

M.O. 534

AIR MINISTRY, METEOROLOGICAL OFFICE, LONDON.

KEW OBSERVATORY, RICHMOND, SURREY, ENGLAND.

SEISMOLOGICAL BULLETIN FOR JANUARY 1950

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: 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	PENDULUM FREE PERIOD T.	DAMPING CONSTANT μ_2 .	$\frac{Ak}{\pi^2}$
N.	22 July, 1949	^{sec.} 21.6	^{sec.} 23.2	-0.06	^{sec⁻¹} 52.1
E.	22 April, 1949	17.8	18.3	+0.04	70.8
Z.	20 May, 1949	14.2	12.5	-0.05	133.

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	03	32	-				
				50	-				
1	ZNE	eL F	16	54	-				
			17	25	-				
2	ZNE	e F	01	09	-				
			02	20	-				
2	ZNE	e F	16	29	-				
			17	35	-				
3	Z	iP	03	05	14			10720	Philippine Islands.
	ZNE	iPP		09	02				18°N., 121°E. (U.S.C.G.S).
	ZNE	e		12	50				
	NE	eSKS		15	44				
	NE	eS		16	42				
	ZNE	ePPS		18	44				
	ZNE	eSS		23	14				
	NE	eSSS		27	58				
	NE	e		30	02				
	ZNE	eL		32	-				
	Z	M		52	08	16	-23		
	N	M F		52	12	17	-35		
			05	30	-				
3	ZNE	e F	06	54	-				
			07	05	-				
3	NE	e(PP)	11	31	30				
	ZNE	eL	12	02	-	16	+2		
	Z	M F		20	57				
			13	10	-				

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SEISMOLOGICAL BULLETIN.

JANUARY, 1950

DATE.	COMPT.	PHASE.	G.M.T.			PERIOD.	AMPLI- TUDE.	Δ	REMARKS.
			h.	m.	s.	sec.	μ	km.	
4/5	NE	e F	23 00	59 50	- -				
5	ZNE	e F	04 05	54 25	- -				
9	ZV,E ZV,NE	iP _g iS _g F _g	19	41 41 44	02 21 -			160	Recorded on Galitzin instruments.
10	ZNE ZNE	ePPP eL F	03 04	26 46 30	54 - -				Off S.E. Coast of Mexico 11°N., 103°W. (U.S.C.G.S.)
10	ZNE ZNE	e eL F	17	25 34 55	13 - -				
12	ZV, N ZNE	ePKP eKS eL F	12 13	26 34 50 20	57 20 - -				(17,000 Km) Fiji Islands. 17°S., 178½°W. Depth about 500 Km. (U.S.C.G.S.)
14	ZNE ZNE	e eL F	00 01	34 58 25	59 - -				
15	NE	e F	05 06	40 20	- -				
15	E ZNE	e eL F	18 19	35 54 30	13 - -				
17	ZNE	e F	11 12	28 15	- -				
19	ZV,Z ZV, Z ZE ZNE E	iP iPP eS eSS eL M F	17	35 36 42 46 51 02 45	44 09 37 14 - 42 -	14	+2	5,250	
20	ZV,Z NE ZNE	e e eL F	18 19	39 00 10 45	03 38 - -				
22	ZNE	eL F	04 05	15 05	- -				
23	ZNE	e F	10 11	40 20	- -				
24	Z ZNE	ePKP eL F	17 19	06 40 20	31 - -				New Hebrides.

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JANUARY,.....19.50

DATE.	COMPT.	PHASE.	G.M.T.			PERIOD.	AMPLI- TUDE.	Δ	REMARKS.
			h.	m.	s.				
25	E ZNE	e	12	24	09		μ	km.	
		eL		38	-				
		F	13	10	-				
30	NE ZNE NE Z N E Z	e	01	27	03	22 20 18	+23 +18 +18		Large microseisms.
		e		33	22				
		eLQ		41	-				
		eLR		48	-				
		M	02	01	14				
		M		02	35				
		M		12	52				
		F	04	15	-				
30	NE	e	14	28	-				Large microseisms.
		F	16	00	-				
31	ZV, ZV, ZV,	e	10	52	42				Confused by microseisms. Shown on Galitzin seismograph.
		e		53	02				
		e		53	28				
		F		56	-				
	NE	e	11	54	-				Confused by microseisms.
		F	12	30	-				

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SEISMOLOGICAL BULLETIN FOR FEBRUARY, 19 50

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

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

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N.	22 July, 1949	21.6 ^{sec.}	23.2 ^{sec.}	- 0.06	52.1 ^{sec.-1}
E.	22 April, 1949	17.8	18.3	+ 0.04	70.8
Z.	20 May, 1949	14.2	12.5	- 0.05	133.

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			h.	m.	s.	sec.	μ	km.	
1	NE	e F	17 18	37 30	- -				Large microseisms.
2	NE	e F	07 08	05 30	- -				Large microseisms.
2/3	ZNE Z NE NE NE NE N E	eP eIP eS eSS eSSS eL M M F	23 00 02	45 48 55 00 05 10 18 18 10	49 13 57 53 15 - 07 13 -	 22 22	 -130 -75	8,890	Large microseisms. Yunnan Province China. 22°N, 100½°E. (U.S.C.G.S.)
3	ZV, ZV, NE NE NE NE N E	eP ePP eS eSS eSSS eL M M F	03 05	04 07 14 18 23 27 36 36 10	04 19 04 37 29 - 19 33 -	 19 22	 +65 -30	8,730	Large microseisms. Répétition.
3	NE	e F	13 14	47 10	- -				Large microseisms.
3	NE	e F	19	01 25	- -				Large microseisms.
4	NE	e F	02 03	47 10	- -				Large microseisms.

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DATE.	COMPT.	PHASE.	G.M.T.			PERIOD.	AMPLI- TUDE.	Δ	REMARKS.
			h.	m.	s.		μ	km.	
5	Z	ePKP2	01	45	13	24 20 17	+15 -11 -13	(19000)	Large microseisms. South of New Zealand. 50°S, 164°E. (U.S.C.G.S.).
	Z	ePP		50	14				
	ZNE	e(PPP)		55	45				
	NE	ePPS	02	04	53				
	ZNE	eSS		09	52				
	ZNE	e		13	09				
	NE	e		26	05				
	ZNE	eL		48	-				
	N	M		59	37				
	E	M	03	04	02				
7	Z	M		06	26	24 20 17	+15 -11 -13	(19000)	Large microseisms. South of New Zealand. 50°S, 164°E. (U.S.C.G.S.).
		F	05	25	-				
7	ZNE	e	11	00	(16)	24 20 17	+15 -11 -13	(19000)	Large microseisms. South of New Zealand. 50°S, 164°E. (U.S.C.G.S.).
	ZNE	eL		16	-				
		F	12	05	-				
8	ZV,	eP	18	24	04	24 20 17	+15 -11 -13	(2,335)	Large microseisms. North Atlantic Ocean. 48°N, 27½°W. (U.S.C.G.S.).
	NE	e(S)		27	50				
	NE	e		28	50				
	ZNE	eL		30	-				
		F	19	20	-				
11	Z	e(P)	01	35	(24)	19	-6	(12000)	Large microseisms.
	ZNE	ePP		39	24				
	NE	eSKS		45	32				
	NE	eSS		55	32				
	ZNE	eL	02	08	-				
	N	M		25	11				
		F	03	20	-				
12/13	NE	e	23	16	05	19	-6	(12000)	Large microseisms.
	NE	e		24	51				
	ZNE	eL		26	-				
		F	00	50	-				
14/15	Z	e	23	37	59	19	-6	(12000)	Large microseisms.
	ZNE	eL		59	-				
		F	00	50	-				
15	ZNE	e	08	48	-	19	-6	(12000)	Large microseisms.
		F	09	05	-				
21	ZNE	e	15	40	-	19	-6	(12000)	Large microseisms.
		F	16	20	-				
22	ZN	e	11	58	18	19	-6	(12000)	Large microseisms.
	ZNE	eL	12	10	-				
		F	13	20	-				
22	ZV	e	15	59	(00)	19	-6	(12000)	Confused by microseisms.
	ZNE	eL	16	53	-				
		F	17	15	-				
23	ZNE	eL	05	32	-	19	-6	(12000)	Confused by microseisms.
		F	06	10	-				
23	NE	e	09	51	20	19	-6	(12000)	Confused by microseisms.
		F	10	15	-				

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			h.	m.	s.	sec.	μ	km.	
23	NE NE	e eL F	11	29	(16)				Confused by microseisms.
				36	-				
				55	-				
25	ZV, N ZNE N	e e eL M F	06	03	10				Confused by microseisms.
				12	06				
				20	-				
				25	45	14	-5		
				55	-				
25	NE NE NE Z E N Z	e e eLQ eLR M M M F		15	03				Confused by microseisms.
				15	55				
				34	-				
				39	-				
				43	33	22	-10		
				43	34	20	+8		
				50	36	14	-5		
			11	55	-				
28	ZNE	e F	08	00	-				
				20	-				
28	ZV,ZNE ZNE ZNE ZV,ZNE NE NE NE NE NE NE ZNE N E ZNE	iP iP _c P i _c P ePP iPPP iS iPS eSS eSSS e eL M M eL ₂ F	10	32	19			8,055	
				32	25				
				34	14				
				35	16				
				37	12				
				41	48				
				43	23				
				45	34				
				47	28				
				50	24				
				52	-				
				56	55	22	-34		
				57	51	25	-65		
			12	51	-				Via antipodes.
			13	55	-				

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

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DATE.	COMPT.	PHASE.	G.M.T.			PERIOD.	AMPLI- TUDE.	Δ	REMARKS.
			h.	m.	s.	sec.	μ	km.	
1	NE ZNE N	e eL M F	09	31	29	19	-5		
				39	-				
				47	23	22	+5	12,800	Sandwich Islands region. 59.5°S., 34°W. (U.S.C.G.S.)
			10	25	-				
2	N NE NE ZNE N	ePS eSS eSSS eL M F	19	09	17	22	+5	12,800	Sandwich Islands region. 59.5°S., 34°W. (U.S.C.G.S.)
				15	43				
				19	37	22	+5	12,800	Sandwich Islands region. 59.5°S., 34°W. (U.S.C.G.S.)
				31	-				
				42	18	22	+5	12,800	Sandwich Islands region. 59.5°S., 34°W. (U.S.C.G.S.)
			20	20	-				
3	Z ZE ZE	e e eL F	11	04	06	22	+5	12,800	Sandwich Islands region. 59.5°S., 34°W. (U.S.C.G.S.)
				27	11				
			12	06	-	22	+5	12,800	Sandwich Islands region. 59.5°S., 34°W. (U.S.C.G.S.)
			13	15	-				
4	E	e F	14	03	-	22	+5	12,800	Sandwich Islands region. 59.5°S., 34°W. (U.S.C.G.S.)
				15	-				
4	E	e F	16	08	-	22	+5	12,800	Sandwich Islands region. 59.5°S., 34°W. (U.S.C.G.S.)
			17	15	-				
5	ZE	e F	01	00	-	22	+5	12,800	Sandwich Islands region. 59.5°S., 34°W. (U.S.C.G.S.)
				15	-				
5	ZE	e F	08	10	-	22	+5	12,800	Sandwich Islands region. 59.5°S., 34°W. (U.S.C.G.S.)
				30	-				
7	ZNE ZN ZN ZNE ZNE ZNE	eP ePP ePPP eSKS eSP eSS	02	21	30	22	+5	12,800	Sandwich Islands region. 59.5°S., 34°W. (U.S.C.G.S.)
				25	45				
				29	04	22	+5	12,800	Sandwich Islands region. 59.5°S., 34°W. (U.S.C.G.S.)
				32	08				
				34	31	22	+5	12,800	Sandwich Islands region. 59.5°S., 34°W. (U.S.C.G.S.)
				40	27				

