

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

No. 59. Jan.—Dec. 1949.

Instruments:

Galitzin-Wilip seismographs.

Constants:

Component	$l$	$A_1$	$T_1$	$\mu^2$		$T$	$k$
	cm	cm	sec			sec	
$N$	12.5	100	12.64	0.1	$1/1-18/5$	12.3	104
					$18/5-31/12$	12.8	
$E$	12.5	100	12.69	0	$1/1-22/6$	12.1	99
					$22/6-31/12$	12.8	
$Z$	14.5	100	11.56	0.1		9.0	84

Wiechert 1000 kg. horizontal seismograph.

Wiechert 1300 kg. vertical seismograph.

Constants:

Component		$T$	$\nu$	$\rho$	$V$
		sec		mm	
$N$	$1/1-18/5$	8.1	5.5	0.6	209
	$18/5-31/12$		4.2		
$E$		8.2	3.9	0.6	210
$Z$		5.8	5.5	0.2	154

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

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

From Oct. 6. a Grenet vertical seismograph is in use on the station.  $T_1 = 1/4^s$ ,  $T = 1^s$ ,  $V_{\max} = \text{abt. } 30\,000$ .

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No.	Date	Hour	Forerunners				L	Δ	Remarks
			P or P'	S					
	1949		m s	m s	m s	m s	h m		
1	Jan. 3	18					34		
2	4	3					05		
3	4	19	i 52 02		i 52 10			Near Rhodos?	
4	9	17					18		
5	9	18					39		
6	13	9	e e 06 06		i i 06 10	i 06 16		ipP' 08 <sup>m</sup> 36 <sup>s</sup> , esP' 09 <sup>m</sup> 39 <sup>s</sup> . Depth about [600 km. South of Fiji Islands.	
7	19	14					19		
8	19	15	e e 12 18	e 22 25			39	80 Formosa region?	
9	23	01	i 13 07				20	Off east coast of Greenland.	
10	23	01	i 18 27				24	Repetition.	
11	23	06		55 38	48 15	55 05	74	PS 56 <sup>m</sup> 50 <sup>s</sup> , SS 62 <sup>m</sup> 12 <sup>s</sup> , SSS 66 <sup>m</sup> .3. Southwest of Sumatra.	
12	24	09	i i 35 17		i i 35 43			Depth about 100 km. Tonga Islands.	
13	28	23	i 38 24					Off east coast of Korea.	
14	Febr. 1	18			i 35 10	37.5		SKS 41 <sup>m</sup> 15 <sup>s</sup> , PS 44 <sup>m</sup> 35 <sup>s</sup> , SS 50 <sup>m</sup> 42 <sup>s</sup> , SSS 54 <sup>m</sup> .9. New Guinea.	
15	2	17	i 52 32	i 61 36	i i 53 21	e 53 42		62 <sup>m</sup> 42 <sup>s</sup> . Depth about 200 km. Aleutian Islands.	
16	5	0	e 32 47					Strong microseisms. Turkey.	
17	5	15	e 28 34					Ionian Islands.	
18	10	22	e 16 25		19 47	20 01	1.1	Samoa.	
19	13	18	e i 44 12		44 37	i 44 56	1.6	ipP' 45 <sup>m</sup> 08 <sup>s</sup> , sP' 45 <sup>m</sup> 25 <sup>s</sup> , ePP 48 <sup>m</sup> 24 <sup>s</sup> , pPP 48 <sup>m</sup> 35 <sup>s</sup> , 55 <sup>m</sup> 26 <sup>s</sup> , 58 <sup>m</sup> 37 <sup>s</sup> , 63 <sup>m</sup> .4. SS 68 <sup>m</sup> .0. SSS 74 <sup>m</sup> .0. Depth about 100 km. Kermadec Islands.	
20	14	19					.5	Strong microseisms.	
21	21	16	i 47 12		i 47 17				
22	23	16	i i 16 41	i 23 32	18 35	27 05	32	47 SSS 28 <sup>m</sup> 03 <sup>s</sup> , 31 <sup>m</sup> 26 <sup>s</sup> . Sinkiang Province, [China.	
23	24	23					44		
24	26	4			39 51	42 48	68	SS 49 <sup>m</sup> . Sandwich Islands region.	
25	28	0							
26	March 2	6	e 58 33	e 62 00	59 14	63 40	64	19 Jan Mayen region.	
27	4	1	e e 30 10		e 40 40	41 03		i 41 <sup>m</sup> 40 <sup>s</sup> , 42 <sup>m</sup> 40 <sup>s</sup> , 48 <sup>m</sup> 01 <sup>s</sup> . Sumatra.	
28	4	10	i i 27 09	i 33 22	28 08	29 00		pPP 30 <sup>m</sup> 02 <sup>s</sup> , sS 34 <sup>m</sup> 38 <sup>s</sup> , P (+ 2.4, - 44.0, + 9.0; - 5.6, + 50.4, - 14.0). [Depth about 200 km. Hindu Kush.	
29	4	15	i 35 39				.8		
30	5	2					24		
31	6	11	i 36 27				.6		
32	9	4					.8		
33	9	5					.04		
34	11	23					.04		
35	16	22	i 34 01		35 27	41 21	71	Strong microseisms. SKKS 42 <sup>m</sup> 43 <sup>s</sup> , PS 45 <sup>m</sup> 23 <sup>s</sup> , PPS 46 <sup>m</sup> 49 <sup>s</sup> . The phases not clearly marked. New Britain.	

