

SEISMOLOGICAL BULLETIN FOR.....JANUARY,.....1934..

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.	3 Oct., 1933	^{sec.} 24.7	^{sec.} 24.9	-.04	^{sec.⁻¹} 47.1
E.	3 Oct., 1933	24.8	24.8	-.04	43.3
Z.	4 Oct., 1933	13.0	12.3	+.13	109.

TIME SERVICE: MINUTE TIME-MARKS ARE MADE ELECTROMAGNETICALLY BY CONTACT CLOCK (MORRISON);

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.
Jan.			h. m. s.	sec.	μ	km.	
1	N	e F	4 59 5 2				Felt in Biarritz. Recorded only by experimental Wood-Anderson.instrument.
2	NE N ZE N	e eL eL M F	21 11 19 23 30 29 22 5	15	+9		
3	N E E NE Z	iP iS i eL eL F	9 53 36 10 2 42 3 17 12 20 11 5			7730	No "Z" record of earlier phases. Sea off Okhotsk. 53°N.,155°E (U.S.C.G.S.) Surface waves poorly developed.
12	ZNE N	eL M F	14 11 16 50 40	18	-15		
15	ZN Z ZN E N E Z N NE Z N E N E ZNE	eP iP iPP iPP i i i i iS iS i i i eL	8 54 20 54 25 57 12 57 15 58 38 58 50 58 55 9 1 50 3 16 3 18 4 35 4 41 6 37 7 18 9			7530	Disturbed by microseisms. Bombay = 1630 Km. Epicentre determined from Kew and Bombay, 26.8°N., 86.3°E. Near Churia Ghati Hills. Very destructive in North Eastern India.

SEISMOLOGICAL BULLETIN.

JANUARY (Contd) 1934.

DATE.	COMPT.	PHASE.	G.M.T.			PERIOD.	AMPLI- TUDE.	Δ	REMARKS.
			H.	M.	S.	SEC.	μ	KM.	
15 contd.	ZNE	M	20	33		(20±)	300		Maxima doubtful; traces very faint and passing off lower edge of chart.
		F	13	15					
16		e	19	33					
		F	20	00					
19	NE	e	18	24					9170 Compression. Destructive in southern and central Mexico. 17°N., 100°W. (U.S.C.G.S.)
	NE	eL		29					
	Z	eL		34					
	N	M	40	3		15	-20		
		F	19	5					
19/20	NE	e	23	25					
	NE	eL		38					
	Z	eL		43					
		F	0	5					
20	NE	eL	7	40					
	Z	eL		48					
		F	8	5					
28		e	14	55					(8000) Very small. Felt in Nevada 39°N., 119°W. (U.S.C.G.S.)
		F	15	25					
28	Z	iP	19	22	29				
	NE	iP		22	31				
	Z	iPP		25	39				
	NE	eS		32	48				
	E	eSS		38	10				
	E	eSSS		41	58				
	ZNE	eL		49					
	E	M		52	7	30	-30		
	N	M		52	33	27	-27		
	N	M		56	3	25	-40		
	Z	M		56	20	25	-54		
	E	M		56	30	24	+47		
	Z	M	20	1	6	17	+45		
	E	M		1	21	18	-48		
	N	M		2	22	19	+32		
		F	22	0					
30		e	20	28					
	NE	eS		38	5				
	NE	eSS		42	(33)				
	NE	eSSS		45	12				
	ZNE	eL		48					
	N	M		55	29	29	-14		
	E	M		56	1	26	+18		
	N	M		58	40	22	-25		
	Z	M		59	29	17	+18		
		F	22	40					
31	ZN	e	11	3					F.J. Scrase, for Superintendent. 6th. Feb., 1934.
	ZNE	eL		16					
	Z	M		23	44	23	-8		
	N	M		26	12	20	-8		
	E	M		27	50	20	+4		
		F	12	15					

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

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			h. m. s.	sec.	μ	km.	
Feb. 2		e	15 51 12				
	NE	eL	16 0				
	N	M	5 9	33	+16		
	E	M	5 13	34	-18		
		eL	8				
	F		40				
2		e	17 10				
	F		30				
2		e	20 0				
	F		35				
3		e	14 54 16				
	NE	i	55 41				
	NE	e	15 12 13				
	E	eL	32				
	N	eL	37				
	N	M	43 5	26	+22		
	E	M	46 20	21	-12		
	N	M	46 58	23	+29		
	M	M	47 29	24	-29		
	M	M	50 14	21	-24		
	E	M	50 15	22	+16		
	N	M	50 29	22	+33		
	F		17 15				
4	N	iP	9 39 21			2230	P and S phases from experimental Wood-Anderson instrument. Felt in Central Albania. Large movements.
	N	iS	43 4				
		L	44 44				
	NE	i	45 27				
	E	M	48 35	17	+19		
	F		10 15				

AIR MINISTRY, METEOROLOGICAL OFFICE, LONDON.

KEW OBSERVATORY, RICHMOND, SURREY, ENGLAND.

SEISMOLOGICAL BULLETIN FOR.....FEBRUARY.....19..34.,



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			h. m. s.	sec.	μ	km.	
Feb. 2	Z	e	15 51 12				
	NE	eL	16 0				
	N	M	5 9	33	+16		
	E	M	5 13	34	-18		
	Z	eL	8				
		F	40				
2		e	17 10				
		F	30				
2		e	20 0				
		F	35				
3	Z	e	14 54 16				
	NE	i	55 41				
	NE	e	15 12 13				
	E	eL	32				
	ZN	eL	37				
	N	M	43 5	26	+22		
	E	M	46 20	21	-12		
	N	M	46 58	23	+29		
	Z	M	47 29	24	-29		
	Z	M	50 14	21	-24		
	E	M	50 15	22	+16		
	N	M	50 29	22	+33		
		F	17 15				
4	N	iP	9 39 21			2230	P and S phases from ex- perimental Wood-Ander- son instrument.
	N	iS	43 4				Felt in Central Albania.
		L	44 44				Large movements.
	NE	i	45 27				
	E	M	48 35	17	+19		
		F	10 15				

KEW OBSERVATORY, RICHMOND, SUI**SEISMOLOGICAL BULLETIN.****February (contd) 19 34.**

