東京帝國大學地震研究所

地震觀測報告

昭和七年 第一册

SEISMOMETRICAL REPORT

OF THE

EARTHQUAKE RESEARCH INSTITUTE

TOKYO IMPERIAL UNIVERSITY

1932

Part 1

(January—March 1932)

Published by the Institute
Tokyo 1932

Seismometrical Report.

(Earthquake Research Institute, Tôkyô, Japan.)

(Part 1, 1932.)

(January 1.—March 31, 1932.)

(1) Sensible earthquakes in Tôkyô for the period January 1—March 31, 1932.

List I.

Time = Central standard time of Japan (Civil mean time of the meridian 135°E.)

Notation :

Prel. tr. = preliminary tremor.
N.S. = North-south component.
E.W. = East-west component.
2A = Range of motion.
T = Period of the earthquake motion.
λ = Longitude.
φ = Latitude.
D = Depth of the earthquake focus.

Intensity : 0 (insensible), I (slight), II (rather weak), III (weak), IV (rather strong), V (strong), VI (violent).

No.	Station	Date	Time of occurrence	Duration		Maximum Motion				Direction of initial motion	Epicentre		Depth	Intensity
				Prel. tr.	Total	N.S.		E.W.			λ (E)	φ (N)		
						2A	T	2A	T					
			h m s	s	m	mm	s	mm	s		°	°	km	
1	Tôkyô	Feb. 4	9 32 58·2	7·0	2	0·068	0·22	0·058	0·22		139·95	36·09	30	I
	Kamakura		9 33 03·4	10·0	1·5	0·016	0·32	0·001	0·32					
	Misaki			12·8	2·5	0·020	0·48	0·019	0·32					I
	Kiyosumi			11·4	2	0·008	0·51	0·007	0·51					
	Titibu			9·2	1	0·002	0·18	0·004	0·35					
	Tôgane			10·6	1	0·008	0·27							
	Tukuba		9 32 57·7	6·5	1·4									I
	Mitaka		9 33 00·5	9·3	2	0·020	0·22	0·020	0·22					

(to be continued.)

List I. (*continued.*)

No.	Station	Date	Time of occurrence	Duration		Maximum motion				Direction of initial motion	Epicentre		Depth	Intensity
				Prel. tr.	Total	N.S		E.W.			λ (E)	φ (N)		
						2A	T	2A	T					
			h m s	s	m	mm	s	mm	s		°	°	km	
2	Tôkyô	Feb. 4	14 44 09·6	9·9	5	0·244	0·32	0·140	0·32	N32°E	140·00	35·94	50	II
	Kamakura		14 44 13·6	11·8	4	0·052	0·51	0·030	0·40					
	Misaki			14·6	6	0·074	0·52	0·104	0·52	N30°E				I
	Kiyosumi													
	Titibu			13·4	3	0·012	0·54	0·008	0·54					
	Tôgane			9·2	3	0·046	0·53	0·006	0·85					
	Tukuba													
	Mitaka		14 44 12·0	11·2	6	0·064	0·23	0·058	0·23					I
3	Tôkyô	12	16 29 44·2	9·2	3	0·037	0·20	0·026	0·25		140·18	35·63	60	I
	Kamakura		16 29 44·1	10·4	3	0·032	0·64	0·046	0·64					
	Misaki			12·4	3·5	0·050	0·69	0·029	0·55					I
	Kiyosumi			11·1	3	0·014	0·59	0·022	0·71					
	Titibu			16·3	2·5	0·012	1·74	0·008	1·74					
	Tôgane			8·9	2·5	0·030	0·45	0·024	0·54					
	Tukuba													
	Mitaka		16 29 44·5	11·1	5	0·024	0·27	0·028	0·27					I
4	Tôkyô	16	23 12 28·1	15·9	10	0·100	0·50	0·040	0·50		146·07	35·57	30	I
	Kamakura		23 12 30·4	14·9	6	0·100	0·58	0·034	0·58					
	Misaki			21·2	5	0·156	1·40	0·068	1·40					
	Kiyosumi		23 12 22·2	10·1	6	0·112	0·45	0·110	0·45	S45°W				II
	Titibu			24·0	6	0·044	1·40	0·026	1·40					
	Tôgane			10·0	6	0·248	0·75	0·120	0·67					II
	Tukuba		23 12 26·8	15·5	2									
	Mitaka		23 12 32·9	17·0	11	0·065	1·38	0·065	1·20					
5	Tôkyô	19	7 36 22·0	7·7	3	0·104	0·17	0·115	0·17	N32°E	140·02	35·97	40	II
	Kamakura		7 36 30·6	9·9	3	0·014	0·41	0·054	0·73					
	Misaki			13·1	3	0·022	0·44	0·027	0·58					I
	Kiyosumi			13·2	3	0·010	0·65	0·008	0·90					
	Titibu													
	Tôgane			9·3	3	0·020	0·60	0·024	0·60					
	Tukuba		7 36 20·0	5·4										III
	Mitaka		7 36 24·2	8·4	4	0·153	0·45	0·146	0·48					I
6	Tôkyô	21	21 07 02·5	6·6	3	0·090	0·32	0·078	0·32		139·59	35·47	30	I
	Kamakura		21 07 06·5	4·8	1·5	0·072	0·38	0·042	0·28					
	Misaki			6·8	3	0·120	0·65	0·086	0·54					I
	Kiyosumi			9·7	3	0·014	0·66	0·024	0·66					
	Titibu			11·2	2	0·008	0·63	0·006	0·52					
	Tôgane			10·3	3	0·022	0·46	0·020	0·46					
	Tukuba													
	Mitaka		21 07 08·1	5·2	3	0·200	0 32	0·263	0·36					I
7	Tôkyô	26	15 11 47·8	7·1	4	0·710	0·45	0·810	0·45		140·09	35·79	35	II
	Kamakura		15 11 48·4	11·4	5	0·120	0·65	0·120	0·43					II
	Misaki			11·5	5	0·166	0·51	0·129	0·51	N45°E				I
	Kiyosumi		15 11 46·4	9·8	5	0·040	0·61	0·092	0·66					II
	Titibu			12·6	4·5	0·020	0·78	0·026	0·78	S78°E				
	Tôgane			7 8	4	0·090	0·67							I
	Tukuba		15 11 44·2	8·5	2									I
	Mitaka		15 11 47·2	9·2	3	0·140	0·66	0·120	0·66					

(*to be continued.*)

List I. (*continued.*)

No.	Station	Date	Time of occurrence	Duration		Maximum motion				Direction of initial motion	Epicentre		Depth	Intensity
				Prel. tr.	Total	N.S.		E.W.			λ (E)	φ (N)		
						2A	T	2A	T					
			h m s	s	m	mm	s	mm	s		°	°	km	
8	Tôkyô	Feb. 26	16 24 04·4	10·9	2	0·052	0·48	0·074	0·42		140·11	35·88	70	I
	Kamakura													
	Misaki			13·6	2	0·014	0·93	0·014	1·00					
	Kiyosumi			14·8	2	0·004	0·77							
	Titibu			14·0	2	0·002	0·75	0·001	0·78					
	Tôgane													
	Tukuba		16 24 03·4	9·2	1									
	Mitaka		16 24 06·1	11·3	2	0·021	0·40	0·014	0·40					
9	Tôkyô	March 2	0 42 41·2	21·7	4	0·084	0·69	0·130	0·69		138·09	35·07	30	I
	Kamakura		0 42 37·2	16·5	3	0·054	0·42	0·050	0·42					
	Misaki			17·9	4	0·018	0·48	0·035	0·95					I
	Kiyosumi			22·8	3	0·008	1·70	0·010	1·90					
	Titibu													
	Tôgane			23·5	3	0·024	2·50	0·028	2·35					
	Tukuba													
	Mitaka		0 42 39·0	18·7	4	0·125	0·72							
10	Tôkyô	2	4 57 30·1	8·0	3	0·120	0·22	0·120	0·22	S30°W.u	140·14	36·04	30	II
	Kamakura		4 57 36·8	10·4	2	0·044	0·48	0·016	0·27					
	Misaki			12·7	3	0·017	0·63	0·025	0·63	NE				I
	Kiyosumi			12·5	3	0·016	0·57	0·008	0·57	Nslight W				
	Titibu													
	Tôgane			10·9	2	0·016	0·75	0·024	0·75					
	Tukuba		4 57 29.0	5·7										II
	Mitaka		4 57 32·3	9·7	3	0·080	0·97							
11	Tôkyô	3	3 38 25·6	8·9	3	0·047	0·46	0·052	0·46		140·05	35·95	50	I
	Kamakura													
	Misaki			13·4	2	0·007	0·63	0·008	0·51					
	Kiyosumi			10·1	2	0·004	0·40	0·004	0·40					
	Titibu			11·0	2	0·002	0·63	0·002	0·63					
	Tôgane			9·4	2	0·008	0·07	0·008	0·37					
	Tukuba		3 38 22·6	11·8	1									I
	Mitaka		3 38 26·6	9·5	2·5	0·016	0·26	0·016	0·26					
12	Tôkyô	5	3 20 28·3	8·2	3	0·056	0·44	0·036	0·44		139·86	35·66	60	I
	Kamakura													
	Misaki			10·5	2·5	0·010	0·51	0·008	0·51					
	Kiyosumi			14·7	2	0·012	0·69	0·020	0·69					
	Titibu			15·0	2	0·008	0·41	0·006	0·41					
	Tôgane			10·8	2·5	0·020	0·45	0·012	0·45					
	Tukuba		3 20 32·5	10·5										
	Mitaka		3 20 32·0	9·8	2	0·018	0·46	0·025	0·50					
13	Tôkyô	8	18 52 28·4	8·0	3	0·055	0·51	0·045	0·51		140·20	35·70	50	I
	Kamakura		18 52 30·0	9·5	2	0·020	0·48	0·040	0·48					
	Misaki			9·8	2	0·025	0·50	0·032	0·50					
	Kiyosumi			8·6	2	0·028	0·77	0·032	0·77					
	Titibu													
	Tôgane			7·7	3	0·048	0·53	0·054	0·53					
	Tukuba		18 52 34·3	9·0	1									
	Mitaka		18 52 30·4	10·0	3	0·044	0·63	0·043	0·50					

(*to be continued.*)

List I. (*continued.*)

No.	Station	Date	Time of occurrence	Duration		Maximum motion				Direction of initial motion	Epicentre		Depth	Intensity
				Prel. tr.	Total	N.S		E.W.			λ (E)	φ (N)		
						2A	T	2A	T					
			h m s	s	m	mm	s	mm	s		°	°	km	
14	Tôkyô	Mar. 10	21 52 52·7	14·2	5	0·053	0·22	0·045	0·22		140·64	36·36	50	I
	Kamakura		21 53 15·5	15·1	2	0·012	0·38	0·020	0·38					
	Misaki			21·0	4	0·017	0·85	0·012	0·60					
	Kiyosumi			18·9	3	0·008	1·12	0·010	1·12					
	Titibu													I
	Tôgane			13·9	3	0·032	0·37	0·027	0·37					II
	Tukuba		21 52 45·4	7·6	1·8									
	Mitaka		21 52 56·4	16·6	5	0·025	0·94	0·043	0 71					
15	Tôkyô	14	0 48 58·5	7·5	4	0·048	0·22	0·046	0·21		140·16	35·98	40	I
	Kamakura		0 49 04·4	11·0	3	0·004	0·21	0·034	0·74					
	Misaki			14·0	4	0·030	1·40	0·025	0·94					
	Kiyosumi			14·2	4	0·016	1·14	0·024	1·33					
	Titibu													
	Tôgane			8·0	3	0·012	0·76	0·006	0·58					
	Tukuba		0 48 53·1	5·6	2									
	Mitaka		0 48 58·6	10·0	4	0·050	0·80	0·103	0·72					
16	Tôkyô	16	20 04 32·5	8·7	4	0·094	0·28	0·060	0·28		140·39	35·40	30	I
	Kamakura		20 04 35·5	8·4	3	0·052	0·48	0·060	0·67					
	Misaki			10·3	4	0·050	0·69	0·048	0·69					
	Kiyosumi		20 04 27·3	5·4	3·2	0·120	0·50	0·084	0·50					II
	Titibu			16·7	3	0·020	1·08	0·016	1·08					
	Tôgane			5·0	3	0·630	0·38	0·586	0·38					II
	Tukuba		20 04 37·3	12·2										
	Mitaka		20 04 32·2	10·0	3	0·066	0·48	0·050	0·36					
17	Tôkyô	21	5 12 44·6	7·3	2	0·028	0·23	0·020	0·22		139·93	36·07	40	I
	Kamakura		5 12 51·7	13·5	2	0·006	0·37	0·006	0·37					
	Misaki			15·4	2	0·008	0·64	0·003	0·51					
	Kiyosumi													
	Titibu			10·4	2	0·010	0·88	0.003	0·88					
	Tôgane			9·5	2	0·008	0·20	0·010	0·20					
	Tukuba		5 12 38·2	5·6	1									
	Mitaka		5 12 46·6	9·6	2	0·010	0·38	0·012	0·37					
18	Tôkyô	24	0 27 12·1	10·7	5	0·064	0·27	0·064	0·32		140·57	35·50	40	I
	Kamakura		0 27 17·2	11·7	3	0·030	0·49	0·020	0·49					
	Misaki			13·2	3	0·021	0·77	0·023	0·64					
	Kiyosumi			7·8	2	0·032	0·42	0·024	0·42					II
	Titibu			16·3	2·5	0·008	1·36	0·006	1·36					
	Tôgane			7·5	3	0·100	0·49	0·276	0·49					II
	Tukuba		0 27 14·0	9·5	2									
	Mitaka		0 27 14·6	14·6	5	0·018	0·40	0·017	0·52					
19	Tôkyô	24	7 47 22·9	8·3	3·5	0·088	0·32	0·228	0·32		139·61	35·82	50	II
	Kamakura		7 47 25·8	8·8	2	0·106	0·60	0·080	0·50					I
	Misaki			9·3	4	0·032	0·62	0·034	0·54					I
	Kiyosumi			12·3	3	0·016	0·67	0·012	0·67					
	Titibu			9·5	2	0·040	0·67	0·036	0·67					
	Tôgane			12·5	2·5	0·016	1·12	0·016	1·10					
	Tukuba		7 47 26·0	10·4	2									
	Mitaka		7 47 22·9	7·0	6	0·172	0·27	0·132	0·45	N14°E, d.				II

(2) *No important distant earthquake* occurred during the period.

(3) *Observation of the acceleration of the earthquake.*

Reports of earthquake observation hitherto have been restricted largely to measurements of ground displacements, with scarcely any data on their intensities beyond that expressed with reference to the bodily sensations produced by the shock. With the intention, however, of Professor M. Ishimoto's acceleration seismograph, which in a simple way registers the intensity of earthquake in a scientific manner, we shall in future include the acceleration of earthquake motion in our reports of earthquake.

In this report, the acceleration seismograph records of the earthquakes of Nos. 2, 5, 7 and 10 are published. From the bodily sensation, the intensities of these earthquakes in Tôkyô were estimated to II.

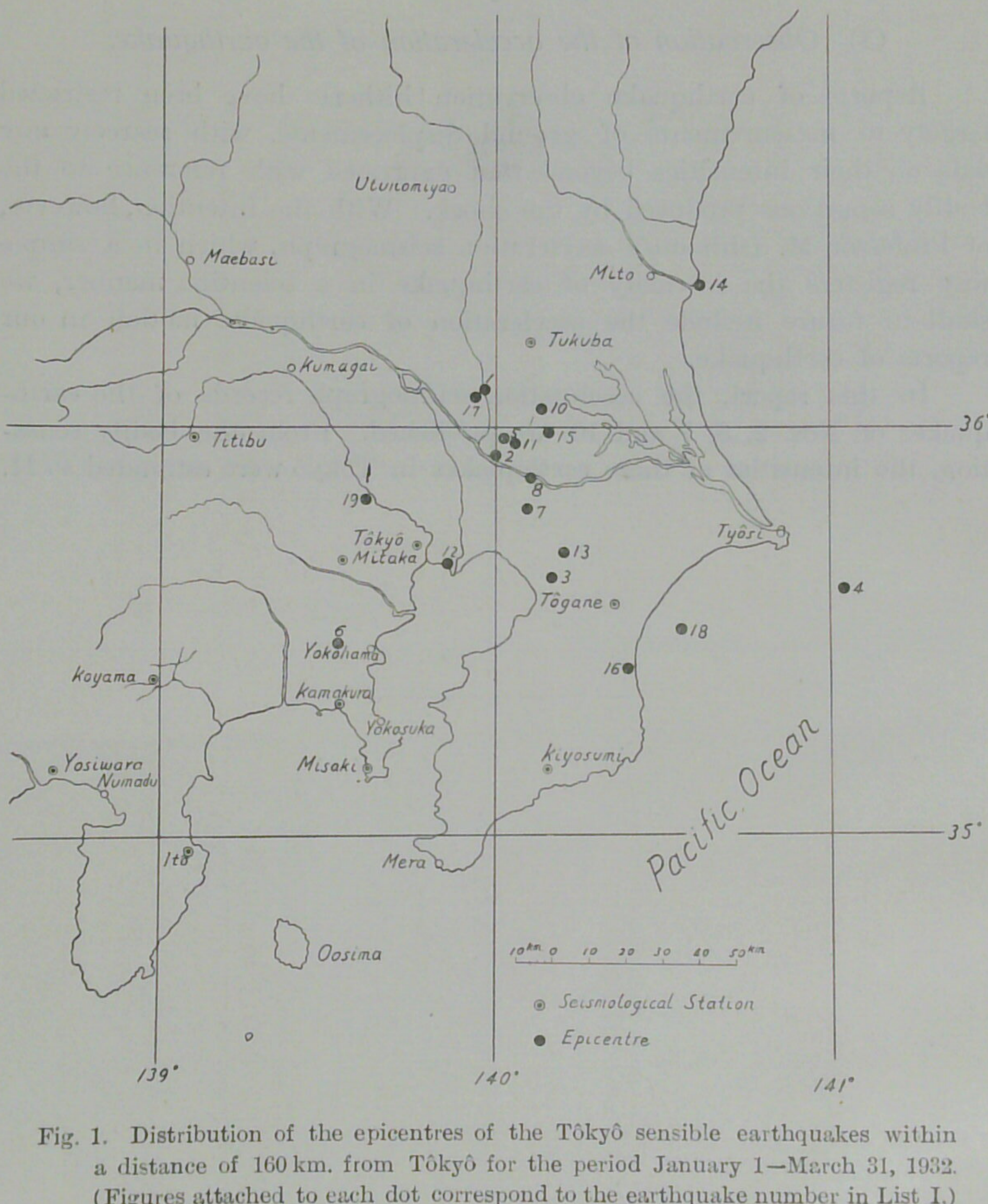
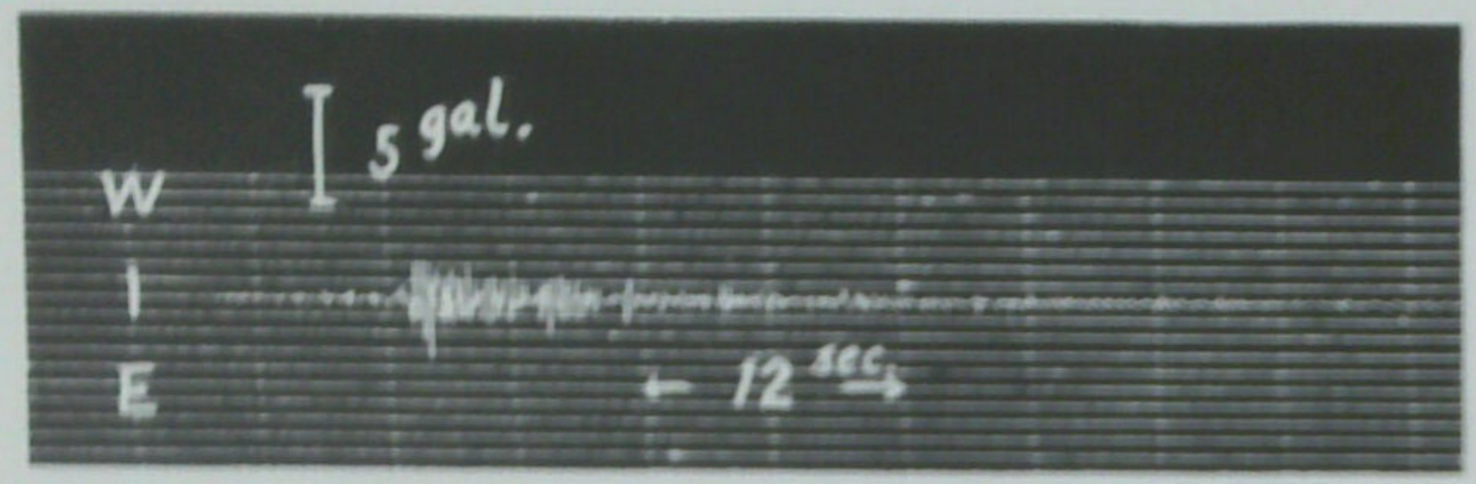


Fig. 1. Distribution of the epicentres of the Tôkyô sensible earthquakes within a distance of 160 km. from Tôkyô for the period January 1—March 31, 1932. (Figures attached to each dot correspond to the earthquake number in List I.)



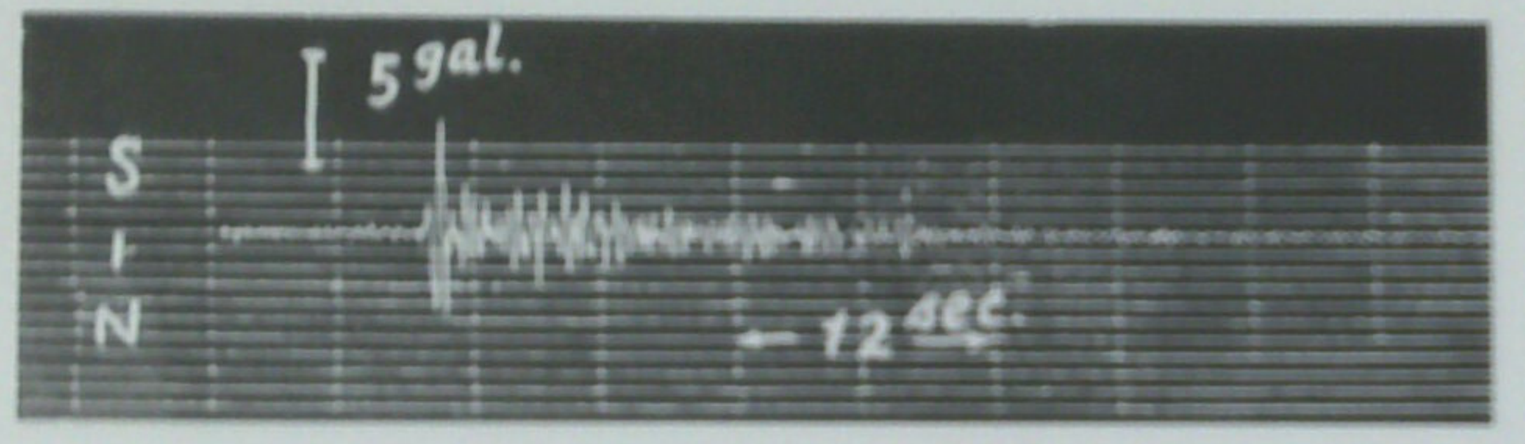


Fig. 1. The Earthquake of Feb. 4 (No. 2.)
(Observed at Hongô, Tôkyô.)
Ishimoto acceleration seismograph diagram.

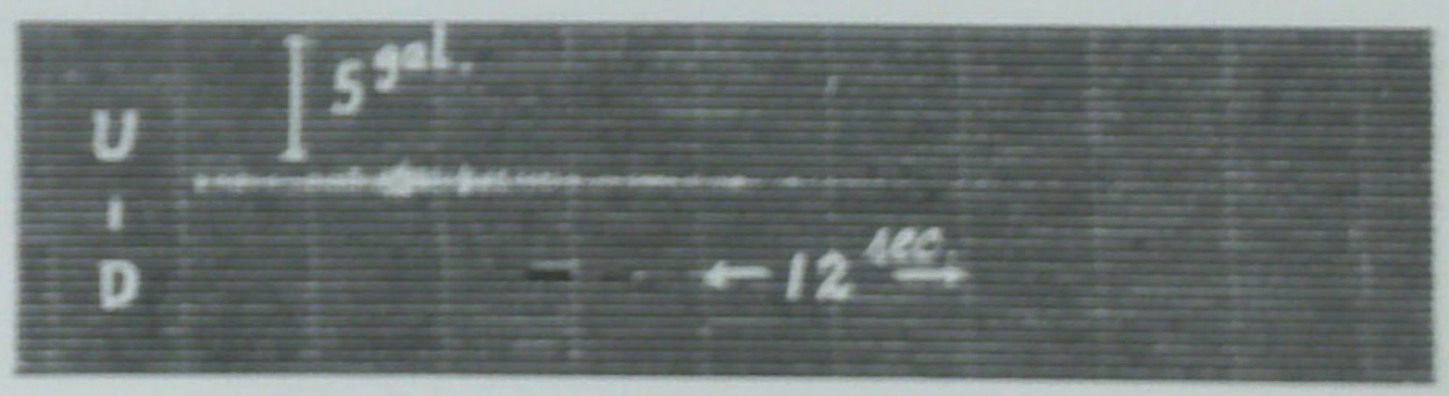
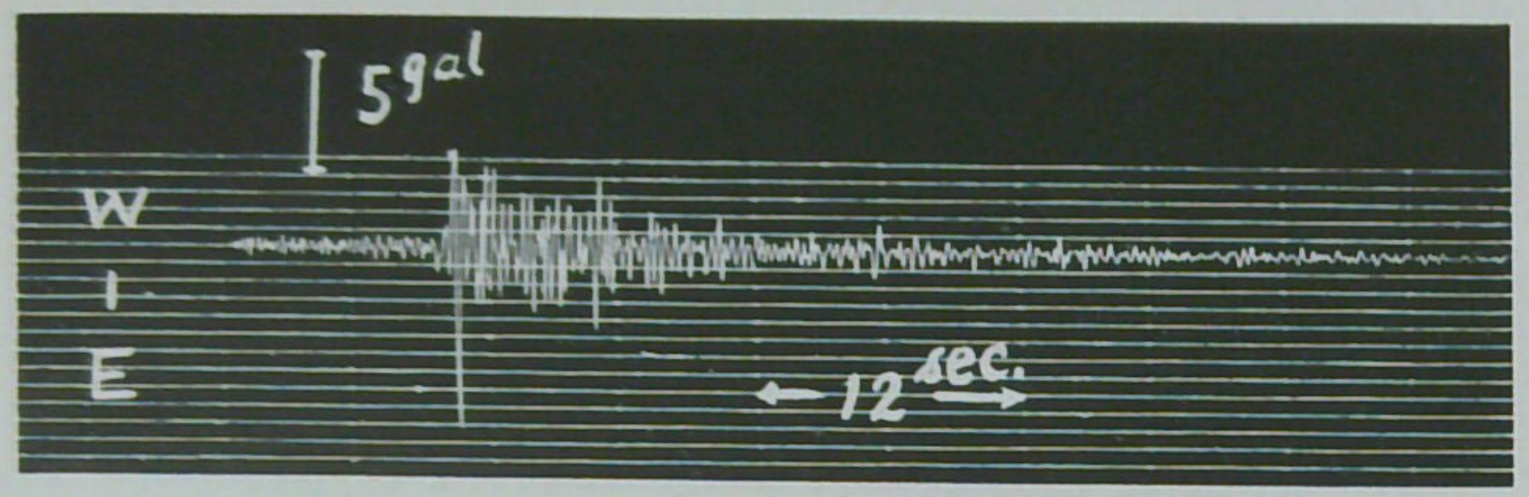
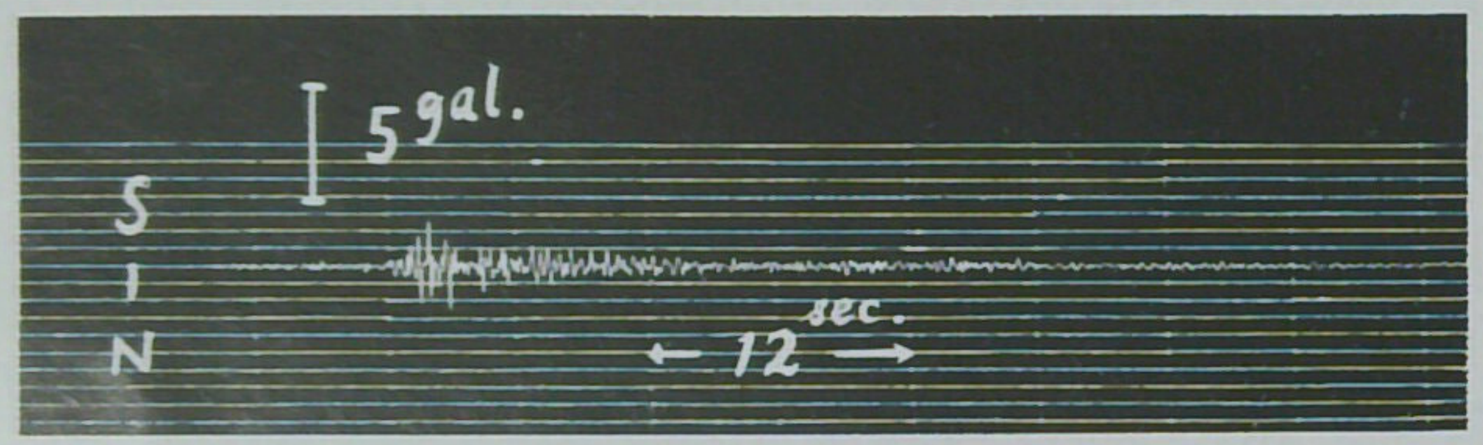


Fig. 2. The Earthquake of Feb. 19 (No. 5.)
(Observed at Hongô, Tôkyô.)
Ishimoto acceleration seismograph diagram.





