

Geophysical Institute
at the AG Observatory Golovec
University of Ljubljana,
Ljubljana, Trg revolucije 11, P.O.B. 20
Yugoslavia

1961

P R E L I M I N A R Y S E I S M O L O G I C A L

B U L L E T I N

(January - March 1961)



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PRELIMINARY SEISMOLOGICAL BULLETIN
 from January 1, 1961 to March 31, 1961

Station Ljubljana : Coordinates : $46^{\circ} 02.6' N$ Lat.
 $14^{\circ} 32.0' E$ Long.
 Geocentric direction cosines: $a = + 6743$, $b = + 1748$, $c = + 7175$,
 $d = - 8$, $h = - 4$;
 Height: 396 m;
 Lithologic foundation: sandstone (carbon);

Instruments:

Wiechert, horizontal astatic seismograph, $M = 200$ kg, mechanical registration, 13-15 mm/min;

Constants (15.III.1961)	T_0	$v:1$	r/T_0^2	V
N-S	4.8	2.6:1	0,005	66
E-W	4.9	2.9:1	0,007	69

Hiller- "Stuttgart", vertical component Z with galvanometrical recording; $T_0 = 1.5$ sec, $T_g = 1.5$ sec, $D_1 = D_2 = 1$, $V_{max} = 10$ 150, 60 mm/min;

Note: Periods of seismic waves are given in seconds, the amplitudes in microns ; sign + means compression, sign - dilatation.

January

JANUARY 1961

- 1 iZ- PKP₁ 16 57 13.1, iZ PKP₂ 16 57 21.6, USCGS: H = 16 38 27.8, 18.3 S, 178.2 W, h about 663 km, Fiji Islands region, D = 16 740 km.
- 2 iZ Pg 10 21 21.0, iZ Sg 10 21 23.2, D = 10 km, weak, not felt.
- 2 (ei)Z 10 31 04.9 (slight, short period waves, superposed on microseisms), iZ PKP 10 31 09.8, iZ! (pPKP) 10 31 30.8!, eiZ 10 31 54.3, eZ PP 10 34 02, eiZ pPP 10 34 22.9, eiZ sPP 10 34 42.0, eiZ PKS 10 34 46.3, USCGS: H = 10 11 56.9, 12.4 S, 166.4 E, h = about 161 km, Santa Cruz Islands region, Mag. = 6 3/4 (Pas), 6 1/2 - 6 3/4 (Berk), D = appr. 15400 km, obscured by microseisms.
- 2 Z 22 38-39 traces.
- 5 eiZ P 14 18 47.9, iZ 14 19 00.1, eZ 14 19 31.7, eZ PP 14 21 54.4, eZ 14 22 29, traces, USCGS: H = 14 06 25.9,

January 1961

-2-

- 51.6 N, 176.3 W, h about 37 km, Andreanoff Island, Aleutian Islands. Felt: Adak, Mag.= 6 3/4 (Pas), 6 1/4-6 1/2 (Berk), D= appr. 9200 km.
- 5 iZ P 15 21 52.2, iZ 15 21 59.9, traces, USCGS: H= 15 09 37.9, 45.7 N, 149.3 E, h about 19 km, Kurile Islands.
- 5 eZ+ PKP 16 12 36.6, iZ! 16 12 41.5, eiZ 16 13 12.1, eZ PP 16 14 07.4, eZ! pP 16 14 22.9, eZ 16 14 55, eZ 16 15 22, USCGS: H= 15 53 56.0, 4.1 S, 143.0 E, h about 108 km, New Guinea. Felt. Mag.= 6 3/4-7 (Pas), D= 13200 km.
- 5 eZ- PKP₁ 18 17 30.4, iZ PKP₂ 18 17 36.9, iZ 18 17 50.2, iZ pPKP₂ 18 18 07.2, eiZ 18 18 27, (e)Z PP 18 21 10, traces, USCGS: H= 17 57 56.6, 21.2 S, 169.3 E, h about 123 km, Loyalty Islands region. Mag.= 6 3/4 (Pas), 6 3/4-7 (Berk), D= 16400 km.
- 5 eZ+ PKP₁ 18 34 16.4, iZ PKP₂ 18 34 19.6, iZ 18 34 37.0, eiZ pPKP₂ 18 34 55.2, eiZ 18 35 28.6, eZ PP 18 37 54.7, eZ pPP 18 38 15, USCGS: H= 18 14 43.0, 21.0 S, 169.1 E, h about 124 km. Loyalty Islands region, aftershock. Mag.= 6 3/4 (Pas), D= 16 400 km.
- 6 iZ Pg 07 31 30.8, iZ Sg 07 31 37.2, iZ! (SgSg) 07 31 43.3, iZ 07 31 46.7, iZ 07 31 56.2, D= 45 km, weak.
- 7 eiZ P 10 34 06.6, iZ 10 34 31.5, iZ S 10 36 36.9, iZ! 10 37 00.2!, traces, disturbed by microseisms. Greece, near Crete, D= 1490 km.
- 7 iZ P 15 55 13.0, eiZ PP 15 55 21.4, iZ S 15 56 58.1, iZ! 15 57 14.6, eZ 15 58 26, disturbed by microseisms. BCIS: H= 15 52 51, 37.6 N, 20.8 E, Ionian Islands. USCGS: H= 15 52 54.0, 37.7 N, 21.1 E, h about 22 km. Near west coast of Greece, D= 1100 km.
- 8 iZ P or PKP 07 48 56.9, eiZ PP 07 51 18.5, eZ 07 51 31.5, traces, obscured by microseisms.
- 8 (e)Z (Pn) 11 58 06.5, iZ Sg 11 59 02.2, D= 370 km, weak.
- 9 eiZ P 03 16 51.2, traces, USCGS: H= 03 08 37.7, 31.2 N, 41.0 W, h about 49 km, North Atlantic Ocean.
- 9 iZ P or PKP 05 55 46.8, traces.
- 9 eZ PKP₁ 10 32 57.2, iZ 10 33 08.1, eZ 10 33 21.2, traces, USCGS: H= 10 13 17.7, 21.3 S, 169.1 E, h about 82 km, Loyalty Islands.
- 9 eiZ P 11 17 57.1, iZ 11 18 08.0, traces, USCGS: H= 11 06 56.9, 17.7 N, 61.1 W, h about 25 km, Leeward Islands.
- 9 (ei)Z P 11 22 07.2, eiZ 11 22 20.5, USCGS: H= 11 11 12.5, 17.6 N, 61.0 W, h about 52 km, Leeward Islands.
- 9 eZ P 19 33 09.3, eiZ 19 33 15.6, USCGS: H= 19 22 05.6, 17.8 N, 61.0 W, h about 31 km, Leeward Islands.
- 9 eZ P 19 35 55.3, eZ 19 36 08.7, traces, USCGS: H= 19 24 59.5, 17.7 N, 61.6 W, h about 31 km, Leeward Islands.
- 9 iZ Pg 20 51 09.0, iZ (Sg) 20 51 29.7, traces, D= 155 km.
- 10 iZ+ P 14 34 20.6, iZ! 14 34 25.3!, iZ 14 34 39.7, iZ 14

January 1961

-3-

- 10 (cont.) 35 20.4, eZ 14 36 07.6, eZ PP 14 37 22.7, eZ M 15 10 -: Tz=21, Az= 20, USCGS: H= 14 22 18.2, 49.9 N, 156.2 E, h about 29 km, Kurile Islands region, Mag.= 6 3/4 (Pas), 6 1/4 (Berk), 6 1/4-6 1/2 (Pal), D= 8800 km.
- 11 eZ P 12 12 17 (obscured by microseisms), iZ PcP 12 12 25.0, eZ 12 12 44, traces, USCGS: H= 11 59 55.0, 51.8 N, 171.0 W, h about 47 km, Fox Islands, Aleutian Islands. D= 8950 km.
- 11 iZ Pg 13 30 19.7, iZ Sg 13 30 23.0, iZ SgSg 13 30 28.6, D= 22 km, weak.
- 12 iZ Pg 04 24 54.7, iZ 04 24 57.8, iZ(SgSg) 04 24 (03) D= 20 km, weak, aftershock.
- 12 iZ P 14 25 16.8, obscured by microseisms, eiZ 14 25 21.3, USCGS: H= 14 13 27.7, 57.4 N, 155.9 W, h about 40 km, Alaska Peninsula.
- 13 Z 21 02-04 traces.
- 14 eiZ P 16 51 08.5, iZ PcP 16 51 18.7, eiZ 16 51 23.8, USCGS: H= 16 38 55.6, 53.9 N, 163.7 W, h about 41 km, Unimak Island region, Mag.= 5 3/4 (Pal), D= appr. 8700 km.
- 15 eiZ Pn 00 16 50.8, eZ 00 18 30.6, eiZ 00 18 52, traces, Athens: felt Cephalonia Island.
- 15 iZ PKP₁ 17 04 12.5, disturbed by microseisms, iZ 17 04 43.9, iZ 17 05 00.7, traces, USCGS: H= 16 44 44.8, 20.4 S, 169.5 E, h about 182 km, Loyalty Islands region.
- 16 iZ P 07 32 49.3, eNE P 07 32 51, iZ 07 33 05.9, iZ pP 07 33 21.6, iZ 07 33 37.8, iZNE PP 07 36 10.6, iZ pPP 07 36 43.9, iZ PPP 07 38 06.6, eNE S 07 43 12, eE M 08 14 - Tn=16, Te= 16, An=160, Ae= 145, eZ M 08 15 - Tz= 15, Az=100; USCGS: H= 07 20 18.6, 36.0 N, 141.1 E, h about 131 km, Near east coast of Honshu, Japan. Felt: Central and northeastern Honshu. Mag.= 6 3/4 -7 (Pas), 7 1/2 (Stras)-h about 150 km, D= about 9600 km.
- 16 eiZ P 11 32 13.7, disturbed by microseisms, iZ 11 32 28.9, iZ 11 32 41.0, iZ pP 11 32 57.6, weak. USCGS: H= 11 19 46.5, 35.7 N, 140.6 E, h about 157 km, Near east coast of Honshu.
- 16 (i)Z P 12 25 (04)(in the minute interruption), iZ 12 25 19.3, iZ! sP 12 26 01.1!, iZ 12 26 39.3, eZ PPP 12 30 25, eZ pPPP 12 30 48, Z M 13 07 - Tz= 15, Az = 66, EN: M traces. USCGS: H= 12 12 34.4, 36.2 N, 141.7 E, h about 105 km, Honshu, Japan, Mag.= 6 1/2 - 6 3/4 (Pas), D= about 9 550 km.
- 16 eiZ P 15 53 48.3, iZ pP 15 54 26.0, eZ 15 54 47, eZ PP 15 57 17.8, eZ pPP 15 57 40.6, (e)Z PPP 15 58 59.3, ZNE M 16 35 45, Tz= 15, Az= 31, USCGS: H= 15 41 23.3, 36.4 N, 140.6 E, Near east coast of Honshu, Japan, D= about 9550 km.
- 17 eiZ Pn 01 53 22.0, iZ Px 01 53 25.4, iZ Pg 01 53 39.2, iZ 01 53 52.2, iZ! 01 54 00.2, iZ Sn 01 54 21.6, iZ Sb 01 54 35.5, iZ Sg 01 54 44.3, BCIS: H= 01 52 05, 46.5 N,

January 1961

-4-

- 7.4 E, Bernesi Alps, felt in Switzerland (Sion, Valais), D= 540 km.
- 17 iZ Pg 12 27 17.4, iZ Sg 12 27 36.3, D= 150 km, weak.
- 17 eiZ PKP 23 25 11.8, iZ 23 25 25.8, (e)Z 23 25 55, traces, USCGS: H= 23 05 32.5, 21.4 S, 169.3 E, h about 84 km, Loyalty Islands region.
- 19 eiZ PKP 04 40 52.1, eiZ 04 44 29.8, USCGS: H= 04 21 16.0, 14.4 S, 166.7 E, h about 26 km, New Hebrides Islands region.
- 19 eiZ PKP 06 14 09.7, eiZ 06 14 40.6, traces, USCGS: H= 05 54 25.5, 21.5 S, 170.3 E, h about 100 km, Loyalty Islands.
- 19 eiZ+ P 17 34 21.1, eiZ 17 34 25.9, iZ 17 34 35.5, USCGS: H= 17 22 16.9, 49.7 N, 155.8 E, h about 31 km, Kurile Islands, Mag.= 5 3/4- 6 1/2 (Pal).
- 20 iZ Pg 00 33 18.2, iZ Sg 00 33 21.1, iZ SgSg 00 33 24.3, iZ! 00 33 26.9, Sg: Tz=1, Az=0.3, D= 20 km, weak, not felt.
- 20 eiZ P 17 21 08.8, eZ 17 21 15.7, eZ 17 21 33.7, traces, USCGS: H= 17 09 15.7, 56.4 N, 152.3 E, h about 46 km, Sea of Okhotsk, Mag.= 6 3/4 (Pas).
- 20 eiZ+ P 22 47 16.4, eZ 22 47 29.0, USCGS: H= 22 34 51.1, 38.1 N, 141.2 E, h about 52 km, Near east coast of Honshu, Japan.
- 21 eZ 03 47 57.7, (e)Z 03 48 15, traces;
- 22 eiZ P or PKP 03 21 05.5, traces.
- 22 eZ PKP 03 43 31.6, iZ pPKP 03 43 40.3, iZ 03 43 49.1, iZ 03 44 18.1, eZ PP 03 46 28, eiZ PKS 03 47 12, iZ 03 47 59.1, iZ 03 49 19.0, eiZ PPP 03 49 38.4, USCGS: H= 03 24 04.5, 11.9 S, 166.2 E, h about 25 km, Santa Cruz Islands region, Mag.= 7 (Pas), 6 1/4- 6 1/2 (Berk), D= 15 350 km.
- 22 eiZ 18 56 48.2, traces,
- 23 eiZ P or PKP 09 54 22.2, traces.
- 24 iZ- PKP 07 44 13.4, iZ! 07 44 17.7!, iZ 07 44 52.9, eiZ pPKP 07 45 08.9, USCGS: H= 07 25 03.5, 15.6 S, 167.6 E, h about 198 km, New Hebrides Islands region, D= 15 750 km.
- 25 eZ+ P 19 16 19.2, eZ 19 17 05.6, traces, USCGS: H= 19 04 22.8, 49.8 N, 156.0 E, h about 98 km, Kurile Islands.
- 26 Z 10 47-48 traces, disturbed by microseisms.
- 26 iZ PKP 13 32 07.9, iZ 13 32 10.8, traces, obscured by microseisms. USCGS: H= 13 12 22.6, 21.3 S, 169.5 E, h about 77 km, Loyalty Islands region.
- 26 iZ PKP₁ 16 33 04.1 (obscured by microseisms), iZ PKP₂ 16 33 09.5, iZ 16 33 24.8, eZ 16 33 32.5, USCGS: H= 16 13 25.1, 21.4 S, 169.5 E, h about 119 km, Loyalty Islands. Mag.= 6 1/2 (Pas), 6- 6 1/4 (Berk), D= 16 500 km.
- 26 iZ+ PKP 19 08 33.0, iZ! 19 08 46.4!, iZ pPKP 19 09 06.7, traces, obscured by microseisms. USCGS: H= 18 48 56.9, 20.7 S, 169.5 E, h about 106 km, Loyalty Islands region.

January 1961

-5-

- 26 iZ 22 00 33.0, traces, obscured by microseisms.
- 28 iZ+ P or PKP 05 32 13.1, eiZ 05 32 20.4, eZ 05 32 38.8, traces.
- 28 iZ- Pn 07 20 21.1, eZ 07 20 53.9, iZ S 07 21 54.4, iZ! 07 21 58.2!, iZ 07 22 13.4, USCGS: H= 07 18 16.2, 39.3 N, 22.0 E, h about 89 km, Northern Greece, D= 980 km.
- 28 eiZ PKP₁ 20 02 44.6, iZ PKP₂ 20 02 51.5, iZ 20 02 57.2, eZ 20 03 22.8, USCGS: H= 19 43 01.4, 21.3 S, 169.5 E, h about 50 km, Loyalty Islands region. Mag.= 6 1/4 (Pas), 6 (Pal), D= 16 440 km.
- 28 eiZ Pn 21 53 09.1, iZ Sg 21 54 07.0, traces, D= appr. 390 km, weak.
- 29 (e)Z (Pn) 18 42 (02) very weak, eZ S 18 43 53.9, eZ 18 44 14, D= 1120 km. Athens: Achaie, Corinthie.
- 29 iZ Pn 22 33 38.1, eiZ Pb 22 33 47.4, iZ 22 33 57.0, iZ Pg 22 34 (00), iZ Sn 22 34 42.1, (i)Z Sb 22 35 (00), iZ! Sg 22 35 12.8, iZ 22 35 34.6, D= 590 km.
- 30 eZ P 12 23 42.2, traces, USCGS: H= 12 12 39.7, 65.2 N, 149.9 W, h about 34 km, Central Alaska, Mag.= 5 1/2 (Pal).
- 31 eZ P 01 00 34.9, eZ PcP 01 00 44.9, eiZ 01 01 04.4, eZ PP 01 03 32.9, eZ 01 03 42.5, traces, USCGS: H= 00 48 36.5, 55.8 N, 153.9 W, h about 26 km, Near Kodiak Island, Alaska. Mag.= 6 1/2 (Pas), 6 (Berk), D= 8650 km.
- 31 eiZ PKP 06 33 09.1, eiZ 06 33 20.2, traces, USCGS: H= 06 13 15.2, 17.1 S, 166.8 E, h about 60 km. New Hebrides Islands.
- 31 eiZ P 08 05 32.8, (or PKP), eiZ 08 05 47.4, traces, weak.