DATE.	COMPT.	PHASE.	G.M.T.			PERIOD.	AMPLI- TUDE.	Δ	REMARKS.
			H.	M.	S.				
Feb.						SEC.	μ	KM.	
4	Z E	iP	13	35	17			4690	
	NE	iS		41	42				
	NE	e		44	53				
	NE	eL		47					
	Z	eL		50					
	N	M		52	41	25	-33		
	N	M		54	13	20	-36		
	E	M		54	24	17	+31		
		F	15	0					
4		e	23	5					
		F		35					
9	NE	eL	10	32					
	Z	eL		37					
	N	M		42	36	24	+12		
		F	11	5					
12		e	12	11					
	NE	L		14					
	E	M		15	32	28	+10		
	N	M		16	12	25	+16		
	Z	L		17					
		F	13	0					
13	ZNE	e	9	56	24				
	ZNE	eL	10	1					
	E	M		2	43		-8		
		F		20					
14	ZNE	iP	4	12	54			10110	Compression.
	ZNE	iPcP		13	7				China Sea, 18°N., 118°E.
	ZNE	iPP		16	38				(U.S.C.G.S.)
	NE	eSKS		23	28				
	ZNE	iSKKS		23	44				
	Z	iS		23	57				
	NE	iPS		25	7				
	NE	iPPS		25	57				
	E	eSS		29	18				
	NE	eL		38					
	Z	eL		46					
	N	M		49	35	25	+150		
	E	M		49	49	25	+170		
	N	M		51	15	23	-270		
	N	M		58	7	20	+210		
	Z	M		58	57	16	+270*		*Maxima passing off lower edge of record.
	E	M		59	8	16	+190*		
	Z	M		59	39	14	+220*		
		F	7	(30)					
14		e	18	3					
		F		30					
14		e	23	5					
		F		20					
16		e	7	28					
		F	8	5					

FORM 3718.



SEISMOLOGICAL BULLETIN.

February (contd) 1934.

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			H.	M.	S.	SEC.	μ	KM.	
Feb. 19		e F	11	25					
				55					
20		e F	4	8					
				35					
21	NE ZNE N	e L M F	0	49	50	16	-5		
				54					
				55	31				
			1	30					
21	ZNE ZNE ZNE N	eP eS L M F	11	42	26			2770	
				46	52				
				51					
				52	29	14	+8		
			12	10					
22	ZNE ZNE Z	e eL M F	8	14		14	-6		
				20					
				31	38				
			9	5					
24		e F	1	2					
				30					
24	ZNE ZNE NE E N NE E NE NE E N Z N E N Z E N Z	iP iPP eSKS eS iS iSS eSSS i L M M L M M M M M M M F	6	37	26			10650	Compression. Marianne Islands. 21°N., 145°E. (U.S.C.G.S.)
				41	29				
				47	50				
				48	53				
				48	57				
				55	48				
				59	24				
			7	2	44				
				9					
				13	52	31	+100		
				14	8	33	+73		
				15					
				18	39	21	+64		
				18	39	21	+83		
				27	51	20	+94		
				28	26	18	+100		
				28	29	19	+98		
				32	27	17	+57		
				34	3	15	+36		
			10	30					
25		e F	17	14					
				35					
28	ZN Z NE NE NE NE Z N E N E	e e e e e eL eL M M M M	14	41	24				
				43	29				
				53	11				
				59	8				
			15	1	18				
				5					
				13					
				24	22	37	+39		
				27	7	34	-50		
				30	35	29	-68		
				33	43	24	+62		

KEW OBSERVATORY, RICHMOND, SL

SEISMOLOGICAL BULLETIN.

February...(contd.)1934.

DATE.	COMPT.	PHASE.	G.M.T.			PERIOD.	AMPLI- TUDE.	Δ	REMARKS.
			H.	M.	S.	SEC.	μ	KM.	
Feb. 28 contd.	N	M		34	2	22	-42		F.J.W. Whipple, Superintendent. 6th. March, 1934.
	Z	M		34	28	24	+36		
	Z	M		36	0	24	-42		
		F	17	40					

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DATE.	COMP.	PHASE.	G.M.T.	PERIOD.	AMPLITUDE.	Δ	REMARKS.
			h. m. s.	sec.	μ	km.	
March 1		e F	4 53 5 15				Very small; possibly not seismic.
1	E NE Z E	e eL eL M F	20 36 45 52 54 24 21 55	22	-5		
1	ZNE NE E Z NE NE Z	e e i i e eL eL F	22 4 23 11 12 11 20 13 46 19 00 24 30 23 45				Chile. 39°S., 73°W (U.S.C.G.S.) Probably deep focus.
4	NE NE Z	e eL eL F	7 2 10 15 8 10				Surface waves poorly developed
4	NE Z E	eL eL M F	11 49 53 12 1 25 40	21	-7		
5	Z Z Z ZNE ZNE NE N	iP' i eP' iPP iPPP iSKKS eSKSP	12 6 20 6 34 7 38 11 18 15 41 19 36 21 52			(19000)	Compression. P' by path of greater deviation. By path greater than 180°.

KEW OBSERVATORY, RICHMOND, SUF

SEISMOLOGICAL BULLETIN.

March (contd.) 1934

DATE.	COMPT.	PHASE.	G.M.T.			PERIOD.	AMPLI- TUDE.	Δ	REMARKS.
			h.	m.	s.				
March 5 contd.	N	ePS	25	4					Felt in North Island of New Zealand.
	Z	iSP	25	13					
	NE	iSS	32	12					
	NE	ePSS	33	36					
	N	e	37	22					
	N	iSSS	44	2					
	NE	L	57						
	Z	L	13	8					
	N	M	19	49	24		+99		
	N	M	27	37	21		+90		
	E	M	28	38	20		+125		
	Z	M	33	44	19		-105		
	N	M	36	53	19		+100		
	E	M	37	19	18		+96		
	Z	M	37	33	18		+105		
		F	15	20					
7/8	NE	e	23	3					Central America. 14°N., 88°W (U.S.C.G.S.)
	NE	eL	12						
	Z	eL	21						
	E	M	22	39	23		+8		
	Z	M	25	11	18		-7		
		F	0	5					
8		e	3	7					
		F	20						
9		e	14	45					Very small; possibly not seismic.
		F	15	15					
12	NE	e	15	15					Confused by microseisms.
	NE	eL	33						
	Z	eL	40						Near Great Salt Lake, Utah. 41.7°N., 112.6°W. (U.S.C.G.S.)
	N	M	43	39	18		+26		
	E	M	46	19	15		-20		
		F	16	40					
12		e	18	49					
		F	19	20					
13	NE	e	13	52	21				
	NE	eL	14	17					
	Z	eL	22						
	N	M	27	3	24		+12		
		F	15	55					
15		e	12	17					Disturbed by wind and microseisms.
		F	40						
20	NE	e	3	16	52				Confused by microseisms.
	NE	eL	41						
	Z	eL	47						
	N	M	55	39	20		+11		
		F	4	25					
21		e	1	40					
		F	55						

SEISMOLOGICAL BULLETIN.

DATE.	COMPT.	PHASE.	G.M.T.			PERIOD.	AMPLI-TUDE.	Δ	REMARKS.
			h.	m.	s.				
March 24	Z	e	12	23	49				
	ZNE	i		26	57				
	ZNE	i		27	26				
	N	e		36	30				
	NE	e		37	10				
	Z	e		41	5				
	NE	i		42	34				
	E	i		44	36				
	NE	eL		57					
	Z	eL	13	9					
	E	M		13	35	29	+49		
	N	M		13	56	29	-73		
	N	M		18	31	25	+57		
	N	M		32	48	19	+40		
	Z	M		32	55	20	-50		
	E	M		40	4	20	-41		
		F	15	40					
29	ZE	eP	20	10	(59)			2030	In minute break; uncertain to ±1 sec. Destructive in the Balkans.
	ZE	iP		11	2				
	ZE	iPP		11	35				
	ZN	eS		14	25				
	E	iS		14	27				
	ZE	i		14	45				
	ZNE	i		15	10				
	NE	L F		15 30	20				

F.J.W. Whipple,
Superintendent.

