

KEW OBSERVATORY, RICHMOND, SURREY, ENGLAND.

SEISMOLOGICAL BULLETIN FOR JANUARY, 1952.

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.	AMPLITUDE.	Δ	REMARKS.
			h.	m.	s.	sec.	μ	km.	
1	ZNE	e F	03	00	-				Microseisms.
				25	-				
1	ZNE	e F	07	55	-				Microseisms.
			08	15	-				
3	ZNE N	eL M F	06	16	-	18	+ 5		Microseisms.
				34	02				
			07	10	-				
4	ZV, ZV, ZNE	iPKP ₁ iPKP ₂ e(L) F	06	07	26				Microseisms.
				07	34				
			07	10	-				
			08	00	-				
11	NE	e F	01	21	-				Small; microseisms.
				35	-				
12	ZV, Z NE NE ZNE ZNE E N	iP eS ePS eSSS eL M M F	20	23	26			8,510	e, NE. Microseisms.
				33	15				Aleutian Islands,
				33	53				53°N, 167°W. (U.S.C.G.S.).
				43	31				
				50	-				
				56	56	17	+ 8		
			21	01	58	17	+ 7		
			23	25	-				
13	ZV, ZV, NE NE	iP eFP eS ePS	04	17	11			9,200	Compression.
				20	57				Large microseisms.
				27	34				East of Formosa.
				27	53				22°N, 124½°E. (U.S.C.G.S.)

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SEISMOLOGICAL BULLETIN.

DATE.	COMPT.	PHASE.	G.M.T.			PERIOD.	AMPLI- TUDE.	Δ	REMARKS.
			h.	m.	s.	sec.	μ	km.	
(contd)									
13	ZNE	ePPS	04	29	19				
	ZNE	e		29	49				
	N	e(SS)		34	03				
	ZNE	eL		43	-				
	N	M		52	32	29	+ 85		
	E	M		53	26	27	- 65		
		F	07	10	-				
15	NE	eL	03	10	-				Large microseisms.
		F		35	-				
17	NE	e	06	00	-				Large microseisms.
		F		30	-				Possibly not seismic.
19	Z	e	08	05	-				Microseisms;
		F		20	-				possibly not seismic.
19/20	-	-	-	-	-				19d. 09h. 12m. to 20d. 10d. 11m. No Galitzin records.
20	ZNE	e	15	15	-				Microseisms.
		F		20	-				
21	ZN,Z	1P	03	54	46			8,430	e,N.
	Z	ePP		57	46				Microseisms.
	NE	eS	04	04	31				Aleutian Islands.
	NE	ePS		05	08				53°N, 166½°W. Depth about
	ZNE	eSS		10	00				60 Km. (U.S.C.G.S).
	ZNE	eSSS		13	34				
	ZNE	eL		20	-				
	E	M		28	13	18	+ 5		
	N	M		33	15	16	+ 3		
		F	05	40	-				
23	ZV,Z	eP	03	39	56				Microseisms.
	ZNE	eL	04	02	-				
		F		30	-				
24	ZNE	e	09	55	-				Small.
		F	10	10	-				
26	ZNE	e	15	13	-				Microseisms.
		F	16	05	-				
28	ZNE	eP	06	30	16				Microseisms.
	ZNE	eL		35	-				
		F		45	-				
29	ZNE	e(L)	01	55	-				Microseisms.
		F	02	20	-				
31	ZV,	eP	20	28	53				Microseisms.
	ZNE	eL		55	-				Overlapped.
		F	-	-	-				
31	ZV,	eP	21	05	45			6,570	Large microseisms.
	ZNE	ePP		06	48				
	E	eS		13	52				

SEISMOLOGICAL BULLETIN.

JANUARY, 19 52

DATE.	COMPT.	PHASE.	G.M.T.			PERIOD.	AMPLI- TUDE.	Δ	REMARKS.
			h.	m.	s.				
(contd)									
31	NE	ePS	21	14	08				
	ZNE	eL		21	-				
	N'	M		35	14	15	- 13		
		F	23	00	-				

KEW OBSERVATORY, RICHMOND, SURREY, ENGLAND.

SEISMOLOGICAL BULLETIN FOR FEBRUARY, 19 52

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.	sec.	μ	km.	
2	ZNE	e	10	53	-				Microseisms.
		F	11	35	-				
3	ZNE	eL	00	00	-				Microseisms.
		F		30	-				
3	NE	e	20	56	49				Microseisms.
		F	21	10	-				
4	ZNE	e	19	54	-				Microseisms.
		F	20	10	-				
5	ZNE	e	05	20	-				Microseisms.
		F		30	-				
5	ZNE	e	17	45	-				
		F	18	20	-				
6	NE	e	06	02	01				
	ZNE	e		04	32				
	ZNE	e(L)		06	30				
		F		20	-				
6	ZNE	eL	08	15	-				
		F		35	-				
8	ZNE	eL	20	50	-				Microseisms,
		F	21	30	-				

KEW OBSERVATORY, RICHMOND, SURREY,

SEISMOLOGICAL BULLETIN.

FEBRUARY, 19 52

DATE.	COMPT.	PHASE.	G.M.T.			PERIOD.	AMPLI- TUDE.	Δ	REMARKS.
			h.	m.	s.	sec.	μ	km.	
10	ZV, ZNE ZNE ZNE	i(P) e(S) e eL F	06	14	55			(2,500)	
				18	46				
				19	02				
				21	-				
				45	-				
11	ZV, ZV,Z NE NE NE ZNE	iP e e e e e(L) F	07	18	47				
				21	20				
				25	21				
				28	33				
				33	02				
				35	-				
			08	45	-				
11	ZNE	e F	16	55	-				
			17	40	-				
14	Z Z Z ZV,Z Z Z N ZNE NE NE NE NE ZNE N E Z	eP e e ePKP iPP i eSKKS iPPS eSS eSSS e eLQ eLR M M M F	03	54	04			(12,000)	Compression.
				54	14				
				54	48				
				58	11				Diffuse.
				59	02				
			04	00	31				Flores Sea, north of Timor Island 8°S, 125°E.(U.S.C.G.S).
				06	07				
				09	30				
				14	38				
				19	30				} Large.
				26	23				
				28	-				
				40	-				
				42	20	33	+ 75		
				48	00	25	+ 40		
				57	01	20	- 28		
			07	30	-				
14	ZV, NE ZV,ZNE ZNE	iP eS ePS eL F	21	14	38			8,100	Northwestern Colombia. 7½°N, 76½°W. (U.S.C.G.S).
				24	05				
				24	16				
				40	-				
			22	35	-				
17	ZV,Z NE ZNE Z	e e eL M F	17	48	21				
			18	01	16				
				15	-				
				24	35	16	+ 2		
			19	15	-				
18	ZNE	e F	02	52	-				
			03	10	-				
22	ZNE	e F	00	15	-				
				40	-				
22	ZNE	e F	12	46	-				
			13	30	-				
24	ZV, ZV, F	i i F	21	28	35				Small. Western Germany. Shown on Galitzins.
				28	50				
				32	-				

DATE.	COMPT.	PHASE.	G.M.T.			PERIOD.	AMPLI- TUDE.	Δ	REMARKS.
			h.	m.	s.				
25	ZV,ZNE	iPKP1	01	36	40			(16,000)	Compression Tonga Islands. 17°S, 173½°W. (U.S.C.G.S). > 180°
	ZV,	iPKP2		37	00				
	ZV,ZNE	ePP		39	58				
	ZNE	iPKS		44	50				
	ZNE	ePPP		49	58				
	ZNE	iSS		58	32				
	ZNE	ePSS		59	38				
	ZNE	eSSS	02	04	18				
	ZNE	eL		20	-				
	N	M		36	33	20	+ 12		
	Z	M		39	35	22	- 12		
	E	M		39	41	20	+ 5		
		F	04	30	-				
26	ZV,Z	iP	11	43	33			(14,000)	Compression. e. N,E. e. N,E.
	ZV,Z	i		44	32				
	ZV,Z	i		44	59				
	ZV,Z	iPP		47	04				
	ZNE	i		47	38				
	ZNE	iSKS		53	33				
	ZNE	iSKKS		55	25				
	ZNE	ePPS		59	41				
	ZNE	eSSS	12	08	56				
	ZNE	eL		15	-				
	Z	M		19	25	20	- 8		
	N	M		19	34	21	+ 5		
		F	14	10	-				
26	ZV,Z	eP	15	51	18			(10,000)	
	ZNE	e(s)	16	02	15				
	NE	ePPS		06	57				
	NE	eSS		09	32				
	ZNE	eL		13	-				
	E	M		21	40	18	+ 7		
	Z	M		21	48	21	+ 9		
	N	M		22	27	20	+ 7		
		F	17	30	-				
26	ZNE	e	17	55	-				Small.
		F	18	25	-				
26	ZNE	e	22	10	-				
	ZNE	eL		23	-				
		F	23	20	-				
28	ZNE	e	01	30	-				Small.
		F	02	00	-				

KEW OBSERVATORY, RICHMOND, SURRE.**SEISMOLOGICAL BULLETIN FOR MARCH, 19 52**

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			h.	m.	s.	sec.	μ	km.	
1	ZNE	e	03	37	(52)				Microseisms.
	ZNE	eL		45	-				
		F	04	00	-				
1	ZNE	eL	16	10	-				Microseisms.
		F		50	-				
2	ZNE	e(L)	04	27	-				Large microseisms.
		F		55	-				
2	ZNE	e(L)	19	30	-				Large microseisms.
		F	20	10	-				
3	ZNE	e(L)	08	32	-				Large microseisms.
		F	10	20	-				
3	ZNE	e(L)	18	15	-				Microseisms.
		F	19	00	-				
4	ZV,ZNE	eP	01	35	02			(9,280)	Microseisms.
	ZV,ZNE	i		35	13				
	ZV,ZNE	i		35	25				
	ZV,ZNE	e		36	09				Near east coast of Hokkaido,
	ZV,ZNE	i		37	32				Japan. 42½°N, 143½°E.
	ZV,ZNE	i		37	45				(U.S.C.G.S.).
	ZV,ZNE	iPP		38	35				
	ZV,ZNE	ePPP		40	43				
	ZV,ZNE	e(S)		45	29				
	ZV,ZNE	iPS		46	05				
	ZV,ZNE	iPPS		46	13				

(contd)



SEISMOLOGICAL BULLETIN.