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No.	Date	Hour	Forerunners				L	Δ	Remarks
			P or P'	S					
	1949		m s	m s	m s	m s	h m		
36	March 17	21			25 20	28 20	62		
37	19	18	i i 31 10	40 52	e 31 51	42 00		SKS 31 <sup>m</sup> 16 <sup>s</sup> , SKKS 32 <sup>m</sup> 43 <sup>s</sup> , PS 35 <sup>m</sup> 18 <sup>s</sup> , SS 42 <sup>m</sup> 12 <sup>s</sup> , SSS 46 <sup>m</sup> .5. No Benioff record. The phases not clearly marked. New Britain.	
38	22	2					.3	SS 47 <sup>m</sup> 05 <sup>s</sup> . Depth about 150 km. [Japan.	
39	23	18	e 10 42		e 11 42				
40	24	21		i 18 36	23 32	26.8		No Benioff record. Off Cape Mendocino, California.	
41	27	6	e 47 55		i 52 17	58 32		PS 61 <sup>m</sup> 02 <sup>s</sup> . Celebes Sea.	
42	27	12					46		
43	27	21					29		
44	28	13			13 57		32	Philippine Islands.	
45	30	15			10.7		56	Strong microseisms.	
46	31	22					41		
47	April 1	9					38		
48	2	17					.1		
49	3	7					27		
50	5	9	i 37 24	45 49	46 21			Depth about 550 km. Siberia.	
51	10	0	i 04 08						
52	11	0	e 08 06		e 08 09		1.3		
53	13	15	e 23 20	31.7			42		
54	13	20	i i 06 56	i 16 11	e 07 14	20 38	26	71 State of Washington.	
55	13	20	i 34 46						
56	14	23	i e 32 44		33 15		37		
57	15	10	i 59 51		i 60 08				
58	18	21	i 53 05				.9		
59	19	15	i e 30 34				82		
60	20	3	i e 48 04		49 10	49 25		SKS 54 <sup>m</sup> 37 <sup>s</sup> , SKKS 56 <sup>m</sup> 00 <sup>s</sup> , 56 <sup>m</sup> 29 <sup>s</sup> , PS 58 <sup>m</sup> 44 <sup>s</sup> , 60 <sup>m</sup> .2. 60 <sup>m</sup> .4. SS 65 <sup>m</sup> .1. SSS 69 <sup>m</sup> .9. Chile.	
61	23	11	e 30 03		i 34 19	41 54	67	P quite small. The reading uncertain. PS 43 <sup>m</sup> .5. PPS 44 <sup>m</sup> .4. SS 49 <sup>m</sup> .5. Flores Sea.	
62	24	4	e i 30 07+	36 23	i 31 54	33 03	40	42 36 <sup>m</sup> 45 <sup>s</sup> , large. 37 <sup>m</sup> 09 <sup>s</sup> . SS 39 <sup>m</sup> .5. Persian Gulf.	
63	25	14	e 09 08	20 06	e i 12 55	13 14		iSKS 19 <sup>m</sup> 16 <sup>s</sup> , pSKS 19 <sup>m</sup> 49 <sup>s</sup> , sS 21 <sup>m</sup> 06 <sup>s</sup> , SP 21 <sup>m</sup> 46 <sup>s</sup> , 22 <sup>m</sup> 30 <sup>s</sup> . Depth about 100 km. Coast of northern Chile.	
64	25	20			01 26	05 41	21	South Pacific Ocean.	
65	25	23	i i 14 36	i 19 12			23	27 Turkey.	
66	26	11					.3		
67	30	1	e i 36 58		40 58	41 28		iSKS 47 <sup>m</sup> 22 <sup>s</sup> , sSKS 48 <sup>m</sup> 12 <sup>s</sup> , e 49 <sup>m</sup> 05 <sup>s</sup> , 50 <sup>m</sup> 28 <sup>s</sup> , 55 <sup>m</sup> 18 <sup>s</sup> . Depth about 100 km. South of Mindanao.	

