

Geodætisk Institut
Proviantgården, Copenhagen, Denmark

Bulletin
of the seismological station

KØBENHAVN

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

Lithologic foundation: chalk

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	$12\frac{1}{2}$	104
E	12.5	100	12.69	0	$12\frac{1}{2}$	106
Z	14.5	100	11.56	0	8.4	80

No. 63. Jan.—Dec. 1953.

Wiechert 1000 kg. horizontal seismograph.

Wiechert 1300 kg. vertical seismograph.

Constants:

Component	T	ν	g	V
	sec		mm	
N	7.9	3.8	$\frac{1}{2}$	212
E	8.0	4.4	0.4	210
Z	5.2	4.4	0.1	165

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

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

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No.	Date	Hour	Forerunners				L	Δ	Remarks
			P or P'	S					
			m s	m s	m s	m s	h m	°	
1	1953 Jan.	3					50		
2	2	18					41		
3	4	7					21		
4	5	7	e e 59 36-	i 68 41			81	69	Komandorskie Islands region.
5	5	10	17 48+	i 27 01			40	71	Kurile Islands.
6	7	0	e 05 09	08.1			9.4	16	Albania.
7	7	1	e 22 38				27		"
8	7	5	e 59 59				26		Kamchatka.
9	7	15					06		
10	10	23					40		
11	11	23	i i 03 15+	e 11 09	14 42		20	57	Yukon. Canada.
12	12	5	e 47 59						Kamchatka.
13	12	17	e 34 53	e 44 00	i 34 57	52.0	57	69	Kurile Islands.
14	15	20		e 19 52			27		Iran.
15	19	5					35		Strong microseisms.
16	20	18					.4		" "
17	21	2					.4		" "
18	24	23					23		
19	25	11	i 56 31				86		Kamchatka.
20	25	20		e 08 52	i 09 44		21		Off west coast of Haiti.
21	26	5	i 13 44+						Kamchatka.
22	27	3	e e 24 07	33 13	33 32	34 07	48	69	"
23	27	3	e 44 05						Superposed on preceding shock. New Britain.
24	27	4	i e 17 34+						Kamchatka.
25	30	22	i 06 02		e 09 15	i 09 29	50		Depth about 100 km. Santa Cruz Islands.
26	Febr. 1	14	i 31 16						Depth about 600 km. Fiji Islands.
27	2	10					09		
28	2	11					03		
29	5	22	e e 46 56	e 50 50			53.5	22	West of Crete.
30	6	5	i 44 36				72		Kamchatka.
31	6	13	i i 24 38+	i 34 10	i 24 53	34 28	50	73	39 ^m 30 ^s . Japan.
32	6	19					49		
33	7	18	i e 34 35	e 43 49	48.5	51.8	57	71	Kurile Islands.
34	7	22	i i 36 06	e 40 08	i i 36 16		43	23	South of Crete.
35	11	23	i 30 37				43		P very small. Pamir.
36	12	8	e i 22 29	i 28 03	23 52	26 20	32	35	30 ^m .5. Iran.
37	14	8	i 48 06	52 02	i i 48 08	52 40			Perhaps deeper than normal. Near Crete.
38	14	22	i 01 37				34		Mariana Islands.
39	15	8	i 16 00*						Turkestan.
40	16	10	i 23 09						Small. Off Costa Rica.
41	19	13	e 25 27		i 25 35				Kermadec Islands.
42	19	15	i 27 58	i 36 14	40 36			61	Mid-Atlantic Ocean.
43	22	20	i 17 34	18 47	i 17 40	e 17 58		6	19 ^m 12 ^s . 19 ^m 44 ^s . Hessen, Germany.