17 06

DATE.	COMPT.	PHASE.	G.M.T.			PERIOD.	AMPLI- TUDE.	Δ	REMARKS.
			h.	m.	s.		μ		
(contd)						sec.		km.	
4	ZV, ZNE	e	01	47	35				
	ZV, ZNE	eSS		52	14				
	ZV, ZNE	eSSS		57	19				Possibly more than one shock.
	ZV, ZNE	eL	02	01	-				
	E	M		(03)	-	(24)	(>650)		Amplitudes very faint;
	N	M		(07)	-	(24)	(>620)		measurements doubtful.
	Z	M		(11)	-	(24)	(>570)		
		F	09	30	-				
4	ZNE	e	17	03	53				Microseisms.
	NE	e		09	41				
	ZNE	eL		16	-				
	N	M		17	58	23	+ 5		
		F	18	15	-				
4	ZNE	e	19	10	-				Microseisms.
		F		25	-				
4	ZV,	iP	20	08	38			9,220	e, ZNE.
	ZV,	i		08	53				e, ZNE.
	ZV,	i		09	06				e, ZNE.
	N	ePP		11	21				
	NE	eSKS		18	48				Microseisms.
	NE	eS		19	02				East coast of Hokkaido,
	Z	ePS		19	16				Japan. 42°N, 146°E.
	NE	eSS		23	58				(U.S.C.G.S).
	ZNE	eSSS		28	43				
	ZNE	eL		36	-				
	N	M		43	17	21	+ 26		
	E	M		43	37	21	- 38		
		F	23	10	-				
5	ZNE	eP	04	01	34			9,280	Microseisms.
	NE	eSKS		11	45				
	NE	eS		12	01				
	ZNE	eL		31	-				
	E	M		36	30	20	- 8		
		F	06	55	-				
5	NE	e	09	39	41				Microseisms.
	ZNE	eL		58	-				
	N	M	10	04	28	12	+ 4		
		F		45	-				
5	ZV,	iP	16	07	39			(6720)	Microseisms.
	NE	e(s)		15	53				
	NE	e		16	52				Doubtful; probably more
	ZNE	eL		23	-				than one shock.
	N	M		47	52	17	+ 9		
		F	17	55	-				
5	ZNE	e	18	45	-				Microseisms.
		F	19	05	-				
5	ZNE	e	21	35	-				Microseisms.
		F	22	00	-				

DATE.	COMPT.	PHASE.	G.M.T.			PERIOD.	AMPLI- TUDE.	Δ	REMARKS.
			h.	m.	s.		μ	km.	
7	ZV,Z	eP	07	45	12			9,220	Microseisms. Honshu, Japan. 36°N, 136½°E. (U.S.C.G.S).
	NE	iS		55	36				
	NE	iPS		56	32				
	NE	eSSS	08	06	01				
	NE	e		13	48				
	ZNE	eL		17	-				
	E	M		23	23	15	- 19		
	N	M		25	30	15	- 22		
	Z	M		30	35	14	- 13		
		F	19	20	-				
7	ZNE	e	09	25	-				Microseisms.
		F	10	00	-				
7	ZNE N	eL	19	00	-			18	Microseisms.
		M		07	39		+ 2		
		F		40	-				
7	ZNE	e	20	30	-				Microseisms.
		F	21	05	-				
8	ZNE	e	11	40	-				Microseisms.
		F	12	10	-				
9	ZNE	e	04	57	-				Microseisms.
		F	05	10	-				
9	ZNE N	e(L)	05	53	-			15	Microseisms.
		M		56	47		- 5		
		F	06	15	-				
9	ZV,Z	iP	17	16	07			(9,460)	Compression. e, NE. Microseisms.
	ZNE	e		16	25				
	ZNE	ePP		19	17				
	ZNE	i		21	29				
	NE	iSKS		26	21				
	NE	e(S)		26	43				
	ZV,ZNE	ePS		27	45				
	ZNE	e		31	49				
	ZNE	eSS		32	39				
	ZNE	eL		40	-				
	E	M		50	59	24	- 95		
	N	M		51	49	26	+150		
	Z	M		52	18	26	-90		
		F	-	-	-				
									Overlapped.
9	ZV, NE NE M N	eP	20	10	55			7,200	Microseisms. Alaska-Canada border. 59½°N, 136°W (U.S.C.G.S).
		eS		19	35				
		eL		34	-				
		M		38	00	20	+ 10		
		F	21	55	-				
10	ZNE	e	18	45	-				Microseisms.
		F	19	15	-				
10	NE'	e	20	05	-				Microseisms.
		F		15	-				

DATE.	COMPT.	PHASE.	G.M.T.			PERIOD.	AMPLI- TUDE.	Δ	REMARKS.
			h.	m.	s.	sec.	μ	km.	
11	ZNE	e F	20 21	55 55	- -				Microseisms.
12	ZNE	e F	01 02	50 20	- -				Small.
12	ZV,Z ZNE	iP eL F	12	17 22 35	15 - -				Microseisms.
13	ZNE	e F	02	25 40	- -				Microseisms.
13	ZNE	e F	06	42(07) 55	- -				Microseisms.
13	ZNE	e F	07	23 35	- -				Microseisms.
13	ZNE NE ZNE ZNE	eP e e(SKS) eL F	14 15	11 19 21 40 25	09 55 29 - -			(9,700)	Microseisms. East China Sea, 28½°N, 127°W. Depth about 200 Km. (U.S.C.G.S).
14	ZNE	e(L) F	18 19	50 10	- -				Microseisms.
14	ZNE	eL F	21 22	40 15	- -				Microseisms.
15	ZNE ZNE N	e eL M F	11 12 13	40 56 13 10	25 - 38 -	25	- 12		Microseisms.
16	ZNE	eL F	22 23	53 20	- -				
19	ZV, ZV,Z ZNE ZV,ZNE ZNE N	iP e iS e eL M F	01 02	32 32 36 37 39 40 15	32 54 55 01 - 42 -	17	+ 14	2,780	e, ZNE.
19	ZNE	e F	08	20 50	- -				Microseisms.
19	ZV, NE ZNE N	i e eL M F	09 10	03 35 42 49 40	41 23 - 46 -	17	+ 6		Microseisms.

DATE.	COMPT.	PHASE.	G.M.T.			PERIOD.	AMPLI- TUDE.	Δ	REMARKS.
			h.	m.	s.		μ	km.	
19	ZV,ZNE	iP	11	11	22			9,640	Compression, Microseisms.
	ZV,ZNE	i		11	26				
	ZV,ZNE	ePP		15	07				
	ZV,ZNE	e		15	38				
	NE	eSKS		21	55				
	ZV,ZNE	eS		22	05				Large.
	ZV,Z	e		22	15				
	ZV,ZNE	e		24	35				
	ZNE	e		29	31				
	ZNE	eL		47	-				
	E	M	12	03	23	16	- 105		
	Z	M		04	58	16	- 175		
	N	M		06	32	16	- 175		Very faint.
		F	16	00	-				
20	ZNE	e	22	00	-				Microseisms.
		F		10	-				
21	NE	e	00	24	55				Microseisms.
	ZNE	eL		45	-				
		F	01	55	-				
21	NE	e	16	56	11				Microseisms.
	ZNE	eL		19	-				
		M		28	59	20	+ 3		
	N	F	18	35	-				
22	NE	e	07	57	39				Microseisms; possibly not seismic.
	ZNE	e		58	32				
		F	08	40	-				
22	NE	e	18	46	19				Microseisms.
	ZNE	eL		57	-				
		M	19	10	11	18	- 2		
	N	F	20	00	-				
23	NE	e	16	00	00				Microseisms.
	ZNE	eL		12	-				
		M		24	05	22	+ 4		
	E	F	17	05	-				
25	ZNE	e	03	44	42				Small.
	ZNE	eL		48	-				
		F	04	00	-				
25	Z	i	04	27	30				
	Z	i		28	36				
		F	05	55	-				
26	ZNE	e	10	35	-				
	ZNE	eL		40	-				
		F	11	10	-				
27	NE	e	16	27	17				
	ZNE	eL		40	-				
		M		45	40	18	+ 4		
	N	F	17	05	-				
29	NE	e	05	45	-				Microseisms. Possibly not seismic.
		F	06	10	-				

SEISMOLOGICAL BULLETIN FOR APRIL, 19 52

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.

(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.	sec.	μ	km.	
1	ZNE	e F	04	30 40	08 -				Small.
1	NE ZNE	e eL F	15 16	07 28 00	- - -				
1	ZNE	eL F	21	05 35	- -				
2	ZNE	eL F	19	15 40	- -				
3	ZNE	e F	03	30 40	- -				
4	ZV, ZV, NE NE N	iP iP e(S) eL M F	03 04 14 30 45 04	04 58 25 30 28 25	42 - 25 - 28 -	18	+ 2	(8,390)	Compression. e,NE. No Z record.
4	NE	e F	08 09	38 05	- -				No Z record.
4	ZNE	eL F	20 21	40 00	- -				Microseisms.
5	ZNE	e F	01	11 20	- -				Microseisms.

DATE.	COMPT.	PHASE.	G.M.T.			PERIOD.	AMPLI- TUDE.	Δ	REMARKS.
			h.	m.	s.		μ		
3	ZV, ZNE ZNE N	e(P) eL M F	10	18	41	19	- 5		
				54	-				
			11	06	53				
				30	-				
9	ZNE	e F	08	17	-				
				30	-				
10	ZV, ZNE ZNE NE ZNE Z	iP e(S) e eL M F	06	10	32	16	+ 13	(9,220)	Microseisms.
				20	53				
				32	02				
				40	-				
				56	25				
			07	55	-				
12	ZV, Z NE NE ZNE	eP eS eSS eL F	01	40	02			9,535	Microseisms.
				50	41				
				56	30				
			02	07	-				
				55	-				
12	NE	e F	11	20	-				Microseisms.
				50	-				
14	ZNE	eL F	08	40	-				Microseisms.
			09	15	-				
15	ZV, Z ZV, ZNE ZV, ZNE ZNE N	iP eS ePS eL M F	00	08	55	21	+ 6	7,820	Microseisms.
				18	07				
				19	10				
				45	-				
				57	27				
			02	30	-				Possibly another shock.
15	ZV, Z NE NE ZNE N	iP eS ePS eL M F	06	12	07	23	+ 3	8,890	Microseisms. Hokkaido, Japan, 43°N., 143½°E. (U.S.C.G.S).
				22	15				
				22	34				
				45	-				
				48	31				
			07	25	-				
15	Z Z ZNE ZNE ZNE NE ZNE N Z	e(P) ePP eSKS eS eSS eSSS eL M M F	19	20	18	17	- 9 + 8		Microseisms. Sandwich Islands region. 56°S, 24°W. (U.S.C.G.S). Phases doubtful.
				23	16				
				29	18				
				30	51				
				36	55				
				40	47				
				52	-				
			20	04	56				
				05	04				
			21	25	-				
15	ZNE	e F	00	30	-				
				45	-				

SEISMOLOGICAL BULLETIN.

17

DATE.	COMPT.	PHASE.	G.M.T.			PERIOD.	AMPLI- TUDE.	Δ	REMARKS.
			h.	m.	s.	sec.	μ	km.	
16	ZV,Z NE ZNE	1P eS eL F	03 04 05	52 02 05	58 31 -			8,790	Kurile Islands region. 47°N, 154°E. (U.S.C.G.S).
16	ZNE	e F	12	05 30	- -				Small.
16	ZNE	e F	15	10 50	- -				Small.
16	ZNE	e F	17 18	40 45	- -				Small.
16	ZNE	e F	21 22	55 20	- -				Small.
17	ZNE	e F	04 05	50 20	- -				Small.
17	ZNE	e F	09 10	53 10	- -				Small.
18	ZNE	e F	13	05 25	- -				Small.
18	ZV,Z ZNE ZNE N	e(PKP) e(SKKS) eL M F	16 17 18	18 28 03 00	16 33 43 -	20	- 3		
18	ZNE	e F	20	40 55	- -				Small.
✓ 19	ZV,ZNE ZV,ZNE ZV, ZV,ZNE ZNE ZV,ZNE ZNE ZNE ZNE N	1P 1PcP i ePP iS 1PS eSS e(SSS) eL M F	10	10 10 10 13 19 20 24 25 29 43	22 29 41 09 47 24 05 57 - 01	18	+11	8,055	Colombia-Venezuela border. 7°N, 71½°W. Depth about 60Km (U.S.C.G.S).
19	ZNE N	eL M F	12 13	15 27 55	- 24 -	22	- 4		Overlapped.
19	ZV,Z NE ZNE ZNE N	e e e eL M F	19 20 20 21	54 00 12 26 10	58 45 11 16 -	20	- 1		

SEISMOLOGICAL BULLETIN.

