

17 MAR 1969

**KONINKLIJK NEDERLANDS
METEOROLOGISCH INSTITUUT**

SEISMIC RECORDS
AT DE BILT

VOLUME 50
1962

DE BILT - 1969

PRIJS F 3,-

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 50

1962

De Bilt, 1968

Publicatienummer K.N.M.I. 108 - 50

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.

The Director in Chief of the
Royal Netherlands Meteorolo-
gical Institute,

Dr. M.W.F. Schregardus.

De Bilt, August 1968

and

is

pl

note

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

SEISMOLOGICAL STATION DE BILT

The geographic coordinates of the seismological station are $52^{\circ}6'1''$ 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 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 1962.

	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
Damping constant	0.0	0.0	0.0
Multiplying factor k	11.0	11.0	175

SEISMOLOGICAL STATION HEERLEN

The geographic coordinates of the seismological station are: $55^{\circ}53'0''$ 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 1962 are:

T	E	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.

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.

VI

Seismic Records at De Bilt

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.

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 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.
- Δ = distance of epicentre.

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 A_1 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.

VII

Seismic Records at De Bilt

THE MICROSEISMIC ACTIVITY

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

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

For measuring the microseismic activity the records of the 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 - $1\frac{1}{4}$ μ
1	$\frac{1}{2}$ - 2 "	$1\frac{1}{4}$ - 5 "
2	2 - 4 "	5 - 10 "
3	> 4 "	> 10 "

Seismic Records at De Bilt

CHARACTER OF THE MICROSEISMIC MOVEMENT

Date 1962	Jan.	Febr.	March	April	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
1	1	3 2	0 1	2	0 1	1 0	1	0	1	3 2	2 3	1
2	1	2	1	2 3	1	0	1	0	1	2 1	3	1
3	1	2 3	1	3	1 0	0	1 2 1	0 1	1	1	3 2	1
4	1 2	3 2	1	3	0	0	1	1	1	1	2	1
5	2	2	1	3 2	0 1	0	1	1	1	1	2 3	1
6	2 3	2 3	1 2	2 1	1	0	1 0	1	1 2	1	3 2	1
7	3	3	2 3	1	1 0	0	0	1 3 2	2 1	1	2 1	1 2
8	3	3 1	3 2	1 2	0	0	0	2 1	1	1 0	1 2	3
9	3 2	1 2	1 2	1 0	0	0	0	1	1	0	1 2	3
10	2 3	1 3	1	1	0	0	0	1	1	0 1	2 1	3
11	3	3	1	1 0	0	0	0	1 2	1 3	1	1	3
12	3	3	1	0	0	0	0	2 1	3 2	1	1 0	3
13	3	3	1	0 1	0	0 1	0	1	2 1	1	0 1	3
14	3	3 1	1 2	1 0	0	1	0 1	1	1	1	1 2	3
15	3	1 2	2 1	0 1	0 1	1	1 0	1 2 1	1	1	2	3
16	3	2 3	1	1 0	1 2 1	1	0	1	1 2	1	2	3
17	3	3 2	1	0	1	1	0 1	1	2 1	1	2	3
18	3 2	2 1	1 2	0	1	1	1	1 0	1	1	2	3
19	2	1	2 1	0	1	1	1 2	0	1 0	1	2 1	3 2
20	2	1	1	0 1	1	1	2 1	0 1	0	1	1 2	3
21	2 3	1	1 0	1 0	1	1 0	1	1	0 1	1 0	1	3
22	3 2	1	0	0	1	0 1	1 2 1	1	1	0 1	1 3	2
23	2 1	1	0	0 1	1	1	1 0	1 2	1 2	1 2	1	2
24	1	1	0	1 0	1	1	0	2	2	2 3	1	2
25	1	1	0 1	0	1 0	1	0	2 1	2 1	3	1 2	1
26	1 3 2	1	1	0	0	1	0	1 2	1	3	1 2	1
27	2 1	1	1	0	0	1	0	2 1	1	3	2	1
28	1	1 0	1	0 1	0	1	0 1	1	1 3	3	2 1	1
29	1		1	1 0	0	1	1 0	1 0	3	3	1 1	2
30	1 3		1 2 1	0	0 1	1	0	0	3	3	1	2
31	3		1 2		1		0 0	1		3 2		2

Seismic Records at De Bilt

Date	Phase	Time			Direction	Period	Amplitude	Remarks
		h	m	s				
62								
1 (1)							(1) Wi: iP 2h 52m 51.6s +. USCGS: 52°2 N 177°7 E, H. 2h 41m 11.6s, h about 48 km. Rat Islands, Aleutian Islands.	
1 (2)	eH F	24	17				(2) Wi: eP 23h 52m 05s; e 23h 52m 10s. USCGS: 52°2 N 177°7 E, H. 23h 40m 23.4s, h about 33 km. Rat Islands, Aleutian Islands.	
2 (3)	eH eL F	12	34.0				(3) USCGS: 79°7 N 22°7 E, H. 12h 22m 58.3s, h about 33 km. Svalbard region	
3 (4)							(4) Wi: iPKP 11h 44m 37s. USCGS: 21°6 S 170°1 E, H. 11h 24m 54.1s, h about 18 km. Loyalty Islands region	
3 (5)							(5) Wi: eP 18h 04m 47s. USCGS: 52°2 N 177°5 E, H. 17h 53m 05.3s, h about 68 km. Rat Islands, Aleutian Islands	
3 (6)							(6) Wi: iPKP 24h 10m 06s -. USCGS: 21°5 S 169°9 E, H. 23h 50m 27.2s, h about 33 km. Loyalty Islands region	
4 (7)	iP iS eL F	4	48	12	(+)		(7) Wi: eP 4h 48m 04s. USCGS: 33°7 N 135°2 E, H. 4h 35m 41.3s, h about 43 km. Near Shikoku, Japan	
5 (8)	e F	1	30				(8) USCGS: 15°5 S 177°7 W, H. 0h 23m 32.1s, h about 24 km. Fiji Islands region	
5 (9)							(9) Wi: iP 4h 35m 27s. USCGS: 36°3 N 71°4 E, H. 4h 27m 03.8s, h about 125 km. Hindu Kush	
7 (10)	eH F	10	08.5				(10) Disturbed by microseisms. Wi: eP 10h 06m 15s. USCGS: 43°3 N 17°1 E, H. 10h 03m 14.3s, h about 33 km. Yugoslavia	
8 (11)	e F	1	28				(11) Disturbed by microseisms. Wi: iP 1h 11m 23s. USCGS: 18°4 N 70°4 W, H. 1h 00m 22.7s, h about 32 km. Near south coast of Dominican Republic	
8 (12)							(12) Wi: iPKP 6h 02m 45.6s -. USCGS: 24°2 S 177°7 W, H. 5h 43m 02.2s, h about 133 km. Tonga Islands region	
9 (13)	eL F	13	19				(13) Wi: eP 12h 52m 44s. USCGS: 43°0 N 144°9 E, H. 12h 40m 49.3s, h about 53 km. Near coast of Hokkaido, Japan	
10 (14)							(14) Wi: e 12h 41m 06s. USCGS: 36°2 N 22°6 E, H. 12h 36m 37.5s, h about 107 km. Off south coast of Crete.	

Seismic Records at De Bilt

Date	Phase	Time			Direction	Period	Amplitude	Remarks
		h	m	s				
1962								
Jan. 11 (15)	e eH F	5	10.0				(15) Disturbed by microseisms. Wi: e 5h 08m 14s. USCGS: 43°3 N 17°1 E, H. 5h 05m 04.1s, h about 33 km. Near coast of central Yugoslavia	
Jan. 19 (16)	eP eS eL F	19	42	18			(16) Disturbed by microseisms. USCGS: 38°5 N 22°1 E, H. 19h 38m 04.1s, h about 38 km. Greece	
Jan. 21 (17)	e F	2	58.0				(17) Wi: e 2h 54.8m. USCGS: 43°0 N 16°9 E, H. 2h 51m 34.8s, h about 33 km. Near coast of central Yugoslavia	
Jan. 21 (18)							(18) Wi: iPKP 13h 10m 31.8s -. USCGS: 17°7 S 178°8 W, H. 12h 51m 52.1s, h about 558 km. Fiji Islands	
Jan. 23 (19)	e F	17	38				(19) USCGS: 44°5 N 12°4 E, H. 17h 31m 38.7s, h about 30 km. Near coast of Emilia Romagna, Italy	
Jan. 26 (20)							(20) Wi: eP 5h 34m 53s. USCGS: 32°2 N 138°1 E, H. 5h 22m 51.0s, h about 333 km. South of Honshu, Japan	
Jan. 26 (21)							(21) Wi: ePKP 6h 29m 02s. USCGS: 23°4 S 176°1 W, H. 6h 09m 23.0s, h about 214 km. Tonga Islands region	
Jan. 26 (22)	iP eS eL F	8	22	25	+		(22) Wi: iP 8h 22m 23s +. USCGS: 35°4 N 22°7 E, H. 8h 17m 39.9s, h about 33 km. Mediterranean Sea, west of Crete	
Jan. 28 (23)	ePKP	5	59	44			(23) Wi: iPKP 5h 59m 43s -. USCGS: 17°2 S 172°0 W, H. 5h 40m 08.2s, h about 25 km. Samoa Islands region	
Feb. 3 (24)	ePP eS eL F	0	57	50			(24) USCGS: 1°3 S 137°5 E, H. 0h 37m 57.4s, h about 33 km. North of New Guinea	
Feb. 4 (25)	eS eL F	21	47	20			(25) Wi: eP 21h 39m 28s. USCGS: 0°5 S 20°2 W, H. 21h 29m 37.2s, h about 33 km. South Atlantic Ocean	
Feb. 11 (26)							(26) Wi: eP 2h 54m 45s. USCGS: 29°6 N 139°1 E, H. 2h 42m 35.6s, h about 401 km. South of Honshu, Japan	
Feb. 11 (27)	eL F	19	50				(27) USCGS: 4°5 S 153°5 E, H. 18h 55m 32.8s, h about 111 km. New Ireland region	
Feb. 18 (28)	eL F	7	08				(28) USCGS: 36°2 N 9°3 E, H. 7h 00m 15.9s, h about 33 km. Tunisia	
Feb. 18 (29)	eP eS eL F	17	37	10			(29) Wi: iP 17h 37m 15s +; i 17h 37m 28s; i 17h 37m 34.5s. USCGS: 8°1 N 74°8 W, H. 17h 25m 14.8s, h about 41 km. Northern Colombia	

