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February, 1951

SEISMOGRAPHIC STATION

BULLETIN

1950

EIJO E. VESANEN
JOHNNY W. JONES

Seattle

University of Washington Press

1951

Seattle, University of Washington Campus:

Latitude $47^{\circ}39'N$

Longitude $122^{\circ}18'W$

Elevation 30 m.

Underground: compact glacial till and hardpan

Instruments:

One vertical, two short period horizontal, and two long period horizontal Sprengnether seismographs.

The first part of the bulletin contains readings of main impulses of distant shocks and the first recorded phase of local and short distance shocks. Additional readings and remarks are given when possible.

Readings of local and short distance shocks are given separately beginning on page 45. This section contains local shocks in the state of Washington and also shocks off coast of Oregon, in the Vancouver Island region, and in the state of Montana. Due to the fact that our secondary stations at Neah Bay and Olympia are not yet in operation it was not possible to plot the epicenters of the local shocks. However, when possible epicentral distance and azimuth from Seattle are given.

All times are G.C.T.

C - compression

D - dilatation

! - an exceptionally prominent impulse

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	Time	Additional Readings And Remarks
Jan 01 eL	03 05.5	e 0258.3, e 58.5 Strong microseisms obscure impulses USCGS: 26N, 110W; 0: 025121
Jan 03 1P epP 1sP eSKS eSKKS eS ePS ePPS eSS ESKKS eL	03 05 14D 33 39 15 57 16 18 32 17 34 18 15 22 26 29 36 30	e 1704, e 1718, e 1840, e 1908 e 2006 Weak surface waves h about 75 USCGS: 18N, 121E; 0: 025150
Jan 05 eP	00 19 20	See list of short distance shocks
Jan 10 eS eSS eL	03 19 09 21 40 25	e 1953, e 2335 Strong microseisms obscure impulses USCGS: 11N, 103W; 0: 030542
Jan 12 eP epP esP ePP 1S eSKS ePS ePPS	12 17 35C 19 36 20 34 40 27 08 16 28 23 29 23	1 1739C, 1 1939, e 2109, e 2740, e 2945 No surface waves h about 560 USCGS: 17S, 178½W; 0: 120606; h: 500
Jan 20 1P 1(pP) eS	18 42 27C 52 47 18	1 4230, 1 4236, 1 4249, 1 4306, 1 4314, 1 4354, e 4419 Strong microseisms



	Time	Additional Readings and Remarks
eL	18 51	Weak surface waves USCGS: Southwestern Alaska; 0: 183656 BCIS: 62N, 154W; 0: 183718
Jan 23 eP	04 54 43	See list of short distance shocks
Jan 23 1P	07 20 07D	See list of short distance shocks
Jan 24 1SKS	17 10 10	e 170052, 1 1050
eSKKS	23	Strong microseisms
eS	32	Weak surface waves
ePS	11 32	USCGS: 14½S, 167E; 0: 164718;
ePPS	12 40	h: 150
eSS	16 22	
Jan 27 eP	10 48 48	See list of short distance shocks
Jan 30 eSKS	0 1 21 45	e 2317, e 2329, e 2716, e 2736,
eSKKS	22 13	e 3215
ePS	24 57	USCGS: 54S, 71W; 0: 005632
eL	44	
Jan 30 1P	02 54 39D	1 5519, 1 5536 USCGS: 61½N, 150W; 0: 024949
Feb. 02 eP	23 47 27	e 4739, e 001116
ePP	51 40	USCGS: 22N, 100½E; 0: 233338
eSKKS	58 30	
eS	59 00	
eSS	00 05 40	
eL	20	
Feb 03 eL	03 41	USCGS: 22N, 100½E; 0: 025146

	Time	Additional Readings and Remarks
Feb 03 eL	16 57	e 165121, e 5128, e 5135, 1 5143, 1 5148, 1 5214, 1 5233 Strong microseisms USCGS: 54N, 162W; 0: 164529
Feb 04 eP eL	02 13 42 22	e 1352, e 1415, e 1429, e 1503 Strong microseisms USCGS: 54N, 162W; 0: 020753
Feb 05 eL	02	USCGS: 50S, 164E; 0: 012330
Feb 08 eP	05 36 11	See list of short distance shocks
Feb 10 1P	07 14 42D	See list of short distance shocks
Feb 10 eL	20	USCGS: Philippine Islands region; 0: 184400
Feb 12 1P eL	22 27 38D 23	1 2744, 1 2753 Strong microseisms USCGS: 19S, 178E; 0: 221455
Feb 14 e	18 53 31	See list of short distance shocks
Feb 14 e	20 17 15	See list of short distance shocks
Feb 14 e	20 49 36	See list of short distance shocks
Feb 14 e	21 53 44	See list of short distance shocks
Feb 17 eP epP eL	03 55 12 33 04 12	e 5541, e 5553, 1 5606, 1 5623 Strong microseisms USCGS: 13½N, 91W; 0: 034721 h: 100

	Time	Additional Readings and Remarks
Feb 18		
1S	00 14 47D	See list of short distance shocks
Feb 23		
1P	08 40 19C	1 4026, e 4050, e 4120, e 4230
1pP	41 52	Strong microseisms
esP	42 43	USCGS: 50N, 148E; 0: 083123; h: 500
Feb 25		
1P	05 59 26D	1 5 ⁹ 31, e 5945
e (pP)	06 00 13	Probably deeper than normal
		Strong microseism
		USCGS: 45½N, 99E; 0: 054709
Feb 25		
eP	10 03 54	USCGS: 28N, 131E; 0: 095134
Feb 28		
1P	10 30 37C	1 3042, 1 3051, 1 3111, 1 3145,
1PcP	31 26	1 3157, 1 3412, 1 3620, 1 3711,
1pP	40	1 3836, 1 3840, 1 4700,
1sP	32 11	1 110006, 1 0037
1pPcP	33	h about 280
1sPcP	33 03	USCGS: 46N, 143½E; 0: 102058;
1PP	25	h: 350
1pPP	35 40	
1PPP	36 01	
1S	38 31	
1SSS	45 36	
Mar 02		
e	18 58 54	e 5926
		Strong microseisms
		USCGS: 59½S, 34W; 0: 183947
Mar 04		
e	16 10 55	e 1122, e 1132
		Strong microseisms
		USCGS: 59½S, 34W; 0: 154840
Mar 07		
eSKS	02 32 54	e 3719, e 4139
eSKKS	33 25	Maybe deeper than normal
ePPS	35 30	Strong microseisms
eSS	40 41	USCGS: 10N, 124E; 0: 020746
eL	50	

	Time	Additional Readings and Remarks
Mar 09 eP	10 13 44	e 1410, e 1449 Strong microseisms USCGS: 16N, 60W; 0: 100339
Mar 11 eL	01 01 25	Strong microseisms USCGS: 20N, 99W; 0: 004251
Mar 14 1P 1 (pP) ePP	03 21 01D 22 04 23 30	1 21 ⁰⁸ , 1 2116, 1 2123, 1 2134, 1 2147, 1 2210, 1 2228, e 3100, e 3200 Strong microseisms USCGS: 8S, 74W; 0: 031002; h: 150
Mar 16 1P epP esP	19 36 20C 38 21 39 16	e 3841 Strong microseisms USCGS: 17S, 178½W; 0: 192456 h: 600
Mar 16 1P	22 25 45	See list of short distance shocks
Mar 20 1P	15 24 06D	See list of short distance shocks
Mar 26 e	04 27 39	See list of short distance shocks
Mar 26 e	06 01 18	See list of short distance shocks
Mar 26 eP	06 45 54D	See list of short distance shocks
Mar 27 ePP ePcP ePPP eS eL	13 13 39 56 14 17 17 55 22	e 1217, e 1226, e 1244, e 1307, e 1316, e 1437, e 1449 Strong microseisms USCGS: 53½N, 173E; 0: 130404

	Time	Additional Readings and Remarks
Mar 29		
eP	13 05 49	e 0708
e(pP)	06 20	Strong microseisms
		USCGS: 27S, 177W; 0: 125253
Apr 03		
1P	06 45 14C	e 4607
		Strong microseisms
		USCGS: 18S, 169½E; 0: 063214
Apr 04		
eP	02 31 25	e 3205, e 3227, e 3241
		Strong microseisms
		USCGS: 51½N, 173W; 0: 022447
Apr 04		
eP	03 54 53D	e 5512
		Strong microseisms
		USCGS: 30N, 130½E; 0: 034246
Apr 04		
eP	18 55 51C	1 5640, 1 5709
1PcP	56 03	Deeper than normal
1pP	08	h about 75
1pPcP	27	USCGS: 52N, 101E; 0: 184410
eS	19 05 32	
ePS	48	
ePPS	06 14	
eSS	10 30	
eL	17	
Apr 05		
eP	01 24 36	e 2440
ePP	25 33	Strong microseisms
eS	59 54	USCGS: 52N, 177W; 0: 011715
eSS	02 02 04	
eL	03	
Apr 07		
eP	05 03 07	See list of short distance shocks
Apr 10		
eP	16 58 31D	1 5838, 1 5852, 1 5905, 1 5915,
ePcP	59 38	e 5925, e 5948
		Strong microseisms
		USCGS: 5N, 76½W; 0: 164838