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No.	Date	Hour	Forerunners				L	Δ	Remarks
			P or P'	S					
			m s	m s	m s	m s	h m	°	
44	1953 Febr. 22	20	i 35 51		35 58	e 36 17			
45	25	21	i e 27 17	i 36 17	i i 27 30			68	Aftershock.
46	26	0	i i 43 22		e 43 58				South of Alaska Peninsula.
47	26	12	e 01 47		04 02	05 13			Near south coast of Kamchatka.
48	26	13	e 27 09						PPP 06 ^m 22 ^s . SKS 08 ^m 41 ^s . 10 ^m 10 ^s .
49	27	11	i 16 16						11 ^m 43 ^s . SS 21 ^m .3. SSS 25 ^m .8. Santa Cruz Islands region.
50	28	23	i 53 34						Kamchatka.
51	March 1	15	e 06.8						Small.
52	1	18					.2		Kashmir.
53	3	11	i 46 28				1.4		Strong microseisms. Loyalty Islands.
54	3	13					.4		Strong microseisms.
55	3	23					32		
56	4	15					28		
57	5	21	i i 12 32	21 31	22 31	29.8	34	68	Kamchatka.
58	5	21	i i 33 09				59		"
59	6	21	i 45 19	i 46 16	i 46 09			5	Norway.
60	10	22		26 06	32 31	36.4	47		Near Tristan da Cunha.
61	11	11					.5		
62	13	5	i 30 50						South of Crete.
63	13	14	i 27 40						Seismic?
64	14	17					46		
65	15	3	i 12 39						Small.
66	15	14	e 21 00						South of Crete.
67	16	17					59		
68	17	7					12		
69	17	13	e e 15 51	24 54	33.2		41	69	Kurile Islands.
70	18	19	e e 10 33	i 13 53	i i 11 06			18	Heavy casualties, Western Turkey.
71	18	21	e 22 35						Aftershock.
72	19	8	i i 38 47	i 47 41	i i 38 53	39 18			sP 40 ^m 11 ^s . PP 41 ^m 24 ^s . PPP 43 ^m 16 ^s .
73	19	21					25		ipS 48 ^m 30 ^s . iPS 48 ^m 41 ^s . 49 ^m 37 ^s . SS 52 ^m 06 ^s . sSS 53 ^m 17 ^s . SSS 56 ^m .0. Depth [about 200 km. Windward Islands.
74	20	6					40		
75	21	1	i 36 21				73		
76	21	19	e 38.1				41.7		Yugoslavia.
77	22	19	e 46 40						Kamchatka.
78	23	12	i 47 41						Aleutian Islands.
79	24	21					34		
80	25	6					.5		
81	26	2	i 20 45		i 20 56			49	Kamchatka.
82	26	5	i 14 10						"
83	26	11	i 53 01						
84	26	12	e 04 31		i 04 34				Perhaps earlier.
85	26	15					22		
86	31	1					05		

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No.	Date	Hour	Forerunners				L	Δ	Remarks
			P or P'	S	m s	m s			
87	1953 April	1	m s	m s	m s	m s	h m	°	New Britain. Samoa Islands region. Japan.
88	2	4			e 16 48	58			
89	3	4	i e 37 26			56			
90	4	6	i e 04 18	e 14.6		32	82		
91	5	10			55.5	61.6	57		63 ^m .2. PS 65 ^m .0. SS 71 ^m .3. SSS 15 ^m .4. Banda Sea. Philippine Islands. Kamchatka. Depth about 570 km. South of Fiji Islands. Philippine Islands. Off Kamchatka.
92	6	0					.5		
93	6	4	e 02 52		13 15	15.5	.6	71	
94	6	12	e i 25 53	35 11			.8		
95	6	23					.9		
96	7	17	i e 47 08		i 49 16				
97	8	0			e 22 43		47		
98	8	12					00		
99	9	16					29		
100	12	22	i e 41 27		i 41 29				
101	13	23					27		sPP 48 ^m 27 ^s . SKS 51 ^m 14 ^s . SP 53 ^m 01 ^s . iPS 54 ^m 37 ^s . isS 55 ^m 25 ^s . 55 ^m 44 ^s . SS 58 ^m 29 ^s . PKKP 58 ^m 43 ^s . 61 ^m 51 ^s . Depth about 650 km. Western Brazil. Kurile Islands. Kamchatka. Peru.
102	14	13	i i 41 38-	i 51 52	43 51	45 36			
103	15	1	i 28 19				51		
104	15	18	i 18 08						
105	17	0	e 16 12	e 27.3			.9		
106	17	12					05		
107	18	4					.4		
108	19	0					13		
109	19	16					40		
110	19	23					25		
111	20	12					15		
112	21	18					.4		
113	21	21					57		
114	23	1					33	62	
115	23	4	e 01 22	i 09 46				62	
116	23	4	e 03 56	i 12 22	13.9				
117	23	16	e 40.1		e e 43 32	i 43 53			
118	24	2	i e 14 31	i 18 25	i i 14 36	i 14 44	20.4	22	
119	25	0					04		
120	25	16	e 32 14		i 32 20		48		
121	29	4			e 52.3		96	74	Solomon Islands region. Japan. SS 68 ^m 00 ^s . SSS 73 ^m .2. Loyalty Islands.
122	29	20	i e 32 35	e 42 02			59		
123	30	1	i 20 30						
124	30	6	i i 46 08		49 16	49 57	1.5		
125	30	15					57		