DATE.	COMPT.	PHASE.	G.M.T.			PERIOD.	AMPLI- TUDE.	Δ	REMARKS.
			h.	m.	s.	sec.	μ	km.	
20	ZNE	e F	10 11	55 30	- -				Microseisms.
23	ZNE	eL F	16	40 55	- -				
25	ZNE	e F	03	45 55	- -				Small.
25	ZNE	e F	06 07	45 00	- -				Small.
27	ZNE	eL F	14 15	05 00	- -				Microseisms.
28	ZV,Z ZV,ZNE ZV,ZNE NE E ZNE NE ZNE N Z	iP ePcP ePP es eP8 e(PPS) eSS eL M M F	11	06 06 09 16 17 17 23 34 42 42 35	33 56 38 37 06 59 24 - 34 39 -			8,820	e,NE.
						25 26	+ 8 - 6		
29	ZV,Z ZV,ZNE ZV,ZNE NE ZNE NE ZV,ZNE ZNE	iP esP ePP iSKS iS iPS ePPS eL F	02	47 48 51 57 58 59 00 07 35	50 58 22 54 14 52 15 - -			(10,000)	Compression. eNE. Focal depth about 200 Km.
			03	00	15				Poorly developed.
29	ZNE	e F	20	35 55	- -				
30	NE	e F	14 15	20 40	- -				Small.

KEW OBSERVATORY, RICHMOND, SURREY, ENGLAND.**SEISMOLOGICAL BULLETIN FOR MAY, 1952**

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.	AMPLI- TITUDE.	Δ	REMARKS.
			h.	m.	s.	sec.	μ	km.	
1	ZNE	e F	16	25	-				Small.
			17	00	-				
3	ZNE	e F	13	00	-				Small.
				15	-				
4	ZNE	e F	07	55	-				Small.
			08	15	-				
4	ZV, Z ZNE	e e F	14	03	39				Small; doubtful.
				09	50				
				20	-				
4	ZV, Z ZV, ZNE ZNE Z ZNE N	e(PP) e(SKS) e(SSS) e eL M F	14	35	34				Tonga Islands region. 24½°S, 177½°W. (U.S.C.G.S.).
				40	06				
			15	00	02				
				01	54				
				30	-				
				40	07	22	+ 4		
			17	10	-				
5	ZNE	e F	02	10	-				Small.
				35	-				
6	ZNE	e F	18	00	-				Small.
				15	-				
6	ZNE	e F	23	10	-				Small.
				20	-				

MAY,

19 52

SEISMOLOGICAL BULLETIN.

DATE.	COMPT.	PHASE.	G.M.T.			PERIOD.	AMPLI- TUDE.	Δ	REMARKS.
			h.	m.	s.		μ		
8	ZV, ZV,Z ZV,ZNE NE ZNE N	iP iP _C P eS ePS eL M F	01	11	23	26	- 3	9,090	Microseisms. Honshu, Japan. 35½°N, 140°E. Depth about 60Km. (U.S.C.G.S).
				11	38				
				21	41				
				21	57				
				39	-				
				50	04				
			02	15	-				
8	ZNE	e F	16	27	-				Small.
				50	-				
8	ZV,Z ZNE ZNE ZNE ZNE ZNE N	eP i(SKS) i(PS) e(PS) eSS eL M F	21	29	50	28	+ 10	(12,000)	Microseismic. Molucca Passage 2½°N, 127°E. (U.S.C.G.S).
				39	09				
				40	11				
				40	57				
				49	01				
				55	-				
			22	10	48				
			23	15	-				
9	ZNE	eL F	04	50	-				
			05	55	-				
9	ZV,Z ZV,Z ZV,ZNE	i i e F	18	06	48				Overlapped.
				06	57				
				09	15				
			-	-	-				
9	ZV,ZNE ZNE ZNE NE ZNE N Z E	i i i i eL M M M F	18	10	10	27	- 40		
				10	24				
				10	49				
				19	11				
				27	-				
				56	40	25	+ 29		
			19	04	09	20	- 11		
				07	34				
			20	45	-				
10	NE	e F	07	25	-				Possibly not seismic.
				55	-				
11	ZNE	e F	14	54	02				Small.
			15	00	-				
13	ZNE	e F	15	00	-				Small.
				45	-				
13	ZV,Z ZNE E ZNE NE ZNE N	iP es e iss e eL M F	19	43	41	19	+ 7	9,220	Compression, e,NE. Costa Rica. 10½°N, 85°W. Depth about 100Km. (U.S.C.G.S).
				54	05				
				59	24				
			20	00	06				
				02	10				
				07	-				
				15	16				
			22	45	-				

SEISMOLOGICAL BULLETIN.

MAY, 19 52

DATE.	COMPT.	PHASE.	G.M.T.			PERIOD.	AMPLI- TUDE.	Δ	REMARKS.
			h.	m.	s.		μ	km.	
14	ZV,Z	iP	00	49	15	22	+ 6	9070	Compression. e,NE. Near coast of Hokkaido, Japan. 43°N, 145½°E. (U.S.C.G.S).
	ZV,ZNE	e		49	32				
	ZNE	iS		59	32				
	NE	ePS	01	00	41				
	ZNE	eL		15	-				
	N	M		23	57				
		F	03	50	-				
14	ZNE	eL	21	45	-				
		F	22	35	-				
15	ZNE	e	11	13	-				
		F		25	-				
15	ZNE	e	19	00	-	18	+ 4	9,200	Dilatation. Off Coast of Panama. 6½°N., 79°W.(U.S.C.G.S).
		F		55	-				
16	ZNE	e	06	15	-				
		F	07	05	-				
16	ZNE	e	10	55	-				
		F	11	25	-				
16	ZNE	e	11	35	-				
		F		50	-				
16	ZNE	e	14	40	-				
		F	15	00	-				
16	ZNE	eL	16	55	-	25	+ 9	8,980	Compression. e,NE. Near Hokkaido, Japan. 42½°N, 144½°E. (U.S.C.G.S).
		F	17	20	-				
16	ZNE	e	18	35	-				
		F	19	10	-				
16	ZV,ZNE	iP	20	57	40				
	ZNE	iPcP		57	57				
	ZNE	e		58	31				
	NE	eS	21	07	12				
	ZNE	eSP		07	57				
	ZNE	eSS		12	37				
	ZNE	eL		15	-				
	E	M		25	59				
		F	23	15	-				
17	ZNE	e	06	55	-	25	+ 9	8,980	Compression. e,NE. Near Hokkaido, Japan. 42½°N, 144½°E. (U.S.C.G.S).
		F	07	25	-				
17	ZV,Z	iP	10	00	34				
	NE	eS		10	46				
	NE	ePS		11	03				
	NE	eSS		16	09				
	ZNE	eL		25	-				
	N	M		34	56				
		F	12	05	-				
19	ZNE	e	16	05	-				
		F		40	-				

SEISMOLOGICAL BULLETIN.

MAY, 19 52

DATE.	COMPT.	PHASE.	G.M.T.			PERIOD.	AMPLI- TUDE.	Δ	REMARKS.
			h.	m.	s.	sec.	μ	km.	
19	ZV,ZNE	iP	18	44	41			9,120	Compression. e, NE. e, NE. Near Hokkaido, Japan. 43°N, 144½°E. (U.S.C.G.S).
	ZV,Z	iPeP		44	58				
	ZV,Z	iPP		47	45				
	NE	eS		54	55				
	ZV,ZNE	ePS		56	00				
	ZNE	eSS	19	01	23				
	NE	eSSS		04	13				
	NE	e		11	01				
	ZNE	eL		12	-				
	E	M		18	44	24	- 55		
	N	M		26	45	19	- 40		
	Z	M		27	07	18	+ 35		
		F	22	55	-				
20	ZNE	e	15	50	-				
		F	16	25	-				
20	ZNE	e	19	15	-				Small.
		F		30	-				
22/23	ZV,Z	eP	23	21	11			10,000	
	NE	eSKS		31	38				
	NE	eS		32	10				
	ZNE	eL		50	-				
	N	M	00	00	23	21	- 6		
		F	01	10	-				
23	ZV,	iP	04	33	35				
	ZV,	i		33	50				
	ZNE	eL	05	02	-				
		F		50	-				
23	ZNE	e	16	05	-				Small.
		F		30	-				
23	ZV,Z	iP	20	43	22				e, NE.
	ZV,Z	i		44	26				e, NE.
		F		55	-				
23	ZNE	e	23	05	-				Small.
		F		30	-				
24	ZV,Z	iP	02	12	28			(9,890)	
	NE	e(SKS)		23	20				
	ZNE	eL		45	-				
		F	03	50	-				
24	ZV,Z	eP	16	19	19				
	ZNE	e(PP)		25	11				
	ZNE	e(SKS)		30	40				
	ZNE	eL		50	-				
		M	17	07	26	23	+ 10		
	N	F	19	20	-				
25	ZNE	e	07	50	-				
		F	08	20	-				
25	ZNE	e	16	50	-				
		F	17	20	-				

SEISMOLOGICAL BULLETIN.

MAY.

19 52

DATE.	COMPT.	PHASE.	G.M.T.			PERIOD.	AMPLI- TUDE.	Δ	REMARKS.
			h.	m.	s.	sec.	μ	km.	
26	ZV,Z	iP	02	57	53			9,000	
	ZV,Z	ePPP	03	02	21				
	ZNE	eS		07	07				
	NE	eSSS		15	25				
	ZNE	eL		25	-				
	N	M		31	56	16	- 3		
		F	04	15	-				
28	ZV,	iP	07	53	19				
	ZV,	i		57	37				
		F	-	-	-				Overlapped.
28	ZV,Z	iP	08	11	05			(9,500)	Dilatation.
	ZV,Z	ipP		13	50				Central Honshu, Japan.
	ZV,Z	isP		14	28				31½°N., 136°W.
	ZV,ZNE	eSKS		20	53				Depth about 400Km.
	ZV,ZNE	eSP		22	00				(U.S.C.G.S).
	ZNE	eSPP		23	02				
	ZNE	eL		40	-				Poorly marked.
		F	09	45	-				
30	ZNE	e	02	05	-				
		F		25	-				
31	ZNE	e(L)	06	10	-				Microseisms.
	N	M		34	36	24	+ 3		
		F	07	25	-				
31	ZNE	e	13	05	-				Small.
		F		15	-				

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.