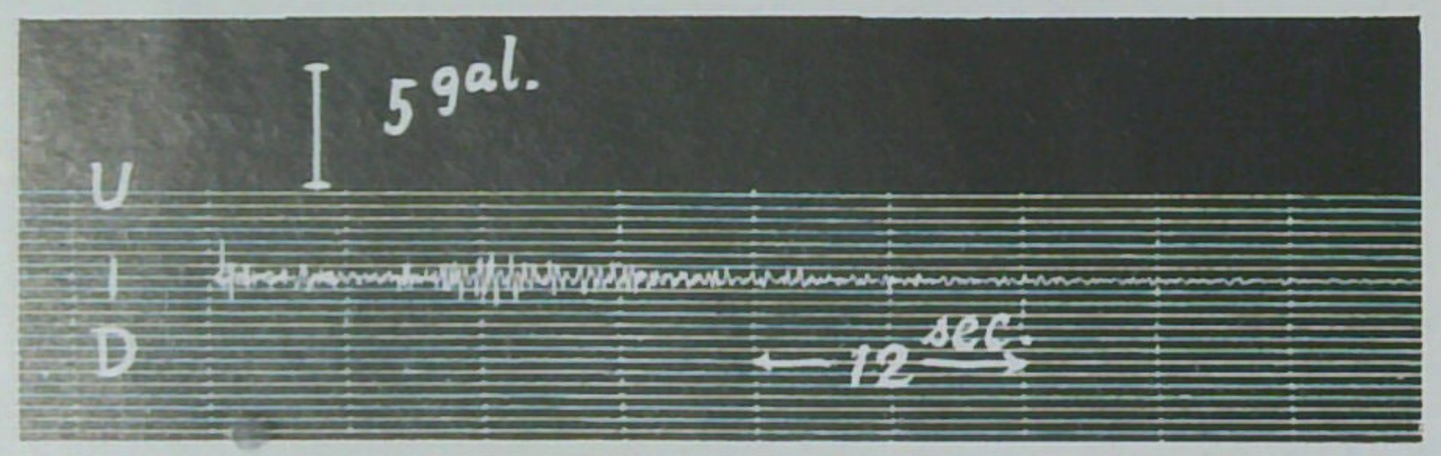


Fig. 3 The Earthquake of Feb. 26 (No. 7.)
(Observed at Hongô, Tôkyô.)
Ishimoto acceleration seismograph diagram.

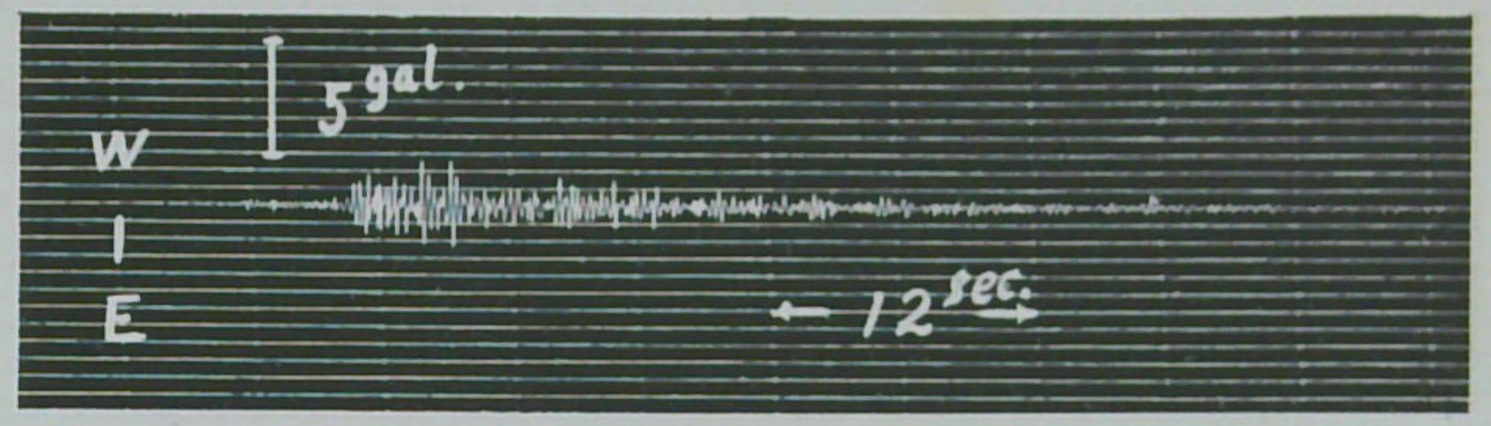


Fig. 4. The Earthquake of March 2 (No. 10.)
(Observed at Hongô, Tôkyô)
Ishimoto acceleration seismograph diagram.

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(Part 2, 1932.)

(April 1.—June 30, 1932.)

(1) Sensible earthquakes in Tôkyô.

List I.

Time = Central standard time of Japan (Civil mean time of the meridian 135°E.)

Notation :

Prel. tr. = Preliminary tremor.
N.S. = North-South component.
E.W. = East-West component.
2A = Range of motion.
T = Period of earthquake motion.
λ = Longitude.
φ = Latitude.
D = Depth of the earthquake focus.

Intensity : 0 (insensible), I (slight), II (rather weak), III (weak), IV (rather strong), V (strong), VI (violent).

No.	Station	Date	Time of occurrence	Duration		Maximum motion				Direction of initial motion	Epicentre		Depth	Intensity
				Prel. tr.	Total	N.S.		E.W.			λ (E)	φ (N)		
						2A	T	2A	T					
			h m s	s	m	mm	s	mm	s				km	
20	Tôkyô	April 5	4 18 01·6	65·9	20	0·512	0·67	0·224	0·67		141°0	31°5		II
	Kamakura		4 18 00·9	60·2	12	0·068	0·76	0·870	2·18					II
	Misaki			62·0	20	0·469	1·10	0·650	1·10					II
	Kiyosumi			59·5	21	1·580	2·65	0·980	2·22					I
	Titibu													
	Tôgane			67·0	20	0·600	1·61	0·740	1·50					II
	Tukuba		4 18 09·3	70·0	5									I
	Mitaka		4 17 53·9	65·8										
	Itô			63·0	19	0·920	4·60	0·960	5·00					
	Koyama													
	Yosiwara			67·0	17	1·000	3·75	1·260	3·45					

(to be continued.)

List I. (*continued.*)

No.	Station	Date	Time of occurrence	Duration Prel. tr.	Duration Total	Maximum motion N.S. 2A	Maximum motion N.S. T	Maximum motion E.W. 2A	Maximum motion E.W. T	Direction of initial motion	Epicentre λ (E)	Epicentre φ (N)	Depth	Intensity
			h m s	s	m	mm	s	mm	s				km	
21	Tôkyô	April 12	3 13 16·6	10·0	15	0·240	0·57	0·450	0·87		139°66	35°·73	70	II
	Kamakura		3 13 20·0	10·9	5	0·486	0·58	0·258	0·35					II
	Misaki			12·4	6	0·118	1·60	0·203	1·74					I
	Kiyosumi			14·4	7	0·110	2·10	0·130	2·10					
	Titibu													
	Tôgane			13·2	9	0·190	1·46	0·190	1·95					
	Tukuba		3 13 18·4	11·2	4									I
	Mitaka			10·6										II
	Itô			14·9	7	0·196	0·32	0·212	0·32					
	Koyama			13·5	5	0·270	0·24	0·290	0·24					II
	Yosiwara			15·6	6	0·230	0·40	0·152	0·40					
22	Tôkyô	14	12 36 56·2	6·7	4	0·090	0 33	0·064	0·44		139·91	35·59	50	I
	Kamakura		12 36 57·4	7·8	2	0·046	0·31	0·012	0·21					
	Misaki			8·7	4	0·042	0·51	0 068	0·51					I
	Kiyosumi		12 36 56·5	9·0	2	0·040	0·67	0·050	0 67					II
	Titibu													
	Tôgane			8·2	3	0·090	0·26	0·054	0·44					I
	Tukuba		12 37 00·3	9.3	2					E slight S				
	Mitaka		12 36 59·7	7·4	5	0·146	0·50	0·059	0·49					I
	Itô			12·0	1	0·048	0·40	0·024	0·30					
	Koyama													
	Yosiwara													
23	Tôkyô	26	12 41 41·6	6·8	4	0·200	0·88	0·196	0·55	S 56°E, d	140·02	35·58	50	II
	Kamakura		12 41 40·2	9·7	4	0·210	0·50	0·394	0·50					I
	Misaki			11·0	4	0·267	0·47	0 253	0 58					I
	Kiyosumi		12 41 39·2	8·3	5	0 180	0 60	0·188	0 60					II
	Titibu			14·9	4	0·065	0·64	0·045	0·64					
	Tôgane			7·4	4	0·430	1·33	0·635	1·42	W				II
	Tukuba		12 41 41·6	9·6	3									
	Mitaka		12 41 41·8	9·4	5	0·292	0·28	0·290	0·28	SE, d				II
	Itô			12·7	3	0·148	0·62	0·080	0 50					
	Koyama			12·6	5	0·240	0·42	0·188	0·40					
	Yosiwara			15·8	4	0·192	0·30	0·120	0 30					
24	Tôkyô	28	12 44 03 9	44·9	10	0·104	0·48	0·124	0 54		137·29	34·00		I
	Kamakura		12 40 01·3	44·0	5	0·100	0·47	0·040	0·38					
	Misaki			44 5	6	0·042	0 95	0·087	1·55					I
	Kiyosumi			46 0	6	0 024	1·36	0·030	1·36					
	Titibu			44·3	6	0·105	0·18	0·066	0·94					
	Tôgane			47·5	7	0·100	0·95	0·100	0·95					
	Tukuba			46·5	3									I
	Mitaka		12 44 04·3	44·1	10	0·141	0·60	0·141	0.59					I
	Itô													
	Koyama			41·0	6	0·096	1·72	0·180	2·00					
	Yosiwara			40·5	5	0·040	1·50	0 170	1·50					
25	Tôkyô	May 20	20 54 37·5	11·4	6	0 160	0·57	0·170	0·57		139·66	36·11	80	I
	Kamakura		20 54 40·8	13·6	5	0·112	0·60	0·110	0·50					I
	Misaki													
	Kiyosumi			17·2	6	0·046	0·84	0·048	1·15					I
	Titibu													

(*to be continued.*)

List I. (*continued.*)

No.	Station	Date	Time of occurrence	Duration		Maximum motion				Direction of initial motion	Epicentre		Depth	Intensity
				Prel. tr.	Total	N.S.		E.W.			λ (E)	φ (N)		
						2A	T	2A	T					
			h m s	s	m	mm	s	mm	s				km	
	Tôgane			14·8	6	0.186	0·86	0·186	0·86					
	Tukuba		20 54 36·6	9·5	3									I
	Mitaka		20 54 37·1	10·8	7	0·350	0·51	0·110	0·32					I
	Itô			18·0	5	0·120	0·30	0·088	0·40					
	Koyama			13·0	5	0·700	0·84	0·880	0·40					I
	Yosiwara			15·6	4	0·260	0·50	0·600	0·50					
26	Tôkyô	May 23	2 30 30·8	9·3	5	0·144	0·48	0·084	0·48	SE	140°.13	35°.61	70	I
	Kamakura		2 30 31·3	10·7	3	0·008	0·33	0·092	0·33					I
	Misaki			10·8	3	0·030	0·52	0·038	0·52					I
	Kiyosumi			9·0	6	0·028	0·59	0·048	0·59					
	Titibu			13·7	2	0·018	0·43	0·020	0·64					
	Tôgane			9·0	4	0·052	0·55	0·088	0·45					I
	Tukuba		2 30 32·6	9·6	1·3									
	Mitaka		2 30 32·3	9·4	5	0·120	0·62	0·120	0·48					I
	Itô			12·5	2	0·056	0·24	0·052	0·20					
	Koyama			12·8	3·5	0·064	0·42	0·048	0·42					
	Yosiwara			14·7	2	0·068	0·46	0·032	0·40					
27	Tôkyô	June 3	9 19 44·7	34·9	25	0·187	1·04	0·158	0·93		141·73	38·19		I
	Kamakura		9 19 52·5	41·5	9	0·034	0·53	0·230	0·53					
	Misaki			42·2	14	0·148	2·65	0·179	2·09					I
	Kiyosumi			42·8	13	0·430	3·78	0·414	3·43					
	Titibu													
	Tôgane			38·3	20	0·860	3·80	0·600	2·72					
	Tukuba		9 19 35·6	28·7	7									I
	Mitaka		9 19 46·4	36·0	20	0·200	1·48	0·223	2·95					I
	Itô				10	0 092	0·5	0·148	0·4					
	Koyama			48·0	10	0·460	1·70	0·480	1·50					
	Yosiwara													
28	Tôkyô	13	9 46 45·0	15·8	4	0 072	0·50	0·068	0·44		140·90	36·37		I
	Kamakura		9 46 51·9	19·9	4	0·070	0·38	0·046	0·13					
	Misaki			21·7	5	0·033	0·54	0·038	0 54					I
	Kiyosumi			18·5	5	0·010	0·98	0·010	0·99					
	Titibu			18·2	4	0·035	0·58	0·030	0·58					
	Tôgane			14·6	5	0·030	0·85	0·026	0·85					
	Tukuba		9 46 40·9	12·1	3									I
	Mitaka		9 46 46·4	17·5	6	0·090	0·72	0·056	0·72					I
	Itô				2	0·040		0·040						
	Koyama			23·5	4	0·120	0·55	0·192	0·50					
	Yosiwara				3	0 080	0·65	0·056	0·55					
29	Tôkyô	16	17 32 38·5	9·7	12	3·265	1.03	3·328	1·52	N32°E	140·08	35·96	60	II
	Kamakura		17 32 42·3	10·6	7	0·276	0·63	0·534	0·63					II
	Misaki			12 5	10	0·328	0·74	0 392	0·74					II
	Kiyosumi		17 32 41·2	13·4	8	0·186	1·35	0·250	1·35					I
	Titibu			12 1	8	0·180	0·78	0·200	0·80					
	Tôgane			10·6	10	0·880	1·32	1·110	1·32					II
	Tukuba		17 32 35·9	6·9	5									II
	Mitaka		17 32 40·9	10·8	9	2·040	1·28	1·466	1·28	N53°E, d				III
	Itô			16·2	10	0·320	0·60	0·400	0·70					
	Koyama			12·7	7	0·620	0·70	1·000	0·70					

(*to be continued.*)

List I. (*continued.*)

No.	Station	Date	Time of occurrence	Duration Prel. tr.	Duration Total	Maximum motion N.S. 2A	Maximum motion N.S. T	Maximum motion E.W. 2A	Maximum motion E.W. T	Direction of initial motion	Epicentre λ (E)	Epicentre φ (N)	Depth	Intensity
	Yosiwara		h m s	s 17·6	m 7	mm 0·400	s 1·00	mm 0·252	s 0·70				km	
30	Tôkyô	June 22	9 36 20·3	14·4	30	2·800	2·72	4·500	2·30	N70°E,d	141°·00	35°·97	40	II
	Kamakura		9 36 24·6	19·7	13	1·200	1·20	3·300	1·70					I
	Misaki			20 1	20	1.41+	2·97	1.21+	2·97					III
	Kiyosumi		9 36 20·4	14·5	20					N55°E				III
	Titibu			21·1	17	1·310	2·17	0·560	1·74	E				
	Tôgıne			10·3	30									III
	Tukuba		9 36 18·9	8·8	8					S53°E				II
	Mitaka		9 36 23.1	17·8	30	2·050	3·17	2·020	3·80					II
	Itô													
	Koyama			22·3	15	1·120	3·75	1·44	4·10	S70°W				
	Yosiwara			28 5	15	1·000	1·60	0·940	1·90					

(2) *Important distant earthquakes as observed in Tôkyô (Hongô).*

List II.

Date	Phase	Time of Occurrence (G. M. T.)	Amplitude 2A	Period	Probable Epicentre.
1932		h m s			
May, 14	P	13 18 11·8			Celebes Sea.
	S	13 24 0·6			
	L	13 26 48.8	mm (E.W.) 17	s 80	
			(N.S.) 10	50	
	F	17 20			
May, 26	P	16 20 0·2			
	S	16 28 4·1			
	L	16 32 47·6	(E.W.) 0·5	25·3	
			(N.S.) 0·8	21·8	
	F	18 50			
June, 3	P	10 50 35·4			Mexico
	PS	11 3 22·6			
	SS	11 9 36			
	L	11 17 40	(E.W.) 1·1	24·5	
			(N.S.) 2·9	24	
	M	11 23 2	(E W.) 1·0	30	
			(N.S.) 1·6	24	
	F	15 13			

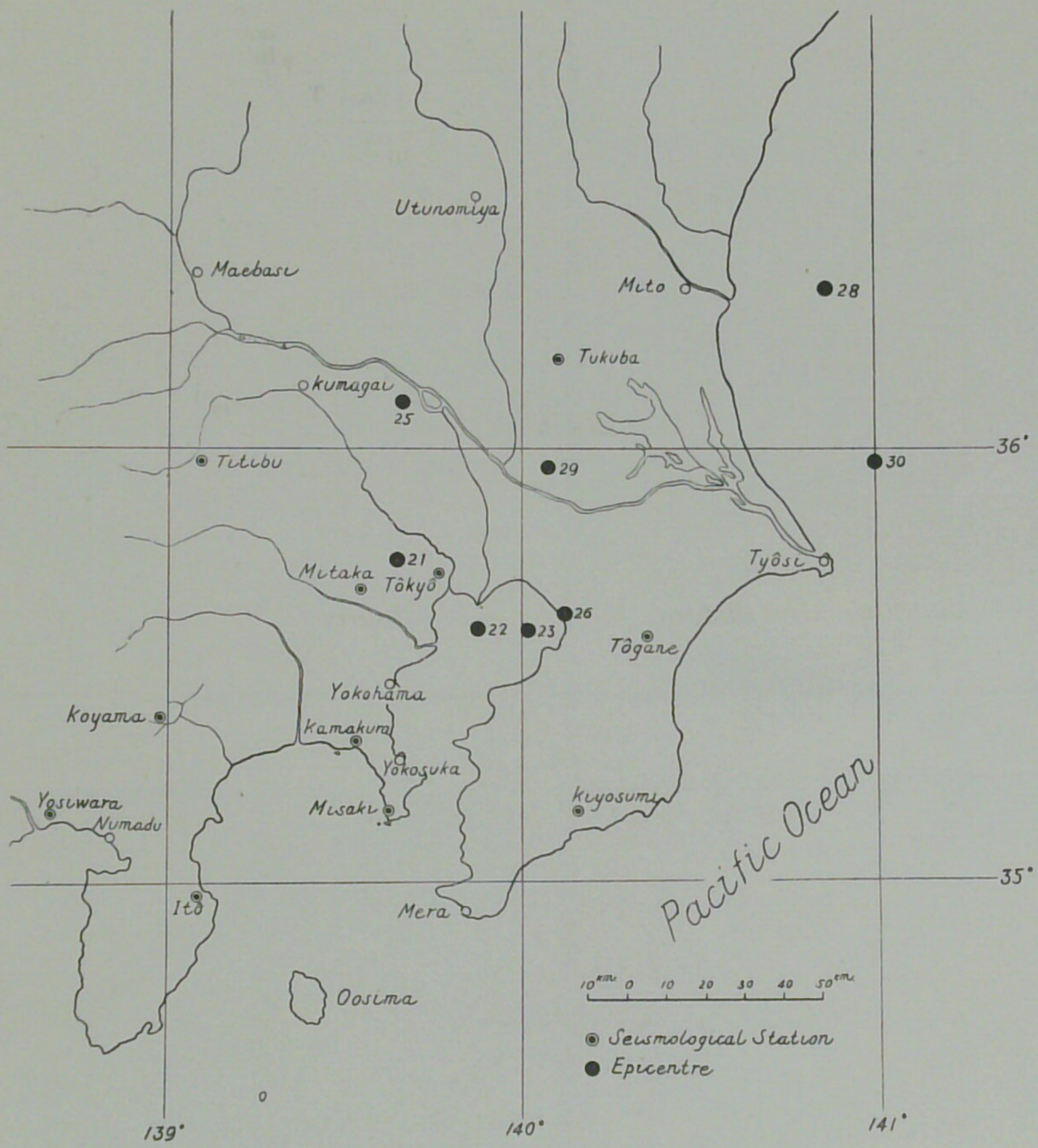
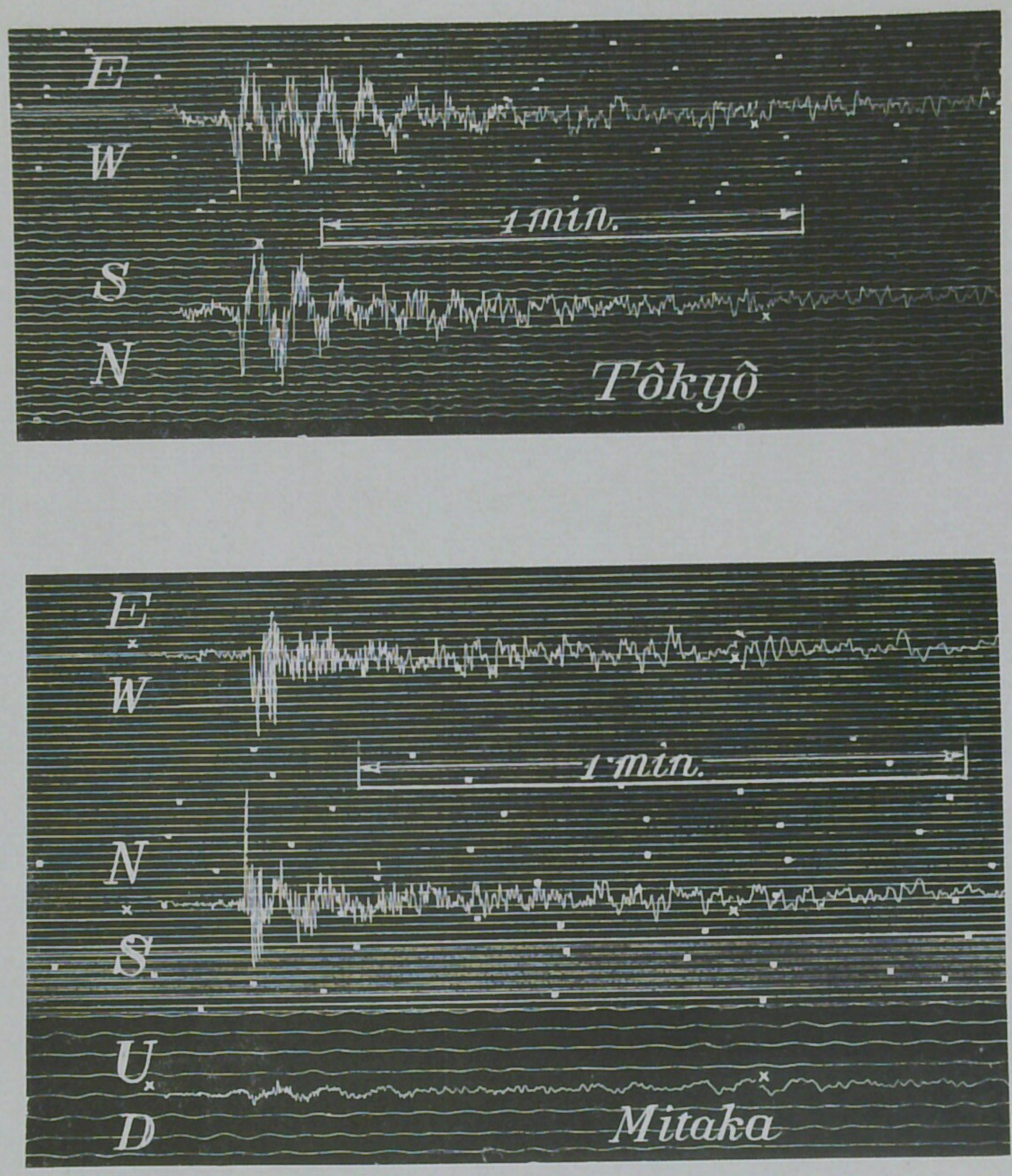


Fig. 1. Distribution of the earthquakes that originated within a distance of 160 kms. from Tôkyô and felt there, for the period April 1—June 30, 1932.

(Figures attached to each epicentre indicate the earthquake number in List I.)



(Full size of actual.)

Fig. 2. Tôkyô and Mitaka observations of the earthquake of April 26, 1932.