	Time	Additional Readings and Remarks
Apr 12 e	18 00	See list of short distance shocks
Apr 12 e	18 46	See list of short distance shocks
Apr 13 e	21 40 04	See list of short distance shocks
Apr 14 1P	11 04 00D	See list of short distance shocks
Apr 15 eL	15 09	e 145929 Strong microseisms USCGS: 14N, 91W; 0: 145125; h: 100
Apr 16 eP	21 49 25	See list of short distance shocks
Apr 18 ePP eS eL	14 44 06 48 50 56	e 4129, e 4917 Strong microseisms USCGS: 4½S, 106W; 0: 143146
Apr 19 1P	16 19 50D	1 2038, 1 2122 USCGS: 17½S, 179W; 0: 160824; h: 600
Apr 20 1P	00 53 37D	See list of short distance shocks
Apr 20 1P	10 00 50C	e 0847 USCGS: 45N, 150E; 0: 095044
Apr 25 1P	22 39 30D	See list of short distance shocks
Apr 26 1P 1(pP)	07 16 25D 17 26	1 1639, 1 1647, 1 1715, 1 1734, 1 1745, 1 2656



	Time	Additional Readings and Remarks
1S 1ScS 1PS	07 25 50 26 20 36	Deeper than normal Weak surface waves USCGS: 34N, 135E; 0: 070448; Slightly deeper than normal
Apr 26 eP	12 24 44D	Weakly recorded USCGS: 53N, 170W; 0: 121828; h: 60
Apr 30 eP	10 40 36	e 4052, e 4104, e 4148, e 4223 USCGS: 24½S, 112½W; 0: 102903
Apr 30 eP	12 35 34	See list of short distance shocks
Apr 30 eP	13 21 08	See list of short distance shocks
Apr 30 eP	18 33 02C?	e 3307, e 3315, e 3411 USCGS: 10½S, 75½W; 0: 182136
Apr 30 eP eL	23 58 09 24 17	USCGS: 4½N, 82½W; 0: 234922
May 09 1P eL	11 30 27C 12 11	e 3047, e 3440, e 120830 USCGS: 41N, 58E; 0: 111710
May 10 1PKP	23 59 07D	1 5917, 1 5922, 1 5953, 1 5957, 1 0057 USCGS: 15S, 43E; 0: 233925
May 15 eL	03 47	USCGS: 0: 033241
May 16 e	05 40 06	See list of short distance shocks
May 16 e	06 53 13	See list of short distance shocks

	Time	Additional Readings and Remarks
May 16 1	06 54 30	See list of short distance shocks
May 16 1P	13 43 20	See list of short distance shocks
May 16 eL	18 10	e 174536, e 4622, 4714, e 4755 USCGS: 6S, 151E; 0: 172145
May 16 e	20 33	See list of short distance shocks
May 17 e	07 35 08	See list of short distance shocks
May 17 1P 1(pP) eS	11 57 20C 59 22 12 05 58	1 5725, 1 5734, 1 5739, 1 5819, e 120636, e 0710, e 0906 No surface waves Strong microseisms USCGS: 39N, 130½E; 0: 114646; h: 600
May 17 1P ePP eSKS eS ePPS! eSS eSSP ePKKS eL	18 26 23C 30 15 36 45 50 38 50 43 23 40 45 10 50	1 2633, e 2705, e 2709, e 2755, e 2806, e 3143, e 3724, e 3746, e 3936, e 4232 Strong microseisms USCGS: 20S, 169E; 0: 181313
May 18 eP	17 05 40	USCGS: Aleutian Islands region; 0: 170017
May 19 eP ePP eSKS eS ePPS ePKKP eL	02 51 27 54 45 03 01 58 02 30 03 40 08 56 16	e 5148, e 5214, e 5235, e 5323, e 5812, e 030530, e 1016 USCGS: 20½S, 169E; 0: 023810

	Time	Additional Readings and Remarks
May 19		
eP	07 18 51	e 1904, e 1936, e 2824, e 3030,
eSKS	29 21	e 3840
eS	56	USCGS: 20½S, 169E; 0: 070531
eL	44	
May 20		
eL	03 24	
May 22		
e	04 23 20	See list of short distance shocks
May 22		
eL	07 17	USCGS: Fiji Islands region; 0: 071204
May 22		
1(P)Z	19 53 08	Very strong microseisms
1	21	USCGS: Off coast of British Columbia; 0: 194943
1	26	
May 23		
1P	17 52 02	See list of short distance shocks
May 23		
eP	17 59 48	See list of short distance shocks
May 23		
eL	19 59	USCGS: South-central Mexico; 0: 193900
May 25		
1P	08 39 46D	1 3953, 14002, 1 4013, 1 4015,
ePP	40 50	1 4021, e 4030, 1 4427
ePcP	42 35	USCGS: 65½N, 151½W; 0: 083432
1S	44 15	
eL	46	
May 25		
1P	18 47 27C	1 4736, 1 4742, 1 4748, 1 4832,
1pP	48 05	1 4846, 1 4928, 1 4936, e 5758,
1PP	50 46	e 5828, e 5833, e 5844, e 5847
1PPP	52 40	USCGS: 13N, 142½E; 0: 183500;
eSKS	57 33	h: 100

	Time	Additional Readings and Remarks
1S	40	
ePPS	59 30	
eL	19 09	
May 25		
1P	23 50 12	See list of short distance shocks
May 26		
1P	01 30 16D	1 3028, 1 3109, 1 3122, 1 3212,
1pP	45	1 3324, e! 4242, e 4432,
1sP	54	e 4545, e 4750, e! 4822
1PP	34 16	h about 110
1SKS	41 16	USCGS: 20S, 169E; 0: 011714;
eS	48	h: 100
eL	54	
May 26		
1P	14 45 08D	USCGS: 18½N, 147E; 0: 143320;
1pP	38	h: 100
May 27		
eS	13 03 30	e 125522, e 130440
eL	26	USCGS: 20S, 168E; 0: 123943;
		h: 200
May 27		
1P	14 38 36C	1 3843, 1 3903, 1 3916,
epP	40 43	1 4006
esP	41 45	USCGS: 17S, 179W; 0: 142710;
1S	48 03	h: 600
eSKS	25	
May 28		
eP	01 50 06C	e 5032, e 5108, e 020217
eS	02 00 39	USCGS: 20S, 169E; 0: 013644
ePS	01 22	
eL	16	
May 30		
1P	15 15 40D	1 1622, e 2620
1pP	18 05	USCGS: 20S, 178½W; 0: 150403;
eS	25 19	h: 600
eSP	26 11	
May 31		
1P	09 32 44D	1 3251, 1 3307, 1 3341, 1 3347
		USCGS: 8S, 74W; 0: 092145;
		h: 150

	Time	Additional Readings and Remarks
May 31		
eL	13 35	USCGS: 31N, 130E; 0: 131309
Jun 01		
eL	19 10	
Jun 03		
e	13 18 38	e 1931
Jun 04		
eP	15 31 47	e 3248, e 4310 USCGS: 21S, 170½E; 0: 151820; h: 100
Jun 05		
eP	11 24 41	e 2447, e 2512, e 3148, e 3211,
ePcP	26 06	e 3616, e 3910
ePP	36	USCGS: 87N, 45E; 0: 111612
eS	31 21	
eSS	34 16	
eL	41	
Jun 05		
e	22 50 10	USCGS: 22N, 144½E; 0: 222923; h: 300
Jun 07		
1P	16 03 09D	1 0314, 1 0317, 1 0322, 1 0414,
1pP	34	1 0522, 1 0732, 1 1149, e 1207,
1PcP	41	e 1220, e 1408, e 1418
1sP	45	USCGS: 4S, 76½W; 0: 165234;
1pPcP	05 04	h: 100
1PP	35	
1PPP	06 20	
eS	11 44	
Jun 08		
ePKP	16 26 48D	e 2709, e 2732, e 2748, e 2927,
epPKP	27 22	e 2955, e 3046, e 3054, e 3112,
1PKS	30 15	1 3120, 1 3130, e 3232, e 3327,
1PKS	27	e 3630, e 3820, e 3940, e 4018,
eSKS	34 04	e 4328, e 4430, e 4630, e 4814,
eSS	45 57	e 5105, e 5512
eL	17 18	USCGS: 45½S, 15W; 0: 160733 BCIS: h: 150

