CLEVELAND

SEISMOLOGICAL OBSERVATORY
JOHN CARROLL UNIVERSITY, CLEVELAND 18, OHIO, U. S. A.

41° 29' 27.90" North, 81° 31' 52.22" West, h = 326 m.

Seismographs: Two Sprengnether long-period horizontal, one Sprengnether vertical.
Two Sprengnether short-period horizontal.

JANUARY, 1957, BULLETIN

Date	Phase	G. M. C. T.	Remarks
2	iP_{ne}	$02^h27^m25^s$	USCGS: 52.5°N, 168°W
	i_n	02 27 37	H = $02^h17^m35^s$ Mag: 6 3/4 (Pas)
2	iP_e	03 58 33	USCGS: 53°N, 168°W
	i_n	03 58 38	H = 03 12 52 Mag: 7 (Pas)
3	iP_{ne}	13 00 30	USCGS: 44°N, 130°E H = $12^h48^m27^s$
	i_{ne}	13 10 02	h = 600 km
			Mag: 7 (Pas)
24	eS_N	15 07 58	USCGS: 25.5°N, 109.5°W
	eL_N	15 14 06	H = $14^h59^m37^s$
24	eL_N	17 14 15	USCGS: 25.5°N, 109.5°W
			H = $16^h59^m50^s$ (Aftershock)
25	iP_{nez}	03 47 09	USCGS: 51.5°N, 177°W
			H = $03^h36^m47^s$
			Mag: 6½ (Pas, Berk)

H. F. Birkenhauer, S.J., Director
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FEBRUARY, 1957, BULLETIN

Date	Phase	G. M. C. T.	Remarks
3	eP_z	$17^h36^m14^s$ d	USCGS: 53.5°N, 159°E
	eP_n	17 36 15	H = $17^h24^m50^s$
	eS_N	17 45 09	Mag: 6½ - 6 3/4 (Pas), 6 1/4 (Berk)
5	iP_{nz}	04 58 09	USCGS: 25.5°N, 45.5°W
	eS_{NE}	05 03 34	H = $04^h51^m20^s$
6	eP_z	20 47 58	USCGS: 50°N, 106°E
			H = $20^h34^m55^s$
9	eP_{ez}	16 44 47	USCGS: 41.5°N, 126°W
	eS	16 50 12	H = $16^h38^m10^s$
			Mag: 6¼ - 6½ (Pas)., 5¼ (Berk)
10	eP_z	05 55 11	USCGS: 35.5°N, 35°W
			H = $05^h47^m59^s$ Mag: 5 3/4 (Pas)
17	iP_{nez}	15 52 40	USCGS: 16°N, 96.5°W
	iS_N	15 57 29	H = $15^h46^m45^s$ h = 60 km
			Mag: 5 3/4 - 6 (Pas)
18	eP_e	14 56 17	USCGS: 25.5°N, 46.5°W
	eN	15 03 52	H = $14^h49^m30^s$
21	iP_{nez}	14 39 53	USCGS: 53°N, 171°W
	eS_{nez}	14 47 43	H = $14^h30^m06^s$ h = 100 km
			Mag: 6 3/4 (Pas)
23	iP_z	20 40 54 d	USCGS: 24°N, 122°E
	iS_n	20 51 59	H = $20^h26^m12^s$
	i_N	20 54 50	Mag: 7 - 7½ (Pas)