February 1961

FEBRUARY 1961

- 3 iZ Pn 19 13 52.1, weak, obscured by microseisms, iZ Sn 19 14 24.6, iZ Sg 19 14 37.5, traces, D= 290 km.
- 4 iZ+ P 09 02 25.1, iZ! PcP 09 02 56.3, iZ 09 03 10.5, eiZ 09 03 34.2, USCGS: H= 08 51 48.9, 24.7 N, 95.3 E, h about 162 km, Northern Burma. Quetta: H= 08 51 41, 25 1/4 N, 96 E, h=60 km, Mag.=5.8, Shillong: H= 08 51 50, 24 N, 95 E, D= 7450 km.
- 4 iZ+ P 19 21 48.7, eiZ 19 21 55.9, traces. USCGS: H= 19 09 12.9, 24.0 N, 122.7 E, h about 14 km. Off east coast of Formosa. Felt.
- 5 iZ!+ Pg 02 41 35.5, iZ! Sg 02 41 38.7, iZ SgSg 02 41 41.0, D= 24 km, weak. No macroseismic reports.
- 5 Z 08 32-34, traces, seismic?
- 5 eZ P 15 51 28.4, eiZ 15 51 56.0, traces. USCGS: H= 15 38 34.0, 8.0 N, 82.8 W, h about 49 km. South Panama.
- 6 eiZ P 18 27 38.0, eiZ 18 27 52.8, traces, USCGS: H= 18

February 1961

-6-

- 6 (cont.) 15 21.6, 44.8 N, 149.1 E, h about 25 km. Kurile Islands.
- 6 iZ- PKP 19 47 47.1, traces, USCGS: H= 19 29 33.2, 4.8 S, 154.2 E, h about 470 km. Solomon Islands region.
- 6 eiZ PKP 22 04 16.4, iZ! 22 04 21.7!, eiZ pPKP 22 04 29.8, eiZ 22 05 21.8, eiZ PP 22 06 27.4, eiZ SKP 22 07 41.4, eiZ 22 08 20.0, USCGS : H= 21 45 13.5, 6.8 S, 155.3 E, h about 59 km. Solomon Islands. Felt. Rabaul: Felt 6°MCS at Boku (6°35'S, 155°20'E), 2-3° MCS at Rabaul. D = appr. 14 200 km.
- 6 (e)Z P or PKP 22 16 40.8, eZ 22 17 41.3, traces.
- 7 eiZ- P or PKP 03 06 15.9, eiZ 03 06 17.8, eZ 03 06 30.3, traces.
- 7 eiZ- P 05 24 49.8, eZ 05 25 10.1, traces, USCGS: H= 05 11 45.0, 4.1 S, 103.3 E, h about 82 km, Sumatra.
- 7 Z 08 56-57 traces, seismic?
- 8 eiZ PKP 02 55 56.7, iZ 02 55 58.8, USCGS: H= 02 36 40.5, 15.3 S, 167.5 E, h about 162 km, New Hebrides Islands region.
- 8 iZ Pn 06 17 38.2 (weak), eZ (S) 06 18 57, eiZ 06 19 23.7, traces, obscured by microseisms. (D=appr.750 km).
- 8 eiZ P 08 16 31.1, eiZ 08 16 46.0, USCGS: H= 08 04 13.8, 10.6 S, 71.0 W, h about 669 km, Brazil-Peru border, Mag.= 5 3/4 (Pas).
- 8 iZ PKP 12 19 45.2, traces, USCGS: H= 11 59 52.3, 18.8 S, 174.9 W, h about 76 km, Tonga Islands.
- 8 iZ PKP₁ 18 09 36.4, iZ! 18 09 43.5, eiZ! PKP₂ 18 09 55.6!, eZ 18 10 16.7, USCGS: H= 17 50 45.2, 20.4 S, 178.1 W, h about 543 km, Tonga Islands. D= 16 950 km.
- 9 Z 00 18-20 traces.
- 9 iZ+ PKP₁ 02 28 12.9, iZpPKP₁ 02 28 29.8, eiZ 02 28 38.0, iZ PKP₂ 02 28 53.8, eiZ pPKP₂ 02 29 09.3, eZ PP 02 32 34.8, eiZ pPP 02 32 45.9, eZ PPP 02 36 48.6, USCGS: H= 02 08 15.9, 28.2 S, 177.4 W, h about 37 km, Kermadec Islands region. Mag.= 6 3/4 (Pas), 6 1/4 (Berk), D= 17 700 km.
- 9 eiZ 19 05 09.9, traces.
- 10 Z (Pg) 07 34 (00), eiZ Sg 07 34 17.2, weak, D= 140 km.
- 10 eiZ P 18 55 44.0, eiZ 18 56 08.1, traces, BCIS: H= 18 51 55, 41.5 N, 6.3 W, border Spain-Portugal. East of "Traz -os-Montes" Province (Portugal). Lisboa: felt 4-5° MCS Braganca region.
- 11 iZ (Sg) 03 22 32.7, traces.
- 11 eiZ- P 06 24 46.5, USCGS: H= 06 12 23.2, 28.8 N, 139.5 E, h about 358 km, North of Bonin Island region.
- 11 eiZ+ P or PKP 06 25 32.4, eiZ 06 25 50.1, traces.
- 11 eiZ Pn 09 16 19.9, eZ Sn 09 18 32, traces, D= appr.1200 km.

February 1961

-7-

- 11 (cont.) Athens: felt at Messinia, southern Peloponnisos.
- 11 Z 14 01-02 traces.
- 11 eZ PKP 17 05 48.0, eiZ 17 05 54.9, eZ 17 06 53, USCGS: H= 16 46 24.6, 19.8 S, 176.2 W, h about 261 km, Fiji Islands.
- 11 iZ Pn 17 48 06.0, iZ Pg 17 48 10.8, iZ Sn 17 48 35.2, iZ! Sx 17 48 39.0, iZ Sg 17 48 43.0, weak, D= 255 km.
- 11 (e)Z PKP₁ 21 21 (02) in the minute interruption, iZ pPKP₁ 21 21 17.7, iZ! PKP₂ 21 21 44.0, eiZ pPKP₂ 21 22 00.2, eiZ 21 22 06.9, eZ PP 21 25 21.9, eZ 21 26 07.8, (e)Z PPP 21 29 06, USCGS: H= 21 01 06.4, 28.2 S, 177.5 W, h about 41 km, Kermadec Islands. Mag.= 6 3/4 (Pas), 6 3/4 (Berk), D= 17 650 km.
- 11 iZ P or PKP 22 46 00.4, traces.
- 11 (e)Z P or PKP 23 55 (01), traces.
- 12 eZ P or PKP 10 36 46.7, traces.
- 12 eiZ PKP₁ 12 28 35.3, iZ PKP₂ 12 28 39.1, traces. USCGS: H= 12 09 22.0, 15.0 S, 175.2 W, h about 281 km, Samoa Islands region.
- 12 iZ+ P 22 05 58.9, iZ PcP 22 06 06.5, iZ 22 06 08.7, iZ pP 22 06 27.1, eZ PP 22 09 15.5, (e)Z PPP 22 11 07, (e)ZNE S 22 16 (00), eZNE M 22 46 - Tn=17, An=76, Te=17, Ae=60, Tz=17, Az= 50. USCGS: H= 21 53 43.5, 43.7 N, 147.6 E, h about 45 km, Kurile Islands. Mag.= 6 3/4 - 7 (Pas), 7 (Pal), 7 (Stras), D= about 9 100 km.
- 12 eiZ+ P 23 38 51.0, iZ PcP 23 39 00.1, iZ! 23 39 04.0, eiZ 23 39 25.4, traces. USCGS: H= 23 26 34.5, 44.0 N, 147.7 E, h about 23 km, D= about 9 100 km. Kurile Islands.
- 13 eiZ PKP₁ 07 05 15.4, iZ PKP₂ 07 05 28.4, eiZ 07 05 39.9, iZ 07 06 (00), traces, USCGS: H= 06 45 25.0, 17.0 S, 173.7 W, h about 43 km. Tonga Islands region. Mag.= 5 3/4 (Pas), 6 (Pal).
- 13 iZ+ P 16 39 39.3, iZ PcP 16 39 49.9, eiZ 16 39 58.4, eiZ 16 40 18.1, eZ 16 41 09.8, USCGS: H= 16 27 20.9, 43.7 N, 149.6 E, h about 25 km, Kurile Islands. Mag.= 6-6 1/4 (Pas), 5 1/2-5 3/4 (Pal).
- 14 eiZ P 03 03 23.4, traces, USCGS: H= 02 51 15.3, 44.2 N, 147.8 E, h about 98 km, Kurile Islands.
- 14 eiZ P 03 34 20.0, eZ 03 34 37.1, traces. USCGS : H= 03 22 00.7, 43.8 N, 147.9 E, h about 20 km. Kurile Islands. Mag.= 6 - 6 1/4 (Pas).
- 14 eZ P or PKP 11 21 23.8, traces.
- 14 Z 16 10-12, traces.
- 14 Z 20 19 - 21, traces.
- 14 eiZ (P) 20 36 46.4, traces.
- 15 eiZ+ PKP 02 29 05.5, iZ 02 29 25.0, USCGS: H= 02 09

February 1961

-8-

- 15 (cont.) 20.4, 22.3 S, 171.6 E, h about 64 km. Loyalty Islands region.
- 15 (ei)Z Pn 09 33 54.1, eZ Sn 09 34 40.7, BCIS: H= 09 32 43, 45.9 N, 9.1 E, Northern Italy, near lake Como. D= 425 km, weak.
- 15 eZ P 10 57 29.5, iZ PcP 10 57 41.2, eiZ pP 10 57 51.6, eiZ sP 10 58 03.6, iZ 10 58 15.3, eiZ 10 58 28.3, USCGS: H= 10 45 15.9, 43.7 N, 147.4 E, h about 69 km. Kurile Islands. Mag.= 6- 6 1/4 (Pas), 6 (Pal), D=9100 km.
- 15 (e)Z Pn 18 26 36, eiZ 18 27 (00), eiZ Sg 18 28 15.1, iZ 18 28 20.6, iZ 18 28 40.5, (D= 620 km), weak.
- 15 Z 21 46 50 - 21 49 - ; traces.
- 16 eiZ Pn 02 57 36.4, (e)Z Sg 02 59 (26), D= 670 km, very weak.
- 16 iZ Pn 03 46 24.5, iZ 03 46 42.9, eiZ (Sn) 03 47 26.5, iZ 03 47 50.3, iZNE Sg 03 48 14.3, iZ 03 48 23.2, iZ! 03 48 52.0!, iZ 03 49 09.3, USCGS: H= 03 44 58.8, 41.1 N, 19.4 E, h about 143 km, Near coast of Albania. D= 670 km.
- 16 Z 09 47-49 traces.
- 16 eiZ+ P 14 07 06.4, eiZ! (PcP) 14 07 15.4, traces, USCGS: H= 13 54 53.7, 43.2 N, 148.0 E, h about 71 km, Kurile Islands. Mag.= 6 - 6 1/4 (Pas), D= appr. 9100 km.
- 16 iZ P or PKP 14 42 03.5, eiZ 14 42 10.9,
- 16 Z 17 40-41, traces.
- 17 iZ! Pg 14 18 17.7, iZ! Sg 14 18 25.5, eiZ 14 18 36.9, D= 65 km, weak.
- 18 Z 01 16-17 traces.
- 18 eiZ Pn 11 01 07.2, eiZ 11 01 53.4, (i) Z Sg 11 03 (00), in the minute interruption, traces, D= 680 km, weak.
- 18 eiZ PKP₁ 12 25 22.2, iZ! (PKP₂) 12 25 27.6, iZ 12 25 39.3, iZ 12 25 43.1, eiZ 12 26 16.6, USCGS: H= 12 05 36.3, 22.6 S, 171.3 E, h about 38 km, Loyalty Islands region. D= about 17 400 km.
- 18 eiZ P 17 11 38.7, eZ! 17 11 45.2, eZ PcP 17 12 41.7, eZ 17 14 29, USCGS: H= 17 02 10.0, 1.3 S, 15.7 W, h about 25 km, Atlantic Ocean, north of Ascension Island. D= about 6000 km.
- 19 eiZ+ P 12 44 18.5, iZ 12 44 24.1, traces, USCGS: H= 12 33 41.9, 14.1 S, 13.9 W, h about 100 km, South Atlantic Ocean.
- 19 Z 18 46-48 traces.
- 20 eiZ P 18 59 39.1, traces, obscured by microseisms; USCGS: H= 18 46 56.5, 5.0 N, 96.0 E, h about 139 km, Near north coast of Sumatra.
- 20 eiZ 19 06 13.6, traces.
- 21 iZ Pn 03 04 38.3, iZ 03 04 50.7, iZ! 03 06 42.1!, iZ Sn

February 1961

-9-

- 21 (cont.) 03 06 55.7, iZ 03 07 25.6, eiZ 03 08 10.3, eZ M 03 09 21, BCIS: H= 03 01 50, 36 1/2 N, 23.0 E, south of Peloponnisos, USCGS: H= 03 01 55.3, 36.5 N, 23.3 E, h about 49 km, Near south coast of Greece, D= 1300 km.
- 21 iZ Pn 22 14 45.8, iZ (Pg) 22 15 03.9, iZ 22 15 28.3, iZ Sg 22 15 42.6, iZ 22 15 56.6, traces, D= appr. 380 km.
- 22 eiZ+ PKP₁ 22 13 28.1, iZ PKP₂ 22 14 08.9, eZ PP 22 17 50, (e)Z 22 18 (00), traces, USCGS: H= 21 53 34.5, 28.4 S, 177.2 W, h about 78 km, Kermadec Islands region. Mag.= 5 3/4 (Berk), 5 1/2- 5 3/4 (Pal), D= 17 700 km.
- 23 eZ P 03 22 37.7, traces.
- 23 eZ P 03 26 46.3, (e)Z S 03 29 18, USCGS: H= 03 23 16.0, 35.0 N, 27.3 E, h about 16 km, Dodecanese Islands region, D= 1600 km.
- 23 eiZ+ P 04 28 47.9, eiZ pP 04 29 20.8, eZ PP 04 32 19.6, USCGS: H= 04 16 25.0, 38.2 N, 142.7 E, h about 119 km, Off east coast of Honshu, Japan. Felt. D= appr. 9 500 km.
- 23 eiZ P or PKP 05 54 23.8, eiZ 05 54 43.0, traces.
- 23 (e)Z 16 02 (04), weak, eZ 16 02 29.1, traces.
- 23 eiZ P 21 48 56.5, eZ 21 49 08.0, eZ 21 49 46.5, (e)Z S 21 51 05, eZ M 21 55 15.5, BCIS: H= 21 46 30, 40 1/2 N, 25 1/2 E, Northern Aegean Sea. Some discordant data. USCGS: H= 21 45 51.5, 37.3 N, 27.5 E, h about 25 km, Dodecanese Islands. Athens: felt Dodecanese Islands Kalymnos, Kos, Nisyros and Samos. Macro seismic epicentre: 36 1/2 N, 27 E. D= 1460 km.
- 23 Z 22 00-22 01, traces.
- 24 eiZ P 03 16 48.0, traces, USCGS: H= 03 04 11.7, 26.1 N, 125.4 E, h about 25 km, Ryukyu Islands.
- 24 eiZ P or PKP 08 40 48.3, eiZ 08 40 54.7, traces.
- 24 eiZ 20 09 55.1, eiZ 20 09 58.0, traces.
- 24 eiZ 20 16 36.7, eZ 20 16 47.5, traces.
- 25 iZ PKP 05 12 09.1, traces, USCGS: H= 04 55 25.1, 21.7 S, 179.6 W, h about 608 km, Fiji Islands region.
- 25 eZ PKP₁ 15 21 45.7, iZ 15 21 51.3, USCGS: H= 15 02 04.8, 15.4 S, 175.8 W, h about 62 km, Samoa Islands region.
- 26 eZ PKP 06 08 05, eZ PP 06 11 03, USCGS: H= 05 48 46.3, 32.7 S, 11.2 W, h about 29 km, Easter Island region, Mag.= 6 1/2- 6 3/4 (Pas), 6 (Berk), 5 1/2 - 5 3/4 (Pal), D= 15 150 km.
- 26 eiZ+ NE P 18 23 16.2, iZ pP 18 23 28.4, eiZ sP 18 23 59, eZN PP 18 26 30.5, eiZ! 18 29 51.4!, (e)ZNE S 18 33 30, eZNE M 19 05 45: Tz= 17, Az= 230, Tn=17, An= 270, Te=17, Ae= 360, USCGS: H= 18 10 48.7, 31.4 N, 131.2 E, h about 54 km, Near coast of Kyushu, Japon, Mag.= 7- 7 1/4 (Pas), 7 (Berk), 7 1/4 (Pal), 1 killed, several injured and extensive property damage at Miyazaki, 3 ft tsunami observed in south-west Shikoku. D= 9 400 km.

February 1961

-10-

- 26 eiZ+ P 21 14 04.3, traces, USCGS: H= 21 01 04.8, 16.0 N, 121.6 E, h about 32 km, Luzon, Philippine Islands, Felt.
- 27 eiZ P 01 20 02.6, iZ 01 20 43.7, traces, USCGS : H= 01 07 51.3, 6.7 N, 73.0 W, h about 200 km, Colombia.
- 27 Z 12 14-15, traces.
- 27 eZ P 13 18 52.1, traces, USCGS: H= 13 06 35.8, 52.5 N, 168.8 W, h about 56 km, Fox Islands, Aleutian Islands.
- 27 eiZ+ P 15 57 09.9, USCGS: H= 15 44 19.8, 9.8 N, 84.4 W, h about 97 km, Near coast of Costa Rica. Minor damage at San Jose.
- 27 eZ-P 18 01 43.9, traces, USCGS: H= 17 53 35.9, 38.4 N, 74.7 E, h about 48 km, Tadzik S.S.R.
- 27 eiZ P or PKP 19 24 53.7.
- 27 eiZ P 21 43 09.0, eZ S 21 47 (00), Athens: felt Dodecanese Islands.
- 27 eZ P 21 57 40.6, USCGS: H= 21 54 30.6, 36.2 N, 26.9 E, h about 32 km, Aegean Sea.
- 27 Z 23 18-20, traces.
- 28 eZ 06 02 10.9.
- 28 eiZ+ P 12 45 44.6, traces, USCGS: H= 12 33 32.1, 46.5 N, 152.2 E, h about 29 km, Kurile Islands.
- 28 Z 13 56-59, traces.

