

# CLEVELAND



From the ISC collection scanned by SISMOS

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

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

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



Bulletin for January, 1955

Gnwh. Date and Number	Phase and Component	G. M. C. T.	Epicenter & Remarks
January 5 No. 1	ip <sup>1</sup> Z iP Z eSKP n iSKP NE e E	01 <sup>h</sup> 39 <sup>m</sup> 38 <sup>s</sup> C 01 39 41 d 01 13 11.5 01 13 17 01 31 56	U.S. C. & G.S. 50° S 162.5° E Off coast of South Island, New Zealand H = 00 <sup>h</sup> 50 <sup>m</sup> 12 <sup>s</sup> * Mag. 6 1/2 - 6 3/4 Δ = 136.3°
January 5 No. 2	eSKS E iPS E eSR <sub>1</sub> E	18 <sup>h</sup> 14 <sup>m</sup> 11 <sup>s</sup> 18 18 18 18 24 29	U.S. C. & G.S. 16° S 167.5° E New Hebrides H = 17 <sup>h</sup> 48 <sup>m</sup> 35 <sup>s</sup> * Mag. 6 3/4 Par. Δ = 117.2°
January 5 No. 3	iPS E eSR <sub>1</sub> E	00 <sup>h</sup> 11 <sup>m</sup> 40 <sup>s</sup> 00 18 05	U.S. C. & G.S. 16° S 167 1/2° E New Hebrides Damage at Malekula H = 23 <sup>h</sup> 42 <sup>m</sup> 03 <sup>s</sup> * Mag. 6 3/4 - 7 Δ = 117.2°
January 6 No. 4	ePS E	02 <sup>h</sup> 52 <sup>m</sup> 12 <sup>s</sup>	U.S. C. & G.S. New Hebrides aftershock H = 02 <sup>h</sup> 22 <sup>m</sup> 35 <sup>s</sup> *

Bulletin for January, 1955

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January 6 No. 5	eL E	10 <sup>h</sup> 44 <sup>m</sup> 30 <sup>s</sup>	U.S. C. & G.S. New Hebrides aftershock H = 09 <sup>h</sup> 48 <sup>m</sup> 19 <sup>s</sup> *
January 8 No. 6	iPR <sub>1</sub> Z iPS E	07 <sup>h</sup> 53 <sup>m</sup> 28 <sup>s</sup> d 08 02 56	U.S. C. & G.S. 11 <sup>1</sup> / <sub>2</sub> ° S, 166 <sup>1</sup> / <sub>2</sub> ° E Santa Cruz Islands h about 60 km H = 07 <sup>h</sup> 33 <sup>m</sup> 36 <sup>s</sup> Mag. 6 3/4 = 7 △ = 114.6° *
January 13 No. 7	eP Z iP Z iP e iP n iS E	02 <sup>h</sup> 13 <sup>m</sup> 24 <sup>s</sup> d 02 13 26.3 d 02 13 26.4 02 13 26.5 02 21 09	U.S. C. & G.S. 53°N, 167 <sup>1</sup> / <sub>2</sub> ° W Fox Islands Aleutian Islands Felt Unalaska H = 02 <sup>h</sup> 03 <sup>m</sup> 43 <sup>s</sup> * Mag. 6.9 Par. △ = 56.5°
January 13 No. 8	iP Z	02 <sup>h</sup> 45 <sup>m</sup> 26 <sup>s</sup> C.	U.S. C. & G.S. 53° N, 167 <sup>1</sup> / <sub>2</sub> ° W Fox Islands Aleutian Islands Felt Unalaska H = 02 <sup>h</sup> 35 <sup>m</sup> 45 <sup>s</sup> * △ = 56.3°
January 20 No. 9	eP n eP e iP Z eS NE	03 <sup>h</sup> 55 <sup>m</sup> 25.4 <sup>s</sup> 03 55 27.2 03 55 27.5 C 04 00 50	U.S. C. & G.S. 15° N, 104.5° W Off Coast of Mexico H = 03 <sup>h</sup> 48 <sup>m</sup> 45 <sup>s</sup> * Mag. 6 1/4 Par. △ = 33.0°

## Bulletin for January, 1955

Gnwh. Date and Number	Phase and Component	G. M. C. T.	Epicenter & Remarks
January 23 No. 10	iP <sub>1</sub> <sup>1</sup> Z	22 <sup>h</sup> 40 <sup>m</sup> 47.0 <sup>s</sup> d	U.S. C. & G.S. Near Southwest coast of Java H = 22 <sup>h</sup> 21 <sup>m</sup> 14 <sup>s</sup> ** about // 46°
January 25 No. 11	iM Z	07 <sup>h</sup> 28 <sup>m</sup> 55.9 <sup>s</sup>	U.S. C. & G.S. Missouri, Arkansas Tennessee border Slight property damage H = 07 <sup>h</sup> 24 <sup>m</sup> 30 <sup>s</sup> ** △ = 583 miles = 8.4°
January 25 No. 12	iP Z	14 <sup>h</sup> 58 <sup>m</sup> 51.8 <sup>s</sup> dil	U.S. C. & G.S. Arctic Ocean off West Coast of Spitzbergen H = 14 <sup>h</sup> 50 <sup>m</sup> 05 <sup>s</sup> * △ = 47.7°
January 29 No. 13	iP Z	17 <sup>h</sup> 15 <sup>m</sup> 11.3 <sup>s</sup> C	U.S. C. & G.S. 51.5° N, 159.5° E Off S.E. Coast of Kamchatka H = 17 <sup>h</sup> 03 <sup>m</sup> 35 <sup>s</sup> * △ = 73.7°
January 31 No. 14	iP Z eP n iP Z eP n iP e iS N eS eE	05 <sup>h</sup> 12 <sup>m</sup> 59 <sup>s</sup> C. 05 12 59.4 05 13 00 d 05 13 00.3 05 13 00.6 05 20 59 05 21 01	U.S. C. & G.S. 12.5° S, 57° W. Mato Grossa, Brazil H = 05 <sup>h</sup> 03 <sup>m</sup> 03 <sup>s</sup> * Mag. 6 3/4 Par. △ = 59.3°

Bulletin for January, 1955

Gnwh. Date and Number	Phase and Component	G. M. C. T.	Epicenter & Remarks
January 31 No. 15	iP Z iP e iP n	15 <sup>h</sup> 14 <sup>m</sup> 45 <sup>s</sup> C 15 14 47.7 15 14 48.4	U.S. C. & G.S. Central Chile - Felt. H = 15 <sup>h</sup> 03 <sup>m</sup> 04 <sup>s</sup> ** $\Delta$ P - H = 75.4°
January 31 No. 16	eP Z iS E eS N	16 <sup>h</sup> 14 <sup>m</sup> 16 <sup>s</sup> C 16 24 25 16 24 31	U.S. C. & G.S. 46.5° N, 153° E Kurile Islands H = 16 <sup>h</sup> 02 <sup>m</sup> 07 <sup>s</sup> * Mag. 6 1/4 - 6 1/2 Par $\Delta$ = 80.2°

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

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

Two Sprengnether short-period horizontal.



