UNIVERSITETET I BERGEN
JORDSKJELVSTASJONEN
(SEISMIC OBSERVATORY)

SEISMIC BULLETIN
1948 - 1950

BY
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AND
M. A. SELLEVOLL

Bergen, Norway, 1955

S E I S M I C B U L L E T I N

Bergen 1948-50

By

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December, 1955

SEISMIC BULLETIN 1948

Registrations at the Seismic Observatory of Bergens Museum, Norway.

(From August 30, 1948: The University in Bergen)

Coordinates: φ = 60°23′18″ N, λ = 5°18′18″ E, Alt.= 20 m

Constants:

Instrument		Weight	V	T_o	ε : 1	r/T_o^2
Wiechert Z	January-June	1300kg	316	4	1.92	0.081
	July-December		320	4.1	2.0	0.077
-"- N-S	January_June	1000kg	152	9.4	2.33	0.023
	July-December		175	9.2	2.4	0.021
-"- E-W	January-June	1000kg	110	8	2.70	0.0156
	July-December		225	9.0	1.4	0.009

No.	Date	Phase	Time (GMT) h.	m.	s.	Period	Amplitude μ A_N	A_E	A_Z	Remarks
1	Jan. 6	eP_Z	17	35	47					16°5N 98°W (USCGS)
		e_Z		38	20					Δ = 9400 km
		eS_N		46	20					Microseismic agitation
		SKS_E			12					
		e_N		48	49					
		eSS_N		51	20					
		L_N		59	(00)					
		F	19							
2	16	P_Z	11	19	36					52°N 172°E (USCGS)
		eS_N		28	12					Δ = 7250 km
		ScS_N		29	23					Microseismic agitation
		SS_N		32	32					
		eL_N		40	40					
		F	12	30						

No.	Date	Phase	Time (GMT)			Period	Amplitude μ			Remarks
			h.	m.	s.		A_N	A_E	A_Z	
3	Jan.17	e_N	02	40	32					Very weak
		F	03	20						Microseismic agitation
4	17	e_N	07	31	(55)					Microseismic agitation
		M_N	08	11	30	20	5			
		F		40						
5	22	e_E	14	29	45					Very weak
		F	15							Microseismic agitation
6	24	eP_Z	18	00	04					10°N 122°E (USCGS)
		i_Z			15					Δ = 10 300 km
		PP_Z		03	26					Microseismic agitation
		SKS_E		10	27					
		S_{NE}		11	00					
		PPS_E		12	22					
		SS_E		16	32					
		e_{1N}		17	32					
		e_{2N}		20	46					
		LQ_N		25	00					
		M_{1NE}		37		28	975	700		
		M_{2NE}		40	30	20	1020	900		
		M_{3NE}		42		18	1180	1040		
		M_{1E}		43		21		1520		
		M_{4NE}		44		20	1020	1400		
		M_{2E}		45		18		1110		
		M		46		16	845	950	1950	
		M_{3E}		48	30	13		280		
		M_{1NZ}		50	50	20	710		1150	
		M_{2NZ}		53		19	500		720	
		M_{4E}		56	30	15		190		
		F	22							

No.	Date	Phase	Time (GMT) h.	m.	s.	Period	Amplitude μ A_N	A_E	A_Z	Remarks
7	Jan.26	e_N	14	25	09					Microseismic agitation
		eL_N		56						
		M_{NE}	15	06		20	59	30		
		M		10		18	29	56	62	
		F		50						
8	27	$iPKS_Z$	12	16	45					$20^{\circ}3S$ $178^{\circ}4W$ (JSA)
		iPP_{NEZ}		19	34					Δ = 15 900 km
		SKS_{NE}		20	29					Compression
		$SKKS_{NZ}$		23	04					Microseismic agitation
		SS		35	10					
		L		47	30					
		F	18	30						
9	28	e_N	04	12	56					Microseismic agitation
		e_E		15	37					
		eL_N		29						
		M_N		44	30	27	18			
		F	05	20						
10	28	eP_Z	15	59	32					Turkestan (Uppsala)
		ePP_Z	16	01	12					Δ = 5000 km
		S_{NE}		06	15					Microseismic agitation
		SS_{NE}		09	30					
		L		14						
		M_{1N}		17		8	20			
		M_{2N}		19	30	11	50			
		M_{1E}		20	30	11		25		
		M_{2E}		23		13		35		
		F	17							

No.	Date	Phase	Time (GMT) h.	m.	s.	Period	Amplitude μ A_N	A_E	A_Z	Remarks
11	Jan. 30	eP_Z	08	53	23					25°0N 59°1E (JSA)
		eS_{NE}	09	00	31					Δ = 5800 km
		e_{NE}		04	27					Microseismic agitation
		M_{1N}		17	30	15	15.5			
		M_{NE}		20	30	19	22	60		
		M_{2N}		23	30	17	41			
		F	10	10						
12	Feb. 9	eP_Z	13	04	20					35°8N 27°3E (JSA)
		PP_N		05	06					Δ = 2900 km
		S_{NE}		08	42					Strong microseismic agitation
		e_E		09	18					
		SS_N			41					
		M_N		16		11	220	70		
		M_1		17	30	12	150	190	262	
		M_2		19		9	82	90	95	
		M_{NZ}		22		10	80		95	
		F	14							
13	9	eL_N	15	49						Microseismic agitation
		F	16	20						
14	12	e_N	22	41	20					
		F	24							
15	13	e_N	05	06	00					Microseismic agitation
		M_N		26		20	95			
		M_{EZ}		29		17		10	31	
		F	06	20						
16	15	eL_N	18	14	12					
		F		30						

No.	Date	Phase	Time (GMT) h.	m.	s.	Period	Amplitude μ A_N	A_E	A_Z	Remarks
17	Feb. 18	iP_{NEZ}	20	35	(01)					82°2N 40°E (JSA)
		PP_Z			31					Δ = 2600 km
		PPP_Z		36	20					Microseismic agitation
		S_{NEZ}		39	16					
		SS_Z		40	35					
		M_1		45		5	5	4		
		M_2		55	30	12	15	24		
		F	21	40						
18	28	eP_Z	02	08	26					52½°N 133°W (JSA)
		eS_N		16	39					$\Delta \sim$ 6800 km
		eL_N		32	ca.40					
		F	03							
19	March 1	eP_Z	01	28	57					4½°S 127°E (JSA)
		PP_Z		31	22					Δ = 12 000 km
		PPP_Z		33	35					N and E out of work.
		e_{1Z}		40	(50)					
		$PKKP_Z$		42	02					
		e_{2Z}		44	(00)					
		e_{3Z}		50	10					
		F	03	30						
20	3	iP_{EZ}	09	22	31					18½°N 118¾° E (BICS)
		S_E		32	58					Compression
		S_N		33	(00)					
		e_N		39	27					
		LQ		44	50	60				
		M_{1N}		57		15	72			
		M_{2N}		59		15	65			
		M_E	10	01		16		95		
		M_{3N}		02	30	12	33			
		M_{EZ}		03		16		107	165	
		M_{4N}		04			65			
		F	11							

No.	Date	Phase	Time (GMT) h.	m.	s.	Period	Amplitude μ A_N	A_E	A_Z	Remarks
21	March 7	eL_Z	19	35						Weak. Microseismic agitation. N and E out of work
		F	20							
22	8	eL_{NE}	17	10						Weak. Microseismic agitation.
		F		50						
23	9	e_N	19	24	30					Microseismic agitation
		M_{1NE}		46		26	25	42		
		M_{2NE}		57	30	24	23	46		
		F	20	30						
24	13	e_N	20	33	37					Microseismic agitation
		M	21	00		24	23	38		
		F		30						
25	15	e_N	12	03						Microseismic agitation
		eL_N		08						
		F		30						
26	16	eL_N	03	26	26					Microseismic agitation
		F		50						
27	21	e_N	20	43						Weak. Strong microseismic agitation
		F	21							
28	24	e_N	06	00						Microseismic agitation
		eL_N		09						
		F	07							
29	29	e_{1N}	10	32	19					
		e_{2N}		34	06					
		M_N		40		16	5.5	7		
		F	11							