	Time	Additional Readings and Remarks
Jun 09 eP	13 09 26	See list of short distance shocks
Jun 11 1P 1pP eS	13 47 11D 27 58 18	1 4717, 1 4807 USCGS: 22S, 69½W; 0: 133445; h: 100
Jun 11 eP	17 31 21	USCGS: 32N, 138½E; 0: 171944
Jun 11 eL	21 02	e 202840, e 2903, e 2923, e 4015 USCGS: 28½S, 73W; 0: 201555
Jun 11 ePP eL	22 33 50 23 18	e 3425, e 3605, e 3714, e 3812, e 3930, e 4225, e 4940 BCIS: 58S, 148E; 0: 221112
Jun 12 eL	00 10	
Jun 12 eL	23 21	
Jun 14 eP eS eL	03 56 49 04 06 41 26	USCGS: 18½S, 174½W; 0: 034410
Jun 14 eP	04 54 58	USCGS: 17S, 168E; 0: 044159
Jun 14 e	06 08 22	USCGS: 19N, 155½W; 0: 054747
Jun 14 1P	08 10 49C	1 1055 USCGS: 14 S, 70W; 0: 075922; h: 300
Jun 14 e	15 47 47	See list of short distance shocks

	Time	Additional Readings and Remarks
Jun 14 e	16 44 44	See list of short distance shocks
Jun 14 e	17 54 55	See list of short distance shocks
Jun 15 1	21 17 10	See list of short distance shocks
Jun 15 eP 1S	23 58 58 00 08 39	USCGS: South of Fiji Islands; 0: 234700; h: 600
Jun 17 e	11 55 07	e 5600 USCGS: Off coast of northern California; 0: 115050
Jun 17 e	12 09 30	USCGS: Off coast of northern California; 0: 120416
Jun 17 eP	22 28 43	e 2926 USCGS: 25S, 67W; 0: 221606; h: 200
Jun 17 eP eS	22 49 04 57 30	e 4918 USCGS: 36N, 140½E; 0: 223724
Jun 18 eL	04 02	
Jun 18 eL	09 34	
Jun 18 eL	13 35	
Jun 19 ePP ePKS eSKS	12 57 11 59 10 13 02 49	e 5605, e 5632, e 5803 e 130020, e 0040, e 0520, e 1243, e 1516, e 1850, 1 2643

	Time	Additional Readings and Remarks
eSKS	13 03 10	USCGS: 8S, 112E; 0: 123658
ePS	07 30	
eSS	13 40	
eL	27	
Jun 19		
1P	18 31 42	See list of short distance shocks
Jun 20		
eP	05 07 17	See list of short distance shocks
Jun 21		
ePP	07 12 30	e 0910, e 0924, e 0933, e 1035, e 1249, 1! 2008, e 2327, e 2511, e 2740 USCGS: 21S, 169E; 0: 065539
ePPP	14 28	
1SKS	19 18	
1SKKS	36	
1S	20 00	
1PS!	21 11	
ePPS	58	
eSS	26 26	
eSSS	31 10	
eL	34	
Jun 21		
eSKS	10 20 39	e 2200, e 2428, e 2500, e 2850 USCGS: 3½S, 147E; 0: 095600
eS	21 19	
ePS	22 31	
ePPS	23 00	
Jun 22		
eL	08 47.6	USCGS: 18° 17' N, 103° 19' W; 0: 082730
Jun 23		
eL	04 13	USCGS: 13N, 93W; 0: 034812; Possibly deeper than normal JSA: h: 100
Jun 24		
eP	22 38 40C	e 3910, e 3946, e 3952, e 4218, e 4320, e 5102, e 5150, e 5748 USCGS: 19½S, 168½E; 0: 222531 JSA: h: 100
epP	39 22	
esP	35	
ePP	41 42	

	Time	Additional Readings and Remarks
ePPP	22 43 51	
eSKS	49 11	
eS	38	
ePS	56	
ePPS	50 08	
eSS	54 50	
ePKKP	56 16	
eL	23 04	
Jun 25		
eP	11 19 39	USCGS: 5N, 127E; 0: 110551
eSKS	30 16	
eSKKS	24	
ePPS	33 37	
eL	52	
Jun 26		
e	17 21 32	See list of short distance shocks
Jun 27		
eP	15 52 24D	e 5237, e 5252, e 5325,
eS	16 01 09	e 160352, e 1005
ePKKP	12 57	USCGS: 45½N, 140E; 0: 154154
eL	17	
Jun 28		
e	04 35 30	See list of short distance shocks
Jun 29		
eL	03 33	USCGS: Northern Chile; h: 100; 0: 001524
Jul 02		
eL	23 20	e 230026, e 0142 USCGS: 4N, 73½W; 0: 224924
Jul 03		
eP	10 16 39D	e 1645, e 1740, e 2228, e 2340,
eSKS	27 16	e 2442, e 2754, e 2905, e 3132
eS	30	USCGS: 8N, 141½E; 0: 100336
ePS	28 10	
e SS	33 14	
eL	40	

	Time	Additional Readings and Remarks
Jul 03 eP	12 42 06	USCGS: 0: 122933; h: 200 BCIS: 24½S, 176W
Jul 05 eP eS eL	18 35 20 39 30 43	e 3626, e 4028 USCGS: 62N, 155W; 0: 183008
Jul 07 eL	05 22	
Jul 07 eP ePP eSKS eS ePKKP eSKKS eL	16 59 46D 17 03 20 10 15 35 17 24 24 10 26	e 170018, e 0331, e 1105 USCGS: 11S, 163½E; 0: 164655
Jul 07 eP	17 07 03	e 0730, e 0742 USCGS: 11S, 163E; 0: 165410
Jul 09 eSKS eS eL	00 26 25 50 45	USCGS: 10S, 161E; 0: 000302
Jul 09 eL	01 35	BCIS: 25.0N, 63.3E; 0: 002859
Jul 09 eP ePP eS eScS ePS ePPS eSS eL	01 51 48D 54 37 02 01 45 58 02 40 03 05 07 24 18	e 5204, e 5224, e 5337 USCGS: 33S, 112W, 0: 013929
Jul 09 eP ePP	02 45 23C 47 22	e 4858, 1 4909 USCGS: 8N, 73W; 0: 023531

	Time	Additional Readings and Remarks
Jul 09		
1P	04 50 27D	1 5033, 1 5036, 1 5124, e 5853,
1PcP	58	1 0330
1pP	52 32	USCGS: 8½S, 71W; 0: 043957;
1PP	53 08	h: 600
1sP	50	
1PPP	55 11	
1sPP	56 08	
1S	59 05	
1SP	05 00 37	
1SS	03 55	
Jul 09		
1P	05 00 28D	e 0950
1pP	02 36	USCGS: 8½S, 71W; 0: 044958;
1S	10 00	h: 600
Jul 09		
eL	08 06.5	
Jul 09		
1P	09 55 27D	e 100358, 1 0453
1pP	57 32	USCGS: 8½S, 71W; 0: 094455;
1S	10 04 06	h: 600
Jul 09		
eP	16 23 22	e 2515, e 3343, e 3535, 3621,
epP	24 17	e 3803
		USCGS: 36N, 72E; 0: 160953
		JSA: 36.6N, 70.3E; 0: 161025;
		h: 220
Jul 10		
eP	05 53 05	e 5326, e 5339, e 5358
eL	07 07	BCIS: 18S, 64E; 0: 053305
Jul 12		
eL	02 02	USCGS: 2N, 101W; 0: 013642
Jul 12		
eP	11 15 16	e 1640, e 1726, e 1756, e 2020,
ePP	16 52	e 2028, e 2041
ePPP	17 04	USCGS: 53N, 166W; 0: 110915

	Time	Additional Readings and Remarks
ePcP	11 19 02	
e(s)	20 05	
eL	21 30	
Jul 12		
1P	11 00 19	e 0121
epP	52	USCGS: Tonga Islands region; O: 114012; h: 100
Jul 12		
eP	15 55 04	e 160216, e 0510 USCGS: O: 154651; h: 100 BCIS: 57N, 165E
Jul 13		
1P	04 14 50C	1! 1533, 1 1556, e 1710, e 1732,
1PcP	15 02	e 2307, e 2413, e 2445, e 2454,
epP	16 50	e 2658
ePP	18 13	USCGS: 27.5N, 139.5E; O: 040350;
ePPP	19 15	h: 500
eS	23 47	
Jul 13		
1P	07 49 36D	See list of short distance shocks
Jul 13		
e(S)	07 57 09	See list of short distance shocks
Jul 14		
1P	11 04 22	See list of short distance shocks
Jul 14		
1	12 33 38	See list of short distance shocks
Jul 14		
eL	12 21	USCGS: 52N, 171W; O: 120645
Jul 16		
e	04 56 35	See list of short distance shocks
Jul 17		
eP	20 30 55C	e 3135, e 4140, e 4236, e 4404 USCGS: 20.5S, 171E; O: 201750