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MARCH, 1957, BULLETIN

Date	Phase	G. M. C.T.	Remarks	
2	iP_z	$00^h31^m34^s$	USCGS: 18.5°N, 78°W	
	iS_E	00 35 46	H = $00^h27^m33^s$	
3	eS_{NE}	03 31 37	USCGS: 8.5°N, 103°W	
			H = $03^h18^m23^s$ Mag: 5 3/4 (Pas)	
8	eP_e	12 25 58	USCGS: 39.5°N, 23°E	H = $12^h14^m12^s$
8	eP_e	23 46 50	USCGS: 39.5°N 23°E	H = $23^h35^m08^s$
9	iP_z	14 29 58	USCGS: 51°N, 175°W	H = $14^h22^m27^s$
	i_N	14 32 52	Mag: 8 - 8.5 (Pas., Berk)	
9	iP_z	20 31 56	USCGS: 52°N, 169.5°W	H = $20^h22^m02^s$
10	iP_z	03 16 20	USCGS: 52°N, 176°W	H = $03^h06^m02^s$
			Mag: 6 1/2 - 6 3/4 (Pas., Berk.)	
10	iP_z	07 33 28	USCGS: 52°N, 176°W	H = $07^h23^m18^s$
10	iP_z	11 30 44	USCGS: 52°N, 171°W	H = $11^h19^m57^s$
10	iP_z	15 36 30	USCGS: 52°N, 173°W	
	iS_n	15 44 39	H = $15^h26^m23^s$	
11	iP_{nez}	03 23 07	USCGS: 51°N, 177°W	
	iS_n	03 31 32	H = $03^h12^m41^s$	
11	iP_{nez}	07 17 25	USCGS: 51°N, 177°W	H = $07^h08^m00^s$
11	iP_{nez}	10 08 34	USCGS: 53°N, 164.5°W	
	iS_N	10 16 26	H = $09^h58^m42^s$	
11	iP_{nez}	15 05 49	Epicenter: 51.5°N, 178°W	
	iS_E	15 14 13	H = $14^h55^m19^s$	
12	iP_{nez}	01 12 50	USCGS: 52°N, 174.5°W	H = $01^h02^m33^s$
12	iP_{nez}	07 38 58	Epicenter: 51.5°N, 173.5°W	
			H = $07^h28^m40^s$	
12	iP_{nez}	07 49 45	USCGS: 52°N, 178°W	H = $07^h39^m17^s$
12	iP_{nez}	08 13 41	USCGS: 51.5°N, 178°W	H = $08^h03^m13^s$
12	iP_{nez}	11 55 15	USCGS: 51°N, 177°W	
	iS_E	12 03 51	H = $11^h44^m50^s$	

12	iP_{nez}	$12^h55^m57^s$	USCGS: 53°N, 168.5°W	$H = 12^h46^m12^s$
12	iP_{nez}	17 10 38	Epicenter: 51.5°N, 175°W	$H = 17^h00^m21^s$
12	iP_{nz}	21 30 51	Epicenter: 2.5°S, 80°W	$H = 21^h22^m45^s$
12	iP_{nez}	23 55 34	Epicenter: 52°N, 174°W	$H = 23^h45^m25^s$
13	iP_{nez}	12 58 21	Epicenter: 52°N, 171.5°W $H = 02^h48^m20^s$	
13	iP_{nez}	03 43 13	USCGS: 52°N, 175°W	$H = 03^h32^m58^s$
13	iP_{nez} iS_n	15 52 35 16 01 03	USCGS: 51.5°N, 179°W	$H = 15^h42^s05^s$
13	iP_z	20 08 53	USCGS: 54°N, 166°W;	$H = 19^h59^m23^s$
14	iP_z	00 47 02	USCGS: 51°N, 178°W	$H = 00^h35^m38^s$
14	iP_{nez} iS_{NE}	14 58 09 15 06 33	USCGS: 51.5°N, 177°W Mag: $7\frac{1}{2}$ (Pas) - $7\frac{1}{4}$ - $7\frac{1}{2}$ (Berk)	$H = 14^h47^m45^s$
14	iP_z	16 01 27	USCGS: 51.5°N, 177.5°W	$H = 15^h51^m00^s$
14	eP_{nez}	17 16 51	USCGS: 51°N, 178°W	$H = 17^h06^m21^s$
15	iP_{nez} iS_N	03 01 49 03 09 34	USCGS: 53°N, 167°W	H = 02 52 08
15	eP_{ez}	04 23 15	USCGS: 51°N, 176°W	H = 04 12 56
15	eP_e	05 18 19		
16	iP_{nez} iS_E	02 44 40 02 52 54	USCGS: 52°N, 179°W H = 02 34 12	
17	iP_z iS_N	08 04 33 08 12 58	51°N, 179°W H = 07 53 51	
17	iP_z	16 26 50	USCGS: 52.5°N, 166°W	H = 16 17 13
17	iP_z iS_E	22 54 14 23 01 50	USCGS: 54°N, 166°W Mag: $6\frac{1}{2}$	H = 22 44 44
18	iP_z	02 35 24	USCGS: 52.5°N, 171°W	H = 02 25 26
19	iP_z iS_N	13 01 08 13 09 30	USCGS: 51.5°N, 175°W Mag: 6-3/4 (Pas)	H = 12 50 51
22	iP_{enz} eS_{NE}	14 30 29 14 38 05	USCGS: 54°N, 166°W Mag: 7 (Pas, Berk)	H = 14 21 06

