 mm per minute respectively. Whenever the WIECHERT and BOSCH records were used, this has been mentioned in the column "remarks".

In a few cases the data from the seismograph at Heerlen are mentioned. The time is Greenwich mean time.

In the column "direction" + 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 times 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 waves 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.
Δ	=	distance of epicentre.

The indices H, N, E, and Z refer to the 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:

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

In this formula $A l$ 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 amplitudes have been omitted when the oscillations were very irregular.

The seismological bulletins of the following stations were available: Algeria, Alicante, Almeria, Athens, Azores, BCIS (Bureau Central International de Séismologie), Beograd, Bogota, Brisbane, Budapest, Coimbra, Columbia University (Palisades N.Y. and Bermuda), Djakarta, Dublin, Firenze, Geophysics Division (New Zealand), Granada, Harvard University, Helsinki, Hermanus, Huancayo, Istanbul, Jena, John Carroll University (Cleveland), JSA (Jesuit Seismological Association), Kew, Kiruna, København, Ksara, La Paz, Lisboa, Manila, Melbourne, Paris, Pasadena, Perth, Poona, Praha, Prato, Quetta, Reykjavik, Riverview N.S.W., Roma, Santiago (Chile), Seismographic Stations of the University of California, Seismological Service of Canada, Stuttgart, Tacubaya, Tananarive, Toledo, Tortosa, Trieste, Uppsala, USCGS (United States Coast and Geodetic Survey), Western Samoa, Weston (Mass.), Wien, Zürich.

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 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 - $\frac{1}{2}$ mm	0 - $1\frac{1}{4}$ "
1	$\frac{1}{2}$ - 2 "	$1\frac{1}{4}$ - 5 "
2	2 - 4 "	5 - 10 "
3	> 4 "	> 10 "

CHARACTER OF THE MICROSEISMIC MOVEMENT

Date 1952	Jan.	Febr.	March	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	2	2	1 2	1 0	1	0	0	0	1	2 1	1	1
2	2 3	2 1	2 3	0	1 0	0 1 0	0 1 0	0	1	1 0 1	1	1
3	3 2	1 2 1	3 2	0	0	0 1 0	0 1	0	1 2 1	1	1	1 2 1
4	2	1	2 1	0 1	0	0	1	0 1 0	1 0	1	1	1
5	2 1 2	1	1 2 1	1	0 1 0	0	1 0	0	0	1 0 1	1	1
6	2	1 2	1	1 2 1	0	0	0	0	0	1	1 2	1
7	2	2	1 2 1	1	0 1 0	0	0	0	0	1 0	2 3 2	1 0
8	2 3	2	1 2	1 0 1	0 1	0	0	0 1 0	0	0 1 2	1	0
9	3	2 1	2	1	1 0	0	0	0 1	0	1	1	0 1
10	3	1	2	1 2	0	0	0	1 0	0	1	1	1 2 1
11	3 2	1	2 1	2 1	0	0 1 0	0	0	0	1	1 0	1
12	2	1	1	1 2	0	0	0	0	0	1	0	1 2 1
13	2 3 2	1	1	2 1	0 1	0	0 1 0	0 1 0	0	1	0	1 2 1
14	2 3 2	1	1	1	1	0	0	0	0	1 2 1	0	1
15	2 3 2	1	1	1 0 1	1	0	0	0	0	1	0	1
16	2 3	1 0	1 0	1 0	1 0	0	0	0 1	0	1	0 1	1 2
17	3 2	0 1 0	0	0	0	0 1	0	1	0 1	1	1 0	3 2
18	2	0 1	0	0	0 1	1 0	0	1	1	1	0	2
19	2	1	0 1	0 1	1 0	0 1 0	0	1 0	1	1	0 1	2
20	2 1	1	1 2	1 2 1	0	0 1 0	0	0 1	1	1	1	2
21	1	1	2 1	1	0 1 0	0 1 0	0	1 0	1 2 1	1	1	2 1
22	1	1	1 2	1	0	0 1 0	0	0	1 0	1 2	1	1 2
23	1	1 0	2 1	1	0	0	0	0	0 1 2	3	1	2 3 2
24	1	0 1	1 0	1 0	0	0	0	0	1 2 3	2	1	2
25	1	1 0	0	0	0	0	0	0	2	2	1 2	2
26	1	0	0 1	0 1	0	0 1	0	0 1 0	2	2	1 2 3	1 2 1
27	1	0 1	1	1	0	1 0	0 1 0	0 1	2 1	1	2	1
28	1 2 1	1	1 2	1 0	0 1	0 1	0	1	1	2 3 2	1 0	1 2 1
29	1 0	1	2	0	1	1 0	0	1 0	1 2	2	0 1	1 0
30	0 1		2 1	0 1	1 0	0	0	0 1 0	2 3 2	2	1	0 1
31	1 2		1		0		0	0 1		2 1		1

Seismic Records at De Bilt



Date 1952	Phase	Time	Direction	Period	Amplitude	Remarks
		h m s		s	μ	
Jan. 3 (1)	eL F	6 15 6 40				(1) Disturbed by microseisms. W1: eP 6h 09m 30s. BCIS: 40°0' N 41°6' E, H. 6h 03m 48s. USCGS: 40½°N 41½°E, H. 6h 03m 52s. Erzurum Province, Turkey.
Jan. 4 (2)	ePKP eL F	6 07 25 7 08 7 13				(2) Disturbed by microseisms. W1: 1PKP ₁ 6h 07m 19s; ePKP ₂ 6h 07m 35s. BCIS: 21°8' S 169°2' E, H. 5h 47m 32s. USCGS: 22° S 169½° E, H. 5h 47m 31s. Loyalty Islands.
Jan. 4 (3)						(3) W1: 1PKP 22h 04m 09s (-). USCGS: H. 21h 44m 15s. Tonga Islands region.
Jan. 6 (4)	eL F	0 45 0 50				(4) Disturbed by microseisms. W1: 1P 0h 18m 00s. BCIS: 27½°N 97°E, H. 0h 06m 49s. USCGS: H. 0h 06m 45s. Northern Burma.
Jan. 6 (5)						(5) W1: ePKP 4h 52.8m. BCIS: 20½° S 168½° E, H. 4h 33m 04s. USCGS: H. 4h 33m 04s. Loyalty Islands region.
Jan. 12 (6)	eP eS eSSS eL F	20 23 24 20 33.2 20 43 20 45 22 00				(6) Disturbed by microseisms. W1: 1P 20h 23m 22s. BCIS: 53°8' N 167°2' W, H. 20h 11m 38s. USCGS: 53° N 167°W, H. 20h 11m 38s. Fox Islands, Aleutian Islands.
Jan. 13 (7)	eP eSKS eS ePS eSS eL F	4 20 16 4 27 16 4 27 40 4 28 44 4 33 20 4 42 6 00				(7) Disturbed by microseisms. W1: eP 4h 16m 41s; e 4h 16m 53s. USCGS: 22° N 124½° E, H. 4h 03m 37s. Off east coast of Formosa. Felt Ryukyu Islands.
Jan. 15 (8)	eL F	3 07 3 15				(8) Disturbed by microseisms. W1: 1P 2h 42m 43s. USCGS: H. 2h 31m 25s. Central Burma.
Jan. 19 (9)	eL F	23 31 23 36				(9) Disturbed by microseisms. USCGS: 31½°N 41°W, H. 23h 12m 12s. North Atlantic Ocean.
Jan. 21 (10)	eP eS eL F	3 54 45 4 04 4 15 5 30				(10) Disturbed by microseisms. W1: 1P 3h 54m 40s; 1pP 3h 54m 52s. USCGS: 53°N 166½°W, H. 3h 43m 04s, h = about 60 km. Fox Islands, Aleutian Islands.
Jan. 23 (11)	e F	4 01 4 30				(11) W1: 1P 3h 39m 27s, +. BCIS: 41½°N 95½°E, H. 3h 29m 27s. USCGS: H. 3h 29m 30s. Northern Kansu Province, China.
Jan. 25 (12)						(12) W1: ePKP ₁ 6h 30m 21s; 1PKP ₂ 6h 30m 26.5s. BCIS: H. 6h 11.6m, h = about 550 km. Fiji Islands region.
Jan. 28 (13)	eL F	6 37 6 44				(13) USCGS: H. 6h 25m 51s. Atlantic Ocean, about 700 miles north of Azores.
Jan. 29 (14)	e F	1 49 2 05				(14) BCIS: 9½°N 122½°E, H. 0h 55m 30s. USCGS: H. 0h 55m 30s. Near Negros, Philippine Islands.

Seismic Records at De Bilt

International
Seismological
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Date 1952	Phase	Time			Direction	Period	Amplitude	Remarks
		h	m	s		s	μ	
Jan. 31 (15)	eL F	20	55					(15) Disturbed by strong microseisms
Feb. 2 (16)	eL F	11	02					(16) Disturbed by microseisms. W1: 1P 10h 31m 45s, +. USCGS: 51 $\frac{1}{2}$ $^{\circ}$ N 179 $^{\circ}$ W, H. 10h 20m 06s, h = about 100 km. Andreanof Islands, Aleutian Islands.
Feb. 5 (17)	eL F	5	20					(17) Disturbed by microseisms.
Feb. 5 (18)	e F	17	40					(18) Disturbed by microseisms. BCIS: 9 $\frac{1}{2}$ $^{\circ}$ N 124 $\frac{1}{2}$ $^{\circ}$ E, H. 16h 50m 44s. USCGS: 16h 50m 44s. Near north coast of Mindanao, Philippine Islands.
Feb. 6 (19)	eH F	5	59					(19) Disturbed by microseisms. W1: 1P 5h 37m 13s, +. BCIS: aftershock of (11), H. 5h 27m 13s. USCGS: H. 5h 27m 10s.
Feb. 6 (20)	eL F	8	15					(20) Disturbed by microseisms. BCIS: 30 $^{\circ}$ S 179 $^{\circ}$ W, H. 6h 54.8m. USCGS: H. 6h 54m 45s. Kermadec Islands.
Feb. 6 (21)	eL F	11	59					(21) Disturbed by microseisms.
Feb. 10 (22)	eS eL F	6	18	38				(22) Disturbed by microseisms. BCIS: 73 $^{\circ}$ N 0 $^{\circ}$ E, H. 6h 10m 03s. USCGS: 72 $\frac{1}{2}$ $^{\circ}$ N 2 $^{\circ}$ E, H. 6h 10m 05s. Jan Mayen Island region.
Feb. 11 (23)	eL F	7	54					(23) Disturbed by microseisms. BCIS: 50.5S 109 $^{\circ}$ 8E, H. 7h 01m 05s. USCGS: 6 $^{\circ}$ S 110 $^{\circ}$ E, H. 7h 01m 04s, h = about 700 km. Java Sea.
Feb. 14 (24)	eP ez ePKP ez ePP eN e(PS) eSS eSSS eL F	3	53	10				(24) W1: ePKP 3h 56m 59s; e 3h 57m 50s; e(P) 3h 58m 01s. BCIS: 7 $^{\circ}$ 7S 126 $^{\circ}$ 5E, H. 3h 38m 15s. USCGS: 8 $^{\circ}$ S 125 $^{\circ}$ E, H. 3h 38m 06s. Flores Sea, north of Timor Island.
Feb. 14 (25)	eP eS eSS eL F	21	14	56				(25) W1: eP 21h 14m 50s. USCGS: 7 $\frac{1}{2}$ $^{\circ}$ N 76 $\frac{1}{2}$ $^{\circ}$ W, H. 21h 01m 37s. Northwestern Colombia.
Feb. 17 (26)	eS eL F	17	59					(26) BCIS: 23 $^{\circ}$ 6N 107 $^{\circ}$ 6W, H. 17h 36m 01s. USCGS: H. 17h 35m 45s. Southern Gulf of California.
Feb. 18 (27)	eL F	2	45					(27) BCIS: 50 $^{\circ}$ S 165 $^{\circ}$ E, H. 1h 13.0m. Auckland Islands region.
Feb. 24 (28)	ePg F	21	26	37				(28) W1: Pn 21h 26m 41s; Pg 21h 27m 06s; F 21h 32m. BCIS: 49 $^{\circ}$ 6N 8 $^{\circ}$ 3E, H. 21h 25m 33s. Rhine-Valley, near Mannheim.

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Date 1952	Phase	Time			Direction	Period	Amplitude	Remarks
		h	m	s		s	μ	
Feb. 25 (29)	1PKP ePP eH eSS eL F	1	36	42	+			(29) W1: 1PKP 1h 36m 39s +; eP 1h 40m 00s. BCIS: 18°1 S 172°8 W, H. 1h 17m 02s. USCGS: 17°S 173½°W, H. 1h 17m 00s. Tonga Islands.
		1	40	02				
		1	50.1					
		1	59					
		2	27					
		4	00					
Feb. 26 (30)	ePKP	2	15	10				(30) W1: 1PKP 2h 15m 12s. USCGS: aftershock of (29), H. 1h 55m 33s.
	1P	11	43	48				
Feb. 26 (31)	1pP	11	44	48				(31) W1: 1P 11h 43m 53s +; 1pP 11h 44m 58s; ePP 11h 47m 37s. BCIS: 14°18 S 69°9W, H. 11h 31m 04s, h = about 250 km. USCGS: 15°S 69°W, H. 11h 30m 54s, h = about 250 km. Peru- Bolivia border.
	1PP	11	47	34				
	epPP	11	48	18				
	1SKS	11	53	57				
	eS	11	54	26				
	esS	11	56.0					
	eL	12	15					
	F	13	30					
Feb. 26 (32)	eP ePP eS ePS eL F	15	51	35	.			(32) W1: eP 15h 51m 40s; (e 15h 52m 07s). USCGS: 11½°N 86½°W, H. 15h 39m 23s, h = about 100 km. Near coast of Nicaragua.
		15	54	42				
		16	02.0					
		16	03.0					
		16	17					
		17	30					
Feb. 26 (33)	ePP eL F	21	29	08				(33) W1: ePP 21h 29m 01s. USCGS: 12½°S 166°E, H. 21h 06m 49s. Santa Cruz Islands.
		22	16					
		23	10					
March 1 (34)	eL F	3	47					(34) Disturbed by microseisms. BCIS: 37°N 33°W, H. 3h 33.9m. Mid- Atlantic Ocean.
		4	00					
March 1 (35)	eL F	16	15					(35) Disturbed by microseisms. W1: 1P 15h 43m 03s; 1 15h 43m 14s. BCIS: foreshock of (37), H. 15h 30m 59s. USCGS: H. 15h 31m 02s.
		16	30					
March 3 (36)								(36) W1: ePKP 7h 32m 30s. USCGS: 21½°S 174½°W, H. 7h 12m 39s. Tonga Islands region.
March 4 (37)	1P 1PP 1S eL F	1	35	00	(+)			(37) Disturbed by microseisms. W1: 1P 1h 34m 45s; e 1h 45m 19s. BCIS: 42°5N 143°6E, H. 1h 22m 41s and 1h 22m 56s. USCGS: 42½°N 143½°E, H. 1h 22m 41s. Near east coast of Hokkaido, Japan. Seismic sea wave.
		1	38	03				
		1	45	02				
		1	59					
		6	30					
March 4 (38)								(38) W1: 1P 1h 52m 00s. BCIS: aftershock of (37), H. 1h 39.7m.
March 4 (39)								(39) W1: 1P 2h 51m 49s -. BCIS: aftershock of (37), H. 2h 39m 43s.
March 4 (40)								(40) W1: 1P 3h 20m 26s. BCIS: foreshock of (46), H. 3h 08m 21s.
March 4 (41)								(41) W1: 1 3h 24m 10s -. BCIS: foreshock of (46), H. 3h 11m 59s.
March 4 (42)								(42) W1: 1P 4h 05m 38s-. BCIS: foreshock of (46), H. 3h 53m 28s. USCGS: H. 3h 53m 36s.
March 4 (43)								(43) W1: 1P 4h 23m 21s-. BCIS: foreshock of (46), H. 4h 11m 12s. USCGS: H. 4h 11m 09s.