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SEISMOMETRIC READINGS CAN BE DETERMINED TO THE NEAREST SECOND.

DATE.	COMPT.	PHASE.	G.M.T.			PERIOD.	AMPLITUDE.	Δ	REMARKS.
			h.	m.	s.	sec.	μ	km.	
2	ZNE	e F	03	35	-				Small.
				55	-				
2	ZNE	e	10	37	45				Microseisms.
	ZNE	eL		45	-				
		F		55	-				
2	Z	e	10	58	49				Microseisms.
	ZNE	eL	11	10	-				
		F		35	-				
2	ZNE	e	18	20	-				Microseisms.
		F		35	-				
3	ZNE	e	06	01	16				
	ZNE	e(L)		06	09				
		F		15	-				
4	ZV,	iP	06	29	27				e, Z.
	ZV,	i		29	32				e, Z.
	ZNE	eL		50	-				
		F	07	20	-				
4	Z	e	20	40	06				
	ZNE	e(L)		43	-				
		F		55	-				
5	ZV, Z	i P	06	08	29			8,590	Near west coast of Colombia.
	NE	eS		18	22				6°N, 77½°W. Depth about 60Km
	ZNE	eL		35	-				(U.S.C.G.S.).
		F	07	05	-				

DATE.	COMPT.	PHASE.	G.M.T.			PERIOD.	AMPLI- TUDE.	Δ	REMARKS.
			h.	m.	s.	sec.	μ	km.	
5	ZNE	e F	10	15	-				Small.
				30	-				
6	ZNE	e(L) F	10	50	-				
			11	05	-				
9	ZNE	e	14	58	38				
	ZNE	e	15	03	14				
		F		15	-				
10	ZV,Z	iPKP	10	18	03			(16,000)	e, NE.
	ZNE	ePP		20	54				Fiji Islands region.
	ZNE	e		26	44				15½°S, 178½°W. (U.S.C.G.S).
	ZNE	e		30	22				
	NE	eSS		40	31				
	ZNE	eSSS		45	38				
	ZNE	e		49	02				
	ZNE	eL	11	05	-				
	N	M		17	27	22	+ 6		
	Z	M		17	29	22	- 4		
		F	13	00	-				
✓ 11	ZV,Z	iP	00	45	39			(12,500)	e, NE.
	ZV,Z	iPP		49	48				e, NE.
	NE	eSKS		56	14				
	NE	eSP		59	03				
	NE	e	01	04	18				
	NE	eSS		04	58				
	ZNE	eL		15	-				
	Z	M		32	32	18	- 10		
	E	M		37	13	17	- 10		
		F	04	30	-				
12	ZNE	e	11	10	17				
	ZNE	e(L) F		17	-				
				30	-				
13	Z	eP	01	12	10			(2,540)	
	ZNE	e(S)		16	13				
	ZNE	eL		20	-				
		F		30	-				
14	ZNE	eL	08	(45)	-				Doubtful; synchronome
		F	09	05	-				clock stopped.
15	ZV,Z	iP	15	26	54			7,550	Dilatation.
	NE	eS		35	53				
	ZNE	eL		52	-				
		F	16	25	-				
15	ZNE	e	17	07	-				Small.
		F		25	-				
16	ZV,	i(P)	03	57	15				Commencement indistinct on
	ZV,	i		57	22				Galitzins.
	ZV,	i		57	32				
		F	04	20	-				

SEISMOLOGICAL BULLETIN.

JUNE,

19 52

DATE.	COMPT.	PHASE.	G.M.T.			PERIOD.	AMPLI- TUDE.	Δ	REMARKS.
			h.	m.	s.				
17	Z	e	04	31	15				
	ZNE	e		36	04				
	Z	e		49	51				
	ZNE	eL	05	25	-				
	F		06	25	-				
17	ZNE	e	07	58	-				
		F	08	10	-				
17	ZV,Z	e	12	29	29				Doubtful.
	Z	e		33	02				
	ZNE	eL	13	00	-				
	F		14	00	-				
17	ZNE	eL	22	45	-				Small.
		F	23	10	-				
18	ZNE	e	04	45	-				Small.
		F	05	05	-				
19	ZV,ZNE	eP	12	25	01			8,610	
	ZNE	eS		34	56				
	NE	eSS		40	04				
	ZNE	eL		48	-				
	N	M		57	05	27	- 120		
	F		15	30	-				
19	ZV,ZNE	e	21	25	05				Doubtful.
	ZNE	e		35	04				
	ZNE	eL		55	-				
	N	M	22	08	11	21	- 6		
	F		23	50	-				
20	ZV,Z	iP	05	59	16			9,780	e, NE. e, NE.
	ZV,Z	iPP	06	02	46				
	NE	eS		10	05				
	NE	ePS		11	03				
	ZNE	eSS		16	11				
	ZNE	eL		28	-				
	N	M		43	49	17	+ 40		
	Z	M		43	53	16	- 35		
	F		08	20	-				
21	ZV,Z	iP	06	41	10				e, NE. Compression Probably deep focus.
	Z	ePP		44	07				
	NE	e(S)		51	10				
	NE	ePPS.		53	32				
	ZNE	eL	07	05	-				
	N	M		19	58	18	- 3		
	F		18	15	-				
22	ZV,Z	iP	10	20	24			8,760	Rarefraction.
	NE	iS		30	25				
	ZNE	eL		50	-				
	F		12	15	-				

SEISMOLOGICAL BULLETIN.

JUNE, 19 52

DATE.	COMPT.	PHASE.	G.M.T.			PERIOD.	AMPLI- TUDE.	Δ	REMARKS.
			h.	m.	s.		μ		
22/23	ZV, ZNE	iP	21	54	04			8,760	Compression.
	ZNE	iPcP		54	41				
	ZNE	ePPF	22	00	23				
	ZNE	iS		04	05				
	ZNE	eSS		09	07				
	ZNE	eL		15	-				
	N	M		32	59	19	- 45		
	Z	M		35	36	17	+ 30		
	E	M		35	21	18	+ 35		
		F	02	10	-				
23	ZV, Z	e(PP)	12	19	38				
	NE	e(S)		26	52				
	ZNE	eL		45	-				
	Z	M	13	00	52	14	- 5		
		F		45	-				
24	ZV, ZNE	eP	16	41	13				
	Z	ePKP		44	16				
	NE	eSKS		51	13				
	ZNE	eL	17	10	-				
		F	18	10	-				
25/26	ZV, Z	eP	23	31	31			8,240	
	ZNE	eS		41	06				
	ZNE	eL		50	-				
	N	M		59	43	30	- 10		
		F	01	45	-				
26	ZNE	e	13	15	-				
		F		30	-				
26	ZNE	e(P)	15	37	34			(3,055)	
	ZNE	e(S)		42	15				
	ZNE	eL		43.6					
	N	M		44	27	14	- 6		
		F	16	30	-				
27	ZV, ZNE	e(P)	13	13	56				
	ZNE	eL		20	-				
		F		40	-				
30	ZNE	e	21	(15)	-				Doubtful; synchronome clock stopped.
		F	22	(30)	-				

LITHOLOGIC FOUNDATION: RIVER GRAVEL RESTING ON

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	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.	sec.	μ	km.	
2	ZNE	e F	02 03	50 10	- -				Small
3	ZV,Z	iP	01	04	23			8,650	Near West coast of Columbia 5½°N. 78°W. (U.S.C.G.S.)
	ZV	iP _o P		04	37				
	ZNE	eS		14	19				
	NE	e		25	05				
	ZNE	eL		30	-				
		F	02	10	-				
4	ZV,ZNE	e F	05	04 15	40 -				Small
4	ZNE	e F	20	40 50	- -				Small
5	ZV,Z	iP	17	28	34				Compression. Hindu Kush, Afghanistan 36½°N. 71°E. Depth about 200 Km (U.S.C.G.S.)
	ZV,Z	iP		29	21				
	ZV,Z	iSP		29	40				
	ZV,	iPP		31	12				
	ZV,Z	iSPP		32	33				
	ZV,Z	iPPP		33	22				
	ZNE	eL		40	-				
		F	18	40	-				
5/6	ZNE	eL F	23 00	56 20	- -				Small
6	ZNE	e(S)	06	27	37				
	ZNE	eL		36	-				
		F	07	30	-				



DATE.	COMPT.	PHASE.	G.M.T.			PERIOD.	AMPLI- TUDE.	Δ	REMARKS.
			h.	m.	s.	sec.	μ	km.	
7	ZNE	eL F	03 04	30 05	- -				Small
8	ZV,Z ZNE	ePKP eL F	15 16 17	59 55 15	50 - -				
8	ZNE	e F	21	10 20	- -				Small
9	ZV,Z NE ZNE E	iP i(s) eL M F	18 19	27 37 49 55 50	24 25 - 34 -	23	+4	(8,780)	Possibly SKS. Off coast of Panama 7½°N. 82°W. (U.S.C.G.S.)
9	ZV,Z NE ZNE	eP e(s) eL F	20 21	48 58 10 55	55 55 - -			(8,770)	Aftershock Possibly SKS
10	ZV,Z ZV,Z ZV,Z ZV,Z ZV,Z	iP i i i i F	16	03 04 04 06 06	57 01 07 34 44 25 -				
13	ZV,Z ZV, ZV,Z ZV,Z ZV,Z ZV, ZNE ZNE NE ZNE	iPP i i i iPPP iSKS ePS eSS eSSS eL F	12 14	17 18 18 19 21 22 28 36 41 55 30	44 03 57 25 11 45 51 05 11 - -			(15,800)	NE,e.Compression ZNE,e. NE,e. NE,e. NE,e. ZNE,e. New Hebrides Islands 18½°S, 169½°E. (U.S.C.G.S.)
✓ 13	Z Z ZNE NE ZNE ZNE N	ePP ePPP ePPS eSS eSSS eL M F	17 18 20	54 56 05 10 14 20 49 30	20 19 15 05 07 - 43 -	22	-8	(12,500)	Ceram Sea 3°S, 128°E. (U.S.C.G.S.)
✓ 15	Z ZNE Z	eP eL M F	06 07	18 40 51 45	35 - 58 -	19	-2		Near Coast of Guatemala 14½°N, 92½°W. (U.S.C.G.S.)
16	ZNE	e F	02	10 25	- -				Small

SEISMOLOGICAL BULLETIN.

