

Geodætisk Institut

Proviantsgården, Copenhagen, Denmark

Bulletin

of the seismological station



KØBENHAVN

$\varphi = 55^{\circ}41' N.$ $\lambda = 12^{\circ}26' E.$ $h = 13$ m.

Lithologic foundation: chalk

No. 62. Jan.—Dec. 1952.

Instruments:

Galitzin-Wilip seismographs.

Constants:

Component	l	A_1	T_1		μ^2	T	k
	cm	cm	sec			sec	
N	12.5	100	12.64		0.0	12.6	103
E	12.5	100	12.69	$1/1-27/11$	0.0	12.5	97
				$27/11-31/12$	-0.1	12.5	111
Z	14.5	100	11.56	$1/1-14/2$	0.1	$8\frac{1}{2}$	89
				$14/2-31/12$	0	$8\frac{1}{2}$	82

Wiechert 1000 kg. horizontal seismograph.

Wiechert 1300 kg. vertical seismograph.

Constants:

Component		T	r	ρ	V
		sec		mm	
N		8.0	3.7	$1/2$	215
E		8.0	4.0	$1/2$	210
Z	$1/1-19/5$	4.9	4	0.3	175
	$19/5-31/12$	5.3	4	0.1	160

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

Benioff vertical seismograph, $T_1 = 1/4^s$ $T = 1^s$. $V_{\max} = \text{ca. } 30\,000$.

København

No.	Date	Hour	Forerunners				L	Δ	Remarks
			P or P'	S					
	1952		<i>m s</i>	<i>m s</i>	<i>m s</i>	<i>m s</i>	<i>h m</i>	°	
1	Jan. 3	6	<i>e</i> 9 13	13 43	<i>e</i> 9 15	13 56	18	26	Turkey.
2	11	7	<i>i e</i> 14 27+						Kurile Islands.
3	12	20	<i>e</i> 22 59	32 33	23 6	33 5		74	36 ^m .8. Aleutian Islands.
4	13	4	<i>i</i> 16 13	26 35	<i>i</i> 16 19	<i>i</i> 26 42	40	84	28 ^m .1. 31 ^m .8. 36 ^m .8. Off Formosa.
5	19	8					3		
6	20	14			59 40		.7		
7	21	3	<i>e i</i> 54 22	63 49	64 22		1.3	73	Aleutian Islands.
8	23	3	<i>i</i> 38 56				58		China.
9	28	6					41		
10	29	1					.7		
11	31	20			40.0		58		Mexico.
12	31	21			13 55	18.2	28		Africa.
	Febr.								
13	2	10	<i>i</i> 31 26		<i>i</i> 31 40		1.0		Aleutian Islands.
14	3	1	<i>i</i> 25 59						
15	3	20					55		
16	6	5	<i>i i</i> 36 43				57		China.
17	10	6	<i>e e</i> 14 7				19		Jan Mayen region.
18	11	7			<i>e</i> 17 54	24 15			Strong microseisms.
19	14	3	<i>e</i> 52 45		53.4	57 6	1.4		<i>PP</i> 57 ^m 23 ^s . <i>PPP</i> 60 ^m .0. 60 ^m 47 ^s . 62 ^m .7. 64 ^m .7. <i>PS</i> 66 ^m 34 ^s . 67 ^m .9. 71 ^m .0. 73 ^m .1. 76 ^m .9. Flores Sea, north of Timor.
20	14	21		25 29			44		Colombia.
21	17	17	<i>e</i> 6 55	59 26			1.3		Gulf of California.
22	18	4							
23	24	21	27 9		27 25				First onset quite small, masked by microseisms, second one clearer.
24	25	1	<i>i e</i> 36 30		39 35	40 13	85		Western Germany.
25	25	18	<i>i</i> 53 22		<i>i</i> 53 36				<i>PPP</i> 42 ^m 47 ^s . <i>e_N</i> 49 ^m 43 ^s . 51 ^m 21 ^s . 52 ^m 5 ^s . [SS 58 ^m .1. Tonga Islands.
26	26	11	<i>i</i> - 44 12	55 15	<i>e</i> 44 42	45 15	71	98	<i>e</i> 47 ^m 18 ^s . <i>PP</i> 48 ^m 8 ^s . <i>e</i> 48 ^m 36 ^s . <i>PPP</i> 49 ^m 8 ^s . <i>SKS</i> 54 ^m 25 ^s . <i>pS</i> 56 ^m 25 ^s . <i>PS</i> 57 ^m 9 ^s . 59 ^m 21 ^s . <i>SS</i> 61 ^m 59 ^s . <i>sSS</i> 63 ^m .5. 64 ^m .7. Depth 250 km. Peru-Bolivia border.
27	26	15		62.5	63 48				No GZ record. Near coast of Nicaragua.
28	26	22					.3		
29	28	0	<i>i</i> 39 54						
	March								
30	1	15	<i>e</i> 42 38						Japan.
31	2	4					32		
32	4	1	<i>i i</i> 34 20	<i>i</i> 44 5	<i>i</i> 34 31	<i>i</i> 34 39	58	76	35 ^m 20 ^s . 36 ^m 30 ^s . 37 ^m 25 ^s . 38 ^m .2. 40 ^m 35 ^s . 45 ^m 1 ^s . 49 ^m .0. 49 ^m .5. large oscillation of long period. <i>L</i> very large, initial period about 1 min. Off Japan.