6th. April, 1934.

AIR MINISTRY, METEOROLOGICAL OFFICE
KEW OBSERVATORY, RICHMOND, SURREY, ENGLAND.

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			h. m. s.	sec.	μ	km.	
3		e F	8 15 40				
3		e F	18 26 50				
3		e F	23 12 50				
4/5			- - -				
6	Z	i	19 22 2				No records: 4d. 17h. to 5d. 7h.
	N	e	32 20				
	ZE	e	32 29				
	Z	e	33 27				
	NE	eL	49				
	Z	eL	53				
	E	M	55 43	30	+ 6		
		F	20 25				
9	Z	e	15 59 38				
	E	e	16 11 21				
	ZNE	eL	27				
	E	M	30 43	27	- 8		
	Z	M	31 1	26	+10		
	N	M	34 6	22	- 5		
		F	17 10				
9		e	17 28				Very small, possibly not seismic.
		F	35				
10		e	6 16				
		F	35				

M.O. 373

KEW OBSERVATORY, RICHMOND, SURREY, ENGLAND.

SEISMOLOGICAL BULLETIN.

APRIL (contd.) 1934

DATE.	COMPT.	PHASE.	G.M.T.			PERIOD.	AMPLI- TUDE.	Δ	REMARKS.
			h.	m.	s.	sec.	μ	km.	
10	ZNE ZNE N	e eL M F	10 11 33 12	51 17 18 00					
						20	+ 8		
10	Z Z Z E E	e i i e i F	21 31 32 52 54 22	31 28 8 44 58 10					Emergent on horizontal components. No surface waves.
11	NE Z	eL eL F	4	10 18 30					
15/16	Z ZNE NE ZNE NE N E Z N E N E N Z Z	eP ePP iSKS ePS eSS L L L M M M M M M M M F	22 34 40 43 49 59 23 2 7 6 7 10 19 21 21 22 24 50 1	29 15 27 17 10 59 2 7 48 11 30 22 57 58 13 50 15				11800	Philippine Islands. 8°N., 127°E. (Strasbourg).
						43 39 29 24 21 18 19 18	+120 + 80 + 99 - 97 - 95 - 85 - 95 + 77		
16	NE Z	eL eL F	4 5	51 00 30					
16			-	-	-				10h. 39m. to 13h. 11m. no records.
16	NE Z	eL eL F	14	26 35 45					
17	ZE ZNE E	eP eL M F	2	41 45 46 55	11				
					3	25	+ 2		
18		e F	13	00 30					Very small, possibly not seismic.
20	ZNE	eL F	15	20 35					
24	NE ZNE N	e eL M F	18 19	47 52 2 55					
					52	20	- 5		

FORM 3718.

H.342.8036.100.534Gp.923



SEISMOLOGICAL BULLETIN.

APRIL (contd.) 19 34.

DATE.	COMPT.	PHASE.	G.M.T.			PERIOD.	AMPLI- TUDE.	Δ	REMARKS.
			h.	m.	s.				
26	NE	e	14	38			"	km.	No "Z" record.
	NE	eL		43					
		F		55					
26	NE	e	21	41	18		+ 4		No "Z" record.
	NE	eL	22	10					
	N	M	21	21		21			Possibly more than one shock.
		F	23	25					
27	Z	e	21	7			+5		
	NE	e		13	00				
	N	e		26	40				
	NE	eL		59					
	Z	eL	22	5					
	N	M		16	38	23			
		F		45					
28		e	16	17					
		F		40					
28		e	19	9					
		F		30					

F.J.W. Whipple,
Superintendent.
4th. May, 1934.

M.O.....373.....

AIR MINISTRY, METEOROLOGICAL OFFICE. LONDON.

EDINBURGH.

14 JUN 1934

File

KEW OBSERVATORY, RICHMOND, SURREY, ENGLAND.

SEISMOLOGICAL BULLETIN FOR.....M.A.Y.....1934.

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.	3 Oct., 1933	^{sec.} 24.7	^{sec.} 24.9	-.04	^{sec.-1} 47.1
E.	3 Oct., 1933	24.8	24.8	-.04	43.3
Z.	4 Oct., 1933	13.0	12.3	+.13	109.

TIME SERVICE: MINUTE TIME-MARKS ARE MADE ELECTROMAGNETICALLY BY CONTACT CLOCK (MORRISON);
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.	
May 1		e F	4 14 20				
1	Z NE	i e F	7 17 53 20				Not very distant.
1	E ZN E	i e i F	7 28 12 28 42 33				Not very distant.
3	NE Z	eL eL F	2 22 28 55				
4	ZNE Z ZNE N E ZN N Z E N Z	iP iPP iS i L M M M M eL F	4 46 42 49 4 55 20 59 20 5 7 10 5 10 17 10 30 16 6 16 12 7 4 55	30 30 28 19 18	-97 +97 -58 -51 +50	7170	Amplitudes of iP as read in mm:- Z N E -7.0 +2.2 -1.1 Azimuth = 331°. 61°N., 148°W (U.S.C.G.S.) Via the Antipodes.
5	Z	e F	16 0 10				Very small; possibly not seismic.

SEISMOLOGICAL BULLETIN.

MAY (Contd.).....19 34.

DATE.	COMPT.	PHASE.	G.M.T.			PERIOD.	AMPLI- TUDE.	Δ	REMARKS.
May			h.	m.	s.	sec.	μ	km.	
9	ZNE	e eL F	16	55					
			17	3					
				30					
11			-	-	-				5h. 20m. to 9h. 40m. no records.
11		e F	18	1					Very small
				10					
11	E	e F	21	8	12				Very small, not very distant.
				11					
13	ZNE	e	9	23	21				
	NE	i		24	34				
	NE	eL		58					
	Z	eL	10	4					
	N	M		10	58	30	-14		
		F	11	20					
14		e F	13	56					
			14	15					
14	ZNE	e	22	23	53				
	NE	i		32	50				
	NE	eL		40					
	E	M		46	13	37	+12		
	Z	eL		49					
		F	23	40					
19	NE	e	1	39	44				
	E	eL		46					
	ZN	eL		50					
		F	2	15					
20	NE	e	19	9	49				
	ZNE	L		11					
	N	M		11	49	19	- 5		
	E	M		12	32	18	+ 5		
		F		25					
21		e F	5	28					
				40					
21	ZN	eP	10	11	59			2290	
	NE	eS		15	47				
	ZNE	L		17					
	E	M		18	44	17	+ 4		
		F		35					
22		e F	2	18					Very small; possibly not seismic.
				30					
22	ZN	e	11	19	31				
	NE	eL		25	34				
	ZNE	L		28					
	N	M		29	00	25	+ 8		
		F	12	00					



SEISMOLOGICAL BULLETIN.