March

MARCH 1961

- 1 eZ P 14 42 33.0, eiZ 14 42 38.3, USCGS: H= 14 31 29.9, 18.9 S, 11.6 W, h about 68 km, South Atlantic Ocean.
- 3 iZ Pg 02 30 38.7, (i)Z Sg 02 31 (00), iZ 02 31 06.0, D= 165 km, weak.
- 3 eZ PKP₁ 06 45 26.5, iZ! 06 45 31.2!, eiZ 06 46 06.8, USCGS: H= 06 25 37.9, 22.9 S, 171.4 E, h about 27 km, Loyalty Islands region.
- 3 iZ Pg 14 12 40.1, iZ Sg 14 12 54.4, D= 115 km, weak.
- 5 iZ! Pg 07 24 53.8, iZ! 07 24 56.9, iZ SgSg 07 25 02.4, D= 22 km, weak.
- 5 eiZ+ PKP 10 58 36, obscured by microseisms, USCGS: H= 10 39 49.9, 17.8 S, 179.0 W, h about 622 km, Fiji Islands region.
- 5 eiZ PKP₁ 21 45 41.2, eiZ 21 45 49.0, iZ PKP₂ 21 46 01.8, USCGS: H= 21 25 55.6, 20.6 S, 176.1 W, h about 58 km, Tonga Islands region.
- 5 eiZ 22 37 31.1, eZ 22 37 35, traces;
- 6 eiZ P 08 23 02.7, eZ S 08 24 54.7, eZ 08 26 06, traces, D= 1 150 km.
- 6 eiZ P or PKP 12 29 33.6, eZ 12 29 38.0.

March 1961

-11-

- 6 eiZ P or PKP 17 58 23.5,
- 6 eZ 21 41 37.2, traces.
- 6 eZ 23 56 51.8, traces.
- 7 Z 02 01-03 traces.
- 7 iZ- PKP₁ 10 30 36.4, iZNE pPKP₁ 10 30 46.5, iZNE PKP₂ 10 31 22.5, eZNE PP 10 35 07, eZ SKS 10 37 45, eZ PPP 10 38 56, USCGS: H= 10 10 38.9, 28.2 S, 175.7 W, h about 43 km, Kermadec Islands region. Mag.= 7 1/4- 7 1/2 (Pas)(Berk), 7- 7 1/2 (Pal), D= about 17 900 km.
- 7 eiZ 22 05 11.3, weak, traces.
- 7 eZ 22 26 52, traces.
- 7 eiZ+ PKP 23 30 55.8, iZ 23 31 04.7, USCGS: H= 23 11 59.6, 4.7 S, 153.2 E, h about 90 km, New Britain region.
- 8 iZ Pn 05 53 09.3, iZ Sg 05 53 46.8, iZ 05 53 58.9, traces, D= 265 km.
- 9 Z 01 22-24 traces.
- 9 eZ P 04 09 10.9, iZ 04 09 27.7, eiZ 04 09 40.5, USCGS: H= 03 59 08.7, 10.9 N, 41.7 W, h about 27 km, Atlantic Ocean.
- 10 eiZ Pn 01 53 46.6, iZ Pb 01 53 53.7, (i)Z Pg 01 54 (01), iZ Sn 01 54 25.9, iZ Sb 01 54 34.7, iZ! Sg 01 54 44.5!, iZ 01 54 57.1, D= 385 km.
- 11 eZ P 01 43 41.7, eZ 01 44 11.8, traces. USCGS: H= 01 31 34.4, 48.7 N, 154.6 E, h about 26 km, Kurile Islands. Mag.= 6 1/2 (Berk).
- 11 eiZ PKP 02 45 11.3, USCGS: H= 02 25 17.0, 16.3 S, 173.0 W, h about 25 km, Tonga Islands region.
- 11 eZ P 08 48 57.6, eZ PP 08 50 32, eZ PPP 08 51 18.8, USCGS: H= 08 41 00.0, 11.2 N, 43.3 E, h about 18 km, Near coast of British Somaliland; BCIS: H= 08 41 06, 11.8 N, 43.0 E, Golf of Tadjourah (Cote Française des Somalis), Felt VI-VII^o MCS at Djibouti.
- 11 (e)Z 11 48 50, eZ 11 49-50, traces.
- 11 eiZ P or PKP 13 21 52.1.
- 12 eiZ P or PKP 10 33 10.0, traces.
- 12 eiZ PKP₁ 23 41 34.2, iZ PKP₂ 23 42 17.7, eZ (PP) 23 46 07, USCGS: H= 23 21 42.5, 28.4 S, 176.0 W, h about 113 km, Tonga Islands region. Mag.= 6 1/4- 6 1/2 (Berk), D= 17 850 km.
- 13 eZ P 08 17 17.2, traces. USCGS: H= 08 03 43.9, 19.2 N, 107.3 W, h about 49 km, Off east coast of Mexico. Mag.= 6 1/4-6 1/2 (Pas).
- 13 (ei)Z Pg 09 17 50.6, iZ Sg 09 17 55.4, iZ 09 17 59.4, D= 35 km, weak.
- 13 eiZ Pn 15 35 08.4, traces. USCGS: H= 13 31 56.0, 35.8 N, 26.6 E, h about 25 km, Dodecanese Islands.

March 1961

-12-

- 13 eZ Pn 19 20 43.5, iZ 19 20 52.5, eZ Sn 19 23 38, eiZ 19 24 18.3, USCGS: H= 19 17 16.1, 34.4 N, 26.5 E, h about 25 km, Crete.
- 13 eZ PKP 21 35 11.2, eiZ 21 35 1.0, traces, USCGS: H= 21 16 13.1, 16.9 S, 178.1 W, h about 600 km, Fiji Islands region.
- 14 eiZ PKP₁ 01 31 45.2, eZ 01 33 06, USCGS: H= 01 11 55.4, 16.9 S, 176.5 W, h about 60 km, Tonga Islands region.
- 14 eiZ P or PKP 13 54 32.6, traces.
- 14 eiZ PKP 14 09 22.7, traces. USCGS: H= 13 49 31.7, 22.0 S, 172.1 E, h about 25 km, New Hebrides Islands region.
- 15 eZ P or PKP 01 45 21.1, traces.
- 15 iZ Pn 01 50 21.9, iZ! Pg 01 50 30.3, iZ! Sg 01 51 02.4, iZ SgSg 01 51 07.7, D= 310 km. BCIS: H= 01 49 38, 46.7 N, 10.8 E, Oetztal Alps (Austria), felt at Sent (Low Engadin, Switzerland).
- 15 eZ PKP 10 33 55.9, Z 10 34 (00), eZ PP 10 35 37.5, USCGS: H= 10 14 55.5, 3.3 S, 150.7 E, h about 21 km, New Ireland region. Felt: Rabaul. Mag.= 6 (Pas), D= appr. 13 350 km.
- 15 iZ PKP 13 19 55.3, traces. USCGS: H= 13 01 02.2, 4.4 S, 152.5 E, h about 99 km, New Britain. Felt: Karlai and Rabaul.
- 15 eZ P 16 30 25.7, eiZ 16 30 34.2, very weak; USCGS: H= 16 17 16.8, 27.5 N, 142.9 E, h about 100 km, Bonin Islands.
- 16 eZ P 05 10 16.2, traces. USCGS: H= 04 58 00.4, 51.7 N, 176.1 E, h about 39 km, Rat Islands, Aleutian Islands.
- 16 eZ PKP 08 12 38.0, USCGS: H= 07 52 39.6, 19.0 S, 172.7 W, h about 25 km, Tonga Islands.
- 16 eiZ PKP 11 38 15.2, eZ 11 38 45.6, eiZ PP 11 39 08.4, USCGS: H= 11 19 43.5, 6.4 S, 130.7 E, h about 77 km, Banda Sea, D= 12 500 km.
- 16 (e)Z (PKP) 14 03 18.4, eZ PP 14 04 25.2, eZ! 14 04 58.3, iZ 14 05 57.8 (other earthquake?), eZ PPP 14 06 40.9, USCGS: H= 13 45 35.6, 8.2 S, 122.0 E, h about 74 km, Flores Islands. Casualties and major property damage at Ende. Mag.= 6 1/4 (Pas), 6 1/4-6 1/2 (Pal).
- 16 Z 20 25-26 traces.
- 17 iZ 04 07 30.9, iZ 04 07 38.4, weak traces.
- 17 iZ 11 12 56.7, traces.
- 17 (e)Z PKP 14 26 46, iZ 14 26 55.6, traces. USCGS: H= 14 06 51.6, 23.8 S, 175.9 W, h about 120 km, Tonga Islands region.
- 17 eZ+ PKP₁ 20 30 28.2, eZ 20 30 40.1, eZ 20 31 11.3, USCGS: H= 20 10 36.4, 24.3 S, 175.6 W, h about 79 km, Tonga Islands region, Mag.= 6 (Pas).
- 18 eiZ 02 17 47.0, traces.

March 1961

-13-

- 18 (e)Z PKP₁ 15 14 55.8, eZ 15 15 17.9, iZ PKP₂ 15 15 33.0, eZ SKP 15 18 37, eZ PP 15 19 13.9, eZ PPP 15 22 47.4, USCGS: H= 14 54 59.3, 49.9 S, 163.3 E, h about 38 km, South of New Zealand. Mag.= 6 3/4 - 7 (Pas), 6 1/2 - 6 3/4 (Berk), 6 1/2 (Pal), D= 17 600 km.
- 19 (ei)Z PKP 07 34 31.3, iZ 07 34 37.7, iZ 07 34 44.2, USCGS: H= 07 14 57.4, 16.0 S, 168.2 E, h about 90 km, New Hebrides Islands.
- 20 eiZ- PKP₁ 16 12 42.8, iZ! 16 12 50.3!, iZ! 16 12 59.2!, iZ pPKP₁ 16 13 14.3, iZ 16 13 40.8, iZ! 16 13 49.7, eZ PP 16 16 26. USCGS: H= 15 53 09.9, 18.4 S, 175.2 W, h about 175 km, Tonga Islands. Mag.= 6 1/2- 6 3/4 (Pas), (Berk), D= 16 830 km.
- 21 eZ PKP₁ 00 02 31.2, iZ pPKP₁ 00 02 45.0, (i)Z PKP₂ 00 03 (02), eiZ 00 03 26.8, USCGS: H= 23 42 33.9, 24.2 S, 175.9 W, h about 25 km, Tonga Islands region. Mag.= 6 1/4 (Pas), 6 1/2 (Pal).
- 21 Z from 04 57 - to 05 02 - traces, weak.
- 21 eZ- PKP₁ 20 14 35.5, iZ! 20 14 40.6, eiZ PKP₂ 20 14 50.3, eiZ 20 15 12.1, USCGS: H= 19 54 44.4, 22.8 S, 171.4 E, h about 19 km, Loyalty Islands region. D= 16 650 km.
- 22 (e)Z Pn 00 37 57, eZ Pg 00 38 13.2, iZ Sg 00 39 14.5, iZ (SgSg) 00 39 22.3, eiZ 00 39 40.7, D= 460 km, weak.
- 23 iZ- Pn 01 02 39.1, iZ (PgPg) 01 02 46.5, iZ! 01 02 51.9, iZ 01 03 07.0, iZNE Sg 01 03 16.5, iZNE M 01 03 31.4, iZ 01 03 45.6, BCIS: H= 01 01 59, 44 N, 12.7 E, Italian coast of Adriatic Sea, Rimini region. USCGS: H= 01 02 01.6, 43.5 N, 12.9 E, h about 116 km, Near coast of north-eastern Italy. D= 260 km.
- 24 iZ Pn 10 37 58.1, iZ 10 38 07.4, iZ Sn 10 39 26.5, eiZ Sg 10 40 17.8, eZ 10 41 08, eZ 10 41 40.0, D= 890 km, weak.
- 24 Z 12 08 50 - 12 12 -, traces, aftershock?
- 24 eiZ Pn 16 10 52.1, eZ Sg 16 13 11.2, eZ M 16 13 28.8, D= 890 km, very weak.
- 24 (e)Z 18 16 58, traces.
- 24 eiZ Pg 18 38 05.3, eiZ 18 38 20.0, iZ Sg 18 38 28.1, D= 175 km, weak.
- 24 eiZ+ P 23 09 45.2, eiZ 23 10 20.6, eZ PP 23 13 05.7, eZ PPP 23 14 56.1, USCGS: H= 22 57 14.2, 35.3 N, 140.9 E, h about 102 km, Near east coast of Honshu, Japan. D= 9 550 km.
- 24 iZ Pg 23 53 47.3, iZ Sg 23 54 07.7, D= 160 km, weak.
- 25 eZ Pn 05 20 46.1, eiZ 05 21 30.8, eZ (Sg) 05 22 05.7, D= appr. 430 km, weak.
- 25 eZ P 13 19 11.5, eZ S 13 21 04.8, eiZ 13 21 48.4, D= 1 160 km, weak.
- 25 eiZ Pg 15 24 44.7, iZ Sg 15 24 49.5, D= 35 km, weak, not felt.

NOTE!

From the beginning of January 1, 1962 the Geophysical Institute University of Ljubljana has changed its address into:

ASTRONOMICAL and GEOPHYSICAL OBSERVATORY
UNIVERSITY OF LJUBLJANA
Trg revolucije 11, P.O.B. 20
Yugoslavia.

We kindly ask You for exchange of Seismological bulletins as also other published material.

March 1961

-14-

- 25 eZ P 21 11 29.2, traces. USCGS: H= 20 58 41.9, 37.1 S, 51.6 E, h about 137 km, Indian Ocean, about 1280 km south of Malagary Republic.
- 26 (e)Z Pn 01 18 30.8, iZ (Sg) 01 19 13.6, (D= appr. 280 km).
- 26 Z 11 51-54 traces.
- 26 Z 22 59-23 01 traces.
- 26 eZ P 23 21 13.8, traces. USCGS: H= 23 11 38.9, 30.6 N, 84.4 E, h about 24 km, Southern Tibet.
- 27 iZ P or PKP 00 27 47.4, traces.
- 27 eZ P or PKP 19 50 09.9, traces.
- 27 Z 20 48-50, traces, weak.
- 28 eiZ+ P 09 49 47.2, eiZ 09 50 30.8, eZ 09 53 47.8, eZ! NE PP 09 54 09.1, eZ 09 54 50.2, eZ (PPP) 09 56 17, eZNE SKS 10 00 (15), USCGS: H= 09 35 55.4, 0.2 N, 123.6 E, h about 83 km, Northern Celebes, Mag.= 6 3/4 (Pas), 6 3/4- 7 (Stras), 7 (Pal), D= 11 300 km.
- 28 eZ PP 21 19 44.2, eZ 21 20 17.7, USCGS: H= 21 01 56.2, 22.0 S, 68.0 W, h about 125 km, Chile-Bolivia border region. Felt: Antofagasta. Mag.= 6 (Pas).
- 29 (e)Z 17 14 45.8, Z (Sg) 17 15 (00), traces.
- 29 eiZ+ P or PKP 22 48 14.6, traces.
- 30 eZ PKP 09 09 32.1, eiZ 09 09 36.8, iZ 09 09 46.7, eiZ 09 10 14.3, USCGS: H= 08 49 45.6, 15.2 S, 172.8 W, h about 25 km, Samoa Islands region. Mag.= 5 3/4 - 6 (Pas).
- 30 eZ 15 11 06.5, traces.
- 30 Z 16 10 - 12, traces, weak.
- 31 eiZ P or PKP 15 14 17.2, eZ 15 14 34.3.

Ljubljana, June 15, 1961

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Yugoslavia

1961

P R E L I M I N A R Y S E I S M O L O G I C A L
B U L L E T I N
(April-June 1961)



Geophysical Institute
 at the AG Observatory Golovec
 University of Ljubljana
 Trg revolucije 11, P.O.B. 20
 Yugoslavia

1961

PRELIMINARY SEISMOLOGICAL BULLETIN
 from April 1, 1961 to June 30, 1961

Station Ljubljana: Coordinates: 46° 02.6' N Lat.
 14° 32.0' E Long.

Geocentric direction cosines: a = + 6743, b = + 1748, c = + 7175
 d = - 8, h = - 4;

Height: 396 m;

Lithologic foundation: sandstone (carbon);

Instruments:

Wiechert, horizontal astatic seismograph, M = 200 kg,
 mechanical registration, 13-15 mm/min;

Constants (15.VI.1961):

Component	T ₀	v:1	r/T ₀ ²	V
N-S	4.9	2.7:1	0.006	67
E-W	4.9	2.8:1	0.006	68

Hiller - "Stuttgart", vertical component Z with galvanometrical recording; T₀ = 1.5 sec, T_g = 1.5 sec, D₁ = D₂ = 1, V_{max} = 10 150, 60 mm/min;

Note: Periods of seismic waves are given in seconds, the amplitudes in microns; sign + means compression, ground motion towards the north or towards the east, sign - means the opposite direction.

April

APRIL 1961

- 1 eiZ P or PKP 05 15 46.3, traces.
- 1 eiZ + P 15 26 44.5, iZNE 15 26 46, iZNE! 15 26 49.2 : T_Z = 1.0, A_Z = 2.7, eZNE PP 15 28 31, eiNE 15 29 20.4, eZ (S) 15 33 29, eN S 15 33 32, eZ SS 15 36 39.5, eE SS 15 36 43, eE M 15 47 55, eZ M 15 51 15: T_Z = 1.1, A_Z = 3.3, USCGS: H = 15 18 22.8, 39.6 N, 77.7 E, h about 21 km. Sinkiang Province, China. Mag. = 6 (Pal), D = 5050 km.
- 1 eiZ P or PKP 15 41 32.3, in the preceding earthquake.

