

M.O. 569

AIR MINISTRY, METEOROLOGICAL OFFICE, LONDON.

KEW OBSERVATORY, RICHMOND, SURREY, ENGLAND.

SEISMOLOGICAL BULLETIN FOR JANUARY, 19 53

Lat. 51° 28' 6" N, Long. 0° 18' 47" W, Height above M.S.L. 5m.

LITHOLOGIC FOUNDATION : RIVER GRAVEL RESTING ON LONDON CLAY.

INSTRUMENTS : (I) GALITZIN APERIODIC SEISMOGRAPHS, PHOTO-GALVANOMETRIC REGISTRATION, THREE COMPONENTS.

CONSTANTS : FOR NOTATION SEE FÜRST B. GALITZIN "VORLESUNGEN ÜBER SEISMOMETRIE"

(LEIPZIG, 1914) OR G. W. WALKER "MODERN SEISMOLOGY" (LONDON, 1913).

COMPONENT.	DATE FROM WHICH CONSTANTS APPLY.	GALVANOMETER FREE PERIOD T ₁ sec.	PENDULUM FREE PERIOD T. sec.	DAMPING CONSTANT μ ² .	$\frac{Ah}{\pi}$ sec. ⁻¹
N.	23 July 1951	21.6	23.3	+0.05	52.8
E.	26 July 1951	17.4	18.7	+0.01	66.7
Z.	2 August 1951	14.1	11.8	+0.18	143.

(H) VERTICAL SEISMOGRAPH, PERIOD 1.5 SECS., DIRECT OPTICAL REGISTRATION (ZV.).

TIME SERVICE : MINUTE TIME-MARKS ARE MADE ELECTROMAGNETICALLY BY CONTACT CLOCK.

TIME COMPARISONS ARE MADE DAILY WITH SIGNALS FROM GREENWICH OBSERVATORY.

SEISMOMETRIC READINGS CAN BE DETERMINED TO THE NEAREST SECOND.

DATE.	COMPT.	PHASE.	G.M.T.			PERIOD.	AMPLI- TUDE.	Δ	REMARKS.
			h.	m.	s.				
2	Z	e	11	30	07			Microseisms.	
	ZNE	eL	12	10	-				
		F		30	-				
3	Z	e	18	27	06			Microseisms.	
	ZNE	eL		50	-				
	N	M	19	02	39	19	+ 2		
		F		30	-				
4	ZNE	e	12	30	-			Microseisms.	
		F	13	00	-				
✓ 5	ZV,	iP	08	00	08		8,220	ZNE, e. Microseisms. Komandorskie Islands region. 54°N, 170°E. (U.S.C.G.S).	
	ZV,Z	iPcP		00	18				
	ZV,	e		01	21				
	ZV,ZNE	ePP		02	55				
	ZNE	eS		09	42				
	NE	e		12	26				
	NE	iSS		14	41				
	ZNE	eL		20	-				
	N	M		25	07	41	-250		
	E	M		37	59	18	-65		
Z	M		41	27	14	-35			
	F		-	-	-				
✓ 5	ZV,ZNE	iP	10	18	27		8,510	Compression. Microseisms. Depth about 60Km. Kurile Islands. 49°N, 156°E. (U.S.C.G.S).	
	ZV,Z	iP		18	33				
	ZNE	iSP		18	46				
	ZNE	i		19	26				
	ZNE	ePP		21	20				
	NE	eS		28	16				

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DATE.	COMPT.	PHASE.	G.M.T.			PERIOD.	AMPLI- TUDE.	Δ	REMARKS.	
			h.	m.	s.					sec.
contd ✓ 5	ZNE	e(PPS)	10	30	14					
	ZNE	eSS		33	32					
	ZNE	e		37	44					
	ZNE	eL		43	-					
	Z	M		57	17	19	-30			
	E	M		57	26	17	-35			
	N	M		58	08	18	-50			
		F	14	30	-					
7	ZNE	e	00	08	05				Microseisma.	
	ZNE	e		08	53					
	ZNE	e		09	18					
	Z	e		09	52					
	ZNE	e(L)		10	55					
	N	M		11	18	15	+17			
		F		50	-					
✓ 7	ZV, Z	eP	01	23	03			2,035	Microseisms.	
	ZNE	iS		26	25				Repetition.	
	ZNE	eSS		27	17					
	ZNE	e(L)		28	-					
	N	M		28	47	15	+18			
		F	02	00	-					
7	NE	e(S)	06	10	12				Microseisms.	
	ZNE	eL		25	-					
		F	07	30	-					
7	ZNE	eL	12	35	-					
		F	13	20	-					
✓ 7	ZV,	iPKP	14	27	50				New Britain.	
	ZNE	ePP		29	37				5½°S, 150½°E. (U.S.C.G.S).	
	ZNE	ePPP		31	13					
	ZNE	eL	15	07	-					
	Z	M		25	17	22	+9			
	N	M		25	30	22	+11			
		F		16	45	-				
9	ZNE	e	17	10	-					
		F		50	-					
10	ZNE	e	23	35	-				Microseisms.	
		F		50	-					
✓ 11/12	ZV, ZNE	iP	23	03	25			6,540	Microseisms.	
	ZNE	i		03	31				Yukon, Canada. 65°N, 133°W.	
	ZNE	iPP		05	44				(U.S.C.G.S).	
	ZNE	iS		11	30					
	ZNE	ePS		11	46					
	ZNE	eSS		15	32					
	ZNE	eSSS		17	53					
	ZNE	eL		20	-					
	N	M		27	56	18	-16			
	E	M		28	12	17	+16			
	Z	M		28	28	17	-15			
		F		01	00	-				

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DATE.	COMPT.	PHASE.	G.M.T.			PERIOD.	AMPLITUDE.	Δ	REMARKS.	
			h.	m.	s.					sec.
12	ZV,ZNE	iP	17	35	29			8,260	Dilatation. Kurile Islands . 49½°N, 156°E. Depth about 60Km. (U.S.C.G.S).	
	ZV,ZNE	iPcP		36	02					
	ZV,ZNE	iP		36	14					
	ZNE	ePP		38	24					
	ZNE	ePPP		40	42					
	ZNE	eS		45	06					
	ZNE	ePS		45	54					
	ZNE	ePPS		46	10					
	NE	e		47	30					
	NE	eSS		50	18					
	ZNE	eL			52					
	E	M		18	10	53	22			-25
	N	M			16	23	22			+21
Z	M			17	31	17	+10			
	F		20	30	-					
13	NE	e	11	10	24					
	ZNE	eL		22	-					
		F		35	-					
15	ZNE	e	12	55	-					
		F	14	10	-					
15	ZNE	e	20	30	-					
		F	21	15	-					
16	ZNE	e	15	15	-					
		F		30	-					
16	ZNE	e	16	40	-					
		F		55	-					
19	NE	e(S)	05	20	01			Microseisms.		
	ZNE	eL		35	-					
	E	M		44	56	20	+6			
		F	06	30	-					
19	ZNE	e	15	50	-			Microseisms.		
		F	16	20	-					
20	ZNE	ePP	17	52	21			Microseisms. doubtful.		
	ZNE	ePS	18	02	02					
	ZNE	ePPS		02	33					
	ZNE	eL		20	-					
	N	M		43	16	22	+ 9			
	F		19	25	-					
21	N	e(S)	02	04	33			Microseisms.		
	ZNE	eL		15	-					
		F	03	15	-					
25	E	e	20	08	35			Microseisms.		
	ZNE	eL		15	-					
		F	21	20	-					
27	N	e	03	40	(02)			Doubtful. No ZV record.		
	E	e		50	28					
	ZNE	eL		55	-					
	E	M	04	01	16	18	-12			
		F	05	30	-					

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			h.	m.	s.				
29	ZNE	eL F	10 11	05 30	- -				Microseisms.
30/31	ZV, Z ZV, ZNE	iPKP iPP	22	06 09	15 13				Microseisms.
	ZNE	eSKKS		15	17				
	ZNE	e(SS)		30	35				
	ZNE	eL		50	-				
	N	M F	23 00	02 30	47 -	24	- 6		
31	ZNE	e F	22	30 40	- -				Microseisms.

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Lat. 51° 28' 6" N, Long. 0° 18' 47" W, Height above M.S.L. 5m.

LITHOLOGIC FOUNDATION: RIVER GRAVEL RESTING ON LONDON CLAY.

INSTRUMENTS: (I) GALITZIN APERIODIC SEISMOGRAPHS, PHOTO-GALVANOMETRIC REGISTRATION, THREE COMPONENTS.

CONSTANTS: FOR NOTATION SEE FÜRST B. GALITZIN "VORLESUNGEN ÜBER SEISMOMETRIE"
(LEIPZIG, 1914) OR G. W. WALKER "MODERN SEISMOLOGY" (LONDON, 1913).

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N.	23 July 1951	21.6	23.3	+0.05	52.8
E.	26 July 1951	17.4	18.7	+0.01	66.7
Z.	2 August 1951	14.1	11.8	+0.18	143.

(II) VERTICAL SEISMOGRAPH, PERIOD 1.5 SECS., DIRECT OPTICAL REGISTRATION (ZV).

TIME SERVICE: MINUTE TIME-MARKS ARE MADE ELECTROMAGNETICALLY BY CONTACT CLOCK.
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			h.	m.	s.				
2	ZNE	eL F	10	15	-				Microseisms.
4	ZV, Z	iP	10	57	35				Microseisms. North Atlantic Ocean. 37½°N, 19½°W. (U.S.C.G.S.)
	NE	e	11	01	25				
	ZNE	e(L)		04	-				
		F		25	-				
5	ZV	eP	22	47	11				Doubtful. West coast of Crete. 35½°N, 23¼°E. (B.C.I.S.)
	ZNE	e		51	24				
	ZNE	e		51	31				
	ZNE	eL		54	-				
	N	M		56	48	18	- 5		
		F		23	10	-			
6	ZNE	e	06	18	00				Small.
		F		45	-				
6	ZNE	e	13	05	-				Small.
		F		20	-				
6	ZV, Z	iP	13	25	20			8,910	NE, e. Near south east coast of Hokkaido, Japan. 42½°N, 143½°E. (U.S.C.G.S.) Well marked on E.
	ZNE	ePcP		25	36				
	ZNE	ePP		28	24				
	NE	eS		35	29				
	ZNE	ePS		35	59				
	ZNE	e(SS)		42	13				
	ZNE	eSSS		45	17				
	ZNE	eL		53	-				
	E	M		14	00	31	21	-33	
	N	M			01	41	22	+20	
Z	M			07	26	18	-14		
	F		16	30	-				

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			h.	m.	s.				
6	ZNE	e F	20	00 15	- -				Small.
U 7	ZV,Z ZNE ZNE ZNE ZNE ZNE N	iP eS ePS eSS eSSS eL M F	18	35 44 45 50 53	18 57 05 37 54			8,320	Kurile Islands 49°N, 156°E. (U.S.C.G.S.)
			19	03	-				
			20	15	-	18	+ 7		
7	ZV,Z ZNE ZNE N	iP eS eL M F	22	36 40 44 47	24 50 -	14	- 2	2,850	Compression. NE, e. Crete. 35½°N., 24½°E. (U.S.C.G.S.)
			23	15	-				
9	ZNE	e F	15 16	35 30	- -				Microseisms.
9	NE ZNE	e eL F	22 23	11 18 00	07 -				Microseisms.
10	NE ZNE	e L F	07 08 09	55 40 10	10 -				Microseisms.
11/12	E	e F	22 00	50 05	- -				Small.
J 12	ZV,ZNE ZV,ZNE ZV,ZNE ZV,ZNE Z ZNE ZNE ZNE ZNE N Z E	iP iPP e i i i(s) iSS e eL M M M F	08	23 25 25 25 26 28 31 35 40 44 48 49	30 08 23 57 59 49 44 01 -	20 14 15	-35 -18 -13	(3,665)	Dilatation. Northern Iran. 35°N., 54½°E. (U.S.C.G.S.)
			11	30	-				
13	ZNE	e F	23	30 50	- -				Small.
14	ZNE ZNE ZNE ZNE ZNE	eP e(s) e e eL F	08	48 53 54 54 55	30 08 02 07 -			(3,010)	Microseisms.
			09	10	-				
14	ZNE ZNE ZNE N	e e eL M F	08	09 16 37 49	18 09 -	22	+ 2		Microseisms.
			23	30	-				

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			h.	m.	s.				
15	ZNE	e F	06	37	-				Small.
15	ZNE	e F	22	23	-				Small.
16	ZV, ZNE	e eL F	01	12	27				Small.
19	ZV,ZNE	iP	15	27	07			5,950	Compression.
	ZV,ZNE	i		27	40				
	ZV,ZNE	iPP		29	38				
	ZNE	e		30	57				
	ZNE	iS		34	38				
	NE	iPS		35	03				
	NE	eSS		40	21				
	ZNE	eL		42	-				
	E	M		53	03	16	+20		
	N	M		53	55	14	-18		
	Z	M		54	04	13	+13		
		F	18	00	-				
22	ZV, ZV, ZV, ZV,Z E	eP e e e e(S)	20	17	55				Microseisms. Hersfeld region, Germany. 50°9 N., 10°0 E. (B.C.I.S.)
	ZV,ZNE	e		18	29				
	ZV,ZN	e		18	37				
	ZNE	e(L)		19	09				
		F		19	29				
				20	20				
				21	03				
				21.5	-				
				25	-				
22	NE	e F	22	10	-				Microseisms.
23	ZNE	eL F	01	22	-				Microseisms.
23	ZNE	e F	04	20	-				Microseisms.
23	ZNE	eL F	13	26	-				Microseisms.
25	ZV,Z NE ZNE N	eP eS eL M F	21	27	34			8,020	Microseisms.
				36	51				
				47	-				
				55	17	24	- 6		
			23	55	-				
26	Z Z ZNE ZNE ZNE ZNE ZNE ZNE ZNE	eP ePP ePPP e eSS ePSS e eSSS eL	12	02	00				Microseisms, doubtful.
				05	52				
				07	09				
				17	46				
				22	38				
				23	04				
				23	20				
				27	38				
				33	-				

