

Panama Canal Zone
 Engineering and Construction Bureau
 Meteorological and Hydrographic Branch

Balboa Heights, Canal Zone

Lat. 8° 57' 39" N.
 Long. 79° 33' 29" W.

h: 36 meters

SEISMOLOGICAL BULLETIN - JANUARY 1957

Sprengnether vertical (Z); Sprengnether LP horizontal (N, E); Wood-Anderson SP horizontal (n, e)

No.	Date	Phase	Comp.	Time		Epicentral Distance (miles)	Remarks
				G. C. T.			
1	4	lp is	N,E N,E	12 36 48 37 48		290	USCGS: 7°N 78°W. West coast of Columbia
2	9	lp is	Z,N,E N,E	08 05 36 15 31		5,395	USCGS: 53°N 167 1/2°W Fox Islands aftershock
3	9	lp is	e,n e	09 24 57 26 26		550	USCGS: 5°N 83°W South coast of Panama
4	15	lp is	E E	04 11 53 14 05		800	USCGS: 2°S 76 1/2°W
5	15	lp is	E N	21 42 08 43 40		550	USCGS: 11°N 86 1/2°W Off coast of Nicaragua
6	22	lp is	Z e	10 35 20 36 05		225	
7	24	lp is	Z N	07 21 23 25 21		1,525	USCGS: 12 1/2°S 78°W Near Peruvian coast
8	25	lp is	Z N	03 49 40 59 58		5,786	USCGS: 51 1/2°N 177°W Andreanof Islands
9	27	ep	Z	14 23 08			
10	28	lp is	Z,n,e Z,N,E e,n	05 56 27 57 16		235	
11	29	lp is	Z,N,E Z,N	00 01 32 02 59		530	

W. H. Esslinger
 W. H. ESSLINGER
 Chief Hydrographer



Panama Canal Company
 Mining and Construction Bureau
 Meteorological and Hydrographic Branch

Balboa Heights, Canal Zone

Lat. $8^{\circ} 57' 39''$ N.
 Long. $79^{\circ} 33' 29''$ W.

SEISMOLOGICAL BULLETIN - FEBRUARY 1957

h: 36 meters

Sprengnether vertical (Z); Sprengnether LP horizontal (N,E); Wood-Anderson SP horizontal (n,e)

No.	Date	Phase	Comp.	Time		Epicentral Distance (miles)	Remarks
				G.C.T.			
12	4	ip	ZNEne	09 02 56		230	Reported strong in Puerto Armuelles, R. de P.
		is	NEne	03 44			
13	4	ip	Zne	14 25 00		290	
		is	Z	26 00			
14	4	ip	ZNEne	16 39 03		240	
		is	ZNe	39 53.5			
15	6	ip	NE	12 46 58			USCGS: $2^{\circ}N 91^{\circ}W$ Galapagos Islands Region
		is					
16	6	ip	ZNE	13 09 20		930	USCGS: $2^{\circ}N 91^{\circ}W$ Galapagos Islands aftershock
		is	ZNE	11 50			
17	6	ep	NE	15 54 06			
18	8	ip	Z	00 21 46		205	
		is	Zne	00 22 29			
19	9	ip	ZNEne	07 24 19		245	USCGS: $7-1/2^{\circ}N 83^{\circ}W$ Off South Coast of Panama, R.P.
		is	ne	07 25 10			
20	10	ip	Z	22 52 02			USCGS: $10^{\circ}N 126^{\circ}E$ Mindanao foreshock
21	10	ip	Z	23 10 39			USCGS: $10-1/2^{\circ}N 126-1/2^{\circ}E$ Mindanao, P.I.
22	11	ip	Z	01 34 34			USCGS: $10^{\circ}N 126^{\circ}E$ Mindanao, aftershock
23	13	ip	Z	00 49 39			USCGS: $10^{\circ}N 126-1/2^{\circ}E$ Mindanao aftershock
24	13	ip	Z	16 43 36		155	
		is	ne	16 44 08			
25	17	ip	Z	15 50 58			USCGS: $16^{\circ}N 96-1/2^{\circ}W$ Oaxaca, Mexico
		es	N	15 54 32			
26	18	ip	Z	23 54 25		1,450	
is	EN	23 58 14					
27	21	ip	EN	14 52 39			
28/1	21	ip	NEZne	23 17 13-1/2		63	
		is	NEne	23 17 27			
29	23	ip	Z	20 45 39			