Seismic Records at De Bilt

Date 1962	Phase	Time			Direction	Period s	Amplitude μ	Remarks
		h	m	s				
b. 19 (30)							(30) Wi: ePKP 11h 24m 12s. USCGS: 20°2 S 175°1 W, H. 11h 04m 46.6s, h about 95 km. Tonga Islands.	
b. 20 (31)							(31) Wi: iPKP 10h 26m 11s; e 10h 26m 24s. USCGS: 27°7 S 178°2 E, H. 10h 07m 26.9s, h about 651 km. Fiji Islands region	
b. 20 (32)	iP eS eL F	16 17 16 27 16 42 17 20	46 44	(+)			(32) Wi: iP 16h 17m 40s (+). USCGS: 43°1 N 144°8 E, H. 16h 05m 45.4s, h about 56 km. Near coast of Hokkaido, Japan	
b. 20 (33)	eS eSSS eL F	22 23 22 31.0 22 38 23 30	12				(33) Wi: eP 22h 13m 50s; i 22h 13m 52s USCGS: 25°8 N 96°8 E, H. 22h 02m 39.6s h about 33 km. Northern Burma region	
b. 21 (34)							(34) Wi: ePKP 0h 25m 55s. USCGS: 24°8 S 177°1 W, H. 0h 06m 02.4s, h about 38 km. Tonga Islands region	
b. 23 (35)	e F	21 10 22 00					(35) USCGS: 3°8 S 152°0 E, H. 20h 21m 28.6s, h about 25 km. New Britain	
b. 27 (36)	ePP ePS eL F	13 00.0 13 10.0 13 40 14 25					(36) USCGS: 37°4 S 73°5 W, H. 12h 40m 50.2s, h about 63 km. Near coast of central Chile	
b. 27 (37)							(37) Wi: i 21h 37m 37.5s. USCGS: 45°7 N 26°4 E, H. 21h 34m 10.8s, h about 146 km. Romania	
b. 1 (38)							(38) Wi: iP 5h 04m 33.5s. USCGS: 26°1 N 125°0 E, H. 4h 51m 59.3s, h about 33 km. Ryukyu Islands region	
b. 1 (39)							(39) Wi: iP 18h 47m 14s. USCGS: 43°0 N 146°2 E, H. 18h 35m 12.9s, h about 48 km. Near coast of eastern Hokkaido, Japan	
b. 1 (40)	e F	22 30 22 34					(40) USCGS: 37°3 N 4°9 W, H. 22h 20m 03.5s, h about 29 km. Off south coast of Spain	
b. 1 (41)	ePKP ePP eL F	24 00 24 03 24.7 26.0	40 40				(41) USCGS: 14°0 S 172°1 E, H. 23h 41m 11.5s, h about 33 km. Santa Cruz Islands region.	
b. 2 (42)	eL F	13 54 14 20					(42) USCGS: 5°6 N 126°7 E, H. 13h 03m 09.6s, h about 96 km. Off south coast of Mindanao, Philippine Islands	
b. 3 (43)	eL F	13 05 13 30					(43) USCGS: 7°4 N 126°6 E, H. 12h 14m 56.2s, h about 87 km. Near east coast of Mindanao, Philippine Islands.	
b. 6 (44)	eL F	6 38 7 05					(44) Wi: eP 6h 07m 40s. USCGS: 13°6 N 93°4 E, H. 5h 55m 44.8s, h about 33 km Andaman Islands	

Seismic Records at De Bilt

Date 1962	Phase	Time			Direction	Period s	Amplitude μ	Remarks
		h	m	s				
Mar. 7 (45)	iPP ePS eL F	11 18 11 26.0 11 50 11 15	04				(45) Disturbed by microseisms. Wi: eP 11h 13m 40s. USCGS: 19°2 N 145°1 E, H. 11h 01m 04.6s, h about 685 km. Mariana Islands	
Mar. 9 (46)							(46) Wi: iPKP 17h 48m 55s -. USCGS: 24.2 S 179°1 W, H. 17h 29m 44.3s, h about 385 km. Fiji Islands region	
Mar. 11 (47)							(47) Wi: eP 15h 35m 13s. USCGS: 52°3 N 178°0 E, H. 15h 23m 40.7s, h about 135 km. Rat Islands, Aleutian Islands	
Mar. 11 (48)	eP iPP eSKS ePS eSS eL F	19 33.0 19 37 19 44 19 46 19 52 20 05 21 10	08 00 40				(48) USCGS: 9°0 N 126°5 E, H. 19h 19m 09.4s, h about 51 km. Near east coast of Mindanao, Philippine Islands	
Mar. 12 (49)	iP eS eL F	11 52 12 02 12 14 14 45	42 58	+			(49) Wi: 11h 52m 46.5s +. USCGS: 8°1 N 82°9 W, H. 11h 40m 12.2s, h about 30 km. Near south coasts of Panama and Costa Rica.	
Mar. 15 (50)							(50) Wi: iPKP 13h 25m 47.5s. USCGS: 20°6 S 178°8 W, H. 13h 07m 06.9s, h about 623 km. Fiji Islands region	
Mar. 16 (51)							(51) Wi: iPKP 15h 45m 31s. USCGS: 21°8 S 173°3 E, H. 15h 25m 48.6s, h about 83 km. Loyalty Islands region	
Mar. 17 (52)							(52) Wi: iP 18h 10m 12s. USCGS: 51°4 N 159°1 E, H. 17h 58m 42.5s, h about 59 km. Near east coast of Kamchatka	
Mar. 17 (53)	iP iS eSS eL F	20 57 21 05 21 11 21 16 24 00	22 14	+			(53) Wi: eP 20h 57m 27s. USCGS: 10°9 N 43°2 W, H. 20h 47m 32.3s, h about 33 km. North Atlantic Ocean	
Mar. 17 (54)							(54) Wi: iPKP 21h 48m 41s. USCGS: 22°6 S 170°9 E, H. 21h 28m 58.7s, h about 28 km. Loyalty Islands region	
Mar. 18 (55)							(55) Wi: eP 5h 40m 27s. USCGS: 40°6 N 142°4 E, H. 5h 28m 31.3s, h about 33 km. Off northern coast of Honshu, Japan.	
Mar. 18 (56)	eP eS ePS eL F	15 34 15 37 15 37 15 38 15 50	18 04 10				(56) Wi: eP 15h 34m 09s. USCGS: 40°9 N 19°5 E, H. 15h 30 m 35.5s, h about 33 km. Southern Albania. Heerlen: iP 15h 34m (07s).	
Mar. 18 (57)	eL F	21 00 22.0					(57) Wi: iP 20h 31m 30s (+). USCGS: 23°8 N 114°6 E, H. 20h 18m 54.6s, h about 25 km. Kwantung Province, China	

Seismic Records at De Bilt

Date 1962	Phase	Time h m s	Direction	Period s	Amplitude μ	Remarks
Apr. 19 (58)						(58) Wi: iP 6h 08m 33.5s -. USCGS: 0°2 N 123°6 E, H. 5h 54m 36.9s, h about 150 km Near south coast of Minahasa Peninsula, Celebes
Apr. 22 (59)	ePS F	0 45 1 40				(59) USCGS: 6°0 S 113°0 E, H. 0h 19m 43.2s, h about 575 km. Java Sea
Apr. 22 (60)						(60) Wi: ePKP 2h 10m 30s. USCGS: 18°9 S 173°1 W, H. 1h 50m 52.4s, h about 60 km. Tonga Islands region
Apr. 22 (61)	eL F	13 08 13 20				(61) USCGS: 29°8 S 71°5 W, H. 12h 07m 07.3s, h about 48 km. Near coast of central Chile.
Apr. 22 (62)	eP ePP ePS eL F	15 28.3 15 33 15 43 16 09 18.0				(62) USCGS: 3°3 S 142°7 E, H. 15h 13m 13.5s, h about 100 km. Near north coast of New Guinea.
Apr. 24 (63)	ePP eL F	13 20 13 59 15.5				(63) Wi: eP 13h 18m 28s. USCGS: 5°7 N 145°2 E, H. 12h 59m 32.3s, h about 98 km. Near north coast of New Guinea
Apr. 25 (64)						(64) Wi: eP 21h 41m 40s. USCGS: 39°1 N 14°7 E, H. 21h 38m 25.5s, h about 330 km. Mediterranean Sea east of Sicily.
Apr. 26 (65)	eP eS eL F	12 14 12 22 12 29 13 15				(65) USCGS: 0°3 S 19°5 W, H. 12h 04m 58.3s, h about 33 km. Mid-Atlantic Ocean
Apr. 26 (66)	ePS eL F	17 02 17 28 18 20				(66) USCGS: 40°6 S 73°3 W, H. 16h 32m 43.6s, h about 32 km. Near coast of southern Chile.
Apr. 28 (67)						(67) Wi: iP 13h 34m 56s +. USCGS: 45°7 N 83°2 E, H. 13h 26m 21.1s, h about 33 km. Kazakh, S.S.R.
Apr. 31 (68)	e F	8 48 9.0				(68) No records from 8h 41m till 8h 48s. USCGS: 9°8 N 121°4 E, H. 7h 44m 35.8s, h about 140 km. Negros Islands, Philippine Islands.
Apr. 1 (69)	e F	1 08 1 40				(69) Wi: eP 1h 53m 06s. USCGS: 33°6 N 59°0 E, H. 0h 45m 14.6s, h about 73 km East Iran.
Apr. 4 (70)	eL F	14 40 15 00				(70) USCGS: 8°0 N 83°0 W, H. 14h 02m 32.2s, h about 23 km. Near south coasts of Panama and Costa Rica.
Apr. 4 (71)						(71) Wi: eP 20h 56m 08s. USCGS: 34°7 N 25°5 E, H. 20h 51m 05.2s, h about 21 km. Crete.
Apr. 4 (72)						(72) Wi: eP 21h 04m 37s. USCGS: 36°4 N 25°5 E, H. 20h 59m 36.1s, h about 25 km. Crete.