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No.	Date	Hour	Forerunners				L	Δ	Remarks
			P or P'	S	m s	m s			
126	1953 May	1					h m	°	Turkey. Pakistan. Turkey.
127	1	10					03		
128	1	20	e 11 08	e 14 45			17	20	
129	1	21	e 26 42		37 09		44		
130	2	5	i e 46 18				52		
131	2	9	e 36 50		i 37 03				
132	2	10			e 40 27	i i 41 48	18		Austria. Turkey. Kamchatka. Kamchatka. ScS 50 ^m .5. Kamchatka. SKS 49 ^m 26 ^s . 53 ^m 26 ^s . 56 ^m .0. Depth [about 600 km. Argentina]. SKS 49 ^m 26 ^s . 53 ^m 26 ^s . 56 ^m .0. Depth [about 600 km. Argentina]. 36 ^m 52 ^s . PPP 39 ^m 12 ^s . SKS 42 ^m 00 ^s . 44 ^m 00 ^s . PS 46 ^m 27 ^s . PPS 47 ^m 56 ^s . SS 53 ^m .0. 55 ^m .1. SSS 57 ^m .5. Depth about 100 km. Central Chile.
133	2	12					.5		
134	2	18	i e 42 05	e 45 42			48	20	
135	2	18	e 49.4	i 58 42			76	71	
136	4	0	i 08 21				35		
137	4	4		e 24.2			41		
138	4	11	i 40 13	i 49 15	i 40 26	49 31	62	69	
139	4	15		e 50 47	e 44 07	46.2			
140	5	1					15		
141	6	17	e 31 50	44.8	e 35 27	36 35	68		
142	7	16					12		42 ^m 43 ^s . 45 ^m 18 ^s . 51 ^m .4. SS 58 ^m .0. Phases not clearly marked. Loyalty Islands. Weak. Aleutian Islands. Kermadec Islands region. Depth about 300 km. Sumatra. Kamchatka. Depth about 100 km. Japan.
143	10	20					.5		
144	11	10	i 36 08		e e 39 14		1.3		
145	13	4	e e 27 40	37.3			52		
146	13	12	i e 12 54		16 32				
147	14	13					10		
148	16	3					05		
149	17	13			35.6		1.1		
150	17	17	i 34 41				1.1		
151	17	22	i 24 03						
152	18	8	e 21 05	e 27 56			33	47	Mid Atlantic Ocean. Kamchatka. Sumatra. South Pacific Ocean. PS 11 ^m .1. Later phases badly marked. [Depth about 200 km. Celebes.
153	18	9					.2		
154	19	3	i 22 21	e 31 30	e 24.6		.8	70	
155	19	6					34		
156	19	16			13 09		35		
157	20	8	e 05 39		09.5	30.2	53		
158	20	11			e 01 47	08.0	35		
159	20	23					57		
160	21	13					08		
161	23	12					20		
162	24	1			e 39 27	46.3			47 ^m 24 ^s . PS 49 ^m 15 ^s . SS 55 ^m .6. SSS [59 ^m .3. Sandwich Islands region.
163	24	3					.5		
164	24	5					.9		
165	25	3					08		
166	25	12	e 51 26	e 62 25			1.5	90	
167	25	17	i e 51 46	60 58			78	70	
168	26	1	i e 54 45	64 14	64 38		79	73	
169	28	4					10		

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			P or P'	S					
169	1953 May	5	<i>m s</i>	<i>m s</i>	<i>m s</i>	<i>m s</i>	<i>h m</i>		SS 33 ^m .3. SSS 36 ^m .8. Some depth. Flores Sea.
170	31	20	<i>e e</i> 09 48	<i>e</i> 19 00	<i>i</i> 09 53	<i>i</i> 19 05	54	70	ScS 19 ^m 57 ^s . SS 23 ^m .0. SSS 26 ^m .9. Off Dominican Republic.
171	31	21	<i>i i</i> 07 32						Afterchock.
172	June	1					.5		
173	2	18	<i>i i</i> 02 48		<i>e</i> 13 14		35		Japan,
174	3	3					04		
175	3	16	<i>e</i> 09 47		<i>i</i> 09 57		15		Turkey.
176	3	18	<i>i</i> 02 57				32		Kamchatka.
177	4	12					56		
178	4	14					23		
179	6	0					27		
180	6	6					18		
181	6	11					26		
182	6	12					16		
183	6	17					46		
184	7	12	<i>e</i> 35 10	<i>i</i> 44 23	44 30	45.1	.9	70	Off Dominican Republic.
185	7	14					05		
186	8	11	<i>i i</i> 51 37	<i>i</i> 60 43	61 01			69	Kamchatka.
187	9	1			04.7		1.6		Celebes region.
188	9	1	<i>i i</i> 50 09	<i>i</i> 59 12	59 26			69	Kamchatka.
189	9	9					.5		
190	9	16	<i>e e</i> 32 52	<i>e</i> 36 43			39	22	Western Turkey.
191	10	18			41.6		79		No Z record. Ceram Island.
192	12	3					11		
193	13	6					40		
194	13	9					06		
195	13	18	<i>e i</i> 43 21	46 57			49	19	Gulf of Corinth.
196	14	4					58		
197	14	10					23		
198	14	11	<i>i</i> 07 04		<i>i</i> 07 06				Tonga Islands region.
199	15	17	<i>i i</i> 58 15	<i>i</i> 67 15	71.3		77	68	<i>P</i> (-1.6, +x, +1.0; +2.8, -0.4, -2.7) per. 3 ^s . Near south coast of [Kodiak Island, Alaska.
201	16	9	<i>i</i> 40 32						Kamchatka.
202	16	10	<i>i i</i> 05 38	15 57				82	Japan.
203	16	16	<i>e</i> 21 37		<i>i</i> 21 39	<i>i</i> 22 09			Tonga Islands region.
204	16	19	<i>i i</i> 59 30	68 36	59 45	69 48		77	Alaska Peninsula.
205	17	1	<i>e</i> 48 02					81	Aleutian Islands.
206	17	14		<i>e</i> 34 25	33 22	41.0		58	Peru.
207	18	5	<i>e e</i> 48 02	<i>e</i> 51 12				53	European Turkey.
208	18	10	<i>e</i> 23 47		25.4			17	Recording interrupted. Solomon Is- lands.
209	18	19						08	
210	19	5					28		