	Time	Additional Readings and Remarks
Jul 18		
1P	01 23 40D	See list of short distance shocks
Jul 19		
eP	10 59 13	e 110530, e 0650, e 0705, e 0941
epP	27	USCGS: Aleutian Islands region;
esP	37	0: 105154
eS	11 05 02	
epS	16	
ePcS	06 30	
eScS	09 08	
epScS	28	
eL	12	
Jul 20		
1P	09 43 33D	1 4342, 1 4732, e 5550, e 5615,
1pP	50	e 5631, e 5653, e 5737, e 5805,
ePP	46 50	e 5831, e 100120, e 0215
eSKS	53 42	USCGS: 17S, 174E; 0: 093048
eS	54 14	
ePS	43	
ePPS	55 17	
eSS	10 00 19	
ePKKP	01 39	
eL	10	
Jul 21		
eS	07 42 10	e 4235
		USCGS: 0: 071855
		BCIS: 29.6S, 179.8W; 0: 071846
Jul 21		
1P	08 26 51D	USCGS: 0: 081621; h: 600
		BCIS: 7.5S, 70W; 0: 081622;
		h: 600
Jul 21		
1P	20 44 58D	1 4508, 1 4518, e 4607, e 5607,
ePP	48 34	e 5627, e 5910, e 210800,
1S	55 51	e 1150
ePS	56 53	Weak surface waves!
ePPS	57 10	USCGS: 15 ½S, 168½E; 0: 203201
eSS	21 01 38	
ePKKP	02 36	
ePKKS	06 12	

	Time	Additional Readings and Remarks
Jul 22 e	19 56 23	See list of short distance shocks
Jul 22 eP	21 51 21	See list of short distance shocks
Jul 22 1P eS eL	23 20 51 31 32 47	e 2138, e 2156, e 3214, e 3258, e 3357 USCGS: 0: 230745 BCIS: 14S, 167E; 0: 2308.0
Jul 25 eL	18 45	USCGS: 31N, 42W; 0: 181500
Jul 26 eL	09 01	BCIS: 19.1N, 64.9W; 0: 083128
Jul 27 eL	10 03	
Jul 27 eL	11 38	USCGS: 33N, 115.5W; 0: 112924
Jul 27 eL	12 11	
Jul 27 eL	12 28	
Jul 27 eL	13 01	
Jul 27 eL	13 06	
Jul 27 eL	22 59	
Jul 28 eL	03 34	

	Time	Additional Readings and Remarks
Jul 28		
eP	05 08 06	e 0832, 1 0905, e 0921, e 1220,
eSKS	18 44	e 1421
eS	19 00	USCGS: 13S, 167E; 0: 045513
ePS	50	
eSS	24 33	
Jul 28		
eP	05 36 10	USCGS: 13S, 167E; 0: 052821
Jul 28		
eL	13 12	
Jul 28		
eS	17 57 39	e 5451, e 5458, e 5751, e 5808,
eL	59 15	e 5839, e 5935
ePcP	28	USCGS: 33 ⁰ 05'N, 115 ⁰ 33'W; 0: 175048
Jul 29		
eL	00 26	
Jul 29		
eS	14 43 14	e 4030, e 4348, e 4418
eL	56	USCGS: 33N, 115 $\frac{1}{2}$ W; 0: 143633
ePcP	44 12	
Jul 29		
1P	16 59 53C	e 170027, e 0436, e 1520,
ePP	17 04 08	e 2210
eSKS	10 30	USCGS: 2 $\frac{1}{2}$ N, 127 $\frac{1}{2}$ E; 0: 164556
eS	11 24	
ePS	13 14	
ePPS	14 00	
eSS	18 3 0	
eSKKS	23 35	
ePKPPKP	24 20	
eL	30	
Jul 29		
eP	18 24 06	See list of short distance shocks
Jul 29		
eL	18 51	

	Time	Additional Readings and Remarks
Jul 30		
1P	00 02 00C	1 0218, e 0232, e 0304, e 0601,
ePP	05 32	e 0920, e 1015, e! 1510, e 2045,
ePPP	07 38	e 2226, e 2300, e 2420
eSKS	12 31	USCGS: 6S, 155E; 0: 234858
eS	48	
ePS	13 54	
ePPS	14 30	
eSS	18 40	
ePKKP	19 18	
ePKKS	20 26	
eSKKS	26 10	
ePPP	28 06	
eL	31	
Aug 01		
eL	00 57	
Aug 01		
eL	08 45 50	USCGS: 33N, 115.5W; 0: 083718
ePcP	46 06	
Aug 01		
eS	09 30 30	e 2205, e 2300, e 2351, e 3710
ePPS	32 06	USCGS: 42½N, 145E; 0: 091139
eL	45	
Aug 01		
e	13 31 14	See list of short distance shocks
Aug 01		
e	14 44 55	See list of short distance shocks
Aug 02		
1P	11 02 43C	1 0256, 1 0314, 1 0336, 1 0345,
1pP	03 30	1 0539, e 1359, e 1516, e 2030
eSKS	13 09	h about 200
eS	41	USCGS: 12N, 143E; 0: 105007; Slightly deeper than normal
Aug 02		
e	14 18 29	e 1950 BCIS: 14.5N, 40E; 0: 134958 Roma: h: 400 Stuttgart: h: 500

	Time	Additional Readings and Remarks
Aug 03		
1P	06 21 36C	1 2142, 1 2216, 1 3405
1 (pP)	53	USCGS: 18N, 100W; 0: 061454;
ePcP	23 29	h: 150
eL	29 43	
Aug 03		
1P	22 28 15D	1 2844, 1 2850, 1 2930, 1 2942,
1PcP	29 10	1 2954, 1 3050, 1 3146, 1 3212,
1PP	30 24	1 3229, e 3632, e 3651, e 3732,
1PPP	31 24	e 3910, e 3931, e 4141
1PcS	33 20	USCGS: 10N, 69½W; 0: 221818.
1S	36 16	
eScS	38 30	
1SS	40 23	
1L	42 50	
Aug 04		
1	02 06 42	See list of short distance shocks
Aug 04		
eL	15 53	Tacubaya: 16°05'N, 97°33'W
Aug 05		
ePKP	09 35 38D	e 3707, e 3723, e 4046, e 4400,
epPKP	48	e 4653, e 4900, e 5040, e 5749,
ePP	36 38	e 100343
epPP	47	USCGS: 50S, 164E; 0: 091648
ePPP	38 30	
ePKS	39 20	
eSKS	42 32	
ePS!	46 35	
ePPS	47 15	
eSS	52 30	
eSKKS	54 20	
ePKKKS	57 30	
eL	10 05	
Aug 07		
eP	02 58 36C	e 5856, e 030317, 1! 0345,
epP	59 14	e 0518, e 1556, e 2520
esP	28	h: 150
ePKS	03 06 45	USCGS: 6N, 126E; 0: 024444 JSA: h: 100

	Time	Additional Readings and Remarks
1SKS	03 08 45	
eSKS	09 05	
ePS	11 32	
ePPS	12 19	
eSS	17 25	
eSKKS	21 52	
eL	26.5	
Aug 08		
1P	05 14 40	e 1505
eL	17	USCGS: 55N, 134½W; 0: 051200
Aug 08		
e	06 32 04	
eL	32.5	
Aug 10		
e	08 25 39'	See list of short distance shocks
Aug 10		
eL	20 02	e 194340, e 4510 BCIS: 7S, 155.7E; 0: 191930
Aug 11		
e	03 10	USCGS: Kurile Islands region; 0: 030110; h: 100
Aug 13		
e	07 57 35	See list of short distance shocks
Aug 13		
e	12 13 12	See list of short distance shocks
Aug 13		
eS	16 59 13	e 5347, e 170358
eL	17 08	USCGS: 19½N, 70½W; 0: 164320
Aug 13		
eP	18 46 12	e 4707
e(pP)	42	USCGS: 51½N, 177W; 0: 183916; h: 100
Aug 14		
1P	23 03 30C	1 0335, 1 0347, e 0541, 1 0607, 1 0703, 1 0817, e 1321, e 1328,

	Time	Additional Readings and Remarks
1pP	23 05 51	e 1344, 1 1351, 1 1505, 1 1741
1S	13 07	USCGS: 27S, 62½W; 0: 225128; h: 700
Aug 15		
1P	14 23 03C	e 2622, e 2637, e 2816, e 2905
ePP	27 42	USCGS: 28.5N, 97E; 0: 140930
ePPP	30 05	
ePS	36 39	
ePPS	37 30	
eL	51	
Aug 15		
eL	19 40	USCGS: 28.5N, 97E; 0: 183845
Aug 15		
eL	22 44	USCGS: 27N, 92E; 0: 214223
Aug 16		
eL	06 33	USCGS: Assam; 0: 053306
Aug 16		
eL	07 33	USCGS: Assam; 0: 064202
Aug 17		
eL	02 48	USCGS: Assam; 0: 015417
Aug 17		
1P	16 27 07D	1 2712, 1 2715, 1 2720, 1 2730,
1pP	29 21	e 2742, 1 2747, e 3706, e 3753,
esP	30 26	e 3755, e 3850
1S	36 37	h about 650
eSKS	52	USCGS: 21S, 180; 0: 161522;
eSP	37 15	h: 600
eSPP	38 11	
Aug 18		
eP	01 21 25	e 2536, e 2556, e 2630, e 2806,
ePP	25 16	e 5315
1SKS	32 00	USCGS: Assam; 0: 010749
eSKKS	16	
eS	40	
eSS	39 10	
eL	56	