23	eP'_z	05 31 45	USCGS: 5.5°S, 131°E	H = $05^h12^m31^s$
	$eSKP_N$	05 35 07	h = 100 km Mag: 7	
24	eP_z	08 29 14	USCGS: 51°N, 130°W	H = 11 06 10
24	i_Z	11 46 49		
29	iP_{nez}	05 20 07	USCGS: 53.5° N, 167° W	
	iS_{NE}	05 27 47	H = 05 10 28	
30	iP_z	09 27 15	USCGS: 52°N, 175°W	H = 09 17 00

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41° 29′ 27.90″ North, 81° 31′ 52.22″ West, h = 326 m.

Seismographs: Two Sprengnether long-period horizontal, one Benioff vertical.
Two Sprengnether short-period horizontal.

APRIL, 1957, BULLETIN

Date	Phase	Component	G. M. C. T.	REMARKS
1	iP	z	$11^h\ 45^m\ 39^s$	USCGS: 51°N, 173°W
	eS	E	11 53 24	H = $11^h\ 35^m\ 30^s$
2	eP	nz	00 49 51	USCGS: 51°N, 173°W
	eS	N	00 57 22	H = $00^h\ 39^m\ 42^s$
2	iP	nez	21 38 04	USCGS: 51°N, 173°W H = $21^h\ 27^m\ 54^s$
4	iP	nez	00 21 33	USCGS: 58°N, 155.5°W H = $00^h\ 13^m\ 08^s$
5	e	z	16 18 19	USCGS: 125°N, 88°E H = $16^h\ 12^m\ 20^s$ h = 100 km
5	e	N	21 15 02	
8	iP	nz	20 24 46	USCGS: 8.5°N, 83°W
	eS	N	20 30 05	H = $20^h\ 18^m\ 09^s$
10	iP	nez	05 18 15	USCGS: 15.5°N, 98°W
	eS	N	05 23 05	H = $05^h\ 12^m\ 08^s$
10	iP	nz	09 19 44	USCGS: 51°N, 177°W H = $09^h\ 09^m\ 18^s$
10	iP	z	11 38 39	USCGS: 56°N, 154°W
	iS	N	11 45 32	H = $11^h\ 29^m\ 58^s$
13	eP	z	03 50 44	USCGS: 48.5°N, 128°W
	eS	N	03 56 30	H = $03^h\ 44^m\ 00^s$
14	eP	ez	19 31 53	USCGS: 15.5°S, 173°W
	ePP	z	19 36 01	H = $19^h\ 17^m\ 57^s$
	eSKS	N	19 42 33	
	iSKKS	N	19 43 34	
15	iP	nez	10 49 07	USCGS: 51.5°N, 179°W H = $10^h\ 38^m\ 37^s$