### BULLETIN FOR FEBRUARY, 1955

Date	Phase		G. M. C. T.		Epicenter & Remarks
3	eP	Z	12 <sup>h</sup> 48 <sup>m</sup> 13.3 <sup>s</sup>	Comp.	U.S.C. & G.S. 44° N, 128.5° E 200 miles off coast of Oregon. H = 12 <sup>h</sup> 41 <sup>m</sup> 24 <sup>s</sup> * Magnitude: 5.3 Δ = 33.7°
4	iP <sup>1</sup> iP <sup>1</sup>	Z Z	07 41 25 07 41 27	dil. Comp.	U.S.C. & G.S. 17° S, 67° E Mascarene Islands Region H = 07 <sup>h</sup> 21 <sup>m</sup> 49 <sup>s</sup> * Δ = 145.0°
5	iS	E	21 04 05		U.S.C. & G.S. 46.5° N, 153° E Kurile Islands H = 20 <sup>h</sup> 41 <sup>m</sup> 53 <sup>s</sup> * Δ = 79.7°
5	iP ePR <sub>1</sub> eS eSR <sub>1</sub>	Z N E E	02 <sup>h</sup> 36 <sup>m</sup> 03.9 <sup>s</sup> 02 37 56 02 42 40 02 45 54	dil.	U.S.C. & G.S. 71° N, 13.5° W Jan Mayen Islands Region H = 02 <sup>h</sup> 27 <sup>m</sup> 53 <sup>s</sup> * Δ = 44.5°
10	iP eP ipP	Z ne Z	00 15 04.3 00 15 04.3 00 15 17.9	Comp. Comp.	U.S.C. & G.S. 50° N, 156° E N. Kurile Islands H = 00 <sup>h</sup> 03 <sup>m</sup> 21 <sup>s</sup> h about 60 km Δ = 75.9°

BULLETIN FOR FEBRUARY, 1955

Date	Phase	G. M. C. T.	Epicenter & Remarks
15	e Z eSKKS e ePPS E	06 <sup>h</sup> 43 <sup>m</sup> 41 <sup>s</sup> 06 46 54 06 50 48	Comp. U.S.C. & G.S. 13.5° S, 166.5° E New Hebrides Islands H = 06 <sup>h</sup> 20 <sup>m</sup> 18 <sup>s</sup> * h about 60 km $\Delta = 115.8^\circ$
18	iP Z ip <sup>P</sup> Z eS E	08 12 05.3 08 12 25 08 16 22	Comp. U.S.C. & G.S. 19.5° N, 68° W off NE Coast of Dominican Republic H = 08 <sup>h</sup> 06 <sup>m</sup> 38 <sup>s</sup> * h about 60 km $\Delta = 24.6^\circ$

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



### BULLETIN FOR MARCH, 1955

Date	Phase	G.M.C.T.	Epicenter & Remarks
1	iPZen	01 <sup>h</sup> 57 <sup>m</sup> 51.4 <sup>s</sup> C	U.S.C. & G.S. 21°S, 37°N Off Coast of Brazil. Felt: Espirito Santo H = 01 <sup>h</sup> 46 <sup>m</sup> 10 <sup>s</sup> * Δ = 75.1°
1	ePN iPZ iPR <sub>1</sub> N eSE iLE	04 50 14 04 50 15 C 04 51 19 04 56 02 05 01 48	U.S.C. & G.S. 65°N, 133°W Yukon - H = 04 <sup>h</sup> 42 <sup>m</sup> 59 <sup>s</sup> * Magnitude: 6 <sup>1</sup> / <sub>2</sub> - 6 3/4 Pasa. 6 <sup>1</sup> / <sub>2</sub> Berkeley Δ = 37.3°
1	iPZ iPR <sub>2</sub> Z eLN <sup>2</sup>	14 <sup>h</sup> 09 <sup>m</sup> 40.3 <sup>s</sup> C 14 11 21.3 C 14 20 16	U.S.C. & G.S. 65°N, 133°W Yukon aftershock H = 14 <sup>h</sup> 02 <sup>m</sup> 25 <sup>s</sup> * Δ = 37.3°
5	iPZ eSN	03 <sup>h</sup> 35 <sup>m</sup> 44.5 <sup>s</sup> d 03 40 24	U.S.C. & G.S. 14°N, 90.5°W Guatemala - H = 03 <sup>h</sup> 29 <sup>m</sup> 58 <sup>s</sup> * h about 150 km Δ = 29.0°
5	iSe iLemE	07 51 43.6 07 54 04	U.S.C. & G.S. 60.5°N, 67°W Hudson Strait - H = 07 <sup>h</sup> 43 <sup>m</sup> 20 <sup>s</sup> * Δ = 20.4°
5	ePz iSN	19 36 54 d 19 43 41	U.S.C. & G.S. 11°N, 44°W H = 19 <sup>h</sup> 28 <sup>m</sup> 31 <sup>s</sup> * Δ = 45.3°

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Date	Phase	G.M.C.T.		Epicenter & Remarks
6	iSKPZ	06 <sup>h</sup> 41 <sup>m</sup> 08.3 <sup>s</sup>	d	U.S.C. & G.S. 2.5°S, 100° Near S. Coast of Sumatra H = 06 <sup>h</sup> 18 <sup>m</sup> 01 <sup>s</sup> * Δ = 142.0°
10	ePZ	03 44 45	d	U.S.C. & G.S. Near W. Coast of Nicaragua H = 03 <sup>h</sup> 38 <sup>m</sup> 35 <sup>s</sup> ** Δ = about 30°
14	iPZ iPNEne iZ iSE esSE	13 21 58.8 13 21 59.0 13 22 45.2 13 29 55 13 30 35	C  d	U.S.C. & G.S. Andreanof Is. Aleutian Islands H = 13 <sup>h</sup> 12 <sup>m</sup> 04 <sup>s</sup> * H about 100 km Magnitude: 7 Pasadena, 6 3/4 Berkeley Δ = 60.0°
18	iPZ iNZ iSNE iPSN	00 18 00.0 00 18 24.0 00 27 09 00 27 34	C C	U.S.C. & G.S. 54.5°N, 161°E Near E. Coast of Kamchatka H = 00 <sup>h</sup> 06 <sup>m</sup> 42 <sup>s</sup> * Δ = 71.0°
20	iPZ epPZ eSE eN	20 19 22 20 19 39 20 23 42 20 24 41	C C	U.S.C. & G.S., 15°N, 92°W Guatemala H = 20 <sup>h</sup> 13 <sup>m</sup> 42 <sup>s</sup> * h about 150 km Δ = 28.0°
21	iPZ iPR <sub>1</sub> E eSE	02 40 41.3 02 42 07 02 46 37	C	U.S.C. & G.S. 45°N, 28°W N. Atlantic Ocean H = 02 <sup>h</sup> 33 <sup>m</sup> 09 <sup>s</sup> * Δ = 39.0°



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22	iP <sub>1</sub> Z iSKPZ	14 <sup>h</sup> 24 <sup>m</sup> 50 <sup>s</sup> 14 28 21	d C	U.S.C. & G.S. 8.5°S, 92°E Indian Ocean H = 14 <sup>h</sup> 05 <sup>m</sup> 04 <sup>s</sup> * Magnitude: 7 Pasadena Δ = 148.3°
31	eP <sub>1</sub> Z ePR <sub>1</sub> NE iPR <sub>1</sub> Z eSR <sub>1</sub> E	18 36 05 18 38 07 18 38 13.1 18 55 08	d C	U.S.C. & G.S. 8°N, 124°E Northwest coast of Mindanao, Phillipine Islands. About 425 killed and several million dollars damage to property and agriculture in Ilagan, Ozamis City, and Lake Lanao area. H = 18 <sup>h</sup> 17 <sup>m</sup> 00 <sup>s</sup> * Magnitude: 7½ Pasadena, Berk. Δ = 125.9°
31	iP <sub>1</sub> Z iZ	21 11 43.5 21 11 53.5	C d	U.S.C. & G.S. 8°N, 124.5°E Mindanao aftershock. Felt. H = 20 <sup>h</sup> 52 <sup>m</sup> 39 <sup>s</sup> * Δ = 125.8°

