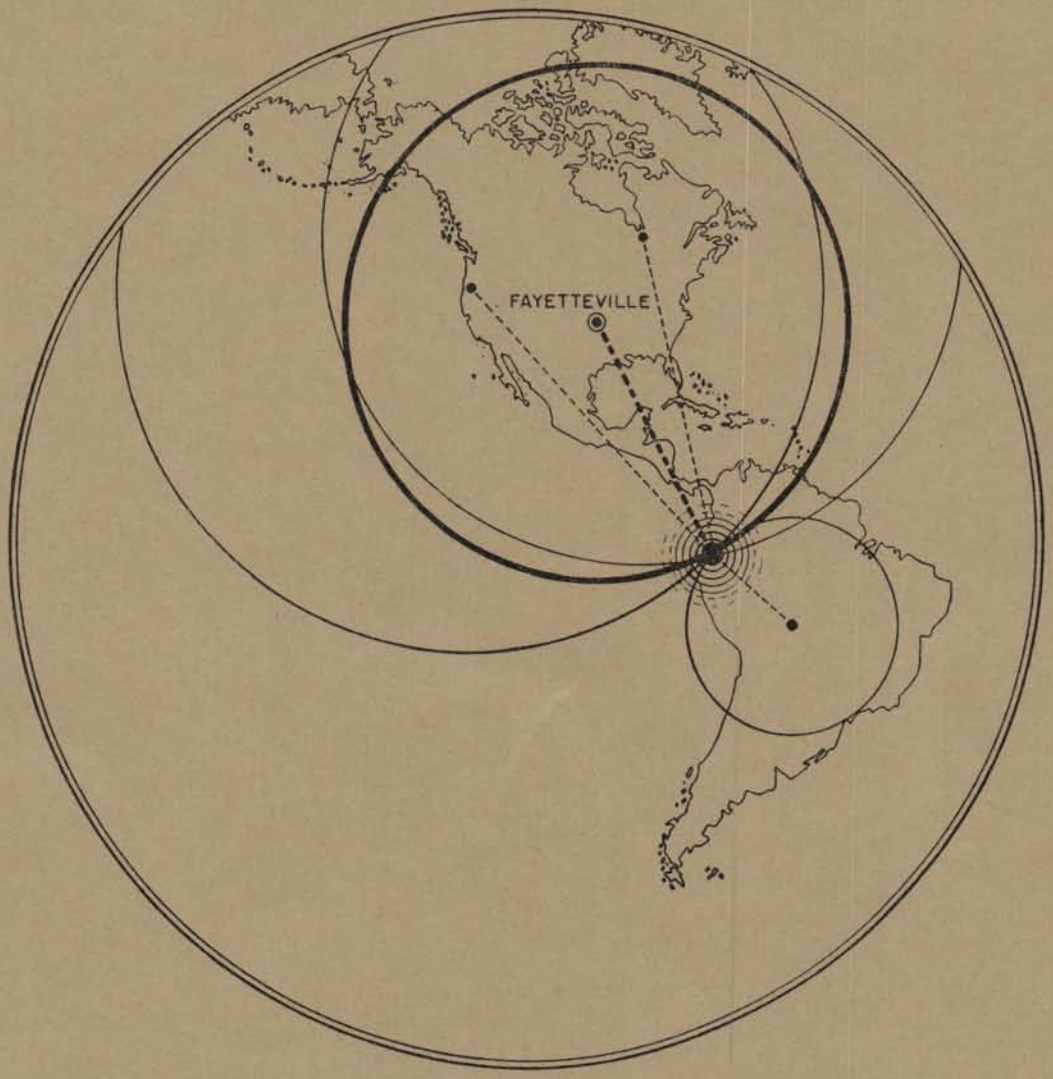
UNIVERSITY OF ARKANSAS

SEISMOLOGICAL BULLETIN

Volume XVI **Number 1**



The University Of Arkansas Seismograph Station

Operated by the University's Department of Geology

in conjunction with the

United States Coast Guard and Geodetic Survey

Earthquakes for the First Quarter of 1967

James E. Edson, Jr.

FAYETTEVILLE SEISMOGRAPH STATION

Volume XVI, Number 1, June 1969
Data for January, February, March 1967

Instruments

Vertical component - Benioff moving coil type, short period electro-magnetic-galvanometric, Mass = 100 lbs.

Seismometer-Benioff moving coil period = 1.1 second
Galvanometer-Geotechnical Corp. period = 0.2 second
Damping ration - about 15:1 (near critical)
Recording drum speed = 60 mm per minute

Horizontal component - Wilson - Wilson-Lamison hinges type: E-W
N-S electromagnetic-galvanometric

Seismograph period - 6.0 seconds (N-S)
6.0 seconds (E-W)
Galvanometer-General Electric period - 4.1 seconds (N-S)
3.8 seconds (E-W)

Recording drum speed - 30 mm. per minute

Clock - IBM, electrically wound, invar pendulum type
accuracy limits generally within one tenth second

Radio - WWV Time Signal impressed manually by telegraph key on 5th, 10th, and 15th second. Time singals received by a Hallicrafter receiver, S-40B.

Vertical-Ground motion trace up (compression)
reading from left to right
N-S - Ground motion trace up - North
E-W - Ground motion trace up - East

(Additional information regarding the station is given on the back cover.)

Information in Remarks column is usually from U. S. Coast and Geodetic Survey epicenter cards. "C" following the trace amplitude indicates a compressional motion of the wave; "D" indicates dilation.

Bulletin compiled by James E. Edson, Jr.
Observer

DATE	PHASE	Time G.M.T. h	m	s	Period Sec. Z	E	N	Trace Amp. (mms) Z	E	N	1
January											
1	e(L)E	05	00	59.7		16.0			2.0		
1	e(S)EN	07	29	43.3		10.0	07.0		6.0	13.0	
1	e(L)EN	07	48	07.2		20.0	22.0		2.0	4.5	
1	e(L)EN	22	50	41.6		16.0	12.0		3.0	3.0	
2	eZ	03	33	35.1	0.5			0.6			
2	iPZ	07	03	53.2	1.0			1.5			
2	C&GS 06-53-17.5, 25.2 S, 71.0 W, h = 38R km, near coast of northern Chile, Mag. 5.0 (CGS), (P-H) 7110 km or 64°.										
2	e(L)E	20	53	39.2		18.0			2.0		
3	e(L)EN	06	26	38.4		18.0	17.0		5.5	4.0	
3	eZ	17	16	17.5	1.0			0.7			
3	iPZ	17	28	20.0	0.8			0.7			
3	e(P)Z	20	58	54.8	0.9			0.6			
	e(S)Z	21	00	33.8	0.9			1.3			
3	e(L)E	22	19	07.7		18.0			1.5		
4	iPZ	06	11	33.6	1.0			1.3			
4	C&GS 05-58-54.1, 38.6 N, 22.1 E, h = 7 km, Greece, 8 persons injured moderate property damage in Patras Region, Mag. 5.2 (CGS), (P-H) 9555 km or 86°.										
4	eZ	16	45	31.2	0.8			0.9			
4	iPZ	20	23	09.8	0.6			1.8			
	e(S)Z	20	25	22.8	0.9			2.0			
4	C&GS 20-15-55.8, 10.7 N, 62.5 W, h = 74 km, near coast of Venezuela, felt on Trinidad, Mag. 5.5 (CGS), (P-H) 4220 km or 38°.										

DATE	PHASE	Time G.M.T. h	m	s	Period Z	E	Sec. N	Trace Amp. (mms) Z	E	N	2
January											
5	iPZE	00	27	59.1	1.8	1.0		4.5	0.8		
	e(PP)ZEN	00	31	47.5	2.0	5.6	6.0	2.8	2.5	4.5	
	e(S)EN	00	38	45.5		5.0	6.0		3.0	5.5	
	e(SS)EN	00	45	07.5		11.0	9.0		6.0	8.0	
	eZ	00	55	31.4	1.0			1.3			
	e(L)ZEN	01	02	55.4	19.0	16.0	18.0	2.0	13.0	75.0	
5	C&GS 00-14-40.4, 48.1 N, 102.8 E, h = 33R km, Mongolia, felt Ulan Bator, Mongolia and Irkutsk, USSR, Mag. 6.4 (CGS), 7.25 (PAS), 7.4-7.6 (BRK), 7.25-7.50 (CGS surface wave), (P-H) 10,555 km or 95°.										
5	eZ	02	14	38.3	0.5			1.0			
6	iPZ	00	16	42.2	0.9			1.7			
6	C&GS 00-04-02.7, 41.8 N, 143.3 E, h = 35 km, Hokkaido, Japan region, Mag. 5.5 (CGS), (P-H) 9555 km or 86°.										
7	eZ	00	47	19.8	1.0			0.8			
7	e(L)E	17	37	39.3		18.0			2.5		
7	eZ	17	47	55.3	1.0			1.1			
7	iPZ	19	28	34.1	0.8			1.1			
	e(S)ZE	19	28	46.1	1.0	2.2		4.0	0.8		
7	C&GS 19-24-15.3, 17.4 N, 98.8 W, h = 68R km, Guerrero, Mexico, Mag. 4.9 (CGS), (P-H) 2110 km or 19°.										
8	e(P)Z	01	27	08.7	0.9			1.5			
8	e(P)Z	02	55	50.6	0.9			0.9			
	e(S)Z	02	56	20.6	0.9			1.0			
8	iPZ	05	13	45.4	0.8			4.0			
	iSZ	05	17	42.9	0.9			1.5			
	eLZ	05	21	01.4	1.0			1.0			

DATE	PHASE	Time G.M.T. h	m	s	Period Z	E	Sec. N	Trace Amp. (mms) Z	E	N
January										
8	C&GS 05-02-52.1, 56.0 N, 162.9 E, h = 33R km, near east coast of Kamchatka, Mag. 4.9 (CGS), (P-H) 7445 km or 67°.									
8	i(P)Z	06	54	25.2	0.9			1.5		
8	C&GS 06-43-32.3, 56.1 N, 162.8 E, h = 44 km, near east coast of Kamchatka, Mag. 4.9 (CGS), (P-H) 7335 km or 66°.									
8	i(P)Z	08	42	55.1	1.0			3.0		
8	C&GS 08-31-59.7, 56.2 N, 162.7 E, h = 24 km, near east coast of Kamchatka, Mag. 4.9 (CGS), (P-H) 7445 km or 67°.									
9	eZ	13	32	38.2	0.7			1.2		
	iZ	13	35	31.2	0.6			0.8		
9	e(P)Z	18	15	08.8	1.0			1.0		
9	C&GS 18-08-23.9, 5.1 N, 77.6 W, h = 40 km, near west coast of Columbia, felt at Cali and Manizales, Mag. 5.2 (CGS), (P-H) 3780 km or 34°.									
10	eZ	17	23	13.3	0.7			1.0		
	eZ	17	26	27.3	0.8			1.3		
10	eZ	20	43	47.1	0.5			1.0		
11	e(P)Z	04	13	13.5	0.6			0.8		
	eZ	06	16	36.5	0.5			1.0		
11	iPZ	14	16	06.5	1.0			1.5		
11	iPZ	16	14	34.8	0.9			4.5		
	e(PP)Z	16	15	50.8	0.9			1.0		
	e(S)Z	16	18	07.8	0.8			0.8		
	C&GS 16-08-06.1, 5.3 N, 82.5 W, h = 22 km, south of Panama, Mag. 5.3 (CGS), 5.4-5.5 (BRK), (P-H) 3665 km or 33°.									
11	eZ	20	16	21.2	0.5			1.0		
11	eZ	20	29	42.2	0.5			1.2		

DATE	PHASE	Time G.M.T. h	m	s	Period Z	E	Sec. N	Trace Z	Amp. (mms) E	N	4
January											
12	eZ	15	09	58.6	0.5			1.0			
13	eEN	14	40	56.6		20.0	21.0		2.0	2.0	
13	i(P)Z	12	15	12.7	0.5			1.0			
13	iPZ	13	00	51.1	0.7			2.0			
13	eZ	14	26	20.0	0.8			0.8			
13	eZ	16	02	90.9	0.7			0.8			
13	eZ	18	03	42.8	0.5			1.0			
13	eZ	19	10	14.7	0.9			1.0			
15	i(P)Z	01	46	27.8	0.6			0.8			
15	eZ	04	22	14.5	0.5			1.0			
15	eZ	05	27	49.4	0.5			1.0			
15	iZ	15	16	21.7	0.5			1.0			
15	C&GS 15-05-37.3, 25.6 S, 70.7 W, h = 5 km, near coast of northern Chile, Mag. 4.8 (CGS), (P-H) 7335 km or 66°.										
16	iPZ	07	21	34.5	0.7			5.0			
17	iPZEN	01	18	05.9	0.8	1.6	2.0	33.0	2.0	2.0	
	ePPZ	01	20	06.4	0.8			2.5			
	eSZEN	01	26	26.4	1.0	6.0	6.0	1.0	6.0	8.5	
17	iPZEN	12	12	24.9	1.0	2.0	2.0	6.0	0.8	1.5	
	eSEN	12	23	06.9		8.0	7.0		12.0	11.0	
	eLEN	12	45	16.9		14.0	16.0		2.0	5.5	
17	C&GS 11-59-31.5, 38.3 N, 142.1 E, h = 44R km, near east coast of Honshu, Japan, Mag. 5.9 (CGS), 6.5 (PAS), 6.5 (BRK), 5.9 (CGS surface wave), (P-H) 9890 km or 89°.										

DATE	PHASE	Time G.M.T. h	m	s	Period Z	E	Sec. N	Trace Amp. (mms) Z	E	N	5
January											
18	iPZ	04	32	34.2	1.0			2.5			
18	C&GS 04-20-52.9, 48.9 N, 154.9 E, h = 40R km, Kurile Islands, Mag. 5.4 (CGS), (P-H) 8555 km or 77°.										
18	eZ	04	40	34.7	0.5			1.0			
	eZ	05	02	30.7	0.5			1.0			
18	iPZEN	05	46	57.2	0.8	2.0	4.0	5.0	1.0	2.5	
	e(S)EN	05	57	17.7		8.0	6.0		3.5	8.0	
	e(L)EN	06	19	15.6		17.0	16.0		16.0	18.0	
18	C&GS 05-34-32.6, 56.6 N, 120.8 E, h = 11 km, eastern Russia, felt at Chita, Mag. 6.2 (CGS), 6.5-6.75 (PAS), 6.5 (BRK), (P-H) 9335 km or 84°.										
18	eZ	07	53	03.6	0.5			0.8			
	eZ	07	57	07.6	0.5			0.8			
18	C&GS 07-48-13, 14.9 N, 92.3 W, h = 33R km, near coast of Chiapas, Mex.. Mag. 4.2 (CGS), (P-H) 2445 km or 22°.										
18	iPZEN	08	27	36.1	0.6	1.0	2.0	7.0	0.5	1.0	
	eLEN	08	49	15.6		20.0	16.0		2.5	4.0	
18	C&GS 08-18-22.0, 52.5 N. 168.3 W, h = 37 km, Fox Islands, Aleutian Islands, Mag. 5.7 (CGS), 6.0 (PAS), 5.5-5.7 (BRK), (P-H) 5890 km or 53°.										
18	eZ	10	50	12.5	1.0			1.5			
18	C&GS 10-41-54.0, 60.4 N, 152.5 W, h = 96R km, southern Alaska. Mag. 4.4 (CGS), (P-H) 5000 km or 45°.										
18	eZ	15	39	0.3	0.5			1.0			
	eZ	15	39	46.3	0.9			2.0			
19	i(P)Z	02	24	24.1	0.7			2.0			
19	C&GS 02-19-23.[illegible] 12.4 N, 86.[illegible] W, h = 211 km, Nicaragua, Mag, 4.1 (CGS), (P-H) 2555 km or 23°.										

DATE	PHASE	Time G.M.T. h	m	s	Period Z	E	N	Trace Amp. (mms) Z	E	N
January										
19	eZ	03	27	52.6	0.9			0.8		
19	ePZE	12	53	30.8	2.0	5.0		3.0	1.8	
	e(PP)ZE	12	57	18.8	2.0	4.2		1.3	3.0	
	eSE	13	04	13.8		8.0			7.0	
	e(SS)E	13	11	11.8		15.0			6.5	
	eLZE	13	24	11.7	21.0	20.0		0.8	13.5	
19	C&GS 12-40-12.6, 14.8 S, 148.8 W, h = 18 km, Fiji Island region, Mag. 6.6 (CGS), 6.25 (PAS), 6.8 (CGS surface wave), (P-H) 10,445 km or 94°.									
19	i(P)Z	14	49	44.2	0.9			1.0		
19	iPZ	14	50	55.7	1.0			1.1		
19	C&GS 14-41-37, 52.4 N, 169.6 W, h = 55 km, Fox Islands, Aleutian Is., Mag. 5.2 (CGS), (P-H) 6000 km or 54°.									
19	ePZ	14	49	09.5	0.9			2.3		
19	iPZ	14	48	0.3	0.7			2.2		
20	iPZEN	02	10	43.1	1.0	6.0	4.0	2.0	2.0	3.5
	e(PP)Z	02	14	24.1	1.5			1.5		
	e(S)EN	02	23	01.1		8.0	8.0		4.0	6.0
	e(L)EN	02	42	20.0		14.0	14.0		5.5	9.0
20	eZ	03	13	41.9	0.8			1.0		
20	iPZ	17	44	09.8	0.8			1.3		
	eZ	17	45	21.1	1.1			1.3		
	eZ	17	49	10.1	1.0			1.1		
21	eZ		06	44.7	1.0			1.2		
21	C&GS 02-54-[illegible] S, [illegible].8 W, h = 33R km, Easter Island Cordillera, Mag. 5.3 (CGS), (P-H) [illegible] km or 37°.									