Instrumental constants:

Tôkyô	Mitaka
V (N.S. E.W.)=50	V (N.S. E.W.)=50 (Vert.)=28
T („ „)=7^s	T (N.S. E.W. Vert.)=7^s
ε („ „)=1·3	ε („ „ „)=1·3

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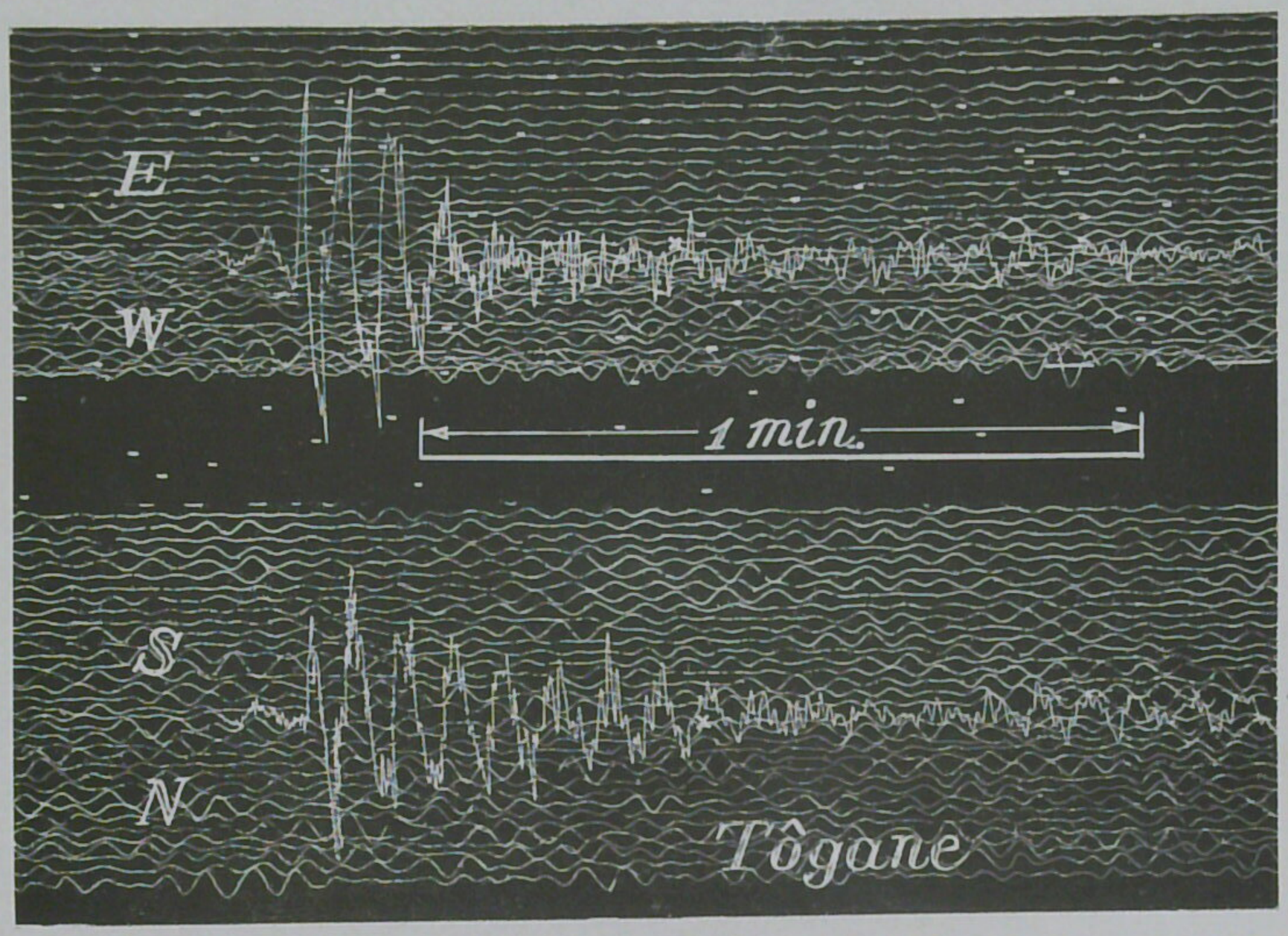
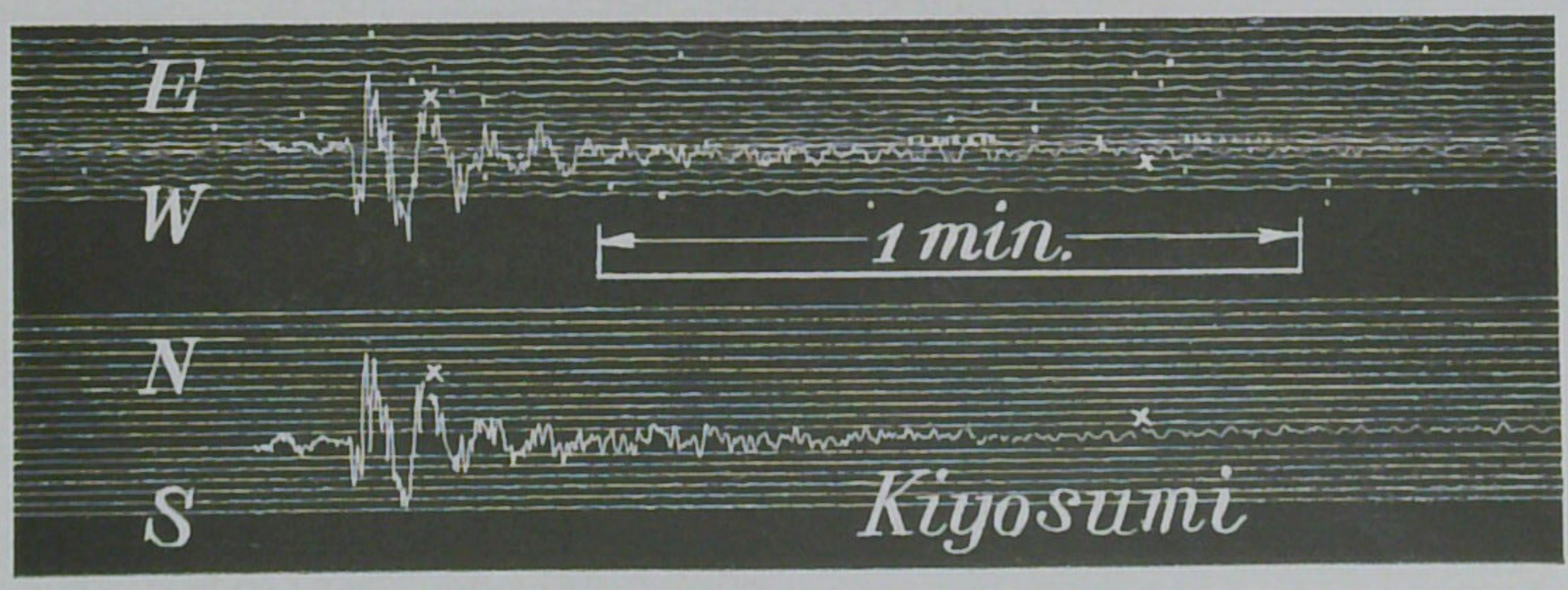




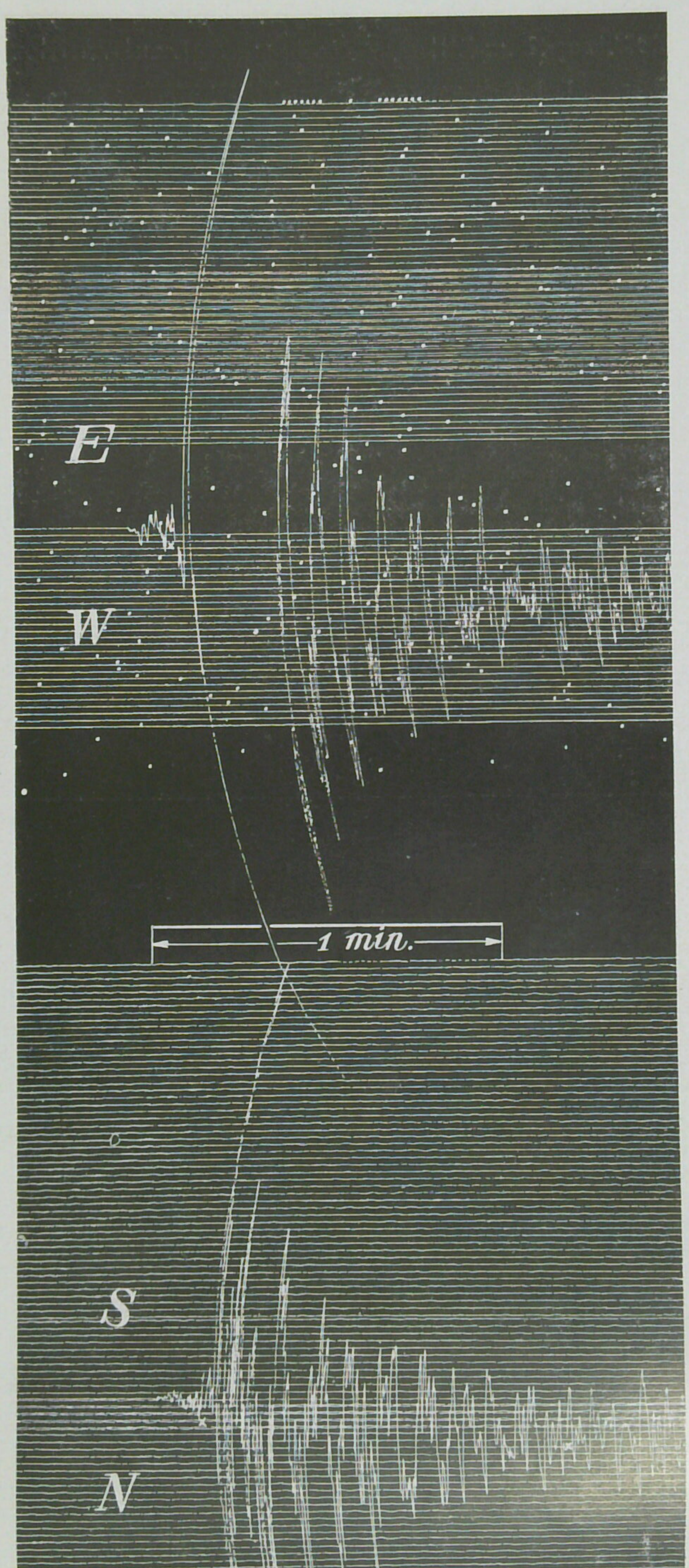
(Full size of actual.)

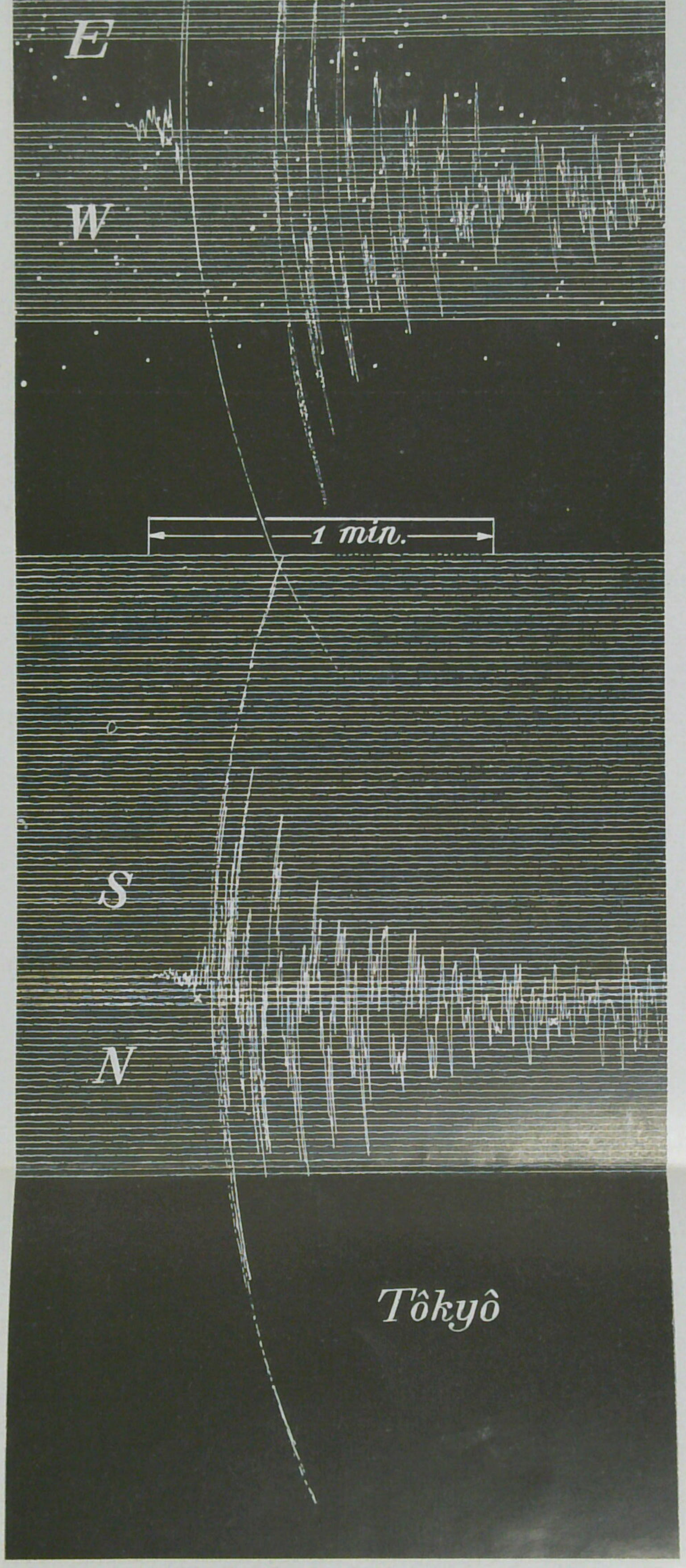
Fig. 3. Tôgane and Kiyosumi observations of the earthquake of April 26, 1932.

Instrumental constants:

Tôgane	Kiyosumi
V (N.S. E.W.)=50	V (N.S. E.W.)=50
T („ „)=7^s	T („ „)=7^s
ε („ „)=1·5	ε („ „)=1·5

（地震報告、一九三二、第二號、圖版）





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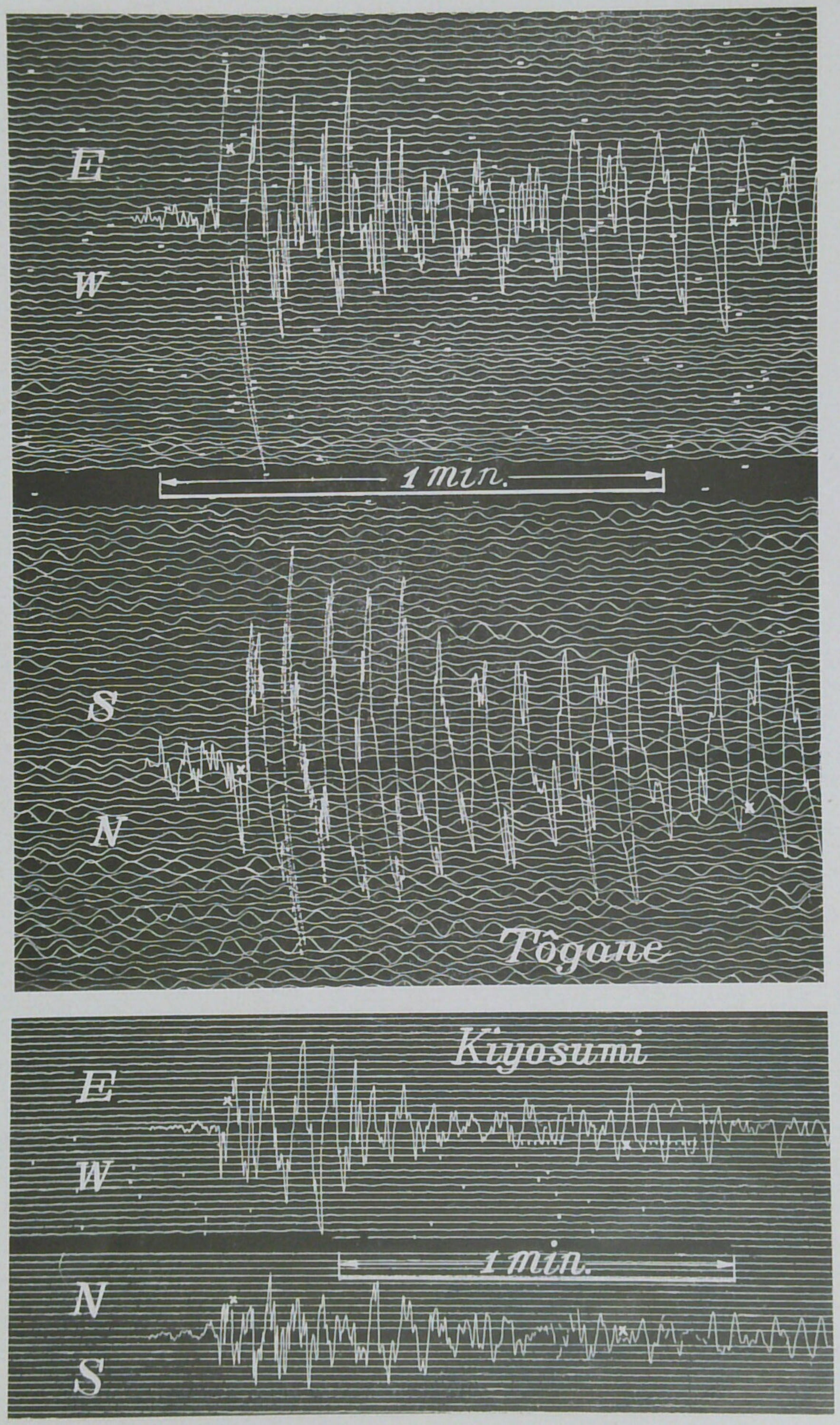
(Full size of actual.)

Fig. 4. Tôkyô observation of the earthquake of June. 16, 1932.

Instrumental constants: See Fig. 2.



(Full size of actual.)

Fig. 5. Tôgane and Kiyosumi observations of the earthquake of June 16, 1932.
Instrumental constant: See Fig. 3.

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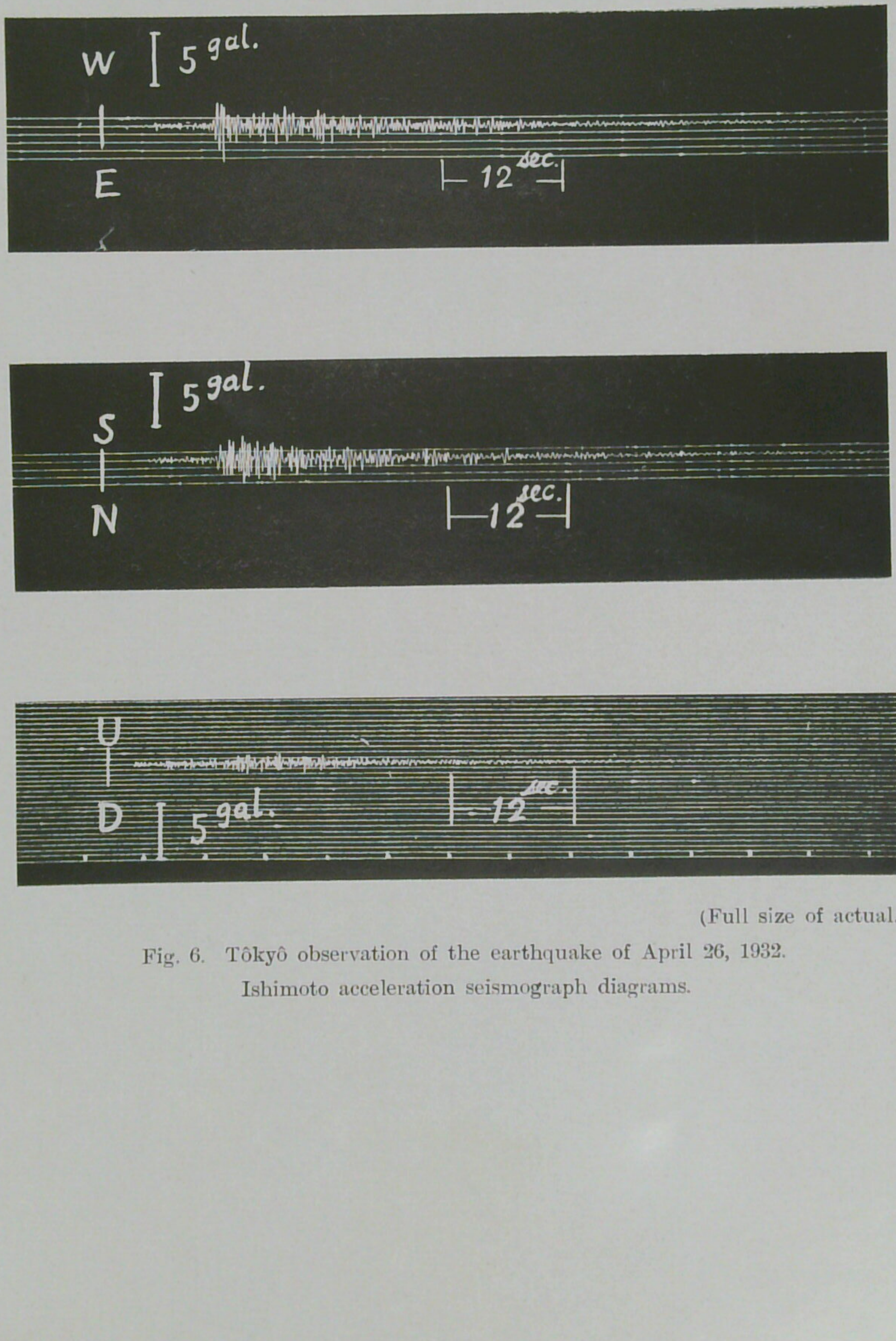
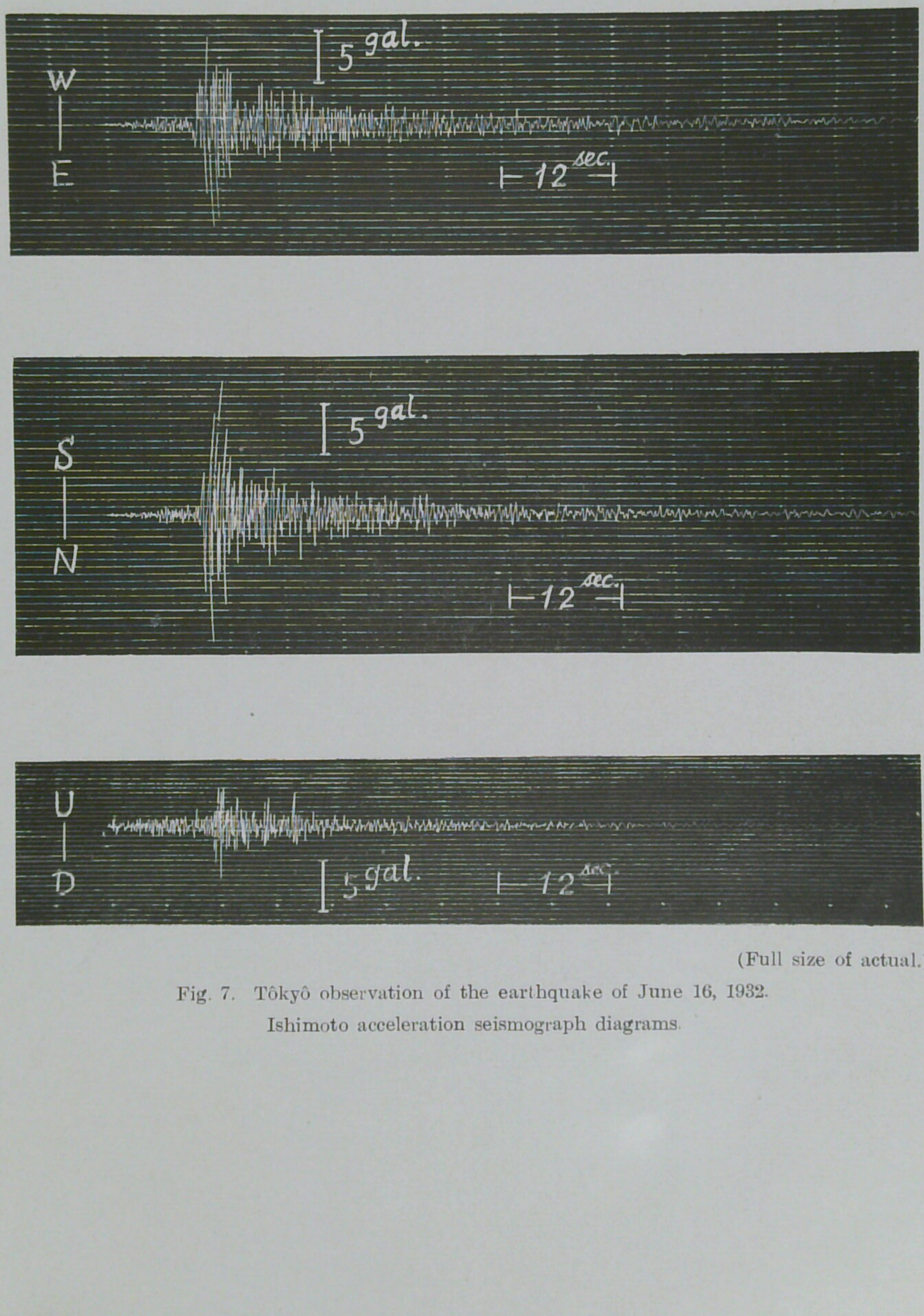


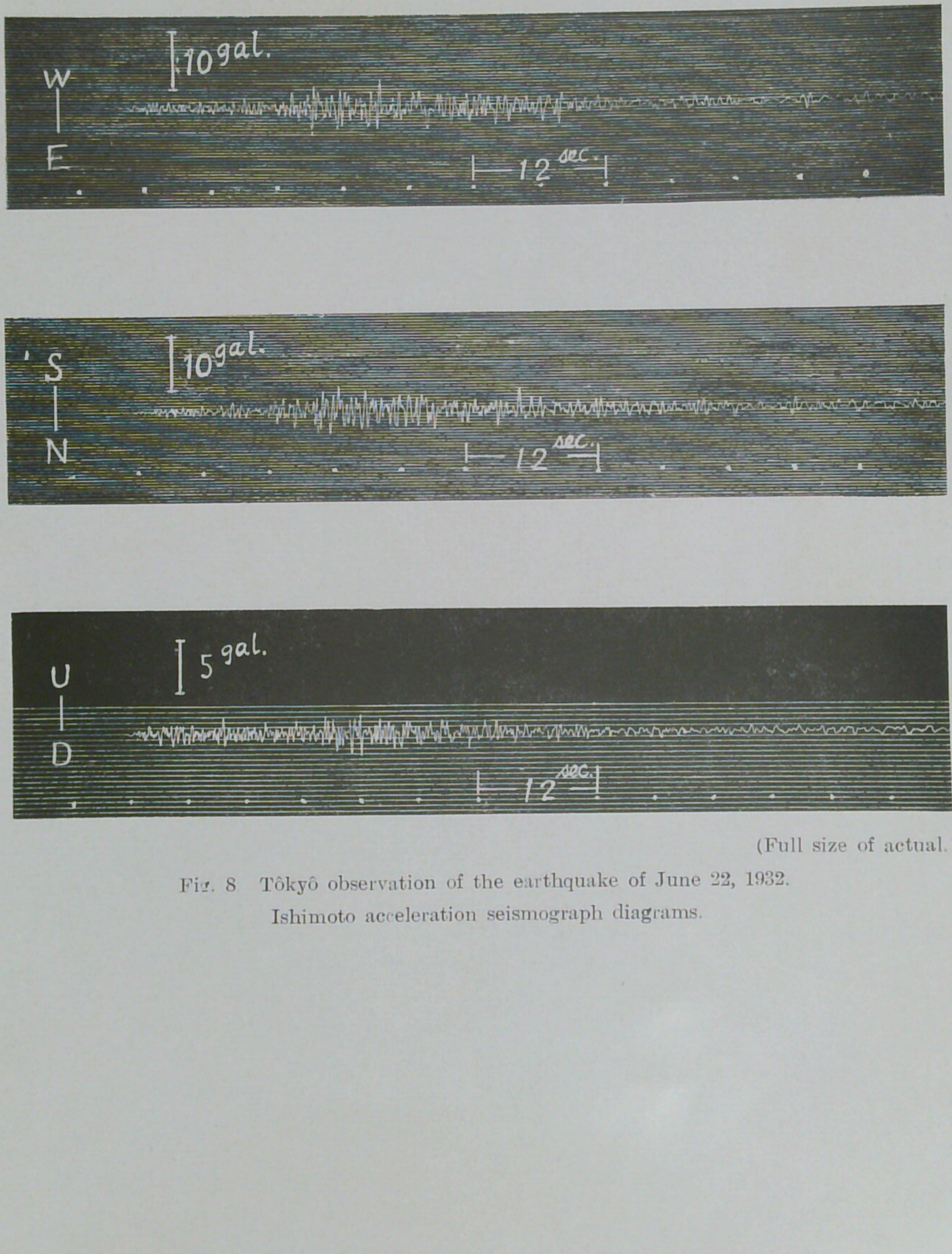
(Full size of actual.)

Fig. 6. Tôkyô observation of the earthquake of April 26, 1932.
Ishimoto acceleration seismograph diagrams.



(Full size of actual.)

Fig. 7. Tôkyô observation of the earthquake of June 16, 1932.
Ishimoto acceleration seismograph diagrams.



(Full size of actual.)

Fig. 8 Tôkyô observation of the earthquake of June 22, 1932.
Ishimoto acceleration seismograph diagrams.

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東京帝國大學地震研究所

地震觀測報告

昭和七年 第三册

SEISMOMETRICAL REPORT

OF THE

EARTHQUAKE RESEARCH INSTITUTE

TOKYO IMPERIAL UNIVERSITY

1932

Part 3

(July 1.—September 30, 1932)

Published by the Institute
Tokyo 1933

Seismometrical Report.

(Earthquake Research Institute, Tôkyô, Japan.)

(Part 3, 1932.)

(July 1.—September 30, 1932.)

