KEW OBSERVATORY, RICHMOND, SURREY, ENGLAND.

SEISMOLOGICAL BULLETIN FOR JANUARY, 1938.

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.	$\frac{Ak}{\pi l}$
		sec.	sec.		sec-1
N.	1937, Dec. 14	24.2	8.1	0.00	77.3
E.	1937, Dec. 15	24.8	8.3	0.00	76.3
Z.	1937, Dec. 30	13.3	13.0	-0.01	75.4

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.
1938			h. m. s.	sec.	μ	km.	
Jan.	N	i	23 45 32				
1/2	NE	i	52 43				
	E	eL	0 15				
	ZN	eL	21				
	E	M	27 23	18	-10		
	Z	M	29 17	19	+10		
	N	M	29 25	18	+10		
		F	1 0				
2	ZNE	i	11 4 43				
	ZNE	eL	8				
		F	15				
2	ZNE	iP	22 39 43			9130	Dilatation.
	NE	iS	50 0				
	N	e	52 59				
	N	L	23 8				Pacific Ocean off Central America.
	ZE	L	13				
	E	M	18 47	18	-20		16°N.,98°W. (U.S.C.G.S.)
	Z	M	18 50	18	-20		
		F	55				
7	NE	e	16 9 49				
	NE	eL	23				
	Z	eL	31				
	Z	M	34 24	30	+17		
		F	17 25				
10	NE	eL	21 44				
	Z	eL	49				
	Z	M	54 9	15	-5		
		F	22 20				

FORM 3717.

233,8039,4520,125,6p.946, M & S. 2/38.

M.O. 425

KEW OBSERVATORY, RICHMOND, SURREY, ENGLAND.

SEISMOLOGICAL BULLETIN.

JANUARY, 1938.

DATE.	COMPT.	PHASE.	G.M.T. h.	m.	s.	PERIOD. sec.	AMPLITUDE. μ	Δ km.	REMARKS.
Jan.									
11	Z	i	15	24	53				Compression.
	NE	i		35	3				
	N	i		35	15				
	Z	i		36	27				
	E	e		47	23				
	E	eL		50					
	ZN	eL		54					
	E	M		57	36	31	+29		
	N	M		58	22	26	+16		
	Z	M	16	7	49	20	+18		
		F		40					
17	-	-	9	30	to				No records.
			13	0					
18		e	5	15					
		F		40					
22	E	e	2	55	7				
	ZNE	L	3	0					
		F		10					
23	ZN	iPP	8	51	15			12000	Dilatation: confused by microseisms.
	NE	iPS	9	0	40				
	E	iSS		5	57				
	E	iSSS		9	56				Felt in Hawaii.
	NE	L		16					
	Z	L		23					
	N	M		26	40	26	+48		
	E	M		29	1	20	-30		
	Z	M		30	14	20	+33		
	ZNE	eL_2	10	42					Via Antipodes.
		F	11	15					
24	E	i	10	58	38				Confused by microseisms.
	N	i	11	4	52				
	NE	i		8	5				
	E	i		12	30				
	E	L		22					
	ZN	L		26					
	N	M		35	10	19	+22		
		F	13	50					
25	NE	eL	18	16					
	Z	eL		21					
		F	19	10					
26		e	3	55					
		F	4	15					
30		e	17	45					Very small; possibly not seismic.
		F		55					

(sgd)
F.J.W. Whipple,
Superintendent.
4th February, 1938.

FORM 3718.

KEW OBSERVATORY, RICHMOND, SUR

SEISMOLOGICAL BULLETIN FOR FEBRUARY, 1938.

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.	$\frac{A\lambda}{\pi I}$
		sec.	sec.		sec^{-1}
N.	1937, Dec. 14	24.2	8.1	0.00	77.3
E.	1937, Dec. 15	24.8	8.3	0.00	76.3
Z.	1937, Dec. 30	13.3	13.0	-0.01	75.4

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. h.	m.	s.	PERIOD. sec.	AMPLITUDE. μ	Δ km.	REMARKS.
1938	Z	iP	19	19	52			13500	Dilatation.
Feb.	Z	i		19	57				Confused by microseisms.
1.	Z	e		23	31				
	ZNE	iPP		24	40				
	NE	i		24	51				
	NE	iPPP		27	6				
	NE	iSKS		30	22				Banda Sea.
	NE	i		30	43				5°S., 132°E. (Strasbourg).
	NE	iPS		34	37				
	NE	i		35	3				
	NE	iPPS		35	51				
	N	iSS		40	57				
	E	iSS		41	4				
	NE	i		45	59				
	NE	L		52					
	E	M		57	48	55	-1921		
	N	M		58	21	58	+3420		
	Z	L	20	3					
	N	M		4	39	30	-1170		
	E	M		11	6	23	+800		
	Z	M		23	58	20	+610		
	ZNE	eL_2	21	4					Via antipodes.
		F	23	30					
4		e	0	52					Very small.
		F	1	10					
5	ZNE	iP	2	35	20			8700	Compression.
	ZNE	ipP		35	59				
	ZNE	iS		44	54				
	N	iScS		45	21				Felt at Bogota, Columbia.
	NE	iPS		46	2				4°N., 75°W. (Strasbourg).
	N	isPS		46	32				Focal depth about 150 km.
	E	i		48	23				
	ZN	iSS		49	54				

FORM 3717.
2.57,9039,4520,125,3/38.

M.O.

KEW OBSERVATORY, RICHMOND, SURR

SEISMOLOGICAL BULLETIN.

FEBRUARY, 1938.

DATE.	COMPT.	PHASE.	G.M.T.	PERIOD.	AMPLITUDE.	Δ	REMARKS.
Feb.			h. m. s.	sec.	μ	km.	
5	ZNE	eL	2 55				
(Cond)	E	M	3 3 27	19	+20		
	Z	M	3 33	16	+16		
		F	4 10				
8	E	i	7 39 11				
	ZN	e	39 22				
	ZNE	eL	56				
	E	M	8 4 46	18	+6		Very small.
		F	20				
8		e	14 0				
		F	15				
8	NE	e	14 44 37				
	ZNE	eL	15 0				
		F	20				
10		e	7 0				
		F	25				
10	ZNE	i	20 48 2				
	N	i	48 38				
	ZNE	L	51				
	N	M	52 30	16	-14		
		F	21 5				
11		e	15 32				Very small.
		F	45				
13	ZNE	L	9 28				Earlier phases masked by microseisms.
	E	M	47 59	19	+12		
		F	10 30				
14	ZNE	iP	3 1 36			4050	Compression.
	ZNE	i	1 47				
	Z	iPP	2 58				
	ZNE	iS	7 26				
	ZNE	i	7 49				
	ZNE	iSS	10 12				
	ZN	i	11 20				
	ZNE	eL	15				Surface waves very small.
		F	45				
15	ZNE	iP	3 35 5			4090	Compression.
	ZNE	iPP	36 32				North of Cape Verde Islands.
	NE	iS	40 57				18°N.,25°W. (U.S.C.G.S.).
	ZNE	L	44				
	N	M	47 52	15	-8		
		F	4 40				
15	Z	iP	7 4 32				Compression.
	E	i	4 46				
	ZNE	eL	15				
		F	45				
22	ZNE	eL	5 54				
		F	6 15				

FORM 3718.

KEW OBSERVATORY, RICHMOND, SURREY, ENGLAND.

SEISMOLOGICAL BULLETIN.

FEBRUARY, 1938

DATE.	COMPT.	PHASE.	G.M.T. h.	m.	s.	PERIOD. sec.	AMPLITUDE. μ	Δ km.	REMARKS.
1938									
Feb. 22.	ZNE	eL	7	10					
		F	8	5					
27		e	2	5					Very small.
		F		45					

(sgd)

F.J.W. Whipple,

Superintendent.
4th March, 1938.

FORM 3718.

M.O. 425

AIR MINISTRY, METEOROLOGICAL OFFICE

KEW OBSERVATORY, RICHMOND, SURREY, ENGLAND.

SEISMOLOGICAL BULLETIN FOR March 1938

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.	$\frac{Ak}{\pi l}$
		sec.	sec.		sec^{-1}
N.	1937, Dec. 14	24.2	8.1	0.00	77.3
E.	1937, Dec. 15	24.8	8.3	0.00	76.3
Z.	1937, Dec. 30	13.3	13.0	-0.01	75.4

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. h.	m.	s.	PERIOD. sec.	AMPLITUDE. μ	Δ km.	REMARKS.
1938. March 2	ZNE	eL	0	21					
		F		55					
2	E	L	7	52					Very small on N-S and Z components.
	E	M		52	40		-.5		
		F		57					
8		e	4	0					Very small
		F		15					
8	Z	e	5	56	36				
	ZNE	i		57	49				
	Z	i		58	1				
	NE	e	6	3	30				
	NE	eL		33					
	Z	eL		40					
	E	M		54	16	20	-8		
	Z	M		57	19	19	-11		
	F		8	20					
9	ZNE	eL	3	24					
		F	4	10					
9	ZE	e	5	55					Very small
		F	6	5					
10		e	16	38					
	NE	eL	17	17					
	Z	eL		22					
		F		45					

301, 8075, 3758, 125, 4/38, M & S, Gp. 946.

M.O. 425

KEW OBSERVATORY, RICHMOND, SURREY, ENGLAND.

SEISMOLOGICAL BULLETIN.