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			h.	m.	s.	sec.	μ	km.	
26	N	M	12	57	40	24	+25		
	E	M	13	02	02	21	+20		
	Z	M		02	09	18	+22		
		F	14	45	-				
26	ZNE	eL	16	37	-				Microseisms.
		F	17	15	-				
28	ZNE	eL	05	05	-				Microseisms.
		F		30	-				
28	ZNE	eL	22	40	-				Microseisms.
		F	23	05	-				

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			h.	m.	s.				
1	ZNE	e F	18	14	-				Small.
				40	-				
2	ZNE	e F	03	20	-				Small.
				45	-				
2	NE	e F	19	30	-				Small.
			20	00	-				
3	ZV,ZNE	iPKP	11	46	51		(6,000)		Microseisms.
	ZV,Z	i		46	59				Loyalty Islands
	ZV,	i		47	36				20°S., 169°E (U.S.C.G.S)
	ZV,ZNE	i		48	03				Possibly SKP.
	ZNE	ePP		51	21				
	ZNE	eSKKS		59	55				
	ZNE	ePPS	12	05	28				
	ZNE	eSS		09	25				
	ZNE	eSSS		15	41				
	ZNE	e		23	17				
	ZNE	eL		32	-				
	N	M		52	00	25	+ 11		
		F	15	30	-				
3/4	ZV, ZNE	iP eL F	23	06	01				Microseisms.
				35	-				
			00	30	-				
4	ZNE	e F	01	20	-				Small.
			02	15	-				

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			h.	m.	s.				
4	ZNE	eL	15	32	-				
		F	16	15	-				
5	Z	eP	19	23	48				
	ZNE	eL		47	-				
		F	20	15	-				
5	ZV,Z	iP	21	13	08			9,490	Compression. eNE. Near south coast of Kamchatka. 51°N., 158°E. Depth about 60 Km.
	ZNE	eS		23	44				
	ZNE	e(SSS)		32	43				
	ZNE	eL		37	-				
	N	M	22	14	24	18	+ 9		
	E	M		14	58	18	- 5		
	Z	M		18	26	18	- 5		
		F	23	30	-				
6	ZNE	e	20	45	-				Small.
		F	21	15	-				
9	NE	e(PKP)	10	33	02				Microseisms.
	ZNE	eL		57	-				
	N	M	11	10	13	24	+ 3		Work in progress.
		F	-	-	-				
10	ZV,ZNE	ePKP	06	18	36				Microseisms.
	ZNE	eL	07	10	-				
		F	08	15	-				
10	ZNE	e(S)	22	22	16				Microseisms.
	NE	e		25	09				
	ZNE	eL		33	-				
	N	M		46	03	30	+ 7		
		F	23	25	-				
13	ZV, NE NE ZNE	eP	05	31	08			2820	Microseisms.
		eS		35	32				
		eSS		36	04				
		eL		39	-				
		F	06	00	-				
14	Z NE ZNE N	iP	17	19	02			8,150	NE, e.
		eS		28	32				
		eL		53	-				
		M	18	09	58	18	- 9		
			F	19	20	-			
15	ZNE	e	03	38	-				Small.
		F		50	-				
15	ZNE	e	14	30	-				Small.
		F		50	-				
16	ZNE	e	09	45	-				Small.
		F	10	05	-				
16	ZNE	e	18	03	-				Small.
		F		20	-				

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			h.	m.	s.				
17	ZNE	eL F	07 08	18 00	- -				
17	ZNE	eL F	12 14	35 30	- -				
✓ 18/19	ZV,ZNE ZV,ZNE ZV,ZNE ZV,ZNE ZV,ZNE ZV, ZV, ZNE Z N E	iP i i(PP) i(PPP) iS i(SS) i(SSS) eL M M M F	19	11 11 11 12 15 15 16 16 18 (21) (21) (21)	12 20 49 41 23 41 23 52 - - -			2620	Compression. Western Anatolia. 40.0°N., 27.2°E. (B.C.I.S). { Maxima very faint.
✓ 19	ZV,ZNE ZV,ZNE ZV,ZNE ZV,ZNE ZV,ZNE ZNE ZNE ZNE ZNE ZNE E N Z	iP i ipP isP e eS e esS esS e eL M M M F	08	37 38 38 38 42 46 46 48 53 55 57 09 09 09	55 02 25 37 29 11 53 29 27 27 - 49 53 59			(7,000)	Compression. Deeper focus than normal.
						19 21 24	- 70 - 35 -100		
19	ZNE	e F	13	05 20	- -				Small.
19	ZNE ZNE ZNE	eP e(s) eL F	21	23 26 28 40	07 26 - -				
20	ZNE	e F	01 02	10 15	- -				Small.
20	ZNE	e F	06 07	40 15	- -				Small.
21	ZNE	e F	02	10 30	- -				
21	ZV, ZNE ZNE	i e eL F	19	43 43 44 55	08 27 - -				Small.
22	ZNE	e F	05 06	35 00	- -				Small.

KEW OBSERVATORY, RICHMOND, SURREY, ENGLAND.

SEISMOLOGICAL BULLETIN.

MARCH, 19 53

DATE.	COMPT.	PHASE.	G.M.T.			PERIOD.	AMPLI- TUDE.	Δ	REMARKS.
			h.	m.	s.				
23	ZN	e	13	14	31				Small.
	ZNE	eL		20	-				
		F	14	10	-				
24	ZNE	e	20	33	29				Small.
		F		45	-				
24	ZNE	e	21	31	27				Small.
	ZNE	eL		34	-				
		F		50	-				
25	-	-	-	-	-				Clock stopped, 04h 07m to 10h 20m
26	ZNE	eL	02	55	-				
		F	03	40	-				
26	ZNE	eL	05	50	-				Small.
		F	06	15	-				
26	ZNE	e	15	21	-				Microseisms.
		F		30	-				
31	ZNE	e	01	00	-				Microseisms.
		F		20	-				

AIR MINISTRY, METEOROLOGICAL OFFICE, LONDON.

KEW OBSERVATORY, RICHMOND, SURREY, ENGLAND.

SEISMOLOGICAL BULLETIN FOR APRIL, 19 53

Lat. 51° 28' 6" N, Long. 0° 18' 47" W, Height above M.S.L. 5m.

LITHOLOGIC FOUNDATION : RIVER GRAVEL RESTING ON LONDON CLAY.

INSTRUMENTS : (I) GALITZIN APERIODIC SEISMOGRAPHS, PHOTO-GALVANOMETRIC REGISTRATION, THREE COMPONENTS.

CONSTANTS : FOR NOTATION SEE FÜRST B. GALITZIN "VORLESUNGEN ÜBER SEISMOMETRIE"

(LEIPZIG, 1914) OR G. W. WALKER "MODERN SEISMOLOGY" (LONDON, 1918).

COMPONENT.	DATE FROM WHICH CONSTANTS APPLY.	GALVANOMETER FREE PERIOD T. sec.	PENDULUM FREE PERIOD T. sec.	DAMPING CONSTANT μ^2 .	$\frac{Ah}{wI}$ sec. ⁻¹
N.	23 July 1951	21.6	23.3	+0.05	52.8
E.	26 July 1951	17.4	18.7	+0.01	66.7
Z.	2 August 1951	14.1	11.8	+0.18	143.

(II) VERTICAL SEISMOGRAPH, PERIOD 1.5 SECS., DIRECT OPTICAL REGISTRATION (ZV).

TIME SERVICE : MINUTE TIME-MARKS ARE MADE ELECTROMAGNETICALLY BY CONTACT CLOCK.

TIME COMPARISONS ARE MADE DAILY WITH SIGNALS FROM GREENWICH OBSERVATORY.

SEISMOMETRIC READINGS CAN BE DETERMINED TO THE NEAREST SECOND.

DATE.	COMPT.	PHASE.	G.M.T.			PERIOD. sec.	AMPLI- TUDE. μ	Δ km.	REMARKS.
			h.	m.	s.				
1	ZNE	e	01	56	49				Microseisms.
		F	02	10	-				
1	ZNE	e	12	05	-				Microseisms.
		F		20	-				
2	ZNE	e	04	30	11	28	- 5		Microseisms; doubtful. New Britain 5°S, 151½°E. Depth about 60Km. (U.S.C.G.S).
	NE	e(SSS)		37	03				
	ZNE	eL		55	-				
	N	M	05	05	21				
3	ZNE	e	05	35	-				Microseisms.
		F	06	10	-				
4	NE	e(S)	06	15	49	16	- 6		Microseisms.
	ZNE	eL		33	-				
	N	M		47	56				
		F	07	30	-				
5	ZNE	eL	11	02	-				
		F		30	-				
6	ZV, Z	iPKP	00	55	07	40	- 9	(13,000)	Dilatation. Microseisms. Banda Sea. 7°S., 132°E. (U.S.C.G.S).
	ZV, Z	i		55	32				
	Z	i(PP)		55	45				
	ZNE	e(SS)	01	13	05				
	NE	e(SSS)		21	17				
	ZNE	eL		35	-				
	N	M		41	55				
		F	02	30	-				

M.O. 569

KEW OBSERVATORY, RICHMOND, SURREY, ENGLAND.

SEISMOLOGICAL BULLETIN.

APRIL, 19 53

DATE.	COMPT.	PHASE.	G.M.T.			PERIOD.	AMPLITUDE.	Δ	REMARKS.
			h.	m.	s.				
6	ZNE	e F	04 05	43 10	- -				
6	ZNE	eL F	12 13	55 30	- -				
8	Z ZNE	e eL F	00 01	26 25	35 -				
12	NE	e F	21	12 30	- -				Small.
14	ZV,ZNE	iP	13	41	00			(9,500)	Western Brazil 7½°S., 71½°W. Depth about 650 Km. (U.S.C.G.S).
	ZNE	iP		43	08				
	ZNE	iSP		44	09				
	Z	ePPP		46	48				
	ZNE	iSKS		50	20				
	ZNE	iS		50	31				
	ZNE	i(SP)		51	33				
	ZNE	esS		54	24				
	ZNE	eSS		56	36				
	ZNE	eL	14	00	-				Poorly developed.
	E	M		03	38	19	- 10		
	ZV,Z	i F		09 30	33 -				
15	ZNE	e F	01 02	55 20	- -				
17	ZV,Z ZV, ZNE	iP i eL F	00	15 15 45 20	33 46 - -				Microseisms. Northern Peru. 5°S., 77°W. (U.S.C.G.S).
17	Z ZNE N	e(P) eL M F	11 12 13	41 07 25 25	(31) - 21 -	18	+ 1		Microseisms.
18	ZNE	eL F	04 05	22 20	- -				Microseisms.
19	ZNE	eL F	00 02	10 00	- -				Small.
19	ZNE	e F	16 17	38 10	- -				Small.
19/20	ZNE	e F	22 00	30 10	- -				Small.
20	ZNE	e F	12 13	20 05	- -				Small.
20	NE ZNE	e e(L) F	20 21	02 37 05	36 - -				Small.

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KEW OBSERVATORY, RICHMOND, SURREY, ENGLAND.

SEISMOLOGICAL BULLETIN.

APRIL, 19 53

DATE.	COMPT.	PHASE.	G.M.T.			PERIOD.	AMPLI- TUDE.	Δ	REMARKS.
			h.	m.	s.				
21	ZNE	e F	18	02	-				Small.
			19	00	-				
21	ZNE	e F	22	00	20				Small.
				20	-				
22	Z	ePKP	10	22	40			(19,000)	
	Z	e		23	18				
	Z	e		23	55				
	Z	e(PP)		27	44				
	Z	eSKS		29	52				
	NE	e		55	18				
	NE	eSSS		58	14				
	ZNE	eL	11	45	-				Small.
		F	13	15	-				
23	ZV,Z	eP	04	02	18				
	ZV,Z	ePP		04	54				
	ZNE	e(S)		11	31				Doubtful.
	ZNE	e		14	08				
	ZNE	eL		20	-				
		F	05	15	-				
23	ZV,Z	iPKP	16	43	44			(13,500)	Region of New Britain
	ZV,	i		44	21				4°S., 154°E. (U.S.C.G.S).
	ZNE	iPP		45	53				
	ZV,ZNE	ePPP		47	24				
	ZNE	ePS		55	24				
	ZNE	ePPS		57	44				
	ZNE	e(PSS)	17	03	16				
	ZNE	eSSS		07	38				
	ZNE	eL		15	-				
	E	M		33	12	25	+130		
	Z	M		33	44	28	-80		
	N	M		35	26	26	+170		
		F	21	30	-				
24	ZV,ZNE	iP	02	15	18				Phases doubtful.
	ZNE	e(PP)		16	18				Probably deeper than normal.
	ZV,ZNE	e(PcP)		17	44				Off Western coast of
	ZNE	e(S)		19	50				Spitzbergen 76½°N, 6°E.
	ZNE	e		20	49				(U.S.C.G.S).
	ZNE	e(L)		22	26				
		F		55	-				
25	ZNE	e F	00	07	-				Small.
				30	-				
25	ZNE	e(P)	16	51	10				Microseisms.
	ZNE	e(PP)		53	49				Phases doubtful.
	ZNE	e(S)		55	22				
	ZNE	e(L)		58	-				
		F	17	15	-				
29	ZNE	eP	03	53	22				Microseisms.
	Z	e		54	21				
	Z	e(S)	04	05	23				
	ZNE	eL		40	-				
	N	M		55	34	20	+4		
		F	05	50	-				

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KEW OBSERVATORY, RICHMOND, SURREY, ENGLAND.