(1) Sensible earthquakes in Tôkyô for the period July 1.—September 30, 1932.

List I.

Time = Central standard time of Japan (Civil mean time of the meridian 135°E.)

Notation :

Prel. tr. = Preliminary tremor.
N.S. = North-South component.
E.W. = East-West component.
2A = Range of motion.
T = Period of earthquake motion.
λ = Longitude.
φ = Latitude.
D = Depth of the earthquake focus.

Intensity ; 0 (insensible), I (slight), II (rather weak), III (weak), IV (rather strong), V (strong), VI (violent).

No.	Station	Date	Time of occurrence	Duration		Maximum motion				Direction of initial motion	Epicentre		Depth	Intensity
				Prel. tr.	Total	N.S.		E.W.			λ (E)	φ (N)		
						2A	T	2A	T					
			h m s	s	m	mm	s	mm	s				km	
31	Tôkyô	July 5	0 45 12·3	7·7	3	0·084	0·22	0·046	0·22		139°·85	35°·55	50	I
	Kamakura			8·2	1	0·016	0·41	0·006	0·31					
	Misaki			9·6	3	0·003	0·49	0·003	0·49					
	Kiyosumi			10·7	2	0·003	0·68	0·002	0·58					
	Titibu			11.0	1·5	0·006	0·63	0·008	0·78					
	Tôgane			9.2	1	0·002	0·23	0·002	0·23					
	Tukuba													
	Mitaka		0 45 10·8	6·5	4	0·078	0·42	0·024	0·42					I
	Itô													
	Koyoma			8·0	1	0·024		0·050						
	Yosiwara													

(*to be continued.*)

List. I. (*continued.*)

No.	Station	Date	Time of occurrence	Duration		Maximum motion				Direction of initial motion	Epicentre		Depth	Intensity
				Prel. tr.	Total	N.S.		E.W.			λ (E)	φ (N)		
						2A	T	2A	T					
			h m s	s	m	mm	s	mm	s				km	
32	Tôkyô	July 13	21 40 21·8	7·3	3	0·088	0·28	0·126	0·28	S76°E.d	140°.07	35°.73	50	II
	Kamakura			9·4	2	0·022	0·32	0·032	0·32					
	Misaki			11·8	3	0·003	0·44	0·003	0·44					I
	Kiyosumi			11·1	3	0·016	0·35	0·012	0·35					
	Titibu			13·7	1.5	0·012	0·30	0 012	0·30					
	Tôgane			7·9	3	0·044	0·48	0·044	0·48					
	Tukuba		21 40 07·1	8·2	1·2									I
	Mitake		21 40 20·3	8·8	4	0·024	0.41	0·037	0·41					
	Itô			12·0	2.5	0·032		0·024						
	Koyama			10·5	5	0·036	0.24	0·072	0.31					
	Yosiwara													
33	Tôkyô	14	21 51 06·8	7·7	2	0·226	0·26	0·144	0·26		139·93	35·45	50	II
	Kamakura			9·0	2	0·012	0·31	0·010	0·20					
	Misaki			8·5	3	0·010	0·33	0·013	0·33					
	Kiyosumi			8·4	3	0·008	0·65	0·004	0·65					
	Titibu													
	Tôgane			8·7	2.5	0·120	0.54	0.160	0·54					I
	Tukuba													
	Mitaka			8·2	3	0·040	0·47							
	Itô			12·0	2	0·016		0·008						
	Koyama			11·0	3	0·016		0·028						
	Yosiwara													
34	Tôkyô	25	17 25 42.8	49·0	15	0·300	2·00	0·400	1·83					I
	Kamakura			47·5	9	0·167	0·73	0·470	1·57					
	Misaki			44·7	13	0·200	1·89	0·148	1·38					II
	Kiyosumi			50·7	13	0·166	3·13	0·222	3·57					
	Titibu			45·9	11	0·596	2·50	0·500	2·50					
	Tôgane			51·3	15	0·216	2·08	0·340	2·50					
	Tukuba		17 25 45·3	49·0	5									I
	Mitaka													
	Itô			41·0	12	0·280	3·00	0·540	4·50					
	Koyama			46·7	9	1·140	3·60	2·000	3·60					
	Yosiwara			41·0	10	1·700	4·00	1·440	2·00					
35	Tôkyô	30	1 36 19·1	21·3	8	0·040	0·75	0·048	0·75		141·42	36·43		I
	Kamakura			28·7	5	0·030	0·52	0·007	0·52					
	Misaki			33·1	6	0·027	0·70	0·035	0·78					
	Kiyosumi			28·7	6	0·012	0·72	0·016	0·72					
	Titibu			27·0	5	0·012	0·54	0·014	0·54					
	Tôgane			18·6	6	0·030	0·59	0·020	0·54					
	Tukuba		1 36 12·7	14·6										
	Mitaka		1 36 22·4	23·7	8	0·044	1·17	0·033	1·25					
	Itô			33·0	2.5	0·008		0·012						
	Koyama			30.0	3	0·040	0.45	0·094	1.10					
	Yoshiwara													
36	Tôkyô	Aug. 1	13 36 16·1	12·5	3	0·100	0·25	0·126	0·25		139·64	36.10	80	I
	Kamakura			14·4	3	0·020	0·35	0·060	0·47					
	Misaki			16·1	4	0·021	0·49	0·014	0·49					
	Kiyosumi			17·0	5	0 008	0·73	0·010	0·73					
	Titibu													

(*to be continued.*)

List I. (*continued.*)

No.	Station	Date	Time of occurrence	Duration		Maximum motion				Direction of initial motion	Epicentre		Depth	Intensity
				Prel. tr.	Total	N.S.		E.W.			λ (E)	φ (N)		
						2A	T	2A	T					
			h m s	s	m	mm	s	mm	s				km	
	Tôgane	Aug. 1		15·0	3	0·040	0.49	0·034	0·49					
	Tukuba		13 36 16·2	10·0	2									
	Mitaka		13 36 15 6	12·6	5	0·085	0·37	0·140	0·37	S14°W				I
	Itô													
	Koyama													
	Yosiwara													
37	Tôkyô	7	7 45 15·0	10·1	5	0·130	0·27	0·150	0·27	S19°W, u.	140°25	36°23	40	I
	Kamakura			14·4	5	0·046	0·38	0·028	0·38					
	Misaki			17·4	5	0·048	0·52	0·029	0·52					I
	Kiyosumi			16·8	5	0·026	0·53	0·020	0·53					
	Titibu			10·6	4	6·020	0·43	0·024	0·43					
	Tôgane			10·8	4	0·046	0·45	0·036	0·45					
	Tukuba		7 46 01·0	6·0	3									III
	Mitaka		7 45 16·9	10·8	5	0·034	0·32	0·052	0·45					I
	Itô			17·0	2	0·032		0·028						
	Koyama			15·6	5	0·076	0·55	0·094	0·35					
	Yosiwara													
38	Tôkyô	14	19 16 58·5	7·5	4	0·076	0 28	0·104	0·28	S58°E,u.	139·32	36·00	14	I
	Kamakura			13·5	5	0·042	0·52	0·012	0·21					
	Misaki													
	Kiyosumi			16·7	4	0·012	0·71	0·011	0·71					
	Titibu			2·9	4	0·215	0·20	0·198	0·20					II
	Tôgane			13·9	5	0·070	0·42	0·036	0·42					
	Tukuba		19 16 59·4	10·4	2	0·021	0·20	0·020	0·24					I
	Mitaka		19 16 54·6	7·2	5	0 054	0·32	0·082	0·32					I
	Itô			15·4	2	0·040	0.60	0·040	0·50					
	Koyama			10·6	3	0·112	0·50	0·271	0·45					
	Yosiwara				3	0·044	0·30	0·052	0·35					
39	Tôkyô	14	21 58 08·7	12·9	8	0·122	1·54	0·090	1·54	N60°E	140.70	35·45	60	I
	Kamakura			15·4	5	0·040	0·75	0·068	0·75					
	Misaki			13·0	5	0·050	0·55	0·063	0·63					I
	Kiyosumi													
	Titibu			21·8	6	0.024	2·00	0·012	0·20					
	Tôgane			8·2	7	0.250	0·94	0·214	0·94					II
	Tukuba		21 57 59·4	13·2	3	0·021	0·61	0·026	0·65					
	Mitaka		21 58 0·81	13·8	8	0·051	1·37	0·055	1·41					
	Itô				3	0·020		0·032						
	Koyama			20·8	4	0·072	1·70	0·080	1·00					
	Yosiwara				3	0 072	1·30	0·060	1·00					
40	Tôkyô	Sept. 3	21 00 22·5	68·7	60	0·950	3·20	0·850	4·07		142.82	41·08		I
	Kamakura			66·0	12	1·200	2·46	0·195	1·60					
	Misaki			86·5	20	0·222	3·12	0·247	2·73					
	Kiyosumi		21 00 27·1	70·2	30	0·340	4·78	0·286	4·78					
	Titibu			73·6	18	0·466	3·25	0·496	3·72					
	Tôgane			68·0	30	1·310	5·00	0·660	4·57					
	Tukuba		21 00 13·3	57·5	9									
	Mitaka		21 00 22·7	68·5	30	0·369	3·73	0·750	3·00					
	Itô			74·0	16	0·280	6·30	1·000	5·10					
	Koyama			81·0	14	1·440	4·00	2·080	3·90					

(*to be continued.*)

List I. (*continued.*)

No.	Station	Date	Time of occurrence	Duration		Maximum motion				Direction of initial motion	Epicentre		Depth	Intensity
				Prel. tr.	Total	N.S.		E.W.			λ (E)	φ (N)		
						2A	T	2A	T					
				s	m	mm	s	mm	s				km	
	Yosiwara	Sept. 3		69·6	18	1·100	2·75	2·240	4·20					
			h m s											
41	Tôkyô	7	20 31 46.6	9·1	4	0·092	0·36	0·060	0·30		140°30	35°89	50	I
	Kamakura			11·0	3	0·024	0 53	0·018	0·53					
	Misaki			15·0	4	0·033	0·80	0·025	0·80					I
	Kiyosumi													
	Titibu			12·0	3	0·010	0·89	0·006	0·89					
	Tôgane			6·5	6	0·124	0·52	0·080	0·52					I
	Tukuba		20 31 44·2	7·1	2	0·020	0·26	0·016	0·28	S37°E				I
	Mitaka		20 31 48·2	9·2	7	0·016	0·59	0·030	0·59					
	Itô			20·0	2	0·008		0·008						
	Koyama			24·0	3	0·040	0·40	0·014	0·50					
	Yosiwara				3	0·008		0·014						
42	Tôkyô	19	1 14 54·2	9·7	5	0·066	0·30	0·052	0·30		139·89	35·30	60	I
	Kamakura			10·8	1									I
	Misaki													
	Kiyosumi			8·9	3			0·020	0·70					I
	Titibu			13·6	3	0 010	0·63	0·006	0·63					
	Tôgane			10·8	3	0·040	0·66	0·034	0·66					
	Tukuba		1 14 56·0	13·9	2	0 008	0·23	0·010	0·24					
	Mitaka		1 14 50·3	10·8	3	0.046	0·22	0·044	0·22					
	Itô			10·4	2	0·084	0·45	0·096	0·44					
	Koyama			10·5	2	0·080	0·38	0·108	0·40					
	Yosiwara			19·0	3	0·114	0·35	0·080	0·60					
43	Tôkyô	19	23 12 45·2	9·3	6	0·475	0·47	0·430	0·42		140·00	35·57	70	II
	Kamakura			9·2	3	0·100	0·49	0·076	0·49					I
	Misaki			11·4	4	0·106	0·45	0·085	0·46					
	Kiyosumi		23 12 46·1	10·9	6	0·028	0·61	0·054	0·61					I
	Titibu													
	Tôgane			9·8	5	0·062	0·47	0·064	0·66					I
	Tukuba		23 12 44·3	8·5	2	0·015	0·48	0·026	0·56					
	Mitaka			9·7	4	0·094	0·74	0·084	0·74					
	Itô			13·3	3	0·084	0·20	0·072	0.20					
	Koyama			14·7	3	0·064		0·076						
	Yosiwara													
44	Tôkyô	23	23 24 15.3	105·2	60	1·530	8·30	1·400	8·00		139·45	44·70		I
	Kamakura			101·3	14	0·440	0·48	0·430	0·97					I
	Misaki			105·1	20	0·262	2·75	0·423	2·85					
	Kiyosumi			104·3	18	0 644	7·60	0·310	4·98					I
	Titibu			96·6	20	0·272	5·14	0·370	5·14					
	Tôgane			91·7	30	0·660	5·15	0·570	6·60					
	Tukuba		23 24 13·6	92·3	10									I
	Mitaka		23 24 19·2	93·8	40	1·900	5·88	1·205	5·88					
	Itô			109·0	13	0·184		0·184						
	Koyama			101·0	12	0·750	1·00	0·760	1·60					
	Yosiwara			104·0	23	0·520	2·00	0·640	2·50					
45	Tôkyô	24	23 51 58·2	10·5	4	0·020	0·34	0·038	0·34		139·89	36·18	60	I
	Kamakura													
	Misaki				2	0·005	0·42	0·003	0·42					

(*to be continued.*)

List I. (*continued.*)

No.	Station	Date	Time of occurrence	Duration		Maximum motion				Direction of initial motion	Epicentre		Depth	Intensity
				Prel. tr.	Total	N.S.		E.W.			λ (E)	φ (N)		
						2A	T	2A	T					
			h m s	s	m	mm	s	mm	s				km	
	Kiyosumi	Sept. 24												
	Titibu			12·5	2	0·010	0·33	0·008	0·33					
	Tôgane			12·8	2	0·004	0·40	0·004	0·40					
	Tukuba		23 51 53·6	7·7	1	0·011	0·14	0·013	0·24					I
	Mitaka													
	Itô													
	Koyama													
	Yosiwara													

(2) *Important distant earthpuakes as observed in Tôkyô (Hongô).*

List II.

Date	Phase	Time of Occurrence (G. M. T.)	Amplitude 2A	Period	Probable Epicentre.
		h m s	mm	s	
1932					
Aug. 14	P	4 46 48·5			
	S	4 51 34·2			
	L	4 54 32·5	(E.W.) 0·300	20·0	
			(N. S.) 0·625	19·3	
	M	4 57 28·5	(E.W.) 0·453	34·0	
			(N. S.) 0·670	34·3	
	F	6·5			
Sept. 26	P	19 33 16·6			Greece.
	S	19 43 47·6			
	L				
	M	20 06 40·0	(E.W.) 0·333	17.7	
			(N. S.) 0·425	14·8	
	F	21			

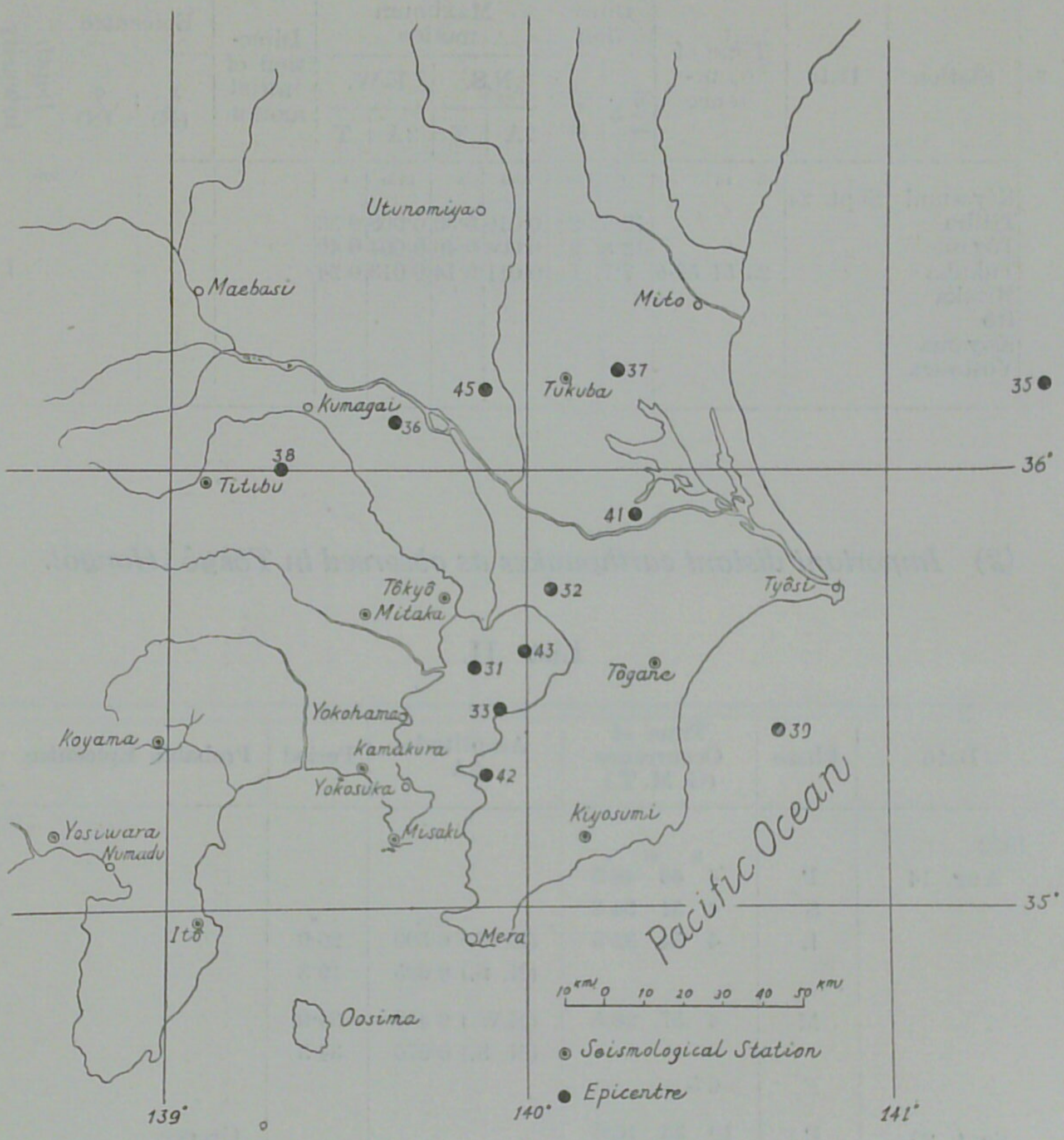
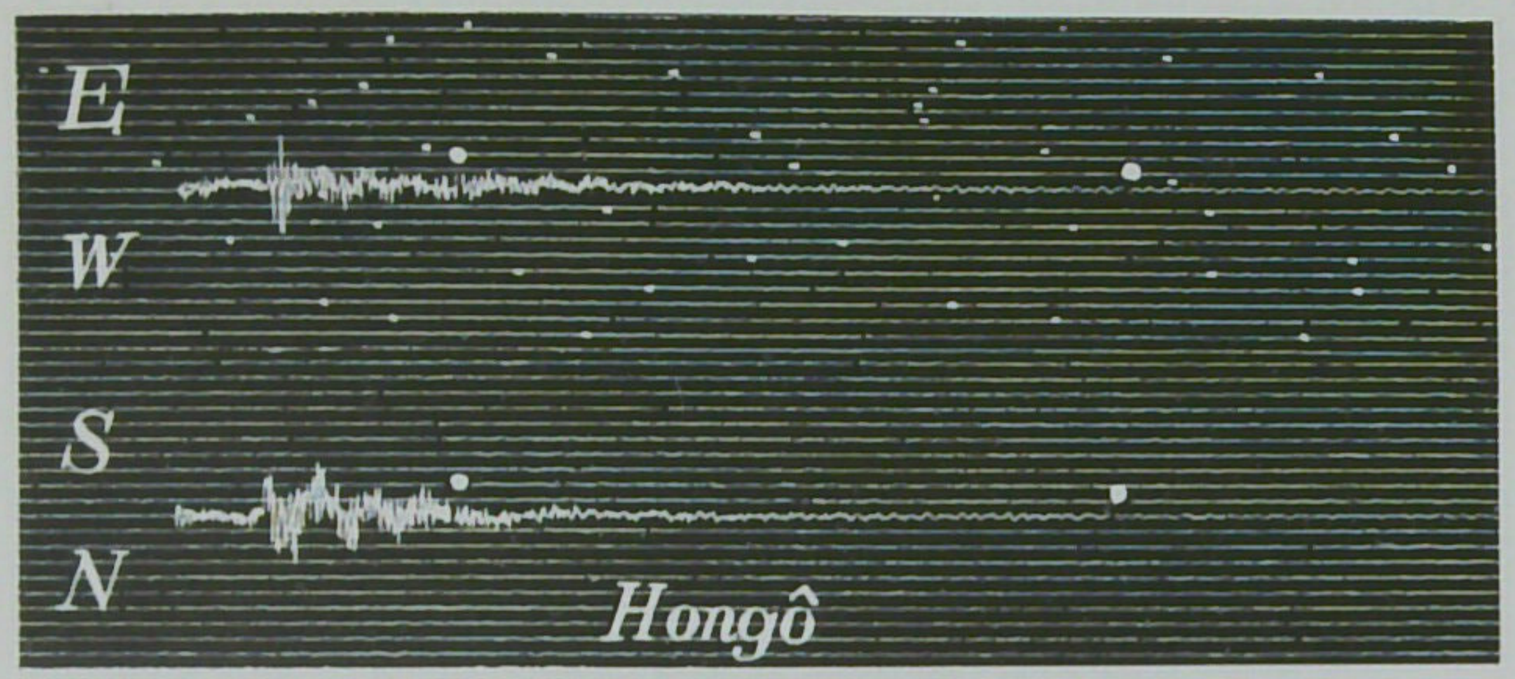
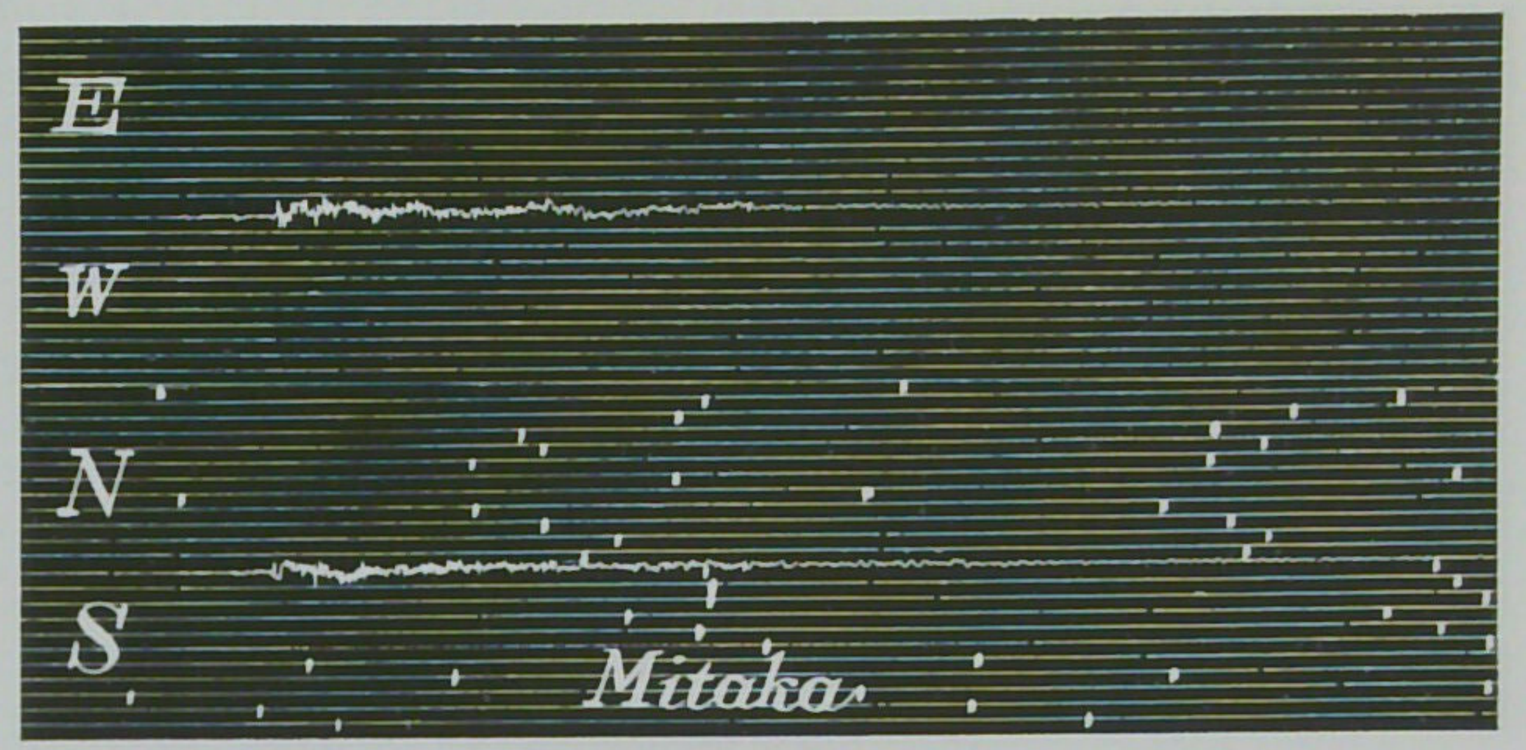


Fig. 1. Distribution of the epicentres of the Tôkyô sensible earthquakes within a distance of 160 km. from Tôkyô for the period July 1—September 30, 1932.
(Figures attached to each dot correspond to the earthquake number in List I.)