DATE	PHASE	Time G.M.T. h	m	s	Period Sec. Z	E	N	Trace Amp. (mms) Z	E	N
January										
22	i(P)Z	08	24	58.7	0.9			2.0		
22	eZ	20	25	35.1	1.0			2.0		
23	iPZ	09	41	43.1	1.0			1.2		
23	iPZ	20	30	17.2	1.9			2.7		
	e(L)Z	20	37	15.7	5.5			2.5		
23	C&GS 20-25-38.3, 19.9 N, 109.3 W, h = 56 km, Revilla Gigedo Islands region, Mag. 5.3 (CGS), 5.7-5.9 (BRK), (P-H) 2335 km or 21°.									
24	i(P)Z	03	18	19.0	0.6			1.5		
	e(S)EN	03	28	53.0		5.0	5.0		2.3	4.5
	eEN	03	29	29.0		6.0	6.0		3.0	5.0
24	C&GS 03-05-39.0, 41.4 N, 141.9 E, h = 69R km, Hokkaido, Japan region, Mag. 5.7 (CGS), 5.25 (PAL), (P-H) 9665 km or 87°.									
24	ePZEN	09	41	01.3	0.9	4.0	4.0	3.5	1.3	2.5
	e(L)E	10	51	06.3		7.0	6.0		2.0	3.5
24	C&GS 09-29-12.3, 0.6 S, 21.0 W, h = 33R km, central mid-Atlantic Ridge, Mag. 4.9 (CGS), (P-H) 8445 km or 76°.									
25	eZ	00	43	31.8	0.7			1.0		
25	iPZ	02	04	02.7	0.6			0.7		
	i(PP)Z	02	08	23.7	1.0			1.5		
	e(S)Z	02	19	25.7	0.5			0.8		
25	eZ	03	09	39.6	0.8			0.8		
25	eZ	03	25	10.6	0.9			0.8		
25	eZ	03	50	46.6	0.5			1.0		

DATE	PHASE	Time G.M.T. h	m	s	Period Z	E	Sec. N	Trace Amp. (mms) Z	E	N	δ
January 26	iPZEN	06	09	0,5	0.9	3.8	6.0	3.0	2.5	3.0	
	e(S)EN	06	12	39.5		10.0	5.0		3.5	5.0	
	e(L)EN	06	14	59.5		8.0	9.0		6.5	11.0	
26	C&GS 06-04-33.9, 21.4 N, 108.9 W, h = 33R km, Revilla Gigedo Islands region, Mag. 5.3 (CGS), 4.9-5.3 (BRK), (P-H) 2220 km or 20°.										
26	eZ	11	56	45.8	0.9			0.8			
26	ePZEN	16	15	18.3	0.8	3.8	5.0	7.5	2.5	9.0	
	eSZEN	16	19	12.3	0.8	4.0	4.0	4.5	4.5	7.0	
26	C&GS 16-10-34.3, 15.0 N, 92.8 W, h = 56R km, Mexico--Guatemala border region, Mag. 5.3 (CGS), 5.2-5.6 (BRK), (P-H) 2335 km or 21°.										
26	iPZEN	20	22	17.7	0.5	1.0	1.0	1.5	0.5	2.0	
	eZ	20	22	31.7	1.0			4.5			
	e(S)ZEN	20	28	29.7	1.6	5.0	4.6	0.8	8.0	14.0	
	e(SS)EN	20	29	43.7		6.0	5.0		4.5	8.0	
	eZ	20	33	05.0	1.0			0.6			
28	i(P)Z	13	47	50.0	0.8			0.8			
	e(S)Z	13	51	56.0	0.9			0.7			
28	C&GS 13-43-01, 14.6 N, 92.8 W, h = 33R km, near coast of Chiapas, Mexico Mag. 4.3 (CGS), (P-H) 2445 km or 22°.										
28	iPZEN	14	02	16.5	1.0	6.0	5.0	5.0	4.0	5.5	
	iSEN	14	09	45.0		10.0	12.0		15.0	15.0	
	eEN	14	19	42.0		16.0	16.0		9.5	14.5	
	e(L)ZEN	14	23	46.0	30.0	15.0	26.0	1.3	28.0	22.0	
28	C&GS 13-52-58.3, 52.4 N, 169.5 W, Fox Islands, Aleutian Islands, felt on Umnak Island, Mag. 6.25-6.5 (PAS), 6.3-6.7 (BRK), 6.7 (CGS surface wave), (P-H) 5890 km or 53°.										

DATE	PHASE	Time G.M.T. h	m	s	Period Sec. Z	E	N	Trace Amp. (mms) Z	E	N
January										
28	eZ	14	15	16.0	0.8			0.9		
28	C&GS 14-05-58.1, 52.3 N, 169.5 W, h = 54 km, Fox Islands, Aleutian Islands, Mag. 5.0 (CGS), (P-H) 5890 km or 53°.									
28	e(P)Z	14	32	44.0	0.7			1.0		
	e(S)Z	14	39	56.0	0.6			0.6		
28	C&GS 14-23-26.7, 52.4 N, 169.4 W, h = 47 km, Fox Islands, Aleutian Islands, Mag. 5.2 (CGS), (P-H) 5890 km or 53°.									
28	eZ	17	28	55.8	0.9			0.9		
28	iPZ	17	51	19.8	0.9			2.5		
	e(L)EN	18	13	21.8		12.0	16.0		2.0	5.0
28	C&GS 17-42-01.5, 52.4 N, 169.4 W, h = 50R km, Fox Islands, Aleutian Is., Mag. 5.6 (CGS), 6.0 (PAS), (P-H) 5890 km or 53°.									
28	eZ	21	01	07.6	1.0			1.0		
	eZ	21	15	18.6	0.9			1.5		
28	iPZ	22	38	57.5	0.9			1.5		
	C&GS 22-28-01.2, 55.0 N, 160.2 E, h = 113R km, Kamchatka, Mag. 5.1 (CGS), (P-H) 7555 km or 68°.									
31	i(P)Z	13	44	19.6	1.0			1.0		
31	eZ	14	44	20.0	0.7			0.6		
31	iPZ	[illegible]	56	25.2	0.9			1.0		
31	C&GS 17-43-56.2, 42.8 N, 145.4 E, h = 44 km, Hokkaido, Japan, Mag. 5.1 (CGS), (P-H) 9335 km or 84°.									
February										
1	e(P)Z	09	29	39.0	0.7			0.9		
	C&GS 09-18-50.5, 55.8 N, 160.7 E, h = 140R km, Kamchatka, Mag. 4.4 (CGS), (P-H) 7555 km or 68°.									

DATE	PHASE	Time G.M.T. h	m	s	Period Sec. Z	E	N	Trace Amp. (mms) Z	E	N
February										
1	eZ	14	08	30.4	0.9			0.8		
1	eZ	14	53	45.3	0.7			0.8		
1	C&GS 14-44-07.7, 16.7 S, 72.7 W, h = 41 km, near coast of Peru, felt at Arequipa, Mag. 4.9 (CGS), (P-H) 6335 km or 57°.									
1	iPZ	15	39	30.2	0.9			1.1		
1	iPZ	23	56	17.9	0.7			1.0		
2	eZ	02	58	13.1	1.0			1.0		
2	eZ	04	37	27.0	1.0			0.6		
2	eZ	06	44	10.8	0.6			0.6		
	eZ	06	55	12.8	0.5			0.5		
2	iPZ	16	37	13.0	0.8			1.8		
2	C&GS 16-24-39.1, 41.6 N. 139.7 E, h = 176R km, Hokkaido, Japan region, Mag. 5.4 (CGS), (P-H) 9555 km or 86°.									
2	eZ	19	29	46.7	0.6			0.9		
3	e(P)Z	05	30	50.0	0.7			1.0		
	e(S)Z	[illegible]	32	45.0						
3	i(P)Z	09	10	25.9	0.9			4.0		
3	C&GS 09-05-37.0, 14.6 N. 93.4 W, h = 33R km, near coast of Chiapas, Mex., Mag. 4.1 (CGS), (P-H) 2445 km or 22°.									
3	eZ	12	49	19.0	0.6			1.2		
3	iPZ	13	06	36.4	1.0			5.0		
	i(S)Z	13	09	27.9	0.9			3.5		
3	[illegible]	[illegible]	35	51.9	0.9			3.0		
4	[illegible]	[illegible]	10	52.2	0.9			0.9		
	e(PP)Z	[illegible]	11	20.2	1.0			1.0		

DATE	PHASE	Time G.M.T. h	m	s	Period Z	E	Sec. N	Trace Amp. (mms) Z	E	N
February										
4	eZ	15	44	36.0	0.9			1.2		
4	e(P)Z	17	48	40.7	1.0			1.0		
4	eZ	20	40	09.3	0.9			1.0		
5	eZ	03	05	30.1	0.6			1.0		
5	i(P)Z	03	28	48.1	0.9			1.0		
5	C&GS 03-20-44.3, 5.1 S, 80.6 W, h = 82 km, near coast of northern Peru, Mag. 4.0, (P-H) 4665 km or 42°.									
5	e(PP)Z	04	29	47.0	0.5			1.5		
5	i(P)Z	05	29	23.5	1.0			1.0		
5	C&GS 05-24-32, 14.3 N, 91.3 W, h = 45 km, Guatemala, Mag. 4.0 (CGS), (P-H) 2445 km or 22°.									
5	i(P)Z	19	08	32.7	1.0			1.3		
6	iPZ	03	34	32.8	0.9			2.0		
6	eZ	16	54	34.3	1.0			0.9		
6	eZ	17	23	59.3	0.7			1.3		
6	eZ	20	47	33.8	0.9			0.9		
7	eZ	02	29	03.7	0.6			0.8		
7	iPZ	15	01	32.3	1.0			3.5		
	eZ	15	03	07.5	1.0			2.5		
7	C&GS 14-53-13.9, 56.7 N, 157.2 W, h = 67R km, Alaska Peninsula, Mag. 5.6 (CGS), 4.4 (BRK), (P-H) 5110 km or 46°.									
8	iPZ	08	32	50.1	0.8			1.8		
8	e[illegible]	18	19	[illegible]3.2	0.6			1.0		
8	i[illegible]	1[illegible]	43	55.[illegible]	1.0			8.8		

DATE	PHASE	Time G.M.T. h	m	s	Period Sec. Z	E	N	Trace Amp. (mms) Z	E	N
February										
8	C&GS 19-39-14, 15.2 N, 96.3 W, h = 46 km, near coast of Onaca, Mexico, Mag. 4.7 (CGS), (P-H) 2335 km or 21°.									
8	eZ	20	36	05.1	0.5			1.0		
9	eZ	04	54	51.8	0.5			0.9		
9	iPZ	15	31	57.2	1.0			27.0		
	eLZ	15	46	16.7	1.0			15.0		
	e(PP)Z	15	33	09.7	10.0			1.5		
9	C&GS 15-24-47.2, 2.9 N, 74.9 W, h = 58R km, Colombia--100 killed; many injured; major damage at Campoale, Guacamaya & Neiva; felt at Iquito, Peru & Quito, Ecuador; Mag. 6.3 (CGS), 6.75 (PAS), 7.3-7.5 (BRK), 7-7.25 (PAL), (P-H) 4220 km or 38°.									
10	eZ	14	59	27.8	0.6			1.0		
10	eZ	21	38	47.0	0.5			1.0		
11	eZ	02	09	53.4	0.5			1.0		
11	eZ	02	51	07.3	1.0			0.8		
11	C&GS 02-39-47.1, 51.7 N, 159.1 E, h = 21 km, off east coast of Kamchatka, Mag. 4.6, (P-H) 8000 km or 72°.									
11	iPZ	04	30	19.0	1.0			1.5		
	eSE	04	34	18.0		10.0			7.5	
	eLEN	04	39	08.0		8.0	8.0		6.0	3.0
11	C&GS 04-25-46.8, 16.3 N, 98.6 W, h = 38 km, near coast of Guerrero, Mex., Mag. 4.7 (CGS), (P-H) 2220 km or 20°.									
11	e(P)Z	04	52	37.0	0.8			0.9		
11	C&GS 04-48-05.3, 16.4 N, 98.6 W, h = 34 km, near coast of Guerrero, Mex., Mag. 4.6 (CGS), (P-H) 2220 km or 20°.									
11	e(P)Z	05	08	59.9	0.7			1.0		
	e(S)E	05	12	52.9		8.0			4.5	

DATE	PHASE	Time G.M.T. h	m	s	Period Z	E	Sec. N	Trace Amp. (mms) Z	E	N
February										
11	C&GS 05-04-23.9, 15.9 N, 98.7 W, h = 21 km, off coast of Guerrero, Mexico, Mag. 4.4(CGS), (P-H) 2335 km or 21°.									
11	iPZ	09	40	32.1	1.0			1.3		
11	C&GS 09-27-29.6, 52.0 N, 106.2 E, h = 5 km, Lake Baikal Region, felt at Ulan Ude, Mag. 5.4 (CGS), 4.7 (BRK), (P-H) 10,110 km or 91°.									
11	eZ	12	34	22.9	0.9			0.9		
11	C&GS 12-29-44, 19.4 N, 108.0 W, h = 33R km, Revilla Gigedo Islands region, Mag. 4.3 (CGS), (P-H) 2335 km or 21°.									
11	i(P)Z	14	44	53.2	0.9			1.0		
11	C&GS 14-33-06.3, 48.2 N, 154.8 E, h = 26 km, Kurile Islands, Mag. 4.7 (P-H) 8445 km or 76°.									
11	i(P)Z	15	41	04.1	1.0			2.0		
11	C&GS 15-31-27.1, 79.6 N, 3.4 E, h = 33R km, Greenland Sea, Mag. 4.9 (CGS), (P-H) 6220 km or 56°.									
12	eZ	13	32	04.6	0.6			1.5		
12	iPZ	14	18	31.2	1.0			5.5		
	e(PP)Z	14	18	39.5	1.0			2.5		
12	C&GS 14-08-12.5, 21.7 S, 70.1 W, h = 18 km, near coast of northern Chile, Mag. 5.5 (CGS), (P-H) 6780 km or 61°.									
13	eZ	04	15	41.3	0.6			2.0		
13	eZ	09	13	41.7	1.0			1.0		
13	iPZ	10	33	54.7	0.7			1.0		
	i(PP)Z	10	34	13.1	0.8			1.0		
13	C&GS 10-25-43.9, 5.2 S, 75.4 W, h = 39 km, northern Peru, Mag. 5.5, (P-H) 5000 km or 45°.									
13	e(P)Z	21	08	43.2	0.9			1.7		

DATE	PHASE	Time G.M.T. h	m	s	Period Sec. Z	E	N	Trace Amp. (mms) Z	E	N
February 13	iPZEN	23	22	33.7	6.5	5.0	4.0	0.9	3.0	6.5
	e(S)ZEN	23	29	18.9	1.0	18.0	8.0	0.8	7.5	16.0
	eLZEN	23	35	18.9	11.0	12.0	10.0	1.5	28.0	29.0
13	C&GS 23-14-19.6; 52.7 N, 34.1 W; h = 10 km; North Atlantic Ocean; Mag. 6.75 (PAS), 6.5-6.9 (BRK), 6.3 (CGS surface wave); (P-H) 5000 km or 45°.									
14	eZ	01	55	12.7	1.0			1.3		
14	eEN	02	44	58.6		18.0	20.0		06.5	12.0
15	iPZN	16	19	11.0	1.5		5.0	18.0		5.0
	eSZN	16	25	26.5	0.8		3.0	16.0		52.0
15	eZ	22	02	18.9	0.6			1.3		
15	eZ	23	36	28.8	0.5			0.9		
16	iPZ	19	56	41.6	0.7			2.5		
17	i(P)Z	00	56	37.2	1.0			1.5		
17	i(P)Z	08	08	59.8	1.0			1.1		
17	C&GS 07-58-25; 25.6 S, 70.2 W; h = 81 km; near coast of northern Chile; Mag. 4.5 (CGS); (P-H) 7110 km or 64°.									
17	iPZ	10	24	21.2	1.7			4.5		
	e(S)Z	10	28	10.2	2.0			1.5		
	eZ	10	41	06.2	1.0			1.0		
17	C&GS 10-10-51.5; 23.7 S, 175.2 W; h = 19 km; Tonga Islands region; Mag. 6.4 (CGS), 6.5 (PAS); (P-H) 10,555 km or 95°.									
17	eEN	10	58	02.1		22.0	22.0		4.5	7.0
17	i(P)Z	20	27	44.6	1.0			2.0		
18	eZ	03	59	32.2	0.6			1.0		

DATE	PHASE	Time G.M.T. h	m	s	Period Z	E	N	Trace Amp. (mms) Z	E	N
February 18	eZ	10	22	53.5	0.9			0.9		
18	eZ	17	02	03.6	0.6			1.3		
19	eZ	02	35	14.4	1.3			0.7		
19	iPZ	11	51	14.6	0.8			2.0		
	e(S)N	11	55	17.6			8.0			7.5
	e(L)EN	11	58	23.6		6.0	8.0		2.5	5.0
19	C&GS 11-46-39.8; 16.2 N, 98.5 W; h = 25 km; near coast of Guerrero, Mexico; Mag. 4.8 (CGS); (P-H) 2220 km or 20°.									
19	iPZEN	22	33	59.5	0.9	2.0	1.8	10.5	0.9	2.0
	e(PP)Z	22	34	26.5	0.6			8.5		
19	iPZ	23	47	27.4	0.7			1.0		
	e(S)Z	23	50	45.9	1.0			2.5		
20	i(P)Z	16	53	25.3	0.9			1.4		
20	eZ	22	09	23.0	0.5			1.0		
21	iPZ	04	22	14.4	1.0			1.5		
	e(S)Z	04	28	47.4	0.9			0.8		
21	C&GS 04-16-21.1; 19.2 N, 67.9 W; h = 44 km; Mona Passage; Mag. 4.8 (CGS); (P-H) 3220 km or 29°.									
22	eZ	18	54	25.2	0.5			2.0		
22	eZ	22	31	21.0	0.5			1.5		
23	iPZE	19	09	06.0	0.9	2.0		2.8	1.0	
	e(PP)Z	19	09	58.9	1.0			1.8		
	eZ	19	10	24.9	1.1			3.0		
	eSZE	19	14	15.9	1.5	6.0		2.5	4.0	

DATE	PHASE	Time G.M.T. h	m	s	Period Z	E	Sec. N	Trace Amp. (mms) Z	E	N
February										
24	ePZ	09	14	29.1	0.6			1.5		
	e(S)Z	09	17	27.1	0.8			2.0		
24	eZ	21	11	59.0	0.7			1.2		
25	iPZ	11	39	51.9	0.6			2.5		
	eSZ	11	43	06.9	0.5			1.5		
25	iPZ	11	58	46.8	0.6			2.5		
	iSZ	12	01	02.3	0.9			2.5		
26	iPZ	03	16	03.4	0.6			1.9		
	e(S)Z	03	19	49.6	0.9			0.8		
26	iPZ	04	11	19.0	0.8			5.0		
26	C&GS 03-57-57.7; 49.8 N, 78.1 E; h = OR km; eastern Kazakh, U.S.S.R.; Mag. 6.0 (CGS); (P-H) 10,555 km or 95°.									
27	iPZ	02	13	51.5	0.6			1.5		
	e(S)Z	02	17	01.5	0.9			1.3		
27	C&GS 02-06-42.5; 2.9 N, 74.8 W; h = 69 km; Colombia; felt in Popayan, Bogota, Medellin area; Mag. 5.2 (CGS); (P-H) 4220 km or 38°.									
28	i(P)Z	06	45	51.3	0.6			1.3		
28	eZ	09	50	35.3	1.0			1.5		
28	C&GS 09-37-18.0; 32.7 N, 141.7 E; h = 23 km; south of Honshu, Japan; Mag. 5.5 (CGS), 5.75-6 (PAS); (P-H) 10,445 km or 94°.									
28	eZ	20	43	49.7	0.8			1.0		
March										
1	e(P)Z	01	24	02.7	0.9			1.1		
	e(S)ZEN	01	29	08.7	1.0	5.0	5.0	0.5	2.8	5.0