March 1938

DATE.	COMPT.	PHASE.	G.M.T. h.	m.	s.	PERIOD. sec.	AMPLITUDE. μ	Δ km.	REMARKS.
1938 March 11	Z	iP	14	55	24			2220	NE, e.
	E	i		55	56				
	NE	i		56	9				
	ZNE	iS		59	6				Felt on the West coast of Greece
	ZNE	iL	15	2	13				
	N	M		2	13	15	+15		
		F		25					
11		e	17	20					Very small
		F		55					
12		e	20	32					Very small
		F	21	0					
13		e	15	51					
		F	16	5					
13	ZNE	iP	17	50	7			2120	Probably repetition of the shock at 11d 14h.
	E	i		50	16				
	NE	e		53	34				
	ZNE	iS		53	41				
		L		56					
	N	M		57	1	15	+27		
		F	18	40					
13		e	21	30					
	ZNE	eL		39					
		F	22	10					
14	Z	iP	0	59	6				
	Z	i		59	17				
	ZNE	eL	1	22					
	E	M		32	14	17	+ 9		
	Z	M		32	19	17	- 8		
		F	2	5					
14	ZE	iP	5	25	51				
	N	e		43	55				
	ZNE	eL		50					
	E	M	6	0	19	13	+ 4		
		F		35					
19	NE	e	13	40					Very small
		F	14	25					
21	ZNE	eL	2	27					
		F	3	10					
22	ZNE	iP	15	33	18			7850	Compression amplitudes of iP as read in mm:-
	ZNE	i		33	23				E. N. E
	ZNE	iPP		35	58				+0.9 -0.3 +0.2
	ZNE	iPPP		37	40				Azimuth about North-West by North. Queen Charlotte Islands.
	NE	iS		42	30				53°N., 132°W (U.S.C.G.S.)
	Z	i		43	12				
	NE	iScS		43	24				
	ZNE	iSS		47	6				
	Z	e		50	12				
	NE	iSSS		50	49				
	ZNE	L		54					

FORM 3718.

M.O. 425

KEW OBSERVATORY, RICHMOND, SURREY, ENGLAND.

SEISMOLOGICAL BULLETIN.

March 1938

DATE.	COMPT.	PHASE.	G.M.T. h.	m.	s.	PERIOD. sec.	AMPLITUDE. μ	Δ km.	REMARKS.
1938 March									
22	Z	M	16	4	23	15	+39		
(Ctd)	N	M		4	38	15	-42		
	E	M		5	15	13	-27		
	ZNE	eL2	17	57					Via antipodes
		F	18	35					
22		e	22	49					
	E	L	23	7					
	Zn	L		9					
		F		40					
25		e	9	0					
		F		20					
25	ZNE	eL	17	4					
		F	18	10					
27	ZNE	e	3	0					
	ZNE	eL		30					
		F		45					
27	E	e	11	19	30				
	N	i		21	27				
	E	i		21	39				Felt in Austria and Yugo-Slavia.
	ZNE	i		23	15				
	ZNE	i		24	29				
	Z	M		24	34	10	+35		
	E	M		24	34	10	-41		
	ZE	i		25	14				
	E	i		26	27				
	ZE	i		27	15				
		F	12	10					
30		e	15	7					Very small
		F		25					
31/1	ZE	eS	22	55	9				
	Z	i		56	35				
	E	i		56	44				
	ZNE	L	23	21					
	Z	M		29	45	15	+9		
	N	M		29	49	15	+10		
		F	0	10					

(sgd)

F. J. W. Whipple,
Superintendent.
5th April 1938.

FORM 3718.

M.O. 425

AIR MINISTRY, METEOROLOGICAL OFFICE, LONDON.

KEW OBSERVATORY, RICHMOND, SURREY, ENGLAND.

SEISMOLOGICAL BULLETIN FOR APRIL 1938.

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.	$\frac{Ak}{\pi l}$
		sec.	sec.		sec^{-1}
N.	1937, Dec. 14	24.2	8.1	0.00	77.3
E.	1937, Dec. 15	24.8	8.3	0.00	76.3
Z.	1937, Dec. 30	13.3	13.0	-0.01	75.4

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. h.	m.	s.	PERIOD. sec.	AMPLITUDE. μ	Δ km.	REMARKS.
1938 April									
1	ZNE	eL	1	38					
		F		55					
1	ZNE	e	21	55					
	NE	L	22	21					
	Z	L		26					
	N	M		29	42	15	-8		
	Z	M		29	46	17	+7		
		F	23	20					
2		e	6	30					
	ZNE	eL		50					
		F	8	50					
10		e	5	38					
		F	6	5					very small
12	ZNE	eL	11	40					
		F	12	15					
13	ZNE	iP	2	49	23			1710	Dilatation. Amplitudes of iP as measured in mm.
	Z	i		50	1				N E Z
	ZN	i		50	32				-47 +4.7 -7.6
	ZNE	iS		52	20				Azimuth about SE.
	NE	iSS		52	30				Felt throughout southern Italy
	NE	i		53	4				39.5 N., 15.0 E. (Strasbourg)
	ZNE	L		54					
	E	M		54	33	9	+50		
	Z	M		54	58	8	-32		
	N	M		55	3	7	-49		
		F	4	30					

FORM 3717.

327,607 5,3758,125,6p.946,M & S,5/38.

SEISMOLOGICAL BULLETIN.

DATE.	COMPT.	PHASE.	G.M.T. h.	m.	s.	PERIOD. sec.	AMPLITUDE. μ	Δ km.	REMARKS.
1938 April 14	ZNE	i	1	28	7				
	Z	i		28	39				
	ZNE	i		37	33				
	ZNE	i		38	8				
	NE	i		38	38				
	NE	e		42	22				
	NE	e		46	2				
	ZNE	eL		51					Surface waves small.
	N	M		59	25	20	+13		
		F	2	50					
16	ZNE	eL	20	56					
		F	21	25					
17	Z	i	14	52	47				
	Z	i		56	26				
	NE	i	15	3	41				
	E	i		5	24				
	E	e		5	57				
	N	eL		25					
	ZE	L		28					
	E	M		30	28	20	+11		
	Z	M		30	33	21	+14		
	N	M		30	38	19	-7		
		F	16	25					
19	ZNE	iP	11	5	1			2800	Dilatation. Amplitudes of iP as measured in mm.
	N	iS		9	29				N E Z
	E	i		9	43				-0.8 +2.0 -3.6
	Z	i		9	54				Azimuth about E.S.E.
	N	i		10	8				Destructive in Asia Minor.
	ZE	i		11	15				38.9° N., 32.7° E. (Strasbourg)
	N	i		11	29				
	ZNE	eL		12					
	N	M		13	40	24	+195		
	E	M		16	5	18	+125		
	Z	M		18	56	14	+ 67		
	ZNE	eL2	13	53					Via antipodes
		F	14	50					
19/20	ZNE	eL	23	0					
		F	0	5					
20	Z	e	6	46	57				
	Z	i		50	24				
	NE	eL	7	30					
	Z	eL		37					
	Z	M		54	58	21	-9		
		F	9	30					
21		e	1	49					
	ZNE	eL	2	6					
		F	3	0					
22	E	i	4	36	22				
	ZNE	eL		50					
		F	5	40					

KEW OBSERVATORY, RICHMOND, SURREY.

SEISMOLOGICAL BULLETIN.

APRIL 1938

DATE.	COMPT.	PHASE.	G.M.T. h.	m.	s.	PERIOD. sec.	AMPLITUDE. μ	Δ km.	REMARKS.
1938 April									
23	Z	i	0	40	55				NE, e.
	ZNE	i		44	32				
	NE	e		51	25				
	E	i		51	55				
	ZNE	eL	1	12					
	E	M		21	0	21	-13		
	Z	M		26	45	21	-12		
		F	2	25					
23	NE	i	9	41	21				
	ZNE	eL		50					
		F	10	25					
25	ZNE	eL	9	18					
		F		30					
25		e	10	45					
		F	11	0					
25		e	11	49					
		F	12	5					
25	NE	eL	15	30					
	Z	eL		34					
		F		55					
25	NE	eL	17	40					
	Z	eL		44					
	Z	M		52	2	19	-6		
	E	M		52	5	19	+6		
		F	18	40					
26		e	13	42					very small
		F	14	15					
29	ZNE	L	2	46					
		F		55					
29	ZNE	i	4	57	50				
	ZNE	L	5	3					
	Z	M		4	6	17	+3		
		F		25					

(Signed)

F.J.W. Whipple
Superintendent
7th May 1938.

FORM 3718.

337. 8075. 3758. 125, Gp. 946. M & S. 6/38.

M.O. 425

AIR MINISTRY, METEOROLOGICAL OFFICE. LONDON.

KEW OBSERVATORY, RICHMOND, SURREY, ENGLAND.

SEISMOLOGICAL BULLETIN FOR MAY 1938.

