

No. 42.

1937.

Geodætisk Institut

Proviantsgaarden, 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	A_1	T_1		μ^2	T	k
N	cm 12.5	cm 100	sec 12.61	$1/4-7/5$	-0.1	sec 11.6	106
				$7/5-30/6$	-0.02	12.5	103
E	12.5	100	12.65	$1/4-17/4$	0.03	11.1	105
				$17/4-30/6$	0.1	12.7	103
Z	14.5	100	11.55	$1/4-10/6$	0.1	9	94
				$15/6-30/6$	0.1	11	95

Wiechert 1000 kg. horizontal seismograph.

Wiechert 1300 kg. vertical seismograph.

Constants:

Component	T	ν		ρ	V
N	sec 9.4	4.1	$1/4-8/5$	mm 0.7	220
			$8/5-30/6$	0.3	220
E	9.5	4.1	$1/4-8/5$	0.8	190
			$8/5-30/6$	0.3	190
Z	5.4	4.4	$1/4-8/5$	0.3	165
			$8/5-30/6$	0.1	165

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

Wood Anderson seismograph, E component, $T = 2^s.7$. Dismounted $22/5$.

Benioff vertical seismograph, $T_1 = 1/4^s$ $T = 1^s$.

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No.	Date	Hour	Forerunners				L	Un-defined	△	Remarks			
			P		S								
			m	s	h	m	s	m	s	h	m	°	
	1937 April												
1	1	18								.6			
2	2	5								1.1			
3	3	1								.4			Faint.
4	3	4											
5	3	12											
6	3	21											
7	4	15											
8*	5*	7	10	50									
9	6	0											
10	7	18	37	54	43	21						34	Iran.
11	8	14											
12	8	22								.5			On Benioff Z only. Faint.
13	9	14									48		
14	11	5								1.4			
15	11	16								.7			
16	12	15								.7			
17	13	5								.9			
18	14	21								.8			
19*	16*	3											
20	21	21	57	8	60	50						21	Pacific Ocean. Greenland Sea.
21	22	16								.3			
22	23	13								.1			Faint.
23	24	5								.7			
24	26	10											
25	28	2	41	49	45	57						23	On Benioff Z only. Asia Minor.
26	28	14								.9			
27	29	1								.5			
28	29	18	17	6	21	33						25	P+. Atlantic Ocean.
29	29	19	i 3	47	12	57						70	P+. Alaska.
30	29	20	29	23	37	50						69	e 38 ^m 38 ^s . P+. Japan. Focal depth [370 km.
31	30	19											
32	30	20											
	May												
33	2	0								.1			
34	2	23								.3			
35	4	5								.6			Small preceding movement.
36	5	22								.1			
37	5	23								.5			
38	6	18								.7			
39	7	14	22	5						.7			
40	7	18								.8			The reading of P not quite certain. No [Galitzin records. South of Alaska.
41	7	22								.8			
42	9	14	58	16	67	48						74	e 76 ^m .1. South of Kurile Islands.
43	10	15											e 47 ^m .7.
44	11	16										26	
45	11	17								.2			
46	12	3								.7			SS 20 ^m .5. New Guinea.

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			P	S						
			m s	m s	h m s	m s	h m	h m	°	
47	1937 May 12	13	21.2		31 52		1.0			Sumatra.
48	13	10					.1			
49	13	17					.6			
50	13	19			11 50					
51	13	21						22		
52	14	10			i57 21	i57 24				
53	16	7					.1			
54	16	11			59 8	70.2	2.0			
55	20	12						58		
56	21	2						40		Small preceding movement.
57	21	13	25 27		35 32	35 53	1.0			Disturbed. P possibly earlier than [read; 25 ^m 21 ^s ? Colombia.
58	23	8	23 21	32 18			.7		68	Atlantic Ocean.
59	23	11		5 36				7		Asia Minor.
60	24	1					.5			Small preceding movement.
61	25	3						41		Pacific Ocean.
62	27	4		57 34			1.3			
63	28	14						21		
64	28	15	i48 14		48 55	58 20				P+. e 58 ^m 33 ^s ; 59 ^m 33 ^s ; 59 ^m 58 ^s .
65	28	20	8 8	17 43	11 49	19 18				[Mexico. Depth ca. 160 km.
66	29	15	27 47	31 51	28 3*	32 18		35	23	e 24 ^m .3. Pacific Ocean. Deep focus.
67	30	12					.1			Asia Minor. Depth about 75 km.
68	31	6					.1			
69	31	15			51.8	68.7	1.5			
70	June 1	15					.5			
71	2	1	27 35	31 57				34	25	Atlantic Ocean.
72	2	21					.9			
73	5	10						36		
74	6	0					1.2			Small preceding movement.
75	6	18					.7			
76	7	4			6.0		.6			
77	7	13					.9			
78	7	16					.9			
79	7	22							6	The Alps.
80	8	3			59	68.5	1.6			
81	8	18	11 48	20 55	21 39				70	S small, uncertain. Kurile Islands.
82*	8*	22	41 59	52 22	42 46	53 41		65		Mexico.
83	10	1					.2			Faint.
84	10	1						49		Small.
85	10	15			22 27			29		
86	10	17						32		
87	12	18					.9			
88	13	23	36 54	47.6	47.4	53.4	1.1			P uncertain, no Z records.
89	14	12			50					[PP 40 ^m 18 ^s . Mexico.
90	14	13					1.2			Phases in forerunners not clearly [marked. No Galitzin Z record.