SEISMOLOGICAL BULLETIN.

APRIL, 19 53

DATE.	COMPT.	PHASE.	G.M.T.			PERIOD.	AMPLI- TUDE.	Δ	REMARKS.
			h.	m.	s.				
30	ZV,	iPKP	06	46	26			(17,500)	Microseisms.
	ZNE	ePP		47	32				
	ZNE	eSKS		50	04				
	ZNE	ePPS	07	00	28				
	ZNE	eL		42	-				
	Z	M		53	08	21	+10		
	N	M		53	02	22	-15		
	E	M		57	40	20	+7		
		F		09	35	-			
		F		09	35	-			
30	Z	e	16	05	-				
		F		20	-				

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AIR MINISTRY, METEOROLOGICAL OFFICE, LONDON.
KEW OBSERVATORY, RICHMOND, SURREY, ENGLAND.
SEISMOLOGICAL BULLETIN FOR MAY, 1953

Lat. 51° 28' 6" N, Long. 0° 18' 47" W, Height above M.S.L. 5m.

LITHOLOGIC FOUNDATION: RIVER GRAVEL RESTING ON LONDON CLAY.

INSTRUMENTS: (i) GALITZIN APERIODIC SEISMOGRAPHS, PHOTO-GALVANOMETRIC REGISTRATION, THREE COMPONENTS.

CONSTANTS: FOR NOTATION SEE FÜRST B. GALITZIN "VORLESUNGEN ÜBER SEISMOMETRIE"

(LEIPZIG, 1914) OR G. W. WALKER "MODERN SEISMOLOGY" (LONDON, 1913).

COMPONENT.	DATE FROM WHICH CONSTANTS APPLY.	GALVANOMETER FREE PERIOD T_1 sec.	PENDULUM FREE PERIOD T sec.	DAMPING CONSTANT μ^2 .	$\frac{Ak}{\pi l}$ sec. ⁻¹
N.	23 July 1951	21.6	23.3	+0.05	52.8
E.	26 July 1951	17.4	18.7	+0.01	66.7
Z.	2 August 1951	14.1	11.8	+0.18	143.

(ii) VERTICAL SEISMOGRAPH, PERIOD 1.5 SECS., DIRECT OPTICAL REGISTRATION (ZV).

TIME SERVICE: MINUTE TIME-MARKS ARE MADE ELECTROMAGNETICALLY BY CONTACT CLOCK.

TIME COMPARISONS ARE MADE DAILY WITH SIGNALS FROM GREENWICH OBSERVATORY.

SEISMOMETRIC READINGS CAN BE DETERMINED TO THE NEAREST SECOND.

DATE.	COMPT.	PHASE.	G.M.T.			PERIOD. sec.	AMPLI- TUDE. μ	Δ km.	REMARKS.
			h.	m.	s.				
1	ZNE	e F	16	10	-				Small.
1	ZNE	e F	17	55	-				Small.
1	ZNE	eP	20	10	44				Small.
	ZNE	eL F		18	-				
				30	-				
1	ZNE	e F	21	40	-				Small.
			22	15	-				
2	ZNE	e F	05	50	-				Small.
			06	10	-				
2	ZNE	iP	18	42	41			(2740)	
	ZNE	e(s)		46	59				
	ZNE	eL F		50	-				Overlapped.
			-	-	-				
2	ZNE	e(L) F	19	24	-				
			20	30	-				
4	ZNE	eL F	00	40	-				
			01	10	-				
4	ZNE	e F	04	48	-				Small.
			05	10	-				

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KEW OBSERVATORY, RICHMOND, SURREY, ENGLAND.

SEISMOLOGICAL BULLETIN.

MAY, 19 53

DATE.	COMPT.	PHASE.	G.M.T.			PERIOD.	AMPLI- TUDE.	Δ	REMARKS.				
			h.	m.	s.								
4	Z	eP	11	40	36	18	+3	9510	Near east coast of Kamchatka. 53½°N., 161°E. (U.S.C.G.S).				
	ZNE	eS		51	14								
	ZNE	e	12	05	(52)								
	ZNE	eL		10	-								
	N	M		19	43								
		F	13	05	-								
4	ZNE	e	15	50	-				Small.				
		F	16	25	-								
5	ZNE	eL	01	08	-								
		F		25	-								
6	ZV,ZNE	iP	17	31	06	22	- 90	12,000	Central Chile. 36½°S., 73°W. (U.S.C.G.S). Depth about 100 Km.				
	ZV,Z	i		31	24								
	ZV,ZNE	iPKP	17	35	33								
	ZV,ZNE	iPP		35	53								
	ZV,ZNE	ePPP		37	50								
	ZNE	eSKS		42	04								
	ZNE	ePS		45	01								
	ZNE	ePPS		46	12								
	ZNE	eSS		50	53								
	ZNE	eSSS		55	29								
	ZNE	e		58	31								
	ZNE	e		59	13								
	ZNE	eL	18	00	-								
	E	M		16	08					21	+130		
	N	M		17	51					21	+110		
Z	M		17	54	21								
		F	22	10	-								
7	ZNE	e	16	15	-				Small.				
		F		30	-								
7	ZNE	e(P)	18	16	22				Small.				
		F	20	10	-								
8	ZNE	e	04	08	-				Small.				
		F		20	-								
10	ZNE	e	00	00	-				Small.				
		F		30	-								
10	ZNE	e	03	05	-				Small.				
		F		30	-								
10	Z	i(P)	05	30	23				Small.				
		e		30	37								
		F	06	30	-								
10	ZNE	e	15	35	-				Small.				
		F		55	-								
11	ZV,Z	iPKP ₁	10	36	24			(17,000)	Dilatation Loyalty Islands 21½°S., 169°E. (U.S.C.G.S). Depth about 100 Km.				
	ZV,Z	iPKP ₂		36	42								
	ZV,Z	i		36	49								
	ZV,ZNE	ePP		39	55								
	ZNE	ePPP		43	12								
	ZNE	e		55	08								
	NE	eSSS	11	06	10								

M.O. 569

KEW OBSERVATORY, RICHMOND, SURREY, ENGLAND.

SEISMOLOGICAL BULLETIN.

MAY, 1953.

DATE.	COMPT.	PHASE.	G.M.T.			PERIOD.	AMPLITUDE.	Δ	REMARKS.
			h.	m.	s.				
contd.						sec.	μ	km.	
✓ 11	ZNE	eL	11	28	-				
	N	M		44	18	21	- 5		
	Z	M	12	10	30	18	- 2		
		F	13	10	-				
13	NE	e	04	55	-				Microseisms.
		F	05	15	-				
13	Z	eL	13	18	-				Microseisms.
	ZNE	F	14	30	-				
14	Z	e(P)	12	13	35				Microseisms.
	ZNE	eL	13	18	-				
		F		25	-				
14	ZNE	e	17	00	-				Microseisms, Doubtful.
		F		35	-				
14	ZNE	e	19	07	-				Microseisms.
		F		15	-				
17	ZNE	e	14	05	-				Microseisms.
		F		40	-				
18	ZNE	eP	08	20	04			4,335	Microseisms.
	ZNE	eS		26	01				
	ZNE	eL		30	-				
		F	10	00	-				
✓ 19	ZV,ZNE	eP	03	23	04			9,040	
	ZNE	eS		33	19				
	ZNE	eL		52	-				
	N	M	04	04	56	18	+ 7		
		F		30	-				
19	ZNE	e	16	50	-				
		F	17	20	-				
20	ZV,Z	e(P)	08	05	09				Microseisms.
	Z	e		05	36				
	Z	e		09	11				
	NE	e		18	01				
	ZNE	eL		59	-				
		F	10	00	-				
20	Z	eP	11	03	36				Doubtful.
	ZNE	eL		40	-				
		F	12	30	-				
21	ZNE	e	13	10	-				Microseisms.
		F		20	-				
22	ZNE	e	22	00	-				Small.
		F		10	-				

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KEW OBSERVATORY, RICHMOND, SURREY, ENGLAND.

SEISMOLOGICAL BULLETIN.

MAY, 19 53

DATE.	COMPT.	PHASE.	G.M.T.			PERIOD.	AMPLI- TUDE.	Δ	REMARKS.
			h.	m.	s.				
24	ZNE	e	01	46	34	18	+ 3	(9,000)	Microseisms.
	ZNE	e		48	20				
	ZNE	e		57	35				
	ZNE	eL	02	02	-				
	N	M	03	19	26				
	F	04	15	-					
25	ZNE	eL	03	15	-				Small.
		F		45	-				
25	Z	e(P)	12	56	00				
	ZNE	eL	13	40	-				
		F	14	15	-				
25	Z	eP	17	52	22				
		eL	18	25	-				
		F	19	30	-				
26	ZV,Z	iP	01	55	29	23	+ 7	(9,000)	Possibly SKS.
	ZV,Z	e		56	30				
	ZNE	ePP		58	33				
	ZNE	e(S)	02	05	36				
	ZNE	ePS		06	02				
	ZNE	ePPS		07	06				
	ZNE	eSS		11	20				
	ZNE	eL		20	-				
	N	M		31	36				
		F	04	30	-				
28	ZNE	e	12	04	-				Small.
		F		20	-				
28	ZNE	e	19	08	-				Small.
		F		25	-				
31	ZV,Z	eP	05	20	20	39	+13		
		ePP		22	30				
		eL		50	-				
		M		58	03				
	F	08	00	-					
31	ZV,Z	iP	20	09	05	19		7,500	e, NE.
		ePcP		10	16				
		e		17	27				
		eS		18	01				
		e(SCS)		18	57				
		e		21	00				
		eSS		21	33				
		eSSS		26	35				
		eL		28	-				
		M		32	13				
		M		32	16				
		M		32	42				
		F		23	45				

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AIR MINISTRY, METEOROLOGICAL OFFICE, LONDON.

KEW OBSERVATORY, RICHMOND, SURREY, ENGLAND.

SEISMOLOGICAL BULLETIN FOR JUNE, 19 53

Lat. 51° 28' 6" N, Long. 0° 18' 47" W, Height above M.S.L. 5m.

LITHOLOGIC FOUNDATION: RIVER GRAVEL RESTING ON LONDON CLAY.

INSTRUMENTS: (I) GALITZIN APERIODIC SEISMOGRAPHS, PHOTO-GALVANOMETRIC REGISTRATION, THREE COMPONENTS.

CONSTANTS: FOR NOTATION SEE FÜRST B. GALITZIN "VORLESUNGEN ÜBER SEISMOMETRIE"

(LEIPZIG, 1914) OR G. W. WALKER "MODERN SEISMOLOGY" (LONDON, 1913).

COMPONENT.	DATE FROM WHICH CONSTANTS APPLY.	GALVANOMETER FREE PERIOD T ₁ sec.	PENDULUM FREE PERIOD T. sec.	DAMPING CONSTANT μ ² .	$\frac{Ak}{\pi l}$ sec. ⁻¹
N.	23 July 1951	21.6	23.3	+0.05	52.8
E.	26 July 1951	17.4	18.7	+0.01	66.7
Z.	2 August 1951	14.1	11.8	+0.18	143.

(II) VERTICAL SEISMOGRAPH, PERIOD 1.5 SECS., DIRECT OPTICAL REGISTRATION (ZV).

TIME SERVICE: MINUTE TIME-MARKS ARE MADE ELECTROMAGNETICALLY BY CONTACT CLOCK.

TIME COMPARISONS ARE MADE DAILY WITH SIGNALS FROM GREENWICH OBSERVATORY.

SEISMOMETRIC READINGS CAN BE DETERMINED TO THE NEAREST SECOND.

DATE.	COMPT.	PHASE.	G.M.T.			PERIOD. sec.	AMPLITUDE. μ	Δ km.	REMARKS.
			h.	m.	s.				
2	ZNE	e	14	55	-			Small	
		F	15	20	-				
2	ZNE	e	18	50	-			Small	
		F	19	00	-				
2	ZNE	e	22	45	-			Small	
		F	23	15	-				
3	ZNE	eL	03	10	-			Microseisms	
		F		30	-				
3	Z	eP	16	10	33		2,610	Microseisms	
	ZNE	eS		14	44				
	NE	eL		17	-				
		F		35	-				
3	ZNE	e	17	50	-			Small	
		F	18	10	-				
6	ZV, Z	eP	06	10	57		2,510		
	NE	eS		14	58				
	ZNE	eL		17	-				
		F		30	-				
6	ZNE	e (P)	11	22	22			Small	
	ZNE	eL		24	-				
		F		40	-				

M.O. 569

KEY OBSERVATORY, RICHMOND, SURREY, ENGLAND.