DATE	PHASE	Time G.M.T. h	m	s	Period Z	E	Sec. N	Trace Amp. (mms) Z	E	N
March										
1	C&GS 01-20-04*; 25.3 N, 109.7 W; h = 33R km; Gulf of California; Mag. 4.7 (CGS); (P-H) 1890 km or 17°.									
1	eZ	02	44	50.6	0.6			1.0		
2	iPZ	02	54	47.4	0.8			10.5		
	eZ	02	56	55.7	0.8			3.0		
2	C&GS 02-47-31.7; 0.3 S, 78.7 W; h = 121 km; Ecuador; Mag. 5.8 (CGS), 4.8-5.2 (BRK); (P-H) 4220 km or 38°.									
2	iPZ	13	26	09.0	1.0			2.5		
	e(S)EN	13	32	27.0		4.0	9.0		5.0	11.0
2	C&GS 13-21-45*; 21.6 N, 108.8 W; h = 33R km; Revilla Gigedo Islands region; Mag. 4.6 (CGS), 4.4-4.8 (BRK); (P-H) 2110 km or 19°.									
2	i(P)Z	23	14	49.5	1.0			1.9		
2	C&GS 23-03-39.7; 53.8 N, 160.5 E; h = 21 km; near east coast of Kamchatka; Mag. 5.0 (CGS); (P-H) 7780 km or 70°.									
3	i(P)Z	06	08	31.0	1.0			1.8		
3	eZ	21	09	43.1	0.5			1.0		
4	iPZ	06	29	15.0	1.0			4.0		
	e(S)Z	06	30	11.0	3.0			1.5		
4	C&GS 06-16-21; 18.5 S, 175.4 W; h = 225R km; Tonga Islands; Mag. 5.7 (CGS), 4.9-5.3 (BRK); (P-H) 10,110 km or 91°.									
4	iPZEN	18	10	45.9	1.1	5.0	6.0	5.0	1.5	8.0
	ePPZEN	18	14	10.2	2.0	6.0	6.0	1.3	2.5	8.5
	eSEN	18	21	08.2		5.0	7.0		5.5	17.5
	eEN	18	23	07.2		7.0	6.2		3.5	6.0
	eLEN	18	37	03.2		20.0	24.0		9.5	10.0
	eEN	18	48	39.2		16.0	17.0		11.0	18.0

DATE	PHASE	Time G.M.T. h	m	s	Period Sec. Z	E	N	Trace Amp. (mms) Z	E	N
March										
4	C&GS 17-58-06.4; 39.2 N, 24.6 E; h = 33R km; Aegean Sea; felt in Greece, western Turkey & Sofia, Bulgaria; Mag. 6.75-7.0 (PAS), 6.5-6.7 (BRK) ; (P-H) 9555 or 86°.									
5	eZ	21	45	01.0	0.5			1.2		
7	e(S)Z	20	30	54.2	0.9			3.5		
	iPZ	20	30	40.2	0.5			1.5		
7	eZ	23	13	33.5	0.5			1.0		
8	eZ	16	22	35.1	0.6			1.0		
9	e(L)EN	07	46	57.6		16.5	16.5		3.5	6.0
9	e(P)Z	14	13	27.3	0.9			1.8		
9	C&GS 14-08-44.5; 14.5 N, 91.4 W; h = 106 km; Guatemala; Mag. 4.6 (CGS); (P-H) 2335 km or 21°.									
9	e(L)EN	18	52	57.1		22.0	22.0		2.0	3.5
11	iPZEN	14	48	52.7	1.0	1.2	1.0	10.5	1.8	8.0
	eSZEN	14	51	52.7	0.8	5.0	8.0	14.5	7.0	8.0
	e(L)EN	14	55	52.6		6.0	7.0		4.0	8.5
11	C&GS 14-44-59.2; 19.1 N, 95.8 W; h = 33 km; Veracruz, Mexico; 3 injured, moderate property damage at Veracruz & Boca del Rio; felt at Jalapa; Mag. 5.5 (PAS), 5.2-5.6 (BRK); (P-H) 1890 km or 17°.									
12	i(P)Z	03	04	32.6	1.0			1.0		
12	eZ	11	00	44.9	0.9			1.0		
12	C&GS 10-49-48.6; 28.3 S, 70.4 W; h = 31 km; Central Chile; Mag. 4.5 (CGS); (P-H) 7555 km or 68°.									
12	e(P)A	21	26	16.0	5.0			1.3		
	e(S)ZEN	21	31	14.0		3.0	9.0		1.5	6.0
12	C&GS 21-22-19*; 28.2 N, 111.6 W; h = 33R km; Gulf of California; Mag. 4.6 (CGS); (P-H) 1890 km or 17°.									

DATE	PHASE	Time G.M.T. h	m	s	Period Z	E	Sec. N	Trace Amp. (mms) Z	E	N	19
March											
13	iPZ	14	53	07.3	0.6			1.5			
13	C&GS 14-44-07.2: 53.7 N, 165.4 W; h = 33R km; Fox Island, Aleutian Islands; Mag. 5.2 (CGS); (P-H) 5665 km or 51°.										
13	iPZ	16	18	50.2	0.8			4.5			
13	C&GS 16-06-54.3; 40.1 S, 74.5 W; h = 33R; off coast of Southern Chile; Mag. = 6.0 (CGS), 7.1-7.5 (BRK); (P-H) 8665 km or 78°.										
14	i(P)Z	07	25	06.4	0.9			0.8			
14	eZ	08	00	19.3	1.0			0.9			
14	C&GS 07-50-19.3; 82.5 N, 36.2 E; h = 33R km; Franz Josef Land; Mag. 4.7 (CGS); (P-H) 6555 km or 59°.										
14	eZ	22	43	10.0	0.6			0.8			
17	eZ	21	06	53.6	0.6			1.0			
17	eZ	21	18	29.6	0.6			1.0			
18	i(P)Z	18	02	49.4	1.0			1.0			
19	i(P)Z	01	29	49.3	1.2			1.8			
	i(P)ZEN	01	33	05.0	0.7	5.0	6.0	2.5	3.5	6.0	
19	eZ	02	26	29.3	0.8			1.1			
19	iPZEN	04	13	41.8	1.0			6.5			
	eSEN	04	23	41.2		10.0	09.0		13.0	14.0	
	eLEN	04	42	37.2		20.0	19.0		7.5	19.0	
19	C&GS 04-01-36.7; 45.4 N, 151.3 E; h = 33R km; Kurile Islands; Mag. 6.5 (FAE); (P-H) 8780 km or 79°.										
20	iPZ	13	43	36.3	1.0			2.0			
	e(S)EN	13	53	32.7	0.8	6.0	5.0	1.6	1.8	2.5	

DATE	PHASE	Time G.M.T. h	m	s	Period Z	E	Sec. N	Trace Amp. (mms) Z	E	N	
March											
20	iPZ	13	43	36.3	1.0			2.0			
	e(S)EN	13	53	32.7	0.8	6.0	5.0	1.6	1.8	2.5	
20	C&GS 13-31-34.0; 45.6 N, 151.4 E; h = 51R km; Kurile Islands; Mag. 5.7 (CGS), 5.5-5.9 (BRK); (P-H) 8780 km or 79°.										
20	i(P)Z	13	52	55.2	2.0			1.5			
20	C&GS 13-40-52.8; 45.6 N, 151.5 E; h = 53R km; Kurile Islands; Mag. 5.3 (CGS); (P-H) 8780 km or 79°.										
20	i(P)Z	14	04	09.2	1.0			2.0			
20	C&GS 13-52-05.5; 45.6 N, 151.5 E; h = 32 km; Kurile Islands; Mag. 5.4 (CGS); (P-H) 8780 km or 79°.										
20	e(P)Z	15	58	31.5	1.0			1.6			
20	C&GS 15-46-29.4; 45.6 N, 151.2 E; h = 60R km; Kurile Islands; Mag. 5.1 (CGS); (P-H) 8780 km or 79°.										
20	i(P)Z	17	23	39.1	1.1			0.9			
20	C&GS 17-11-34.8; 45.5 N, 151.4 E; h = 33R km; Kurile Islands; Mag. 5.0 (CGS); (P-H) 8780 km or 79°.										
20	i(S)EN	14	14	08.7		4.0	4.2		1.5	2.0	
21	iPZEN	18	18	21.7	0.8	0.8	2.0	14.0	0.8	1.5	
	eE	18	23	32.2		2.0			1.0		
	eN	18	28	06.2			4.0			2.0	
	e(S)EN	18	28	24.2		2.2	5.0		1.0	3.0	
22	eZ	03	20	17.7	0.7			1.0			
22	eZ	05	14	02.6	1.0			1.0			
22	C&GS 05-05-17*; 10.8 S, 79.0 W; h = 26R km; near coast of Peru; Mag. 4.6 (CGS); (P-H) 5445 km or 49°.										

DATE	PHASE	Time G.M.T. h	m	s	Period Z	E	Sec. N	Trace Z	Amp. (mms) E	N
March										
22	eZ	05	29	00.6	1.0			0.8		
22	C&GS 05-20-16*; 10.8 S, 79.1 W; h = 27R km; off coast of Peru; Mag 4.6 (CGS); (P-H) 5445 km or 49°.									
22	iPZ	09	20	39.3	0.5			2.5		
22	C&GS 09-15-28*; 12.8 N, 87.6 W; h = 56 km; near coast of Nicaragua; Mag. 4.4 (CGS); (P-H) 2665 km or 24°.									
23	iPZ	15	20	04.5	0.7			5.0		
24	ePZ	02	15	59.0	0.5			1.0		
24	e(P)Z	08	36	15.4	0.7			1.5		
24	iPZEN	09	18	39.3	0.5	1.6	2.0	4.5	0.8	1.0
	eZ	09	19	04.3	0.6			3.5		
	e(PP)Z	09	21	05.3	0.9			3.9		
	eZ	09	21	30.3	1.0			7.5		
	i(S)ZEN	09	23	54.8	1.5	1.6	2.0	4.5	2.0	4.0
	eEN	09	24	27.3		4.4	4.0		1.9	5.0
24	iPZ	12	04	34.0	0.6			1.8		
24	eZ	20	58	59.1	0.6			1.1		
25	eZ	07	09	51.9	0.5			1.3		
25	iZ	12	28	39.2	0.9			1.6		
25	eZ	21	53	01.9	0.9			0.8		
25	i(P)Z	23	00	02.4	1.0			1.0		
	e(L)N	23	35	37.7	10.0			2.0		
25	C&GS 22-47-58.4; 45.5 N, 151.4 E; h = 41 km; Kurile Islands; Mag. 5.5 (CGS), 5.2-5.6 (BRK), 5.75 (PAL); (P-H) 8780 km or 79°.									
27	e(L)N	09	49	57.9			20.0			2.5

DATE	PHASE	Time G.M.T. h	m	s	Period Z	E	N	Sec. Z	E	N	Trace Amp. (mms) Z	E	N
March 27	e(L)N	10	48	57.9			15.0						3.5
25	eZ	23	07	29.7	0.6						1.0		
27	eZ	00	05	30.8	1.1						0.8		
27	C&GS 23-56-48*; 10.3 S, 73.9 W; h = 134 km; Peru; Mag. 4.4 (CGS); (P-H) 5445 km or 49°.												
27	iPZ	08	34	33.7	0.6						3.5		
	i(PP)Z	08	35	44.9	0.9						3.0		
	iZ	08	38	42.5	1.1						2.5		
	e(S)E	08	40	54.0		4.0						1.7	
	eE	08	43	18.0		3.8						1.7	
27	eZ	09	12	10.0	0.6						0.5		
27	i(P)Z	14	45	30.2	0.5						2.5		
27	C&GS 14-40-10*; 12.4 N, 87.4 W; h = 24 km; near coast of Nicaragua; Mag. 4.3 (CGS); (P-H) 2780 km or 25°.												
27	eZ	20	44	09.1	0.5						1.0		
28	iPZ	01	26	51.2	0.6						2.5		
30	iPZEN	02	27	34.0	0.8	3.0	3.0				10.0	1.0	1.0
	e(S)ZEN	02	31	15.5	0.5	4.0	2.0				0.8	1.5	2.0
31	e(P)Z	02	21	39.6	0.5						0.6		
31	C&GS 02-12-17.8; 52.1 N, 169.7 W; h = 28 km; Fox Islands, Aleutian Islands; Mag. 4.8 (CGS); (P-H) 6000 km or 54°.												
31	e(P)Z	10	41	04.7	0.9						0.7		
	e(S)Z	10	45	29.7	0.9						0.6		

The University of Arkansas Seismograph Station is located on the University Farm, 2.5 miles northwest of the main campus at Fayetteville. Coordinates of the station are 36° 05.46' north latitude and 94° 11.47' west longitude. Altitude above mean sea level is 1,325 feet. The seismometer pier rests on the Boone limestone of lower Mississippian age. Approximately 2,500 feet of limestone, shale and sandstone overlie the pre-Cambrian crystalline rocks in the vicinity of the station.

University of Arkansas
Seismograph Station
Department of Geology
Fayetteville, Arkansas

UNIVERSITY OF ARKANSAS

SEISMOLOGICAL BULLETIN

Volume XVI **Number 2**

The University Of Arkansas Seismograph Station

Operated by the University's Department of Geology

in conjunction with the

United States Coast Guard and Geodetic Survey

Earthquakes for the Second Quarter of 1967

James E. Edson, Jr.

FAYETTEVILLE SEISMOGRAPH STATION

Volume XVI, Number 2, July 1969
Data for April, May, June 1967

Instruments

Vertical component - Benioff moving coil type, short period electro-magnetic-galvanometric, Mass = 100 lbs.

Seismometer-Benioff moving coil period = 1.1 second
Galvanometer-Geotechnical Corp. period = 0.2 second
Damping ration - about 15:1 (near critical)
Recording drum speed = 60 mm per minute

Horizontal component - Wilson - Wilson-Lamison hinges type: E-W
N-S electromagnetic-galvanometric

Seismograph period - 6.0 seconds (N-S)
6.0 seconds (E-W)
Galvanometer-General Electric period - 4.1 seconds (N-S)
3.8 seconds (E-W)

Recording drum speed - 39 mm. per minute

Clock - IBM, electrically wound, invar pendulum type
accuracy limits generally within one tenth second

Radio - WWV Time Signal impressed manually by telegraph key on 5th, 10th, and 15th second. Time signals received by a Hallicrafter receiver, S-40B.

Vertical-Ground motion trace up (compression)
reading from left to right
N-S - Ground motion trace up - North
E-W - Ground motion trace up - East

(Additional information regarding the station is given on the back cover.)

Information in Remarks column is usually from U.S. Coast and Geodetic Survey epicenter cards. "C" following the trace amplitude indicates a compressional motion of the wave; "D" indicates dilation.

Bulletin compiled by James E. Edson, Jr.
Observer

DATE	PHASE	Time G.M.T. h	m	s	Period Z	E	N	Sec. Z	E	N	Trace Amp. (mms) Z	E	N	f
April														
1	e(P)Z	06	06	19.9	1.0						1.1			
	e(PP)Z	06	09	06.9	1.0						1.1			
	e(S)EN	06	16	15.9		8.0	6.0					2.0	4.0	
	e(L)EN	06	38	40.8		18.0	18.0					1.3	3.0	
1	C&GS 05-54-19.1; 45.8 N, 151.8 E; h = 40R km; Kurile Islands; Mag. 5.7 (CGS), 5.75 (PAS), 5.9-6.1 (BRK), 5.75 (PAL); (P-H) 8780 km or 79°.													
1	eZ	08	00	27.7	1.0						1.0			
1	C&GS 07-48-28*; 45.9 N, 152.0 E; h = 40R km; Kurile Islands region; Mag. 5.0 (CGS); (P-H) 8780 km or 79°.													
1	e(P)ZN	10	48	53.2	1.0		4.0				0.8		2.3	
	eEN	10	55	08.2		7.0	8.0					2.5	3.0	
	e(L)EN	10	58	20.2		15.0	9.0					3.0	4.5	
1	e(P)Z	12	35	37.9	1.0						1.6			
	e(S)EN	12	45	33.9		7.0	7.0					2.0	4.0	
	e(L)N	13	06	49.9		20.0	20.0					1.3	3.5	
1	C&GS 12-23-35.5; 45.7 N, 151.8 E; h = 40R km; Kurile Islands; Mag. 5.9 (CGS), 5.75 (PAS), 5.4-5.8 (BRK); (P-H) 8780 km or 79°.													
1	e(P)Z	14	12	37.7	0.7						1.0			
1	C&GS 14-00-33.8; 45.8 N, 151.7 E; h = 23 km; Kurile Islands; Mag. 5.4 (CGS); (P-H) 8780 km or 79°.													
1	eEN	15	49	29.4		4.0	5.0					1.0	5.6	
1	eZ	23	29	18.3	0.5						0.6			
2	e(P)Z	12	03	13.8	0.6						1.1			
	eZ	12	03	19.8	0.9						1.6			
	eZ	12	07	14.8	0.7						1.1			

DATE	PHASE	Time G.M.T. h	m	s	Period Z	E	N	Sec. Z	Trace Amp. (mms) E	N	2
April											
2	C&GS 11-58-30*; 5.0 N, 93.0 W; h = 45 km; Near coast of Chiapas, Mex.; Mag. 4.5 (CGS); (P-H) 2335 km or 21°.										
3	e(S)N	13	23	06.6			8.0			5.0	
	e(L)EN	13	46	11.6		20.0	20.0		1.0	2.0	
4	eZ	04	06	28.2	1.0			0.8			
4	C&GS 03-54-26.2; 45.5 N, 152.2 E; h = 42R km; Kurile Islands Region; Mag. 5.0 (CGS); (P-H) 8780 km or 79°.										
4	iZ	04	35	23.7	1.0			0.8			
4	eZ	23	11	55.9	0.8			0.8			
	eZ	23	14	21.4	0.6			1.0			
5	eN	01	11	21.2			6.0			9.5	
5	eZ	11	58	01.3	0.8			0.5			
6	iPZ	12	50	48.9	1.0			1.5			
6	C&GS 12-46-17*; 15.8 N, 95.6 W; h = 60 km; near coast of Oaxaca, Mex.; Mag. 4.1 (CGS); (P-H) 2220 km or 20°.										
6	iPZ	14	05	50.2	0.7			2.0			
	eEN	14	09	44.2		2.0	6.0		0.9	2.0	
6	C&GS 14-01-21.5; 16.3 N, 98.0 W; h = 54 km; near coast of Guerrero, Mex.; Mag. 4.9 (CGS); (P-H) 2220 km or 20°.										
6	eZ	23	45	14.9	1.0			0:8			
6	C&GS 23-32-10.6; 36.3 N, 140.5 E; h = 44 km; near east coast of Honshu, Japan; Mag. 5.2 (CGS); (P-H) 10,220 km or 92°.										
8	iZ	04	27	09.4	0.5			0.6			
8	C&GS 04-22-42.0; 16.5 N, 96.4 W; h = 26 km; Oaxaca, Mexico; Mag. 3.9 (CGS); (P-H) 2220 km or 20°.										
8	eZ	05	44	39.2	0.6			0.6			
	eZ	05	45	46.2	0.5			1.9			

DATE	PHASE	Time G.M.T. h	m	s	Period Z	E	Sec. N	Trace Z	Amp. E	(mms) N
April										
8	eZ	18	01	38.8	0.5			1.1		
8	eZ	20	18	09.5	0.4			1.0		
9	i(P)Z	18	04	03.9	1.0			1.8		
10	eLEN	15	57	45.5		18.0	20.0		1.5	2.0
10	iPZEN	19	02	41.3	0.5	1.0	1.6	2.5	0.8	0.8
	eZ	19	03	16.3	0.8			9.5		
	i(S)ZEN	19	05	18.5	0.8	2.0	2.0	18.0	3.5	15.0
	e(L)ZEN	19	06	31.3	4.0	5.0	6.0	1.5	5.5	12.5
10	C&GS 19-00-25.6; 39.9 N, 104.8 W; h = 5R; Colorado - slight damage at Denver; felt at Golden, Greeley, Pueblo; Mag. 4.8 (CGS), 5.0 (GOL); (P-H) 1110 km or 10°.									
10	e(P)Z	19	39	33.2	0.8			1.6		
	eZ	19	40	35.2	0.5			1.9		
	i(S)ZEN	19	41	29.5	0.9	1.0	1.6	4.5	0.6	5.0
10	iPZ	20	05	39.2	0.9			1.3		
10	C&GS 19-57-34.4; 58.6 N, 154.3 W; h = 86; Alaska Peninsula; Mag. 5.5 (CGS); (P-H) 4890 km or 44°.									
11	i(P)Z	00	01	31.4	0.6			0.8		
	e(S)Z	00	03	30.9	0.7			1.6		
11	iPZ	12	49	18.0	1.0			1.0		
	e(L)N	12	57	43.5			14.0			4.0
11	C&GS 12-42-47.7; 18.8 N, 62.7 W; h = 86 km; Leeward Islands; Mag. 5.2 (CGS); (P-H) 3665 km or 33°.									
12	i(P)Z	04	47	14.1	0.6			0.5		
	e(S)Z	04	53	36.5	0.5			0.5		