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MARCH 19 50

DATE.	COMPT.	PHASE.	G.M.T.			PERIOD.	AMPLI- TUDE.	Δ	REMARKS.
			h.	m.	s.	sec.	μ	km.	
contd.									
7	ZNE	e	02	42	47				
	ZNE	e		46	07				
	ZNE	eL		52	-				
	E	M	03	12	43	19	+31		
	Z	M		12	52	18	-33		
	N	M		12	55	19	-39		
		F	05	10	-				
8	ZV,	iP	04	28	01			500	Small.
	ZV,	iP		28	17				Western Germany.
	NE	eS ^g		29	17				
	E	e ^g		29	53				Large movement..
		F		35	-				
9	ZV,Z	iP	10	13	32			6,950	
	ZV,Z	i		13	43				
	NE	eS		21	59				
	ZNE	eL		28	-				
	E	M		32	44	18	-2		
		F	11	05	-				
9	NE	e	20	35	-				
		F	21	05	-				
12	ZNE	e	02	34	-				
		F	03	00	-				
12	ZNE	e	05	25	-				
		F		50	-				
12	ZNE	e	07	35	-				
		F		45	-				
14	ZV,Z	iP	03	22	21			9,500	Dilatation.
	ZV,ZNE	iS		32	43				Eastern Peru 8°S, 74°W.
	ZE	iSP		33	37				Depth about 150 Km.
	NE	eSSS		45	32				(U.S.C.G.S.)
	ZNE	eL		50	-				poorly developed.
		F	04	05	-				
14	NE	e	16	42	-				
		F	17	10	-				
15	Z	e	06	40	17				
	ZNE	eL		45	-				
		F		55	-				
16	ZV,	iP	19	43	31			16,000	Fiji Islands region.
	N	eSKS		54	32				17°S, 178½°W.
	E	eSS	20	05	14				Depth about 600 Km.
		F		50	-				(U.S.C.G.S.)
									No surface waves.
18	ZV,ZN	e	05	06	27				Large microseisms.
	ZNE	e		19	07				
	ZNE	eL		31	-				
	N	M		38	17	23	+9		
		F	06	25					

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			h.	m.	s.				
18	NE	e F	11 13	52 10	- -		μ	km.	Large microseisms.
20	NE	e F	15 16	58 20	- -				
22	ZV, ZNE N	i eL M F	12	54 58 00 10	59 - 42 -	11	+3		Small.
22	Z NE Z	e eL _Q eL _R F	21 22	33 54 03 25	46 - - -				
24	ZNE	e F	01	00 15	55 -				
25	ZNE NE Z	e eL _Q eL _R F	07	36 43 47 10	06 - - -				
25/26	ZNE	e F	23 00	55 35	- -				
26	ZNE ZNE	e eL F	17 18	11 20 20	- - -				
27	ZNE	e F	11	28 40	- -				
27	ZV, ZV,Z ZNE NE ZNE ZNE ZNE N E	iP i iS ePS e eSS eL M M F	13	15 15 25 25 27 30 36 41 54 05	50 54 24 58 09 26 - 51 20 -	29 18	+12 -15	8,220	Dilatation. Aleutian Islands region. 53½°N, 173°E. (U.S.C.G.S. ? AJ.
27	Z NE NE Z N E	e e eL _Q eL _R M M F	21 22 23 28 23	46 51 04 13 23 28 55	06 35 - - 31 24 -	22 18	-7 -6		
28	NE	e F	04 05	52 10	- -				
29	ZNE	e F	14	23 50	- -				

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			h.	m.	s.				
29	ZN	e(P)	18	01	33	30 24	-7 +5	(10,000)	
	ZNE	e(SKS)		11	25				
	ZNE	e(PS)		12	57				
	NE	e(SS)		18	17				
	NE	e		31	51				
	ZNE	eL		37	-				
	N	M		43	50				
	Z	M		52	55				
		F	20	45	-				
30	ZNE	e	16	55	-				
		F	17	10	-				

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			h.	m.	s.	sec.	μ	km.	
1	ZNE	e	00	36	29				Small
	ZNE	eL	01	06	-				
		F		40	-				
1	ZNE	e	02	55	-				
	ZNE	eL	03	08	-				
		F		35	-				
1	ZNE	eL	03	49	-				
	N	M	04	02	15	14	-2		
		F		15	-				
4	NE	e	04	22	32				
	ZNE	eL		27	-				
	N	M		40	31	16	-3		
		F	05	05	-				
4	ZV,Z	iP	08	54	07			6,400	Border of U.S.S.R. and outer Mongolia. 52°N, 101°E. (U.S.C.G.S.)
	ZV,ZN	ePP		56	25				
	ZNE	eS	19	02	04				
	ZNE	eSS		05	53				
	ZNE	eSSS		08	10				
	ZNE	eL		09	-				
	N	M		17	03	19	+85		
	E	M		17	37	18	-70		
	N	M		21	41	16	-130		
	E	M		21	53	16	-95		
	Z	M		21	53	15	-120		
		F	22	00	-				
5	Z	e(P)	01	28	(52)			(8500)	Doubtful. Confused by microseisms. Aleutian Islands region. 52°N, 177°W. (U.S.C.G.S.)
	N	e(PS)		39	10				
	ZNE	e(SS)		44	06				
	ZNE	eL		56	-				
		F	03	10	-				

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KEW OBSERVATORY, RICHMOND, SURREY, ENGLAND.

SEISMOLOGICAL BULLETIN.

APRIL, 19 50

DATE.	COMPT.	PHASE.	G.M.T.			PERIOD.	AMPLI- TUDE.	Δ	REMARKS.
			h.	m.	s.				
5	NE ZNE	e e(L) F	18	22 24 40	37 - -		μ	km.	Confused by microseisms.
6	NE ZNE	e eL F	03	01 11 40	07 - -				
10	NE	e F	07 08	32 15	- -				Confused by microseisms.
10	ZE	e F	17 18	11 20	- -				Large microseisms. No N-S record.
12	NE	e F	08 09	30 10	- -				Small.
12	NE	e F	14 16	55 00	- -				
13	Z ZNE ZNE	eP e(S) eL F	11 12	56 00 02 15	23 35 - -		(2650)		Azores Islands region. 36°N, 27°W. (U.S.C.G.S.)
14	Z Z ZNE ZNE ZNE ZNE ZNE E	e e e e e eL M F	20 21 30 30 33 37 55 21 22	20 21 30 30 33 37 55 05 25	42 26 06 50 44 56 - 10 -	23	+3		
14/15	ZNE	e F	23 00	53 05	- -				
15	Z Z NE NE ZNE ZNE	eP ePP e e(SS) e eL	15 15 12 17 24 28	03 06 08 47 36 -	27 28 08 47 36 -				e, NE.
			16	15	-				
16	ZNE	e F	22	15 45	- -				
18	ZNE	e F	15 16	25 10	- -				

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KEW OBSERVATORY, RICHMOND, SURREY, ENGLAND.

SEISMOLOGICAL BULLETIN.

APRIL, 19 50

DATE.	COMPT.	PHASE.	G.M.T.			PERIOD.	AMPLI- TUDE.	Δ	REMARKS.
			h.	m.	s.				
20	Z	1P	10	03	00	22	-4	8,760	e, NE. Kurile Islands region. 45°N, 150°E. (U.S.C.G.S.).
	N	eS		13	01				
	NE	ePS		13	25				
	ZN	e(PPS)		14	18				
	ZN	eSS		19	10				
	ZNE	eL		29	-				
	Z	M		42	12				
20		F	11	25	-	12	+3	2,040	Northern Algeria. 34°N, 3°E. (U.S.C.G.S.)
	ZV,ZNE	1P	17	23	21				
	NE	eS		26	44				
	ZNE	eL		28	-				
	Z	M		31	15				
26		F	18	05	-	17	+7	9220	Near southern coast of Japan.
	ZV,Z	1P	07	17	36				
	ZV,Z	e(pP)		17	51				
	NE	ePP		21	13				
	NE	eS		27	56				
	ZN	eSKS		28	07				
	ZNE	ePS		29	07				
	ZNE	eSS		33	59				
	ZNE	eL		39	-				
	N	M	08	01	37				
26		F	09	05	-				
	ZNE	e	19	40	-				
		F	20	10	-				
	ZNE	e			-				
30	Z	e	10	59	31				
	NE	e	11	06	26				
	Z	e		06	51				
	N	e		08	21				
	NE	e		09	23				
	NE	eLQ		20	-				
	Z	eLR		27	-				
		F	13	55	-				
30					-				
	ZNE	e(L)	19	05	-				
		F		25	-				

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AIR MINISTRY, METEOROLOGICAL OFFICE, LONDON.

KEW OBSERVATORY, RICHMOND, SURREY, ENGLAND.

SEISMOLOGICAL BULLETIN FOR MAY, 19 50

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: 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	PENDULUM FREE PERIOD T ₂	DAMPING CONSTANT μ ₂	$\frac{AE}{\pi^2}$
N.	22 July, 1949	21.6 ^{sec.}	23.2 ^{sec.}	-0.06	52.1 ^{sec.-1}
E.	22 April, 1949	17.8	18.3	+0.04	70.8
Z.	20 May, 1949	14.2	12.5	-0.05	133.

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	ZV, ZNE ZNE	e eL F	00	12	32				
				22					
				55					
2	ZV,	e F	00	51					Very small.
				55					
3	ZV, ZNE ZNE	e eL F	07	21	01				
				25					
				40					
7	ZNE	e F	05	52					Small.
			06	05					
7	Z NE ZNE	e e eL F	07	06	44				
				20	44				
				51					
			09	00					
7	ZNE	e F	10	53					Small.
			11	10					
9	Z ZNE NE ZNE ZNE ZNE N	1P ePPP 1S eSP eSS eL M F	06	20	07			6,055	eNE. Gulf of Aden.
				23	38				
				27	45				
				27	58				
				31	34				
				35					
				42	51	18	-3		
			07	35					
9	ZNE	e F	09	40					Earlier phases lost in changing of charts.
			10	10					

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KEW OBSERVATORY, RICHMOND, SURREY, ENGLAND.

SEISMOLOGICAL BULLETIN.

MAY, 19 50

DATE.	COMPT.	PHASE.	G.M.T.			PERIOD.	AMPLI-TUDE.	Δ	REMARKS.
			h.	m.	s.				
9	ZV,ZNE	1P	11	24	54			4,730	Turkmen 41°N, 58°E. (U.S.C.G.S.)
	ZNE	i		25	02				
	ZNE	1PP		26	40				
	ZNE	eS		31	15				
	NE	eSS		34	04				
	ZNE	i		34	22				
	ZNE	eL		39	-				
	N	M		45	39	17	+17		
	E	M		45	55	15	-8		
	Z	M		48	50	15	-10		
		F	13	20	-				Small.
10	ZNE	e	02	15	-				Small.
		F		25	-				
10	ZNE	e	22	40	-				
		F		50	-				
10/11	ZV,ZNE	eP	23	51	23			8,430	
	ZV,ZNE	ePP		54	18				
	NE	eS	00	01	08				
	NE	ePS		01	24				
	ZNE	eL		13	-				
	N	M		24	06	19	+16		
	E	M		24	42	15	+18		
		F	03	00	-				
13	ZNE	e	01	25	-				Small.
		F		55	-				
13	ZNE	e	18	55	-				Small.
		F	20	00	-				
14	ZNE	e	04	59	26				Small.
		F	05	25	-				
17	ZNE	e	05	44	33				
	NE	e		49	23				
	ZNE	eL	06	03	-				
		F		50	-				
17	ZV,Z	1P	11	58	00			9300	Compression. Sea of Japan. 39°N, 130½°E. Depth about 600 Km. (U.S.C.G.S.) Records very faint.
	ZV,Z	1PP	12	00	00				
	ZE	iS		07	11				
	E	eSS		10	49				
	ZNE	eL		28	-				
		F		50	-				
17	ZV,Z	1PKP	18	32	57			(16,000)	Records very faint. New Hebrides Islands region. 20°S, 169°E. (U.S.C.G.S.)
	ZV,	i		33	13				
	ZV,	i		33	42				
	ZV,	i		34	36				
	NE	e		56	33				
	ZNE	eL	19	16	-				
	E	M		39	36	20	+10		
		F	21	10	-				

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KEW OBSERVATORY, RICHMOND, SURREY, ENGLAND.