Seismic Records at De Bilt

Date 1962	Phase	Time h m s	Direction	Period s	Amplitude μ	Remarks
Apr. 7 (73)	ez F	23 35 23 41				(73) USCGS: 15°0 N 60°5 W, H. 23h 04m 12.2s, h about 77 km. Windward Islands
Apr. 10 (74)	iP iS eL F	21 41 21 44 21 46.0 22 50	+	4	16	(74) Wi: iP 21h 41m 19s. USCGS: 37°9 N 20°1 E, H. 21h 37m 12.6s, h about 35 km. Ionian Sea. Heerlen: eP 21h 41m (06s).
Apr. 11 (75)	eP eS eL F	10 51 10 55 10 56.0 11 30				(75) Wi: iP 10h 51m 41s. USCGS: 38°2 N 20°0 E, H. 10h 47m 34.0s, h about 43 km. Ionian Sea.
Apr. 11 (76)	iP ePP iS eL F	1 05 1 08 1 15 1 31 5.0				(76) Wi: iP 1h 05m 01s -. USCGS: 38°1 N 142°3 E, H. 0h 52m 44.8s, h about 48 km Near east coast of Honshu, Japan.
Apr. 12 (77)	eL F	5 58 6 20				(77) Wi: iP 5h 28m 21.5s. USCGS: 38°2 N 142°5 E, H. 5h 16m 05.0s, h about 26 km Near east coast of Honshu, Japan
Apr. 15 (78)	ez F	18 40 20.0				(78) USCGS: 2°7 S 11°6 W, H. 18h 08m 27s h about 25 km. Ascension Island region.
Apr. 16 (79)						(79) Wi: iP 13h 32m 49.3s -. USCGS: 30°6 N 140°6 E, H. 13h 20m 15.1s, h about 176 km. South of Honshu, Japan.
Apr. 16 (80)	e F	18 55 19 10				(80) USCGS: 44°8 S 37°2 E, H. 17h 54m 49.2s, h about 25 km. Prince Edward Islands.
Apr. 17 (81)	e F	10 11 10 20				(81) USCGS: 42°3 N 17°8 E, H. 10h 03m 46.9s, h about 25 km. Adriatic Sea.
Apr. 17 (82)	eP eS eL F	11 38 11 41 11 43.5 12 02				(82) Aftershock of (74). USCGS: 37°8 N 19°9 E, H. 11h 33m 51.0s, h about 26 km. Ionian Sea.
Apr. 17 (83)	e F	21 42 21 52				(83) Wi: iP 21h 06m 24.5s. USCGS: 38°1 N 142°5 E, H. 20h 54m 08.3s, h about 43 km. Near east coast of Honshu, Japan.
Apr. 17 (84)	iP eZ eS eL F	22 44 22 46 22 52 23 00 23 45				(84) Wi: eP 22h 44m 46s +. USCGS: 1°5 S 14°9 W, H. 22h 34m 56.7s, h about 25 km. Mid-Atlantic Ocean.
Apr. 18 (85)	iP eZ iSKS eL F	19 27 19 32 19 38 19 55 21.0				(85) Wi: eP 19h 28m 02s. USCGS: 9°9 S 78°9 W, H. 19h 14m 35.6s, h about 23 km. Off coast of Peru.
Apr. 19 (86)	eP eS F	3 21 3 25 3 42				(86) Aftershock of (74). BCIS: 37°6 N 20°1 E, H. 3h 17m 25s. Ionian Sea.

Seismic Records at De Bilt

Date 1962	Phase	Time h m s	Direction	Period s	Amplitude μ	Remarks
pr. 19 (87)	eP eS eL F	23 25 33 23 33 11 23 40 24 30				(87) Wi: eP 23h 25m 23s; 1 23h 25m 25s. USCGS: 69°8 N 138°8 E, H. 23h 16m 07.0s, h about 17 km. Siberia, USSR.
pr. 20 (88)	iP iS iSS iSSS eL F	5 58 45 6 07 34 6 11 46 6 15 28 6 20 8.0				(88) Wi: iP 5h 58m 50s +. USCGS: 20°6 N 72°2 W, H. 5h 47m 55.3s, h about 25 km. Near north coast of Haiti. Heerlen: iP 5h 58m (50s).
pr. 21 (89)						(89) Wi: iPKP 8h 05m 12.5s. USCGS: 23°7 S 180°0 long.. H. 7h 46m 18.5s, h about 559 km. Fiji Islands region.
pr. 22 (90)						(90) Wi: iPKP 2h 29m 14.5s. USCGS: 18°7 S 169°4 E, H. 2h 10m 11.3s, h about 259 km. New Hebrides Islands region.
pr. 22 (91)	eP eS eL F	4 57 43 5 07 54 5 34 6.0				(91) Wi: eP 4h 57m 44s. USCGS: 15°5 N 93°1 W, H. 4h 45m 20.3s, h about 69 km. Near coast of Chiapas, Mexico.
pr. 23 (92)						(92) Wi: iP 19h 27m 35s. USCGS: 32°7 N 130°6 E, H. 19h 15m 34.1s, h about 181 km. Kyushu, Japan.
pr. 23 (93)	iP about iS-iP	6 10.0 09 45	+	4	7	(93) De Bilt, no time recording. Wi: iP 6h 10m 04.5s +. USCGS: 42°9 N 143°4 E, H. 5h 58m 04.9s, h about 25 km. Hokkaido Japan.
pr. 24 (94)						(94) Wi: iP 16h 18m 53s. USCGS: 2°2 S 76°1 W, H. 16h 06m 23.7s, h about 175 km. Ecuador-Peru border.
pr. 25 (95)						(95) Wi: iP 3h 40m 18s. USCGS: 54°0 N 160°3 E, H. 3h 28m 56.1s, h about 29 km. Kamchatka.
pr. 25 (96)	eZ eH iH F	4 48.0 4 48 36 4 48 56 5 00				(96) Wi: e 4h 46m 42s. BCIS: 45°03' N 5°30' E, H. 4h 44m 48s. USCGS: 45°4 N 5°8 E, H. 4h 44m 55.2s, h about 33 km. France-Swiss border.
pr. 25 (97)	eS eL F	16 10 06 16 30 17 30				(97) Wi: eP 15h 59m 44s. De Bilt control of instruments 15h 59m till 16h 03m. USCGS: 38°4 N 142°5 E, H. 15h 47m 29.4s, h about 56 km. Honshu, Japan.
pr. 26 (98)	ePKP	7 45 04				(98) Wi: ePKP 7h 45m 02s. USCGS: 17°3 S 179°1 W, H. 7h 26m 31.3s, h about 657 km. Fiji Islands.
pr. 27 (99)						(99) Wi: iPKP 6h 49m 16.5s -. USCGS: 23°1 S 179°2 E, H. 6h 30m 24.9s, h about 576 km. Fiji Islands region.
pr. 27 (100)	ePKP eL F	7 07 20 7 45 8 30				(100) USCGS: 44°4 S 74°8 W, H. 6h 47m 27.0s, h about 31 km. Near coast of southern Chile.

Seismic Records at De Bilt

Date 1962	Phase	Time h m s	Direction	Period s	Amplitude μ	Remarks
Apr. 28 (101)	iP eS eL F	11 23 54 11 28 00 11 31 12 00				(101) Wi: eP 11h 23m 57s. USCGS: 36°4 N 26°6 E, H. 11h 18m 57.4s, h about 40 km. Dodecanese Islands.
Apr. 28 (102)	iP eS eL F	12 48 45 12 52 45 12 56 13 15	(+)			(102) Wi: eP 12h 48m 45s. Aftershock of (101). USCGS: 36°3 N 26°7 E, H. 12h 43m 49.1s, h about 48 km. Dodecanese Islands
Apr. 30 (103)	eP eZ ePP eS eL F	2 38 36 2 38 44 2 41 50 2 48 56 3 06 4.0				(103) Wi: iP 2h 38m 36.5s (+). USCGS: 38°8 N 140°9 E, H. 2h 26m 30.0s, h about 104 km. Hokkaido, Japan.
Apr. 30 (104)	iPKP eSS eL F	16 36 32 16 59.5 17 25 18.5				(104) Wi: iPKP 16h 36m 27s. USCGS: 18°1 S 176°1 W, H. 16h 16m 51.2s, h about 33 km. Tonga Islands region.
Apr. 30 (105)	iPKP F	18 50 38 19.0				(105) Wi: iPKP 18h 50m 36s -. USCGS: 18°1 S 176°2 W, H. 18h 31m 05.9s, h about 92 km. Fiji Islands region.
Apr. 30 (106)	iZ iH eL F	23 55 09 23 59 17 24 00 24 10				(106) Wi: e 23h 54m 59s; i 23h 55m 06s. USCGS: 72°0 N 7°2 E, H. 23h 50m 33.5s, h about 25 km. BCIS: 73°7 N 7°0 E, H. 23h 50m 20s. North Atlantic Ocean, north-east of Jan Mayen Island.
May 3 (107)						(107) Wi: iP 2h 49m 57.2s. USCGS: 42°6 N 144°6 E, H. 2h 37m 56.6s, h about 49 km. Off south-east coast of Hokkaido, Japan.
May 3 (108)	eL F	4 27 5 05				(108) USCGS: 60°0 S 32°9 W, H. 3h 34m 49.0s, h about 20 km. Sandwich Islands region.
May 3 (109)						(109) Wi: eP 23h 30m 17s. USCGS: 44°1 N 7°3 W, H. 23h 27m 16.1s, h about 31 km. Off coast of northern Spain.
May 5 (110)	eL F	11 53 12 25				(110) USCGS: 34°1 N 139°3 E, H. 11h 11m 49.3s, h about 57 km. Near south coast of Honshu, Japan.
May 6 (111)	eL F	4 54 5 20				(111) USCGS: 54°2 S 136°5 W, H. 3h 33m 47.0s, h about 25 km. South Pacific Ocean.
May 6 (112)	eP iPP eSS eL F	19 15.2 19 20 09 19 36.0 19 52 22.0				(112) USCGS: 60°2 S 33°5 W, H. 19h 00m 13.5s, h about 33 km. Sandwich Islands region.
May 7 (113)	iP iS eSS eL F	17 51 46 18 01 40 18 06.5 18 11 20 30	+			(113) Wi: iP 17h 51m 41s +. USCGS: 45°2 N 146°9 E, H. 17h 39m 50.3s, h about 20 km. Kurile Islands.

Seismic Records at De Bilt

Date 1962	Phase	Time h m s	Direction	Period s	Amplitude μ	Remarks
May 8 (114)						(114) Wi: iP 16h 36m 57.5s. USCGS: 43°06' N 144°07' E, H. 16h 25m 13.1s, h about 121 km. Off east coast of Honshu, Japan.
May 8 (115)	eL F	24 06 24 12				(115) Wi: iP 23h 58m 42s. USCGS: 35°05' N 24°11' E, H. 23h 53m 59s, h about 86 km. Sea of Crete, Mediterranean Sea.
May 9 (116)						(116) Wi: eP 11h 30m 56s. USCGS: 46°02' N 153°00' E, H. 11h 19m 02.1s, h about 40 km. Kurile Islands.
May 10 (117)						(117) Wi: iP 0h 14m 10s. USCGS: 62°00' N 150°01' W, H. 0h 03m 40.2s, h about 72 km. Alaska.
May 10 (118)		1 57 2 45				(118) Wi: ePKP 0h 48m 16s. USCGS: 41°08' S 171°06' E, H. 0h 27m 17.5s, h about 54 km. South Island, New Zealand.
May 10 (119)	eP eS eL F	5 24 00 5 34.1 5 55 6 35				(119) Wi: iP 5h 24m 00s. USCGS: 52°04' N 170°09' W, H. 5h 12m 15.9s, h about 43 km. Fox Islands.
May 10 (120)						(120) Wi: eP 11h 19.4m. USCGS: 49°00' N 28°05' W, H. 11h 14m 25.0s, h about 25 km. North of Azores Islands.
May 11 (121)	e F	1 10 1 15				(121) USCGS: 44°04' N 11°01' E, H. 1h 05m 31.6s, h about 25 km. 20 miles north of Firenze, Italy.
May 11 (122)	iP ePP eS eL F	14 24 31 14 27 44 14 35 14 14 52 18.0	+	8	14	(122) Wi: eP 14h 24m 37s. USCGS: 17°00' N 99°06' W, H. 14h 11m 54.1s, h about 40 km. Near coast of Mexico.
May 15 (123)	eP ePP iS iZ iSS eH eL F	5 38 46 5 43 22 5 51 26 5 53 22 6 00 02 6 04 08 6 18 8.5				(123) Wi: ePKP 5h 42.6m; ePP 5h 43m 28s. USCGS: 7°03' S 128°03' E, H. 5h 23m 46.4s, h about 34 km. Banda Sea.
May 17 (124)						(124) Wi: iP 3h 08m 36.0s +. USCGS: 21°02' S 178°08' W, H. 2h 49m 50.4s, h about 549 km. Fiji Islands region.
May 18 (125)	e F	12 33 12 35				(125) USCGS: 48°06' N 28°07' W, H. 12h 11m 59.8s, h about 25 km. North Atlantic Ocean.
May 18 (126)	e F	19 28 19 55				(126) USCGS: 46°01' N 148°05' E, H. 18h 46m 40.1s, h about 60 km. Kurile Islands.
May 18 (127)						(127) Wi: ePKP 23h 38m 20s. USCGS: 16°00' S 173°00' W, H. 23h 18m 46.9s, h about 25 km. Tonga Islands region.