JULY 1952

DATE.	COMPT.	PHASE.	G.M.T			PERIOD.	AMPLI- TUDE.	Δ	REMARKS.
			h.	m.	s.	sec.	μ	km.	
17	ZV,Z	iP	16	22	25			(9,400)	NE,e. Dilatation
	ZV,Z	i		22	46				NE,e.
	ZV,ZNE	ePP		25	44				
	NE	iSKS		32	51				Southern Honshu, Japan.
	NE	iS		33	22				34½°N, 136°E.
	ZNE	ePS		34	21				Depth about 100 km.
	NE	eSSS		44	28				(U.S.C.G.S.)
	NE	eLq		50	-				
	Z	eLr		54	-				
	N	M		55	47	27	-16		
		F	19	20	-				
18	ZV,Z	i	05	37	19				
	ZNE	eL	06	35	-				
		F	07	15	-				
18	ZNE	e	09	50	-				Small
		F	10	15	-				
18	ZV,Z	ePP	19	00	22				Easter Island region
	ZNE	ePS		10	02				23°S, 114½°W. (U.S.C.G.S.)
	ZNE	eL		38	-				
	Z	M		52	11	18	+4		
		F	20	20	-				
20	ZNE	e	07	00	-				Small
		F		40	-				
20	ZNE	e	11	20	-				Small
		F		30	-				
21	ZV,ZNE	iP	12	04	17			8,730	Compression.
	ZV,ZNE	i		04	23				
	ZV,ZNE	i		04	34				California.
	ZV,ZNE	iPP		07	21				35.1°N, 118.9°W.
	ZV,ZNE	iPPP		08	52				(Pasadena).
	ZV,ZNE	iS		14	17				
	ZNE	iPS		14	44				
	ZNE	eSS		19	48				
	ZNE	e		22	45				
	ZNE	eSSS		23	42				
	ZNE	e		24	58				
	ZNE	eL		27	-				
	N	M		33	48	26	(+600)		
	E	M		39	24	17	(+200)		
	Z	M		39	31	16	(+270)		
		F	17	00	-				
21	ZNE	e	20	35	-				
		F	21	05	-				
21	ZNE	e	22	05	-				Small.
		F		25	-				
22/23	ZV,Z	eP	23	09	58				
	ZV,ZNE	e		20	00				Doubtful.
	ZNE	eL	00	00	-				
		F	-	-	-				Overlapped.

KEW OBSERVATORY, RICHMOND, SURREY, ENGLAND.

SEISMOLOGICAL BULLETIN.

JULY, 1952
International
Seismological
Centre

DATE.	COMPT.	PHASE.	G.M.T.			PERIOD.	AMPLI- TUDE.	Δ	REMARKS.
			h.	m.	s.		μ	km.	
23	ZV,Z	i	00	50	33	17	- 3		
	Z	e		53	27				
	ZNE	e	01	01	29				
	ZNE	eL		15	-				
	N	M		25	09				
23		F	02	15	-				
	ZNE	e	13	39	00				
	ZNE	eL		55	-				
24		F	14	25	-				
	ZV,Z	iP	22	21	34	26	+ 7	8,980	NE,e. NE,e. Off Japan. 42½°N., 145½°E. Depth about 60 Km. (U.S.C.G.S).
	ZV,	iPcP		21	49				
	ZV,Z	i		21	58				
	ZNE	eS		31	43				
	ZNE	eSKS		32	06				
	ZNE	ePS		32	45				
	ZNE	eSS		37	01				
	ZNE	eSSS		41	29				
	ZNE	eL		45	-				
	N	M		56	00				
		F	23	55	-				
25	ZNE	e	07	18	-				Small.
				35	-				
25	ZNE	eL	15	40	-				
		F	16	30	-				
25	ZNE	e	19	43	33				Overlapped.
	ZNE	eL		49	-				
		F	-	-	-				
25	ZNE	eL	20	23	-				
		F	21	50	-				
27	ZNE	eL	03	25	-				
		F	04	00	-				
27	ZV,Z	i	08	42	15				
	ZV,Z	i		44	20				
	ZNE	e		56	08				
	E	i	09	04	25				
	ZNE	eL		14	-				
		F	10	50	-				
28	ZNE	e	19	05	-				Small.
		F		20	-				
29	NE	e	07	25	47	17	+ 7		
	ZNE	e		26	28				
	ZNE	e		31	03				
	ZNE	e		34	49				
	ZNE	eL		40	-				
	N	M		50	16				
		F	10	05	-				

KEW OBSERVATORY, RICHMOND, SUR

SEISMOLOGICAL BULLETIN.

JULY, 19 52

DATE.	COMPT.	PHASE.	G.M.T.			PERIOD.	AMPLI- TUDE.	Δ	REMARKS.
			h.	m.	s.				
29	ZNE	e	20	35	-				Small.
		F	21	30	-				
31	ZNE	e	12	41	34				
	ZNE	eL		50	-				
		F	13	40	-				



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 FURST 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.	sec.	μ	km.	
3	NE ZNE	e eL F	13 14	56 02	14 -				
				30	-				
6	ZNE	eL F	05	30 55	- -				Small.
6	ZNE	e F	07 08	55 20	- -				Small.
7	ZV,Z NE ZNE	iP eS eL F	22 23	05 16 35 20	49 16 - -			9,280	Near east coast of Hokkaido, Japan. 43°N., 144½°E. (U.S.C.G.S.).
13	ZNE	eL F	03	40 55	- -				
13	ZNE	eL F	21 22	30 10	- -				
14	ZV,Z ZNE E ZNE ZNE	eP ePP eSKS eS eL F	16 17	14 18 24 25 55 25	17 12 48 14 - -			9,950	
14 / 15	ZV,Z ZNE ZNE	iPKP ePP ePKS	23	35 38 39	55 12 18			(14,000)	Solomon Islands 6°S., 155°E. (U.S.C.G.S.).

DATE.	COMPT.	PHASE.	G.M.T.			PERIOD.	AMPLI- TUDE.	Δ	
			h.	m.	s.	sec.	μ	km.	
✓ 14/15 (Contd)	ZNE N	eL M F	00	15	—	27	- 5		
16	Z ZNE N	ePP eL M F	14	13	35				
			15	17	02	19	+ 3		
			16	45	—				
✓ 17	ZV,ZNE	iP	16	13	05			7,520	Eastern Tibet.
	ZV,ZNE	iPcP		13	12				30½°N., 91½°E. (U.S.C.G.S).
	ZV,ZNE	iPP		15	37				
	ZNE	iPPP		17	39				
	ZNE	iS		22	02				Large.
	ZV,ZNE	iScS		22	11				
	ZNE	ePS		22	31				
	ZNE	eSS		27	25				
	ZNE	eSSS		29	51				Large.
	ZNE	eL		33	—				
	N	M		39	28	27	(+450)		
	E	M		46	09	18	(+200)		
	Z	M		46	18	17	(+170)		
		F	20	50	—				
18	NE ZNE N	e(s) eL M F	13	32	21				Microseisms.
			14	05	28	20	+ 3		
			15	40	—				
19	Z ZNE	e eL F	11	09	10				
			12	20	—				
✓ 20	ZV,ZNE	iP	15	37	02			8,890	
	ZV,ZNE	iPcP		37	23				
	ZV,ZNE	ePP		39	50				
	ZNE	eSKS		46	36				
	ZNE	eS		47	10				
	ZNE	eSS		51	16				
	ZNE	eSSS		57	41				
	ZNE	eL		59	—				
	N	M	16	09	19	17	+ 20		
	E	M		10	08	16	- 19		
	Z	M		10	10	16	- 21		
		F	18	55	—				
21	ZNE	e F	23	30	—				Small.
				55	—				
22/23	ZV, ZNE	e eL F	23	16	06				
			00	05	—				
23	ZNE	eL F	14	55	—				
			15	30	—				
23	ZNE	eL F	18	10	—				Small.
				30	—				



SEISMOLOGICAL BULLETIN.

AUGUST, 19 52

DATE.	COMPT.	PHASE.	G.M.T.			PERIOD.	AMPLI- TUDE.	Δ	REMARKS.
			h.	m.	s.				
24	ZV,Z	1PKP	13	03	17				
	ZNE	eL		40	-				
		F	14	05	-				
24	ZV,	1P	20	49	49			(3,100)	
	ZNE	e(S)		54	33				
	ZNE	eL		58	-				
		F	21	10	-				
25	ZV,Z	1P	01	56	10			7,800	Compression.
	NE	eS	02	05	21				
	ZNE	eL		25	-				
		F		50	-				
25	ZV,	i	18	02	16				Possibly not seismic.
		F		04	-				
27	ZV,Z	iP	11	39	13				Dilatation.
	ZV,Z	i		39	31				
	ZNE	eL	12	05	-				
		F		50	-				
27	ZNE	eL	17	30	-				
		F	18	00	-				
28	ZV,	e(P)	02	55	07				Microseisms.
	ZNE	e(L)		56	-				
		F	03	05	-				
28	ZV,	i(PKP)	11	04	10				Compression. Microseisms.
	ZV,	i		04	22				
	ZV,	i		04	29				
	NE	e		13	29				
	ZNE	eL		30	-				
		F	11	50	-				
28	ZNE	eL	13	55	-				Microseisms.
		F	14	25	-				
28	ZNE	eL	15	10	-	18	- 3		Microseisms.
	N	M		25	19				
		F	17	10	-				
29	NE	e	05	52	00				Microseisms.
	ZNE	eL	06	15	-				
		F	07	05	-				
29	ZNE	e	17	00	-				Small.
		F		20	-				
31	NE	e	03	50	-				Small.
		F	04	10	-				
31	ZV,Z	1P	16	21	39	24	+ 5	9,800	
	ZV,Z	i		21	52				
	NE	eSKS		32	00				
	NE	eS		32	29				
	ZNE	eL		50	-				
	N	M		57	54				
		F	17	30	-				

SEISMOLOGICAL BULLETIN FOR SEPTEMBER, 19 52

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. sec.	PENDULUM FREE PERIOD T. sec.	DAMPING CONSTANT A. A. ² .	$\frac{Ah}{w}$ 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.	sec.	μ	km.	
2	ZNE ZNE	e e F	23	28	56 32 40				Small.
7	ZNE ZNE N	e eL M F	03	01	17 50 04 06	19	+ 1		
9	ZV,ZNE ZV,ZNE ZV,ZNE ZV,ZNE ZNE ZV,ZNE ZV,ZNE ZNE ZNE ZNE ZNE N E Z	iP i i iPP e iS i(PS) eSS e e eL M M M F	13	06	50 07 07 10 14 16 18 22 25 28 34 41 41 41 17			8,710	Compression. Near coast of Costa Rica. 9°N, 84½°W. (U.S.C.G.S). Large on E. Large on N.
10	ZNE F	eL F	19	45	- 20				
11	ZNE	eL F	19	05	- 30				

SEISMOLOGICAL BULLETIN.