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No.	Date	Hour	Forerunners				L	Δ	Remarks
			P or P'	S					
68	1949 May 3	6	i i 07 49	i 16 52	08 16	12 15	h m	17 <sup>m</sup> 36 <sup>s</sup> , 22 <sup>m</sup> 24 <sup>s</sup> . P (+ 1.8, x, - 3.1; - 2.2, x, + 3.5). Depth about 100 km. Kurile Islands.	
69	6	14	e 39 23					Strong microseisms. P uncertain. Siberia.	
70	9	13	i i 48 42	58 57	e 49 27	59 16		65 <sup>m</sup> 46 <sup>s</sup> . Deeper than normal. Sumatra.	
71	12	1	i 14 01				.1	Japan.	
72	12	11					24.3	Anatolia.	
73	13	20	i e 18 35	i 22 23			83	PS 60 <sup>m</sup> 42 <sup>s</sup> . PPS 62 <sup>m</sup> 26 <sup>s</sup> . SS 66 <sup>m</sup> 37 <sup>s</sup> . Flores Sea.	
74	16	4		i 59 07	i 51 17	53 32		Kurile Islands.	
75	17	2	i e 41 12	i 50 28			64		
76	21	17					50		
77	21	21	i i 52 03	i 61 52	e i 52 16	54 59	76	62 <sup>m</sup> 15 <sup>s</sup> , 68 <sup>m</sup> .0. Slightly deeper than normal. Off east coast of Honshu, Japan.	
78	23	4	e 37 17		i 37 40			Kermadec Islands.	
79	24	2	e 48 15		e 51 52		110	South Pacific Ocean.	
80	24	17					03		
81	24	19	i 11 17		e i 11 30		40	Repetition to no. 77.	
82	25	5					40		
83	25	7					30		
84	25	8	i i 32 18	i 39 10	i i 32 24	34 07	46	42 <sup>m</sup> 25 <sup>s</sup> , 42 <sup>m</sup> 43 <sup>s</sup> . Tien Shan.	
85	26	6					6		
86	30	1		e 58 09	i 57 10	61 44		65 <sup>m</sup> .3. Northern Chile.	
87	June 4	1	i 13 37						
88	9	21			41 22			Samoa Islands region.	
89	10	6					42		
90	11	14		e 36 34			58		
91	12	18		i 16 33	i 15 16	18 27		esS 20 <sup>m</sup> 27 <sup>s</sup> . Partly masked by long-periodic disturbances. Depth about [600 km. Northern Argentina.	
92	14	1					.0		
93	15	10					14		
94	16	18		14 23	17 56		21	No Galitzin Z record. Gulf of Aden.	
95	17	4	i 26 11		i 26 21			No Galitzin Z record. Longperiodic [disturbances. South coast of Crete.	
96	19	2	i 13 07						
97	19	10					.0		
98	19	12		e 41 03				North Atlantic Ocean.	
99	22	2					.1		
100	23	22	e 46 20		e 47 06	49 32		50 <sup>m</sup> 39 <sup>s</sup> , 55 <sup>m</sup> 36 <sup>s</sup> , 57 <sup>m</sup> 09 <sup>s</sup> . New Hebrides Islands.	
101	24	22	i 52 15		56 11	i 63 04		63 <sup>m</sup> 53 <sup>s</sup> . PS 64 <sup>m</sup> 49 <sup>s</sup> . Off southwest coast of Japan.	
102	25	0			e 41 12		46	i 46 <sup>m</sup> 21 <sup>s</sup> .	
103	25	19	i i 36 48+		39 23			Tonga Islands.	