MAY (Contd.) 19 34.

DATE.	COMPT.	PHASE.	G.M.T.			PERIOD.	AMPLI TUDE.	Δ	REMARKS.
			h.	m.	s.				
May									
30		e F	12	23					Very small.
				40					
31		e F	13	30					
				40					
31		e F	15	7					
				20					

F.J.W. Whipple,
Superintendent.

6th. June, 1934.

KEW OBSERVATORY, RICHMOND, SURREY, ENGLAND. *File*

SEISMOLOGICAL BULLETIN FOR JUNE 1934.

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.	3 Oct., 1933	24. ^{sec.} 7	24. ^{sec.} 9	-.04	47. ^{sec-1} 1
E.	3 Oct., 1933	24.8	24.8	-.04	43.3
Z.	4 Oct., 1933	13.0	12.3	+.13	109.

TIME SERVICE: MINUTE TIME-MARKS ARE MADE ELECTROMAGNETICALLY BY CONTACT CLOCK (MORRISON);
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.	
June 1	Z	e	6 5 58				
	ZNE	e	6 33				
	ZNE	e	15 20				
	E	e	24 11				
	ZNE	eL	33				
	Z	M	43 6	13	+1		
		F	7 10				
2	ZNE	iP	13 46 40			2050	Amplitudes as read in mm:
	ZNE	i	46 49				N E Z
	E	iS	50 8				iP +0.7 -0.3 -1.2
	E	L	50 46				i -5.2 +2.0 +5.3
	N	L	51 16				Azimuth about 337°, giving
	Z	L	51 19				epicentre near 68°N., 19°W.
	N	M	51 48	23	-51		Felt in Northern Iceland.
	E	M	52 19	16	+76		
	N	M	53 24	14	+50		
	Z	M	53 25	13	-32		
		F	16 5				
2	Z	e	16 56 12				Horizontal components
	ZNE	eL	17 18				disturbed by wind.
		F	18 15				
2	ZNE	eL	21 27				
		F	22 40				
3	Z	e	16 34 59				Very small; possibly not
		F	17 5				seismic.
4	NE	e	22 0				
		eL	6				
	Z	eL	11				
		F	35				

DATE.	COMPT.	PHASE.	G.M.T.			PERIOD.	AMPLI- TUDE.	Δ	REMARKS.
			h.	m.	s.				
June 5/6	Z	e	23	45					
	ZNE	eL		49					
	F		00	5					
6	ZNE	eL	4	30					
	F		5	30					
6	ZNE	eL	7	9					
	F			45					
8	Z	e	3	21	35				Not very distant.
	E	e		21	59				
	N	e		22	5				
	NE	e		22	19				
	NE	e		22	47				
	NE	e		22	58				
	N	L		23	14				
	E	L		23	22				
	Z	L		23	35				
	Z	M		23	46	8	+1		
	F			27					
8	NE	eS	5	9	46				
	NE	eL		20					
	Z	eL		25					
	E	M		32	57	17	-9		
	F		6	35					
8	ZNE	eL	16	44					
	F			55					
9	Z	i	13	17	37				
	ZNE	i		19	41				
	ZNE	i		20	23				
	NE	i		20	58				
	Z	e		22	55				
	NE	e		36	27				
	ZNE	eL		50					
	N	M	14	5	9	23	+13		
	Z	M		11	59	21	-5		
	F		15	45					
13	ZNE	iP	2	3	3			8780	Compression. Sea of Okhotsk. (Strasbourg). 48°N., 148°E.
	ZNE	iS		13	2				
	ZNE	eL		29					
	E	M		34	30	29	-14		
	N	M		36	(3)	28	-22		
	F		3	55					
13	ZNE	e	9	9	40				Felt in Northern Italy.
	ZNE	e		9	59				
	ZNE	i		10	43				
	E	i		11	35				
		L		13					
	F			15					
13/14	ZE	eP	22	19	30			5680	Amplitudes of iP as read in mm. N E Z (+0.1) -0.7 +2.0 Azimuth about east.
	ZNE	iP		19	32				
	Z	i		19	49				

DATE.	COMPT.	PHASE.	G.M.T.			PERIOD.	AMPLI- TUDE.	Δ	
			h.	m.	s.				
June 13/14	ZE	iPP	22	21	36				Afghanistan. 29.5°N., 63.5°E. (Strasbourg.)
contd.	E	iS		26	49				
	NE	i		26	51				
	Z	iSP		26	55				
	NE	iScS		29	14				
	ZE	i		31	34				
	ZNE	eL		34					
	E	M		39	53	31	-42		
	N	M		45	26	19	-60		
	Z	M		51	57	11	-16		
		F	1	30					
14		e	22	16					Very small.
		F		25					
15	NE	eL	3	45					
	Z	eL		58					
		F	4	30					
15	NE	eL	6	45					
	Z	eL		50					
		F	7	15					
16		e	5	56					
		F	6	15					
17	NE	e	15	7	27				Alaska. 62°N., 150°W. (U.S.C.G.S.)
	ZNE	eL		17					
		F		40					
18	ZN	iP	9	24	50			6890	
	NE	iS		33	13				
	NE	iPS		33	47				
	ZNE	eL		45					
	N	M		49	8	30	-7		
		F	10	45					
19	ZE	eP	18	48	44			2890	Emergent on "Z" and "N" components. Horizontal components disturbed by wind.
	E	iS		53	19				
	NE	L		56					
	Z	L		57					
	N	M		57	35	17	-11		
		F	19	20					
22	ZNE	eL	19	10					
		F		40					
23	ZNE	e	5	39	40				
	NE	eL		50					
	E	M		56	33	26	-10		Horizontal components disturbed by wind.
	Z	eL		57					
	N	M		58	26	13	+13		
		F	6	55					
24	Z	eL	2	26					
		F	3	5					
24	Z	e	4	46					
		F	5	40					

KEW OBSERVATORY, RICHMOND, SUR., ARGENTINA.SEISMOLOGICAL BULLETIN.

JUNE (Contd.) 1934.