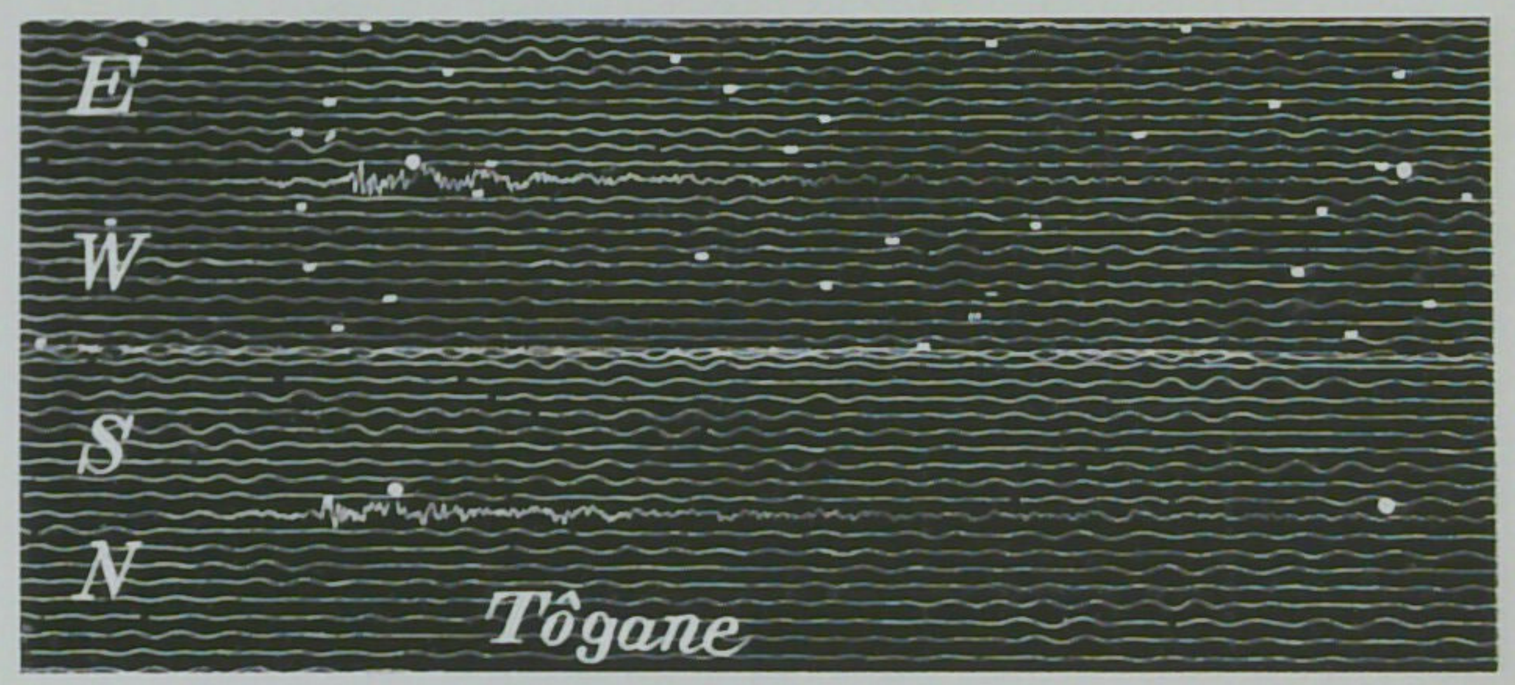


(*Full size the actual.*) $1^{min.}=42{\cdot}2^{m.m.}$



(*Full size the actual.*) $1^{min.}=44{\cdot}3^{m.m.}$

(*Full size the actual.*) $1^{min.}=39{\cdot}2^{m.m.}$

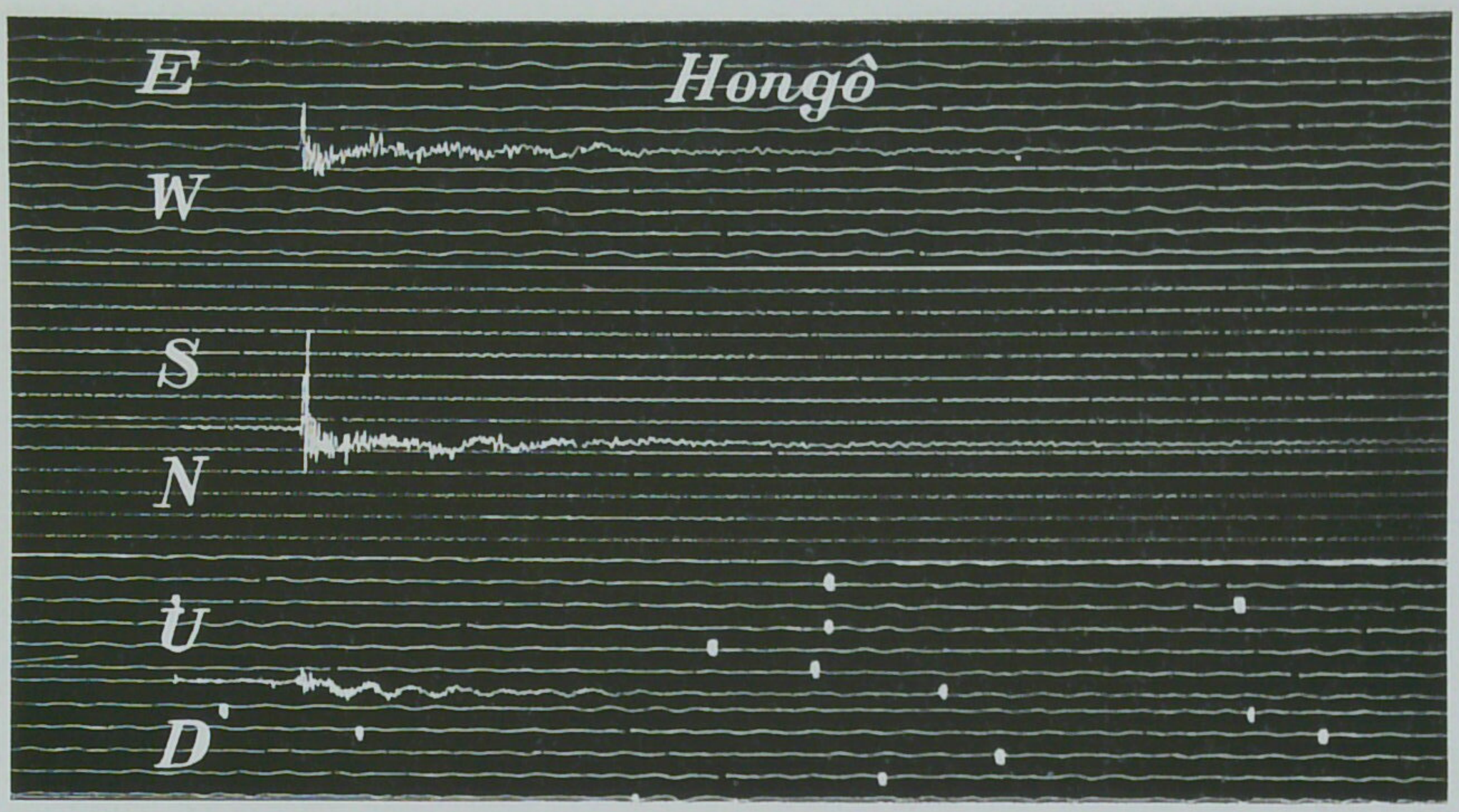


(*Full size the actual.*) $1^{min.}=63{\cdot}2^{m.m.}$

Fig. 2. Seismograms of the earthquake of July 13, 1932. (Eqk. No. 32)

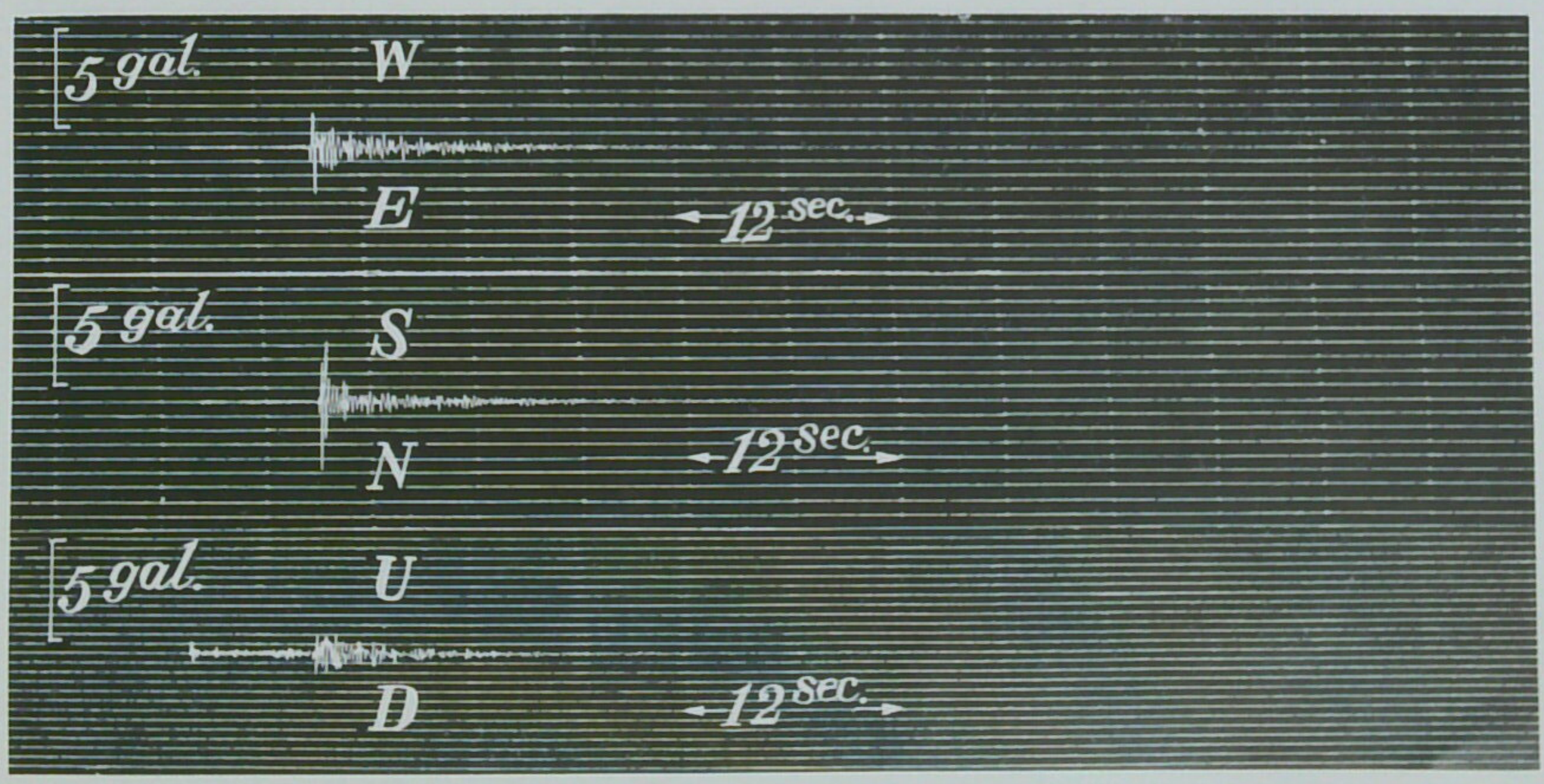
Instrumental constants: V = Magnification. T = Natural oscillation period. e = Damping ratio.

Hongô	V (N.S. E.W.) = 50	
	T (〃 〃) = 7^s	
	e (〃 〃) = 1·5	
Misaki	V (N.S. E.W.) = 120	
	T (〃 〃) = 4^s	
	e (〃 〃) = 1·5	
Mitaka	V (N.S. E.W.) = 50	
	T (〃 〃) = 7^s	
	e (〃 〃) = 1·5	
Tôgane	V (N.S. E.W.) = 50	
	T (〃 〃) = 7^s	
	e (〃 〃) = 1·5	



(*Magnified two-time the actual.*) $1^{m.in.} = 87{\cdot}2^{m.m.}$

Fig. 3, a. Seismogram of the earthquake of July 14, 1932. (Eqk. No. 33.)
Hongô (Tôkyô) observation.
Instrumental constants (see Fig. 2).



(*1·6 × the actual.*)

Fig. 3, b. Ishimoto acceleration seismograph diagram of the earthquake of July 14, 1932. (Eqk. No. 33.)
Hongô (Tôkyô) observation.

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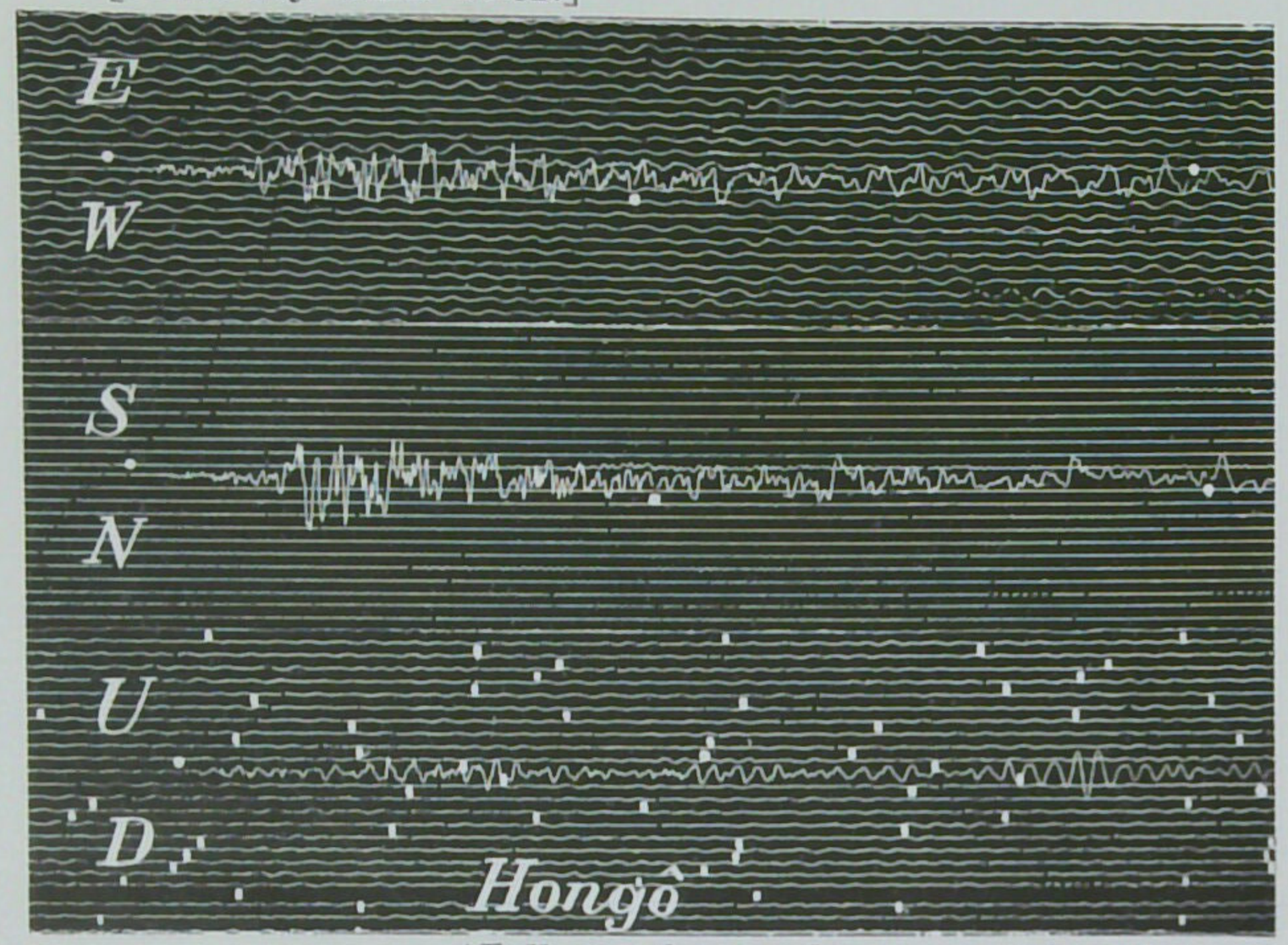
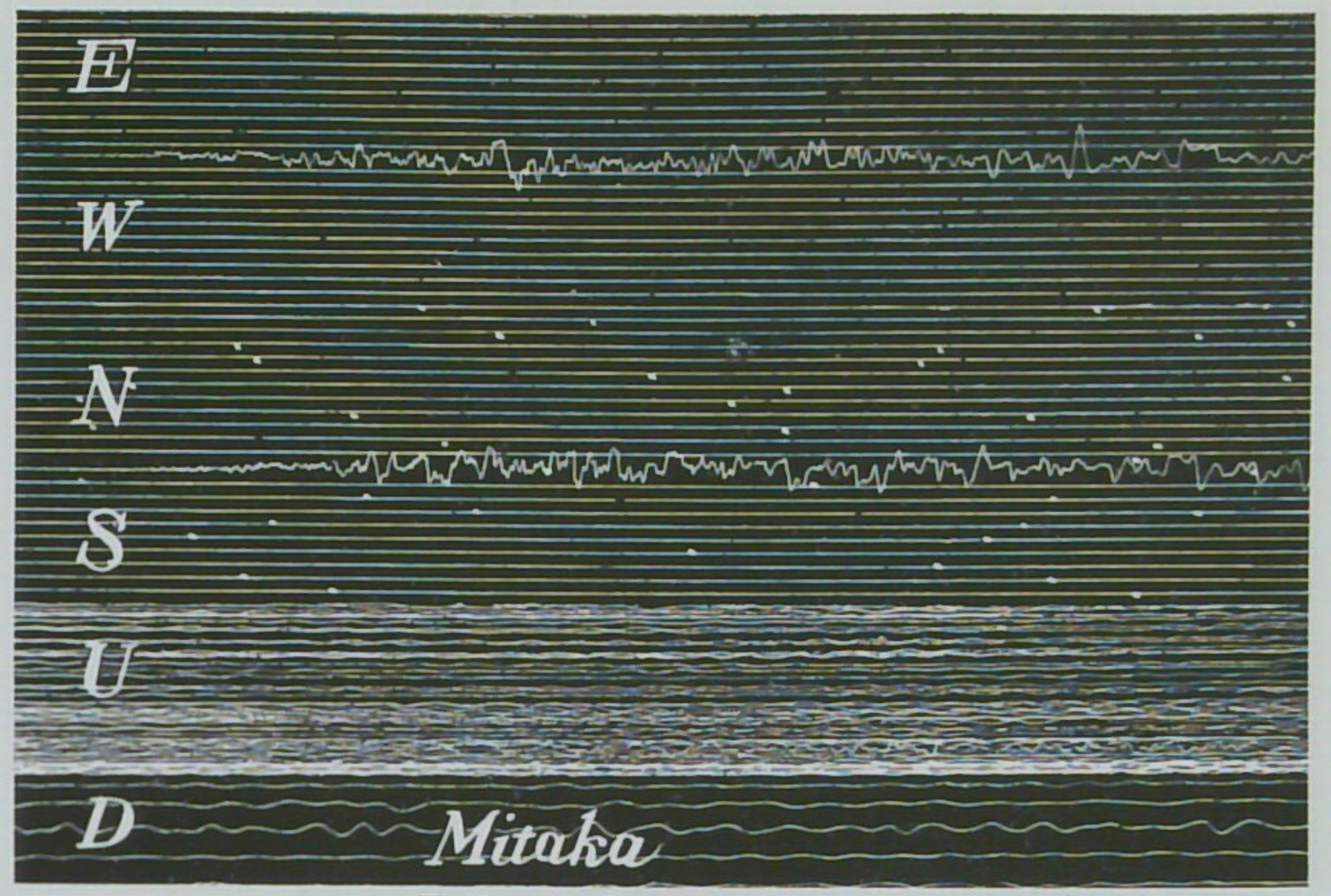
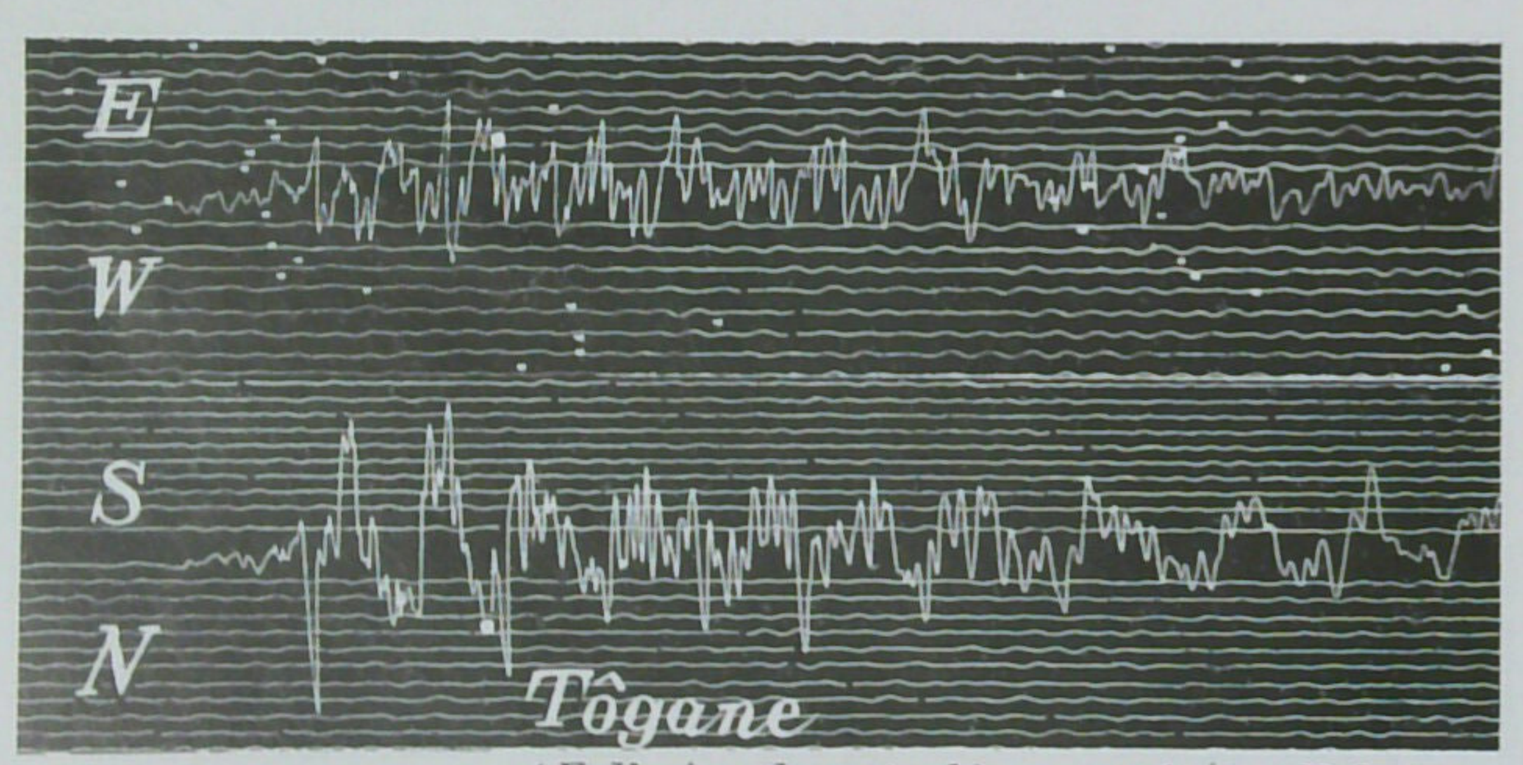


(*Full size the actual.*) $1^{min.}=39\cdot5^{m.m.}$



(*Full size the actual.*) $1^{min.}=57\cdot9^{m.m.}$



(*Full size the actual.*) $1^{min.}=63\cdot6^{m.m.}$

(*Full size the actual.*) $1^{min.}=66\cdot5^{m.m.}$

Fig. 4. Seismograms of the earthquake of Aug. 14, 1932. (Eqk. No. 39.)

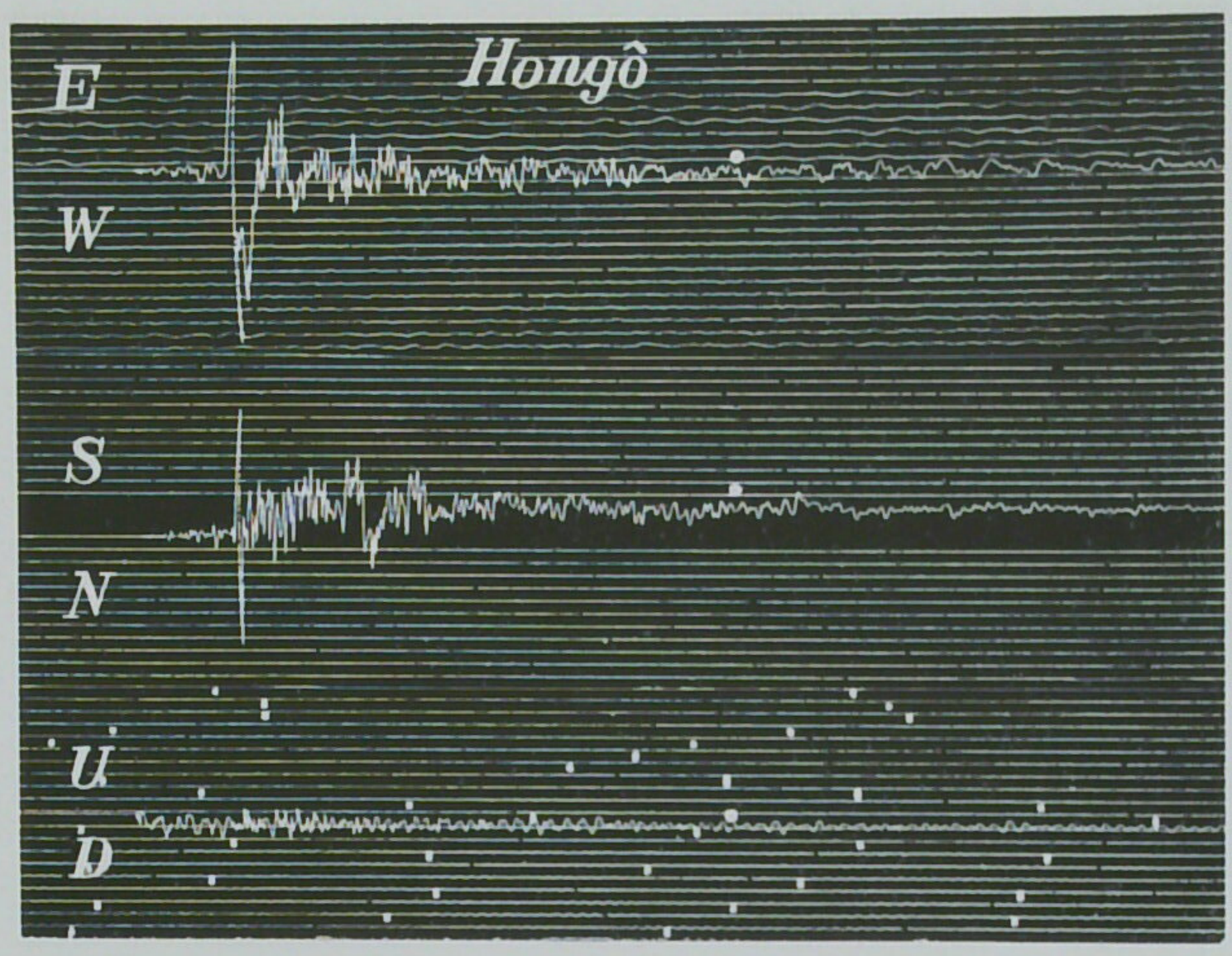
Instrumental constants: V = Magnification. T = Natural oscillation period. e = Damping ratio.

Hongô
V(N.S. E.W.) = 50
V(Vert.) = 28
T(N.S. E.W. Vert.) = 7^s
e(N.S. E.W. Vert) = 1·5

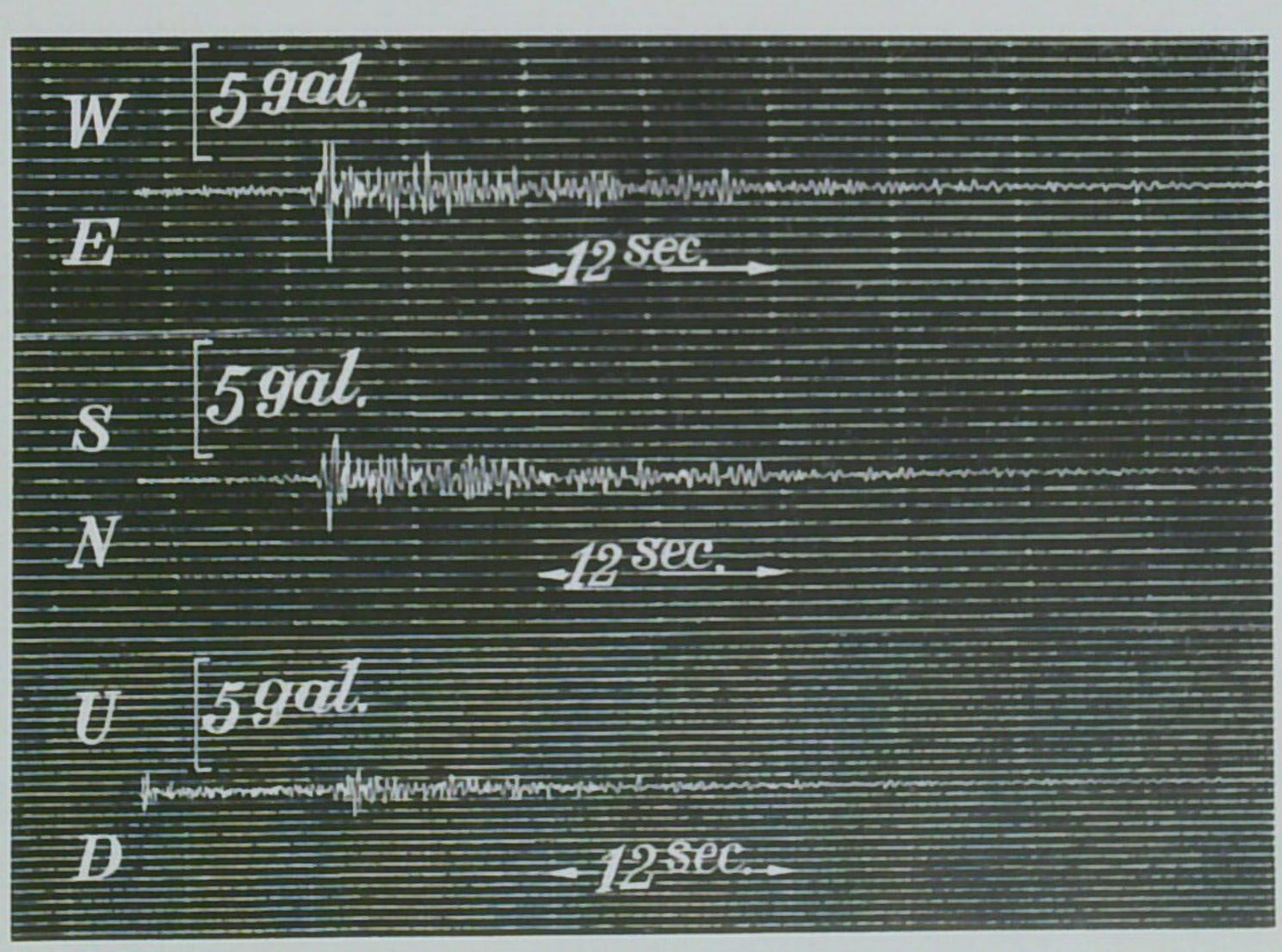
Tôgane (see Fig. 2.)