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No.	Date	Hour	Forerunners				L	Δ	Remarks
			P or P'	S					
104	1949 June 26	5		e 49 41			51.8	Ionian Sea.	
105	26	8	e 55 16		i <sub>E</sub> 60 01	65.8		i <sub>E</sub> 66 <sup>m</sup> 08 <sup>s</sup> , 66 <sup>m</sup> 36 <sup>s</sup> , 69 <sup>m</sup> .1. SS 74 <sup>m</sup> .8.	
106	27	1					03	[SSS 78 <sup>m</sup> .1. Molucca Sea.	
107	28	20		e 25 16			34	North Atlantic Ocean.	
108	July 2	11	e 48 35		e 49 25			Southwest of New Zealand?	
109	2	20	e i 10 52	i 22 28	14 22	15 02	98	iSKS 21 <sup>m</sup> 28 <sup>s</sup> , i 22 <sup>m</sup> 16 <sup>s</sup> , 24 <sup>m</sup> 44 <sup>s</sup> .	
110	4	1	i 58 19					[SS 29 <sup>m</sup> .0. Mariana Islands region.	
111	4	3	i i 48 36+	i 54 55	50 16		58.2	58 <sup>m</sup> 40 <sup>s</sup> . Persian Gulf.	
112	4	4	i 30 36					Probably aftershock.	
113	5	2	e e 37 57	e 44 15	i i 38 01	i 38 08	42	i 44 <sup>m</sup> 23 <sup>s</sup> . Aftershock.	
114	7	0					.1		
115	7	4		e 45 38	48 30		50	North Atlantic Ocean.	
116	7	12	e 26 02	e 30 08			33.5	South of Rhodos.	
117	8	7	e 58 27					Foreshock?	
118	8	8	e e 10 04	e 16 24	11 42	15 24	42	Turkestan.	
119	8	13					.1		
120	8	18	i e 22 08	25 24			26.8	18 Southwest of Spitsbergen.	
121	9	1					.7		
122	10	4	i i 01 24+	i 07 43	i 02 56	03 06	14.0	42 03 <sup>m</sup> 32 <sup>s</sup> . ScP 07 <sup>m</sup> 15 <sup>s</sup> , 08 <sup>m</sup> 34 <sup>s</sup> , 09 <sup>m</sup> 01 <sup>s</sup> .	
123	10	5	e 23 15					iSS 10 <sup>m</sup> 39 <sup>s</sup> . Turkestan.	
124	10	11	i e 05 18	e 11 32	14 34		42	Repetition.	
125	10	12	i e 05 40	e 12 01	i 07 19		42	"	
126	10	14	i e 21 13	e 27 30	i 21 16	22 55	42	"	
127	10	15	i 15 38					"	
128	10	15	i i 26 49+	e 33 07	28 27	31 16	42	"	
129	10	15	i i 57 05	i 63 23	i 58 43		42	"	
130	10	16	i i 31 50	i 38 08	i 33 30	40 57	42	"	
131	10	17	i 48 36					"	
132	10	19	i 02 33					"	
133	10	23	i 16 46					"	
134	11	4	i 03 26					"	
135	11	9	e 50 44		e 50 54	e 51 06		Fiji Islands region?	
136	11	16	i i 22 38	e 32 22	i e 22 52			Deeper than normal. Japan.	
137	13	10	i e 21 50	e 28 12	23 29		42	Aftershock to Turkestan quake.	
138	13	18	i 36 15	e 42 34	37 55		42	Aftershock to Turkestan quake.	
139	14	3	e 43 24	e 49 41			42	Aftershock to Turkestan quake.	
140	14	11					16.8	Yugoslavia.	
141	14	20			i 59 29			Off east coast of Borneo.	
142	14	23	i i 32 52	i 42 34				Deep focus. Bonin Islands region.	
143	15	11			37.7		.9		
144	18	0			e 51 10	e 57 33	81	Molucca Sea.	
145	18	22					34		
146	19	17	e e 50 02		51 41	52 06		59 <sup>m</sup> 25 <sup>s</sup> . No Galitzin records Turkestan.	
147	20	22			44 26	45 05	62	No Galitzin Z record. Southwest of Java.	