Date	Phase	Component	G. M. C. T.	REMARKS
16	iPKP	nez	$04^h\ 22^m\ 32^s$	USCGS: 4.5°S 107.5°E
	iPKS	N	04 28 26	H = $04^h\ 04^m\ 04^s$
17	iP	nez	09 37 51	USCGS: 52.5°N, 169°W
	eS	e	09 46 16	H = $09^h\ 27^m\ 54^s$
17	eP	nez	18 14 23	USCGS: 14.5°N, 92°W H = $18^h\ 09^m\ 26^s$
19	iP	nez	15 54 43	USCGS: 51.5°N, 168.5°W H = $15^h\ 44^m\ 53^s$
19	iP	nez	22 29 06	USCGS: 52°N, 166.5°W
	eS	E	22 37 54	H = $22^h\ 19^m\ 26^s$
21	eP	z	21 19 25	USCGS: 7°N, 72°W
	iP	nz	21 19 31	H = $21^h\ 12^m\ 56^s$
	eS	E	21 25 05	
23	eS	ne	09 27 15	USCGS: 34.5°N, 86 3/4°W H = $09^h\ 23^m\ 39^s$
24	iP	nez	19 22 15	USCGS: 36°N, 28.5°E
	iS	E	19 32 13	H = $19^h\ 10^m\ 05^s$
25	iP	nez	02 37 44	USCGS: 36.5°N, 29°E
	iS	NE	02 47 45	H = $02^h\ 25^m\ 36^s$
25	iP	nez	07 25 25	USCGS: 52°N, 173.5°W
	eS	E	07 33 36	H = $07^h\ 15^m\ 15^s$

MAY, 1957, BULLETIN

Date	Phase	Component	G. M. C. T.	REMARKS
2	eP	nz	$04^h 01^m 56^s$ 04 07 03	USCGS: 72^oN 67.5^oW H = 03^h 55^m 34^s
2	eP	z	11 39 01	USCGS: 52.5^oN 167^oW H = 11^h 29^m 13^s
2	iP	ez	11 48 42	USCGS: 52.5^o N 169^oW H = 11^h 38^m 52^s
2	iP'	z	21 54 48	USCGS: $7\frac{1}{2}^oS$ 120^oE H = 21^h 36^m 25^s h = 600 km.
12	iP	z	11 48 50	USCGS: $8\frac{1}{2}^oS$ $107\frac{1}{2}^oE$ H = 11^h 29^m 07^s
13	ePg	n	14 27 19	USCGS: Western North Carolina felt
15	eP	n	02 16 47	USCGS: $17\frac{1}{2}^oN$ $93\frac{1}{2}^oW$ H = 02^h 11^m 05^s h = 100 km.
18	eP	ez	05 34 04	USCGS: 51^oN 171^oW H = 05^h 24^m 01^s
19	eL	E	21 10 44	USCGS: 12^oN 87^oW H = 21^h 00^m 36^s h = 100 km
20	eL	E	02 08 30	USCGS: 51^oN 180^oW H = 01^h 50^m 54^s
21	iSKS	ENn	01 36 23	USCGS: $21\frac{1}{2}^oN$ 144^oE H = 01^h 11^m 58^s h = 100 km.

Date	Phase	Component	G. M. C. T.	Remarks
22	iP	ez	$13^h 40^m 11^s$	USCGS: 50°N 177° W
	ePPS	EN	13 49 42	H = $13^h 29^m 44^s$
24	iP	nz	02 45 03	USCGS: 3°N 76½°W
	iS	n	02 50 49	H = $02^h 37^m 37^s$
24	eP	z	03 46 13	USCGS: 53°N 167½°W
				H = $03^h 36^m 33^s$
26	eP	z	06 45 32	USCGS: 41° N 31°E
	iS	E	06 55 28	H = $06^h 33^m 31^s$
31	iP	n	02 26 51	USCGS: 27½°S 63°W
	iS	n	02 35 19	H = $02^h 16^m 31^s$
				h = 600 km.

CLEVELAND

SEISMOLOGICAL OBSERVATORY
JOHN CARROLL UNIVERSITY, CLEVELAND 18, OHIO, U.S.A.

41° 29′ 27.90″ North, 81° 31′ 52.22″ West, h = 326 m.