Mitaka
V(N.S. E.W.) = 50
V(Vert.) = 17
T(N.S. E.W. Vert.) = 7^s

Titibu
V(N.S. E.W.) = 50
T(〃 〃) = 7^s
e(〃 〃) = 1·5

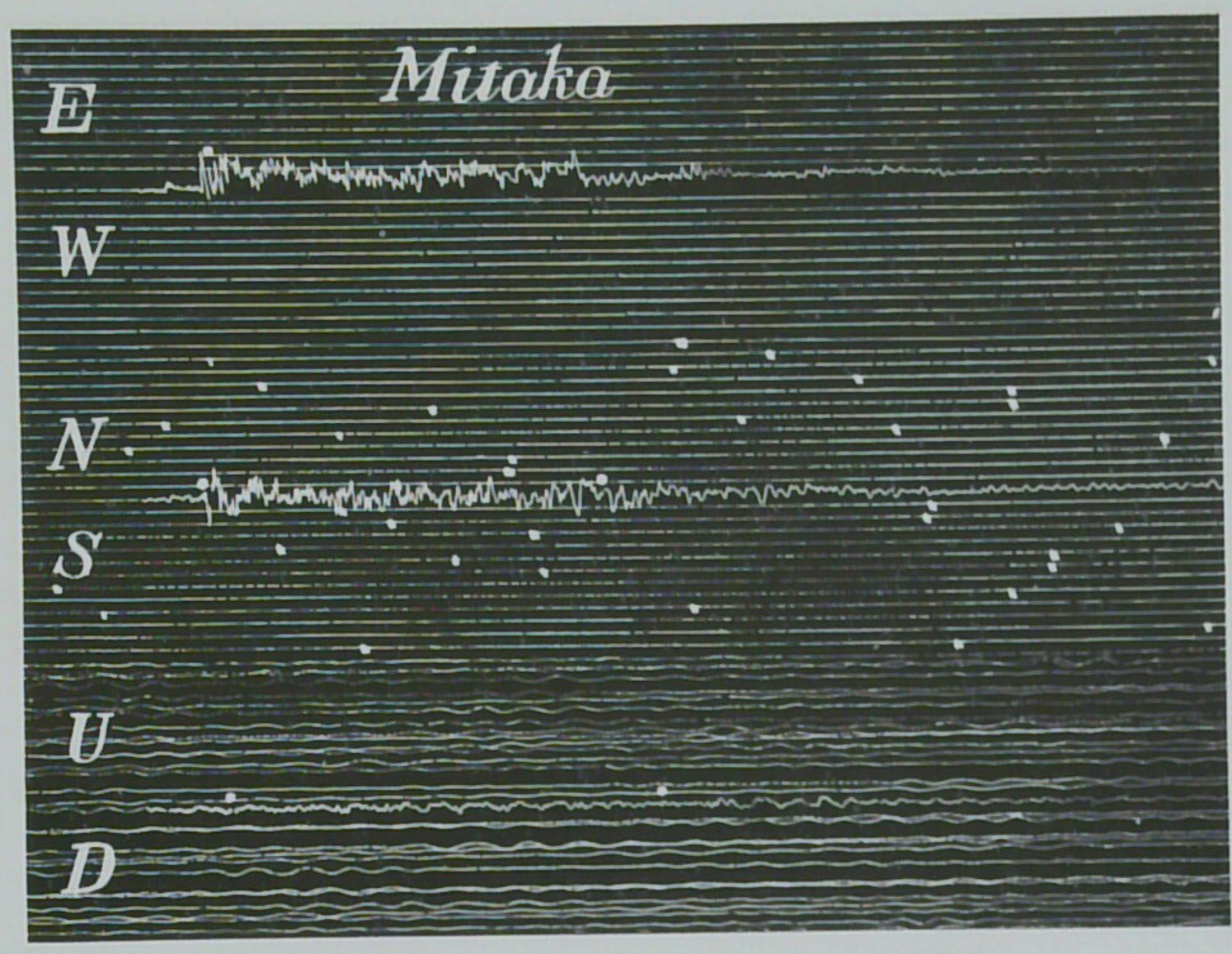


(a) (*Full size the actual.*) $1^{min.}=46{\cdot}4^{m.m.}$

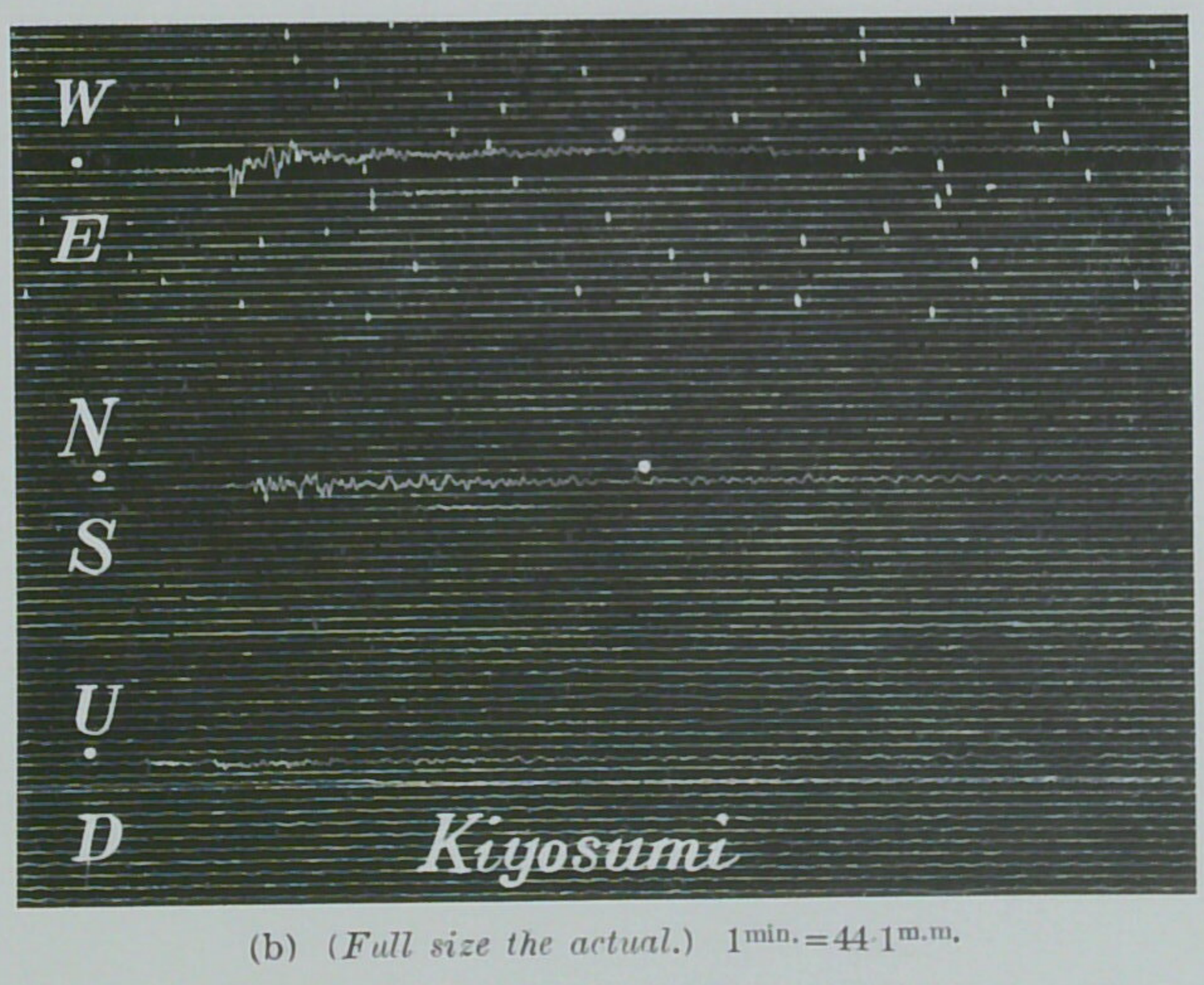


(b) *E. W. N. S.-comp.* $=1{\cdot}6\times$ *the actual.*
Vertical comp. $=1{\cdot}6\times$ *the actual.*

Fig. 5. Seismograms of the earthquake of Sept. 19, 1932.
(Eqk. No. 43.)
(a) Hongô. (b) Ishimoto acceleration seismograph diagram obtained at Hongô.
Instrumental constants: Hongô (see Fig. 2).



(a) (*Full size the actual.*) $1^{min.}=36{\cdot}2^{m.m.}$



(b) (*Full size the actual.*) $1^{min.}=44{\cdot}1^{m.m.}$

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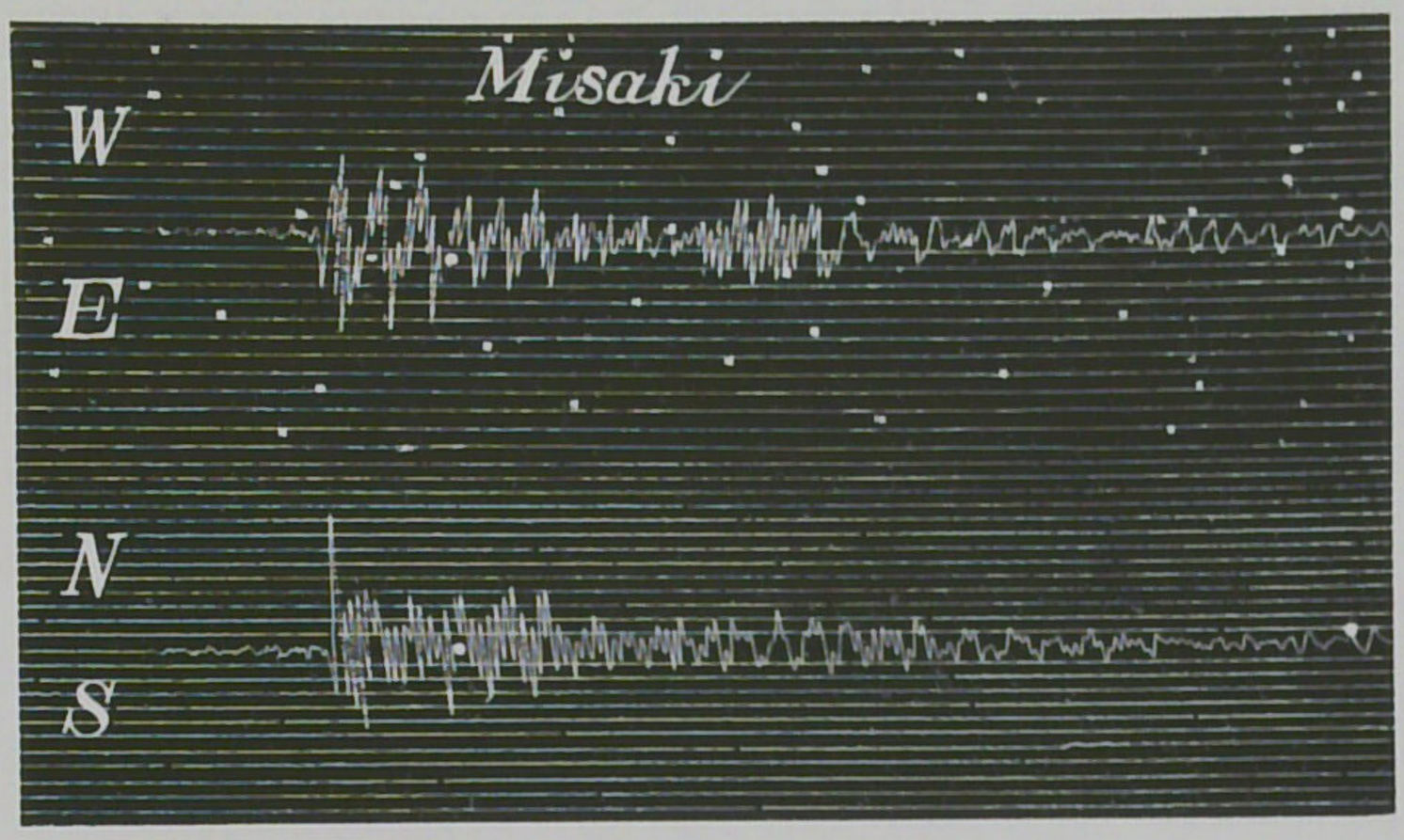
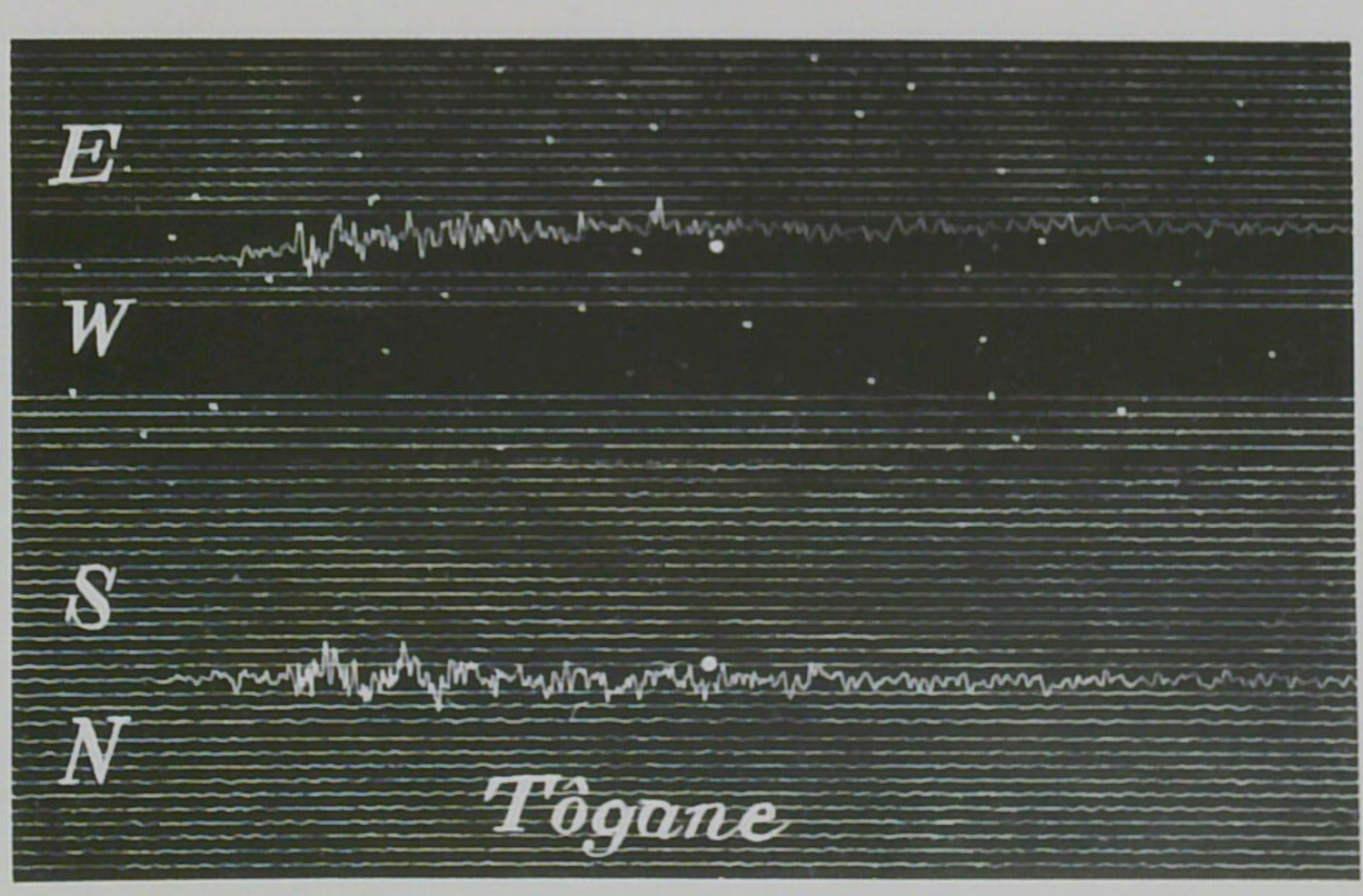
Fig. 6. Seismograms of the earthquake of Sept. 19, 1932.
(Eqk. No. 43.)

(a) Mitaka. (b) Kiyosumi.

Instrumental constants:
- Mitaka (see Fig. 2.)
- Kiyosumi
  - V (N. S. E. W) = 50
  - V (Vert.) = 17
  - T (N. S. E. W. Vert.) = 7^s
  - e (N. S. E. W.) = 1·8
  - e (Vert.) = 1·2



(a) (*Full size the actual.*) $1^{min.} = 65{\cdot}7^{m.m.}$



(b) (*Full size the actual.*) $1^{min.} = 63{\cdot}7^{m.m.}$

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Fig. 7. Seismograms of the earthquake of Sept. 19, 1932.
(Eqk. No. 43.)

(a) Misaki. (b) Tôgane.

Instrumental constants: (see Fig. 2.)

東京帝國大學地震研究所

地震觀測報告

昭和七年 第四册

SEISMOMETRICAL REPORT

OF THE

EARTHQUAKE RESEARCH INSTITUTE

TOKYO IMPERIAL UNIVERSITY

1932

Part 4

(October 1.—December 31, 1932)

Published by the Institute
Tokyo 1933

Seismometrical Report.

(Earthquake Research Institute, Tôkyô, Japan.)

(Part 4, 1932.)

(October 1.—December 31, 1932.)

(1) Sensible earthquakes in Tôkyô for the period October 1.—December 31, 1932.

List I.

Time = Central standard time of Japan (Civil mean time of the meridian 135°E.)

Notation :

Prel. tr. = Preliminary tremor.
N.S. = North-South component.
E.W. = East-West component.
2A = Range of motion.
T = Period of earthquake motion.
λ = Longitude.
φ = Latitude.
D = Depth of the earthquake focus.

Intensity ; 0 (insensible), I (slight), II (rather weak), III (weak), IV (rather strong), V (strong), VI (violent)

No.	Station	Date	Time of occurrence	Duration		Maximum Motion				Direction of initial motion	Epicentre		Depth	Intensity
				Prel. tr.	Total	N S.		E. W.			λ (E)	φ (N)		
						2A	T	2A	T					
			h m s	s	m	μ	s	μ	s		°	°	km	
46	Tôkyô	Oct. 5	3 44 27·0	7·8	4	20	0·23	26	0·27		140·00	36·04	40	I
	Kamakura				2	24	0·57	4						
	Misaki													
	Kiyosumi			13·5	3	4	0·84	4	0·85					
	Titibu			11·2	2	8	0·27	8	0·27					
	Tôgane			10·4	2	5	0·55	6	0·68					
	Sakura													
	Tukuba		3 44 25·7	5·1	1·2	34	0·28	24	0·16					I
	Mitaka		3 44 29·0	8·4	3	20	0·60	34	0·60					
	Koyoma			12·4	2	20	0·60	32	0·60					

(to be continued.)

List I. (*continued.*)

No.	Station	Date	Time of occurrence	Duration		Maximum motion				Direction of initial motion	Epicentre		Depth	Intensity
				Prel. tr.	Total	N.S.		E.W.			λ (E)	φ (N)		
						2A	T	2A	T					
			h m s	s	m	μ	s	μ	s		°	°	km	
47	Tôkyô	Oct. 14	14 36 07·7	7·5	6	250	0·49	280	0·30		139·87	35·97	50	II
	Kamakura			12·0	4	50	0·22	60	0.33					
	Misaki			13·4	5	53	0·81	46	0·81					
	Kiyosumi		14 36 14·2	9·7	5	20	0 86	20	0·90					I
	Titibu			11·9	4	24	0 78	2)	0·60					
	Tôgane													
	Sakura			8·5	6	66	0·41	16	0·81					
	Tukuba		14 36 0·77	7·2	1·3	36	0·39	88	0·47					II
	Mitaka													
	Itô			16·0	2									
	Koyama			15·4	3									
	Yosiwara			18·0	3									
48	Tôkyô	14	21 19 31·7	4·4	3	24	0·21	24	0·21		139·70	35·55	20	I
	Kamakura		21 20 —	6·7	2	50	0·45	20	0·60					
	Misaki			7·4	2	49	0·58	33	0·58					
	Kiyosumi		21 19 35·1	9·2	2	6	0·56	5	0·56					
	Titibu			9·3	2	4	0 61	4	0·61					
	Tôgane													
	Tukuba		21 19 38·5	10·4	1									
	Mitaka		21 20 10·8	4·6	3	30	0·47	45	0·47					
49	Tôkyô	16	9 09 55·6	16·1	9	204	2·65	242	2·41		140·86	35·45	70	I
	Kamakura		9 09 39·9	17·6	7	340	3·40	140	2·30					
	Misaki			15·9	7	333	2·58	116	2·00					
	Kiyosumi		9 09 45·0	12·4	5	226	1·44	80	1·44					I
	Titibu			22·2	9	56	2·12	60	2·12					
	Tôgane			10·9	9	570	2·03	620	2·28					II
	Sakura													
	Tukuba		9 09 52·5	16·4	2·5	15	0·48	22	0·64					
	Mitaka		9 09 56·9	16·7	9	146	2·00	150	1·92					I
	Itô				18·0									
	Koyama				20·0									
50	Tôkyô	23	13 36 05·3	9·2	4	68	0·35	72	0·35		139·78	36·00	60	I
	Kamakura			12·0	3	26	0·27	14	0·22					
	Misaki			13·6	3	25	0·30	33	0·30					
	Kiyosumi		13 36 09·1	10·6	3	6	0·69							
	Titibu			11·9	3			12	0·62					
	Tôgane			11·7	3	10	0·93	14	0·93					
	Sakura													
	Tukuba		13 35 59·9	7·5	2	25	0·24	36	0·21					II
	Mitaka		13 36 04·1	10·9	4	44	0·49	29	0·44					
	Koyama			15·0										
51	Tôkyô	25	3 36 25·3		4	64	0·66	24	0·50		140·45	36·77	80	I
	Kamakura													
	Misaki			25·5	3	12	0·67	7	0·55					
	Kiyosumi													
	Titibu			21·6	3			24	0·91					
	Tôgane			20·1	3	16	0·91	16	0·91					
	Sakura			18·3	3	20	0·73	42	0·84					
	Tukuba		3 36 17·1	11·7	2·6	33		20	0·33					I

(*to be continued.*)

List I. (*continued.*)

No.	Station	Date	Time of occurrence	Duration		Maximum motion				Direction of initial motion	Epicentre		Depth	Intensity
				Prel. tr.	Total	N.S.		E.W.			λ (E)	φ (N)		
						2A	T	2A	T					
	Mitaka	Oct. 25	h m s 3 36 25·9	s 14·0	m 6	μ 12	s 0·27	μ 12	s 0·27		°	°	km	
52	Tôkyô	31	11 18 40·3	9·0	2·5	60	0·30	56	0·30		139·82	36·04	60	I
	Kamakura		11 18 44·2	10·5	1·5	14	0·28	10	0·28					
	Misaki			13·0	2	17	0·46	21	0·46					
	Kiyosumi			10·4	1	4	0·77	4	0·89					
	Titibu			11·0	1	6	0·16	4	0·16					
	Tôgane			11·8	2	7	0·63	16	0·73					
	Sakura													
	Tukuba		11 18 36·8	7·5	1·5	8	0·32	26	0·32					I
	Mitaka		11 18 35·1	9·5	3	66	0·34	24	0·36					
	Koyama			14·0										
53	Tôkyô	31	23 13 09·1	11·3	3	56	0·20	40	0·20		139·95	36·11	60	I
	Kamakura		23 13 16·5	13·5	1·5	20	0·30	10	0·30					
	Misaki			16·4	2	12	0·55	8	0·55					
	Kiyosumi													
	Titibu			11·4	1	6	0·34	8	0·34					
	Tôgane			12·7	3	8	0·39	6	0·39					
	Sakura													
	Tukuba		23 13 07·3	6·8	1	18		23	0·18					II
	Mitaka		23 13 10·9	10·5	3	44	0·35	24	0·35					
54	Tôkyô	Nov. 1	17 30 51·4	8·1	2	42	0·23	45	0·23		139·89	36·15	40	I
	Kamakura		17 31 00·0	8·7	2	16	0·34	4						
	Misaki			15·(	2	7	0·49	9	0·49					
	Kiyosumi			15·7	2	6	0·65	4	0·65					
	Titibu			10·2	1	10	0·31	12	0·21					
	Tôgane			11·6	2	8	0·37	8	0·37					
	Sakura			10·0	2	6	0·41	9	0·31					
	Tukuba		17 30 49·9	6·6	1	26	0·14	2)	0·15					
	Mitaka		17 30 52·7	8·7	2	50	0·46	21	0·49					
	Koyama				1	24	0·45	28	0·45					
55	Tôkyô	13	13 48 55·8	77·8	60	1750	2·95	500	1·77		137·48	43·39		I
	Kamakura		13 48 58·7	80·0	16	1140	0·52	216	0·52					II
	Misaki													
	Kiyosumi			87·6	30	560	4·57	424	3·27					II
	Titibu			74·1	30	400	4·78	410	4·78					
	Tôgane			83·2	30	1480	5·45	840	3·82					
	Sakura			95·5	30	1326	4·05	910	3·00					
	Tukuba													
	Mitaka		13 48 56·5	79·4	30	1900	3·20	1317	4·40					
	Itô			97·8	25	610	4·95	397	4·95					
	Koyama			92·5	20	940	5·00	1160	4·45					I
56	Tôkyô	23	17 57 53·5	10·5	6	400	0·45	221	0·48		139·82	36·15	60	II
	Kamakura		17 57 57·0	13·2	3	194	0·50	192	0·30					II
	Misaki			14·8	5	33	0·41	48	0·41					
	Kiyosumi			14·5	4	20	0·53	12	0·40					
	Titibu			11·5	3	44	0·53	44	0·53					
	Tôgane			13·5	5	28	0·56	28	0·56					
	Sakura			11·0	5	30	0·43							
	Tukuba		17 57 52·2	8·3	2	22	0·31	20	0·31	N74°E				I

(*to be continued.*)

List. I. (*continued.*)

No.	Station	Date	Time of occurrence	Duration		Maximum motion				Direction of initial motion	Epicentre		Depth	Intensity
				Prel. tr.	Total	N.S.		E.W.			λ (E)	φ (N)		
						2A	T	2A	T					
			h m s	s	m	μ	s	μ	s					
	Mitaka	Nov. 23	17 57 52·2	11·3	6	120	0·34	186	0·37					
	Itô			15·4	2	184	0·31	112	0·31					
	Koyama			13·5	3	221	0·41	261	0·48					
													km	
57	Tôkyô	Dec. 2	2 41 20·1	13·5	12	430	0·64	496	0·64	N 24°E.d	140°.29	36°.47	40	II
	Kamakura		2 41 27·5	19·4	9	250	0·53	254	0·43					II
	Misaki			20·9	10			175	0·88					I
	Kiyosumi			19·3	10	100	0·83	90	0·83					
	Titibu			15·8	10	234	0·68	304	0·68	W slights				
	Tôgane			12·5	11	100	0·57	170	0·57					II
	Sakura			12·2	21	490	0·79	1140	0·79					II
	Tukuba		2 41 11·2	8·6	6	840	0·64	840	0·64					III
	Mitaka		2 41 21·9	15·0	17	463	0·72	838	0·72					
	Itô			23·5	7	260	0·60	136	0·65					
	Koyama			22·0	7	608	0·97	460	0·68	N 45° E				
58	Tôkyô	5	7 41 45·2	14·0	13	84	1·02	150	1·55		139·08	34·89	10	I
	Kamakura		7 41 35·4	9·5	7	274	0·56	456	1·35					I
	Misaki			7·7	10	150	1·71	133	1·71	N 63° E				
	Kiyosumi			13·2	11	20	2·13	52	2·13					
	Titibu													
	Tôgane			14·9	7	84	1·85	32	1·09					
	Sakura													
	Tukuba		7 41 52·1	21·0	3	7	0·8	12	1·12					
	Mitaka		7 41 44·1	12·3	14	126	0·37	334	0·50					
	Itô			2·8	10	2780	0·57	3220	0·57	S 2° E				IV
	Koyama			8·4	7	400	1·83	400	1·83					II
59	Tôkyô	16	5 23 32·2	9·8	3	31	0·24	22	0·22		140·33	35·20	20	I
	Kamakura		5 23 30·4	7·5	2	16	0·41	4	0·31					I
	Misaki			7·8	3	91	0·61	75	0·61					I
	Kiyosumi		5 23 23·0	3·0	2	160	0·47	63	0·47	N 69° E,d				II
	Titibu			14·8	1	8	0·52	5	0·52					
	Tôgane			5·0	4	20	0·79	36	0·60					
	Sakura			7·9	3	8	0·54	8	0·54					
	Tukuba													
	Mitaka		5 23 33·5	11·2	4	22	0·22	29	0·22					
	Itô				1	4		5						
	Koyama			17·0	2	40	0·40	24	0·35					

(2) *Important distant earthpuakes as observed in Tôkyô (Hongô).*

List II.