Seismic Records at De Bilt

Date 1962	Phase	Time h m s	Direction	Period s	Amplitude μ	Remarks
May 19 (128)	iP iPP ePPP iS eSS eSSS eL F	15 10 53 15 14 12 15 16 20 15 21 36 15 27.0 15 31.0 15 38 18.0	+	5	10	(128) Wi: eP 15h 10.9m. USCGS: 17°02' N 99°05' W, H. 14h 58m 15.0s, h about 33 km. Near coast of Mexico.
May 21 (129)	iP ePP ePPP iS eL F	12 13 15 12 15 28 12 17 00 12 21 49 12 33 14.5	+			(129) Wi: iP 12h 13m 07s +. USCGS: 37°03' N 96°00' E, H. 12h 02m 50.6s, h about 25 km. China.
May 21 (130)	iPKP ₁ iPKP ₂ iPKP ₁ eSS F	21 34 32 21 34 43 21 36 26 21 56 30 24.0	(-)			(130) Wi: iPKP ₁ 21h 34m 33s -. USCGS: 19°08' S 177°04' W, H. 21h 15m 30.0s, h about 342 km. Fiji Islands region. Heerlen: i (21h 35m 31s).
May 22 (131)	ePKP iZ iPP F	8 25 38 8 25 51 8 28 32 10.5				(131) USCGS: 12°03' S 166°00' E, H. 8h 06m 38.9s, h about 135 km. Santa Cruz Islands.
May 22 (132)	eZ F	22 26 24.5				(132) USCGS: 5°04' S 151°09' E, H. 22h 03m 31.1s, h about 54 km. New Britain.
May 25 (133)	e F	1 00 1 10				(133) USCGS: 58°06' N 31°04' W, H. 0h 48m 58.3s, h about 33 km. South of Greenland.
May 25 (134)	ePKP F	4 39 44 6.3				(134) USCGS: 20°07' S 174°03' W, H. 4h 19m 57.0s, h about 281 km. Tonga Islands.
May 26 (135)						(135) Wi: iPKP 2h 31m 42.3s (+). USCGS: 19°07' S 177°08' W, H. 2h 13m 0.15s, h about 561 km. Fiji Islands.
May 29 (136)	e F	1 37 1 40				(136) BCIS: 39°08' N 25°00' E, H. 1h 33m 40s. Southeast of Lemnos Island, Aegean Sea.
May 30 (137)	eP eS F	10 10.6 10 17 00 11.0				(137) USCGS: 29°09' N 42°07' W, H. 10h 02m 53.0s, h about 35 km. Atlantic Ocean.
May 31 (138)	eP ePP eS F	6 41 30 6 45.5 6 51 50 8 30				(138) USCGS: 22°00' N 142°07' E, H. 6h 28m 26.1s, h about 258 km. Volcano Islands region.
June 2 (139)	eL F	12 55 13 40				(139) USCGS: 49°09' N 129°07' W, H. 12h 26m 11.0s, h about 33 km. Vancouver Island.
June 2 (140)	eP eL F	17 27 40 18 00 18 45				(140) USCGS: 29°09' N 130°07' E, H. 17h 15m 13.8s, h about 54 km. Ryukyu Islands region.

Seismic Records at De Bilt

Date 1962	Phase	Time			Direction	Period s	Amplitude μ	Remarks
		h	m	s				
June 3 (141)	iP iS eL F	15	11	10			(141) Wi: iP 15h 11m 18.5s. USCGS: 22°34'1 W, H. 15h 02m 26.4s, h about 33 km. North Atlantic Ocean.	
June 3 (142)	eH F	23	55.0				(142) Wi: iP 23h 48m 40s. USCGS: 41°9 N 28°4 W, H. 23h 43m 43.8s, h about 33 km. North Atlantic Ocean.	
June 6 (143)	eL F	18	33				(143) USCGS: 39°0 N 12°3 W, H. 17h 50m 06.8s, h about 14 km. California	
June 8 (144)							(144) Wi: iPKP 1h 50m 31.5s +. USCGS: 18°1 S 178°4 W, H. 1h 31m 59.9s, h about 603 km. Fiji Islands region.	
June 8 (145)	e F	10	02				(145) Wi: eP 9h 23m 49s. USCGS: 28°4 N 129°8 E, H. 9h 11m 11.5s, h about 19 km. Ryukyu Islands.	
June 9 (146)							(146) Wi: eP 20h 19m 57s. USCGS: 12°8 N 91°1 W, H. 19h 57m 23.0s, h about 33 km. Off coast of Guatemala.	
June 11 (147)							(147) Wi: iPKP 4h 54m 01.0s +. USCGS: 19°6 S 177°7 W, H. 4h 35m 00.6s, h about 370 km. Fiji Islands region.	
June 11 (148)	iP iPP eS eL F	7	18	34			(148) Wi: iP 7h 18m 33.2s (-). USCGS: 43.6 N 18°3 E, H. 7h 15m 41.4s, h about 33 km. Yugoslavia. Heerlen: iP 7h 18m (21s).	
June 12 (149)	e F	9	58				(149) USCGS: 64°9 N 17°1 W, H. 9h 46m 30.3s, h about 33 km. Iceland.	
June 14 (150)	eP eS eSS eL F	8	03	27			(150) Wi: iP 8h 03m 17.5s. USCGS: 54°4 N 169°1 E, H. 7h 55m 53.3s, h about 30 km. Near Islands, Aleutian Islands.	
June 14 (151)							(151) Wi: iP 20h 30m 37s. USCGS: 1°9 S 76°9 W, H. 20h 18m 06.2s, h about 160 km. Ecuador-Peru border region.	
June 14 (152)	ePS e eL F	22	38.5				(152) Wi: eP 22h 26.8m. USCGS: 26°4 N 126°0 E, H. 22h 14m 14.2s, h about 33 km. Ryukyu Islands region.	
June 15 (153)	eL F	7	20				(153) USCGS: 20°5 S 70°6 W, H. 6h 30m 35.7s, h about 33 km. Near coast of Northern Chile.	
June 17 (154)	e F	5	09				(154) USCGS: 33°1 N 75°9 E, H. 4h 39m 30.1s, h about 34 km. Kashmir region.	

Seismic Records at De Bilt

Date 1962	Phase	Time			Direction	Period s	Amplitude μ	Remarks
		h	m	s				
June 18 (155)							(155) Wi: iPKP 24h 01m 26.7s -. USCGS: 4°9 S 152°0 E, H. 23h 42m 371.s, h about 100 km. New Britain region.	
June 19 (156)							(156) Wi: iPKP 16h 58m 20.0s +. USCGS: 20°9 S 177°8 W, H. 16h 39m 21.4s, h about 405 km. Fiji Islands region.	
June 21 (157)	eP eS eL F	4	56	18			(157) Wi: eP 4h 56m 21s. USCGS: 5°7 N 82°6 W, H. 4h 43m 43.3s, h about 23 km. South of Panama.	
June 21 (158)							(158) Wi: iPKP 8h 58m 08s. USCGS: 20°8 S 175°6 W, H. 8h 38m 28.4s, h about 67 km. Tonga Islands region.	
June 22 (159)	e F	12	43				(159) Wi: iP 12h 01m 41s. USCGS: 32°2 N 142°2 E, H. 11h 48m 56.8s, h about 33 km. Off coast of Honshu, Japan.	
June 23 (160)	iP ePP eS eL F	9	57	34			(160) Wi: eP 9h 57m 22s. USCGS: 25°5 N 128°3 E, H. 9h 44m 38.9s, h about 33 km. Ryukyu Islands.	
June 23 (161)							(161) Wi: eP 10h 11m 19s. USCGS: 19°2 N 121°3 E, H. 9h 58m 27.0s, h about 45 km. Near coast of Luzon, Philippine Islands.	
June 24 (162)	eL F	1	57				(162) Wi: ep 1h 32m 45s, H. 25°6 N 101°2 E, H. 1h 21m 19.7s, h about 33 km. Yunnan Province, China.	
June 25 (163)							(163) Wi: iPKP 1h 50m 18.4s +. USCGS: 20°8 S 179°2 W, H. 1h 31m 41.9s, h about 645 km. Fiji Island region.	
June 25 (164)	iP eS eL F	11	23	08			(164) Wi: eP 11h 23m 04.8s. USCGS: 24°2 N 122°5 E, H. 11h 10m 26.0s. Off Coast of Formosa.	
June 28 (165)	eL F	6	59				(165) USCGS: 40°9 N 20°8 E, H. 6h 51m 04.3s, h about 25 km. Near Greece-Albania border.	
June 28 (166)							(166) Wi: iPKP 21h 06m 43.0s +. USCGS: 17°8 S 175°1 W, H. 20h 47m 30.3s, h about 223 km. Tonga Islands region.	
June 29 (167)	e F	17	05				(167) USCGS: 62°4 N 152°0 W, H. 16h 28m 07.1s, h about 50 km. Alaska.	
June 30 (168)	eS eSS eL F	19	53	40			(168) USCGS: 16°3 N 122°1 E, H. 19h 29m 57.9s, h about 82 km. Near coast of Luzon, Philippine Islands.	
July 5 (169)	eL F	18	25				(169) USCGS: 30°9 N 141°4 E, H. 17h 40m 55.3s, h about 23 km. South of Honshu, Japan.	