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### BULLETIN FOR APRIL, 1955

Date	Phase	G.M.C.T.		Epicenter & Remarks
1	iPZ	18 <sup>h</sup> 49 <sup>m</sup> 16 <sup>s</sup>	d	U.S.C. & G.S. 64°N, 21°W Iceland H = 18 <sup>h</sup> 41 <sup>m</sup> 27 <sup>s</sup> * Δ = 41.3°
4	iPZ iSNE iSR <sub>1</sub> E	19 38 08.0 19 35 06 19 36 32	C	U.S.C. & G.S. 13°N, 87°W Nicaragua H = 19 <sup>h</sup> 24 <sup>m</sup> 04 <sup>s</sup> * Mag. 6 $\frac{1}{4}$ Pasadena Δ = 29.0°
5	iPZ iZ iN eSE iLE iMN	15 15 16.6 15 15 21.4 15 20 04 15 20 13 15 23 31 15 24 11	d	U.S.C. & G.S. 25°N, 110°W Gulf of California H = 15 <sup>h</sup> 09 <sup>m</sup> 15 <sup>s</sup> * Mag. about 7 Pasadena Δ = 29.0°
5	iPZ	16 01 44.5	C	Aftershock of preceding quake
5	iPZ iPZ eSn iSe	16 22 30.1 16 22 35.9 16 31 30.4 16 31 34.9	C C	U.S.C. & G.S. 24 $\frac{1}{2}$ °N, 110°W Gulf of California aftershock H = 16 <sup>h</sup> 16 <sup>m</sup> 24 <sup>s</sup> * Δ = 29.3°
5	iPZ	17 09 57.4	d	Aftershock of preceding quake
6	iP <sub>1</sub> <sup>1</sup> Z iP <sub>2</sub> <sup>1</sup> Z iPR <sub>1</sub> Z	20 08 53.4 20 10 02.2 20 13 51.2		U.S.C. & G.S. 33.5°S, 87°E Indian Ocean H = 19 <sup>h</sup> 48 <sup>m</sup> 46 <sup>s</sup> * Δ = 170.5°

BULLETIN FOR APRIL, 1955

Date	Phase	G.M.C.T.	Epicenter & Remarks
9	eP <sub>4</sub> e eP <sub>3</sub> e iS <sub>4</sub> n iS <sub>4</sub> e ie <sub>4</sub> iS <sub>3</sub> e iLn iLe	12 <sup>h</sup> 03 <sup>m</sup> 33.7 <sup>s</sup> 12 03 37.9 12 04 23.7 12 04 24.5 12 04 26.7 12 04 28.7 12 05 01.7 12 05 02.0	$\Delta$ S <sub>4</sub> - P <sub>4</sub> = 478 km H = 12 <sup>h</sup> 02 <sup>m</sup> 26.2 <sup>s</sup>
10	iP <sub>1</sub> Z ePR <sub>1</sub> Z	17 57 17.3 d 17 59 05.8 C	U.S.C. & G.S.: 8°N, 125°E Philippines aftershock. Many injured, moderate damage in Lanao Province. H = 17 <sup>h</sup> 38 <sup>m</sup> 12 <sup>s</sup> * $\Delta$ = 125.9°
11	iPZ	20 27 17.3 C	U.S.C. & G.S.: 13.5°N, 87°W Nicaragua-Honduras border H = 20 <sup>h</sup> 21 <sup>m</sup> 16 <sup>s</sup> * $\Delta$ = 29.0°
13	iPZ	20 57 34.9 C	U.S.C. & G.S.: 37.5°N, 22°E Southern Greece H = 20 <sup>h</sup> 45 <sup>m</sup> 45 <sup>s</sup> * $\Delta$ = 75.3°
14	ePR <sub>1</sub> Z iPR <sub>2</sub> N iSKSN eSE ePSN eZ eSR <sub>1</sub> N	01 47 59 C 01 50 28 01 54 16 01 55 38 01 57 13 01 57 29 02 03 07	U.S.C. & G.S.: 30°N, 101.5°E Sikang Province, China H = 01 <sup>h</sup> 28 <sup>m</sup> 58 <sup>s</sup> * Mag. 7 $\frac{1}{2}$ Pasa. 7 Berk. $\Delta$ = 109.0°

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Date	Phase	G.M.C.T.	Epicenter & Remarks
15	iPZ en eSKSNEe iSE ePSN	03 <sup>h</sup> 54 <sup>m</sup> 24.6 <sup>s</sup> d 03 54 31.2 04 04 56 04 05 43 04 07 14	U.S.C. & G.S: 40°N, 74.5°E Kirghiz, S. S. R. H = 03 <sup>h</sup> 40 <sup>m</sup> 52 <sup>s</sup> * Mag. 7 Pas., 6 3/4-7 Berk. $\Delta = 96.3^\circ$
17	ePN iPZ iSE	18 46 52 18 46 54.0 d 18 56 16	U.S.C. & G.S: 52°N, 159.5°E Off South coast of Kamchatka H = 18 <sup>h</sup> 35 <sup>m</sup> 27 <sup>s</sup> * h about 60 km Mag: 6 3/4 Pasadena $\Delta = 73.0^\circ$
17	iPZ	22 47 16.8 C	U.S.C. & G.S: San Juan Pro- vince, Argentina H = 22 <sup>h</sup> 35 <sup>m</sup> 50 <sup>s</sup> ** $\Delta P - H = 73.1^\circ$
19	iPZ i <sub>P</sub> PZe eSNE	16 59 00.3 d 16 59 30.7 C 17 08 37	U.S.C. & G.S: 39.5°N, 23°E Near East coast of Greece, Many killed, extensive damage at Volos. H = 16 <sup>h</sup> 47 <sup>m</sup> 17 <sup>s</sup> * $\Delta = 74.7^\circ$
19	ePZ iSE iPSN	20 35 29.1 d 20 44 52 20 45 44	U.S.C. & G.S: 30°S, 72°W Near Coast of Central Chile. Extensive damage from water waves at Tongoy and LaSerna. H = 20 <sup>h</sup> 24 <sup>m</sup> 05 <sup>s</sup> * Mag: 7 Pasadena $\Delta = 72.7^\circ$
20	iPZ iSE iPSE	02 24 00.5 C 02 33 20 02 34 08	U.S.C. & G.S: 30.5°S, 72.5°W Near Coast of Central Chile.F. Mag: 6 1/2 Pasadena $\Delta = 73.1^\circ$