DATE	PHASE	Time G.M.T. h	m	s	Period Z	E	Sec. N	Trace Amp. (mms) Z	E	N	4
April											
12	C&GS 04-40-53.0; 19.3 N, 63.3 W; h = 38 km; Leeward Islands; Mag. 4.5 Mag. 4.5 (CGS); (P-H) 3555 km or 32°.										
12	iPZ	05	01	42.0	1.0			1.8			
12	C&GS 04-56-26.8; 12.2 N, 88.1 W; h = 49 km; off coast of Central America; Mag. 4.6 (CGS); (P-H) 2780 km or 25°.										
12	e(P)Z	05	11	0.5	0.6			1.7			
	e(S)ZEN	05	14	32.5	1.0	5.0	6.0	1.0	2.0	6.5	
12	e(L)EN	06	02	30.4		24.0	28.0		2.5	6.0	
12	eZ	14	37	23.7	1.0			0.8			
12	C&GS 14-32-39.1; 15.2 N, 94.0 W; h = 33R km; near coast of Oaxaca,Mexico; Mag. 4.7 (CGS); (P-H) 2335 km or 21°.										
13	iPZ	18	51	27.3	1.0			1.3			
13	C&GS 18-40-07.7; 52.1 N, 157.6 E; h = 50R km; Kamchatka; Mag. 5.3 (CGS); (P-H) 7890 km or 71°.										
13	iPZE	20	04	02.2	0.5	0.6		6.5	1.0		
	e(S)ZEN	20	07	28.7	0.5	5.0	10.0	0.5	3.0	13.0	
	e(L)ZEN	20	10	12.7	1.5	4.0	4.0	0.6	1.8	4.0	
13	C&GS 19-59-51.9; 18.5 N, 100.2 W; h = 86 km; Guerrero, Mexico; Mag. 5.6 (CGS), 4.3-4.7 (BRK); (P-H) 2110 km or 19°.										
14	ePZEN	05	23	11.6	1.0	1.2	3.0	4.8	1.0	6.0	
	e(S)EN	05	26	37.6		2.2	4.0		1.0	3.5	
14	eZ	09	57	27.0	0.5			0.8			
14	eEN	10	13	13.0		3.0	4.0		2.0	6.0	
14	eZ	20	31	24.7	0.6			0.8			
16	i(P)Z	10	22	03.2	0.8			0.8			
16	C&GS 10-10-06.7; 46.4 N, 153.3 E; h = 24 km; Kurile Islands; Mag. 5.3 (CGS); (P-H) 8665 km or 78°.										

DATE	PHASE	Time G.M.T. h	m	s	Period Z	E	Sec. N	Trace Amp. (mms) Z	E	N
April										
18	i(P)Z	08	34	34.9	0.6			1.1		
18	C&GS 08-29-17.1; 11.7 N, 87.2 W; h = 113 km; near coast of Nicaragua; Mag. 4.7 (CGS); (P-H) 2790 km or 25°.									
18	eZ	07	10	38.3	0.8			0.8		
18	C&GS 07-05-07.9; 10.7 N, 86.7 W; h = 53 km; off coast of Costa Rica; Mag. 4.8 (CGS); (P-H) 2890 km or 26°.									
19	i(P)Z	01	59	50.2	0.8			1.2		
19	eZ	03	01	04.7	0.9			0.9		
19	eZ	21	43	10.1	0.7			1.0		
19	iPZ	22	02	45.1	0.9			1.2		
	iZ	22	03	09.1	1.0			1.6		
	eZ	22	03	20.1	1.1			1.5		
19	C&GS 21-51-05.1; 18.8 N, 69.6 W; h = 103R km; Dominican Republic Region; Mag. 5.0 (CGS); (P-H) 3220 km or 29°.									
20	iPZ	00	20	14.9	0.6			1.7		
20	iPZ	00	23	18.4	1.0			5.5		
20	eZ	04	12	03.6	0.5			1.0		
20	i(P)Z	13	45	55.9	1.0			1.3		
20	C&GS 13-41-30.5; 16.8 N, 99.5 W; h = 65 km; near coast of Guerrero, Mexico; felt at Acapulco; Mag. 4.4 (CGS); (P-H) 2220 km or 20°.									
21	e(P)Z	08	33	36.6	0.8			0.5		
	e(S)E	08	37	15.6		5.0			2.7	
21	eLE	09	28	05.4		18.0			1.3	
22	eZ	08	56	38.1	0.9			0.4		
22	i(P)Z	14	49	24.8	0.7			2.5		

DATE	PHASE	Time G.M.T. h	m	s	Period Sec. Z	E	N	Trace Amp. (mms) Z	E	N
April										
22	C&GS 14-43-21.4; 08.3 N, 82.8 W; h = 40 km; Panama--Costa Rica border region; Mag. 5.0 (CGS); (P-H) 3335 km or 30°.									
22	eZ	16	31	06.4	0.8			1.8		
22	eZ	16	39	00.4	1.0			0.8		
22	C&GS 16-32-55.6; 8.4 N, 82,8 W; h = 44 km; Panama--Costa Rica border region; Mag. 4.4 (CGS); (P-H) 3335 km or 30°.									
22	iPZ	20	04	12.6	0.7			3.0		
23	i(P)Z	09	41	56.8	1.0			0.8		
23	C&GS 09-30-22.0; 36.3 N, 2.4 E; h = 33R km; Algeria; Mag. 4.8 (CGS); (P-H) 8220 km 74°.									
23	iPZ	14	02	53.8	0.6			1.0		
	e(S)ZE	14	08	54.4	1.2	4.0		0.5	2.0	
23	iZ	14	49	31.3	0.9			0.8		
23	C&GS 14-44-10*; 11.5 N, 86.5 W; h = 76 km; near coast of Nicaragua; Mag. 4.3 (CGS); (P-H) 2780 km or 25°.									
23	e(S)ZE	17	42	45.8	2.0	3.0		0.8	1.5	
24	eZ	20	56	15.2	0.6			0.9		
25	i(P)Z	06	25	48.5	0.8			0.5		
	eZ	06	29	39.0	0.8			0.5		
25	iPZ	10	47	38.4	1.0			2.3		
	i(PP)Z	10	48	47.9	0.8	3.0	3.6	3.5	1.1	5.0
25	C&GS 10-36-14.3; 32.9 S, 69.0 W; h = 39 km; Mendoza Province, Argentina; minor damage at Mendoza, felt at San Juan; Mag. 5.7 (CGS); (P-H) 8000 km or 72°.									
26	e(P)Z	07	22	27.7	0.6			0.4		
	e(S)ZEN	07	27	39.7	1.2			0.4		

DATE	PHASE	Time G.M.T. h	m	s	Period Sec. Z	E	N	Trace Amp. (mms) Z	E	N
April 26	C&GS 07-18-18*; 30.9 N, 114.3 W; h = 33R km; Gulf of California; Mag. 4.5 (CGS); (P-H) 2000 km or 18°.									
26	e(P)Z	13	31	17.7	0.5			2.2		
27	eZ	03	04	16.7	0.8			0.5		
27	iPZ	17	26	59.3	0.6			0.6		
	eZ	17	27	32.3	0.7			2.2		
	iSZEN	17	29	34.3	0.9	1.6	1.6	6.0	0.5	3.0
27	C&GS 17-24-42*; 39.9 N, 104.7 W; h = 5R km; Colorado; minor damage at Commerce City; felt at Boulder, Denver and Longmot; Mag. 3.75-4.0 (GOL), 4.4 (CGS); (P-H) 1110 km or 10°.									
28	e(P)Z	03	46	47.5	0.5			0.3		
	eZ	03	46	56.5	0.7			1.1		
28	eZ	20	04	27.2	0.5			1.0		
29	e(P)Z	00	10	55.3	0.8			1.0		
	e(L)ZEN	00	22	08.2	16.0	9.0	8.0	0.8	10.0	14.0
29	C&GS 00-04-41.8; 51.2 N, 130.4 W; h = 6 km; Queen Charlotte Islands Region; Mag. 5-5.5 (GOL), 5.1 (CGS); (P-H) 3445 km or 31°.									
29	iPZ	04	05	19.2	0.8			3.6		
	e(S)ZE	04	13	23.6	1.0	5.0		0.3	2.3	
29	C&GS 03-55-20.8; 51.4 N, 178.3 W; h = 50 km; Andreanof Islands, Aleutian Islands; felt on Adak; Mag. 5.25-5.50 (GOL), 6.0 (CGS); (P-H) 6555 km or 59°.									
29	iPZ	12	35	31.4	0.7			1.0		
29	C&GS 12-25-32.7; 51.5 N, 178.2 W; h = 51 km; Andreanof Islands, Aleutian Islands; felt on Adak; Mag. 5.3 (CGS); (P-H) 6555 km or 59°.									
29	eZ	23	14	10.8	0.6			0.8		
30	i(P)Z	07	34	27.4	0.5			1.0		

DATE	PHASE	Time G.C.T. h	m	s	Period Z	E	Sec. N	Trace Z	Amp. (mms) E	N
May										
1	C&GS 07-09-00.5, 39.7 N, 21.3 E, h = 15 km, Greece, at least 9 killed. More than 54 injured and extensive property damage in the northwestern Greece area. Mag. 5.75-6.0 (PAS), 5.8-6.2 (BRK), 5.75-6.0 (GOL), 5.5 (PAL), 5.6 (CGS), (P-H) 9335 km or 84° ca.									
	iPZ	07	21	32.7	0.8			4.0		
	eSEN	07	31	56.0		12.0	9.0		3.0	3.5
	eLEN	07	49	03.9		25.0	25.0		2.5	2.5
2	eZ	21	07	43.1	0.6			1.5		
2	eE	23	58	39.0		6.0			1.0	
3	C&GS 00-31-46*, 19.4 N, 108.2 W, h = 33R km, Revilla Gigedo Islands region, Mag. 4.3 (CGS), (P-H) 2335 km or 21° ca.									
	ePZ	00	36	25.4	0.8			0.5		
	e(S)E	00	40	25.4		NM			NM	
	eEN	00	43	02.4		7.0	6.0		1.2	1.5
3	iZ	15	48	59.3	0.7			1.0		
3	eZ	19	30	54.0	0.5			0.7		
3	eZ	20	47	39.8	0.5			0.5		
4	eZ	02	26	29.0	1.0			0.6		
4	eZ	04	05	00.8	1.6			0.5		
4	eZ	08	36	12.3	1.1			0.5		
4	eZ	14	14	10.0	0.7			1.1		
4	C&GS 22-34-50*, 30.6 N, 114.3 W, d = 28 km, Gulf of California, Mag. 5.0 (PAS), 4.5 (CGS), (P-H) = 2,000 km or 18° ca.									
	ePZ	22	38	57.8	1.2			0.5		
	e(L)ZEN	22	44	12.8	3.0	7.0	08.0	0.8	3.0	13.5
5	eZ	02	38	15.3	0.7			1.0		
5	i(P)Z	12	52	0.0	0.9			0.8		

DATE	PHASE	Time h	G.C.T. m	s	Period Z	E	N	Sec. Z	Trace Amp. (mms) E	N
May										
5	C&GS 17-06-14.9, 63.7 N, 148.5 W, h = 102 km, Central Alaska. Felt at Nenana, Fairbanks, and Fort Greely, Mag. 4.9 (CGS), (P-H) 4665 km or 42° ca.									
	iPZ	17	14	01.1	0.6			0.4		
	iZ	17	14	24.3	1.4			0.6		
5	iPZEN	17	57	43.4	0.8	2.0	2.0	2.0	1.1	1.4
	e(PP)Z	17	57	55.4	1.0			5.5		
6	eZ	02	04	36.3	0.7			0.5		
6	eZ	03	55	30.8	1.0			0.5		
6	C&GS 12-39-44*, 15.1 N, 92.4 W, h = 121 km, Mexico-Guatemala border region Mag. 4.3 (CGS), (P-H) 2335 km or 21° ca.									
	iPZ	12	44	20.8	0.7			1.0		
	e(S)Z	12	48	13.8	0.6			0.6		
6	C&BS--------14-00-41.4, 19.3 N, 70.0 W, h = 39 km, Dominical Republic region Mag. 5.3 (CGS), (P-H) 3000 km or 27° ca.									
	iPZ	14	06	22.6	0.7			2.0		
	e(S)ZN	14	12	01.1	0.8		6.0	0.6		1.7
	e(L)N	14	15	25.1			6.0			2.5
6	eZ	21	18	39.4	0.6			1.0		
7	eZ	01	34	04.7	0.5			0.6		
7	eZ	02	02	28.6	0.6			0.6		
7	e(P)Z	18	06	48.0	0.5			0.4		
	i(S)ZN	18	10	16.0	1.0		3.4	0.4		2.3
8	C&GS 08-06-27.1, 6.8 N, 73.4 W, h = 29 km, Northern Columbia, felt at Medellin, Mag. 4.4 (CGS), (P-H) 3890 km or 35° ca.									
	iPZ	08	13	17.8	0.7			0.3		
8	C&GS 14-40-09.9, 13.0 N, 88.2 W, h = 49 km, off coast of Central America. Felt at San Salvador, El Salvador, Mag. 4.6 (CGS), (P-H) 2665 km or 24° ca.									

DATE	PHASE	Time G.C.T. h	m	s	Period Sec. Z	E	N	Trace Amp. (mms) Z	E	N
May										
8	iPZ	14	45	21.4	0.5			1.5		
8	iPZ	23	43	04.5	0.6			2.0		
	iZ	23	43	15.8	0.7			2.0		
9	C&GS 06-14-57.1, 44.2 N, 149.0 E, h = 40R km, Kurile Islands, Mag. 5.3 (CGS), (P-H) 9110 km or 82° ca.									
	iPZ	06	27	12.1	0.8			0.5		
	iZ	06	27	24.6	1.0			1.4		
9	i(P)Z	11	12	20.6	0.7			1.0		
9	C&GS 12-36-36.8, 56.6 N, 152.6 W, h = 33R km, Kodiak Island Region, Mag. 5.0 (CGS), (P-H) 4890 km or 44° ca.									
	ePZ	12	44	40.4	0.8			0.8		
	e(L)EN	13	02	38.4		19.0	20.0		2.5	3.5
9	C&GS 15-06-58.6, 56.6 N, 152.3 W, h = 17 km, Kodiak Island Region, Mag. 4.8 (CGS), (P-H) 4890 km or 44° ca.									
	iPZ	15	15	02.9	0.9			1.0		
9	eZ	18	33	15.8	0.6			0.5		
9	eZ	20	01	02.6	0.6			1.1		
9	i(P)Z	21	48	52.8	1.0			1.0		
10	eZ	02	30	53.4	1.0			0.5		
11	iPZEN	15	15	24.6		1.8	1.8		1.8	5.5
	eSEN	15	23	32.1		9.0	5.0		2.5	4.0
	eLEN	15	46	14.1		16.0	18.0		1.3	1.8
12	C&GS 09-28-45.9, 7.0 N, 73.1 W, h = 144 km, Northern Columbia, felt at Bogota, Mag. 4.6 (CGS), (P-H) 3780 km or 34° ca.									
	iPZ	09	35	23.0	0.8			02.0		
12	eZ	19	50	44.1	0.5			1.0		
13	C&GS 05-18-55.4, 56.5 N, 152.6 W, h = 33R km, Kodiak Island Region, Mag. 4.7-4.9 (BRK), 5.3 (CGS), (P-H) 4890 km or 44° ca.									

DATE	PHASE	Time G.M.T. h	m	s	Period Z	E	Sec. N	Trace Amp. (mms) Z	E	N	11
May											
13	iPZ	05	26	58.6	0.8			0.6			
	eLEN	05	45	20.0		15.0	16.0		4.5	7.0	
13	eZ	19	43	43.7	0.6			0.5			
14	C&GS 08-38-33.1, ±0.6 s, 68.9 W, h = 109R km, Chile--Bolivia border region, Mag. 5.2 (CGS), (P-H) 6665 km or 60° ca.										
	iPZ	08	48	36.8	0.2			1.0			
	eZ	08	49	04.3	0.6			2.0			
14	iZ	17	40	50.5	0.6			0.6			
15	i(P)Z	02	40	52.6	0.9			0.6			
15	C&GS 17-08-57.1, 10.3 S, 74.6 W, h = 117 km, Peru, Mag. 5.1 (CGS), (P-H) 5445 km or 49° ca.										
	iPZ	17	17	38.4	0.7			0.3			
16	C&GS 08-14-34*, 33.2 S, 1108.4 W, h = 33R km, Easter Island Cordillera, Mag. 5.1 (CGS), (P-H) 7780 km or 70° ca.										
	iPZ	08	25	46.1	1.0			0.5			
16	C&GS 12-58-09.5, 13.5 N, 90.6 W, h = 95 km, near coast of Guatemala, Mag. 4.6-4.8 (BRK), 4.75-5.0 (GOL), 4.8 (CGS), (P-H) 2445 km or 22° ca.										
	iPZEN	13	03	04.5	0.9	3.0	3.0	1.0	1.0	2.0	
	eSEN	13	07	19.0		10.0	11.0		2.0	4.0	
	eLEN	13	16	37.0		10.0	10.0		2.5	3.0	
17	eEN	00	56	29.6		6.0	4.0		1.3	1.5	
17	iZ	11	25	36.4	1.0			0.4			
18	C&GS 11-22-31.6, 41.9 N, 144.7 E, h = 41 km, Hokkaido, Japan Region, Mag. 4.9 (CGS), (P-H) 9445 km or 85° ca.										
18	iPZ	11	35	07.2	2.0			0.5			
18	C&GS 1400-56.1, 42.0 N, 144.7 E, h=40 km, Hokkaido, Japan Region, Mag. 5.1 (CGS), (P-H) 9335 km or 84° ca.										
18	ePZ	14	13	31.0	2.0			0.5			