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	1952		<i>m s</i>	<i>m s</i>	<i>m s</i>	<i>m s</i>	<i>h m</i>	°	
	March								
33	4	1	<i>i</i> 51 21						Repetition. No GZ record.
34	4	1	<i>i</i> 51 44						" "
35	4	2	<i>i</i> 3 35						" "
36	4	2	<i>i</i> 20 7						" "
37	4	2	<i>i</i> 51 24						" "
38	4	3	<i>i</i> 20 2						" "
39	4	3	<i>i</i> 23 45						" "
40	4	4	<i>i</i> 5 13						" "
41	4	4	<i>i</i> 22 56						" "
42	4	16	<i>e e</i> 42 37	52 14			69	75	Japan.
43	4	17					57		
44	4	19					.1		
45	4	19	<i>e</i> 49 39						
46	4	20	<i>i i</i> 7 55	17 34	12 32	18 37	34	75	Japan.
47	4	21	<i>i</i> 1 7						
48	5	1	<i>e</i> 32 9				61		<i>P</i> masked by microseisms, the reading not certain.
49	5	4	<i>e e</i> 0 48	10 20			26		Japan.
50	5	9					55		Forerunners masked by microseisms. No BZ record.
51	5	16	<i>e</i> 6 2	15 33	9 32		.5	74	Japan.
52	5	18					40		Interrupted.
53	7	7	<i>i e</i> 44 30-	<i>i</i> 54 14	54 38	55 5		76	Japan.
54	7	9	<i>e</i> 56 18				84		" "
55	7	11	<i>e</i> 56 8						" "
56	7	18	<i>i</i> 27 39				55		" "
57	7	20					24		
58	8	11	<i>e</i> 41 18						Jan Mayen region.
59	9	4					56		
60	9	5	<i>e</i> 48 52				54		Jan Mayen region.
61	9	16	<i>e</i> 48 40						
62	9	17	<i>i i</i> 15 23+	<i>i</i> 24 55	18.1	30.2	37	74	Japan.
63	9	20	<i>i i</i> 10 45+	19 24				65	Canada.
64	10	18	<i>i</i> 13 40				41		Japan.
65	11	0	<i>i</i> 45 19						
66	11	20	<i>i</i> 49 0		<i>i</i> 49 16		75		Japan.
67	12	8	<i>e</i> 16 52						
68	12	12	<i>e e</i> 17 35	21 14			22	20	Off Iceland.
69	13	4					.7		
70	13	6					40		Turkey.
71	13	14	<i>e</i> 9 19	<i>i</i> 18 52	10 24	20 6			SS 24 ^m .2. Depth about 200 km. [Eastern China Sea.
72	14	18					52		
73	14	21	<i>i</i> 6 56	<i>i</i> 16 30	<i>i</i> 7 6	17 25	34	74	Japan.
74	15	11			35 24	<i>i</i> 40 11	59		Off Sumatra.
75	15	12			24 1				
76	16	22	<i>i</i> 21 0	30.5	<i>i</i> 21 10		46	73	Japan.
77	18	11	<i>e</i> 15 41						

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			P or P'	S					
	1952		<i>m s</i>	<i>m s</i>	<i>m s</i>	<i>m s</i>	<i>h m</i>	°	
78	March								
79	19	1	<i>e i</i> 31 51+	35 23	32 33		38	20	Lg 38 ^m 11 ^s , period ca. 5 ^s . Turkey. Disturbed.
80	19	8	<i>e</i> 15 27				4		Corea—Manchuria.
81	19	9					40		
81	19	11	<i>i</i> 10 37	22 16	<i>i</i> 10 41	13 40	47		PP 14 ^m 21 ^s , 31 ^s . PPP 16 ^m 31 ^s . PPPP 17 ^m 56 ^s . 18 ^m 41 ^s . SKS 21 ^m 16 ^s . PS 23 ^m 8 ^s . PPS 23 ^m 56 ^s . 25 ^m 1 ^s . 25 ^m 32 ^s . SS 27 ^m 50 ^s . 28 ^m 41 ^s . 30 ^m .9. SSS 32 ^m 37 ^s . 34 ^m .6. [36 ^m .6. Philippine Islands. Faint preceding movement.
82	21	0					7		
83	21	17					4		
84	22	2	<i>e</i> 7 55						
85	22	5					14		
86	22	15					7		
87	23	16					12		Small preceding movement.
88	25	3	<i>i</i> 40 11				48		Mediterranean Sea.
89	25	10					.5		
90	26	12					26		
91	27	16		29 35			.7		Ascension Island region.
92	27	22					36		
	April								
93	1	4					33		
94	1	15					3		Disturbed.
95	1	21					3		No BZ record 14 ^h —34 ^h .
96	2	18			51 16	58 33	1.3		SS 64 ^m .4. Mexico.
97	3	3					30		Ionian Sea.
98	4	3	<i>i i</i> 4 4+	13 9	14 2	17.9	28	69	Kamchatka.
99	4	8					32		Disturbed.
100	8	10					.9		No Galitzin records.
101	9	8					25		
102	10	6	<i>e e</i> 9 39+	20.0	<i>i</i> 9 49	21 0	38	83	29 ^m .6. Riukiu Islands. Indian Ocean.
103	12	1		50.0					
104	14	1	<i>i</i> 23 49		<i>i</i> 26 38				
105	14	23	<i>e e</i> 3.4		14 32				P waves quite small, no clear onset. Moluccas.
106	15	6	<i>i i</i> 11 25	21 15			39		Deeper than normal. Japan.
107	15	9	<i>i</i> 34 39						
108	15	13	<i>i</i> 55 7						
109	15	19					.9		Forerunners small, masked by micro- seisms.
110	16	3	<i>i</i> 51 50						Kurile Islands region.
111	16	12					7		
112	17	4					50		
113	18	3	<i>i</i> 54 55						Tonga Islands region.
114	18	16			23 47	26.5	52		31 ^m .9. Marianne Islands region.
115	19	10	<i>i i</i> 11 8+	<i>i</i> 21 17	14 10	22 56	32	81	24 ^m .6. 26 ^m .8. Colombia—Venezuela [border.
116	19	12					8		
117	19	13					10		