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.	1937, Dec, 14	24.2 sec.	8.1 sec.	0.00	77.3 sec^{-1}
E.	1937, Dec. 15	24.8	8.3	0.00	76.3
Z.	1937, Dec. 30	13.3	13.0	-0.01	75.4

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. h.	m.	s.	PERIOD. sec.	AMPLITUDE. μ	Δ km.	REMARKS.
1938. May 1	ZNE	eL	2	1					
		F	3	5					
2	ZNE	eL	15	43					
		F	16	10					
3	Z	iP	2	27	39			8900	Dilatation
	ZNE	iS		37	44				
	NE	eL		49					
	Z	eL		55					
		F	3	25					
3	Z	iP	19	27	54				
	Z	i		28	26				
	ZNE	eL		55					
		F	20	20					
6	NE	iP	5	1	7			400	
	NE	iPg		1	12				
	NE	iS		1	51				
	NE	iS*(I)		1	56				
	NE	iS*(II)		2	0				
	ZNE	iSg		2	5				
	N	i		2	21				
		F		6					
6	ZE	iP	18	29	26				Probably in Nicaragua. (Strasbourg)
	ZNE	eL		50					
	Z	M	19	1	43	19	+7		
	E	M		1	47	19	+7		
		F		50					

SEISMOLOGICAL BULLETIN.

DATE.	COMPT.	PHASE.	G.M.T. h.	m.	s.	PERIOD. sec.	AMPLI-TUDE. μ	Δ km.	REMARKS.
May									
8	NE	e	14	26	55				
	ZNE	eL		50					
	E	M	15	10	32	18	+13		
	Z	M		11	23	18	+10		
		F	16	35					
10	-	-	10	35 to 11	45				No records.
11	Z	iP	14	57	20			10350	
	E	i		57	47				
	Z	i		58	19				Pacific Ocean near Central America.
	Z	iPP	15	1	14				17°N., 101°W.(U.S.C.G.S.)
	NE	iSKS		7	34				
	ZNE	iS		8	34				
	Z	iSP		9	19				
	ZNE	eL		25					
	N	M		27	57	30	+15		
		F	17	10					
2	Z	eP	15	54	59			14000	
	Z	iPKP		58	13				
	ZNE	iPP	16	0	14				
	ZNE	i		0	31				
	NE	iPKS		1	29				
	ZNE	iPPP		3	0				
	NE	eSKKS		6	59				
	NE	iPS		10	28				
	ZNE	iPPS		11	51				New Guinea.
	NE	i		12	29				8°S., 147°E. (U.S.C.G.S.)
	Z	i		13	3				
	ZNE	i		13	11				
	ZNE	i		14	3				
	ZNE	eSS		17	13				
	N	i		17	51				
	E	i		17	59				
	ZNE	i		18	51				
	N	i		21	41				
	E	iSSS		22	37				
	N	i		23	7				
	NE	L		27					Love waves.
	ZNE	L		32					Rayleigh waves.
	E	M		48	52	23	+200		
	N	M		53	14	23	+220		
	Z	M		58	40	19	+220		
		F	20	10					
12	ZNE	eL	21	50					
	N	M		58	5	19	+9		
		F	23	0					

M.O.....

KEW OBSERVATORY, RICHMOND, SURREY

SEISMOLOGICAL BULLETIN.

MAY 19 38

DATE.	COMPT.	PHASE.	G.M.T. h.	m.	s.	PERIOD. sec.	AMPLITUDE. μ	Δ km.	REMARKS.
May 12	ZNE	iP	22	15	5			2770	
	ZNE	iS		19	31				Superposed on preceding shock.
	ZNE	i		19	39				
	ZNE	L		23					
	N	M		24	5	18	-31		
		F	-	-	-				Overlapped by preceding shock.
13		e	1	35					
		eL		57					
		F	2	15					
13	ZNE	i	2	58	2				
		eL	3	3					
		F		15					
13		e	4	11					Very small
		F		15					
13		e	13	0					
		F		10					
13	NE	eL	15	59					
	Z	eL	16	7					
		F		30					
14		e	4	57					
		F	5	15					
14		e	7	6					Very small
		F		20					
14		e	7	52					Very small
		F	8	0					
14	E	e	14	34	25				
	ZNE	L		45					
	N	M		46	57	23	+14		
		F	13	35					
14	NE	e	18	53					Very small
		F	19	10					
15		e	1	0					Very small
		F		15					
15	ZE	iP	3	38	16			2430	Dilatation.
	E	iS		42	15				
	ZNE	L		43					North Atlantic Ocean.
	Z	M		44	34	18	+6		
		F	4	15					
16		e	14	30					
		F		45					
16		e	16	30					
		F		55					

FORM 3718.

SEISMOLOGICAL BULLETIN.

DATE.	COMPT.	PHASE.	G.M.T. h.	m.	s.	PERIOD. sec.	AMPLITUDE. μ	Δ km.	REMARKS.
May 16	Z	iP	18	40	50				
	ZNE	L		47					
		F	19	5					
18		-	9.5 to 15	45					No records.
19		e	15	27					
		F		30					Very small
19	Z	iP	17	23	12			11700	
	Z	i		23	17				
	ZNE	iPP		27	43				
	ZNE	i		27	53				
	E	i		29	39				
	ZNE	iPPP		30	13				
	NE	iSKS		33	50				Macassar Strait.
	N	iS		35	21				1°S., 119°E. (U.S.C.G.S.)
	Z	iSP		36	54				
	NE	iPS		37	9				Large movement.
	E	i		37	21				
	E	i		37	41				Large movement.
	ZNE	iPPS		38	8				
	ZE	i		40	22				Large movement.
	E	iPKKS		42	20				
	ZN	iSS		42	59				
	E	iPPP		46	37				
	E	iSSS		47	21				PPP by path > 180.°
	N	i		48	1				
	NE	eL		50					
	ZNE	L		53					Love waves.
	E	M	18	13	13	25	+280		Rayleigh waves
	N	M		20	51	19	+160		
	Z	M		22	15	20	-160		
		F	22	0					
19		e	18	20					
		F		30					
22	Z	i	8	5	36				
		F		30					N.E., e.
22	Z	i	8	41	54				
	ZNE	eL	9	1					
		F	10	45					Compression. N.E., e.

FORM 3718.

SEISMOLOGICAL BULLETIN.

MAY 1938.

DATE.	COMPT.	PHASE.	G.M.T. h.	m.	s.	PERIOD. sec.	AMPLITUDE. μ	Δ km.	REMARKS.
May									
23	ZNE	iP	7	31	11			9430	Compression.
	ZNE	i		31	21				Amplitudes of iP as read in mm:- N -1.2, E -1.0, Z +4.5
	ZNE	iPP		34	35				
	ZNE	iPPP		36	35				
	Z	i		37	53				
	NE	iS		41	43				Azimuth about 40°
	ZNE	iS_cS		41	54				
	E	i		42	3				
	Z	iSP		42	33				
	ZNE	iSS		47	11				Felt in Japan.
	ZNE	e		48	35				36°N., 141°E. (U.S.C.G.S.)
	NE	L		57					
	Z	L	8	2					
	E	M		4	7	30	-380		
	N	M		6	18	25	-290		
	Z	M		9	16	24	+250		
		F	-	-	-				Overlapped by next shock.
23	NE	iPP	8	38	49			(9400)	Repetition of preceding shock.
	NE	iS		45	28				
	E	iPS		45	57				
	N	iSS		51	13				
	NE	i		52	31				
	N	i		59	43				
	NE	L	9	7					
	Z	L		13					
	N	M		16	30	21	+66		
	E	M		18	3	19	-62		
	Z	M		22	0	18	+52		
		F	11	50					
23		e	16	4					Very small.
		F		15					
24		e	10	6					Very small.
		F		20					
26		e	11	56					
		F	12	25					
27	ZNE	iP	21	27	33			2970	
	ZNE	eP_cP		31	0				
	NE	iS		32	14				
	ZNE	iL		32	40				
	N	M		34	1	8	-9		
	Z	M		35	26	11	-7		
		F	22	10					
28		e	0	16					Very small.
		F		30					
28	Z	eP	10	25	44			8450	
	ZNE	iS		35	27				
	ZNE	eL		51					
	E	M		55	1	18	+5		
	Z	M		59	6	16	+9		
	N	M		59	16	14	-8		
	ZNE	eL	11	43					Via antipodes.
		F		55					

FORM 3718.

SEISMOLOGICAL BULLETIN.

M

DATE.	COMPT.	PHASE.	G.M.T. h.	m.	s.	PERIOD. sec.	AMPLITUDE. μ	Δ km.	REMARKS.
May									
28	Z	iP	16	54	16			8950	Dilatation.
	NE	iS	17	4	24				
	E	eL		19					
	ZN	eL		24					
	E	M		28	3	23	+19		
	N	M		28	13	21	+15		
		F	18	45					
30	ZNE	i	14	49	28				Compression.
	ZN	i		49	34				
	N	i		49	50				
	Z	i		51	5				
	ZN	i		52	58				
	ZN	i		53	4				
	ZN	i		53	41				
	E	e	15	11	44				
	N	e		12	56				
	ZNE	eL		35					
	E	M		56	8	20	-38		
	N	M		57	8	21	-59		
	Z	M		57	13	21	+59		
		F	17	25					
31	ZNE	eL	0	12					
		F		55					
31	Z	e	18	5					
	ZNE	eL		9					
		F		30					
31	Z	e	19	45					
	ZNE	eL		49					
		F	20	10					

(Signed)

F.J.W. Whipple
Superintendent
7th June 1938.

FORM 8718.

KEW OBSERVATORY, RICHMOND, SURREY, ENGLAND.

SEISMOLOGICAL BULLETIN FOR JUNE 1938.

