

H 07
File

SEISMOLOGICAL BULLETIN' FOR... January.....1933.

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 SEISMOLOGIE" (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.	6 Sept. 1932	sec. 24.7	sec. 25.1	0.00	sec-1 47.2
E.	5 Sept. 1932	24.8	25.1	+0.01	43.4
Z.	7 Sept. 1932	13.0	12.8	+0.07	109.

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

DATE.	PHASE.	G.M.T.			PERIOD.	AMPLITUDES.			Δ	REMARKS.
						An.	Ae.	Az.		
		h.	m.	s.	sec.	μ	μ	μ	km.	
Jan. 1	eL F	9 10	58 25							Confused by microseisms.
3	eL F	16	9 40							
4	eL F	2	9 45							
"	eL F	4	29 50							
7	NZ e e E NE NE NE N Z N E F	4	19 29 35 36 45 46 47 52 54 55 6	31 00 16						
					41 38 20 21	+10 +30 +31	-27	+55		
8	e F	7	13 40							
9	EZ Z is NE NE N F	2	10 11 17 18 19 21 22 3	27 17 29 24 53 21 41 15					5700 ±	Compression. Azimuth about east. Samarkand, 40°N, 67°E. (Strasbourg). Deep Focus (0.03) ± Distance & deptn from tables by F.J. Scrase.

SEISMOLOGICAL BULLETIN.

January.....1933.

DATE.	PHASE.	G.M.T.			PERIOD.	AMPLITUDE.			Δ	REMARKS.
						An	As	Az		
		HR.	MIN.	SEC.	SEC.	μ	μ	μ	KM.	
Jan. 14.	1(Sg)	8	31	52						Northern England. Very small.
	1		31	56						
	F		33							
17	e	19	40							
	F	20	5							
"	e	22	46							
	F		55							Possibly not seismic
18	eL	9	13							
	F		25							
21	e	16	3							
	F	17	10							
21	1P	19	34	58					11200	
	1PP		39	2						Dilatation. Indian Ocean, 34°S, 58.5°E. (Strasbourg.)
E	ePPP		41	17						
NE	eSKS †		45	31						
E	1SKKS†		46	7						Bombay telegraphs: 1P 19h. 30m. 36s. 1S 38 25
E	1S		46	37						
NE	1PS		48	5						
NE	1SS		53	37						† SKS = S _c P _c S SKKS = S _c P _c P _c S.
NE	eSSS		57	19						
NE	L	20	3							
Z	eL		8							
N	M 1		16	43	23	+51				
Z	M 2		17	36	21			+59		
E	M 3		17	54	22		-59			
N	M 4		21	29	20	-51				
E	M 5		22	22	19		+64			
N	M 6		24	35	20	+49				
EZ	M 7		24	38	18		+58	+52		
	F	22	40							
23	e	18	58							
	F	19	5							
27/28	Z	22	56	14						
	E	23	35							No "N" record.
	Z		43							
	F	1	0							
29	EZ	18	58							
	F	19	5							

F. J. Seaton

Superintendent.

6th. Feb., 1933.



KEW OBSERVATORY, RICHMOND, SURREY, ENGLAND.

SEISMOLOGICAL BULLETIN FOR FEBRUARY 1933.

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 (SEC).	PENDULUM FREE PERIOD T (SEC).	DAMPING CONSTANT μ ²	Ak / π L (SEC.) ⁻¹
N	6 Sept. 1932	24.7	25.1	0.00	47.2
E	5 Sept. 1932	24.8	25.1	+0.01	43.4
Z	7 Sept. 1932	13.0	12.8	+0.07	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.	PHASE.	G.M.T.			PERIOD.	AMPLITUDE.			Δ	REMARKS.
						An	As	Az		
		HR.	MIN.	SEC.	SEC.	μ	μ	μ	KM.	
Feb. 3	N	22	33	52						
	NE		33	57						
	NE		52							
	Z		58							
	N		59	12	23	-8				
	F	23	30							
8	e	7	10	24						Southern Germany. Very small.
	F		12							
13	NE	3	10							
	NE		15							
	Z		20							
	N		20	37	18	+19				
	E		24	59	12		+33			
	Z		25	1	12			-42		
	F	4	5							
14	e	6	45							
	F	7	10							
19	e	5	26							
	F		45							
22	e	18	25							
	F		40							
23	Z	8	22	31					10,700	Compression. Pacific Ocean off Northern Chile (18°S., 72°W) (Strasbourg)
	ipp		26	12						
	i		26	36						
	E		33	8						
	NE		33	28						
	N		34	6						

H147.190.100.333.6p923.

K E W O B S E R V A T O R Y , R I C H M O N D , S U R R E Y , E N G L A N D**SEISMOLOGICAL BULLETIN FOR.....MARCH.....1933.**

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.

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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.	PHASE.	G.M.T.			PERIOD.	AMPLITUDE.			Δ	REMARKS.
		HR.	MIN.	SEC.		An μ	Ae μ	Az μ		
Mar. 2/3										
	ZNE	iP	17	43	31				9400	Amplitudes of iP
	ZNE	i		43	35					as read in mm.
	ZNE	i		43	39					N E Z
	ZNE	iPP		46	58					+5.3 +2.4 -18.7
	Z	iPPP		49	3					
	E	iPPP		49	5					Azimuth = 26°
	E	iSKS		53	51					
	ZN	i		53	57					Destructive in
	ZNE	iS		54	1					N.E. Japan
	Z	iPS		54	53					
	Z	i		55	3					39°N., 142.5°E.
	E	i		55	32					(Strasbourg.)
	E	i		58	59					
	E	i		59	9					
	E	i		59	16					
	N	SS		59	(43)					
		eL	18	7						
	N	M	From		(21)	>350				Oscillations off
	E	M	18	10	(24)		>350			top and bottom of
	Z	M	to 18.40		(20)			>600		charts.
		F	1	30						
3		e	5	15						
	F			50						
3	NE	eL	9	52						
	Z	eL	10	2						
	E	M	10	1	34	22	-15			
		F	11	5						
3		e	15	50						
	F		16	10						
6		e	13	46						
	F		14	5						



SEISMOLOGICAL BULLETIN.