Seismographs: Two Sprengnether long-period horizontal, one Benioff vertical.
Two Sprengnether short-period horizontal.

June, 1957, BULLETIN

Date	Phase	G. M. C. T.	Remarks
5	ePn	07:22:56	USCGS: 52.5°N 35°W H = 07-16-17*
	ePPPn	07:24:11	Δ = 32°
	eSn	07:28:17	
10	iPPz	01:23:00	USCGS: 9°S 117°E H = 00-59-54*
	iSKKSz	01:29:23	Δ = 142° Mag. 6 3/4
11	iPz	00:04:16	USCGS: 52°N 176°W H = 23-53-57*
	ePPe	00:07:05	Δ = 62°
11	iPz	00:09:31	USCGS: 52°N 176°W H = 23-59-09*
			Δ = 62°
12	iPz	08:41:27	USCGS: 41.5°N 142.5°E H=08-28-34*
			Δ = 88°
13	iPe	10:50:55	USCGS: 51.5°N 175°W H =10-40-38*
	iSe	10:59:11	Δ = 62° Mag. 7
14	iPe	06:34:40	USCGS: 52°N 175.5°W H =06-24-20*
	iSKSe	06:44:25	Δ = 62° Mag. 6¼
15	iPKPe	01:03:58	USCGS: 34°S 56°E H = 00-44-15*
			Δ = 148° Mag. 6 - 6¼
22	iPn	06:24:56	USCGS: 16°N 94°W H = 06-19-06*
	iSn	06:29:33	Δ = 27.5° Mag. 6½
22	ePKPz	00:09:35	USCGS: 1.5°S 137°E H= 23-50-23 *
	ePPz	00:11:30	Δ = 127° Mag. 7¼
23	iPz	03:34:28	USCGS: 58.5°N 137°W H=03-27-02*
			Δ = 38.5° Mag. 5½ - 5 3/4
23	eS_4e	06:36:50	USCGS: East Central Tennessee
			Δ = 650 km H=06-34-18*
27	iPz	00:21:48	USCGS: 56.5°N 116°W H =00-09-28*
	iSn	00:32:02	Δ = 82° Mag.7½

CLEVELAND

Dr. Jeffreys Room.

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41° 29′ 27.90″ North, 81° 31′ 52.22″ West, h = 326 m.

Seismographs: Two Sprengnether long-period horizontal, one Benioff vertical.
Two Sprengnether short-period horizontal.

July, 1957, BULLETIN

Date	Phase	G. M. C. T.	Remarks
2	ePz	00: 55: 33.5 c	USCGS: 36N 53E H= 00: 42:23*
	eSE	01: 06: 06	Δ = 93 Mag. 7¼ - 7½
3	iPz	12:35:14 d	USCGS: 50½N 179W H= 12:24:37*
	eSn	12:43:53	Δ = 63.5 Mag. 6-6¼ Pas. 5 3/4Berk
8	ePn	15:36:17	USCGS: 14½N 91W H=15:30:33*
	eSn	15:40:50	Δ = 28.5 Mag. 6 L = 150 km.
9	iP'z	10:17:43 c	USCGS: 6S 104E H= 09:58:09*
	eE	10:21:43	Δ = 145 h = 60 km
10	iPz	05:09:18 c	USCGS: 8N 82½W H = 09:04:08*
			Δ = 34 Mag. 6½-6 3/4Pas 6 3/4-7Ber.
14	ePKPz	06:42:12 c	USCGS: 27S 178W H = 06:23:52*
	ePPE	06:42:58	Δ = 111 Mag. 7-7¼ h = 150 km
	eSKSE	06:48:36	
	iN	06:50:28	
14	eE	08:29:36.5	USCGS: 30S 177W H= 08:10:45*
			Δ = 43 mag. 6 3/4
21	iPz	06:10:02.5 c	USCGS: 14½N 92W H=06:04:11*
	eE	06:15:15.5	Δ = 28.5 Mag. 5 3/4-6 Berk h=100km
23	iPz	00:55:34.5 c	USCGS: 52N 177W H=00:45:12*
	eSE	01:03:57.5	Δ = 61.5 Mag 6¼ - 6½
24	iPn	02:08:54.5	USCGS: 30S 70½W H=01:57:25*
	en	02:17:45	Δ = 72.25 Mag. 6½
25	iPz	07:52:49.6 d	USCGS: 51N 177W H= 07:42:25*
	eSE	08:01:12.6	Δ = 62.5 Mag. 6¼
28	iPz	08:46:05 c	USCGS: 17N 99W H= 08:40:04*
			Δ = 29 Mag. 7½