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20	iPn iPZ ePR <sub>1</sub> N eSE ePSE	05 <sup>h</sup> 59 <sup>m</sup> 59.1 <sup>s</sup> 06 00 02.6 06 02 39 06 09 17 06 10 04	U.S.C. & G.S.; 30.5°N, 72.5°W Near coast of Central Chile. H = 05 <sup>h</sup> 48 <sup>m</sup> 27 <sup>s</sup> * Mag. 6½ Pasadena Δ = 73.1°
21	iPZ eSN	07 30 01.3 C 07 39 37	U.S.C. & G.S.: 39.5°N, 23°E Near East coast of Greece. Many casualties & extensive property damage. H = 07 <sup>h</sup> 18 <sup>m</sup> 17 <sup>s</sup> * Δ = 74.7°
23	iPZ iSN ePSE	18 40 15.3 d 18 49 38 18 50 22	U.S.C. & G.S.: 24.5°S, 113°W Easter Islands region. H = 18 <sup>h</sup> 28 <sup>m</sup> 47 <sup>s</sup> * Mag. 6 3/4 Pasadena Δ = 72.9°
24	iPZ	12 50 42.9 d	U.S.C.G.S.: Windward Passage H = 12 <sup>h</sup> 45 <sup>m</sup> 30 <sup>s</sup> ** Δ P - H = 23.8°
26	iPZ i <sub>p</sub> PZ eSE e <sub>s</sub> SE	03 09 34.2 d 03 09 55.0 03 14 29 03 14 50	U.S.C. & G.S.: 13.5°N, 89.5°W Near coast of El Salvador Felt: San Salvador H = 03 <sup>h</sup> 03 <sup>m</sup> 34 <sup>s</sup> *, about 60 km Mag. 6½ Pasadena Δ = 28.6°
28	iPZ iZ dE eSNE eN	19 15 26.8 C 19 15 51.0 d 19 23 36 19 24 00 19 25 24	U.S.C. & G.S.: 51°N, 178.5°W Felt: adak. H = 19 <sup>h</sup> 04 <sup>m</sup> 59 <sup>s</sup> * Mag: 6½ Pasadena Δ = 63.9°
30	iPZ iPR <sub>1</sub> Z eSE	01 38 30.9 C 01 39 07.9 C 01 43 31	U.S.C. & G.S.: 12.5°N, 87°W Near coast of Nicaragua. Felt: Nicaragua H = 01 <sup>h</sup> 32 <sup>m</sup> 25 <sup>s</sup> * Δ = 29.5°

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 Two Sprengnether short-period horizontal.



## BULLETIN FOR MAY, 1955

Date	Phase	G.M.C.T.		Epicenter & Remarks
1	iPZ iSKKSE esR <sub>1</sub> E	10 <sup>h</sup> 08 <sup>m</sup> 18.3 10 19 03 10 25 04	d	USCGS: 39.5° N, 143.5° E off coast of Northern Honshu, Japan H = 09 <sup>h</sup> 55 <sup>m</sup> 16 <sup>s</sup> * Mag. 6 3/4 Pasadena Δ = 89.7°
1	ePZ eSe iSE eSR <sub>1</sub> N	15 11 46.6 15 22 29 15 22 30 15 28 33	c	USCGS: 39.5° N, 143.5° E Honshu aftershock. H = 14 <sup>h</sup> 58 <sup>m</sup> 44 <sup>s</sup> * Mag. 6 Pasadena Δ = 89.7°
3	ePZ iSE	17 20 34.1 17 31 19	c	USCGS: 39.5° N, 143° E. Near coast of Northern Honshu, Japan H = 17 <sup>h</sup> 07 <sup>m</sup> 33 <sup>s</sup> * Δ = 89.8°
11	iPZ ePR <sub>2</sub> N iSE	11 11 54.7 11 13 52 11 18 15	c	USCGS: 0° N, 78° W, Ecuador. Minor damage in Carchi and Imbabura provinces. H = 11 <sup>h</sup> 04 <sup>m</sup> 00 <sup>s</sup> * Mag. 6 3/4 Pas Δ = 42.0°
13	ePE iPZ iPR <sub>1</sub> Z eSE	03 35 37 03 35 38.8 03 36 10.7 03 40 20	c d	USCGS: 19.5° N, 64° W. Virgin Is region. Felt: San Juan, P.Rico H = 03 <sup>h</sup> 29 <sup>m</sup> 55 <sup>s</sup> * Δ = 26.5°
14	ePR <sub>1</sub> Z iNn eSKKSE eSI eE isSKKSNE eSR <sub>1</sub> K	06 21 35 06 26 04 06 27 41 06 28 08 06 29 45 06 30 41	d	USCGS: 28° N, 139.5° E, Bonin Islands region. H = 06 <sup>h</sup> 04 <sup>m</sup> 14 <sup>s</sup> * h about 500 km. Mag. 6 3/4 Pasadena Δ = 101.0°

(MAY)

Page 2

Date	Phase	G.M.C.T.		Epicenter & Remarks
17	iP1Z	15 <sup>h</sup> 09 <sup>m</sup> 07 <sup>s</sup>	d	USCGS: 7°N, 94.5°E Nicobar Islands. H = 14 <sup>h</sup> 49 <sup>m</sup> 47 <sup>s</sup> * Magnitude 7, Pasadena Δ = 132.0°
	iP'Z	15 09 15.0	d	
	iPR <sub>1</sub> nZ	15 11 31.0	d	
	iSKPZ	15 12 30	d	
	iSR <sub>1</sub> E	15 28 24		
19	iPZ	02 31 11.9	c	
	ipPZ	02 31 26.2	c	
19	iPZ	07 17 23.0	c	USCGS: 19°S, 69°W Northern Chile. Felt: Arica H = 07 <sup>h</sup> 07 <sup>m</sup> 13 <sup>s</sup> * h about 100 km Δ = 62.2°
	ipPZ	07 17 49.2	c	
	iSN	07 25 33.6		
	isSE	07 26 16		
	ipPSN	07 26 48		
22	iPZ	23 54 27.6	d	USCGS: 11°S, 74°W Central Peru h = 23 <sup>h</sup> 45 <sup>m</sup> 17 <sup>s</sup> * h about 100 km Δ = 53.4°
	ipPZ	23 54 51.2	c	
25	iPZ	03 15 04	c	USCGS: 14°N, 92.5°W Off coast of Guatemala. H = 03 <sup>h</sup> 08 <sup>m</sup> 58 <sup>s</sup> * Δ = 29.1°
	esN	03 19 53		
26	ePR <sub>1</sub> Z	16 43 10	d	USCGS: 10°S, 161°E Solomon Is H = 16 <sup>h</sup> 23 <sup>m</sup> 10 <sup>s</sup> * Magnitude: 7, Pasadena Δ = 117.7°
	iPR <sub>1</sub> Z	16 43 11	c	
	eSKSE	16 48 51		
	ePSE	16 52 46		
28	iPZ	06 31 53.9	d	USCGS: 30.5°S, 65°W Cordoba province, Argentina. Felt: San- tiago and Valpariaso, Chile H = 06 <sup>h</sup> 20 <sup>m</sup> 40 <sup>s</sup> * h about 200 km Mag. 6 3/4, Pas. Δ = 74.2°
	ipPZ	06 32 37.3	c	
	iSNE	06 41 06		
	iPSN	06 41 45		
29	iP'Z	15 53 52.6		USCGS: 10.5°S, 110.5°E Off south coast of Java. H = 15 <sup>h</sup> 34 <sup>m</sup> 00 <sup>s</sup> * Mag. 6 3/4 Pas. Δ = 148.0°

(MAY)

Date	Phase	G.M.C.T.	Epicenter & Remarks
30	iPZ iSKSNE iSNE ePSN	12 <sup>h</sup> 44 <sup>m</sup> 43.3 <sup>s</sup> c 12 54 24 12 55 37 12 57 11	USCGS: 24.5°N, 142.5°E Volcano Islands. Felt: Tokyo H = 12 <sup>h</sup> 31 <sup>m</sup> 41 <sup>s</sup> * h about 600 km Mag. 7 <sup>1</sup> / <sub>4</sub> Pas. Δ = 103.0°
30	iPZ ePR <sub>1</sub> N i(SKKS)N	23 46 00.1 c 23 48 03 23 55 31	USCGS: 3°S, 137°E Western New Guinea H = 23 <sup>h</sup> 26 <sup>m</sup> 50 <sup>s</sup> * Mag. 6 <sup>1</sup> / <sub>2</sub> Pas. Δ = 129.0°
31	iPR <sub>1</sub> Z eSKSE ePSE	09 49 57.9 d 09 55 40 09 59 30	USCGS: 27°S, 177.5°W Kermadec Islands region H = 09 <sup>h</sup> 30 <sup>m</sup> 44 <sup>s</sup> * h about 100 km Mag. 6 3/4 Pas. Δ = 113.2°
31	iPZ iPR <sub>2</sub> N iSE iSR <sub>2</sub> E	18 05 12.6 18 07 02 18 11 38 18 15 18	USCGS: 0°, 92°W Galapagos Islands H = 17 <sup>h</sup> 57 <sup>m</sup> 12 <sup>s</sup> * Δ = 42.7°

EJW:ard



# CLEVELAND

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

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

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

Two Sprengnether short-period horizontal.