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	1952		<i>m s</i>	<i>m s</i>	<i>m s</i>	<i>m s</i>	<i>h m</i>	°	
	April								
118	19	20					28		Tonga.
119	20	7	<i>e</i> 27 7						Kermadec Islands region.
120	22	4	<i>i</i> 45 36		<i>i</i> 46 0				
121	23	16					33		Tonga.
122	24	12	<i>i i</i> 31 29—				42		Near Costa Rica.
123	25	3					.9		
124	25	6	<i>i e</i> 14 45		25 24				
125	25	10							No Galitzin records. Kermadec Islands region.
126	27	8	<i>i e</i> 32 16		<i>i</i> 32 21	<i>i</i> 32 27			P' small, no distinct onset. Tonga.
127	27	13	<i>e e</i> 2.8						
128	28	1	<i>i</i> 19 34		<i>i</i> 19 40				
129	28	11	<i>i e</i> 5 52	15 21	15 44	16 26	30	74	Japan.
130	29	2	<i>i i</i> 47 9+	56 49	48 15	50 14			58 ^m 8 ^s . 58 ^m 46 ^s . Off north coast of Formosa.
131	29	3	<i>i</i> 19 6						
132	30	19	<i>e</i> 0 19						
	May								
133	1	16		26 32			34		Atlantic Ocean.
134	2	18	<i>i</i> 29 14						
135	3	11	<i>i</i> 14 25				.2		
136	3	13							Tonga.
137	4	14	<i>e e</i> 35 7		39.5		2		
138	6	18					37	78	Japan.
139	8	1	<i>i e</i> 10 41	<i>i</i> 20 34	21 4	25.9			SKKS 36 ^m 5 ^s . PS 37 ^m 37 ^s . Molucca Passage.
140	8	21			28.9	35 13			
141	9	3	<i>i i</i> 48 11+		50 7		1.7		Kermadec Islands region.
142	9	18	<i>e e</i> 6 37		8 22	18 10	3		<i>e z</i> 23 ^m 52 ^s . <i>e N, E</i> 24 ^m .9. Solomon Islands.
143	10	15							
144	10	17			28 37				Molucca Passage.
145	12	19			44.4				Atlantic Ocean.
146	13	3	<i>e</i> 56 9						
147	13	19	<i>i</i> 44 18+		54 52	56 2			SS 61 ^m .0. Costa Rica.
148	14	0					.6		
149	14	0	<i>i i</i> 48 37+	58 13	60.2		75	75	Japan.
150	14	21			34.1		.9		
151	15	11					10		
152	15	18					57		
153	15	19					28		
154	16	5			58 13	65.4	1.4		Guatemala.
155	16	10					53		
156	16	14	<i>e</i> 36 46	40 27			42	20	P and S small. Iceland.
157	16	16					54		
158	16	20	<i>i i</i> 58 20—	69 14	68 50	69 46	85		Off Panama.
159	16	22	<i>i i</i> 39 13						Tonga.
160	17	6			22 10	23 34	.9		Solomon Islands.

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			P or P'	S					
	1952		<i>m s</i>	<i>m s</i>	<i>m s</i>	<i>m s</i>	<i>h m</i>	°	
161	May 17	9	<i>i i</i> 59 53+	69 26	<i>i</i> 59 64	69 44	85	74	SS 74 ^m .4. East of Japan.
162	19	6					3		
163	19	18	<i>i i</i> 44 0-	53 33	44 15	46 44	67	74	PS 53 ^m 52 ^s . SS 58 ^m .4. SSS 62 ^m .1. [Japan.
164	20	15					57		
165	20	19					6		
166	22	23	<i>i e</i> 20 29+	30 32			51		Riukiu Islands.
167	23	4	<i>i e</i> 32 55-		<i>i</i> 33 9		62		Japan.
168	24	2			17 24	24.1	45		24 ^m 57 ^s . Off Chile.
169	24	16	<i>i i</i> 18 50		29 33		8		Sumatra.
170	25	7					44		
171	25	16					44		
172	26	2	<i>i e</i> 57 0	65.4				62	Tibet, Assam and Burma border.
173	26	3	<i>i e</i> 45 42						Tonga.
174	28	7	<i>i i</i> 55 23+		56 34	58 18			SS 65 ^m 6 ^s . Depth ca. 220 km. Hindu Kush.
175	28	8	<i>i i</i> 10 23-	<i>i</i> 19 40	24 44				Deep focus. Disturbed. Japan.
176	31	6					.1		
	June								
177	2	3					28		
178	2	10					40		
179	2	11					5		
180	3	5	<i>i</i> 56 35				61		Lg(BZ) 61 ^m 08 ^s . Rumania.
181	4	6	<i>i</i> 28 26-		<i>i</i> 28 31		45		Tibet.
182	4	20					41		
183	4	21	<i>i</i> 43 30-		54 1				Near west coast of Colombia.
184	5	6	9.2	19 44					» » » » »
185	5	10					.1		
186	6	10					.9		
187	9	14		57 34			61		Dodecanese.
188	10	10	<i>e</i> 17 58		20 44	39.1	1.0		Fiji Islands region.
189	11	0	<i>e</i> 46.3		50 49	56.9			57 ^m 56 ^s . PS 60 ^m .3. Argentina.
190	12	11			9.5		13		Near Crete.
191	13	1	<i>i e</i> 11 52+	15 35			18	21	Near west coast of Greece.
192	14	2	<i>i e</i> 16 14+						Alaska.
193	14	8	<i>i e</i> 7 43		<i>i</i> 7 52				Japan.
194	15	15	<i>i e</i> 25 58	34.2				60	Tibet.
195	15	16	<i>i</i> 32 10				1.0		Japan.
196	16	3	<i>i i</i> 57 8					1.0	Fiji Islands region.
197	17	4	<i>i</i> 27 23						Tonga.
198	17	12			.5				No clearly marked phases.
199	17	22		47 12	47 27		50		Off Portugal.
200	18	4					39		
201	19	0					32		
202	19	12	<i>e e</i> 24 15	33 25	41.2		45	70	China.
203	19	21			26 15	33 15			Tonga.
204	20	5	<i>e i</i> 58 30+	68.6			88	80	Near Formosa.
205	21	6	<i>i i</i> 40 29	49 53	<i>i</i> 40 30	<i>i</i> 40 39	65	73	Kurile Islands.