Date	Phase	Time of Occurrence (G. M. T.)	Amplitude 2A	Period	Probable Epicentre.
		h m s	mm	s	km
1932 Dec. 4	P	8 18 45			Δ=4150
	S	8 24 32			
	L	8 27 17·4	(E.W.) 1·300	39·0	
	M				
	F				
Dec. 25	P	2 11 17·5			km
	S	2 16 43·6			Δ=3830
	L	2 19 20·0	mm (E.W.) 6·000	62·0	λ=98° E
			(N. S.) 17·000	63·0	φ=39·5° N
	M	2 22 13·0	(indistinct)		
	F				

Daily frepuency of the earthquake felt in Tôkyô during 1932.

List III.

Date \ Month	I	II	III	IV	V	VI	VII	VIII	IX	X	XI	XII	Sum
1								1			1		2
2			2									1	3
3			1			1			1				3
4		2											2
5			1	1			1			1		1	5
6													0
7								1	1				2
8			1										1
9													0
10			1										1
11													0
12		1		1									2
13						1	1				1		3
14			1	1			1	2		2			7
15													0
16		1	1			1				1		1	5
17													0
18													0
19		1							2				3
20					1								1
21		1	1										2
22						1							1
23					1				1	1	1		4
24			2						1				3
25							1			1			2
26		2		1									3
27													0
28				1									1
29													0
30							1			2			3
31													0
Sum		8	11	5	2	4	5	4	6	8	3	3	59

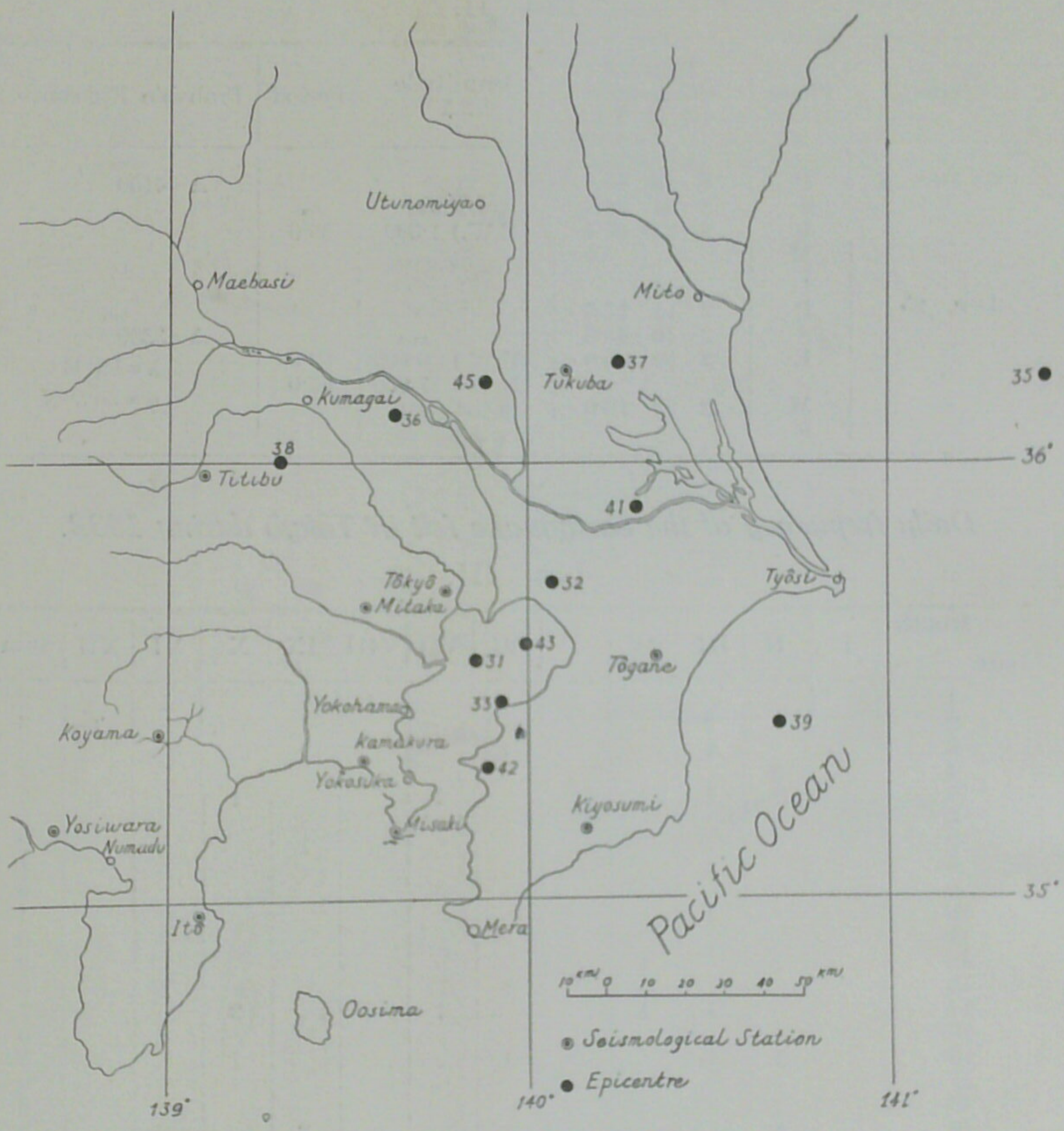

Fig. 1. Distribution of the epicentres of the Tôkyô sensible earthquakes within a distance of 160 km. from Tôkyô for the period October 1—December 31, 1932.

(Figures attached to each dot correspond to the earthquake number in List I.)

REMARK.

In Plates. I and II attached to Seismometrical Report Part 1, 1932, already published, an error was made in the arrangement of the diagrams, to correct which these revised Plates are appended to Part 4 of the same report for 1932.

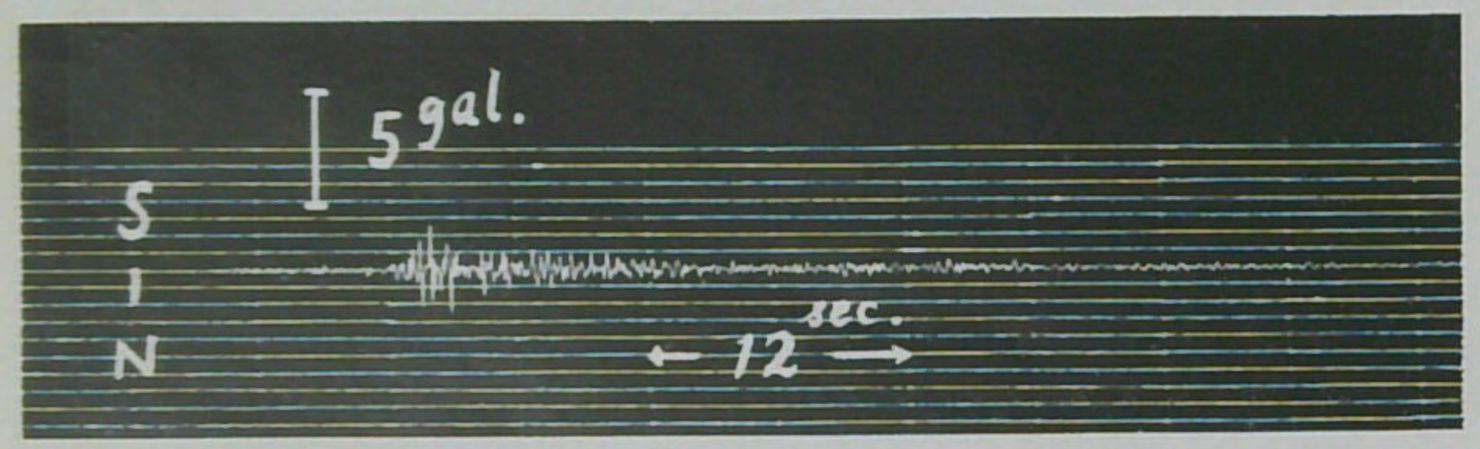

Fig. 1. The Earthquake of Feb. 4 (No. 2.)
(Observed at Hongô, Tôkyô.)
Ishinto acceleration seismograph diagram.

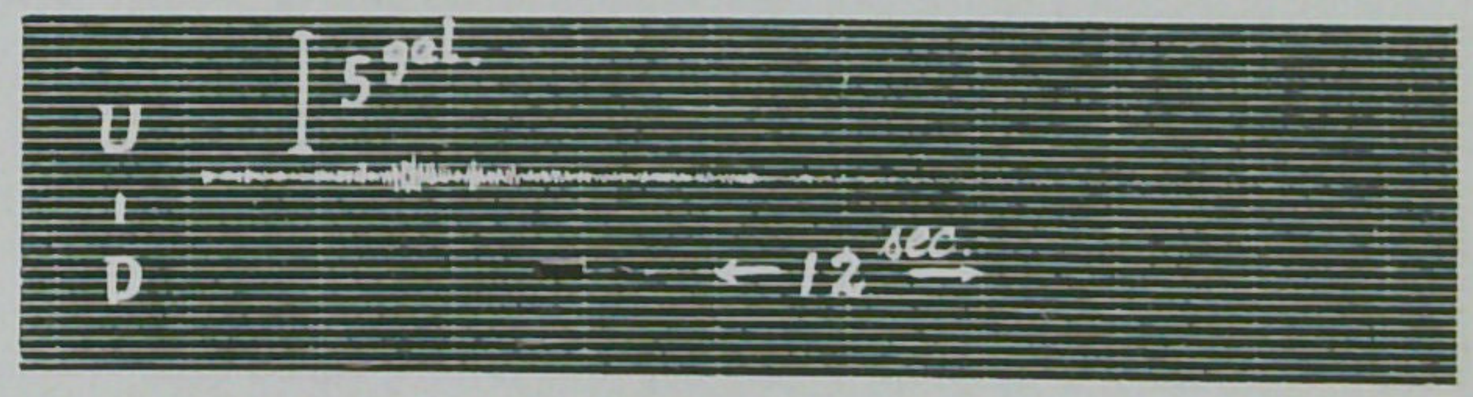

Fig. 2. The Earthquake of Feb. 19 (No. 5.)
(Observed at Hongô, Tôkyô.)
Ishimoto acceleration seismograph diagram.

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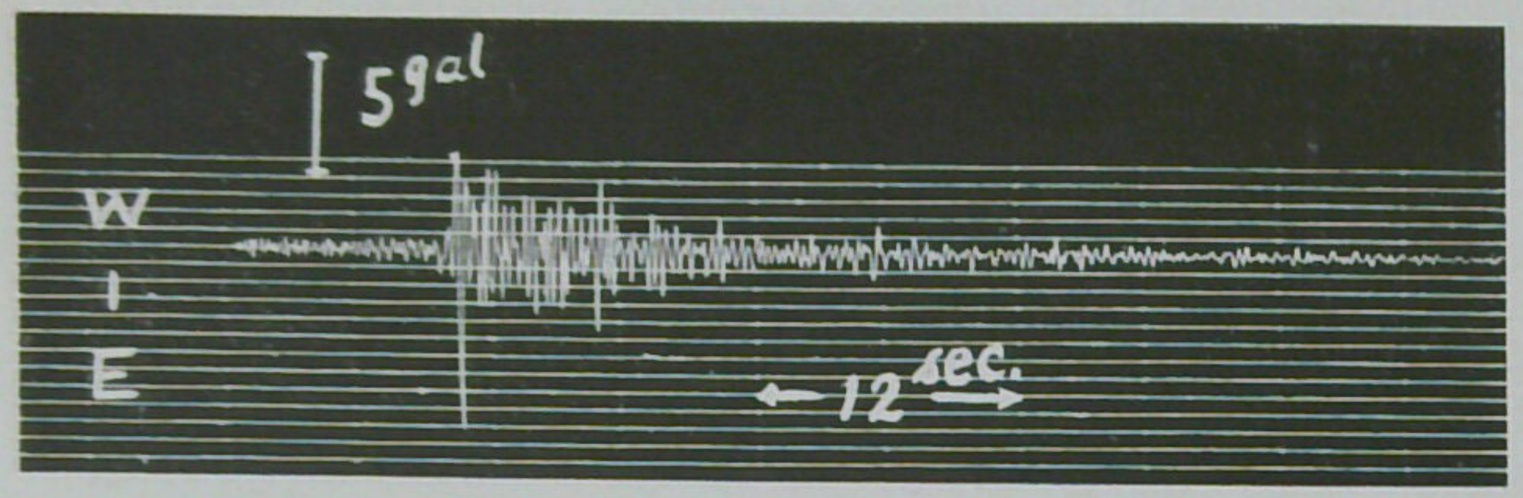
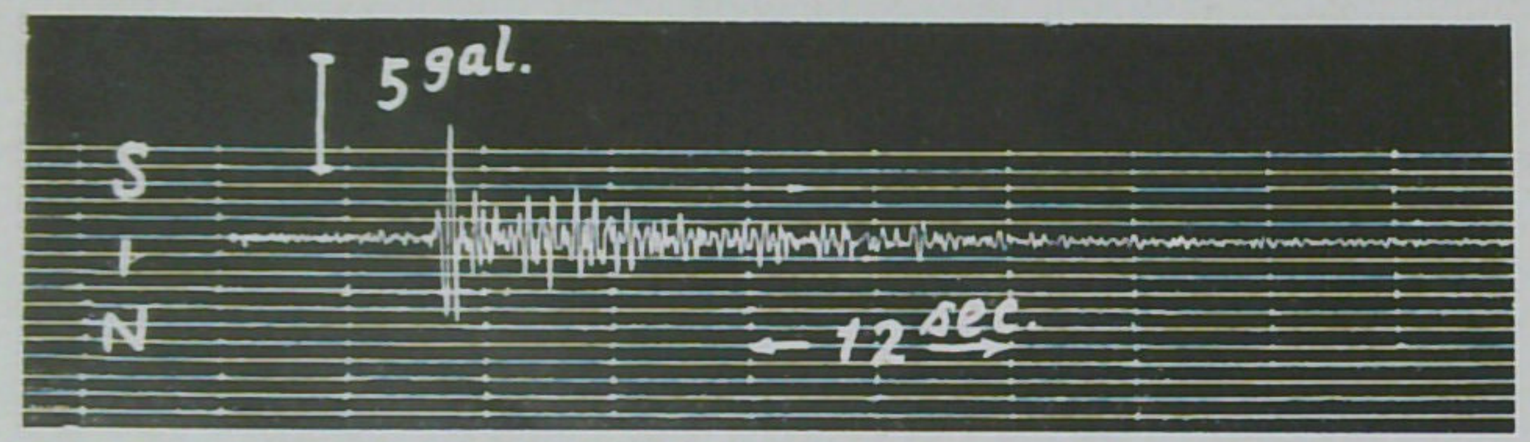




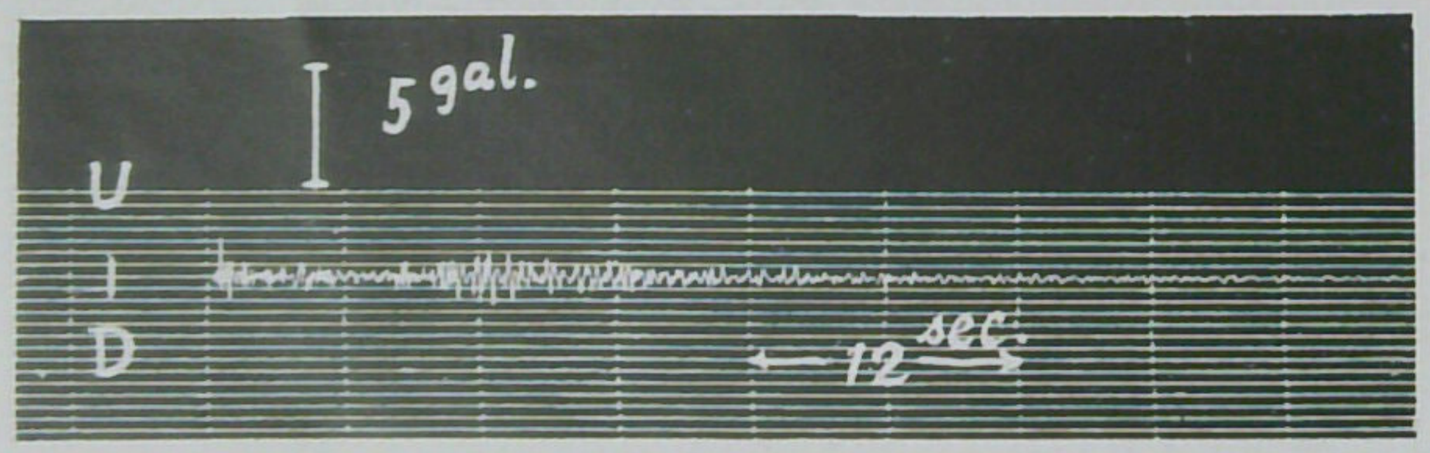
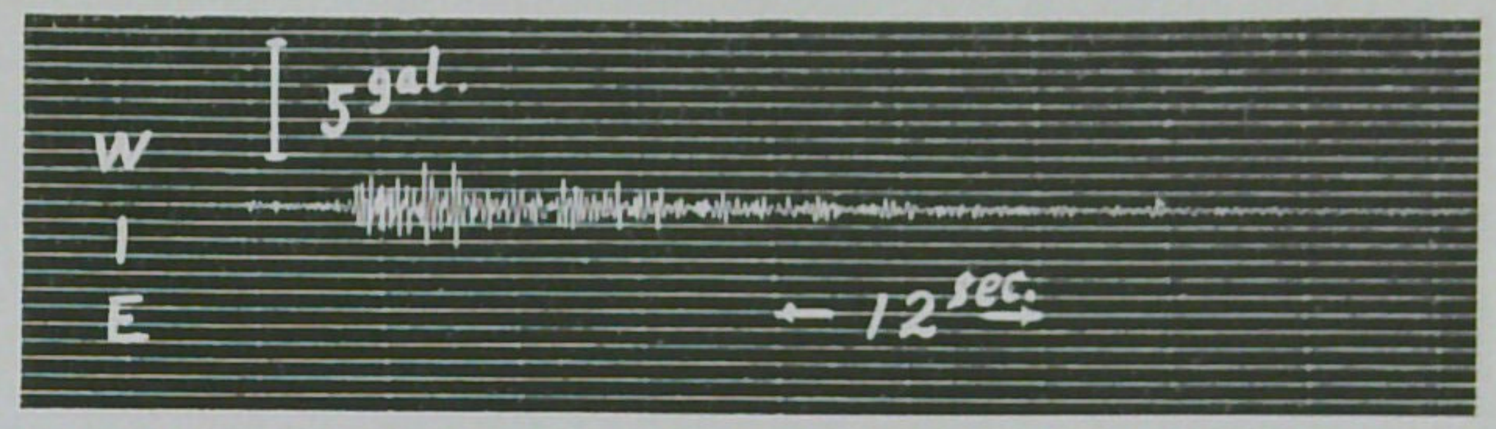
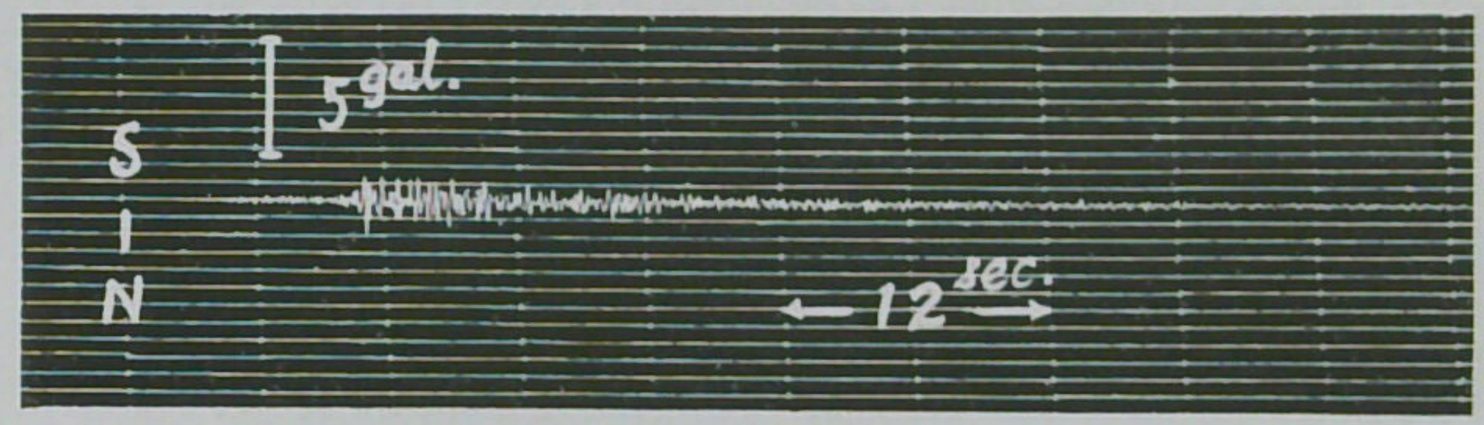


Fig. 3. The Earthquake of Feb. 26 (No. 7.)
(Observed at Hongô, Tôkyô.)
Ishimoto acceleration seismograph diagram.





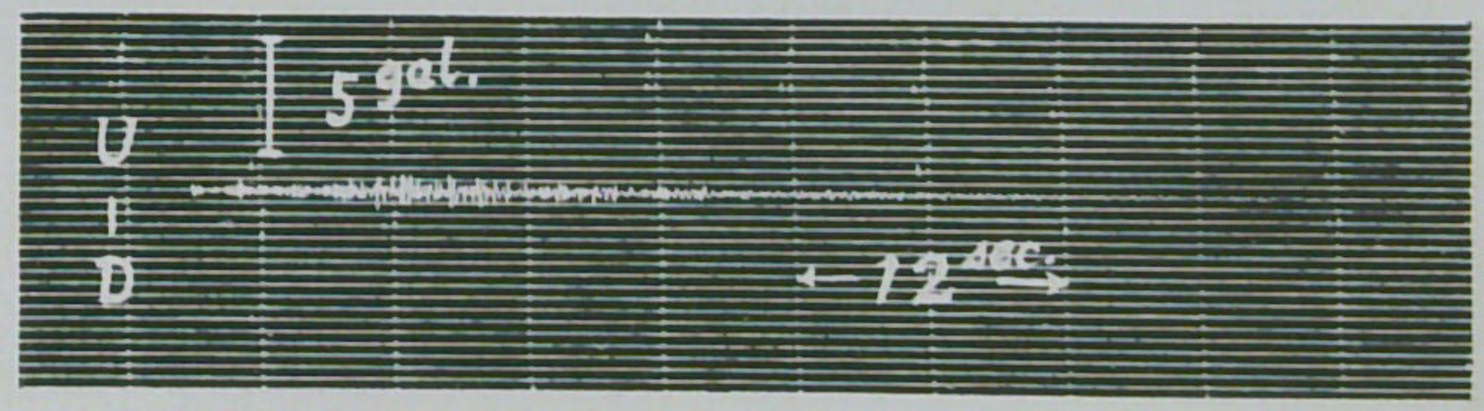


Fig. 4. The Earthquake of March 2 (No. 10.)
(Observed at Hongô, Tôkyô)
Ishimoto acceleration seismograph diagram.

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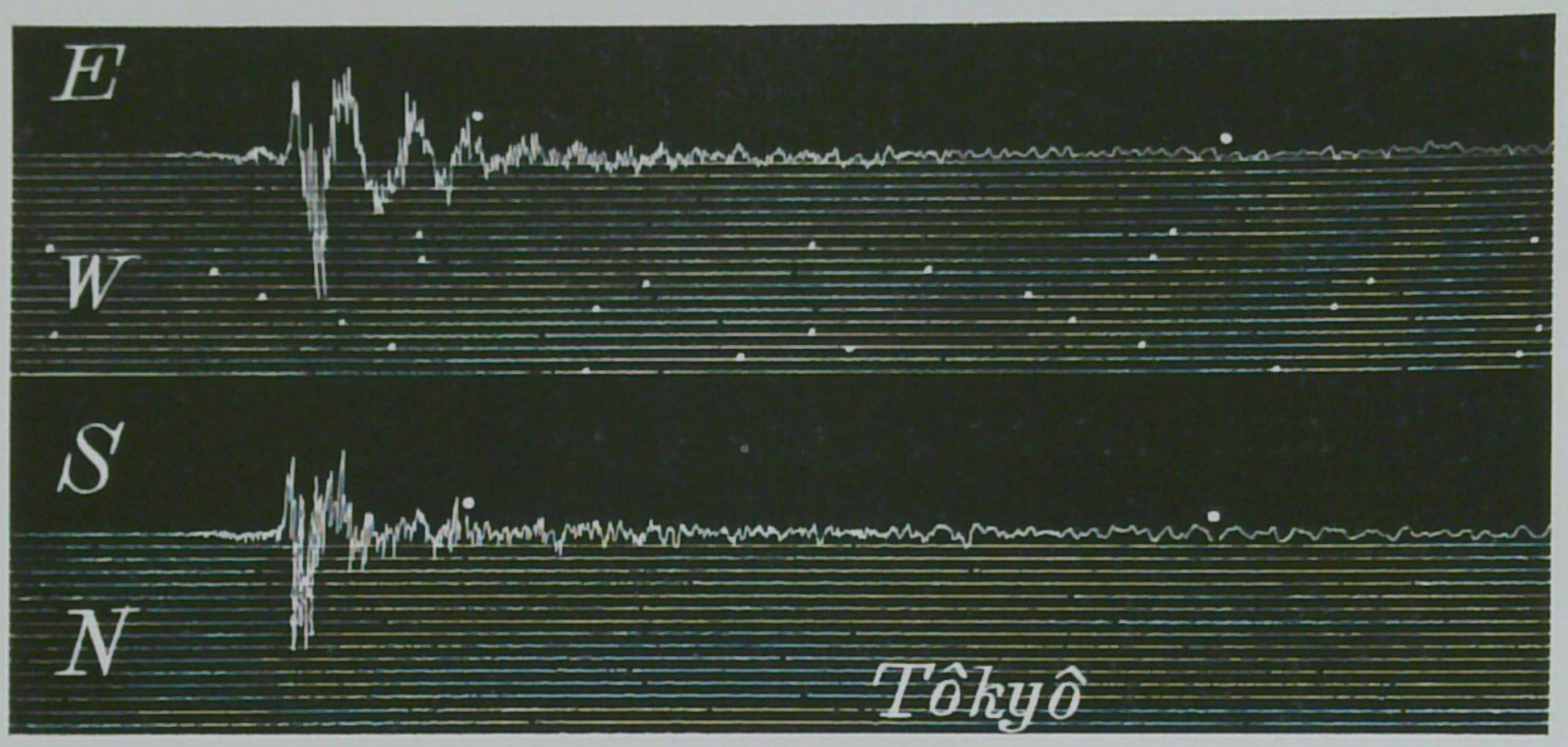

(Full size the actual.) $1^{min.}=61{\cdot}2^{m.m.}$

Fig. 2. Tôkyô observation of the earthquake of Oct. 14, 1932. (No. 47.)