No.	Date	Phase	Time (GMT) h.	m.	s.	Period	Amplitude μ A_N	A_E	A_Z	Remarks
30	April 4	e_N	05	18	18					Weak. Microseismic agitation.
		F		40						
31	17	iP_{NZ}	16	23	32					$32^\circ 7N$ $135^\circ 6E$ (JSA)
		PP_{EZ}		26	26					Δ = 8700 km
		PPP_Z		28	14					Compression
		e_{NEZ}		29	31					
		e_N		33	02					
		S_{NE}		33	25					
		SS_E		38	(06)					
		$PKKKP_N$		42	(06)					
		eL_E		43	16					
		M	17	02	30	16	63	119	212	
		M_{1E}		03	30	14		105		
		M_{2E}		04	30	12		68		
		M_{1NE}		05	30	12	33	68		
		M_{1N}		07	30	13	61			
		M_{2N}		10		13	61			
		M_{2NE}		12	30	15	141	64		
		M_{3N}		19		13	54			
		F	19							
32	18	e_{1N}	12	46	ca. 30					
		e_{2N}		48	30					
		M_{NE}	13	20	30	25	18.5	25		
		M_N		24	30	22	14			
		M		29		22	28	30	27	
		F	15							

No.	Date	Phase	Time (GMT)			Period	Amplitude μ			Remarks
							A_N	A_E	A_Z	
	April		h.	m.	s.					
33	21	iP_{NEZ}	20	33	00					$13\frac{1}{2}^{\circ}$S $166\frac{1}{2}^{\circ}$E (BCIS)
		ePP_E		35	35					Δ = 7200 km
		S_{NE}		41	46					Compression
		ScS_{NE}		42	51					
		eSS_{NE}		45	53					
		LQ_N		49						
		M_{NE}		55	30	19	26	26		
		M_N		56		22	33			
		M_{1E}		58	30	20		14		
		M_{2E}	21	01	30	20		21		
		M		03	30	20	24	50	78	
		F	23							
34	22	P_Z	00	39	13					Aftershock of preceeding.
		e_N		43	43					Δ = 7200 km
		eS_{NE}		47	58					
		PS_E		49	04					
		F	02							
35	22	P_{NEZ}	10	48	00					$38^{\circ}5$N $20^{\circ}6$E (BCIS)
		PP_Z		48	43					Δ = 2650 km
		e_Z		49	06					
		S_{NE}		52	12					
		SS_{NE}		53	18					
		LQ_{NE}		54	ca.45					
		M_{NE}		57		16	141	260		
		M_E		58		13		180		
		M_{1N}			30	13	175			
		M_{2N}		59	30	10	68			
		M_{EZ}	11	00	30	10		50	87	
		F	12	20						
36	23	e_N	12	21						Weak
		F		50						

No.	Date	Phase	Time (GMT)			Period	Amplitude μ			Remarks
							A_N	A_E	A_Z	
	April		h.	m.	s.					
37	26	e_N	09	44						Weak
		F	10							
38	May 8	P_Z	02	57	47					45°8N 150°5E (JSA)
		eS_N	03	07	27					$\Delta \sim 8350$ km
		eL_N		18						
		F		40						
39	9	eP_N	02	21	02					30°N 130°8E (JSA)
		e_N		30	(54)					Δ = 9200 km
		S_{NE}			18					Z out of work
		SS_N		35	(54)					
		L_N		45						
		M_N		52		24	33			
		M_{NE}		58		17	33	29		
		F	03	40						
40	11	P_Z	09	09	17					17°2S 69°8W (JSA)
		ipP_Z			37					$\Delta \sim 8400$ km
		eS_N		17	38					h = 100 km
		eL_N		33						
		F	11							
41	12	iP_Z	01	08	44					38°N 142°E (JSA)
		S_{NE}		18	24					Δ = 8400 km
		i_N			46					Compression
		L		27						
		M_N		42		18	39			
		M_{NE}		45	30	19	43	43		
		F	03	50						
42	14	e_N	13	39	ca.42					
		L	14	00						
		F		40						

No.	Date	Phase	Time (GMT) h.	m.	s.	Period	Amplitude μ A_N	A_E	A_Z	Remarks
43	May 14	P_Z	18	51	12					
		e_N		59	52					
		L_N		16						
		F	20							
44	14	iP_Z	22	42	26					54°7N 160°2W (JSA)
		PP_Z		44	53					Δ = 7200 km
		e_N		46	27					Compression
		iS_{NEZ}		51	06					
		i_{1N}			41					
		i_{2N}			59					
		SS_N		55	40					
		L_N	23	03						
		M		05		30	200	175	~200	
		M_{NZ}		11		21	115		125	
		M_N		12	30	21	770			
	15	F	03	30						
45	23	e_N	09	52	00					
		F	10	10						
46	25	iP_{EZ}	07	22	36					30°N 100°E (JSA)
		eS_N		31	21					Δ = 7500 km
		ScS_E		32	25					
		eL_Z		43						
		M_Z		53		20			230	
		M_{1N}	08	01	30	16	63			
		M_E		02	30	14		77		
		M_{2N}		04		14	43.5			
		F	10							
47	29	iP_{NEZ}	04	53	25					45¾°N 26½°E (BCIS)
		S_N		56	(55)					
		eL_E		59						
		F	05	20						

No.	Date	Phase	Time (GMT)	Period	Amplitude μ			Remarks
			h. m. s.		A_N	A_E	A_Z	
48	June 1	eL_N	19 35					Microseismic agitation
		F	20 20					
49	10	eL	18 48					Weak
		F	19 10					
50	13	L_E	06 44					Weak
		F	07					
51	15	eP_Z	11 56 48					$33^\circ 2N\ 135^\circ 8E$ (JSA)
		S_N	12 06 30					Δ = 8400 km
		L	21 30					
		M_{NE}	35	20	60	75		
		F	13 20					
52	18	L	19 00					
		M_N	10	12	4			
		F	30					
53	21	e_N	12 30 ca.50					
		eL_N	47					
		F	13 30					
54	27	e_N	00 26					
		L_N	40					
		M_N	47	20	12			
		F	01 20					
55	27	eL_N	22 19					
		F	23					

No.	Date	Phase	Time (GMT) h.	m.	s.	Period	Amplitude μ A_N	A_E	A_Z	Remarks
56	June 28	e_N	07	25	50					35°8N 136°2E (JSA)
		S_E		35	(00)					Δ ~ 8600 km
		PS_E			16					Z out of work
		SS_N		40	(00)					
		L		45						
		M_{1NE}		53		35	150	150		
		M_{2NE}	08	00		13	115	113		
		F	09							
57	29	e	10	50	26					16°S 172°W (USCGS)
		e_{1NE}		51	25					
		e_{2NE}	11	02	20					
		eL		32						
		F	13	15						
58	29	iP_Z	16	12	45					Caucasus
		i_Z		13	36					Δ = 3350 km
		eS		17	50					Compression
		e_{NE}		19	22					
		eL		20	07					
		M_{NE}		24		8	13	6		
		F	17	30						
59	30	iP_Z	12	26	27					38°50'N 20°40'E (BCIS)
		PP_Z		27	03					Δ = 2600 km
		iS_N		30	39					Compression
		LQ_N		32	35	40				
		M_{NE}		36		20	155	450		
		M		37		14	115	97	140	
		F	13	30						
60	July 3	eL_N	15	49						
		F	16	10						

No.	Date	Phase	Time (GMT) h.	m.	s.	Period	Amplitude μ A_N	A_E	A_Z	Remarks
61	July 5	e_N	14	08	25					
		L_N		12						
		M_N		24		14	8			
		F	15							
62	7	e_Z	02	31	17					
		e_N		41	27					
		eL_N		52						
		M_N	03	10		13	6			
63	8	eP_Z	12	37	31					
		L_N		40						
		F	13	10						
64	14	L_Z	23	37						N and E out of work
		F	24							
65	16	eL_Z	08	02						Weak
		F		30						N and E out of work
66	20	P_Z	11	16	00					17°S $74\frac{1}{2}^\circ$W (USCGS)
		PP_Z		19	54					Δ = 11 200 km
		$eSKS_{NE}$		26	31					
		$SKKS_E$		27	05					
		S_E		27	29					
		ePS_N		28	48					
		eSS_N		33	(41)					
		eL_N		44						
		F	12	40						
67	23	eL_N	13	07						
		F	14							