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			P or P'	S					
211	1953 June	8	<i>e i</i> 15 50	<i>i</i> 19 27			<i>h m</i>		Zante, Greece.
212	21	13	<i>i</i> 59 11				22.1	20	Kurile Islands.
213	21	16	<i>i</i> 22 15						Tonga Islands region.
214	22	0	<i>i</i> 11 05	21 27	30.5			83	Indian Ocean, west of Sumatra.
215	22	16					59		
216	23	1	57 58	61 46	58 22			21	Near Crete.
217	23	14	<i>e e</i> 04 42	<i>i</i> 13 45	14 47	18.1		26	21 ^m .4. Near south coast of Kamchatka.
218	24	21	<i>i</i> 30 09	<i>e</i> 39 29	40.2			69	Kurile Islands.
219	25	6					.9		
220	25	10	<i>e</i> 59 29	<i>e</i> 71 39	<i>e</i> 63 01	<i>i</i> 64 05		107	66 ^m 18 ^s . 69 ^m 41 ^s . <i>iPS</i> 73 ^m 25 ^s . <i>i</i> 74 ^m 36 ^s . <i>iSS</i> 79 ^m 41 ^s . East of Flores Island.
221	26	6	<i>e</i> 01 45		02 02	08 07			08 ^m 57 ^s . <i>PS</i> 11 ^m 19 ^s . <i>iPPS</i> 12 ^m 25 ^s . 13 ^m 05 ^s . <i>SS</i> 16 ^m 53 ^s . <i>SSS</i> 23 ^m .0. Flores Island region.
222	26	7	<i>e</i> 53 44		<i>i</i> 53 46				Depth about 550 km. East of Fiji Islands.
223	27	8	<i>i i</i> 01 45						Depth about 550 km. East of Fiji Islands.
224	28	5	<i>e e</i> 49 37	<i>e</i> 59 59			77	81	Japan.
225	29	3		<i>e</i> 51 21			67		Off coast of Panama.
226	29	19	<i>i</i> 00 58						
227	29	23	<i>e</i> 36 19					55	Tibet-Nepal-India border.
228	30	7	<i>i</i> 48 45						Near east coast of Kamchatka.
229	30	22	<i>i i</i> 53 47	<i>e</i> 63 09	<i>i</i> 53 58		1.2	72	Near south coast of Kamchatka.
230	July	1							
231	2	3	<i>i i</i> 10 44	<i>i</i> 19 50	<i>e</i> 20 22		32	69	Near south coast of Kamchatka.
232	2	7	<i>i i</i> 15 51		<i>e</i> 17 00	<i>i</i> 18 53			<i>iPKS</i> 19 ^m 35 ^s . <i>pPKS</i> 20 ^m 19 ^s . <i>isPP</i> 20 ^m 39 ^s . 26 ^m 51 ^s . <i>SP</i> 29 ^m 05 ^s . 32 ^m 07 ^s . <i>i</i> 33 ^m 05 ^s . 35 ^m 12 ^s . 36 ^m 26 ^s . 37 ^m .o. Depth about 200 km. New Hebrides. Japan.
233	2	9	<i>e</i> 00 07						Near coast of southern Peru.
234	2	13			<i>e</i> 56.1		82		
235	2	18	<i>i</i> 28 18-						
236	2	22	<i>e</i> 40 59	<i>e</i> 51 11				71	Riu-Kiu Islands region.
237	3	2						47	
238	3	5	<i>e</i> 43 27	<i>e</i> 53 33				69	80
239	3	6	<i>i</i> 35 32						Seismic?
240	3	18			<i>e</i> 49 01	54 48			<i>PS</i> 58 ^m .8. <i>SS</i> 65 ^m .1. <i>SSS</i> 69 ^m .5. Sand- wich Islands.
241	5	4					15		
242	6	22						52	
243	7	4	<i>i i</i> 20 17-	<i>i</i> 30 39	21 12	<i>e</i> 30 20			<i>pS</i> 31 ^m 32 ^s . <i>sS</i> 32 ^m 11 ^s . Depth about [250 km. Sumatra.
244	7	14						24	
245	7	17	<i>e</i> 40 53	51 23	51 15			70	84
246	9	19	<i>i</i> 10 32	<i>e</i> 17 18	20.4			24.5	46
247	9	20							No <i>BZ</i> record. Sinkiang province, China.
248	9	21	<i>i e</i> 32 17	<i>i</i> 39 10				67	Afterchock.
249	9	21						45	46
250									North Atlantic Ocean.