MARCH 1933.

DATE.	PHASE.	G.M.T.			PERIOD.	AMPLITUDE.			△	REMARKS.
						An	As	Az		
		HR.	MIN.	SEC.	SEC.	μ	μ	μ	KM.	
Mar.7	e	14	49							
	F	15	0							
8	e	2	22							
	F		40							
11	ZNE	2	6	15					8855	Destructive round Long Beach, Southern California. 32.8°N, 118.5°W (J.S.A)
	NE		16	18						
	NE		26							
	Z		30							
	N		37	34	22	+24				
	E		39	52	17		+14			
	Z		44	58	19			-17		
	F	3	30							
11	Z	14	34	24					(10100)	
	N		38	8						
	ZNE		44	19						
	Z		45	27						
	NE	15	6							
	E		8	44	23		+7			
	Z		14							
	Z		17	39	15			+5		
	N		19	48	16	+6				
	F	16	10							
11	Z	19	45	7						Deep focus. Surface waves very poorly developed.
	Z		47	2						
	ZNE		49	5						
	NE		54	53						
	NE		55	31						
	Z		56	55						
	E		58	57						
	E	20	2	13						
	iSS									
	F	21	5							
12	e	5	55							
	F	6	10							
13	e	8	5							
	F		20							
14	ZNE	1	24	30					2485	Overlapped by next shock.
	E		28	34						
	N		28	42						
	NE		30.0							
	Z		32.4							
	N		32	29	12	+15				
	F	-	-	-						
	N	1	47							
	NE		50							
	Z		56							
	F	2	40							
15	eL	6	23							
	F	7	10							

SEISMOLOGICAL BULLETIN.

MARCH

1933.

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						An	As	Az		
		HR.	MIN.	SEC.	SEC.	μ	μ	μ	KM.	
Mar.†									8365	
17†	ZN	16	6	58						
	NE		16	36						
	N		17	13						
	ZE		17	21						
	N		20	58						
	E		25							
	ZN		29							
	N		38	44	20	-24	+17			
	E		48	46	14			-16		
	Z	17	40							
17†	Z	19	51	13						
	E		57	44						
	E	20	0	19						
	NE		16	53						
	NE		23							
	N		29	57	27	-37	+24			
	E		30							
	Z		42	22	19		-24			
	E		42	26	18			+21		
	Z	21	25							
18†	N	3	35							
	NE		51							
	E		54	8	46		(-50)			Small on "N-S" component.
	Z		59							
	N	4	6	40	20	+8				
			30							
23	NE	18	22	46						
	NE		25							
	Z		28							
			35							
23	Z	18	4	(23)						
	NE		12							
	Z		14							
			45							
26	e	5	38							
	F		45							Very small.
	e	19	47							
	F		55							
28	e	4	54							
	F	5	10							
31	e	22	38							
	F		55							

† Records confused by wind and microseisms

F.J.W. Whipple.

Superintendent.

4th. April, 1933.

KEW OBSERVATORY, RICHMOND, SURREY, ENGLAND.**SEISMOLOGICAL BULLETIN FOR APRIL 1933**

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

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DATE.	PHASE.	G.M.T.			PERIOD.	AMPLITUDE.			Δ	REMARKS.
						A_n	A_e	A_z		
		HR.	MIN.	SEC.	SEC.	μ	μ	μ	KM.	
Apr. 1	NE	eL	16	44						
	E	M		47	24		+ 5			
	Z	eL		48						
	N	M		50	9	+ 4				
		F	17	15						
9	ZNE	iP	2	59	11				9280	
	Z	e		59	30					
	ZNE	ePP	3	2	16					
	NE	S		9	35					
	N	e		13	37					
	E	eSS		15	9					
	N	eSSS		21	2					
	NE	eL		26						
	Z	eL		32						
	N	M		35	22	+23				
	E	M		35	33		+41			
	Z	M		39	36			-14		
		F	-	-	-					Overlapped by next shock.
9	Z	eP	4	11	7				8930	
	ZNE	eS		21	14					
	N	e		25	37					
	E	eSS		26	57					
	E	eSSS		30	39					
	NE	eL		37						
	Z	eL		39						
	N	M		40	56	-12				
	N	M		45	58	+ 9				
	E	M		48	12		+23			
	Z	M		48	16			+17		
		F	5	30						
9		e	11	19						
		F		40						

SEISMOLOGICAL BULLETIN. (contd.)

...APRIL... 19 33

DATE.	PHASE.	G.M.T.			PERIOD.	AMPLITUDE.			Δ	REMARKS.
						An	Ae	Az		
		HR.	MIN.	SEC.	SEC.	μ	μ	μ	KM.	
Apr 9		21	47							
	Z E		53							
	F	22	10							
13		23	22							
	F		55							
16		7	26							
	F	8	25							
16	Z E	19	37	6						No "N" record.
	Z		46	35						
	Z	20	23	47						
	E		13							
	Z		27							
	Z		31	58	21			+ 8		
	F		55							
16	Z E	21	20							No "N" record.
	F		45							
19		2	34							
	F	3	20							
19		3	33							
	F	4	00							
19	Z	7	1	4						
	E		8	20						
	NE		18	40						
	NE		30							
	E		32	42	26		-16			
	N		32	55	25	-16				
	Z		37							
	N		42	9	17	+50				
	E		42	9	17		+33			
	Z		42	15	15			-47		
	F	8	50							
23	ZNE	6	2	54					2720	Amplitudes of iP as
	ZNE		2	57						read in mm. :-
	NE		7	16						Z N E
	ZNE		7	23						+2.7 +1.4 -2.8
	Z		7	26						
	NE		9							giving azimuth about
	Z		11							115°
	E		13	24	17		+94			36.5° N., 26.5° E
	Z		14	1	10			-51		(Strasbourg.)
	N		15	11	12	+89				Destructive in
										Italian island of
	F	-	-	-						Kos, Aegean Sea.
										Overlapped by next
										shock.