DATE	PHASE	Time G.M.T. h	m	s	Period Z	E	N	Sec. Z	Trace Amp. (nms) E	N	12
May											
21	eZ	01	29	06.6	1.0			0.5			
21	e(P)Z	03	17	0.4	1.7			1.0			
21	C&GS 07-18-13*, 27.9 N, 111.3 W, h = 33R km, Gulf of California, Mag. 4.4-4.8 (BRK), 5.5 (GOL), 4.7 (CGS), (P-H) 1890 km or 17° ca.										
	ePZEN	07	22	05.0	0.8	4.0	4.0	1.3	1.6	2.0	
	eSZEN	07	26	59.0	8.4	3.6	5.6	2.0	11.5	51.0	
	e(L)ZEN	07	31	49.0	14.0	7.2	8.0	1.8	5.5	12.5	
21	eZEN	14	52	24.2	3.0	3.0	3.6	0.5	0.8	2.0	
21	iPZEN	19	04	19.8	0.8	4.0	5.0	9.0	1.3	3.0	
	eZEN	19	07	32.8	0.8	4.0	4.0	4.7	1.5	5.0	
	iZ	19	16	01.8	1.0			1.8			
	eEN	19	14	01.8		3.0	4.0		2.8	5.5	
	e(L)EN	19	18	31.8		15.6	12.0		3.0	2.5	
21	iZ	20	19	16.6	0.8			0.7			
22	eN	22	46	32.8			6.0			4.0	
	eEN	22	50	14.8		4.0	6.0		1.8	6.0	
23	C&GS 08-03-31*, 15.5 N, 95.2 W, h = 51 km, Near Coast of Oaxaca, Mexico Mag. 4.1 (CGS), (P-H) 2335 km or 21 ca.										
	iPZ	08	08	09.5	0.6			0.5			
23	i(P)Z	08	54	05.0	1.0			6.2			
23	iPZEN	14	04	10.6	0.8	2.0	2.0	5.0	2.0	1.9	
	e(S)ZEN	14	09	23.6	1.5	3.4	3.0	2.0	2.8	14.5	
	eZEN	14	11	07.6	6.0	8.0	6.0	1.2	6.5	15.5	
26	eZ	00	10	39.0	0.9			0.6			

DATE	PHASE	Time G.M.T. h	m	s	Period Z	E	Sec. N	Trace Z	Amp. (nms) E	N
May										
26	iPZ	15	04	13.3	0.9			2.1		
	i(S)EN	15	11	07.3		9.0	7.0		5.0	7.0
27	C&GS 17-22-58.7, 51.9 N, 176.1 E, h = 34 R km, Rat Islands, Aleutian Islands, Mag 6.0 (PAS), 5.8 (BRK), 6.0 - 6.25 (PAL), 5.8 (CGS), (P-H) 7000 km or 6.3° ca.									
	iPZ	17	33	19.4	0.8			1.5		
	eSEN	17	43	08.2		2.6	2.0		3.5	4.5
28	i(P)Z	13	41	09.7	0.7			0.5		
30	e(S)EN	14	36	52.1		10.0	8.0		4.5	9.0
June										
3	C&GS 09-08-56.4, 58.4 N, 151.2 W, h =32 km, Kodiak Island Region, Mag 4.8 - 5.2 (BRK), 5.0 - 5.25 (PAL), 5.5 (CGS), (P-H) 4780 km or 43° ca.									
	ePEN	09	16	53.5		2.0	2.0		0.6	0.9
	e(S)EN	09	23	19.5		4.0	5.0		1.1	2.0
	e(L)EN	09	34	11.5		10.0	16.0		2.0	2.5
3	e(P)Z	21	57	27.8	0.7			0.5		
4	eZ	00	10	31.4	0.9			0.8		
4	eZ	02	58	58.0	0.9			0.6		
4	eZ	03	55	36.8	0.8			0.5		
4	C&GS 05-26-44.6, 51.4 N, 159.3 E, h= 9 km, off East Coast of Kamchatka, Mag 4.8 (CGS), (P-H) 8000 km or 72° ca.									
	iPZ	05	38	07.5	1.0			1.1		
4	C&GS 16-14-13.6, 33.6 N, 90.9 W, h = 33R km, Mississippi, Felt in Mississippi, Tennessee, Louisiana, and Arkansas. Mag 3.5 (PAL), 3.8 (CGS), (P-H) 445 km or 4° ca.									
	iPZEN	16	15	10.6	0.9	1.0	1.0	3.5	2.0	3.5
	iSZEN	16	16	06.7	1.0	0.8	1.2	76.0	11.5	31.0
4	iPZ	18	38	02.3	1.2			0.8		
	C&GS 18-28-39.6, 15.7 Sl 75.7 W, h = 38 km, Near Coast of Peru, Mag 4.7 (CGS), (P-H) 6,000 km or 54° ca.									

DATE	PHASE	Time G.M.T. h	m	s	Period Z	E	N	Sec. Z	E	N	Trace Amp. (mms) Z	E	N	14
June														
5	C&GS 01-21-20.2, 21.3 S, 174.5 W, h = 33R km, Tonga Islands, Mag 5.0-5.2 BRK, 5.2 (CGS), (P-H) 10,555 km or 95° ca.													
	ePZ	01	34	40.5	1.0						0.6			
	eZ	01	38	34.5	1.4						0.3			
5	e(L)EN	02	11	06.4		18.0	16.0					1.0	2.0	
5	eZ	12	06	53.2	1.0						1.5			
5	C&GS 16-38-36.2, 51.5 N, 159.1 E, h = 33R km, Off East Coast of Kamchatka, Mag 4.5 (CGS), (P-H) 7890 km or 71° ca.													
	ePZ	16	49	54.6	0.9						0.5			
7	eZ	03	29	16.4	0.8						0.6			
7	C&GS 07-06-33.2, 17.1 N, 99.9 W, h = 47 km, Guerrero, Mexico, Felt at Acapulco, Mag 4.3 - 4.7 (BRK), 4.4 (CGS), (P-H) = 2220 km or 20° ca.													
	iPZEN	07	10	58.4	1.0	3.0	3.6				1.5	0.9	5.5	
	e(S)EN	07	14	52.9		5.0	5.0					1.5	6.2	
	e(L)ZEN	07	17	36.9	2.5	4.0	4.6				0.5	2.3	3.3	
7	eZ	12	57	01.2	1.0						1.0			
7	C&GS 18-16-31.4, 47.5 N, 155.4 E, h = 29 km, Kurile Islands Region, Mag 5.2 (CGS), (P-H) = 8445 km or 76° ca.													
	iPZ	18	28	18.4	0.7						2.0			
7	eZ	21	19	23.1	0.9						0.8			
9	iZ	08	49	14.5	0.9						0.5			
9	eZ	20	48	52.5	0.6						1.5			
10	eZ	02	34	28.7	0.8						0.6			
10	C&GS 05-26-44.4, 41.3 S, 73.6 W, h = 37R km, Near Coast of Southern Chile, Mag. 5.7 (CGS), (P-H) 8665 km or 78 ca													
	iPZ	05	38	46.2	1.0						2.3			

DATE	PHASE	Time G.M.T. h	m	s	Period Z	E	N	Sec. Z	E	N	Trace Amp. (mms) Z	E	N
June													
10	iPZ	05	58	33.6	1.1						0.5		
	C&GS 05-45-53*, 3.6 S, 12.1 W, h = 12 km, North of Ascension Island, Mag 5.1 (CGS), (P-H) 9335 km or 84° ca.												
11	eZ	01	11	28.4	0.9						0.5		
11	eZ	01	58	48.3	1.0						0.3		
11	eZ	03	43	47.0	1.0						1.0		
11	iZ	12	02	05.6	1.0						0.5		
11	i(P)Z	15	40	35.9	0.7						0.6		
12	C&GS 00-05-06.5, 16.6 N, 46.6 W, h = 33R km, North Atlantic Ridge, Mag 5.1 (CGS), (P-H) 5110 km or 46° ca.												
	iPZ	00	13	31.4	1.0						0.9		
12	C&GS 02-51-05.5, 38.2 N, 22.7 E, h = 33R km, Greece, Mag 4.8, (P-H) 9445 km or 85° ca.												
	iPZ	03	03	44.4	0.8						1.4		
12	iPZ	03	27	11.0	1.0						2.0		
12	iPZ	21	37	22.0	1.0						2.8		
12	C&GS 23-22-45.3, 47.4 N, 154.3 E, h = 56 R km, Kurile Islands, Mag 5.5 - 5.7 (BRK), 5.4 (CGS), (P-H) 8445 km or 76° ca.												
	iPZ	23	34	32.8	0.9						2.5		
13	iPZ	01	29	39.0	1.0						3.0		
13	C&GS 19-08-54.4, 42.9 N, 78.2 W, h = 5 km, New York, Slight damage at Attica. Felt in western New York. Mag 3.9 (CGS), (P-H) 1665 km or 15° ca.												
	ePZ	19	12	39.8	0.7						0.3		
	e(S)ZEN	19	16	07.8	0.5	2.0	2.0				3.0	1.6	4.5
	eEN	19	16	55.8		3.0	3.8					1.5	3.5
14	iPZ	03	23	34.8	1.0						2.5		
14	i(P)Z	03	58	26.5	0.7						1.3		

DATE	PHASE	Time G.M.T. h	m	s	Period Z	E	Sec. N	Trace Amp. (mms) Z	E	N	16
June 14	C&GS 05-06-16.3, 15.2 S, 173.6 W, h = 11 km, Tonga Islands, Felt in Pago Pago and at Apia, Mag 5.6 - 5.8 (BRK), 5.9 (CGS), (P-H) 10,110 km or 91° ca.										
	iPZ	05	19	19.3	0.9			1.0			
14	C&GS 08-05-58.6, 47.5 N, 154.4 E, h = 55R km, Kurile Islands, Mag 4.4-4.8 (BRK), 5.3 (CGS), (P-H) 8445 km or 76° ca.										
	iPZ	08	17	44.7	1.0			2.0			
14	C&GS 08-13-02.2, 47.5 N, 154.5 E, h = 53R km, Kurile Islands, Mag 5.4 (CGS) (P-H) 8445 km or 76° ca.										
	iPZ	08	24	48.0	1.0			1.1			
14	eZ	16	11	35.1	0.9			0.5			
15	C&GS 00-35-21.7, 10.6 N, 65.3 W, h = 31 km, Near Coast of Venezuela, Mag 4.5 (CGS), (P-H) 4110 km or 37° ca.										
	iPZ	00	42	25.4	1.0			0.5			
15	iZ	02	45	30.1	0.9			0.6			
15	eZ	13	09	01.9	0.8			0.7			
16	C&GS 10-01-34.7, 15.0 S, 75.6 W, h = 22 km, Near Coast of Peru, Felt at Arequipa, Mag 4.6 (CGS), (P-H) 5890 km or 53° ca.										
	ePZ	10	10	47.4	1.0			0.6			
17	C&GS 05-00-11.8, 58.3 S, 26.6 W, h = 140 km, South Sandwich Islands Region, Mag 6.75 (PAS), 6.3-6.5 (BRK), 6.25-6.5 (GOL), 6.1 (CGS): (P-H) 12,000 km or 108° ca.										
	ePZ	05	14	39.9	1.0			0.5			
	eZEN	05	19	03.9	1.9	5.0	5.0	1.1	1.2	2.0	
	eEN	05	24	51.9		8.0	8.0		2.8	6.0	
	eEN	05	29	23.9		9.0	6.0		4.0	7.0	
17	eEN	01	13	58.5		16.0	12.0		2.0	1.5	

DATE	PHASE	Time G.M.T. h	m	s	Period Z	E	N	Sec. Z	E	N	Trace Amp. (mms) Z	E	N	17
June														
17	C&GS 17-43-55.2, 14.1 N, 90.0 W, h = 103 km, Guatemala. Felt at San Salvador, El Salvador. Mag 4.8 (CGS), (P-H) 2555 km or 23°													
	ePZ	17	48	55.3	0.8						1.0			
	e(S)ZEN	17	53	20.3	1.0	2.0	2.0				0.9	0.7	1.5	
18	i(P)Z	02	32	38.5	0.8						1.6			
19	C&GS 17-07-45.4, 52.7 N, 166.9 W, h = 33R km, Fox Islands, Aleution Islands, Mag. 5.0 (PAS), 6.3-6.5 (BRK), 5.75-6 (PAL), 5.75-6 (GOL), 5.7 (CGS), (P-H) 578 km or 52° ca.													
	e(P)EN	17	16	53.9		3.6	4.0					1.0	1.9	
	e(L)EN	17	32	55.9		18.0	16.0					3.5	3.0	
	e(S)EN	17	24	15.9		8.0	9.0					3.0	3.5	
20	e(S)E	07	55	22.0		4.0						1.5		
	e(L)EN	08	07	34.0		12.0	18.0					3.0	3.0	
21	C&GS 06-49-56.6, 2.2 S, 77.6 W, Peru-Ecuador Border Region. Felt at Quito, Ecuador, Mag 6.0 (PAS), 5.3 (CGS), (P-H) 4665 km or 42° ca.													
	e PEN	06	57	41.0		2.0	3.0					1.0	3.0	
	e(S)EN	07	03	51.0		4.0	4.0					1.5	3.5	
21	C&GS 18-13-02.9, 64.8 N, 147.4 W, h = 17 km, Central Alaska. Felt over 90,000 sq. mile area. Mag. 6.0 (PAS), 5.2-5.6(BRK), 6.25-6.5 (GOL), 6.1 (CGS), surface wave, 5.6 (CGS). (P-H) 4780 km or 43° ca.													
	ePEN	18	20	55.5		4.0	4.0					0.9	3.5	
	e(S)EN	18	26	31.5		10.0	11.0					27.0	36.0	
	e(L)EN	18	35	33.5		24.0	16.0					35.5	54.0	
21	C&GS 20-09-28.4, 25.2 S, 70.5 W, h = 23 km, Near Coast of Northern Chile Felt at TALTAL, Mag 5.7 (CGS), (P-H) 7220 km or 65° ca													
	ePEN	20	20	05.4		1.2	4.0					1.3	3.5	
	eSEN	20	28	45.4		6.0	6.0					2.0	4.5	
23	e(S)EN	12	17	07.8		5.0	4.0					3.0	4.5	
25	eZ	23	36	52.5	3.0						1.0			

DATE	PHASE	Time G.M.T. h	m	s	Period Z	E	Sec. N	Trace Amp (mms) Z	E	N
June										
26	C&GS 02-22-34.8, 18.4 N, 105.2 W, h = 45 km, Off Coast of Jalisco, Mexico. Mag. 5.7 (BRK), 4.75-5 (PAL), 5.5 (GOL), 5.0 (CGS), (P-H) 2220 km or 20° ca.									
	iPZEN	02	27	06.2	4.0	2.0	2.0	5.4	1.4	4.5
	iSEN	02	30	56.0		10.0	7.6		3.5	6.3
	eLZEN	02	33	32.0	16.0	7.0	6.0	1.4	39.0	51.0
26	eEN	04	24	47.7		7.0	7.4		1.4	1.5
28	eEN	15	35	13.4		22.0	20.0		1.1	1.1
29	C&GS 13-57-07*, 33.6 N, 90.9 W, h = 33R km, Mississippi. Felt in Washington, Bolivar, and Sunflower counties. Mag 3.4 (CGS), (P-H) 445 km or 4° ca.									
	iPZEN	13	58	04.7		0.8	1.0		0.4	0.4
	eSEN	13	59	02.3		2.0	3.0		2.7	8.0
30	eZ	20	02	47.2	1.8			1.0		

The University of Arkansas Seismograph Station is located on the University Farm, 2.5 miles northwest of the main campus at Fayetteville. Coordinates of the station are 36° 05.46' north latitude and 94° 11.47' west longitude. Altitude above mean sea level is 1,325 feet. The seismometer pier rests on the Boone limestone of lower Mississippian age. Approximately 2,500 feet of limestone, shale and sandstone overlie the pre-Cambrian crystalline rocks in the vicinity of the station.

University of Arkansas
Seismograph Station
Department of Geology
Fayetteville, Arkansas

UNIVERSITY OF ARKANSAS

SEISMOLOGICAL BULLETIN

Volume XVI Number 3

The University Of Arkansas Seismograph Station

Operated by the University's Department of Geology

in conjunction with the

United States Coast Guard and Geodetic Survey

Earthquakes for the Third Quarter of 1967

James E. Edson, Jr.

FAYETTEVILLE SEISMOGRAPH STATION

Volume XVI, Number 3, July 1969
Data for July, August, September 1967

Instruments

Vertical component - Benioff moving coil type, short period electromagnetic-galvanometric, Mass = 100 lbs.

Seismometer-Benioff moving coil period = 1.1 second
Galvanometer-Geotechnical Corp. period = 0.2 second
Damping ration - about 15:1 (near critical)
Recording drum speed = 60 mm per minute

Horizontal component - Wilson - Wilson-Lamison hinges type: E-W
N-S electromagnetic-galvanometric

Seismograph period - 6.0 seconds (N-S)
6.0 seconds (E-W)
Galvanometer-General Electric period - 4.1 seconds (N-S)
3.8 seconds (E-W)

Recording drum speed - 30 mm. per minute

Clock - IBM, electrically wound, invar pendulum type
accuracy limits generally within one tenth second

Radio - WWV Time Signal impressed manually by telegraph key on 5th, 10th, and 15th second. Time signals received by a Hallicrafter receiver, S-40B.

Vertical-Ground motion trace up (compression)
reading from left to right
N-S - Ground motion trace up - North
E-W - Ground motion trace up - East

(Additional information regarding the station is given on the back cover.)

Information in Remarks column is usually from U.S. Coast and Geodetic Survey epicenter cards. "C" following the trace amplitude indicates a compressional motion of the wave; "D" indicates delation.

Bulletin compiled by James E. Edson, Jr.
Observer

DATE	PHASE	Time G.M.T. h	m	s	Period Z	E	N	Sec. Z	E	N	Trace Amp. (mms) Z	E	N	1
July 2	e(L)EN	08	11	52.7		30.0	26.0					1.6	2.0	
4	eZ	02	48	34.0	0.9			0.6						
4	iPZ	06	18	29.6	0.9			1.1						
4	C&GS 06-12-58*; 10.8 N, 86.4 W; h = 33R km; off coast of Costa Rica; Mag. 4.1 (CGS); (P-H) 2890 km or 26°.													
4	iPZ	07	44	41.5	0.6			1.0						
4	C&GS 07-39-20*; 11.8 N, 87.3 W; h = 38 km; near coast of Nicaragua; Mag. 4.0 (CGS); (P-H) 2780 km or 25°.													
4	iPZ	13	34	28.9	1.0			1.0						
4	i(P)Z	14	28	38.5	0.9			0.8						
	eSEN	14	38	09.9		4.2	8.0					1.4	1.9	
4	C&GS 14-16-51.6; 38.1 S, 73.4 W; h = 28 km; near coast of Central Chile; felt strongly in Central Chile; Mag. 5.75 (PAS), 6.4-6.6 (BRK), 5.4 (CGS); (P-H) 8445 km or 76°.													
4	eZ	23	17	50.4	0.6			1.4						
4	iPZ	23	54	45.2	0.7			2.6						
4	C&GS 23-42-13.7; 43.2 N, 142.5 E; h = 160 km; Hokkaido, Japan Region; Mag. 5.4-5.8 BRK, 5.6 (CGS); (P-H) 9445 km or 85°.													
5	eEN	00	04	45.3		8.0	7.0					2.5	9.5	
5	iZ	04	11	32.4	0.6			0.7						
5	C&GS 04-03-06.8; 54.5 N, 157.9 W; h = 33 km; south of Alaska; Mag. 4.8 (CGS); (P-H) 5220 km or 47°.													
6	iPZEN	13	51	38.3	0.6	2.8	4.4	0.8				1.3	1.7	
	eSEN	13	59	06.7		8.0	4.0					2.8	3.5	
	LEN	14	12	59.1		9.0	8.0					3.0	4.5	
6	C&GS 13-42-22.5; 52.6 N, 168.2 W; h = 14 km; Fox Islands, Aleutian Islands; Mag. 6.25-6.5 (PAS), 5.8-6.0 (BRK), 5.75 (GOL), 6-6.25 (PAL), 5.9 (CGS); (P-H) 5890 km or 53°.													