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Date 1952	Phase	Time	Direction	Period	Amplitude	Remarks
		h m s		s	μ	
March 4 (44)	eL F	17 08 18 10				(44) Disturbed by microseisms. W1:1P 16h 43m 02s. BCIS: foreshock of (46), H. 16h 30m 53s. USCGS: H. 16h 31m 00s.
March 4 (45)						(45) W1: 1PKP 19h 49m 47s. USCGS: 10°S 161½°E, H. 19h 30m 28s. Solomon Islands.
March 4 (46)	eP eS eL F	20 08.3 20 18 20 33 22 30				(46) Disturbed by microseisms. W1:1P 20h 08m 21s -. BCIS: 42°0'N 145°0' E, H. 19h 56m 10s. USCGS: 42°0'N 146°0' E, H. 19h 56m 10s. CMO: 41°9' N 145°0' E, h = 40 km. Off east coast of Hokkaido, Japan.
March 4 (47)						(47) W1: 1P 21h 01m 32s. BCIS: after-shock of (46), H. 20h 49m 16s. USCGS: H. 20h 49m 20s.
March 5 (48)	eP eS ePS eH eL F	4 01 4 11 4 12 4 22 4 27 5 20				(48) Disturbed by microseisms. W1:1P 4h 01m 12s. BCIS: aftershock of (46), H. 3h 49m 03s. USCGS: H. 3h 49m 03s.
March 5 (49)	eL F	9 55 10 50				(49) Disturbed by microseisms. BCIS: aftershock of (46), H. 9h 17m 03s.
March 5 (50)	eS eL F	16 16.5 16 31 17 30				(50) Disturbed by microseisms. W1:1P 16h 06m 22s. BCIS: aftershock of (46), H. 15h 54m 13s. USCGS: H. 15h 54m 18s.
March 7 (51)	eS eH eL F	7 55 8 06 8 10 9 20				(51) Disturbed by microseisms. W1:1P 7h 44m 54s. BCIS: 36°2'N 136°1' E, H. 7h 32m 37s. USCGS: 36°0'N 136½°E, H. 7h 32m 38s. Honshu, Japan.
March 7 (52)	eL F	18 55 19 20				(52) Disturbed by microseisms. BCIS: aftershock of (46). H. 18h 15m 53s. USCGS: H. 18h 16m 02s.
March 7 (53)	eL F	20 26 20 50				(53) Disturbed by microseisms. BCIS: aftershock of (46), H. 19h 43m 50s. USCGS: H. 19h 43m 58s.
March 8 (54)	eL F	11 47 12 00				(54) Disturbed by microseisms. BCIS: foreshock of (56), H. 11h 33m 05s.
March 9 (55)	e F	4 55 5 00				(55) Disturbed by microseisms. BCIS: 38°0'N 20°8' E, H. 4h 45m 25s. Near west coast of Greece.
March 9 (56)	eP eL F	5 49.3 5 56 6 10				(56) Disturbed by microseisms. USCGS: 70½°N 15°W, H. 5h 44m 29s. Jan Mayen Island region.
March 9 (57)						(57) W1:1P 16h 49m 04s. USCGS: H. 16h 37m 30s. Near south coast of Kamchatka.
March 9 (58)	1P 1PP 1S e(PS) eN eL F	17 15 17 18 17 25 17 26.4 17 31.5 17 39 20 00	+			(58) Disturbed by microseisms. W1:1P 17h 15m 48s+. USCGS: 42°0'N 143½°E, H. 17h 03m 43s. CMO: 41°7' N 143°5' E, h = 0 - 20 km. Near south coast of Hokkaido, Japan.

Seismic Records at De Bilt



Date 1952	Phase	Time	Direction	Period	Amplitude	Remarks
		h m s		s	μ	
March 9 (59)	eS eL F	20 19 47 20 27 21 25				(59) Disturbed by microseisms. W1:1P 20h 10m 57s-. USCGS: $59\frac{1}{2}^{\circ}\text{N}$ 136°W , H. 20h 00m 17s. Alaska-Canada border.
March 10 (60)	eL F	18 40 19 00				(60) W1: 1P 18h 13m 05s+. BCIS: after-shock of (46), H. 18h 00m 55s.
March 11 (61)	e eL F	21 02 21 18 21 45				(61) Disturbed by microseisms. W1:1P 20h 49m 24s. BCIS: aftershock of (37), H. 20h 37m 19s. USCGS: H. 20h 37m 20s.
March 12 (62)	eL F	1 57 2 10				(62) BCIS: China Sea
March 12 (63)	eL F	12 22 12 40				(63) W1: 1P 12h 17m 32s. BCIS: 64°ON 22°OW , H. 12h 13m 11s. USCGS: H. 12h 13m 10s. Near west coast of Iceland.
March 13 (64)	eL F	2 24 2 35				
March 13 (65)	eL F	6 40 6 55				(65) Disturbed by microseisms. BCIS: 41°N , $27\frac{1}{2}^{\circ}\text{E}$, H. 6h 30m 02s. Turkey in Europe.
March 13 (66)	1pP ez epPP eS eSS e(PS) eSSS eL F	14 10 25 14 10 51 14 14 03 14 19 50 14 21 18 14 21 50 14 29 14 41 15 30	(-)			(66) W1:1P 14h 09m 38s; 1 14h 10m 15s; 1pP 14h 10m 50s. USCGS: $28\frac{1}{2}^{\circ}\text{N}$ 127°E , H. 13h 57m 26s, h = about 200 km. East China Sea.
March 14 (67)	e F	18 54 19 05				(67) BCIS: North Atlantic Ocean.
March 14 (68)	eP eL F	21 07.4 21 35 22 05				(68) Disturbed by microseisms. W1:1P 21h 07m 21s -. BCIS: aftershock of (46), H. 20h 55m 12s. USCGS: H. 20h 55m 20s.
March 15 (69)	eSKS eL F	11 40 04 11 55 13 00				(69) Disturbed by microseisms. USCGS: $5\frac{1}{2}^{\circ}\text{S}$ $100\frac{1}{2}^{\circ}\text{E}$, H. 11h 15m 46s. Off Southwest coast of Sumatra.
March 16 (70)	eS eL eF	22 31.8 22 50 23 15				(70) W1:1P 22h 21m 25s; 1 22h 21m 35s; 1 22h 22m 00s; 1 22h 22m 09s. BCIS: aftershock of (37), H. 22h 09m 21s. USCGS: H. 22h 09m 23s.
March 18 (71)	1PKP	11 15 50				(71) W1: 1PKP 11h 15m 49s -. USCGS: 12°S 168°E , H. 11h 56m 27s. Santa Cruz Islands.
March 19 (72)	eP ePP eS eL F	1 32.0 1 32 38 1 35 54 1 38 2 05				(72) Disturbed by microseisms. W1:1P 1h 31m 58s -. BCIS: 40°ON 28°E , H. 1h 27m 24s. USCGS: 40°N 29°E , H. 1h 27m 23s. Northwestern Turkey.
March 19 (73)	eL F	8 20 8 30				(73) BCIS: 37°N 15°E , H. 8h 13m 37s. Sicily, Italy.
March 19 (74)	e F	9 34 10 20				(74) BCIS: 40°N 125°E , H. 9h 04m 14s. USCGS: 41°N 125°E , H. 9h 04m 18s. Near Korea-Manchuria border.

Seismic Records at De Bilt



Date 1952	Phase	Time			Direction	Period	Amplitude	Remarks
		h	m	s		s	μ	
March 19 (75)	iP iz iPP eH iPS eSS eL F	11 11 11 11 11 11 11 15	11 14 15 21 21 29 43 00	07 45 19 36 43 50	-			(75) W1: eP 11h 10m 58s; 1 11h 11m 07s. USCGS: $9\frac{1}{2}^{\circ}\text{N } 127^{\circ}\text{E}$, H. 11h 57m 09s. Manila: $9^{\circ}4\text{N } 125^{\circ}1\text{E}$. Off east coast of Mindanao, Philippine Islands.
March 21 (76)	eL F	0 1	35 35					(76) Disturbed by microseisms. USCGS: $11^{\circ}\text{S } 165^{\circ}\text{E}$, H. 23h 39m 08s. h = about 60 km. Santa Cruz Islands.
March 21 (77)	e F	17 18	15 15					(77) Disturbed by microseisms. USCGS: $11^{\circ}\text{S } 165^{\circ}\text{E}$, H. 16h 10m 38s. h = about 60 km. Santa Cruz Islands.
March 22 (78)	e F	18 20	40 00					(78) Disturbed by microseisms. BCIS: $51^{\circ}7\text{N } 172^{\circ}0\text{W}$, H. 18h 15m. USCGS: $52^{\circ}\text{N } 173^{\circ}\text{W}$, H. 18h 15m 43s. Andreanof Islands, Aleutian Islands.
March 23 (79)	e F	16 16	15 45					(79) Disturbed by microseisms. BCIS: $11^{\circ}\text{N } 125^{\circ}\text{E}$, H. 15h 21m 50s. Near Samar, Philippine Islands.
March 25 (80)	e F	3 4	47 00					(80) W1: eP 3h 40m 06s. BCIS: $34^{\circ}3\text{N } 23^{\circ}4\text{E}$, H. 3h 35m 11s. USCGS: H. 3h 35m 13s. Mediterranean Sea, about 100 miles southwest of Crete.
March 25 (81)	iPKP epPKP F	4 4 4	27 28 29	26 27 30	-			(81) W1: ePKP 4h 27m 25s; epPKP 4h 28m 32s. USCGS: $16\frac{1}{2}^{\circ}\text{S } 176^{\circ}\text{W}$, H. 4h 08m 25s, h = about 250 km. Tonga Islands region.
March 25 (82)	e F	10 11	30 10					(82) USCGS: $5\frac{1}{2}^{\circ}\text{S } 150^{\circ}\text{E}$, H. 9h 29m 42s New Britain.
March 27 (83)	e F	16 17	32 00					(83) BCIS: $6^{\circ}8\text{S } 11^{\circ}5\text{W}$, H. 16h 09m 00s. USCGS: H. 16h 09m 50s. Ascension Island region.
April 1 (84)	e F	4 4	29 40					(84) BCIS: $36^{\circ}2\text{N } 7^{\circ}3\text{E}$, H. 4h 21m 06s. East Constantine, Algeria.
April 1 (85)	e F	15 16	19 00					(85) USCGS: $15^{\circ}\text{S } 175\frac{1}{2}^{\circ}\text{W}$, H. 14h 08m 47s. Samoa Islands region.
April 1 (86)	e F	21 21	05 30					(86) BCIS: $37^{\circ}\text{N } 78^{\circ}\text{E}$, H. 20h 36m 30s. Karakoram.
April 1 (87)	eP eS eL F	18 18 19 19	47 58 18 50	33 10				(87) USCGS: $16\frac{1}{2}^{\circ}\text{N } 99\frac{1}{2}^{\circ}\text{W}$, H. 18h 34m 50s. Near coast of Guerrero, Mexico.
April 3 (88)	e F	3 3	27 40	50				(88) BCIS: $38\frac{1}{2}^{\circ}\text{N } 20\frac{1}{2}^{\circ}\text{E}$, H. 3h 20m 00s. Ionian Sea.
April 4 (89)	iP i(PcP) ePP eS eSS eL F	3 3 3 3 3 3 4	04 04 07 14 19.2 27 30	32 54 22 04	+ -			(89) W1: iP 3h 04m 28s +. USCGS: $52^{\circ}\text{N } 159\frac{1}{2}^{\circ}\text{E}$, H. 2h 52m 55s. Near east coast of Kamchatka.

Seismic Records at De Bilt



Date 1952	Phase	Time	Direction	Period	Amplitude	Remarks
		h m s		s	μ	
April 4 (90)	eL F	8 35 9 00				(90) W1: 1P 8h 02m 07s (-). USCGS: 23 $\frac{1}{2}$ $^{\circ}$ N 121 $^{\circ}$ E, H. 7h 49m 25s. Near east coast of Formosa.
April 4 (91)						(91) W1: eP 20h 19m 30s. USCGS: 4 $^{\circ}$ S 30 $\frac{1}{2}$ $^{\circ}$ E, H. 20h 09m 18s. Ruanda-Urundi, Tonganyika border.
April 5 (92)						(92) W1: e 0h 10m 55s; F 0h 13.5m. BCIS: 43 $^{\circ}$ 0'N 0 $^{\circ}$, H. 0h 05m 22s. Upper Pyrenees.
April 5 (93)						(93) W1: eP 0h 38m 55s. BCIS: 23 $^{\circ}$ S 1 $^{\circ}$ E, H. 0h 27.2s. Off coast south-west Africa.
April 5 (94)	eL F	9 54 10 07				(94) W1: ePKP 8h 52m 49s. USCGS: 15 $\frac{1}{2}$ $^{\circ}$ S 177 $\frac{1}{2}$ $^{\circ}$ E, H. 8h 33m 12s. Fiji Islands.
April 8 (95)						(95) W1: 1P 0h 31m 05s. USCGS: 9 $^{\circ}$ S 70 $\frac{1}{2}$ $^{\circ}$ W, H. 0h 19m 04s, h = about 600 km. Western Brazil.
April 8 (96)						(96) W1: eP 3h 18m 51s; epP 3h 19m 04s. USCGS: 53 $\frac{1}{2}$ $^{\circ}$ N 161 $^{\circ}$ E, H. 3h 07m 30s., h = about 60 km. Near east coast of Kamchatka.
April 8 (97)	eP ePP eSKS eSS eL F	10 14.0 10 18.0 10 24 36 10 32 10 43 12 00				(97) W1: eP 10h 14m 03s. BCIS: 8 $^{\circ}$ 1'N 123 $^{\circ}$ 2'E, H. 10h 00m 39s, h = about 250 km. Manilla: 8 $^{\circ}$ 5'N 122 $^{\circ}$ 7'E. Near north coast of Mindanao, Philippine Islands.
April 9 (98)	eL F	8 20 8 30				(98) Disturbed by microseisms. W1:eP 8h 14m 18s. BCIS: 8h 08.2m. About 450 miles northwest of Azores Islands.
April 9 (99)	e F	8 44 9 00				(99) Disturbed by microseisms. W1:eP 8h 39m 05s. BCIS: 37 $^{\circ}$ 8'N 26 $^{\circ}$ 9'E, H. 8h 34m 35s. Samoa Islands region.
April 10 (100)	eP eS eSSS eL F	6 10.0 6 20.8 6 31 6 39 7 30				(100) Disturbed by microseisms. W1: 1P 6h 10m 02s-; 1 6h 10m 11s. USCGS: 25 $^{\circ}$ N 126 $^{\circ}$ E, H. 5h 57m 20s. C.M.O.: 24 $^{\circ}$ 5'N 124 $^{\circ}$ E. Ryukyu Islands.
April 12 (101)	eH F	2 02 2 40				(101) BCIS: 14 $\frac{1}{2}$ $^{\circ}$ S 66 $\frac{1}{2}$ $^{\circ}$ E, H. 1h 27m 09s. Indian Ocean.
April 14 (102)						(102) W1: 1 1h 24m 00s; 1 1h 26m 12s.
April 15 (103)	eP ePP eS ePS eSS eL F	0 04.0 0 08.0 0 15 50 0 17 30 0 23.5 0 42 1 45				(103) Disturbed by microseisms. W1: eP 0h 03m 58s. USCGS: 3 $\frac{1}{2}$ $^{\circ}$ N 126 $\frac{1}{2}$ $^{\circ}$ E, H. 23h 49m 45s. Molucca Passage.
April 15 (104)	1P 1pP eS eSSS eL F	6 11 55 6 12 16 6 22 16 6 31 40 6 37 7 15	+			(104) W1: 1P 6h 11m 40s +. BCIS: 42 $^{\circ}$ 1'N 142 $^{\circ}$ 4'E, H. 5h 59m 50s, h deeper than normal. USCGS: 43 $^{\circ}$ 0'N 143 $^{\circ}$ 5'E, H. 5h 59m 53s. CMO: 42 $^{\circ}$ 0'N 142 $^{\circ}$ 8'E, h = 30 km. Hokkaido, Japan.