April 1961

-2-

- 1 iZ P or PKP 18 46 23.8, eiZ 18 46 45.5.
- 1 iZ P 20 55 17.7.
- 2 iZ Pg 03 56 11.5, eiZ Sg 03 56 25.9, D= appr. 120 km, weak.
- 2 eiZ P or PKP 12 59 22.
- 2 (e)Z P 16 00 (30) weak, eZ S 16 02 14, D= about 980 km.
- 2 eiZ 21 12 46 traces.
- 3 eiZ P or PKP 08 07 35.9, traces.
- 3 eZ P 16 43 56.7, eiZ 16 44 20.5, USCGS: H= 16 32 04.3, 52.5 N, 158.9 E, h about 38 km, Near east coast of Kamchatka.
- 4 eiZ+ P 01 26 17.7, iZ 01 26 23.3, USCGS: H= 01 17 59.3, 39.7 N, 78.1 E, h about 81 km, Sinkiang Province, China.
- 4 eiZ+ P 01 34 23.6, iZ 01 34 29.1, USCGS: H= 01 26 07.9, 39.6 N, 78.0 E, h about 64 km, Sinkiang Province, China.
- 4 eiZ+ P 09 54 59.5, iZ! 09 55 06.3!, iZ 09 55 13.7, (ei) Z PP 09 56 54.3, (e)NE M 10 12 - . USCGS: H= 09 46 36.6, 40.1 N, 77.8 E, h about 16 km, Sinkiang Province, China. D= about 5100 km.
- 4 eiZ P or PKP 13 56 24.4.
- 4 Z 17 45-46 traces.
- 5 eZ P 06 55 26.2, traces, weak, USCGS: H= 06 47 07.4, 39.7 N, 78.1 E, h about 79 km, Sinkiang Province, China.
- 5 iZ! Pg 07 15 56.3, iZ! Sg 07 16 03.8, iZ (SgSg) 07 16 11.8, D= 50 km. Macroseismic epicentre: 46° 15' N, 150° 10' E. Felt III^o-IV^o MCS at Žalec, Prebold (III^o), Sempeter IV^o, west from Celje, Slovenia.
- 5 iZ- P or PKP 10 18 34.1, eZ 10 18 43.7, traces.
- 6 eiZ+ P 01 42 09.9, iZ 01 42 13.1, USCGS: H= 01 33 46.9, 39.6 N, 77.8 E, h about 33 km, Sinkiang Province, China.
- 6 Z 10 26-27 traces.
- 6 eiZ Pn 12 35 35.9, iZ Pg 12 35 51.8, iZ Sn 12 36 19.6, eiZ Sg 12 36 40.3, weak, D= about 450 km.
- 6 iZ+ P 14 17 30.0, eiZ PcP 14 17 35.6, iZ 14 17 40.0, traces, USCGS: H= 14 05 00.3, 2.2 N, 97.2 E, h about 25 km, Near coast of Sumatra, D= 9250 km.
- 6 eiZ- PKP(1) 15 53 11.9, iZ! PKP 15 53 13.8, iZ 15 53 27.9, USCGS: H= 15 33 38.6, 20.3 S, 169.4 E, h about 121 km. Loyalty Islands region.
- 6 eZ+ P 18 19 51.5, iZ 18 19 58.3, eZ PP 18 21 26, (e) Z S 18 25 (50), USCGS: H= 18 12 40.7, 27.8 N, 56.7 E, h about 109 km, Southern Iran, D= about 4250 km.
- 6 (e)Z 21 32 12.3, traces.
- 6 eiZ- P 22 38 55.7, USCGS: H= 22 26 29.6, 1.9 N, 96.5 E,

April 1961

-3-

- 6 (continuation): Near coast of Sumatra.
- 7 eiZ 02 28 07.8, eiZ 02 28 11.2, traces.
- 7 Z 04 48-51, traces.
- 7 (ei)Z Pn 06 46 31, eZ Sn 06 48 16, eiZ 06 48 38.2, iZ (Sg) 06 48 54.1, eiZ 06 49 12.2, D= 820 km. Greece. Athens: felt at Kastoria (Argos-Orestikon, Mavrochori, Nestorion).
- 7 eiZ P or PKP 06 56 04.4, eiZ 06 56 13.3, traces.
- 7 iZ P 10 19 26.2, USCGS: H= 10 06 49.5, 0.3 S, 97.0 E, h about 25 km, Near coast of Sumatra.
- 7 eZ Pn 17 37 26, eiZ (Pg) 17 37 46.2, eZ (Sn) 17 38 22, D= 530 km, weak.
- 7 eiZ PKP 17 56 25.5, traces, USCGS: H= 17 37 09.6, 19.5 S, 177.1 W, h about 355 km, Fiji Islands region.
- 7 eZ+ P 20 06 29.8, eiZ 20 06 49.0, traces, USCGS: H= 19 54 51.9, 57.2 N, 163.3 E, h about 20 km, Near east coast of Kamchatka.
- 7 iZ+ P 21 25 41.1, iZ pP 21 25 52.5, eZ PP 21 27 27.9, eZ 21 27 40.7, USCGS: H= 21 17 43.8, 39.3 N, 73.0 E, h about 44 km, Kirghiz-Tadzik border. Felt: Tashkent. D= about 4900 km.
- 8 eZ- P 09 17 09.1, traces. USCGS: H= 09 03 48.9, 2.1 S, 79.1 W, h about 24 km, Ecuador.
- 8 eiZ+ PKP 16 19 19.0, iZ 16 19 24.5, traces, USCGS: H= 15 59 49.2, 18.2 S, 168.6 E, h about 120 km, New Hebrides Islands region.
- 8 eiZ+ P or PKP 16 23 54.8, traces.
- 8 eiZ PP 18 19 18.9, (e)Z PPP 18 21 53, USCGS: H= 17 59 46.7, 38.2 S, 72.7 W, h about 60 km, Chile. Mag.= 6 1/2 (Pas), 5 3/4 - 6 (Pal), D= about 12 700 km.
- 8 eiZ- P 19 31 38.6, traces, USCGS: H= 19 18 54.8, 37.6 N, 140.3 E, h about 189 km, Honshu, Japan.
- 8 (e)Z PP 21 54 54, traces, USCGS: H= 21 36 41.6, 14.8 N, 145.1 E, h about 105 km, Mariana Islands region. Mag.= 6 1/2 (Pas).
- 9 iZ P or PKP 07 47 19.0.
- 9 eiZ- P or PKP 12 25 15.5, traces.
- 9 iZ+ P 15 47 39.6, iZ 15 47 52.4, iZ 15 48 05.3, eiZ PP 15 50 58.1, eZ 15 51 17, (e)NE M 16 20 -, weak traces, USCGS: H= 15 35 05.4, 24.1 N, 122.2 E, h about 13 km, Near coast of Formosa, D= about 9400 km.
- 10 eiZ P or PKP 03 46 56.5, traces.
- 10 eiZ Pn 06 57 00.3, eiZ Pg 06 57 13.9, eZ Sn 06 57 46.3, iZ! Sg 06 58 01.0, iZ 06 58 15.8, traces, D= 410 km.
- 10 iZ+ P 07 09 47.3, USCGS: H= 06 57 13.6, 24.1 N, 122.3 E, h about 22 km, Near coast of Formosa.

April 1961

-4-

- 10 eiZ- PKP 17 59 13.5, traces, USCGS: H= 17 40 26.6, 17.5 S, 178.8 W, h about 618 km, Fiji Islands region.
- 11 eiZ P or PKP 11 38 20.1.
- 11 eiZ PKP 16 31 16.3, iZ 16 31 20.1, eZ 16 31 24.5, USCGS: H= 16 11 33.3, 22.4 S, 169.9 E, h about 58 km, Loyalty Islands.
- 12 iZ+ Pn 00 44 42.5, eiZ Pg 00 44 55.6, iZ 00 45 07.8, iZ Sg 00 45 45.7, eiZ 00 46 09.0, D= appr. 400 km.
- 12 (e)Z 04 20 (27), eiZ Sg 04 21 09.2, weak traces, aftershock?
- 12 eiZ 14 45 33.1, iZ Sg 14 45 56.4, iZ 14 46 21.2, weak traces.
- 12 eZ P 17 39 55.9, traces, USCGS: H= 17 27 46.5, 48.1 N, 154.7 E, h about 42 km, Kurile Islands.
- 12 eiZ P 22 33 22.4, eZ pP 22 33 41.8, Z PP 22 37 (00) in the minute interruption, USCGS: H= 22 20 33.6, 13.1 N, 88.9 W, h about 122 km, El Salvador. Minor damage at San Salvador and southern El Salvador, Mag.= 5 3/4-6 (Pas), D= 9900 km.
- 13 eZ P or PKP 10 13 22.8,
- 13 iZ (Pg) 13 45 49.4, iZ (Sg) 13 46 07.4, (D=appr.180 km).
- 13 eiZ+ P 16 42 59.7, iE 16 43 05, iZ 16 43 27.8, iZ 16 43 38.6, eZ PP 16 44 38.7, eZ PPP 16 45 19.8, eNE 16 53 29.5, eZNE M 17 04 10, Tz= 14, Az= 42. USCGS : H= 16 34 39.1, 40.1 N, 77.8 E, h about 19 km, Sinkiang, China. D= 5330 km.
- 13 eZ- PKP 17 32 28.8, traces, USCGS: H= 17 12 36.4, 15.5 S, 173.1 W, h about 25 km, Samoa Islands region.
- 13 (e)Z Pn 17 47 (55), (e)Z S 17 49 24, D= about 900 km, very weak.
- 14 iZ Pg 05 06 13.2, iZ Sg 05 06 16.3, D= 20 km, weak, not felt.
- 15 eiZ Pn 00 39 15.3, iZ Pb 00 39 21.9, eiZ Sn 00 40 (01) in the minute interruption, iZ Sg 00 40 12.2, iZ 00 40 32.3, iZ! 00 40 41.0!, D= appr. 410 km.
- 15 eiZ P or PKP 05 28 31.2, traces.
- 16 Z 04 02+03, traces.
- 16 eiZ- P 11 52 27.9, eZ 11 52 42.6, USCGS: H= 11 40 40.7, 53.5 N, 158.7 E, h about 27 km, Kamchatka.
- 16 Z 18 29.7 - 18 31 - . traces, weak.
- 16 (e)Z P or PKP 19 58 44, traces.
- 17 (i)Z Pn 16 06 01.4, iZ Pg 16 06 15.2, iZ PgPg 16 06 23.0, iZ X 16 06 32.7, iZ(Sn) 16 06 39.4, iZ 16 06 50.1, iZ! Sg 16 06 59.7!, iZ 16 07 19.0, D= 380 km.
- 17 eZ P 16 31 04, traces, disturbed by microseisms,

April 1961

-5-

- 17 (continuation): USCGS: H= 16 21 10.2, 3.9 N, 31.5 W, h about 25 km, Mid-Atlantic Ocean.
- 17 iZ PKP 21 07 12.2, USCGS: H= 20 48 12.5, 21.3 S, 178.6 W, h about 549 km, Tonga Islands region.
- 19 eiZ Pb 00 17 33.1, eiZ Pg 00 17 39.3, eiZ 00 17 53.7, eZ Sn 00 18 12.9, iZ Sx 00 18 32.6, eiZ Sg 00 18 45.3, eiZ 00 18 53.2, BCIS: H= 00 16 12, 48°18'N, 9°00' E, Stuttgart:Raichberg (Schwäbisch Jura) felt V-VI^oMCS in the epicentral zone; III-IV in Stuttgart, Ludwigsburg, Waiblingen, Leonberg regions. Zürich: felt in Switzerland. D= 510 km.
- 19 eiZ+ P or PKP 07 05 47.8, eZ 07 05 52.9.
- 19 iZ PKP 07 58 41.8, eZ 07 58 47, traces, USCGS: H= 07 39 12.8, 18.2 S, 168.2 E, h about 98 km, New Hebrides Islands.
- 19 Z 11 56-57, traces.
- 19 eiZ+ P 16 24 42.8, iZ PcP 16 24 45.4, iZ 16 24 51.6, iZ 16 24 57.6, iZ pP 16 25 05.7, USCGS: H= 16 12 28.7, 44.2 N, 148.0 E, h about 51 km, Kurile Islands. D= about 9000 km.
- 19 eiZ P 20 32 05.6, eZ 20 32 12.2, USCGS: H= 20 19 46.4, 44.6 N, 150.2 E, h about 27 km, Kurile Islands.
- 19 eZ P 22 20 06.6, traces. USCGS: H= 22 07 51.2, 44.9 N, 149.5 E, h about 34 km, Kurile Islands.
- 20 iZ Pg 07 02 46.4, iZ Sg 07 02 57.2, D= 85 km, weak.
- 20 eiZ Pn 09 19 36.4, iZ Sg 09 20 10.2, D= appr. 240 km, weak.
- 20 eiZ 12 17 26.7, traces.
- 20 eZ PKP₁ 21 58 51.4, iZ! PKP₂ 21 59 08.3!, iZ 21 59 17.8, eZ PP 21 02 20.1, USCGS: H= 21 39 07.0, 15.2 S, 173.7 W, h about 25 km; South of Samoa Islands. Felt: Apia. Mag.= 6-6 1/4 (Pas), D= 16500 km.
- 21 eiZ P 20 22 50.2, eZ 20 22 58.1, traces, USCGS: H= 20 10 38.3, 47.7 N, 154.6 E, h about 27 km, Kurile Islands.
- 21 eZ P 21 39 04.1, eZ 21 39 23.9, USCGS: H= 21 26 42.1, 51.7 N, 173.9 W, h about 36 km, Andreanof Islands, Aleutian Islands, Mag.= 5 1/2- 5 3/4 (Pal).
- 22 iZ 00 34 43.8, traces, near.
- 22 (e)Z 00 49 38, traces.
- 22 Z 06 21 (00), traces.
- 22 (ei)Z 15 33 (01) in the minute interruption.
- 23 eiZ P 05 27 10.8, iZ 05 27 11.5, iZ 05 27 20.9, eiZ PP 05 30 25.1, USCGS: H= 05 14 31.1, 26.2 N, 129.8 E, h about 110 km, Ryukyu Islands.
- 23 eiZ+ P 09 13 58.4, iZ(PcP) 09 14 02.3, eZ 09 14 12.5,

April 1961

-6-

- 23 (continuation): iZ 09 14 23.4, iZ 09 14 36.3, eiZ 09 15 54.4, eZ PP 09 17 04, eiZ 09 17 13.9, eZ 09 17 43, eNE S 09 24 02, eNE L 09 44 -, eNE M 09 53 -, USCGS: H= 09 01 41.8, 44.6 N, 150.2 E, h about 44 km, Kurile Islands. Mag.= 6 1/4 (Pas), 6 1/2 (Berk), (Pal), D= 9030 km.
- 23 eZ P 17 03 18.3, eiZ 17 03 40.0, USCGS: H= 16 51 03.6, 44.5 N, 150.1 E, h about 76 km, Kurile Islands.
- 25 Z 00 41 -42 traces.
- 25 eiZ P 01 29 55.6, iZ 01 30 09.3, iZ 01 30 42.6, eZ PP 01 33 15.0, USCGS: H= 01 17 42.7, 44.5 N, 150.0 E, h about 78 km, Kurile Islands. Continuation of the record obscured by microseisms.
- 25 eZ PKP 11 36 18.5, traces, disturbed by microseisms, USCGS: H= 11 16 41.4, 32.7 S, 178.5 W, h about 45 km, Kermadec Islands region, Mag.= 5 1/2 - 5 3/4 (Pal).
- 26 eiZ+ P 02 34 28.6, traces, USCGS: H= 02 21 10.5, 5.6 S, 105.6 E, h about 93 km, Southern Sumatra.
- 26 Z 06 39-42, traces.
- 26 eiZ+ P 07 51 14.4, eiZ 07 51 20.0, eiZ 07 52 10.9, USCGS: H= 07 38 54.1, 44.6 N, 149.9 E, h about 20 km, Kurile Islands, Mag.= 6 (Berk), 5 3/4- 6 (Pal).
- 26 eiZ P or PKP 12 12 51.1, traces.
- 26 eZ P 19 44 50.8, eZ 19 45 03.3.
- 27 eiZ P or PKP 20 23 43.3, iZ 20 23 54.1,
- 28 Z 19 32-33, traces, weak.
- 28 (e)Z Pn 20 50 10, iZ Pg 20 50 28.1, eiZ Sn 20 51 03.8, iZ! 20 51 30.0!, BCIS: H= 20 48 50, h = 20 km, Strasbourg and Stuttgart: 47.7°N, 7.9°E, South border of Schwarzwald (DBR). Felt: VI+, macroseismic radius sup. than 120 km, D= 550 km.
- 28 eZ PKP₁ 20 55 09.8, eiZ PKP₂ 20 55 14.5, USCGS: H= 20 36 25.3, 17.7 S, 178.7 W, h about 595 km, Fiji Islands.
- 29 eZ P 09 32 16.6, eiZ pP 09 32 23.1, traces, USCGS: H= 09 19 28.3, 40.6 N, 127.5 W, h about 26 km, Off coast of northern California. Mag.= 5 1/2- 5 3/4 (Pas), 5 1/2 (Berk), 5 1/2- 5 3/4 (Pal), D= 9730 km.
- 29 eiZ P 09 34 57.0, iZ 09 35 03.2, eiZ 09 35 23.8, eZ PP 09 35 41.3, eZ PPP 09 35 53, eNE L 09 45 -, traces, BCIS: H= 09 29 05, 72 N, 7 1/2 W, Atlantic Ocean, north off Jan Mayen Island. USCGS: H= 09 29 09.5, 71.3 N, 7.4 W, h about 14 km, Jan Mayen Island region. D = about 3100 km.
- 29 iZ Pg 20 08 46.0, iZ Sg 20 09 (00), iZ 20 09 06.8, D= 110 km. Weak, obscured by microseisms.
- 30 eiZ P 11 27 33.9, eZ 11 28 20, traces, disturbed by microseisms; USCGS: H= 11 15 19.8, 44.6 N, 149.7 E, h about 70 km, Kurile Islands.

April 1961

-7-

- 30 eZ PKP 15 08 03.0, iz 15 08 05.8, eiZ 15 08 11.4, traces, USCGS: H= 14 48 11.5, 15.3 S, 174.4 W, h about 25 km, Samoa Islands region.
- 30 iZ Pn 18 25 08.9, eiZ 18 25 21.0, eiZ Sn 18 26 44.6, iZ 18 27 07.8, eiZ (SgSg) 18 27 42.5, eiZ 18 28 42.8, Athens: Cephalonia Island, felt at Argostoli V^o MCS. D= 970 km.

