

No. 63

1953

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. 63. Jan.—Dec. 1953.

Instruments:

Galitzin-Wilip seismographs.

Constants:

Component	l	A_1	T_1	μ^2	T	k
	cm	cm	sec		sec	
<i>N</i>	12.5	100	12.64	0	$12\frac{1}{2}$	104
<i>E</i>	12.5	100	12.69	0	$12\frac{1}{2}$	106
<i>Z</i>	14.5	100	11.56	0	8.4	80

Wiechert 1000 kg. horizontal seismograph.

Wiechert 1300 kg. vertical seismograph.

Constants:

Component	T	ν	ρ	V
	sec		mm	
<i>N</i>	7.9	3.8	$\frac{1}{2}$	212
<i>E</i>	8.0	4.4	0.4	210
<i>Z</i>	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, $T_1 = \frac{1}{4}^s$, $T = 1^s$. $V_{\max} = \text{ca. } 30000$.

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No.	Date	Hour	Forerunners				L	△	Remarks
			P or P'		S				
			m s	m s	m s	m s	h m	°	
	1953								
	Jan.								
1	2	3					50		
2	3	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.
	Febr.								
26	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	△	Remarks
			P or P'	S					
			m s	m s	m s	m s	h m	°	
44	1953 Febr. 22	20	i 35 51			e 36 17			Aftershock.
45	25	21	i e 27 17	i 36 17	i i 27 30			68	South of Alaska Peninsula.
46	26	0	i i 43 22		e 43 58				Near south coast of Kamchatka.
47	26	12	e 01 47		04 02	05 13			PPP 06 ^m 22 ^s . SKS 08 ^m 41 ^s . 10 ^m 10 ^s . 11 ^m 43 ^s . SS 21 ^m .3. SSS 25 ^m .8. Santa Cruz Islands region.
48	26	13	e 27 09						Kamchatka.
49	27	11	i 16 16						
50	28	23	i 53 34						Small.
51	March 1	15	e 06.8						Kashmir.
52	1	18					.2		
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 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 . 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.
73	19	21					25		
74	20	6					40		
75	21	1	i 36 21				73		
76	21	19	e 38.1				41.7		Yougoslavia.
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	m s	m s	h m	°	
87	1953 April 1	1					58		
88	2	4			e 16 48		56		New Britain.
89	3	4	i e 37 26						Samoa Islands region.
90	4	6	i e 04 18	e 14.6			32	82	Japan.
91	5	10					57		
92	6	0			55.5	61.6	.5		63 ^m .2. PS 65 ^m .0. SS 71 ^m .3. SSS 15 ^m .4. Banda Sea.
93	6	4	e 02 52		13 15	15.5	.6		Philippine Islands.
94	6	12	e i 25 53	35 11			.8	71	Kamchatka.
95	6	23					.9		
96	7	17	i e 47 08		i 49 16				Depth about 570 km. South of Fiji Islands.
97	8	0			e 22 43		47		Philippine Islands.
98	8	12					00		
99	9	16					29		
100	12	22	i e 41 27		i 41 29				Off Kamchatka.
101	13	23					27		
102	14	13	i i 41 38-	i 51 52	43 51	45 36			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.
103	15	1	i 28 19				51		Kurile Islands.
104	15	18	i 18 08						Kamchatka.
105	17	0	e 16 12	e 27.3			.9		Peru.
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		
115	23	4	e 01 22	i 09 46				62	Sinkiang province, China.
116	23	4	e 03 56	i 12 22	13.9			62	» » »
117	23	16	e 40.1		e e 43 32	i 43 53			iPP 44 ^m 01 ^s . 44 ^m 58 ^s . SKS 49 ^m 38 ^s . SKKS 52 ^m 21 ^s . PS 55 ^m .0. SS 61 ^m .4. SSS 65 ^m .9. New Britain region.
118	24	2	i e 14 31	i 18 25	i i 14 36	i 14 44	20.4	22	iE 18 ^m 28 ^s . iN 18 ^m 36 ^s . Off West coast [of Spitzbergen.
119	25	0					04		Sinkiang province. China.
120	25	16	e 32 14		i 32 20		48		
121	29	4			e 52.3		96		Solomon Islands region.
122	29	20	i e 32 35	e 42 02			59	74	Japan.
123	30	1	i 20 30						
124	30	6	i i 46 08		49 16	49 57	1.5		SS 68 ^m 00 ^s . SSS 73 ^m .2. Loyalty Islands.
125	30	15					57		