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	1952		<i>m s</i>	<i>m s</i>	<i>m s</i>	<i>m s</i>	<i>h m</i>	°	
206	June 22	3	<i>e e</i> 52 25		<i>i</i> 52 39				Kermadec Islands region.
207	22	10	<i>e i</i> 19 46+	29 9			44	73	Kurile Islands.
208	22	21	<i>i i</i> 53 25+	62 49	63 28	67 49	76	73	P(-2.2, -1.5, +3.0; +7.1, +3.5, [-9.3). Kurile Islands.
209	22	22	<i>i i</i> 11 37+						Small, the reading uncertain.
210	23	11	<i>e</i> 17.0						
211	23	12		<i>i</i> 25 27			44		Formosa.
212	23	18					.8		Kurile Islands.
213	24	16	<i>i</i> 40 36	49 54			65		» » S quite small, the reading uncertain.
214	25	23	<i>i</i> 30 37	39 27				66	China.
215	26	13					.4		
216	26	15			44.6		48		Azores.
217	27	13			16 31		19		Greece.
218	29	8	<i>i</i> 16 18						Aleutian Islands.
219	30	21					.6		
	July								
220	2	17					34		
221	3	1	<i>i e</i> 5 5	15 41				86	Off Colombia.
222	4	5	<i>i e</i> 4 29-		<i>i</i> 7 16	<i>i</i> 7 25			Fiji Islands region. Deep focus.
223	4	20					41		Italy.
224	4	21					37		»
225	5	12	<i>i e</i> 59 40						Fiji Islands region.
226	5	17	<i>i i</i> 27 33+	33.8	<i>i</i> 28 16	<i>i</i> 28 39		44	28 ^m 53 ^s . <i>i</i> PP 29 ^m 17 ^s . <i>p</i> PP 29 ^m 55 ^s . <i>s</i> PP 30 ^m 19 ^s . <i>s</i> S 35 ^m 13 ^s . SS 37 ^m 6 ^s . 16 ^s . Depth 220 km. Hindu Kush.
227	6	6	<i>i</i> 20 47						Atlantic Ocean.
228	7	3	<i>i</i> 4 19						Aleutian Islands.
229	8	1	<i>i</i> 9 37		<i>i</i> 12 21				Japan Sea.
230	8	21	<i>i</i> 3 20						Off Greece.
231	9	18	<i>e e</i> 28 7		38 45		51		Off Panama. The reading of P uncertain.
232	9	20	<i>e</i> 49 45		60 15		75		Off Panama. The reading of P uncertain.
233	10	16	- <i>i</i> 3 45		<i>i</i> 6 25	10 2			<i>e</i> _N 12 ^m 53 ^s . <i>e</i> _N 13 ^m 24 ^s . <i>e</i> _E 24 ^m 56 ^s . Deep focus. Fiji Islands.
234	13	12	<i>e</i> 17 25		<i>i</i> 17 27	<i>i</i> 17 33			<i>e</i> _Z 18 ^m 45 ^s . 20 ^m 25 ^s . 21 ^m 9 ^s . 21 ^m 45 ^s . 25 ^m 5 ^s . 28 ^m 39 ^s . 30 ^m .5. 35 ^m .1. 38 ^m .2. Deep focus. New Hebrides.
235	13	17		60 45	53.2	55 28	78		57 ^m 35 ^s . SKS 59 ^m 27 ^s . PS 62 ^m .2. SS 68 ^m .0. SSS 71 ^m .9. Ceram Sea.
236	15	6	<i>e</i> 19.0		29 33		51		P quite small, no clear onset. Near
237	16	2					9		[coast of Guatemala.
238	17	16	<i>i i</i> 21 43-	<i>i</i> 31 30	<i>i</i> 21 56	<i>i</i> 22 3	42		<i>i</i> 22 ^m 11 ^s . 31 ^m 55 ^s . Deeper than normal.
239	18	19			61 4	62 16	91		Japan.
240	21	12	<i>i i</i> 4 29	14 39	7 38	15 34	26	81	Easter Island region.
241	21	20			12.1		.5		16 ^m 6 ^s . SS 19 ^m 35 ^s . 20 ^m 39 ^s . California.