DATE	PHASE	Time G.M.T. h	m	s	Period Z	E	Sec. N	Trace Z	Amp. (mms) E	N
July										
6	eEN	18	49	10.7		5.0	5.0		1.0	1.3
6	eEN	05	28	20.3		4.0	5.0		1.0	1.7
6	i(P)Z	21	43	24.9	0.8			1.7		
6	eZ	23	11	57.7	0.9			1.0		
7	eZ	02	34	02.4	0.6			0.5		
7	iZ	04	17	47.2	0.6			1.0		
7	eZ	15	57	07.8	0.7			1.4		
8	eZ	02	28	34.0	0.8			0.9		
	eZ	02	29	09.0	0.5			0.6		
8	eZ	23	11	40.3	0.6			0.8		
9	eZ	20	29	28.1	0.8			0.5		
12	e(P)N	21	07	01.4			5.8			6.0
	e(S)N	21	12	04.4			5.8			12.5
12	C&GS 21-00-20.9; 5.6 N, 82.6 W; h = 33R km; south of Panama; Mag. 6.5 (PAS); (P-H) 3780 km or 34°.									
13	eZ	00	17	13.8	1.0			1.1		
13	iZ	02	21	50.9	0.9			0.6		
13	C&GS 02-10-20.0; 35.5 N, 0.1 W; h = 13 km; Algeria: 10 killed, 15 injured, 40 houses destroyed at M'khalif; Mag. 5.0 (CGS); (P-H) 8110 km or 73°.									
15	i(P)Z	03	40	19.4	0.6			1.0		
15	C&GS 03-26-57.4; 49.8 N, 78.1 E; h = 0 km; Eastern Kazakh, USSR; Mag. 5.4 (CGS); (P-H) 10,555 km or 95°.									
15	eZ	08	25	18.4	0.7			0.9		
15	C&GS 08-14-59.3; 51.5 N, 176.8 E; h = 32 km; Rat Islands, Aleutian Islands; Mag. 4.9 (CGS); (P-H) 6890 km or 62°.									

DATE	PHASE	Time G.M.T. h	m	s	Period Z	E	N	Sec. Z	Trace Amp. (mms) E	N
July 15	eZ	11	59	37.1	0.7			0.6		
	eEN	12	04	49.1		4.0	4.0		1.0	1.0
15	(C&GS) 11-55-37*; 24.2 N, 108.9 W; h = 33R km; Gulf of California; Mag. 4.4 (CGS); (P-H) 2000 km or 18°.									
15	eZ	14	59	28.8	0.7			0.7		
15	e(P)Z	18	47	14.5	0.6			0.9		
	e(S)ZEN	18	49	30.5	0.4	2.0	2.2	2.0	0.6	0.6
15	i(P)Z	23	07	28.5	0.6			1.1		
	i(P)Z	23	16	45.2	0.7			0.7		
16	i(P)Z	09	19	59.8	1.0			2.0		
16	C&GS 09-15-21; 15.3 N, 94.9 W; h = 55 km; near coast of Oaxaca, Mexico; Mag. 4.1 (CGS); (P-H) 2335 km or 21°.									
16	i(P)Z	09	54	19.6	0.8			0.6		
16	e(S)EN	13	55	08.1		4.6	4.8		1.1	1.0
17	e(P)Z	19	23	45.0	0.4			1.0		
18	i(P)Z	09	21	06.2	0.8			2.0		
18	i(P)Z	19	36	18.6	1.0			1.7		
18	e(P)Z	21	49	31.6	0.6			1.0		
18	i(P)Z	22	03	26.8	0.8			1.7		
20	iPZ	13	21	23.4	1.2			4.0		
	eSNE	13	31	20.0		4.0	5.2		3.5	4.5
20	iPZ	14	36	27.7	0.7			0.8		
	eSNE	14	46	12.8		3.0	3.2		1.0	1.0
20	C&GS 14-26-14.1; 51.4 N, 178.3 E; h = 33 km; Rat Islands, Aleutian Islands; Mag. 4.6-5 (BRK), 5.3 (CGS); (P-H) 6780 km or 61°.									

DATE	PHASE	Time G.M.T. h	m	s	Period Sec. Z	E	N	Trace Amp. (mms) Z	E	N	4
July 20	iPZ	15	55	02.3	0.8			1.0			
	eSNE	15	56	16.7		4.5	3.8		2.5	3.1	
21	ePZ	02	33	00.2	0.7			0.6			
21	iPZ	07	21	44.7	1.0			1.4			
21	iPZ	09	15	33.3	0.8			25.0			
	eSNE	09	15	40.5		0.6	0.6		1.4	2.0	
21	C&GS 09-14-48.9; 37.5 N, 90.4 W; h = 35 km; eastern Missouri; felt in southeastern Missouri and southern Illinois; Mag. 3.9 (CGS); (P-H) 334 km or 3°.										
22	ePZ	16	07	43.1	0.5			1.2			
22	ePZ	17	09	55.0	1.3			1.1			
	ePNE	17	09	48.0		2.0	3.0		1.7	4.0	
	eSNE	17	20	29.0		6.0	4.0		13	14	
22	C&GS 16-56-53.3; 40.7 N; 30.8 E; h = 4 km; Turkey; 173 killed, 183 injured, major property damage in Sakarya, Hendek, and Akyazi provinces; Mag. 7.25 (PAS), 7.1-7.3 (BRK); (P-H) 9780 km or 88°.										
22	ePZ	19	33	51.9	0.3			0.9			
26	iPZ	19	06	17.6	1.0			0.9			
	eSNE	19	15	57.0		5.0	1.1		2.5	2.0	
26	C&GS 18-53-01.3; 39.5 N, 40.4 E; h = 33R km; Turkey: 92 killed, 120 injured, and major property damage in Eastern Turkey; Mag. 5.75-6 (PAL), 5.6 (CGS); (P-H) 10,445 km or 94°.										
27	iPZ	00	04	35.9	1.0			2.0			
	iSZN	00	05	28.3	1.1		3.0	2.0		3.0	
	eLN	00	09	24.4			5.5			4.5	
27	iPZ	01	27	36.2	1.1			1.2			

DATE	PHASE	Time G.M.T. h	m	s	Period Z	E	Sec. N	Trace Z	Amp. E	(mms) N	5
July											
27	C&GS 01-23-19*; 21.8 N, 108.1 W; h = 33R km; Revilla Gigedo Islands region; Mag. 3.8 (CGS); (P-H) 2110 km or 19°.										
27	ePZN	13	09	04.0	1.1		2.5	0.6		2.5	
27	ePZ	13	39	39.9	0.8			1.2			
27	C&GS 13-35-11*; 16.5 N, 98.2 W; h = 64 km; near coast of Guerrero, Mexico; Mag. 4.1 (CGS); (P-H) 2220 km or 20°.										
27	ePZN	14	30	43.8	1.5	1.6		0.5	2.0		
27	iPZ	16	59	00.4	1.0			1.0			
27	ePZ	22	57	24.9	0.8			1.2			
27	ePZ	23	18	19.9	0.6			0.7			
27	ePZ	23	44	59.8	0.7			1.1			
28	iPZN	03	50	58.3	0.9		3.1	4.0		2.0	
28	C&GS 03-46-29.8; 16.1 N, 96.6 W; h = 56 km; Oaxaca, Mexico; Mag. 4.6 (CGS); (P-H) 2220 km or 20°.										
29	iPZ	10	31	02.1	0.9			2.5			
29	ePZ	15	46	06.2	1.0			3.0			
29	ePZ	16	50	08.1	0.9			1.6			
29	ePZ	19	13	13.8	0.5			1.1			
30	ePZN	00	06	52.8	0.6		3.0	1.0		3.0	
	eSN	00	11	34.8			6.0			15.0	
	eLN	00	17	34.8			23.0			75.0	
30	ePZ	02	16	54.6	0.5			0.8			
30	ePZ	20	29	54.4	0.5			1.0			

DATE	PHASE	Time G.M.T. h	m	s	Period Z	E	Sec. N	Trace Z	Amp. E	(mms) N	1
August											
1	ePN	01	29	36.2			5.0			2.0	
1	iPZ	07	46	08.7	0.5			10			
1	ePZ	11	25	35.8	0.5			0.5			
2	ePZ	11	02	23.1	1.1			3.0			
2	ePZN	11	23	14.9	0.5		4.0	0.5		3.0	
2	ePZN	14	32	32.5	0.4		4.0	0.5		2.0	
6	i(P)Z	17	29	55.7	1.0			1.0			
7	e(P)Z	02	09	53.7	0.7			1.8			
7	eZ	09	58	43.4	0.6			1.3			
7	iPZ	11	22	53.5	0.5			2.0			
	e(L)	11	39	27.0		11.0	14.0		2.0	2.0	
7	C&GS 11-14-42.7; 58.7 N, 154.6 W; h = 37 km; Alaska Peninsula; Mag. 4.3-4.5 (BRK), 5.1 (CGS); (P-H) 5000 km or 45°.										
7	eZ	20	17	25.7	0.7			1.5			
8	eZ	01	58	44.3	0.8			1.0			
8	e(P)Z	14	41	57.1	1.0			0.8			
	e(L)ZEN	14	51	34.1	4.0	6.0	5.2	0.6	2.5	2.8	
8	C&GS 14-36-04; 8.7 N, 102.8 W; h = 34 km; off coast of Mexico; Mag. 4.6 (CGS); (P-H) 3220 km or 29°.										
8	eZ	19	47	08.2	0.9			1.5			
9	iPZ	07	22	45.8	0.7			1.0			
9	C&GS 07-14-08.1; 8.5 S, 73.8 W; h = 46 km; Peru: Brazil Border Region; Mag. 5.0 (CGS); (P-H) 5335 km or 48°.										
9	iZ	07	31	13.0	0.6			0.8			

DATE	PHASE	Time G.M.T. h	m	s	Period Z	E	Sec. N	Trace Z	Amp. E	(mms) N
August										
9	eZ	08	39	04.0	0.9			0.6		
	iZ	08	42	15.6	0.9			1.5		
9	eZ	11	33	29.6	0.9			0.8		
9	iPZEN	13	27	20.4	1.0	2.0	2.0	2.0	1.0	0.9
	eZ	13	27	56.4	0.6			20.5		
	eEN	13	28	07.4		2.0	4.0		3.0	2.5
	eZ	13	29	00.4	0.6			20.0		
	eSZEN	13	29	58.4	1.2	2.0	2.2	68.0	13.0	62.0
	eLZEN	13	31	02.4	0.9	6.0	6.0	38.0	30.0	45.0
9	C&GS 13-25-06.2; 39.9 N, 104.7 W; h = 5 km; Colorado, slight damage in Adams County; felt at Fraser, Pueblo, and Cheyenne, Wyoming; Mag. 5.3 (CGS); (P-H) 207 km or 9°.									
9	iPZ	16	13	38.0	1.0			0.8		
9	C&GS 16-09-13.4; 16.5 N, 98.5 W; h = 94 km; near coast of Guerrero, Mexico; Mag. 4.2 (CGS); (P-H) 2220 km or 20°.									
9	eZ	16	32	38.0	0.6			1.0		
10	ePZ	04	32	43.9	0.9			0.6		
10	C&GS 04-20-27.8; 45.0 S, 79.5 W; h = 33R km; off coast of Southern Chile; Mag. 5.0 (CGS); (P-H) 9110 km or 82°.									
10	eZ	06	30	22.7	0.5			1.0		
10	iPZEN	11	33	29.6	1.2	2.0	3.0	4.0	0.6	1.4
	i(S)EN	11	43	28.9		4.0	4.0		2.9	2.6
10	C&GS 11-21-22.3; 45.4 N, 150.3 E; h = 37 km; Kurile Islands; Mag. 5.5-5.9 (BRK), 5.7 (CGS); (P-H) 8890 km or 80°.									
10	iPZ	12	04	27.3	0.6			1.3		
10	C&GS 11-59-59.5; 16.6 N, 98.5 W; h = 58 km; near coast of Guerrero, Mexico; Mag. 4.8 (CGS); (P-H) 2220 km or 20°.									

DATE	PHASE	Time G.M.T. h	m	s	Period Z	E	Sec. N	Trace Z	Amp. E	(mms) N
August										
11	iZ	05	42	09.2	0.8			1.0		
11	ePZ	06	29	39.6	1.0			1.0		
11	C&GS 06-18-37*; 31.3 S, 111.9 W; h = 33R km; Easter Island Region; Mag. 4.9 (CGS); (P-H) 7665 km or 68°.									
12	e(P)Z	09	53	11.0	0.7			0.6		
	eEN	09	57	13.0		4.0	3.8		1.5	2.0
	e(S)EN	10	03	36.0		7.0	9.0		10.0	8.5
	eEN	10	04	34.0		10.0	12.0		15.0	20.5
12	C&GS 09-39-44.3; 24.7 S, 1777.5 W; h = 134 km; south of Fiji Islands; felt at Raoul; Mag. 6.5 (PAS), 6.1-6.3 (BRK), 5.8 (CGS); (P-H) 10,780 km or 97°.									
12	iPZ	10	51	53.5	0.9			1.0		
12	C&GS 10-40-43.9; 53.7 N, 160.4 E; h = 25 km; near east coast of Kamchatka; Mag. 5.0 (CGS); (P-H) 7780 km or 70°.									
12	e(L)E	13	23	04.7		20.0			1.5	
13	iPZ	20	19	35.6	1.0			5.9		
	iSEN	20	29	34.6		3.6	3.0		5.8	8.2
	iEN	20	30	15.0		2.0	4.0		3.5	9.2
13	eZ	22	18	52.3	0.9			0.7		
13	e(L)EN	23	02	24.2		16.0	16.0		3.5	3.0
13	ePZ	23	56	56.1	0.9			0.8		
13	C&GS 23-44-11*; 7.0 S, 12.6 W; h = 28 km; Ascension Island Region; Mag. 5.0 (CGS); (P-H) 9665 km or 87°.									
14	iPZEN	12	48	15.8	0.7	0.9	0.9	15.5	0.6	3.0
	eSZEN	12	51	44.5	1.0	3.8	4.0	3.0	1.3	2.0
14	C&GS 12-44-04.7; 17.3 N, 94.6 W; h = 120 km; Chiapas, Mexico; Mag. 4.5 (CGS); (P-H) 2000 km or 18°.									

DATE	PHASE	Time G.M.T. h	m	s	Period Z	E	Sec. N	Trace Amp. (mms) Z	E	N	4
August 15	eZ	03	01	22.0	1.0			0.9			
15	ePZ	03	29	49.9	0.8			0.6			
15	C&GS 03-23-52.3; 19.2 N, 68.5 W; h = 39 km; North Atlantic Ocean; Mag. 4.9 (CGS); (P-H) 3110 km or 28°.										
15	ePZ	11	27	03.1	0.9			0.6			
15	C&GS 11-18-34*; 8.3 S, 80.4 W; h = 33R km; off coast of Northern Peru; Mag. 4.3 (CGS); (P-H) 5220 km or 47°.										
16	eZ	02	14	23.1	0.6			0.8			
16	i(P)Z	10	26	0.1	0.5			1.5			
17	i(P)Z	22	50	05.1	0.6			2.0			
17	C&GS 22-42-09.3; 59.4 N, 151.4 W; h = 55 km; Kenai Peninsula, Alaska; felt at Palmer; Mag. 5.0 (CGS); (P-H) 4780 km or 43°.										
17	i(P)Z	23	30	27.7	0.6			2.0			
17	C&GS 23-20-02.7; 22.8 S, 68.9 W; h = 90 km; Northern Chile; Mag. 4.7 (CGS); (P-H) 7000 km or 63°.										
18	ePZ	05	58	29.3	0.6			0.7			
18	C&GS 05-50-29.0; 61.5 N, 151.0 W; h = 19 km; Southern Alaska, felt at Palmer; Mag. 4.5 (CGS); (P-H) 4780 km or 43°.										
20	e(P)N	20	06	49.8			3.0			1.1	
	eN	20	13	37.8			8.0			2.2	
	eN	20	22	05.8			6.0			2.1	
20	C&GS 19-58-22*; 8.8 S, 108.3 W; h = 33R km; Northern Eastern Island, Cordillera; Mag. 4.9 (CGS); (P-H) 5220 km or 47°.										
21	e(P)N	07	52	32.0			4.0			1.3	
	eN	07	56	02.0			6.0			6.2	
	eN	08	37	23.8			38.0			2.5	
	eN	08	58	39.8			23.0			8.0	

DATE	PHASE	Time G.M.T. h	m	s	Period Z	E	Sec. N	Trace Z	Amp. E	(mms) N
August 22	e(P)EN	13	21	23.5		3.2	2.8		1.7	3.0
	e(S)EN	13	30	49.5		20.0	16.5		5.5	8.5
	e(L)EN	13	55	09.4		30.0	30.0		6.0	8.0
24	eN	11	48	31.5			4.0			1.7
24	i(P)Z	21	22	58.3	0.4			3.5		
25	eZ	02	14	17.3	0.9			0.9		
25	iZ	11	51	59.4	0.9			2.1		
25	iZ	15	24	25.0	0.6			2.0		
26	e(P)Z	00	54	34.2	1.0			0.6		
	iZEN	00	55	36.9	2.5	4.6	6.0	2.3	2.0	2.2
	eEN	01	05	01.2		9.0	9.6		2.5	3.0
	eZ	01	06	16.2	1.0			0.6		
26	eZ	02	27	58.1	0.6			1.0		
26	eZ	12	11	58.4	0.6			2.5		
26	eZ	13	31	51.3	1.0			1.2		
27	eZ	02	14	30.7	0.5			1.0		
27	iPZEN	13	14	03.2	0.5	01.8	03.0	20.2	02.1	2.8
	i(PP)ZEN	13	14	38.5	0.7	05.6	06.0	07.5	04.0	11.0
	i(S)EN	13	18	10.7		03.8	05.6		03.0	4.0
	e(SS)EN	13	19	19.9		07.0	09.0		10.0	15.0
27	C&GS 13-08-55.9; 12.3 N, 86.2 W; h = 183 km; Nicaragua: felt in Managua Area; Mag. 5.2 (CGS); (P-H) 2665 km or 24°.									
27	iPZ	13	40	55.7	0.7			1.5		
	e(S)EN	13	46	0.7		6.0	04.0		1.5	2.5
	e(L)EN	13	50	46.7		11.0	11.0		1.8	3.5

DATE	PHASE	Time G.M.T. h	m	s	Period Sec. Z	E	N	Trace Amp. (mms) Z	E	N
August 27	C&GS 13-34-52.6; 50.2 N, 130.0 W; h = 24 km; Vancouver Island Region; Mag. 5.1 (CGS); (P-H) 3335 km or 30°.									
28	iPZ	01	04	56.6	0.7			06.5		
28	i(P)Z	12	04	22.2	0.9			0.8		
	iZ	12	05	19.6	0.9			2.0		
28	iPZEN	15	31	54.1	1.0	0.9	0.6	1.5	0.5	1.0
	e(S)EN	15	36	56.1		8.0	6.0		2.1	2.0
	eLZEN	15	41	40.1	20.0	10.0	11.0	1.0	7.5	10.0
28	C&GS 15-25-51.8; 50.4 N, 129.9 W; h = 33R km; Vancouver Island Region; Mag. 4.2-4.4 (BRK), 5.2 (CGS); (P-H) 3335 km or 30°.									
28	iZ	16	09	20.0	0.7			1.5		
28	iPZEN	16	26	08.0	0.8	3.0	3.0	0.8	1.0	1.5
	e(S)EN	16	31	34.0		4.0	7.0		2.0	2.5
	e(L)ZEN	16	36	04.0	20.0	9.0	10.8	1.0	8.5	9.5
28	C&GS 16-20-06.6; 50.4 N, 129.8 W; h = 33R km; Vancouver Island Region; Mag. 4.2-4.4 (BRK), 5.1 (CGS); (P-H) 3335 km or 30°.									
28	eZ	20	41	20.5	0.6			1.7		
29	eZ	04	15	57.3	0.9			1.0		
29	i(P)Z	04	54	50.2	1.0			1.1		
29	C&GS 04-43-42.5; 31.9 S, 112.3 W; h = 33R km; Easter Island Region; Mag. 4.9 (CGS); (P-H) 7665 km or 69°.									
29	eZ	07	46	44.0	0.6			0.8		
29	iPZ	17	19	38.1	0.8			1.5		
29	C&GS 17-14-13*; 40.4 N, 125.5 W; h = 17 km; off coast of northern California; Mag. 4.4 (CGS); (P-H) 2890 km or 26°.									