## BULLETIN FOR JUNE, 1955

Date	Phase	G.M.C.T.		Epicenter & Remarks
2	ePe iPe eSN eSN ePSN	00 <sup>h</sup> 29 <sup>m</sup> 29.8 <sup>s</sup> 00 29 31.6 00 37 59 00 38 08 00 38 51		U.S.C.G.S: 51.5°N, 180° Andreanof Islands, Aleutian Is. H = 00 <sup>h</sup> 18 <sup>m</sup> 56 <sup>s</sup> * Mag. 6 3/4 Pasadena Δ = 64.0°
2	1PZ	02 12 43.0	c	USCGS: 51.5°N 180° Andreanof Islands aftershock H = 02 <sup>h</sup> 02 <sup>m</sup> 10 <sup>s</sup> * Δ = 64.0°
4	1PZ ipPZ eSEe esSE	17 04 18.5 17 04 30.7 17 15 02 17 15 18	c d	USCGS: 40°N 142.5°E Off coast of Northern Honshu, Japan. H = 16 51 22 * h about 60 km Δ = 89.6°
4	1PZ ipPZ eSE esSE	17 35 27.9 17 36 42.9 17 46 13 17 46 28	d c	USCGS: 46°N, 142.5°E Off coast of Northern Honshu, Japan H = 17 <sup>h</sup> 22 <sup>m</sup> 31 <sup>s</sup> * h about 60 km Δ = 89.6°
5	1PZ eSE ePSE	02 03 49.7 02 12 17 02 12 50	d	USCGS: 51.5°N, 180° Andreanof Islands, Aleutian Is. H = 01 53 16 * Mag. 6 1/4, 6 1/2 Pasadena Δ = 64.0°
11	1PZ ipPZ iSN iPSE	22 29 58.2 22 31 57 22 38 22 22 39 03	d d	USCGS: 27°S, 63°W. Santiago del Estero province, Argentina H = 22 19 40 h about 600 km Δ = 71.2°

(JUNE)

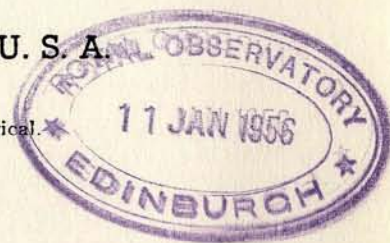
Date	Phase	G.M.C.T.		Epicenter & Remarks
12	iPZ eSE	20 42 41.8 20 52 33	d	USCGS: 49°N, 155°E Kurile Is. H = 20 <sup>h</sup> 30 <sup>m</sup> 45 <sup>s</sup> * $\Delta = 77.0^\circ$
14	ePZ iPZ ipZ ePR <sub>1</sub> Z eSN	06 17 40.3 06 17 43.5 06 17 46.9 06 18 38 06 22 54	c c d	USCGS: 20°N, 107°W. Off coast of Colima, Mexico. H = 06 <sup>h</sup> 11 <sup>m</sup> 18 <sup>s</sup> * Magnitude: 7 - Pasadena $\Delta = 30.7^\circ$
14	eSKSN iSKKSE eSN	17 45 44 17 46 18 17 46 36		USCGS: 36.5°N, 141.5°E Near east coast of Honshu, Japan H = 17 21 57 * $\Delta = 93.0^\circ$
16	ePZ eSE	12 43 39.6 12 48 58	c	USCGS: 25°N, 113.5°W Off Off coast of Lower California H = 12 37 15 * $\Delta = 31.0^\circ$
19	iPZ	21 35 16.9	d	USCGS: 53.5°N, 166°W Fox Islands, Aleution Islands. H = 21 25 21 * $\Delta = 55.3^\circ$
20	iPZ iSE	12 17 57.2 12 26 26	d	USCGS: 51.5°N, 180° Andeanof Islands, Aleution Islands H = 12 <sup>h</sup> 07 <sup>m</sup> 25 <sup>s</sup> * Mag. 6 3/4 Pas. 7 1/4 Berkeley: $\Delta = 64.0^\circ$
23	iPZ ipPZ iPR <sub>1</sub> Z eSE	22 25 55.6 22 26 09.4 22 29 34.2 22 36 10	c c c	USCGS: 44.5°N, 149°E Kurile Is H = 22 <sup>h</sup> 13 <sup>m</sup> 31 <sup>s</sup> * h about 60 km $\Delta = 82.8^\circ$
27	iPZ	02 02 58.1	c	USCGS: Off coast of Colima, Mex H = 01 58 30 ** $\Delta$ p-H = 31.7°
28	ePZ iPZ eSN eSR <sub>1</sub> N	04 37 16 04 37 18.5 04 44 37 04 48 17	d d	USGS: 86.5°N, 70°E North Polar region. H = 04 <sup>h</sup> 28 <sup>m</sup> 07 <sup>s</sup> * Mag. 6 Pasadena $\Delta = 52.0^\circ$
29	iPZ iPZ	05 08 25 05 08 40.7	d d	USCGS: 30.5°N, 130°E Ryukn Isl. H = 04 <sup>h</sup> 55 <sup>m</sup> 02 <sup>s</sup> $\Delta = 102.8^\circ$