Seismic Records at De Bilt

Date 1962	Phase	Time h m s	Direction	Period s	Amplitude μ	Remarks
July 6 (170)	eP eS eL F	2 22.2 2 30 14 2 40 3 25				(170) Wi: 2h 22.1m. USCGS: 13°3 N 58°0 E H. 2h 12m 19.9s, h about 30 km. Arabian Sea, east of Socotra.
July 6 (171)	iP iS eL F	9 20 28 9 22 52 9 25.2 10 15				(171) Wi: eP 9h 20m 27s. USCGS: 38°0 N 20°2 E, H. 9h 16m 15.0s, h about 30 km. Ionian Sea.
July 6 (172)	iP iPP iPP iS iH isS F	23 13 51 23 15 01 23 15 46 23 20 21 23 20 30 23 21 43 25 15	+	5	20	(172) Wi: eP 23h 13m 41s. USCGS: 36°6 N 70°4 E, H. 23h 05m 32.2s, h about 203 km. Hindu Kush.
July 7 (173)	iP eS eL F	6 24 38 6 34 14 6 49 7.5				(173) Wi: eP 6h 24m 33s. USCGS: 51°3 N 178°6 E, H. 6h 12m 48.9s, h about 60 km. Rat Islands, Aleutian Islands.
July 7 (174)						(174) Wi: iP 21h 32m 28.5s -. USCGS: 51°9 N 158°6 E, H. 21h 20m 57.7s, h about 33 km. Near south coast of Kam- chatka.
July 10 (175)						(175) Wi: iPKP 5h 30m 46.3s -. USCGS: 20°8 S 178°7 W, H. 5h 12m 06.4s, h about 584 km. Fiji Islands.
July 10 (176)	eL F	10 16 10 30				(176) USCGS: 38°4 N 25°9 E, H. 10h 06m 02.0s, h about 25 km. Aegean Sea.
July 11 (177)	eL F	1 23 2 00				(177) Wi: eP 1h 12m 38s. USCGS: 31°8 N 66°9 E, H. 1h 03m 59.3s, h about 25 km. Afghanistan.
July 13 (178)	eP ePP eS eL F	3 45.4 3 49.6 3 56 07 4 22 5.0				(178) USCGS: 10°4 N 122°6 E, H. 3h 32m 00.4s, h about 66 km. Panay, Philippine Islands.
July 13 (179)						(179) Wi: iP 22h 30m 30s (-). USCGS: 56°2 N 164°0 E, H. 22h 19m 23.3s, h about 59 km. Komandorskie Islands region.
July 14 (180)	e F	16 35.5 16 37.5				(180) USCGS: 30°4 N 79°5 E, H. 15h 58m 53.7s, h about 40 km. India-Tibet border.
July 14 (181)	eL F	20 19 21.0				(181) USCGS: 40°3 N 124°4 W, H. 19h 43m 52.6s, h about 25 km. Northern California
July 14 (182)						(182) Wi: eP 20h 49m 35s. USCGS: 50°2 N 155°8 E, H. 20h 38m 01.3s, h about 60 km Kurile Islands.

Seismic Records at De Bilt

Date 1962	Phase	Time h m s	Direction	Period s	Amplitude μ	Remarks
July 15 (183)	eP eS F	6 59 29 7 10.0 7 45				(183) Wi: iP 6h 59m 22s, epP 6h 59m 47s. USCGS: 39°8 N 140°9 E, H. 39°8 N 140°9 E, h about 103 km. Honshu, Japan
July 16 (184)	eL F	3 20 4.0				(184) USCGS: 52°1 N 138°9 E, H. 2h 04m 52.6s, h about 14 km. South of Tasmania
July 16 (185)	eP eS eL F	7 08 00 7 11.5 7 14 7 20				(185) BCIS: 38°5 N 22°0 E, H. 7h 03m 41s. Greece
July 16 (186)	eP eL F	13 05 20 13 34 14.5				(186) Wi: iP 13h 05m 08s (-). USCGS: 62°3 N 153°1 W, H. 12h 54m 40.6s, h about 39 km. Alaska.
July 17 (187)	eP ePP ePPP ePS eL F	5 47 12 5 52 08 5 54 36 6 02 04 6 20 7.5				(187) USCGS: 43°0 S 74°9 W, H. 5h 32m 08.8s, h about 26 km. Near coast of Chile.
July 17 (188)	eP eS eL F	17 32 26 17 42 28 17 57 18 35	(+)			(188) Wi: iP 17h 32m 21.4s +. USCGS: 43°1 N 144°5 E, H. 17h 20m 22.9s, h about 30 km. Hokkaido, Japan.
July 21 (189)	eS eL F	21 30 41 21 45 22.5				(189) USCGS: 15°5 N 92°5 W, H. 21h 08m 22.6s, h about 129 km. Guatemala-Mexico border.
July 25 (190)	eP eS eSS eL F	4 49 20 4 58 46 5 03.2 5 10 6.5				(190) Wi: eP 4h 49m 24s. USCGS: 18°9 N 81°1 W, H. 4h 37m 50.7 s, h about 64 km. West of Jamaica.
July 26 (191)						(191) Wi: eP 4h 34m 04s. USCGS: 47°1 N 153°9 E, H. 4h 23m 11.9s, h about 35 km Kurile Islands.
July 26 (192)	iP iS	8 27 10 8 37 40				(192) Wi: iP 8h 27m 13.0s -. USCGS: 7°5 N 82°7 W, H. 8h 14m 41.8s, h about 21 km. South of Panama.
July 28 (193)	iPKP ePP eL F	0 24 45 0 28.0 1 18 2.0				(193) Wi: ePKP 0h 24m 44s. USCGS: 16°2 S 173°2 W, H. 0h 05m 10.8s, h about 40 km. Samoa Islands.
July 28 (194)	eL F	20 34 20 50				(194) Wi: eP 19h 55m 23s. USCGS: 36°9 N 141°9 E, H. 19h 43m 00.3s, h about 39 km. Off east coast of Honshu, Japan
July 28 (195)						(195) Wi: eP 20h 58m 25s. USCGS: 44°6 N 148°6 E, H. 20h 46m 26.0s, h about 32 km. Kurile Islands.
July 30 (196)	eSS eL	17 54.0 18 10				(196) Wi: iPKP 17h 35m 36s; iPP 17h 37m 06s. USCGS: 3°3 S 143°9 E, H. 17h 16m 44.4s, h about 25 km. Near north coast of New Guinea.

Seismic Records at De Bilt

Date 1962	Phase	Time	Direction	Period	Amplitude	Remarks
		h m s		s	μ	
July 30 (197)	iP iS iPS eL F	20 31 02 20 41 03 20 41 58 20 52 23.5	+	5	6	(197) Wi:eP 20h 31m 05s. USCGS: 5°0 N 76°3 W, H. 20h 18m 49.3s, h about 45 km Western Colombia.
July 31 (198)	eS eL F	5 36 35 5 56 7.0				(198) USCGS: 18°8 N 120°8 E, H. 5h 13m 04.ls, h about 39 km. Near north coast of Luzon, Philippine Islands.
Aug. 1 (199)	eP ePKP iPP ePS eSS eL F	4 52.1 4 55 54 4 57 19 5 07.2 5 14 5 30 7.5				(199) Wi: iPKP 4h 55m 47s. USCGS: 3°2 S 143°7 E, H. 4h 36m 57.6s, h about 33 km Near north coast of New Guinea.
Aug. 3 (200)	iSKS iS iPS iSS eL	9 20 13 9 20 58 9 22 28 9 27 27 9 37				(200) Wi:iP 9h 09m 50s; iPP 9h 13m 54s. USCGS: 23°2 S 67°5 W, H. 8h 56m 12.ls, h about 71 km. Northern Chile-Argentina border.
Aug. 3 (201)						(201) Wi: eP 11h 12m 24s. USCGS: 40°9 N 73°3 E, H. 11h 04m 03.6s, h about 25 km. Kirghiz, S.S.R.
Aug. 5 (202)	eH F	9 23 9 45				(202) USCGS: 74°2 N 52°5 E, H. 9h 08m 40.8s. Nova Zembla, nuclear explosion.
Aug. 6 (203)	iP iS eSS eL F	1 43 00 1 49 00 1 51 56 1 53 3 00	(+)			(203) Wi:iP 1h 43m 05.5s. USCGS: 32°0 N 40°8 W, H. 1h 35m 30.5s, h about 48 km. North Atlantic Ocean.
Aug. 6 (204)	ePKP F	21 11.8 23.0				(204) USCGS: 26°9 S 177°1 W, H. 20h 51m 56.8s, h about 50 km. Kermadec Islands region.
Aug. 9 (205)						(205) Wi: iP 4h 33m 37.2s. USCGS: 6°7 N 73°1 W, H. 4h 21m 55.4s, h about 180 km Colombia.
Aug. 9 (206)						(206) Wi: iP 10h 56m 10s. USCGS: 30°1 N 129°0 E, H. 10h 44m 00.5s, h about 198 km. Ryukyu Islands.
Aug. 10 (207)	eP eS eL F	21 08 44 21 12 44 21 13.5 21 45				(207) Wi: 21h 08m 52s (-). USCGS: 49°4 N 27°9 W, H. 21h 03m 59.2s, h about 33 km North Atlantic Ocean.
Aug. 11 (208)	iPKP1 iPKP2 ePP	2 06 15 2 08 40 2 09 42				(208) Wi: iPKP1 2h 06m 14s; iPKP2 2h 08m 37s; ePP 2h 09m 42s. USCGS: 20°0 S 178°8 W, h about 638 km. Fiji Islands.
Aug. 11 (209)	ePP eS ePS eL F	8 31 35 8 38 34 8 39 30 8 55 9.5				(209) Wi: 8h 28m 05s -. Change of papers from 8h 24m till 8h 31m. USCGS: 25°2 N 123°3 E, H. 8h 15m 43.7s, h about 140 km Off north east coast of Formosa.