	Time	Additional Readings and Remarks
Aug 18 eL	17 36	e 171607 USCGS: Assam; 0: 165849
Aug 20 eL	01 06	
Aug 20 1P	01 46 31	See list of short distance shocks
Aug 20 e	08 31 20	
Aug 20 e	09 17 10	USCGS: S.E. Tibet; 0: C90337
Aug 22 eL	03 20	USCGS: S.E. Tibet; 0: 022238
Aug 22 eL	07 39	1 065648 USCGS: 31N, 94E; 0: 064318
Aug 22 eP	07 48 53'	e 4910, e 5000, e 5029, e 5109, e 5124, e 5545 USCGS: 53N, 160E; 0: 074009 JSA: h: 75
Aug 22 eL	14 13	USCGS: Assam; 0: 132227
Aug 23 eL	04 08	USCGS: 29.5N, 95E; 0: 030919
Aug 23 eL	19 45	USCGS: Assam; 0: 184657
Aug 24 1P	17 47 10D	See list of short distance shocks
Aug 25 e	02 17 16	See list of short distance shocks

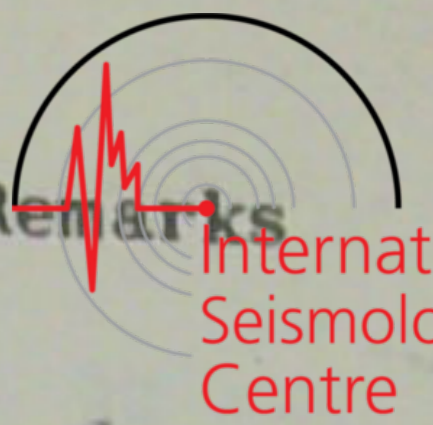
	Time	Additional Readings and Remarks
Aug 26		
1P	04 45 18C	1 4521, e 4531, 1 4636, 1 4710,
1PP	46 10	1 4750, e 5030, 1 5152, 1 5233,
1S	50 11	1 5320
eSS	51 05	USCGS: 65N, 162W; 0: 043927
ePcP	52 01	
eL	53.3	
Aug 26		
eL	07 27	USCGS: 19S, 170E; 0: 071229; h: 100
Aug 27		
eL	00 50	
Aug 27		
eL	15 49	USCGS: Southwestern Alaska; 0: 153332
Aug 28		
eP	13 05 26	e 0542 USCGS: Mariana Islands region; 0: 125248
Aug 30		
eL	05 07	
Aug 30		
e	07 16 12	e 1912 USCGS: 3½S, 130½E; 0: 065103
Aug 31		
eP	07 19 29C	e 2034, e 2416, e 3036, e 4322
1P	31 ^D	USCGS: 6N, 126E; 0: 070535
eSKS	30 14	
eL	51	
Aug 31		
1P	08 03 08	See list of short distance shocks
Aug 31		
eP	18 49 13	See list of short distance shocks

	Time	Additional Readings and Remarks
Sep 02		
eP	02 53 42D	e 5349, e 5405, 1 5528, e 5616,
1pP	58	e 5842, 1 5900, 1 5923, e 030000,
ePP	54 30	e 0030, e 0053, e 0110
ePcP	56 42	USCGS: 52½N, 169W; 0: 024723;
eS	58 32	h: 100
eScP	59 34	
eL	03 01.5	
Sep 02		
eL	14 17	
Sep 03		
e	04 28	USCGS: 11S, 162½E; 0: 040515
Sep 03		
eL	19 50	
Sep 05		
eL	19 28	USCGS: 33½N, 117W; 0: 191956
Sep 09		
ePP	10 38 46	1 3552, e 3950, e 4009, e 4627,
ePPP	40 37	e 4838, e 4930, e 5012, e 5424,
eSKS	45 33	e 5545, e 5805, e 110012
eS	46 04	USCGS: 4S, 153E; 0: 102140
ePPS	47 41	
eSS	52 24	
eL	11 02 20	
Sep 10		
1P	03 32 33C	1 3246, 1 3249, 1 3333, 1 3345,
1PcP	33 03	1 3412, 1 3544, 1 4222, 1 4300,
1PP	35 02	1 5547
1S	41 40	Weak surface waves. Deeper than normal
		USCGS: 35N, 140E; 0: 032120
Sep 10		
eP	15 28 51C	Several shocks! The first P is very weak
1 (P2)	55	
1 (P3)	29 09	1 2934, 1 3052, e 3705, e 3738,
1 (P4)	48	e 3936, e 3956, e 4126, e 4147,
e (PP2)	32 18	e 4244, e 4328, e 4915, e 5030, e 5124, e 5211, e 5310

Time

Additional Readings and Remarks

e (FP3)	15 32 32	USCGS: 14S, 167E; 0: 151557
e (PP4)	33 10	
e (PPP2)	34 10	
e (PPP3)	34	
e (PPP4)	35 10	
e (SKS2)	39 10	
e (SKS3)	23	
e (PS2)	40 36	
e (PPS2)	56	
e (SS2)	45 25	
e (SS3)	46 22	
eL	54 32	
Sep 10		
eP	15 46 40	Deep focus earthquake!
ePP	48 12	e 5451, e 5509
ePcS	50 28	
eS	54 47	
eScS	55 37	
eSS	58 13	
Sep 10		
1P	20 15 42	See list of short distance shocks
Sep 12		
eP	02 27 34	See list of short distance shocks
Sep 14		
1	07 38 17	See list of short distance shocks
Sep 14		
1	08 04 04	See list of short distance shocks
Sep 14		
eL	10 02	e 092414, e 2420, e 2444 USCGS: Halmahera Islands region; 0: 090608; h: 200
Sep 15		
eP	14 27 07	e 2717, e 2752, e 3748, e 3824 USCGS: 23S, 176W; 0: 141430; h: 100



	Time	Additional Readings and Remarks
Sep 16		
eP	01 04 28	e 0505, e 1312, e 1342, e 1940
eS	12 41	USCGS: 4S, 104½W; 0: 005536
eSS	15 45	
eL	21	
Sep 16		
1P	22 05 30C	1 0540, 1 0543, 1 0633, 1 0712,
1pP	55	1 0720, 1 0735, 1 0848, 1 1012,
1sP	06 11	e 1130, e 1208, e 1453
1PP	30	USCGS: 52½N, 178E; 0: 215815;
1PcP	07 47	h: 100
1pPcP	08 17	
1ScS	15 36	
Sep 18		
1P	04 40 06	See list of short distance shocks
Sep 18		
1P	19 47 08D	1 4714, 1 4722, 1 4750, e 5032
1PcP	31	USCGS: 9S, 71½W; 0: 193644;
1 (pP)	48 39	h: 750
Sep 19		
eP	20 43 36D	e 4342, e 4352, e 4825, e 5451,
ePP	47 33	e 5505, e 5645, e 5800,
ePPP	49 16	e 210150, e 0552, e 0718,
eSKS	54 05	e 0823
eS	27	USCGS: 2S, 138½E; 0: 202948
ePS	55 42	
ePPS	56 15	
eSS	21 00 13	
eL	08.5	
Sep 20		
1	00 48 46	USCGS: 4S, 157E; 0: 003405 and 003551
Sep 20		
1P	14 09 29	e 0944, e 1007, e 1249, 1 1256
Sep 21		
e	23 10 36	e 1334
		USCGS: 9S, 67E; 0: 225102

	Time	Additional Readings and Remarks
Sep 22		
eP	08 03 41	e 0348, e 0403, e 0417, e 0455,
ePP	06 48	e 0524, e 0538, e 1420
eS	13 12	Strong Microseisms
eL	28	USCGS: 25S, 114W; 0: 075207
Sep 23		
1P	00 05 07C	1 0512, 1 0523, 1 0540, 1 0647,
1(pP)	06 09	e 0832, e 1524, e 1810, e 1850,
1PP	07 46	e 1935
eSKS	14 48	USCGS: 18S, 117W; 0: 235329;
eS	15 07	h: 450
ePS	15 55	
ePPS	16 05	
Sep 24		
e	01 59 06	See list of short distance shocks
Sep 24		
eP	22 18 22	e 1845, e 1906
eL	25	Strong Microseisms
		USCGS: 64N, 156W; 0: 221328
Sep 27		
eL	03 48.5	USCGS: 20N, 109W; 0: 033655
Sep 27		
eL	03 54	e 5230
		USCGS: 20N, 109W; 0: 034332
Sep 27		
eP	08 36 4.6	e 3654, e 3730, e 3757
epP	38 15	No surface waves
		h about 400?
		USCGS: 18½S, 175E; 0: 082358
Sep 28		
1P	03 42 36	1 4246, 1 4256, 1 4351
1pP	43 03	No surface waves
		h about 100?
		USCGS: 23N, 121E; 0: 032936
Sep 28		
1P	21 49 27	1 4940, 1 5031, 1 5048
1S	51 37	Strong Microseisms
eL	52 18	USCGS: 54½N, 134½W; 0: 214701