Seismic Records at De Bilt



Date 1952	Phase	Time			Direction	Period	Amplitude	Remarks
		h	m	s		s	μ	
April 15 (105)	ePKP e F	9	34	40				(105) W1: 1PKP 9h 34m 40s-; 1pPKP 9h 35m 03s; 1 9h 36m 14s. BCIS: 19°S 178°W, H. 9h 15m 13s, h = about 100 km. USCGS: H. 9h 15m 03s. Fiji Islands region.
April 15 (106)	ePP ePS eSS eL F	19	21	32				(106) BCIS: 58°S 25°8W, H. 19h 02m 11s. USCGS: 56°S 24°W, H. 19h 02m 12s. Sandwich Islands region.
April 16 (107)	e F	0	36					(107) BCIS: aftershock of (106), H. 23h 32m 54s.
April 16 (108)	eP eL F	3	52.4					(108) W1: 1P 3h 52m 14s; 1 3h 52m 15.5s. USCGS: 47°W 154°E, H. 3h 40m 19s. Kurile Islands region.
April 16 (109)	e F	11	58					(109) BCIS: aftershock of (104), H. 11h 26m 17s.
April 16 (110)	e F	15	15					(110) BCIS: aftershock of (106), H. 14h 16m 46s.
April 16 (111)	e F	22	00					(111) BCIS: aftershock of (106), H. 21h 02m 16s.
April 17 (112)	e F	4	53					(112) BCIS: H. 3h 55m 50s. Marianas Islands region.
April 18 (113)								(113) W1: 1PKP 3h 55m 05s. USCGS: H. 3h 35m 20s. Tonga Islands region.
April 18 (114)								(114) W1: e 14h 49m (15)s.
April 18 (115)	ePP ePS eSS eL F	16	17	46				(115) W1: ePP 16h 17.8m. USCGS: 12°N 140°E, H. 15h 59m 10s. Marianas Islands region.
April 18 (116)	eE F	20	42					(116) BCIS: 60°S 22°W, H. 19h 42m 43s. Sandwich Islands region.
April 19 (117)	1P 1S eSS eL F	10	10	42	+			(117) W1: 1P 10h 10m 50s; 1 10h 10m 57s; e 10h 11m 47s. USCGS: 7°N 71½°W, H. 9h 58m 53s. Colombia-Venezuela-border.
April 19 (118)	ePS eL F	19	54.8					(118) USCGS: H. 19h 26m 12s. Sandwich Islands region.
April 20 (119)								(119) W1: 1PKP 7h 27m 19s. USCGS: 22°S 175°W, H. 7h 07m 36s, h = about 100 km. Tonga Islands.
April 22 (120)								(120) W1: 1PKP 20h 59m 11s -. BCIS: H. 20h 39.6m. Fiji Islands region.
April 23 (121)	eL F	16	35					(121) BCIS: H. 15h 55.2m. Ryukyu Islands region.
April 24 (122)								(122) W1: ePKP 12h 31.6m. BCIS: 21°S 175°W, H. 12h 11.8m. Tonga Islands.

Seismic Records at De Bilt



Date 1952	Phase	Time			Direction	Period	Amplitude	Remarks
		h	m	s		s	μ	
April 27 (123)								(123) W1: 1PKP 8h 32m 30s+. BCIS: 27 $\frac{1}{2}$ $^{\circ}$ S 180 $^{\circ}$, H. 8h 12m 22s. USCGS: H. 8h 12m 32s. Kermadec Islands region
April 27 (124)	eL F	14	05					(124) W1: ePKP 13h 03.0m+. BCIS: H. 12h 43.2m. Tonga Islands region.
April 27 (125)								(125) W1: e 14h 15.8m. BCIS: South Pacific?
April 28 (126)								(126) W1: eP 1h 20.2m. USCGS: H. 1h 15m 25s. About 300 miles northeast of Jan Mayen Island.
April 28 (127)	1P 1pP eS e(PS) eL F	11	06	22	+			(127) W1: 1P 11h 0m 17s+. USCGS: 42 $^{\circ}$ 5'N 143 $^{\circ}$ E, H. 10h 54m 18s. CMO: 42 $^{\circ}$ N 142 $^{\circ}$ 8' E. Hokkaido, Japan.
April 29 (128)	1P epP 1PP 1S esS eL F	2	47	39	+			(128) W1: 1P 2h 47m 34s +. USCGS: 26 $^{\circ}$ N 122 $\frac{1}{2}$ $^{\circ}$ E, H. 2h 35m 00s. Off north coast of Formosa.
April 29 (129)	eP	3	19	02				(129) W1: 1P 3h 19m 05s-. USCGS: 15 $^{\circ}$ S 44 $\frac{1}{2}$ $^{\circ}$ E, H. 3h 7m 35s, h = about 200 km Mozambique Channel
April 30 (130)								(130) W1: 1PKP 19h 00m 30s. USCGS: H. 18h 41m 39s. Fiji Islands region.
May 1 (131)								(131) W1: eP 15h 16m 07s. USCGS: H. 15h 04m 07s. Near Islands, Aleutian Islands.
May 1 (132)	eS eL F	16	25	20				(132) W1: eP 16h 18m 56s. USCGS: 28 $^{\circ}$ N 43 $\frac{1}{2}$ $^{\circ}$ W, H. 16h 10m 41s. North Atlantic Ocean.
May 3 (133)	e F	13	09					(133) BCIS and USCGS: 15 $^{\circ}$ S 76 $\frac{1}{2}$ $^{\circ}$ W, H. 12h 14m 09s. Off coast of Southern Peru.
May 4 (134)	ePKP ₁ ePP eL F	14	35.2					(134) W1: ePKP ₁ 14h 35m 18s. USCGS: 24 $\frac{1}{2}$ $^{\circ}$ S 177 $\frac{1}{2}$ $^{\circ}$ W, H. 14h 15m 16s. Tonga Islands region.
May 6 (135)	e F	17	52					(135) USCGS: 41 $\frac{1}{2}$ $^{\circ}$ N 125 $^{\circ}$ W, H. 17h 21m 02s. Off coast of northern California.
May 8 (136)	eP eS eN ePPS eL F	1	11	30				(136) W1: eP 1h 11m 04s. USCGS: 35 $\frac{1}{2}$ $^{\circ}$ N 140 $^{\circ}$ E, H. 0h 58m 40s, h = about 60 km CMO: 35 $^{\circ}$ 4'N 140 $^{\circ}$ 2'E, h = 50 km. Honshu, Japan.
May 8 (137)	ePP ez eSKKS ePS eSS eL F	21	29	37				(137) BCIS and USCGS: 21 $^{\circ}$ N 127 $^{\circ}$ E, H. 21h 10m 40s. Molucca Passage.
		21	35	18				
		21	36.5					
		21	38	31				
		21	44.5					
		22	00					
		23	00					

Seismic Records at De Bilt



Date 1952	Phase	Time	Direction	Period	Amplitude	Remarks
		h m s		s	μ	
May 9 (138)	ePKP ₁ ePKP ₂ eSS eL F	3 48.3 3 48.7 4 13.5 4 40 6 00				(138) W1: ePKP ₁ 3h 48m 20s. BCIS: 27°S 178°W, H. 3h 29m 01s, h = about 400 km. USCGS: H. 3h 29m 00s, h = about 400 km. Kermadec Islands region.
May 9 (139)	1PKP ePP 1pPP ePKS ePS eHZ eL F	18 06 49 18 08 44 18 09 03 18 10 16 18 19.0 18 23 25 18 43 20 45	-			(139) W1: ePKP 18h 06m 44s; epPKP 18h 07m 06s. BCIS: 6°S 155°E, H. 17h 47m 43s, h = about 60 km. Solomon Islands.
May 10 (140)	e F	10 14 10 20				(140) Tacubaya: 16°35'N 92°35'W, H. 9h 25m 03s, h = 100 km. Chiapas, Mexico.
May 10 (141)	e F	15 05 15 20				(141) W1: eP 14h 35.0m. BCIS: fore- shock of (146), H. 14h 22m 53s.
May 10 (142)	e F	18 01 18 15				(142) BCIS: aftershock of (137), H. 17h 04m 08s.
May 12 (143)	eS eL F	19 42 16 19 43 20 00				(143) W1: 1P 19h 39m 04s -; 1 19h 39m 06s. BCIS: 35°3N 7°0W, H. 19h 34m 30s. Off northwest coast of Marocco.
May 13 (144)	eL F	5 00 5 30				
May 13 (145)	1P ePP eS ePS eSS eL F	19 44 01 19 47 13 19 54 20 19 55 23 20 00 02 20 07 22 30				(145) W1: eP 19h 44m 04s. BCIS: 10½°N 84½°W, H. 19h 31m 48s, h = about 100 km. USCGS: 10½°N 85°W, H. 19h 31m 45s, h = about 100 km. Costa Rica.
May 14 (146)	1P 1pP 1S 1PS eL F	0 49 06 0 49 33 0 59 12 0 59 56 1 15 2 30				(146) W1: 1P 0h 49m 02s -. BCIS: 42°1N 145°2E, H. 0h 36m 55s. USCGS: 43°0N 145½°E, H. 0h 36m 59s. CMO: 41°9N 145°4E, h = 20 km. Near east coast of Hokkaido, Japan.
May 14 (147)	eL F	21 46 22 30				(147) USCGS: 16½°N 86½°W, H. 21h 11m 36s. Off north coast of Honduras.
May 15 (148)	eL F	11 13 11 45				(148) W1: 1P 10h 38m 21s-. BCIS: 19°N 112½°E, H. 10h 25m 21s. USCGS: H. 10h 25m 25s. Off north coast of Luzon, Philippine Islands.
May 15 (149)	e F	19 00 19 55				(149) Disturbed by microseisms.
May 16 (150)	eE eL F	6 06 6 22 7 00				(150) W1: 1P 5h 54m 40s. BCIS: 14½°N 91½°W, H. 5h 42m 11s. USCGS: 14°N 92½°W, H. 5h 42m 09s. Near coast of Guatemala.
May 16 (151)	e F	10 57 11 25				(151) BCIS: aftershock of (148), H. 10h 08m 23s.
May 16 (152)						(152) W1: eP 11h 04m 47s. USCGS: 16½°N 96½°W, H. 10h 52m 18s, h = about 100 km. Oaxaca, Mexico.

Seismic Records at De Bilt



Seismic Records at De Bilt								
Date 1952	Phase	Time			Direction	Period	Amplitude	
		h	m	s		s	μ	
May 16 (153)	1P 1S ePS eSS eL F	20 58 21 08 21 09 21 13 21 23 23 00	00 08 00 30 00 00	-	5	5		(153) W1: 20h 58m 03s-. BCIS: 6°5'N 79°W, H. 20h 45m 41s. USCGS: 6½°N 79°W, H. 20h 45m 40s. Off coast of Panama.
May 16 (154)								(154) W1: 1(P) 22h 44m 21s-.USCGS: H. 22h 19m 35s. Tonga Islands region.
May 17 (155)	1P eS eL F	10 00 10 10 10 27 11 30	23 25 25 30	+				(155) W1: 1P 10h 00m 18s+. BCIS: 42½°N 143½°E, H. 9h 48m 14s. USCGS: 42½°N 144½°E, H. 9h 48m 16s. CM0: 41.8°N 144.2°E, h= about 60 km.
May 19 (156)	eL F	6 05 6 20						(156) BCIS: H. 5h 14.0m. Leyte Island region, Philippine Islands.
May 19 (157)	1P 1PP eS ePS eL F	18 44 18 47 18 54 18 55 19 10 21 30	30 31 33 37 37 30	+				(157) W1: 1P 18h 44m 26s; 1 18h 45m 09s. BCIS: 42½°N 143½°E, H. 18h 33m 21s. USCGS: 43°N 144½°E, H. 18h 32m 24s. Near east coast of Hokkaido, Japan.
May 20 (158)	ez F	16 07 16 20						(158) BCIS: aftershock of (148), H. 15h 11m 01s.
May 20 (159)	eH F	19 10 19 25						
May 20 (160)	e F	23 35 23 40						
May 22 (161)	1P eS eL F	23 20 23 31 23 51 0 50	59 26 26 50	(+)				(161) W1: 1P 23h 20m 53s (+). USCGS: 29½°N 131½°E, H. 23h 08m 21s. Ryukyu Islands.
May 23 (162)	eP eS eL F	4 33 4 43 5 02 5 45	23 53 53 45					(162) W1: 1P 4h 33m 18s -. USCGS: 33°N 136°E, H. 4h 20m 52s, h=about 60 km. CM0: 33°0'N 135.9°E, h = 40 km. Near south coast of Honshu, Japan.
May 23 (163)	1PKP F	20 43 20 50	23 23	-				(163) W1: 1PKP 20h 43m 22s; 1pPKP 20h 44m 26s. USCGS: 18½°S 176°W, H. 20h 24m 08s. h = about 250 km. Tonga Island
May 24 (164)	eP ePP eSKKS eSS eL F	2 12 2 16 2 23 2 30 2 42 4 00	43 41 39 41 41 00					(164) BCIS: 21½°S 71°W, H. 1h 59m 06s. USCGS: 21½°S 71°W, H. 1h 59m 05s. Near coast of northern Chili.
May 24 (165)	eP ez eSKS eS eL F	16 19 16 19 16 29 16 30 16 49 19 00	09 58 51 14 14 00					(165) W1: 1P 16h 19m 02s. BCIS: 1°0'S 98.8°E, H. 16h 05m 53s. Off west coast of Sumatra.
May 25 (166)	eL F	7 57 8 15						(166) BCIS: 29½°N 131°E, H. 7h 02.3m Ryukyu Islands.
May 25 (167)	eL F	16 48 17 05						(167) BCIS: 22°N 121°E, H. 16h 00m 30s, h = about 100 km. Near south coast of Formosa.