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.	$\frac{Ak}{\pi l}$
		sec.	sec.		sec-1
N.	1937, Dec. 14	24.2	8.1	0.00	77.3
E.	1937, Dec. 15	24.8	8.3	0.00	76.3
Z.	1937, Dec. 30	13.3	13.0	-0.01	75.4

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. h.	m.	s.	PERIOD. sec.	AMPLITUDE. μ	Δ km.	REMARKS.
1938 June 9	Z	iP	19	30	3			13,000	N.E.,e. Compression
	ZNE	iPP		34	49				
	ZN	i		35	56				
	ZN	i		37	19				
	ZNE	iPPP		37	32				
	ZNE	iSP		44	33				Banda Sea
	NE	i		44	54				4° S., 126° E. (U.S.C.G.S.)
	E	i		45	2				
	ZNE	iSPP		45	33				
	NE	e		50	5				
	NE	i		50	33				
	ZNE	iSS		51	9				
	E	i		54	37				
	N	eSSS		55	21				
	E	i		55	50				
	NE	e		58	45				
	NE	eL	20	11					
	Z	eL		18					
	N	M		22	7	21	-48		
	Z	M		26	13	20	+47		
	E	M		28	1	20	+44		
	F		23	0					

FORM 3717.
374, 8075, 3758, 125, 6p946, M & S, 7/38.

KEW OBSERVATORY, RICHMOND, SUR

SEISMOLOGICAL BULLETIN.

JUNE 1938

DATE.	COMPT.	PHASE.	G.M.T. h.	m.	s.	PERIOD. sec.	AMPLITUDE. μ	Δ km.	REMARKS.
1938 June									
10	ZNE	eP	10	6	39			10,000	Amplitudes of iP as read in mm:- N. E. Z. +0.7 +0.7 -3.0 azimuth about north-east.
	ZNE	iP		6	52				
	ZNE	iPP		10	19				
	ZNE	ePPP		11	51				
	NE	iSKS		17	18				
	ZNE	iS		17	37				
	NE	iPS		18	27				Riu-Kiu Islands.
	NE	iSS		23	38				25° N., 125° E. (U.S.C.G.S.)
	NE	iSSS		27	46				
	ZNE	L		34					
	E	M		51	48	18	-420		
	N	M		52	8	18	-440		
	Z	M		52	19	18	+380		
	ZNE	eL_2	12	5					L via antipodes.
		F	15	0					
10	ZNE	eL	16	15					
		F		30					
	ZNE	eL	17	6					
		F		30					
10	ZNE	eP	18	18	23				Pacific Ocean near Central
	ZNE	eL		50					America 16 N.,98° W. (U.S.C.G.S.)
		F	19	35					
10	ZNE	eL	20	24					Very small
		F		30					
11	Z	iP	10	58	18			345	Felt in Belgium, Holland,
	ZNE	iP*		58	25				France, England and Germany.
	ZNE	iPg		58	30				
	ZNE	i		58	38				
	NE	iS		58	56				
	ZNE	iS*		59	4				
	ZNE	iSg		59	11				
	ZNE	M	11	0±					
		F		10					
11	Z	i	12	10	1				After shock from the Belgian
		F		12					earthquake at 11d.10h. 57m.
11	ZE	i	13	9	23				
	ZNE	i		10	22				ditto.
		F		12					
12	Z	iP	13	26	32				
	Z	i		26	41				
	ZNE	i		26	55				ditto.
	ZNE	i		27	3				
	ZNE	i		27	8				
	Z	i		27	22				
	Z	i		27	30				
	F			31					

KEW OBSERVATORY, RICHMOND, SURREY,

SEISMOLOGICAL BULLETIN.

June 1938

DATE.	COMPT.	PHASE.	G.M.T. h.	m.	s.	PERIOD. sec.	AMPLITUDE. μ	Δ km.	REMARKS.
1938 June 14		e	8	19					Very small
		F		20					
15	ZNE	eL	8	37					Argentina. 32° S., 68° W., (U.S.C.G.S.)
		F	9	10					
15	Z	e	13	0	36				
	ZNE	eL		47					
		F	15	0					
16	ZNE	iP	2	28	14			9890	Compression Amplitudes of iP as read in mm:- N. E. Z. -0.6 -0.6 +1.8 Azimuth about north-east
	ZNE	i		28	26				
	ZNE	iPP		31	53				
	Z	iPPP		33	54				
	NE	iSKS		38	44				
	ZNE	iSKKS		38	58				
	ZNE	iS		39	7				Riu-Kiu Islands. 28° N., 130° E. (Strasbourg).
	E	iPS		39	54				
	ZNE	iPPS		40	25				
	NE	i		40	57				
	ZE	i		44	30				
	N	iSS		45	34				
	N	eSSS		51	46				
	Z	i		52	6				
	ZNE	eL	3	0					
	Z	M		14	16	14	(-290)*		* Maxima passed off bottom of chart.
	N	M		14	19	14	-170		
	E	M		14	19	14	-200		
		F	6	50					
16/17	ZNE	eL	23	39					
		F	0	10					
18	NE	eL	1	25					
	Z	eL		34					
		F		55					
19	-	-	7	29					No records
			to 9	56					
20	-	-	13	24					No records
			to 14	37					
20/21	ZNE	iP	23	59	33			5870	
	ZNE	iPP	0	1	29				
	ZE	i		2	53				
	ZNE	iS		7	2				
	NE	iSS		10	18				
	E	i		10	38				
	ZN	i		10	50				
	ZNE	L		17					
	N	M		19	47	17	-210		
	Z	M		22	44	16	-200		
	E	M		22	45	17	-230		
		F	3	20					

FORM 3718.

KEW OBSERVATORY, RICHMOND, SUR

SEISMOLOGICAL BULLETIN.

JUNE 19..

DATE.	COMPT.	PHASE.	G.M.T. h.	m.	s.	PERIOD. sec.	AMPLI-TUDE. μ	Δ km.	REMARKS.
1938									
June									
21	NE	eL	7	28					
	Z	eL		34					
		F	8	5					
23	ZNE	eL	1	50					
		F	2	25					
									Compression N.E.,e
23	Z	iPKP	13	15	5				
	ZNE	i		15	9				
	NE	e		17	50				
	ZN	e		18	37				
	ZNE	eL		57					
	E	M	14	21	26	21	+14		
	Z	M		21	41	21	+29		
	N	M		22	17	21	−10		
		F	16	0					
									Very small
24		e	20	2					
		F		15					
25/26	ZNE	iP	23	50	44			2920	
	ZNE	iS		55	21				Surface waves very small
		F	0	35					
28	ZE	iP	19	30	3			9030	Compression.
	E	iS		40	15				Azimuth about west.
	E	iPS		40	39				
	ZNE	eL		55					
		F	20	15					
29	NE	eL	20	10					
		F		30					
									Dilatation. N.E., e.
30	Z	iPKP	17	4	23				
	ZNE	eL			50				
		F	18	50					

(Signed)

F.J.W. Whipple
Superintendent.
5th July 1938.

FORM 3718.

M.O. 425

AIR MINISTRY, METEOROLOGICAL OFFICE, LONDON.

KEW OBSERVATORY, RICHMOND, SURREY, ENGLAND.

SEISMOLOGICAL BULLETIN FOR JULY 1938.

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.	1937, Dec. 14	24.2 sec.	8.1 sec.	0.00	77.3 sec^{-1}
E.	1937, Dec. 15	24.8	8.3	0.00	76.3
Z.	1937, Dec. 30	13.3	13.0	-0.01	75.4

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. h.	m.	s.	PERIOD. sec.	AMPLITUDE. μ	Δ km.	REMARKS.
1938 July									
2	Z	e	1	48	44				Not very distant.
		F	2	10					
2		e	12	38					
		F		55					
4	Z	i	21	32	21				
	ZNE	eL	22	30					
		F	23	15					
5	Z	i	2	23	26				Compression.
		F	-	-	-				Overlapped by next shock.
5	Z	i	3	14	21				
	ZNE	eL		45					
		F	5	25					
5/6	Z	iPKP	22	27	1				Compression.
	ZNE	eL	23	15					
	E	M	0	0	4	18	+4		
		F		45					
6	Z	iPKP	1	44	11				
	Z	i		44	44				
	ZNE	eL	2	32					
	E	M	3	14	35	18	+6		
		F	4	20					
6	ZNE	eL	13	42					
		F	14	15					

FORM 3717.
400,8075,3758,125,Gp345 M&S,8/38.

M.O. 425

KEW OBSERVATORY, RICHMOND, SURREY, ENGLAND.

SEISMOLOGICAL BULLETIN.

JULY 19 38.

DATE.	COMPT.	PHASE.	G.M.T. h.	m.	s.	PERIOD. sec.	AMPLITUDE. μ	Δ km.	REMARKS.
1938 July									
8	ZNE	eL	14	52					
		F	15	5					
12	ZNE	e KP	12	56	31				
	ZNE	eL	13	42					
		F	15	10					
13	Z	e	20	19	6				
	Z	e		19	27				
	NE	e		22	53				
		F		30					
14	ZNE	eL	3	37					
		F	4	5					
15	ZNE	eL	0	50					
		F	1	25					
16	ZNE	eL	16	40					Very small.
		F	17	5					
17		e	11	25					
		F	12	10					
18	Z	e	1	0	8				Very small.
	NE	i		1	13				
	NE	i		1	29				
	NE	i		2	24				
	ZNE	L		3	9				
	N	M		3	11	8	+5		
	Z	M		3	13	8	+5		
		F		15					
20	ZNE	iP	0	28	26			2400	Dilatation
	ZNE	iS		32	23				
	ZNE	i		32	35				Destructive in Northern Attica, Greece.
	ZNE	L		35					
	N	M		36	18	11	+51		
		F	2	10					
21	NE	i	9	30	0				
	ZNE	eL		45					
		F	10	45					
21	ZNE	eL	22	5					
		F		40					

FORM 3718.