SEISMOLOGICAL BULLETIN.

MAY, 1950

DATE.	COMPT.	PHASE.	G.M.T.			PERIOD.	AMPLI-TUDE.	Δ	REMARKS.
			h.	m.	s.	sec.	μ	km.	
19	ZV,Z	iPKP	02	57	56			(16,500)	Compression. New Hebrides Islands region. 20½°S, 169°E. (U.S.C.G.S.)
	ZNE	i		58	02				
	ZN	e		59	10				
	ZN	ePP	03	01	33				
	Z	e(SP)		12	02				
	NE	eSS		20	49				
	ZNE	eL		47	-				
	N	M	04	06	24	20	+5		
	Z	M		06	48	19	-6		
		F	06	00	-				
19	Z	ePKP	07	25	18			(16,500)	Probably repetition.
	ZV,ZNE	i		25	22				
	Z	e		26	42				
	ZN	ePP		28	53				
	NE	eSS		48	03				
	N	e	08	05	21				
	ZNE	eL		16	-				
	Z	M		34	17	18	+3		
		F	10	20	-				
20	Z	eP	09	44	58			(11,000)	
	Z	e		45	28				
	ZNE	ePPP		51	03				
	N	e		53	54				
	ZNE	e(SKKS)		56	24				
	NE	eSS	10	03	40				
	E	eSSS		07	38				
	ZNE	eL		12	-				
		F	11	30	-				
21	ZNE	e	19	25	-				
		F		40	-				
21	ZNE	e	23	05	-				
		F		15	-				
22	ZNE	e(PPP)	23	34	25				Small.
	Z	e(SKS)		35	04				
	ZNE	eL	00	36	-				
		F	01	25	-				
23	ZNE	e	13	02	-				Small.
		F		30	-				
24	ZV,Z	i	04	15	42				
	NE	e		16	13				
	NE	e		26	42				
	ZNE	eL	05	11	-				
		F	06	15	-				
25	ZNE	e	13	50	-				Small.
		F		55	-				
25	ZV,ZNE	e(P)	18	54	10			(12,000)	Possibly deeper focus than normal.
	ZV,ZNE	i		54	26				
	ZNE	e		56	38				
	ZNE	i(PP)		59	40				
	ZNE	eSKS	19	04	52				

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KEW OBSERVATORY, RICHMOND, SURREY, ENGLAND.

SEISMOLOGICAL BULLETIN.

MAY, 19 50

DATE.	COMPT.	PHASE.	G.M.T.			PERIOD.	AMPLI- TUDE.	Δ	REMARKS.
			h.	m.	s.	sec.	μ	km.	
contd.									
25	ZNE	ePPS	19	09	44				
	NE	eSS		14	00				
	ZNE	eSSS		19	36				
	ZNE	eL		23	-				
	N	M		31	47	33	+13		
	E	M		32	36	26	-14		
		F	21	20	-				
26	ZV,ZNE	iPKP	01	36	54			(17,500)	Compression Multiple shock.
	ZV,ZNE	i		37	12				
	ZV,ZNE	i		37	26				
	ZV,ZNE	e		38	06				
	ZV,ZNE	e		39	02				
	ZV,ZNE	ePP		40	38				
	ZV,ZNE	eSKKS		48	18				
	ZNE	e		50	33				
	ZNE	iSS		59	40				Large.
	ZNE	i	02	09	54				
	ZNE	eL		18	-				
	N	M		42	07	23	-40		
	E	M		43	44	20	+22		
	Z	M		45	30	21	-31		
		F	06	05	-				
26	Z	e(PKP)	18	59	04				
	Z	e	18	00	10				
	ZNE	eL		54	-				Small.
		F	19	55	-				
27	ZV,ZNE	eP	12	59	12				
	ZV,ZNE	e	13	00	06				
	ZNE	eL		30	-				
	Z	M		23	32	18	+1		
		F	15	10	-				
28	ZV,NE	ePKP	01	56	31				No Z record.
	NE	ePP	02	00	14				
	N	e		06	02				
	NE	e(PPS)		14	58				
	NE	eL		50	-				
	E	M	03	04	30	20	+4		
		F	04	20	-				
30	Z	e	10	03	15				Small.
	ZNE	eL		09	-				
		F		20	-				
30	ZV,Z	iPKP	15	22	41				eNE
	ZV,ZNE	ePP		25	05				
	ZNE	ePKS		26	07				
	ZNE	eL	16	08	-				
		F		30	-				
31	Z	eP	13	26	01			(11,000)	
	Z	eSKS		36	29				
	ZNE	ePS		38	03				
	ZNE	eL		55	-				
	Z	M	14	10	49	16	+5		
		F	15	30	-				

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KEW OBSERVATORY, RICHMOND, SURREY, ENGLAND.

SEISMOLOGICAL BULLETIN.

JUNE, 19 50

DATE.	COMPT.	PHASE.	G.M.T.			PERIOD.	AMPLI- TUDE.	Δ	REMARKS.
			h.	m.	s.				
contd.						sec.	μ	km.	
8	ZNE	eSS	16	39	12				
	NE	eSSS		42	28				
	ZNE	eL		47	-				
	N	M		58	00	30	+17		
	N	M		03	53	17	-10		
	Z	M		03	56	17	-9		
		F	19	30	-				
11	ZNE	eL	04	20	-				
	N	M		28	55	18	+2		
		F		55	-				
11	ZV,ZNE	e	14	00	08				Small.
		F		15	-				
11	ZNE	e	18	05	-				Small.
		F		30	-				
11	ZNE	e	21	10	-				Small.
				25	-				
11	ZV,ZNE	ePKP	22	31	09			(17,000)	
	NE	eSKKS		41	21				
	ZNE	e		43	10				
	NE	ePS		46	00				Later records lost.
	ZNE	eSS		56	53				Galitzins failed from
		F	-	-	-				11d 23h 12m to 12d 09h 25m.
12	ZNE	e	15	15	-				Small.
		F	16	00	-				
14	ZV,ZNE	ePKP	04	03	53			(17,500)	
	ZV,ZNE	e		04	09				
	ZV,ZNE	e		05	00				
	ZV,ZNE	ePP		07	18				
	ZNE	e(SSS)		33	06				
	Z	e		33	54				
	ZNE	eL		47	-				
	N	M	05	02	06	23	+2		
		F	06	30	-				
14	ZNE	e	07	50	-				Small.
		F	08	30	-				
15	ZNE	e	07	40	-				Small.
		F	08	25	-				
17/18	ZV,Z	iP	22	50	10			11,310	Compression.
	ZV,Z	i		50	26				
	ZNE	eSKS	23	00	23				
	ZNE	iSKKS		00	56				
	ZNE	i(ScS)		01	05				
	ZNE	eS		02	00				
	ZNE	eSS		08	19				
	ZNE	eSSS		13	21				
	ZNE	eL		15	-				
	N	M		32	52	18	+3		
		F	00	15	-				

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AIR MINISTRY, METEOROLOGICAL OFFICE, LONDON.

KEW OBSERVATORY, RICHMOND, SURREY, ENGLAND.

SEISMOLOGICAL BULLETIN FOR JUNE, 1950

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: 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	PENDULUM FREE PERIOD T.	DAMPING CONSTANT μ 2.	$\frac{Ak}{\pi^2}$
N.	22 July, 1949	21.6 ^{sec.}	23.2 ^{sec.}	- 0.06	52.1 ^{sec.}
E.	22 April, 1949	17.8	18.3	+ 0.04	70.8
Z.	20 May, 1949	14.2	12.5	- 0.05	133.

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.	
4	ZNE	e F	02 03	45 00	- -				Small.
4	EZ EZ E EZ	e(P) e e eL F	08 09	00 04 13 17 30	14 57 10 - -				No N-S record.
4	Z ZNE Z	ePKP ePP e(SKS) F	15 16	37 40 46 20	55 14 08 -			(16,300)	Loyalty Islands region. 21°S., 170½°E. Depth about 100 Km. (U.S.C.G.S.). No surface waves
5	ZV, ZV, ZNE	eP ePP eL F	11 12	23 25 40 30	24 15 - -			(4,200)	North Polar region. 87°N., 45°E. (U.S.C.G.S.).
7	ZV,ZNE ZV,ZNE ZV,Z ZV,ZNE ZV,ZNE ZV,ZNE ZNE ZNE N	iP ipP iPP iS iPS ePPS eSS eL M F	17 19	05 05 08 15 16 17 20 25 34 45	00 30 24 13 10 08 56 - 05 -	22	+2	9,000	Dilatation. Northern Peru. 4°S, 76½°W. Depth about 100 Km. (U.S.C.G.S.).
8	ZV,Z ZNE NE NE ZNE	iP ePP eSKS iS ePPS	16 	21 24 31 32 34	09 58 48 46 38			10,945	Compression. eNE. South of Tristan da Cunha 45½°S., 15°E. (U.S.C.G.S.).

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KEW OBSERVATORY, RICHMOND, SURREY, ENGLAND.

SEISMOLOGICAL BULLETIN.

JUNE, 19 50

DATE.	COMPT.	PHASE.	G.M.T.			PERIOD.	AMPLI- TUDE.	Δ	REMARKS.
			h.	m.	s.				
18	ZNE	e F	11	01	- 15				Small.
18	ZV,ZNE	e	13	07	00				
	NE	e		08	15				
	NE	e		12	15				
	ZNE	eL		20	-				
	N	M		29	16	17	+2		
		F	14	25	-				
19	ZV,Z	ePP	12	55	57			(12,000)	
	ZV,Z	ePPP		58	26				
	Z	ePS		05	47				
	Z	ePPS		07	00				
	NE	eSSS		26	03				
	ZNE	eL		30	-				
	E	M		35	25	33	-14		
	N	M		36	00	30	+18		
		F	16	20	-				
20	ZV,Z	e	14	16	56				Small.
	Z	e		22	13				
		F		50	-				
21	ZV,ZNE	iPKP 1	07	15	24			(17,000)	Compression.
	ZV,ZNE	iPKP 2		15	29				New Hebrides Islands region.
	ZV,ZNE	e		15	46				21°S., 169°E. (U.S.C.G.S.).
	ZV,Z	i		16	39				
	ZNE	ePP		18	56				
	ZNE	ePPP		29	30				> 180°.
	ZNE	e		38	12				
	ZNE	eL		45	-				
	N	M	08	22	11	21	+25		
	Z	M		22	26	21	+16		
	E	M		24	18	20	+7		
		F	-	-	-				Overlapped by next shock
21	ZNE	ePKP	10	16	55			13,500	Off north east coast of
	Z	ePP		18	40				New Guinea. 3½°S, 147°E.
	ZNE	ePKKP		26	58				(U.S.C.G.S.).
	NE	ePPS		29	06				
	NE	eSSS		40	00				
	ZE	e		45	12				
	ZNE	eL		47	-				
	N	M		59	38	28	+9		
	Z	M	11	09	12	22	-5		
		F	-	-	-				Overlapped by next shock.
21	ZNE	e	12	40	-				
		F	13	25	-				
22	E	e	01	53	22				
	ZNE	eL		57	-				
		F	02	20	-				
24/25	ZV,ZNE	iPKP	22	45	14			(16500)	Compression.
	ZV,ZNE	i		45	21				
	ZV,ZNE	i		46	25				
	ZV,ZNE	iPP		48	52				
	NE	e		49	34				

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KEW OBSERVATORY, RICHMOND, SURREY, ENGLAND.

