

No. 21.

1946-47.

## Geodætisk Institut

Proviantsgaarden, Copenhagen, Denmark.

### Bulletin

of the seismological station

# SCORESBY-SUND

$\varphi = 70^{\circ} 29' N.$   $\lambda = 21^{\circ} 57' W.$   $h = 69$  m.

Lithologic foundation: Gneiss.

No. 21. Sept. 1946-Dec. 1947

**Instruments:**

Galitzin-Wilip seismographs.

**Constants:**

Component	$l$	$A_1$	$T_1$		$T$	$k$
	cm	cm	sec		sec	
$N$	12.0	100	11.91		12.0	102
$E$	12.0	100	13.00	$^{11}/_9 46 - ^{11}/_{10} 46$	14.2	103
				$^{11}/_{10} 46 - ^{31}/_{12} 47$	12.9	95
$Z$	14.9	100	10.02	$^{11}/_9 46 - ^{10}/_6 47$	$9^{1/2}$	100
				$^{10}/_6 47 - ^{31}/_{12} 47$	10	100

Damping was approximately aperiodic.

Time corrections were determined daily by means of Rugby scientific time signals. Until September 6, 1947 time is known with an accuracy of about  $1/_{10}$  sec. From that date onwards there is possibly a systematic error of + 1 sec. or - 1 sec. in time determinations.

Recording that was stopped on July 1, 1944 was resumed on September 11, 1946.

Scoresby-Sund.

No.	Date	Hour	Forerunners				L	△	Remarks			
			P		S							
			<i>m</i>	<i>s</i>	<i>m</i>	<i>s</i>	<i>m</i>	<i>s</i>	<i>h</i>	<i>m</i>	°	
1	1946 Sept. 29	3	17	1			20.5	<i>i</i> 21 48				22 <sup>m</sup> 33 <sup>s</sup> . 23 <sup>m</sup> 30 <sup>s</sup> . <i>i</i> SKS 27 <sup>m</sup> 47 <sup>s</sup> . <i>i</i> SKKS <sub>N</sub> 28 <sup>m</sup> 54 <sup>s</sup> . <i>e</i> S <sub>E</sub> 29 <sup>m</sup> 38 <sup>s</sup> . PS 31 <sup>m</sup> .0. PPS 32 <sup>m</sup> .3. 34 <sup>m</sup> .5. 38 <sup>m</sup> .0. Solomon Islands region.
2	Oct. 2	1							36			
3	2	4	56	0	63	56	64	17	70	57		South of Kamchatka. No Z record.
4	2	6	<i>i</i> 53	9	61	4	61	29	68	57		» » » » » »
5	14	5					25.2		57			
6	22	10					<i>i</i> 20 37	22 50				25 <sup>m</sup> 41 <sup>s</sup> . 27 <sup>m</sup> 14 <sup>s</sup> . 29 <sup>m</sup> 40 <sup>s</sup> 30 <sup>m</sup> .2. Kamchatka. Deep.
7	25	21	<i>i</i> 59	44 +	<i>i</i> 67	21	63	14				43 <sup>m</sup> 30 <sup>s</sup> . PKS 43 <sup>m</sup> 45 <sup>s</sup> , large. 49 <sup>m</sup> 39 <sup>s</sup> . 54 <sup>m</sup> .4. 60 <sup>m</sup> .4.
8	26	0	40	17 +			40	56				S <sub>c</sub> S 66 <sup>m</sup> 43 <sup>s</sup> . 68 <sup>m</sup> .3. Aleutian Islands.
9	30	7	<i>i</i> 56	55	64	23	59	57	62	6	72	53
10	Nov. 1	11			31	43	32	3	36	25		Aleutian Islands. Strong microseisms.
11	2	14					28	28	.9			
12	2	18	<i>i</i> 37	46	45	15	39	46			53	Movement very large, the reading of S not certain. P(-1.9, -6.8, +5.0; +3.9, +12.0, -11.0). Turkestan.
13	4	21	<i>i</i> 56	32	<i>i</i> 63	25	58	24	<i>i</i> 63	41	47	66 <sup>m</sup> .4. 67 <sup>m</sup> .2. P(x, -11, +5; x, +21, -17). East coast of Caspian Sea.
14	6	20	6	42 +	15	11	21.2				63	Karakoram.
15	10	18							14			Recording interrupted 10 <sup>h</sup> 39 <sup>m</sup> - 18 <sup>h</sup> 14 <sup>m</sup> .
16	12	15							0			
17	12	17					49	44		50.5		PPP 52 <sup>m</sup> .9. 55 <sup>m</sup> 6 <sup>s</sup> . PS 59 <sup>m</sup> 31 <sup>s</sup> . 61 <sup>m</sup> 17 <sup>s</sup> . 64 <sup>m</sup> 8 <sup>s</sup> . SS 65 <sup>m</sup> .4. Tonga region.
18	17	3					42.2	46.0			62	
19	28	16					19.5	23 2				28 <sup>m</sup> 22 <sup>s</sup> . 29 <sup>m</sup> .1.
20	Dec. 8	23					34	44			35	
21	19	3	9	29	19	39	16	3		25.0	36	31 <sup>m</sup> .0. East of Formosa.
22	20	19	<i>i</i> 30	51 +	40	42						Movement very large, the reading of S not certain. Strong microseisms. Japan.
23	21	10	29	31	38	16	39	10			66	Japan.
24	1947 Jan. 23	16	7	6 +					.4			Aleutian Islands.
25	24	16	59	50	69	21					74	
26	25	4					12	54		17.6	.4	E record only.
27	25	5									23	E record only. Superposed on preceding shock.