DATE.	COMPT.	PHASE.	G.M.T.			PERIOD.	AMPLI- TUDE.	Δ	REMARKS.
			h.	m.	s.		μ	km.	
11/12	Z	iPP	22	46	42				Dilatation. Kermadec Islands. 29°S, 177°W. (U.S.C.G.S).
	ZNE	ePPP		50	50				
	ZNE	ePS	23	01	36				
	NE	eSS		10	57				
	NE	eSSP		12	08				
	ZNE	eL		50	-				
	N	M		58	07	19	+	4	
		F	01	25	-				
14	ZV,	i	08	21	49				Doubtful.
	ZNE	e		27	31				
		F		40	-				
14	ZNE	e(s)	09	53	57				
	ZNE	eL	10	07	-				
	N	M		13	07	14	+	6	
		F	11	00	-				
15	ZNE	e	04	48	59				
	ZNE	e(L)	05	00	-				
		F		20	-				
15	ZV,	iP	11	37	47				
	ZNE	e		51	50				
	ZNE	eL		57	-				
	N	M	12	05	46	15	+	4	
		F		50	-				
15	ZNE	e	14	46	-				Small.
		F	15	10	-				
19	ZNE	e	19	20	-				Small.
		F		45	-				
20	ZV,Z	e	13	57	52				
	ZNE	eL	14	18	-				
		F	15	25	-				
21	ZV,ZNE	iP	02	43	23			(10,000)	Compression. Depth of focus about 250 km.
	ZNE	iPP		43	29				
	ZNE	iSP		44	58				
	ZNE	ePP		46	24				
	ZV,ZNE	ePPP		48	58				
	ZV,ZNE	iSKS		53	32				
	ZNE	iS		54	04				
	ZNE	iPS		55	24				
	ZNE	ePPS		56	30				
	ZNE	e		57	20				
	NE	eSS		58	20				
	ZNE	eL	03	09	-				
	N	M		23	29	18	+	9	
	Z	M		29	24	18	+	6	
		F	05	30	-				
21	Z	e	11	38	03				Doubtful. Microseisms.
	Z	e		43	56				
	Z	e		51	47				
	ZNE	eL	12	07	-				
		F		55	-				

SEISMOLOGICAL BULLETIN.

SEPTEMBER, 19 52

DATE.	COMPT.	PHASE.	G.M.T.			PERIOD.	AMPLI- TUDE.	Δ	REMARKS.
			h.	m.	s.				
22	ZNE	eL F	12 13	17 15	- -				Microseisms.
23	ZNE	e F	20 21	41 00	07 -				Microseisms.
✓ 27	ZV,ZNE ZV,ZNE ZNE ZNE ZNE E	iP ePcP eS ePS eL M F	19	17 17 27 27 43 59 45	31 45 10 42 - 44 -	18	+ 3	8,350	Microseisms.
28	ZNE	e F	02 03	55 10	- -				Microseisms.
28	ZNE	e F	20	00 10	- -				Microseisms.
30	ZV,Z ZV, ZV,ZNE NE NE NE ZNE N Z E	iP iPP eS ePS eSS eSSS eL M M M F	13	03 06 13 14 19 22 25 39 39 39 15	48 32 28 02 26 19 - 20 (56) 58 -	16 12 14	- 33 + 23 - 25	8,335	Microseisms. Faint.

M.O. 558

AIR MINISTRY, METEOROLOGICAL OFFICE, LONDON.

KEW OBSERVATORY, RICHMOND, SURREY, ENGLAND.

SEISMOLOGICAL BULLETIN FOR OCTOBER, 19 52

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 .	$\frac{Ah}{wI}$ 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.	AMPLI- TUDE.	Δ	REMARKS.
			h.	m.	s.	sec.	μ	km.	
1	ZNE N	eL M F	10	05	-	18	+ 3		Microseisms.
				17	18				
			11	05	-				
1	ZNE	e F	13	55	-				Microseisms.
			14	15	-				
2	ZNE	eL F	14	35	-				Small.
			15	20	-				
3	ZV, ZE ZV, Z ZE ZE ZNE	eP e ePP e(S) eL F	07	49	00	18	+ 3	(9,065)	Off South Coast of Panama. 6½°N., 83°W. (U.S.C.G.S.)
				49	05				
				51	37				
				59	16				
			08	15	-				
			09	00	-				
✓4	Z ZNE ZNE E	eS ePS eL M F	04	24	49	18	+ 3		Microseisms.
				27	21				
				35	-				
				37	25				
			05	25	-				
4	ZNE	e F	20	20	-				
				40	-				
5	ZNE	e F	10	30	-				
				55	-				

M.O. 558

KEW OBSERVATORY, RICHMOND, SURREY, ENGLAND.

SEISMOLOGICAL BULLETIN.

OCTOBER, 19 52

DATE.	COMPT.	PHASE.	G.M.T.			PERIOD.	AMPLI- TUDE.	Δ	REMARKS.
			h.	m.	s.		μ		
5	Z	iP	10	59	51			2,140	ZV, NE. e. Near West Coast of Greece.
	NE	eS	11	03	22				
	ZNE	ePS		03	37				
	ZNE	eL		07	-				
	N	M		07	50	14	+ 9		
	Z	M		10	12	10	+ 6		
		F	12	05	-				
5	ZV,Z	iP	22	15	05			8,390	Chinghai Province, China. 37°N., 93°E. (U.S.C.G.S).
	ZV,Z	i		15	12				
	NE	eS		24	48				
	ZNE	eSS		29	46				
	ZNE	eL		38	-				
	E	M		45	05	13	+ 4		
	Z	M		46	23	11	- 5		
		F	23	45	-				
6	ZNE	e	02	40	-				Small.
		F	03	30	-				
6	ZNE	e	19	55	-				Small.
		F	20	10	-				
7	Z	e	16	13	01				Small.
		e		15	32				
		e(L)		20	-				
		F		35	-				
7	ZV,Z	e	18	13	00				
		eL		36	-				
		M		40	12	19	- 3		
		F	19	00	-				
8	ZNE	eL	15	07	-				
		M		10	52	13	- 2		
		F	15	25	-				
10	ZV,Z	eP	11	56	42			2,220	Off West coast of Greece.
	ZV,Z	eS	12	00	19				
	ZNE	eL		04	-				
	E	M		04	06	18	+ 5		
		F		40	-				
10	Z	e(PKP)	16	15	09				Microseisms. Possibly more than one shock.
		e		17	52				
		e		26	05				
		e		37	25				
	ZNE	eL	17	05	-				
	E	M		19	30	18	- 3		
		F	18	20	-				
10	ZV,Z	iP	18	57	00			6,300	Microseisms. Central Pakistan . 30½°N., 69°E. (U.S.C.G.S).
		eS	19	04	51				
		ePS		05	28				
		eL		10	-				
	N	M		23	29	19	+20		
	Z	M		25	55	16	- 9		
		F	20	50	-				

DATE.	COMPT.	PHASE.	G.M.T.			PERIOD.	AMPLI- TUDE.	Δ	REMARKS.
			h.	m.	s.	sec.	μ	km.	
11	ZNE N	eL M F	01	07	-	26	+ 6		Microseisms.
				19	51				
			02	45	-				
11/12	-	-	(21 to 10)	(05 to 14)	(- to -)				Galitzins not traversing.
13	ZV,Z ZV,Z ZNE ZNE N	eP ePP eS eL M F	16	45	02	15	-10	4,445	Microseisms.
				46	34				
				51	06				
				52	-				
				54	17				
			17	10	-				
14	ZNE	eL F	00	50	-				Microseisms.
			01	45	-				
15	ZNE	eL F	00	35	-				Microseisms.
			01	15	-				
15	ZNE	e F	03	40	-				Small.
				50	-				
15	ZNE	e F	18	10	-				Small.
				30	-				
✓ 18	ZV,Z ZV,Z ZV,Z ZV,ZNE ZNE ZNE ZNE NE NE ZNE N	iPKP ₁ iPKP ₂ iPP eSKSP e ePPS eSS ePSS eSSS eL M F	05	42	05	21	+ 4	5,590	NE, e.
				42	22				
				45	30				NE, e.
				55	48				
			06	01	48				
				04	32				
				10	31				Phases doubtful.
				11	48				
				31	52				
				35	-				
				45	24				
			08	10	-				
18	ZV,Z ZNE N ZNE N	eP eS eSS eL M F	12	07	06	27	- 7		Microseisms.
				14	18				
				18	01				
				19	-				
				20	06				
			13	10	-				
18	ZNE	e F	21	40	-				Small,.
			22	10	-				
19	ZNE	e F	03	45	-				Small.
			04	00	-				
21	ZNE	e F	02	50	-				Small.
			03	30	-				
22	ZNE ZNE	e eL F	04	24	53				Microseisms.
				28	-				
				45	-				

DATE.	COMI T.	PHASE.	G.M.T.			PERIOD.	AMPLI- TUDE.	Δ	REMARKS.
			h.	m.	s.				
22	NE	e	17	12	12				Microseisms.
	NE	eL		15	-				No Z record.
		F		50	-				
25/26	-	-	(21	05	-)				Galitzins not traversing.
			(09	12	-)				
26	ZV,	i	08	53	15				Microseisms.
	ZV,	i		54	26				
	ZV,	i		54	59				
		F	09	00	-				
26	NE	e	13	43	08				Microseisms.
	NE	e		52	31				
	ZNE	eL	14	05	-				
		F		40	-				
26	ZNE	eL	15	17	-				Microseisms.
		F		40	-				
26	Z	eP	16	02	08				Microseisms.
	ZV,Z E	ePP		05	36				
	ZNE	ePPP		08	51				
	ZNE	eSPP		16	03				
	ZNE	eSS		21	37				
	ZNE	eL		30	-				
	E	M		41	33	23	+11		
	N	M		43	54	23	+11		
	Z	M		48	52	17	+ 6		
		F	17	30	-				
26	ZV, Z	iP	18	14	34			9,110	Microseisms.
	ZV, Z	ePP		17	53				
	ZNE	eS		24	53				
	ZNE	ePS		25	59				
	ZNE	eL		43	-				
	N	M		50	40	21	+15		
	E	M		50	52	21	+22		
		F	-	-	-				Overlapped.
26	ZNE	eL	20	00	-				Microseisms.
	E	M		07	45	23	+ 7		
	N	M		10	44	23	- 7		
		F	-	-	-				Overlapped.
26	ZNE	e	22	45	-				Small.
		F	23	05	-				
27	ZV, Z	iP	03	29	44			9,260	
	ZNE	ePP		33	02				
	ZNE	eS		40	10				
	ZNE	ePS		41	10				
	NE	eSS		45	40				
	NE	eSSS		49	06				
	ZNE	eL		56	-				
	N	M	04	08	27	23	+12		
		F	05	20	-				



			h.	m.	s.	sec.	μ	km	
28	ZNE	e	04	55	-				Microseisms.
		F	05	55	-				
28	ZNE	eL	07	10	-				Microseisms.
	E	M		19	32	21	+ 7		
	N	M		19	44	21	+ 8		
		F	08	30	-				
28	ZNE	eL	17	25	-				Microseisms.
		F		55	-				
29	ZNE	e	20	15	-				Microseisms.
		F	21	30	-				
31	ZV,Z	eP	16	49	42			9,320	Microseisms.
	Z	ePP		53	07				
	Z	e(PPP)		57	21				
	NE	eS	17	00	11				
	ZNE	ePS		01	19				
	NE	eSS		06	05				
	NE	eSSS		09	17				
	ZNE	eL		15	-				
	N	M		26	18	19	+12		
	E	M		26	36	21	-12		
		F	18	20	-				

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

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	$\frac{Ak}{w}$ sec. ⁻¹
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E.	26 July 1951	17.4	18.7	+0.01	66.7
Z.	2 August 1951	14.1	11.8	+0.18	143.