SEISMOLOGICAL BULLETIN.

JUNE, 19 50.

DATE.	COMPT.	PHASE.	G.M.T.			PERIOD.	AMPLI- TUDE.	Δ	REMARKS.
			h.	m.	s.		μ	km.	
contd. 24/25	NE	eSKKS		55	26				
	NE	eSKSP		59	00				
	ZNE	e(SS)	23	07	56				
	Z	i(SSS)		12	38				
	ZNE	eL		25	-				
	Z	M		52	25	22	-28		
	N	M		52	43	21	+32		
25	E	M		53	57	20	-12		
		F	02	25	-				
	ZV,	eP	11	20	54			(11,500)	
	ZV,Z	ePP		24	51				
	ZV,Z	iPS		33	52				
	ZV,Z	iPPS		34	53				
	NE	e(SSS)		44	58				
27	ZNE	eL		50	-				
	N	M	12	04	27	20	-5		
	Z	M		17	16	18	+3		
		F	13	40	-				
	ZNE	e	02	35	-				Small.
		F	03	00	-				
27	ZV,Z	iP	15	53	53			8,780	Compression. eNE.
	ZN,Z	i		54	00				
	ZN	ePP		56	54				
	ZNE	i(PPP)		59	54				
	ZNE	iS	16	03	55				
	ZNE	iSKS		04	35				
	NE	e		06	42				
	NE	eSS		09	52				
	ZNE	eL		18	-				
	E	M		28	19	17	+10		
	N	M		28	30	17	+11		
	Z	M		36	45	13	+8		
		F	17	50	-				
28	ZV,	i	23	30	49				Not very distant.
	ZV,ZNE	i		31	52				
	ZV,ZNE	i		32	01				
		F		35	-				
29	ZNE	e	00	03	-				
		F		55	-				

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AIR MINISTRY, METEOROLOGICAL OFFICE, LONDON.

KEW OBSERVATORY, RICHMOND, SURREY, ENGLAND.

SEISMOLOGICAL BULLETIN FOR JULY, 19 50

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: 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	PENDULUM FREE PERIOD T.	DAMPING CONSTANT μ ₂ .	$\frac{At}{m}$
N.	22 July, 1949	21 ^{sec} .6	23 ^{sec} .2	-0.06	52 ^{sec} .1
E.	22 April, 1949	17.8	18.3	+0.04	70.8
Z.	20 May, 1949	14.2	12.5	-0.05	133.

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.	
2/3	ZV, Z ZNE	eP eL F	23	01	17				Central Columbia 4°N, 73½°W. (U.S.C.G.S.).
3	Z ZV, Z ZNE NE NE NE ZNE E N Z	ePKP iPP ePPP eSS e eLQ eLR M M M F	10	20	57			(12000)	Caroline Islands Region. 8°N, 141½°E. (U.S.C.G.S.)
				22	52				
				25	01				
				38	21				
				49	23				
				53	-				
				59	-				
			11	01	39	30	+17		
				02	36	25	-18		
				09	19	19	+5		
			12	50	-				
3	ZNE	e F	13	50	-				Small.
			14	10	-				
5	ZV, Z Z Z ZNE	ePKP ePP e eL F	03	54	47			(16000)	New Hebrides. 19°S, 168°E. (U.S.C.G.S.)
				58	11				
			04	03	17				
				53	-				
			05	55	-				
6	ZNE ZNE	e eL F	07	23	54				Small.
				30	-				
				55	-				
7	Z Z ZNE Z ZNE ZNE	ePKP e ePP eSKKS e e(SKSP)	17	06	19			(15,000)	Solomon Islands Region. 11°S, 163½°E. (U.S.C.G.S.)
				06	40				
				08	59				
				16	23				
				18	07				
				19	55				

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KEW OBSERVATORY, RICHMOND, SURREY, ENGLAND.

SEISMOLOGICAL BULLETIN.

JULY, 19 50

DATE	COMPT.	PHASE	G.M.T.			PERIOD.	AMPLI- TUDE.	Δ	REMARKS
			h.	m.	s.		μ	km.	
7	Z	e(SS)	17	30	05	27	+4		
	ZNE	e		39	35				
	ZNE	eL		50	-				
	N	M	18	08	55				
8	ZNE	F	20	05	-				
9	ZV, ZN	eP	00	37	53	22	-5	6020	
	Z	eP _c P		38	54				
	NE	eS		45	29				
	NE	eS _c S		47	57				
	NE	eSS		49	25				
	ZNE	eL		53	-				
	N	M	01	05	03				
		F	-	-	-				
9	ZN	e(P)	01	58	57			(15,000)	
	Z	e	02	00	01				
	ZNE	eSKP		03	49				
	ZNE	eSS		18	05				
	ZNE	eL		40	-				
		F	-	-	-				
9	Z	e(P)	03	43	42				Overlapped by next shock.
	ZE	e		46	45				
		F	04	20	-				
9	ZV, ZNE	iP	04	51	34	18	-4	9,700	Dilatation. Western Brazil. 8½°S, 71°W. Depth about 600Km.(U.S.C.G.S) Probably more than one shock.
	ZV, ZNE	ipP		53	50				
	Z	e		57	54				
	ZE	e		58	53				
	ZNE	iSKS	05	00	57				
	ZNE	eSP		02	10				
	ZNE	ePS		03	13				
	ZNE	eSS		05	33				
	ZNE	eSS		07	03				
	ZNE	eSSS		10	33				
	NE	i		13	55				
	NE	e		20	33				
	ZNE	eL		23	-				
	N	M		27	46				
		F	07	25	-				
9	ZNE	iP	09	56	37			9,700	Dilatation. Approximate repetition.
	Z	ipP		58	51				
	ZNE	isP		59	51				
	ZNE	iSKS	10	06	09				
	E	iSKKS		06	31				
	ZNE	eS		07	12				
	ZNE	epS		10	05				
	ZNE	eSS		15	35				
	NE	e		19	05				
	ZNE	eL		21	-				
	Z	i		25	13				
		F	11	00	-				

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KEW OBSERVATORY, RICHMOND, SURREY, ENGLAND.

SEISMOLOGICAL BULLETIN.

JULY, 19 50

DATE.	COMPT.	PHASE.	G.M.T.			PERIOD.	AMPLI- TUDE	Δ	REMARKS.
			h.	m.	s.				
9	ZNE	iP	16	19	05	21	+6	5800	Compression. eN. Pakistan. 36°N, 72°E. (U.S.C.G.S). Depth about 200Km.
	ZE	isP		20	17				
	ZNE	ePPP		21	58				
	ZNE	iS		26	08				
	NE	isS		27	29				
	ZNE	i		27	43				
	ZNE	eSS		29	57				
	ZNE	eL		33	-				
	N	M		41	04				
9	ZNE	F	17	35	-				Small.
10	Z	eP	05	46	56			8,870	
	NE	eS		57	03				
	NE	eSS	06	01	49				
	ZNE	eL		07	-				
		F	07	30	-				
12	ZV, ZN	eP	11	21	00	18	-3	8,620	Aleutian Islands Region. 53°N, 166°W. (U.S.C.G.S).
	ZNE	ePP		23	53				
	NE	eS		30	55				
	NE	ePS		31	16				
	ZNE	eL		40	-				
	N	M	12	00	16				
12	ZNE	F	14	00	-				Small.
13	ZV, Z	i(P)	04	18	08			(10,300)	Bonin Islands Region. 27½°N. 139½°W. Depth about 500 Km. (U.S.C.G.S).
	NE	e(SKS)		26	04				
	NE	i(S)		26	36				
	NE	i(SP)		26	41				
	NE	e(SS)		29	57				
	NE	e(SS)		33	12				
	ZNE	eL		36	-				
		F	05	50	-				
17	ZNE	e	00	51	-				Small.
		F	01	05	-				
17	ZNE	e	20	38	-				Small.
		F	21	00	-				
18	ZV, Z	eP	01	45	31	22	+2	(10,500)	Doubtful.
	NE	e(S)		56	51				
	ZNE	eL	02	18	-				
	E	M		22	45				
18	ZV, E ZNE NE ZNE N	F		55	-	22	+3		Doubtful.
		e	16	48	55				
		e		58	52				
		e	17	01	31				
		e		11	41				
		eL		15	-				
	N	M		29	37				
		F	18	00	-				

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KEW OBSERVATORY, RICHMOND, SURREY, ENGLAND.

SEISMOLOGICAL BULLETIN.

JULY, 19 50

DATE.	COMPT.	PHASE.	G.M.T.			PERIOD.	AMPLI- TUDE.	Δ	REMARKS.
			h.	m.	s.				
19	ZNE	e F	05 06	42 05	- -				Small.
19	ZNE	e F	11 12	37 05	- -				Small.
19	ZNE	e F	13 14	40 05	- -				Small.
20	ZV, Z ZV, Z NE NE NE NE ZNE N	iPKP ePP eSKKS eSKSP eSS eSSS eL M F	09 10 10 11 17 27 43 12	50 53 00 03 11 52 27 43 30	24 48 44 49 52 52 - 25 -	30	+16	(16000)	Dilatation. Fiji Islands Region 17°S, 174°E. (U.S.C.G.S).
20	ZNE	e F	17 18	40 15	- -				Small.
21	Z ZNE	e eL F	07 08 09	38 35 05	52 - -				Small.
21	ZV, Z ZV, Z NE NE NE NE ZNE N	iPKP ₁ ePKP ₂ ePP eSS ePSS eSSS eL M F	20 21 21 21 19 33 47 23	51 52 55 13 15 19 33 47 25	35 08 18 36 12 12 - 20 -	25	+6	(16000)	Dilatation. eNE. New Hebrides Islands Region 15½°S. 168½°E. (U.S.C.G.S).
22/23	ZV, ZNE ZV, Z NE	ePKP ₁ ePKP ₂ eL F	23 23 00 01	30 30 15 30	20 52 - -				
24	ZNE	e F	13 14	40 30	- -				Small.
25	ZV, Z NE ZNE NE ZNE N	eP ePP eS eSS eL M F	18 18 28 30 33 34 19	22 23 28 30 33 34 20	14 36 02 48 - 03 -	17	-2	4,165	
28	ZV, Z NE ZNE NE NE N	ePKP ePP e eSKS eL M F	05 06 07	14 18 19 24 52 16 45	47 14 18 20 - 28 -	22	+2	(15,000)	

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SEISMOLOGICAL BULLETIN.

JULY, 19 50

DATE	COMPT.	PHASE.	G.M.T.			PERIOD.	AMPLI- TUDE.	Δ	REMARKS.
			h.	m.	s.				
28	NE NE	e eL F	18	20	-		μ	km.	
				30	-				
				55	-				
29	NE	eL F	15	15	-				Traces on Z.
				50	-				
29	ZV, Z	eP	17	03	16			10, 110	
	ZV, ZNE	eS		14	19				
	ZV, ZNE	ePS		15	22				
	NE	eSS		20	20				
	ZNE	eL		30	-				
	E	M F		46	44	23	+3		
			19	20	-				
30	ZV, Z	1(PKP)	00	08	08			(14,000)	eNE.
	ZV, ZNE	e(PP)		10	23				
	ZV, ZNE	1(PKS)		11	30				
	ZV, Z	e(PPS)		24	20				
	NE	e(SS)		30	10				
	ZNE	eL		38	-				
	N	M		57	49	28	-21		
	E	M F		58	36	25	-7		
			03	10	-				
31	NE	eL F	18	37	-				Traces on Z.
			19	20	-				

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AIR MINISTRY, METEOROLOGICAL OFFICE, LONDON.