# CLEVELAND

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

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

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



BULLETIN FOR JULY, 1955

Date	Phase	G.M.C.T.		Epicenter & Remarks
3	ePZ	14 <sup>h</sup> 37 <sup>m</sup> 11.0 <sup>s</sup>	d	USCGS: 52°N, 178°E Rat Island, Aleutian Island H = 14 <sup>h</sup> 26 <sup>m</sup> 32 <sup>s</sup> * Δ = 65.2°
	iPZ	14 37 23.4	c	
	eSN	14 45 52		
4	ePZ	14 30 26	d	USCGS: 51.5°N, 177°E Rat Island, Aleutian Island H = 14 <sup>h</sup> 19 <sup>m</sup> 44 <sup>s</sup> * Mag. 6½ - 6 3/4 Pasadena Δ = 65.9°
	ePZ	14 30 38.8	d	
	ePZ	14 30 45	c	
	eSN	14 39 05		
6	iPZ	02 05 54.6	c	USCGS: 51°N, 158°E Kamchatka, H = 01 <sup>h</sup> 54 <sup>m</sup> 17 <sup>s</sup> * Mag. 6 3/4 Pasa. Δ = 74.6°
	iPZ	02 05 55.2	c	
	iSE	02 15 28		
7	iPZ	05 03 33.6	d	USCGS: 12.5°N, 88°W Near Coast of Nicaragua H = 04 <sup>h</sup> 57 <sup>m</sup> 25 <sup>s</sup> Δ = 30.4°
	eSRE	05 10 00		
11	iPZ	20 33 03.9	d	USCGS: 1.5°S, 13°W Atlantic H = 20 <sup>h</sup> 21 <sup>m</sup> 20 <sup>s</sup> * Δ = 76.0°
	iPZ	20 33 05.7	d	
14	eP'Z	10 10 54.6	d	USCGS: 8.5°N, 94°E Nicobar Is. H = 09 <sup>h</sup> 51 <sup>m</sup> 37 <sup>s</sup> * Δ = 131.2°
	iSKPZ	10 14 12.3	d	
16	ePZ	07 19 10.2	d	USCGS: 37.5°N, 27°E Dode- canese Islands. Extensive damage on Samos Islands. H = 07 <sup>h</sup> 07 <sup>m</sup> 08 <sup>s</sup> * Mag. 6 3/4 7 Pasadena Δ = 78.2°
	iPZ	07 12 12.4	c	
	iSNE	07 29 05		
17	ePZ	22 08 04.3	c	USCGS: 54°N, 168°W, Fox. Is. Aleutian Is. Felt: Analaka H = 21 <sup>h</sup> 58 <sup>m</sup> 25 <sup>s</sup> * Mag. 5 3/4- 6 Pasadena Δ = 56.3°
	iSN	22 15 50		
	eSR <sub>1</sub> E	22 20 23		
19	eSR <sub>1</sub> N	16 38 35		USCGS: 60.5°N, 145.5°W Near South coast of Alaska H = 16 <sup>h</sup> 21 <sup>m</sup> 05 <sup>s</sup> * Δ = 42.7°

(JULY)

Date	Phase	G.M.C.T.		Epicenter & Remarks
19	iPR <sub>1</sub> Z eSNE iSN eSRN	00 02 40.2 00 07 44 00 07 50 00 11 25	d	USCGS: 56.5°N, 153°W Near South Coast of Kodiak Is. H = 23 <sup>h</sup> 52 <sup>m</sup> 25 <sup>s</sup> * Mag. 6 Pas. $\Delta = 47.3^\circ$
20	iPZ eSE	21 08 30.9 21 14 35	c	USCGS: 0.5°N, 78.5°W. Northern Ecuador, Extensive damage at Cotacachi H = 21 <sup>h</sup> 00 <sup>m</sup> 43 <sup>s</sup> * $\Delta = 41.2^\circ$  S - P = 62.6° h about 100 km.
21	iPN iPe ipPN eSE iE	11 55 20 11 55 20.1 11 55 42 12 03 44 12 05 44		
26	ePZ eSE	04 12 53 04 19 43	c	USCGS: 56.5°N, 153°W. Kodiak Island foreshock H = 04 <sup>h</sup> 04 <sup>m</sup> 18 <sup>s</sup> * Mag. 6 Pas. $\Delta = 47.3^\circ$
27	iPZ iPR <sub>1</sub> Z iSE <sup>1</sup>	18 27 43 18 29 43 18 34 34	c d	USCGS: 56.5°N, 153°W Near South Coast Kodiak Is. H = 18 09 08 * Mag 6 $\frac{1}{4}$ Pas. $\Delta = 47.3^\circ$
28	eSKPN	02 22 04		USCGS: 9.5°N, 122°E Negros Island aftershock. H = 02 <sup>h</sup> 00 <sup>m</sup> 10 <sup>s</sup> ** $\Delta = 125.9^\circ$

EJW:ard

# CLEVELAND



From the ISC collection scanned by SISMOS

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

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

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

Two Sprengnether short-period horizontal.

### BULLETIN FOR AUGUST, 1955

Date	Phase	G.M.C.T.	Epicenter & Remarks
6	eE eSKSE iSKhSE iSE esSN	08 <sup>h</sup> 46 <sup>m</sup> 36 <sup>s</sup> 08 55 16 08 56 09 08 56 53 08 59 26	USCGS: 21° $\frac{1}{2}$ S, 177°W Tonga Islands region. H = 08 <sup>h</sup> 31 <sup>m</sup> 25 <sup>s</sup> * h about 350km Mag. 6 $\frac{3}{4}$ Pasadena $\Delta = 108.4^\circ$
8	eSE	10 46 33	USCGS: 38° $\frac{1}{2}$ N, 118° $\frac{1}{2}$ W Mineral County, Nevada H = 10 <sup>h</sup> 35 <sup>m</sup> 38 <sup>s</sup> * $\Delta = 28.7^\circ$
16	iP'Z ipP'Z iPR <sub>1</sub> Z iZ iSKSE iPSE	12 05 30.2 c 12 06 15.8 c 12 06 47.9 c 12 08 55.4 12 12 12 12 16 43	USCGS: 6°S, 155°E Solomon Islands H = 11 <sup>h</sup> 46 <sup>m</sup> 58 <sup>s</sup> h about 200 km Mag. 7 $\frac{1}{4}$ Pasadena $\Delta = 119.0^\circ$
16	iPZ	19 16 21.6 d	USCGS: 12° $\frac{1}{2}$ N, 86° $\frac{1}{2}$ W Nicaragua H = 19 <sup>h</sup> 10 <sup>m</sup> 13 <sup>s</sup> * $\Delta = 29.4^\circ$
21	iP'Z eSKPNE eSKSN eSKKSNE eSR <sub>1</sub> N	17 53 09 c 17 55 23 18 00 13 18 02 01 18 12 01	USCGS: 3°S, 137° $\frac{1}{2}$ E New Guinea H = 17 <sup>h</sup> 33 <sup>m</sup> 58 <sup>s</sup> * Mag. 6 $\frac{3}{4}$ - 7 Pas. Berk. $\Delta = 129.0^\circ$
23	iPZ iSE	15 39 22.6 c 15 44 50.6	USCGS: 43° $\frac{1}{2}$ ON, 128°W. About 170 miles off coast of Oregon H = 15 <sup>h</sup> 32 <sup>m</sup> 40 <sup>s</sup> * Mag. 6 - 6 $\frac{1}{2}$ Pasadena $\Delta = 33.7^\circ$
24	ePE eSE	07 03 12 07 08 50	USCGS: 44° $\frac{1}{2}$ ON, 129° $\frac{1}{2}$ OW. Off coast of Oregon. H = 06 56 20 * $\Delta = 35.3^\circ$
25	e(P)Z	22 23 25	USCGS: 52°N, 176°E Rat Islands, Aleutian Islands H = 22 <sup>h</sup> 12 <sup>m</sup> 43 <sup>s</sup> h about 60 km $\Delta = 61.4^\circ$

(AUGUST)

Date	Phase	G.M.C.T.	Epicenter & Remarks
28	iPZ iPR <sub>2</sub> <sup>N</sup> iSN	20 <sup>h</sup> 19 <sup>m</sup> 29 <sup>s</sup> 20 20 40 20 24 19	USGCS: 14° N, 91°W. Near coast of Guatemala. H = 20 <sup>h</sup> 13 <sup>m</sup> 30 <sup>s</sup> , h about 60 km Mag. 6 3/4 Pas. & Berk. Δ = 29.0°
29	ePZ	01 21 13 d	USGCS: Near Coast of Guatemala H = 01 <sup>h</sup> 14 <sup>m</sup> 27 <sup>s</sup> ** h about 60 km
29	eSE	08 05 53	USGCS: 12°N, 87°W. Nicaragua H = 07 <sup>h</sup> 53 <sup>m</sup> 32 <sup>s</sup> * Δ = 30.0°
29	ePZ eSN	15 44 25 15 52 50	USGCS: 51°N, 178½°W. Andrean-of Islands, Aleutian Islands H = 13 <sup>h</sup> 33 <sup>m</sup> 56 <sup>s</sup> * Δ = 63.5°