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SEISMOLOGICAL BULLETIN - MARCH 1957

h: 36 meters

Spregnether vertical (Z); Spregnether LP horizontal (N,E); Wood-Anderson SP horizontal (n,e)

No.	Date	Phase	Comp.	Time	Epicentral Distance	Remarks
				G.C.T.		
30	2	ip	ZN	00 29 49		USCGS: $18-1/2^{\circ}$ N 78° W
31	3	ip	ZE	03 23 38	1,675	USCGS: $8-1/2^{\circ}$ N 103° W Off Coast of Mexico
		is	N	03 27 55		
32	5	ip	ZN	12 32 45	3,150	USCGS: 33° N $34-1/2^{\circ}$ W North Atlantic Ocean
		is	NE	12 39 24		
33	8	ip	Z	12 34 32		USCGS: $39-1/2^{\circ}$ N 23° E Eastern Greece
34	9	ip	Z	02 33 12		
35	9	ip	Z	14 35 12		USCGS: 51° N 175° W Andreanof Islands, Aloutian Islands
36	9	ip	Z	15 54 40		
37	9	ip	Z	16 45 21		USCGS: 51° N 176° W Andreanof Islands
38	9	ip	Z	20 51 43		USCGS: $52-1/2^{\circ}$ N $169-1/2^{\circ}$ W Fox Islands
39	10	ip	Z	03 18 57		USCGS: 52° N 176° W Andreanof Islands
40	10	ip	Z	13 23 17		USCGS: $51-1/2^{\circ}$ N 180° W Andreanof Islands
41	10	ip	Z	15 38 59		USCGS: 52° N 173° W Andreanof Islands
42	10	ip	Z	18 17 47		
43	11	ip	Z	03 25 34		USCGS: 51° N 177° W Andreanof Islands
44	11	ip	Z	10 11 10		USCGS: 53° N $164-1/2^{\circ}$ W Fox Islands

No.	Date	Phase	Comp.	Time		Epicentral Distance (miles)	Remarks
				G.C.T.			
45	11	ip	Z	15 08 15			USCGS: 51-1/2°N 178-1/2°W Andreanof Islands
46	11	ip	Z	15 48 51			USCGS: 51-1/2°N 178°W Andreanof Islands
47	12	ip	Z	07 41 29			USCGS: 51-1/2°N 173-1/2°W Andreanof Islands
48	12	ip	Z	07 51 11			USCGS: 52°N 178°W Andreanof Islands
49	12	ip	Z	11 57 45			USCGS: 51°N 177°W Andreanof Islands
50	12	ip	Z	21 25 31			USCGS: 2-1/2°S 80°W Near Coast of Ecuador
51	13	ip	Z	03 00 51			USCGS: 52°N 171-1/2°W Andreanof Islands
52	13	ip	Z	15 55 01			USCGS: 51-1/2°N 179°W Andreanof Islands
53	14	ip	Z	15 00 30			USCGS: 51-1/2°N 177°W Andreanof Islands
54	15	ip	Z	03 04 18			USCGS: 53°N 167°W Fox Islands
55	16	ip	ZNE	02 17 08		5,772	
		is	NE	02 27 34			
56	17	ip	ZNE	22 56 59		5,500	USCGS: 54°N 166°W Fox Islands
		is	NE	23 06 59			
57	18	ip	Z	14 36 11		120	
		is	n	14 36 36			
58	19	ip	Z	13 03 37		6,000	
		is	NE	13 14 25			
59	21	ip	Z	08 47 09		4,700	
			E	08 51 06			
60	22	ip	ZNE	14 33 18		5,450	
			N	14 43 22			



No.	Date	Phase	Comp.	Time	Epicentral Distance	Remarks
				G.C.T.		
61	22	ip	Z	17 22 22		
62	22	ip	Z	19 52 48		USCGS: 37-1/2°N 122.6°W Northern California
63	22	ip	ZE	04 32 10		
64	23	ip	Z	01 59 36		
65	23	ip	Z	02 09 00		
66	23	ip	Z	02 52 51		
67	23	ip	Z	08 32 22		
68	23	ip	Z	11 49 20		
69	25	ep	Z	13 28 14		
70	25	ep	Z	14 25 45		
71	29	ip	ZNE	05 22 46	5,600	
		is	NE	05 32 54		