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			P		S						
			m	s	m	s	h	m	h	m	°
91	1937 June 15	23									
92*	19*	17				25 59	29 29	.3			Pacific Ocean.
93	20	19						.9			
94*	21*	15	i 26 39	i 38 6		37 12	39 27	.3	55		Peru.
95	21	19						.8			
96	21	22						.9			
97	22	5							.9		
98	23	21						.4			
99	24	4							16		
100	24	13	24 24			34.1		.8			Off Costa Rica.
101	24	13	26 17			36.8	37.0				Off Costa Rica.
102	24	15						57			Faint.
103	24	20	7 20	13 16		8 46		17		38	Atlantic Ocean.
104	26	19						35			
105	28	20						.7			
106	30	14						.8			

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NOTES

- No. 8. April 5. 7^h. New Guinea; $\Delta = \text{ca. } 110^\circ$. Phases unusually clearly marked. P_Z 10^m50^s, small. P'_Z about 14^m.4, small. PP 15^m26^s; PPP 17^m45^s. (PKS) 18^m.5. SKS 21^m38^s, large on E . e_N ($SKKS$) 22^m.9. PS 24^m40^s, large on E ; PPS 25^m40^s. e_E ($PKKS$) 28^m.7. e_N 29^m.2. SS 30^m35^s. e_Z 34^m.3. e_N 34^m.9.
- No. 19. April 16. 3^h. Pacific Ocean. Deep focus. i 20^m27^s quite small; i 20^m30^s; 32^s. iP' 20^m41^s followed by exceptionally large movement on Z ; focal distance? PP 23^m59^s large on N . e_E 26^m57^s. $e_{N,E}$ 27^m.4. e 29^m19^s and 30^m19^s large and clearly marked on N . $e_{N,Z}$ 33^m40^s; e_N 34^m14^s, large. $e_{N,Z}$ 35^m24^s. e_E 37^m.6 and e_N 38^m5^s large. 42^m.2, 43^m42^s and 44^m.6 large, distinct phases on E . Corresponding movement on N large, but phases not clearly marked.
- No. 82. June 8. 22^h. Mexico. $\Delta = 88^\circ$; $h = 190$ km. P , condensation, 41^m59^s. pP 42^m46^s. PP 45^m19^s. pPP 45^m59^s. SKS 52^m4^s (in time-mark); S 52^m22^s. SP (or pS) 53^m15^s; PS (or sS) 53^m41^s. e 54^m29^s. SS 58^m.9.
- No. 92. June 19. 17^h. Pacific Ocean. PKP 25^m59^s, on Galitzin Z only. i 26^m3^s; 9^s; 17^s; 22^s distinct pulses on the Benioff Z record. i 29^m29^s; 30^m31^s; 33^m51^s clearly marked on Galitzin Z . No clearly marked phases on N ; no time-marks on Galitzin E . L small.
- No. 94. June 21. 15^h. Peru; $\Delta = \text{ca. } 100^\circ$. Phases exceptionally clearly marked. iP 26^m39^s (x , +1.8, +3.8; x , -1.8, -4.6). e 26^m50^s. PP_Z 20^m22^s; 33^s. e_E 30^m.7. e_N 34^m37^s. SKS 37^m12^s, large on E . $i_N S$ 38^m6^s, large on N . PS 39^m27^s, large on Z and very large on E . SS_N 44^m.6; e_E 44^m57^s. SSS_E 50^m.2. L_Q 55^m; L_R 61^m.