SEISMOLOGICAL BULLETIN.

June 1953

DATE.	COMPT.	PHASE.	G.M.T.			PERIOD.	AMPLITUDE.	Δ	REMARKS.					
			h.	m.	s.					sec.	μ	km.		
6	ZV,ZNE	iP	12	11	01			2,500	Small					
	NE	eS		15	01									
	ZNE	eL		18	-									
		F		40	-									
6	ZNE	e	17	55	-				Small					
		F	18	10	-									
7	ZV,Z	iP	12	34	26			7,020	Near north coast of Dominican Republic. 20°N., 70°W. (U.S.C.G.S)					
	ZNE	eS		42	57									
	ZNE	e(SKS)		44	19									
	ZNE	eL		49	-									
		F	14	30	-									
8	ZNE	e	03	35	-				Small					
		F	05	15	-									
8	ZV,Z	iP	11	52	12			(8,500)	NE,e. NE,e. Near east coast of Kamchatka 52°N., 159½°E. (U.S.C.G.S). Depth about 60 Km.					
	ZV,Z	i(pP)		52	34									
	ZNE	eS	12	02	03									
	ZNE	eSP		02	37									
	NE	eSSS		10	57									
	ZNE	eL		20	-									
	N	M		33	22					19	+6			
	F	14	50	-										
9	ZNE	eP	01	50	47									
	ZNE	e	02	11	03									
	ZNE	eL		15	-									
	N	M		29	58					18	+5			
	F	03	30	-										
9	ZNE	e	16	40	-				Not very distant					
		F		55	-									
10	ZNE	e(P)	18	43	53				Microseisms					
	NE	eL	19	20	-									
		F	20	15	-									
12	ZNE	e	03	15	-				Small					
		F		30	-									
	13	ZNE	eP	18	43					43			2,500	
		ZNE	eS		47					42				
ZNE		eL		51	-									
	F	19	15	-										
14	ZNE	e	05	00	-				Small					
		F		55	-									
14	ZNE	e	15	40	-				Small					
		F	17	45	-									
15	ZNE	e	14	50	-				Small					
		F	15	10	-									

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KEW OBSERVATORY, RICHMOND, SURREY, ENGLAND.

SEISMOLOGICAL BULLETIN.

June 19 53

DATE.	COMPT.	PHASE.	G.M.T.			PERIOD.	AMPLITUDE.	Δ	REMARKS.		
			h.	m.	s.						
15	ZV,ZNE	iP	17	58	32			7,880	Compression Near south coast of Kodiak 56½°N., 154°W. (U.S.C.G.S.).		
	ZV,ZNE	ePcP		59	00						
	ZV,ZNE	ePP	18	01	18						
	ZNE	iS		07	46						
	ZNE	ePS		08	03						
	ZNE	ePPS		08	34						
	ZNE	eSS		12	01						
	ZNE	eSSS		15	58						
	ZNE	e		17	34						
	NE	eLQ		22	-						
	ZNE	eLR		25	-						
	Z	M		31	54					18	+16
	N	M		31	57					18	-17
	E	M		32	03					18	-17
	F		21	10							
16	NE	e	07	10	-				Small		
		F		20	-						
16	Z	iP	10	06	16			(11500)			
		e		07	52						
		ePP		09	52						
		e(SKS)		16	45						
		e(S)		18	13						
		e		18	21						
		eL		40	-						
E	M		43	15	27	+4					
	F		12	15							
16	Z	eP	16	21	51				Small		
		F		25	-						
16	Z	iP	19	59	45			9,245	NE,e. NE,e.		
		i	20	00	14						
		eS		10	10						
		eL		25	-						
		F		21	15						
17	ZNE	e	02	15	-				Small		
		F		45	-						
17	ZNE	eL	14	55	-						
		F		15	30						
18	ZV,ZNE	eP	05	49	11			2,230			
		eS		52	49						
		e		56	33						
		eL		59	-						
		F		06	15						
18	ZV,ZNE	iPKP	10	24	03						
		eSKP		27	27						
		eL		11	05						
		M		30	26					18	+3
		F		13	15						
18	ZNE	e	19	15	-				Small		
		F		40	-						

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SEISMOLOGICAL BULLETIN.

June 19 53

DATE.	COMPT.	PHASE.	G.M.T.			PERIOD.	AMPLI- TUDE.	Δ	REMARKS.
			h.	m.	s.				
19	ZNE	e F	05 00	35 00	- -				Small
21	Z ZNE ZNE	e e eL F	08 22 24 40	21 19 -	02 19 -				
22	ZNE	eL F	00 01	45 10	- -				
23	Z ZNE ZNE	eP eS eL F	01 02 06 20	56 02 -	49 39 -			4,200	
✓23	ZNE NE ZNE N	eP eS eL M F	14 14 20 34 16	05 14 -	22 56 -	24	+4	8,220	
25	Z ZNE	e(P) eL F	05 06 08	54 55 40	46 - -				Microseisms
✓25	ZV,Z ZV,ZNE ZV,ZNE ZV,ZNE ZNE ZNE ZNE ZNE ZNE ZNE ZNE ZNE ZNE ZNE N Z E	eP iPKP iPP eSKP ePS e ePPS e ePSS eSS e e eL M M M F	11 03 05 06 15 15 16 16 21 30 42 43 44 57 58 59 14	00 49 05 20 05 37 17 37 18 07 17 16 -	10 49 05 20 05 37 17 37 18 07 17 16 -	23 25 25	+31 -20 +20	(13000)	Doubtful
✓26	ZV,Z Z ZNE ZNE ZNE N	iP ePP eS eSP eL M F	06 05 12 13 25 54 11	03 41 47 57 -	00 41 47 57 -	23	-20	8,470	
28	Z ZNE ZNE	e(P) e eL F	05 06 07	50 01 20 50-	49 21 -				Doubtful
29	ZNE	e F	03 04	55 25	- -				Small
30	ZNE	e F	00 25	00 -	- -				Small

AIR MINISTRY, METEOROLOGICAL OFFICE, LONDON.

KEW OBSERVATORY, RICHMOND, SURREY, ENGLAND.

SEISMOLOGICAL BULLETIN FOR JULY, 1953

Lat. 51° 28' 6" N, Long. 0° 18' 47" W, Height above M.S.L. 5m.

LITHOLOGIC FOUNDATION : RIVER GRAVEL RESTING ON LONDON CLAY.

INSTRUMENTS : (I) GALITZIN APERIODIC SEISMOGRAPHS, PHOTO-GALVANOMETRIC REGISTRATION, THREE COMPONENTS.

CONSTANTS : FOR NOTATION SEE FÜRST B. GALITZIN "VORLESUNGEN ÜBER SEISMOMETRIE"
(LEIPZIG, 1914) OR G. W. WALKER "MODERN SEISMOLOGY" (LONDON, 1918).

COMPONENT.	DATE FROM WHICH CONSTANTS APPLY.	GALVANOMETER FREE PERIOD T ₁ sec.	PENDULUM FREE PERIOD T. sec.	DAMPING CONSTANT μ ² .	Ak wi sec. ⁻¹
N.	23 July 1951	21.6	23.3	+0.05	52.8
E.	26 July 1951	17.4	18.7	+0.01	66.7
Z.	2 August 1951	14.1	11.8	+0.18	143.

(II) VERTICAL SEISMOGRAPH, PERIOD 1.5 SECS., DIRECT OPTICAL REGISTRATION (ZV).

TIME SERVICE : MINUTE TIME-MARKS ARE MADE ELECTROMAGNETICALLY BY CONTACT CLOCK.
TIME COMPARISONS ARE MADE DAILY WITH SIGNALS FROM GREENWICH OBSERVATORY.
SEISMOMETRIC READINGS CAN BE DETERMINED TO THE NEAREST SECOND.

DATE.	COMPT.	PHASE.	G.M.T.			PERIOD.	AMPLITUDE.	Δ	REMARKS.
			h.	m.	s.				
1	ZV, Z	iP	03	11	22	24	+ 6	8335	Compression. Near south coast of Kamchatka. 50½°N, 157°E. Depth about 60Km. (U.S.C.G.S).
	ZV, Z	ePcP		11	49				
	ZNE	eFP		14	05				
	ZNE	eS		21	02				
	ZNE	ePS		22	11				
	ZNE	eL		32	-				
	N	M		43	26				
2	ZV, ZNE	1PKP	07	16	11	31	- 23	(15,500)	Compression. New Hebrides Islands. 18½°S, 169°E. Depth about 200 Km. (U.S.C.G.S).
	ZV, ZNE	1pPKP		17	05				
	ZV, ZNE	1sPKP		17	34				
	ZNE	ePP		19	26				
	ZNE	epPP		20	46				
	ZNE	e(sPP)		21	44				
	ZNE	eSKKS		26	26				
	ZNE	ePS		29	44				
	ZNE	e		33	44				
	ZNE	ePPP		34	58				
	ZNE	eSS		37	42				
	ZNE	eSSS		45	38				
	ZNE	eL		49	-				
	E	M	08	09	03				
N	M		17	02	23	- 5			
Z	M		23	38	23				
2	ZNE	F	12	30	-				
		F	14	15	-			Small.	

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KEW OBSERVATORY, RICHMOND, SURREY, ENGLAND.

SEISMOLOGICAL BULLETIN.

JULY, 19 53

DATE.	COMPT.	PHASE.	G.M.T.			PERIOD.	AMPLI- TUDE.	Δ	REMARKS.
			h.	m.	s.				
2	ZNE	e F	23	20	-				Small.
3	ZNE	eL F	02	48	-				Overlapped.
3	ZNE	e F	02	57	-				
			03	15	-				
3	ZNE	e F	06	15	-				Small.
				35	-				
3	ZNE	e F	18	58	-				Small.
			20	00	-				
5	ZNE	eS eL F	04	11	14				
				12	-				
				30	-				
6/7	ZNE	eL F	22	55	-				Microseisms.
			00	15	-				
7	ZNE	e	04	33	11				Sumatra.
	ZNE	eL F		55	-				1°N., 100°E. (U.S.C.G.S).
			05	30	-				
7	ZNE	eL F	18	15	-				Small.
			19	10	-				
7	ZNE	eL F	21	05	-				Small.
				30	-				
9	Z	eP	19	11	44				
	ZNE	e(SSS)		23	04				
	ZNE	eL		28	-				
	N	M		31	46	18	+ 8		
		F	20	20	-				
9	ZNE	eL F	21	12	-				Small.
				30	-				
9	Z	eP	21	31	11			4,230	North Atlantic Ocean.
	ZNE	eS		37	06				30°N., 42½°W.
	ZNE	eL		40	-				(U.S.C.G.S).
	N	M		42	19	20	- 16		
	E	M		42	44	22	- 15		
		F	23	20	-				
10	ZNE	e F	08	08	-				Small.
				25	-				
10	NE	eP	15	33	52				
	ZNE	ePP		37	13				
	ZNE	ePPP		38	21				
	ZNE	eL F		45	-				
			16	50	-				

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KEW OBSERVATORY, RICHMOND, SURREY, ENGLAND.

SEISMOLOGICAL BULLETIN.

JULY, 19 53

DATE.	COMPT.	PHASE.	G.M.T.			PERIOD.	AMPLITUDE.	Δ	REMARKS.
			h.	m.	s.				
12	Z	eP	07	03	29			(11,000)	Near north coast of New Guinea. 2°S., 139½°E. (U.S.C.G.S).
	ZNE	ePP		09	20				
	ZNE	ePPP		11	04				
	ZNE	eSKKS		14	15				
	ZNE	ePKKP		19	55				
	ZNE	eSS		24	22				
	ZNE	eL		40	-				
	N	M		46	03	23	+ 5		
	F		09	30	-				
13	Z	e	08	15	-			Small.	
		F		40	-				
13	Z	e(P)	21	48	10			Small.	
	Z	e		49	08				
		F		55	-				
15	Z	eP	10	09	47			Small.	
	ZNE	e		13	58				
	ZNE	eL		16	-				
		F		30	-				
16	ZNE	e	15	15	-			Small.	
		F		35	-				
20	ZV, ZNE	iP	08	27	56			(12,500)	Microseisms. NE, e. Tonga Islands. 21°S., 177°W. Depth about 100Km. (U.S.C.G.S).
	ZV, Z	ipP		28	16				
	ZV, ZNE	eaP		28	56				
	ZNE	ePP		32	21				
	ZNE	eSKS		38	23				
	ZNE	e(PKPP)		41	23				
	NE	e(SS)		51	17				
	ZNE	eL		58	-				
	E	M	09	39	43	38	-17		
	N	M		40	49	41	-35		
		F	11	30	-				
21	ZV, Z	iP	17	35	37			NE, e. Microseisms. Ryukya Islands. 27½°N., 128°E. (U.S.C.G.S).	
	ZNE	eL	18	00	-				
	N	M		21	13	17	+ 5		
		F		45	-				
22	ZV, ZNE	iP	05	23	01			8,460	Compression. Microseisms.
	ZV, ZNE	e		23	26				
	ZNE	ePP		25	57				
	ZNE	eS		32	48				
	ZNE	ePS		33	56				
	NE	iSSS		39	15				
	ZNE	eL		43	-				
	N	M		52	02	28	+12		
	E	M	06	05	05	18	-10		
		F	08	30	-				
22	ZNE	e	13	40	-			Small.	
		F	14	15	-				
22	Z	eP	15	14	47			2,680	Microseisms.
	ZNE	eS		19	01				
	ZNE	eL		23	-				
	N	M		24	30	14	- 5		
		F	19	00	-				

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JULY, 19 53.