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			P or P'	S					
	1952		<i>m s</i>	<i>m s</i>	<i>m s</i>	<i>m s</i>	<i>h m</i>	°	
242	July 21	22					16		
243	23	0					10		
244	23	0	<i>i</i> 50 47+				78		California.
245	23	14					.0		»
246	24	10	<i>i e</i> 49 38						Kermadec Islands.
247	24	22	<i>i i</i> 20 54+	30 23	<i>i</i> 21 16	31 19	46		Japan. Deeper than normal.
248	25	14					1.6		South Pacific.
249	25	19		32 6			49		California.
250	25	20					23		»
251	26	10	<i>i</i> 23 22						Japan.
252	26	13	<i>e</i> 44 33						Burma.
253	26	14			<i>i</i> 47 4				Samoa.
254	27	2			34.3		1.5		
255	27	8	<i>i</i> - 42 6		<i>i</i> 45 0				<i>P'</i> very large. (Δ = ca. 145°). Benioff record only. Fiji Islands.
256	29	7	<i>e</i> 16.0	26.1	26.8		43		California.
257	29	20	<i>i</i> 5 55				.5		Aleutian Islands.
258	31	12			31.5		.8		California.
	Aug.								
259	1	10					.9		
260	1	20					.5		
261	3	14					.1		
262	4	1	<i>i e</i> 56 38	62 10	<i>i</i> 56 43		70	35	<i>S</i> small, uncertain. Iran.
263	6	5			25.5		37		Atlantic Ocean.
264	7	21	<i>i</i> 35 2						Tonga.
265	7	22	<i>i i</i> 5 8	14 41	15 0		32	74	<i>S</i> small, Japan.
266	8	12	<i>i</i> 23 23						
267	9	10					.3		
268	12	6	<i>i</i> 16 21						
269	12	6	<i>i</i> 43 18	53 19					
270	13	3					36	79	Off Sumatra. Small preceding movement.
271	13	14	<i>i</i> 37 15						Iran.
272	13	21		29 14			37		
273	14	16	<i>e</i> 13 41		<i>i</i> 24 6	32 48	44		Sumatra.
274	14	23	<i>i</i> 35 55		37.2	47.1	1.2		<i>P'</i> quite small. Solomon Islands.
275	15	19	<i>i e</i> 16 27						
276	15	20	<i>i</i> 10 54						
277	16	14			12.7	19 49	49		22 ^m .2. Solomon Islands.
278	17	4	<i>i i</i> 37 11+		40 33				Indian Ocean.
279	17	16	<i>e e</i> 12 13-	20 17	<i>i</i> 12 16	14 23	29	59	22 ^m .1. 24 ^m .1. <i>P</i> (<i>x</i> , +1.9, -1.0; -1.5, -9.0, +8.5). Tibet.
280	18	13			24 12	33 50	57		Chile.
281	19	11					31		Some preceding movement.
282	20	15	<i>e</i> 36 51	46 39	<i>i</i> 37 6	46 46			47 ^m 31 ^s . First <i>P</i> wave quite small, the reading uncertain. Off coast of Oregon.
283	21	4							Small preceding movement. Near Crete.
284	21	16	<i>i</i> 37 33				31		Fiji Islands.

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No.	Date	Hour	Forerunners				L	Δ	Remarks
			P or P'	S					
	1952		<i>m s</i>	<i>m s</i>	<i>m s</i>	<i>m s</i>	<i>h m</i>	°	
285	Aug. 21	23					.3		Small preceding movement.
286	22	23					.4		California.
287	24	13					34		
288	24	20	<i>e</i> 49.4				57		<i>P</i> masked by microseisms. Mediterranean Sea.
289	25	1	<i>i e</i> 55 16		65.3		70		Assam.
290	27	11	<i>i e</i> 38 55	48.3	<i>i</i> 39 9	<i>i</i> 39 12	1.1		<i>i</i> 49 ^m 19 ^s . Deeper than normal. Alaska.
291	28	11	<i>i e</i> 3 52						Alaska.
292	29	6					.4		
293	31	16	<i>i e</i> 21 11+	30 38	31 4	35.6	46	73	Japan.
	Sept.								
294	7	3					37		
295	7	5					37		
296	7	22	<i>i</i> 31 37						
297	9	13	<i>i e</i> 7 28	<i>i</i> 18 4	17 50			87	Bonin Islands region. SS 24 ^m 0 ^s . Costa Rica.
298	10	4	<i>i</i> 20 48						Tyrrhenian Sea.
299	10	9					.5		
300	11	22	<i>e</i> 46 36		<i>i</i> 46 40	50 23	1.7		Kermadec Islands.
301	11	23	<i>i</i> 43 11		<i>i</i> 43 22				
302	12	1			12 5		15		Ionian Sea.
303	14	6	<i>i</i> 10 14						Fiji Islands.
304	14	9	<i>e</i> 44 9	52 13	<i>i</i> 44 12		63	59	China.
305	15	4	<i>e</i> 38 28		44.1				The readings uncertain; no clear onsets.
306	15	11	<i>e</i> 36 52	43 45				47	Turkestan. Central Pakistan.
307	15	18					32		
308	15	19					41		
309	19	18					.3		
310	20	14					.3		
311	21	2	<i>i i</i> 44 3+	<i>i</i> 55 19	45 39	<i>i</i> 47 53			<i>PP</i> 48 ^m 12 ^s . <i>sPP</i> 49 ^m 42 ^s . <i>iSKS</i> 54 ^m 21 ^s . <i>iSKKS</i> 54 ^m 59 ^s . 56 ^m 19 ^s . <i>isS</i> 57 ^m 25 ^s . Depth 250 km. Argentina-Bolivia border.
312	21	11					.9		Small preceding movement.
313	22	12					.3		California.
314	23	20		40 3			44		Turkey.
315	24	20	<i>e</i> 40 16	49 10	50 8			67	Alaska.
316	27	19	- <i>e</i> 16 52-	25 57	17 9		41		Deeper than normal. Kamchatka.
317	28	14			45.9				
318	28	19					.8		
319	28	22					46		
320	29	1	<i>i</i> 24 49						Kermadec Islands.
321	30	2	<i>e</i> 56 30				65		
322	30	13	<i>e i</i> 2 56	<i>i</i> 11 50	5 25	12 53	26	67	SS 16 ^m .3. LR 32 ^m . China.
323	Oct. 1	8					30		
324	1	10					.0		