KEW OBSERVATORY, RICHMOND, SURREY, ENGLAND.

SEISMOLOGICAL BULLETIN. (contd.)

APRIL 1933.

DATE.	PHASE.	G.M.T.			PERIOD.	AMPLITUDE.			Δ	REMARKS.
						Am	As	Az		
		HR.	MIN.	SEC.	SEC.	μ	μ	μ	KM.	
Apr. 23	Z	eP	7	26	14				9310	
	NE	eS		36	40					
	NE	L		54						
	Z	L	8	1						
	E	M		2	51		-20			
		F	9	30						
23		eL	11	27						
		F		40						
25	ZN	e	22	42	41					
		eL		48						
		F	23	00						
27	ZN	P	2	46	48				7350	
	ZNE	iP		46	53					Amplitudes of iP
	ZNE	iPP		49	14					as read in mm. :-
	E	iS		55	35					Z N E
	N	i		55	51					-10.0 +5.3 -1.4
	N	i		56	50					giving azimuth
	E	iSS		59	36					about 344°
	NE	eL	3	5						
	Z	eL		9						Alaska.
	N	M		11	54	+101				
	Z	M		18	3					
		M		19	47		-4.8	-57		
	E	eL ₂	5	8						via the Antipodes.
		F	6	0						
27	Z	e	12	12	27					
	NE	e		17	11					
	Z	e		19	17					
	NE	eL		34						
	Z	eL		37						
		F	13	40						
28		e	22	38	48					
	NE	L		42						
	N	M		43	18	-9				
	Z	eL		45						
		F	23	0						

F.J.W. Whipple
Superintendent.
6th. May, 1933.

KEW OBSERVATORY, RICHMOND, SURREY, ENGLAND.

SEISMOLOGICAL BULLETIN FOR.....MAY.....19.33.

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.

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TIME COMPARISONS ARE MADE DAILY WITH SIGNALS FROM GREENWICH OBSERVATORY.
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DATE.	PHASE.	G.M.T.			PERIOD.	AMPLITUDE.			Δ	REMARKS.
						A_n	A_e	A_z		
		HR.	MIN.	SEC.	SEC.	μ	μ	μ	KM.	
May 1	Z	19	1	45						
	E		30							
	ZN		34							
	F	-	-	-						
1	Z	20	3	23					9010	
	E		13	34						
	E		26							
	ZN		31							
	E		35	5	28		-13			
	Z		44	51	18			+ 6		
	F	22	5							
2	e	0	2							
	F		35							
4	e	0	18							
	F		35							
5	NE	4	43							
	Z		52							
	E		52	36	20		- 5			
	F	5	20							
6	Z	5	45	52					8900	
	E		55	57						
	ZN		56	2						
	NE	6	1	6						
	N		8							
	Z E		11							
	E		12	51	27		-13			
	Z		15	44	20			-10		
	F	7	10							

Overlapped by
next shock.

SEISMOLOGICAL BULLETIN.

MAY 1933

DATE.	PHASE.	G.M.T.			PERIOD.	AMPLITUDE.			Δ	REMARKS.
						An	As	Az		
		HR.	MIN.	SEC.	SEC.	μ	μ	μ	KM.	
May 6	e F	21	12							
			30							
7	e F	17	28							Very Small.
			35							
8	e F	1	22							
			40							
8	Z E Z E Z E E N Z E N E Z	iP i ePP eS eL eL M M M F	10 46 46 49 56 11 9 13 20 23 24 13	11 15 19 10 9 14 41 36					8770	Compression.
					24 18 17	+21	+27	+17		
8	e F	18 19	50 15							} Very small.
9	e F	3	25 40							
11	Z ZNE Z ZNE ZNE N E Z	eP iP PP eS eL M M M F	19 14 14 15 17 20 20 22 22 20	18 20 40 59 56 18 18 22 15					2210	Dilatation. Amplitudes of iP as read in mm:- Z N E +6.0 +2.0 -3.4 Azimuth + 118° giving epicentre near 40° N., 23° E Gulf of Saonica.
					14 11 8	+85	-62	+41		
15	e F	20	11 30							
16	Z E NE NE Z N E	e e eL eL M M F	1 25 34 2 3 7 5 15 3	(28) (50) 32 17						
					25 19	+14	+11			
18	e F	0 1	40 5							
19	Z ZNE ZNE NE Z N E Z	eP iP eS eL eL M M M F	18 7 7 15 20 24 24 27 31 31 20	30 34 5 5 41 27 57 10					5990	Atlantic Ocean 1.5° S., 11° W. (Strasbourg).
					26 15 13	+55	-43	+39		

KEW OBSERVATORY, RICHMOND, SURREY,



MAY 1933.

SEISMOLOGICAL BULLETIN.

DATE.	PHASE.	G.M.T.			PERIOD.	AMPLITUDE.			Δ KM.	REMARKS.
						An μ	As μ	Az μ		
May 20	e	5	50							
	F	7	0							
23	e	17	29							
	F	18	00							
30	e	12	22							
	F		45							
30	e	14	48							
	F		55							

Very small.

A.W. Lee
for Superintendent.

2nd. June, 1933.