DATE.	COMPT.	PHASE.	G.M.T.			PERIOD.	AMPLI- TUDE.	Δ	REMARKS.
			h.	m.	s.	sec.	μ	km.	
June 24	Z	iP	6	12	46			10110	Dilatation. Emergent on horizontal components. Argentina. 23°S., 68°W. (U.S.C.G.S.)
	Z	i		13	13				
	Z	iPP		16	35				
	NE	iSKS		23	14				
	NE	iS		23	49				
	Z	iSP		25	10				
	E	iSS		30	23				
	ZNE	eL		38					
	N	M		48	39	25	-22		
	Z	M		50	9	25	-46		
	E	M		50	14	24	+37		
		F	9	0					
24		e	14	46					Very small.
		F	15	10					
25	Z	e	15	30	13				+ 3
	ZNE	eL		36					
	N	M		38	13	12			
		F		50					
27	NE	e	1	21	33				+2
	N	e		25	21				
	NE	eL	2	4					
	Z	eL		13					
	N	M		20	4	20			
		F	3	30					
29	Z	i	8	42	45				Deep focus.
	Z	i		44	7				
	Z	e		46	5				
	Z	e		47	6				
	NE	e		50	45				
	ZNE	i		52	37				
	Z	i		53	50				
	ZNE	i		54	31				
	ZE	e		56	49				
	ZE	e		58	5				
	ZNE	e	9	2	41				
		eL		(12)					
		F	10	10					
29		e	13	1					Very small.
		F		15					
30	Z	e	10	35	32				Horizontal components disturbed by wind.
	ZNE	eL		40					
		F	11	5					
30	Z	e	12	16	0				Horizontal components disturbed by wind.
	ZNE	eL		21					
		F		55					
30	Z	e	13	35					F.J.W. Whipple, Superintendent.
	ZNE	eL		40					
		F	14	10					
									5th. July, 1934.

SEISMOLOGICAL BULLETIN FOR JULY 1934.

Lat. 51° 28' 8" 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.	3 Oct., 1933	^{sec.} 24.7	^{sec.} 24.9	-.04	^{sec⁻¹} 47.1
E.	3 Oct., 1933	24.8	24.8	-.04	43.3
Z.	4 Oct., 1933	13.0	12.3	+.13	109.

TIME SERVICE: MINUTE TIME-MARKS ARE MADE ELECTROMAGNETICALLY BY CONTACT CLOCK (MORRISON);
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	eL F	20 50 21 40				
3	ZNE	eL F	4 30 5 0				
4	Z NE Z	e eL eL F	2 1 2 30 36 4 20				
6/7	ZNE ZNE NE NE NE NE Z E N Z	eP ePP eS i eSS L L M M M F	23 0 44 4 2 10 24 10 32 15 22 22 26 30 17 30 41 35 3 2 55	18 18 15	+38 -61 -69	8400	Pacific Ocean off southern Oregon 42°N., 126 °W. (U.S.C.G.S.)
12	NE Z	e eL eL F	10 30 36 40 11 20				No records 7d. 14h. 59m. to 12d. 9h. 27m.
12		e F	15 30 50				Very small; possibly not seismic.
13		e F	11 4 15				

JULY (Conta. 1922)

SEISMOLOGICAL BULLETIN.

DATE.	COMPT.	PHASE.	G.M.T.			PERIOD.	AMPLI- TUDE.	Δ	REMARKS.
			h.	m.	s.				
13		e F	13	19					Very small; possibly not seismic.
				25					
16	Z ZNE	e eL F	8	31	30				9230 Amplitudes of iP as read in mm. :- N E Z (0.0) +3.0 +7.0 Azimuth about west. Destructive in Chiriqui Province, Panama.
18	ZE	iP	1	48	29				
	ZE	iPP		51	28				
	ZNE	i		58	41				
	N	iS		58	51				
	N	i	2	5	39				
	ZNE	eL		13					
	E	M		13	12	39	+380		
	N	M		17	24	23	-165		
	Z	M		18	29	15	+155		
	E	M		19	29	21	+170		
	Z	M		20	9	15	+180		
	N	M		23	31	19	-160		
		F	-	-	-				
18	Z NE ZNE E N Z	iP eS eL M M M F	4	12	46				8670 Overlapped by next shock. Confused by coda of preceding shock.
				22	40				
				37					
				42	9	21	-25		
				46	39	18	+15		
				54	33	17	-27		
			8	0					
18		eL F	16	45					9070 Amplitudes of iP as read in mm. :- N E Z 0.0 +0.7 +2.2 Azimuth about west. Repetition from 18d. 1h.
18	ZE	iP	17	11	45				
	Z	i		11	59				
	N	i		21	46				
	NE	iS		21	59				
	E	iPS		23	28				
	E	iSS		27	23				
	ZNE	L		35					
	N	M		35	44	24	-35		
	E	M		42	4	23	+46		
	N	M		43	57	19	+27		
	E	M		43	58	21	+43		
	Z	M		44	2	19	+41		
	Z	M		45	47	19	+43		
		F	-	-	-				
18	Z NE NE E NE E NE NE NE Z Z	iP' iPP iPKS iPPP i iSS iPSS iSSS L i eL	19	59	36				(15500) Dilatation. Emergent on horizontal components. Oceania.
			20	2	46				
				3	38				
				5	45				
				16	35				
				21	26				
				22	26				
				26	48				
				34					
				37	58				
				47					

DATE.	COMPT.	PHASE.	G.M.T.			PERIOD.	AMPLI- TITUDE.	Δ	REMARKS.
			h.	m.	s.				
18	N E Z	M M M F	20	53	to	-	>350	km.	Maxima doubtful. Traces very faint and confused by overlapping. Overlapped by following shocks.
			21	6		-	>300		
			20	55	58	26	+630		
19	Z ZN NE	i e i F	0	26	18				Later phases obscured by coda of previous shock.
				29	5				
				29	54				
19	Z Z N NE Z N E N Z	i i i eL eL M M M M F	1	47	18				Overlapped by next shock.
				56	54				
			2	3	34				
				15					
				25					
				25	34	31	+67		
				25	52	30	+76		
				27	29	28	+67		
				43	3	18	-38		
			5	0					
19	Z Z ZNE	e e eL F	6	4	39				Very small.
				7	42				
				22					
19	Z NE NE NE Z E N Z	i e e eL eL M M M F	7	56	27				
				59	54				
			8	17	35				
				44					
				50					
			9	0	57	20	+12		
				1	23	19	+17		
				3	32	18	+21		
			10	55					
19		e F	23	17	12				Very small.
				55					
20		e F	0	15					
			1	10					
20	Z ZNE	e eL F	2	22	38				
				53					
			3	50					
20		e F	5	30					
				35					
20		e F	14	25					
			15	0					
20	NE Z E N Z	e eL eL M M M F	18	30					Very small.
			19	13					
				20					
				57	20	25	-9		
			20	17	4	18	+6		
				30	59	17	+5		
			21	45					

SEISMOLOGICAL BULLETIN.