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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.	sec.	μ	km.	
1	NE ZNE ZNE N	e e eL M F	00	12	12				Microseisms.
				20	30				
				30	-				
				35	13	16	- 10		
			01	30	-				
2	ZV, Z ZV, ZNE NE ZNE	1PKP1 1PKP2 eSS e eL F	00	05	17			(17,000)	Microseisms. Fiji Islands region. 23½°S., 178°W. Depth about 150Km. (U.S.C.G.S.).
				05	30				
				28	21				
				29	32				
			01	10	-				
				45	-				
4	ZV, ZN ZV, ZNE ZV, ZNE ZV, ZV, ZV, ZV, ZV, ZV, ZV, ZV, ZNE ZV, ZV, ZV, ZV, Z N E	1P 1PcP 1 1 1(PPP) 1 1 1 1 1 1S 1(PS) 1(PPS) 1(SS) eL M M M F	17	10	11			8,850	E e. Compression. Microseisms. Numerous aftershocks. Near east coast of Kamchatka. Seismic sea waves. 52½°N., 159°E. (U.S.C.G.S.). Chiefly from S.P.V. readings.
				10	17				
				10	32				
				11	01				
				14	45				
				15	29				
				15	46				
				17	29				
				18	33				
				20	17				
				21	44				
				22	51				
				26	23				
				33	-				
				(39)	-	(26)	(600)		
				(53)	-	(25)	(350)		
				(57)	-	(25)	(450)		
			-	-	-				Overlapped.

DATE.	COMPT.	PHASE.	G.M.T.			PERIOD.	AMPLI- TUDE.	Δ
			h.	m.	s.	sec.	μ	km.
4	ZV,	1P	17	36	14			
	ZV,	1P		37	36			
	ZV,	1P		48	15			
	ZV,	1P		50	31			
	ZV,	1P		52	43			
	ZV,	1P	18	40	31			
	ZV,	eP	19	52	21			
	ZV,	1P	21	00	39			
	ZV,	1P		12	35			
	ZV,	eP	22	04	41			
	ZV,	1P	23	40	54			
5	ZV,	1P	06	51	03			
	ZV,	1P	11	58	29			
5	ZNE	eP	02	31	59			8,860
	NE	e		41	27			
	NE	eS		42	03			
	ZNE	eL		55	-			
	E	M	03	07	13	21	+ 4	
	Z	M		13	45	17	+ 3	
	N	M		13	49	17	+ 4	
		F	-	-	-			
5	ZV,Z	eP	03	41	35			8,410
	E	eS	03	51	19			
	ZNE	eL	04	12	-			
	E	M		18	23	18	+ 4	
		F	-	-	-			
5	ZV,Z	1P	06	09	45			8,500
	E	e		12	43			
	NE	eS		19	39			
	ZNE	eL		35	-			
	N	M		51	02	18	+12	
		F	-	-	-			
5	ZNE	eL	10	10	-			Microseisms.
		F	-	-	-			Overlapped.
5	ZV,Z	1(P)	11	58	28			Microseisms.
	ZNE	e(L)	12	(08)	-			
		F	-	-	-			Overlapped.
5	Z	eP	12	59	52			Microseisms.
		F	-	-	-			Overlapped.
5	ZV,ZNE	1P	13	18	10			Microseisms.
	Z	e		18	23			
	ZNE	eL		26	-			
	E	M		54	54	17	+17	
	N	M		59	26	19	+18	
	Z	M		59	32	17	+15	
		F	-	-	-			Overlapped.
5	ZV,	1P	15	00	34			Z,e. Microseisms.
		F	16	15	-			
5	ZNE	e	16	45	-			Microseisms.
		F	17	10	-			

Among the numerous later shocks may be mentioned.

Microseisms.

Overlapped.

Microseisms.

Overlapped.

Microseisms.

Overlapped.

Microseisms.

Overlapped.

Microseisms.

Overlapped.

Microseisms.

Overlapped.

Microseisms.

Overlapped.

Z,e. Microseisms.

Microseisms.

Overlapped.

Overlapped.

Overlapped.

Overlapped.

KEW OBSERVATORY, RICHMOND, SUI

SEISMOLOGICAL BULLETIN.

NOVEMBER, 19 52

DATE.	COMPT.	PHASE.	G.M.T.			PERIOD.	AMPLI- TUDE.	Δ	REMARKS.
			h.	m.	s.	sec.	μ	km.	
5	ZNE	e(P)	18	31	59				Microseisms.
	ZNE	eL	19	45	-				
	N	M		55	33	19	+ 5		
		F	-	-	-				Overlapped.
5	ZV,	e(P)	20	22	29				Microseisms.
	ZV,	i		42	21				
	Z	e	21	00	51				
		F	22	20	-				
5/6	ZNE	eL	23	15	-				Microseisms.
	N	M		31	02	20	- 7		
		F	00	45	-				
6	ZV,	e(P)	01	10	46				Microseisms.
		F		14	-				
6	ZNE	e	03	10	-				Microseisms.
		F	05	00	-				
6	ZNE	e	06	15	-				Microseisms.
	ZNE	eL		26	-				
		F	07	30	-				
6	ZNE	e	14	40	-				Microseisms.
		F	15	30	-				
6	ZV,Z	eP	19	57	50				Microseisms. Near north
	ZNE	eL	20	20	-				coast of New Guinea.
	N	M		56	46	25	-26		5°S., 145½°E.
		F	22	30	-				(U.S.C.G.S.).
7	ZNE	eL	01	05	-				Microseisms.
		F	04	55	-				
7	ZNE	e	12	55	-				Microseisms.
		F	13	40	-				
7	Z	eP	14	20	19			9,610	Microseisms.
	NE	e		29	27				
	NE	eS		31	01				
	NE	ePS		32	22				
	ZNE	eL		45	-				
	N	M		55	32	24	- 7		
		F	15	50	-				
7	ZNE	eL	21	30	-				Microseisms,
	E	M	21	43	09	16	- 8		Overlapped.
		F	-	-	-				
7	ZNE	e	22	01	10				Microseisms.
		F	-	-	-				Overlapped.
7/8	ZNE	eP	22	17	30			8,730	Microseisms.
	ZNE	e		17	56				
	ZNE	eS		27	30				
	ZNE	eL		50	-				
	N	M	22	57	25	18	+10		
		F	-	-	-				Overlapped.

SEISMOLOGICAL BULLETIN.

NOVEMBER,

1952

DATE.	COMPT.	PHASE.	G.M.T.			PERIOD.	AMPLI- TUDE.	Δ	REMARKS.
			h.	m.	s.		μ		
8	ZNE	e F	00 01	35 45	- -				Microseisms.
8	ZNE	e F	05 06	30 30	- -				Microseisms.
8	ZNE N	e(L) M F	17 18	45 54 50	- 50 -	19	- 3		Microseisms.
8	ZV,Z ZNE NE ZNE NE ZNE N Z E	iP ePP eS ePS eSS eL M M M F	19 19 20 20 20 20 20 20 20 22	45 49 55 56 01 12 26 26 26 10	23 04 22 48 10 - 00 02 31 -			8,680	NE, e. Microseisms.
9	ZV,Z ZV,Z ZNE ZNE ZNE N	iP iPcP eS e(PPS) eL M F	00 00 01 01 01 -	34 34 44 46 00 14 -	18 30 02 52 - 33 -	19	- 5		Microseisms. Overlapped.
9	ZNE N	eL M F	01 02 03	55 03 00	- 26 -	21	- 4		Microseisms.
9	ZNE Z	eL M F	05 07	15 27 30	- 05 -	19	- 4		Microseisms.
9	ZV, ZV, ZNE N	i(P) i eL M F	15 16 16 17	34 43 07 14 15	38 22 - 51 -	19	+ 3		Microseisms.
9	ZNE	e F	18 19	57 24	- -				Microseisms.
9	ZNE	eL F	21 22	20 40	- -				Microseisms.
10	ZV,Z ZV,Z ZNE	i(P) i eL F	01 02	06 07 40 20	59 12 - -				Microseisms.
10	ZNE	e F	04	20 30	- -				Microseisms.
10	Z ZNE	e(P) eL F	06 07	14 50 50	04 - -				Microseisms.

SEISMOLOGICAL BULLETIN.



From the ISC collection scanned by SISMOS

DATE.	COMPT.	PHASE.	G.M.T.			PERIOD.	AMPLI- TUDE.	Δ	REMARKS.
			h.	m.	s.	sec.	μ	km.	
10	ZNE	e F	10 11	30 10.	- -				Small.
10	Z ZNE	e(P) eL F	20 21 22	48 10 00	37 - -				
11	ZNE	e F	01 02	30 30	- -				Small.
11	ZNE	e F	20	05 30	- -				
12	ZNE	e F	00 01	50 30	- -				Small.
12	ZE	e(P) F	13 14	47 10	12 -				Small.
12	Z ZNE	e(P) eL F	17 - 18	02 30 30	22 - -				Small.
13	ZNE	e F	00	02 10	- -				Small.
13	ZV,Z ZNE ZNE ZNE ZNE N	iP eS ePS eSS eL M F	08 - - - - - 11	10 20 21 26 35 42 30	38 20 22 52 - 14 -	26	- 10	8,370	Near south coast of Kamchatka. 50½°N., 157°E. (U.S.C.G.S).
13	Z ZNE	e(P) eL F	15 16	45 12 55	22 - -				
13/14	ZV,Z ZV,Z ZNE ZNE	iP i e eL F	22 - - 23 00	37 37 40 10 10	28 41 24 - -				
15	ZNE	e F	01 02	52 05	- -				Small.
15	ZNE	e F	05 07	45 05	- -				Small.
16	Z	e F	02	35 55	- -				Small.
16	ZNE	e F	04 05	55 30	- -				
16	ZV,Z ZV,Z ZV,ZNE NE	eP e eS eSS	07 08 09 17	59 01 42 26	42 14 42 -			8,730	

DATE.	COEPT.	PHASE.	G.M.T.			PERIOD.	AMPLI- TUDE.	Δ	REMARKS.
(contd.)			h.	m.	s.	sec.	μ	km.	
16	ZNE N	eL M F	08	43	-	19	+ 4		
			10	00	58				
16	ZNE	e(P) F	15	22	30				Small.
				55	-				
17	ZNE	e F	12	53	-				Small.
			13	10	-				
17	ZNE	e F	14	05	-				Small.
				25	-				
18	ZV, Z ZV, Z ZNE N	1P 1PcP eL M F	08	25	24	18	+ 2		
				25	35				
				55	-				
			09	07	39				
			10	20	-				
18	ZNE	e F	18	15	-				Small.
				30	-				
19	ZNE	e F	07	05	-				Small.
				30	-				
19	ZNE	eL F	11	00	-				
				30	-				
19	ZNE	e F	17	50	-				Small.
			18	30	-				
20	ZNE	e F	07	55	-				
			08	30	-				
20	ZNE	e F	12	05	-				
				55	-				
20	ZV, Z ZV, Z ZNE NE ZNE ZNE ZNE N E Z	1P ePP eS eSP eSS eSSS eL M M M F	15	49	15	20 18 18	+ 6 - 8 - 7	9,315	NE, e. Off coast of Nicaragua. 12½°N., 88°W. Depth about 60 Km. (U.S.C.G.S).
				52	14				
				59	44				
			16	00	08				
				04	44				
				08	24				
				12	-				
				19	12				
				22	03				
				22	05				
			17	30	-				
20	ZNE	e F	17	45	-				Small.
			18	05	-				
21	ZNE	e F	03	20	-				Small.
				30	-				
21	ZNE	e F	04	05	-				
				40	-				
21	ZNE	e F	18	00	-				Small.
				30	-				



SEISMOLOGICAL BULLETIN.