KEW OBSERVATORY, RICHMOND, SURREY, ENGLAND.**SEISMOLOGICAL BULLETIN FOR JUNE 1933.**

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 (SEC).	PENDULUM FREE PERIOD T (SEC).	DAMPING CONSTANT μ^2	$A_k / \pi L$ (SEC.) ⁻¹
N	6 Sept. 1932	24.7	25.1	0.00	47.2
E	5 Sept. 1932	24.8	25.1	+0.01	43.4
Z	7 Sept. 1932	13.0	12.8	+0.017	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.	PHASE.	G.M.T.			PERIOD.	AMPLITUDE.			Δ	REMARKS.
		HR.	MIN.	SEC.		A_n	A_e	A_z		
					SEC.	μ	μ	μ	KM.	
1	ZN	2	45	13						
	ZNE		49	00						
			51							
	N		52	3	13	+ 3				
		3	10							
2	Z	7	51	30						
	E	8	1	57						
	NE		22							
	Z		26							
	N		33	56	20	+10				
	E		37	48	18		-11			
		9	10							
2		13	27							Very small.
			40							
3	Z	17	22	2						
	Z		25	32						
	ZNE		58							
	N	18	1	5	19	+ 8				
	Z		6	30	15			- 8		
			45							
4		13	32							
			40							
4		14	9							
			15							
6		2	51							
	NE	3	18							
	Z		27							
	Z		30	46	19			- 7		
	N		32	8	20	- 6				
		4	0							



SEISMOLOGICAL BULLETIN.

JUNE (contd.) 1933.

DATE.	PHASE.	G.M.T.			PERIOD.	AMPLITUDE.			△	REMARKS.
						An	Ae	Az		
		HR.	MIN.	SEC.	SEC.	μ	μ	μ	KM.	
7	Z	eP	11	57	49				8400	
	NE	eS	12	7	29					
	NE	eL		23						
	Z	eL		28						
	Z	M		35	8			- 7		
		F	14	00						
8	Z	i	18	23	10					
	ZNE	e	18	26	25					
	NE	eL		52						
	Z	eL		55						
	E	M		57	10		+ 9			
		F	20	00						
10		e	12	4						
		F	-	-						Overlapped by next shock.
10	Z	eP	12	10	52				2050	Compression.
	ZNE	iP		10	57					
	NE	eS		14	20					
	ZNE	L		15						
	Z	M		17	4			+16		
	E	M		17	27					
	N	M		18	20					
		F	14	10		+17	-16			
10		eL	14	23						
		F		40						
10		e	15	21						
		F		35						
10		e	16	38						Very small.
		F	17	00						
10		e	20	42						
		F		55						
11		e	13	28						
		F		35						Very small.
11		e	14	34						
		F	15	35						
12	Z	e	15	34	22					
		eL	16	2						
		F		45						
12		eL	21	50						
		F	22	10						
13	Z	eP	20	45	59				9100	
	Z	ePoP		46	15					
	Z	ePP		49	10					
	NE	eS		56	15					
	E	eL	21	12						
	ZN	eL		17						
	N	M		22	25	20	+ 9			
	E	M		24	00	18	- 9			
	Z	M		26	53	20		- 7		
		F	22	5						

DATE.	PHASE.	G.M.T.			PERIOD.	AMPLITUDE.			KM.
						An	As	Az	
		HR.	MIN.	SEC.	SEC.	μ	μ	μ	
13	Z	eP	22	30	33				7230
	Z	ePP		32	54				
	NE	eS		39	14				
	E	eL		51					
	ZN	eL		54					
	E	M		59	52	18		+ 3	
	N	M	23	0	53	19	+ 6		
		F		50					
14		e	21	33					
		F		45					
16		e	1	30					
		F	2	5					
18	E	e	5	0					
	ZNE	eL		8					
	N	M		10	28	24	- 7		
		F	6	0					
18/19	ZNE	iP	21	50	9				9200
	ZNE	iPP		53	20				
	ZN	ePPP		55	29				
	NE	iS	22	0	29				
	E	i		0	34				
	Z E	i		0	57				
	Z E	iPS		1	27				
	N	iPPS		2	20				
	E	iSS		6	18				
	E	iSSS		9	38				
	NE	L		15					
	Z	L		20					
	E	M		20	28	36	-200		
	N	M		22	24	30	-155		
	E	M		23	20	27	+165		
	N	M		26	57	23	+140		
	E	M		27	56	20	+125		
	N	M		29	18	23	-195		
	E	M		29	35	22	+125		
	N	M		30	29	22	-170		
	Z	M		30	44	21		-185	
	Z	M		32	56	17		-135	
		F	1	45					
19		e	19	23					
		F		50					
24/25	ZNE	eP	22	8	46				(11200)
	E	iSKS		19	40				
	E	iSS		29	6				
	NE	eL		37					
	N	M		44	50	43	+340		
	Z	eL		45					
	E	M		51	48	29	+135		
	N	M		56	36	24	+150		
	E	M	23	1	16	20	+185		
	Z	M		1	28	20		+100	
	N	M		3	6	20	+145		
	E	M		4	25	17	+135		
	Z	M		4	37	18		+110	
		F	2	40					

} Very small.

Amplitudes of iP
as read in mm.:-
Z N E
+4.7 -2.0 (-0.8)

Large movement.

} emergent on N-S
component.

North of Japan.

43°N., 142°E.
(Strasbourg.)
38°N., 142°E.
(U.S.C.G.S.)

Destructive in
southern Sumatra.

4°S., 103.5°E.
(Strasbourg.)



SEISMOLOGICAL BULLETIN.

JUNE (contd 1933.

