

No. 33.

1935.

Geodætisk Institut
 Proviantgaarden, Copenhagen, Denmark.

Bulletin
 of the seismological station

KØBENHAVN

$\varphi = 55^{\circ}41' N.$ $\lambda = 12^{\circ}27' E.$ $h = 13$ m.

Lithologic foundation: chalk.

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Instruments:

Galitzin-Wilip seismographs:

Constants:

Component	l	T_1	A_1	μ^2	T	k
	cm	sec	cm		sec	
N	12.5	12.61	100	-0.1	12.2	103
Z	14.5	10.02	100	-0.1	11	100

E was dismantled on Jan. 5.

Wiechert 1000 kg. horizontal seismograph.

Wiechert 1300 kg. vertical seismograph.

Constants:

Component	T	ν	ρ	V
	sec		mm	
N	9.5	4.1	0.7	215
E	9.5	4.0	0.7	195
Z	5.4	4	0.2	170

Milne-Shaw seismograph, E component, with the approximate constants $T = 12^s$ $\nu = 20$ $V = 300$.

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No.	Date	Hour	Forerunners				L	Un-defined	△	Remarks
			P	S						
	1935									
	Jan.		<i>m s</i>	<i>m s</i>	<i>h m s</i>	<i>m s</i>	<i>h m</i>	<i>h m</i>	°	
1*	1*	13			39 53	i 43 8				Pacific Ocean.
2	2	23					.3			
3	3	1	59 57	67 58	62.1	71.8			58	Tibet.
4	4	10					.7			
5*	4*	14	45 38	48 52					18	Asia Minor.
6*	4*	16	24 12	27.6					19	» »
7	4	20					.5			Faint.
	5									No Galitzin records 8 ^h 25 ^m —15 ^h 5 ^m .
8	6	7					.6			Faint.
9	7	11					.9			
10	8	13					.6			
11	11	1					0			
12	14	23					.3			Faint.
13	16	6					.6			»
14	17	2			27 39	30.9	1.2			<i>e_N</i> 31 ^m 51 ^s . New Caledonia.
15	18	2	18.0	25 39					55	<i>P</i> quite small, uncertain.
16	18	17			.6		.9			
17	19	1					.0			
18	19	11					.9			
19	19	12			56.8		1.1			
20	22	15			31.9		.9			
21*	23*	7	35 25	44 53	40.0	45 38	55		73	Aleutian Islands.
22	30	1					.0			
23	31	18					.9			
	Febr.									
24	3	2						.5		
25	4	18					.6			
26	6	2	2 19	9 5*	12.3		.3		46	Atlantic Ocean.
27	7	18					15			Small preceding movement.
28	9	20					.0			
29	13	10					.0			
30	18	6					49			
31	22	9					45			
32	22	17	17 20	26 45	26 57*		.6		73	The beginning of <i>P</i> uncertain
33	24	12					.2			[17 ^m 20 ^s or 30 ^s .
34*	25*	2	56 6	59 59	60 29		.0		22	Crete.
35	27	10								
	March									
36	2	6					.3			
37	4	16					.8			
38	5	10	33 25	i 38 47					33	Persia. <i>P</i> uncertain, possibly earlier than read.
39	5	22	25 13	32.9			.7		55	Himalaya.
40	7	10	38 21				1.1			
41	10	16					28			
42	11	12					.1			
43	12	13					1.0			Forerunners masked by microseisms.

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No.	Date	Hour	Forerunners				L	Un-defined	△	Remarks
			P	S						
	1935 March		<i>m s</i>	<i>m s</i>	<i>h m s</i>	<i>m s</i>	<i>h m</i>	<i>h m</i>	°	
44	13	19					.7			
45	14	13					.4			
46	14	14					.9			
47	14	15			<i>i</i> 52 28		1.8			
48	15	11					.1			
49	15	12					.8			
50	17	20					.9			
51	17	21	46 14		49 10	56 52	1.2			
52	18	8	<i>i</i> 45 32	49 31	50 13				22	Asia Minor. Disturbed.
53	19	7					34			
54	20	23			18.1	35.1	.9			
55	21	0	14.3	22 53			.6		64	Superposed on preceding shock. [Bengal.]
56	24	0					.4			
57	24	15					.2			
58	27	20					.1			
59	28	0		6 14						Manchuria. No Galitzin records.
60	29	13			7 44		.7			
61	30	3					.7			
62	30	16			54 51	61.2				
63	30	21	<i>i</i> 31 37	41 25	34 32	46.2	.9		77	Japan. Greece. <i>P</i> and <i>S</i> small, somewhat [uncertain.]
64	31	3	25 6	28 19			29			

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NOTES

- No. 1. Jan. 1. 13^h. Pacific Ocean; $\Delta = \text{ca. } 140^\circ$. Deep focus. P'_Z 39^m53^s. e_Z 41^m9^s; e 42^m.9; i_Z 43^m8^s, large; e_N 43^m33^s; e_N 44^m.7. SS 60^m.8.
- No. 5. Jan. 4. 14^h. Asia Minor. The beginning of P small, not quite certain; iP 45^m42^s. eS_N 48^m52^s; eS_E 48^m58^s, not large, followed immediately by L . M large.
- No. 6. Jan. 4. 16^h. Asia Minor. The beginning of P quite small, the reading not certain; e 24^m16^s larger movement; followed by much oscillatory movement. S small, not clearly marked. e_N 28^m.2.
- No. 21. Jan. 23. 7^h. Aleutian Islands. The beginning of P not clearly marked; the reading not quite certain. PPP 40^m.0. S 44^m53^s small; PS 45^m38^s larger. SS 39^m.9.
- No. 34. Febr. 25. 2^h. Crete. Deep focus. The beginning of P quite small, followed by increasing oscillatory movement; e_Z 56^m36^s, large. $e_{N,Z}$ 57^m8^s. S 59^m59^s, large; $i_{N,E}$ 60^m29^s, larger. L small.

Seismometric readings: Notation

- P — normal first preliminary tremors, longitudinal waves.
 $PP...$ — longitudinal waves reflected at the earth's surface.
 S — normal second preliminary tremors, transverse waves.
 $SS...$ — transverse waves reflected at the earth's surface.
 PS ; PPS ; ... — waves reflected at the earth's surface which travel partly as longitudinal, partly as transverse waves.
 SKS — waves which traverse the mantle as transverse waves but are refracted through the core with longitudinal oscillation.
 PKS — waves which pass the mantle on one side of the core as longitudinal waves, on the other side as transverse waves and are refracted through the core with longitudinal oscillation.
 $SKKS$ — waves which traverse the mantle as transverse waves, are refracted through the core with longitudinal vibration and are reflected on its inner boundary.
 L — long, or surface, waves; main phase.
 M — waves of greatest amplitude in the surface waves.
 i — sharply defined beginning of a phase.
 e — gradual beginning of a phase.
 Δ — arcual distance from the station to the epicentre.
) affixed to time of phase indicates that the beginning is in a time-mark.
) affixed to number and date refers to Notes.