DATE	PHASE	Time G.M.T. h	m	s	Period Z	E	Sec. N	Trace Z	Amp. E	(mms) N
August										
30	e(P)ZN	04	40	49.8	1.0		4.4	0.9		4.0
	e(S)EN	04	50	48.8		5.0	6.0		1.1	4.5
	e(L)EN	05	15	51.8		20.0	31.0		3.0	7.5
30	eZ	13	10	10.0	0.6			2.0		
30	iPZN	13	45	31.5	1.0		4.0	2.0		2.0
	e(S)N	13	55	22.9			5.2			2.0
30	C&GS 13-33-26.4; 45.4 N, 151.5 E; h = 33R km; Kurile Islands; Mag. 5.5 (CGS); (P-H) 8890 km or 80°.									
30	eZ	14	58	01.8	0.9			1.5		
31	eZ	01	15	06.2	0.9			1.8		
31	ePZ	14	15	14.9	0.9			2.5		
31	C&GS 14-06-36.5; 10.3 S, 78.1 W; h = 62 km; near coast of Peru; Mag. 5.0 (CGS); (P-H) 5335 km or 48°.									
31	eZ	16	00	43.7	0.9			2.0		
31	iZ	16	34	10.0	0.8			1.0		
September										
1	C&GS 02-49-18.3; 6.9 N, 73.0 W, d = 151 km; Northern Colombia, felt at Bogota. Mag. 4.6 (CGS), (P-H) 3780 km or 34° ca.									
	i(P)Z	02	55	57.6	0.6			2.3		
1	eZ	20	01	40.5	0.5			1.6		
1	C&GS 22-42-01.8, 44.9 N, 147.0 E, d = 134 km., Kurile Islands, Mag. 5.4 (CGS), (P-H) 8890 km or 80° ca.									
1	iPZ	22	54	08.7	1.0			3.5		
2	eZ	19	11	06.5	0.5			1.5		
2	eZ	20	24	10.4	0.7			1.7		

DATE	PHASE	Time G.M.T. h	m	s	Period Z	E	N	Trace Amp. (mms) Z	E	N	Δ
September											
2	eZ	21	01	27.0	0.8			3.0			
2	eZ	21	43	37.9	0.8			2.0			
3	eZ	01	56	28.5	0.7			1.2			
3	eZ	02	56	45.4	0.6			1.4			
3	eZ	11	31	44.5	0.4			1.5			
3	C&GS 11-30-51.7, 60.5 N, 151.6 W, d = 79 km, Kenai Peninsula, Alaska, Mag. 4.7 (CGS), P-H 4390 km or 44° ca.										
3	i(P)Z	11	38	47.0	1.0			1.0			
3	C&GS 21-07-30.8, 10.6 S, 79.8 W, d = 38 km, off coast of Peru, felt at Lima, Mag. 6.75-7.0 (PAS), 6.5 (CGS), (P-H) 5335 km or 48° ca.										
3	iPZEN	21	16	11.2	0.7	1.0	4.0	91.0	5.5	44.0	
	eSZEN	21	23	12.9	08.0	6.8	9.0	02.5	8.0	55.0	
	e(L)ZN	21	30	08.9	41.0	28.0		01.0		30.0	
4	eZ	04	08	35.9	2.0			0.7			
	eZ	04	09	58.9	2.0			1.5			
4	C&GS 16-06-09*, 9.2 S, 77.3 W, d = 33 R km, Peru, Mag. 4.8 (CGS), (P-H) 5335 km or 48° ca.										
4	i(P)Z	16	14	48.2	0.6			2.0			
4	i(P)Z	19	41	06.1	0.8			5.0			
4	i(P)Z	22	16	28.5	0.8			2.5			
5	eZ	21	51	26.9	0.5			1.0			
6	C&GS 03-19-12*, 46.7 N, 154.0 E, d = 33 r. km, Kurile Islands Region, Mag. 4.8 (CGS), (P-H) 8555 km or 77° ca.										
	iPZ	03	31	05.6	1.0			1.0			
6	e(P)Z	05	20	46.0	0.6			1.7			

DATE	PHASE	Time G.M.T. h	m	s	Period Sec. Z	E	N	Trace Amp. (mms) Z	E	N
September										
6	i(P)Z	07	49	17.6	1.0			1.1		
6	C&GS 17-24-40.1, 52.6 N, 168.5 W, d = 33 R km, Fox Islands, Aleutian Islands, Mag. 4.8 (CGS), (P-H) 5890 km or 53° ca.									
	i(P)Z	17	33	55.4	0.8			1.4		
7	C&GS 01-59-58.1, 31.3 N, 114.4° W, d = 11 km, Gulf of California, Mag. 5.5 (PAS), (P-H) 2000 km or 18° ca.									
	i(P)Z	02	04	03.1	1.1			1.8		
	e(S)ZN	02	09	09.5	2.0		3.0	2.1		14.0
	e(L)ZN	02	12	51.5	5.0		6.0	0.7		8.0
7	eZN	03	04	30.3	0.8		3.0	0.5		2.5
7	e(S)ZN	04	48	50.0	1.0		4.0	0.6		2.5
7	e(P)Z	07	31	09.6	1.0			3.5		
	iZ	07	32	14.6	1.4			1.3		
	iZ	07	34	0.6	2.0			0.6		
	eZ	07	43	52.5	1.4			0.7		
7	i(P)Z	13	49	09.5	1.0			1.0		
	e(S)ZN	13	54	15.7	2.2		2.0	1.0		4.5
7	eZN	14	34	13.4	3.0		3.0	0.6		2.0
7	eZ	15	17	19.3	0.6			1.4		
7	C&GS 18-47-06*, 15.9 N, 95.6 W, d = 13 km, near coast of Oaxaca, Mexico, Mag. 4.1 (CGS), (P-H) 2335 km or 21° ca.									
	i(P)Z	18	51	42.7	0.6			1.5		
8	eZ	01	29	15.8	0.6			0.8		
8	i(P)Z	03	58	26.2	0.9			2.7		

DATE	PHASE	Time G.M.T. h	m	s	Period Z	E	Sec. N	Trace Amp. (mms) Z	E	N
September										
8	C&GS 08-06-56.2, 34.2 S, 71.4 W, d = 33 R km, near coast of central Chile, felt at Santiago, Mag. 4.8 (CGS), (P-H) 8,000 km or 72° ca.									
	ePZ	08	18	22.7	0.9			0.7		
8	C&GS 08-59-59.3, 23.4 S, 70.7 W, d = 33 km, near coast of northern Chile, felt at Antofagasta, Mag. 5.5 (CGS), (P-H) 7000 km or 63° ca.									
	iPZ	09	10	25.1	0.7			4.0		
8	eZ	09	40	01.0	0.7			0.7		
8	eZ	22	56	23.0	2.0			0.6		
9	iPZN	10	16	58.3	0.8		2.0	23.0		13.5
	iSZN	10	25	14.1	1.0		4.0	2.2		25.5
9	e(L)N	17	43	24.5			16.0			3.5
10	C&GS 15-51-42.3, 13.2 N, 89.5 W, d = 69 km, El Salvador, flet at San Slavador, mag. 3.8 (CGS), (P-H) 2555 km or 23° ca.									
	ePZ	15	56	44.1	0.6			0.8		
10	eZ	21	22	16.0	0.6			1.1		
11	eZ	15	46	43.6	0.6			1.0		
11	eZ	20	43	01.2	0.9			3.2		
12	C&GS 00-16-02.8, 16.7 N, 98.4 W, d = 87 km, near coast of Guerrero, Mexico, Mag. 4.5 (CGS), (P-H) 2220 km or 20° ca.									
	ePZ	00	20	28.1	1.0			1.0		
12	C&GS 02-43-33.1, 44.6 N, 149.8 E, d = 25 km, Kurile Islands, Mag. 5.1 (CGS), (P-H) 8890 km or 80° ca.									
	i(P)Z	02	55	46.5	1.0			1.8		
12	C&GS 10-05-33.1, 17.0 N, 97.3 W, d = 88 km, Oaxaca, Mexico, Mag. 4.4 (CGS), (P-H) 2110 km or 19° ca.									
	i(P)Z	10	09	53.0	0.9			1.0		

DATE	PHASE	Time G.M.T. h	m	s	Period Z	E	Sec. N	Trace Amp. (mms) Z	E	N
September										
12	C&GS 10-14-43*, 16.6 N, 97.6 W, d = 70 km, Oaxaca, Mexico, Mag. 4.3 (CGS), (P-H) 2220 km or 20° ca.									
	i(P)Z	10	19	07.3	0.8			1.0		
12	C&GS 11-11-31.3, 5.0 S, 11.5 W, d = 33R km, Ascension Island Region, Mag. 4.9 (CGS), (P-H) 9555 km or 86° ca.									
	iPZ	11	24	14.4	1.0			1.0		
14	eZ	12	00	31.6	0.8			1.0		
14	eZ	13	02	08.6	0.6			1.0		
16	iZ	16	55	32.5	0.6			2.4		
17	C&GS 07-56-22.7, 17.2 N, 94.1 W, d = 45 km, Chiapas, Mexico, Mag. 5.2 (CGS), (P-H) 2110 km or 19° ca.									
	e(S)N	16	58	24.4			3.2			4.5
18	e(P)N	07	04	51.2			4.0			4.5
	eN	07	06	26.2			8.2			6.8
18	iZ	14	41	23.4	0.9			1.6		
18	eZ	15	51	48.3	0.6			1.2		
19	C&GS 10-56-08.6, 43.0 N, 145.2 E, d = 84 km, Hokkaido, Japan region, Mag. 6.5 (PAS), 6.2-6.6 (BRK), 6.25-6.5 (PAL), 5.9 (CGS), (P-H) 9220 km or 83° ca.									
	i(P)ZEN	11	08	32.8	1.0	1.8	1.6	4.0	1.2	1.9
	i(S)EN	11	18	43.2		5.6	9.0		3.2	16.5
	iEN	11	19	28.2		4.0	6.0		3.5	6.5
20	e(P)ZEN	09	58	12.4	0.8	1.8	2.0	0.6	0.7	1.0
	eLEN	10	42	51.3		17.0	17.0		2.3	6.0
	eZEN	10	00	00.4	1.5	4.0	4.0	0.7	1.5	4.0

DATE	PHASE	Time G.M.T. h	m	s	Period Z	E	Sec. N	Trace Amp. (mms) Z	E	N
September 21	e(S)EN	00	11	45.6		4.0	4.0		2.3	6.0
22	C&GS 08-08-04.3, 0.7 S, 20.1 W, d = 33R km, Central Mid-Atlantic Ridge Mag. 5.3 (CGS), (P-H) 8555 km or 77° ca.									
	iPZ	08	19	57.8	0.8			4.0		
22	C&GS 10-17-59.9, 44.5 N, 149.4 E, d = 60 km, Kurile Islands, Mag. 5.3-5.7 (BRK), 5.9 (PAL), 5.6 (CGS), (P-H) 9000 km or 81° ca.									
	i(P)ZEN	10	30	10.0	1.0	2.8	3.0	3.6	1.5	2.5
	i(S)EN	10	40	15.5		4.0	6.0		2.1	5.5
	e(L)N	11	05	51.4			18.0			3.0
22	C&GS 11-19-21.4, 44.3 N, 149.4 E, d = 50 km, Kurile Islands, Mag. 4.4 (CGS), (P-H) 9000 km or 81° ca.									
	ePZ	11	31	34.4	1.0			0.8		
22	C&GS 12-34-51.6, 44.4 N, 149.4 E, d = 51 km, Kurile Islands, Mag. 4.8 (CGS), (P-H) 9000 km or 81° ca.									
	i(P)Z	12	47	03.7	1.0			1.2		
23	i(P)Z	07	09	21.9	0.9			1.1		
	e(S)Z	07	13	31.9	1.2			2.1		
23	C&GS 09-13-12.3, 51.6 N, 172.7 E, d = 45 km, near Islands, Aleutian Islands, Mag. 4.8 (CGS), (P-H) 7110 km or 64° ca.									
	iPZ	09	23	44.8	0.5			1.0		
23	eZ	14	39	08.3	0.8			1.1		
	iZ	21	51	37.9	0.7			1.4		
23	iZ	23	10	05.7	0.7			.85		
24	iZ	00	04	26.8	0.5			1.1		
24	eZ	06	19	25.7	0.8			0.6		

DATE	PHASE	Time G.M.T. h	m	s	Period Z	E	Sec. N	Trace Amp. (mms) Z	E	N
September										
25	C&GS 04-03-50*, 15.9 S, 75.2 W, d = 33R km, near coast of Peru, Mag. 4.7 (CGS) (P-H) 6110 km or 55° ca.									
	i(P)Z	04	13	17.7	0.6			.75		
25	C&GS 08-10-06.7, 17.7 N, 61.5 W, d = 33R km, Leeward Islands, Mag. 4.6 (CGS), (P-H) 3780 km or 34° ca.									
	iPZ	08	16	48.0	1.0			.95		
25	iPZ	09	13	31.7	0.8			2.0		
25	eZ	09	54	30.8	1.0			.6		
25	C&GS 23-38-39*, 16.3 N, 96.4 W, d = 29 km, Oaxaca, Mexico, Mag. 3.8 (P-H) 2220 km or 20° ca.									
	i(P)Z	23	43	10.6	0.6			1.3		
26	eZ	02	11	49.6	0.6			0.7		
26	C&GS 11-11-23.7, 33.6 S, 70.5 W, d = 84 km, Chile--Argentina border region, minor damage in Santiago, Chile area. Mag. 5.5-5.7 (BRK), 5.8 (CGS), (P-H) 8220 km or 74° ca.									
	iPZEN	11	22	41.6	1.0	0.5	1.0	9.0	0.8	1.1
	e(PP)Z	11	23	04.8	1.1			7.0		
	i(S)EN	11	32	00.8		4.0	6.8		1.5	2.5
26	C&GS 16-11-23.9, 30.0 S, 71.5 W, d = 55R km, near coast of central Chile, Mag. 6.75 (PAS) 5.8-6.0 (BRK), (P-H) 7555 km or 68° ca.									
	iPZEN	16	22	24.5	1.0	1.8	2.0	9.0	1.1	2.6
	i(S)EN	16	31	28.4		6.0	7.0		3.7	12.5
27	iPZEN	17	04	8.3	1.2	.5	.5	4.5	1.1	1.0
	e(PP)ZE	17	05	23.5	1.0	.8		.4	2.1	
	eSZEN	17	09	15.7	1.0	1.3	1.2	.3	.2	5.5
28	e(L)E	05	52	46.1		18.0			1.5	

DATE	PHASE	Time G.M.T. h	m	s	Period Z	E	Sec. N	Trace Amp. (mms) Z	E	N
September 28	C&GS 15-44-55.7, 59.5 N, 147.7 W, d = 28 km, Gulf of Alaska, felt on Middleton Island, Mag. 5.4-5.8 (BRK), 5.6 (CGS), (P-H) 4665 km or 42° ca.									
	e(P)E	15	52	44.8		3.8			1.3	
	e(S)E	15	58	50.8		6.0			1.8	
	e(L)E	16	08	07.8		17.0			9.5	
30	iPZ	03	25	36.1	.7			1.2		
30	ePZE	22	51	25.1	1.0	.2		2.0	.2	
	e(S)ZE	23	21	50.6	.8	1.2		1.0	1.2	

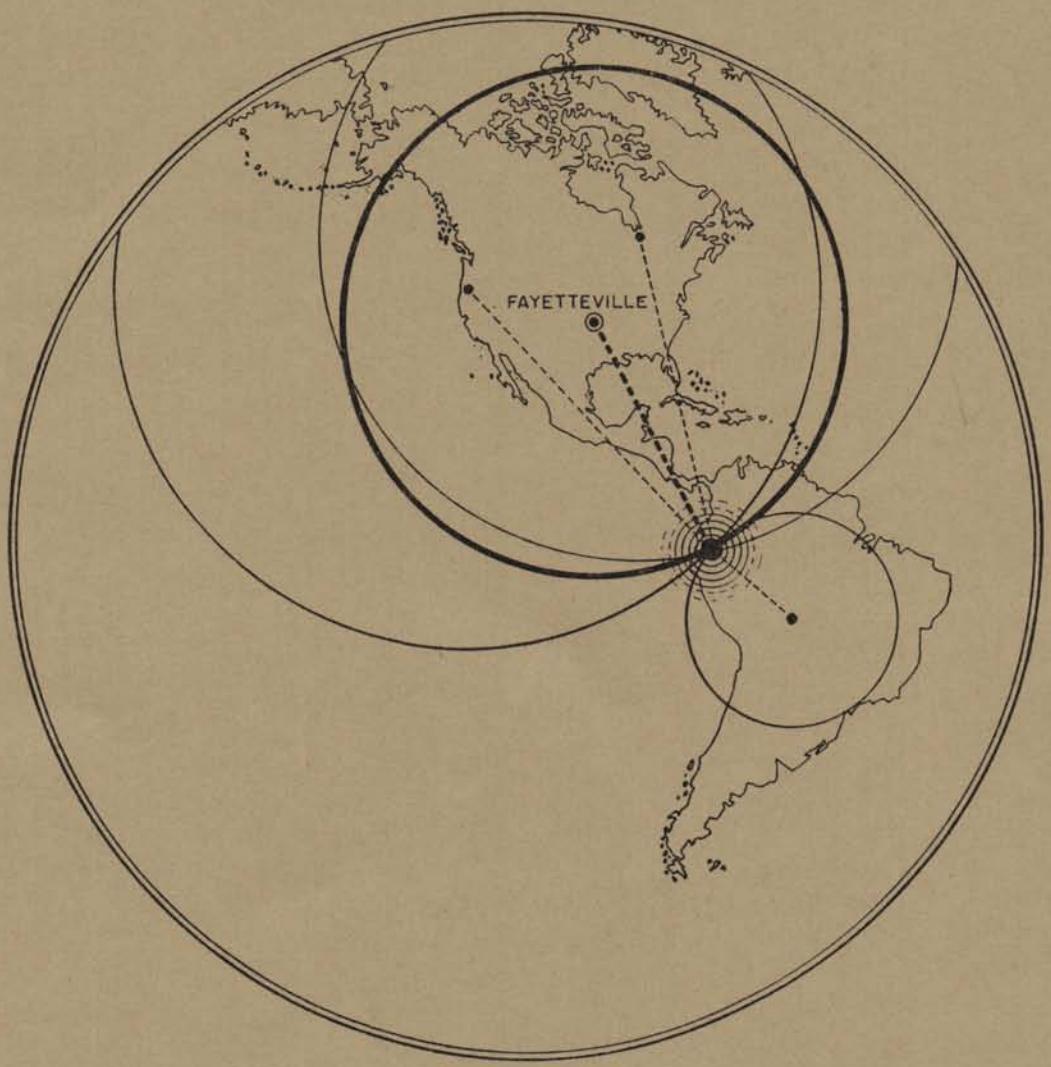
The University of Arkansas Seismograph Station is located on the University Farm, 2.5 miles northwest of the main campus at Fayetteville. Coordinates of the station are 36° 05.46' north latitude and 94° 11.47' west longitude. Altitude above mean sea level is 1,325 feet. The seismometer pier rests on the Boone limestone of lower Mississippian age. Approximately 2,500 feet of limestone, shale and sandstone overlie the pre-Cambrian crystalline rocks in the vicinity of the station.