No.	Date	Phase	Time (GMT) h.	m.	s.	Period	Amplitude μ A_N	A_E	A_Z	Remarks
	July									
68	24	P_{NEZ}	06	08	(57)					$35^{\circ}2N$ $24^{\circ}4E$ (JSA)
		e_Z			44					Δ = 3100 km
		e_{1N}			31					
		S_{NE}		13	39					
		e_{2N}		14	31					
		SS_E		15	07					
		ScS_E			37					
		e_{3N}			54					
		M_{NE}		19	30	20	81	26		
		M_N		24		9	12			
		F	07	30						
69	29	e_N	01	05						Weak
		F		30						
70	30	e_N	03	41						
		F	04	20						
71	Aug. 7	ePP_N	14	55	00					
		e_{1N}		57	20					
		e_{2N}	15	10	24					
		eL_N		19						
		M_N		30		16	12			
		F	17							
72	10	eL_N	13	41						Weak
		F	14							
73	11	eP_Z	10	48	24					$17^{\circ}7N$ $95^{\circ}1W$ (JSA)
		S_N		58	24					Δ = 8900 km
		e_N	11	03	22					
		SS_N		04	ca. 13					
		F		50						
74	17	eL_N	17	52						Microseismic agitation
		F	18	20						

No.	Date	Phase	Time (GMT) h.	m.	s.	Period	Amplitude μ A_N	A_E	A_Z	Remarks
75	Aug. 18	eP_N	21	17	09					41°5N 16°2E (Trieste)
		eS_N		20	(55)					Δ = 2300 km
		eL_N		22	23					
		F		40						
26	20	e_N	19	22						Weak
		F	20							
77	23	e_N	11	56						Very weak
		F	12	20						
78	25	e_N	06	34	(49)					Z out of work
		F	08							
79	27	e_L	10	54						
		F	11	20						
80	28	e_N	02	47						
		F	03	30						
81	29	e_N	18	00	35					Weak
		F	20							
82	29	e_N	23	55						Weak
	30	F	00	30						
83	30	eP_Z	01	41	49					North of Iceland (BCIS)
		eS		44	23					Δ = 1600 km
		F	02	10						
84	Sept. 2	e_{1N}	23	54	57					9°5N 124°5E (JSA)
		S_N		59	(04)					Δ ~ 10 500 km
		SKS_N			47					
	3	SS_N	00	05	29					
		e_{2N}		09	20					

No.	Date	Phase	Time (GMT) h.	m.	s.	Period	Amplitude μ A_N	A_E	A_Z	Remarks
84	Sept. 3 (cont.)	LQ	00	13	25	65				
		M_N		23		38	61			
		F	01	20						
85	4	e_N	15	32						Very weak
		F	16	40						
86	8	e_Z	15	28	32					
		e_{NZ}		31	47					
		eL_N		43						
		F	17	50						
87	10	eL	12	24	50					
		F		50						
88	10	iP_{NZ}	13	59	56					44°N 146½°E (USCGS)
		S_{NE}	14	09	16					Δ ~ 8000 km
		PS_{NE}			27					Compression
		e_N		10	17					
		SS_N		14	16					
		L_N		21	20					
		M_{NE}		36		22	75	16		
		F	16							
89	11	e_E	08	58	00					38°N 22½°E (Trieste)
		eS_N	09	01	32					Δ ~2000 km
		e_E		03	12					Z out of work
		F		20						
90	12	e_N	14	09	24					Very weak
		F		30						
91	21	eL_N	18	08	48					Microseismic agitation
		F		30						

No.	Date	Phase	Time (GMT)	Period	Amplitude μ			Remarks
					A_N	A_E	A_Z	
	Sept.		h. m. s.					
92	23	e_N	01 27 ca.33					
		F	02					
93	23	eL_N	15 57					
		F	16 20					
94	24	eL_N	21 30					
		F	22 40					
95	24	e	23 59					
	25	F	01					
96	25	eL	04 06 ca.45					Weak
		F	30					
97	26	eL_N	08 27 50					
		F	50					
	28							N, E, and Z out of work
98	Oct. 5	iP_{NEZ}	21 19 44					Δ = 4300 km
		PP_{NZ}	21 17					Dilatation
		PPP_Z	48					
		S_{NE}	25 44					
		SS_N	28 ca.15					
		SS_E	18					
		M_{1N}	34	12	281			
		M_{2N}	37 30	10	185			
		M_{EZ}	41 30	10		122	560	
		F	24					
99	6	eL_E	01 52					Weak
		F	02 10					

No.	Date	Phase	Time (GMT)	Period	Amplitude μ			Remarks
					A_N	A_E	A_Z	
	Oct.		h. m. s.					
100	12	eL_N	15 17					
		F	16					
101	15	eL_N	23 15 ca.30					
	16	F						N and E out of work from 00 06 00
102	18	eL_N	09 15					
		F	30					
103	28	P_Z	20 57 19					$36\frac{1}{2}^{\circ}$N 141°E (BCIS)
		pP_Z	34					$\Delta \sim$ 9000 km
		eS_Z	21 07 25					h = 100 km
		F	22					N and E out of work
104	Nov. 3	e_N	06 13 (00)					Microseismic agitation
		eL_N	25					
		F	07 20					
105	13	e_N	04 55 ca.20					Microseismic agitation
		F	05 20					
106	19	e_E	01 28					
		F	02 30					
107	22	P_Z	23 38 06					$82\frac{1}{2}^{\circ}$N 20°E (BCIS)
		S_N	41 48					Δ = 2275 km
		F	24					Dilatation
108	26	e_{1N}	05 57 48					Z out of work
		e_{2N}	06 00 46					
		e_{3N}	06 08					
		eL_N	17 30					
		F	07 40					

No.	Date	Phase	Time (GMT)	Period	Amplitude μ			Remarks
					A_N	A_E	A_Z	
	Nov.		h. m. s.					
109	28	L_N	22 18					
		F	40					
110	Dec.4	iP_Z	00 34 (52)					21°5N 106°1W (JSA)
		S_N	45 17					Δ = 9300 km
		SS_N	50 26					
		L_{NE}	01 02					
		M_{NE}	12	16	8.5	4		
		F	02					
111	5	eL_N	07 15					
		F	08 50					
112	15	e_{1N}	19 34 15					Microseismic agitation
		e_{2N}	40 25					
		F	20 30					Z out of work
113	23	e_{1Z}	08 51 20					
		e_{2Z}	09 00					
		e_{1N}	02 53					
		e_{2N}	07 11					
		L_N	13					
		F	10 20					
114	31	L_N	00 25					Very strong microseismic agitation
		F	01					

SEISMIC BULLETIN 1949

Registrations at the Seismic Observatory of the University in Bergen, Norway

(Before August 30, 1948: Bergens Museum)

Coordinates: $\varphi = 60^{\circ}23'18''$ N, $\lambda = 5^{\circ}18'18''$ E, Alt.= 20 m

Constants:

Instrument	Weight	V	T_o	ε:1	r/T_o^2
Wiechert Z January-December	1300kg	320	4.1	2.0	0.077
" N-S January-December	1000kg	175	9.2	2.4	0.021
" E-W January-December	1000kg	275	9.0	1.4	0.009

No.	Date	Phase	Time (GMT) h.	m.	s.	Period	Amplitude μ A_N	A_E	A_Z	Remarks
1	Jan. 9	eL_N	17	21						Microseismic agitation
		eL_E		26						
		F	16							
2	14	eL_N	16	07						Very strong micro-seismic agitation
		F		30						
3	19	eL_N	14	23	30					Very strong micro-seismic agitation
		F		35						
4	19	e_N	15	22	43					
		eL_N		34						
		M_N		45		22	38			
		F	16	30						
5	23	eL	01	15	20					
		F		30						

No.	Date	Phase	Time (GMT) h.	m.	s.	Period	Amplitude μ A_N	A_E	A_Z	Remarks
6	Jan.23	e_N	06	56	20					
		e_{1E}		57	45					
		e_{2E}	07	02	(58)					
		L_N		20						
		L_E		21	30					
		M_N		24		30	28			
		F	08	30						
7	Feb. 1	eL_E	19	03						Microseismic agitation
		eL_N		14						
		F	21							
8	2	P_Z	17	52	54					Aleutian Islands
		$ePcP_Z$		53	31					Δ = 7200 km
		$ePcS_N$		57	31					
		S_N	18	01	40					
		e_N		04	13					
		F		30						
	13									N, E, and Z out of work.
9	14	eL_N	19	29						Microseismic agitation
		F	20	30						
10	23	eS_N	16	23	44					Very strong microseismic agitation
		L_N		27	47					
		M_{1N}		35		18	985			E and Z disturbed by microseisms
		M_{2N}		36		10	180			
		M_{3N}		37		9	107			
		M_{4N}		38		9	135			
		F	18							
11	24	eL_N	23	33						
		F	24							