Seismic Records at De Bilt

Date 1962	Phase	Time	Direction	Period	Amplitude	Remarks
		h m s		s	μ	
Aug. 13 (210)	eP eS eSS eSSS eL F	6 48 48 6 59 28 7 05.5 7 08.7 7 17 8.0				(210) Wi:eP 6h 48m 49s. USCGS: 2°1 N 83°5 W, H. 6h 35m 56.0s, h about 33 km. About 300 miles north west of Ecuador.
Aug. 13 (211)	eS eL F	20 29.5 20 37 21.0				(211) USCGS: 51°8 N 110°2 E, H. 20h 11m 36.ls, h about 33 km. Buryatkaya, SSR
Aug. 14 (212)	eSS eL F	1 56 2 30 3.3				(212) USCGS: 49°9 S 163°0 E, H. 1h 10m 50.5s, h about 43 km. About 300 miles north of Macquarie Islands.
Aug. 17 (213)	eP ePP ePPP eL F	5 18 22 5 22 12 5 24 20 5 53 6.5				(213) USCGS: 10°6 N 121°6 E, H. 5h 04m 31.5s, h about 33 km. Penay region, Philippine Islands.
Aug. 18 (214)	eP eL F	16 54 30 17 23 17 40				(214) Wi: eP 16h 54m 23s. USCGS: 62°3 N 152°5 W, H. 16h 43m 54.3s, h about 32 km. Central Alaska.
Aug. 18 (215)	eP eL F	17 56 53 18 20 19 10				(215) Wi: eP 17h 56m 43s. USCGS: 62°3 N 152°5 W, H. 17h 46m 14.9s, h about 32 km Central Alaska.
Aug. 19 (216)	ez iP iPP iS eSS eL F	18 35 29 18 35 38.5 18 37 29 18 42 31 18 45 18 18 49 19 50	-	4	3	(216) Wi:iP 18h 35m 17s; i 18h 35m 27s. USCGS: 44°6 N 81°7 E, H. 18h 26m 38.6s, h about 33 km. Northwest Sinkiang Province, China.
Aug. 20 (217)	e F	9 20 9 30				(217) USCGS: 74°4 N 51°2 E, H. 9h 02m 14.5s. Nova Zembla, nuclear explosion.
Aug. 21 (218)	ez eH eL	18 12 13 18 14 42 18 15.5				(218) Wi: e 18h 12m 14s. USCGS: 41°5 N 15°4 E, H. 18h 09m 06.8s, h about 36 km. Italy (foreshock of 219)
Aug. 21 (219)	(ez eH eL F	18 22 38) 18 24.0 18 25 19 40				(219) Wi: i 18h 22m 36s. USCGS: 41°4 N 15°5 E, H. 18h 19m 33.3s, h about 34 km Italy. Heerlen: iS 18h 24m (25s)
Aug. 21 (220)	ePKP eL F	21 25 36 22 05 24				(220) USCGS: 28°7 S 176°8 W, H. 21h 06m 00.ls, h about 55 km. Kermadec Islands region.
Aug. 22 (221)	e F	9 18 9 28				(221) BCIS: 74½° N 52°E, H. 9h 00m 06s. Nova Zembla, nuclear explosion.
Aug. 24 (222)						(222) Wi: iPKP 7h 06m 03s. USCGS: 24°5 S 178°8 E, H. 6h 47m 08.ls, h about 52 km. Fiji Islands region.
Aug. 25 (223)						(223) Wi:iP 8h 50m 31s. USCGS: 20°5 S 178°5 W, H. 8h 31m 48.7s, h about 561 km. Fiji Islands.

Seismic Records at De Bilt

Date 1962	Phase	Time	Direction	Period	Amplitude	Remarks
		h m s		s	μ	
Aug. 26 (224)	eP eSSS eL F	7 01 (50) 7 21.0 7 30 8 25				(224) USCGS: 34°0 N 139°2 E, H. 6h 48m 57.1s, h about 38 km. Near east coast of Honshu, Japan
Aug. 27 (225)	e F	9 17 9 30				(225) USCGS: 74°7 N 50°3 E, H. 9h 00m 50.9s. Nova Zembla, nuclear explosion
Aug. 27 (226)	e F	17 07 17 30				(226) Wi: iP 16h 32m 21s. USCGS: 38°3 N 142°2 E, H. 16h 20m 04.7s, h about 40 km. Near east coast of Honshu, Japan
Aug. 28 (227)	iP iS F	11 04 12 11 07 41 12 30	-	5	15	(227) Wi: iP 11h 04m 10.5s -. USCGS: 38°0 N 23°1 E, H. 10h 59m 58.5s, h about 120 km. South west of Peleponese, Greece. Heerlen: iP 11h 04m (00s).
Aug. 29 (228)	e F	21 07 21 20				(228) USCGS: 34°0 N 139°3 E, H. 20h 20m 20.5s, h about 33 km. Near east coast of Honshu, Japan.
Aug. 29 (229)	eP eS eL F	22 49 55 22 59 10 23 20 24.2				(229) USCGS: 34°1 N 139°1 E, H. 22h 36m 53.9s, h about 33 km. Near east coast of Honshu, Japan.
Aug. 30 (230)	eP eS eL F	13 46 50 13 56.2 14 08 15.0				(230) USCGS: 41°8 N 111°8 W, H. 13h 35m 28.7s, h about 37 km. Utah-Idaho border
Aug. 30 (231)	ePKP eL F	17 37 39 18 30 19.2				(231) Wi: ePKP 17h 37m 38s; i 17h 37m 48s. USCGS: 21°2 S 174°4 W, H. 17h 17m 51.9s, h about 33 km. Tonga Islands.
Aug. 31 (232)	iP eS eSS eL F	17 14 37 17 24.4 17 30.0 17 40 19.0	+	3	3	(232) Wi: 17h 14m 31.4s +. USCGS: 51°3 N 179°7 W, H. 17h 02m 43.4s, h about 26 km. Rat Islands, Aleutian Islands.
Aug. 31 (233)						(233) Wi: iP 18h 07m 56.5s (+). USCGS: 51°2 N 179°9 W, H. 17h 56m 08.9s, h about 43 km. Rat Islands, Aleutian Islands.
Sep. 1 (234)	eP eS eL F	3 57 58 4 07 46 4 25 6.3				(234) Wi: iP 3h 57m 54s (+). USCGS: 51°3 N 179°7 W, H. 3h 46m 05.0s, h about 25 km. Rat Islands, Aleutian Islands.
Sep. 1 (235)						(235) Wi: iP 4h 53m 29s (-). USCGS: 51°3 N 179°9 W, H. 4h 41m 41.5s, h about 37 km. Rat Islands, Aleutian Islands.
Sep. 1 (236)						(236) Wi: ePKP 5h 11m 16s; ePP 5h 14m 19s. USCGS: 15°9 S 168°2 E, H. 4h 52m 14.5s, h about 244 km. New Hebrides Islands.

Seismic Records at De Bilt

Date 1962	Phase	Time	Direction	Period	Amplitude	Remarks
		h m s		s	μ	
Sep. 1 (237)						(237) Wi: iP 8h 02m 54.0s +. USCGS: 51°3 N 179°9 W, H. 7h 51m 08.2s, h about 42 km. Rat Islands, Aleutian Islands.
Sep. 2 (238)	iP ePP eS F	19 27 38 19 28 50 19 33 20 23	+	6	18	(238) Wi: iP 19h 27m 30.2s +. USCGS: 35°6 N 50°0 E, H. 19h 20m 38.5s, h about 21 km. Northwest Iran. Heerlen: iP 19h 27m (47s)
Sep. 2 (239)						(239) Wi: iP 3h 14m 18s. USCGS: 51°3 N 179°8 W, H. 3h 02m 29.3s, h about 26 km. Rat Islands, Aleutian Islands.
Sep. 4 (240)	eP eS F	23 05 17 23 10 22 23 40				(240) Wi: eP 23h 05m 15s. USCGS: 39°9 N 44°2 E, H. 22h 59m 19.4s, h about 33 km Turkey-Armenia, S.S.R. border.
Sep. 8 (241)	e F	10 38.0 10 43				(241) USCGS: 73°7 N 53°8 E, H. 10h 17m 57.7s, h = 0. Nova Zembla, nuclear explosion.
Sep. 10 (242)	eP iZ eS eL F	9 41 32 9 41 46 9 45.7 9 48 10.0				(242) Wi: iP 9h 41m 28s -. USCGS: 35°0 N 27°1 E, H. 9h 36m 24.3s, h about 33 km Dodecanese Islands.
Sep. 10 (243)	ePKP epPKP iPP ePPP F	16 02 33 16 04 58 16 06 06 16 09 28 16 40				(243) Wi: iPKP ₁ 16h 02m 32.5s +; iPKP ₂ 16h 02m 36.3s. USCGS: 21°1 S 179°2 W; H. 15h 43m 59.4s, h about 640 km. Fiji Islands.
Sep. 10 (244)						(244) Wi: ePKP 18h 08m 52s (-). USCGS: 17°5 S 173°6 W, H. 17h 49m 16.1s, h about 33 km. Tonga Islands region.
Sep. 12 (245)	eP ePS eL F	21 05 40 21 12 20 21 18.5 22 45				(245) Wi: eP 21h 05m 28s. USCGS: 36°5 N 69°2 E, H. 20h 57m 00.4s, h about 50 km Hindu Kush.
Sep. 14 (246)						(246) Wi: iPKP 18h 36m 56.5s -; iPKP 18h 38m 26s. USCGS: 19°9 S 177°6 W, H. 18h 17m 52.1s, h about 350 km. Fiji Islands.
Sep. 15 (247)	e F	8 22 8 30				(247) USCGS: 74°4 N 51°5 E, H. 8h 02m 13.9s, h = 0. Nova Zembla, nuclear explosion.
Sep. 15 (248)	eP iZ iS eSS eL F	23 02 40 23 02 47 23 12 30 23 17.5 23 28 24.5				(248) Wi: eP 23h 02m 35s; i 23h 02m 39s. USCGS: 48°5 N 156°8 E, H. 22h 50m 46.3s, h about 33 km. Kurile Islands.
Sep. 16 (249)	e F	11 18 11 25				(249) USCGS: 74°2 N 51°6 E, H. 10h 59m 10.5s, h = 0. Nova Zembla.

Seismic Records at De Bilt

Date 1962	Phase	Time			Direction	Period s	Amplitude μ	Remarks
		h	m	s				
Sep. 17 (250)							(250) Wi: iPKP 18h 14m 24.7s; epPKP 18h 16m 29s. USCGS: 21°0 S 179°1 W, H. 17h 55m 45.4s, h about 601 km. Fiji Islands	
Sep. 18 (251)	iP eS eSS eL F	0 41 0 51 0 57 1 03 3.5	30 47 20		-	6	3 (251) Wi: eP 0h 41m 34s. USCGS: 7°5 N 82°3 W, H. 0h 29m 05.2s, h about 33 km. South of Panama.	
Sep. 18 (252)	e F	8 49 8 55					(252) USCGS: 73°2 N 54°7 E, H. 8h 29m 07.7s, h = 0, Nova Zembla.	
Sep. 19 (253)	eP e eL F	11 07 11 13.0 11 20 11 45	06				(253) USCGS: 73°8 N 53°8 E, H. 11h 00m 56.4s, h = 0. Nova Zembla.	
Sep. 21 (254)	e F	8 20 8 30					(254) BCIS: 74½° N 52° E, H. 8h 01m 13s, h = 0. Nova Zembla.	
Sep. 21 (255)							(255) Wi: iPKP 15h 13m 29.0s. USCGS: 17°7 S 178°7 W, H. 14h 54m 51s, h about 536 km. Fiji Islands region.	
Sep. 22 (256)	eP eS eScS eSS eL F	7 02 7 12 7 12.9 7 16 7 26 8 30	54 00 37				(256) Wi: iP 7h 02m 43.0s (-). USCGS: 26°5 N 97°0 E, H. 6h 51m 32.3s, h about 33 km. Northern Burma.	
Sep. 23 (257)							(257) Wi: eP 16h 01m 28s. USCGS: 60°1 N 151°2 W, H. 12h 50m 46.4s, h about 86 km. Kenai Peninsula, Alaska.	
Sep. 24 (258)	eL F	15 20 15 40					(258) Wi: eP 14h 50m 22s. USCGS: 42°8 N 145°3 E, H. 14h 38m 21.7s, h about 33 km. Near east coast of Hokkaido, Japan.	
Sep. 25 (259)							(259) Wi: ePKP 0h 41.1m. USCGS: 55°6 S 124°3 W, H. 0h 21m 14.6s, h about 67 km. South Pacific Ocean.	
Sep. 27 (260)	eP eS eL F	8 09 8 14.3 8 22 8 45	23				(260) USCGS: 74°3 N 52°4 E, H. 8h 03m 16.4s, h = 0. Nova Zembla. Nuclear explosion.	
Sep. 27 (261)							(261) Wi: iPKP 13h 43m 45.0s +. USCGS: 17°6 S 178°9 W, H. 13h 25m 05.6s, h about 507 km. Fiji Islands.	
Sep. 28 (262)	eL F	19 19 19 40					(262) Wi: iP 19h 08m 15s -. USCGS: 5°2 N 76°2 W, H. 18h 56m 08.7s, h about 127 km. Western Colombia.	
Sep. 29 (263)							(263) Wi: eP 15h 30m 33s. USCGS: 27°0 S 63°6 W, H. 15h 17m 47.7s, h about 575 km. Santiago Del Estero Province, Argentina.	
Oct. 1 (264)							(264) Wi: 4h 15m 28s +. USCGS: 17°5 S 178°9 W, H. 3h 56m 52.0s, h about 550 km. Fiji Islands.	