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No.	Date	Hour	Forerunners				L	Δ	Remarks
			P or P'	S					
148	1949 July 21	21			40 30	43 50			No Galitzin Z record. pPKS 50 <sup>m</sup> 23 <sup>s</sup> , 56 <sup>m</sup> 36 <sup>s</sup> , 57 <sup>m</sup> 06 <sup>s</sup> , 59 <sup>m</sup> 06 <sup>s</sup> , PPP (> 180°) 61 <sup>m</sup> 16 <sup>s</sup> , 62 <sup>m</sup> 16 <sup>s</sup> , 67 <sup>m</sup> 01 <sup>s</sup> . No Galitzin Z record. Depth about 200 km. New Hebrides Islands.
149	23	10	i i 45 50		i 48 47	49 34			
150	23	15	i e 07 57	i 11 33	11 59		13.3	20	No Galitzin Z record. First movement small, then large swings. Near west-coast of Turkey.
151	23	18			02 27		04		39 <sup>m</sup> 21 <sup>s</sup> , SKKS 42 <sup>m</sup> 06 <sup>s</sup> , SKSP 45 <sup>m</sup> 07 <sup>s</sup> , SKKS (> 180°) 46 <sup>m</sup> 37 <sup>s</sup> , SS 54 <sup>m</sup> 47 <sup>s</sup> . No Galitzin Z record. Kermadec Islands.
152	27	15	e i 31 27		i 31 34	35 16			
153	30	17					57		Forerunners traced but very uncertain. No Galitzin Z record. Turkey.
154	Aug. 5	19	e 22 00	i 33 00	e 32 35	33 54	53	90	SS 39 <sup>m</sup> 37 <sup>s</sup> , SSS 43 <sup>m</sup> .1. Central Equador. Destructive.
155	6	0	e 55 02		55 13	58 44			63 <sup>m</sup> 37 <sup>s</sup> , 64 <sup>m</sup> 53 <sup>s</sup> , 67 <sup>m</sup> 28 <sup>s</sup> , 69 <sup>m</sup> 49 <sup>s</sup> , 73 <sup>m</sup> 05 <sup>s</sup> , 76 <sup>m</sup> .0. Phases not clearly marked. [Tonga Islands region.
156	7	7					.2		Indian Ocean.
157	8	7			32 29	38 13			
158	8	13					17		
159	9	21					54		
160	11	14					29		
161	11	14		e 51.4	53.1		54.5		North Atlantic Ocean.
162	11	21					28		
163	13	18			44 22	51 26			PS 53 <sup>m</sup> 59 <sup>s</sup> , PPS 54 <sup>m</sup> 54 <sup>s</sup> , SS 60 <sup>m</sup> 09 <sup>s</sup> , SSS 63 <sup>m</sup> .3. Northeast of New Guinea. Masked by longperiodic microseisms. Baluchistan.
164	16	11	e 57 36	e 64 27				47	Depth about 100 km. Japan.
165	17	18	i i 45 38						Destructive. Eastern Turkey.
166	17	18	i i 49 39	i 54 02			58	25	Aftershock. Partly masked by preceding shock.
167	17	20		e 54 56			58		Masked by microseisms. Panama.
168	18	13			56 42				SS 25 <sup>m</sup> 50 <sup>s</sup> . Off British Colombia.
169	22	4	i i 12 11	i 21 13	12 47	21 58	33.6	69	Eastern Turkey.
170	23	13	i 46 11				53		
171	23	15	e i 35 34	e 39 16	38 16	46.3	1.0		Near coast of Peru.
172	23	20		i 44 42	38 05	45 38	57.5	70	SS 49 <sup>m</sup> 03 <sup>s</sup> , SSS 52 <sup>m</sup> .1. British Colombia.
173	23	22	e 11 44						Eastern Turkestan.
174	24	6	i 45 18						Depth about 100 km. Tonga Islands region.
175	25	4	e e 25 49	e 35 09	40 25		50	72	Aleutian Islands.
176	25	23	e 44 50		45 23	52 22	80		55 <sup>m</sup> 07 <sup>s</sup> , 57 <sup>m</sup> 11 <sup>s</sup> , SS 60 <sup>m</sup> 24 <sup>s</sup> , Banda Sea.
177	26	5	e 38 31		i 39 01				First onset of very short period. Seismic?