University of Arkansas
Seismograph Station
Department of Geology
Fayetteville, Arkansas

UNIVERSITY OF ARKANSAS

SEISMOLOGICAL BULLETIN

Volume XVI **Number 4**



The University Of Arkansas Seismograph Station

Operated by the University's Department of Geology

in conjunction with the

United States Coast Guard and Geodetic Survey

FAYETTEVILLE SEISMOGRAPH STATION

Volume XVI, Number 4, September 1969
Data for October, November, December 1967

Instruments

Vertical component - Benioff moving coil type, short period electro-magnetic-galvanometric, Mass = 100 lbs.

Seismometer-Benioff moving coil period = 1.1 second
Galvanometer-Geotechnical Corp. period = 0.2 second
Damping ration - about 15:1 (near critical)
Recording drum speed = 60 mm per minute

Horizontal component - Wilson - Wilson-Lamison hinges type: E-W
N-S electromagnetic-galvanometric

Seismograph period - 6.0 seconds (N-S)
6.0 seconds (E-W)
Galvanometer-General Electric period - 4.1 seconds (N-S)
3.8 seconds (E-W)

Recording drum speed - 30 mm. per minute

Clock - IBM, electrically wound, invar pendulum type
accuracy limits generally within one tenth second

Radio - WWV Time Signal impressed manually by telegraph key on 5th, 10th, and 15th second. Time signals received by a Hallicrafter receiver, S-40B.

Vertical-Ground motion trace up (compression)
reading from left to right
N-S - Ground motion trace up - North
E-W - Ground motion trace up - East

(Additional information regarding the station is given on the back cover.)

Information in Remarks column is usually from U. S. Coast and Geodetic Survey epicenter cards. "C" following the trace amplitude indicates a compressional motion of the wave; "D" indicates dilation.

Bulletin compiled by James E. Edson, Jr.
Observer

DATE	PHASE	Time G.M.T. h	m	s	Period Z	E	N	Trace Amp. (mms) Z	E	N
October										
1	ePZ	08	11	29.6	.7			2.0		
3	i(P)E	18	21	11.8		2.0			2.25	
	e(S)E	18	26	47.9		10.0			3.2	
	e(L)EN	18	33	58.0		19.0	21.0		2.5	8.7
4	i(P)Z	2	59	03.1	1.5			.5		
4	i(P)ZEN	07	07	51.1	.9	2.0	4.0	3.5	.8	1.1
4	iPZN	10	04	58.6	.8		4.0	1.5		1.6
	e(S)ZE	10	05	58.2	2.2	2.2	4.0	2.2	.5	2.0
4	i(P)ZE	10	08	55.0	.5			.6		
	e(S)E	10	09	28.1		3.8			1.1	
4	iPZE	11	23	38.7	.7	6.0		1.4	1.5	
	iPPZEN	11	24	39.6	.7	1.6	2.0	2.5	3.1	1.6
	iSZEN	11	27	44.0	.2	3.2	7.0	9.0	8.6	10.0
4	e(L)ZEN	19	13	15.3	19.0	24.0	14.0	1.0	6.5	17.5
4	C&GS 22-27-29*, 14.7 N, 92.3 W, d = 33R km, Near Coast of Chiapas, Mexico, Mag = 4.2 (CGS), (P-H) 2335 km or 21° ca									
	e(P)Z	22	32	10.7	.2			1.1		
5	i(P)Z	02	02	39.6	.4			1.7		
5	iPZ	04	50	38.9	.7			2.0		
5	C&GS 12-00-51.2, 37.8 N, 20.7 E, d = 15 km, Ionia Sea, Mag 5.0 (P-H) 9445 km or 85° ca.									
	i(P)Z	12	13	26.4	.5			1.1		
6	iPZ	04	19	34.9	.9			2.0		
7	C&GS 01-14-04.1, 29.6 S, 71.1 W, d=42 km, Near Coast of Central Chile Slight damage at La Serena. Felt at Illapel, Mag 4.4-4.8 (BRK), 5.3 (CGS), (P-H) 7555 km or 68° ca.									
	iPZ	01	25	04.6	1.2			2.5		
7	iPZ	08	39	20.0	.8			1.9		

DATE	PHASE	Time G.M.T. h	m	s	Period Sec. Z	E	N	Trace Amp. (mms) Z	E	N
October										
7	C&GS 09-06-52.3, 49.2N; 156.3E, d=33R, Kurile Islands, Mag 4.9 (CGS) (P-H) 8220 km or 74° ca.									
	i(P)Z	09	18	28.8	1.0			1.0		
8	i(P)Z	03	04	02.4	.6			1.5		
8	i(P)Z	03	27	51.8	.7			1.6		
9	iPZ	15	21	42.9	1.0			3.5		
9	e(P)Z	15	53	28.9	.7			1.1		
9	iPZ	18	34	21.5	.8			3.7		
	i(PP)Z	18	38	30.7	2.0			12.1		
10	iPZ	17	05	37.3	.7			2.0		
11	iPZE	13	04	32.0	.4	.2		.3	.2	
	i(S)ZEN	13	06	19.0	1.2	.2	6.0	.4	.2	.4
11	e(P)ZN	13	13	34.1	2.0		1.1	1.2		.2
11	iPZ	15	23	41.1	1.0			2.2		
11	iPZ	18	50	53.9	1.0			2.5		
	i(S)ZEN	18	54	20.5	2.0	4.0	4.0	2.0	1.6	.2
11	i(P)ZEN	19	37	20.2	.2	3.0	2.4	2.0	1.0	1.0
11	iPZ	21	51	32.2	.4	.2	.2	2.0	.2	.2
	e(S)N	21	51	49.6	.6	.2	.2	2.0	.2	.2
12	iPZ	19	31	19.5	.4	.2	.2	2.0	.2	.2
	e(S)ZEN	19	31	46.1	1.5	.2	.2	7.0	.2	.2
12	i(P)ZEN	19	56	22.1	1.5	.2	.2	1.5	.2	.2
12	iPZEN	21	50	30.5	?	.2	.2	2.5	.2	.2
12	e(P)ZEN	22	21	48.3	.4	.2	2.5	.5	.2	4.5
	e(S)ZEN	22	22	34.9	.4	2.0	6.0	.4	1.5	5.0
13	iPZEN	03	37	54.7	1.0	.2	.2	.2	.5	.2
14	iPZEN	08	06	03.0	.3	4.8	4.4	17.5	18.5	13.5
	e(S)ZEN	08	10	17.8	.4	9.0	10.0	3.5	43.5	52.0
	e(L)ZEN	08	17	05.0	1.4	8.5	6.4	1.7	6.5	14.0

DATE	PHASE	TIME G.M.T. h	m	s	PERIOD Z	E	SEC. N	Trace Z	Amp. (mms) E	N
October										
14	iPZEN	18	40	12.9	1.2	.2	2.2	1.5	.2	2.0
15	ePZEN	13	33	31.4	.2	3.0	4.0	.2	1.2	2.5
	eSEN	13	38	08.6		8.0	8.0		2.0	3.5
	eLEN	13	43	04.2		12.0	11.0		4.0	25.0
16	i(P)Z	01	58	16.4	1.1			1.9		
17	ePZEN	01	21	18.5	.5	.3	4.2	17.0	.4	6.5
	e(PP)ZEN	01	23	30.5	2.0	4.0	3.0	2.5	2.0	2.9
	e(S)ZEN	01	28	52.3	1.0	14.0	10.0	.7	51.2	3.5
	e(L)ZEN	01	38	58.7	15.0	14.0	18.0	1.8	3.0	49.0
17	e(P)Z	05	09	43.6	.3			2.5		
17	iPZEN	14	34	06.6	1.0	3.0	1.5	4.1	1.5	.7
	i(PP)ZEN	14	35	22.2	1.2	2.2	4.8	3.8	2.2	2.0
	i(S)ZEN	14	39	02.3	2.5	2.8	3.0	2.5	3.9	.9
17	e(P)Z	21	50	23.6	.8			1.4		
18	e(P)Z	20	43	21.6	.4			2.0		
20	iPZEN	02	46	15.4	1.5		1.0	6.7		1.0
20	iPZN	05	11	04.9	1.0		1.8	5.0		1.0
20	e(P)ZN	18	29	45.4	.7		.2	2.5		.2
21	i(P)Z	01	02	20.0	.8		.2	2.5		.2
	e(PP)Z	01	03	20.2	1.2		.2	3.5		.2
	e(S)Z	01	03	40.3	1.0		.2	1.0		.2
21	e(P)ZN	04	18	37.1	.7		.2	1.4		.2
22	i(P)Z	03	05	55.6	.9			1.0		
22	i(P)ZN	09	09	33.2	1.0		2.4	2.5		1.5
24	e(P)Z	01	14	56.5	1.2			1.5		
	e(PP)ZN	01	18	31.3	.6		6.0	2.5		4.0
	e(S)ZN	01	28	53.7	7.2		12.0	7.2		13.0
24	iPZ	04	56	21.0	.8			7.5		
24	iPZN	15	41	12.5	.8		4.0	2.5		2.0

DATE	PHASE	TIME G.M.T. h	m	s	Period Z	E	Sec. N	Trace Z	Amp. (mms) E	N	5
October											
24	ePZN	22	34	07.8	.8		7.2	2.5		.2	
25	ePZ	00	05	25.3	1.0			2.5			
25	iPZN	12	28	21.4	1.2		7.2	2.5		.2	
25	iPZN	12	51	34.3	1.0		.2	3.0		.2	
27	e(P)Z	02	31	53.1	0.5			1.2			
November											
1	i(P)Z	16	21	01.0	0.9			1.7			
	C&GS 16 09 16.7, 48.2 N, 154.4 E, d = 47 km, Kurile Islands, Mag 5.3 (eas) (P-H) 8445 km or 76° ca.										
1	i(P)Z	16	42	42.1	0.9			2.0			
	C&GS 16 30 57.1, 48.3 N; 154.4 E, d = 40 km, Kurile Islands, Mag 4.6-5.0 (BRK), 5.5 (CGS), (P-H) 8445 km or 76° ca.										
2	iPZ	03	43	20.8	.7			2.5			
	C&GS 03 32 24.7, 28.8 S; 69.5 W, d = 79 km, Chile-Argentina Border Region, Mag 4.3-5.2 (BRK), 5.3 CGS), (P-H) 7555 km or 68° ca.										
2	e(P)Z	20	09	09.9	.5			1.5			
	e(PP)Z	20	09	35.6	0.7			1.5			
	e(S)Z	20	16	56.1	1.3			1.1			
3	i(P)Z	08	24	07.0	0.8			2.5			
	C&GS 08 15 34.4, 7.6 S; 81.4 W; d=14 km; Off coast of Northern Peru, Mag 5.2 (CGS), (P-H) 5220 km or 47° ca.										
4	ePZ	04	15	36.9	0.5			.1			
4	iPZ	13	39	55.5	0.7			1.3			
	C&GS 13 26 47.7, 37.4 N; 141.6 E, d = 46 km; Near East Coast of Honshu, Japan, Felt at Tokyo. Mag 5.7 (CGS), (P-H) 10, 110 km or 91° ca.										
4	iPZ	14	43	09.2	1.0			3.5			
	C&GS 14 30 37.5, 43.5N; 1441.1E; d = 30R km, Kokkaido, Japan Region, Mag. 6.0 (GOL), 5.8 (CGS); (P-H) 9445 km or 85° ca.										
4	iPZ	14	48	34.0	0.9			1.7			

DATE	PHASE	TIME G.M.T. h	m	s	Period Z	E	Sec. N	Trace Z	Amp. (mms) E	N	6
November											
4	iPZ	15	18	08.5	1.0			0.9			
	C&GS 15 11 22.5, 17.7 N; 61.0 W; d = 42 km, Leeward Islands, Mag. 4.9 (CGS), (P-H) 3890 km or 35° ca.										
4	iPZ	16	34	26.9	0.5			8.0			
	iPPZ	16	34	49.5	1.0			4.5			
	e(S)Z	16	36	23.4	1.0			1.7			
	C&GS 16 26 48.2; 2.8 S; 77.7 W; d = 99 R km, Peru-Ecuador Border Region, Mag 5.5-5.9 (BRK) 6.0 (CGS), (P-H) 4555 km or 41° ca.										
7	i(P)Z	02	01	59.5	0.9			1.5			
7	e(P)Z	03	06	49.3	0.6			1.4			
7	i(P)Z	04	02	10.2	1.3			1.2			
	C&GS 03 49 17.4, 14.9 S; 173.0 W; d = 43 R km, Samoa Islands Region, Felt at Apia, Mag 5.5 (GOL), 5.6 (CGS), (P-H) 9890 km or 89° ca.										
7	e(P)Z	04	39	58.6	0.7			1.5			
8	iPZ	03	15	36.7	1.0			9.5			
	ePPZ	03	17	05.2	0.9			7.0			
	iSZ	03	19	10.0	1.1			15.1			
9	iPZ	02	36	48.4	2.7			1.0			
9	iPZ	07	55	59.1	0.6			4.1			
	C&GS 07 47 16, 54.8 N; 162.1 W; d = 40 km, Alaska Peninsula, Mag 4.7 (CGS), (P-h) 5445 km or 49° ca.										
12	ePZ	08	25	13.5	.8			1.8			
13	ePZ	10	12	37.8	1.0			1.3			
13	iPZ	22	57	49.9	0.5			2.0			
13	iPZ	23	13	37.7	0.5			2.0			
14	ePZ	07	12	26.4	0.8			1.0			
	i(PP)Z	07	13	02.9	0.9			4.5			
	eSZ	07	14	59.8	1.2			7.5			
14	e(P)Z	16	47	54.0	1.2			1.0			
14	iPZ	18	45	00.5	1.0			1.5			
14	iPZ	21	42	50.1	1.0			6.0			

DATE	PHASE	Time G.M.T. h	m	s	Period Z	E	Sec. N	Trace Z	Amp. (mms) E	N	7
November											
15	iPZ	00	47	39.4	0.8			1.0			
15	e(P)Z	05	49	42.3	1.2			1.1			
16	iPZ	05	06	43.9	1.0			2.0			
16	iPZ	15	01	06.6	1.0			2.0			
17	iPZ	02	02	39.9	0.8			0.5			
17	ePZ	03	46	12.6	1.0			1.5			
17	iPZ	12	21	45.3	0.5			2.0			
17	iPZ	12	31	22.5	0.7			1.6			
17	iPZ	21	44	23.1	0.9			2.3			
18	ePZ	01	12	11.5	0.4			0.9			
18	ePZ	03	06	46.9	1.0			1.1			
18	iPZ	12	20	03.9	0.8			.5			
December											
6	iPZ	02	58	18.4	1.0			3.5			
	i(S)Z	03	00	21.3	1.0			0.6			
	C&GS 02 53 06.9, 12.5 N; 87.2 W; d = 87 R; Near Coast of Nicaragua; Felt at San Salvador; Mag 5.3 (CGS); (P-H) 2665 km or 24° ca.										
6	ePZ	03	38	28.6	.8			1.2			
	C&GS 03 33 46.4; 15.1 N; 92.5 W; d = 77 km; Mexico-Guatemala Border Region; Mag 4.4 (CGS); (P-H) 2335 km or 21° ca.										
6	ePZ	03	42	19.9	0.9			1.4			
6	iPZ	05	00	36.0	0.8			3.0			
6	e(P)Z	23	06	34.6	1.0			1.8			
10	e(P)Z	03	06	49.0	0.7			1.0			
10	e(P)ZN	04	09	24.8	.5		.4	1.0		0.4	

DATE	PHASE	Time G.M.T. h	m	s	Period Z	E	Sec. N	Trace Z	Amp. (mms) E	N	8
December											
10	iPZN	12	12	07.9	1.0		1.0	13.0		3.5	
	e(PP)ZN	12	15	20.0	1.0		5.6	1.5		3.0	
	iSZN	12	16	33.8	0.8		9.0	1.2		7.7	
	iLZN	12	19	47.8	9.0		6.0	1.0		23.2	
10	iPZ	19	32	32.0	0.6			3.1			
	iPPZN	19	33	13.5	0.8		.4	9.0		1.0	
	eSZN	19	35	36.5	0.5		5.0	4.0		5.6	
	C&GS 19 30 00.1; 36.7 N; 107.2 W; d = 0.0; New Mexico, 36° 40.7' N; 107° 12.5' W; asbuggy. Shot elevation 846.1 meters (AEC); Mag 4.4-4.8 (BRK); 4.5-4.75 (GOL); 5.1 (CGS); (P-H) 1220 km or 11° ca.										
10	i(P)Z	23	10	23.1	0.9			2.1			
12	ePZ	01	07	22.4	0.5			1.4			
12	ePZ	02	51	03.2	0.5			1.0			
12	iPZN	07	57	39.1	1.0		6.0	3.5		1.75	
12	iPZN	08	00	59.6	1.0		6.0	4.5		2.0	
13	ePZ	04	18	58.6	0.7			1.1			
13	iPZ	10	50	05.8	1.0			4.0			
13	iPZ	11	09	50.5	1.0			2.5			
	C&GS 10 58 21.6; 49.4 N; 154.5 E; d = 138 km; Kurile Islands, Mag 5.1 (CGS); (P-H) 8220 km or 74° ca.										
17	e(P)NE	20	05	30.7		1.0	1.0		.9	1.0	

The University of Arkansas Seismograph Station is located on the University Farm, 2.5 miles northwest of the main campus at Fayetteville. Coordinates of the station are 36° 05.46' north latitude and 94° 11.47' west longitude. Altitude above mean sea level is 1,325 feet. The seismometer pier rests on the Boone limestone of lower Mississippian age. Approximately 2,500 feet of limestone, shale and sandstone overlie the pre-Cambrian crystalline rocks in the vicinity of the station.

University of Arkansas
Seismograph Station
Department of Geology
Fayetteville, Arkansas