M.O. 425

KEW OBSERVATORY, RICHMOND, SURREY, ENGLAND.

SEISMOLOGICAL BULLETIN.

JULY 1938.

DATE.	COMPT.	PHASE.	G.M.T. h.	m.	s.	PERIOD. sec.	AMPLITUDE. μ	Δ km.	REMARKS.
1938 July									
22	ZNE	eP	8	0	47			9650	
	NE	eSKS		11	16				
	NE	eSS		16	59				
	ZNE	eL		20					
	E	M		31	33	26	+30		
		F	10	55					
23/24	ZNE	eL	23	55					
		F	0	30					
24	NE	eP	13	23	58				No "Z" record.
	NE	e		34	42				
	NE	eL		44					
		F	14	30					
27	Z	i	1	34	0				
	NE	e		41	26				
		F		50					
27		e	13	32					Very small.
		F		45					
27		eL	17	40					
	E	M		53	28	15	+9		
		F	18	20					
28	Z	i	8	29	14				
		F	9	5					
29	ZE	i	13	20	5				Compression.
	ZE	i		23	59				
	E	e		30	37				
	E	i		30	56				
	N	i		31	18				
	NE	i		31	38				
	ZE	i		32	53				
	ZNE	eL		55					
	N	M	14	5	30	19	+11		
		F	16	0					
30		e	19	39					
		F	20	0					

(Signed)

F.J.W. Whipple
Superintendent
4th August 1938.

FORM 3718.

KEW OBSERVATORY, RICHMOND, SURREY, ENGLAND.

SEISMOLOGICAL BULLETIN FOR AUGUST 1938.

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.	$\frac{Ak}{\pi l}$
		sec.	sec.		sec^{-1}
N.	1937, Dec. 14	24.2	8.1	0.00	77.3
E.	1937, Dec. 15	24.8	8.3	0.00	76.3
Z.	1937, Dec. 30	13.3	13.0	-0.01	75.4

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. h.	m.	s.	PERIOD. sec.	AMPLITUDE. μ	Δ km.	REMARKS.
1938									
August									
2	ZNE	eL	0	42					Very small
		F	1	5					
3	ZNE	eL	14	12					
		F		30					
4	Z	iP	9	7	51			10000	
	Z	i		8	47				
	Z	e		17	35				Northern Argentina.
	ZNE	iSKS		18	6				24°S., 65°W. (U.S.C.G.S.)
	ZNE	iSKKS		18	45				
	ZE	iSP		19	59				
	ZNE	eL		30					
	E	M		47	12	20	+9		
	Z	M		47	18	20	+8		
		F	11	10					
5		e	16	30					Very small
		F	17	40					
8	ZNE	e	13	18					
	ZN	i		19	25				
	N	e		23	26				
	ZNE	eL		25					
	E	M		25	51	15	+5		
		F	14	5					
8	ZNE	iP	15	39	51			2300	
	E	iS		43	40				
	ZN	e		43	50				
	ZNE	eL		45					
	E	M		46	19	15	+5		
		F	16	10					

FORM 3717.

424, 8075, 3758, 125,6p 9/36, M & S, 9/38.

M.O. 425

KEW OBSERVATORY, RICHMOND, SURREY, ENGLAND.

SEISMOLOGICAL BULLETIN.

AUGUST 1938.

DATE.	COMPT.	PHASE.	G.M.T. h.	m.	s.	PERIOD. sec.	AMPLITUDE. μ	Δ km.	REMARKS.
1938									
August									
8	ZN	e	16	54	22				
	ZNE	eL	17	0					
		F		10					
8	ZNE	eL	19	5					
		F		25					
9	ZNE	eL	12	5					Very small.
		F		25					
9	ZNE	eL	18	42					
		F	19	0					Very small.
9		e	22	15					Very small.
		F		30					
10		e	2	45					Very small.
		F		55					
12	ZN	e	4	25	49				
	Z	e		28	18				
	ZNE	eL	5	20					
		F	6	25					
14	ZN	e	20	55	52				
	ZNE	eL	21	5					
		F		30					
15	ZNE	i	11	6	25				
	ZNE	i		9	54				
	ZNE	L		13					
		F		25					
15	ZNE	eL	17	35					Very small
		F		55					
16	ZNE	iP	4	39	34			8270	Compression.
	NE	iP_cP		39	58				Amplitudes of iP as read in mm.:-
	Z	i		40	8				N. E. Z.
	ZE	iPP		42	24				(-0.2) -0.9 +2.0
	ZNE	iPPP		43	57				Azimuth between E.N.E. and E.
	ZE	iPPPP		44	53				
	ZNE	iS		49	7				Burma.
	NE	iPS		49	41				
	E	i		50	41				22°N., 93°E. (Strasbourg.)
	NE	iSS		53	57				
	ZNE	L	5	5					
	Z	M		16	56	21	+200		
	E	M		16	58	21	+105		
		F	8	35					
18	E	i	9	54	15				
	ZNE	eL	10	20					
		F	11	10					
18	ZNE	eL	19	52					
	Z	M	20	4	49	16	+6		
		F		30					

FORM 3718.

SEISMOLOGICAL BULLETIN.

....AUGUST.....19..38.

DATE.	COMPT.	PHASE.	G.M.T. h.	m.	s.	PERIOD. sec.	AMPLITUDE. μ	Δ km.	REMARKS.
1938 August									
20		e	6	18					Very small
		F		40					
21		e	17	4					Very small
		F		20					
22		e	10	55					Very small
		F	11	5					
22	Z	e	22	4	47				
	ZNE	eL		10					
	E	M		19	4	13	+5		
		F	23	0					
23	ZNE	eL		8	50				
		F	9	15					
24	ZNE	eL	16	45					
		F	17	10					
25	Z	e	1	41	55				
	Z	i		46	4				N.E, e.
	E	i		52	34				
	Z	i		55	2				
	E	e		56	4				
	ZNE	eL	2	25					
	Z	M		43	31	17	-5		
		F	4	20					
28	ZN	eP	21	7	47				
	ZNE	eL		13					
		F		55					
29	Z	eP	15	36	12			11430	Destructive in the Philippines
	ZE	e		41	22				
	NE	iSKS		46	48				
	NE	i		46	54				
	NE	iS		48	10				
	NE	iPS		49	4				
	Z	e		49	19				
	ZNE	eL	16	10					
	E	M		17	16	24	-47		
	N	M		19	5	22	-17		
	Z	M		24	25	20	+14		
		F	18	20					

FORM 3718.

M.O. 425

KEW OBSERVATORY, RICHMOND, SURREY.

SEISMOLOGICAL BULLETIN.

AUGUST 1938

DATE.	COMPT.	PHASE.	G.M.T. h.	m.	s.	PERIOD. sec.	AMPLITUDE. μ	Δ km.	REMARKS.
1938 August									
30	Z	e	12	8	42				
	Z	i		10	21				N.E., e.
	ZN	e		12	58				
	Z	i		14	50				
	E	e		17	16				
	ZNE	e		20	12				
	Z	i		22	23				
	NE	eL		45					
	Z	eL		53					
	Z	M	13	6	42	18	-21		
	N	M		6	45	18	-9		
	E	M		7	13	18	+13		
		F	15	36					
30		e	17	35					Very small
		F	18	50					
30		e	19	38					Very small
		F		55					
31	Z	e	18	5	3				
	Z	i		5	40				
	N	e		6	58				
	N	e		14	33				
	N	e		17	18				
	ZNE	eL	18	40					
		F	19	25					

(Signed)

F.J.W. Whipple
Superintendent
5th September 1938.

FORM 3718.

AIR MINISTRY, METEOROLOGICAL OFFICE, LON

File

KEW OBSERVATORY, RICHMOND, SURREY, ENGLAND.

SEISMOLOGICAL BULLETIN FOR SEPTEMBER 1938

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.	$\frac{Ak}{\pi l}$
		sec.	sec.		sec-1
N.	1937, Dec. 14	24.2	8.1	0.00	77.3
E.	1937, Dec. 15	24.8	8.3	0.00	76.3
Z.	1937, Dec. 30	13.3	13.0	-0.01	75.4

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. h.	m.	s.	PERIOD. sec.	AMPLITUDE. μ	Δ km.	REMARKS.
1938 September									
1	Z	e	3	7	9				
	ZNE	eL		42					
	Z	M		52	56	16	-6		
		F	4	25					
1/2	Z	iP	23	0	31			8700	N.E,e.
	Z	i		0	48				Pacific Ocean
	Z	ePP		3	33				near Salvador.
	N	eS		10	26				
	NE	ePS		10	47				13°N., 90°W. (U.S.C.G.S.)
	ZNE	eL		25					
	Z	M		44	40	16	+7		
		F	0	55					
3	Z	i	4	50	29				N.E,e.
	ZNE	L		56					
		F	5	20					
4		e	19	46					
	ZNE	eL	20	12					
		F	21	30					
4		eL	22	37					
		F		55					
5		e	8	0					Very small
		F		20					
5	Z	$iPKP_1$	15	2	30			(18000)	
	Z	$iPKP_2$		3	12				
	Z	ePP		6	55				
	ZNE	eL		50					
		F	17	20					

FORM 3717.