KEW OBSERVATORY, RICHMOND, SURREY, ENGLAND.

SEISMOLOGICAL BULLETIN FOR AUGUST, 19 50

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: 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	PENDULUM FREE PERIOD T.	DAMPING CONSTANT $\mu/2$	$\frac{Ak}{\pi}$
N.	22 July, 1949	21. ^{sec} 6	23. ^{sec} 2	- 0.06	52. ^{sec} 1
E.	22 April, 1949	17.8	18.3	+ 0.04	70.8
Z.	20 May, 1949	14.2	12.5	- 0.05	133.

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	NE	e F	00	50	-				
			02	10	-				
1	ZV,ZNE ZV, NE N	eP e eL M F	09	24	01				Off Hokkaido, Japan.
				24	14				42½°N., 145°E. (U.S.C.G.S).
				50	-				Chart changing.
				58	15	26	+4		
			10	40	-				
2	ZV,Z NE NE NE ZNE N	iP ePPP eS eSS eL M F	11	09	09			(9510)	Compression. e, NE.
				15	19				Phases doubtful.
				19	51				
				24	55				
				40	-				
			12	00	25	17	+3		
			13	20	-				
2	ZV,ZNE ZV,Z ZNE ZE ZNE E	iP ePP eS eSS eL M F	13	58	46			5,460	Compression.
			14	00	34				e, NE.
				05	50				
				09	53				
				15	-				
				24	20	14	-5		
			15	50	-				
3	ZNE	e F	07	00	-				Small.
				20	-				
3	ZV,Z ZNE ZNE	e(p) e(S) eL F	15	45	52			(9,035)	
				56	07				
			16	25	-				Indefinite.
			17	30	-				
3/4	ZV,ZNE Z	iP ePPP	22	29	28			7,780	Compression.
				33	41				

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KEW OBSERVATORY, RICHMOND, SURREY, ENGLAND.

SEISMOLOGICAL BULLETIN.

AUGUST, 19 50

DATE.	COMPT.	PHASE.	G.M.T.			PERIOD.	AMPLI- TUDE.	Δ	REMARKS.
			h.	m.	s.				
conta.						sec.	μ	km.	
3/4	ZNE NE ZE ZNE N	1S 1PS e(SKS) eL M F	22	38	38	37	+18		Northwestern Venezuela. 10°N., 69½°W. (U.S.C.G.S).
			01	15	-				
5	ZV,Z ZV,Z ZV,Z ZNE ZNE ZN ZNE NE ZNE E Z N	1PKP1 1PKP2 1PKS ePP ePPP eSKKS eSKSP eSS eL M M M F	09	36	59			(19,000)	Compression. e, NE. e, NE. e, NE.
				38	15				
				39	14				
				42	09				
				46	33				Auckland Islands region. 50°S., 164°E. (U.S.C.G.S).
				47	49				
				52	39				
			10	03	03				
				28	-				
				59	35	19	-12		
				59	47	20	-13		
			11	00	59	18	-14		
			12	45	-				
7	ZV,ZNE ZV,ZNE ZV,ZNE ZE NE NE ZNE N Z E	eP e ePP ePPP eSKS ePKKP eL M M M F	02	59	00			(11,500)	Off Mindanao. 6°N, 126°E. (U.S.C.G.S).
				59	33				
			03	03	07				
				06	01				
				09	27				
				14	26				
				27	-				
				45	33	25	-12		
				49	10	18	- 9		
				49	14	18	- 7		
			06	10	-				
7	ZNE ZNE	e eL F	16	16	01				
				35	-				
			17	50	-				
8	ZNE	e F	05	45	-				Small.
			06	10	-				
10	ZNE	e F	20	25	-				Small.
			21	10	-				
13	ZNE	e F	17	10	-				
				50	-				
14/15	ZV,Z ZV, Z ZNE ZV,ZNE ZNE ZNE N NE NE NE ZNE N	1P i ipP esP ePP iPPP i(S) i(SKS) 1sS eSS esSS esSS eL M F	23	03	47			(10,500)	Dilatation. e, NE. Northern Argentina. 27°S., 62½°W. Depth about 700Km. (U.S.C.G.S.).
				03	54				
				05	58				
				07	05				
				07	45				
				10	48				
				13	25				
				14	10				
				17	36				
				19	32				
				21	24				
				24	28				
				26	-				
				31	16	28	+11		
			02	00	-				

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KEW OBSERVATORY, RICHMOND, SURREY, ENGLAND.

SEISMOLOGICAL BULLETIN.

AUGUST, 19 50

DATE.	COMPT.	PHASE.	G.M.T.			PERIOD.	AMPLI- TUDE.	Δ km.	REMARKS.
			h.	m.	s.				
15	ZNE	e F	07	00 30	- -				Small.
15	ZV,ZNE	iP	14	21	00			8,000	Compression.
	ZNE	i		22	04				Clear.
	ZNE	iPP		24	34				Destructive around
	ZNE	ePPP		26	22				Assam - Tibet.
	NE	i		29	56				Large.
	ZV,ZNE	iS		30	22				
	ZV,	iPS		30	40				
	ZV,	e		32	38				
	ZV,	eSSS		37	04				
	ZV,	e(PKKP)		40	02				
	ZV,	eL		41	-				
	ZV,	M*		55	(40)	(22)	(+28mm)		*Short period record (ZV). Galitzins very faint and maxima exceeding 400 μ .
	ZV,	e		38	52				
	ZV,	e		44	58				
	ZV,	e	15	02	44				
	ZV,	e		28	05				
	ZV,	e		35	04				
	ZV,	e		37	38				
	ZV,	e		40	38				
	ZV,	e		49	25				
	ZV,	e	16	09	10				Aftershocks.
	ZV,	e		40	56				
	ZV,	e		58	04				
	ZV,	i	17	01	26				
	ZV,	e		07	48				
	ZV,	e		28	20				
	ZV,	e	18	14	06				
	ZV,	e		50	08				
	ZV,	e	21	13	03				
	ZV,	e		45	08				
		F	-	-	-				Overlapped.
15	ZV,Z	e(P)	21	53	47			7,980	Aftershock.
	ZV,Z	e		53	59				
	NE	eS	22	03	08				
	NE	ePS		03	24				
	ZNE	eL		16	-				
	N	M		23	25	24	+9		
		F	-	-	-				Overlapped.
15/16	ZV,	e	23	56	03				
		F	-	-	-				Overlapped to about 05h.
16	ZV,	iP	05	44	35			7,980	Aftershock.
	ZV,	i		44	48				
	NE	eS		53	56				
	N	ePS		54	14				
	NE	eSKS		55	02				
	ZNE	eL	06	10	-				
		F	-	-	-				Overlapped.
16	ZV,Z	iP	06	53	26			8,035	Aftershock.
	ZV,	i		53	48				
	NE	eS	07	02	50				
	NE	eSKS		03	38				

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KEW OBSERVATORY, RICHMOND, SURREY, ENGLAND.

SEISMOLOGICAL BULLETIN.

AUGUST, 19 50

DATE.	COMPT.	PHASE.	G.M.T.			PERIOD.	AMPLI- TUDE.	Δ	REMARKS.
			h.	m.	s.	sec.	μ	km.	
contd.									
16	ZNE	e	07	11	03				
	ZNE	eL		16	-				
	N	M		22	12	24	-18		
	Z	M		29	00	12	+ 8		
		F	09	05	-				
16	ZNE	e	10	10	-				Small.
		F		15	-				
16	ZNE	e	12	06	-				Small.
		F		25	-				
16	ZV,	eP	15	47	23				Aftershock.
	NE	eL	16	06	-				
	ZV,	e		35	32				Probably further aftershocks.
	ZV,	e		47	24				
		F		50	-				
16	ZV,Z	eP	18	02	51			7,835	Aftershock.
	NE	eS		12	04				
	NE	eSKS		12	58				
	ZNE	eL		25	-				
		F	19	30	-				
16	ZV,	e(P)	19	37	00				
	ZNE	eL	20	00	-				
		F		20	-				
16	ZV,	e(P)	20	22	52				Small.
	ZNE	eL		50	-				
		F	21	30	-				
16/17	ZV,	e(P)	23	33	00				Small.
	ZNE	eL	00	01	-				
		F		30	-				
17	ZV,Z	eP	02	05	36			7,925	Aftershock.
	NE	eS		14	54				
	ZNE	eL		30	-				
	N	M		34	50	21	+7		
		F	03	25	-				
17	ZNE	e	03	55	-				
		F	04	15	-				
17	ZV,	eP	05	40	31			8,075	Aftershock.
	NE	eS		49	47				
	ZNE	eL	06	05	-				
		F		55	-				
17	ZNE	e	07	50	-				
		F	08	15	-				
17	ZNE	e	15	30	-				Small.
		F		35	-				
17	ZV,	i(HKP)	16	34	02				Compression. e, ZNE.
	ZV,Z	e(PKP)		36	27				Deep focus.
	ZN	e		37	51				

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KEW OBSERVATORY, RICHMOND, SURREY, ENGLAND.

SEISMOLOGICAL BULLETIN.

AUGUST, 1950

DATE.	COMPT.	PHASE.	G.M.T.			PERIOD.	AMPLI- TUDE.	Δ km.	REMARKS.
			h.	m.	s.				
contd. 17	ZV, ZV, N ZNE	e e e eL F	16	45	33				
				45	07				
				47	56				
				55	-				
			18	00	-				
18	ZV,Z ZNE NE NE N ZNE E Z	1P 1S 1SP eSS eSSS eL M M F	01	19	14			7,925	Dilatation. e, NE. Aftershock.
				28	32				
				29	21				
				33	25				
				36	47				
				40	-				
				53	05	18	+18		
				54	16	14	+11		
			04	00	-				
18	ZV,Z ZNE ZNE N	1P eS eL M F	17	10	12			7,925	Dilatation. e, NE. Aftershock.
				19	30				
				24	-				
				41	12	16	- 5		
			19	00	-				
18	ZNE	e F	22	55	-				
			23	20	-				
19	ZNE	e F	21	55	-				Small.
			23	30	-				
20	ZV,Z NE ZE ZNE	1P e e(S) eL F	09	14	55			(7,815)	Aftershock.
				23	09				
				24	07				
				(50)	-				Doubtful; Chart Changing.
			10	45	-				
21	ZV,Z E NE E ZNE	eP eS ePS eSSS eL F	06	03	09			8,220	Small. Aftershock.
				12	43				
				13	27				
				20	59				
				28	-				
			07	15	-				
21	NE ZNE	e(S) e F	08	49	21				
				56	46				
			10	00	-				L lost in chart changing.
21	NE	e F	16	40	-				Small.
			17	00	-				
21	ZV, ZNE	eP eL F	18	55	16				
			19	20	-				
				45	-				
21/22	ZV, E NE ZNE	1P eS ePS eL F	23	06	56			7,870	Aftershock.
				16	11				
				17	01				
				32	-				
			00	15	-				
22	ZV,Z ZV,Z	1P 1	02	33	54			7,855	Aftershock.
				33	01				

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KEW OBSERVATORY, RICHMOND, SURREY, ENGLAND.

SEISMOLOGICAL BULLETIN.