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SEISMOLOGICAL BULLETIN - APRIL 1957

h: 36 meters

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No.	Date	Phase	Comp.	Time	Epicentral Distance (miles)	Remarks
				G.C.T.		
1	1	ip	Z	04-16-45	260	
		is	n	04-17-39		
2	3	ep	Z,E	17-16-26	2,200	
		es	E,N	17-21-37		
3	4	ip	Z	00-24-34		USCGS: 53° N 168° W Fox Islands
4	4	ip	Z	11-08-54	3,050	Southern Mendoza Province, Argentina
		is	E	11-15-27		
5	5	ip	Z	02-34-19	400	
		es		02-35-28		
6	5	ip	Z	03-02-18	5,600	USCGS: 52° N $172-1/2^{\circ}$ W Fox Islands
		is	E	03-12-37		
7	5	ip	NE	07-54-37	4,600	USCGS: $26-1/2^{\circ}$ S 177° W Kermadec Islands Region
		is	N	08-03-18		
8	5	ip	Z _E e	16-14-28	900	USCGS: $12-1/2^{\circ}$ N 88° W Near Coast of Nicaragua
		is	N	16-17-05		
9	6	ep	ZN	02-08-10		
10	7	ep	N	06-18-21	5,900	
		is	N	06-29-01		
11	8	ip	Z _E e	20-19-03	215	USCGS: $8-1/2^{\circ}$ N 83° W Felt Force III Panama-Costa Rica Border Felt Strong Puerto Armuelles
		is	ne	20-19-48		
12	10	ip	Z,E	05-16-35	1,450	USCGS: $15-1/2^{\circ}$ N 98° W Near Cost of Oaxaca, Mexico
		is	NE	05-20-21		
13	10	ip	Z,NE	07-31-08	1,250	USCGS: 14° N $91-1/2^{\circ}$ W Guatemala
		is		07-34-28		
14	10	ip	ZNE	11-41-35	5,100	USCGS: 56° N 154° W Kodiak Island Region
		is	NE	11-51-04		
15	13	ip	Z	06-50-01		

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No.	Date	Phase	Comp.	Time		Epicentral Distance (miles)	Remarks
				G.C.T.			
16	13	ip	Z	10-30-43			USCGS: $5^{\circ}\text{N } 126-1/2^{\circ}\text{E}$ Near South Coast of Mindanao, Philippine Islands
17	13	ip	ZN	15-45-39	2,000		USCGS: $19^{\circ}\text{S } 69-1/2^{\circ}\text{W}$ Northern Chile
		is	NE	15-50-29			
18	13	ep	NE	16-49-23	2,600		
		es	NE	16-55-02			
19	14	ip	Z	07-31-18			USCGS: $31^{\circ}\text{N } 84-1/2^{\circ}\text{E}$ Southern Tibet
20	14	ip	Z	08-27-55	5,200		
		is	N	08-37-57			
21	14	ip	Z	19-31-30	6,500		USCGS: $15-1/2^{\circ}\text{S } 173^{\circ}\text{W}$ Samoa Islands. Felt: Apia
		is	NE	19-42-51			
22	14	ip	Z	21-11-56			
23	15	ip	Z	10-51-33			USCGS: $51-1/2^{\circ}\text{N } 179^{\circ}\text{W}$ Andreanof Islands, Aleutian Islands
24	16	ip	ZNE	04-23-09	6,200		USCGS: $4-1/2^{\circ}\text{S } 107-1/2^{\circ}\text{E}$ Western Java Sea
		is	NE	04-34-26			
25	17	ip	ZNE	18-12-44	1,900		
			NE	18-17-24			
26	17	ip	Z	20-05-07			
27	19	ep	ne	22-31-46			USCGS: $52^{\circ}\text{N } 166-1/2^{\circ}\text{W}$ Fox Islands, Aleutian Islands
28	20	ip	Z	12-49-58			USCGS: $6^{\circ}\text{S } 147-1/2^{\circ}\text{E}$ Near Coast of New Guinea
29	20	ip	Z,E	12-53-27			
30	20	ip	Z	14-20-29			
31	21	ip	Z,N,E	21-14-16			USCGS: $7^{\circ}\text{N } 72^{\circ}\text{W}$ Colombia-Venezuela Border
		is					
32	22	ip	Z	13-45-12	1,200		
		is	N	13-48-28			