451, 8075, 3758, 125, 6p. 946, M & S. 10/38.

M.O. 425

KEW OBSERVATORY, RICHMOND, SURRE

SEISMOLOGICAL BULLETIN.

SEPTEMBER 19 38

DATE.	COMPT.	PHASE.	G.M.T. h.	m.	s.	PERIOD. sec.	AMPLITUDE. μ	Δ km.	REMARKS.
1938 September									
6	Z	iP	20	58	4				N.E,e.
	ZNE	eL	21	34					
		F	22	10					
7	Z	e	2	13	25				
	ZNE	eL		52					
		F	3	25					
7	ZNE	iP	4	16	15			10000	compression
	ZNE	iPP		19	45				
	N	eSKS		26	47				
	N	i		27	49				
	Z	iSP		28	7				
	NE	iPPS		28	33				
	Z	e		29	30				
	NE	iSS		32	53				
	NE	eL		42					
	Z	eL		52					
	N	M	5	1	7	15	-61		
	Z	M		1	10	15	+90		
		F	7	25					
7	Z	iP	13	17	16				
	Z	i		19	33				
	ZNE	i		20	25				
	N	i		20	39				Surface waves very small
		F	14	40					
10		e	23	10					
		F		25					
11		e	20	32					Very small
		F		55					
12	ZNE	eL	6	48					
		F	7	20					
14		e	9	40					Very small
		F		55					
16	ZNE	eL	4	47					
		F	5	15					
16		e	6	55					
		F	7	25					
18	ZNE	iP	3	55	17			2400	Compression
	ZNE	iS		59	14				
	ZNE	L	4	2					
	Z	M		4	39	9	-17		
	N	M		4	41	9	+30		
		F		45					
21		e	13	55					Very small
		F	14	10					
21		e	15	0					Very small
		F		25					

FORM 3718.

M.O.....

KEW OBSERVATORY, RICHMOND, SI

SEISMOLOGICAL BULLETIN.

.....SEPTEMBER.....19...38.

DATE.	COMPT.	PHASE.	G.M.T. h.	m.	s.	PERIOD. sec.	AMPLITUDE. μ	Δ km.	REMARKS.
1938									
September									
21	NE	iP	19	4	41			9900	Wood-Anderson records
	NE	i		5	13				Galitzin seismographs not in
	E	i		5	27				operation.
	NE	iS		15	35				
	NE	eL		30					
		F	20	40					
25	ZNE	eL	21	33					
		F	22	30					
27	Z	iP	2	41	5			6010	N.E, e. Compression.
	NE	iS		48	42				
	ZNE	eL		56					
	Z	M	3	13	46	10	+9		
	N	M		13	51	10	+14		
		F	4	20					
27		e	10	37					
	ZNE	eL	11	20					
	Z	M		32	59	22	+6		
		F	12	45					
28		e	18	37					
	ZNE	eL	19	27					
		F	20	50					

(Signed)

L.H.G. Dines
Officer in charge
5th October 1938

FORM 3718.

M.O. 425

AIR MINISTRY, METEOROLOGICAL OFFICE, LONDON.

KEW OBSERVATORY, RICHMOND, SURREY, ENGLAND.

SEISMOLOGICAL BULLETIN FOR OCTOBER 1938

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.	$\frac{Ak}{\pi l}$
		sec.	sec.		sec^{-1}
N.	1937, Dec 14	24.2	8.1	0.00	77.3
E.	1937, Dec 15	24.8	8.3	0.00	76.3
Z.	1937, Dec. 30	13.3	13.0	-0.01	75.4

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. h.	m.	s.	PERIOD. sec.	AMPLITUDE. μ	Δ km.	REMARKS.
1938 October									
2	ZNE	eL	16	55					
		F	17	10					
7	NE	eL	1	50					
	Z	eL		54					
		F	2	20					
7	NE	eL	17	10					
	Z	eL		18					
		F		50					
9	ZNE	eL	17	55					Earlier phases obscured by microseisms.
	Z	M	18	15	26	18	+5		
		F		50					
10	e		3	45					
	F		4	15					
10	ZNE	eP	21	2	43			11500	
	Z	iPP		7	26				N.E.,e.
	Z	iPPP		10	2				
	NE	iSKS		13	16				
	NE	iSKKS		14	14				
	ZNE	iPS		16	32				large movement.
	ZNE	iPPS		17	41				
	Z	iSKKP		21	55				
	NE	eSS		22	43				
	Z	iPPP		26	22				by path greater than 180°.
	NE	eSSS		26	49				
	NE	eL		30					
	Z	eL		35					
	N	M		52	23	26	-84		
	E	M		55	25	22	-77		
	Z	M		55	56	26	+98		
		F	23	50					

FORM 3717.
480,807S,37.58,125,6p.946 M & S, 11/38.

M.O. 425

KEW OBSERVATORY, RICHMOND, SURREY, ENGLAND.

SEISMOLOGICAL BULLETIN.

.....OCTOBER.....19.38...

DATE.	COMPT.	PHASE.	G.M.T. h.	m.	s.	PERIOD. sec.	AMPLITUDE. μ	Δ km.	REMARKS.
1938									
October									
11	ZNE	e	0	36	25				
	ZNE	eL	1	2					
		F		40					
12	Z	iP	0	46	57			9410	Compression N.E.,e.
	Z	iPP		50	9				N.E.,e.
	NE	iSKS		57	16				
	NE	iS		57	28				
	Z	eSP		58	18				
	E	iSS	1	2	42				
	ZNE	eL		15					
	N	M		22	51	20	-31		
	E	M		22	51	20	+66		
	Z	M		31	17	15	+17		
		F	3	30					
13	NE	eL	16	8					
	Z	eL		15					
	N	M		24	10	15	-11		
	E	M		24	10	15	-10		
	Z	M		24	14	15	+14		
		F		55					
16	NE	i	2	23	12				From records of Wood-Anderson
	NE	i		24	53				seismographs
	Z	i		25	26				Not very distant.
		F		30					
17/18		e	23	51					
		F	0	15					
19	ZNE	iP	4	22	59			5810	
	NE	iS		30	25				
	NE	i		30	31				Altai Mountains.
	NE	iSS		32	48				48°N., 91°E.(Strasbourg)
	NE	iSS		34	35				
	ZNE	L		39					
	E	M		44	0	17	-110		
	N	M		44	0	17	+145		
		F	6	15					
20	NE	iPP	2	39	21			13000	No "Z" record.
	NE	i		39	49				
	NE	i		40	13				
	NE	iSKS		44	51				
	NE	iPS		49	3				West of Timor.
	E	iSS		55	3				9°S., 123°E. (Strasbourg)
	E	i	3	1	11				
	NE	eL		16					
	N	M		17	45	46	+130		
	E	M		19	10	48	-195		
		F	5	10					
20		e	13	45					Very small
		F	14	15					

FORM 3718.

M.O. 256

KEW OBSERVATORY, RICHMOND, SUR

SEISMOLOGICAL BULLETIN.

....OCTOBER.....19..38..

DATE.	COMPT.	PHASE.	G.M.T. h.	m.	s.	PERIOD. sec.	AMPLITUDE. μ	Δ km.	REMARKS.
1938 October									
21	N	i	20	45	23				
	NE	eL	21	5					No " Z " record
		F		45					
22	NE	eL	1	5					No " Z " record
		F		50					
23	NE	e	3	46					No " Z " record
	NE	eL		52					
	E	M	4	5	51	12	+5		
		F	5	10					
23		e	6	27					Very small
		F		55					
23	Z	iP	15	13	17			8570	Dilatation
	NE	iS		23	6				
	NE	iPS		23	24				
	NE	L		42					
	Z	L		45					
	E	M		47	20	15	+11		
	N	M		51	57	15	+11		
	Z	M		52	1	15	+10		
		F	17	5					
26		e	4	0					Very small
		F		25					
26		e	17	45					Very small
		F		55					
29	ZN	iP	13	21	11				
	N	e		29	54				
	E	e		31	7				
	E	i		31	47				
	N	e		31	57				
	NE	eL		50					
	E	M		53	4	32	+11		
	Z	eL		55					
		F	14	35					
30		e	0	32					Very small
		F	1	0					

(Signed)

F.J.W. Whipple
Superintendent
5th November 1938.

FORM 3718.

M.O. 425

AIR MINISTRY, METEOROLOGICAL OFFICE, LONDON.

EDINBURGH.
15 DEC 1938
File

KEW OBSERVATORY, RICHMOND, SURREY, ENGLAND.