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No.	Date	Hour	Forerunners				L	Δ	Remarks
			P or P'	S					
178	1949 Aug. 28	19			e 39 22		42.2		North Atlantic Ocean.
179	29	3	i 53 36						
180	29	14					54.2		
181	30	16	i 54 29	i i 57 33			59.6	17	Crimea.
182	Sept. 4	11	i 28 19						Seismic?
183	5	3	e e 06 45		e 17 24	18 28	34		Philippine Islands.
184	5	3	e e 30 54						Repetition. Masked by first shock.
185	12	9	i 36 36		39 50	43 09	1.3		SKKS 46 <sup>m</sup> 32 <sup>s</sup> . Loyalty Islands region.
186	14	2					.3		
187	14	20	e 04 06		e 04 35	i 08 30			PPP 10 <sup>m</sup> 30 <sup>s</sup> , eSKS 14 <sup>m</sup> 48 <sup>s</sup> , iPS 17 <sup>m</sup> 22 <sup>s</sup> , [18 <sup>m</sup> 35 <sup>s</sup> . Celebes region.
188	15	16					31		
189	16	19			35 58		58		Aftershock to Celebes quake. (No. 187).
190	17	2					46		
191	17	11	i i 34 41	i 38 26			40.5	21	Greece.
192	17	23	e 11 53		13 47	17 42			iSKS 21 <sup>m</sup> 21 <sup>s</sup> . Pacific Ocean.
193	19	22			10 41	12 34	33		SS 16 <sup>m</sup> 49 <sup>s</sup> , SSS 20 <sup>m</sup> .6. South Atlantic [Ocean.
194	20	3					04		
195	20	8					.0		
196	20	12	i 15 09		e 15 16	18 55	58		29 <sup>m</sup> 17 <sup>s</sup> , SS 38 <sup>m</sup> .8. SSS 44 <sup>m</sup> .2. Kermadec Islands region.
197	21	13	e i 07 46		18 13	19 04			PPS 19 <sup>m</sup> 28 <sup>s</sup> , SS 23 <sup>m</sup> 52 <sup>s</sup> , SSS 27 <sup>m</sup> .5.
198	22	16					19		Southern Mexico.
199	24	4			48 38	51 42	75		SS 54 <sup>m</sup> .2. SSS 57 <sup>m</sup> .2. Solomon Islands region.
200	25	15			38 10	42.6	72		SS 52 <sup>m</sup> .0. Repetition.
201	27	15	i e 41 14	i 49 50	i i 41 28	43 45	61	64	45 <sup>m</sup> 20 <sup>s</sup> , 51 <sup>m</sup> 10 <sup>s</sup> , SS 54 <sup>m</sup> .0. Deeper than [normal. Alaska.
202	27	18					.0		
203	29	4	i 55 45		i 55 50		72		
204	Oct. 4	10	e i 30 53	i 39 26	i 31 10	41 01		64	SS 43 <sup>m</sup> 30 <sup>s</sup> , SSS 46 <sup>m</sup> .3. Mid Atlantic Ocean.
205	4	17		e 41 39			45		Greece.
206	5	21					10		
207	7	12	i i 15 55		19 21	19 51	48		iSKS 26 <sup>m</sup> 34 <sup>s</sup> , iSKKS 26 <sup>m</sup> 43 <sup>s</sup> , PS 28 <sup>m</sup> 46 <sup>s</sup> , PPS 29 <sup>m</sup> 32 <sup>s</sup> , SS 34 <sup>m</sup> .3.
208	7	14					(2)		Indian Ocean.
209	8	3							The onset of L masked by previous L-waves.
210	8	21	i 13 10		i e 13 16		19.4		Mediterranean Sea.
211	12	22					.9		
212	13	4					.9		
213	13	10	i 32 35				42.6		Iran.
214	19	9					02		