	Time	Additional Readings and Remarks
Sep 29		
eP	06 38 35	1 3931, e 4637
1PP	39 05	USCGS: 19N, 107W; 0: 063214
1S	43 56	
ePcS	44 30	
eScS	49 00	
Sep 29		
eP	08 00 23	USCGS: 19N, 107W; 0: 075422
eS	05 10	
Sep 30		
1P	07 42 32C	e 4607, 1 4711
1FP	46 29	USCGS: 28N, 94E; 0: 072854
eSKS	53 05	
eSKS	54 02	
eSS	08 00 50	
eL	23	
Oct 01		
eS	13 10 29	e 1040
eL	10.9	USCGS: Queen Charlotte Islands region; 0: 130614
Oct 01		
eL	14 15.9	e 1534
Oct 02		
eL	12 00	USCGS: 21N, 109W; 0: 114330
Oct 03		
eP	12 44 23	1 4448
eL	49.5	USCGS: 65½N, 128W; 0: 124008
Oct 05		
1P	00 53 12	1 5319, 1 5411, 1 5430, 1 5441,
eL	01 20	1 5504, 1 5523
		USCGS: 8½S, 170W; 0: 004107
Oct 05		
1P	16 18 15D	1 1823, 1 1844, 1 1906, 1 1913,
1pP	41	1 1921, 1 2041, 1 2116, 1 2146,
ePcP	19 51	1 2205, 1 2231
1PcS	23 42	USCGS: 10½N, 85W; 0: 160934;
1S	25 10	h: 100

	Time	Additional Readings and Remarks
eScS	16 28 10	
eSS	30	
eL	29	
Oct 07		
eP	19 59 44	See list of short distance shocks
Oct 08		
1P	03 37 48D	1 3811, 1 4145, 1 4204, 1 4304,
1PP	41 31	1 5000
1PPP	43 33	Strong microseisms
1SKS	48 16	USCGS: 4S, 128E; 0: 032309
Oct 11		
e	08 15 09	USCGS: 63N, 160W; 0: 080925; h: 150
Oct 11		
1P	08 40 23D	1 4034, 1 4043, 1 4121, 1 4140 USCGS: 63N, 160W; 0: 083519; h: 150
Oct 14		
eL	18 38	e 3711, e 3723, e 3733, e 3746 Not too distant
Oct 15		
eL	16 42	USCGS: 10S, 160E; 0: 155953
Oct 16		
eL	22 00	
Oct 17		
eL	03 59.5	USCGS: 39½N, 117W; 0: 0345433
Oct 17		
e	14 25 05	
Oct 17		
eL	21 41.5	e 3720
Oct 19		
eL	04 15	USCGS: 19N, 64W; 0: 034825

	Time	Additional Readings and Remarks
Oct 19 eL	13 55	
Oct. 20 eL	08 13	USCGS: 19N, 64W; 0: 074430
Oct 21 1P 1pP ePP 1S eSS eL	04 25 07D 53 28 50 35 14 40 44 51	1 2525, 1 2607, 1 2626, 1 2634, e 3542, e 3601, e 4138 h about 175 Maybe, two shocks USCGS: 18½S, 174W; 0: 041259; h: 100
Oct 21 eL	09 16	USCGS: 17½N, 106W; 0: 085710
Oct 21 1P ePP eS ePcS eL	09 49 36D 50 35 55 03 55 17 59.2	1 4940, 1 5111, e 5118, 1 5148, e 5638, e 5739, e 5815 USCGS: 17½N, 106W; 0: 094258
Oct 21 eL	14 06	USCGS: Pacific Ocean, off coast of Ecuador; 0: 133355
Oct 23 1P 1pP 1PP 1PcP 1pPcP 1S eSS eL	16 21 10C 29 22 32 57 23 16 27 15 30 28 33	1 2119, 1 2148, 1 2215, 1 2342, 1 2733, e 2805, e 2822, e 2835, e 2850 USCGS: 14½N, 92W; 0: 161324; h: 100
Oct 23 1P 1 (pP)	17 13 16C 33	1 1325, 1 1406, e 1550 USCGS: 14½N, 92W; 0: 170531; h: 100

	Time	Additional Readings and Remarks
Oct 23 eP	17 55 46	1 5727, 1 5828, 1 5937 USCGS: 14½N, 92W; 0: 174757; h: 100
Oct 23 1P	18 07 28D	1 0825, 1 0843 USCGS: 14½N, 92W; 0: 175942; h: 100
Oct 23 eL	21 57	USCGS: 14½N, 92W; 0: 213206; h: 100
Oct 23 eP	23 46 36	1 4747, 1 4848 USCGS: 14½N, 92W; 0: 233850; h: 100
Oct 24 eL	00 02	USCGS: 14½N, 92W; 0: 002328; h: 100
Oct 24 eP eL	00 59 56 01 15	e 010018, e 0156, e 0229 USCGS: 14½N, 92W; 0: 005207; h: 100
Oct 24 eL	02 16	USCGS: 14½N, 92W; 0: 015208; h: 100
Oct 24 eL	06 14	
Oct 24 eL	09 55	USCGS: 14½N, 92W; 0: 092857; h: 100
Oct 25 1P 1pP	07 15 50C 16 21	1 1646, e 2600 Strong microseisms USCGS: 26N, 125½E; 0: 070317; h: 100
Oct 26 eL	16 53	Strong microseisms USCGS: 32S, 178W; 0: 153843
Oct 31 eL	19 50	Strong microseisms USCGS: Gulf of California; 0: 193514

	Time	Additional Readings and Remarks
Oct 31 eL	20 36	Strong microseisms USCGS: 23½N, 108W; 0: 202230
Nov 01 eL	01 53	Strong microseisms USCGS: Guatemala; 0: 012257
Nov 02 eP e(pP),	07 20 27D 58	e 3110 Deeper than normal
Nov 02 1P 1(P2) 1PP 1(PP2) 1PPP 1(PPP2) 1SKS	15 42 19D 43 39 46 27 47 48 48 53 50 10 52 35	e 4251, 1 4329, 1 4423, 1 4641, 1 4821, 1 4836, 1 4912, 1 5243, 1 5333, 1 5411, 1 5516, 1 5725 Several shocks? USCGS: 6S, 129½E; 0: 152749
Nov 04 1	06 53 30	See list of short distance shocks
Nov 04 1P	07 35 25	1 3605 USCGS: 15S, 167E; 0: 072250; h: 200
Nov 04 eL	11 34	
Nov 04 eL	13 31	
Nov 05 eP eS eSS eL	16 43 09D 51 29 55 08 59	1 4317, 1 4420, 1 4451, 1 4521 USCGS: 14½N, 92W; 0: 163520
Nov 05 1P	17 49 11D	1 4919, 1 4927 Records obscured due to change of papers USCGS: 33N, 134½E; 0: 173725

	Time	Additional Readings and Remarks
Nov 06 eL	23 05	USCGS: 7½S, 155½E; 0: 222205
Nov 08 1P ePP eSKS 1S eL	02 31 13D 34 36 41 39 55 55	e 3120, 1 3138, 1 (P) 3149, 1 3156, 1 3205, e 3218, 1 3227, 1 3232, 1 3256, 1(P) 3305, e 3314, 1 3407, e (P) 3502, 1 3523, e 4236, e 4319, e 4358, e 4822, e 4913 May be several shocks. Note the following shock! USCGS: 9½S, 159½E; 0: 021809
Nov 08 eP	02 42 13	USCGS: 9½S, 159½E; 0: 023559
Nov 08 eL	15 56	
Nov 10 eP eL	02 20 37 28.6	e 2219, e 2318, e 2630
Nov 10 1P e(pP) eS	05 13 39D 15 37 23.2	1 1347 Deep focus earthquake
Nov 11 eP e(S) eL	09 34 39 40 11 45	e 3508, e 3615, e 4156
Nov 11 eL	14 24	
Nov 14 eL	02 40	USCGS: 40½N, 121½W; 0: 023550
Nov 14 eL	0 5 05	USCGS: 11S, 161E; 0: 042346