MAY 1961

- 1 eZ P 12 31 54.2, traces, USCGS: H= 12 19 05.6, 40.6 N, 125.7 W, h about 29 km, Off coast of northern California.
- 1 eiZ Pn 14 23 05.8, eZ Sn 14 24 38.3, (e)Z 14 25 (00), traces, D= 880 km, weak.
- 1 eiZ P 18 58 11.6, traces, USCGS: H= 18 45 28.9, 40.7 N, 127.3 W, h about 69 km, Off coast northern California.
- 2 (e)Z P or PKP 01 41 10, eiZ 01 41 26.7, traces.
- 2 eZ P 03 17 32.6, eiZ 03 17 44.7, eiZ PP 03 18 20.3, traces, USCGS: H= 03 11 45.7, 71.2 N, 6.9 W, h about 22 km, Jan Mayen Islands region.
- 2 eiZ PKP₁ 19 10 37.8, iZ! 19 10 41.1, eZ PKP₂ 19 10 50.7, traces, USCGS: H= 18 50 57.5, 15.2 S, 173.1 W, h about 71 km, Samoa Islands region.
- 2 eZ PKP 19 58 11, eZ 19 58 58, traces, USCGS: H= 19 38 13.5, 27.8 S, 176.4 W, h about 53 km, Kermadec Islands region.
- 2 eZ PKP₂ 20 00 12, USCGS: H= 19 39 38.2, 27.5 S, 176.7 W, h about 77 km, Kermadec Islands region.
- 2 eZ P or PKP 21 09 24, eiZ 21 09 41.3, traces.
- 2 eZ P 22 50 40.5, USCGS: H= 22 37 55.5, 40.8 N, 127.0 W, h about 22 km, Off coast of northern California.
- 2 eiZ+ PKP₁ 23 04 42.3, eiZ 23 04 54.1, iZ PKP₂ 23 05 24.7, iZ! 23 05 39.9, eZ SKP 23 08 18, eZ PP 23 09 07, eiZ 23 09 29.3, eiZ 23 10 32.4, USCGS: H= 22 44 44.3, 27.8 S, 176.5 W, h about 47 km, Kermadec Islands region. Mag.= 6 3/4 (Pas), 6 1/4-6 1/2 (Berk), 6 1/4 (Pal), D= about 17750 km.
- 2 eiZ PKP 23 43 57.2, eiZ 23 44 40.7, traces. USCGS: H= 23 24 03.6, 27.7 S, 176.4 W, h about 84 km, Kermadec Islands region.
- 3 eiZ+ P 00 36 08.6, iZ 00 36 16.4, USCGS: H= 00 26 17.0, 1.0 N, 26.4 W, h about 25 km, Mid Atlantic Ocean.
- 3 Z 04 27- 30 traces.

May 1961

-8-

- 4 eiZ P 02 30 20.8, USCGS: H= 02 17 34.0, 40.6 N, 127.1 W, h about 25 km, Off coast of northern California.
- 4 eiZ (PKP₁) 03 51 47.3, iZ PKP₂ 03 51 53.0, USCGS: H= 03 33 03.5, 17.9 S, 178.5 W, h about 601 km, Fiji Islands region.
- 4 eiZ P 07 10 28.6, iZ 07 10 36.2, traces, USCGS: H= 07 00 32.9, 17.7 N, 46.4 W, h about 19 km, Atlantic Ocean.
- 5 eiZ P or PKP 05 18 35.1, traces.
- 5 (ei)Z Pg 11 20 47.2, iZ Sg 11 21 06.9, iZ 11 21 10.0, D= 160 km, weak.
- 5 eiZ PKP 14 03 17.4, eZ 14 03 57, traces. USCGS: H= 13 43 21.1, 27.8 S, 176.1 W, h about 34 km, Kermadec Islands region, Mag.= 6 1/4 (Pas).
- 5 Z 16 52-55 traces.
- 5 eZ P or PKP 19 39 21.2, traces.
- 6 eZ P or PKP 12 20 09.9, eZ 12 20 36.3,
- 6 (e)Z Pg 14 34 04, iZ Sg 14 34 17.8, D= about 110 km, very weak.
- 6 eiZ+ P 16 06 43.6, iZ PP 16 06 51.5, iZ 16 06 56.5, eiZ 16 07 07.5, eZ S 16 08 20.2, USCGS: H= 16 04 33.1, 37.4 N, 11.2 E, h about 30 km, Mediterranean Sea, off coast of Tunisia. D= about 1020 km.
- 6 eiZ+ P 19 47 31.0, eZ 19 47 41.4, iZ! 19 47 49.4, eiZ 19 48 07.8, USCGS: H= 19 38 04.6, 1.2 S, 15.5 W, h about 24 km, Atlantic Ocean, north of Ascension Island.
- 6 Z 23 21-26, traces, weak.
- 6 eiZ+ PKP 23 32 57.2, iZ 23 33 03.3, iZ 23 33 21.6, eiZ 23 35 02, USCGS: H= 23 13 29.5, 17.2 S, 167.9 E, h about 96 km, New Hebrides Islands region.
- 7 eiZ (PKP) 00 44 36.6, eiZ 00 45 06.4, eZ PP 00 46 37, USCGS: H= 00 25 40.8, 6.1 S, 154.4 E, h about 123 km, Solomon Islands region, Mag.= 6 1/2-6 3/4 (Pas), D= about 14150 km.
- 7 Z 01 11-13, traces, USCGS: H= 00 59 06.3, 44.3 N, 149.4 E, h about 37 km, Kurile Islands.
- 7 (e)Z P 02 07 07, USCGS: H= 01 57 02.4, 8.3 N, 38.0 W, h about 25 km, Atlantic Ocean.
- 7 eZ P 02 53 54.7, USCGS: H= 02 43 58.5, 8.2 N, 38.1 W, h about 46 km, Atlantic Ocean.
- 7 eiZ+ P 04 45 55.9, iZ 04 46 18.0, USCGS: H= 04 32 14.5, 8.6 S, 111.4 E, h about 113 km, Near coast of Java.
- 7 eZ 04 49 09.8, iZ 04 49 58.9, traces.
- 7 eiZ Pn 04 53 32.0, eiZ 04 54 42.5, eiZ Sn 04 54 56.6, iZ Sg 04 55 42.3, eiZ 04 55 58.2, iZ 04 56 07.8, D=810 km.

May 1961

-9-

- 7 eiZ Pn 05 52 09.9, iZ 05 52 30.3, iZ 05 53 46.9, iZ Sg 05 53 51.9, iZ 05 54 27.0, D= about 630 km.
- 7 eZ+ P 10 36 28.5, eZ pP 10 37 02, eZ PP 10 40 38, eZ pPP 10 41 08, eiZ 10 42 09.3, USCGS: H= 10 22 43.7, 5.8 N, 126.8 E, h about 89 km, Off coast of Mindanao, P.I., D= about 11200 km.
- 7 (e)Z 10 49 35, traces.
- 7 Z 11 58 -59, traces.
- 7 eiZ+ P 12 26 40.7, USCGS: H= 12 14 15.5, 35.2 N, 134.5 E, h about 25 km, Honshu, Japan.
- 7 eiZ P 13 32 07.1, traces, USCGS: H= 13 22 04.8, 16.0 N, 46.9 W, h about 39 km, Atlantic Ocean.
- 7 (e)Z P 15 46 38, (e)Z PP 15 47 28.4, iZ 15 47 42.2, USCGS: H= 15 40 52.5, 71.2 N, 7.1 W, h about 66 km, Jan Mayen Islands region.
- 7 Z 18 44 50 - 18 46 -, traces, very weak.
- 8 iZ P or PKP 13 06 23.7.
- 8 eZ PP 19 41 52, USCGS: H= 19 23 35.4, 24.3 S, 69.7 W, h about 48 km, Northern Chile. Mag.= 5 1/2- 5 3/4 (Pal). Felt.
- 8 (ei)Z Pg 21 11 24.3, eiZ Sg 21 11 40.5, traces, weak. D= about 120 km.
- 8 eiZ P or PKP 22 01 17.6.
- 8 eiZ Pg 22 20 21.3, eiZ Sg 22 20 36.9, D= 110 km, weak.
- 8 iZ+ Pn 22 46 35.8, iZ Pg 22 46 42.7, iZ PgPg 22 46 48.6, iZ PgPgPg 22 46 57.3, iZ Sn 22 47 09.7, iZ Sg 22 47 19.4, iZ 22 47 30.1, iZ! 22 47 40.9, iZ 22 48 05.6, BCIS: H= 22 45 51, 44.2 N, 11.9 E, Etruscan Appenins, Italy, USCGS: H= 22 45 50.0, 43.8 N, 11.8 E, h about 21 km, Italy. D= 300 km.
- 9 (ei)Z Pn 08 42 04.0, eiZ Sn 08 42 41.0, iZ Sg 08 42 41.9, D= 420 km.
- 9 eiZ+ P or PKP 11 36 26.5,
- 10 eiZ Pn 17 10 42.7, eiZ 17 10 56.6, eiZ 17 11 12.8, Z Sg 17 13 (00) in the minute interruption. D= 850 km.
- 10 eiZ Pn 17 59 06.7, eZ (Sn) 17 59 43, (D=about 330 km).
- 11 eiZ PKP 05 45 38.7, eiZ 05 45 48.5.
- 12 eiZ P 03 52 50.8, iZ! 03 52 58.4, iZ! 03 53 (00), USCGS: H= 03 40 20.1, 0.0, 97.9 E, h about 81 km, Near coast of Sumatra.
- 12 eZ 11 29 18.1, eiZ 11 29 32.5, eZ 11 29 42.9, traces.
- 12 iZ PKP 21 45 31.2, (e)Z 21 45 38.6, traces. USCGS: H= 21 26 39.3, 19.3 S, 179.1 E, h about 600 km, Fiji Islands.
- 13 eZ PKP 14 38 42.6, eZ 14 39 23, USCGS: H= 14 18 42.4, 27.9 S, 176.0 W, h about 25 km, Kermadec Islands region.

May 1961

-10-

- 13 eiZ+ PKP 15 11 41.6, iZ! 15 11 47.0, iZ 15 11 53.6, eiZ pPKP 15 13 54.3, USCGS: H= 14 52 55.3, 17.5 S, 178.8 W, h about 556 km, Fiji Islands region, D= about 16700 km.
- 13 eZ P 16 01 49.5 traces, USCGS:H= 15 49 29.6, 43.4 N, 147.8 E, h about 31 km, Off northeastern coast of Hokkaido, Japan.
- 13 (e)Z 17 29 45, traces.
- 13 eZ PKP 19 31 39.3, traces, USCGS: H= 19 19 37.3, 25.3 N, 122.6 E, h about 261 km. Off northeast coast of Formosa.
- 14 eZ PKP 00 32 37.2, eZ 00 32 51.7, traces, USCGS: H= 00 12 33.6, 39.6 S, 176.8 E, h about 40 km, North Island, New Zealand. Minor damage.
- 14 eZ PKP 03 03 19.2, eZ 03 03 38.8, USCGS: H= 02 43 22.7, 27.9 S, 176.3 W, h about 47 km, Kermadec Islands region.
- 14 eiZ P or PKP 03 17 24.5, traces.
- 14 (e)Z 05 10 50, traces.
- 14 eZ PKP 13 39 06.2, traces, USCGS: H= 13 20 02.9, 16.7 S, 173.9 W, h about 95 km, Tonga Islands.
- 14 eiZ P or PKP 13 54 54.2.
- 14 eZ 15 12 23.
- 14 eiZ P 15 13 17.4, eZ 15 13 50, traces, USCGS:H= 15 08 04.2, 67.7 N, 18.4 W, h about 47 km, North of Iceland.
- 14 eZ P 15 43 57.1, eiZ 15 44 03.7, USCGS: H= 15 38 07.5, 67.7 N, 18.4 W, h about 23 km, North of Iceland.
- 14 (e)Z P 19 44 15, eZ 19 44 27, USCGS: H= 19 31 34.4, 40.8 N, 127.4 W, h about 45 km, Off coast of northern California, Mag.= 4 1/2 (Berk), 5 (Pal),
- 15 eiZ 04 45 38.7, traces.
- 15 eiZ PKP 19 31 46.5, obscured by microseisms, USCGS: H= 19 12 10.8, 15.3 S, 166.6 E, h about 58 km, Santa Cruz Islands.
- 15 eiZ PKP₁ 21 12 41.0, iZ! 21 12 48.5, eiZ (PKP₂) 21 13 (OO) in the minute interruption, eiZ PP 21 14 46.5, USCGS: H= 20 53 05.3, 20.0 S, 177.2 W, h about 89 km, Tonga Islands region, D= 16950 km.
- 16 Z P 21 58 (OO)-disturbed by microseisms, iZ 21 58 08.3, iZ 21 58 13.9, eiZ PP 22 01 23.8, USCGS: H= 21 45 24.0, 30.0 N, 132.0 E, h about 25 km, Ryukyu Islands. Mag.= 5 1/4- 5 1/2 (Pal), D= 9500 km.
- 17 eiZ+ P 19 41 34.4, iZ 19 41 41.7, eZ! 19 42 26.1, iZ 19 43 22.7, eiZ PP 19 44 38, USCGS: H= 19 29 19.3, 52.0 N, 173.9 E, h about 21 km, Near Aleutian Islands, Mag.= 6 (Pas), 6 1/4- 6 1/2 (Pal), D= 8900 km.

May 1961

-11-

- 17 iZ Pg 20 34 46.2, iZ Sg 20 35 (OO), iZ! 20 35 07.8, D= 110 km, weak.
- 18 eiZ P or PKP 12 51 56.6, iZ 12 51 58.6, traces.
- 19 eiZ P 21 38 17.1, traces, USCGS: H= 21 30 16.8, 38.3 N, 72.6 E, h about 37 km, Tadzik S.S.R.
- 20 eZ+ P 18 01 29.5, iZ 18 01 31.4, eiZ 18 02 14.2, eZ 18 03 26, USCGS: H= 17 52 04.6, 6.5 S, 31.7 E, h about 58 km, Tanganyika.
- 20 (e)Z Pn 20 01 38, eiZ Sg 20 02 26.3, very weak, D= 320 km.
- 20 (e)Z 20 08 41, Z 20 09 (OO), near; weak traces.
- 20 (e)Z Pn 23 19 34, iZ Sg 23 20 17.4, D= about 300 km, very weak.
- 21 eiZ P or PKP 03 59 35.0, traces.
- 21 eiZ P 10 26 21.0, traces, USCGS: H= 10 13 47.7, 23.7 N, 123.5 E, h about 63 km, Ryukyu Islands.
- 21 eiZ PKP 18 32 56.5, eZ 18 33 14.0, USCGS: H= 18 13 02.9, 18.8 S, 173.6 W, h about 60 km, Tonga Islands.
- 21 iZ+ PKP 21 59 39.9, iZ! 21 59 44.4, USCGS: H= 21 40 03.2, 34.3 S, 150.4 E, h about 27 km, New South Wales, Australia. Minor damage in Sidney area.
- 22 eZ PKP₁ 14 04 22.3, iZ 14 04 43.8, iZ PKP₂ 14 04 48.8, (e)Z PP 14 08 35, USCGS: H= 13 44 35.8, 21.3 S, 174.4 W, h about 97 km, Tonga Islands. Mag.= 6 (Pas), 5 3/4 (Berk), 6 1/2 (Pal), D= about 17250 km.
- 22 eiZ+ PKP₁ 17 52 14.4, iZ PKP₂ 17 52 44.0, iZ 17 52 52.4, eiZ 17 53 55, eiZ PP 17 56 11.5, USCGS: H= 17 32 21.6, 22.8 S, 176.1 W, h about 35 km, Tonga Islands region. Mag.= 6 1/2- 6 3/4 (Pas), D= about 17150 km.
- 22 eiZ Pg 20 16 26.2, eiZ Sg 20 16 35.6, iZ SgSg 20 16 42.0, weak, D= about 70 km.
- 23 eZ- PKP 00 06 06.6, eiZ 00 06 15.4, eZ 00 06 26.2, USCGS: H= 23 47 03.2, 22.6 S, 177.0 W, h about 526 km, Tonga Islands region.
- 23 eiZ Pn 02 48 37.2, eZNE P 02 48 38.8, eN 02 48 40.7, iZ! 02 48 42.0!, iZ 02 49 32.4, iZ! 02 50 08.6, eE (S) 02 51 06, eiZ S 02 51 06.6, eZ L 02 52 40. BCIS: H= 02 45 18.8 + 0.7 sec, 36.8 N, 28.7 E, h= 70 km+ 10 km ca. SW from Turkey. Damage in Rhodes Island in Turkey at Marmarica, Ula and Milas (Province Mugla). Numerous houses damaged. Note: Determination has been obtained making use of electronic machine of Strasbourg University. USCGS: H= 02 45 16.0, 36.4 N, 28.3 E, h about 49 km, Dodecanese Islands. Moderate property damage in Rhodes area and in southwestern Turkey. Mag.= 6 1/4 (Pas), (Pal). Athens: 7.5°MCS at Istrios (Dodecanese Island), Mag.(macr.)= 6.9, D= 1600 km.
- 23 iZ+ P 03 53 11.0, iZ 03 53 12.3, eZ 03 53 30.4, USCGS:

May 1961

-12-

- 23 (continuation): H= 03 40 26.1, 9.8 N, 84.0 W, h about 136 km, Costa Rica.
- 23 iZ (P or PKP) 03 55 54.4, eZ 03 56 09.6, eZ PP 03 56 31.7, traces.
- 23 eiZ+ P 16 57 41.1, iZ 16 57 45.0, eZ pP 16 58 14.8, eiZ PP 17 01 18.1, USCGS: H= 16 44 59.4, 12.6 N, 87.3 W, h about 138 km, Near coast of Nicaragua; felt at Managua and southeastern El Salvador. D= 10020 km.
- 23 eiZ 20 00 34.5, traces, very weak.
- 25 eiZ Pn 00 19 24.4, iZ 00 19 30.1, iZ Pg 00 19 36.7, iZ 00 19 47.6, eiZ Sn 00 20 02.6, eiZ Sg 00 20 23.6, iZ 00 20 44.6, iZ 00 20 58.9, D= 385 km.
- 25 Z 11 46-48 traces.
- 25 eiZ Pn 13 14 47.0, eiZ 13 14 57.7, traces, Athens: felt Dodecanese Islands.
- 25 eiZ P or PKP 13 41 47.8, traces.
- 25 eZ P 19 46 09.1, USCGS: H= 19 33 05.7, 4.2 S, 103.3 E, h about 93 km, Sumatra.
- 25 eiZ P or PKP 20 03 11.2, eiZ 20 03 19.7,
- 25 eiZ PKP₁ 21 26 26.9, iZ 21 26 30.0, Z 21 28 (00), USCGS: H= 21 07 29.7, 14.8 S, 177.4 W, h about 417 km, Fiji Islands region.
- 26 eiZ- PKP 06 26 21.7, eiZ 06 26 23.3, USCGS: H= 06 06 53.3, 18.6 S, 169.1 E, h about 132 km, New Hebrides Islands region.
- 26 Z 11 50-52 traces.
- 26 eiZ Pn 21 10 22.7, eiZ Sn 21 11 22.6, eiZ Sg 21 11 49.9, iZ! M 21 11 56.0: Tz=1.8. D= 560 km.
- 27 iZ P 07 30 17.0, eiZ 07 30 31.7, USCGS: H= 07 18 12.2, 41.0 N, 142.1 E, h about 156 km, Near north coast of Honshu, Japan.
- 27 eiZ+ P 17 39 05.9, iZ 17 39 14.6, iZ 17 39 23.4, USCGS: H= 17 26 32.2, 1.2 N, 98.4 E, h about 36 km, Near northwest coast of Sumatra.
- 28 eiZ P 04 13 05.4, eiZ 04 13 12.7, USCGS: H= 03 59 53.5, 5.4 S, 102.4 E, h about 74 km, Off coast of southern Sumatra.
- 28 iZ Pn 09 00 05.4, iZ Pg 09 00 13.8, iZ PgPg 09 00 19.3, iZ Sn 09 00 40.6, iZ Sg 09 00 50.2, iZ! 09 00 56.1, iZ 09 01 05.4, BCIS: H= 08 59 16, 44 1/4 N, 11 1/2 E, Italy. Appennins, south of Bologna. D= 320 km.
- 28 eiZ+ PKP 19 48 33.3, traces. USCGS: H= 19 28 21.9, 26.0 S, 179.7 E, h about 219 km, South of Fiji Islands.
- 29 iZ Pn 04 14 24.0, iZ Pg 04 14 32.2, iZ Sn 04 14 57.5, iZ Sg 04 15 11.4, iZ! 04 15 18.3, BCIS: H= 04 13 41, 41 1/4 N, 11 1/2 E, Italy. Appennins south of Bologna. D= 320 km.