Scoresby-Sund.

No.	Date	Hour	Forerunners				L	△	Remarks				
			P		S								
			m	s	m	s	m	s	h	m	°		
28	1947 Jan. 26	10	i 17	47	i 26	44	18	12	20	10			PP 20 <sup>m</sup> 23 <sup>s</sup> . i PPP 22 <sup>m</sup> 13 <sup>s</sup> . e 24 <sup>m</sup> 40 <sup>s</sup> . S <sub>c</sub> S 27 <sup>m</sup> 58 <sup>s</sup> . No Z record. P (+ 2 <sup>1</sup> / <sub>2</sub> , + 9, x; - 4 <sup>1</sup> / <sub>2</sub> , - 10, x). Depth about 100 km. Nicaragua.
29	29	8	30	41 -			i 34	56	40	28			PS 44 <sup>m</sup> 29 <sup>s</sup> . Argentina. Depth ca. 600 km.
30	Febr. 7	9					1.1		8	14			PS 10 <sup>m</sup> 40 <sup>s</sup> . SS 17 <sup>m</sup> 34 <sup>s</sup> .
31	8	11									7		Recording interrupted 11 <sup>h</sup> 0 <sup>m</sup> -11 <sup>h</sup> 7 <sup>m</sup> .
32	9	4					54	30			1.3		
33	10	4			21	40	15.2		28	36			Himalaya.
34	18	13	i 41	27 +	i 50	37	51	4	53	28			Japan. Depth ca. 450 km.
35	21	22					22	20			.8		
36	24	17	i 44	47	55	33	55	5				88	Bolivia.
37	March 2	19					29	5	34	47			35 <sup>m</sup> .8. 38 <sup>m</sup> 27 <sup>s</sup> . 44 <sup>m</sup> .2. P possibly earlier than read. New Guinea.
38	17	8	i 30	37	39	42	32	59	44.2			69	No Z record. China.
39	25	20	51	58			52	13	52	32			65 <sup>m</sup> .9. 74 <sup>m</sup> 28 <sup>s</sup> . New Zealand.
40	29	7	52	17	53	35					54		P quite small, the reading uncertain.
41	April 2	5					58	14	64	24			Small movement precedes PP 58 <sup>m</sup> 14 <sup>s</sup> . 65 <sup>m</sup> .0. 66 <sup>m</sup> .0. PS 67 <sup>m</sup> 34 <sup>s</sup> . 68 <sup>m</sup> .9. 71 <sup>m</sup> .5. 73 <sup>m</sup> .7. New Guinea.
42	2	20	57	29	67	49	64.4		68	5		83	P quite small, the reading uncertain. Formosa.
43	8	19					50						
44	10	16	8	7 +	16	18	20.2				26	60	California.
45	11	14	42	15	52	33	45.7		58.2		69	83	Between Formosa and Luzon.
46	14	7	26	22	35	8	35	29	35.9		43	66	36 <sup>m</sup> 31 <sup>s</sup> . Japan.
47	16	18					52	16	52	33			Movement small.
48	24	19	45	41	54	15	55	21			61	64	Atlantic Ocean.
49	25	20									39		
50	28	13					47						Forerunners or L?
51	29	8					6						Forerunners or L?
52	May 2	2									.7		Preceding movement disturbed.
53	6	20	45.6				49.4		50	28			SKS 56 <sup>m</sup> 10 <sup>s</sup> . SKKS 57 <sup>m</sup> 24 <sup>s</sup> . PS 60 <sup>m</sup> 4 <sup>s</sup> . 61 <sup>m</sup> 13 <sup>s</sup> . SS 66 <sup>m</sup> .9. South of New Britain.
54	8	19					6.7				.4		
55	9	0					15	35				27	
56	11	6					41	10	46.3			53	Italy.
57	11	18					59.1		65	17	1.6		
58	14	2					30	22					