No.	Date	Phase	Time (GMT) h.	m.	s.	Period	Amplitude μ A_N	A_E	A_Z	Remarks
12	Feb.26	eL_N	04	46						Microseismic agitation
		F	05	20						
13	28	L_N	00	43	20					Microseismic agitation
		F	01	40						
14	March 2	eP_Z	06	57	29					E of Greenland (Uppsala)
		S_E		59	42					Δ = 1350 km
		L_N	07	00	26					
		L_E			30					
		i_N			46					
		F		30						
15	4	e_{1N}	01	41	44					
		e_{2N}		42	38					
		e_E		43	19					
		L_N	02	02	15					
		F		50						
16	4	iP_{EZ}	10	27	39					Hindu-Kush (Uppsala)
		e_{1N}			42					Δ = 5000 km
		pP_Z		28	14					h = 200 km
		e_{ZE}			34					Compression
		e_{1Z}			(54)					
		PP_N		29	11					
		PPP_{ZE}		30	07					
		e_{2Z}			42					
		e_{2N}			46					
		e_{3N}		31	34					
		S_{NE}		34	14					
		e_{4N}			36					
		ScS_E		37	20					
		L_{NE}		39						

No.	Date	Phase	Time (GMT) h.	m.	s.	Period	Amplitude μ A_N	A_E	A_Z	Remarks
	March									
16	4 (cont.)	M	10	43		16	>440	90	550	
		M_E		45		12		55		
		M_{1N}		46		9	100			
		M_{2N}		47			46.5			
		F	13							
17	16	e_{1N}	22	45	30					
		e_{2N}		56	25					
		M_E	23	28		22		4.5		
		M_N		30		20	10			
		F	24							
18	17	PKP_Z	21	23	45					Bismarck Archipel (Uppsala)
		PS_N		35	15					$\Delta \sim 13\,300$ km
		SS_N		42	00					
		cL_N		59						
		M_N	22	12	30	20	4			
		F	24							
19	19	eL	19	20						Very weak
		F		40						
20	24	e_{1N}	21	17	25					
		e_{2N}		25	20					
		L_N		29						
		F	22	20						
21	27	e_N	06	49	42					3°N $128\frac{1}{2}^\circ$E (W)
		PP_N		52	14					Δ = 11 400 km
		PP_E			22					
		SKS_N		58	40					
		SKS_E			44					
		S_{NE}		59	47					
		e_{1E}	07	01	17					

No.	Date	Phase	Time (GMT) h.	m.	s.	Period	Amplitude μ A_N	A_E	A_Z	Remarks
	March									
21	27 (cont.)	e_{NE}	07	02	16					
		e_N		04	20					
		SS_N		06	(02)					
		e_{2E}			40					
		L		13						
		M_{1N}		24		50	~200			
		M_{2N}		27		35	~135			
		M_{1NE}		29		30	110	73		
		M_{2NE}		32	30	30	165	73		
		F	09	30						
22	28	eL	13	51	ca50					Weak
		F	14	10						
	April									
23	13	iP_{NEZ}	20	06	24					47°N 122°7W (JSA)
		pP_Z			46					Δ = 7200 km
		S_{NE}		15	(00)					h = 100 km
		ScS_N		16	11					
		SS_N		19	10					
		L_E		22	30					
		M_{NE}		28		35	42	30		
		F	21	30						
24	20	SKS_E	03	54	36					38°S 77½°W (JSA)
		$SKKS_E$		55	50					Δ = 13 200 km
		PS_E		58	32					
		SS_N	04	05	08					
		e_{1E}			32					
		e_{2E}			(52)					
		L		20						
		F	05	30						

No.	Date	Phase	Time (GMT)			Period	Amplitude μ			Remarks
							A_N	A_E	A_Z	
	April		h.	m.	s.					
25	23	e_{1E}	11	44	(50)					
		e_{2E}		54	20					
		eL	12	03						
		F		30						
26	24	P_Z	04	30	(52)					27°N 56°E (W)
		e_Z		32	52					Δ ~5300 km
		S_E		37	(52)					Microseismic
		SS_{NE}		41	24					agitation
		M_{NE}		54		15	12	4		
		F	06							
27	25	eP_Z	14	09	54					20½°S 69½°W (W)
		PP_Z		13	19					Δ = 10 500 km
		e_{1N}		19	18					
		SKS_N		20	10					
		e_{2N}		21	(02)					
		SS_E		26	26					
		$PKKP_N$		27	10					
		e_{3N}		32	30					
		L_N		36						
		M_E		47		36		20		
		F	16							
28	30	e_{1Z}	01	40	00					6°N 125½°E (W)
		e_{2Z}			34					Δ ~10 500 km
		PPS_N		49	40					
		SS_N		56	(04)					
		e_{1E}			26					
		e_{2E}		59	40					
		e_N	02	00	04					
		L		08						
		M_{NE}		17		30	67	38		
		M_N		19		20	31			
		F	03	20						

No.	Date	Phase	Time (GMT) h.	m.	s.	Period	Amplitude μ A_N	A_E	A_Z	Remarks
29	May 3	iP_Z	06	07	32					49°N 153½°E (W)
		S_E		16	18					Δ = 2500 km
		ScS		17	20					Compression
		F	07							
30	9	e_E	13	59	30					Microseismic agitation
		eL_E	14	18						
		F	15							
31	13	e_N	20	19	35					
		F	21							
32	16	eL_{NE}	05	34						Weak
		F	06	30						
33	21	e_N	22	02						
		eL_N		17						
		L_E		21	25					
		M_N		28	30	20	10			
		F	23							
34	25	eP_E	08	32	34					42°N 83°E (W)
		S_{NE}		39	34					Δ = 5300 km
		SS_{NE}		43	11					Z out of work
		M_{1N}		50		8	~12			
		M_E		53	30	10		27		
		M_{2N}		54		10	16			
		F	09	40						
35	June11	eL	15	05						Very weak
		F		30						
36	14	eL_N	01	07						Microseismic agitation
		F		30						

No.	Date	Phase	Time (GMT) h.	m.	s.	Period	Amplitude μ A_N	A_E	A_Z	Remarks
	June									
	24									N, E, and Z out
	25									of work
	26									
37	July 2	e_{1Z}	20	11	48					16°N 148°E (W)
		PP_N		14	49					Δ = 10 700 km
		e_{2Z}		15	44					
		SKS_{NE}		21	23					
		S_N		22	10					
		e_E		28	40					
		L_E		41						
		M_E		48		28		9		
		M_N	21	00		14	8			
		F		30						
38	4	P_Z	03	49	15					27½°N 56°E (W)
		S_E		56	10					Δ = 5200 km
		SS_E		59	30					
		eL_E	04	07						
		F		30						
39	8	e_E	08	18						
		M_E		30		12		2		
		F		50						
40	8	e	18	21	(00)					72°N 0° (W)
		eS_E		22	51					$\Delta \sim$1250 km
		eL_E		24						
		F		40						

No.	Date	Phase	Time (GMT) h.	m.	s.	Period	Amplitude μ A_N	A_E	A_Z	Remarks
	July									
41	10	iP_{EZ}	04	01	56					$39\frac{1}{2}^{\circ}$N $70\frac{1}{2}^{\circ}$E (W)
		PP_Z		03	19					Δ = 4750 km
		PcP_Z			47					
		e_{1E}			52					
		e_{2E}		08	14					
		iS_E			36					
		i_{EZ}		09	21					
		L_E		11	35					
		L_N		12	35					
		M_{NE}		21		13	>460	ca300		
		M_N		23		13	>600			
		F	07							
42	10	e_{1E}	14	41						Several earthquakes which cannot be separated
		e_{1Z}		45						
		e_{2E}		47	27					
		e_{2Z}		57	30					
		M_{EZ}	15	16	30	10		20	18	
		i_{1Z}		31	17					
		i_{2Z}		33	12					
		e_{1N}		34	47					
		e_{2N}		40	41					
		M_E		57	30	10		560		
		M_Z	16	03	30	10			470	
		F	18	30						
43	11	eL_E	16	58						Weak
		F		40						
44	19	e_{1E}	17	52	21					
		e_{2E}	18	00	08					
		M_E		10		10		2		
		F		50						