AUGUST, 19 50

DATE.	COMPT.	PHASE.	G.M.T.			PERIOD.	AMPLI- TUDE.	Δ	REMARKS.
			h.	m.	s.				
contd.						sec.	μ	km.	
22	NE	eS	02	43	08				
	NE	ePS		44	01				
	NE	e(PKKP)		50	36				
	ZNE	eL		55	-				
	N	M	03	02	05	22	- 4		
		F		55	-				
22	NE	e	06	26	49				
	ZNE	eL		45	-				
		F	-	-	-				Overlapped.
22	ZV,Z	iP	06	54	30			8,020	Compression.
	NE	eS	07	03	53				Aftershock.
	NE	ePS		05	01				
	ZNE	eL		16	-				
		F	-	-	-				Overlapped.
22	ZV,Z	e(P)	07	51	49				Small.
	NE	e	08	02	19				
	ZNE	eL		20	-				
		F	09	05	-				
22	ZV,Z	eP	13	33	56			8,130	Aftershock.
	ZV,Z	i		34	01				
	NE	eS		43	25				
	NE	ePS		44	19				
	ZNE	eL		53	-				
	N	M	14	03	36	22	-12		
		F	15	05	-				
23	ZV,Z	iP	03	20	39			7,890	Compression.
	NE	e		29	55				Aftershock.
	NE	eS		30	09				
	NE	ePS		30	47				
	NE	e		37	57				
	ZNE	eL		45	-				
	Z	M		55	26	13	+ 5		
		F	04	55	-				
23	NE	e	15	50	-				
	ZNE	eL	16	10	-				
		F		50	-				
23	ZV,	i	18	36	04				Not shown on Galitzins.
	ZV,	i		36	28				
	ZV,	i		37	26				
	ZV,	i		38	38				
		F		40	-				
23	ZV,Z	iP	18	58	27			8000	Aftershock.
	NE	iS	19	07	49				
	N	eSKS		08	00				
	NE	eSP		08	47				
	ZNE	eL		20	-				
	Z	M		33	58	13	- 3		
		F	24	20	-				

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KEW OBSERVATORY, RICHMOND, SURREY, ENGLAND.

SEISMOLOGICAL BULLETIN.

AUGUST 1950

DATE.	COMPT.	PHASE.	G.M.T.			PERIOD.	AMPLI- TUDE.	Δ	REMARKS.
			h.	m.	s.				
24	ZV,	iP	01	39	29		"	7930	Aftershock.
	NE	eS		48	47				
	ZNE	eL	02	05	-				
		F	04	00	-				
24	ZNE	e	11	02	02				Small.
		F		35	-				
24	ZNE	e	13	50	-				
		F	14	00	-				Small.
24	ZV,	e	16	47	55				Small with traces on Galitzins.
		F	17	40	-				
25	ZNE	e	08	50	-				
		F	09	20	-				Small.
26	ZNE	e(S)	04	58	30				Overlapped.
	NE	e	05	02	24				
	ZNE	eL	06	10	-				
		F	-	-	-				
26	ZV,	i(P)	06	45	10	19 15	-11 + 5		
	E	i		53	58				
	ZE	e	07	02	24				
	ZNE	eL		07	-				
	N	M		14	52				
	Z	M		19	47				
		F	08	30	-				
26	ZNE	e	16	45	-				Small.
		F	17	30	-				
27	ZNE	e	11	35	-				Small.
		F	12	00	-				
29	ZNE	e	18	47	-				Small.
		F	19	00	-				
29/30	ZNE	e	23	15	-				Small.
		F	00	10	-				
30	Z	e	05	32	20				Small.
		F		55	-				
30	Z	e(P)	07	06	10	23	+ 3		
	ZNE	e		20	28				
	ZNE	eL		40	-				
	N	M		53	15				
		F	08	05	-				
30	ZNE	e	09	32	34				Small.
		F		50	-				
30	ZN	e	23	33	40				Small.
		F		45	-				
31	ZNE	e	02	00	-				Small.
		F		30	-				

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KEW OBSERVATORY, RICHMOND, SURREY, ENGLAND.

SEISMOLOGICAL BULLETIN.

AUGUST, 19 50

DATE.	COMPT.	PHASE.	G.M.T.			PERIOD.	AMPLI- TUDE.	Δ	REMARKS.
			h.	m.	s.				
31	ZNE	eP	07	19	57	28	+11	(12000)	
	ZNE	ePP		24	49				
	NE	eSKS		30	26				
	ZNE	e(PPS)		34	23				
	ZNE	eL		43	-				
	N	M	08	03	56				
31		F	09	25	-				
	ZV,Z	e	17	29	18				
	NE	i		30	05				
	ZNE	i		30	29				
	ZE	i		31	19				
	NE	e		32	23				
31		F		55	-				
	Z	e(P)	20	04	02				
	NE	e		13	15				
	ZNE	eL		30	-				
		F	21	00	-				

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AIR MINISTRY, METEOROLOGICAL OFFICE, LONDON.

KEW OBSERVATORY, RICHMOND, SURREY, ENGLAND.

SEISMOLOGICAL BULLETIN FOR SEPTEMBER, 19 50

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: 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	PENDULUM FREE PERIOD T.	DAMPING CONSTANT μ ² .	$\frac{Ak}{\pi l}$
N.	22 July, 1949	21.6 ^{sec.}	23.2 ^{sec.}	- 0.06	52.1 ^{sec.-1}
E.	22 April, 1949	17.8	18.3	+ 0.04	70.8
Z.	20 May, 1949	14.2	12.5	- 0.05	133.

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	ZV, Z NE NE ZNE ZNE	eP eS ePS eSS eL F	03	00	15 40 23 11 - -			9,240	
1	ZV, ZNE	e(P) eL F	07 08	23 47 25	18 - -				
2	ZNE	eL F	00	20 55	- -				
2	ZV, Z NE ZNE E	iP eS eL M F	02 03 04	59 08 55	03 44 - 47 -	18	-4	8,350	Compression. e, NE. Aleutian Islands. 52½°N., 169°W. (U.S.C.G.S)
2	ZNE	e F	10	30 55	- -				Small.
2	Z ZNE N	e(PKP) eL M F	13 14 16	20 35 20	26 - 49 -	26	+7		Doubtful.
2	ZV, Z NE NE ZNE N	iP e e(S) eL M F	16 18	26 32 35 50 56 20	02 06 20 - 40 -	17	-4	(7,930)	Dilatation. e, NE. Repetition from Assam.

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KEW OBSERVATORY, RICHMOND, SURREY, ENGLAND.

SEISMOLOGICAL BULLETIN.

SEPTEMBER, 19 50

DATE.	COMPT.	PHASE.	G.M.T.			PERIOD.	AMPLI- TUDE.	Δ	REMARKS.
			h.	m.	s.				
4	Z NE ZNE	eP e(S) eL F	06	30	56			(7,450)	Doubtful. Further repetition from Assam.
				39	49				
				55	-				
			07	55	-				
4	ZNE	e F	12	25	-				
				55	-				
4	ZNE	e F	21	37	-				Small.
			22	10	-				
5	ZV, ZV ZV,ZE ZNE N	i(P) i i eL M F	04	12	06				Probably two earthquakes superposed. Felt in Central Italy.
				14	55				
				15	30				
				15	-				
				16	23	22	+17		
			05	05	-				
5	NE	e F	08	40	-				Small.
				50	-				
9	ZV, Z NE ZNE N	ePKP e(PF) eSS eL M F	10	40	40			(14,000)	New Britain region. 4°S., 153°E. (U.S.C.G.S.).
				43	09				
				56	45				
			11	15	-				
				32	52	26	+6		
			13	00	-				
10	ZV,Z ZV, ZNE ZNE ZNE ZNE E	iP i eS ePS eSS eL M F	03	34	08			9,200	Near coast of Honshu, Japan. 35°N., 140°E. (U.S.C.G.S.).
				34	18				
				44	31				
				45	05				
				50	03				
			04	00	-				
				06	09	34	+7		
			05	10	-				
10	ZV,ZNE ZV,Z ZV, ZNE ZNE ZNE ZNE ZNE ZNE ZNE N	iPKP i(pPKP) i(sPKP) iPP iPKS ePPP eSKKS e(PS) eSS eL M F	15	35	29			(16,000)	Dilatation. e, NE. New Hebrides Islands regio 14°S., 167°E. (U.S.C.G.S.). Probably somewhat deeper than normal.
				36	16				
				37	17				
				38	43				
				39	15				
				42	05				
				45	22				
				50	16				
				58	00				
			16	15	-				
				32	48	23	-12		
			18	30	-				
11	ZNE	e F	00	53	-				
			01	20	-				
11	ZV, ZNE	e(P) eL F	09	52	06				
			10	20	-				
			11	00	-				
12	ZNE	e F	05	45	-				
			06	00	-				

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KEW OBSERVATORY, RICHMOND, SURREY, ENGLAND.

SEISMOLOGICAL BULLETIN.

SEPTEMBER, 19 50

DATE.	COMPT.	PHASE.	G.M.T.			PERIOD.	AMPLI-TUDE.	Δ	REMARKS.
			h.	m.	s.				
13	NE ZNE	e eL F	00	34	38				
			01	45	-				
			01	30	-				
13	ZV, ZNE N	e(P) eL M F	11	24	27				
				45	-				
				49	02	18	+12		Confused by microseisms.
			13	00	-				
14	ZNE ZNE	e eL F	09	35	35				
			10	00	-				
				55	-				Chart changing.
16	ZNE	e F	01	40	-				
			02	45	-				Small.
18	ZNE	e F	19	45	-				
			20	00	-				Small.
19	ZNE ZNE ZNE ZNE ZNE NE ZNE E N Z	ePKP ePP i e e e eL M M M F	20	49	50				
				52	38				
				59	46				
			21	03	56				
				06	46				
				18	52				
				28	-				
				36	05	23	+21		
				43	30	21	+22		
				43	48	21	+18		
			23	45	-				
21/22	ZV, Z NE N ZNE	eP i eSKS eSSS eL F	23	03	20			10,000	
				04	23				
				13	50				
				24	13				
				30	-				
			00	40	-				
22	NE	e F	04	25	-				
				45	-				Small.
22	Z ZNE ZNE ZNE E	e(PP) e(SKKS) e(PPP) eL M F	08	15	33				
				21	59				
				30	11				
				45	-				By path > 180°.
				53	58	24	+4		
			09	30	-				
23	ZV,ZNE ZN ZNE NE NE ZNE ZNE ZNE ZNE	iPKP iPP ePPP eSS e eSSS e e eL F	00	12	27				
				14	46				Dilatation.
				18	19				
				30	11				Large on E.
				36	52				
				39	45				Interpretations doubtful.
				54	05				Deep focus.
				56	51				
			01	05	-				Small.
			02	20	-				

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KEW OBSERVATORY, RICHMOND, SURREY, ENGLAND.

SEISMOLOGICAL BULLETIN.

SEPTEMBER, 19 50

DATE.	COMPT.	PHASE.	G.M.T.			PERIOD.	AMPLI- TUDE.	Δ	REMARKS.
			h.	m.	s.				
23	ZV, ZNE ZNE	iP iS eL F	06	29	19			2,830	
				33	44				
				37	-				
			07	00	-				
23	ZNE ZNE	e eL F	19	05	-				
				40	-				
			20	05	-				
24/25	ZV, NE ZNE	e(P) e(S) eL F	23	04	57				
				11	53				
				25	-				
			00	05	-				
26	ZNE	eL F	00	03	-				
				55	-				
26	ZNE	e F	15	00	-				Doubtful.
				20	-				
26	ZNE	eL F	19	45	-				
			20	15	-				
27	NE ZNE	e eL F	04	00	10				Small.
				10	-				
				50	-				
27	ZV,Z ZV,Z ZNE	i(P) e eL F	08	43	45				
				44	12				
			09	45	-				Small.
			10	30	-				
27	ZNE	e F	13	32	-				
				55	-				
28	ZV,Z ZNE Z	e(P) eL M F	03	46	12				
			04	10	-				
				27	32	18	+4		
			05	05	-				
29	ZV,Z Z Z ZNE E ZNE N E Z	iP i i eS eSS eL M M M F	06	44	57			9,210	Dilatation. e, NE.
				45	27				
				46	23				
				55	20				
			07	02	00				
				07	-				
				14	42	22	+11		
				16	47	27	+45		
				17	41	22	-49		
			09	25	-				
29	ZNE	e F	23	05	-				
				30	-				

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KEW OBSERVATORY, RICHMOND, SURREY, ENGLAND.