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No.	Date	Phase	Comp.	Time	Epicentral Distance	Remarks
				G.C.T.		
33	22	ip	Z	15-39-18	850	
		is	E	15-41-36		
34	23	ip	Z	17-59-30		
		es	E	18-01-56		
35	23	ip	Z	22-05-52	6,500	
		is	E	22-17-16		
36	24	ip	ZNE	19-34-22		USCGS: 36° N $28-1/2^{\circ}$ E Turkey foreshock
37	25	ip	ZNE	02-39-18		USCGS: $36-1/2^{\circ}$ N 29° E Near South Coast of Turkey Extensive Property Damage
		es	E	02-49-50		
38	25	ip	Z	04-20-26		
39	25	ip	Z	07-28-01		
40	25	ip	ZE	10-36-04		
41	25	ip	Z	11-25-57		
42	26	ip	Z	02-31-21		
		es	E	02-33-39		
43	28	ip	Z	01-43-29		
44	28	ip	ZNEne	06-40-29	60	Felt Force III
		is		06-40-41		
45	29	ip	ZNne	06-16-11	170	
		es		06-16-45		
46	29	ip	Zne	07-35-17.5	60	
			ne	07-35-29		

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SEISMOLOGICAL BULLETIN - MAY 1957

h: 36 meters

Sprengnether vertical (Z); Sprengnether LP horizontal (N,E); Wood-Anderson SP horizontal (n,e)

No.	Date	Phase	Comp.	Time G.C.T.	Epicentral Distance (miles)	Remarks
1	1	iP iS	Zne ne	16-14-11 16-14-25	70	
2	2	iP	ZN	04-06-05		USCGS: 72° N $67-1/2^{\circ}$ W Baffin Bay
3	2	iP iS	ZN NE	10-45-57 10-55-34	5,200	USCGS: $56-1/2^{\circ}$ S 123° W South Pacific Ocean
4	2	iP	Z	21-55-23		
5	3	iP	Z	15-02-48		USCGS: $12-1/2^{\circ}$ N $125-1/2^{\circ}$ E Near east coast of Samar, P.I.
6	4	iP	Z	10-25-20		USCGS: $3-1/2^{\circ}$ S 137° E Western New Guinea
7	7	iP iS	ZNE NE	01-20-50 01-22-47	700	USCGS: 1° N $85-1/2^{\circ}$ W Off coast of Ecuador
8	10	iP iS	ZNEne ne	11-22-08 11-22-11	15	Felt Force I
9	12	iP	ZNE	05-00-07		Sandwich Islands Region
10	12	iP	Z	11-49-17		USCGS: $8-1/2^{\circ}$ S $107-1/2^{\circ}$ E Near South coast of Java
11	12	iP iS	ne ne	17-05-41 17-06-06	120	
12	13	iP	Z	02-40-22.5		USCGS: 44° N $135-1/2^{\circ}$ E Sikhota Alin, Siberia
13	13	iP iS	ZNE ne	16-41-55 16-42-18	110	
14	16	iP	Z	17-57-11		
15	17	iP iS	ZNne N	17-50-17 17-51-25	325	
16	18	iP iS	ZNE NE	05-36-36 05-47-01	6,000	USCGS: 51° N 171° W Fox Islands, Aleutian Islands

No.	Date	Phase	Comp.	Time		Epicentral Distance (miles)	Remarks
				G.C.T.			
17	19	eP	E	07-23-03		3,700	About 800 miles West of Galapagos Islands.
		eS	E	07-30-45			
18	19	iP	Z	21-02-31		850	USCGS: 25°N 125-1/2°E Ryukyu Islands
		iS	N	21-04-55			
19	19	iP	Z	22-44-58			USCGS: 8°S 74°W Peru
20	20	iP	Z	18-35-05			
21	20	iP	Z	21-35-08		2,250	
		iS	N	21-40-24			
22	21	iP	Z	01-30-56			USCGS: 21-1/2°N 144°E Mariana Islands Region
23	22	iP	Z	13-42-36		5,800	
		iS	NE	13-53-07			
24	24	iP	ZNE	02-39-15		310	USCGS: 3°N 76-1/2°W Colombia
		iS	En	02-40-19			
25	25	iP	ne	14-33-40.5		190	
		iS	n	14-34-21.5			
26	26	iP	NE	06-47-23		6,800	USCGS: 41°N 31°E Bolu Province, Turkey
		iS	E	06-57-53			
27	26	iP	ne	07-37-34		110	
		iS	ne	07-37-57			
28	27	iP	ZNen	10-56-46		510	
		iS	E	10-58-21			
29	29	eP	E	07-33-42		2,700	
		iS	E	07-39-43			
30	29	iP	Z	22-34-04		600	
		iS	NE	22-35-47			
31	31	iP	ZNEne	02-22-14		2,225	
		iS	NE	02-27-36			
32	31	iP	ZNEne	21-59-15.5		225	
		iS	NEne	22-00-22.5			