DATE.	COMPT.	PHASE.	G.M.T.			PERIOD.	AMPLITUDE.	Δ	REMARKS.
			h.	m.	s.				
22	ZV, Z	eP	18	12	21			(4,680)	Microseisms.
	ZNE	e(6)		18	39				
	ZNE	e		18	58				
	ZNE	eL		23	-				
	F		19	30	-				
23	ZV, Z	iP	01	15	16				Microseisms.
	ZNE	eL		42	-				
	F		02	00	-				
23	ZNE	eL	19	10	-				Microseisms.
		F		45	-				
24	ZNE	e	12	00	-				Small.
		F		25	-				
25	ZNE	e	18	50	-				Small.
		F	19	30	-				
26	ZV, Z	eP	17	05	14	37	- 6		Microseisms. Deeper than normal.
	ZV, Z	e(PP)		11	18				
	ZV, Z	e		12	08				
	ZNE	e		20	14				
	ZNE	eSS		22	51				
	ZNE	eL		40	-				
	N	M		43	48				
	F		19	15	-				
27	ZNE	eL	00	15	-				Microseisms.
		F	01	00	-				
28	ZV, Z	iP	07	58	25				Traces on N and E components.
	ZV, Z	i		58	33				
	ZV, Z	i		58	39				
	ZV, Z	i		59	20				
	ZV, Z	i	08	00	03				
	ZNE	(eL)		30	-				
28	ZNE	e	18	50	-				Small.
		F	19	20	-				
29	Z	eP	13	42	17			6,110	
	ZNE	eS		49	58				
	ZNE	eScS		50	16				
	ZNE	eL	14	00	-				
	F		15	00	-				
29	Z	e(P)	18	27	49				
	Z	e		28	02				
	ZNE	eL		50	-				
	F		19	45	-				
29/30	Z	ePKP	23	37	40				
	Z	ePP		40	48				
	ZNE	eL	24	20	-				
	F		01	20	-				

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JULY, 1953

DATE	COMPT.	PHASE.	G.M.T.			PERIOD.	AMPLI- TUDE.	Δ	REMARKS.
			h.	m.	s.				
30	Z	e F	06	22	44				Small.
30	Z	e	07	09	58				Small.
	ZNE	eL		25	-				
		F	09	35	-				
31	Z	e(P)	00	03	37				
	NE	e		08	44				
	ZNE	e		10	22				
	ZNE	e		11	30				
	NE	e		13	06				
	ZNE	eL		30	-				
		F	01	15	-				
31	ZV,	i F	11	05	05				Possibly not seismic.
31	ZNE	e	13	45	-				Small.
		F	15	20	-				
31/1	ZNE	e F	23	55	-				Small.
			00	20	-				

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AIR MINISTRY, METEOROLOGICAL OFFICE, LONDON.

KEW OBSERVATORY, RICHMOND, SURREY, ENGLAND.

SEISMOLOGICAL BULLETIN FOR AUGUST, 1953

Lat. 51° 28' 6" N, Long. 0° 18' 47" W, Height above M.S.L. 5m.

LITHOLOGIC FOUNDATION: RIVER GRAVEL RESTING ON LONDON CLAY.

INSTRUMENTS: (I) GALITZIN APERIODIC SEISMOGRAPHS, PHOTO-GALVANOMETRIC REGISTRATION, THREE COMPONENTS.

CONSTANTS: FOR NOTATION SEE FÜRST B. GALITZIN "VORLESUNGEN ÜBER SEISMOMETRIE"

(LEIPZIG, 1914) OR G. W. WALKER "MODERN SEISMOLOGY" (LONDON, 1918).

COMPONENT.	DATE FROM WHICH CONSTANTS APPLY.	GALVANOMETER FREE PERIOD T. sec.	PENDULUM FREE PERIOD T. sec.	DAMPING CONSTANT μ^2 .	$\frac{Ah}{\pi l}$ sec. ⁻¹
N.	23 July 1951	21.6	23.3	+0.05	52.8
E.	26 July 1951	17.4	18.7	+0.01	66.7
Z.	2 August 1951	14.1	11.8	+0.18	143.

(II) VERTICAL SEISMOGRAPH, PERIOD 1.5 SECS., DIRECT OPTICAL REGISTRATION (ZV).

TIME SERVICE: MINUTE TIME-MARKS ARE MADE ELECTROMAGNETICALLY BY CONTACT CLOCK.
TIME COMPARISONS ARE MADE DAILY WITH SIGNALS FROM GREENWICH OBSERVATORY.
SEISMOMETRIC READINGS CAN BE DETERMINED TO THE NEAREST SECOND.

DATE.	COMPT.	PHASE.	G.M.T.			PERIOD.	AMPLITUDE.	Δ	REMARKS.
			h.	m.	s.				
1	ZV, Z	iPKP1	00	49	53				NE, e.
	ZV, ZNE	ePKP2		50	51				
	Z	e(PPP)		55	11				
	ZNE	eL	01	48	-				
		F	02	45	-				
1	ZNE	e(P)	04	15	12				
	ZNE	eL		22	-				
	ZNE	F		30	-				
2	ZV, Z	iP	17	39	50				
	Z	e		45	38				
	ZNE	eL	18	40	-				
	ZNE	F	19	45	-				
6	ZV, ZNE	e(P)	19	14	40	17	+ 3	(3650)	Microseisms.
	ZNE	e(S)		19	58				
	ZNE	eL		22	-				
	Z	M		31	05				
	Z	F	20	55	-				
6	ZNE	eL	21	28	-				Small.
	ZNE	F	22	10	-				
9	ZV, ZNE	iP	07	45	44	17	+25	2290	Dilatation. Near western coast of Greece 38½°N, 21°E. (U.S.C.G.S).
	ZV, ZNE	iPP		45	50				
	ZV, ZNE	iPPP		46	17				
	ZV, ZNE	iS		49	26				
	ZNE	eSS		50	02				
	ZNE	eL		53	-				
	N	M		54	25				
	Z	M		54	48				

KEW OBSERVATORY, RICHMOND, SURREY, ENGLAND.

SEISMOLOGICAL BULLETIN.

AUGUST, 1953.

DATE.	COMPT.	PHASE.	G.M.T.			PERIOD.	AMPLITUDE.	Δ	REMARKS.	
			h.	m.	s.					sec.
Contd.	E	M		57	24	17	+30			
		F	10	15	-					
11	ZV,ZNE	iP	03	36	56			2330	Near western coast of Greece 38½°N, 21°E. (U.S.C.G.S.).	
	ZV,ZNE	iPP		36	59					
	ZNE	iPPP		37	49					
	ZNE	e		39	09					
	ZNE	eS		40	42					
	ZNE	eSS		41	21					
	ZV	i(P)		42	44					
	ZV,ZNE	e(P)		43	30					
	ZV,	i(P)		43	37					
	ZNE	eL		44	-					
	ZV,	i(P)		44	31					
	N	M		46	24	18	+102			
	E	M		46	24	17	+160			
	Z	M		48	48	12	+45			
	ZV,	i(P)	07	00	10				Numerous small aftershocks.	
		F	(12	45	-)					
11	ZV,Z	eP	12	47	58			2,110	Microseisms.	
	NE	eS		51	30					
	ZNE	eL		54	-					
		F	13	15	-					
11	ZNE	eP	13	19	59			1760	Microseisms.	
	NE	eS		22	55					
	ZNE	eL		28	-					
		F		40	-					
11	ZNE	e	13	55	-				Small.	
		F	14	10	-					
12	ZV,Z	iP	06	12	37			2,210	NE, e.	
	ZNE	eS		16	13					
	ZNE	eL		18	-					
	N	M		19	59	17	+ 4			
		F		45	-					
12	ZV,ZNE	iP	09	28	26			2040	Dilatation. Near western coast of Greece 38½°N, 21°E. (U.S.C.G.S.).	
	ZV,ZNE	iPP		28	29					
	ZV,ZNE	iPPP		28	39					
	ZV,ZNE	i(P)		29	23					
	ZV,ZNE	i(P)		29	42					
	ZV,ZNE	i(P)		30	07					
	ZV,ZNE	e(P)		31	18					
	ZV,ZNE	e(P)		31	35					
	ZV,ZNE	eS		31	59					
	ZV,ZNE	eSS		32	17					
	ZV,ZNE	e(P)		33	10					
	ZV,ZNE	e(P)		35	59					
	ZNE	eL		39	-					
	Z	M		45	16	14	-45			
	N	M		45	16	17	-66			
	E	M		46	50	19	-75			
		F	-	-	-					Overlapped by numerous small aftershocks.

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KEY OBSERVATORY, RICHMOND, SURREY, ENGLAND.

SEISMOLOGICAL BULLETIN.

AUGUST, 1953

DATE.	COMPT.	PHASE.	G.M.T.			PERIOD.	AMPLITUDE.	Δ	REMARKS.
			h.	m.	s.				
12	ZNE NE	e(P) e F	11	38	21 44				Overlapped.
			-	-	-				
√12	ZV,ZNE ZV,ZNE ZV,ZNE ZV,ZNE ZV,ZNE ZV,ZNE ZNE ZNE ZNE ZNE E N Z	iP i(PP) i(PPP) i i i iS iSS i(P) eL M M M F	12	09	57 13 32 39 05 50 41 25 11 - 37 46 49 -			2310	Overlapped by numerous small aftershocks.
						17	+25		
						12	-40		
						12	-12		
12	ZV,Z ZNE ZNE ZNE ZNE	iP iS e e eL F	13	44	12 42 23 09 -			2200	
			14	10	-				
12	ZV,ZNE ZV,ZNE ZV,ZNE ZV,ZNE ZV,ZNE ZNE E	iP e i eS e eL M F	14	13	16 40 10 58 33 -			2290	Overlapped by numerous small shocks.
						16	-10		
12	ZV,Z ZNE ZNE	eP eS eL F	16	13	08 55 -			2340	
√12	ZNE ZNE N	e(PKP) eL M F	17	13	47 -				Possibly several shocks.
			18	05	-				
			19	24	14 -	18	- 3		
12	ZNE	e F	19	55	-				
			20	10	-				
13	ZNE	e F	02	00	-				
				10	-				
13	ZV,Z ZNE ZNE	iP eS eL F	03	26	41 22 -			2,280	
				30					
				38					
				55					
13	ZNE	e F	05	03	-				Small.
				30	-				

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KEW OBSERVATORY, RICHMOND, SURREY, ENGLAND.

SEISMOLOGICAL BULLETIN.

AUGUST, 19 53

DATE.	COMPT.	PHASE.	G.M.T.			PERIOD.	AMPLITUDE.	Δ	REMARKS.
			h.	m.	s.				
13	ZNE	e F	06 07	48 20	- -			Small.	
✓ 13	ZV,Z	iP	09	42	46			NE, e.	
	ZV,Z	i		43	00			NE, e.	
	ZV,Z	i		43	09			NE, e.	
	ZV,Z	i		43	40			NE, e.	
	ZV,ZNE	i(PP)		46	39			Doubtful.	
	ZNE	e(S)		53	16			several shocks superposed.	
	ZNE	e(PPS)		56	52				
	ZNE	eL	10	10	-				
	E	M		28	46	20	+ 5		
		F	13	15	-				
13	ZNE	e(P)	14	52	30		(1,910)		
	ZNE	eS		55	40				
	ZNE	eL		58	-				
		F	15	15	-				
13	ZNE	e(P)	20	21	44			Small.	
		F		30	-				
14	ZNE	e	01	35	-			Small.	
		F		50	-				
14	NE	e(P)	22	46	07				
	ZNE	eL		58	-				
		F	23	15	-				
15	NE	e	06	40	-			Small.	
		F		50	-				
15	NE	e	16	55	-			Small.	
		F	17	20	-				
15	NE	e	21	50	-			Small.	
		F	22	10	-				
17	ZNE	e(P)	00	36	13			Small.	
		F		45	-				
17	Z	eP	02	17	07		2,220	Doubtful.	
	ZNE	eS		20	44				
	ZNE	eL		24	-				
		F		40	-				
17	ZNE	e	02	55	-			Small.	
		F	03	10	-				
17	ZNE	eL	04	05	-				
		F		55	-				
17	ZNE	e	22	10	-			Small.	
		F		25	-				
18	ZV,	e(P)	07	54	50			Small.	
		F		57	-				

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DATE.	COMPT.	PHASE.	G.M.T.			PERIOD.	AMPLI- TUDE.	Δ	REMARKS.
			h.	m.	s.				
18	ZV,	e(P) F	08	35	50				Small.
18	ZV,	e(P) F	15	49	40				Small.
18	ZNE	e F	18	50	-				Small.
18	ZNE ZNE	e(P) eL F	22	51	52				Small.
19	ZNE	e F	01	05	-				Small.
19	ZNE	e F	03	30	-				Small.
19	ZNE	e F	11	00	-				Small.
20	Z NE ZNE	eP eS eL F	19	31	56			2,330	
21	Z ZNE	e(P) eL F	13	55	46				Microseisms.
22	NE ZNE	e eL F	01	14	54				Microseisms.
23	ZNE ZNE ZNE ZNE ZNE ZNE	eP e ePP ePPS eSS eL F	07	29	02				Microseisms.
24	ZNE ZNE	e(P) eL F	02	29	15				Microseisms.
24	ZNE	e F	14	00	-				Microseisms.
25	ZV,Z ZNE ZNE ZNE ZNE ZNE Z N E	e(P) e PKP ePPS eSS eSSS eL M M M F	02	26	45				Microseisms.
				28	16				
				43	30				
				48	30				
				51	44				
				55	-				
			03	20	09	23	+ 5		
				24	19	23	-10		
				25	56	24	+ 6		
			05	50	-				