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No.	Date	Hour	Forerunners				L	△	Remarks					
			P		S									
			m	s	m	s	m	s	m	s	h	m	°	
59	1947 May 17	7	26	11			26	22	i 26	36				<i>i<sub>E</sub></i> 26 <sup>m</sup> 45 <sup>s</sup> . 40 <sup>m</sup> .2. 49 <sup>m</sup> .0. First movement quite small, reading of onset (26 <sup>m</sup> 11 <sup>s</sup> ) uncertain. 26 <sup>m</sup> 36 <sup>s</sup> onset of large swing.
60	19	7										0		
61	19	11										46		
62	25	4										4		
63	25	12					10	41						
64	25	23					23.0					43		
65	26	20					9	10	10	42				
66	27	3					55.1		63.9					
67	27	6					18	6	19	56				Small movement precedes <i>PP</i> (18 <sup>m</sup> 6 <sup>s</sup> ). 20 <sup>m</sup> 48 <sup>s</sup> . 24 <sup>m</sup> 58 <sup>s</sup> . 25 <sup>m</sup> 59 <sup>s</sup> . 27 <sup>m</sup> 32 <sup>s</sup> . 28 <sup>m</sup> 37 <sup>s</sup> . 31 <sup>m</sup> .2. 32 <sup>m</sup> .4. <i>SS</i> 33 <sup>m</sup> 44 <sup>s</sup> . Off north coast of New Guinea.
68	28	15					10	43				.9		
69	June 1	11					32	36	28.3	35.7				Southwest of Greece.
70	2	6	i 49	54 +	57	33	51.9		52	50			55	53 <sup>m</sup> 18 <sup>s</sup> . Turkestan.
71	4	0	37	16	43	13	38	48	39	16			49	<i>SS</i> 46 <sup>m</sup> 4 <sup>s</sup> . Deeper than normal. No <i>Z</i> record.
72	5	23	9	23	18.4								31	<i>P</i> quite small, the reading uncertain.
73	7	19					6.0		9	58				12 <sup>m</sup> 26 <sup>s</sup> . 13 <sup>m</sup> .0. 19 <sup>m</sup> .5. No <i>Z</i> record.
74	10	12											34	Phillippine Islands. Recording interrupted 10 <sup>h</sup> 40 <sup>m</sup> - 12 <sup>h</sup> 34 <sup>m</sup> .
75	10	19			52	24	48	23					55	Azores.
76	12	9	16	37	28	28	20	4	21	1		.8		<i>SKS</i> 27 <sup>m</sup> 18 <sup>s</sup> . <i>SKKS</i> 28 <sup>m</sup> 3 <sup>s</sup> . <i>PS</i> 30 <sup>m</sup> .1. <i>e<sub>N</sub></i> 34 <sup>m</sup> .1. <i>SS</i> 36 <sup>m</sup> 4 <sup>s</sup> . Molucca Islands.
77	13	20	37	43	i 48	24	i 37	48	41	18			88	<i>SKS</i> 48 <sup>m</sup> 8 <sup>s</sup> . <i>PS</i> 49 <sup>m</sup> 32 <sup>s</sup> . <i>SS</i> 54 <sup>m</sup> .3. <i>e<sub>E</sub></i> 61 <sup>m</sup> 13 <sup>s</sup> .
78	14	0	3	13			6	38	13	36				( <i>S</i> ) <sub>N</sub> 14 <sup>m</sup> 2 <sup>s</sup> . <i>PS</i> 14 <sup>m</sup> 57 <sup>s</sup> . <i>e<sub>E</sub></i> 26 <sup>m</sup> .7.
79	14	0	i 43	37			54							Superposed on preceding shock.
80	14	16	42	57 +			53	42						
81	15	8					9.4							
82	16	0					39.2					1.0		
83	19	2					37	48	38	4		1.0		Small preceding movement.
84	19	7	i 47	27 -			i 47	36	51	2				<i>SKS</i> 57 <sup>m</sup> 47 <sup>s</sup> . 58 <sup>m</sup> 8 <sup>s</sup> . <i>i<sub>E</sub></i> 58 <sup>m</sup> 22 <sup>s</sup> . <i>PS</i> 59 <sup>m</sup> 18 <sup>s</sup> . <i>e<sub>E</sub></i> 70 <sup>m</sup> .8.
85	19	22	59	48	69	56	75.3						81	No <i>Z</i> record.
86	20	13	42	27	49	2							44	Atlantic Ocean. No <i>Z</i> record.
87	20	23			13	21								
88	28	2					12	16				.7		
89	28	17										26		
90	28	19										19		Small preceding movement on <i>N</i> .