	Time	Additional Readings and Remarks
Nov 14		
1P	06 36 25	1 3631, 1 3640, 1 3648, 1 3652,
eL	39	e 3804
		USCGS: Northeastern California;
		0: 063433
Nov 17		
eP	19 35 19C	1 3527, 1 3539, 1 4132, 1 4209
1S	41 15	Strong microseisms
eL	45	USCGS: 17N, 100½W; 0: 192818
Nov 22		
eP	10 23 20C	1 2327, 1 2333, 1 2342, e 2503,
1P	22D	e 3206, e 3608
ePP	24 05	USCGS: 51N, 176W; 0: 101626;
ePcP	26 12	Possibly deeper than normal
1S	29 02	
ePcS	16	
eSS	31 36	
eScS	33 39	
eL	40	
Nov 23		
1P	10 58 19	See list of short distance shocks
Nov 29		
eP	01 49 52	e 5011, e 5039
		USCGS: 22N, 143E; 0: 013752
Dec 01		
eP	15 02 10	e 0329, e 0344, e 1422, e 1730,
epP	30	e 1752
eS	11 15	Strong microseims
eSS	16 05	USCGS: 14N, 47W; 0: 145100;
eL	20	h: 100
Dec 02		
1P	15 29 41D	1 2944, 1 2958, 1 3012, 1 3036,
1(pP)	31 30	1 3051, 1 3150
1S	38 16	USCGS: 8S, 71½W; 0: 151920;
1SP	39 09	h: 650
1(sS)	41 23	

	Time	Additional Readings and Remarks
- Dec 02		
1P	20 04 53C	1 0520, 1 0548, 1 0951, 1 1600,
1PP	08 31	1 1750, 1 1850
1PPP	10 37	May be several shocks
eSKS	15 15	USCGS: 18S, 167E; 0: 195145
1S	25	
1PPS	17 05	
1SS	20 08	
eL	30	
Dec 03		
eP	08 00 39	1 0045, 1 0050, 1 0056, 1 0157
1(pP)	01 23	Deep focus earthquake
eS	11.5	USCGS: 17½S, 167E; 0: 074733
Dec 04		
eP	16 41 14	e 4122, e 4138, e 4303, e 4319,
epP	44	e 4410, e 5904, e 170130
esP	42 02	USCGS: 5S, 153½E; 0: 162801;
1PP	45 14	h: 100
1pPP	50	
eSKS	51 40	
eSKKS	59	
eS	52 20	
ePS	53 30	
ePPS	54 28	
eL	17 07	
Dec 06		
eP	17 07 14	e 0717, e 0802
		No surface waves!
		USCGS: 18S, 167E; 0: 165406
Dec 07		
1P	20 30 33	See list of short distance shocks
Dec 09		
1P	21 51 22D	1 5124, 1 5126, 1 5143, 1 5205,
1pP	52 20	e 0311, e 0323, e 0351, e 0429,
1sP	38	e 0448, e 0533, e 0559
eSKS	22 01 52	h about 250
eS	02 24	USCGS: 24S, 67½W; 0: 213856;
eSP	46	h: 200

	Time	Additional Readings and Remarks
Dec 10		
eP	03 02 16	1 0219, 1 0236, 1 0239, 1 0253,
1PcP	22	1 0348, 1 0413, e 1150
1pP	03 04	Strong microseisms
1pPcP	12	h about 200
1sP	27	USCGS: 14½S, 76½W; 0: 025040;
1sPcP	34	h: 60

Dec 10		
1P	15 35 49D	1 3611, 1 3624, 1 3732, 1 4630,
1pP	37 05	e 5900, e 140018
1sP	32	USCGS: 28½S, 179W; 0: 132310;
ePP	39 30	h: 300
ePPP	41 32	
1SKS	45 54	
1S	46 05	
1SP	47 05	
1PS	18	
epS	31	
esS	48 10	
1SS	52 16	

Dec 11		
1P	03 45 20C	1 4526, 1 4544, 1 4618
1pP	46 12	USCGS: 24S, 68W; 0: 033256;
		h: 200

Dec 11		
e	07 00 18	e 0217, e 0511

Dec 11		
1P	14 57 03D	1 5728, 1 5817
		Strong microseisms
		USCGS: 8S, 71W; 0: 144641;
		h: 650

Dec 14		
1P	02 04 52C	1 0523, 1 0838, 1 0915, 1 1500,
1PP	08 16	1 1512, 1 1623, 1 1706
1S	14 54	USCGS: 19½S, 176W; 0: 015247;
		h: 200

Dec 14		
eP	09 01 35	1 0231
eL	03.8	USCGS: 40.1N, 120.2W; 0: 085934

	Time	Additional Readings and Remarks
Dec 14 eP eL	09 31 55 34.1	USCGS: 40.1N, 120.2W; 0: 092954
Dec 14 1P 1S	13 26 19D 28 22	1 2635, 1 2732, 1 2831, 1 2837, 1 2902, 1 2911 USCGS: 40.1N, 120.2W; 0: 132421
Dec 14 1P eL	14 22 56C 15 05.8	Interpretation of phases is difficult due to the preceding shock USCGS: 17N, 98W; 0: 141550
Dec 15 1P 1pP	01 49 49C 50 32	1 5018, e 5100, e 5203 USCGS: Bonin Islands region; 0: 013807; h: 150
Dec 15 eL	10 10	USCGS: Northern California; 0: 093432
Dec 16 1P	10 50 26C	See list of short distance shocks
Dec 16 e	22 46 56	e 4702, e 4719 indistinct impulses
Dec 17 1P eL	01 15 10 28	Very weak impulses USCGS: Southern Mexico; 0: 010802
Dec 18 eP	08 12 26	e 1236, e 1252, e 1306, e 1327, e 1445, e 1505 USCGS: 15N, 90W; 0: 080446; h: 200
Dec 19 e	19 45 32	See list of short distance shocks
Dec 21 eL eL	02 41 16 05	



	Time	
Dec 26	13 58 49C	1 5854, 1 5905, 1 5923
1P	14 10	1 140008, 1 0051
eL		USCGS: 17N, 98W; 0: 135143
Dec 28	14 27 50C	1 2755, 1 2823, 1 2925
1P		Strong microseisms
		USCGS: 9S, 72W; 0: 141729;
		h: 750

Short distance shocks

Jan 05	00 19 21.0	Dilatation?
ePnZ	23	Distance 2.3 dg.
eP*Z	28	P impulses very weak
ePgZ	50.1	Strong microseisms
1SnE	52.0	
1S*E!	55.0	
1SgN		
Jan 23	04 54 43	Dilatation?
eP*Z	55 03.9	Distance 1.6 dg.
1S*E!		P impulses very weak
		On the E component after S* the waves continue with uniform, relatively great amplitude for 31 sec. then decrease very rapidly
Jan 23	07 20 07.0	Dilatation! (from NW?)
1PgZ!	09.5	Distance 0.7 dg.
1Pn	17.0	On E component waves continue uniformly of relatively great amplitude for 29 sec. after Sg and then decrease very rapidly
1SgE	21.5	
1SnE		
Jan 27	10 48 48	Distance 5.7 dg.
eP	54	The P impulses are very weak
1	49 08	USCGS: 42N, 125W; 0: 104718
1		

	Time	Additional Readings and Remarks
1S	10 49 55	
1	57	
1	50 04	
Feb 08		
ePgZ	05 36 10.8	Dilatation?
1SgE!	24.2	Distance 0.9 dg. P impulses very weak Very strong microseisms obscure records somewhat. 15 sec. after Sg the amplitude decreases suddenly
Feb 10		
1PZ	07 14 41.6	Dilatation!
1(S)	47	Distance 0.4 dg?
Feb 14		
e E	18 53 31	Weak, indistinct impulses
e E	44	Off coast of Oregon?
1 Z	54 09	
1 Z	20	
Feb 14		
e E	20 17 15	Aftershock?
Feb 14		
e E	20 49 36	Aftershock?
Feb 14		
e E	21 53 44	Aftershock?
e E	54 16	
1 Z	35	
e E	42	
Feb 18		
1SNE	00 14 47.2	Weak. Distance shorter than 1 dg.
1 E	51	Strong microseisms
Mar 16		
1 Z	22 25 44.8	P impulses very weak.
1SN!	47.1	Strong microseisms
1 E	51	Distance less than 1 dg.

	Time	Additional Readings and Remarks
Mar 20		
1PnZ	15 24 06.1	Dilatation!
1 Z	12.9	Distance 7.3 dg.
1 Z	18.7	USCGS: 40½N, 121½W; 0: 152217
1 Z	29.3	
1 Z	36.2	
eSN	25 30	
e N	58	
1 E	26 17	
1L	27	
Mar 26		
e Z	04 27 39	Weak indistinct impulses Foreshock?
Mar 26		
e Z	06 01 18	Weak indistinct impulses
e Z	22	Foreshock?
e Z	29	
Mar 26		
ePZ	06 45 54	Dilatation
e Z	46 02	Distance 6.0 dg.
e E	16	Interpretation difficult
eSN	47 04	USCGS: 45N, 129½W; 0: 064422
e E	10	
Apr 07		
e (P)	05 03 07	Impulses very weak
1 (S)	04 39	Vancouver Island region?
eL	05	
Apr 12		
e E	18 00	Impulses weak and indistinct Foreshock?
Apr 12		
e E	18 46	Impulses weak and indistinct Foreshock?
Apr 13		
e E	21 40 04	Strong microseisms
1 SEN!	22.0	P is very weak
1 E	28.3	29 sec. after S the amplitude decreases suddenly
		Foreshock?