Date	Phase	G. M. C. T.	Remarks
28	iPe	13:40:18.5	USCGS: 17½N 99W H = 13:34:20* Δ = 28
29	iPz	17:25:59c	USCGS: 23½S 71½W H= 17:15:14*
	iSn	17:34:41	Δ = 65.7 Mag. 7 - 7¼

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41° 29′ 27.90″ North, 81° 31′ 52.22″ West, h = 326 m.

Seismographs: Two Sprengnether long-period horizontal, one Benioff vertical
Two Sprengnether short-period horizontal.

August, 1957, BULLETIN

Date	Phase	G. M. C. T.	Remarks
4	iPz	06:12:39 c	USCGS: 17N 100W H= 06:06:36*
	iSE	06:17:27	Δ = 29 Mag. 6.25
4	iPz	14:22:19 c	USCGS: 17N 99½W H= 14:16:18*
			Δ = 28.5 Mag. 6.25
16	iPn	23:39:05.5	USCGS: 10½N 104W H= 23:31:55*
			Δ = 37 Mag. 6.5-6.75
18	iPz	21:54:17.5 c	USCGS: 50N 157E H= 21:42:30*
	iSE	22:03:55	Δ = 74.5 mag. 6.5
18	ePPz	21:17:45 c	USCGS: 16½N 99W H=21:10:42*
			Δ = 30
26	iPz	11:39:15.4 c	USCGS: 19S 63W H= 11:28:50*
	eSn	11:47:30.4	Δ = 63 Mag. 6.25 - 6.5
26	ePz	14:06: 46.5 c	USCGS: 2S 81W H= 13:58:48*
	iSE	74:13:14.3	Δ = 43.5 Mag. 6

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41° 29′ 27.90″ North, 81° 31′ 52.22″ West, h = 326 m.
Seismographs: Two Sprengnether long-period horizontal, one Benioff vertical.
Two Sprengnether short-period horizontal.

September, 1957, BULLETIN

Date	Phase	G. M. C. T.	Remarks
7	iPz	07:00:21	USCGS: 50°N 156°E H = 06-48-36* Δ = 76°
7	iPz	10:17:14	USCGS: 51.5°N 178.5°W H=10-06-47* Δ = 62°
12	iPn	00:33:26	USCGS: 17.5°N 85°W H=00-28-02*
	iSn	00:37:49	Δ =25°
24	ePKPz	08:40:07	USCGS: 5.5°N 127.5°E H=08-21-05*
	ePPn	08:42:08	Δ = 125° Mag. 7 3/4
25	iPe	05:57:52	USCGS: 34°N 38.5°W H=05-50-56*
	iSn	06:03:24	Δ = 35° Mag. 6½ - 6 3/4
28	iPPz	14:37:59	USCGS: 20.5°S 178°W H=14-20-00* Δ = 107° Mag. 7½ h = 650 km