DATE.	COMPT.	PHASE.	G.M.T.			PERIOD.	AMPLI- TUDE.	Δ	REMARKS.
			h.	m.	s.				
21	NE Z	eL eL F	5	27					
				32					
				50					
21	Z ZNE NE NE NE E N E NE Z E N Z	e i i i i i i i i L L M M M F	6	37	46				
				41	46				
				49	37				
				58	56				
			7	0	23				
				1	19				
				4	14				
				4	26				
				11					
				14					
				27	28	25	+140		
				34	17	20	+59		
				50	1	18	+61		
			-	-	-				Overlapped by next shock.
21	ZE N NE E ZE E NE ZNE N Z E Z	iP e e i i i e eL M M M M F	10	51	3				Amplitudes of iP as read in mm. :- N E Z 0.0 +1.1 +2.0 Azimuth about west.
				54	54				
			11	1	9				
				1	43				
				2	6				
				2	43				
				6	10				
				15					
				19	37	20	+25		
				20	2	21	+44		
				21	8	22	-42		Compression. Emergent on horizontal components.
				21	8	22	-42		
				33	18	17	-40		
			14	50					
22	Z ZNE NE Z N	e e eL eL M F	3	17	14				
				20	54				
			4	3					
				11					
			5	8	56	16	+2		
				40					
22	Z ZNE ZNE ZNE NE ZE NE N Z F	i i i i i i eL M eL F	20	5	39				very Surface waves/poorly developed.
				6	36				
				7	2				
				12	41				
				14	15				
				14	28				
				22					
				27	46	21	-6		
				28					
			21	10					
23	Z ZNE NE Z N	eP eS eL eL M F	18	30	43			5830	
				38	10				
				44					
				46					
				46	7	14	-4		
			19	45					

SEISMOLOGICAL BULLETIN.

DATE.	COMPT.	PHASE.	G.M.T.			PERIOD.	AMPLI-TUDE.	Δ	REMARKS.
			h.	m.	s.				
24		e F	3	25					
				50					
27		e F	2	52					Very small.
			3	25					
27		e F	13	45					
			14	50					
28	ZNE	e	2	27	23				
	ZNE	eL		35					
	N	M	39	44		18	+3		
		F	3	10					
28		e F	16	10					Very small.
				35					
28/29	ZN	iP	21	48	21			8000	Amplitudes of iP as read in mm. :- N E Z -1.0 (+0.2) +2.7 Azimuth between N and NNW. Alaska, 56°N., 157°W. (U.S.C.G.S). Via the Antipodes.
	ZN	i		51	6				
	ZNE	iS		57	41				
	E	L	22	11					
	E	M		12	44	32	-35		
	N Z	L		14					
	N	M		16	25	27	+57		
	E	M		16	32	26	-34		
	Z	M		16	59	26	-56		
	Z	M		22	12	18	-63		
	N	M		22	34	19	-56		
		eL ₂	0	2					
		F ₂	1	0					
30	ZNE	eL F	2	23					
				35					
30	ZNE	eL F	3	13					
				25					
30	ZNE	eL F	4	4					
				20					
30	ZNE	eL F	4	49					
			5	10					
31	NE	eL	6	49					
	Z	eL		55					
		F	7	25					
31	ZNE	e F	12	13	17				Very small.
			13	15					
F.J.W. Whipple, Superintendent. 7th. Aug., 1934.									

SEISMOLOGICAL BULLETIN FOR.....



From the ISC collection scanned by SISMOS

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.	3 Oct., 1933	24.7 ^{sec.}	24.9 ^{sec.}	-.04	47.1 ^{sec⁻¹}
E.	3 Oct., 1933	24.8	24.8	-.04	43.3
Z.	4 Oct., 1933	13.0	12.3	+.13	109.

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

DATE.	COMP.	PHASE.	G.M.T.	PERIOD.	AMPLITUDE.	Δ	REMARKS.
			h. m. s.	sec.	μ	km.	
Aug.							
2	Z	e	7 23 56				Horizontal components disturbed by wind.
	ZNE	eL	50				
		F	8 40				
4	Z	e	13 30				Very small.
	NE	eL	14 5				
	Z	eL	11				
		F	15 35				
6	Z	e	12 19 16				
	ZNE	eL	46				
		F	13 15				
6		e	17 34				
		F	45				
"	ZNE	e	3 59 25				
	ZNE	e	4 2 35				
	N	e	18 38				
	ZNE	e	21 18				
	N	e	26 23				
	NE	eL	43				
	Z	eL	50				
	E	M	5 1 1	22	+19		
	N	M	1 45	22	+30		
	Z	M	1 50	21	-29		
		F	7 20				
7	Z	e	11 59 47				
	NE	eL	12 17				
	Z	eL	22				
	N	M	25 10	12	-13		
	Z	M	26 44	12	-13		
		F	13 40				

DATE.	COMPT.	PHASE.	G.M.T.			PERIOD.	AMPLI- TUDE.	Δ	REMARKS.
			h.	m.	s.	sec.	"	km.	
Aug. 9		e F	20	39					
			21	30					
10		e F	23	29					Very small.
				55					
11	Z	e	8	31	18				
	NE	eL		58					
	Z	eL	9	6					
	N	M		13	48	19	+21		
	Z	M		16	7	16	+16		
		F	10	20					
11	ZNE	i	12	20	9				
	Z	e		25	19				
	ZNE	eL		30					
		F	-	-	-				Overlapped by next shock.
11	Z	e	13	3	36				
	ZNE	eL		7					
	N	M		15	29	22	+14		
		F	14	30					
11		e	15	26					
		F		40					
12		e	14	57					Very small; possibly not seismic.
		F	15	10					
13	ZNE	e	0	3	36				
	ZNE	e		7	46				
	ZNE	e		16	48				
	NE	eL		39					
	Z	eL		44					
	E	M		53	12	27	-56		
	N	M		55	46	19	-36		
	Z	M		56	0	20	-39		
		F	2	35					
14	ZNE	i	9	9	1				
	NE	eL	10	1					
	Z	eL		11					
		F	11	5					
15	ZNE	eL	11	44					
		F	12	20					
16		i	2	16	41				Very small. Felt in northern and central Scotland. Measurements taken from experimental Wood-Anderson instrument.
		i		16	56				
		i		17	3				
		i		17	26				
		i		17	49				
		F		20					
18	NE	eL	3	23					
	Z	eL		29					
		F		55					
19/20	ZNE	eL	23	44					
		F	0	5					

SEISMOLOGICAL BULLETIN.

AUGUST, 19 34.

DATE.	COMPT.	PHASE.	G.M.T.			PERIOD.	AMPLI- TUDE.	Δ	REMARKS.
			h.	m.	s.	sec.		km.	
Aug. 21	NE Z N	eL eL M F	20	22					Horizontal components disturbed by wind.
				26					
				25	19	24	-5		
			21	0					
22		e F	8	2					Very small; possibly not seismic.
				10					
23		e F	23	29					
				40					
24	ZNE ZNE NE Z Z	e e eL eL M F	0	8	7				
				11	7				
				56					
			1	2		18	+5		
				12	56				
			2	20					
26	NE Z Z	eL eL M F	2	6					
				13					
				20	11	16	+4		
				50					
28		e F	12	6					
				20					
31	ZNE ZNE ZNE ZNE ZNE E N N E Z	eP iP ePP iS L M M M M M F	5	9	50			3810	Dilatation. Amplitudes of iP as read in mm.: - N E Z -2.3 +1.0 +2.8 Azimuth about 335° Baffin Bay.
				9	58				
				11	27				
				15	26				
				20					
				20	20	27	+48		
				20	43	27	+62		
				24	35	17	+41		
				25	44	13	+42		
				26	53	13	+37		
			7	5					
31	ZN NE NE Z N E Z E	e e eL eL M M M M F	15	6	42				
				17	28				
				21					
				26					
				27	0	16	-77		
				27	1	17	+44		
				29	51	13	+32		
				29	54	17	+36		
			16	40					
									F.J. Scrase, for Superintendent. 5th. Sept., 1934.