No.	Date	Phase	Time (GMT) h.	m.	s.	Period	Amplitude μ A_N	A_E	A_Z	Remarks
	July									
45	23	P_Z	10	41	53					$18\frac{1}{2}^{\circ}$S 169°E (W)
		PKP_Z		44	38					Δ = 14 000 km
		e_Z			57					
		PP_Z		47	(55)					
		PKS_E		48	35					
		F	11	30						
46	23	P_Z	15	09	02					$38\frac{1}{2}^{\circ}$N $26\frac{1}{2}^{\circ}$E (W)
		e_{1Z}			36					Δ = 2900 km
		S_N		13	27					
		e_{2Z}			45					
		L_E		14	45					
		M_{EZ}		21	30	13		55	150	
		F	16	50						
47	27	PKP_Z	15	31	23					29°S 177°W (W)
		c_N		36	15					$\Delta \sim$16 000 km
		L_N	16	13						
		F	17	30						
48	30	eL_E	18	02						Very weak
		F		20						
	Aug.									
49	10	eL_N	13	48	30					Very weak
		F	14	20						
50	11	e_E	14	15	(00)					Weak
		F	15	20						
51	12	eL_N	08	04						Weak
		F		20						
52	13	e_N	18	54	50					
		eL_E	19	08						
		F	20	10						

No.	Date	Phase	Time (GMT)			Period	Amplitude μ			Remarks
							A_N	A_E	A_Z	
	Aug.		h.	m.	s.					
53	13	L_E	12	23						Very weak
		F		40						
54	17	P_Z	18	45	25					
		S								In next shock
55	17	iP_{NEZ}	18	50	26					39°N 40°E (W)
		PP_Z		51	28					Δ = 3100 km
		e_Z		52	(05)					
		S_N		54	(05)					
		i_{1N}		55	32					
		SS_N		56	34					
		PcS		57	23					
		i_{2N}		59	(05)					
		M	19	02		16	240	36	150	
		M_{NE}		03		14	125	48		
		M_E		05		12		27		
		F	20	40						
56	17	eL_N	21	02						Weak
		F		30						
57	18	eL_E	14	54						Weak
		F	15	30						
58	22	P_{NZ}	04	11	33					54°N 133W (W)
		i_{NEZ}			37					Δ = 6850 km
		e_N		12	38					
		e_{1Z}		13	10					
		e_{2Z}		14	10					
		e_{3Z}		15	40					
		PcS_N		16	12					
		S_{NE}		19	55					
		PPS_E		20	25					

No.	Date	Phase	Time (GMT) h.	m.	s.	Period	Amplitude μ A_N	A_E	A_Z	Remarks
	Aug.									
58	22 (cont)	L_E	04	25	30					
		M_E		30		40		~800		
		M_{1N}		31	30	40	~1000			
		M_{EZ}		32		21		82	455	
		M		39	30	15	650	192	690	
		M_{2N}		40		16	520			
		F	08	30						
59	23	P_{NZ}	20	35	00					$14^{\circ}S$ $14^{\circ}W$ (W) Δ = 7000 km
		PP_Z		37	11					
		S_{NE}		43	30					
		ScS_N		44	57					
		SS_N		47	20					
		L_N		52						
		M_N	21	01		23	11			
		F	22							
60	25	eL_N	04	33						Weak
		F	05	30						
61	25	e_N	23	43						
	26	F		30						
62	29	e_N	14	56	37					Weak
		F	15	20						
63	30	e_E	17	00	25					
		M_{NE}		03		8	1	1		
		F		20						
64	Sept.5	e_{1E}	03	05	ca.32					
		e_{2E}		11	" 25					
		L_N		40						
		F	04	30						

No.	Date	Phase	Time (GMT) h.	m.	s.	Period	Amplitude μ A_N	A_E	A_Z	Remarks
	Sept.									
65	14	PP_{ZN}	20	08	(48)					1°N 126°E (W)
		SKS_{NE}		15	10					Δ = 11 600 km
		PPS_E		18	41					
		e_N		19	24					
		SS_E		23	24					
		LQ_N		35	13					
		M_N		40		52	1.			
		M_{1NE}		44		34	1.3	0.5		
		M_{2NE}		52		20	2	0.6		
		M_Z		54		22			1	
		F	22							
66	18	eL_N	00	21						Very weak
		F		40						
67	21	e_{1Z}	13	07	16					17°N 94½°W
		e_{2Z}		10	34					$\Delta \sim$ 8000 km
		PS_N		16	34					
		e_{1E}		17	20					
		e_{2E}		18	25					
		e_N		26	ca.35					
		L_N		29	ca.05					
		F	14							
68	27	PcP_Z	15	40	40					60°N 149°W (W)
		PPP_Z		42	55					$\Delta \sim$ 5800 km
		PcS_Z		44	27					
		ScS_N		49	08					
		SS_E		53	28					
		LQ_N		58						
		M_{1N}	16	00		35	0.8			
		M_{1E}		01		30		0.8		
		M_{2N}		08		15	1			
		M_{2E}		13	30	12		0.6		
		F	18							

No.	Date	Phase	Time (GMT)	Period	Amplitude μ			Remarks
					A_N	A_E	A_Z	
	Sept.		h. m. s.					
69	29	eL_E	05 17					Weak. Microseismic agitation.
		F	30					
70	Oct. 4	eP_Z	10 31 (00)					1°S 21°W (W)
		S_{NE}	39 47					Δ = 7400 km
		L	47 ca20					
		M_E	11 01	16		6		
		F	30					
71	7	PP_{NE}	12 20 36					33°S 56½°E
		PPP_N	22 38					Δ = 11 050 km
		SKS_N	27 04					
		PPS_N	30 (00)					
		SS_{NE}	35 20					
		M_E	13 12 30	20		5		
		M_N	15 30	16	5			
		F	15					
72	19	e_{1N}	21 30 40					5½°S 154°W (W)
		PPS_{NE}	31 19					$\Delta \sim$ 13 200 km
		e_{2N}	32 34					Strong micro-seismic agitation
		$SKKS_N$	37 04					
		e_E	40 30					
		e_{3N}	50					
		e_{4N}	42 30					
		L	49					
		M_{NE}	59 30	35	60	100		
		M_N	22 05 30	22	50			
		M_E	11	20		13		
		F	23 30					
73	20	e_{1E}	13 15 12					Strong micro-seismic agitation
		e_{2E}	22 28					
		F	14 20					

No.	Date	Phase	Time (GMT)	Period	Amplitude μ			Remarks
					A_N	A_E	A_Z	
			h. m. s.					
74	Oct.21	L_N	22 46 13					
		F	23					
75	31	e_N	00 49 22					Very weak
		F	01 30					
76	31	eP_Z	01 49 36					56°N 135°W (W)
		e_N	57 19					$\Delta \sim 6800$ km
		S_N	(54)					
		PS_N	59 14					
		eL_N	02 12					
		F	03					
77	Nov.1	e_N	13 31 47					
		F	50					
78	2	eL	03 32					
		F	04					
79	3	PcP_{ZN}	01 23 22					48½°N 154°E (W)
		i_Z	24					$\Delta \sim 7700$ km
		PP_N	25 34					Microseismic
		e_Z	26 54					agitation
		e_N	30 32					
		S	32 10					
		ScS_N	33 (02)					
		cL_N	46					
		F	02 30					
80	7	ePP_N	06 21 16					
		$ePKS_{NE}$	22 23					
		eL_E	07 02					
		F	08 30					