Date	Phase	G. M. C. T.	Remarks
25	iP_{nz}	$10^h15^m18^s$	Epicenter USCGS 50.5°N, 156.5°E
	eS_N	10 24 45	H = $10^h03^m32^s$ - Kamchatka
	i_N	10 25 15	Mag: 6 3/4 (Pas), 6 1/2 (Berk)
27	e_N	22 47 51	Epicenter USCGS 56°N 161°E
	e_N	22 52 27	H = $22^h32^m25^s$ - Kamchatka
	i_N	22 53 19	Mag: 6 1/2 - 6 3/4 (Pas)
30	eL_E	02 21 12	Epicenter USCGS 53°N 167°W - H = $02^h13^m08^s$ Fox Islands
31	iP_{nez}	10 14 48	Epicenter USCGS 6.5°N 83°W
	e_N	10 19 32	H = $10^h07^m54^s$ - Coast of Panama
	iS_E	10 20 16	Mag: $6\frac{1}{2}$-6 3/2 (Pas) - 6 3/4 (Berk)
31	e_E	16 40 52	Epicenter USCGS 1.5°N 86°W H = $16^h24^m17^s$ Galapagos Islands

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Date	Phase	G. M. C. T.	Remarks
2	iP_n	$07^h26^m48^s$	USCGS: 15°N 93.5°W
	eS_E	07 33 08	H = $07^h20^m58^s$ h = 100 km
10	e_E	03 06 23	USCGS: 7°S 155.5°E H = $02^h36^m21^s$ Solomon Islands
12	eP_n	00 08 02	USCGS: 19°N 81.5°W H = $00^h03^m02^s$ Caymon Islands
13	e_E	17 52 20	USCGS: 33°S 179°W H = $17^h22^m41^s$ Kermadec Islands
15	e_E	16 51 21	USCGS: 51.5°N 158°E H = $16^h30^m29^s$ East coast of Kamchatka
17	e_N	06 59 38	Epicenter: Baja, California H = $06^h43^m00^s$ Mag: 5 (Pas)
20	eS_E	12 57 24	USCGS: 54° N 165°W H = $12^h40^m23^s$ Mag: $6\frac{1}{4}$ - $6\frac{1}{2}$ (Berk)
24	eP_E	20 08 54	Record Weak
	eS_E	20 15 02	
29	iP_{nz}	22 30 02	USCGS: 21°S 66°W H = $22^h19^m38^s$ Mag: 7 3/4 - 8 (Pas); $7\frac{1}{2}$ (Berk)

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Date	Phase	G. M. C. T.	Remarks
4	iP_z	03 51 08	USCGS: 45.5°N 99.5°E H = $03^h37^m45^s$
	ePR_{1z}	03 54 55	Outer Mongolia
	$iSKKS_E$	04 02 15	Mag: 7.9 (Pas); 7 3/4-8 (Berk)
	iPS_N	04 03 58	
	e_N	04 06 02	
	iSR_{1N}	04 09 03	
7	e_E	22 31 18	Surface Waves
9	iP_{nz}	22 14 59	Epicenter: 65.5°N 133°W
	eL_E	22 23 46	H = $22^h07^m43^s$
10	i_z	14 54 47	
	e_N	15 05 53	
13	iP_N	01 38 44	USCGS: 7°N 76°W H = $01^h31^m57^s$
	iS_E	01 44 14	h = 100 km Mag: 6 3/4 (Pas)
13	iP_z	01 58 16	USCGS: 34.5°N 48°E H = $01^h44^m59^s$
	iS_N	02 08 40	Iran, Major Damage: Mag: 7 ¼ (Pas)
13	e_N	22 38 55	Surface Waves
16	iP_{nez}	17 34 20	USCGS: 50°N 127°W
	iS_{NE}	17 39 35	H = $17^h27^m47^s$
17	eP_{ne}	05 21 36	USCGS: 43.5°N 162°E H = $05^h10^m11^s$
	eS_{LE}	05 30 52	Mag: 6 3/4 (Pas)
17	iP'_{ez}	14 08 50	USCGS: 12°S 167°E
	i_z	14 10 19	H = $13^h50^m05^s$
	e_E	14 13 42	Mag: 7 3/4 (Pas)
	e_e	14 16 27	
	e_E	14 23 21	
25	iP_z	16 32 58	USCGS: 10.5°N 62.5°W H = $16^h26^m01^s$
31	eS_N	10 34 13	USCGS: 58°N 32°W H = $10^h21^m35^s$

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