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AUGUST, 19 53

DATE.	COMPT.	PHASE.	G.M.T.			PERIOD.	AMPLITUDE.	Δ	REMARKS.
			h.	m.	s.				
26	ZNE	e F	20	00	-				
				30	-				
27	ZNE	e F	19	38	-				
			20	00	-				
27	NE	e	21	09	56				
	ZNE	eL		42	-				
		F	25	20	-				
28	ZNE	eL	00	27	-				
	N	M		32	06	23	- 3		
		F	02	00	-				
28	ZNE	e(P)	20	47	12				
	ZNE	eL		50	-				
		F	21	00	-				
29	NE	e	02	17	55				
	ZNE	eL		25	-				
		F	03	10	-				
29	ZV,Z	iP	13	12	42			1800	
	ZNE	iS		15	44				
	ZNE	eL		18	-				
	N	M		18	37	15	+ 5		
	E	M		20	50	11	- 6		
	Z	M		22	22	10	+ 5		
		F	15	10	-				Possibly a second shock.
29	ZNE	e	17	40	-				Small.
		F	18	05	-				
30	NE	e	22	05	-				
		F		30	-				
31	ZV,	i(P)	08	04	22				Traces on Galitzin
		F		07	-				components.
31	ZNE	e	17	50	-				Small.
		F	18	20	-				

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AIR MINISTRY, METEOROLOGICAL OFFICE, LONDON.

KEW OBSERVATORY, RICHMOND, SURREY, ENGLAND.

SEISMOLOGICAL BULLETIN FOR SEPTEMBER, 1953

Lat. 51° 28' 6" N, Long. 0° 18' 47" W, Height above M.S.L. 5m.

LITHOLOGIC FOUNDATION : RIVER GRAVEL RESTING ON LONDON CLAY.

INSTRUMENTS : (i) GALITZIN APERIODIC SEISMOGRAPHS, PHOTO-GALVANOMETRIC REGISTRATION, THREE COMPONENTS.

CONSTANTS : FOR NOTATION SEE FÜRST B. GALITZIN "VORLESUNGEN ÜBER SEISMOMETRIE"
(LEIPZIG, 1914) OR G. W. WALKER "MODERN SEISMOLOGY" (LONDON, 1913).

COMPONENT.	DATE FROM WHICH CONSTANTS APPLY.	GALVANOMETER FREE PERIOD T ₁ sec.	PENDULUM FREE PERIOD T. sec.	DAMPING CONSTANT μ ² .	$\frac{Ak}{\pi l}$ sec. ⁻¹
N.	23 July 1951	21.6	23.3	+0.05	52.8
E.	26 July 1951	17.4	18.7	+0.01	66.7
Z.	2 August 1951	14.1	11.8	+0.18	143.

(ii) VERTICAL SEISMOGRAPH, PERIOD 1.5 SECS., DIRECT OPTICAL REGISTRATION (ZV.).

TIME SERVICE : MINUTE TIME-MARKS ARE MADE ELECTROMAGNETICALLY BY CONTACT CLOCK.
TIME COMPARISONS ARE MADE DAILY WITH SIGNALS FROM GREENWICH OBSERVATORY.
SEISMOMETRIC READINGS CAN BE DETERMINED TO THE NEAREST SECOND.

DATE.	COMPT.	PHASE.	G.M.T.			PERIOD.	AMPLI- TUDE.	Δ	REMARKS.			
			h.	m.	s.							
1	ZV, Z	e(P)	17	52	-				Small.			
		F	18	30	-							
1	ZNE E	e	20	18	42				Small.			
		eL		22	-							
		F		30	-							
1	ZNE ZNE	e	23	05	-				Small.			
		eL		10	-							
		F		25	-							
2	ZNE	e	01	55	-				Small.			
		F	02	15	-							
2	ZNE	e	17	57	-				Small.			
		F	18	18	-							
✓ 4	ZV, ZNE	eP	07	34	52				Compression. 32°S., 71°W. (U.S.C.G.S).			
	ZV, ZNE	eL		35	27							
	ZNE	e		37	43							
	ZV, ZNE	e		39	59							
	ZV, ZNE	e		44	30							
	ZNE	e		45	39							
	ZNE	e		46	55							
	ZNE	e		49	27							
	ZNE	eL		56	(47)							
	N	M		08	10					48	24	+30
	E	M			12					21	20	+19
	Z	M			16					45	16	+ 6
		F		10	30					-		

KEW OBSERVATORY, RICHMOND, SURREY, ENGLAND.

SEISMOLOGICAL BULLETIN.

SEPTEMBER, 19 53

DATE.	COMPT.	PHASE.	G.M.T.			PERIOD.	AMPLI- TUDE.	Δ	REMARKS.
			h.	m.	s.				
4	ZNE N	eL	14	54	-	22	+ 6		
		M	15	06	14				
		F	16	30	-				
5	ZNE	e F	00	01	- -				Small.
5	ZNE	e F	01	18	23 -				Small.
5	ZNE	e F	08	55	- -				Small.
5	Z NE ZNE	eP	14	27	32				Doubtful.
		eS		30	46				
		eL F	15	15	-				
5	Z	e F	19	10	02 -				Small.
			21	30	-				
6	ZNE	eL F	02	02	- -				Small. 50½°N. 90°E. Outer Mongolia. (U.S.C.G.S).
				20	-				
7	ZV, ZNE ZNE ZNE ZNE ZNE ZNE E Z N	iP	04	04	22			2850	41°N., 33°E. N. Turkey. (U.S.C.G.S).
		i		05	09				
		iS		08	47				
		e		09	29				
		e		09	38				
		eL		13	-				
		M		16	31				
		M		16	44				
		M		20	08				
		F	06	30	-				
8	ZNE	e F	10	15	- -				Small.
				35	-				
10	ZV, ZNE ZNE Z ZNE ZNE ZNE E N Z	iP	04	12	00				Compression. 35°N., 32°E. West coast of Cyprus. Heavy casualties, extensive property damage. (U.S.C.G.S).
		i		12	05				
		i		12	14				
		e		17	18				
		e		18	14				
		e		19	36				
		eL		20	-				
		M		23	33				
		M		24	33				
		M		25	32				
10	NE	e F	14	55	- -				Small.
			15	20	-				
14	ZV, Z Z NE NE ZNE	i	00	46	15				Compression. NE, e. 18½°S., 178½°E. Fiji Islands. (U.S.C.G.S).
		i		48	03				
		e	01	12	47				
		e		14	28				
		eL		30	-				
		M		53	20				
FORM 3718. N		M F	03	25	-	20	+ 6		

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KEW OBSERVATORY, RICHMOND, SURREY, ENGLAND.

SEISMOLOGICAL BULLETIN.

SEPTEMBER, 19 53

DATE.	COMPT.	PHASE.	G.M.T.			PERIOD.	AMPLITUDE.	Δ	REMARKS.
			h.	m.	s.				
14	ZNE	e F	10	01	-				Small.
14	ZNE	e F	11	31	-				
			12	00	-				
14	ZNE	e F	12	10	-				
			13	00	-				
✓ 14	ZNE	iP	15	00	49				Near west coast of Greece. 38°N., 20½°E. (U.S.C.G.S).
	ZNE	eS		03	53				
	ZNE	e		07	43				
	ZNE	eL		12	(31)				
	E	M F		12 35	27 -	15	- 5		
15	ZNE	i F	11	46	11				Small.
			12	05	-				
16	ZNE	eL F	02	55	-				
			04	15	-				
16	ZNE	e F	12	05	-				
				40	-				
17/18	ZNE	e	21	31	06				Tonga Islands. 20½°S., 174°W. (U.S.C.G.S).
	ZNE	e		31	39				
	ZNE	e		31	59				
	NE	e		53	47				
	NE	e	22	04	15				
	ZNE	eL		30	-				
	N	M F		40 00	23 15	17	+ 3		
18	ZNE	e F	17	35	-				Small.
				45	-				
18/19	ZNE	e F	23	50	-				Small.
			00	15	-				
20	N	e	19	29	13				
	NE	eL		45	-				
	Z	eL		49	-				
	N	M F		55 20	- 30	20	- 8		
23	ZV,ZNE	iP	02	26	24			8400	Kurile Islands. 50½°N., 156°E. (U.S.C.G.S). Z, e.
	Z	iPP		29	15				
	N	eS		36	07				
	E	eFS		36	35				
	N	iScS		37	03				
	NE	eSS		41	-				
	NE	eL		47	-				
	Z	eL		53	-				
	N	M F	03 04	06 10	56 -	20	+30		
25	NE	e F	12 13	45 10	- -				

KEW OBSERVATORY, RICHMOND, SURREY, ENGLAND.

SEISMOLOGICAL BULLETIN.

SEPTEMBER, 1953

DATE.	COMPT.	PHASE.	G.M.T.			PERIOD.	AMPLI- TUDE.	Δ	REMARKS.	
			h.	m.	s.					sec.
25	Z	e	13	48	12				Bonin Islands. 28°N., 140°E. (U.S.C.G.S).	
	Z	e	14	07	-					
	NE	eL		28	-					
	Z	eL		38	-					
		F	15	05	-					
26	ZV,Z	iP	01	14	18			(8500)	N, e. Near S. Coast Kamchatka. 50°N., 157½°E. (U.S.C.G.S). (U.S.C.G.S).	
	N	e(SS)		29	-					
	NE	eL		38	-					
	Z	eL		43	-					
		F	02	25	-					
26	NE	eL	20	35	-					
		F	21	10	-					
27	ZV	iP	06	15	29			6400	Microseisms. Near Windward Isles. 14°N., 58°W. (U.S.C.G.S).	
	ZV	i		15	43					
	ZV	e		20	01					
	NE	eS		23	26					
	N	e(L)		30	25					
	E	eL		32	-					
		F	07	20	-					
29	ZV	i	01	56	17			Very distant	(Z, e) N, e NE, e ZE, e E, e Probably deeper than normal.	
	ZV,Z	i		57	15					
	ZV,Z	i	02	01	01					
	Z	i		02	21					
	NE	e		04	45					
	N	i		09	17					
	N	i		11	05					
	E	i		15	13					
	NZ	i		18	13					
	NE	e		25	-					
	NE	e		32	-					
		F	04	20	-					
	30/1	ZV	iP	23	16	43				
ZV,Z		iPcP		16	57					
N		iS		27	01					
N		iScS		27	09					
N		eSS		32	16					
NE		eSSS		36	12					
Z		eL		45	-					
N		M		44	17	28	+60			
E		M		51	38	18	-28			
Z		M		51	40	18	-18			
		F	02	00	-					

AIR MINISTRY, METEOROLOGICAL OFFICE, LONDON.
KEW OBSERVATORY, RICHMOND, SURREY, ENGLAND.
SEISMOLOGICAL BULLETIN FOR OCTOBER, 1953.

Lat. 51° 28' 6" N, Long. 0° 18' 47" W, Height above M.S.L. 5m.

LITHOLOGIC FOUNDATION: RIVER GRAVEL RESTING ON LONDON CLAY.

INSTRUMENTS: (I) GALITZIN APERIODIC SEISMOGRAPHS, PHOTO-GALVANOMETRIC REGISTRATION, THREE COMPONENTS.

CONSTANTS: FOR NOTATION SEE FÜRST B. GALITZIN "VORLESUNGEN ÜBER SEISMOMETRIE"

(LEIPZIG, 1914) OR G. W. WALKER "MODERN SEISMOLOGY" (LONDON, 1918).

COMPONENT.	DATE FROM WHICH CONSTANTS APPLY.	GALVANOMETER FREE PERIOD T_1 sec.	PENDULUM FREE PERIOD T_2 sec.	DAMPING CONSTANT μ^2 .	$\frac{Ak}{\pi l}$ sec. ⁻¹
N.	23 July 1951	21.6	23.3	+0.05	52.8
E.	26 July 1951	17.4	18.7	+0.01	66.7
Z.	2 August 1951	14.1	11.8	+0.18	143.

(II) VERTICAL SEISMOGRAPH, PERIOD 1.5 SECS., DIRECT OPTICAL REGISTRATION (ZV.).

TIME SERVICE: MINUTE TIME-MARKS ARE MADE ELECTROMAGNETICALLY BY CONTACT CLOCK.

TIME COMPARISONS ARE MADE DAILY WITH SIGNALS FROM GREENWICH OBSERVATORY.

SEISMOMETRIC READINGS CAN BE DETERMINED TO THE NEAREST SECOND.