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 T. C. HENTER
 Acting Chief Hydrographer

Panama Canal Company
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Lat. 8°57' 39" No.
 Long. 79°33' 29" W.

SEISMOLOGICAL BULLETIN - ~~MAY~~ ^{JUNE} 1957

h: 36 meters

Sprengnether vertical (Z); Sprengnether LP horizontal (N,E); Wood-Anderson SP horizontal (n,e)

No.	Date	Phase	Comp.	Time		Epicentral Distance (miles)	Remarks
				G.C.T.			
1	1	iP iS	ZNE N	19-38-26 19-41-56		1,300	USCGS: 1N 91W Galapagos Islands
2	6	eP	e	05-57-11			USCGS: 52N 171 1/2W Fox Islands, Aleutian Islands
3	10	iP iS	Z E	01-20-04 01-31-11		6,300	
4	13	iP iS	NE NE	10-53-16 11-03-47		5,900	USCGS: 51 1/2N 175W Andreanof Islands, Aleutian Islands
5	14	iP iS	Z NE	06-37-07 06-47-27		5,700	USCGS: 52N 175 1/2 W Andreanof Islands, Aleutian Islands
6	15	iP iS	Z E	01-03-33 01-07-03		1,400	
7	15	iP iS	Z NE	18-31-06 18-41-08		5,500	USCGS: 52N 171W Fox Islands, Aleutian Islands
8	18	iP	ZNE	15-08-09			
9	18	iP	ZN	17-32-28			USCGS: 25S 170E Loyalty Islands Region
10	19	iP i	N N	08-20-37 08-45-46			USCGS: 16 1/2 S 176 1/2 E Fiji Islands
11	19	iP iS	ZN N	09-50-43 09-52-25		590	
12	22	iP iS	ZNEne N	06-22-48 06-25-53		1,100	USCGS: 16N 94W Near Coast of Chiapas, Mexico
13	23	iP	ZE	00-09-59			
14	24	iP	ZNE	09-53-30			USCGS: 16N 94W Mexico Aftershock
15	27	iP i	E E	00-29-09 01-01-59		10,350	USCGS: 56 1/2 N 116E Northeast of Lake Baikal, U.S.S.R.



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SEISMOLOGICAL BULLETIN - July 1957

h: 36 meters

Sprengnether vertical (Z); Sprengnether LP horizontal (N,E); Wood-Anderson SP horizontal (n,e)

No.	Date	Phase	Comp.	Time G.C.T.	Epicentral Distance (miles)	Remarks
1	2	iP eS	Z E	01-01-06 01-11-56	6,000	USCGS: 36N 53E Northern Iran
2	6	iP	ZE	15-33-29		USCGS: 14 1/2N 91W
3	10	iP iS	ne ne	09-05-05 09-05-47	200	USCGS: 8N 82 1/2W Near Coast of Panama
4	14	eP iS	E E	06-37-28 06-47-50.5	5,700	USCGS: 27 1/2S 177W Tonga Islands Region
5	21	iP eS	ZNE NE	06-07-17 06-12-24	2,100	USCGS: 14 1/2N 92W Near Coast of Guatemala
6	23	eP iS	Z N	00-58-04 01-08-29	5,800	USCGS: 52N 177W Andreanof Islands, Aleutian Islands
7	24	iP iS	N N	02-05-05 02-10-59	2,500	USCGS: 30S 70 1/2W Central Chile-Argentina Border
8	28	eP iS	Z N	03-39-10 03-39-48	180	
9	28	iP eS	ZNE N	08-44-46 08-49-58	1,650	USCGS: 17N 99W Guerrero, Mexico Heavy Property Damage
10	28	iP iS	NE NE	13-39-05 13-43-05	1,650	USCGS: 17 1/2N 99W Mexico Aftershock
11	29	eP eS	E E	00-16-05 00-19-56	1,450	
12	29	iP eS	Z E	17-21-58 17-27-18	2,500	

T.C. HENTER
Acting Chief Hydrographer

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Long. $79^{\circ}33'29''$ W.