May 1961

-13-

- 29 eiZ 06 30 21.1, eiZ 06 30 36.8, iZ 06 31 04.0, irregular traces, seismic?
- 30 (ei)Z Pg 13 39 34.2, eiZ Sg 13 39 48.8, D= 120 km, weak.
- 31 iZ 00 02 39.3, traces.
- 31 eZ PKP 19 34 52.6, Z 19 35 (00), eiZ 19 35 44.1, USCGS: H= 19 15 57.0, 5.3 S, 151.6 E, h about 56 km, New Britain. Felt. Mag.= 5 1/2-5 3/4 (Pal).

June 1961

JUNE 1961

- 1 Z 07 41-43, traces.
- 1 eZ+ P 10 14 07.7, USCGS: H= 10 02 45.1, 19.5 N, 69.3 W, h about 53 km, Near coast of Dominican Republic.
- 1 eiZ P or PKP 21 44 57.3, traces.
- 1 eiZNE P 23 37 06.0, iZ! 23 37 15.5!, iZ 23 37 38.1, eZ PP 23 38 44.1, eZ PPP 23 39 22.3, eZ 23 39 58.7, eZNE S 23 43 23, eZ 23 43 40, eNE L 23 46 50, eNE M 23 55 -, BCIS: H= 23 29 21, 10.3 N, 39.9 E, Addis Ababa: Ethiopia. Village of Kara Koro. 5 victims. Felt at Addis Ababa. Mag.= 6 1/4 (Stras), 6.5-7 (Praha). USCGS: H= 23 29 21.1, 10.6 N, 39.3 E, h about 51 km, Ethiopia. Mag.= 6 1/2-6 3/4 (Pas), numerous repetitions. D= 4700 km.
- 2 eiZ P 00 09 34.8, iZ 00 09 38.7, USCGS: H= 00 01 45.4, 10.5 N, 39.5 E, h about 29 km, Ethiopia.
- 2 eiZ P 00 16 44.3, eZ 00 18 31.1, USCGS: H= 00 08 59.8, 10.3 N, 39.6 E, h about 64 km, Ethiopia.
- 2 eiZ 00 29 11.3, traces.
- 2 eiZ 01 05 47.0, traces.
- 2 (e)Z P 01 24 13, USCGS: H= 01 16 10.6, 9.7 N, 39.7 E, h about 60 km, Ethiopia.
- 2 Z 01 56-58, traces, weak.
- 2 Z P 04 59 (00) in the minute interruption, eiZ 04 59 23.7, eiZ! 04 59 54.2, eiZ PP 05 00 41.7, eZ S 05 05 13, eiZ 05 06 55.6, eiZ SS 05 08 20.7, eZ L 05 11 22. BCIS: H= 04 51 14, USCGS: H= 04 51 10.4, 9.8 N, 40.0 E, h about 41 km, Ethiopia. Felt: Addis Ababa. Mag.= 6 1/4-6 1/2 (Pas), 6 1/4 (Stras), D= 4730 km.
- 2 iZ P 05 30 21.1, iZ! 05 30 25.8!, eiZ 05 30 37.3, Z PP 05 32 (00), eiZ! 05 32 38.9, USCGS: H= 05 22 29.1, 10.3 N, 39.6 E, h about 26 km, Ethiopia. D= 4700 km.
- 2 eiZ P 05 52 43.5, iZ! 05 52 49.4!, eiZ PP 05 54 13.7, iZ! 05 55 19.4, eZ 05 55 42.7. USCGS: H= 05 44 52.4, 10.3 N, 39.8 E, h about 31 km, Ethiopia. BCIS: H= 05

June 1961

-14-

- 2 (continuation), 44 57, D= about 4700 km.
- 2 eiZ P 07 10 37.8, Z! 07 11 (00) in the minute interruption, eZ PP 07 12 22, USCGS: H= 07 02 52.4, 10.3 N, 40.0 E, h about 54 km, Ethiopia. D= 4800 km.
- 2 eiZ 08 13 06.8, iZ! 08 13 16.4, eiZ (Sg) 08 13 51.1, traces, near.
- 2 eZ 22 28 16, eZ 22 28 31, traces.
- 2 iZ P or PKP 23 40 25.0, eiZ 23 40 33.1.
- 3 eZ P 01 25 09.7, eiZ 01 25 18.3, iZ 01 25 25.5, eZ 01 25 35.6, USCGS: H= 01 13 25.4, 56.1 N, 164.8 E, h about 29 km, Off east coast of Kamchatka.
- 3 eZ P 15 28 16.2, USCGS: H= 15 20 24.6, 9.7 N, 39.7 E, h about 60 km. Ethiopia.
- 3 eZ P 15 31 06.1, eiZ 15 31 08.8, eiZ 15 31 38.5, eiZ PP 15 32 44.3, eiZ PPP 15 33 18.7, USCGS: H= 15 23 16.6, 9.8 N, 39.8 E, h about 50 km, Ethiopia. D= about 4700 km.
- 3 eiZ PKP 22 10 41.0, iZ 22 10 43.2, eZ 22 11 33.5, USCGS: H= 21 51 05.9, 17.6 S, 167.6 E, h about 25 km, New Hebrides Islands. Felt: Porta Vila.
- 4 iZ- P 07 42 11.1, iZ-! 07 42 16.2!, iZ+ 07 42 24.2, iZ 07 42 47.0, iZ+ PcP 07 43 25.3, iZ-! 07 43 28.3, eiZ PP 07 44 10.4, eiZ PPP 07 45 18.8, eZ! S 07 49 33.9, USCGS: H= 07 33 05.4, 33.8 N, 81.8 E, h about 46 km, Tibet. Mag.= 6 1/2 (Pas), 6 1/4-6 1/2 (Stras), D= 5750 km.
- 4 iZ- P 07 52 50.9, iZ 07 52 55.5, USCGS: H= 07 43 43.6, 34.2 N, 82.2 E, h about 30 km. Tibet.
- 4 eiZ- P 14 00 36.5, iZ 14 00 39.9, traces. USCGS: H= 13 51 26.6, 33.6 N, 82.4 E, h about 40 km, Tibet.
- 4 iZ P or PKP 21 47 20.9, traces.
- 5 (e)Z P or PKP 02 25 39, traces.
- 5 Z P 03 38 (00) in the minute interruption, eiZ 03 38 13.2, eiZ 03 39 15.8, USCGS: H= 03 31 01.4, 28.3 N, 54.8 E, h about 81 km, Southern Iran.
- 5 iZ Pg 09 40 47.2, iZ PgPg 09 40 52.4, iZ Sg 09 41 10.2, iZ 09 41 14.9, D= 175 km.
- 5 iZ Pg 12 10 26.1, iZ PgPg 12 10 31.0, iZ Sg 12 10 49.1, iZ! 12 10 55.4!, D= 175 km.
- 5 iZ P or PKP 12 16 30.2, iZ! 12 16 48.2.
- 6 iZ! Pg 06 51 01.4, iZ! Sg 06 51 03.7, iZ 06 51 11.2, D= 18 km, weak, not felt.
- 6 iZ Pg 14 38 22.0, iZ Sg 14 38 24.9, D= 22 km, weak, no macroseismic report.
- 6 eZ P 21 04 35, iZ 21 04 39.0, traces. USCGS: H= 20 56 14.7, 39.3 N, 77.9 E, h about 68 km, Sinkiang Province, China.

June 1961

-15-

- 7 iZ! P 14 25 02.7, iZ 14 25 08.5, eiZ PP 14 27 11.0, eZ PPP 14 28 22, USCGS: H= 14 15 18.9, 5.4 S, 11.6 W, h about 17 km, Ascension Island region, Mag.= 5 1/4-5 1/2 (Pal), D= 6250 km.
- 7 eZ Pg 18 31 47, Z Sg 18 32 (00), iZ 18 32 06.6, traces, D= 90 km, weak.
- 8 (ei)Z Pn 15 47 09.2, iZ Pg 15 47 39.8, (e)Z Sn 15 48 19, iZ Sg 15 48 58.9, eiZ M 15 49 27, D= 720 km.
- 8 eiZ+ P or PKP 18 14 12.4.
- 8 eZ 18 59 29, traces.
- 9 eiZ P 04 04 06.6, USCGS: H= 03 55 51.4, 34.5 N, 73.8 E, h about 110 km, Northern India.
- 9 eiZ- P 09 42 26.5, eiZ 09 42 43.0, eiZ PP 09 43 10.3, USCGS: H= 09 36 49.2, 40.8 N, 50.7 E, h about 17 km, Caspian Sea. D= 2950 km.
- 9 eiZ- P 15 29 55.0, eiZ! 15 30 10.9, USCGS: H= 15 17 50.7, 5.5 N, 95.8 E, h about 100 km, Near coast of Sumatra.
- 9 Z 17 37-41 traces.
- 9 iZ P or PKP 19 25 17.1, eiZ 19 25 20.9, eiZ 19 25 33.0,
- 9 (e)Z (Pn) 20 54 (31), eiZ (Sg) 20 55 31.4, (D= appr. 400 km, very weak).
- 9 iZ Pg 21 38 53.3, iZ Sg 21 39 17.4, weak, D= 190 km.
- 9 eiZ P or PKP 21 49 42.6.
- 10 iZ (Pg) 13 17 06.1, obscured by microseisms, eiZ (Sg) 13 17 17, (D= about 85 km).
- 10 iZ (Pg) 22 56 31.6, iZ (Sg) 22 56 43.3, (D= about 90 km, weak).
- 11 iZ+ P 05 17 29.4, eiNE 05 17 35.3, iZ! 05 17 53.2, eiZNE PP 05 18 45.3, eiNE! 05 19 10, eiZ S 05 23 13.4, eNE S 05 23 17, iZ! 05 23 48.5!, eZ SS 05 25 48.3, eZ M 05 29 40: Tz= 7, Az= 8, eN M 05 32 -, BCIS: H= 05 10 23, 28.3 N, 54.7 E, Mag.= 6 1/4 (Stras), Chiraz: The village of Dehkone (27°52'N, 54°26'E) destroyed. 62 killed, damage at Lar, 10 wounded. USCGS: H= 05 10 26.0, 28.9 N, 54.6 E, h about 38 km, Southern Iran. Major property damage, many casualties in Lar area. Mag.= 6 1/2-6 3/4 (Pas), 6 1/4-6 1/2 (Pal), D= 4000 km.
- 11 eiZ P 05 37 15.3, obscured by preceding shock. USCGS: H= 05 30 05.9, 27.3 N, 54.5 E, Southern Iran.
- 11 eiZ P 06 53 52.9, eZ PP 06 55 23.6, USCGS: H= 06 47 54.1, 29.3 N, 55.2 E, h about 25 km, Iran. D= about 4100 km.
- 11 eiZ P 06 58 32.5, eiZ 06 59 15.8, USCGS: H= 06 51 29.0, 28.1 N, 54.7 E, h about 42 km, Southern Iran.
- 11 eiZ P 09 28 42.3, traces. USCGS: H= 09 21 42.3, 29.0 N, 55.1 E, h about 19 km, Iran.
- 11 iZ Pn 10 49 48.4, eiZ Pg 10 49 53.3, iZ Sg 10 50 21.3,

June 1961

-16-

- 11 (continuation), D= 240 km, weak.
- 11 Z 11 13-16, traces.
- 11 eZ P 12 37 24.5, USCGS: H= 12 30 21.3, 27.5 N, 54.4 E, h about 56 km, Iran.
- 11 eiZ+ P 12 38 30.5, eiZ 12 39 32.4, eZ PP 12 39 45.5, (e)Z S 12 44 09, USCGS: H= 12 31 26.8, 28.0 N, 54.6 E, h about 36 km, Iran. D= 4000 km.
- 11 eiZ+ P 14 05 02.3, iZ 14 05 29.9, eZ PP 14 06 13.6, USCGS: H= 13 57 58.6, 27.6 N, 54.6 E, h about 63 km, Southern Iran. BCIS: H= 13 57 56, Southern Iran, NE from Lar. D= about 4100 km.
- 11 (ei)Z Pn 14 31 47.5, iZ Sg 14 32 23.3, D= 250 km, weak.
- 11 eZ P 15 13 17.0, eiZ 15 13 34.8, eZ PP 15 14 18.9, USCGS: H= 15 06 17.3, 27.8 N, 54.6 E, h about 63 km, Southern Iran.
- 11 eiZ- P 17 08 10.8.
- 11 eiZ P 17 26 35.5, USCGS: H= 17 15 30.0, 24.3 N, 98.4 E, h about 38 km, Burma-China border region.
- 11 eiZ- P or PKP 22 41 21.8, traces.
- 11 eiZ P 23 20 12.0, traces. USCGS: H= 23 13 07.7, 28.5 N, 54.6 E, h about 25 km, Iran.
- 12 eiZ+ P 10 10 02.3, eiZ 10 10 07.0, eZ 10 12 44, USCGS: H= 09 58 17.6, 21.5 N, 106.0 E, h about 55 km, North Veit-Nam.
- 12 Z 17 12-14 traces.
- 12 eiZ PKP 18 12 25.4, eiZ 18 12 36.1, USCGS: H= 17 53 27.4, 6.9 S, 155.0 E, h about 110 km, Solomon Islands.
- 12 eiZ P 21 55 37.6, eZ 21 55 55, USCGS: H= 21 48 34.8, 28.6 N, 55.1 E, h about 35 km, Iran.
- 13 eZ P 07 27 25.8, eiZ 07 27 38.4, eZ PP 07 30 10.6, USCGS: H= 07 15 58.2, 22.6 S, 12.5 W, h about 37 km, South Atlantic Ocean, D= 8100 km.
- 13 eZ P or PKP 17 23 38.6, eZ 17 24 20,
- 13 eiZ- PKP₁ 21 57 32.9, iZ 21 57 41.9, iZ! PKP₂ 21 57 55.7!, USCGS: H= 21 37 55.0, 21.4 S, 176.4 W, h about 146 km, Tonga islands region. Additional readings: iZ pPKP₁ 21 58 15.2, eiZ pPKP₂ 21 58 37.3, iZ 21 59 13.3, D= about 17 000 km.
- 14 eiZ P 00 31 29.5, eZ 00 32 28.5, USCGS: H= 00 24 30.8, 28.3 N, 54.9 E, h about 62 km, Iran.
- 14 eiZ+ P 00 51 56.9, eiZ 00 52 17.9, eZ 00 53 23.3, eZ PP 00 54 17.6, USCGS: H= 00 41 10.3, 24.5 N, 95.0 E, h about 52 km, Northern Burma. D= 7350 km.
- 14 eiZ (P) 03 15 37.9, eZ 03 15 50.4, eiZ 03 16 04.0, eZ 03 17 52, eiZ 03 18 07.0, eZ (PKP) 03 18 20, USCGS:

June 1961

-17-

- 14 (continuation): H= 02 59 49.3, 5.5 S, 151.9 E, h about 98 km, New Britain. Felt: Rabaul, Rangarere.
- 14 eiZ P 20 40 08.1, eiZ 20 40 35.6, (e)Z PP 20 41 46, USCGS: H= 20 32 24.0, 10.8 N, 40.1 E, h about 56 km, Ethiopia. D= 4700 km.
- 15 eiZ+ P 06 28 39.6, eiZ 06 28 42.5, iZ 06 29 56.0, eZ PP 06 30 04, USCGS: H= 06 21 40.1, 27.8 N, 54.8 E, h about 113 km, Southern Iran. D= 4050 km.
- 15 eiZ P 20 57 22.3, traces, weak, USCGS: H= 20 49 42.3, 38.9 N, 70.0 E, h about 45 km, Tadzik S.S.R.
- 15 iZ+ P 23 36 55.5, iZpP 23 37 06.8, iZ 23 37 28.1, USCGS: H= 23 24 40.5, 45.4 N, 151.3 E, h about 38 km, Kurile Islands. D= about 9000 km.
- 16 iZ Pg 00 52 13.4, iZ Sg 00 52 27.1, D= 110 km, weak.
- 16 iZ- P 10 44 10.3, iZ! 10 44 11.4!, iZ 10 44 26.0, iZpP 10 44 38.6!, iZ! sP 10 44 52.7!, eiZ 10 46 46.0, eZ PP 10 47 21, eZ S 10 54 13.5, eZ SP 10 55 07, USCGS: H= 10 31 56.2, 8.8 N, 73.4 W, h about 120 km, Northern Colombia. Felt at Barrancabermeja, Maracaibo, Venezuela. Mag.= 6 (Pas), D= 9150 km.
- 16 (e)Z P or PKP 11 10 35, eiZ 11 11 13.7.
- 16 iZ Pn 17 07 21.4, iZ Pg 17 07 27.5, iZ! Sg 17 07 58.5, D= 260 km.
- 17 eZ+ P 08 12 56, eiZ PP 08 14 23.2, traces. USCGS: H= 08 05 54.5, 28.7 N, 55.3 E, h about 25 km, Southern Iran. D= 4050 km.
- 17 eZ P 11 10 10.8, USCGS: H= 10 56 30.3, 11.9 S, 75.3 W, h about 29 km, Peru. Mag.= 5 (Pal).
- 17 Z P or PKP 12 33 (00).
- 17 eiZ+ P 15 20 30.2, eiZ 15 20 49.1, eiZ 15 21 12.6, eiZ PP 15 24 06.7, eiZ 15 24 26.3. USCGS: H= 15 07 36.1, 14.2 N, 92.2 W, h about 147 km, Mexico-Guatemala border, Mag.= 6 (Pas), D= 10100 km.
- 17 eiZ PKP 22 08 16.5, traces, USCGS: H= 21 49 25.8, 20.8 S, 178.9 W, h about 627 km, Fiji Islands region.
- 17 eiZ 22 33 22.8.
- 18 iZ P or PKP 03 29 33.9.
- 18 iZ- P 06 35 12.0, USCGS: H= 06 26 05.3, 33.8 N, 82.0 E, h about 45 km, Tibet.
- 18 eiZ+ Pn 09 43 26.0, iZ Px 09 43 30.8, iZ Pg 09 43 39.4, iZ Sn 09 44 05.8, iZ Sg 09 44 22.8, iZ! 09 44 37.5, iZ! 09 44 43.4!, iZ 09 45 10.9, BCIS: H= 09 42 30, 43.8 N, 11.4 E, Florence region, D= 360 km.
- 18 (e)Z Pn 10 47 19, eiZ (Sg) 10 47 58.9, (D= appr. 280 km, weak).
- 18 Z 12 06 (00) in the minute interruption; local shock?

June 1961

-18-

- 18 eZ- PKP₁ 14 14 28.9, eiZ+ PKP₂ 14 15 16.8, eZ pPKP₁ 14 16 11.4, eZ 14 16 56, eZ PP 14 19 (00) in the minute interruption, USCGS: H= 13 55 16.6, 31.3 S, 179.8 E, h about 434 km, D=17950 km, Kermadec Islands region.
- 18 (e)Z 18 37 (34), eiZ (Sg) 18 38 17, traces, near.
- 18 eiZ P or PKP 20 26 23.6, weak.
- 18 (e)Z PKP 22 33 20.7, eiZ 22 34 09.1, USCGS: H= 22 13 30.0, 56.7 S, 141.6 W, h about 92 km, South Pacific Ocean.
- 19 eZ P 01 58 32.7, traces. USCGS: H= 01 45 29.9, 12.6 N, 121.9 E, h about 120 km, Luzon, Philippine Islands.
- 19 eZ P 02 58 22.8, eiZ 02 58 32.6, USCGS: H= 02 46 03.6, 39.3 N, 142.9 E, h about 85 km, Off east coast of Honshu, Japan.
- 19 eiZ 05 33 19.8, traces, seismic?
- 19 eiZ+ P 07 50 51.2, Z 07 51 (00), eZ PP 07 53 55, USCGS: H= 07 38 29.6, 39.2 N, 142.9 E, h about 98 km, Off east coast of Honshu, Japan. D= 9200 km.
- 19 eiZ+ P 17 12 15.8, iZ 17 12 36.7, iZ! pP 17 12 58.9!, iZ 17 13 20.9, Z PP 17 14 (00), eiZ pPP 17 14 37.3, eiZ! 17 15 46.5!, USCGS: H= 17 04 39.3, 36.6 N, 71.0 E, h about 151 km, Hindu Kush, D= 4750 km.
- 19 (e)Z 20 03 44, traces, near?
- 19 eiZ+ P 22 29 03.8, traces. USCGS: H= 22 17 13.5, 53.7 N, 160.7 E, h about 25 km, Kamchatka.
- 20 iZ Pn 01 47 54.0, eiZ Sg 01 48 19.9, D= 190 km.
- 20 eiZ P 03 29 24.7, eiZ! 03 29 30.7, eiZ PP 03 31 (02), USCGS: H= 03 21 26.5, 11.5 N, 44.5 E, h about 30 km, Gulf of Aden. D= 4800 km.
- 20 eiZ+ PKP 14 46 42.9, iZ! 14 46 46.9, iZ 14 46 56.1, iZ 14 47 05.7, USCGS: H= 14 27 02.6, 21.8 S, 169.3 E, h about 64 km, Loyalty Islands.
- 20 eiZ Pg 21 02 48.8, iZ Sg 21 03 05.1, D= 125 km, weak.
- 21 eiZ- P 04 10 21.9, traces. USCGS: H= 03 57 44.0, 15.3 N, 87.3 W, h about 114 km, Northwestern Honduras.
- 21 eiZ+ P 06 46 26.7, iZ 06 46 44.3, eiZ PP 06 47 51.5, iZ! 06 48 51.3, iZ! 06 48 54.4, USCGS: H= 06 39 22.8, 27.9 N, 55.0 E, h about 48 km, Iran. D= 4050 km.
- 21 (e)Z P 16 07 55.5, iZ 16 08 06.5, eZ SgSgSg 16 12 08, eZ Q 16 12 30, eZ! M 16 13 26: Tz=7, Az= 5. Remarkable surface waves. BCIS: H= 16 04 42, 37.7 N, 29.0 E, Southern Turkey. Istanbul: felt at Denizli (37.8 N, 29.1 E). D= about 1500 km.
- 21 eiZ+ P 19 21 39.3, USCGS: H= 19 14 41.9, 28.6 N, 55.2 E, h about 84 km, Iran.
- 21 eiZ- P 20 38 29.4, eZ (PP) 20 42 29, eZ S 20 49 54,

June 1961

-19-

- 21 (continuation), USCGS: H= 20 25 00.9, 7.6 S, 110.0 E, h about 163 km, Near north coast of Java. D= about 11100 km.
- 21 eiZ P or PKP 21 21 18.7, traces.
- 21 eZ 22 28 19.7, eiZ 22 28 24.6, traces.
- 22 iZ Pn 00 57 20.2, iZ Pb 00 57 29.3, iZ Pg 00 57 36.7, iZ PpPg 00 57 40.2, iZ X₁ 00 57 47.3, iZ X₂ 00 57 59.1, iZ Sn 00 58 18, iZ Sg 00 58 45.2, iZ! SgSg 00 58 50.5, iZ M 00 59 15 (Z partially underexposed, N and E no time marks), BCIS: H= 00 56 01, 42.4 N, 19.3 E, Border region Albania-Yugoslavia. USCGS: H= 00 56 04.7, 42.4 N, 19.6 E, h about 53 km, Northern Albania-Yugoslavia border. Press: felt in Titograd (42.4 N, 19.3 E) V-VI^o MCS. Some damage on buildings. D= 560 km.
- 22 Z 01 16-18 traces, weak.
- 23 eZ P 09 08 27.1, eiZ 09 09 05.7, USCGS: H= 08 55 55.2, 43.9 N, 128.9 W, h about 56 km, Off coast of Oregon. Mag.= 5 1/4- 5 1/2 (Berk), 5 3/4-6 (Pal).
- 23 eZ P 16 43 30.5, Z 16 44 (00), eiZ PP 16 44 50.4, USCGS: H= 16 36 28.0, 28.5 N, 55.5 E, h about 54 km, Iran. D= 4030 km.
- 23 eiZ 18 15 39.5, traces, seismic?
- 23 eiZ P or PKP 20 07 22.4, traces, weak.
- 23 iZ 20 40 20.5, eiZ 20 40 34.4, traces, weak.
- 24 eZ P 09 48 14.3, iZ 09 48 17.4, iZ 09 48 21.9, USCGS: H= 09 36 08.8, 4.1 N, 97.5 E, h about 188 km, Sumatra.
- 24 eiZ+ PKP 16 37 54.9, traces, USCGS: H= 16 19 23.7, 4.6 S, 144.9 E, h about 212 km, Near north coast of New Guinea. Felt.
- 25 eiZ- P 02 41 50.2, eiZ 02 41 54.3, USCGS: H= 02 29 29.9, 40.8 N, 144.1 E, h about 57 km, Near north coast of Honshu, Japan.
- 25 eiZ+ PKP 09 29 06.8, (i)Z 09 31 (00) in the minute interruption, USCGS: H= 09 10 04.2, 19.4 S, 177.9 W, h about 489 km, Fiji Islands.
- 25 eiZ+ P 12 47 20.5, iZ 12 47 26.4, USCGS: H= 12 40 31.8, 29.0 N, 54.2 E, h about 90 km, Iran.
- 25 (e)Z P 17 00 15 eiZ 17 00 27.3, eZ PP 17 04 19, USCGS: H= 16 46 32.9, 21.7 N, 143.1 E, h about 13 km, North of Mariana Islands. Mag.= 5 3/4 (Berk).
- 25 eiZ 19 56 13.9, traces.
- 26 iZ! Pn 09 16 07.4, eiZ Pg 09 16 24.8, iZ X₁ 09 16 38.8, Z Sn 09 17 (00), eiZ Sg 09 17 22.5, eiZ! 09 17 34.8, iZ M 09 17 48. D= 480 km.
- 26 iZ Pg 12 03 53.7, iZ Sg 12 04 09.0, D= 120 km, weak.
- 26 eiZ+ P 14 59 38.7, iZ 14 59 53.7, eiZ PP 15 02 42.1, USCGS: H= 14 47 26.1, 52.4 N, 174.5 E, h about 60 km.

June 1961

-20-

- 26 (continuation) Near Islands, Aleutian Islands, Mag.=
5 1/2- 5 3/4 (Pal), D=appr. 9150 km.
- 27 eiZ P 07 14 37.0, eiZ! 07 14 53.5, iZ 07 15 19.2, iZ!
07 15 32.4, iZ 07 16 17.9, iZ PP 07 16 57.9, USCGS:
H= 07 03 42.2, 27.8 N, 99.4 E, h about 33 km, Yunan
Province, China. Mag.= 6 (Pas), 6 1/2 (Berk), 5 3/4- 6
(Pal), D= 7450 km.
- 27 eiZ P 08 04 07.1, iZ! 08 04 09.2, traces, USCGS: H=
07 52 23.7, 54.6 N, 157.7 E, h about 19 km, Kamchatka.
- 27 eZ Pn 14 15 36.5, iZ Pg 14 15 41.6, iZ Sg 14 16 08.3,
iZ! 14 16 13.8!, iZ! 14 16 45.3!, D= 240 km.
- 28 iZ! P or PKP 08 13 15.4, weak traces, obscured by
microseisms.
- 29 eiZ Pn 02 49 57.1, eiZ 02 50 34.7, Z (Sg) 02 51 (00),
D= about 410 km, weak.
- 29 eiZ PKP 09 42 17.9, iZ 09 42 23.8, eiZ 09 42 31.6,
eZ! PP 09 45 21, eiZ SKP 09 46 05.1, eiZ 09 46 36.8,
USCGS: H= 09 22 55.8, 13.8 S, 166.0 E, h about 37 km,
New Hebrides Islands. Mag.= 6 1/4- 6 1/2 (Berk), 5 1/2-
5 3/4 (Pal). D= about 15500 km.
- 29 eiZ Pn 12 54 12.8, iZ! Pg 12 54 39.1, iZ! 12 55 (00),
iZ! Sg 12 56 03.2, iZ 12 56 40.5, iZ 12 56 56.5, D=
about 650 km.
- 29 eiZ P or PKP 16 48 17.3, traces.
- 29 eiZ PKP 18 10 58.2, traces.
- 29 eiZ P 22 09 14.7, eiZ 22 09 30.2, weak traces, obscured
by microseisms. USCGS: H= 22 01 21.0, 85.0 N, 97.3 E,
h about 11 km, Severnaya Zemlya region.
- 30 eiZ 05 11 10.7, traces, obscured by microseisms.

Ljubljana, September 25, 1961

V. Ribarič

University of Ljubljana
Geophysical Institute
at the AG Observatory Golovec

1961

Ljubljana, Trg revolucije 11, P.O.B.20
Yugoslavia

P R E L I M I N A R Y S E I S M O L O G I C A L
B U L L E T I N

(July - September 1961)



University of Ljubljana
 Geophysical Institute
 at the AG Observatory Golovec,
 Ljubljana, Trg Revolucije 11, P.O.B. 20
 Yugoslavia

1961

PRELIMINARY SEISMOLOGICAL BULLETIN

from July 1, 1961 to September 30,
 1961

Station Ljubljana: Coordinates: $46^{\circ} 02.6'$ N Lat.
 $14^{\circ} 32.0'$ E Long.

Geocentric direction cosines: $a=+ 6743$, $b=+ 1748$, $c=+7175$
 $d=- 8$, $h=- 4$;

Height: 396 m;

Lithologic foundation: sandstone (carbon);

Instruments:

Wiechert, horizontal astatic seismograph, $M= 200$ kg,
 mechanical registration, 13-15 mm/min;
 Constants (15.IX.1961):

Component	T_0	$v:1$	r/T_0^2	V
N-S	4.9	2.7:1	0,006	66
E-W	4.9	2.8:1	0,006	68

Hiller- "Stuttgart", vertical component Z with galvanometrical recording; $T_0 = 1.5$ sec, $T_g = 1.5$ sec, $D_1 = D_2 = 1$, $V_{max} = 10150$, 60 mm/min;

Note: Periods of seismic waves are given in seconds, the amplitudes in microns; sign + means compression, ground motion towards the north or east, sign - means dilatation or the opposite direction of motion.

July

JULY 1961

1 eiZ Pn 10 30 44.6, eZ(Pg) 10 31 23, eiZ Sn 10 32 15.2, eiZ 10 32 28.7, iZ! 10 32 50.8, eZ M 10 33 35, D=890 km, Athens: felt in Jannina(IV+), Kryopighi, Philipias.

1 eZ P 13 24 17.9, eiZ 13 28 26.4, traces, USCGS: H= 13 10 46.6, 15.3 S, 75.0 W, h about 146 km, Near coast of Peru.

July 1961

-2-

- 1 iZ- PKP 19 09 46.2, iZ 19 09 52.4, eZ 19 11 09.3, USCGS: H= 18 50 57.5, 17.9 S, 178.4 W, h about 601 km, Fiji Islands.
- 1 eiZ 21 28 40.8, eiZ 21 28 46.7, traces.
- 2 (ei)Z Pn 07 00 11.7, iZ 07 00 43.8, eiZ Sn 07 01 42.1, iZ M 07 03 06.5, D= about 900 km, weak.
- 2 iZ- Pg 21 03 29.4, iZ Sg 21 03 37.4, D= 55 km, no macroseismic reports.
- 2 iZ! Pg 21 58 48.2, iZ! Sg 21 58 55.2, D= 55 km, not felt.
- 3 iZ- Pg 04 31 48.3, iZ Sg 04 31 55.3, weak, D= 55 km.
- 3 iZ Pg 04 36 05.1, iZ Sg 04 36 10.4, very weak, D= 45 km.
- 3 iZ Pg 04 36 13.6, iZ! Sg 04 36 20.3, D= 50 km.
- 3 iZ P or PKP 05 15 18.3, traces.
- 3 iZ P or PKP 06 12 31.8,
- 3 (e)Z P or PKP 08 15 21, traces.
- 3 (e)Z 08 27 20, eiZ 08 28 06.7, traces.
- 4 iZ PKP 02 39 21.4, traces, USCGS: H= 02 19 48.7, 17.9 S, 167.4 E, h about 56 km, New Hebrides Islands.
- 4 eiZ- P 05 08 29.6, USCGS: H= 04 56 03.7, 40.8 N, 118.0 W, h about 61 km, Western Nevada. Felt. Mag.= 5 3/4 (Berk).
- 4 (e)Z 06 28 31.5, eiZ (PKP) 06 28 46.7, USCGS: H= 06 10 44.8, 17.9 N, 146.4 E, h about 145 km, Mariana Isl.
- 4 eiZ PKP 19 37 37.3, traces, USCGS: H= 19 17 46.7, 55.8 S, 147.4 E, h about 39 km, Macquarie Island region.
- 5 eiZ- P or PKP 06 42 49.4, obscured by microseisms.
- 5 eiZ 14 42 06.8, traces.
- 5 (i)Z Pg 21 02 35.4, iZ Sg 21 02 51.5, D= about 130 km, weak, disturbed by microseisms.
- 6 eiZ P 16 18 20.0, eiZ 16 18 54.4, eZ PP 16 20 32.8, USCGS: H= 16 08 20.8, 7.0 S, 13.1 W, h about 19 km, Ascension Island region, D= 6550 km.
- 6 iZ 19 46 32.4, iZ 19 46 38.6, traces, seismic?
- 6 iZ+ PKP 22 29 08.2, iZ! 22 29 13.1 (partly underexposed), iZ PP 22 32 31.1, (ei)Z PPP 22 35 (01) in the minute interruption, USCGS: H= 22 09 31.4, 20.0 S, 169.0 E, h about 47 km, New Hebrides Islands. Mag.= 6 1/2 (Pas), 6 1/2-6 3/4 (Pal), D= 15600 km.
- 7 (e)Z 11 20 (02) in the minute interruption, traces.
- 7 Z 11 22 18.0, traces.
- 7 iZ 11 34 43.2, traces.
- 7 eiZ PKP 12 53 21.9, iZ 12 53 33.2, USCGS: H= 12 33 37.1,