EJW:ard

# CLEVELAND



From the ISC collection scanned by SISMOS

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

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

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

### BULLETIN FOR SEPTEMBER, 1955

Date	Phase	G.M.C.T.		Epicenter & Remarks
1	ePn eSN	17 <sup>h</sup> 39 <sup>m</sup> 26.0 <sup>s</sup> 17 44 53		USCGS: 10°N, 84½°W. Costa Rica Ten killed, 500 homeless in Toro Amarello H = 17 <sup>h</sup> 33 <sup>m</sup> 01 <sup>s</sup> * Δ = 31.8°
3	ePZ eSE	05 28 30 05 32 56	c	USCGS: 18½°N, 70°W. Dominican Republic. H = 05 <sup>h</sup> 23 <sup>m</sup> 04 <sup>s</sup> * Δ = 24.7°
3	iPZne epPne iSN esSN	12 42 14 12 42 31.7 12 47 03 12 47 27	c d	USCGS: 14°N, 91°W, Guatemala, H = 12 <sup>h</sup> 36 <sup>m</sup> 20 <sup>s</sup> * Felt h about 100 km. Mag: 6½ Pasa. = 28.9°
3	iP'Z iZ iSKPN ePR <sub>2</sub> NE	16 42 07 16 45 08 16 45 38 16 47 18	d d	USCGS: 1°N, 123°E, Celebes H = 16 <sup>h</sup> 22 <sup>m</sup> 52 <sup>s</sup> Δ = 133.0°
4	iPZ ipPZ isPZ eSN ePSE	11 40 09 11 40 32 11 40 49 11 48 40 11 49 16	d c c	USCGS: 22°S, 69°W. Northern Chile. Minor damage at caluma H = 11 <sup>h</sup> 29 <sup>m</sup> 40 <sup>s</sup> h about 100 km Δ = 65.2°
5	ePe eSe eSR <sub>1</sub> 1	02 07 48.3 02 13 22.0 02 14 11.1		USCGS: 37½°N, 122°W. Santa Clara County, California. Minor damage at San Jose. H = 02 <sup>h</sup> 01 <sup>m</sup> 15 <sup>s</sup> Mag: 5.8 Pasa. Δ = 31.3°
8	ePR <sub>1</sub> Z ePSN	02 22 40 02 32 10	c	USCGS: Sandwich Islands Region H = 02 <sup>h</sup> 03 <sup>m</sup> 15 <sup>s</sup> ** Mag: 6 3/4 - 7 Pas. Δ about 113°

(September, 1955)

Date	Phase	G.M.C.T.		Epicenter & Remarks
9	iP'Z iPR <sub>1</sub> Z	10 <sup>h</sup> 01 <sup>m</sup> 19.8 <sup>s</sup> 10 04 23.2	c d	USCGS: 2°S, 100°E. Near south coast of Sumatra. H = 09 <sup>h</sup> 41 <sup>m</sup> 57 <sup>s</sup> * Mag. 6 $\frac{1}{4}$ -6 $\frac{1}{2}$ Pasa. $\Delta$ = 142.9°
11	iPZ esN	08 49 19.7 08 53 39	c	USCGS: Savan Island Region, Caribbean Sea. H = 08 <sup>h</sup> 44 <sup>m</sup> 00 <sup>s</sup> ** $\Delta$ about 24.4°
11	ePR <sub>1</sub> N esKPN	18 24 31 18 26 25		USCGS: 7°S, 155°E, Solomon Is. H = 18 <sup>h</sup> 04 <sup>m</sup> 16 <sup>s</sup> * $\Delta$ = 120.3°
12	iPZ iSE iPSN	06 21 48 06 32 02 06 32 43		USCGS: 32 $\frac{1}{2}$ °N, 30°E, off coast of Egypt. 20 killed, many injured and extensive property damage in Nile Delta area. H = 06 <sup>h</sup> 09 <sup>m</sup> 20 <sup>s</sup> * Mag: 6 $\frac{3}{4}$ Pasa. $\Delta$ = 83.2°
13	iPZ esN	02 10 58.4 02 19 25	c	USCGS: 52°N, 176°W. Andreanof Is., Aleutian Is. H = 02 <sup>h</sup> 00 <sup>m</sup> 43 <sup>s</sup> h about 60 km. Mag: 5 $\frac{3}{4}$ -6 Pasa $\Delta$ = 61.5°
15	eP'Z iSKPE	12 49 47 12 53 11	c	USCGS: 5°S, 134 $\frac{1}{2}$ °E. Off coast of Western New Guinea. H = 12 <sup>h</sup> 30 <sup>m</sup> 27 <sup>s</sup> * Mag: 6 $\frac{3}{4}$ Pasa. $\Delta$ = 132.3°
22	ePSN	03 53 49		USCGS: 24°N, 123°E. Off East coast of Formosa. Felt: Taipeh H = 03 <sup>h</sup> 25 <sup>m</sup> 03 <sup>s</sup> * $\Delta$ = 111.3°
23	iPR <sub>1</sub> Z ePSN	15 25 46 15 35 18	c	USCGS: 27°N, 101 $\frac{1}{2}$ °E. Yunan Province, China H = 15 <sup>h</sup> 06 <sup>m</sup> 19 <sup>s</sup> Mag: 6 $\frac{3}{4}$ Pasa. $\Delta$ = 112.7°
26	iPN ipPN iSN isSN	08 33 54 08 34 40 08 38 16 08 39 40		USCGS: 15 $\frac{1}{2}$ °N, 92 $\frac{1}{2}$ °W. Chiapas, Mexico. H = 08 <sup>h</sup> 28 <sup>m</sup> 20 <sup>s</sup> * h about 200 km. Mag: 6 $\frac{3}{4}$ Pasa $\Delta$ = 27.6°
28	ePN ePZ iPeZ esN	18 15 48 18 15 49.7 18 15 50.9	c c	USCGS: 15°N, 97 $\frac{1}{2}$ °W. Near coast of Oaxaca, Mexico. H = 18 <sup>h</sup> 09 <sup>m</sup> 40 <sup>s</sup> * Mag: 6 Pasadena $\Delta$ = 30.1°
30	iPZ	19 24 46.2	d	USCGS: 51 $\frac{1}{2}$ °N, 176 $\frac{1}{2}$ °W. Andreanof Islands, Aleutian Islands H = 19 <sup>h</sup> 14 <sup>m</sup> 24 <sup>s</sup> $\Delta$ = 61.8°