DATE.	PHASE.	G.M.T.			PERIOD.	AMPLITUDE.			Δ	REMARKS.
						An	As	Az		
		HR.	MIN.	SEC.	SEC.	μ	μ	μ	KM.	
25	e	6	36							Very small.
	F	7	0							
25	ZNE	21	14							
	ZNE		24							
	Z		30	54	14			+ 6		
	F	22	20							
27	Z E	15	44	41					2200	
	NE		48	21						
	ZNE		50							
	F	16	15							
28	e	12	9							Very small.
	F		30							
28/29	Z	23	46	36						
	NE		56	14						
	ZNE		0	10						
	F	1	5							
29	e	3	9							
	F		30							
29	e	15	30							Very small.
	F		35							
29	ZNE	16	58	37						
	ZNE	17	3							
	F		15							
29	ZNE	18	33	50						
	ZNE		39							
	F		50							

F.J.W. Whipple,
Superintendent.

6th. July, 1933.

K E W O B S E R V A T O R Y , R I C H M O N D , S U R R E Y , E N G L A N D .

SEISMOLOGICAL BULLETIN FOR JULY 19.33.

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 (SEC).	PENDULUM FREE PERIOD T (SEC).	DAMPING CONSTANT μ^2	$A_k / \pi L$ (SEC).
N	6 Sept. 1932	24.7	25.1	0.00	47.2
E	5 Sept. 1932	24.8	25.1	+0.01	43.4
Z	7 Sept. 1932	13.0	12.8	+0.07	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.	PHASE.	G.M.T.			PERIOD.	AMPLITUDE.			Δ	REMARKS.
						An	Ae	Az		
		HR.	MIN.	SEC.	SEC.	μ	μ	μ	KM.	
July										
2	e F	12	7							
			40							
3	e F	15	52							
		16	15							
7	e F	8	7							Very small.
			25							
9	ZNE NE E ZN E N Z	1P eS eL eL M M M F	1 2	42 52 5 13 14 21 24 25	16 21 25 25 18 16				8900	Compression. Kurile Islands. 45°N., 150°E. (U.S.C.G.S.)
						-9	-9	+7		
9	Z NE N Z E	eP eS eL eL F	5	46 57 11 14 45	59 27				9550	Pacific Ocean off Mexico. 17°N., 105°W. (U.S.C.G.S.)
9	NE Z ZNE	e(S) e eL F	9 10 11	50 0 10 30	22 29					P lost during changing of charts. Probably P of second shock.

....JULY (Contd.) 1933

...JULY (Contd.) 1933

KEW OBSERVATORY, RICHMOND, SUI**SEISMOLOGICAL BULLETIN.**

JULY (Contd.) 1933.

DATE.	PHASE.	G.M.T.			PERIOD.	AMPLITUDE.			Δ	REMARKS.
						An	Ae	Az		
		HR.	MIN.	SEC.	SEC.	μ	μ	μ	KM.	
18	Z	e	19	24	15					
	E	eL		58						
	ZN	eL	20	5						
		F		40						
19	ZNE	eL	5	45						
		F	6	0						
19		e	11	27						
		F	12	30						
19	ZN	e	13	44	18					
	ZNE	eL	14	15						
		F	15	(10)						
19	ZN	eP	15	11	47				(8700)	Aleutian Islands. 51°N., 174°W. (U.S.C.G.S.).
	ZNE	eL		40						
		F	16	50						
19	ZNE	eP	20	12	29				2800	
	NE	eS		16	57					
	Z	e	17	17	6					
	NE	L		18						
	N	M		21	18	16				
		F	21	0		-25				
20/21	Z	eP	23	26	34				9210	
	NE	eS		36	55					
	E	eL		54						
	ZN	eL		57						
		F	0	35						
21/22										
	Z	e	20	21	13					
	Z	e		25	23					
	E	e		33	40					
	Z	e		35	6					
	N	e		35	24					
	E	e		36	3					
	N	e		41	31					
	NE	eL		41	31					
	ZN	eL	21	2						
	N	M		8	31	19				
	Z	M		8	36	20				
		F	0	10				-24		
22	ZNE	eP	21	7	2				8420	Amplitudes as read in mm. :- Z N E +1.5 -0.8 (+0.2)
	NE	eS		16	43					
	N	eSS		21	44					
	N	eSSS		25	37					
	Z	ePKKP		25	49					
	E	eL		27						
	ZN	eL		32						
	E	M		34	14	26				
	N	M		43	27	20	-37	-33		
	E	M		44	53	20		+40		
	N	M		46	34	19	-40			
	Z	M		46	37	18				
		eL ₂	23	17				+41		
		F	1	15						Via Antipodes.

SEISMOLOGICAL BULLETIN.

JULY (Contd.) 1953.

DATE.	PHASE.	G.M.T.			PERIOD.	AMPLITUDE.			Δ	REMARKS.
		HR.	MIN.	SEC.		A _n	A _s	A _z		
					SEC.	μ	μ	μ	KM.	
23 Z	eP	4	26	10					9650	
E	eS		36	52						
ZNE	eL		57	"						
	F	5	45							
23 Z	e	9	44	41						
ZNE	eL		54							
	F	10	30							
24 Z	e	10	22							
	F		40							Very small; traces only on horizontal components.
24 Z	e	19	15	11						
ZN	e		18	37						
N	e		25	17						
ZNE	eL	20	2							
Z	M		15	1	20			+22		
N	M		15	6	20	+18				
E	M		20	(0)	20		+11			
	F	22	10							
25 Z	e	3	40.2							Possibly not seismic
	F		43							
25 Z	e	5	5	6						
NE	L		27							
	F		45							
31 Z	i	11	40	26						Confused by micro- seisms and wind.
ZNE	L		46							
ZNE	M		48							
	F	12	10							
										P.J.W. Whipple, Superintendent. 3rd. August., 1933.