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			P or P'	S					
	1953		<i>m s</i>	<i>m s</i>	<i>m s</i>	<i>m s</i>	<i>h m</i>	°	
248	July 10	15	<i>e</i> 25 35		<i>G.Z.</i> 29 28	<i>i_H</i> 33 18			34 ^m 20 ^a . Deeper than normal. Hindu Kush. <i>PS</i> 11 ^m .8. New Guinea.
249	12	1	<i>i i</i> 01 07	<i>i</i> 07 32	03.2	10 50			
250	12	7			02 28	10 08			
251	July 15	10					.3		
252	18	11					53		
253	19	15	<i>i</i> 04 19						
254	19	18					54.5		
255	20	8	<i>i i</i> 27 46		28.2	<i>i_Z</i> 30 16			<i>PP</i> 31 ^m 12 ^a . 38 ^m .5. <i>i_N</i> 45 ^m 57 ^a . <i>SS</i> 50 ^m .2. Depth about 100 km. Tonga Islands region.
256	21	17	<i>i i</i> 34 55+	<i>e</i> 45 06	38 15	54.9	65	81	Riu-Kiu Islands.
257	22	5	<i>e i</i> 22 22	31 30	24 57	27 00		70	<i>iPS</i> 32 ^m 06 ^a . <i>iScS</i> 32 ^m 24 ^a . <i>SSS</i> 39 ^m .1. [Kamchatka.
258	22	13					29		
259	22	13	<i>e</i> 40 27						
260	22	15	<i>e</i> 14 05	<i>e</i> 17 45			20.2	20	Turkey.
261	22	18	<i>e</i> 13 28	<i>i</i> 20 43	15.5		26	51	North Atlantic Ocean.
262	23	1	<i>i i</i> 14 25	<i>e</i> 21 25			.5	48	Pakistan.
263	23	18		<i>e</i> 44 41	<i>i</i> 44 54		58		Kamchatka.
264	25	17	<i>i e</i> 46 42				1.8		Tonga Islands region.
265	26	17		<i>i</i> 17 29	<i>e</i> 10 27	<i>i</i> 11 07	.7		<i>iSKS</i> 16 ^m 45 ^a . 18 ^m 46 ^a . 24 ^m 12 ^a . Gal. <i>Z</i> and <i>N</i> out of function. Mariana Islands.
266	26	23	<i>e</i> 42 44				73		Gal. <i>Z</i> and <i>N</i> out of function. Japan.
267	27	15					.9		
268	28	7	<i>i</i> 58 19						Depth about 550 km. Fiji Islands [region.
269	28	18					49		Mid Atlantic Ocean.
270	29	13		<i>i</i> 51 28	58.0				
271	29	18			<i>e</i> 38 45		55		Off coast of Guatemala.
272	29	23			41 13	47 33	86		Fiji Islands region.
273	30	6	<i>i</i> 40 16				1.1		<i>P</i> very small. Kamchatka.
274	30	8	<i>i</i> 36 42						Japan.
275	31	0		08 46	<i>e</i> 02 34	<i>i</i> 08 06	28		09 ^m 43 ^a . Mariana Islands.
276	31	23			24 13		.9		Argentina.
277	Aug. 1	0	<i>e</i> 49 41						Tonga Islands.
278	2	17	<i>e</i> 39 30		42.7	66.4	1.5		Loyalty Islands.
279	4	3					48		
280	4	14			<i>e</i> 15 35	<i>i</i> 15 40			Depth about 200 km. New Hebrides.
281	6	19	<i>e</i> 04 17				18		Sinkiang province, China.
282	6	21					17		
283	8	18	<i>i</i> 50 40						Kamchatka.
284	9	7	<i>e e</i> 45 23	<i>i</i> 48 52			50.5		51 ^m .7. Heavy casualties. Ithaca, Greece.
285	9	10	<i>i</i> 10 17						
286	11	3	<i>e i</i> 36 41	<i>i</i> 40 11					Greece.
287	11	11		<i>e</i> 09 15					Explosion in Czechoslovakia.