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No.	Date	Hour	Forerunners				L	Δ	Remarks
			P or P'	S					
	1952		<i>m s</i>	<i>m s</i>	<i>m s</i>	<i>m s</i>	<i>h m</i>	°	
325	Oct. 2	13	<i>e 23 30</i>				50		Fiji Islands.
326	4	4			24.6	29.0	38		Atlantic Ocean.
327	5	10		29 16			32		Greece.
328	5	10					44		"
329	5	10	<i>e i 59 19+</i>	<i>i 62 52</i>	63 2		65	20	"
330	5	22	<i>i i 14 6+</i>	22 7			31		S possibly earlier than read. China.
331	6	3					2		
332	6	20					.0		
333	6	22		49.7			1.5		Kamchatka.
334	7	16					19		
335	7	18					31		Tibet.
336	8	14					.9		China.
337	10	11	<i>e 56 23</i>	59 51			62	19	P small, the reading uncertain. Greece.
338	10	16					1.0		Some preceding movement; no clearly marked phases. Samoa.
339	10	18	<i>i e 56 9+</i>	63 10	58.1	64 53		49	SS 67 ^m .1. Central Pakistan.
340	11	0			50.7		1.1		New Britain.
341	11	2					.1		Superposed on preceding shock.
342	12	10					.8		Faint preceding movement.
343	12	17					2		
344	13	13					.2		
345	13	16	<i>e e 46 38</i>	50 12	<i>e 46 55</i>		52	20	Greece.
346	13	23	<i>e 44.1</i>				1.8		South of Kermadec Islands.
347	15	0			19.4		46		Off Costa Rica.
348	15	3					.6		
349	15	18					7		
350	15	19	<i>i 15 37</i>						Japan.
351	17	15	<i>i 27 48</i>						"
352	18	0					.1		
353	18	5	<i>e 42 0</i>		44 39	45 33	1.4		New Hebrides.
354	18	12	<i>e 7 51</i>	16 10			23	61	Atlantic Ocean.
355	18	21	<i>i 34 46</i>				51		Hindu Kush.
356	19	3					50		
357	20	15							Phases not clearly marked.
358	22	4	19 48	23 46			27		Dodecanese.
359	22	17	<i>e e 5 58</i>	10 21			14		Southern Turkey.
360	26	8	<i>e 31 54</i>						
361	26	8	<i>i i 52 35</i>	<i>i 62 6</i>	<i>i 53 45</i>	54 17		79	62 ^m 25 ^s . PS 63 ^m 36 ^s . SS 67 ^m 17 ^s . Depth about 300 km. Japan.
362	26	13	<i>e 32 7</i>				61		Japan.
363	26	15					12		"
364	26	15	<i>i 58 7</i>				89		"
365	26	16	<i>i e 4 56</i>						Superposed on preceding shock.
366	26	18	<i>e e 13 52</i>	23 34	<i>i 14 9</i>	16 44	.7	76	Japan.
367	26	19	<i>i i 31 9+</i>	40 52	<i>i 34 1</i>	41.5	59	76	"
368	26	19	<i>i 35 25</i>		<i>i 35 34</i>				"
369	26	20	<i>i 39 17</i>		<i>i 39 26</i>		69		Japan.
370	26	22	<i>e 12 28</i>		<i>e 12 38</i>		43		P quite small, uncertain. Japan.

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No.	Date	Hour	Forerunners				L	Δ	Remarks
			P or P'	S					
	1952		<i>m s</i>	<i>m s</i>	<i>m s</i>	<i>m s</i>	<i>h m</i>	°	
371	Oct. 27	0					33		
372	27	3	<i>e e 29 4+</i>	38 48	<i>i 29 16</i>	31 56	56	76	<i>e z</i> 33 ^m 42 ^s . Japan.
373	27	20	<i>i 50 25</i>						
374	28	4	<i>i 41 23</i>	50 54	<i>e 41 28</i>			74	Haïti.
375	28	6	<i>i e 42 54</i>	52 40				77	Japan.
376	28	17					28		
377	31	10	<i>e 15 19</i>		<i>i 15 24</i>				
378	31	16	<i>i 49 9</i>	59 0				77	78
379	31	17	<i>e 0 28</i>		<i>i 0 38</i>				No Galitzin records Oct. 31. 8 ^h - [Nov. 1. 8 ^h . Japan.
	Nov.								
380	1	0	<i>i 2 4</i>					22	China.
381	1	5	<i>i 47 57</i>						Fiji Islands.
382	2	0	<i>i e 5 5</i>		<i>i 5 9</i>	5 47			"
383	4	10	<i>i 28 34</i>						"
384	4	12							"
385	4	17	<i>i i 9 29+</i>	<i>i 18 39</i>				29	70
386	4	17	<i>e 47 40</i>						Near east coast of Kamchatka. Very large, but first wave small.
387	4	17	<i>e 49 52</i>						Kamchatka.
388	4	18	<i>i i 40 1</i>						"
389	4	19	<i>i 1 35</i>						"
390	4	19	<i>i 51 46</i>						"
391	4	21	<i>i i 0 4</i>						"
392	4	21	<i>i 11 59</i>						"
393	4	22	<i>i i 4 10</i>						"
394	4	22	<i>i i 24 6</i>						"
395	4	22	<i>i 25 34</i>						"
396	4	22	<i>i i 30 30</i>						"
397	4	22	<i>e 48 20</i>						"
398	4	23	<i>i 40 19</i>					66	"
399	5	2		40 22				57	"
400	5	3	<i>i i 41 0</i>					66	"
401	5	6	<i>i e 9 10</i>	18 20				31	70
402	5	8						.1	Kurile Islands.
403	5	9						18	
404	5	9						.6	
405	5	10						.2	
406	5	10						.9	
407	5	11						.9	
408	5	11	<i>e 45 48</i>						Kamchatka.
409	5	13	<i>i i 17 35+</i>	<i>i 26 40</i>	26 58			.7	69
410	5	17	<i>e 49 26</i>						"
411	5	19	<i>i i 19 27+</i>	28 29				.7	69
412	5	20	<i>e 41 55</i>						"
413	5	21	<i>i 57 23</i>		<i>i 57 28</i>				"
414	5	22	<i>i e 57 15</i>	66 23	<i>i 57 23</i>				"
415	6	1	<i>i 9 56</i>						"