SEISMOLOGICAL BULLETIN FOR NOVEMBER 1938

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.	$\frac{Ak}{\pi l}$
		sec.	sec.		sec-1
N.	1937, Dec. 14	24.2	8.1	0.00	77.3
E.	1937, Dec. 15	24.8	8.3	0.00	76.3
Z.	1937, Dec. 30	13.3	13.0	-0.01	75.4

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. h.	m.	s.	PERIOD. sec.	AMPLITUDE. μ	Δ km.	REMARKS.
1938 November 4		e	3	50					Very small
		F	4	20					
5	ZNE	iP	8	55	59			9670	Compression. Amplitudes of iP as read in mm.
	ZNE	ipP		56	18				N. E. Z.
	ZNE	isP		56	31				-1.0 -0.7 +2.7
	ZE	i		57	2				giving azimuth about 35°
	Z	i		57	49				Felt in eastern Japan.
	Z	iPP		59	24				36° N., 141° E., with depth of
	ZNE	ipPP		59	47				focus about 85 km. (Strasbourg.)
	NE	isPP		59	56				
	ZNE	iPPP	9	1	40				
	Z	i		3	19				
	NE	iS		6	28				
	NE	i		6	40				
	NE	ipS		6	52				
	E	isS		7	0				Large movement.
	ZNE	iSP		7	20				
	ZNE	isPS		7	56				
	Z	i		8	24				
	N	i		11	58				
	E	iSS		12	20				
	E	i		12	40				
	NE	isSS		13	8				
	ZNE	i		13	37				
	ZNE	iSSS		15	49				
	Z	i		17	48				
	E	i		18	12				
	NE	i		19	52				
	NE	L		21	24				
	Z	L		24					
	E	M		26	55	36	-780		
	N	M		28	9	33	-480		
	Z	M		28	36	35	-360		
		F	-	-	-				Overlapped by next shock.

513, 3075, 3758, 125, Gp. 946, M & S. 12/38.

M.O. 425

KEW OBSERVATORY, RICHMOND, SURREY, ENGLAND.

SEISMOLOGICAL BULLETIN.

...NOVEMBER.....19.38...

DATE.	COMPT.	PHASE.	G.M.T. h.	m.	s.	PERIOD. sec.	AMPLITUDE. μ	Δ km.	REMARKS.
1938 November 5	ZNE	iP	11	2	54			9650	Dilatation.
	ZNE	ipP		3	15				Repetition of preceding shock.
	ZNE	isP		3	27				
	ZNE	iPP		6	35				
	NE	iPPP		8	22				
	ZNE	i		8	38				
	ZNE	i		10	3				
	NE	i		10	16				
	NE	iS		13	20				
	NE	ipS		13	45				large movement.
	ZN	isS		13	58				
	E	iSP		14	18				
	NE	isPS		14	40				
	Z	i		15	12				
	NE	i		15	40				
	ZE	iSS		19	35				
	NE	iSSS		22	32				
	NE	eL		28					
	Z	eL		33					
	N	M		42	59	22	+760		
	E	M		44	17	19	(± 530)*		* Maxima passing beyond limits of registration.
	Z	M		45	38	20	+810		
		F	15	25					
5	NE	e	22	6					No "Z" record.
	NE	eL		14					
		F		30					
6	NE	eP	9	6	30			9600	No "Z" record.
	NE	i		6	37				Pacific Ocean near Japan.
	NE	isP		7	1				37° N., 142° E., with depth of focus about 100 km. (Strasbourg.)
	N	iPP		9	55				
	E	isPP		10	21				
	NE	i		13	59				
	NE	iS		17	0				
	N	iPS		18	1				
	E	i		18	21				
	N	M		55	8	14	-200		
	E	M		55	53	14	-145		
		F	13	15					
6	NE	eL	18	3					No "Z" record.
		F		40					
6/7	NE	eP	21	51	21			9540	No "Z" record.
	NE	i		51	46				Repetition of the shock at 6d. 9h.
	NE	iS	22	1	58				
	E	i		2	12				
	NE	eL		17					
	E	M		33	16	16	+110		
	N	M		42	2	13	+ 65		
		F	1	0					

FORM 3718.

M.O. 425

KEW OBSERVATORY, RICHMOND, SURREY, ENGLAND.

SEISMOLOGICAL BULLETIN.

NOVEMBER 1938

DATE.	COMPT.	PHASE.	G.M.T. h.	m.	s.	PERIOD. sec.	AMPLITUDE. μ	Δ km.	REMARKS.
1938.									
November									
7	NE	eL	1	36					No "Z" record.
		F	-	-					Overlapped by next shock.
7	NE	eP	1	51	9			(9130)	No "Z" record.
	N	i(S)	2	1	18				
	E	i(PS)		1	38				large movement.
	NE	e		7	32				Possibly two shocks superposed.
	NE	eL		19					
	E	M		21	58	32	+26		
	N	M		23	22	32	+26		
		F	3	50					
7	NE	e	4	40					No "Z" record.
	NE	eL		58					
	N	M	5	14	53	13	- 9		
		F		55					
7	Z	iP	19	46	20			9410	Compression. N.E., e.
	NE	iS		56	51				
	NE	eSS	20	2	13				
	E	iSSS		6	2				
	Z	i		8	57				
	NE	eL		15					
	Z	eL		23					
	E	M		24	47	19	-14		
	Z	M		32	52	13	+12		
		F	21	20					
8	ZNE	e	3	17	0				Felt near Vienna
	NE	i		17	26				
	N	i		17	38				
	NE	i		17	55				
		F		25					
8		e	11	45					
		F	12	25					
8		e	13	55					
		F	14	25					
9	ZNE	iP	9	28	37				Compression.
	ZNE	i		29	4				No records 9h 39m to 9h 46m
	NE	eL		57					during changing of charts,
	Z	eL	10	5					
	E	M		6	58	18	-32		
	N	M		15	55	13	-34		
	Z	M		16	3	13	-22		
		F	12	25					
9	ZNE	eL	16	57					
		F	17	20					
10	E	eL	7	30					
	ZN	eL		38					
		F	8	5					

FORM 3718.

KEW OBSERVATORY, RICHMOND, SURREY, ENGLAND.

SEISMOLOGICAL BULLETIN.

NOVEMBER 1938

DATE.	COMPT.	PHASE.	G.M.T. h.	m.	s.	PERIOD. sec.	AMPLITUDE. μ	Δ km.	REMARKS.
1938									
November									
10	Z	eP	11	1	1			9500	
	Z	ePPP		5	3				
	E	iSKS		10	23				
	N	iSKKS		10	36				
	NE	iPS		11	29				
	NE	eL		30					
	Z	eL		36					
	E	M		39	45	18	+10		
	Z	M		45	2	16	-12		
	N	M		45	42	14	-15		
		F	13	15					
10	ZN	iP	20	30	6			8190	Compression. E., e.
	ZNE	i		30	15				Amplitudes as read in mm:-
	ZNE	iPP		32	51				N E Z
	ZNE	iPPP		34	29				iP -1.0 +(0.2) +2.2
	ZE	i		37	1				i -6.2 +2.2 +16.0
	ZE	iS		39	35				Azimuth between N and NNW.
	ZN	iPS		40	9				Pacific Ocean south of Alaska.
	ZNE	iPPS		40	43				55° N., 157° W. (Strasbourg).
	N	iSS		44	53				
	NE	i		46	13				
	N	iSSSS		48	57				
	Z	i		54	50				
	ZN	iLR		56	17				
	N	M*		57	17	32	(-9000)		*Galitzin traces passing beyond limits of registration.
	N	M*		59	25	27	(+8000)		Approximate maxima from record of Wood-Anderson seismograph.
	F		-	-	-				Overlapped by following shocks
10	N	eP	22	7	(7)			8030	From Wood-Anderson record.
	N	iS		16	28				Obscured by surface waves
	N	iPS		16	39				from preceding shock.
		F	-	-	-				
11	ZN	iP	1	9	10			8030	Compression. E., e.
	N	i		9	19				
	ZNE	iS		18	31				
	NE	iPS		18	49				
	NE	i		19	14				
	ZNE	eL		33					
	E	M		36	24	29	+36		
	Z	M		41	24	22	+29		
		F	-	-	-				
11	E	e (S)	3	21	1				Lost in later movements from the great earthquake at 10d 20h.
	ZNE	eL		35					
		F	4	30					
11	ZNE	eL	5	30					
		F	6	10					
11	ZNE	eL	6	35					
		F	7	5					

KEW OBSERVATORY, RICHMOND, SURREY, ENGLAND.

SEISMOLOGICAL BULLETIN.

NOVEMBER 1938

DATE.	COMPT.	PHASE.	G.M.T. h.	m.	s.	PERIOD. sec.	AMPLI-TUDE. μ	Δ km.	REMARKS.
1938 November									
11	Z	eP	8	42	13				
	ZNE	eL	9	5					
	Z	M		37	57	18	+6		
		F	10	25					
12		e	8	54					
		F	9	30					
12	Z	eP	15	1	45			9190	
	NE	eS		12	5				
	ZNE	eL		30					
	E	M		35	9	20	+7		
	Z	M		44	12	16	-9		
		F	17	5					
13	NE	eL	5	44					
	Z	eL		52					
		F	6	15					
13	ZN	iP	13	25	50			9590	Compression. E., e.
	ZN	i		26	13				
	NE	iSKS		35	51				
	NE	iS		36	29				
	E	eL		49					
	ZN	L		56					
	Z	M		56	37	31	+26		
	N	M		57	18	30	+26		
	E	M		58	29	25	+27		
		F	14	55					
13/14	Z	eP	22	44	11			(9700)	
	ZE	iSP		55	12				
	E	eSS	23	0	51				
	NE	eSSS		4	29				
	E	e		4	53				
	NE	eL		8					
	Z	eL		12					
	E	M		22	48	19	+76		
	N	M		29	16	15	+59		
	Z	M		29	23	15	+72		
		F	1	35					
14	NE	eL	3	18					
	Z	eL		27					
		F		55					
14	ZNE	eL	13	10					
	Z	M		23	2	22	+12		
	E	M		23	29	23	+11		
		F	14	20					
15	ZNE	eL	10	28					
		F	11	5					
15		e	12	0					
		F		10					Very small

FORM 8718.