DATE.	COMPT.	PHASE.	G.M.T.			PERIOD.	AMPLITUDE.	Δ	REMARKS.
			h.	m.	s.				
1	NE	e	18	34	-			Small	
		F		40	-				
2	N	iP	02	26	53		4520		
		iS		33	02				
		eSS		36	-				
		eL		41	45				
4	NE	e	13	07	-			Small.	
		F		25	-				
4	NE	e	15	50	-			Small.	
		F	16	10	-				
5	ZV, ZNE	iP	04	43	19		8050	Compression.	
		i		43	24				
		i		43	28				
		iPcP		43	36				
		i		44	09				
		iS		52	43				
		iPS		53	07				
		iSKKS		53	45				
		e	05	02	19				
		e		07	47				
		eL		15	-				
5	N	e	06	55	-			Small.	
		F	07	15	-				

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DATE.	COMPT.	PHASE.	G.M.T.			PERIOD.	AMPLI- TUDE.	Δ	REMARKS.
			h.	m.	s.				
5	ZNE	eL F	10 11	41 10	- -				
5/6	N NE	e eL F	23 00 01	50 18 25	- - -				Off east coast of Papua, New Guinea 9°S., 152½°E. (U.S.C.G.S).
6	Z N N ZN N Z N E NE ZN N	iP iPP i(PKS) iPPP i eSKKS i ePS e eL M F	21 22	59 04 06 08 11 12 13 16 34 44 54	23 46 19 07 52 19 26 24 08 09 26				N, e. E, e. E, e. E, e. New Britain area 3½°S., 151°E. (U.S.C.G.S).
						20	+16		Overlapped
6/7	ZV,Z ZV ZV ZV ZV	iP i i i i F	23	13 13 13 13	28 34 37 44 52				E, e. . Other phases confused by previous shock.
8	NE	e F	16 17	56 20	- -				Small. Sikang Province, China. 30°N., 97½°E. (U.S.C.G.S).
8	ZV ZV,Z ZV ZV ZN ZNE N Z	iP i i i e e M i F	19	21 21 21 21 36 42 45 47	20 23 34 38 - 45 53 10				Western Tibet 32°N., 82½°E. (U.S.C.G.S).
						21	-17		
9	ZNE	e F	00	03 20	- -				Small.
9	NE NE N	e(PcP) e(S) eL F	04	06 08 09 20	51 15 21 -				
9	N	e F	17	43 50	- -				Small.
10	NE	e F	01	00 10	- -				Small.
10	ZV Z ZV ZV Z	iP i i iPP iPPP	21	33 33 34 34 34	48 53 05 12 26			2385	NE, e. Near west coast of Greece. 38½°N., 21°E. (U.S.C.G.S).

KEW OBSERVATORY, RICHMOND, SURREY, ENGLAND.

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OCTOBER, 19 53

DATE.	COMPT.	PHASE.	G.M.T.			PERIOD.	AMPLITUDE.	Δ	REMARKS.
			h.	m.	s.				
Contd. 10	ZNE	iS	21	37	38				
	E	i(SS)		37	49				
	NE	e		40	34				
	ZNE	i		41	57				
	Z	i		44	01				
		F	22	05	-				
✓ 11	ZV, ZN	iP	13	20	26			8315	E, e.
	ZV, Z	iPcP		20	46				Compression.
	N	iPP		23	28				
	N	ePPP		25	41				
	N	iS		30	05				E, e.
	N	i(PS)		31	03				
	Z	i(PPS)		31	19				E, e.
	NE	eSS		35	05				
	Z	i		36	09				
	Z	i		39	50				E, e.
	Z	i		41	21				N, e.
	ZE	e		42	25				
	E	e		43	25				
	Z	i		44	10				
	ZE	e		47	15				N, e.
	N	e		48	21				Northern Kurile Islands, depth about 60 Kms.
	ZNE	e(L)		52	-				50°N., 155½°E. (U.S.C.G.S?)
	E	M		56	21	20	+18		
N	M		14	00	29	20	+18		
Z	M		14	00	31	19	-11		
	F		16	10	-				
✓ 11	ZV, Z	iP	17	18	22			6890	E, e.
	NE	iS		26	46				
	N	e		33	13				Western Tibet 31½°N., 83°E.
	E	e		34	57				(U.S.C.G.S).
	ZNE	e		40	-				
	ZNE	e(L)		42	-				
	N	M		42	57	20	-53		
	E	M		47	50	20	+22		
	Z	M		47	54	16	-16		
	F		18	40	-				
13	N	iP	09	16	13			9220	E, e.
	N	ePPP		21	19				Northern Gulf of
	N	e		23	09				California. 30°N, 113½°W.
	NE	eS		26	37				(U.S.C.G.S).
		F		-	-				Overlapped.
13	ZV, ZNE	i	09	49	53				Z, e. Other phases confused
	F		10	25	-				by previous shocks. Numerous small aftershocks follow.
14	ZV, ZNE	iP	14	59	27			8735	Compression.
	ZV, Z	iP		59	56				
	ZV, Z	iPP	15	02	31				Near east coast of
	ZV	iPPP		02	57				Hokkaido, Japan. Depth
	ZV	i		06	52				about 100 Kms.
	NE	iS		09	27				43°N., 144½°E.
	ZN	iPS		10	08				(U.S.C.G.S).
	Z	i		32	50				
	Z	i		35	45				
	Z	i		42	47				
		F		16	00	-			

KEW OBSERVATORY, RICHMOND, SURREY, ENGLAND.

SEISMOLOGICAL BULLETIN.

OCTOBER, 19 53

DATE	COMPT.	PHASE.	G.M.T.			PERIOD.	AMPLI- TUDE.	Δ	REMARKS.
			h.	m.	s.				
16	N NE ZN	e e e F	09	03	-				Small. Mid Atlantic Ocean 15°N., 45°W. (U.S.C.G.S)..
16	ZNE E	e eL F	10	34	-				Small. Oaxaco, Mexico. 16°N., 96½°W. (U.S.C.G.S).
16	ZV E ZNE	e e e F	21	49	21				Small.
				53	01				
				55	41				
			22	10	-				
17	ZV,Z N ZV N N NE ZNE ZNE	iP i i eS i e e e(L) F	21	19	09			8445	E, e. Near southeast coast Kamchatka 52°N., 159°E. (U.S.G.G.S).
				19	17				
				19	28				
				28	55				
				38	19				
				44	-				
				49	09				
				53	-				
			23	10	-				
19	NF	e F	18	56	-				Small.
			19	10	-				
21	N N ZNE	e e e F	05	01	-				Small.
				06	-				
				09	-				
				30	-				
21	ZV,ZNE ZV,ZNE ZV NE N N N ZE ZNE	iP iS i e iScP i i i eScS F	11	35	42			2280	Compression. Foreshock of 18h. 44m. 27s. Near west coast of Greece. 38°N., 20½°E. (U.S.C.G.S).
				39	22				
				40	53				
				42	-				
				43	02				
				43	48				
				44	30				
				45	14				
				47	-				
			12	15	-				
21	ZNE	e F	16	42	-				Small.
				55	-				
21	ZV,ZNE ZV ZV ZNE ZNE ZNE N E Z	iP i i iS i i i M M M F	18	44	27			2280	Compression. Near west coast of Greece. Minor damage on Cephalonia. 38°N., 20½°E. (U.S.C.G.S).
				44	32				
				45	43				
				48	07				
				50	50				
				51	34				
				51	49	15	+88		
				53	56	16	+32		
				54	40	9	+15		
			20	20	-				

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KEW OBSERVATORY, RICHMOND, SURREY, ENGLAND.

SEISMOLOGICAL BULLETIN.

OCTOBER, 1953

DATE.	COMPT.	PHASE.	G.M.T.			PERIOD.	AMPLI- TUDE.	Δ	REMARKS.	
			h.	m.	s.					
21/22	ZV	iP	23	48	34		μ	km.	NE, e. Aftershock of 18h. 44m. 27s. Near west coast of Greece. 38°N., 20½°E. (U.S.C.G.S).	
	ZNE	eS		52	14					
	N	e		55	02					
	ZNE	e		55	42					
		F	00	10	-					
22	ZNE	e	13	48	-				Small.	
			14	00	-					
24	NE	e	05	09	-				Small.	
				25	-					-
25	ZNE	e	00	40	-				Small.	
				01	25					-
27	ZV,Z ZV	i	03	53	05				Small.	
				53	23					-
				-	-					-
27	ZV N	i	18	33	20				Microseisms, Compression. Small.	
				43	28					-
				19	10					-
28	NE	e	02	56	-				Small.	
				03	15					-
28	NE NE	e	12	53	-				Small.	
				eL	59					-
				F	13					10



AIR MINISTRY, METEOROLOGICAL OFFICE, LONDON.

KEW OBSERVATORY, RICHMOND, SURREY, ENGLAND.

SEISMOLOGICAL BULLETIN FOR NOVEMBER, 1953

Lat. 51° 28' 6" N, Long. 0° 18' 47" W, Height above M.S.L. 5m.

LITHOLOGIC FOUNDATION: RIVER GRAVEL RESTING ON LONDON CLAY.

INSTRUMENTS: (I) GALITZIN APERIODIC SEISMOGRAPHS, PHOTO-GALVANOMETRIC REGISTRATION, THREE COMPONENTS.

CONSTANTS: FOR NOTATION SEE FÜRST B. GALITZIN "VORLESUNGEN ÜBER SEISMOMETRIE"

(LEIPZIG, 1914) OR G. W. WALKER "MODERN SEISMOLOGY" (LONDON, 1913).

COMPONENT.	DATE FROM WHICH CONSTANTS APPLY.	GALVANOMETER FREE PERIOD T ₁ sec.	PENDULUM FREE PERIOD T. sec.	DAMPING CONSTANT μ ² .	$\frac{Ah}{\pi l}$ sec. ⁻¹
N.	23 July 1951	21.6	23.3	+0.05	52.8
E.	26 July 1951	17.4	18.7	+0.01	66.7
Z.	2 August 1951	14.1	11.8	+0.18	

(II) VERTICAL SEISMOGRAPH, PERIOD 1.5 SECS., DIRECT OPTICAL REGISTRATION (ZV).

TIME SERVICE: MINUTE TIME-MARKS ARE MADE ELECTROMAGNETICALLY BY CONTACT CLOCK.

TIME COMPARISONS ARE MADE DAILY WITH SIGNALS FROM GREENWICH OBSERVATORY.

SEISMOMETRIC READINGS CAN BE DETERMINED TO THE NEAREST SECOND.

DATE.	COMPT.	PHASE.	G.M.T.			PERIOD.	AMPLITUDE.	Δ	REMARKS.
			h.	m.	s.				
1	NE	e F	19	03	-				Microseisms. Off east coast of Formosa. 22°N., 122°E. (U.S.C.G.S).
1	N	e F	21	46	-				Small, Microseisms. Kurile Islands region. (U.S.C.G.S).
3	NE	e F	22	41	-				Small.
4	ZN	iPKP	04	08	42		15,000		E, e. No S.P.V. record
	ZN	iPP		11	41				E, e.
	N	iPS		22	04				E, e.
	E	ePPS		24	34				
	NE	e		25	30				
	E	iSS		30	20				N, e.
	NE	i		36	02				
	E	e		41	24				
	E	i		43	14				New Hebrides Islands
	E	i		44	44				12½°S, 166½°E. (U.S.C.G.S).
	E	i		46	13				
	ZE	e(LQ)		54	10				
	ZNE	iLR		56	44				
	E	M	05	20	29	18	+56		
	N	M		10	36	23	-120		
	Z	M		11	35	22	-75		
		F	07	50	-				
4	N	iPKP	12	51	-				Aftershock of 04h. 08m. 42s.
	NE	e		59	-				New Hebrides Islands.
	ZNE	eL	13	36	-				12°S., 166½°E. (U.S.C.G.S).
		F	14	50	-				

KEW OBSERVATORY, RICHMOND, SURREY, ENGLAND.

SEISMOLOGICAL BULLETIN.

NOVEMBER, 19 53

DATE	COMPT.	PHASE.	G.M.T.			PERIOD.	AMPLITUDE.	Δ	REMARKS.
			h.	m.	s.				
8	NE	e F	14 15	57 05	- -				Possibly not seismic.
9	N	e F	03 04	57 20	- -				Small.
9	ZV, ZN	iP	17	37	23			8400	Near east coast of Kamchatka. depth about 60 Kms. 52½°N., 159°E. (U.S.C.G.S).
	ZN	ePPP		42	06				
	NE	eS		47	02				
	NE	eSS		52	11				
	ZNE	eL	18	04	47				
	E	M		14	26	22	+ 7		
	N	M		13	44	23	- 9		
	Z	M		28	15	17	- 6		
		F	19	15	-				
10	ZV, Z	i	15	13	36				NE, e.
	NE	eL F		19 50	27 -				
10/11	ZV, ZNE	iP	23	52	09			8450	Compression.
	ZV	iPcP		52	37				Near south coast Kamchatka depth about 60 Kms. 50½°N., 157°E. (U.S.C.G.S).
	N	iPP		55	30				
	N	ePPP		57	21				
	Z	i		58	20				
	N	iS	00	01	47				
	E	iScS		02	15				
	ZN	i		02	58				
	E	e		05	05				
	N	eSS		06	42				
	N	e		08	23				
	N	e		12	45				
	ZNE	eL		14	47				
	N	M		21	09	31	+43		
	E	M		28	14	20	+17		
	Z	M		34	33	16	+9		
		F	02	30	-				
13	NE	e F	12	09 35	- -				Small.
13	ZV, Z	iP	16	30	11			4795	E, e.
	ZV	i(PPP)		30	28				Small, probably deeper than normal.
	NE	eS		36	38				
	NE	e		40	59				
	N	e		54	10				
	N	e	17	01	-				3½°N., 96°E. (U.S.C.G.S).
	E	e		11	-				
		F		40	-				
13	Z	iPKP	19	35	06			15550	NE, e.
	Z	iPP		38	08				
	Z	i(PcPKP)		43	22				
	Z	i(PcPKP)		47	11				NE, e.
	Z	iPKKS		47	57				
	Z	ePPS		50	16				
	NE	e		52	08				
	NE	eSS		56	26				
	E	e(SKSSKS)		58	21				

KEW OBSERVATORY, RICHMOND, SURREY, ENGLAND.