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No.	Date	Hour	Forerunners				L	Δ	Remarks
			P or P'	S					
	1953		<i>m s</i>	<i>m s</i>	<i>m s</i>	<i>m s</i>	<i>h m</i>	°	
288	Aug. 11	12							
289	11	13					53.5		
290	11	14	<i>e</i> 40 17			<i>i</i> 40 36	21.3		
291	11	15	<i>e</i> 10 09						
292	11	20	<i>i</i> 24 29						Depth about 600 km. Fiji Islands.
293	12	6					13		
294	12	9	<i>e i</i> 28 10	<i>i</i> 31 44	<i>i</i> 28 13			20	Heavy casualties. Cephalonia, Greece.
295	12	11	<i>e</i> 37 58		<i>i</i> 38 06				Greece.
296	12	12	<i>e e</i> 09 41	<i>i</i> 13 15	<i>i</i> 09 44			20	"
297	12	13	<i>e</i> 43 42						"
298	12	14	<i>e e</i> 12 58	<i>e</i> 16 25				19	"
299	12	16	<i>e e</i> 12 44	<i>e</i> 16 23				20	"
300	12	17	<i>e e</i> 13 20		<i>e</i> 16 43	35 55	1.2		<i>SSS</i> 40 ^m .3. Tonga Islands.
301	12	22			30.6				
302	13	3					31		
303	13	5					05		
304	13	9	<i>e e</i> 42 39		<i>e</i> 43 24	45 54	86		<i>e</i> 46 ^m 16 ^a . <i>PPP</i> 49 ^m .0. <i>i_N</i> 52 ^m 40 ^a . 56 ^m .0. 58 ^m .1. Loyalty Islands.
305	13	10	<i>e</i> 20 10						Guatemala.
306	13	14		<i>e</i> 51 28			54		Greece.
307	14	1					34		
308	14	22			<i>e</i> 43 46		51		Atlantic Ocean.
309	17	0					.6		
310	17	2		<i>e</i> 20 17			23		Greece.
311	17	4					02		
312	17	10					29		
313	18	18					57		
314	18	22		<i>e</i> 51.6			54		Greece.
315	19	1			<i>e</i> 01 50		04		
316	19	3					28.5		
317	19	10					50		
318	20	19		<i>e</i> 35.3			38		Greece.
319	21	19					.3		
320	21	20					.6		
321	22	1					19		
322	23	7	<i>e</i> 28.4	<i>e</i> 36.6			.7		Mid Atlantic Ocean.
323	24	2					32		
324	24	12	<i>e</i> 29 34						Seismic?
325	24	13		<i>e</i> 44 05	<i>e</i> 44 37		62		Guatemala.
326	25	2		<i>e</i> 24.5	<i>e</i> 30 28				<i>ePS</i> 34 ^m .4. <i>SS</i> 40 ^m .5. Phases badly marked. New Britain.
327	27	19	<i>e</i> 38 37	<i>i</i> 42 12			45	20	Greece.
328	27	20	<i>e</i> 58 45		<i>e</i> 69 15		90		Sumatra.
329	27	22	<i>i e</i> 27 49+	<i>e</i> 37 05			52		Depth about 100 km. Japan.
330	28	0					29		
331	28	20		<i>e</i> 46 42			49.3		Greece.
332	29	2		<i>e</i> 15 54	<i>i_N</i> 16 16	19.3			India - Nepal border.

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No.	Date	Hour	Forerunners				L	△	Remarks
			P or P'	S					
	1953		<i>m s</i>	<i>m s</i>	<i>m s</i>	<i>m s</i>	<i>h m</i>	°	
333	Aug. 29	14	<i>i</i> 13 32+	<i>i</i> 17 12			19		Algeria.
334	31	4					46		
335	31	6					02		
336	31	8	<i>i</i> 03 44+				26		Deeper than normal. Kamchatka.
337	31	11					2		
338	31	17					44		
339	Sept. 1	19					37		
340	1	20		18.2			20		Greece.
341	2	0	<i>i</i> 41 47	<i>e</i> 46 26	<i>i</i> 46 43		50		Caucasia.
342	4	7	<i>e</i> <i>i</i> 34 15+	<i>i</i> 43 22	37 16	38 41	58	70	SKS 44 ^m 11 ^s . SS 48 ^m .2. SSS 51 ^m .6. Kurile Islands.
343	4	14			36.5	42.4	60		Chile.
344	5	1		<i>e</i> 16 55			21		West of Crete.
345	5	14	<i>i</i> 23 09	<i>i</i> 26 43			28.7	20	Gulf of Corinth.
346	5	19	<i>e</i> <i>i</i> 09 24	<i>i</i> 18 28	21.5	26.9	30	69	Near south coast of Kamchatka.
347	5	23	<i>i</i> 00 45						P perhaps 4 ^s earlier.
348	6	1					54		
349	7	4	<i>e</i> <i>e</i> 03 28	<i>e</i> 07 18	<i>i</i> 03 31		09.2	21	Turkey.
350	10	4	<i>i</i> 11 25	<i>e</i> 15 46	<i>i</i> 16 00		18.5	25	Heavy casualties. Cypren.
351	14	0	<i>i</i> 46 07		49.1	<i>i</i> 50 31	91		61 ^m 09 ^s . 61 ^m 35 ^s . SS 67 ^m 40 ^s . Slightly deeper than normal. Seismic sea-wave. Fiji Islands.
352	14	9	<i>e</i> 09 22				37		Kamchatka.
353	14	10			<i>e</i> 32 58	42 22	69		SS 48 ^m .2. South of Afrika.
354	14	11			31 04	40 27	64		SS 46 ^m .2. South of Afrika.
355	14	15	<i>e</i> <i>i</i> 00 30	<i>i</i> 03 55			5.6	18	Greece.
356	15	11					44.3		»
357	15	11			46 52				»
358	16	2	<i>i</i> 08 24		12.0	15.1	.9		30 ^m .8. Samoa Islands region.
359	16	11					.5		
360	16	12					13		
361	16	21	<i>i</i> 53 01				78		Kurile Islands.
362	17	21	<i>i</i> 31 20-		35 18		1.4		Depth about 100 km. Tonga Islands region.
363	18	17					35		
364	20	19			14 39	16.8	48		PS 24 ^m 11 ^s . SS 30 ^m .0. South Atlantic Ocean.
365	23	2	<i>e</i> 25 48	<i>i</i> 34 56	35 48	40.8		70	Kurile Islands.
366	25	1					30		
367	25	13	<i>e</i> 53 47	<i>i</i> 64 17	<i>e</i> 54 10	73.0	82	84	Bonin Islands.
368	25	17					31		
369	26	1	<i>e</i> 13 34	<i>i</i> 22 45	23 40	27.8		70	31 ^m .0. Kamchatka.
370	27	6	<i>i</i> 16 25	<i>i</i> 25 24	25 39	30.0		68	Windward Islands.
371	27	10	<i>i</i> 12 09		<i>i</i> 12 24				Kermadec Islands region.
372	28	13	<i>e</i> 25 01						Kamchatka.
373	29	1	<i>e</i> <i>e</i> 56 13		<i>i</i> 56 46	65 44			70 ^m 44 ^s . <i>i</i> _N 72 ^m 26 ^s . 75 ^m .6. 80 ^m .2. Depth about 300 km. New Zealand.