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

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No.	Date	Hour	Forerunners				L	Δ	Remarks
			P or P'	S					
169	1953 May 31	5	m s	m s	m s	m s	h m	°	SS 33 ^m .3. SSS 36 ^m .8. Some depth. Flores Sea. ScS 19 ^m 57 ^s . SS 23 ^m .0. SSS 26 ^m .9. Off Dominican Republic.
170	31	20	e e 09 48	e 19 00	i 09 53	i 19 05	54	70	
171	31	21	i i 07 32						Afterchock.
172	June 1	20					.5		Japan, Turkey. Kamchatka.
173	2	18	i i 02 48		e 13 14		35		
174	3	3					04		
175	3	16	e 09 47		i 09 57		15		
176	3	18	i 02 57				32		
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	e 35 10	i 44 23	44 30	45.1	.9	70	
185	7	14					05		
186	8	11	i i 51 37	i 60 43	61 01		1.6	69	
187	9	1			04.7				
188	9	1	i i 50 09	i 59 12	59 26			69	
189	9	9					.5		
190	9	16	e e 32 52	e 36 43			39	22	
191	10	18			41.6		79		No Z record. Ceram Island.
192	12	3					11		Gulf of Corinth. Tonga Islands region. P(-1.6, +x, +1.0; +2.8, -0.4, -2.7) per. 3 ^s . Near south coast of [Kodiak Island, Alaska.
193	13	6					40		
194	13	9					06		
195	13	18	e i 43 21	46 57			49	19	
196	14	4					58		
197	14	10					23		
198	14	11	i 07 04		i 07 06				
199	15	17	i i 58 15	i 67 15	71.3		77	68	
200	16	8	i 34 20						
201	16	9	i 40 32						
202	16	10	i i 05 38	15 57				82	Japan.
203	16	16	e 21 37		i 21 39	i 22 09			Tonga Islands region.
204	16	19	i i 59 30	68 36	59 45	69 48	77	69	Alaska Peninsula.
205	17	1	e 48 02				81		Aleutian Islands.
206	17	14		e 34 25	33 22	41.0	58		Peru.
207	18	5	e e 48 02	e 51 12			53	17	European Turkey.
208	18	10	e 23 47		25.4				Recording interrupted. Solomon Is-
209	18	19					08		[lands.
210	19	5					28		

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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>	°	
	June								
211	21	8	<i>e i</i> 15 50	<i>i</i> 19 27			22.1	20	Zante, Greece.
212	21	13	<i>i</i> 59 11						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		69	21 ^m .4. Near south coast of Kamchatka.
218	24	21	<i>i</i> 30 09	<i>e</i> 39 29	40.2				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.
	July								
230	1	3	<i>i i</i> 10 44	<i>i</i> 19 50	<i>e</i> 20 22		32	69	Near south coast of Kamchatka.
231	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.
232	2	9	<i>e</i> 00 07						Japan.
233	2	13			<i>e</i> 56.1		82		Near coast of southern Peru.
234	2	18	<i>i</i> 28 18-						
235	2	22	<i>e</i> 40 59	<i>e</i> 51 11			71	81	Riu-Kiu Islands region.
236	3	2					47		
237	3	5	<i>e</i> 43 27	<i>e</i> 53 33			69	80	
238	3	6	<i>i</i> 35 32						Seismic?
239	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-
240	5	4					15		[wich Islands.
241	6	22					52		
242	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.
243	7	14					24		
244	7	17	<i>e</i> 40 53	51 23	51 15		70	84	Japan.
245	9	19	<i>i</i> 10 32	<i>e</i> 17 18	20.4		24.5	46	No <i>BZ</i> record. Sinkiang province, China.
246	9	20		<i>e</i> 58 33	<i>e</i> 53 34	61 50	67		Aftershock.
247	9	21	<i>i e</i> 32 17	<i>i</i> 39 10			45	46	North Atlantic Ocean.