KEW OBSERVATORY, RICHMOND, SURREY,



From the ISC collection scanned by SISMOS

SEISMOLOGICAL BULLETIN FOR SEPTEMBER 1934.

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.	5 Sept. 1934	24.7 ^{sec.}	24.5 ^{sec.}	+.01.	46.7 ^{sec⁻¹}
E.	6 Sept. 1934	24.8	24.8	-.01.	42.6
Z.	11 Sept. 1934	13.0	13.1	+.01.	109.

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

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.
Sept. 1		e F	h. m. s. 7 55 8 15	sec.	μ	km.	
1	ZNE ZNE	e eL F	11 56 46 12 5 45				
4	ZN ZNE	e eL F	16 54 34 17 50 19 5				
6	ZNE NE Z	e eL eL F	2 41 3 12 18 35				
7	ZN NE ZNE E Z	i e eL M M F	3 43 2 46 6 47 47 38 50 16 4 10	15 8	-7 -4		
7		e F	20 31 40				
8	NE Z	e eL eL F	7 7 11 15 30				
8	Z Z	e i	11 33 56 34 24				
	ZNE	eL	12 34				
		F	13 40				

No records during standardisation, etc.,
5d. 13h. 10m. - 15h. 31m.
6d. 8h. 28m. - 16h. 33m.

SEISMOLOGICAL BULLETIN.

SE. 1000000. 1934.

DATE.	COMPT.	PHASE.	G.M.T.			PERIOD.	AMPLI- TUDE.	Δ	REMARKS.
Sept.			h.	m.	s.	sec.	μ	km.	
11	ZNE	eL F	1	29					
				35					
12	NE	eL	15	15					
	Z	eL		17					
	E	M	24	13	13	+5			
	Z	M	24	15	13	-5			
		F		45					
12		e F	16	32					Very small; possibly not seismic.
				35					
12	NE	eL	18	32					
	Z	eL		39					
		F		55					
13		e F	3	52					
			4	10					
13		e F	15	9					
				30					
15	NE	eP	7	9	26			9070	No "Z" record.
	NE	eS		19	40				Mexico,
	NE	eL		34					20°N., 105°W.
	E	M	45	23	18	+20			(U.S.C.G.S.)
	N	M	45	48	19	+9			
		F	8	35					
16		e F	14	2					
				35					
21	NE	e	13	2	34				Very small, traces on
	NE	e		3	14				"Z" record.
	NE	e		3	52				
		F		50					
23		e F	1	54					
			2	5					
23	Z	e	8	18	54				
	Z	e		29	9				
	ZNE	eL	9	23					
		F	10	0					
26	Z	e	7	37	10				
	NE	e		44	33				
	NE	e		47	42				
	ZNE	eL		53					
		F	8	45					
27	ZNE	eL	23	18					
		F		35					
									F.J.W. Whipple, Superintendent.
									4th. October, 1934.



KEW OBSERVATORY, RICHMOND, SURI...

SEISMOLOGICAL BULLETIN FOR OCTOBER 1934.

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.	5 Sept., 1934	^{sec.} 24.7	^{sec.} 24.5	+ .01	^{sec⁻¹} 46.7
E.	6 Sept., 1934	24.8	24.8	- .01	42.6
Z.	11 Sept., 1934	13.0	13.1	+ .01	109.

TIME SERVICE: MINUTE TIME-MARKS ARE MADE ELECTROMAGNETICALLY BY CONTACT CLOCK (MORRISON);
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.	
5	Z	e	20 38 11				
	E	e	48 9				
	NE	eL	21 8				
	Z	eL	12				
	E	M	13 28	22	-10		
	N	M	15 8	25	+ 8		
	Z	M	20 10	17	+ 4		
		F	50				
5		e	22 42				
		F	23 25				
6	ZE	eP	0 24 3			2190	
	NE	iS	27 42				
	ZNE	eL	29				
	E	M	30 8	17	- 4		
	N	M	30 46	14	+ 5		
		F	50				
6	ZNE	e	13 5 57				
	E	eL	12				
	ZN	eL	15				
	N	M	15 27	24	+ 7		
	E	M	16 17	16	+ 5		
		F	50				
7		e	11 3				
		F	15				
8		e	7 22				
		F	30				



DATE.	COMPT.	PHASE.	G.M.T.			PERIOD.	AMPLI- TUDE.	Δ
			h.	m.	s.	sec.	μ	km.
10	Z	i	16	0	57			
	Z	i		1	1			
	Z	i		1	20			
	ZN	e		3	5			
	N	i		10	50			
	ZN	e		14	21			
	N	e		17	2			
	E	i		23	36			
	ZN	i		24	14			
	NE	e		28	0			
	E	e		29	24			
	ZNE	eL		32				
	N	M		36	27	26	-22	
		F	18	25				
18	Z	e	8	8	41			
	Z	e		11	39			
	NE	eL		52				
	Z	eL		59				
	N	M	9	19	5	19	+ 7	
	Z	M		23	22	20	- 8	
	E	M		27	8	18	+ 7	
		F	10	35				
19	NE	eL	21	29				
	N	M		32	4	21	+ 7	
	Z	eL		35				
		F		50				
21		e	18	48				
		F	19	10				
26	Z	i	17	24	2			
	Z	i		27	43			
	N	e		34	49			
	ZNE	i		36	0			
	E	e		45	36			
	NE	eL		54				
	Z	eL		59				
	E	M		59	35	28	+29	
	N	M		59	47	28	+22	
	E	M	18	8	49	19	+21	
	N	M		9	9	16	+23	
	Z	M		9	13	17	-23	
		F		50				
27		e	11	5				
		F		35				
29	NE	eL	0	23				
	Z	eL		30				
		F		45				
29	NE	eL	3	13				
	N	M		17	13	22	- 6	
	Z	eL		18				
		F		40				
29	NE	e	16	22				
	NE	eL		33				
		M		36	3	29	-20	
	N	eL		38				
		F	17	0				

Compression. Emergent on horizontal components.

Irregular.

} Emergent on horizontal components.

Possibly not seismic.

F. J. W. Whipple.
Superintendent.
3rd. Nov., 1934.

SEISMOLOGICAL BULLETIN FOR.....NOVEMBER.....1934....

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.	5 Sept., 1934	^{sec.} 24.7	^{sec.} 24.5	+ .01	^{sec.⁻¹} 46.7
E.	6 Sept., 1934	24.8	24.8	- .01	42.6
Z.	11 Sept., 1934	13.0	13.1	+ .01	109.