Seismic Records at De Bilt

Date 1962	Phase	Time			Direction	Period s	Amplitude μ	Remarks
		h	m	s				
Oct. 1 (265)	eP eL F	12 22.0 12 35 13.2					(265) Wi: iP 12h 22m 00.5s -. USCGS: 27°9 N 54°9 E, H. 12h 13m 57.4s, h about 16 km. South east of Lar, Iran.	
Oct. 1 (266)							(266) Wi: iPKP 21h 02m 05s -. USCGS: 19°6 S 174°5 W, H. 20h 42m 36.5s, h about 143 km. Fiji Islands region.	
Oct. 3 (267)	e F	1 30 1 50					(267) Wi: eP 1h 25m 08s. USCGS: 40°5 N 29°7 W, H. 1h 16m 46.7s, h about 33 km. Azores Islands region.	
Oct. 3 (268)							(268) Wi: iPKP 17h 33m 19s; ipPKP 17h 33m 29s. USCGS: 21°0 S 168°4 E, H. 17h 13m 41.5s, h about 33 km. Loyalty Islands.	
Oct. 4 (269)	e F	0 10 0 20					(269) BCIS: foreshock of (272)	
Oct. 4 (270)	eP eS eL F	19 50 19 54 19 56 20 15	25 00				(270) Wi: eP 19h 50m 28s. USCGS: 38°3 N 22°7 E, H. 19h 46m 10.1s, h about 38 km. Gulf of Corinth, Greece.	
Oct. 5 (271)	e F	8 52 9 00					(271) USCGS: 40°7 N 29°8 W, H. 8h 39m 32.2s, h about 33 km. Azores Islands region.	
Oct. 6 (272)	eP eS eL F	3 22 3 27 3 30 3 55	41 22				(272) Wi: eP 3h 22m 51s. USCGS: 40°8 N 29°5 W, H. 3h 17m 07.2s, h about 33 km. Azores Islands region.	
Oct. 6 (273)	eP eL F	4 00 4 07 4 35	34				(273) Wi: eP 4h 00m 44s. USCGS: 40°5 N 29°5 W, H. 3h 54m 58.3s, h about 33 km. Azores Islands region.	
Oct. 6 (274)	ePKP ePP eSS eL F	4 42 4 46.1 5 19 5 31 7.0	48				(274) Wi: iPKP 4h 42m 55s. USCGS: 17°4 S 167°7 E, H. 4h 23m 24.1s, h about 33 km. New Hebrides Islands.	
Oct. 6 (275)							(275) Wi: iP 5h 51m 09s -. USCGS: 26°2 N 126°9 E, H. 5h 38m 40.3s, h about 122 km. Ryukyu Islands.	
Oct. 6 (276)	ePKP eL F	8 23.0 9 10 10 10					(276) Wi: ePKP 8h 23.0m. USCGS: 17°2 S 168°0 E, H. 8h 03m 31.7s, h about 33 km. New Hebrides Islands. Aftershock of (274)	
Oct. 6 (277)							(277) Wi: ePKP 11h 19m 55s; iPP 11h 23m 11s. USCGS: 13°3 S 167°3 E, H. 11h 00m 52.8s, h about 209 km. Banks Islands, New Hebrides Islands.	
Oct. 6 (278)	ePKP epPKP eL F	23 50 23 51 24 40 2.0	56 06				(278) Wi: ePKP 23h 50m 56s; epPKP 23h 51m 08s. USCGS: 17°5 S 167°6 E, H. 23h 31m 27.7s, h about 42 km. New Hebrides Islands.	
Oct. 7 (279)	e F	6 58 7 05					(279) USCGS: 40°5 N 29°2 W, H. 6h 45m 13.8s, h about 33 km. Azores Islands region.	

Seismic Records at De Bilt

Seismic Records at De Bilt

Date 1962	Phase	Time			Direction	Period	Amplitude	Remarks
		h	m	s				
Oct. 7 (280)	eL F	10	03				(280) USCGS: 49°2 N 29°2 W, H. 9h 49m 25.9s, h about 33 km. Azores Islands region.	
Oct. 8 (281)	eL F	5	25				(281) USCGS: 40°5 N 29°5 W, H. 5h 14m 20.4s, h about 33 km. Azores Islands region.	
Oct. 8 (282)	iP ePP eS eL F	22	09	03			(282) Wi: iP 22h 08m 59s -. USCGS: 24°3 N 121°7 E, H. 21h 56m 22.2s, h about 29 km. Near east coast of Formosa.	
Oct. 9 (283)							(283) Wi: eP 16h 07m 29s. USCGS: 36°4 N 71°3 E, H. 15h 59m 17.5s, h about 241 km. Hindu Kush.	
Oct. 9 (284)	ePP ePs ePPS eL F	20	35	10			(284) USCGS: 3°2 S 148°2 E, H. 20h 14m 38.3s, h about 33 km. Bismarck Sea.	
Oct. 10 (285)							(285) Wi: iPKP 9h 39m 27.5s (-). USCGS: 22°2 S 179°6 W, H. 9h 20m 40.8s, h about 558 km. Fiji Islands.	
Oct. 10 (286)	eL F	23	05				(286) USCGS: 15°1 S 173°3 W, H. 21h 52m 36.8s, h about 33 km. Samoa Islands region.	
Oct. 12 (287)							(287) Wi: eP 9h 20m 57s. USCGS: 27°4 N 129°1 E, H. 9h 08m 15.9s, h about 25 km Ryukyu Islands.	
Oct. 13 (288)	eP eS eL F	10	30	18			(288) Wi: eP 10h 30m 28s. USCGS: 35°5 N 49°8 E, H. 10h 23m 38.2s h about 33 km West of Teheran, Iran.	
Oct. 13 (289)	e F	20	02				(289) USCGS: 12°6 S 166°6 E, H. 18h 47m 44.5s, h about 33 km. Santa Cruz Island.	
Oct. 14 (290)	eL F	15	53				(290) USCGS: 31°8 N 131°5 E, H. 14h 08m 59.5s, h about 33 km. Near south coast of Kyushu.	
Oct. 16 (291)	eP eL F	18	14	22			(291) USCGS: 51°6 N 175°8 W, H. 18h 02m 32.9s, h about 27 km. Near Islands, Aleutian Islands.	
Oct. 21 (292)							(292) Wi: eP 2h 16m 11s. USCGS: 61°1 N 149°7 W, H. 2h 05m 22.7s, h about 80 km. Vicinity Anchorage, Alaska	
Oct. 22 (293)							(293) Wi: iPKP 1h 28m 24s. USCGS: 18°1 S 177°9 W, H. 1h 09m 50.9s, h about 612 km. Fiji Islands region.	
Oct. 22 (294)	ez eL F	9	19	10			(294) USCGS: 73°4 N 54°9 E, H. 9h 06m 10.1s, h = 0. Nova Zembla, nuclear explosion.	

Date 1962	Phase	Time			Direction	Period	Amplitude	Remarks
		h	m	s				
Oct. 22 (295)	eP eL F	15	35	20			(295) USCGS: 49°8 N 155°8 E, H. 15h 23m 32.9s, h about 19 km. Northern Kurile Islands.	
Oct. 25 (296)	eL F	21	25				(296) Disturbed by microseisms. USCGS: 61°4 S 154°9 E, H. 20h 06m 10.0s, h about 33 km. South east of Macquarie Islands.	
Oct. 26 (297)							(297) Wi: iP 11h 31m 30s (-). USCGS: 33°7 N 27°9 E, H. 11h 26m 12.4s, h about 33 km. Near Crete, Mediterranean Sea.	
Nov. 4 (298)	e F	23	45				(298) Wi: ePKP 23h 12m 31s. USCGS: 43°2 S 75°6 W, H. 22h 53m 34.2s, h about 33 km. Off coast of southern Chile.	
Nov. 6 (299)	eL F	0	33				(299) Disturbed by microseisms. Wi:eP 0h 17m 51s. USCGS: 28°0 N 55°6 E, H. 0h 09m 47.2s, h about 33 km. Southern Iran.	
Nov. 7 (300)	eL F	13	11				(300) Disturbed by microseisms. USCGS: 40°5 N 29°4 W, H. 12h 57m 45.7s, h about 33 km. Azores Islands.	
Nov. 9 (301)							(301) Wi: iP 1h 17m 51.5s (-). USCGS: 33°4 N 47°2 E, H. 1h 11m 02.1s, h about 33 km. Irak-Iran border region.	
Nov. 10 (302)	iP ipP eS eL F	1	45	20.0	+	4	(302) Wi: iP 1h 45m 14.3s +. USCGS: 43°8 N 147°2 E, H. 1h 33m 19.0s, h about 60 km. Kurile Islands	
Nov. 11 (303)	eL F	11	57				(303) Disturbed by microseisms. USCGS: 55°8 N 113°1 E, H. 11h 31m 44.5s, h about 33 km. Lake Baikal region.	
Nov. 11 (304)							(304) Wi: iPKP 12h 16m 28.0 (+). USCGS: 19°3 S 177°6 W, H. 11h 57m 47.9s, h about 547 km. Fiji Islands.	
Nov. 11 (305)	e(S) eL F	15	30	26			(305) Wi: iP 15h 23m 45.5s (-). USCGS: 17°2 N 40°7 E, H. 15h 15m 33.6s, h about 34 km. Red Sea.	
Nov. 11 (306)	ePP eL F	16	32	10			(306) Wi: iPKP 16h 29m 17.3s (+); epPKP 16h 29m 53s. USCGS: 12°9 S 166°5 E, H. 16h 09m 57.6s, h about 77 km. Santa Cruz Islands.	
Nov. 11 (307)	ePKP ePP eSKKS ePS eSS eL F	22	33.3	19			(307) USCGS: 43°2 S 76°0 W, H. 22h 14m 18.7s, h about 33 km. Off coast of Southern Chile.	