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

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

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No.	Date	Hour	Forerunners				L	△	Remarks								
			P or P'		S												
			m	s	m	s	m	s	h	m	°						
333	1953 Aug. 29	14	i	13	32+	i	17	12		19		Algeria.					
334	31	4								46							
335	31	6								02							
336	31	8	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	41	47	e	46	26	i	46	43	50	Caucasia.				
342	4	7	e	i	34	15+	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				e	16	55				21				West of Crete.	
345	5	14	i	i	23	09	i	26	43			28.7	20			Gulf of Corinth.	
346	5	19	e	i	09	24	i	18	28	21.5	26.9	30	69			Near south coast of Kamchatka.	
347	5	23	i		00	45										P perhaps 4 ^s earlier.	
348	6	1										54					
349	7	4	e	e	03	28	e	07	18	i	i	03	31	09.2	21		Turkey.
350	10	4	i	i	11	25	e	15	46	i	i	16	00	18.5	25		Heavy casualties. Cypren.
351	14	0	i		46	07				49.1	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	e		09	22						37					Kamchatka.
353	14	10						e	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	e	i	00	30	i	03	55			5.6	18				Greece.
356	15	11										44.3					»
357	15	11						46	52								»
358	16	2	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		53	01						78					Kurile Islands.
362	17	21	i	i	31	20-				35	18	1.4					Depth about 100 km. Tonga Islands region.
363	18	17								14	39	16.8	48				PS 24 ^m 11 ^s . SS 30 ^m .0. South Atlantic Ocean.
364	20	19															
365	23	2	e		25	48	i	34	56	35	48	40.8	70				Kurile Islands.
366	25	1											30				
367	25	13	e		53	47	i	64	17	e	54	10	73.0	82	84		Bonin Islands.
368	25	17											31				
369	26	1	e		13	34	i	22	45	23	40	27.8	70				31 ^m .0. Kamchatka.
370	27	6	i		16	25	i	25	24	25	39	30.0	68				Windward Islands.
371	27	10	i		12	09				i	12	24					Kermadec Islands region.
372	28	13	e		25	01											Kamchatka.
373	29	1	e	e	56	13				i	i	56	46	65	44		70 ^m 44 ^s . 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				
			m s	m s	m s	m s	h m	°	
374	1953 Sept. 30	23		28 03	e 20 26	i 27 46			Mexico.
375	Oct. 5	4	i i 42 42	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	e 13 13						Perhaps 10 ^s earlier. Loyalty Islands [region].
379	8	3					42		
380	8	5					02		
381	8	10	e 32 08	i 36 31			40		Turkey.
382	8	11					50		
383	8	16					51		
384	8	19	i 20 23	e 27 57	32 10		37		Tibet.
385	10	21	i 33 33	e 37 12			39	20	Greece.
386	11	13	i 19 50	29.0	29 50		42		Northern Kurile Islands.
387	11	17	i 17 24	i 25 02	27.3		34.5	54	Tibet.
388	13	9		e 16 47			.5		Northern Gulf of California.
389	14	13	i 54 44						
390	14	14	i i 58 44	i 68 01*	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 12 26						
393	16	21		52 33			54.7		Ionian Islands.
394	17	0	i 58 58						Near Crete.
395	17	21	i i 18 35+	i 27 40	28 34		40		Kamchatka.
396	20	5	e 42 05				49		East of Black Sea.
397	21	11	ee 35 21	i 38 46			40.5	19	Ionian Islands.
398	21	18	i i 44 09	i 47 39			49	19	» »
399	21	23	e 48 14	e 51 49			54	19	
400	22	13					41		
401	26	15	i 29 18						Seismic?
402	27	3	i 52 23		i 52 25				Japan.
403	27	7	i 06 56		i 07 20				Seismic?
404	27	18	i 34 00						Depth about 300 km. Southern Bolivia.
405	28	2					49		
406	28	12					47		
407	29	14	i 56 18		i 56 20				
408	31	14					.4		
409	Nov. 1	18					58		
410	1	21	i 07 06				30		Kurile Islands.
411	3	22			37 20		40		Greece.
412	4	4	e i 08 26		10 51	i 11 55			PS 21 ^m .0. 27 ^m .5. 29 ^m .6. 33 ^m .5. New Hebrides.
413	4	4	e 24 05						Aftershock.

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No.	Date	Hour	Forerunners				L	△	Remarks						
			P or P'		S										
			m	s	m	s	m	s	m	s	h	m	°		
	1953														
	Nov.														
414	4	6	i	15 38										Korea.	
415	4	12	e	04 31											
416	5	8	e	29 19										SS 39 ^m 05 ^s . Depth about 200 km. Hindu [Kush.	
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	69	68	Kamchatka.
422	13	12											03		
423	13	16	e	29 32									57		
424	13	19									37	30			
425	14	20	i	i 14 39	i	23 47	i	24 00	e	25 12			38	70	Sumatra. i 41 ^m 18 ^s . New Hebrides Islands.
426	15	14	e	59 56											
427	17	11	e	49 15											
428	17	13	e	42 38	i	53 12	i	42 44					69	85	Caucasia. Strong microseisms. Guatemala. Arabian Sea.
429	18	18	e	49 05											
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			
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	44	79	SSS 34 ^m .7. Repetition.
435	26	1	i	59 43	i	69 45					70	04	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		
442	28	2	e	22 56									54		Repetition to no. 433.
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		82	i 60 ^m 21 ^s . 71 ^m 42 ^s . Strong microseisms. North of New Guinea.
450	3	15	e	i 03 44	e	11 32					18	28	22	56	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			52		Japan. SKKS 55 ^m 43 ^s . PS 57 ^m .5. SS 63 ^m .0. SSS 66 ^m .8. Near coast of Peru. Kamchatka. Kermadec Islands.
456	12	17	e 44 48+	i 56 08	i i 44 54	i 55 23	78	95	
457	13	7	i 07 21				33		
458	13	8	i 36 53		i 37 00				
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. Philippine Islands.
462	20	6			e 58.1		81		
463	20	10					14		
464	20	21	i e 32 24	e 42 27	i 32 35	i 42 39	60	79	i PS 43 ^m 06 ^s . Off Hondo. Japan. Strong microseims. Japan.
465	21	17	i 47 49						Strong microseims. Philippine Islands.
466	22	19			08.9	09.9	.5		Strong microseims. Kamchatka.
467	24	2			e 45 07	e 54 34	71		» » »
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