KEW OBSERVATORY, RICHMOND, SURREY, ENGLAND.**SEISMOLOGICAL BULLETIN FOR August, 1933,**

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.	6 Sept. 1932	sec. 24.7	sec. 25.1	0.00	sec ⁻¹ 47.2
E.	5 Sept. 1932	24.8	25.1	+0.01	43.4
Z.	7 Sept. 1932	13.0	12.8	+0.07	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.	PHASE.	G.M.T.			PERIOD.	AMPLITUDES.			Δ	REMARKS.
		h.	m.	s.		AN.	AE.	AZ.		
Aug.					sec.	μ	μ	μ	km.	
4	e F	18	21							Very small; possibly not seismic.
			30							
5	e NE Z	1	4							
	eL		44							
	eL		53							
	F	3	5							
7	Z	3	15	19						Very small.
	E		25	48						
	ZNE		41							
	F	4	10							
7	e F	13	30							
		14	5							
11	ZNE	9	5	47						
	Z		8	41						
	ZNE		15	29						
	E		24	8						
	ZNE		31							
	E		35	44	25					
	N		35	57	25					
	F	10	45			+21	+15			
13	Z	9	41	46						
	Z		45	49						
	ZNE	10	18							
	F	12	10							
14	e F	22	52							
		23	5							

KEW OBSERVATORY, RICHMOND, SURREY, ENGLAND.

SEISMOLOGICAL BULLETIN.

(contd. August, 1933.

DATE.	PHASE.	G.M.T.			PERIOD.	AMPLITUDE.			△	REMARKS.
						Am	As	Az		
August		HR.	MIN.	SEC.	SEC.	μ	μ	μ	KM.	
15 ZNE	e	0	50	8						
E	e		54	19						
ZNE	eL		55							
	F	2	0							
15 NE	eL	3	41							
Z	eL		49							
	F	4	15							
15 NE	eL	20	24							
Z	eL		26							
	F		35							
17	e	6	34							
	F		45							
18	-	-	-	-						No records 5h. 15m to 8h. 15m.
20 NE	eL	12	36							
Z	eL		45							
	F	13	0							
22	eL	11	47							
	F	12	20							
25 ZNE	eP	8	2	2					8430	Compression.
E	eS		11	44						
NE	eSS		16	27						
NE	eSSS		19	30						
NE	L		23.8							
Z	eL		26							
N	M		31	7	23					
NE	M		33	30	23					
E	M		35	44	24					
	F	10	45							
26	e	21	18							
	F		35							
26 Z E	eP	20	23	56					2160	
ZNE	eS		27	33						
	L		28.4							
N	M		29	5	19	+6				
	F	21	5							
28/29 Z	eP	22	34	23					12,670	
ZNE	eP'		38	21						
Z	ePP		39	19						
NE	iSKS		45	3						
E	iS		47	8						
NE	iPS		48	51						
Z	iSP		48	55						
NE	eSS		54	51						
N	eSSS		58	27						
N	eSSSS	23	2	15						
NE	eL		5							
Z	eL		8							
E	M		20	59	18		-78			
N	M		22	23	20	+135				
Z	M		22	38	18			-130		
	F	3	15							



SEISMOLOGICAL BULLETIN.

August..(contd.). 1933.

DATE.		PHASE.	G.M.T.			PERIOD.	AMPLITUDE.			△	REMARKS.
							An	As	Az		
August			HR.	MIN.	SEC.	SEC.	μ	μ	μ	KM.	
29	ZN	i	15	6	30						
	NE	i		13	48						
	ZNE	i		13	59						
	ZNE	i		15	6						
		eL		30							
			16	5							"L" waves very poorly developed.
31	NE	e	3	10							
	NE	eL		23							
		eL		27							
	Z	F		50							
F.J. Scrase, for Superintendent.											
5th. Sept., 1933.											

AIR MINISTRY, METEOROLOGICAL OFFICE

KEW OBSERVATORY, RICHMOND, SURREY, ENGLAND.

SEISMOLOGICAL BULLETIN FOR SEPTEMBER, 1933.

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 .	$\frac{Ak}{\pi l}$
N.	6 Sept. 1932	24.7 ^{sec.}	25.1 ^{sec.}	0.00	47.2 ^{sec-1}
E.	5 Sept, 1932	24.8	25.1	+0.01	43.4
Z.	7 Sept. 1932	13.0	12.8	+0.07	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.	PHASE.	G.M.T.			PERIOD.	AMPLITUDES.			Δ	REMARKS.
						AN.	AE.	Az.		
		h.	m.	s.	sec.	μ	μ	μ	km.	
2 Z	eP	16	53	34					(10000)	Pacific Ocean.
ZN	ipP		55	11						Depth of focus
NE	iSKS	17	3	24						about 400 Km.
NE	iS		3	51						(J.S.A.)
ZNE	iSP		5	8						
NE	eL		10							"L" waves very
Z	eL		15							poorly developed.
N	M		39	36	17	+7				
Z	M		39	42	16			-6		
	F	18	50							
6	e	2	40							
	F	3	25							
6	e	18	30							
	F	19	5							
6/7 Z	iP'	22	27	9					(17000)	Small on horizontal
Z	ipP'		29	34						Pacific Ocean
N	e(SKKS)		36	47						24°S., 178°W. Depth
										of focus about 600 Km
N	eL		44							(J.S.A.)
Z E	eL		48							"L" waves very poor
	F	0	40							developed.
7	e	9	9							
	F		20							
7	e	18	53							Very small.
	F	19	10							
7/8	e	23	10							
	F	0	10							
8	e	7	2							Very small.
	F		10							

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

SEPTEMBER (cont.) 1933.