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No.	Date	Hour	Forerunners				L	△	Remarks
			P or P'	S					
	1952		<i>m s</i>	<i>m s</i>	<i>m s</i>	<i>m s</i>	<i>h m</i>	°	
416	Nov. 6	2	i 34 59						Kamchatka.
417	6	2	i 38 52						Kamchatka.
418	6	4	e 5 42						Kamchatka.
419	6	5	i 39 11						Kamchatka.
420	6	6			2 40		20		Kamchatka.
421	6	6	i 47 13						Tonga Islands.
422	6	8					50		No Galitzin records 9 ^h 50 ^m —15 ^h 10 ^m .
423	6	11	i 8 22		i 8 36				Kamchatka.
424	6	18					28		
425	6	19	i e 57 11+	66 21	66 37	69.9		70	Kamchatka.
426	6	20	i 50 19						»
427	6	23	e 40 19						» Small, uncertain.
428	6	23	i 46 51		i 47 2		69		»
429	7	2			51.1		60		
430	7	6	i 37 11				70		
431	7	7					.5		
432	7	12	i e 20 20	29 29			46	70	Kamchatka.
433	7	13	i e 52 54				79		»
434	7	14	e e 19 45				44		»
435	7	17	e 5 48		i 5 59				»
436	7	21			18 14		38		Lower Gulf of California.
437	7	22	i e 16 49	26 12	27 0		43	72	Kurile Islands.
438	7	23	i 24 11						
439	7	23	i e 32 2		i 32 5	i 32 10	1.5		Kermadec Islands.
440	8	2					55		
441	8	3					51		
442	8	5	i 11 7	20 10	e 11 12		38	69	Kamchatka.
443	8	8	e 16 10						Kamchatka.
444	8	9	i 1 11						Kamchatka.
445	8	12	i 19 27						
446	8	14	e 7 8				.7		
447	8	15	i 48 11						
448	8	17					42		
449	8	18					.6		
450	8	19					.3		
451	8	19	i 20 40						
452	8	19	i i 44 44+	54 7	55 6		70	72	Kurile Islands.
453	8	20	e 26 16						Kamchatka.
454	8	23	i 41 54						Japan.
455	9	0					32		
456	9	0	i i 33 42+				1.0		Kurile Islands.
457	9	1	i 28 47				55		Kamchatka.
458	9	1	i e 50 19						»
459	9	5					.2		
460	9	5	i 17 26				46		Kamchatka.
461	9	6	e e 8 17				39		»
462	9	15	i 19 51						»



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No.	Date	Hour	Forerunners				L	△	Remarks
			P or P'	S					
	1952		<i>m s</i>	<i>m s</i>	<i>m s</i>	<i>m s</i>	<i>h m</i>	°	
463	Nov. 9	15	i i 34 1+	43 16			1.0	71	Kamchatka.
464	9	15	i i 42 43+						Kurile Islands.
465	9	18	i 23 27				51		Kamchatka.
466	9	21					.4		
467	9	22	i 40 35						
468	9	22	i 42 20						
469	10	1	i e 6 21		i 6 33		.8		Kamchatka.
470	10	10					51		
471	10	11	i 59 16						Seismic?
472	10	18					29		
473	10	20	i e 37 44+				67		No Galitzin N or E records. Kamchatka.
474	10	22	e e 5 17				33		No Galitzin N or E records. Kamchatka.
475	10	23	i 41 24				69		No Galitzin N or E records. Kamchatka.
476	11	1	e e 8 4				35		No Galitzin N or E records.
477	11	8					58		
478	11	14	e 21 43				48		
479	11	19	i e 31 56+	41.3	i 32 6		57	72	Kamchatka.
480	11	21					46		
481	12	0					47		
482	12	3	i 17 4				47		
483	12	5					.3		
484	12	8	i 15 10						Kamchatka.
485	12	8	i 49 59		e 50 7				Tonga Islands.
486	12	14					17		
487	12	16					.3		
488	12	16	e e 53 15				1.3		
489	13	3	i 12 25						South of Tonga Islands.
490	13	8	e e 10 3						Disturbed. Kamchatka.
491	13	10	i 34 56						
492	13	15	e 33 48	42 57			1.0	70	
493	13	22	i i 36 53-	46 20			60	73	Kamchatka.
494	14	7	i 11 52						
495	14	13					3		
496	15	1					44		
497	15	5	e e 12 41				41		
498	15	5	e e 34 15				58		
499	15	8					58		
500	15	12					.2		
501	15	15					40		
502	16	0					54		
503	16	2					25		No Benioff Z record 1 ^h 9 ^m —7 ^h 31 ^m .
504	16	4					48		Small preceding movement.
505	16	7					1.6		New Guinea.
506	16	12	i 41 30		58 47		69		Kamchatka.
507	16	15					33		