TIME SERVICE: MINUTE TIME-MARKS ARE MADE ELECTROMAGNETICALLY BY CONTACT CLOCK (MORRISON);
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.	"	km.	
Nov.							
4 *	Z NE Z N	e eL eL M F	3 13 35 42 49 21	19	-7		
4 *	NE Z N	eL eL M F	4 25 30 5 9 58 45	20	+10		* Confused by wind.
5/6	Z N NE NE ZNE N E Z	e i e e eL M M M F	23 14 16 25 12 33 2 37 0 40 54 9 54 39 58 41 0 50	19 19 18	-7 -7 +7		
7		e F	14 40 45				
9	ZN ZN	i eL F	13 46 0 54 14 0				Dilatation. No E-W record.

SEISMOLOGICAL BULLETIN.

November (Contd.) 1954.

DATE.	COMPT.	PHASE.	G.M.T.			PERIOD.	AMPLI- TUDE.	Δ	REMARKS.
			h.	m.	s.	sec.	μ	km.	
Nov. 10	ZE	e	15	44	25				
	ZNE	L		49					
	N	M	50	9		20	+7		
	Z	M	50	37		20	-8		
	E	M	50	42		18	+7		
		F	16	20					
12	ZNE	e	7	27					
	NE	L		34					
	N	M	34	21		40	(-30)		
	Z	L		36					
	N	M	38	56		19	-20		
	E	M	38	59		21	+20		
	Z	M	43	3		14	+9		
		F	8	35					
16	ZNE	eL	10	53					
		F	11	35					
16	Z	e	14	16	28				
	NE	eL		42					
	Z	eL		47					
	N	M	48	23		26	-10		
	E	M	48	47		26	+9		
		F	16	15					
18	ZNE	iP	3	30	9			5430	Compression.
	ZE	i		31	22				Turkestan. 37°N., 66.5°E.
	ZE	i		33	0				(Strasbourg).
	E	iS	37	14					
	ZN	iS	37	16					
	E	e	38	34					Surface waves poorly
	NE	e	41	7					developed.
	N	M	52	17		19	-10		
		F	4	20					
18	NE	e	15	36					
	NE	eL		42					
	Z	eL		49					
		F	16	5					
18/19	Z	i	22	59	17				Compression.
	ZNE	e	23	1	26				Felt in Sydney, Australia.
	Z	i		2	32				Emergent on horizontal
	NE	e		8	36				components
	NE	eL		36					
	Z	eL		43					
	Z	M	49	17		27	-15		
	N	M	50	57		25	-13		
	E	M	53	52		25	+6		
		F	1	0					
21	E	e	22	36	22				
	ZNE	eL		43					
		F		55					
24	ZNE	eL	14	1					
	N	M		8	48	19	+4		
		F		45					

KEW OBSERVATORY, RICHMOND, SURREY, ENGLAND.**SEISMOLOGICAL BULLETIN FOR.....DECEMBER.....19 34.**

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.	5 Sept., 1934	^{sec.} 24.7	^{sec.} 24.5	+ .01	^{sec⁻¹} 46.7
E.	6 Sept., 1934	24.8	24.8	- .01	42.6
Z.	11 Sept., 2934	13.0	13.1	+ .01	109.

TIME SERVICE: MINUTE TIME-MARKS ARE MADE ELECTROMAGNETICALLY BY CONTACT CLOCK (MORRISON);

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.	
Dec.							
1		e F	19 53 20 5				
3	ZN ZNE E	eP eL M F	2 50 27 3 18 28 5 4 5	18	+ 5		Central America 15°N., 89°W. (U.S.C.G.S.)
4	NE NE ZNE NE Z E Z N	e e e eL eL M M M F	17 48 8 48 43 49 58 18 8 11 13 50 14 8 14 37 45	23 23 21	-16 + 7 -12		Northern Chile 19°S., 70°W. (U.S.C.G.S.)
8		e F	10 24 45				
15	Z ZNE N NE Z Z N NE Z NE ZNE E N E	eP iP eS iS i e i i i i eL M M M	2 8 25 8 31 17 11 17 16 17 22 21 53 24 3 24 27 24 34 24 40 28 33 53 34 6 36 39	28 24 20	+210 >320 +145	7330	Amplitudes of iP as read in mm.:- N E Z -0.7 -1.2 +2.0 giving azimuth = 62° ±5°. Tibet, 31.5°N., 89°E. (Strasbourg).

SEISMOLOGICAL BULLETIN.

DECEMBER (contd) 1934..

DATE.	COMPT.	PHASE.	G.M.T.	PERIOD.	AMPLI- TUDE.	Δ	REMARKS.
			h. m. s.	sec.	"	km.	
Dec 15	N	M	37 24	15	-270		
	N	M	38 29	15	+230		
	Z	M	39 14	15	+120		
	E	M	40 1	17	+155		
	Z	M	40 13	14	+105		
	Z	M	42 47	11	- 63		
		F	4 (30)				
17	NE	eL	16 49				Masked by microseisms.
	Z	eL	58				
	N	M	17 7 6	23	+ 13		
		F	18 0				
21		e	13 17				Very small.
		F	25				
22	ZNE	e	14 52 21				Pacific Ocean off Central America.
	ZNE	e	57 16				8°N., 89°W. (U.S.C.G.S.).
	NE	e	15 0 37				
	N	eL	2				
	E	e	2 14				
	ZE	eL	5				
	E	M	10 8	23	-35		
	Z	M	10 13	23	-40		
	N	M	12 47	19	+20		
		F	16 10				
23	ZNE	e	10 16 5				
	ZNE	i	16 10				
	N	i	17 7				
	Z	e	18 6				
	NE	eL	30				Surface waves small.
	Z	eL	36				
		F	11 0				
23		e	23 48				
		F	0 0				
24	ZNE	e	16 0 45				Confused by microseisms.
	N	i	2 41				
	NE	i	2 53				
	NE	i	3 16				
	N	M	4 33	14	+16		
		F	10				
25		e	7 28				Possibly not seismic.
		F	50				
28		e	12 50				
		F	13 30				
30	Z	e	14 20 42				Disturbed by wind and microseisms.
	Z	e	24 52				California.
	NE	L	28				
	Z	L	31				
	N	M	36 33	17	+35		
	E	M	37 21	17	+25		
	Z	M	39 19	15	+26		
		F	15 55				



SEISMOLOGICAL BULLETIN.

DATE.	COMPT.	PHASE.	G.M.T.			PERIOD.	AMPLI-TUDE.	Δ km.	REMARKS.
			h.	m.	s.				
Dec. 31	ZNE	eP	18	58	8			8570	Mexico.
	ZNE	ePP	19	1	38				
	NE	eS		7	57				
	NE	iS		8	2				
	Z	e		9	4				
	N	eSS		12	48				
	NE	L		18					
	Z	L		25		20	-135		
	N	M		26	54	17	-140		
	E	M		29	27	16	+120		
	N	M		30	28	16	+120		
	Z	M		30	29	15	-110		
		F	23	0					

F.J.W. Whipple.
Superintendent.
5th. Jan., 1935.