 International
Seismological
Centre

DATE.	PHASE.	G.M.T.			PERIOD.	AMPLITUDE.			Δ	REMARKS
						An	Ae	Az		
		HR.	MIN.	SEC.	SEC.	μ	μ	μ	KM.	
9 Z	i	21	39	19						Small on horizontal components.
NE	e		42	52						
	eL	22	23							
	F	23	45							
12 ZN	e	12	36	42						
	eL		42							
	F		55							
12	e	13	55							Very small.
	F	14	10							
17	e	4	44							
	F	5	10							
20 NE	eL	0	7							
Z	eL		15							
	F		40							
21 NE	eL	0	22							
Z	eL		31							
	F		55							
21 NE	e	3	47							
ZNE	eL		59							
	F	4	45							
21 NE	eL	10	28							
Z	eL		35							
E	M		38	56	18		-7			
N	M		39	11	18	+7				
	F	11	15							Very Small.
21	e	20	27							
	F	21	10							
22 Z	e	11	57	10						
Z	i		57	23						
N	e	12	1	3						
	F		15							
22 ZNE	eL	12	56							
	F	13	45							
24 ZNE	eP	15	31	24					8600	Aleutian Islands. 51°N., 177°W. (U.S.C.G.S.)
NE	eS		41	14						
NE	eL		45							
Z	eL		50							
E	M	16	1	54	23		+13			
N	M		6	38	22	+12				
	F	17	20							
25 E	e	14	34							
N	eL		38							
Z E	eL		43							
	F	15	15							



DATE.	PHASE.	G.M.T.	PERIOD.	AMPLITUDE.			Δ	REMARKS.
				An	Ae	Az		
		HR. MIN. SEC.	SEC.	μ	μ	μ	KM.	
25	ZNE	eP	19 1 27				6710	Compression.
	Z	i	1 39					
	ZNE	ePP	3 41					
	ZNE	ePPP	5 5					
	NE	eS	9 41					
	Z	e	15 21					
	ZNE	eL	19					
	E	M	29 13		-78			
	Z	M	29 49			-80		
	N	M	29 56	-77				
		F	21 20					
26	Z	e	3 36 6					Destructive around
	N	e	40 (17)					Lama dei Peligni,
	ZNE	iL	41 11					Central Italy.
		F	4 5					
27	ZNE	eL	22 48					
		F	23 10					
27/28	ZNE	eL	23 45					Very small.
		F	0 5					
30	Z	e	14 41 29					
	NE	eL	15 17					
	Z	eL	27					
	N	M	35 31	+11				
	Z	M	35 36			-9		
		F	17 15					

F.J.W. Whipple,
Superintendent.

6th. October, 1933.

SEISMOLOGICAL BULLETIN FOR OCTOBER, 1933.

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

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.	PHASE.	G.M.T.			PERIOD.	AMPLITUDES.			Δ	REMARKS.
						Am.	Ae.	Az.		
		h.	m.	s.	sec.	μ	μ	μ	km.	
Oct. 2	eL F	15	18							Overlapped by next shock.
		-	-							
2	Z E	15	42	4					9450	Compression
	ZN		42	56						Azimuth about W.
	ZN		43	51						Pacific Ocean west
	Z		45	24						of Central America.
	E		52	29						4°N., 84°W.
	N E		52	37						(Strasbourg.)
	Z		53	45						
	E		53	54						
	NE	16	4							
	Z		9							
	E		15	9	23		-39			
	E		18	35	19		-36			
	Z		18	41	17			-32		
	N		20	15	18	+24				
	Z		22	40	17			-35		
	F	19	40							
3	e	19	19							No records, 3d.8h.32
	F	20	5							to 15h.5m. 4d.8h.45
3	e	22	32							to 12h.0m. during
	F		45							standardization etc.
5	e	5	58							
	F	6	15							

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

OCTOBER (contd. 1933)

DATE.	PHASE.	G.M.T.			PERIOD.	AMPLITUDE.			Δ	REMARKS.
						An	Ae	Az		
October		HR.	MIN.	SEC.	SEC.	μ	μ	μ	KM.	
5	ZNE	eP	6	26	2				2050	Compression.
	NE	eS		29	30					
	ZNE	eL		31						
		F		55						
5	Z E	iP	13	37	56				4830	
	NE	eS		44	29					
	E	e(SS)		47	52					
	ZNE	eL		51						
	E	M		57	32	22	+16			
	N	M		58	50	22				
	Z	M	14	5	39	12	-17	+11		
		F	15	50						
7		e	3	34						
		F	4	15						
14	Z	eP	22	30	39				8500	
	NE	eS		40	24					
	NE	eL		56						
	Z	eL	23	0						
		F		45						
16	NE	eL	5	4						Confused by micro-seisms.
	Z	eL		10						
		F		15						
17	ZNE	eL	14	15						
		F		40						
20		e	11	17						Possibly not seismic. Confused by wind and microseisms.
		F		40						
21	E	eL	3	30						
	ZNE	eL		35						
		F	4	40						
22	ZNE	eL	12	35						
		F	13	15						
23	ZNE	eL	5	22						
		F	6	10						
23	ZNE	e	14	4	26					
	NE	eL		20						
	Z	eL		23						
	N	M		28	51	22	+ 6			
		F	15	5						
24		e	16	35						
		F	17	0						
24		e	22	45						Very small.
		F		55						
25/26	Z	e	23	41	14					
	Z	i		42	6					
	N	e		45	15					
	NE	i		51	28					
	NE	i		52	2					

SEISMOLOGICAL BULLETIN.

OCTOBER (cont) 1933

DATE.	PHASE.	G.M.T.			PERIOD.	AMPLITUDE.			△	REMARKS.
						An	Ae	Az		
		HR.	MIN.	SEC.	SEC.	μ	μ	μ	KM.	
October 25/26										
	Z		53	34						
	N		53	38						
		0	8							
	N		20	35	20	+14				
	E		20	45	19		-15			
	Z		20	50	20			-16		
		1	40							
	F									
26	Z	12	40							Confused by wind and microseisms.
			55							
	eL	14	45							Possibly not seismic.
	F									
30		8	20							
	e		40							
	F									

F.J.W. Whipple.
Superintendent.
6th. Nov., 1933.