No.	Date	Phase	Time (GMT) h.	m.	s.	Period	Amplitude μ A_N	A_E	A_Z	Remarks
81	Nov.11	eL_N	16	30						
		F	17							
82	20	e_N	07	31	48					
		cL_E		44						
		M_{NE}		54	30	18	25	16		
		M_E		58	30	17		17		
		F	09							
83	22	PKP_{ZN}	01	11	18					$28\frac{1}{2}^{\circ}$S $178\frac{1}{2}^{\circ}$W
		e_Z		12	16					$\Delta \sim 16\,400$ km
		PKS		14	42					Dilatation
		PPP_N		18	(00)					
		e_N		25	(00)					
		e_E		35	14					
		L_E		52	45					
		F	03							
84	23	e_N	17	01	(00)					Weak
		F		30						
85	27	PKS	09	05	(00)					18°S 173°W (W)
		SS_E		22	20					$\Delta \sim 15\,000$ km
		L		49						
		F	11	30						
86	Dec.17	PKS_N	07	17	(04)					$54\frac{1}{2}^{\circ}$S 70°W (W)
		e_{1N}		19	27					$\Delta \sim 14\,300$ km
		e_{2N}		20	16					Strong micro-seismic agitation
		$SKKS_N$		22	36					
		PPS_N		27	48					
		$SKKS_N$		30	18					
		e_{3N}		32	48					
		SS_N		33	34					
		LQ_N		46						

No.	Date	Phase	Time (GMT)			Period	Amplitude μ			Remarks
			h.	m.	s.		A_N	A_E	A_Z	
86	Dec.17 (cont.)	M_{1N}	07	55		48	2			
		M_{2N}		59		24	110			
		M	08	03		20	260	65	540	
		M_{1NZ}		10	30	20	112		115	
		M_{2NZ}		13	30	18	58		62	
		F	10	30						
87	17	PKS_N	15	31	04					$54\frac{1}{2}^{\circ}$S 70°W (W)
		$SKKS_N$		36	29					⊿ ~14 300 km
		e_{1N}		37	(04)					
		e_{2N}		40	44					
		e_{3N}		43	28					
		SS_N		46	34					
		LQ_N		58	25					
		M_N	16	08		60	2			
		M_{NE}		12	30	30	111	20		
		M		15		24	91	10	15	
		M_E		21	30	24		75		
		F	18	30						
88	25	eL_N	23	57	(00)					
	26	F	00	30						
89	26	e_{1N}	07	04	20					
		e_{2N}		09	12					
		M_{1N}		31		28	20			
		M_E		41		24		9		
		M_{2N}		44		20	10			
		F	08	30						

No.	Date	Phase	Time (GMT) h.	m.	s.	Period	Amplitude μ A_N	A_E	A_Z	Remarks
90	Dec.28	$eSKS_E$	00	22	(58)					60°S 22°W (W)
		PPS_N		29	06					△ ~13 700 km
		SS_N		34	28					Microseismic agitation
		e_N		38	38					
		LQ		47						
		M_N		52		30	13			
		F	02							
91	29	P_{NEZ}	03	16	41					18½°N 121°E
		PP_N		19	40					△ = 9700 km
		e_{1N}		24	26					Dilatation
		S_{NE}		27	18					
		e_{2N}		28	(58)					
		e_{3N}		29	56					
		SS_N		33	(58)					
		LQ_N		41	10					
		M_{1N}		52		20	100			
		M_{NE}		55	30	19	200	50		
		M_{2N}		56	30	17	105			
		M_E		59		18		60		
		M_{3N}	03	01		13	30			
		F	05	30						
92	29	eL_N	11	05						
		F		30						

SEISMIC BULLETIN 1950

Registrations at the Seismic Observatory of the University in Bergen, Norway

(Before August 30, 1948: Bergens Museum)

Coordinates: $\varphi = 60^{\circ}23'18''$ N, $\lambda = 5^{\circ}18'18''$ E, Alt.= 20 m

Constants:

Instrument		Weight	V	T_o	: 1	r/T_o^2
Wiechert Z	January-March	1300kg	320	4.1	2.0	0.077
	April-October		322	4.1	1.7	0.137
	November-December		302	4.0	2.1	0.060
-"- N-S	January-March	1000kg	175	9.2	2.4	0.021
	April-October		183	9.5	2.0	0.033
	November-December		167	9.4	2.8	0.016
-"- E-W	January-March	1000kg	275	9.0	1.4	0.009
	April-October		170	9.1	1.3	0.013
	November-December		144	8.9	8.0	0.016

Date	Phase	Time (GMT)			Period	Amplitude μ			Remarks
						A_N	A_E	A_Z	
Jan.		h	m	s					
3	e_N	03	12	49					18°N 121°E (W)
	SKS_N		14	(57)					Δ ~ 9 600 km.
	e_L		29						
	M_N		39		25	24			
	M_E		47		17		9		
	F	04	30						
19	eL_N	17	52						Weak
	F	18	20						
22	e_N	04	29						Microseismic agitation
	F	05							
24	PP_N	17	09	(02)					14½°S 167°E (W)
	e_N			42					Δ ~ 14 200 km.
	F	18							
30	e_N	01	26	(04)					Microseismic agitation
	eL_{NE}		54						
	M_E	02	02	30	20		7		
	M_N		06		18	10			
	F	03	30						
Febr.									
2	e_{1N}	23	57	(04)					22°N 100½°E
	SS_N		59	32					Δ ~ 8 200 km.
3	e_{2N}	00	03	(04)					
	L_N		05	30					
	M_{1N}		14	30	23	125			
	M_{2N}		20		14	100			
	F	01	30						
3	e_N	03	21						
	M_{1N}		32	30	22	110			
	M_{2N}		34	30	12	12			
	F	04	30						

No.	Date	Phase	Time (GMT) h	m	s	Period	Amplitude/μ A_N	A_E	A_Z	Remarks
	Febr.									
8	5	e_N	02	45						
		F	03	30						
9	8	eL	18	29						Weak
		F	19							Microseismic agitation
10	25	eL	06	19						Weak
		F		30						Microseismic agitation
11	25	eL_N	10	36						Microseismic agitation
		F	11							
12	28	iP_{NEZ}	10	31	29					46°N, 143½°E (W)
		i_{NZ}			44					Δ = 7 100 km.
		ipP_{NZ}		32	45					h= 350 km.
		iPP_Z		33	22					
		i_{1Z}		35	49					
		i_{2Z}		37	37					
		iS_{NE}		40	02					
		ScS_{EN}			(55)					
		sS_N		42	25					
		SS_N		44	25					
		SSS_{NE}		48	01					
		L		54	25					
		F	13							
	March									
13	7	eL_{NE}	02	51						Microseismic agitation
		M_{1N}	03	01		24	31			
		M_{2N}		03	30	17	40			
		M		08		16	30	16	30	
		F	04							

No.	Date	Phase	Time (GMT) h	m	s	Period	Amplitude μ A_N	A_E	A_Z	Remarks
	April									
14	4	P_Z	18	52	(58)					51½°N 101°E (W)
		S_{NE}	19	00	12					Δ = 5 800 km.
		e_E			35					
		SS_{NE}		03	48					
		e_N			(58)					
		LQ		05	50					
		M_1		12	30	9	43	13	33	
		M_{NE}		15		11	45	25		
		M_2		16	30	11	90	33	150	
		F	20	30						
15	6	eL_N	02	08	35					Microseismic agitation
		F	03							
16	20	eL_N	10	29						Weak
		F	11							
	May									
17	9	eL_E	06	49						Very weak
		F	07	20						
18	9	eL	09	32						Very weak
		F	10							
19	9	e_{NE}	11	30	45					
		e_N		33	(11)					
		L_{NE}		36	36					
		M_N		41	30	20	5			
		F	12	30						
20	17	P_Z	11	57	07					39°N 130½°E (W)
										Δ ~ 7 100 km.