SEISMOLOGICAL BULLETIN - August 1957

h: 36 meters

Sprengnether vertical (Z); Sprengnether LP horizontal (N,E); Wood-Anderson SP horizontal (n,e)

No.	Date	Phase	Comp.	Time G.C.T.	Epicentral Distance (miles)	Remarks
1	5	iP iS	ZNE E	06-11-21 06-15-33	1,650	
2	5	iP	E N	14-21-02 14-25-08	1,650	USCGS: 52N 159E Kamchatka
3	5	iP	ZNE	17-38-54		Near coast of Oaxaca, Mexico
4	7	iP iS	Zn n	15-23-46 24-30	210	Northern Peru
5	7	iP iS	Zne e	20-23-50 20-24-12	105	
6	9	iP	Z	02-47-58		USCGS: 2S 137E New Guinea
7	15	iP eS	e	08-33-19 33-32	65	USCGS: 10N 80W Near north coast of Panama Felt Balboa Force IV
8	15	iP iS	e	08-58-05 58-18	65	USCGS: 10N 80W After shock
9	16	iP iS	nZ nZ	00-36-17 36-30	65	USCGS: 10N 80W After shock
10	16	iP i	ZE N	23-37-10 41-32	C	USCGS: 10-1/2N 104W Pacific Ocean
11	18	iP iS	NE N	21-14-52.5 D 18-32.5	2,075	USCGS: 16-1/2N 99W Mexico After shock
12	26	iP iS	ZNE NE	11-35-19 40-27	C 2,075	USCGS: 19S 63W Southern Bolivia
13	26	iP iS	ZNE NE	14-01-32 03-37	C 755	USCGS: 12S 81W Coast of Ecuador

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Balboa Heights, Canal Zone

Lat. 8°57'39"N
 Long. 79°33'29"W

SEISMOLOGICAL BULLETIN - September 1957

h:36 meters

Sprengnether vertical (Z); Sprengnether LP horizontal (N,E); Wood-Anderson SP horizontal (n,e)

No.	Date	Phase	Comp.	Time G.C.T.	Epicentral Distance (miles)	Remarks
1	3	iP iS	Z ne	13-31-53C 32-18	120	
2	4	i	Z	04-53-38		Fox Islands, Aleutian Islands
3	6	iP	ZNE	00-24-03D		USCGS: 20S 68W Chile-Bolivia Border
4	7	iP iS	Z n	01-12-21D 13-46	500	USCGS: 8-1/2N 72 W Western Venezuela
5	7	iP iS	Z E	10-19-41C 30-05	5,200	USCGS: 51-1/2N 178-1/2W Andreanof Islands
6	10	iP iS	Z e	06-15-56D 16-35	190	
7	12	iP iS	ALL N	00-30-24C 32-41	850	
8	14	iP iS	ZNE NE	17-09-25D 11-28	750	
9	20	eP eS	Z n	15-01-45C 02-16		
10	21	iP iS	Z N	11-12-07C 12-50	205	
11	24	iP	ALL	08-40-54C		USCGS: 5-1/2N 127-1/2E Near South Coast of Mindanao
12	24	iP iS	Zne Zne	15-12-56.5C 13-08	50	
13	27	i	Z	04-28-20		USCGS: 1S 127E Spice Islands
14	28	iP iS	Z E	14-32-54C 42-35	5,200	USCGS: 20-1/2S 178W Fiji Islands

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SEISMOLOGICAL BULLETIN - October 1957

h: 36 meters

Sprengnether vertical (Z); Sprengnether LP horizontal (N,E); Wood-Anderson SP horizontal (n,e)