Seismic Records at De Bilt

Seismic Records at De Bilt

Date 1962	Phase	Time h m s	Direction	Period s	Amplitude μ	Remarks
Nov. 12 (308)	eL F	13 36 14 00				(308) Wi:iP 13h 01m 56s -. USCGS: 26°0 N 128°4 E, H. 12m 49s 10.8s, h about 40 km. Ryukyu Islands.
Nov. 14 (309)	eL F	8 30 8 55				(309) USCGS: 35°3 N 140°8 E, H. 7h 48m 05.5s, h about 61 km. Central Honshu, Japan.
Nov. 15 (310)	eL F	16 53 17.3				(310) USCGS: 38°3 S 73°2 W, H. 15h 51m 57.6s, h about 33 km. Central Chile.
Nov. 15 (311)	eL F	24 10 24 40				(311) Wi: iP 23h 38m 34.5s +. USCGS: 8°7 S 74°8 W, H. 23h 25m 15.7s, h about 45 km. Near coast of Northern Peru.
Nov. 16 (312)	eSS eL F	7 57.5 8 14 9.5				(312) Begin during change of papers. USCGS: 32°3 S 111°5 W, H. 7h 18m 37.3s, h about 43 km. Easter Islands region.
Nov. 16 (313)	iP ePP eS eL F	21 22 01 21 24.9 21 31 55 21 46 21 50	+	6	3	(313) Wi:iP 21h 21m 57s +. USCGS: 13°5 N 93°2 E, H. 21h 10m 01.8s, h about 33 km. Andaman Islands.
Nov. 23 (314)	e eL F	0 54.8 1 09 1.8				(314) USCGS: 15°1 S 75°3 W, H. 0h 30m 04.5s, h about 33 km. Near coast of Southern Peru.
Nov. 23 (315)						(315) Wi: iPKP 23h 24m 27.5s -. USCGS: 21°5 S 179°3 W, H. 23h 05m 47.4s, h about 609 km. Fiji Islands.
Nov. 24 (316)	eP eL F	16 29.6 16 40 17.0				(316) Wi: eP 16h 29m 41s. USCGS: 9°8 N 40°7 W, H. 16h 19m 44.9s, h about 33 km. Atlantic Ocean.
Nov. 26 (317)	eP eS eL F	5 38 25 5 49.2 5 56 6.5				(317) USCGS: 39°8 N 77°2 E, H. 5h 29m 30.2s, h about 14 km. Sinkiang Province, China.
Nov. 26 (318)						(318) Wi: iPKP 16h 18m 39.2s (-). USCGS: 23°8 S 175°8 W, H. 15h 38m 46.2s, h about 19 km. Tonga Islands.
Nov. 27 (319)						(319) Wi: iP 7h 05m 17.0s +. USCGS: 25°1 N 122°9 E, H. 6h 52m 57.8s, h about 148 km. Ryukyu Islands.
Nov. 27 (320)	e L	13 05 13 30				(320) USCGS: 14°9 N 119°9 E, H. 12h 07m 12.7s, h about 35 km. Near west coast of Luzon, Philippine Islands.
Nov. 29 (321)						(321) Wi: ePKP 9h 23m 38s. USCGS: 22°3 S 175°9 W, H. 9h 03m 51.1s, h about 33 km. Tonga Islands.
Nov. 29 (322)	ePKP ePP ePPS eSS eL F	19 25.1 19 29.7 19 41 46 19 48 20 05 21.5				(322) USCGS: 17°3 S 168°5 E, H. 19h 06m 37.6s, h about 33 km. New Hebrides Islands.

Date 1962	Phase	Time h m s	Direction	Period s	Amplitude μ	Remarks
Nov. 30 (323)	eP ePP eS eL F	22 04 08 22 07 15 22 14 32 22 37 23.0				(323) USCGS: 17°4 N 99°6 W, H. 21h 51m 22.9s, h about 51 km. Guerrero, Mexico.
Dec. 1 (324)	eP eL F	2 02.0 2 33 3:0				(324) USCGS: 52°4 N 170°1 W, H. 1h 50m 20.4s, h about 38 km. Fox Islands, Aleutian Islands.
Dec. 1 (325)						(325) Wi: ePKP 21h 21m 21s. USCGS: 17°7 S 178°7 W, H. 21h 02m 51.8s, h about 620 km. Fiji Islands region.
Dec. 4 (326)	eL F	18 00 18.5				(326) USCGS: 16°5 S 172°8 W, H. 16h 40m 06.0s, h about 33 km. Samoa Islands region.
Dec. 7 (327)	eL F	10 13 10 30				(327) Wi: eP 9h 46m 46s. USCGS: 38°0 N 106°3 E, H. 9h 36m 01.5s, h about 33 km. Central China.
Dec. 7 (328)	iP epP esP ePP esPP eSKS eS ePS esSKS eSS ePS eL F	14 15 50 14 17 28 14 18 10 14 19 31 14 21 30 14 25 40 14 26 00 14 27 12 14 28 42 14 29.0 14 30.0 14 40 15.5	-	4	4	(328) Wi: iP 14h 15m 47.5s (+); epP 14h 19m 20s. USCGS: 29°2 N 139°2 E, H. 14h 03m 37.0s, h about 411 km. Bonin Islands region.
Dec. 8 (329)	eL F	19 25 19 50				(329) Disturbed by microseisms. Wi:ePKP 18h 38.4s. USCGS: 15°2 S 173°7 W, H 18h 18m 29.1s, h about 33 km. Tonga Islands region.
Dec. 8 (330)	eP F	21 40 23.5				(330) Disturbed by microseisms. Wi:eP 21h 39.9m; epP 21h 42.2m; ePP 21h 43m 59s. USCGS: 25°8 S 63°4 W, H. 21h 27m 22.2s, h about 620 km. Salta-Santiago Del Estero Provinces border, Argentina.
Dec. 8 (331)						(331) Wi:iP 23h 06m 55s -. USCGS: 50°0 N 176°8 W, H. 22h 55m 01.2s, h about 33 km. Andreanof Islands, Aleutian Islands.
Dec. 12 (332)						(332) Wi: ePKP 10h 28m 13s. USCGS: 4°8 S 153°8 E, H. 10h 08m 48.5s, h about 94 km. New Britain.
Dec. 12 (333)						(333) Wi: eP 23h 09m 31s. USCGS: 4°6 N 96°5 E, H. 22h 56m 45.8s, h about 138 km. Sumatra.
Dec. 20 (334)						(334) Wi: iPKP 9h 06m 17s +. USCGS: 23°4 S 179°3 E, H. 8h 47m 23.2s, h about 512 km. Fiji Islands region.

Seismic Records at De Bilt

Date 1962	Phase	Time h m s	Direction	Period s	Amplitude μ	Remarks
Dec. 21 (335)	eL F	1 39 2 10				(335) USCGS: 9°0 S 112°4 E, H. 0h 44m 19.7s, h about 64 km. Near south coast of Java.
Dec. 21 (336)						(336) Wi: eP 8h 54m 31s. USCGS: 52°4 N 168°5 W, H. 8h 42m 48.3s, h about 33 km. Fox Islands, Aleutian Islands.
Dec. 21 (337)	ePP ePPP	9 24 30 9 26.0				(337) Wi: iP 9h 21m 46s. Disturbed by microseisms. USCGS: 52°5 N 168°5 W, H. 9h 10m 01.6s, h about 33 km. Fox Islands, Aleutian Islands.
Dec. 21 (338)						(338) Wi: iP 9h 45m 13s +. USCGS: 42°4 N 142°3 E, H. 9h 33m 15.5s, h about 27 km. Near south coast of Hokkaido, Japan.
Dec. 22 (339)	iPKP F	1 12 11 1 15				(339) Wi: iPKP 1h 12m 05s. USCGS: 22°0 S 170°1 E, H. 0h 52m 23.4s, h about 33 km. Loyalty Islands region.
Dec. 22 (340)	eL F	2.0 3.5				(340) Wi: iPKP 1h 48m 30s. USCGS: 21°9 S 170°1 E, H. 1h 28m 48.9s, h about 33 km. Loyalty Islands region.
Dec. 22 (341)	iP eS eL F	15 32 13 15 42.0 16.0 17.0				(341) Wi: eP 15h 32m 13s. USCGS: 52°5 N 168°8 W, H. 15h 20m 31.0s, h about 47 km. Fox Islands, Aleutian Islands.
Dec. 24 (342)	e F	11 26 11 40				(342) USCGS: 73°6 N 57°5 E, H. 11h 11m 42.0s, h = 0 km. Nova Zembla, nuclear explosion.
Dec. 24 (343)						(343) Wi: ePKP 12h 00m 26.5s. USCGS: 22°0 S 170°1 E, H. 11h 40m 46.7s, h about 33 km. Loyalty Islands region.
Dec. 25 (344)	e F	13 52 14 02				(344) BCIS: 73°N 52°E, H. 13h 36.3s. Nova Zembla, nuclear explosion.
Dec. 26 (345)						(345) Wi: 6h 23m 20.5s. USCGS: 12°8 N 60°9 W, H. 6h 12m 26.5s, h about 32 km. Windward Islands.
Dec. 26 (346)	eP eS eL F	9 02.0 9 05 9 06 9.25				(346) Wi: eP 9h 02m 24.5s. USCGS: 39°3 N 10°6 W, H. 8h 58m 11.1s, h about 19 km. Off coast of Portugal.
Dec. 26 (347)	iP iS ePS eSS eL F	22 36 47 22 46 18 22 47 00 22 51.0 23 02 25.0				(347) Wi: eP 22h 36m 43s (+). USCGS: 23°9 N 65°4 E, H. 23h 25m 15.5s, h about 33 km. Komandorskie Islands.
Dec. 26 (348)						(348) Wi: eP 23h 34m 28s. USCGS: 23°9 N 65°4 E, H. 23h 25m 16.7s, h about 34 km. Arabian Sea.

Seismic Records at De Bilt

Date 1962	Phase	Time h m s	Direction	Period s	Amplitude μ	Remarks
Dec. 26 (349)						(349) Wi: iP 23h 57m 42s; i 23h 57m 52s. USCGS: 54°0 N 168°8 E, H. 23h 46m 14.7s, h about 33 km. Komandorskie Islands.
Dec. 27 (350)	e F	19 01 19 20				(350) Wi: iP 18h 30m 49.0s (+) USCGS: 39°9 N 142°0 E, H. 18h 18m 42.0s, h about 36 km. Near west coast of Southern Honshu, Japan.
Dec. 29 (351)	eL F	8 40 8 45				(351) USCGS: 23°9 N 65°2 E, H. 8h 04m 25.7s, h about 33 km. Afghanistan.
Dec. 29 (352)	iP iPP eSKS eL F	10 54 32 10 58 26 11 05 02 11 30 12.3				(352) USCGS: 20°0 S 69°9 W, H. 10h 41m 04.1s, h about 46 km. Northern Chile.
Dec. 29 (353)	ePKP ePP eSS eL F	15 07 36 15 11 50 15 13.9 16 15 17.3				(353) USCGS: 31°2 S 177°9 W, H. 14h 47m 41.4s, h about 43 km. Kermadec Islands region.