No.	Date	Phase	Time (GMT) h	m	s	Period	Amplitude μ A_N	A_E	A_Z	Remarks
	May									
21	17	PP_N	18	36	15					
		e_{1N}		49	(07)					
		e_{2N}		59	17					
		L_N	19	18						
		M_N		32	30	22	10			
		F	20	30						
22	19	e_E	02	57	(06)					
		F	05							
23	26	PKP_Z	01	36	48					19°S 169°W (W)
		PP_N		39	20					Δ ~15 000 km.
		PKS_{NE}		40	28					
		$SKKKS_N$		46	30					
		$SKSSKS_N$		59	25					
		L_N		37						
		M_E	02	40		20		3		
		F	04							
	June									
24	7	P_{EZ}	17	05	25					4°S 76½°W (W)
		pP_Z		05	(54)					Δ~9 700 km.
		SKS_E		16	06					h= 100 km.
		e_{1E}			56					
		PS_N			04					
		e_{2E}			34					
		F	18							
25	8	PP_N	16	26	14					45½°S 15°W (W)
		e_E		34	08					Δ~12 000 km.
		PS_E		35	46					
		SS_E		41	22					
		L_E		56						
		M_N	17	10		18	8			
		F	18							

No.	Date	Phase	Time (GMT)	Period	Amplitude A_N	Amplitude A_E	Amplitude A_Z	Remarks
	June		h m s					
26	11	eL_N	23 55					Weak
	12	F	00 30					
27	17	eL_N	23 15 36					Weak
		F	40					
28	18	eL_{NE}	13 19 20					
		F	40					
29	19	SKS_E	13 02 16					
		e_{1N}	03 15					
		SS_E	09 48					
		e_{2N}	13 28					
		L	24					
		M_N	36	30	15			
		F	14 30					
30	20	eL_Z	14 22 17					
		F	30					
31	21	PP_{NE}	07 18 (46)					$21^\circ S$ $169^\circ E$ (W)
		e_N	28 06					$\Delta \sim 16\,000$ km.
		SS_N	37 31					
		L_E	56					
		F	09 30					
32		e_N	10 36 16					
		L_{EN}	51					
		F	11 30					
33	24	PKS_{EN}	22 48 36					$19\frac{1}{2}^\circ S$ $168\frac{1}{2}^\circ E$ (W)
		$SKSP_N$	58 00					$\Delta \sim 15\,500$ km.
		e_{1N}	23 07 24					
		e_{2N}	08 (44)					
		e_{3N}	11 54					

No.	Date	Phase	Time (GMT)	Period	Amplitude μ			Remarks
					A_N	A_E	A_Z	
	June		h m s					
33	24	e_{+N}	16 59					
		L_E	22 15					
	25	F	01 30					
34	25	e_E	11 31					
		L_N	56					Weak
		F	12 30					
35	27	eS_E	16 02 13					$45\frac{1}{2}^{o}$N 140°E (W)
		SSS_E	09 (43)					
		eL_E	14					
		M_E	21	28		15		
		F	17					
	July							
36	3	e_{1E}	10 31 50					
		e_{2E}	36 (40)					
		L_{NE}	51					
		M_E	59	22	6	10		
		F	12 30					
37	7	eL_N	17 53					Weak
		F	18 30					
38	9	L_E	00 58					Z out of work
		M_E	01 05	16		2.5		
		F	30					
39	9	e_E	02 01 (59)					Very weak
		F	30					
40	9	P_{NE}	04 51 (59)					$8\frac{1}{2}^{o}$S 71°W (W)
		pP_{NE}	54 23					$\Delta \sim 9\,600$ km.
		e_{1N}	05 01 37					h ~600 km.
		S_{NE}	02 07					Z out of work

No.	Date	Phase	Time (GMT) h	m	s	Period	Amplitude μ A_N	A_E	A_Z	Remarks
	July		h	m	s					
40	9	PS_N	05	03	11					
		e_{1E}			46					
		e_{2N}			(59)					
		sS_N		06	31					
		$(sPS)_{NE}$		07	19					
		SS_{NE}		08	24					
		e_{2E}		11	31					
		e_{NE}		12	04					
		e_{3N}		16	11					
		L_N		18	30					
		F	06	30						
41	9	P_E	16	18	33					36°N 72°E (W)
		e_{1E}		19	41					Δ = 5 200 km.
		e_{2E}		21	29					Z out of work
		$S_{E(N)}$		25	13					
		SS_N		28	46					
		L_N		29	50					
		F	17	20						
42	20	e_{1N}	10	10						
		e_{2N}		11	21					
		L_N		35						
		F	12							
43	21	e_N	20	54	20					
		e_E		55	(52)					
		F	21	30						
44	29	e_E	17	10	22					Z out of work
		eL_E		37						
		F	18	20						

No.	Date	Phase	Time (GMT)			Period	Amplitude A_N	Amplitude A_E	Amplitude A_Z	Remarks
	July		h	m	s					
45	30	e_E	00	18	(57)					
		M_N		54	30	26	10			
		M_E	01	00		22		4.5		
		F		30						
	August									
46	1	e_N	09	32	(06)					
		L_N		40						
		F	10	30						
47	3	e_N	15	37	53					
		F		38						
48	3	P_E	22	29	58					10°N $69\frac{1}{2}^{\circ}$W (W)
		S		39	35					Δ = 8 300 km
		L_N		50						
		F	23	30						
49	5	e_{1E}	09	47	32					Weak
		e_{2E}	10	02	32					
		F	11							
50	7	PP_E	03	02	39					6°N, 126°E (W)
		E_{1N}		06	49					$\Delta \sim$11 000 km.
		e_{NE}		08	56					
		$SKKS_N$		09	44					
		e_{2N}		12	49					
		e_{3N}		21	(14)					
		L_N		22	25					
		F	04	30						

No.	Date	Phase	Time (GMT) h	m	s	Period	Amplitude A_N	A_E	A_Z	Remarks
	August									
51	7	e_N	16	22						Weak
		F	17							
52	14	eL_N	23	32	47					Weak
		F	24							
53	15	iP_{NEZ}	14	20	21					25.5°N 97°E (USCGS)
		PP_E		22	58					△ = 7 350 km.
		PPP_E		24	52					E out of work from 14 h 50 m 00 s
		e_{NE}		25	44					
		iS		28	52					
		S_N			57					
		PS_N		29	06					
		M_{1NE}		30	30	20	500	455		
		SS_N		34	(00)					
		M_{2NE}		36		15	510	570		
		L		39	44					
		M_1		40		22	770	290	1100	
		M_2		44		15	790	450	780	
		M_{3NE}		46	30	17	840	2900		
		M_{1Z}		47		31			5200	
		M_3		49		30	980	4900	10830	
		M_E		50		27		3900		
		M_{2Z}		53		20			5050	
		M_{1N}		54		15	850			
		M_{NZ}		57		17	1100		4000	
		M_{2N}	15	02		21	1000			
		M_{3Z}		05		15			1180	
		M_{4Z}		10		15			390	
		F	21							
54	16	L_N	07	18						E and Z out of work
		M_{NE}		23		14	3	2		
		F		45						

No.	Date	Phase	Time (GMT)			Period	Amplitude μ			Remarks
							A_N	A_E	A_Z	
	August		h	m	s					
55	16	L_E	16	09						Z out of work
		F		40						
56	16	L_E	18	31	30					
		F	19							
57	17	L_E	02	26						
		F		50						
58	17	eL_E	06	04						Weak
		F		30						
59	18	P_{EZ}	01	18	36					Assam (USCGS)
		PP_E		22	41					Δ = 7 300 km.
		S_E		27	21					
		L_E		37	30					
		M_E		49		18		7		
		F	03							
60	18	e_{1E}	17	21	31					Weak
		e_{2E}		23	16					
		F		50						
61	20	eL_E	09	47	22					Very weak
		F	10							
62	21	e_N	23	16						Very weak
		F	24							
63	22	e_N	02	45	(02)					
		F	03	30						Z out of work
64	22	e_N	07	02	(02)					Z out of work
		L_N		19						
		F		45						

No.	Date	Phase	Time (GMT)			Period	Amplitude/μ			Remarks
							A_N	A_E	A_Z	
	August		h.	m	s					
65	22	L_E	13	55	30					
		M_N	14	00		24	10			
		F		30						
66	23	L_E	03	43						Z out of work
		M_E		50		16		3		
		F	04	10						
67	23	L_{NE}	19	24						Z out of work
		M_E		28	30	18		4		
		F	20							
68	26	e_E	04	57	23					Z out of work
		F	06	20						
69	26	e_E	06	52	53					
		L_E	07	06						
		M_E		15		20		6		
		F	08							
70	30	L_E	07	43						Very weak
		F	08							
71	31	SKS_E	07	29	52					6°N, 126°E (W)
		PPS_E		32	46					Δ = 10 800 km.
		e_E		33	37					
		SS_N		37	27					
		L_N		49	12					
		M_N	08	09		22	15			
		F	09							
72	31	e_{NE}	17	32						
		F	18	20						