	Time	Additional Readings and Remarks
Apr 14		
1PZ!	11 04 00.3	Dilatation from NW!
1S	08	Azimuth about N10 ⁰ W. Distance 0.6 dg. Felt in Seattle. USCGS: 48N, 122½W; 0: 110348
Apr 16		
eP	21 49 25	Distance 5.5 dg.
eP*	37	Strong microseisms
ePg	52	USCGS: 49N, 129W; 0: 214802
eS	50 30	
1L	54	
Apr 20		
1PgZ	00 53 37.4	Dilatation
1 Z	40.0	Distance 0.5 dg.
1 Z	42.2	21 sec. after Sg the amplitude decreases very suddenly
1SgN		
1 NE	49	
Apr 25		
1PZ	22 39 30	Dilatation
1 Z	36	Distance 5.6 dg.
1P*	42	USCGS: 43½N, 127½W; 0: 223807
1	52	
1	40 13	
1 Z	19	
eS	36	
1	42	
1	51	
1	41 09	
1L	20	
Apr 30		
e(P)Z	12 35 33.7	Dilatation?
1SE	36.4	In Seattle area?
1 E	43.3	
Apr 30		
e(P)N	13 21 08	In the same area
e N	19	
e N	36	

Additional Readings and Remarks



May 16				This and three following shocks probably occurred in the same area as the shocks of Apr 30
e(P)N	05 40	06		
1 N			13.2	
1 N			20.0	

May 16				See the note above
e(P)N	06 53	13.2		
1 N			19.0	
1 N			29.0	

May 16				See the note above
1(P)N	06 54	30.2		
1 N			37.0	

May 16				See the note above
1(P)N	13 43	20.4		
1 N			24	
1 E			27.8	
1 N			32.0	

May 16				Very weak
e E	20 33			

May 17				Distance not greater than 1 dg. Weak, indistinct impulses
e(P)NE	07 35	08		
1(S)E			18.5	
1 N			25	
1 E			27	

May 22				Weak seismogram
e(P)Z	04 23	20		
e			24	

May 23				P in time mark Distance about 1/2 dg.
1Pg	17 52	02		
1 NE			02.7	
1 NE			04.2	
1SgEN!			08.0	
1 E			14.0	

May 23				Aftershock P very weak
ePZ	17 59	48		
1SgEN!			54.0	
1 N			56.3	

	Time	Additional Readings and Remarks
May 25		
1PgZ	23 50 11.7	Dilatation
1SgEN!	17.7	Distance 0.6 dg.
1 N	19.5	Aftershock
Jun 09		
eP	13 09 26	Distance 6.4 dg.
e	34	USCGS: 41N, 125½W; 0: 130746
eP*	43	
ePg	56	
eS	10 41	
eSg	11 20	
Jun 14		
e(P)	15 47 47	Indistinct impulses
e	52	
e	55	
Jun 14		
e(P)	16 44 44	Indistinct impulses
e	49	
e	57	
Jun 14		
e(P)	17 54 55	Indistinct impulses
e	55 11	
e	21	
Jun 15		
1(S)E	21 17 10.0	Strong microseisms
1 E	12.0	Distance not greater than 1 dg.
1 E	16.0	
Jun 19		
1P	18 31 42	Distance 5.4 dg.
1P*	52	USCGS: 44N, 127W; 0: 183015
1	32 39	
1S	46	
1S*	33 03	
Jun 20		
e(P)	05 07 17	Weak
e	27	Aftershock?
e	35	

Additional Readings and Remarks



	Time		Additional Readings and Remarks
Jun 26	17 21 32	e(P)Z	Distance 1.3 dg. East from Seattle? (Chelan County?)
		eSNE	
	22 00	e E	
		e E	
Jun 28	04 35 30	e(P)Z	Aftershock?
		e Z	
		e(S)E	
		e E	
Jul 13	07 49 35.8	1P*Z!	Dilatation! Distance 1.0 dg.
		1PnN	
		1 N	
		1 N	
		1SgN	
		1S*N!	
		1 N	
Jul 13	07 57 09	e(S)N	Aftershock
		e N	
Jul 14	11 04 22.5	1P*Z!	Dilatation! Distance 1.1 dg. In the same area as the shocks of July 13
		1 N	
		1 Z	
		1SgN	
		1S*N!	
		1 N	
Jul 14	12 33 38	1 Z	Aftershock
		1 Z	
		1 Z	
Jul 16	04 56 35.2	e NZ	Aftershock
		1S*N	

	Time	Additional Readings and Remarks
Jul 18		
1PgZ!	01 23 39.6	Dilatation
1	41.5	In Seattle area?
1SgN!	42.2	
1 N	46	
Jul 22		
e Z	19 56 23	Indistinct impulses
e Z	28	
e Z	30	
Jul 22		
e(P)Z	21 51 20.5	Distance 0.4 dg?
e Z	24	
1SgN	25.0	
e N	31	
Jul 29		
ePgZ	18 24 06	In Seattle area?
1SgNEZ!	08.3	
1ZZ!	10.3	
1 N	12.0	
Aug 01		
e N	13 31 14	Indistinct impulses
e N	26	
Aug 01		
e N	14 44 55	In Seattle area?
1SgN	57.5	
e N	45 02	
Aug 04		
1(Sg)NE	02 06 42	In Seattle area?
Aug 10		
e Z	08 25 39	Indistinct impulses
e Z	50	
Aug 13		
e Z	07 57 35	Indistinct impulses
e Z	47	
e Z	58 02	

Time Additional Readings and remarks



Aug 13
e Z
e Z

12 13 12
25

Indistinct impulses

AUG 20
1P
1
1P*
1Pg
1
1S
1
1S*
1L

01 46 31.4
36.0
53.0
47 05.0
21.3
39.0
42.3
53.8
48 05

Compression?
Distance 5.8 dg.
USCGS: 47 1/4N, 113 1/2W; O: 014455
(Western Montana)

Aug 24
1P
1
1
1S
1
1L

17 47 10
17
45
48 19
24
54

Dilatation
Distance 5.9 dg.
USCGS: 42 1/2N, 126W; O: 174534

Aug 25
e
e
1S
1
1L

02 17 16
25
48
18 04
22

P impulses very weak
USCGS: 49 1/2N, 129W; O: 021510

AUG 1 Z
1 N
1 E

08 03 08
10
19

Distance less than 1/2 dg.

Aug 31
eP
e
eS
eL

18 49 13
25
50 11
52

Distance 4.9 dg.
USCGS: 42N, 125W; O: 184743

Sep 10
1(P)N
1SN
1 N

20 15 42.0
44.7
47.0

In Seattle area?

	Time	Additional Readings and Remarks
Sep 12		
ePgZ	02 27 34.0	Distance 0.4 dg.
1P*N	35.0	
1SgE	39.5	
1S*	40.5	
1 E	45.2	
Sep 14		
1 Z	07 38 17.5	Weak indistinct impulses
1 Z	27.0	
e N	40.5	
Sep 14		
1 Z	08 04 04.5	Weak indistinct impulses
1 Z E	10.5	
1 Z	19.0	
Sep 18		
1PZ	04 40 05.7	In Seattle area?
1 N	06.7	
1 N	07.1	
Sep 24		
e E	01 59 06	Few, indistinct impulses Strong microseisms
e E	09	
e E	15	
Oct 07		
eP	19 59 44	Distance 4.5 dg. USCGS: 50N, 129½W; 0: 195810
e	20 00 11	
eS	40	
Nov 04		
1 E	06 53 30.3	Indistinct impulses Distance less than 1 dg.
1 E	33.2	
1 E	38.5	
1 E	41.6	
Nov 23		
1(P)N	10 58 19.5	Distance less than 1 dg.
1(S)N	27.3	
1 N	31.0	

	Time	Additional Readings and Remarks
Dec 07		
1PgNE!	20 30 32.9	Dilatation? (From SE!)
1SgNE!	38.2	Strong microseisms in
1 E	38.8	vertical component.
1 E	42.0	Azimuth S64 ⁰ E.
		Distance 0.4 dg.
Dec 16		
1P	10 50 26	Compression!
1	30	Distance 5.4 dg.
1	35	USCGS: 43½N, 127W; 0: 104901
1S	51 29	
1	41	
1	46	
1	49	
eL	52.1	
Dec 19		
e	19 45 32	Weak, indistinct impulses
e	50	USCGS: 49N, 129W; 0: 194353
eL	46.5	