Seismic Records at De Bilt



Date 1952	Phase	Time	Direction	Period	Amplitude	Remarks
		h m s		s	μ	
May 26 (168)	1P ePP eS eScS eSS eSSS eL F	2 57 34 3 00 08 3 06 33 3 07 36 3 11 08 3 14.2 3 22 4 15				(168) W1: eP 2h 57m 25s. BCIS: $28\frac{1}{2}^{\circ}\text{N}$ 95°E , H. 2h 46m 31s. Tibet-Assam border.
May 26 (169)						(169) W1: ePKP 3h 45m 53s. USCGS: H. 3h 26m 14s, h = about 100 km. Tonga Islands region.
May 28 (170)	1P ez eH	7 55 58 7 57 13 8 07				(170) F in next shock. BCIS: 36°N 70°E , H. 7h 47m 40s, h = about 220 km. Hindu Kush.
May 28 (171)	1P epP iS iPS eSS eL F	8 10 55 8 12 30 8 20 38 8 21 27 8 26 10 8 36 9 20	-			(171) W1: 1P 8h 10m 47s. USCGS: $35\frac{1}{2}^{\circ}\text{N}$ 136°E , H. 7h 59m 09s, h = about 400 km. Central Honshu, Japan.
May 30 (172)	eL F	2 05 2 20				(172) BCIS: $22\frac{1}{2}^{\circ}\text{N}$ 121°E , H. 1h 17m 14s, h = about 100 km. USCGS: H. 1h 17m 14s. Near east coast of Formosa.
May 31 (173)	e(SS) eL F	5 45 6 17 7 00				(173) BCIS: 63°S 155°E , H. 4h 54.5m South Pacific.
June 1 (174)						(174) W1: 1 13h 04m 56s.
June 2 (175)	eL F	3 32 3 45				(175) W1: eP 3h 05m 17s. BCIS: $29\frac{1}{2}^{\circ}\text{N}$ $95\frac{1}{2}^{\circ}\text{E}$, H. 2h 54m 23s. Poona: 29°N 95°E , H. 2h 54m 27s. Tibet.
June 2 (176)	e F	10 44 10 49				(176) BCIS: aftershock of (175), H. 10h 08m 03s.
June 3 (177)	eS eL F	6 00 25 6 02 6 06				(177) BCIS: 45°N 28°E , H. 5h 53m 01s. Near mouths of the Danube.
June 4 (178)	eP eS eL F	6 29 08 6 36.2 6 45.5 7 08				(178) BCIS: $37\frac{1}{2}^{\circ}\text{N}$ 79°E , H. 6h 19m 49s. USCGS: H. 6h 19m 45s. Northern Kashmir - Tibet border.
June 4 (179)	e F	20 41 20 50				(179) BCIS: 39°N 24°E , H. 20h 31m 21s. Sporades Islands, Greece.
June 4 (180)						(180) W1: 1P 21h 43m 09s; 1 21h 43m 15s. USCGS: foreshock of (181), H. 21h 30m 52s.
June 5 (181)	e F	6 35 6 55				(181) W1: 1P 6h 08m 56s. USCGS: 6°N $77\frac{1}{2}^{\circ}\text{W}$, H. 5h 56m 35s, h = about 60 km Near west coast of Colombia.
June 5 (182)	e F	10 07 10 28				(182) BCIS: Probably Celebes region.
June 6 (183)	e(S) eL F	10 45.1 10 51 11 10				(183) BCIS: 7°N 35°W , H. 10h 27m 33s. Mid - Atlantic Ocean.

Seismic Records at De-Bilt



Date 1952	Phase	Time			Direction	Period	Amplitude	Remarks
		h	m	s		s	μ	
June 9 (184)	eP e F	14	53	35				(184) BCIS: $36^{\circ}6'N$ $27^{\circ}6'E$, H. 14h 48m 31s. Aegean Sea.
June 10 (185)	ePKP ez ePP ez ez ePPP ePPS eSS eSSS eL F	10	18	00				(185) USCGS: $15\frac{1}{2}^{\circ}S$ $178\frac{1}{2}^{\circ}W$, H. 9h 58m 27s. Fiji Islands region.
June 11 (186)	eP ePP ePPP eSKS ePS eSS eSSS eL F	0	45	49				(186) W1: ePP 0h 50m 22s. BCIS: $32^{\circ}1'S$ $67^{\circ}9'W$, H. 0h 31m 36s. USCGS: $32^{\circ}S$ $67\frac{1}{2}^{\circ}W$, H. 0h 31m 32s. San Juan province, Argentina.
June 12 (187)	eP eS eL F	11	05	06				(187) W1: eP 11h 05m 13s. BCIS: $34^{\circ}8'N$ $26^{\circ}1'E$, H. 11h 00m 10s. USCGS: H. 11h 00m 09s. Near southeast coast of Crete.
June 13 (188)	1P eS eL F	1	11	50	+			(188) W1: eP 1h 11m 46s. BCIS: $37^{\circ}5'N$ $22^{\circ}1'E$, H. 1h 07m 23s. USCGS: H. 1h 07m 25s. Near west coast of Greece.
June 14 (189)	eP eS eL F	2	16	33				(189) W1: 1P 2h 16m 30s. USCGS: $58^{\circ}N$ $153\frac{1}{2}^{\circ}W$, H. 2h 05m 33s, h = 60 km. Near coast of Alaska Peninsula.
June 14 (190)	eL F	8	47					(190) W1: 1P 8h 08m 07s+. Change of papers from 8h 08m till 8h 17m. BCIS: $40^{\circ}N$ $143^{\circ}E$, H. 7h 55m 53s. USCGS: H. 7h 55m 51s. Off east coast of Honshu, Japan.
June 15 (191)	1P eS eL F	15	26	31				(191) W1: 1P 15h 26m 25s+. BCIS: $31^{\circ}7'N$ $92^{\circ}0'E$, H. 15h 15m 57s. USCGS: H. 15h 15m 48s. Southeastern Tibet.
June 15 (192)	eL F	17	04					(192) BCIS: aftershock of (190), H. 16h 20m 18s. USCGS: $40^{\circ}N$ $143\frac{1}{2}^{\circ}E$, H. 16h 20m 20s.
June 16 (193)	1PKP ePP eH F	3	57	20				(193) W1: 1PKP 3h 57m 18s-; 1pPKP 3h 59m 13s. USCGS: $23^{\circ}S$ $179\frac{1}{2}^{\circ}W$, H. 3h 38m 20s, h = about 500 km. Fiji Islands region.
June 17 (194)	eP ePP eSKSP eSS eL F	4	27.5					(194) W1: 1P 4h 27m 46s. USCGS: $21\frac{1}{2}^{\circ}S$ $176^{\circ}W$, H. 4h 07m 42s.

Seismic Records at De Bilt



Date 1952	Phase	Time	Direction	Period	Amplitude	Remarks
		h m s		s	μ	
June 17 (195)	ez eL F	12 32.8 13 00 13 50				(195) Disturbed by microseisms.
June 17 (196)	eP eS eL F	22 41 52 22 45 36 22 47 23 00				(196) W1: eP 22h 42m 06s. BCIS: 36°7'N 11°8'W, H. 22h 37m 25s. USCGS: 36½°N 11°W, H. 22h 37m 25s. Off southwest coast of Portugal.
June 18 (197)						(197) W1: 1P 1h 10m 04s. BCIS: 16°2'N 62°0'W, H. 0h 59m 36s, h = about 100 km. USCGS: 16½°N 61½°W, H. 0h 59m 34s, h = about 100 km. Leeward Islands.
June 18 (198)	eL F	4 45 5 05				
June 19 (199)	eL F	0 31 0 40				(199) BCIS: 41½°N 21½°E, H. 0h 22m 58s. Yugoslavia.
June 19 (200)	1P ePP eS eSS eSSS eL F	12 24 46 12 27 30 12 34 25 12 39.2 12 42.8 12 47 15 15				(200) W1: eP 12h 24m 36s. BCIS: 22°6'N 100°0'E, H. 12h 12m 56s. USCGS: 23°N 100°E, H. 12h 12m 56s. Southern Yunnan Province, China.
June 19 (201)	eP 1z eS eSS eL F	21 25.0 21 25 50 21 35 30 21 41.5 21 54 24 00				(201) BCIS: 55°S 55°W, H. 21h 05m 24s. Southeast of Falkland Islands.
June 20 (202)	1P 1PP ePPP 1S ePS eSS eL F	5 58 59 6 02 20 6 04 12 6 09 34 6 10 23 6 15.4 6 29 8 10	+	+		(202) W1: 1P 5h 58 56s. BCIS: 24°3'N 121°8'E, H. 5h 46m 17s. USCGS: 25°2'N 122°E, H. 5h 46m 20s. Near north coast of Formosa.
June 20 (203)	eL F	10 04 10 15				(203) USCGS: 39½°N 82½°W, H. 9h 38m 06s. Southeastern Ohio.
June 21 (204)	1P ez eS eL F	6 40 59 6 47.0 6 50 50 7 05 8 00				(204) W1: 1P 6h 40m 55s. USCGS: foreshock of (206), H. 6h 28m 57s.
June 22 (205)	eP eS eL F	10 20.3 10 30.0 10 47 11 45				(205) W1: 1P 10h 20m 10s. USCGS: foreshock of (206), H. 10h 08m 14s.
June 22 (206)	1P 1PP 1S eSS eL F	21 53 54 21 56 57 22 03 49 22 09.4 22 22 1 30	+	-		(206) W1: 1P 21h 53m 50s. BCIS: 46°8'N 153°5'E, H. 21h 41m 54s. USCGS: 46°N 153°E, H. 21h 41m 53s. CMO: 46°8'N 153°5'E. Kurile Islands
June 23 (207)	eP eS eL F	12 15 57 12 26 07 12 45 13 30				(207) BCIS: aftershock of (202), H. 12h 03m 10s. USCGS: 24½°N 122°E, H. 12h 03m 09s. Near east coast of Formosa.

Date 1952	Phase	Time	Direction	Period	Amplitude	Remarks
		h m s		s	μ	
June 24 (208)	eP ePP eS eL F	16 41 02 16 43 54 16 51.0 17 10 18 10				(208) W1: eP 16h 40m 59s. BCIS: aftershock of (206), H. 16h 29m 03s. USCGS: $46\frac{1}{2}^{\circ}\text{N } 154^{\circ}\text{E}$, H. 16h 29m 02s. CMO: $46^{\circ}.5\text{N } 152^{\circ}.5\text{E}$. Kurile Islands.
June 25 (209)	eP eS eSSS eL F	23 31.1 23 40 32 23 48 23 54 1 30				(209) BCIS: $31^{\circ}\text{ON } 101^{\circ}.5\text{E}$, H. 23h 19m 40s. USCGS: $31^{\circ}\text{N } 101^{\circ}\text{E}$, H. 23h 19m 58s. Sikang Province, China.
June 26 (210)	eL F	13 04 13 30				
June 26 (211)	iP eS eL F	15 38 05 15 43 15 15 45 16 30				(211) BCIS: $37^{\circ}.9\text{N } 25^{\circ}.6\text{W}$, H. 15h 33m 03s. USCGS: $36\frac{1}{2}^{\circ}\text{N } 25\frac{1}{2}^{\circ}\text{W}$, H. 15h 32m 57s. Azores Islands.
June 27 (212)	eP eS eL F	13 13 25 13 16 50 13 18.5 13 30				(212) W1: eP 13h 13m 18s. BCIS: $40^{\circ}.8\text{N } 23^{\circ}.7\text{E}$, H. 13h 09m 14s. Northern Greece.
June 28 (213)						(213) W1: eP 16h 40.5m. USCGS: $16\frac{1}{2}^{\circ}\text{N } 97\frac{1}{2}^{\circ}\text{W}$, H. 16h 27m 47s. Oaxaca, Mexico.
June 30 (214)	iP iPS eL F	21 14 11 21 21 55 21 30 22 10				(214) W1: iP 21h 14m 09s. BCIS: $0^{\circ}.5\text{S } 29^{\circ}.5\text{E}$, H. 21h 04m 31s. USCGS: H. 21h 04m 20s. Near Lake Victoria, East Africa.
July 3 (215)	eP eL F	1 04.7 1 27 2 00				(215) W1: iP 1h 04.7m (+). USCGS: $5\frac{1}{2}^{\circ}\text{N } 78^{\circ}\text{W}$, H. 0h 52m 23s. Near west coast of Colombia.
July 4 (216)						(216) W1: iPKP 5h 04m 40s. USCGS: $20\frac{1}{2}^{\circ}\text{S } 178\frac{1}{2}^{\circ}\text{W}$, H. 4h 46m 01s, h = about 600 km. Fiji Islands region.
July 4 (217)	e F	20 40 20 45				(217) W1: e 20h 40.5m; F 20h 44m. BCIS: $44^{\circ}.1\text{N } 11^{\circ}.8\text{E}$, H. 20h 35m 12.5s. Roma: $44^{\circ}\text{N } 11^{\circ}47'\text{E}$, H. 20h 35m 08s. Etruscan Apennines.
July 4 (218)	eL F	21 36.5 21 38				(218) BCIS: aftershock of (217), H. 21h 30m 23s.
July 5 (219)						(219) W1: iP 12h 59m 52s. USCGS: H. 12h 41m 12s, h = about 600 km. Fiji Islands region.
July 5 (220)	iP ipP e(PcP) F	17 28 10 17 28 54 17 29 17 18 10				(220) W1: iP 17h 28m 00s; ipP 17h 28m 44s; i(PcP) 17h 29m 07s; iPPP 17h 30m 53s. BCIS: aftershock of (170), H. 17h 19m 50s. h = about 220 km. USCGS: $36\frac{1}{2}^{\circ}\text{N } 71^{\circ}\text{E}$, H. 17h 19m 47s, h = about 200 km. Hindu Kush.
July 6 (221)	eL F	0 05 0 30				(221) BCIS: $30\frac{1}{2}^{\circ}\text{S } 70^{\circ}\text{W}$, H. 23h 06m 17s Argentina - Chile border.
July 6 (222)	eP eS eL F	6 20.4 6 28.2 6 39 7 15				(222) W1: eP 6h 20m 28s. BCIS: $0^{\circ}0' 16^{\circ}.5\text{W}$, H. 6h 10m 47s. USCGS: H. 6h 10m 45s. Mid-Atlantic Ocean.
July 7 (223)	e F	3 29 4 00				(223) USCGS: $54^{\circ}\text{N } 164^{\circ}\text{W}$, H. 2h 53m 01s Near south coast of Unimak Island, Aleutian Islands.

Seismic Records at De Bilt



Date 1952	Phase	Time			Direction	Period	Amplitude	Remarks
		h	m	s		s	μ	
July 8 (224)								(224) W1: 1P 1h 10m 04s. USCGS: 42°N 131°W, H. 0h 59m 23s, h = about 600 km. Sea of Japan.
July 8 (225)								(225) W1: 1PKP 15h 59m 50s-. BCIS: near 16°S 176°W, H. 15h 40.2m. Tonga Islands region.
July 9 (226)	1P ePP ePPP eS eL F	18 18 18 18 18 20	27 30 33 38 54 00	45 51 47 11				(226) USCGS: 7½°N 82°W, H. 18h 15m 18s. Off coast of Panama.
July 9 (227)	eP (eS eL	20 20 21	49.3 59.7 15	)				(227) W1: eP 20h 49m 20s. USCGS: aftershock of (226), H. 20h 36m 48s. F in next shock.
July 9 (228)	1PKP ePP F	21 21 22	11 15 30	48 10				(228) W1: 1PKP 21h 11m 45s BCIS: H. 20h 52m 20s, h = about 100 km. Tonga Islands region.
July 10 (229)								(229) W1: e 7h 40m 07s. BCIS: probably Fiji Islands region.
July 10 (230)	1PKP 1pPKP F	16 16 16	03 06 30	55 28	(-) (-)			(230) W1: 1PKP 16h 03m 54s-; 1 16h 03m 57s-; 1pPKP 16h 06m 30s-; 1 16h 06m 36+. USCGS: 18½°S 180°, H. 15h 45m 28s, h = about 700 km. Fiji Islands.
July 13 (231)	1PKP epPKP ePP epPP ePPP epPPP eSS eSSS F	12 12 12 12 12 12 12 12 14	17 19.3 21 22 24 25 39.5 45 00	41 03 38 11 43	+			(231) Disturbed by microseisms. W1: 1PKP 12h 17m 37s. USCGS: 18½°S 169½°E, H. 11h 58m 34s, h = about 300 km. New Hebrides Islands.
July 13 (232)	eP e(S) eSS eL F	17 18 18 18 20	53.9 01.5 09.5 35 30					(232) Disturbed by microseisms. USCGS: 3°S 128°E, H. 17h 34m 26s. Ceram Sea.
July 15 (233)	eP eS eH eL F	6 6 6 6 7	18 29 29 50 40	50 05 15				(233) USCGS: 14½°N 92½°W, H. 6h 06m 20s. Near coast of Guatemala.
July 17 (234)	1P 1pP 1S 1sS eL F	16 16 16 16 16 18	22 22 32 32 47 00	11 31 27 56				(234) W1: 1P 16h 22m 08s(+); 1pP 16h 22m 30s(+). USCGS: 34½°N 136°E, H. 16h 09m 25s, h = about 100 km. CMO: 34.4N 135.8E, h = 70 km. Southern Honshu, Japan.
July 18 (235)	ePP ez ePS eL F	19 19 19 19 20	00.5 05 10.8 35 30	10				(235) USCGS: 23°S 114½°W, H. 18h 39m 40s. Easter Island region.
July 19 (236)	ePKP F	22 22	29 32	48				(236) BCIS: 17°S 173°W, H. 22h 10m 11s. Tonga Islands region.