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No.	Date	Hour	Forerunners				L	△	Remarks					
			P		S									
			m	s	m	s	m	s	m	s	h	m	°	
91	1947 June 28	22										23		
92	30	8					10.3	16	24					
93	July 1	13										30		
94	9	18					20	46	26.6					
95	10	10	29	44 +	38	5							61	
96	10	10	52	12								.7	72	Superposed on preceding shock. No Z record. Off Guatemala.
97	10	16	16	24	25	44							72	No Z record. Kurile Islands.
98	12	2	9	31	18	10							28	65
99	12	12					70.5							
100	13	13					19.8	26	24					No records 10 <sup>h</sup> 59 <sup>m</sup> - 13 <sup>h</sup> 9 <sup>m</sup> . 35 <sup>m</sup> .3. No Z record. East of Fiji Islands.
101	16	19	32	24	42	2	37.1	42	40	1.0			75	East of Japan.
102	16	21										51		
103	21	21										11		
104	23	17	32	27			34	14	42	24				SS 51 <sup>m</sup> .3. 54 <sup>m</sup> .2. South Atlantic.
105	24	12	36	1 +			38	0	39	22				PPS 49 <sup>m</sup> 56 <sup>s</sup> . SS 54 <sup>m</sup> .9. New Hebrides Islands.
106	24	22			29	13						40		California.
107	25	19			32	18	31	20						Northern Argentina. Depth ca. 600 km.
108	26	12	5	53	14	16							62	
109	26	16					17.3		33.0					
110	28	3	56	41	62	56	58	21	66.1				41	Alaska.
111	29	6					51	28			1.3			
112	29	13	i 54	43	i 64	4	59.0						72	P(-2.5, -4.6, +5.8).
113	29	23					56.4							
114	30	22										37		
115	31	14			35	14					.8			Off Ecuador.
116	Aug. 1	1					13	40						
117	1	3										15		
118	2	1										44		
119	2	2										40		
120	4	18					7.1					26		
121	5	14	i 34	54	43	29	i 35	0	43	41			64	PPP 38 <sup>m</sup> 54 <sup>s</sup> . SSS 50 <sup>m</sup> .6. P(x, -2.6, +2.2). Arabian Sea.
122	6	5	i 58	41	68	25	60	49	i 68	10			86	SP 69 <sup>m</sup> 26 <sup>s</sup> . sS 72 <sup>m</sup> .1. Depth about 600 km.
123	7	0	50	26	58	30	50	34	51.1				59	PPP 54 <sup>m</sup> .1. PS 58 <sup>m</sup> 42 <sup>s</sup> . 61 <sup>m</sup> .6. SSS 65 <sup>m</sup> .2. Off Cuba.
124	9	3			8	39						16		Atlantic Ocean.
125	12	13										29		
126	12	16										2		
127	15	4	19	6	25	40	20	44				33	44	S possibly earlier than read. Caucase.
128	15	9	26	51 +	36	58					1.0		81	South of Japan.
129	16	6					10.7				.4			

Scoresby-Sund.