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No.	Date	Hour	Forerunners				L	△	Remarks
			P or P'	S					
	1953		<i>m s</i>	<i>m s</i>	<i>m s</i>	<i>m s</i>	<i>h m</i>	°	
374	Sept. 30	23		28 03	<i>e</i> 20 26	<i>i</i> 27 46			Mexico.
375	Oct. 5	4	<i>i</i> 42 42	<i>i</i> 51 33	52 24	56.4	65	67	SSS 59 ^m .7. No Gal. Z record. Kamchatka.
376	5	23			53.4		74		New Guinea.
377	6	22			00 32	4.1	31		PS 8 ^m 16 ^s . PPS 9 ^m 19 ^s . SS 14 ^m 45 ^s . SSS 19 ^m .0. New Britain region.
378	6	23	<i>e</i> 13 13						Perhaps 10 ^s earlier. Loyalty Islands [region].
379	8	3					42		
380	8	5					02		
381	8	10	<i>e</i> 32 08	<i>i</i> 36 31			40		Turkey.
382	8	11					50		
383	8	16					51		
384	8	19	<i>i</i> 20 23	<i>e</i> 27 57	32 10		37		Tibet.
385	10	21	<i>i</i> 33 33	<i>e</i> 37 12			39	20	Greece.
386	11	13	<i>i</i> 19 50	29.0	29 50		42		Northern Kurile Islands.
387	11	17	<i>i</i> 17 24	<i>i</i> 25 02	27.3		34.5	54	Tibet.
388	13	9		<i>e</i> 16 47			.5		Northern Gulf of California.
389	14	13	<i>i</i> 54 44						
390	14	14	<i>i</i> 58 44	<i>i</i> 68 01*	<i>i</i> 59 14	68 13	1.4	74	sS 68 ^m 42 ^s . PS 68 ^m 52 ^s . Depth about 100 km. Japan.
391	15	4					43		
392	15	17	<i>i</i> 12 26						
393	16	21		52 33			54.7		Ionian Islands.
394	17	0	<i>i</i> 58 58						Near Crete.
395	17	21	<i>i</i> 18 35+	<i>i</i> 27 40	28 34		40		Kamchatka.
396	20	5	<i>e</i> 42 05				49		East of Black Sea.
397	21	11	<i>e</i> <i>e</i> 35 21	<i>i</i> 38 46			40.5	19	Ionian Islands.
398	21	18	<i>i</i> 44 09	<i>i</i> 47 39			49	19	»
399	21	23	<i>e</i> 48 14	<i>e</i> 51 49			54	19	»
400	22	13					41		
401	26	15	<i>i</i> 29 18						Seismic?
402	27	3	<i>i</i> 52 23		<i>i</i> 52 25				Japan.
403	27	7	<i>i</i> 06 56		<i>i</i> 07 20				Seismic?
404	27	18	<i>i</i> 34 00						Depth about 300 km. Southern Bolivia.
405	28	2					49		
406	28	12					47		
407	29	14	<i>i</i> 56 18		<i>i</i> 56 20				
408	31	14					.4		
	Nov.								
409	1	18					58		
410	1	21	<i>i</i> 07 06				30		Kurile Islands.
411	3	22			37 20		40		Greece.
412	4	4	<i>e</i> <i>i</i> 08 26		10 51	<i>i</i> 11 55			PS 21 ^m .0. 27 ^m .5. 29 ^m .6. 33 ^m .5. New Hebrides.
413	4	4	<i>e</i> 24 05						Aftershock.