Seismic Records at De Bilt



Date 1952	Phase	Time			Direction	Period	Amplitude	Remarks
		h	m	s		s	μ	
July 20 (237)	ez F	11	20					(237) BCIS: $34^{\circ}8'N$ $26^{\circ}5'E$, H. 11h 05m 27s. Off southeast coast of Crete.
July 21 (238)	1P 1PP eS ePS eL F	12	04	29	+			(238) W1: 1P 12h 04m 30s; 1 12h 04m 38m; eL 12h 31m 30s; F 13h 40m. USCGS: $35^{\circ}1'N$ $118^{\circ}9'W$, H. 11h 52m 11s. Tulare Valley, Southern California.
		12	07	38				
		12	14	41				
		12	15	30				
		12	29					
		17	00					
July 21 (239)	eH eL F	20	22					(239) Manila: $18^{\circ}0'N$ $121^{\circ}0'E$, Luzon, Philippine Islands.
		20	25					
		21	00					
July 22 (240)								(240) W1: 1 9h 00m 58s+; 1 9h 01m 04s. BCIS: South Pacific.
July 22 (241)								(241) W1: 1PKP 18h 33m 45s. BCIS: H. 18h 14.0m. South of New Hebrides Islands.
July 23 (242)	eL	0	00					(242) F in next shock. W1: ePKP 23h 10.3m. BCIS: $50^{\circ}S$ $123^{\circ}W$, H. 22h 50m 10s. South Pacific.
July 23 (243)	eP eS eL F	0	50	43				(243) USCGS: aftershock of (238), H. 0h 38m 33s.
		1	00	53				
		1	17					
		2	00					
July 23 (244)								(244) W1: 1P 1h 11m 54s. USCGS: $14^{\circ}N$ $91\frac{1}{2}^{\circ}W$, H. 0h 59m 17s. Near coast of Guatemala.
July 23 (245)	eP eL F	13	29	20				(245) USCGS: aftershock of (238), H. 13h 17m 02s.
		14	00					
		14	30					
July 24 (246)	1P eS eL F	22	21	24				(246) W1: 1P 22h 21m 19s-. USCGS: $42\frac{1}{2}^{\circ}N$ $145\frac{1}{2}^{\circ}E$, H. 22h 09m 20s, h = about 60 km. CM0: $42^{\circ}7'N$ $145^{\circ}3'E$, h = about 60 km. Off east coast of Hokkaido, Japan.
		22	31	16				
		22	46					
		24	00					
July 25 (247)	eL F	15	40					(247) W1: 1PKP 14h 38m 16s. BCIS: $60^{\circ}S$ $150^{\circ}E$, H. 14h 17m 25s. South Pacific.
		16	40					
July 25 (248)	eL F	19	49					(248) W1: eP 19h 22m 01s. USCGS: aftershock of (238), H. 19h 09m 42s.
		20	45					
July 26 (249)								(249) W1: eP 13h 44m 59s. BCIS: H. 13h 32.9m. Off east coast of Hokkaido, Japan.
July 26 (250)								(250) W1: eP 14h 38m 15s. BCIS: $20^{\circ}N$ $95^{\circ}E$, H. 14h 26m 35s. Birma.
July 27 (251)	ePKP eL F	2	30	34				(251) USCGS: $15\frac{1}{2}^{\circ}S$ $173^{\circ}W$, H. 2h 11m 08s. Samoa Islands region.
		3	30					
		3	50					
July 27 (252)	1PKP ₁ 1PKP ₂ 1pPKP ₁ ePPP eSS F	8	42	15	-			(252) W1: ePKP ₁ 8h 42m 14s; 1 8h 42m 16s; 1pPKP ₁ 18h 44m 18s; 1PP 18h 45m 57s. USCGS: $20\frac{1}{2}^{\circ}S$ $179^{\circ}E$, H. 18h 23m 22s, h = about 500 km. Fiji Islands.
		8	42	34	+			
		8	44	19	-			
		8	49.0					
		9	04					
		10	30					
July 29 (253)	eS eL F	7	26.2					(253) USCGS: aftershock of (238), H. 7h 03m 45s.
		7	44					
		8	30.					

Seismic Records at De Bilt



Date 1952	Phase	Time	Direction	Period	Amplitude	Remarks
		h m s		s	μ	
July 31 (254)	eP eS eL F	12 21 23 12 31 30 12 45 13 50				(254) USCGS: $35\frac{1}{2}^{\circ}\text{N}$ $118\frac{1}{2}^{\circ}\text{W}$, H. 12h 09m 08s. Southern California.
Aug. 1 (255)	e F	10 54 11 05				(255) BCIS: 29°N 50°E , H. 10h 30.8m. Persian Gulf.
Aug. 1 (256)	eL F	20 30 20 35				
Aug. 2 (257)	e F	19 39 21 10				
Aug. 3 (258)	e F	14 05 14 20				(258) USCGS: $12\frac{1}{2}^{\circ}\text{S}$ 78°W , H. 13h 13m 48s. Near coast of Peru.
Aug. 4 (259)	e F	2 07 2 25				(259) BCIS: $35^{\circ}5\text{N}$ $49^{\circ}3\text{E}$, H. 1h 49m 39s. Southwest Iran.
Aug. 6 (260)	eS eL F	5 24.3 5 30 6 05				(260) W1: eP 5h 16m 14s. BCIS: 3°N $27\frac{3}{4}^{\circ}\text{W}$, H. 5h 06m 09s. USCGS: H. 5h 06m 10s. Mid Atlantic Ocean, about 800 miles northeast of Brazil.
Aug. 6 (261)	e F	7 55 8 15				
Aug. 6 (262)	e F	18 39 18 55				
Aug. 7 (263)						(263) W1: 1PKP ₁ 21h 35m 13s; 1PKP ₂ 21h 35m 20s. BCIS: H. 21h 15m 20s. Tonga Islands region.
Aug. 7 (264)	1P ePP eS eL F	22 05 32 22 08 44 22 15.7 22 33 23 30				(264) W1: 1P 22h 05m 33s. BCIS: $41\frac{1}{2}^{\circ}\text{N}$ 144°E , H. 21h 53m 22s. USCGS: 43°N $144\frac{1}{2}^{\circ}\text{E}$, H. 21h 53m 31s. CMO: $41^{\circ}7\text{N}$ 145°E , h = 60 km. Near east coast of Hokkaido, Japan.
Aug. 9 (265)						(265) W1: 1PKP 6h 25m 44s; 1 6h 25m 53s. BCIS: H. 6h 06.1m. South Paci- fic, New Hetrides Islands region.
Aug. 9 (266)	eL F	10 20 10 50				(266) BCIS: $42\frac{1}{2}^{\circ}\text{N}$ 145°E , H. 9h 38m 05s. USCGS: H. 9h 38m 17s. CMO: $42^{\circ}0\text{N}$ $145^{\circ}2\text{E}$. Near east coast of Hokkaido, Japan.
Aug. 12 (267)						(267) W1: 1P 6h 43m 36s. BCIS: $5\frac{3}{4}^{\circ}\text{N}$ 94°E , H. 6h 31m 03s. USCGS: H. 6h 31m 03s. Off northwest coast of Sumatra.
Aug. 13 (268)						(268) W1: 1 3h 29m 09s.
Aug. 13 (269)	e F	9 44 9 49				
Aug. 13 (270)	e F	14 53 15 00				(270) W1: 1P 14h 37m 35s; 1 14h 37m 41s. BCIS: $33\frac{3}{4}^{\circ}\text{N}$ $47\frac{3}{4}^{\circ}\text{E}$, H. 14h 30m 25s. West Iran.
Aug. 13 (271)	eP eS eL F	21 22.0 21 28 00 21 32.5 22 00				(271) W1: eP 21h 22m 01s; 1 21h 22m 11s. BCIS: $33^{\circ}1\text{N}$ $40^{\circ}4\text{W}$, H. 21h 14m 27s. USCGS: H. 21h 14m 11s. North Atlantic Ocean, about 900 miles southwest of the Azores Islands.

Seismic Records at De Bilt



Date 1952	Phase	Time	Direction	Period	Amplitude	Remarks
		h m s		s	μ	
Aug. 13 (272)	e F	23 10 23 20				(272) BCIS: North Atlantic Ocean.
Aug. 14 (273)	1P ePP 1S eL F	16 14 00 16 17 34 16 24 48 16 16 45 17 30				(273) BCIS: $2^{\circ}\text{N } 99\frac{1}{2}^{\circ}\text{E}$, H. 16h 01.6m, h = about 300 km. USCGS: H. 16h 01m 07s. Sumatra.
Aug. 14 (274)	ePKP ePP ez eL F	23 35 52 23 37 57 23 52 28 24 15 2 00				(274) USCGS: $6^{\circ}\text{S } 155^{\circ}\text{E}$, H. 23h 16m 42s. Solomon Islands.
Aug. 16 (275)	eSS eL F	14 30.3 14 50 16 30				(275) Disturbed by microseisms. BCIS: $5^{\circ}\text{S } 155\frac{1}{2}^{\circ}\text{E}$, H. 13h 51m 47s. Solomon Islands region.
Aug. 17 (276)	1P ePcP 1PP 1PPP eScP 1S 1SS 1SSS eL F	16 12 46 16 13 24 16 15 13 16 16 48 16 17 25 16 21 22 16 25 40 16 28 40 16 31 20 30	-			(276) W1: 1P 16h 12m 43s; ePP 16h 14m 59s; ePPP 16h 16m 32s; eL 16h 34m; F 17h 05m. USCGS: $30\frac{1}{2}^{\circ}\text{N } 91\frac{1}{2}^{\circ}\text{E}$, H. 16h 02m 05s. Poona: $29^{\circ}8'\text{N } 90^{\circ}3'\text{E}$, H. 16h 02m 27s. Eastern Tibet.
Aug. 18 (277)	ePP ePS eSS eL F	13 23.5 13 32.9 13 38.5 13 53 14 40				(277) Disturbed by microseisms. BCIS: $30^{\circ}3'\text{S } 71^{\circ}2'\text{W}$, H. 13h 04m 54s. USCGS: H. 13h 04m 50s. Central Chile-Argentina border.
Aug. 19 (278)	e eL F	11 04 11 35 12 20				(278) Disturbed by microseisms.
Aug. 19 (279)						(279) W1: 1P 14h 13m 39s. USCGS: $16^{\circ}\text{N } 60\frac{1}{2}^{\circ}\text{W}$, H. 14h 03m 00s. Leeward Islands.
Aug. 20 (280)	eP eS eSSS eL F	15 37.0 15 46 45 15 55 16 00 18 00				(280) Disturbed by microseisms. BCIS: $43^{\circ}\text{N } 126^{\circ}7'\text{W}$, H. 15h 25m 00s. USCGS: $43^{\circ}\text{N } 127^{\circ}\text{W}$, H. 15h 24m 59s. Off coast of Oregon.
Aug. 21 (281)						(281) W1: 1PKP 16h 37m 45s-. USCGS: $20^{\circ}\text{S } 178\frac{1}{2}^{\circ}\text{W}$, H. 16h 19m 04s, h = about 600 km. Fiji Islands region.
Aug. 21 (282)	e F	22 57 23 00				
Aug. 22 (283)	eL F	23 21 23 50				(283) USCGS: $35^{\circ}3'\text{N } 119^{\circ}0'\text{W}$, H. 22h 41m 22s. Near Bakersfield, California.
Aug. 23 (284)	eL F	15 00 15 30				(284) W1: 1P 14h 35m 05s; 1 14h 35m 12s. USCGS: $7^{\circ}\text{N } 82^{\circ}\text{W}$, H. 14h 22m 33s. Off coast of Panama.
Aug. 24 (285)	eSS eL F	13 16 13 35 14 05				(285) BCIS: $23\frac{1}{2}^{\circ}\text{N } 142\frac{1}{2}^{\circ}\text{E}$, H. 12h 45m 36s. USCGS: H. 12h 45m 40s. Bonin Islands.

Seismic Records at De Bilt



Date 1952	Phase	Time	Direction	Period	Amplitude	Remarks
		h m s		s	μ	
Aug. 24 (286)	e F	15 31 15 35				(286) W1: 1P 15h 10m 42s. BCIS: $9\frac{1}{2}^{\circ}\text{N}$ $62\frac{1}{2}^{\circ}\text{W}$, H. 14h 59m 30s. USCGS: H. 14h 59m 28s. Near mouth of Orinoco River, Venezuela.
Aug. 24 (287)	e F	20 56 21 08				(287) W1: eP 20h 49.1m. BCIS: 35°N 28°E , H. 20h 44m 15s. USCGS: H. 20h 44m 16s. Mediterranean Sea, about 100 miles east of Crete.
Aug. 25 (288)	eL F	2 20 2 45				(288) W1: 1P 1h 55m 43s+. BCIS: $27\frac{1}{2}^{\circ}\text{N}$ $95\frac{3}{4}^{\circ}\text{E}$, H. 1h 44m 40s. USCGS: H. 1h 44m 42s. Assam.
Aug. 27 (289)	eP ePP eL F					(289) Disturbed by microseisms. W1: 1P 11h 39m 13s-; 1pP 11h 39m 30s-. USCGS: $55\frac{1}{2}^{\circ}\text{N}$ 160°W , H. 11h 27m 54s, h = about 60 km. Alaska Peninsula.
Aug. 27 (290)						(290) W1: ePKP 19h 31m 04s. BCIS: South Pacific.
Aug. 28 (291)	e F	2 58 3 05				(291) BCIS: 62°N 28°W , H. 2h 47.0m North Atlantic Ocean.
Aug. 28 (292)						(292) W1: 1P 11h 04m 08s+; e 11h 04m 22s. USCGS: 55°N 160°W , H. 10h 52m 41s. Near south coast of Alaska Peninsula.
Aug. 28 (293)	e F	12 14 12 35				
Aug. 28 (294)	eL F	14 05 14 20				(294) USCGS: 34°S 106°W , H. 12h 57m 04s. Easter Island region.
Aug. 28 (295)	e F	15 10 15 45				(295) BCIS: $53\frac{1}{2}^{\circ}\text{S}$ 25°E , H. 14h 21m 45s. USCGS: H. 14h 21m 49s. Indian Ocean, about 1800 miles south of Capetown.
Aug. 29 (296)	eP eSKS eL F	5 40.9 5 51.5 6 10 6 55				(296) Disturbed by microseisms. BCIS: 6°N $95\frac{3}{4}^{\circ}\text{E}$, H. 5h 28m 17s, h = about 100 km. Near north coast of Sumatra.
Aug. 30 (297)	eL F	15 18 15 25				(297) W1: eP 15h 06m 56s. USCGS: 32°N 41°W , H. 14h 59m 13s. North Atlantic Ocean.
Aug. 30 (298)	e F	21 30 21 40				
Aug. 31 (299)	1P ePP e(PS) eL F	16 21 40 16 24 38 16 32 03 16 47 17 30				(299) W1: 1P 16h 21m 35s; 1pP 16h 21m 49s. USCGS: 42°N $142\frac{1}{2}^{\circ}\text{E}$, H. 16h 09m 33s. CMO: 41.9°N 142.8°E , h = about 40 km. Near south coast of Hokkaido, Japan.
Sept. 2 (300)	eL F	23 28 23 36				(300) BCIS: 37.2°N 21.6°E , H. 23h 20m 04s. Southwest coast of Peloponnesus, Greece.
Sept. 5 (301)	eL F	2 40 2 50				