No.	Date	Phase	Comp.	Time G.C.T.	Epicentral Distance (miles)	Remarks
1	2	iP	ZE	12-31-48C		USCGS: 11N 63W Venezuela
2	4	iP iS	ZE E	05-29-56D 35-28	2,300	USCGS: 11N 63W Near Coast of Venezuela
3	5	iP eS	Z N	09-07-31D 08-17		
4	6	iP iS	ZNE N	00-58-02D 01-02-44	2,300	USCGS: 11N 62-1/2W Venezuela Aftershock
5	15	i	ALL	03-56- D		Time Mark Out of Order
6	20	iP	Z	12-11-34C		USCGS: 11-1/2N 42W Atlantic Ocean
7	24	iP iS	E E	21-51-02 56-24	2,200	USCGS: 25N 109-1/2W Gulf of California
8	28	iP	E	05-56-45		Panama Foreshock
9	31	iP	n	10-08-57.5	200	USCGS: 6-1/2N 83W Off Coast Panama Felt Force III

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SEISMOLOGICAL BULLETIN - November 1957

h: 36 meters

Sprengnether vertical (Z); Sprengnether LP horizontal (N,E); Wood-Anderson SP horizontal (n,e)

No.	Date	Phase	Comp.	Time	Epicentral Distance (miles)	Remarks
				G.C.T.		
1	2	i	E	07-24-19		USCGS: 15N 93-1/2W Near Coast of Chiapas, Mexico
2	2	iP eS	Z N	12-09-56D 10-40		
3	10	iP iS iS	All N Ee	10-22-34D 23-31 23-33		USCGS: 8N 74-1/2W Northern Colombia
4	13	i i	N N	17-50-10 55-50		USCGS: 33S 179W Kermadec Islands Region
5	18	iP iS	Z E	17-00-30C 01-18		
6	20	iP iS	Z N	12-52-42D 13-02-42	5,200	USCGS: 54N 165W Unimak Islands
7	25	i	Z	20-23-20C		USCGS: 44-1/2N 129-1/2W
8	25	i	Z	22-55-07C		USCGS: 1-1/2S 116E Near East Coast of Borneo
9	26	i	Z	05-30-08C		USCGS: 2S 116E Near East Coast of Borneo
10	26	iP	Z	19-26-43D		USCGS: 19N 121E Near North Coast of Luzon, P.I.
11	26	iP i	Z N	23-25-59C 29-39	600	USCGS: 11-1/2N 86-1/2W Near Coast of Nicaragua
12	29	iP iS	ZN E	22-25-53.5D 30-55.5	2,100	USCGS: 21S 66W Southern Bolivia

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SEISMOLOGICAL BULLETIN - December 1957

h: 36 meters

Sprengnether vertical (Z); Sprengnether LP horizontal (N,E); Wood-Anderson SP horizontal (n,e)

No.	Date	Phase	Comp.	Time	Epicentral Distance	Remarks
				G.C.T.	(miles)	
1	4	iP	Z	03-56-51C	6,900	USCGS: 45-1/2N 99-1/2E Outer Mongolia
		iS	N	04-09-48		
2	7	iP	Z	22-20-05.5C	6,000	USCGS: 45N 150-1/2E Kurile Islands
		iPR2	n	21-07.5		
3	10	iP	ALL	02-45-42C	145	
		iS	n	46-11.5		
4	10	eP	N	15-19-00		USCGS: 5-1/2S 155E Solomon Islands Aftershock
5	13	i	Z	00-32-48D		
6	14	iP	Z	23-08-17D	230	
		iS	N	09-05		
7	17	eP	N	05-27-34.5		USCGS: 43-1/2N 162E Near East Coast of Kamchatka
		eS	N	41-46.5		
8	17	i	N	14-10-40.5		USCGS: 12S 167E Santa Cruz Islands
9	19	eP	N	04-15-57		Nicaragua
		eS	N	19-15		
10	20	iP	ZN	11-26-22	2,800	USCGS: 30-1/2S 71W Central Chile
		iS	N	32-34		
11	25	iP	Z	16-29-58C	1,250	USCGS: 10-1/2N 62-1/2W Venezuela
		iS	N	33-16		
12	28	iP	Z	14-42-56	2,500	USCGS: 18S 64-1/2W Bolivia
		iS	N	48-32		
13	31	e	N	15-24-46		USCGS: 45S 165-1/2E Off Coast of South Island, New Zealand
		e	N	30-46		

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