No.	Date	Hour	Forerunners				L	△	Remarks				
			P		S								
			m	s	m	s	m	s	h	m	°		
130	1947 Aug. 17	9					27	21					
131	22	2					51.6		61.3	1.4		68 <sup>m</sup> .1. No Z record.	
132	23	4					55.8			1.2			
133	24	11			54	35	46.8		49	51		56 <sup>m</sup> 36 <sup>s</sup> . No Z record. China.	
134	27	13	i 57	25			i 57	43	60	57		62 <sup>m</sup> 21 <sup>s</sup> . 79 <sup>m</sup> .9. New Zealand.	
135	28	7	0	31	8	43	4	20	9	6		No Z record.	
136	28	14	39	19	47	14				57	57	» » »	
137	28	20					14.2		20	40		Chile.	
138	30	22	29	35	35	57	i 29	55	31	16		Aegean Sea. Deeper than normal.	
139	Sept. 2	14					53	12	62	48		69 <sup>m</sup> 54 <sup>s</sup> . 71 <sup>m</sup> 41 <sup>s</sup> . 72 <sup>m</sup> 44 <sup>s</sup> . 74 <sup>m</sup> .6.	
140	3	15	i 37	9	46	10						Deep focus. West of Tonga Islands. Deep focus. Kurile Islands. No Z record.	
141	3	19					26.7			.8			
142	4	0					56	25	60	36			
143	5	7								56			
144	23	12	37	57	45	44	41	14	45	54		56	46 <sup>m</sup> 27 <sup>s</sup> . 49 <sup>m</sup> 19 <sup>s</sup> . 50 <sup>m</sup> 27 <sup>s</sup> . 51 <sup>m</sup> 17 <sup>s</sup> . Strong microseisms. Iran.
145	25	23					49	54	56	59			59 <sup>m</sup> 58 <sup>s</sup> .
146	26	16	14	8	24	15	17	17	20	32			Off east-coast of China. Deep. Strong microseisms, the readings uncertain.
147	30	18								50			
148	Oct. 1	13					1	38					
149	3	23					52	20			1.1		
150	5	19					10	21					Small preceding movement.
151	6	20	3	19	9	29	4	5	5	3			Strong microseisms.
152	10	7					59.1						» »
153	16	2	17	26 +	23	38	17	39	23	53		41	19 <sup>m</sup> 1 <sup>s</sup> . 19 <sup>m</sup> 17 <sup>s</sup> . 26 <sup>m</sup> 36 <sup>s</sup> . 26 <sup>m</sup> 49 <sup>s</sup> . Alaska.
154	20	1	50	59 +	57	2	52	43	53	10		39	57 <sup>m</sup> 19 <sup>s</sup> . 59 <sup>m</sup> .6. Alaska.
155	21	10					12	51.			.3		
156	22	17					52.6				1.3		
157	29	14									6		
158	Nov. 1	15	11	48	i 22	36	12	38	15	27		89	SKS 22 <sup>m</sup> 20 <sup>s</sup> . 23 <sup>m</sup> 1 <sup>s</sup> . 23 <sup>m</sup> 38 <sup>s</sup> . 24 <sup>m</sup> 3 <sup>s</sup> . 26 <sup>m</sup> 20 <sup>s</sup> . 28 <sup>m</sup> 29 <sup>s</sup> . 29 <sup>m</sup> .3. P (+ 0.9, + 2.0, + 1.5; - 4.1, - 6.9, - 8.6). Peru.
159	4	0	19	54	28	31	29	9	29	47		64	Japan.
160	8	14									5		
161	9	5					20	35					Strong microseisms.
162	12	16					41	39					
163	14	11	0	44	9	15						63	Japan.
164	21	4	5	46	14	43	16	2	19.4			68	Pacific Ocean off Mexico.

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			P		S							
			<i>m</i>	<i>s</i>	<i>m</i>	<i>s</i>	<i>m</i>	<i>s</i>	<i>h</i>	<i>m</i>	°	
	1947											
	Nov.											
165	21	19				41.5						
166	23	10				5 32			9			Strong microseisms.
167	25	18				40 0			59			
	Dec.											
168	15	19	40	20		40 59	44	42				57 <sup>m</sup> 57 <sup>s</sup> .
169	19	16				59 31	65.5		81			
170	19	17				42 33						
171	29	18							16			
172	30	0							9			
	30	2										Records not readable.
173	30	4							58			
174	30	16							31			
175	31	5				35 49			37			
176	31	15				32 59	37.0		62			

Phases are denoted by the symbols used in the International Seismological Summary. The signs + or - after the time of a P phase mean that the initial motion is upwards or downwards respectively. In  $P(\pm a, \pm b, \pm c)$   $a$ ,  $b$  and  $c$  are trace amplitudes in mm. of first swing on NS, EW and vertical component records respectively; + means that ground motion is directed to N, E or up, - that it is S, W or down. When a second set of amplitudes is given, it is those of the second swing. An  $x$  replaces a small amplitude that cannot be measured accurately.