Seismic Records at De Bilt



Date 1952	Phase	Time			Direction	Period	Amplitude	Remarks
		h	m	s		s	μ	
Sept. 7 (302)	eL F	3	47					(302) USCGS: 16°S 177°W, H. 2h 38m 58s. Fiji Islands.
Sept. 7 (303)	eL F	5	15					(303) USCGS: 51½°N 173°W, H. 4h 30m 17s. Andreanof Islands, Aleutian Islands.
Sept. 9 (304)	1P 1pP 1S ePS 1SS eSSS eL F	13	07	07				(304) W1: 1P 13h 07m 14s; ePP 13h 10m 39s. BCIS: 8½°N 84½°W, H. 12h 54m 44s, h = about 60 km. USCGS: 9°N 84½°W, H. 12h 54m 42s. Near coast of Costa Rica.
Sept 10 (305)	eH F	9	30					BCIS: 12°8N 39°6E, H. 9h 05m 58s. Ethiopie.
Sept 10 (306)	eL F	19	40					BCIS: 10½°N 123½°E, H. 18h 47m 02s. Negros, Philippine Islands.
Sept 11 (307)	eL F	6	12					(307) USCGS: 9°N 85½°W, H. 5h 28m 22s. Near coast of Costa Rica.
Sept 11 (308)	eL F	9	03					(308) BCIS: 18°5S 22°E, H. 8h 23m 24s. Bechuanaland.
Sept 11 (309)								(309) W1: 1P 22h 17m 38s. BCIS: 5½°N 123½°E, H. 22h 03m 46s. USCGS: H. 22h 03m 44s. Celebes Sea.
Sept. 11 (310)	1PKP ₁ 1PKP ₂ ePP ePPP eSS eL F	22	46	38				(310) W1: 1PKP ₂ 22h 47m 17s. USCGS: 29°S 177°W, H. 22h 26m 41s. Kermadec Islands.
Sept 12 (311)	e F	1	11					(311) BCIS: 37°6N 20°5E, H. 1h 03m 59s. Ionian Sea.
Sept. 14 (312)								(312) W1: 1PKP 6h 10m 24s; 1pPKP 6h 12m 39s. USCGS: 25°S 179°E, H. 5h 51m 30s, h = about 550 km. South of Fiji Islands.
Sept 14 (313)	1P eS ePS eL F	9	44	47				(313) W1: 1P 9h 44m 37s. USCGS: 34°N 93½°E, H. 9h 34m 10s. Poona: 35°0N 93°0E, H. 9h 34m 09s. Chinghai province, China.
Sept 15 (314)	eS eL F	4	47.9					(314) BCIS: 38°N 59°E, H. 4h 31m 24s. Turkestan.
Sept 15 (315)	eP eS eL F	11	37.4					(315) W1: eP 11h 37m 17s. BCIS: 30½°N 72°E, H. 11h 28m 06s. USCGS: H. 11h 28m 14s. Central Pakistan.
Sept 15 (316)	eL F	19	40					(316) W1: eP 19h 33m 37s. BCIS: 37°5N 27°0E, H. 19h 28m 53s. Aegean Sea.

Seismic Records at De Bilt



Date 1952	Phase	Time			Direction	Period	Amplitude	Remarks
		h	m	s		s	μ	
Sept 16 (317)								(317) W1: 1P 22h 35m 14s. USCGS: H. 22h 22m 47s. CMO: 29.7°N 131.5°E. Near south coast of Kyushu, Japan.
Sept 17 (318)	1PKP F	1 35 1 36		31				(318) W1: 1PKP 1h 35m 30s+. USCGS: 17½°S 179°W, H. 1h 16m 53s, h = about 600 km. Fiji Islands.
Sept 19 (319)	eL F	18 22 18 40						(319) BCIS: H. 17h 30.7m, h = about 200 km. Samar Island region, Philip- pine Islands.
Sept 20 (320)	ePKP e(PP) eL F	13 18 13 23 14 15 15 00						(320) BCIS: 56.1°S 145.1°E, H. 12h 57m 44s. Southwest of Macquarie Island.
Sept 21 (321)	1P epP 1sP 1pP 1pPP 1sPP 1SKS 1S 1PS 1H eH F	2 43 2 44 2 45 2 47 2 48 2 49 2 53 2 54 2 55 2 58 3 00.1 5 30		38 47 15 30 30 00 54 37 53 52	+			(321) W1: 1P 2h 43m 44s+; 1pP 2h 44m 40s+; 1pP 2h 47m 30s. USCGS: 22½°S 65°W, H. 2h 30m 30s, h = about 250 km. Argentina-Bolivia border.
Sept 21 (322)	eL F	12 00 12 30						(322) W1: eP 11h 25m 04s. USCGS: 33½°N 142°E, H. 11h 12m 09s. Off south coast of Honshu, Japan.
Sept 22 (323)	eL F	12 15 13 10						(323) Disturbed by microseisms. USCGS: 40½°N 124°W, H. 11h 41m 27s. Cape Mendocino, California.
Sept 23 (324)	eH eL F	20 40 20 43 20 50						(324) Disturbed by microseisms. BCIS: 36½°N 29½°E, H. 20h 30m 52s. Southwestern Turkey.
Sept 27 (325)	1P 1pP 1S esS ePS eSS eL F	19 17 19 17 19 26 19 27 19 27 19 31.8 19 42 20 35		21 40 57 26 35				(325) Disturbed by Microseisms. W1: 1P 19h 17m 16s-. USCGS: 50½°N 157°E, H. 19h 05m 46s, h = about 100 km. Near coast of Kamchatka.
Sept 30 (326)	1P ePPP eS ePS eSSS eL F	13 03 13 08 13 12 13 13 13 21 13 25 14 30		29 00 56 30 30	(-)			(326) Disturbed by microseisms. W1: 1P 13h 03m 22s. USCGS: 28½°N 102°E, H. 12h 52m 00s. Poona: 28°N 102.5°E, H. 12h 52m 04s. Szechwan Province, China.
Oct. 1 (327)	eL F	10 00 10 30						(327) Disturbed by microseisms.
Oct. 1 (328)	eL F	13 52 14 10						(328) Disturbed by microseisms. BCIS: 36½°N 94°E, H. 13h 21m 02s. Southeast of Altyn Tagh, Central Asia.
Oct. 2 (329)	eL F	14 24 14 45						(329) W1: ePKP 13h 23m 38s. BCIS: H. 13h 04.0m. Fiji Islands region.

Seismic Records at De Bilt



Date 1952	Phase	Time	Direction	Period	Amplitude	Remarks
		h m s		s	μ	
Oct. 3	eS	8 00.0				(330) USCGS: $6\frac{1}{2}^{\circ}\text{N } 83^{\circ}\text{W}$,
(330)	eSSS	8 09				H. 7h 36m 45s.
	eL	8 16				Off south coast of Panama.
	F	8 55				
Oct. 4	eS	4 23.5				(331) BCIS: $11\frac{1}{4}^{\circ}\text{S } 14^{\circ}\text{W}$, H. 4h 04m 05s
(331)	eL	4 32				Atlantic Ocean, south of Ascension
	F	5 05				Island.
Oct. 4	eL	20 22				(332) BCIS: Probably: North Atlantic
(332)	F	20 30				Ocean.
Oct. 5	eH	10 29 00				(333) BCIS: $37^{\circ}.1\text{N } 20^{\circ}.4\text{E}$, H. 10h 21m
(333)	eL	10 30.5				18s. Mediterranean Sea, near south-
	F	10 50				west coast of Greece.
Oct. 5	1P	10 59 14				(334) BCIS: $37\frac{1}{2}^{\circ}\text{N } 20\frac{1}{2}^{\circ}\text{E}$, H. 10h 54m
(334)	1z	10 59 23				56s. Mediterranean Sea, near south-
	1S	11 02 39				west coast of Greece.
	eL	11 04.5				
	F	11 30				
Oct. 5	1P	22 14 41				(335) W1: 1P 22h 14m 34s.
(335)	eS	22 23 16				BCIS and USCGS: $37^{\circ}\text{N } 93^{\circ}\text{E}$, H. 22h
	eL	22 36				04m 28s. Poona: $37^{\circ}.0\text{N } 92^{\circ}.5\text{E}$, H. 22h
	F	23 30				04m 23s. Chinghai province, China.
Oct. 6	e(S)	2 45.5				(336) Disturbed by microseisms.
(336)	eL	2 52				BCIS: H. 2h 27.0m. St Paul Rocks
	F	3 10				region, Atlantic Ocean.
Oct. 6	eL	23 13				(337) Disturbed by microseisms.
(337)	F	23 30				USCGS: $53\frac{1}{2}^{\circ}\text{N } 161^{\circ}\text{E}$, H. 22h 29m 35s.
						Off east coast of Kamchatka.
Oct. 7	eL	16 19				(338) Disturbed by microseisms.
(338)	F	16 38				BCIS: aftershock of (334),
						H. 16h 08m 31s.
Oct. 7	eL	18 33				(339) Disturbed by microseisms.
(339)	F	19 00				BCIS: $32^{\circ}.4\text{N } 87^{\circ}.5\text{E}$, H. 18h 02m 14s.
						USCGS: H. 18h 02m 10s. Central Tibet
Oct. 8	eL	15 02				(340) Disturbed by microseisms.
(340)	F	15 20				USCGS: $39^{\circ}\text{N } 113^{\circ}\text{E}$, H. 14h 24m 02s.
						Northeastern China.
Oct. 10	eP	11 56 12				(341) Disturbed by microseisms.
(341)	1S	11 59 45				BCIS: aftershock of (334),
	ez	11 59 58				H. 11h 51m 56s.
	eL	12 01.5				
	F	12 20				
Oct. 10	ePKP	16 15.2				(342) Disturbed by microseisms.
(342)	ePP	16 18 27				BCIS: $15\frac{1}{4}^{\circ}\text{S } 174\frac{3}{4}^{\circ}\text{W}$, H. 15h 55m 30s.
	1PKS	16 18 51				USCGS: H. 15h 55m 35s.
	eSS	16 37				Samoa Islands region.
	eL	17 08				
	F	18 00				
Oct. 10	eP	18 56 41				(343) Disturbed by microseisms.
(343)	eS	19 04 03				W1: eP 18h 56.6m.
	eL	19 12				USCGS: $30\frac{1}{2}^{\circ}\text{N } 69^{\circ}\text{E}$, H. 18h 47m 37s.
	F	20 30				Poona: $29^{\circ}.5\text{N } 69^{\circ}.5\text{E}$, H. 18h 47m 44s.
						Central Pakistan.
Oct. 11	eSS	0 45				(344) Disturbed by microseisms.
(344)	eL	1 11				USCGS: $6^{\circ}\text{S } 149^{\circ}\text{E}$, H. 0h 13m 59s.
	F	2 30				New Britain.

Seismic Records at De Bilt



Date 1952	Phase	Time			Direction	Period	Amplitude	Remarks
		h	m	s		s	μ	
Oct. 11 (345)								(345) W1: 1P 1h 35m 37s. BCIS: 19 $\frac{1}{2}$ °S 23°E, H. 1h 24m 02s. USCGS: H. 1h 24m 01s. Northwestern Bechuanaland, Africa.
Oct. 13 (346)	eL F	16 17	51 05					(346) Disturbed by microseisms. BCIS: 38°9'N 23°7'E, H. 16h 42m 24s. Roma: 39°N 22°E, H. 16h 42m 37s. Off north east coast of Euboea Island, Greece.
Oct. 14 (347)	eL F	0 1	57 10					(347) Disturbed by microseisms. USCGS: 34°S 178°E, H. 23h 24m 10s. South of Kermadec Islands.
Oct. 15 (348)	eL F	0 1	35 25					(348) USCGS: 8 $\frac{1}{2}$ °N 83°W, H. 23h 56m 03s. Near south coast of Costa Rica.
Oct. 15 (349)	eL F	3 3	35 45					
Oct. 16 (350)								(350) W1: eP 9h 59m 51s. Disturbed by microseisms. USCGS: 41 $\frac{1}{2}$ °N 142°E, H. 9h 47m 51s, h = about 60 km. Near north coast of Honshu, Japan.
Oct. 17 (351)								(351) W1: 1P 15h 28m 14s+. CM0: 43°2'N 145°2'E, h = about 30 km. Eastern Hokkaido, Japan.
Oct. 18 (352)	ePKP ePP ePKS eSS eSSS eL F	5 5 5 6 0 6 7	42.0 45.2 46.0 04.0 09.0 30 50					(352) Disturbed by microseisms. W1: 1PKP 5h 42m 07s; 1PKS 5h 46m 08s USCGS: 16°S 168°E, H. 5h 22m 32s. New Hebrides.
Oct. 18 (353)	eP eS eSSS eL F	12 12 12 12 13	07 15 20.7 25 05	33 05				(353) Disturbed by microseisms. W1: 1P 12h 07m 22s; 1 12h 07m 45s; 1 12h 07m 53s. USCGS: 13°N 46°W, H. 11h 57m 36s. Atlantic Ocean.
Oct. 20 (354)	eL F	1 1	23 30					(354) Disturbed by microseisms. USCGS: 57°N 57°W, H. 1h 04m 35s. Off coast of Labrador.
Oct. 21 (355)	eL F	3 3	00 30					(355) Disturbed by microseisms. USCGS: 9 $\frac{1}{2}$ °N 84 $\frac{1}{2}$ °W, H. 2h 30m 46s. Near coast of Costa Rica.
Oct. 22 (356)								(356) W1: 1PKP 4h 04m 12s. USCGS: 18°S 174°W, H. 3h 44m 30s. Tonga Islands.
Oct. 22 (357)	e eL F	4 4 4	24 27 40					(357) W1: 1P 4h 20m 24s. BCIS: 36°7'N 27.9E, H. 4h 14m 52s. Dodecanesos, Greece.
Oct. 22 (358)								(358) W1: ez 17h 06.7m. USCGS: South Turkey. No records from Oct. 22 7h 34m till Oct. 23 8h 01m.
Oct. 25 (359)								(359) W1: 1P 14h 43m 58s. USCGS: 26°N 112°W, H. 14h 31m 09s. Lower California.