SEISMOLOGICAL BULLETIN.

SEPTEMBER, 19 50

DATE.	COMPT.	PHASE.	G.M.T.			PERIOD.	AMPLI- TUDE.	Δ	REMARKS.
			h.	m.	s.				
30	ZV, ZE	iP	07	40	15	18 12	μ +11 -8	7,800	Compression.
	ZV, ZE	1		44	24				
	ZE	ePPP		44	44				
	NE	eS		49	28				
	E	e(SKS)		50	16				
	E	eSS		53	40				
	NE	eSSS		57	12				
	ZNE	eL	08	05	-				
	E	M		13	57				
	Z	M		15	22				
		F	09	05	-				

M.O. 534

AIR MINISTRY, METEOROLOGICAL OFFICE, LONDON.

KEW OBSERVATORY, RICHMOND, SURREY, ENGLAND.

SEISMOLOGICAL BULLETIN FOR OCTOBER, 19 50

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: 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	PENDULUM FREE PERIOD T.	DAMPING CONSTANT μ ² .	$\frac{Ak}{\pi'}$
N.	22 July, 1949	21.6 ^{sec.}	23.2 ^{sec.}	- 0.06	52.1 ^{sec.-1}
E.	22 April, 1949	17.8	18.3	+ 0.04	70.8
Z.	20 May, 1949	14.2	12.5	- 0.05	133.

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	02 03	45 20	- -				Small.
3	ZNE	e F	07	05 30	- -				Small.
3/4	ZV, NE NE ZNE E	e P e S e(SP) eL M F	23	13 23 24 40 44 00	32 04 05 - 08 -	23	+6	8180	Microseisms.
5	ZNE	eL F	01 03	50 10	- -				Microseisms.
5	ZV, ZE ZV, ZE ZE NE ZV, ZNE ZE Z NE ZNE E Z N	iP ePP ePPP eS ePS e eSS eSSS eL M M M F	16	21 24 26 31 32 36 37 40 45 49 50 53 22	32 24 59 49 14 10 00 36 - 39 02 00 - -	23 23 20	> +420 -260 -150	9070	Compression. eN. Northwestern Costa Rica. 10½°N. 85°W. (U.S.C.G.S).
5/6	ZNE	e F	23 00	50 20	- -				Small.
6	ZE	e F	08 09	35 10	- -				Small.

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KEW OBSERVATORY, RICHMOND, SURREY, ENGLAND.

SEISMOLOGICAL BULLETIN.

OCTOBER, 19 50

DATE.	COMPT.	PHASE.	G.M.T.			PERIOD.	AMPLI- TUDE.	Δ	REMARKS.
			h.	m.	s.				
7	NE	e F	23	10 35	- -				Large microseisms.
8	ZNE ZV,ZNE ZNE E NE NE Z ZNE NE NE NE ZNE E N Z	eP iPP e iSKS eSKKS iPS i iSS e eSSS e eL M M M F	03	38 43 44 48 50 52 54 59 04 03 04 08 15 37 37 41	19 09 46 54 12 43 36 04 04 00 08 - 09 40 41			(12,500)	Large microseisms. Molucca Islands 4°S, 128°E. (U.S.C.G.S).
			04						
						21	+60		
						23	+110		
						20	+40		
			-	-	-				Overlapped.
8	ZV,	iP F	05 08	01 20	35 -				
8	ZNE	eL F	15 17	50 50	- -				Large microseisms.
13	NE	e F	00 01	45 15	- -				Small.
15	ZV, ZNE NE ZNE ZNE N	ePP e ePS eSSS eL M F	16	21 22 32 43 55 09 20	50 45 23 56 - 58 -	30	+3	(14,700)	Solomon Islands. 10°S, 160°E. (U.S.C.G.S).
16	ZNE	e F	08	10 20	- -				Small.
16	ZNE	e F	16	20 35	- -				Small.
17	ZNE	e F	22 23	45 10	- -				Small.
19	ZNE	e F	04	10 40	- -				Small.
19	ZV, ZV,Z E NE ZNE	ePKP ePP eSS eSSS eL F	10	19 23 41 50 11 12	47 29 57 05 - -			(16000)	
20	ZNE	e F	08	10 30	- -				Small.

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KEW OBSERVATORY, RICHMOND, SURREY, ENGLAND.

SEISMOLOGICAL BULLETIN.

OCTOBER, 19 50

DATE.	COMPT.	PHASE.	G.M.T.			PERIOD.	AMPLI- TUDE.	Δ	REMARKS.
			h.	m.	s.				
21	ZV,ZNE	iPKP ₁	04	32	33	22	-75	(17,000)	Compression.
	Z	iPKP ₂		33	04				
	ZNE	ePP		35	57				
	ZNE	e		42	36				
	N	iSKKS		42	52				
	Z	e		43	55				
	NE	ePPS		48	59				
	NE	eSS		54	58				
	ZNE	eL	05	15	-				
	N	M		33	56				
21	ZV,ZNE	eP	09	55	52	34	+9	8,960	
	ZV,Z	e		56	25				
	NE	eS	10	06	16				
	NE	ePS		06	36				
	ZNE	eSS		11	54				
	ZNE	eL		17	-				
	N	M		23	48				
		F	11	20	-				
22	ZNE	e	06	02	-				Small.
		F		20	-				
23	ZV,ZE	iP	16	25	26	19	+90	8,690	Compression. eN. eN. Near coast of Guatemala. 14½°N. 92°W. (U.S.C.G.S).
	ZE	i(P _c P)		25	33				
	ZNE	e		25	52				
	ZNE	ePP		28	14				
	ZNE	iS		35	24				
	ZNE	ePS		35	42				
	ZNE	e		36	34				
	ZNE	eSS		40	08				
	ZNE	eSSS		44	31				
	ZNE	eL		46	-				
	Z	M		59	39				
	E	M	17	00	11				
	N	M		05	43				
	ZV,	i	18	00	01				
		F	21	20	-				
24	ZNE	eL	00	15	-				Small.
		F	01	00	-				
24	Z	eP	01	04	10			(10,420)	
	ZNE	e(S)		15	26				
	ZNE	eL		25	-				
		F	02	40	-				
25	NE	eP	07	15	02			(9,730)	
	ZNE	e(SKS)		25	26				
	ZNE	e(S)		25	49				
	ZNE	eL		45	-				
		F	08	20	-				
26	N	e	04	38	-				
	ZNE	eL	05	10	-				
		F	06	15	-				

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KEW OBSERVATORY, RICHMOND, SURREY, ENGLAND.

SEISMOLOGICAL BULLETIN.

OCTOBER, 19 50

DATE.	COMPT.	PHASE.	G.M.T.			PERIOD.	AMPLI- TUDE.	Δ km.	REMARKS.
			h.	m.	s.				
26	ZE E	eL M F	17	00	-	18	+2		No "N-S" record. Large microseisms.
				09	16				
			18	15	-				
28	ZNE	e F	10	30	-				Small.
			11	15	-				
28	ZNE	eL F	22	55	-				
			23	25	-				
29	ZNE	e F	01	50	-				Small.
			02	20	-				
29	ZNE	e F	06	42	-				Small.
			07	10	-				
30	ZNE	eL F	03	40	-				
				55	-				
30/31	ZNE	e F	23	52	-				Small.
			00	10	-				
31	ZV,Z ZNE ZNE Z	e(P) e eL e F	19	27	22				Microseisms.
				32	31				
				38	-				
				50	46				
			20	30	-				
31	ZNE E	eL M F	21	00	-	19	-3		
				09	45				
				40	-				

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AIR MINISTRY, METEOROLOGICAL OFFICE, LONDON.

KEW OBSERVATORY, RICHMOND, SURREY, ENGLAND.

SEISMOLOGICAL BULLETIN FOR NOVEMBER 1950

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: 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	PENDULUM FREE PERIOD T.	DAMPING CONSTANT μ^2 .	$\frac{Ak}{\pi^2}$
N.	22 July 1949	21 ^{sec.} ₆	23 ^{sec.} ₂	-0.06	52 ^{sec.-1} ₁
E.	22 April 1949	17.8	18.3	+0.04	70.8
Z.	20 May 1949	14.2	12.5	-0.05	133.

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	13 25 - 14 50 -				
2.	ZNE	e	07 31 00				
	NE	e	31 21				
	NE	e	37 25				
	ZNE	eL F	52 - 08 40 -				
2	ZV, ZNE	e(P)	15 43 00			(2,800)	Banda Sea Region
	ZV, ZNE	e	44 00				6°S., 129½°E. (U.S.C.G.S.)
	ZV, ZNE	iPKP	46 38				
	ZNE	ePP	48 05				
	ZNE	e	49 09				Large
	ZNE	ePPP	51 36				Large
	Z	ePS	57 41				
	NE	ePPS	58 33				
	NE	e(SKKS)	16 06 01				
	NE	eSSS	08 57				
	ZNE	eL	15 -				
	N	M	34 09	35	-140		
	E	M	43 29	27	+70		
	Z	M	45 52	20	-23		
		F	20 15 -				
2	ZNE	e	20 52 -				
	ZNE	eL	58 -				
		F	21 25 -				
5	Z	e	16 58 -				
	ZNE	eL	17 15 -				
		F	- - -				Overlapped by following shock
5	Z	iP (contd.)	17 50 12			9,240	Compression e, NE

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KEW OBSERVATORY, RICHMOND, SURREY, ENGLAND.

SEISMOLOGICAL BULLETIN.

NOVEMBER 19 50

DATE.	COMPT.	PHASE.	G.M.T.	PERIOD.	AMPLI- TUDE.	Δ	REMARKS.
			h. m. s.	sec.	μ	km.	
5	(cont'd)						
	ZNE	ePP	17 53 09				
	ZNE	e	57 01				
	NE	eSKS	18 00 11				Off Coast of Shikoku, Japan
	ZNE	eS	00 37				33°N., 134½°E. (U.S.C.G.S.)
	ZNE	ePS	00 53				
	ZNE	e	02 17				
	ZNE	eSS	06 21				
	ZNE	eL	18 -				
	N	M	33 24	15	-40		
	Z	M	35 23	15	+30		
	E	M	35 27	13	+24		
		F	20 35 -				
6/7	ZNE	ePKP	22 44 49			(14,000)	Microseisms. Solomon Islands
	Z	e(PS)	57 35				Region 7½°S., 155½°E.
	N	e(SS)	23 07 16				(U.S.C.G.S.)
	ZNE	eL	28 -				
	N	M	37 58	22	-3		
		F	00 45 -				
8	ZV,Z	iPKP	02 40 08			(13,800)	e,NE
	Z	i	40 20				e,NE
	ZV,ZNE	iPP	41 12				
	ZNE	ePPP	44 40				Solomon Islands Region
	NE	eSKS	46 58				9½°S., 159½°E. (U.S.C.G.S.)
	ZNE	ePKKP	50 08				
	ZNE	ePS	52 10				
	ZNE	ePPS	54 08				
	ZNE	ePPP	57 20				>180°
	ZNE	ePSS	59 40				
	ZNE	eSSS	03 03 04				
	ZNE	eL	12 -				
	N	M	32 03	25	-33		
	Z	M	35 00	23	+18		
	E	M	43 06	19	+12		
		F	06 10 -				
10	NE	e	02 31 05				Microseisms
	ZNE	eL	50 -				
		F	03 50 -				
11	ZNE	e	04 45 -				ditto
		F	05 10 -				
12	ZNE	e	09 55 -				ditto
		F	10 30 -				
12	ZNE	e	22 05 -				ditto
		F	30 -				
14	ZN	e	04 45 -				ditto
		F	05 10 -				
14	ZNE	e	22 40 -				ditto
		F	23 10 -				
16	ZNE	e	09 45 -				Small
		F	10 15 -				

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KEW OBSERVATORY, RICHMOND, SURREY, ENGLAND.