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No.	Date	Hour	Forerunners				L	Δ	Remarks
			P or P'	S					
			m s	m s	m s	m s	h m	°	
414	1953 Nov. 4	6	i 15 38						Korea.
415	4	12	e 04 31						SS 39 ^m 05 ^s . Depth about 200 km. Hindu [Kush.
416	5	8	e 29 19		i 29 21	e 30 36			
417	7	13					.8		
418	8	14					.9		
419	9	17	i i 36 45+	i 45 45	e 40 09	46 07	57	68	Kamchatka.
420	10	15					24		
421	10	23	e i 51 31	i 60 29	54 31	65 21	69	68	Kamchatka.
422	13	12					03		
423	13	16	e 29 32				57		Sumatra.
424	13	19			37 30	38 27			i 41 ^m 18 ^s . New Hebrides Islands.
425	14	20	i i 14 39	i 23 47	i 24 00	e 25 12	38	70	Kamchatka.
426	15	14	e 59 56						
427	17	11	e 49 15						Caucasia.
428	17	13	e 42 38	i 53 12	i 42 44		69	85	Strong microseisms. Guatemala.
429	18	18	e 49 05						Arabian Sea.
430	20	21	e 24 01		i 24 22				Tonga Islands region.
431	22	17	i 56 09						Seismic?
432	23	15	i 43 15		i 43 33	i 44 13			
433	25	18	i i 01 05	i 11 09	i 01 12	i 01 29		79	04 ^m 21 ^s . iScS 11 ^m 34 ^s . 13 ^m 27 ^s . SS 16 ^m .4. Seismic sea-wave. Off Hondo. Japan.
434	26	0	i i 15 44	i 25 48	26 06	30 28	44	79	SSS 34 ^m .7. Repetition.
435	26	1	i 59 43	i 69 45	70 04	74 50	1.5	79	Repetition.
436	26	5					05		»
437	26	8	i i 26 27	i 36 37	i 26 31		54	80	»
438	26	20					12		
439	27	0					45		
440	27	11	e 42 17				70		Japan.
441	28	0					10		Repetition to no. 433.
442	28	2	e 22 56				54		» » » »
443	28	5	i 23 30						
444	28	20	e 22.1	i 25 26			28		Greece.
445	29	1					00		Strong microseisms.
446	29	4					50		» »
447	Dec. 1	5	e 20 32						Depth about 200 km. Riu - Kiu Islands.
448	1	21	i 41 18-						Depth about 500 km. South of Fiji Islands.
449	2	4			i 52 12	54 07	82		i 60 ^m 21 ^s . 71 ^m 42 ^s . Strong microseisms.
450	3	15	e i 03 44	e 11 32	18 28		22	56	North of New Guinea. Central Tibet.
451	4	15	i 06 06	i 15 25			30	71	Off Vancouver Island.
452	5	9	i i 53 33				84		Off Hondo, Japan.
453	5	18	i 51 40				1.4		» » »
454	7	2	e 19 28-	i 31 11	e 20 00	e i 23 45	55		iSKS 30 ^m 04 ^s . e 30 ^m 46 ^s . sS 32 ^m 01 ^s . 33 ^m 28 ^s . i 38 ^m 22 ^s . Depth about 100 km. Heavy casualties. Northern Chile.



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No.	Date	Hour	Forerunners				L	Δ	Remarks
			P or P'	S					
			m s	m s	m s	m s	h m	°	
455	1953 Dec. 7	14	i i 23 22	e 33.3					
456	12	17	e 44 48+	i 56 08	i i 44 54	i 55 23	52	95	Japan. SKKS 55 ^m 43 ^s . PS 57 ^m .5. SS 63 ^m .0. SSS 66 ^m .8. Near coast of Peru.
457	13	7	i 07 21				33		Kamchatka.
458	13	8	i 36 53		i 37 00				Kermadec Islands.
459	14	11					21		
460	14	14					25		
461	20	0	i 32 26	i 41 26	i 32 30	i 33 42		74	i 41 ^m 32 ^s . Depth about 300 km. Sea of Japan.
462	20	6			e 58.1		81		Philippine Islands.
463	20	10					14		
464	20	21	i e 32 24	e 42 27	i 32 35	i 42 39	60	79	iPS 43 ^m 06 ^s . Off Hondo. Japan.
465	21	17	i 47 49						Strong microseims. Japan.
466	22	19			08.9	09.9	.5		Strong microseims. Philippine Islands.
467	24	2			e 45 07	e 54 34	71		Strong microseims. Kamchatka.
468	24	23	i i 32 21+	i 41 41			58	72	» » »
469	25	2	i i 02 38+	i 11 44			28	71	» » »
470	25	16					.9		
471	26	9	i 51 42		i 52 31				Kamchatka.
472	26	10	e 16 23		i 17 13				»
473	26	13	i 23 48+				51		»
474	26	18	e 25 12		i 25 14				»
475	28	2	e i 43 01	i 46 31			48.8	19	Near west coast of Greece.

May 1954

HENRY JENSEN