Instrumental constants : V (N. S. E. W.) = 50
T („ „) = 7^s
ε („ „) = 1·3

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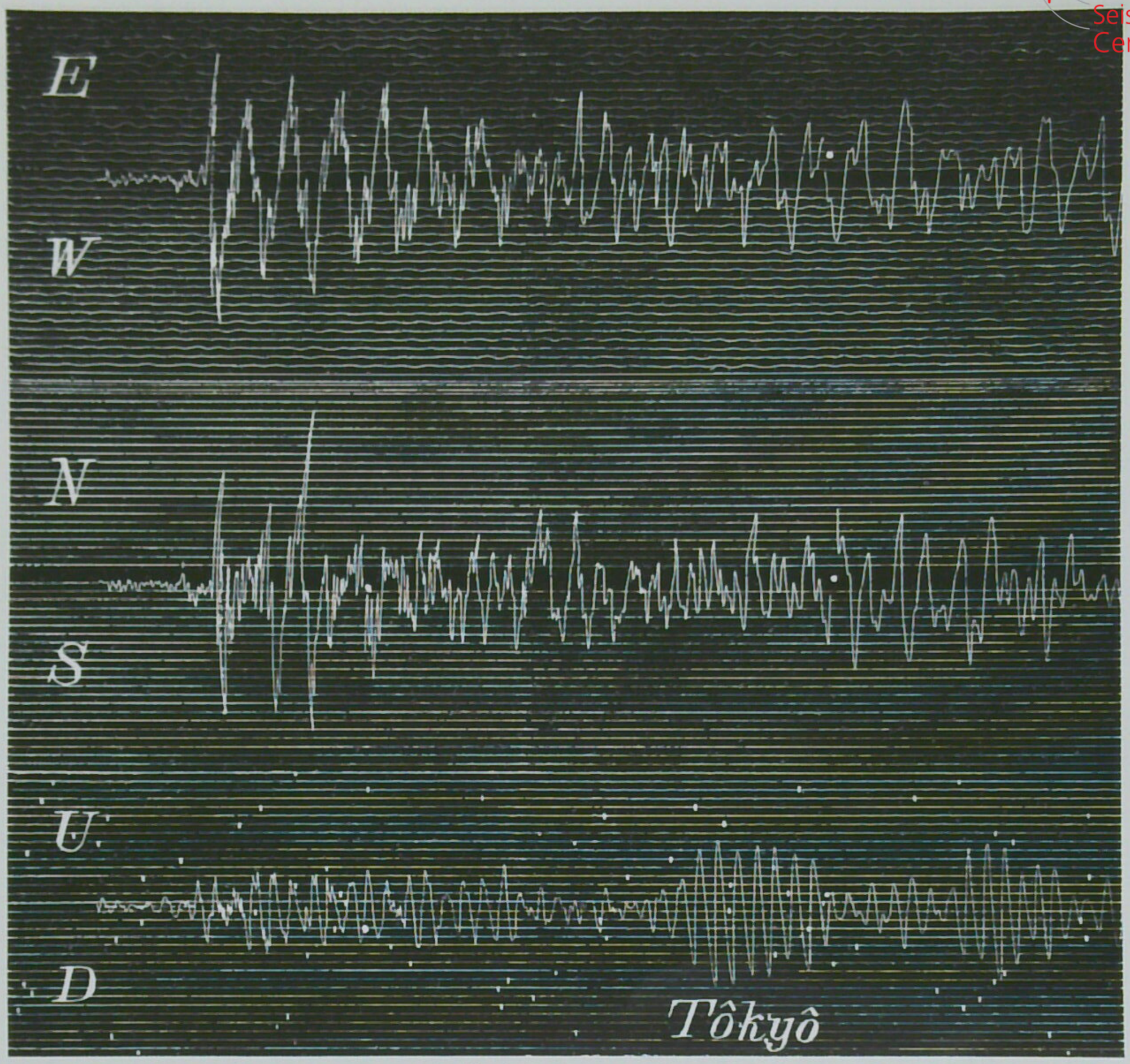
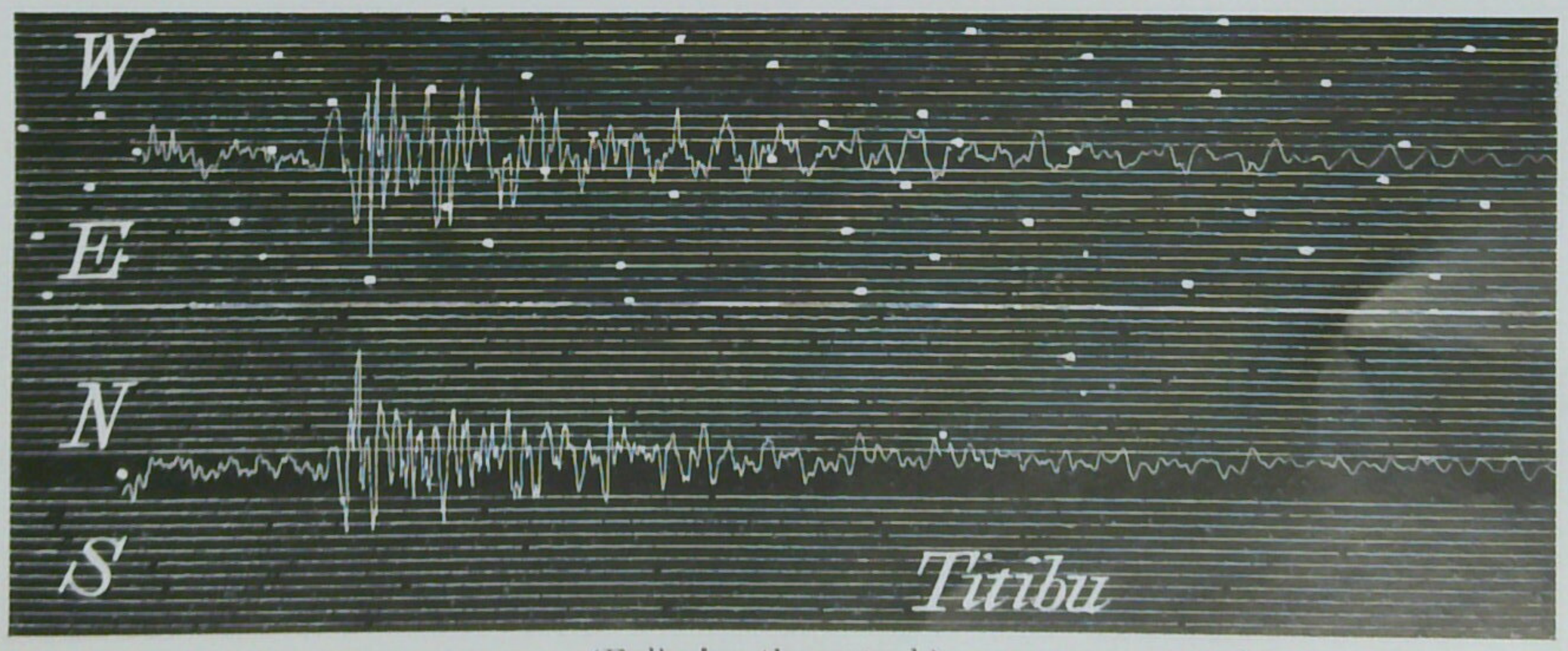


(Full size the actual.) $1^{min.} = 54{\cdot}5^{m.m.}$



(Full size the actual.) $1^{min.} = 71{\cdot}3^{m.m.}$

Fig. 3 Tôkyô and Titibu observations of the earthquake of Dec. 2, 1932. (No. 57.)

Instrumental constants:

Tôkyô	Titibu
V (W.S., E.W.)=50	V (N.S., E.W.)=50
(Vert.) =28	
T (N.S., E.W Vert.)=7^s	T („ „)=7^s
ε („ „ „)=1·5	ε („ „)=1·3

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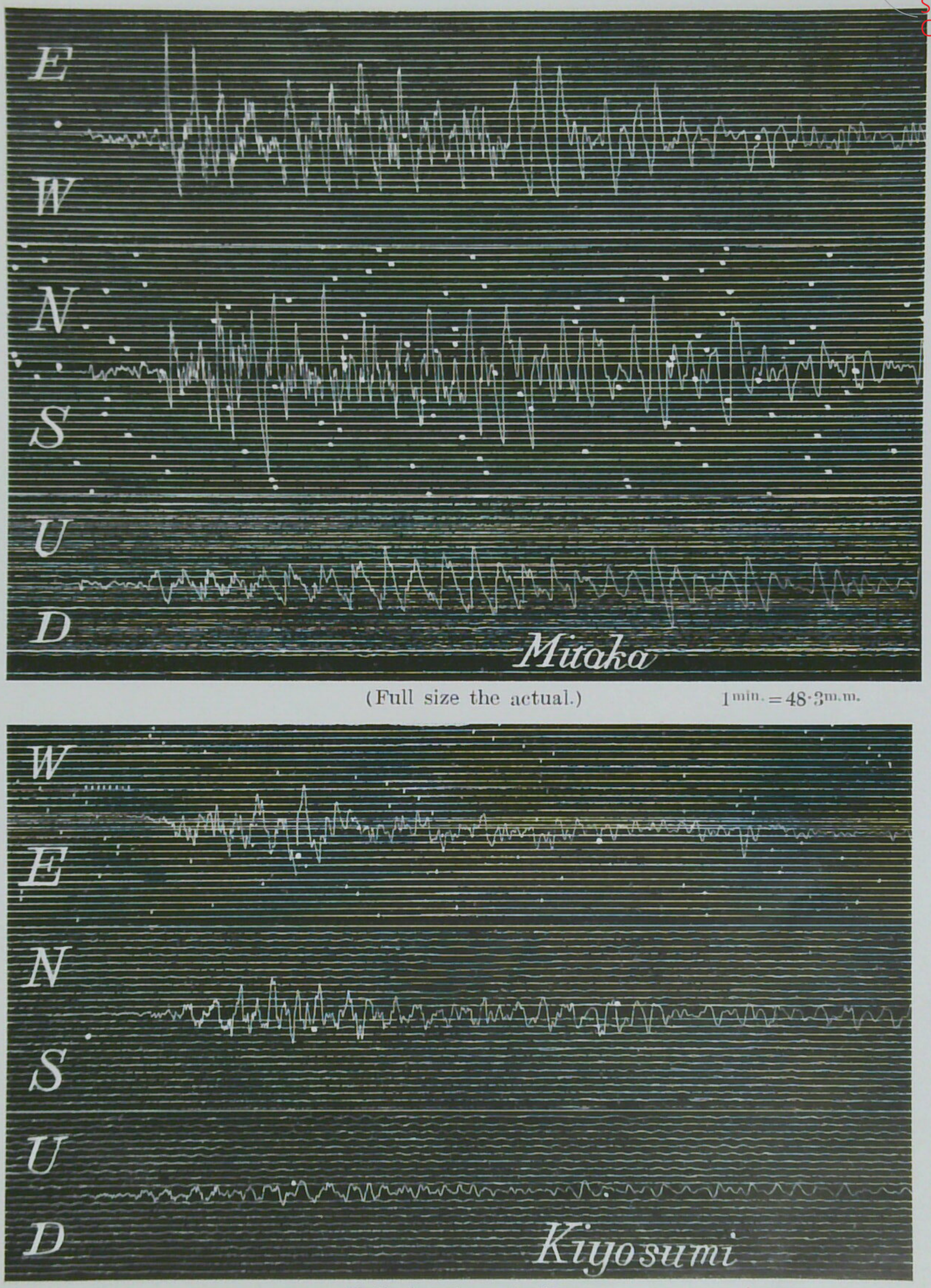

(Full size the actual.) $1^{min.} = 48 \cdot 3^{m.m.}$

(Full size the actual.) $1^{min.} = 42 \cdot 9^{m.m.}$

Fig. 4. Mitaka and Kiyosumi observations of the earthquake of Dec. 2, 1932. (No. 57.)

Instrumental constants :

Mitaka	Kiyosumi
V (N.S., E.W.) = 50	V (N.S., E.W.) = 50
(Vert.) = 28	(Vert.) = 28
T (N.S., E.W. Vert.) = 7^s	T (N.S., E.W. Vert.) = 7^s
ε („ „ „) = 1·3	ε (N.S.) = 1·9, (E.W.) = 1·6, (Vert.) = 1·2

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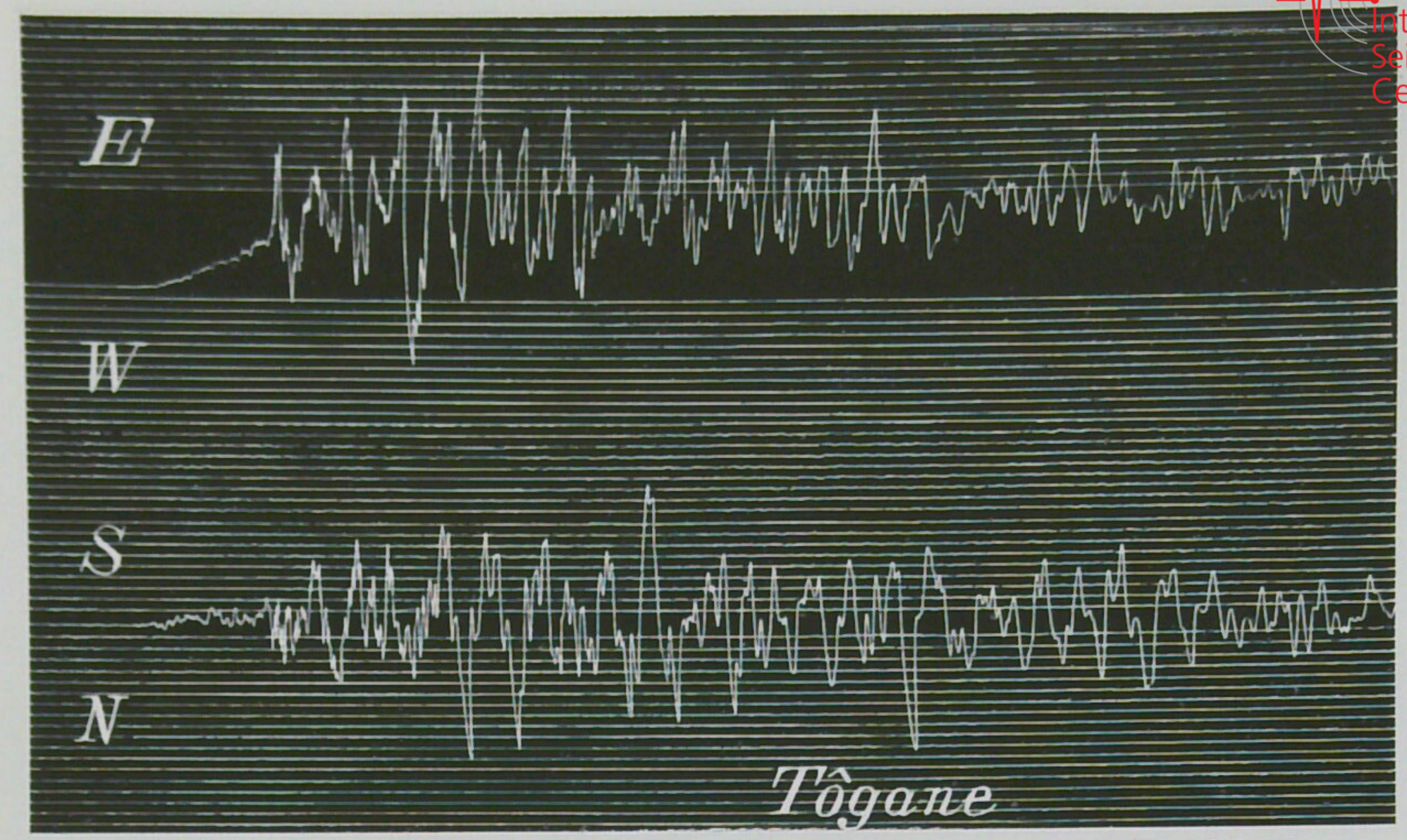
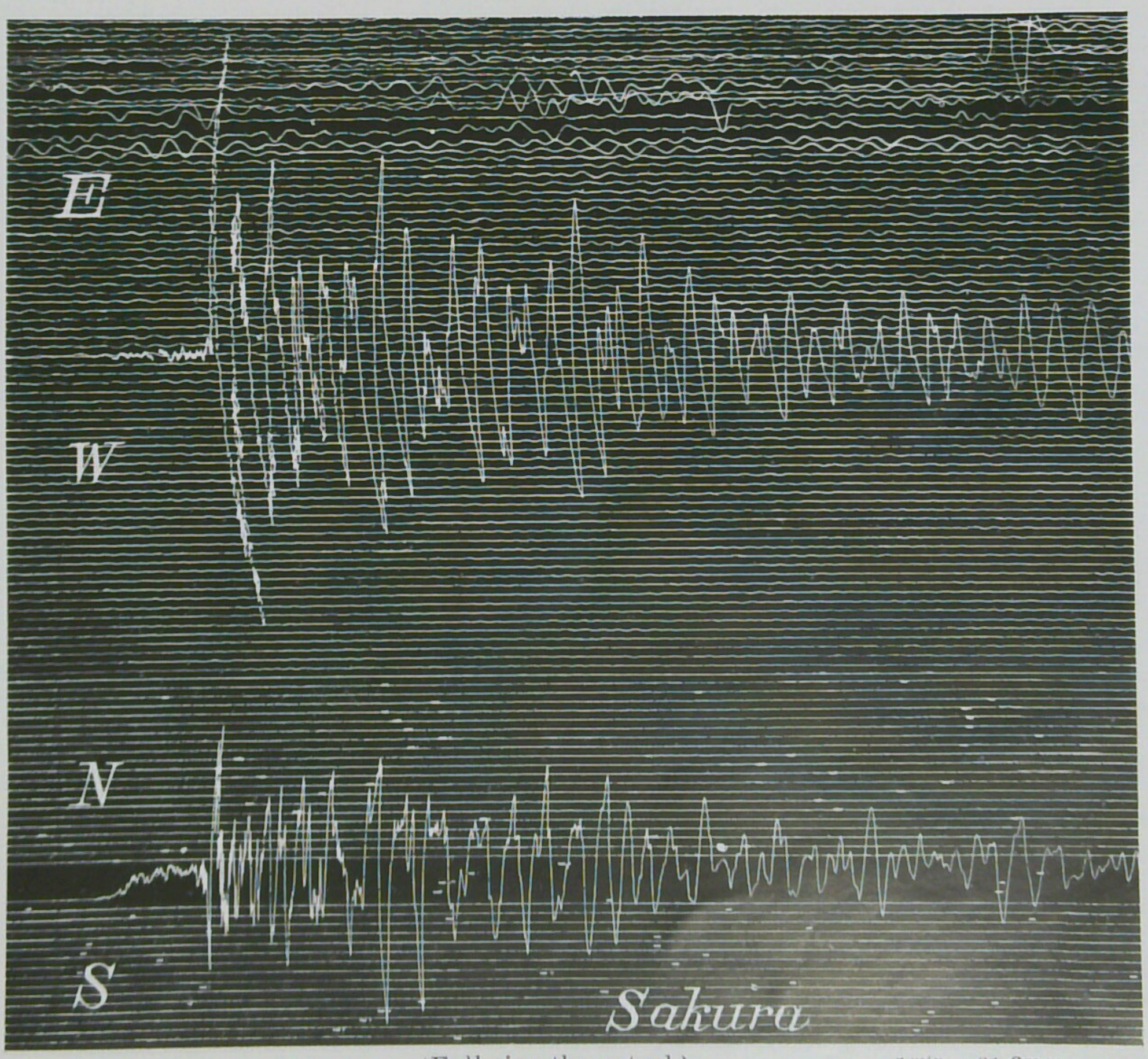


(Full size the actual.) $1^{min.} = 63{\cdot}3^{m.m.}$



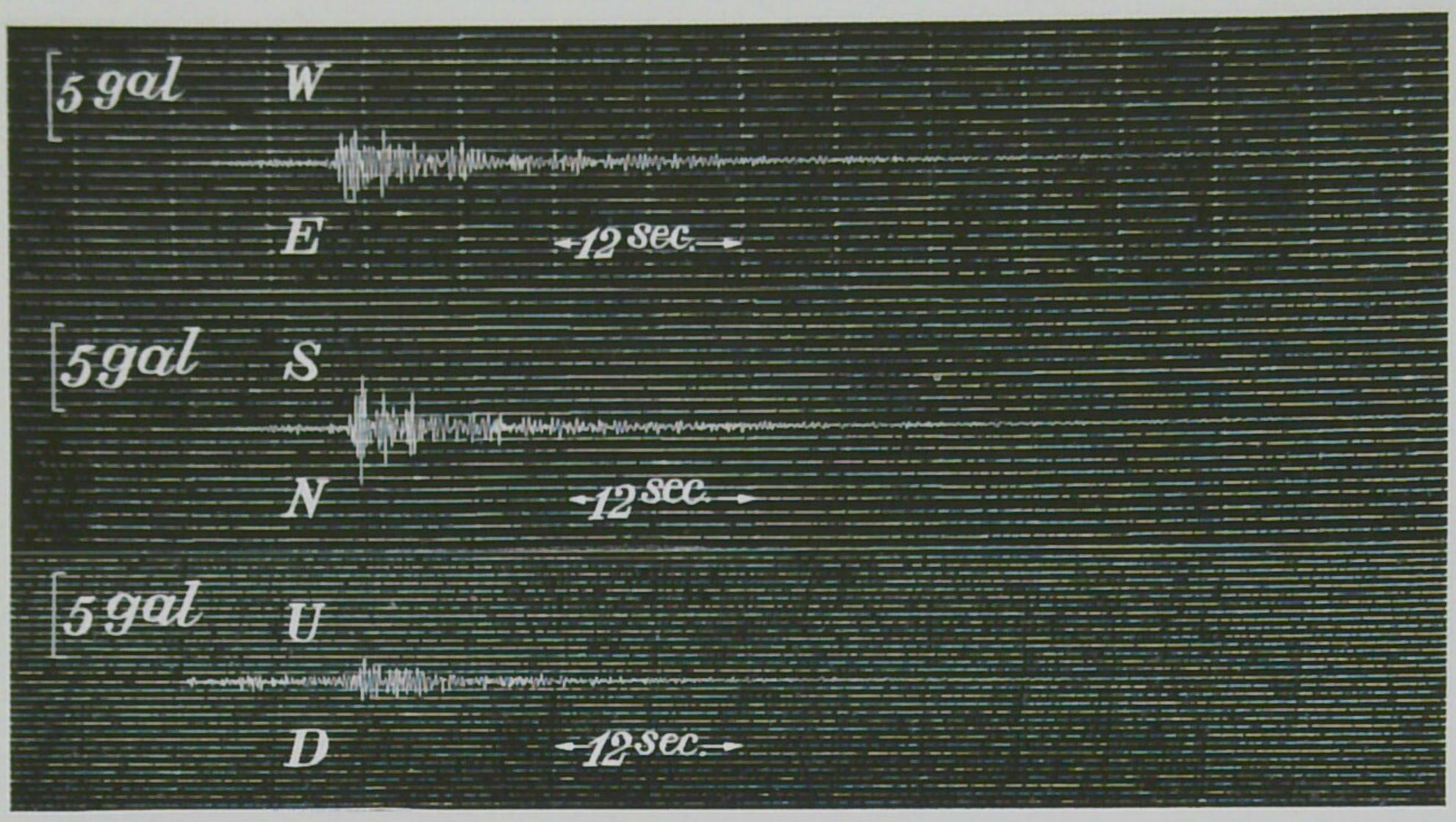
(Full size the actual.) $1^{min.} = 61{\cdot}3^{m.m.}$

Fig. 5. Tôgane and Sakura observations of the earthquake of Dec. 2, 1932. (No. 57.)

Instrumental constants:

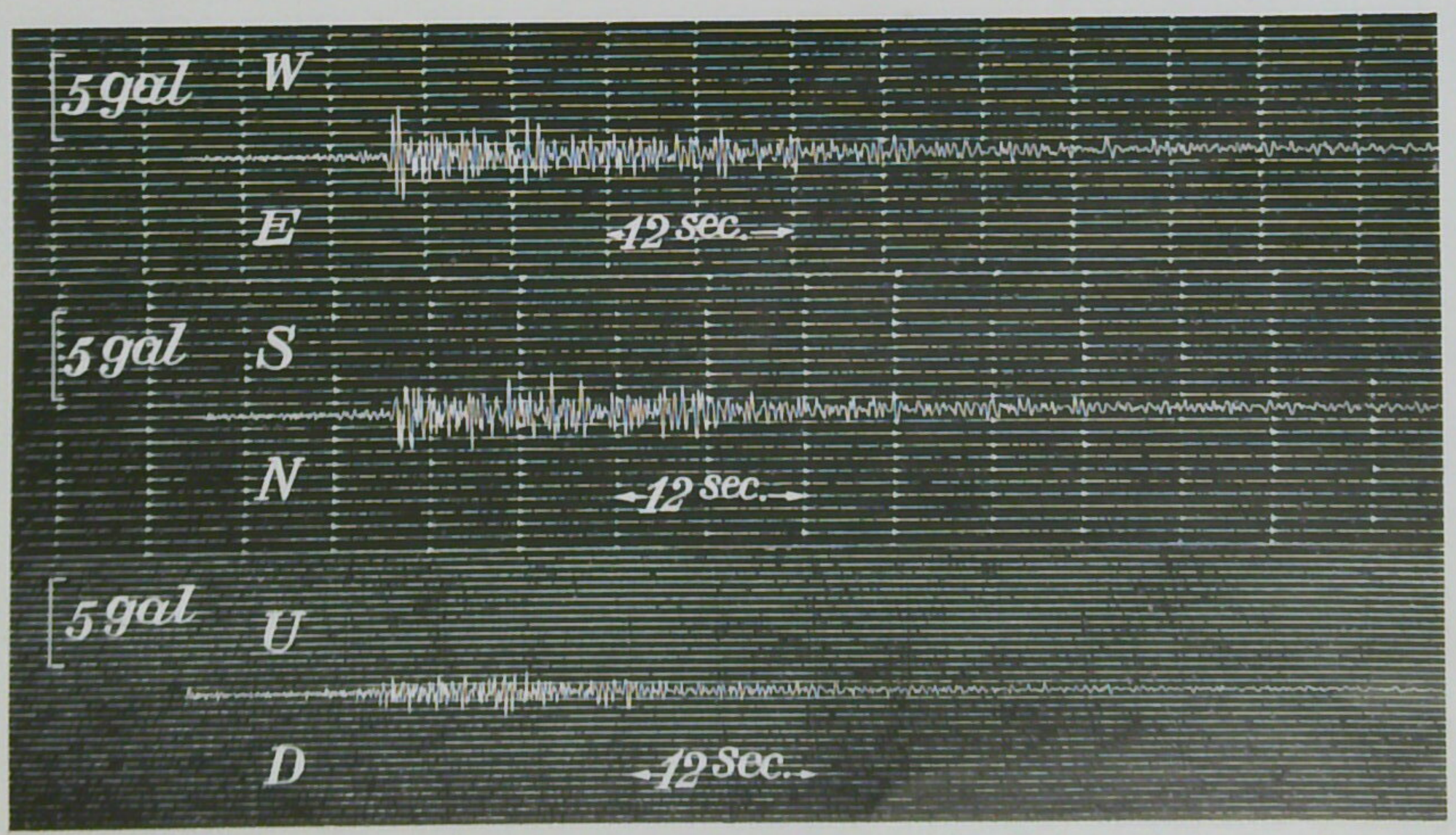
Tôgane	Sakura
V (N.S., E.W.)=50	V (N.S., E.W.)=50
T („ „)=7^s	T („ „)=7^s
ε („ „)=1·5	ε (N.S.)=1·6(E.W.)=1·3

（地震報告、一九三二、第四號、圖版）



(*Full size the actual.*)

Fig. 6. Ishimoto acceleration seismograph diagrams of the earthquake of Oct. 14, 1932. (No. 47), obtained at Hongô (Tôkyô).



(*Full size the actual.*)

Fig. 7. Ishimoto acceleration seismograph diagrams of the earthquake of Dec. 2, 1932 (No. 57), obtained at Hongô (Tôkyô).