SEISMOLOGICAL BULLETIN.

NOVEMBER 19 50

DATE.	COMPT.	PHASE.	G.M.T.			PERIOD.	AMPLI- TUDE.	Δ	REMARKS.
			h.	m.	s.		μ	km.	
17	ZNE N	eL M F	16	15	-	13	+3		
				23	47				
				40	-				
17	ZV,ZNE ZV,ZNE NE ZV,Z ZNE ZNE ZNE N E Z	eP ePP eS ePS eSS eSSS eL M M M F	19	40	51	18 18 16	-5 +6 +4	8,990	Near West Coast of Mexico 17°N., 100½°W. (U.S.C.G.S.)
				43	56				
				51	03				
				51	12				
				55	48				
				59	31				
			20	03	-				
				19	08				
				19	08				
				19	12				
			21	10	-				
17	ZNE	eL F	22	28	-				
				50	-				
19	ZNE	e F	22	00	-				Microseisms
				15	-				
21	ZNE	e F	21	27	-				Microseisms
				45	-				
22	Z NE NE N NE NE ZNE N	eP eS e(SKS) ePS eSS eSSS eL M F	10	28	31	20	-5	8,430	Aleutian Islands Region 51°N., 176°W. (U.S.C.G.S.)
				38	16				
				38	50				
				39	16				
				43	18				
				47	08				
				50	-				
			11	03	47				
			12	05	-				
24	Z Z ZNE	ePKP ePP eL F	13	23	19				
				26	33				
			14	15	-				
			15	25	-				
24	Z NE NE NE ZNE N	ePKP ePPS e eSS eL M F	20	38	01	19	+3	(17,500)	
				55	57				
			21	00	29				
				01	49				
				33	-				
				40	33				
			22	50	-				
25	ZNE	e F	17	40	-				Microseisms
				50	-				
28	ZV,Z NE ZNE N	e e eL M F	17	59	15	14	-7		Microseisms
			18	02	39				
				05	-				
				07	37				
				20	-				
30	NE	e F	18	50	-				Microseisms
			20	00	-				

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AIR MINISTRY, METEOROLOGICAL OFFICE, LONDON.

KEW OBSERVATORY, RICHMOND, SURREY, ENGLAND.

SEISMOLOGICAL BULLETIN FOR DECEMBER, 19 50

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: 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	PENDULUM FREE PERIOD T.	DAMPING CONSTANT μ ₂ .	$\frac{Ak}{\pi^2}$
N.	22 July 1949	21 ^{sec.} .6	23 ^{sec.} .2	-0.06	52 ^{sec.} .1
E.	22 April 1949	17.8	18.3	+0.04	70.8
Z.	20 May 1949	14.2	12.5	-0.05	133.

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	ZV,Z	iP	15	00	09			5,890	Mid-Atlantic Ocean. 14°N, 47°W. Depth about 100 Km. (U.S.C.G.S.).
	ZV,Z	i		00	13				
	ZV,Z	ePP		02	12				
	ZNE	iS		07	37				
	NE	eScS		10	32				
	NE	eSS		11	19				
	ZNE	eL		13	-				
	N	M		18	08	17	+55		
	Z	M		18	10	18	+60		
	E	M		19	24	18	-65		
		F	18	30	-				
2	ZV,	1P	15	30	49			(9500)	Western Brazil 8°S, 71½°W depth about 650 Km. (U.S.C.G.S.).
	ZV,	1pP		33	06				
	ZV,E	1SKS		40	12				
	NE	eS		40	24				
	NE	eSP		41	26				
	NE	eSSS		45	20				
	NE	eSSS		49	54				
	NE	e		53	16				
		F	16	30	-				
2	ZV,ZN	1PKP ₁	20	11	26			(16000)	Compression New Hebrides region 18°S, 167°E. (U.S.C.G.S.).
	ZNE	1PKP ₂		11	50				
	ZV,ZNE	ePP		15	06				
	ZNE	ePPP		18	25				
	ZV,ZNE	e(HKP)		20	19				
	NE	ePS		25	12				
	NE	eSS		32	45				
	ZNE	ePSS		34	07				
	ZNE	eL		50	-				
	N	M	21	04	12	31	+86		
	E	M		04	46	26	+40		
	Z	M		22	17	18	-30		
		F	00	50	-				

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KEW OBSERVATORY, RICHMOND, SURREY, ENGLAND.

SEISMOLOGICAL BULLETIN.

DECEMBER, 19 50

DATE.	COMPT.	PHASE.	G.M.T.			PERIOD.	AMPLI-TUDE.	Δ	REMARKS.
			h.	m.	s.				
3	ZV, ZV, N ZNE N	1(P) 1 e(S) eL M F	06	38	16	18	+5	(8240)	
				38	25				
				47	51				
			07	05	-				
				12	45				
				45	-				
3	ZV,	1 F	08	07	13				Small.
			10	20	-				
4	ZV,Z NE NE NE	e e e eL F	07	57	48				Small.
			08	20	11				Aftershock of 2nd 19h.
				21	33				
				48	-				
			09	10	-				
4	ZV,Z ZV,Z NE NE NE NE ZNE E N Z	1PKP 1pPKP ePP epPP eSKKS e(SS) eL M M M F	16	47	03			(13,700)	NE,e.
				47	29				New Britain region
				50	21				5°S, 153½°E. depth about
				50	43				100 Km. (U.S.C.G.S.).
				55	55				
			17	08	55				
				10	-				
				33	16	29	+16		
				36	38	25	+32		
				49	57	18	-7		
			19	15	-				
5	ZV, ZNE E	e eL M F	22	21	51				
				40	-				
				44	01	23	-4		
			23	15	-				
9/10	ZV,Z ZNE ZNE ZNE ZNE NE ZNE Z ZNE E Z N	1P 1pP i 1PP ePPP eSKS eS e(SS) eL M M M F	21	52	05			(11,000)	NE,e.
				52	35				Northern Argentina
				53	07				- Chile border region.
				55	43				24°S, 67½°W. depth about
				59	35				200 Km. (U.S.C.G.S.).
			22	02	31				
				03	10				
				08	53				
				10	-				
				31	26	23	+110		
				31	30	22	+200		
				36	12	18	+110		
			02	20	-				
10	ZV,ZNE NE NE NE ZNE Z N E	eP eSKS eSKKS ePS eL M M M F	03	04	12			(11,400)	Near Southern coast of Peru
				14	18				14½°S, 76½°W.
				14	44				depth about 60 Km.
				16	41				(U.S.C.G.S.).
				25	-				
				38	52	24	+4		
				39	12	24	+10		
				39	12	24	+9		
			04	20	-				

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KEW OBSERVATORY, RICHMOND, SURREY, ENGLAND.

SEISMOLOGICAL BULLETIN.

DECEMBER, 19 50

DATE.	COMPT.	PHASE.	G.M.T.			PERIOD.	AMPLI- TUDE.	Δ	REMARKS.
			h.	m.	s.				
10	ZV,Z	1PKP ₁	14	42	33			(17,200)	NE,e. Dilatation. NE,e. Kermadec Islands region. 28½°S, 179°W. depth about 300 Km. (U.S.C.G.S.).
	ZV,Z	1PKP ₂		43	06				
	ZNE	1PP		46	44				
	ZNE	eSKKS		53	00				
	ZNE	eSKSP		56	59				
	NE	ePPS	14	01	14				
	NE	e		02	00				
	ZNE	eSS		06	07				
	ZNE	e		09	59				
	ZNE	eSSS		14	54				
	ZNE	eL		18	-				
	E	M		39	47	25	-12		
	N	M		40	04	28	-18		
		F	17	20	-				
12	ZNE	eL	02	30	-				
		F	03	15	-				
14	ZV,Z	1PKP ₁	02	12	10			(15,000)	NE,e. Compression. Tonga Islands region. 19½°S. 176°W. depth about 200 Km. (U.S.C.G.S.).
	ZV,ZNE	1PKP ₂		12	18				
	ZV,ZNE	i		13	21				
	ZV,ZNE	1PP		15	44				
	ZV,ZNE	i		15	56				
	ZV,ZNE	ePSKS		23	30				
	ZV,ZNE	e		25	58				
	ZNE	eL		32	-				
	E	M		34	(34)	21	-150		
	Z	M		36	(09)	13	+24		
	N	M		53	43	20	-52		
		F	06	30	-				
14	ZV,ZNE	1P	14	28	09			(10,000)	Southern Mexico 17°N, 98°W. (U.S.C.G.S.).
	ZV,ZNE	i		28	24				
	Z	e		29	40				
	ZV,ZNE	ePP		31	14				
	NE	eSKS		38	34				
	ZNE	e		39	10				
	ZNE	e		44	04				
	Z	iSS		46	32				
	N	i		47	16				
	ZNE	eL		50	-				
	Z	M	15	04	01	19	+56		
	E	M		04	11	19	-75		
	N	M		08	20	19	-34		
		F	18	30	-				
18	ZV,Z	eP	08	16	30			(11,100)	Guatemala. 15°N, 90°W. depth about 200 Km. (U.S.C.G.S.).
	ZV,Z	e		17	18				
	ZV,Z	ePP		20	33				
	NE	e		26	10				
	NE	eSKS		27	37				
	ZNE	eL		35	-				
		F	09	00	-				
18	ZNE	e	16	13	37				Small.
	ZNE	e		21	21				
	N	e		27	07				
	ZNE	eL		40	-				
		F	17	30	-				

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KEW OBSERVATORY, RICHMOND, SURREY, ENGLAND.

SEISMOLOGICAL BULLETIN.

DECEMBER, 19 50

DATE.	COMPT.	PHASE.	G.M.T.			PERIOD.	AMPLI- TUDE.	Δ	REMARKS.
			h.	m.	s.	sec.	μ	km.	
19	ZE NE NE ZNE	e e e eL F	21	30	15				ZV record lost.
				32	07				
				36	09				
				37	-				
				55	-				
19/20	N	e(L) F	23	55	-				
			00	35	-				
22	ZNE N	eL M F	09	52	-	26	+6		
			10	58	52				
			10	30	-				
24	ZV, ZNE	e eL F	05	44	17				
			06	00	-				
				30	-				
24	ZNE	e F	17	05	-				Very small.
				30	-				
26	ZNE	eL F	14	35	-				Small.
			15	05	-				
28	ZNE N	e eL F	22	41	52				
				45	-				
			23	00	-				
29	ZE ZNE ZNE N	e e eL M F	12	15	21	16	-10		
				22	25				
				27	-				
				31	34				
			13	25	-				
29	ZNE	eL F	20	40	-				Small.
			21	20	-				
29	Z NE ZNE N	e e eL M F	22	46	5	21	-5		
				56	23				
				10	-				
				17	33				
				55	-				
30	Z ZNE	e eL F	07	03	27				Small.
			08	05	-				
				50	-				