No.	Date	Phase	Time (GMT) h	m	s	Period	Amplitude A_N	A_E	A_Z	Remarks
	Sept.									
73	2	e_{1N}	03	02	06					
		e_{2N}		17	13					
		eL_N		23						
		F	04	30						
74	2	eL_N	16	39	(58)					
		F	17	30						
75	9	L_N	11	21						Weak
		F	12							
76	10	$ePKP_2$	15	35	18					14^oS 167^oE (W)
		$iPKS_{NEZ}$		38	32					$\Delta \sim 14$ 500 km.
		PKS_{NE}			46					
		e_{NEZ}		39	31					
		PPS_N		49	19					
		e_{1E}		50	37					
		e_{2E}		56	19					
		e_{3E}		57	20					
		L_E	16	05	30					
		F	17	30						
77	13	e_N	11	37	43					
		L_N		42						
		M_N		45		16	6			
		F	12	30						
78	14	eL_N	10	00						
		M_N		10	25	22	8			
		F	11							

No.	Date	Phase	Time (GMT) h	m	s	Period	Amplitude A_N	A_E	A_Z	Remarks
	Sept.									
79	19	SKS_E	20	56	10					2^oS $138\frac{1}{2}^oE$ (W)
		e_{1E}		58	30					Δ = 12 200 km.
		PPS_N	21	00	15					
		e_{2E}		02	33					
		SS_{EN}		04	(55)					Microseismic agitation
		L_E		15	15					
		M_{NE}		30	30	23	18	8		
		M_E		37		23		8		
		M_N		39		23	12			
		F	23							
80	23	PP_N	00	15	06					18^oS 117^oW(USCGS)
		e_N		16	41					$\Delta \sim$ 15 000 km.
		PPS_N		27	10					
		SS_E		32	29					
		e_E		35	09					
		F	01	30						
81	23	L_E	06	39	34					Very weak
		F	07							
82	24	e_N	23	11	45					
		eL_N		17	30					
		F	24							
83	28	eL_E	04	15						Very weak
		F	05							
84	29	SKS_{NE}	06	55	21					19^oN 107^oW (W)
		PS_N		55	(56)					$\Delta \sim$ 9 500 km.
		SS_N	07	00	44					
		L_Z		07	00					
		M_N		20	30	16	12			
		M_E		22		16		12		
		F	08							

No.	Date	Phase	Time (GMT) h	m	s	Period	Amplitude μ A_N	A_E	A_Z	Remarks
	Sept.									
35	30	eP_Z	07	38	41					28°N, 94°E (USCGS)
		eS_N		47	43					Δ ~ 7 700 km.
		eL_N		59	25					
		F	09							
	Okt.									
36	5	P_{EZ}	16	21	48					10½°N 85°W (W)
		eP_E		22	20					Δ = 9 400 km.
		PP_{EZ}		24	54					h ~ 100 km.
		S_E		32	10					
		e_{1NE}			(56)					
		e_{2NE}		37	43					
		SS_N		38	04					
		L_N		44	46					
		M		55		20	130	460	730	
		M_N	17	00		20	160			
		F	20							
37	8	e_E	03	48	30					
		e_{1N}		55	32					
		e_{2N}		56	(56)					
		e_{NE}			48					
		e_{3N}		59	21					
		M_N	04	21		22	75			
		M		30		20	80	50	110	
		F	06							
38	23	P_{EZ}	16	25	35					14½°N 92°W (W)
		PP_E		28	46					Δ = 9 900 km.
		S_{NE}		35	44					
		SS_E		41	06					
		e_E		44	(56)					
		L_E		47	16					
		M_E	17	09		20		40		
		F	20							

No.	Date Nov.	Phase	Time (GMT) h	m	s	Period	Amplitude μ A_N	A_E	A_Z	Remarks
9	2	e_{1Z}	15	42	31					$6^{\circ}S$ $129\frac{1}{2}^{\circ}E$ (W)
		e_{NZ}		43	41					Δ = 12 000 km.
		PP_{NZ}		46	36					
		e_{2Z}		47	28					
		e_{NE}		48	28					
		SKS_{NE}		52	52					
		$SKKS_{NE}$		53	53					
		PPS_Z		56	30					
		e_E		57	36					
		e_{3Z}			56					
		SS_N	16	03	(01)					
		L_E		12	20					
		M_{1N}		21	30	50	20			
		M_{2N}		26	30	26	14			
		M_E		29	30	20		19.5		
		M_{NE}		32		20	8	19.5		
		F	19							
	5	eP_{NZ}	17	49	26					$33^{\circ}N$ $134\frac{1}{2}^{\circ}E$ (W)
										$\Delta \sim$ 8 700 km.
		S_E		59	18					
		e_N			22					
		$ESS_{e(N)}$	18	04	22					
		L		16	32					
		M_E		26		14		20		
		$M_{\cdots}$		30		12	15	15	30	
		F	19	20						
	8	e_Z	02	39	(02)					
		e_{1E}		44	34					
		e_{2E}		48	49					
		M_{NE}	03	28		23	17	25		
		M_E		30		22		25		
		F	05	30						

Date	Phase	Time (GMT)			Period	Amplitude A_N	Amplitude A_E	Amplitude A_Z	Remarks
Nov.		h	m	s					
17	SKS_{NE}	19	51	15					
	eL_E	20	12						
	F	21	20						
22	eL_N	10	50						
	F	12							
Dec.									
1	eS_N	15	09	09					14^oN 47^oW (W)
	e_N		13	19					
	L_N		15	55					
	M_N		17	30	32	66			Microseismic agitation
	M_E		20		24		15		
	F								
2	PKP_N	20	11	22					18^oS 167^oE (USCGS)
	e_{NE}		14	13					Δ = 12 300 km.
	PP_{NE}			50					Microseismic agitation
	PKS_{NE}		15	45					
	e_{1N}		16	(52)					
	PPP_E		18	05					
	PPP_N			13					
	$(PcPPKP)_N$		19	39					
	e_{2N}		23	00					
	$SKKS_N$		26	38					
	e_{3N}		30	54					
	SS_N		37	(52)					
	e_{4N}		44	30					
	L		50						
	M_{NE}	21	02		28	5	3		
	F	23							

o.	Date	Phase	Time (GMT)	Period	Amplitude μ A_N	A_E	A_Z	Remarks
	Dec.							
6	4	e_{1N}	16 55 (52)					
		e_{2N}	58 28					
		L_N	17 15					
		M_N	29	35	20			
		F	18 30					
7	9	P_N	21 53 34					24^oS $67\frac{1}{2}^oW$ (W)
		PP_{NE}	56 51					$\Delta \sim 11\,500$ km.
		e_{1N}	57 19					Z out of work
		i_{NE}	22 03 05					
		SKS_E	31					
		i_{ZN}	04 09					
		ePS_N	06 11					
		SS_N	23 10 50					
		e_L	19 20					
		M_N	23	70	600			
		F	01					
8	10	PKP_N	13 42 22					
		SKP_N	45 45					Δ = 16 500 km.
		SKS_N	49 16					h = ca 250 km.
		$SKKS_N$	52 07					Microseismic agitation
		$SKSP_N$	55 33					
		e_N	59 21					Z out of work
		L_N	14 15 50					
		F	15 30					
9	14	PKP_N	02 11 46					
		iPP_N	14 46					Δ = 15 300 km.
		PPP_N	15ca32					h = 200 km.
		$iPKS_N$	16 26					
		iSS_E	32 44					Z out of work
		SSS_N	34 06					Microseismic agitation
		i_N	35 (02)					
		L_N	45 30					

Date	Phase	Time (GMT) h	m	s	Period	Amplitude A_N	A_E	A_Z	Remarks
14	M_E	02	50		48		33	•	
	M_{NE}		55	30	16	30	33		
	F	03	20						
14	e_N	14	28	04					17°N 98°W (W)
	e_{1E}			30					Δ ~ 9 000 km
	e_{2E}		30	44					h = 70 km.
	e_{3E}		31	42					Microseismic agitation
	S_E		38	36					
	SS_{EN}		39	(02)					
	e_{4E}		40	(02)					
	$(SS)_E$		44ca	22					
	L_E	14	52						
	M_E	15	04		20		12		
	M_{1N}		05		24	20			
	M_{NE}		08		17	11	25		
	M_{2N}		10	30	18	33			
	F	16							
18	e_N	08	27	58					
	F	09	30						Z out of work
22	e_N	09	25	50					
	eL_N		49						Weak
	F	10	30						