# CLEVELAND



From the ISC collection scanned by SISMOS

## SEISMOLOGICAL OBSERVATORY

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

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

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



### BULLETIN FOR OCTOBER, 1955

Date	Phase	G.M.C.T.	Epicenter & Remarks
2	iPZ eSR <sub>2</sub> E	16 <sup>h</sup> 09 <sup>m</sup> 55.2 <sup>s</sup> c 16 18 32	USCGS: 5.5°N, 83°W, off coast of Panama. H = 16 <sup>h</sup> 02 <sup>m</sup> 54 <sup>s</sup> * Δ = 36.0°
5	iPZ ipPZ eSE esSE	09 09 15.8 c 09 09 36.9 d 09 18 27 09 19 13	USCGS: 53.5°N, 161°E, Near east coast of Kamchatka H = 08 <sup>h</sup> 57 <sup>m</sup> 55 <sup>s</sup> Δ = 71.5°
6	iPZ ipPZ iSE isSE	11 15 03.3 d 11 15 45.9 d 11 24 47 11 26 00	USCGS: 36.°S, 70°W Mendoza Province, Argentina Felt: Constitucion, Talca & Santiago H = 11 <sup>h</sup> 03 <sup>m</sup> 16 <sup>s</sup> * h about 150 km Δ = 78.5°
9	iPZ	23 24 33.0 c	USCGS: 50.5°N, 176°E. Near Islands, Aleutian Islands H = 23 <sup>h</sup> 13 <sup>m</sup> 22 <sup>s</sup> * Δ = 66.4°
10	eP'Z iP'Z iPR <sub>1</sub> Z isKSE iPSE eSR <sub>1</sub> E	09 16 42 c 09 16 45 d 09 18 09 c 09 23 55 09 27 50 09 34 29	USCGS: 3°S, 153°E New Britain H = 08 <sup>h</sup> 57 <sup>m</sup> 44 <sup>s</sup> * Δ = 120.0°
13	iP'Z iPR <sub>1</sub> Z eSKSE ePSE	09 45 30.9 d 09 46 39.1 c 09 52 19 09 56 22	USCGS: 9.5°S, 161°E Solomon Islands H = 09 <sup>h</sup> 26 <sup>m</sup> 44 <sup>s</sup> * Mag. 7, Pas. Δ = 117.7°
13	iPZn iZ iZ iZ eSN	21 57 10.9 d 21 57 19.1 c 21 57 29.1 c 21 57 37.5 c 22 02 28	USCGS: 12.°N, 87°W. Near coast of Nicaragua H = 21 <sup>h</sup> 20 <sup>m</sup> 59 <sup>s</sup> * Δ = 30.0°

(OCTOBER)

Date	Phase	G.M.C.T.		Epicenter & Remarks
19	iPZ	10 06 37.9	c	USCGS: 49.5°N, 155°E Northern Kurile Islands H = 09 <sup>h</sup> 54 <sup>m</sup> 43 <sup>s</sup> * Mag. 6 $\frac{1}{2}$ Pasadena $\Delta$ = 76.3°
	iPR <sub>1</sub> N	10 09 34		
	iSNE	10 16 20		
	iPS	10 16 45		
	eSR <sub>1</sub> N	10 20 56		
21	iSKSE	19 25 40		USCGS: 21°S, 179°W. Fiji Is. H = 19 <sup>h</sup> 02 <sup>m</sup> 40 <sup>s</sup> * h about 650 km Mag. 6 $\frac{1}{2}$ Pasadena = 109.3°
	eSKKSE	19 26 39		
	eSE	19 27 25		
	isSKSE	19 29 18		
	esSKKSE	19 30 23		
	esSN	19 31 39		
	esPSE	19 33 01		
	eSR <sub>1</sub> N	19 35 20		
21	eP'Z	23 29 00	c	USCGS: 0.5°S, 123.5°E Northern Celebec H = 23 <sup>h</sup> 09 <sup>m</sup> 38 <sup>s</sup> * $\Delta$ = 133.8°
	eSKP'Z	23 32 21	c	
	iSKPZ	23 32 29	c	
	e(PPS)E	23 42 42		
25	iPN	16 40 16		USCGS: 16.5°N, 95.5°W Oaxaca, Mexico H = 16 <sup>h</sup> 34 <sup>m</sup> 23 <sup>s</sup> $\Delta$ = 27.5°
	iPN	16 40 18.3	d	
	eSN	16 45 11		
31	iPZ	01 16 10	c	USCGS: 52°N, 175.5°W, Andreanof Islands, Aleutian Islands H = 01 <sup>h</sup> 05 <sup>m</sup> 53 <sup>s</sup> * Mag. 5 $\frac{3}{4}$ - 6 Pasadena $\Delta$ = 61.0°
	iSE	01 24 22		

EJW:ard

# CLEVELAND

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

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

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

Two Sprengnether short-period horizontal.

## BULLETIN FOR NOVEMBER, 1955

Date	Phase	G.M.C.T.		Epicenter & Remarks
10	ePZ	01 <sup>h</sup> 57 <sup>m</sup> 51.8 <sup>s</sup>	d	USCGS: 15°S, 174°W. Samoa IS. H = 01 <sup>h</sup> 44 <sup>m</sup> 04 <sup>s</sup> * h about 100 km Mag: 7½ - 7½ Pasadena Δ = 102.7°
	iZ	02 01 01.8	c	
	ePR <sub>1</sub> N	02 02 04		
	eSKSN	02 08 19		
	ePSN	02 09 24		
15	iPZ	10 15 35.5	c	USCGS: 55½°N, 155°W. Off South coast of Alaska Penins. H = 10 <sup>h</sup> 06 <sup>m</sup> 49 <sup>s</sup> * Mag: 6½ (Pas.), 6 (Berk.) Δ = 48.8°
	eSE	10 22 42		
	eSR <sub>1</sub> N	10 26 17		
17	iPZ	07 08 28.7	c	Δ S-P = 28.5°
	eSE	07 13 23		
	eSR <sub>1</sub> E	07 14 26		
22	iPZ	03 35 53.6	c	USCGS: 24½°S, 123°W Eastern Tuamotu Archipelago H = 03 <sup>h</sup> 24 <sup>m</sup> 00 <sup>s</sup> * Mag: 6 ¾ - 7 Pasadena Δ = 77.1°
	iSN	03 45 38		
23	iPZ	06 41 07.4		USCGS: 50½°N, 157°E. Near South Coast of Kamchatcka H = 06 <sup>h</sup> 29 <sup>m</sup> 29 <sup>s</sup> *, h about 60 km Mag: 7-7½ Pasadena Δ = 75.3°
	ipPZ	06 41 26.4		
	eSN	06 50 39		
	isSN	06 51 04		
	ePSE	06 51 43		
26	iPZ	17 44 20.2	c	

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# CLEVELAND

## SEISMOLOGICAL OBSERVATORY

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

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

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

Two Sprengnether short-period horizontal.

### BULLETIN FOR DECEMBER, 1955

Date	Phase	G.M.C.T.	Epicenter & Remarks
6	iPZ iSNE e	04 <sup>h</sup> 41 <sup>m</sup> 25.8 <sup>s</sup> d 04 49 50 04 51 01	USCGS: 20°S, 70°W. Northern Chile H = 04 <sup>h</sup> 31 <sup>m</sup> 00 <sup>s</sup> * Mag: 6 3/4 Pasa. $\Delta = 62.8$
7	eSKSn eSKSe eSR <sub>1</sub> N	15 27 43.3 15 27 43.7 15 35 28	USCGS: 26 <sup>1</sup> / <sub>2</sub> N, 142 <sup>1</sup> / <sub>2</sub> E. Bonin Islands H = 15 <sup>h</sup> 03 <sup>m</sup> 11 <sup>s</sup> * Mag: 6 3/4 - 7 Pasadena $\Delta = 101.5^{\circ}$
17	ee eN iNE eN	06 13 34 06 22 12 06 22 30 06 22 49	USCGS: 33°N, 115 <sup>1</sup> / <sub>2</sub> W. Near Brawley, California H = 06 <sup>h</sup> 07 <sup>m</sup> 27 <sup>s</sup> * Mag: 5 <sup>1</sup> / <sub>4</sub> - 5 <sup>1</sup> / <sub>2</sub> Pasadena $\Delta = 28.0^{\circ}$

EJW:ard