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No.	Date	Hour	Forerunners				L	△	Remarks
			P or P'	S					
215	1949 Oct. 19	21	m s	m s	m s	m s	h m	°	PS 30 <sup>m</sup> 45 <sup>s</sup> . SS 37 <sup>m</sup> 15 <sup>s</sup> . SSS 43 <sup>m</sup> 03 <sup>s</sup> . Strong microseisms. Solomon Islands [region].
216	20	2			21 24	27 14			
217	20	13			15 12	22 17	.7		SSS 25 <sup>m</sup> 22 <sup>s</sup> . Strong microseisms. So- [lomon Islands region.
218	21	6					.9		Solomon Islands region.
219	21	21			54 47	64 32	1.5		Depth about 450 km. Fiji Islands region.
220	28	19	i 06 43						
221	31	1					06		
222	31	1	e i 50 15	i 59 07	52 47	54 35	72.7	67	SeS 60 <sup>m</sup> 18 <sup>s</sup> . SS 63 <sup>m</sup> 29 <sup>s</sup> . Alaska. 31 <sup>m</sup> 54 <sup>s</sup> . 32 <sup>m</sup> 51 <sup>s</sup> . Solomon Islands region.
223	31	18			16 00	26 05	52		
224	Nov. 1	13	e 13 14	i 20 13		24.4	27.5	48	P very small, uncertain. Altaii Moun- tains, Mongolia.
225	2	2			51 42	67.3	81		Northwest of New Guinea.
226	3	1	i i 23 39	i 32 40	24 22	28 39			i 32 <sup>m</sup> 54 <sup>s</sup> . i 33 <sup>m</sup> 27 <sup>s</sup> . i 38 <sup>m</sup> 25 <sup>s</sup> . 41 <sup>m</sup> .0. Depth about 200 km. Kurile Islands. Felt in Stevns, Denmark.
227	4	7			i 16 52				
228	7	6	i e 19 00		21 37	i i 22 25	62		i 31 <sup>m</sup> 18 <sup>s</sup> . 34 <sup>m</sup> 39 <sup>s</sup> . SS 39 <sup>m</sup> 42 <sup>s</sup> . New Hebrides Islands.
229	8	8	e 57 50				1.5		North of New Guinea.
230	11	15	e 56 38	e 66 54	60 44		87	82	Formosa region.
231	13	5			07 05		23		Forerunners masked by microseisms. Guatemala.
232	20	7	i i 22 28	e 32 44	i 32 54	34 28	8	82	SS 38 <sup>m</sup> 08 <sup>s</sup> . Gulf of California.
233	22	1	i i 11 23		i i 11 25	i 11 41			i i P <sub>2</sub> 12 <sup>m</sup> 21 <sup>s</sup> . i i P P 15 <sup>m</sup> 11 <sup>s</sup> . 17 <sup>m</sup> 04 <sup>s</sup> . i 18 <sup>m</sup> 40 <sup>s</sup> . 20 <sup>m</sup> 32 <sup>s</sup> . SKSP 25 <sup>m</sup> 29 <sup>s</sup> . SKKS <sub>2</sub> 26 <sup>m</sup> 27 <sup>s</sup> . 29 <sup>m</sup> 44 <sup>s</sup> . Deeper than normal. Kermadec Islands.
234	22	15	i 29 11						Iran.
235	23	16	i i 55 25	e 59 18			61.5		S uncertain. Aegean Sea.
236	27	9	i e 01 45		05 31	12 00	.9		20 <sup>m</sup> 13 <sup>s</sup> . SS 23 <sup>m</sup> 24 <sup>s</sup> . SSS 28 <sup>m</sup> .8. Tonga Islands.
237	Dec. 5	13	e 11 36						
238	5	13					.5		
239	6	17					.8		
240	7	16	i 18 34	e 22 45			26.2		South of Crete.
241	17	1					.5		
242	17	7	i 12 50		15 14	17 54			SKS 21 <sup>m</sup> 45 <sup>s</sup> . 22 <sup>m</sup> 47 <sup>s</sup> . PS 25 <sup>m</sup> 15 <sup>s</sup> . Straits of Magellan.
243	17	15	i e 27 14		30 14	31 57	68.2		SS 46 <sup>m</sup> .4. Straits of Magellan.
244	18	5	i 58 37		i 59 08				Depth about 150 km. Kermadec Islands.
245	20	4	i 35 12						Depth about 600 km. Fiji Islands.
246	21	19	i i 45 46		49 52	i 55 29			59 <sup>m</sup> 14 <sup>s</sup> . i 59 <sup>m</sup> 35 <sup>s</sup> . 61 <sup>m</sup> 37 <sup>s</sup> . Depth about 600 km. Southern Bolivia.