M.O. 425

KEW OBSERVATORY, RICHMOND, SURREY, ENGLAND.

SEISMOLOGICAL BULLETIN.

NOVEMBER 1938

DATE.	COMPT.	PHASE.	G.M.T. h.	m.	s.	PERIOD. sec.	AMPLITUDE. μ	Δ km.	REMARKS.
1938 November									
15	ZNE	eL	16	10					
		F		45					
15		e	19	55					
		F	20	10					
15	Z	eP	21	13	58			10700	
	Z	ePP		18	14				
	E	iSKS		24	51				
	NE	eS		25	27				
	ZE	eSP		27	54				
	NE	eSS		32	30				
	ZNE	eL		47					
	Z	M	22	2	34	19	+13		
	E	M		8	46	18	+19		
		F	23	50					
16	ZNE	e	5	56	57				
	ZNE	eL	6	12					
		F	7	5					
16	Z	iP	11	20	47			9310	N., e.
	N	iS		31	13				
	E	i		31	19				
	ZNE	eL		49					
	E	M		58	54	22	+8		
		F	12	35					
17	ZNE	iP	4	6	0			8070	Compression.
	ZNE	iPcP		6	14				
	ZNE	iPP		8	45				
	ZNE	ePPP		10	23				
	E	iS		15	23				
	NE	i		15	31				Pacific Ocean south of Alaska.
	E	i		15	35				55°N., 158°W. (U.S.C.G.S.)
	E	L		25					
	ZN	L		29					
	E	M		32	50	29	-220		
	Z	M		34	9	28	+230		
	N	M		34	17	26	+240		
	ZNE	eL2	6	19					L via Antipodes.
	E	M		36	48	20	+7		
	N	M		37	1	19	-11		
	Z	M		37	5	19	-12		
		F	8	20					
17		e	21	50					Very small.
		F	22	5					
18	NE	eL	19	10					
	Z	eL		20					
		F		45					
19	E	eL	6	25					
	ZN	eL		30					
		F	7	10					

FORM 3718.

M.O. 425

KEW OBSERVATORY, RICHMOND, SURREY, ENGLAND.

SEISMOLOGICAL BULLETIN.

NOVEMBER 1938

DATE.	COMPT.	PHASE.	G.M.T. h.	m.	s.	PERIOD. sec.	AMPLITUDE. μ	Δ km.	REMARKS.
1938 November 21	NE	e	1	33	2				
	NE	e		33	58				
	NE	eL		49					
	Z	eL		53					
	E	M		55	59	24	+6		
	Z	M		57	36	14	+5		
		F	2	25					
21	NE	eL	7	42					
	Z	eL		48					
		F	8	10					
21		e	15	33					Very small
		F		55					
22	Z	iP	1	26	44			9690	N.E., e.
	ZNE	i		27	2				
	NE	iSKS		37	15				
	ZNE	iS		37	28				
	E	i		37	53				
	E	iPS		38	17				
	NE	eL		54					Love waves.
	E	M		59	6	31	+24		
	N	M		59	24	31	+17		
	ZNE	eL	2	2					Rayleigh waves.
	E	M		10	24	15	+32		
	N	M		10	53	18	+27		
	Z	M		11	7	15	-30		
		F	4	45					
22		e	8	57					Very small
		F	9	25					
25	ZE	iP	0	12	8			1760	
	E	i		12	56				
	N	iS		15	9				
	E	i		15	22				
	ZNE	L		18					
	E	M		19	20	15	+6		
	Z	M		19	24	16	+8		
		F		45					
25	NE	eL	9	0					
	Z	eL		10					
	Z	M		15	24	20	+12		
		F		50					
29	NE	eL	14	23					Confused by microseisms.
	Z	eL		28					
		F	15	0					

FORM 3718.

M.O. 425

KEW OBSERVATORY, RICHMOND, SURREY, ENGLAND.

SEISMOLOGICAL BULLETIN.

NOVEMBER 19 38

DATE.	COMPT.	PHASE.	G.M.T. h.	m.	s.	PERIOD. sec.	AMPLITUDE. μ	Δ km.	REMARKS.
1938 November 30	ZNE	eP	2	42	39			9670	Confused by microseisms.
	E	i		52	58				
	NE	iSKS		53	2				
	E	iSKKS		53	10				
	N	iS		53	22				
	NE	iPS		54	10				
	E	iSS		58	48				
	ZNE	eL	3	9					
	E	M		20	44	20	+56		
	N	M		22	28	20	-68		
	Z	M		25	13	19	+59		
		F	5	20					

(Signed)

F.J.W. Whipple
Superintendent
5th December 1938.

FORM 3718.

M.O. 425

AIR MINISTRY, METEOROLOGICAL OFFICE, LONDON.

KEW OBSERVATORY, RICHMOND, SURREY, ENGLAND.

SEISMOLOGICAL BULLETIN FOR DECEMBER 1938.

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.	$\frac{Ak}{\pi l}$
		sec.	sec.		sec^{-1}
N.	1937, Dec. 14	24.2	8.1	0.00	77.3
E.	1937, Dec. 15	24.8	8.3	0.00	76.3
Z.	1937, Dec. 30	13.3	13.0	-0.01	75.4

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. h.	m.	s.	PERIOD. sec.	AMPLITUDE. μ	Δ km.	REMARKS.
1938 December									
1	NE	eL	3	5					Confused by microseisms.
	Z	eL		12					
		F		50					
2	ZNE	e	22	41	0				
	NE	eL		49					
	Z	eL		52					
	N	M		53	54	13	+10		
		F	23	20					
3		e	1	30					Very small.
		F		50					
3	NE	i(S)	12	34	54				
	NE	eL		53					
	Z	eL	13	2					
	E	M		2	36	19	+12		
	Z	M		7	7	18	+13		
		F	14	0					
4		e	6	55					Very small confused by microseisms.
		F	7	25					
4	ZNE	eL	17	30					
		F	18	30					
5		e	1	7					Very small.
		F		20					

FORM 3717.

531,8075, 3758,125, 6p. 946, M. & S. 1/39.

M.O. 425

KEW OBSERVATORY, RICHMOND, SURREY, ENGLAND.

SEISMOLOGICAL BULLETIN.

DECEMBER 1938

DATE.	COMPT.	PHASE.	G.M.T. h.	m.	s.	PERIOD. sec.	AMPLITUDE. μ	Δ km.	REMARKS.
1938 December 6/7	Z	iP	23	13	50			10900	
	Z	iPP		17	41				
	E	iS		25	27				
	NE	eL		43					
	Z	eL		50					
	N	M		51	45	18	-74		
	E	M		54	34	18	-80		
	Z	M		59	59	14	-48		
		F	1	15					
7		e	11	0					Very small
		F		15					
7	ZE	i	13	45	16				Compression
	NE	i		46	27				
	E	i		52	47				Confused by microseisms.
	Z	e		54	23				
	E	i		55	3				
	E	e		56	31				
	ZNE	i	14	2	43				
	NE	eL		22					
	Z	eL		28					
	N	M		33	36	28	+29		
	Z	M		34	51	26	+27		
		F	16	15					
9	Z	iP	4	6	24			7890	N.E., e.
	E	iS		15	38				
	E	iPS		15	56				
	NE	iScS		16	24				
	ZNE	eL		30					
	Z	M		39	12	19	-10		
		F	5	15					
9		e	5	49					
		F	6	10					
13	E	i(S)	17	48	32				
	NE	eL	18	8					
	Z	eL		13					
	E	M		16	29	18	-10		
	Z	M		19	17	18	+ 5		
		F		55					
14/15	-	-	-	-	-				No records, 14d. 16h. 18m. to 15 d. 18h. 3m.
16*	E	e	17	59	5				
	NE	e	18	7	1				
	NE	eL		49					*Tabulations from Wood-Anderson seismograms; Galitzin instruments not recording
	N	M	19	5	41	17	(+120)		
	E	M		6	41	18	(+120)		
		F		30					
17*	NE	eL	0	50					
		F	1	10					

FORM 8718.

M.O. 425

KEW OBSERVATORY, RICHMOND, SURREY, ENGLAND.

SEISMOLOGICAL BULLETIN.

.....DECEMBER.....19..38..

DATE.	COMPT.	PHASE.	G.M.T. h.	m.	s.	PERIOD. sec.	AMPLITUDE. μ	Δ km.	REMARKS.
1938									
December									
17	ZNE	eP	16	45	8			7250	Confused by microseisms.
	NE	ePPP		49	18				
	E	eS		53	50				
	ZNE	eL	17	4					
	Z	M		11	14	14	+37		
	N	M		11	26	16	-38		
	E	M		11	46	12	-26		
		F		45					
19	ZNE	eL	19	7					
		F		35					
21	ZNE	eL	13	25					
		F	14	10					
22	NE	eL	17	40					
	Z	eL		48					
	N	M		52	47	23	-15		
		F	18	10					
23	ZNE	eL	18	55					Confused by microseisms.
		F	19	5					
26	NE	i	22	10	32				
	E	i		10	39				
	N	i		14	0				
	N	i		14	29				
	NE	i		14	40				
	ZNE	L		15					
		F		25					
30	ZNE	eL	3	55					
		F	4	15					

(Signed)

F.J.W. Whipple
Superintendent
5th January 1939.

FORM 3718.