DATE.	COMPT.	PHASE.	G.M.T.			PERIOD.	AMPLI- TUDE.	Δ	REMARKS.
			h.	m.	s.	sec.	μ	km.	
22	ZNE	e F	06	10	-				Small.
				30	-				
22	ZV,Z	iP	07	58	48			8,650	
	Z	ePP	08	00	56				
	ZNE	eS		08	44				
	ZNE	eL		25	-				
	N	M		32	47	19	- 6		
		F	09	20	-				
28	ZV, ZNE	e(P) eL	08	17	35				Microseisms.
	N	M		48	-				
		F	09	00	27	14	- 3		
				45	-				
29	ZV, ZV, ZV, NE	iP iPcP i(S) eL	08	34	24			(8,700)	Microseisms.
				34	38				
				44	22				
	N	M	09	08	17	18	-50		
	E	M		08	17	18	+33		
		F	11	30	-				
29/30	ZV,Z	iP	23	57	45			7,870	NE,e. Microseisms.
	ZV,Z	iPcP		57	57				NE,e.
	Z	e		58	19				
	ZNE	ePP	00	00	22				
	ZNE	ePP		02	04				
	ZNE	eS		07	00				
	ZNE	ePS		07	24				
	ZNE	eSKS		08	18				
	ZNE	eSS		11	24				
	ZNE	eSSS		15	00				
	ZNE	eL		18	-				
	E	M		31	15	19	-55		
	Z	M		31	16	18	+55		
	N	M		31	28	19	-45		
		F	03	15	-				
30	ZV, ZNE	eP eL	19	40	29				Microseisms.
	Z	M	20	13	-				
		F		21	14	16	+ 3		
			21	00	-				

KEW OBSERVATORY, RICHMOND, SURREY, ENGLAND.**SEISMOLOGICAL BULLETIN FOR DECEMBER, 1952**

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.	AMPLITUDE.	Δ	REMARKS.
			h.	m.	s.	sec.	μ	km.	
2	NE ZNE ZNE	e e eL F	19	51	17				Microseisms.
				53	42				
			20	06	-				
				20	-				
3	ZNE	e F	22	50	-				Microseisms.
			23	30	-				
4	ZV, Z ZNE ZNE ZNE	1P eS ePS eL F	04	04	00			7,460	Microseisms. Aleutian Islands. 52°N, 178°E. (U.S.C.G.S),
				12	54				
				13	57				
				25	-				
			05	05	-				
4	ZNE	e F	07	55	-				Small.
			08	15	-				
4	ZNE	e F	11	40	-				Small.
			12	25	-				
5	ZNE	e F	21	05	-				Small.
			22	40	-				
6	ZNE ZNE	e eL F	04	10	-				Microseisms.
				20	-				
				50	-				



SEISMOLOGICAL BULLETIN.

DECEMBER, 19 52

DATE.	COMPT.	PHASE.	G.M.T.			PERIOD.	AMPLI- TUDE.	Δ	REMARKS.
			h.	m.	s.				
✓ 6	ZV,Z	1PKP	11	00	40			(15,000)	Compression. Microseisms. Solomon Islands 8°S., 157°E. (U.S.C.G.S). Large on N-S. Large on N-S.
	ZV,Z	e		00	50				
	ZV,ZNE	ePP		03	12				
	ZV,ZNE	1PKS		04	26				
	ZNE	e(SKKS)		09	18				
	ZNE	e(SKKKS)		09	54				
	ZNE	ePPS		14	52				
	ZNE	e		16	50				
	NE	e		18	50				
	NE	eSS		20	56				
	ZNE	ePSS		21	33				
	ZNE	eSSS		27	14				
	ZNE	e		31	22				
	ZNE	eL		38	-				
	E	M		43	29	36	+ 85		
	N	M		43	53	38	+ 80		
	N	M		57	14	22	+ 35		
	Z	M		58	51	24	- 25		
6		F	14	30	-				Microseisms.
	ZNE	e	21	12	05				
	ZNE	eL		55	-				
7		F	23	10	-				8,410 Compression. NE,e. Microseisms.
	ZV,Z	1P	01	02	10				
	ZNE	e		03	39				
	ZNE	e(PPP)		06	46				
	ZNE	eS		11	54				
	ZNE	ePS		12	44				
	NE	eSS		17	22				
	ZNE	eL		25	-				
	N	M		38	33	22	- 13		
		F	04	00	-				
7	ZNE	eL	17	18	-				Microseisms.
		F	18	15	-				
8	ZNE	e(S)	15	41	06				Microseisms. China Burma border. 23°N. 99½°E. (U.S.C.G.S).
	ZNE	eL		50	-				
	N	M		53	32	22	+ 9		
		F	16	40	-				
10	ZV,ZN	1P	06	02	39			2,440	E,e. Microseisms. E,e. Jan Mayen Island region. 71°N., 7°W. (U.S.C.G.S).
	ZN,ZN	1PP		03	00				
	ZN	1PPP		04	00				
	ZNE	eS		06	22				
	ZV,ZNE	eSS		06	50				
	ZNE	eL		08	-				
	E	M		09	58	18	- 23		
	Z	M		10	12	13	+ 20		
	N	M		13	48	14	- 15		
		F	07	30	-				
✓ 11	ZV,	1P	09	10	12				Microseisms. Changing charts. Kurle Islands. 49°N., 155°E. (U.S.C.G.S).
	ZNE	eL		35	-				
	N	M		49	34	22	- 10		
		M		49	48	20	+ 6		
	Z	F	11	30	-				

M.O. 558

KEW OBSERVATORY, RICHMOND, SURREY, ENGLAND.

SEISMOLOGICAL BULLETIN.

DECEMBER, 19 52

DATE.	COMPT.	PHASE.	G.M.T.			PERIOD.	AMPLI- TUDE.	Δ	REMARKS.
			h.	m.	s.				
12	ZV, ZNE	i(P) eL F	20	43	56				Microseisms.
			21	20	-				
				45	-				
15	ZNE	eL F	10	30	-				Microseisms.
			11	15	-				
16	-	-	-	-	-				Record broken by power cuts; 07h. 23m. to 16h. 35m.
16	ZNE	eL F	16	(35)	-				Beginning lost.
			19	30	-				Microseisms.
✓ 17/18	ZV,ZNE	iP	23	09	30			2,800	Microseisms.
	ZV,ZNE	iPP		10	03				Near south coast of Crete.
	ZV,ZNE	e		10	32				34½°N., 24°E. (U.S.C.G.S).
	ZV,ZNE	iS		13	43				
	ZNE	e		14	19				
	ZNE	e(SS)		15	11				
	ZNE	eL		16	-				
	N	M		20	56	19	- 75		
	E	M		20	59	19	- 110		
	Z	M		21	06	16	- 70		
		F	03	00	-				
19	ZNE	eL F	09	55	-				Microseisms.
			13	00	-				
22	ZNE	e F	10	50	-				Microseisms.
			11	20	-				
✓ 22/23	ZV,Z	iP	22	36	20			8,665	Microseisms.
	NE	eS		46	17				
	NE	ePS		46	28				
	ZNE	eL	03	05	-				
	E	M		11	31	21	+ 4		
		F	00	15	-				
24	ZNE	eL F	09	40	-				Microseisms.
			10	15	-				
24	ZNE	eL F	15	18	-				Microseisms.
				40	-				
✓ 24	ZV, ZV,ZNE	ePKP ePKS	18	58	53				Microseisms.
			19	02	06				Phases doubtful.
	ZNE	ePS		11	11				
	ZNE	eSS		18	58				
	ZNE	eSSS		23	25				
	ZNE	eL		25	-				
	N	M		24	28	25	- 60		
	Z	M		56	28	25	- 40		
	E	M		56	48	25	+ 35		
		F	-	-	-				Overlapped.
24	ZNE	eL F	22	40	-				Microseisms.
			23	30	-				

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KEW OBSERVATORY, RICHMOND, SURREY, ENGLAND.

SEISMOLOGICAL BULLETIN.

DECEMBER, 19 52

DATE.	COMPT.	PHASE.	G.M.T.			PERIOD.	AMPLI- TITUDE.	Δ	REMARKS.
			h.	m.	s.	sec.	μ	km.	
25	NE	e	02	57	04				Microseisms.
	NE	e	03	15	49				
	ZNE	eL		30	-				
		F	-	-	-				Overlapped.
25	ZNE	e(L)	04	25	-				Microseisms.
		F	05	25	-				
25/26	NE	eS	22	40	09				Microseisms.
	NE	eSS		48	09				Doubtful, ePZV.
	ZNE	eL		50	-				22h. 32m. 25s.
	N	M	23	01	58	16	+ 11		
	E	M		02	06	16	- 10		
	Z	M		02	08	14	+ 11		
		F	00	30	-				
26	ZNE	eL	04	53	-				Microseisms.
		F	05	30	-				
27	ZNE	eL	02	00	-				Microseisms.
		F	03	00	-				
28	ZNE	e	05	15	-				Microseisms.
		F	06	20	-				
28	ZNE	ePKP	15	20	00				Microseisms.
	ZNE	eSKKS		29	38				
	ZNE	eSSS		45	56				
	ZNE	eL		50	-				
	E	M		55	28	20	- 9		
	N	M		58	27	30	+ 14		
	Z	M	16	11	27	17	- 5		
		F		30	-				
28	ZNE	e(L)	19	10	-				Microseisms.
		F	20	15	-				
29	ZV,Z	eP	02	21	16			(9,040)	Microseisms.
	ZNE	e(S)		31	31				
	NE	eSS		36	15				
	ZNE	eL		50	-				
	E	M	03	04	01	16	+ 2		
		F		55	-				
29	NE	e	07	00	-				Microseisms.
		F		10	-				
29	ZV,Z	e	09	31	15				Microseisms.
	ZNE	eL	10	05	-				
		F	11	00	-				
30	Z	e	12	20	20				Microseisms.
	Z	e		23	40				
	NE	e		29	22				
	NE	e		31	01				
	ZNE	eL		40	-				
		F	13	40	-				

SEISMOLOGICAL BULLETIN.

DECEMBER, 1952

DATE.	COMPT.	PHASE.	G.M.T.			PERIOD.	AMPLI- TUDE.	Δ		REMARKS.
			h.	m.	s.					
31	ZV,	eP	14	52	59	18	+ 4	2,900		Microseisms.
	ZV,	e		57	01					
	ZNE	eS		58	29					
	ZNE	e(SS)		58	55					
	ZNE	eL	15	02	-					
	N	M		02	46					
31		F		15	-	17	+ 7	2,890		Microseisms. Repetition.
	ZV,	eP	17	23	02					
	ZV,	ePP		24	15					
	ZV,ZNE	eS		28	31					
	NE	eSS		29	21					
	ZNE	eL		30	-					
	N	M		32	46					
		F	18	00	-					
31	ZNE	eL	22	28	-					Microseisms.
		F	23	00	-					