AIR MINISTRY, METEOROLOGICAL OFFICE

KEW OBSERVATORY, RICHMOND, SURREY, ENGLAND.SEISMOLOGICAL BULLETIN FOR... NOVEMBER,.....1933.

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)
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N.	3 Oct., 1933	sec. 24.7	sec. 24.9	-.04	sec ⁻¹ 47.1
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TIME SERVICE : MINUTE TIME-MARKS ARE MADE ELECTROMAGNETICALLY BY CONTACT CLOCK (MORRISON) ;
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SEISMOMETRIC READINGS CAN BE DETERMINED TO THE NEAREST SECOND.

DATE.	PHASE.	G.M.T.	PERIOD.	AMPLITUDES.			Δ	REMARKS.
				AN.	AE.	Az.		
		h. m. s.	sec.	μ	μ	μ	km.	
1	Z E	eL F	16 17 40					
2	Z	eL	12 38 56					
	ZNE	eL	13 0					
	Z	M	23 21					
		F	14 15			+ 7	disturbed	Horizontal components by wind.
5	NE	eL	21 5					
	N	M	9 30					
		F	22 0	+ 6				
6		e	7 27					
		F	40					
8		e	0 54 6					
		F	58					Felt in Southern Germany.
19	Z	e	3 30 57					
	NE	e	53 5					
	NE	e	54 31					
	NE	eL	4 21					
	Z	eL	29					
		F	5 45					
20/21	ZNE	eP	23 28 34				3810	Compression.
	ZNE	iP	28 39					Amplitudes of iP as
	ZNE	iPP	30 8					read in mm:-
	Z	iP _c P	31 4					Z N E
	NE	iS	34 10					-14.0 +9.7 -4.2
	E	iSS	36 16					Azimuth = 335° giving
	ZNE	eL	37					epicentre near
								75°N., 65°W.
								Baffin Bay.

FORM : 3448

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

NOVEMBER (contd.) 1933.

DATE.	PHASE.	G.M.T.			PERIOD.	AMPLITUDE.			Δ	REMARKS.
						An	Ae	Az		
		HR.	MIN.	SEC.	SEC.	μ	μ	μ	KM.	
20/21 Nov. contd.										
	E M	38	41		22		>310*			*Maxima too large to be recorded completely.
	N M	39	40		(20)	>270*				
	E M	44	33	14			>260*			
	N M	44	43	14		>250*				
	Z M	44	47	14				+340		
	N M	47	7	11		+170				
	Z M	47	10	11				-165		
	Z M	50	17	11				-140		
	F	3	30							
22	Z E	0	11							
	NE		25							
	Z		27							
	F	1	5							
22	E	5	14							
	N		25							
	Z E		29							
	F	6	5							
22		8	50							Possibly not seismic. Very small.
	F	9	0							
22		9	22							
	F		40							
22	Z	13	1	28						
	ZNE		4	45						
	Z E		8	39						
	N		21	14						
	NE		40							
	Z		48							
	N		58	21	22	+22				
	E		59	22	23		-20			
	Z	14	6	10	18			+15		
	F	15	30							
22	NE	19	44							
	NE		47							
	Z		52							
	F	20	5							
22	NE	23	17							
	Z		21							
	F		40							
23	ZNE	1	20							Very small.
	F		25							
23	NE	19	19	49						
	ZNE		35							
	E		38	13	22		- 5			
	F	20	20							
28	Z	11	17	44						
	NE		24	11						
	ZNE		27							
	E		36	51	25		+25			
	N		39	11	22	-30				
	Z		40	23	22			-21		
	F	12	35							



DATE.	PHASE.	G.M.T.			PERIOD.	AMPLITUDE.			△	REMARKS.
						An	Ae	Az		
		HR.	MIN.	SEC.	SEC.	μ	μ	μ	KM.	
29 ZNE	eL	5	38							
	F	6	20							
29 ZNE	eL	19	47							
	F	20	15							
30	eL	4	54							
	F	5	5							

F.J.W.Whipple.
SUPERINTENDENT.

6th. December, 1933.

SEISMOLOGICAL BULLETIN FOR DECEMBER, 1933.

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

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SEISMOMETRIC READINGS CAN BE DETERMINED TO THE NEAREST SECOND.

DATE.	PHASE.	G.M.T.			PERIOD.	AMPLITUDES.			Δ	REMARKS.
		h.	m.	s.		Am.	Ae.	Az.		
					sec.	μ	μ	μ	km.	
December 2	ZNE eL F	6	45							"N" record defective (broken contact between pendulum coils & leads) 2d. 9h. 38m. to 7d. 11h. 57m. No records 10h. 19m. to 11h. 25m. Adjustments for tilt of pillar. No records 10h. 45m. to 11h. 57m. Repairing "N".
		7	15							
2	ZNE eL F	20	55							
		22	5							
6		-	-	-						
7		-	-	-						9250 Compression. Horizontal components disturbed by wind. Pacific Ocean off Central America. 18°N., 104°W (U.S.C.G.S.)
9	ZNE eL F	8	25							
			35							
12	Z i Z e N e NE eL Z eL N M F	14	30	20						
			33	35						
			37	24						
		15	7							
			16							
			19	20	25	-13				
		16	45							
13	ZNE iP	21	36	16						9250 Compression. Horizontal components disturbed by wind. Pacific Ocean off Central America. 18°N., 104°W (U.S.C.G.S.)
	ZNE i		36	23						
	N i		45	39						
	NE iS		46	39						
	E i		50	30						
	NE e		55	46						
	NE eL	22	3							
	Z eL		6							
	E M		13	15	17	-54				
	N M		13	23	20					
	Z M		13	45	16	-21				
	F	23	10						-46	