Seismic Records at De Bilt



Date 1952	Phase	Time	Direction	Period	Amplitude	Remarks
		h m s		s	μ	
Oct. 26 (360)	eS ess eL F	9 03.0 9 04.5 9 25 9 55				(360) W1: 1P 8h 52m 59s-; 1 8h 54m 11s; 1 8h 54m 42s. USCGS: $34\frac{1}{2}^{\circ}\text{N } 137^{\circ}\text{E}$. H. 8h 41m 03s, h = about 300 km. Near south coast of Honshu, Japan.
Oct. 26 (361)	eL F	14 06 14 30				(361) Disturbed by microseisms. USCGS: $39^{\circ}\text{N } 143\frac{1}{2}^{\circ}\text{E}$, H. 13h 20m 14s. CMO: $39^{\circ}4\text{N } 143^{\circ}9\text{E}$, h = about 40 km. Off east coast of Honshu.
Oct. 26 (362)	eL F	15 17 15 35				(362) Disturbed by microseisms. USCGS: $40^{\circ}\text{N } 143\frac{1}{2}^{\circ}\text{E}$, H. 14h 30m 04s. CMO: $39^{\circ}5\text{N } 144^{\circ}1\text{E}$, h = about 40 km. Off northeast coast of Honshu, Japan.
Oct. 26 (363)						(363) W1: eP 15h 58m 30s. USCGS: foreshock of (365), H. 15h 46m 14s. CMO: $39^{\circ}3\text{N } 144^{\circ}0\text{E}$, h = about 40 km.
Oct. 26 (364)	eP ePP eS eSS eL F	16 05.4 16 08 38 16 15 35 16 21 16 33 17 35				(364) Disturbed by microseisms. W1: 1P 16h 05m 20s. USCGS: foreshock of (365), H. 15h 53m 03s. CMO: $39^{\circ}5\text{N } 143^{\circ}7\text{E}$, h = about 50 km.
Oct. 26 (365)	eP ePP eS eSS eL	18 14 21 18 17 26 18 24 31 18 30.0 18 40				(365) Disturbed by microseisms. W1: eP 18h 14m 16s. F in next shock. USCGS: $39^{\circ}\text{N } 143^{\circ}\text{E}$, H. 18h 02m 00s. CMO: $39^{\circ}4\text{N } 144^{\circ}0\text{E}$, h = about 40 km. Off east coast of Honshu, Japan.
Oct. 26 (366)	ePP eS eL F	19 34 48 19 41.8 20 00 20 55				(366) Disturbed by microseisms. W1: 1P 19h 31m 33s. USCGS: $38\frac{1}{2}^{\circ}\text{N } 143\frac{1}{2}^{\circ}\text{E}$, H. 19h 19m 12s. CMO: $39^{\circ}3\text{N } 143^{\circ}3\text{E}$, h = about 20 km. Off east coast of Honshu, Japan.
Oct. 26 (367)	eL F	21 10 21 40				(367) W1: 1P 20h 39m 42s-. USCGS: $40\frac{1}{2}^{\circ}\text{N } 143^{\circ}\text{E}$, H. 20h 27m 28s. CMO: $39^{\circ}8\text{N } 144^{\circ}\text{E}$, h = about 40 km. Off northeast coast of Honshu, Japan.
Oct. 26 (368)	eL F	22 44 23 10				(368) USCGS: $40^{\circ}\text{N } 143\frac{1}{2}^{\circ}\text{E}$, H. 22h 00m 38s. CMO: $39^{\circ}4\text{N } 143^{\circ}8\text{E}$. Off northeast coast of Honshu, Japan.
Oct. 27 (369)	eP ePP eS eL F	3 29 33 3 32 42 3 39 45 3 56 4 55				(369) W1: 1P 3h 29m 20s-. USCGS: aftershock of (365), H. 3h 17m 12s. CMO: $39^{\circ}4\text{N } 143^{\circ}4\text{E}$, h = 50 à 60 km.
Oct. 27 (370)						(370) W1: 1PKP 20h 50m 36s-. USCGS: H. 20h 31m 58s, h = about 600 km. Fiji Islands.
Oct. 28 (371)	eL F	5 03 5 30				(371) Disturbed by microseisms. W1: 1P 4h 41m 04s -. BCIS: $18^{\circ}3\text{N } 73^{\circ}3\text{W}$, H. 4h 29m 52s. USCGS: $18\frac{1}{2}^{\circ}\text{N } 73\frac{1}{2}^{\circ}\text{W}$, H. 4h 29m 51s. Haiti.
Oct. 28 (372)	eL F	7 10 7 40				(372) Disturbed by microseisms. W1: 1P 6h 43m 18s-. USCGS: $40^{\circ}\text{N } 144^{\circ}\text{E}$, H. 6h 31m 04s. CMO: $39^{\circ}5\text{N } 144^{\circ}6\text{E}$, h = about 40 km. Off east coast of Honshu, Japan.

Seismic Records at De Bilt



Date 1952	Phase	Time	Direction	Period	Amplitude	Remarks
		h m s		s	μ	
Oct. 29 (373)	eSS eF	20 15 20 22				(373) Disturbed by microseisms. W1: 1PKP 19h 53m 40s-. USCGS: 17°S 174°W, H. 19h 34m 19s, h = about 150 km. Tonga Islands.
Oct. 31 (374)	eP ePP eS eL F	16 49 32 16 52 44 16 59 53 17 20 18 25				(374) Disturbed by microseisms. W1: eP 16h 49.5m. USCGS: 39°N 143°E, H. 16h 37m 14s. CMO: 39.2N 143.8E, h = about 60 km. Off east coast of Honshu, Japan.
Nov. 1 (375)	eS eSS eSSS eL F	0 11.5 0 16 0 19.5 0 25 1 25				(375) Disturbed by microseisms. W1: 1P 0h 02m 30s (-). BCIS: 34½°N 100½°E, H. 23h 51m 36s. USCGS: H. 23h 51m 37s. Poona: 35.4N 102.0E, H. 23h 51m 24s. Sikang Province, China.
Nov. 1 (376)						(376) W1: 1PKP 5h 48m 06s; 1pPKP 5h 50m 05s. USCGS: H. 5h 29m 06s, h = about 500 km. About 500 miles south of Fiji Islands.
Nov. 2 (377)	ePKP epPKP eSS eSSS F	0 05.2 0 06 00 0 28 0 34 1 40				(377) Disturbed by microseisms. W1: 1PKP 0h 05m 14s. USCGS: 23½°S 178°W, H. 23h 45m 36s, h = about 150 km. Fiji Islands region.
Nov. 4 (378)	1P 1S eL	17 09 58 17 19 27 17 37				(378) W1: 1P 17h 09m 55s (-). USCGS: 52½°N 159°E, H. 16h 58m 20s. Near east coast of Kamchatka. Seis- mic sea wave.
Nov. 4 (379- 386)						(379-386) Aftershock of (378). USCGS: W1: 1P 19h 31m 13s, W1: 1P 19h 52m 11s, 52½°N 159½°E, H. 19h 40m 41s. W1: 1P 21h 00m 25s, 50°N 157°E, H. 20h 48m 53s. W1: 1P 21h 12m 23s +, 52½°N 159½°E, H. 21h 00m 53s. W1: 1P 22h 04m 40s -, 50°N 158½°E, H. 21h 52m 50s. W1: 1 22h 04m 49s +, W1: 1P 22h 24m 30s, 52°N 161°E, H. 22h 12m 54s. W1: 1P 22h 30m 55s. W1: 1P 22h 48m 33s.
Nov. 4 (387)	eP	23 40 14				(387) W1: eP 23h 40m 44s. USCGS: after- shock of (378), H. 23h 28m 58s. F in next shock.
Nov. 4 (388)						(388) W1: 1 23h 46m 58s -.
Nov. 4 (389)						(389) W1: 1 23h 58m 02s -.
Nov. 5 (390)	eP 1S eL	2 31.7 2 41 18 2 50				(390) F in next shock. W1: eP 2h 31.6m. USCGS: aftershock of (378), 50½°N 157°E, H. 2h 19m 58s.
Nov. 5 (391)	eP eS eL F	3 41.5 3 51 08 4 01 5 30				(391) W1: 1P 3h 41m 23s -. USCGS: aftershock of (378), 51°N 159°E, H. 3h 29m 44s.

Seismic Records at De Bilt



Date 1952	Phase	Time	Direction	Period	Amplitude	Remarks
		h m s		s	μ	
Nov. 5 (392)	eP eS eL F	6 09 35 6 19.2 6 29 8 00				(392) W1: 1P 6h 09m 30s. USCGS: aftershock of (378), 49°N 156°E, H. 5h 57m 43s.
Nov. 5 (393)						(393) W1: 1 7h 17m 51s -.
Nov. 5 (394)						(394) W1: 1 7h 34m 59s -.
Nov. 5 (395)						(395) W1: 1 8h 15m 13s +.
Nov. 5 (396)	eL F	12 05 13 05				(396) Disturbed by microseisms. W1: 1P 11h 46m 11s. USCGS: aftershock of (378), 51½°N 159°E, H. 11h 34m 37s.
Nov. 5 (397)						(397) W1: 1P 11h 58m 16s. USCGS: aftershock of (378), 50°N 157°E, H. 11h 46m 34s.
Nov. 5 (398)	1P e F	13 18 02 13 40 14 50				(398) W1: 1P 13h 17m 59s. USCGS: aftershock of (378), 52°N 159½°E, H. 13h 06m 24s.
Nov. 5 (399)						(399) W1: 1 14h 22m 35s.
Nov. 5 (400)						(400) W1: 1P 15h 00m 22s. USCGS: aftershock of (378), 50°N 156½°E, H. 14h 48m 41s.
Nov. 5 (401)	eP eS eL F	19 19 57 19 29 27 19 43 20 30				(401) Disturbed by microseisms. W1: eP 19h 19m 21s. USCGS: aftershock of (378), 53½°N 161½°E, H. 19h 08m 26s.
Nov. 5 (402)						(402) W1: eP 20h 42.1m. USCGS: aftershock of (378), 49°N 159°E, H. 20h 30m 22s.
Nov. 5 (403)	eP eS eL F	22 57.8 23 07.3 23 19 24 30				(403) Disturbed by microseisms. W1: eP 22h 57.5m. USCGS: aftershock of (378) 53½°N 160°E, H. 22h 46m 10s.
Nov. 6 (404)						(404) W1: 1 1h 10m 34s.
Nov. 6 (405)						(405) W1: 1 2h 35m 21s.
Nov. 6 (406)	eL F	6 18 7 00				(406) Disturbed by microseisms.
Nov. 6 (407)	eP 1S eL F	19 57 40 20 07 17 20 18 22 10	(+)			(407) Disturbed by microseisms. W1: eP 19h 57.5m USCGS: aftershock of (378), 51½°N 159½°E, H. 19h 45m 57s.
Nov. 7 (408)	eL F	3 10 3 20				(408) Disturbed by microseisms.
Nov. 7 (409)	eS eL F	14 29.5 14 40 15 30				(409) Disturbed by microseisms. USCGS: aftershock of (378), 49°N 157°E, H. 14h 08m 25s.

Seismic Records at De Bilt



Date 1952	Phase	Time			Direction	Period	Amplitude	Remarks
		h	m	s		s	μ	
Nov. 7 (410)	eL F	21	30					(410) Disturbed by microseisms. USCGS: 26°N 110½°W, H. 20h 54m 58s. Lower Gulf of California.
Nov. 7 (411)	1P 1S eL F	22	17	19				(411) Disturbed by microseisms. USCGS: 47°N 155°E, H. 22h 05m 19s. Kurile Islands.
		22	27	16				
		22	41					
		23	30					
Nov. 8 (412)	eL F	0	30					(412) Disturbed by microseisms.
		1	15					
Nov. 8 (413)	eL F	5	35					(413) Disturbed by microseisms.
		6	35					
Nov. 8 (414)	eL F	17	43					(414) Disturbed by microseisms.
		18	30					
Nov. 8 (415)	1P eS eSS eL F	19	45	15				(415) Disturbed by microseisms. USCGS: 48½°N 156°E, H. 19h 33m 18s. Kurile Islands.
		19	55.0					
		20	00.0					
		20	05					
		21	30					
Nov. 9 (416)	1P e eL F	0	34	10				(416) Disturbed by microseisms. USCGS: 48½°N 155½°E, H. 0h 22m 15s. Kurile Islands.
		0	42					
		0	58					
		3	00					
Nov. 9 (417)	eL F	5	12					(417) Disturbed by microseisms.
		7	40					
Nov. 9 (418)	eL F	18	56					(418) Disturbed by microseisms.
		19	30					
Nov. 9 (419)	eL F	21	20					(419) Disturbed by microseisms.
		22	00					
Nov. 10 (420)	1S eL F	1	16	31				(420) Disturbed by microseisms. USCGS: 50°N 158½°E, H. 0h 55m 00s. Off south coast of Kamchatka.
		1	34					
		2	15					
Nov. 10 (421)	eL F	6	07					(421) Disturbed by microseisms.
		6	35					
Nov. 10 (422)	eL F	6	50					(422) Disturbed by microseisms. BCIS: H. 6h 05m 45s. Kurile Islands region.
		7	30					
Nov. 10 (423)	eL F	21	05					(423) Disturbed by microseisms. USCGS: 53½°N 160°E, H. 20h 26m 40s. Near east coast of Kamchatka.
		22	00					
Nov. 11 (424)	eL F	1	38					(424) Disturbed by microseisms.
		2	10					
Nov. 11 (425)	eL F	14	35					(425) Disturbed by microseisms. W1: 1P 14h 22m 07s+. BCIS: aftershock of (378).
		15	04					
Nov. 11 (426)	eL F	20	02					(426) Disturbed by microseisms. W1: 1P 19h 32m 21s. BCIS: aftershock of (378).
		20	30					
Nov. 12 (427)								(427) W1: 1PKP 8h 50m 08s. USCGS: H. 8h 30m 18s. Tonga Islands region.
Nov. 12 (428)								(428) W1: 1P 13h 50m 12s. BCIS: aftershock of (378).

Seismic Records at De Bilt



Date 1952	Phase	Time			Direction	Period	Amplitude	Remarks
		h	m	s		s	μ	
Nov. 12 (429)	eL F	17	23					
		18	00					
Nov. 12 (430)								(430) W1: e 17h 38m 02s.
Nov. 13 (431)	1P ePP eS eL	8	10	28				(431) No records from 8h 34m till 13h 55m. W1: eP 8h 10m 23s. USCGS: $50\frac{1}{2}^{\circ}\text{N } 157^{\circ}\text{E}$, H. 7h 58m 45s. CMO: $51^{\circ}\text{N } 157^{\circ}\text{E}$. Near south coast of Kamchatka.
		8	13	26				
		8	20	10				
		8	32					
Nov. 13 (432)	eP eS eL F	15	34					(432) Disturbed by microseisms. W1: eP 15h 34.0m BCIS: aftershock of (378)
		15	44.0					
		16	06					
		17	15					
Nov. 13 (433)	1P ePP eS eL F	22	37	23	-			(433) Disturbed by microseisms. W1: 1P 22h 37m 17s -. USCGS: $50^{\circ}\text{N } 158^{\circ}\text{E}$, H. 22h 35m 34s. Off south coast of Kamchatka.
		22	40.0					
		22	47	00				
		23	08					
		24	10					
Nov. 14 (434)								(434) W1: 1P 5h 02m 00s. BCIS: H. 4h 50.5m. Near south coast of Kamchatka.
Nov. 15 (435)	eL F	1	53					(435) W1: 1P 1h 15m 58s. BCIS: aftershock of (378).
		2	10					
Nov. 15 (436)	1P eS eL F	5	34	42				(436) W1: 5h 34m 39s. BCIS: aftershock of (378).
		5	44					
		6	00					
		7	00					
Nov. 16 (437)	eP eL F	1	59	40				(437) USCGS: $50\frac{1}{2}^{\circ}\text{N } 157^{\circ}\text{E}$, H. 1h 47m 54s. Near south coast of Kamchatka.
		2	30					
		2	45					
Nov. 16 (438)	eP eS eL F	4	22.0					(438) W1: eP 4h 22.3m BCIS: aftershock of (378)
		4	32.0					
		4	49					
		5	30					
Nov. 16 (439)	ePP e(PPP) eSS eL F	7	59	10				(439) W1: ePP 7h 59m 21s. USCGS: H. 7h 38m 32s. Near northeast coast of New Guinea.
		8	02.1					
		8	16.5					
		8	37					
		10	00					
Nov. 16 (440)	eS eL F	15	23.2					(440) USCGS: $2^{\circ}\text{N } 29\frac{1}{2}^{\circ}\text{W}$, H. 15h 05m 02s. Mid Atlantic Ocean.
		15	30					
		16	00					
Nov. 17 (441)								(441) W1: 1P 13h 32m 43s. BCIS: H. 13h 21.0m. Kurile Islands region.
Nov. 18 (442)								(442) W1: 1 7h 54m 22s -.
Nov. 18 (443)	1P eS eL F	8	25	16	-			(443) W1: 1P 8h 25m 10s -. USCGS: $49\frac{1}{2}^{\circ}\text{N } 156\frac{1}{2}^{\circ}\text{E}$, H. 8h 13m 25s. Off south coast of Kamchatka.
		8	35	18				
		8	50					
		10	00					
Nov. 19 (444)	eL F	10	56					(444) Disturbed by microseisms. USCGS: $29\frac{1}{2}^{\circ}\text{N } 86\frac{1}{2}^{\circ}\text{E}$, H. 10h 23m 28s. South Tibet.
		11	15					