SEISMOLOGICAL BULLETIN.

NOVEMBER, 19 53

DATE.	COMPT.	PHASE.	G.M.T.			PERIOD.	AMPLITUDE.	Δ	REMARKS.
			h.	m.	s.				
Contd.						sec.	μ	km.	
✓ 13	ZN	e	20	02	16				
	ZN	e		15	38				
	NE	e(L)		23	-				
	N	M		42	11	19	- 9		
		F	22	05	-				
14	ZV, Z	1P	20	15	16			8530	
	ZV, ZNE	1PcP		15	29				
	N	e(PPP)		20	27				52°N., 160°E. (U.S.C.G.S).
	NE	eS		25	03				
	N	e		36	05				
	ZNE	e(L)		43	-				
		F	21	45	-				
16	ZV, Z	i	17	37	17				21½S., 169°E. (U.S.C.G.S).
		F	-	-	-				Microseisms.
✓ 17	ZV, ZNE	1P	13	42	06			8955	Dilatation, microseisms.
	ZV, ZE	1PP		45	12				
	ZV, ZNE	iS		52	13				
	E	e		54	15				
	ZNE	eSS		57	05				
	ZNE	e	14	01	26				
	NE	e(LQ)		04	05				
	ZNE	e(LR)		06	51				
	E	M		16	27	18	+34		
	N	M		17	33	25	+49		
	Z	M		17	42	12	-15		
		F	16	00	-				
18	ZV	i	18	49	37				Microseisms.
		F	-	-	-				
20	NE	e	04	41	-				Small.
	E	e		45	-				
	ZNE	e(L)		48	-				
		F	05	15	-				
20	ZV	e	19	18	-				Small, deeper than normal
	ZNE	e		22	16				
	ZNE	e		25	42				
		F		35	-				
20	ZV	e	21	24	-				Small.
		F	-	-	-				Microseisms.
25	ZV, Z	i	17	55	44				Dilatation.
		F	-	-	-				Overlapped.
✓ 25	ZV, ZNE	1P	18	01	46			9510	Dilatation, numerous aftershocks.
	NE	i		02	04				
	ZV	i		02	14				
	NE	i		02	51				
	NE	i		03	56				
	E	i		04	44				
	ZV, ZNE	1PP		05	19				
	E	i		05	38				
	ZN	e		11	36				
	ZNE	1S		12	24				
	ZV	i		12	47				

KEW OBSERVATORY, RICHMOND, SURREY, ENGLAND.

SEISMOLOGICAL BULLETIN.

NOVEMBER, 19 53

DATE.	COMPT.	PHASE.	G.M.T.			PERIOD.	AMPLITUDE.	Δ	REMARKS.
			h.	m.	s.				
Contd. 25	ZV,N	iPS	18	13	43				
	ZNE	eSS		17	54				
	N	i		23	03				
	E	e		25	29				
	NE	eLQ		26	50				
	ZNE	eLR		29	36				
	E	M		34	24	33	+740		
	ZV	e		34	56				
	N	M		44	-	22	> 640		
	Z	M		44	-	23	> 500		
		F	23	25	-				
26	ZV,ZNE	iP	00	16	22			9890	Aftershock of 18h. 01m. 46s.
	ZNE	iPP		19	56				
	ZNE	iSKS		27	06				
	ZNE	iS		27	16				
	N	iSS		33	56				
	NE	e(L)		43	56				
	E	M	01	00	20	19	-34		
	Z	M		00	33	19	-30		
	N	M		00	59	21	-43		
			F	-	-	-			Overlapped.
26	ZV,Z	iP	02	00	22			9900	NE, e.
	NE	eSKS		11	04				Aftershock of 18h. 01m. 46s.
	E	eS		11	18				
	NE	e(L)		28	-				
		F	03	25	-				
26	NE	e	05	11	-				Small.
	ZNE	e(L)		17	-				Aftershock?
		F		35	-				
26	ZV,ZNE	iP	08	27	08			9550	Aftershock of 18h. 01m. 46s.
	NE	ePP		30	43				
	NE	iS		37	48				
	ZN	iPS		39	06				
	NE	eSS		43	15				
	NE	e(L)		54	56				
	N	M	09	09	04	21	+48		
	E	M		10	46	19	+44		
	Z	M		11	09	17	+23		
			F	11	20	-			
27	NE	e	00	50	-				Small.
		F	01	10	-				
27	NE	e	12	13	-				Small.
		F		45	-				
28	NE	e	00	10	-				Small.
		F	01	00	-				
28	N	e	03	04	-				Small.
		F		15	-				

KEW OBSERVATORY, RICHMOND, SURREY, ENGLAND.
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NOVEMBER, 19 53

DATE.	COMPT.	PHASE.	G.M.T.			PERIOD.	AMPLI- TUDE.		REMARKS.
			h.	m.	s.		sec.	μ	
28	ZV	i	20	22	07				NE, e.
	NE	e		25	56				
	NE	e		29	25				
		F		45	-				
29	ZNE	e	01	02	56				
	ZN	e		04	27				
	N	e		07	20				
	ZE	eL		10	44				
		F		25	-				
29	NE	e	04	55	-				
		F		05	20				
29	NE	e	19	11	-				Small.
		F		25	-				
30	ZV	i	13	25	38				Microseisms.
	NE	e		32	29				
		F		40	-				

AIR MINISTRY, METEOROLOGICAL OFFICE, LONDON.

KEW OBSERVATORY, RICHMOND, SURREY, ENGLAND.

SEISMOLOGICAL BULLETIN FOR DECEMBER, 1953.

Lat. 51° 28' 6" N, Long. 0° 18' 47" W, Height above M.S.L. 5m.

LITHOLOGIC FOUNDATION: RIVER GRAVEL RESTING ON LONDON CLAY.

INSTRUMENTS: (I) GALITZIN APERIODIC SEISMOGRAPHS, PHOTO-GALVANOMETRIC REGISTRATION, THREE COMPONENTS.

CONSTANTS: FOR NOTATION SEE FÜRST B. GALITZIN "VORLESUNGEN ÜBER SEISMOMETRIE" (LEIPZIG, 1914) OR G. W. WALKER "MODERN SEISMOLOGY" (LONDON, 1918).

COMPONENT.	DATE FROM WHICH CONSTANTS APPLY.	GALVANOMETER FREE PERIOD T. sec.	PENDULUM FREE PERIOD T. sec.	DAMPING CONSTANT μ^2 .	$\frac{Ak}{\pi l}$ sec. ⁻¹
N.	23 July 1951	21.6	23.3	+0.05	52.8
E.	26 July 1951	17.4	18.7	+0.01	66.7
Z.	2 August 1951	14.1	11.8	+0.18	143.

(II) VERTICAL SEISMOGRAPH, PERIOD 1.5 SECS., DIRECT OPTICAL REGISTRATION (ZV).

TIME SERVICE: MINUTE TIME-MARKS ARE MADE ELECTROMAGNETICALLY BY CONTACT CLOCK.
TIME COMPARISONS ARE MADE DAILY WITH SIGNALS FROM GREENWICH OBSERVATORY.
SEISMOMETRIC READINGS CAN BE DETERMINED TO THE NEAREST SECOND.

DATE.	COMPT.	PHASE.	G.M.T.			PERIOD. sec.	AMPLI- TUDE. μ	Δ km.	REMARKS.
			h.	m.	s.				
1	ZV, Z	iP	05	21	15			7150	E, e. Microseisms, compression N, e. Ryukyu islands Depth about 60 Kms. 29°N., 128½°E (U.S.C.G.S).
	E	i(SKS)		31	23				
	ZNE	i(PS)		33	06				
	ZNE	e		34	24				
	E	e(PKKP)		38	56				
	ZNE	e		44	06				
	NE	e		51	-				
2	ZV	e(PKP)	04	44	-				Small, microseisms. Northern New Guinea. 3½°S., 141½°E. (U.S.C.G.S).
	NE	e(SKS)		51	-				
	NE	e		53	28				
	NE	e(SS)	05	02	-				
	NE	e		05	16				
	NE	e		15	-				
	NE	eL		25	-				
3	ZV, Z	iP	15	04	40				Compression. Central Tibet 31°N., 85½°E. (U.S.C.G.S).
	NE	iS		13	17				
	N	e		20	04				
	N	e(LQ)		26	-				
	ZNE	e(LR)		30	-				
	N	M		30	26				
4	ZNE	eL	08	20	-				Small.
		F		30	-				

KEW OBSERVATORY, RICHMOND, SURREY, ENGLAND.
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DATE.	COMPT.	PHASE.	G.M.T.			PERIOD.	AMPLI- TUDE.	Δ	REMARKS.
			h.	m.	s.				
✓ 4	NE	e	15	15	21	19	+16	Off coast of Vancouver island 49½°N., 129°W. (U.S.C.G.S).	
	NE	e		23	29				
	ZNE	eLR		32	-				
	N	M		33	05				
		F	16	25	-				
5	ZV	i	09	54	12			Dilatation. small	
	ZNE	eL	10	35	-				
		F	11	05	-				
7	ZV, Z	iP	02	18	48		10,650	Dilatation. Northern Chile, Heavy casualties and extensive property damage. 22°S., 68½°W. (U.S.C.G.S). Depth about 100 Kms.	
	ZNE	i		19	20				
	ZV, Z	iPP		22	40				
	NE	iSKS		29	16				
	ZNE	eS		29	56				
	ZNE	eL		53	-				
		F	04	45	-				
7	ZV	e	19	04	-			Small.	
	NE	e	20	00	-				
		F		15	-				
8	NE	e	02	58	-			Small. Bonin Isles.	
		F		30	-				
12	ZNE	e	09	06	-			Small. Off coast of Vancouver Island. charts being changed.	
		F	-	-	-				
✓ 12	ZV, ZNE	iP	17	44	10			9700	Compression. Peru. 3½°S., 81°W. (U.S.C.G.S).
	Z	iPP		47	17				
	ZNE	iS		54	50				
	E	eSS	18	01	01				
	N	eLQ		07	26				
	ZNE	eLR		09	56				
	Z	M		21	53				
	E	M		22	01				
	N	M		22	01				
		F	22	05	-				
13	ZV	i	07	08	00			Small. Near south coast of Kamchatka 50°N., 158½°E. (U.S.C.G.S).	
	NE	e		35	-				
		F	08	15	-				
14	N	e	01	35	-			Small.	
		F		45	-				
14	NE	eL	11	27	-			Small.	
		F		50	-				
14	NE	eL	14	28	-			Small.	
		F		55	-				
16	NE	e	03	32	-			Small, microseisms.	
		F		50	-				
20	NE	e	07	27	-			Small.	
		F		50	-				

KEW OBSERVATORY, RICHMOND, SURREY, ENGLAND.
SEISMOLOGICAL BULLETIN.

DECEMBER, 19 53

DATE.	COMPT.	PHASE.	G.M.T.			PERIOD.	AMPLI- TUDE.	Δ	REMARKS.
			h.	m.	s.				
20	NE	e	10	09	-				
	NE	eL F	11	12 00	- -				
20	ZV,Z	i	21	33	04				Dilatation.
	ZV	i		33	16				
	NE	e		44	-				Honshu, Japan. $34\frac{1}{2}^{\circ}\text{N}$, $141\frac{1}{2}^{\circ}\text{E}$.
	ZNE	eL F	22	05 45	- -				(U.S.C.G.S).
21	NE	e	18	22	-				Small.
		F		30	-				
22	NE	e	19	36	-				Small. Philippine Islands.
		F	20	05	-				
23	ZV	i	15	24	08				Not seismic (aircraft breaking sound barrier).
24	NE	e	02	55	26				Microseisms. Kamchatka.
		e(L)	03	09	-				
		F	04	30	-				
24/25	ZV	iP	23	32	(57)				N,e. Microseisms. Kamchatka.
	NE	e	00	00	-				
	NE	eLR F		05 45	- -				
√ 25	ZV,ZN	iP	02	03	15			8650	Compression, microseisms E,e. Kamchatka.
	N	ePPP		08	-				
	ZNE	iS		13	12				
	ZNE	eSS		18	-				
	ZNE	eL		30	-				
	E	M		39	42	20	+31		
	N	M F		44 04	01 55	19	-33		
25	NE	e	17	00	-				Small.
		F		15	-				
26	ZV,Z	i	13	24	25				Compression, Small.
	E	e		53	-				
	NE	eL		56	-				
		F	14	30	-				
28	ZV,Z	iP	02	43	19			2330	NE, e. West coast Greece Depth about 100 Kms.
	NE	e S/ScP		46	57				
	NE	i ScP		50	29				
	F		03	05	-				