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No.	Date	Hour	Forerunners				L	Δ	Remarks
			P or P'	S					
508	1952 Nov. 17	10	m s	m s	m s	m s	h m	°	
509	17	12					.6		
510	17	14					.7		
511	17	20	e 45 3				1.2		
512	18	7	i 53 59		i 54 10				Kamchatka.
513	18	8	i 24 47				53		No Galitzin records 8 ^h 18 ^m -8 ^h 50 ^m . [Kamchatka.]
514	18	18					.1		
515	18	21					.4		
516	19	6					.9		
517	19	10			41.3		.9		Southern Tibet.
518	20	8					.5		
519	20	12					8		
520	20	15	e 49.9		60 28	60.9			61 ^m .7. SS 66 ^m .6. Off Nicaragua.
521	21	2	i 39 19				71		Kamchatka.
522	21	3					57		
523	21	17	e 36 52				57		West of Alaska.
524	21	23			47 38				
525	22	5	i e 30 30				1.0		Kamchatka.
526	22	7	e 58 56-	69 6			85	81	California.
527	24	2	i 27 20						West of Bonin Islands.
528	24	10	i 38 0						
529	25	16	i 28 32		i 28 42				
530	26	13	i i 36 24+	45 24	46 14		59	68	Kamchatka.
531	27	0	i 2 43						
532	27	7	i i 28 16+	34.4	i 29 8	30 6		44	30 ^m 25 ^s . 31 ^m 19 ^s . sS 35 ^m 21 ^s . 37 ^m 6 ^s . 37 ^m 24 ^s . 37 ^m 42 ^s . Depth about 220 km. Hindu Kush. Assam.
533	28	5	i 45 4						Disturbed. Kamchatka.
534	28	8	i i 16 43+				.7		39 ^m 24 ^s . Solomon Islands.
535	28	21	i 20 47		22.0	38 41			50 ^m .1. Kamchatka.
536	29	8	i i 33 44+	i 42 43	i 42 53	47.3	53	68	70 ^m .5. Alaska.
537	29	23	i i 57 29+	i 66 26	60 4	i 66 47			Distinct shock or phase of the one [above?]
538	30	0			i 6 22				
539	30	11	i 2 10						
540	30	19					10		
541	30	19	e e 39 53+	48 53	i 39 57		64	68	Kamchatka.
542	30	20	i 40 9						
543	Dec. 1	10	i 30 6						
544	1	14	e 43 45		e 43 50		1.2		First reading not certain. No clear onset. Kamchatka.
545	2	19					38		
546	3	22	i 36 50				63		Kamchatka.
547	4	4	i 2 50	12 0	i 3 32	12.6	21		12 ^m 58 ^s . Deeper than normal. Aleutian [Islands.]
548	4	11					28		
549	4	11					48		
550	4	15	i 8 41						Gulf of Oman.

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No.	Date	Hour	Forerunners				L	Δ	Remarks
			P or P'	S					
551	1952 Dec. 6	3	m s	m s	m s	m s	h m	°	
552	6	3	e 45 38				72		Kamchatka.
553	6	11	i e 0 23+		2 11	6.0	35		6 ^m 40 ^s . 9 ^m .1. 11 ^m .9. 13 ^m .5. 14 ^m 31 ^s . e _Z 17 ^m 33 ^s . SS 18 ^m .7. SSS 23 ^m .3. Solomon Islands.
554	6	21	e 9 44+		11 25		52		Aftershock.
555	7	1	i e 1 38	10 56	i 1 41	2 23	26	72	4 ^m .4. 11 ^m 33 ^s . 41 ^s . 12 ^m 53 ^s . SS 15 ^m .6. SSS 18 ^m .7. e 23 ^m 8. Aleutian Islands. Kamchatka.
556	7	16	e e 44 25	54 37			70		
557	7	21					.4		
558	8	15			37.7		46		
559	10	6	e i 2 11	5 36				19	e 6 ^m 18 ^s . Jan Mayen region.
560	10	9					.3		
561	10	14					.5		
562	11	9	i e 9 36	18 49	19 37	24.2	32	71	27 ^m .5. Kurile Islands.
563	12	1					.5		
564	12	14	i 1 44						
565	12	15					2		
566	12	21					12		
567	13	13					45		
568	15	9	e 56 27	65 42			83	71	Kamchatka.
569	16	6					.9		
570	17	23	i i 9 1	i 13 6	13 23	13 57	16		P (+16.4, -7.3, +12.0; -26.8, +14.3, -27.8). Deep focus. Near south coast of Crete.
571	18	9		40 36			.9		Kamchatka.
572	18	11					10		
573	20	4	i 16 51						Kamchatka.
574	22	10					51		
575	22	22	i e 35 43	44 38	45 16	45 33	57	67	Kamchatka.
576	22	23	e 56 34						Near Crete.
577	23	23	e 13 3						Kamchatka.
578	24	9					40		
579	24	15					16		
580	24	18		60.0	69 56				71 ^m 14 ^s . SS 77 ^m .1. SSS 81 ^m .1. New Britain.
581	24	22					.7		Some preceding movement.
582	25	2			59.1	60.4	90		66 ^m .3. New Britain.
583	25	4			9.1		21		
584	25	22	e e 31 28	38 27			.8	48	Central Pakistan.
585	25	23	i 19 40						Kamchatka.
586	26	4					51		
587	26	11	i i 33 41						South of Fiji Islands.
588	26	23	i e 59 26		i 59 35	62 20			Tyrrhenian Sea.
589	27	1	i i 37 0		i 37 11	46 27	63		Kamchatka.
590	27	17					40		
591	28	5	e 5 10				.4		Alaska.
592	28	15					40		Faint. Philippines.

København

No.	Date	Hour	Forerunners				L	Δ	Remarks					
			P or P'		S									
			m	s	m	s	m	s	m	s	h	m	°	
593	1952 Dec. 28	15	e	15 4			19	4	25	38	.8			Philippines. Off south coast of Pakistan.
594	28	18			56	14					1.2			
595	29	2	i e	20 39	29	59	i	20 50			46	72		Kamchatka.
596	29	9	i	31 40							61			Formosa.
597	29	12									57			
598	29	17									1.0			
599	29	23	i e	40 2			41	58						Fiji Islands.
600	30	12					30	7			.7			Costa Rica.
601	30	18	i e	47 20										Fiji Islands.
602	31	12									57			
603	31	14	i	53 38			57.7				60			Near Crete.
604	31	17	e	23 38			27	48			30			» »
605	31	22					5	15			21			Kurile Islands.