Seismic Records at De Bilt



Date 1952	Phase	Time	Direction	Period	Amplitude	Remarks
		h m s		s	μ	
Nov. 20 (445)	eL F	6 00 6 30				(445) Disturbed by microseisms. BCIS: H. 5h 06.5m. Northwestern Luzon, Philippine Islands.
Nov. 20 (446)	eP ePP eS eSS eSSS eL F	15 49 36 15 52 48 15 59.7 16 05.7 16 09.0 16 15 17 30				(446) Disturbed by microseisms. USCGS: 12 $\frac{1}{2}$ $^{\circ}$ N 88 $^{\circ}$ W, H. 15h 37m 17s, h = about 60 km. Off coast of Nicaragua.
Nov. 21 (447)						(447) W1: 1P 2h 39m 44s. BCIS: aftershock of (378)
Nov. 21 (448)	eL F	3 55 4 30				(448) Disturbed by microseisms. W1: eP 3h 31m 07s. BCIS: aftershock of (378).
Nov. 22 (449)	eL F	6 00 6 20				(449) Disturbed by microseisms. W1: 1P 5h 30m 55s -. BCIS: aftershock of (378).
Nov. 22 (450)	eP 1z ePP eS eL F	7 58 40 7 58 56 8 01 48 8 09 07 8 25 9 25				(450) Disturbed by microseisms. W1: eP 7h 58m 55s. USCGS: 35 $^{\circ}$ 8N 121 $^{\circ}$ 1W, H. 7h 46m 37s. San Luis Obispo County, California.
Nov. 26 (451)	eL F	14 10 14 35				(451) Disturbed by microseisms. W1: eP 13h 36m 45s -; 1pP 13h 36m 47s -. USCGS: foreshock of (456), H. 13h 25m 18s.
Nov. 27 (452)	eH eH F	7 36 36 7 39.1 8 00				(452) Disturbed by microseisms. Change of papers from 7h 22m till 7h 29m. W1: 1P 7h 28m 44s-; 1pP 7h 29m 24s. BCIS: 36 $^{\circ}$ 5N 70 $^{\circ}$ 5E, H. 7h 20m 34s, h = about 220 km. Northern Afghanistan.
Nov. 27 (453)						(453) W1: 1 7h 42m 21s -.
Nov. 28 (454)	1P eL F	8 17 12 8 40 9 30				(454) Disturbed by microseisms. Change of papers from 8h 20m till 8h 27m. W1: 1P 8h 17m 06s+; 1 8h 17m 22s. BCIS: foreshock of (456). USCGS: 52 $^{\circ}$ N 160 $^{\circ}$ E, H. 8h 05m 30s. Near east coast of Kamchatka.
Nov. 28 (455)	ePP ePS eSS eL F	21 22 38 21 32.5 21 40 21 58 23 00				(455) Disturbed by microseisms. W1: 1PKP 21h 20m 28s-; epPKP 21h 20m 56s. USCGS: 6 $\frac{1}{2}$ $^{\circ}$ S 155 $\frac{1}{2}$ $^{\circ}$ E, H. 21h 01m 27s, h = about 100 km. Solomon Islands.
Nov. 29 (456)	1P 1S ePS eL F	8 34 13 8 43 41 8 44 24 9 00 11 30				(456) Disturbed by microseisms. W1: 1P 8h 34m 04s-; 1 8h 34m 11s-; 1 8h 35m 02s; eL 9h 10m; F 9h 18m. BCIS: aftershock of (378), H. 8h 22m 38s. USCGS: 53 $^{\circ}$ N 160 $^{\circ}$ E, H. 8h 22m 34s. Near east coast of Kamchatka.
Nov. 29 (457)	1P 1PP ePPP 1S	23 57 45 0 00 24 0 02 12 0 07 04				(457) W1: eP 23h 57m 45s; 1 23h 58m 34s -. USCGS: 56 $^{\circ}$ N 155 $^{\circ}$ W, H. 23h 46m 25s. Off south coast of Alaska Peninsula.

Seismic Records at De Bilt



Date 1952	Phase	Time	Direction	Period	Amplitude	Remarks
		h m s		s	μ	
Nov. 29 (cont'd 457)	1PS eSS eL F	0 07 24 0 11 34 0 17.5 3 00				
Nov. 30 (458)	eL F	20 07 20 40				(458) W1: 1P 19h 40m 17s+; 1 19h 40m 21s-. USCGS: 52 $\frac{1}{2}$ $^{\circ}$ N 159 $^{\circ}$ E, H. 19h 28m 44s. Near east coast of Kamchatka.
Dec. 1 (459)						(459) W1: eP 13h 09m 37s. BCIS: aftershock of (378), H. 12h 58m 02s.
Dec. 1 (460)						(460) W1: eP 14h 44m 07s; 1 14h 44m 24s. BCIS: H. 14h 32.8m. Off east coast of Kamchatka.
Dec. 2 (461)	eL F	19 45 20 15				(461) Disturbed by microseisms. W1: eP 19h 11m 46s. BCIS: aftershock of (378), H. 19h 00m 15s.
Dec. 4 (462)	eP eS 1PS eL F	4 04 4 12 42 4 13 45 4 25 5 10				(462) Disturbed by microseisms. W1: 1P 4h 03m 53s (-). USCGS: 52 $^{\circ}$ N 178 $^{\circ}$ E, H. 3h 51m 25s, h = about 100 km. Rat Islands, Aleutian Islands.
Dec. 4 (463)	eL F	11 35 12 10				(463) Disturbed by microseisms. USCGS: 49 $^{\circ}$ N 157 $^{\circ}$ E, H. 10h 49m 35s. Off south coast of Kamchatka.
Dec. 5 (464)	eL F	21 15 21 30				(464) Disturbed by microseisms. BCIS: North Atlantic Ocean.
Dec. 6 (465)	eL F	4 15 4 40				(465) Disturbed by microseisms. W1: 1P 3h 46m 03s -. BCIS: H. 3h 34m 20s. Off south coast of Kamchatka.
Dec. 6 (466)	1PKP 1PP ePKS ePS eSS eSSS eL F	11 00 32 11 02 46 11 04.0 11 13.0 11 20 10 11 25.0 11 39 14 20				(466) W1: 1PKP 11h 00m 33s -. USCGS: 8 $^{\circ}$ S 157 $^{\circ}$ E, H. 10h 41m 14s. Solomon Islands.
Dec. 6 (467)	ePKP ePP eL F	21 09.8 21 12 21 49 22 20				(467) W1: ePKP 21h 09m 46s. USCGS: aftershock of (466), H. 20h 50m 35s.
Dec. 7 (468)	1P ePP eS ePS eSS eL F	1 02 06 1 04 50 1 11 44 1 12 30 1 17.0 1 27 3 40	+	5	7	(468) W1: 1P 1h 02m 00s +. USCGS: 53 $^{\circ}$ N 172 $\frac{1}{2}$ $^{\circ}$ E, H. 0h 50m 12s. Near Islands, Aleutian Islands.
Dec. 7 (469)	eP eS eL F	16 44.8 16 54 30 17 13 18 10				(469) W1: 1P 16h 44m 48s -. USCGS: 51 $\frac{1}{2}$ $^{\circ}$ N 157 $^{\circ}$ E, H. 16h 33m 10s. Off south coast of Kamchatka.
Dec. 7 (470)	eL F	21 19 22 00				(470) USCGS: H. 20h 20m 02s. Solomon Islands.
Dec. 8 (471)						(471) W1: 1P 4h 32m 11s. BCIS: aftershock of (463), H. 4h 20m 38s.

Seismic Records at De Bilt



Date 1952	Phase	Time			Direction	Period	Amplitude	Remarks
		h	m	s		s	μ	
Dec. 8 (472)	e eL F	15	40					(472) No records from 13h 01m till 15h 26m. W1: eP 15h 21m 07s. USCGS: 23°N 99½°E, H. 15h 09m 30s. China-Burma border.
Dec. 9 (473)								(473) W1: 1PP 9h 38m 03s. USCGS: 15½°S 168°E, H. 9h 15m 12s. New Hebrides Islands.
Dec. 10 (474)	1P 1S eL F	6	02	39	+	6	5	(474) W1: 1P 6h 02m 35s +. USCGS: 71°N 7°W, H. 5h 58m 06s. Jan Mayen Island.
Dec. 10 (475)	eL F	9	20					(475) Disturbed by microseisms. USCGS: 15½°S 173½°W, H. 8h 06m 03s. Samoa Islands.
Dec. 11 (476)	1P 1pP 1z eS esS eH eL F	9	10	05	+			(476) W1: eP 9h 09m 58s; epP 9h 10m 26s. USCGS: 49°N 155°E, H. 8h 58m 18s, h = about 60 km. Kurile Islands.
Dec. 12 (477)	eL F	1	28					(477) USCGS: 56½°N 154°W, H. 0h 47m 56s. Near south coast of Kodiak Island, Alaska.
Dec. 12 (478)	eL F	21	15					(478) W1: 1P 20h 43m 36s -; 1 20h 43m 45s-. BCIS: H. 20h 32.1m. Kamchatka region.
Dec. 13 (479)	eL F	13	50					(479) Disturbed by microseisms. BCIS: 45°N 151½°E, H. 13h 06m 40s. USCGS: H. 13h 06m 45s. Kurile Islands.
Dec. 15 (480)	eL F	10	25					(480) Disturbed by microseisms. W1: eP 9h 56m 50s. USCGS: 51½°N 160½°E, H. 9h 45m 12s. Off east coast of Kamchatka.
Dec. 17 (481)	eP 1S eL F	23	09	00	+	5	60	(481) Disturbed by microseisms. W1: 1P 23h 08m 59s+. BCIS: 34½°N 24½°E, H. 23h 03m 55s. USCGS: 34½°N 24°E, H. 23h 03m 58s. Near south coast of Crete.
Dec. 18 (482)	eL F	9	55					(482) Disturbed by microseisms. W1: eP 9h 31m 57s. USCGS: 53½°N 162°E, H. 9h 20m 28s. Off east coast of Kamchatka.
Dec. 19 (483)								(483) W1: eP 0h 45.5m. BCIS: H. 0h 33m 57s. Off southeast coast of Kamchatka.
Dec. 19 (484)								(484) W1: 1 2h 14m 50s.
Dec. 20 (485)								(485) W1: 4h 17m 14s +. USCGS: 53°N 160°E, H. 4h 05m 48s. Near east coast of Kamchatka.
Dec. 22 (486)	eP eS eL F	22	36	22				(486) Disturbed by microseisms. W1: 1P 22h 36m 06s -. USCGS: 54°N 160½°E, H. 22h 24m 42s. Near east coast of Kamchatka.

Seismic Records at De Bilt



Date 1952	Phase	Time	Direction	Period	Amplitude	Remarks
		h m s		s	μ	
Dec. 24 (487)	eL F	9 30 10 00				(487) Disturbed by microseisms. W1: 1PKP 8h 52m 26s; ePP 8h 54.4m USCGS: foreshock of (489), H. 8h 33m 25s.
Dec. 24 (488)	eL F	15 13 15 35				(488) Disturbed by microseisms. W1: 1P 14h 39m 57s +. USCGS: 29°N 130°E, H. 14h 27m 21s. CMO: 29°N 131°E, Ryukyu Islands.
Dec. 24 (489)	ePP ePS eSS eL F	19 00 38 19 10.6 19 18 19 38 21 30				(489) Disturbed by microseisms. W1: 1PKP 18h 58m 39s; e 18h 58m 49s. BCIS: 5°9'S 151°2'E, H. 18h 39.6m. USCGS: 5½°S 151½°E, H. 18h 39m 33s. New Britain.
Dec. 24 (490)	eL F	22 38 23 10				(490) Disturbed by microseisms. W1: ePKP 21h 56m 11s. USCGS: after- shock of (489), H. 21h 37m 05s.
Dec. 25 (491)	eL F	3 29 5 20				(491) Disturbed by microseisms. W1: ePKP 2h 47m 44s. USCGS: after- shock of (489), H. 2h 28m 39s.
Dec. 25 (492)						(492) W1: ePKP 3h 38m 54s. BCIS: aftershock of (489), H. 3h 19m 52s.
Dec. 25 (493)	eS eL F	22 39.5 22 49 23 30				(493) Disturbed by microseisms. W1: eP 22h 31m 51s. USCGS: 29°N 69½°E, H. 22h 22m 42s. Central Pakistan.
Dec. 25 (494)						(494) W1: eP 23h 20.0m. USCGS: 53°N 159°E, H. 23h 08m 35s. Near east coast of Kamchatka.
Dec. 26 (495)	eL F	4 50 5 30				(495) Disturbed by microseisms. BCIS: 11½°N 121½°E, H. 4h 03m 26s. Near northeast coast of Panay, Philippine Islands.
Dec. 26 (496)						(496) W1: 1P 11h 33m 52s; 1 11h 33m 59s; 1pP 11h 36m 15s. BCIS: 22½°S 178½°W, H. 11h 15m 09s, h=about 600 km USCGS: H. 11h 15m 06s. About 200 miles south of Fiji Islands.
Dec. 26 (497)						(497) W1: 1P 23h 59m 09s +; e 24h 00m 14s. BCIS: 40.0°N 15.5°E, H. 23h 55m 56s, h = 250 - 300 km. Gulf of Policastró, Tyrrhenian Sea.
Dec. 27 (498)	eS eL F	1 47 2 06 3 00				(498) Disturbed by microseisms. W1: 1P 1h 37m 24s+. USCGS: 53°N 160°E, H. 1h 25m 54s. Near east coast of Kamchatka.
Dec. 28 (499)	eL F	5 17 6 20				(499) W1: eP 5h 05m 34s. USCGS: 65½°N 167½°W, H. 4h 55m 06s. Near west coast of Seward Peninsula, Alaska.
Dec. 28 (500)	eP ePP ePS eL F	15 15.4 15 19.6 15 29 15 50 17 00				(500) Disturbed by microseisms. USCGS: 6°N 127°E, H. 15h 01m 19s. BCIS: 6°5'N 127°0'E, H. 15h 01m 20s. Off east coast of Mindanao.

Seismic Records at De Bilt



Date 1952	Phase	Time			Direction	Period	Amplitude	Remarks
		h	m	s		s	μ	
Dec. 28 (501)	eL F	19	10					(501) Disturbed by microseisms. W1: eP 18h 49.5m. BCIS: 25°0N 63½°E, H. 18h 40m 23s. Poona: 26°0N 63°0E, H. 18h 40m 08s. USCGS: H. 18h 40m 20s. Off south coast of Pakistan.
Dec. 29 (502)	eP ePP eS eL F	2	21	08				(502) Disturbed by microseisms. W1: eP 2h 21m 03s; e 2h 21m 23s-. USCGS: 49°N 158°E, H. 2h 09m 13s. Off south coast of Kamchatka.
Dec. 29 (503)	eL F	10	05					(503) Disturbed by microseisms. W1: 1P 9h 32m 05s-. BCIS: 23½°N 121½°E, H. 9h 20m 24s. Formosa.
Dec. 29 (504)								(504) W1: 1PKP 23h 40m 15s-; 1pPKP 23h 42m 12s. USCGS: 21°S 178½°W, H. 23h 21m 20s, h = about 500 km. Fiji Islands.
Dec. 30 (505)								(505) W1: eP 12h 19m 28s. USCGS: 10½°N 84°W, H. 12h 07m 02s. Costa Rica.
Dec. 30 (506)								(506) W1: ePKP 18h 47m 33s. USCGS: 19°S 178°W, H. 18h 28m 42s, h = about 500 km. Fiji Islands. No records from Dec. 29 12h 26m till Dec. 30 15h 15m.
Dec. 31 (507)	eL F	15	00					(507) Disturbed by microseisms. W1: e 14h 53.8m. BCIS: 35½°N 25½°E, H. 14h 48m 39s. Off north coast of Crete.
Dec. 31 (508)	eL F	17	28					(508) Disturbed by microseisms. BCIS: aftershock of (507), H. 17h 18m 42s.
Dec. 31 (509)	eL F	22	22					(509) Disturbed by microseisms. USCGS: 49°N 156°E, H. 21h 43m 49s. Kurile Islands.