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No.	Date	Hour	Forerunners				L	△	Remarks
			P or P'	S					
247	1949 Dec. 22	9	m s	m s	m s	m s	h m	°	
248	23	21	i i 43 21	i 53 39	i i 43 46	i 43 56			iPP 46 <sup>m</sup> 44 <sup>s</sup> . 53 <sup>m</sup> 57 <sup>s</sup> . i 54 <sup>m</sup> 27 <sup>s</sup> . Depth [about 100 km. Mexico.
249	25	23	e 46 02						Foreshock to next quake.
250	25	23	i 29 28						Masked by microseisms. Japan.
251	26	6					58		
252	28	0			i 50 26	64.6			Masked by microseisms. Fiji Islands.
253	28	6			17 23	23 17			27 <sup>m</sup> 14 <sup>s</sup> . SS 33 <sup>m</sup> 32 <sup>s</sup> . Masked by micro- [seisms. Sandwich Islands.
254	29	3	i i 16 34		17 37	18 27	41		eSKS 26 <sup>m</sup> 54 <sup>s</sup> . i 27 <sup>m</sup> 24 <sup>s</sup> . Northern [Luzon. Philippine Islands.
255	29	10	e 30 42				50		Depth about 200 km. Kermadec Islands.
256	29	17	i e 02 32		25.6		61		
December 1954									HENRY JENSEN