July 1961

-3-

- 7 (cont.) 20.2 S, 169.6 E, h about 25 km, Loyalty Islands region.
- 7 eiZ PKP 13 29 41.9, eiZ 13 30 07.1, eZ PP 13 31 22.8, eiZ 13 33 35.2, USCGS: H= 13 10 43.8, 5.7 S, 149.7 E, h about 57 km, New Britain. Felt. Mag.= 6 -6 1/4 (Pas), D= 13800 km.
- 7 (e)Z PKP₁ 15 01 27, iZ PKP₂ 15 01 31.1, eiZ 15 01 39.1, eiZ 15 02 37.9, eiZ 15 05 05.2, USCGS: H= 14 41 53.0, 20.4 S, 169.2 E, h about 100 km, Loyalty Islands region.
- 7 iZ 18 02 24.6, iZ 18 02 34.6, traces.
- 7 eiZ 19 37 05.7, iZ 19 37 18.9, traces.
- 7 eiZ+ PKP 22 39 08.3, iZ 22 39 11.1, iZ! 22 39 21.5, Z 22 40 (00), eZ PP 22 42 28, eZ 22 43 03, USCGS: H= 22 19 34.2, 20.1 S, 169.2 E, h about 89 km, Loyalty Islands region. Mag.= 5-5 1/4 (Pal), D= 16 350 km.
- 7 eiZ P or PKP 23 08 06.1, eZ 23 08 13, traces.
- 8 eiZ+ PKP₁ 02 54 59.2, iZ PKP₂ 02 55 11.0, iZ 02 55 32.7, (e)Z PP 02 58 11, USCGS: H= 02 35 20.1, 20.0 S, 168.8 E, h about 52 km, Loyalty Islands, D= 16 300 km.
- 8 eiZ PKP 03 45 06.6, iZ 03 45 11.1, traces, USCGS: H= 03 25 19.5, 20.6 S, 169.1 E, h about 25 km, Loyalty Islands region.
- 8 eiZ Pn 10 24 04.1, eiZ 10 24 13.9, eiZ Sn 10 25 32.7, eiZ 10 25 59.4, iZ M 10 26 24.4, D= 870 km, Athens: felt at Corphu Island, (IV+ in Avliotes).
- 8 eiZ+ PKP 15 28 11.9, eZ 15 28 19.0, Nouméa: Loyalty Islands region, 20.3 S, 168.9 E, H= 15 08 32.
- 8 eiZ+ PKP 15 54 16.5, iZ! 15 54 19.7, iZ 15 54 33.7, iZ 15 59 54.9, eZ 16 00 36, eiZ 16 01 56.7, USCGS: H= 15 34 38.5, 20.1 S, 169.8 E, h about 44 km, Loyalty Islands.
- 8 eZ PKP 21 33 36.9, iZ 21 33 51.8, eiZ! pPKP 21 34 00.5, iZ 21 34 08.1, USCGS: H= 21 13 59.4, 20.2 S, 169.0 E, h about 56 km, Loyalty Islands.
- 8 eiZ+ PKP 22 08 25.7, iZpPKP 22 08 52.6, USCGS: H= 21 48 46.2, 20.2 S, 169.0 E, h about 68 km, Loyalty Islands region.
- 9 eZ P 06 45 30.9, USCGS: H= 06 32 52.4, 15.0 N, 87.2 W, h about 165 km, Honduras.
- 9 eZ P 08 12 49.3, eiZ 08 12 53.8, eiZ 08 13 20.0, USCGS: H= 08 05 45.9, 28.8 N, 54.7 E, h about 25 km, Iran.
- 9 eiZ 14 12 32.0, eiZ 14 13 39.9, traces.
- 9 eZ P or PKP 20 11 37.
- 9 eZ PKP 22 32 00.1, eiZ 22 32 11.5, weak traces.
- 10 iZ PKP 12 35 28.8, traces, very weak, USCGS: H= 12 16

July 1961

-4-

- 10 (cont.) 29.4, 20.7 S, 179.5 W, h about 564 km, Fiji Islands region.
- 11 eiZ- Pn 08 47 49.1, iZPb 08 47 52.0, iZ Pg 08 47 55.8, iZ X₁ 08 48 08.8, iZ Sn 08 48 18.8, iZ Sg 08 48 30.1, iZ! 08 48 35.1, F= 08 53 -, D= 280 km, Zagreb: felt in Orahovica (17°53' E, 45°32' N), Yugoslavia.
- 11 eZ+ P 09 43 31.6, eZ PP 09 46 18, eiZ 09 46 28.6, USCGS: H= 09 31 57.2, 8.3 N, 93.3 E, h about 163 km, Nicobar Islands region. D= 8450 km.
- 12 iZ P 02 50 50.2, iZ 02 51 40.5, eZ S 02 52 33.2, eiZ 02 53 54.9, iZ M 02 54 26.5, D= 1075 km.
- 12 eiZ+ PKP 14 56 45.1, eiZ 14 57 05.6, USCGS: H= 14 36 57.4, 22.8 S, 171.3 E, h about 65 km, Loyalty Islands region.
- 14 iZ Pn 02 39 16.3, iZ Sn 02 40 56.5, obscured by microseisms, D= 1070 km, weak.
- 15 iZ+ P 00 30 54.0, iZ 00 31 08.9, USCGS: H= 00 17 49.5, 13.1 N, 120.4 E, h about 52 km, Luzon, Philippine Islands.
- 15 (e)Z 08 50 10, iZ Sg 08 50 29.8, traces, weak.
- 15 iZ PKP 20 52 21.1, eiZ 20 52 29.6, USCGS: H= 20 33 23.0, 20.3 S, 178.2 W, h about 511 km, Fiji Islands region.
- 15 iZ Pn 21 28 41.6, eiZ Sn 21 29 51.5, iZ 21 30 23.5, iZ! Sg 21 30 38.4, D= 830 km.
- 15 (ei)Z Pn 22 09 45.7, iZ 22 11 39.5.
- 16 eiZ- PKP 05 42 12.1, USCGS: H= 05 22 36.5, 19.0 S, 175.4 W, h about 200 km, Tonga Islands.
- 16 (i)Z (PKP₁) 07 06 53.5, iZ! PKP 07 06 57.4!, Z 07 07 (00), eiZ pPKP 07 07 54.8, traces, USCGS: H= 06 47 19.7, 18.6 S, 175.7 W, h about 172 km, Tonga Islands.
- 16 eiZ+ Pg 14 04 14.6, iZ! Sg 14 04 27.6, iZ! 14 04 38.7, D= 110 km.
- 16 iZ Pg 14 09 04.5, iZ Sg 14 09 17.4, iZ! 14 09 26.8, D= about 110 km, aftershock.
- 16 eZ (PKP) 14 21 22.6 very weak, iZ+ PKP 14 21 26.5 remarkable, eiZ 14 21 43.7, USCGS: H= 14 01 38.7, 22.7 S, 171.2 E, h about 56 km, Loyalty Islands region, Mag.= 5-5 1/2 (Berk), Nouméa: H= 14 01 33, 23.4 S, 171.5 E, Mathew Island region.
- 16 eiZ 16 45 14.6, eiZ 16 48 56.3, traces.
- 16 iZ Pg 21 17 32.2, iZ Sg 21 17 40.9, iZ! 21 17 50.8, D= 75 km, weak, disturbed by microseisms.
- 16 eiZ+ P 21 20 49.9, traces, obscured by microseisms, USCGS: H= 21 08 45.6, 49.3 N, 155.1 E, h about 29 km, Kurile Islands.
- 16 iZ- PKP 23 22 16.2, traces, USCGS: H= 23 03 26.9, 18.0

July 1961

-5-

- 16 (cont.) S, 178.3 W, h about 591 km, Fiji Islands region.
- 17 eiZ P 05 20 26.7, USCGS: H= 05 13 20.3, 27.1 N, 54.5 E, h about 59 km, Iran.
- 17 iZ P or PKP 11 12 43.9, iZ 11 12 55.5;
- 17 eZ+ P 15 01 11.7, eiZ 15 01 17.5, USCGS: H= 14 53 28.4, 41.2 N, 72.4 E, h about 67 km, Kirghiz S.S.R.
- 17 Z (P) 15 47 (02), eiZ 15 47 31.4, USCGS: H= 15 32 50.4, 2.4 S, 141.5 E, h about 64 km, Near coast of New Guinea.
- 17 eZ+ P 16 32 52.5, iZ 16 33 (03), eZ PP 16 36 13.1, USCGS: H= 16 20 22.6, 35.7 N, 141.2 E, h about 75 km, Near east coast of Honshu, Japan. Felt. D= 9500 km.
- 18 iZ!- P 14 16 16.4, eNE P 14 16 19, eiZ PP 14 19 38.8, eiZ! S 14 26 49.0, eNE! S 14 26 49.5, eiZ SP 14 27 39, eNE L 14 45 -, eNE M 14 49 -:T_E, N =23, Z M 15 01, Tz= 17, Az=120, USCGS: H= 14 03 36.5, 29.4 N, 131.6 E, h about 21 km, Northern Ryukyu Islands, felt:Kyushu, Japan. Mag.= 6 1/2-6 3/4 (Pas), 6 3/4-7 (Berk), 6 1/2 (Pal), D= 9550 km.
- 18 iZ! P 14 46 41.7, disturbed by previous shock, USCGS: H= 14 34 07.3, 29.9 N, 131.2 E, h about 72 km, Northern Ryukyu Islands.
- 18 iZ P 15 28 52.2, eiZ 15 29 22.3, USCGS: H= 15 16 12.5, 29.5 N, 131.3 E, h about 35 km, Northern Ryukyu Islands.
- 18 iZ P 16 32 45.1, USCGS: H= 16 20 08.8, 29.5 N, 131.2 E, h about 62 km, Northern Ryukyu Islands.
- 18 eiZ P 17 01 16.5, traces, USCGS: H= 16 48 34.8, 29.5 N, 131.8 E, h about 60 km, Northern Ryukyu Islands.
- 18 eZ P 19 41 44.9, iZ! 19 41 50.3, eiZ 19 42 41.9, USCGS: H= 19 29 04.8, 29.3 N, 131.6 E, h about 60 km, Northern Ryukyu Islands.
- 18 iZ+ P 21 35 09.8, eiZ 21 35 32.2, USCGS: H= 21 26 30.5, 13.8 N, 56.6 E, h about 43 km, Arabian Sea.
- 18 eiZ P 23 55 15.8, eZ 23 55 42.1, USCGS: H= 23 42 36.5, 29.7 N, 131.4 E, h about 39 km, Northern Ryukyu Islands.
- 19 eZ P 05 42 34.4, traces, USCGS: H= 05 29 57.6, 29.2 N, 131.3 E, h about 60 km, Northern Ryukyu Islands.
- 19 iZ P 06 45 59.0, USCGS: H= 06 33 18.1, 29.6 N, 131.7 E, h about 27 km, Northern Ryukyu Islands.
- 19 (e)Z Pn 10 42 12, eiZ (Sn) 10 44 00.5, eiZ 10 44 32.4, (D=about 1000 km).
- 19 eiZ P 10 48 21.6, traces.
- 19 eiZ+ P 12 11 23.5, eiZ 12 11 33.1, USCGS: H= 11 58 43.7, 29.6 N, 131.5 E, h about 31 km, Northern Ryukyu Islands.
- 19 eiZ P or PKP 12 18 17.0, traces.
- 19 eiZ 17 30 42.0, traces.
- 19 eiZ Pn 23 03 08.0, iZ 23 03 10.5, iZ 23 03 37.9, iZ 23

July 1961

-6-

- 19 (cont.) 04 07.0, iZ Sn 23 04 52.0, iZ! NE 23 05 06.5, iZ! 23 05 11.5, iZ SgSg 23 05 54.3, iZ M 23 05 37.2, Tz=2, Az=0.9, eNE M 23 07 - F 23 15 ca. BCIS: H= 23 00 58, 38.2 N, 20.4 E, Ionian Sea, near Cephalonia Island, Athens: Mag.=4 3/4. D= 1000 km.
- 20 iZ P or PKP 02 25 10.5, iZ 02 25 25.3, obscured by microseisms.
- 20 eiZ P 03 17 21.3, eZ 03 17 30.3, disturbed by microsms. USCGS: H= 03 04 41.7, 29.5 N, 131.2 E, h about 47 km, Northern Ryukyu Islands.
- 20 eiZ 09 15 19.3, traces.
- 20 eiZ PKP 15 29 17.1, USCGS: H= 15 10 26.7, 17.5 S, 178.7 W, h about 570 km, Fiji Islands.
- 21 eiZ+ PKP 01 30 14.4, eiZ 01 30 40.2, USCGS: H= 01 10 36.2, 22.2 S, 171.6 E, h about 117 km, Loyalty Islands region.
- 21 eZ PKP 13 26 49, eiZ 13 27 17.7, USCGS: H= 13 07 25.4, 19.4 S, 169.2 E, h about 167 km, New Hebrides Islands.
- 21 (ei)Z P 18 46 57.7, traces.
- 21 eiZ P 19 03 31.2, iZ 19 03 41.0, USCGS: H= 18 50 50.3, 29.6 N, 131.6 E, h about 16 km, Northern Ryukyu Islands.
- 21 eiZ P or PKP 19 10 28.5, traces.
- 21 eiZ P 22 52 33.9, iZ 22 52 43.8, traces, USCGS: H= 22 39 53.2, 29.6 N, 131.6 E, h about 32 km, Northern Ryukyu Islands.
- 22 (ei)Z 13 29 37, traces.
- 22 Z PKP 18 32 (03) in the minute interruption, USCGS: H= 18 12 31.1, 54.0 S, 141.2 E, h about 84 km, South of Tasmania.
- 23 eiZ+ PKP 14 23 14.3, iZ 14 23 20.3, eZ PP 14 26 35, USCGS: H= 14 03 39.8, 18.5 S, 168.2 E, h about 44 km, New Hebrides Islands. Felt. Mag.= 5 3/4-6 (berk), D= 16 130 km.
- 23 eiZ PKP 14 36 09.7, eiZ! 14 36 24.5, USCGS: H= 14 16 34.3, 18.4 S, 168.1 E, h about 48 km, New Hebrides Islands. Felt.
- 23 Z 15 29.6 traces.
- 23 eiZ PKP 15 48 29.9, USCGS: H= 15 28 52.6, 18.3 S, 168.2 E, h about 44 km, New Hebrides Islands.
- 23 eiZ+ PKP 15 49 50.9, Z! 15 50 (00), Z! 15 54 (00)!, USCGS: H= 15 30 22.8, 18.5 S, 168.0 E, h about 107 km, New Hebrides Islands.
- 23 iZ!+ PKP₁ 22 10 43.4, eiNE PKP₁ 22 10 44, Z partly underexposed, iZ!NE 22 10 59.3, iE 22 11 16.5, iZ 22 11 20.7, eiZNE PP 22 14 00.4, eZ PPP 22 16 46, iZ SKS 22 17 24.1, eZ 22 19 34, eiZ SKKS 22 20 23, iZ M 23 15 -:Tz=21, Az=75, USCGS: H= 21 51 07.5, 18.3 S, 168.3

July 1961

-7-

- 23 (cont.) E, h about 44 km, New Hebrides Islands, D= 16. 120 km.
- 23 iZ! PKP₁ 22 21 32.6, iZ! 22 21 33.2, iZ 22 21 50.6, USCGS: H= 22 01 55.3, 18.4 S, 168.3 E, h about 37 km, New Hebrides Islands, D= 16.120 km. Additional readings: iZ 22 22 56.7, eiZ PP 22 24 41.7, iZ 22 25 11.9.
- 23 eiZ P or PKP 22 35 06.6, traces.
- 23 eiZ PKP 23 41 44.7, traces. USCGS: H= 23 22 10.1, 18.6 S, 168.0 E, h about 53 km, New Hebrides Islands.
- 24 eiZ+ PKP 00 05 54.7, iZ! 00 05 56.9!, iZ 00 06 08.9, USCGS: H= 23 46 17.2, 18.4 S, 167.8 E, h about 25 km, New Hebrides Islands.
- 24 iZ P or PKP 00 09 34.8, traces.
- 24 eiZ- PKP 01 49 47.4, USCGS: H= 01 30 56.5, 21.1 S, 179.3 W, h about 642 km, Fiji Islands region.
- 24 eiZ P or PKP 01 52 13.0.
- 24 iZ+ PKP 02 18 27.0, eiZ 02 18 32.1, USCGS: H= 01 58 52.3, 18.2 S, 168.4 E, h about 23 km, New Hebrides Islands.
- 24 eiZ 04 04 22.1;
- 24 eZ- P or PKP 13 32 33.8, traces.
- 24 eiZ P or PKP 20 25 51.3, traces.
- 24 eiZ P or PKP 23 27 10.0, iZ! 23 27 13.1;
- 25 eiZ PKP 01 50 06.3, USCGS: H= 01 30 33.2, 18.3 S, 168.3 E, h about 99 km, New Hebrides Islands.
- 25 eiZ P 03 00 28.6, traces. USCGS: H= 02 48 13.5, 8.8 S, 71.3 W, h about 642 km, Western Brazil.
- 25 eZ PKP 09 10 16.0, traces. USCGS: H= 08 50 38.5, 18.4 S, 167.7 E, h about 25 km, New Hebrides Islands.
- 25 eZ P 12 13 48.5, USCGS: H= 12 00 59.6, 21.0 N, 123.6 E, h about 61 km, Off east coast of Formosa.
- 25 eiZ P 18 53 13.7, eiZ PP 18 57 47.1, USCGS: H= 18 39 24.1, 0.0, 124.7 E, h about 43 km, Northern Celebes, D= 11.550 km.
- 26 iZ Pg 12 01 06.1, iZ Sg 12 01 30.9, iZ! 12 01 38.7, BCIS: H= 12 00 39, 47 3/4 N, 13 E, Salzburg region, Austria. No macroseismic data. D= 190 km.
- 26 iZ Pg 12 05 42.4, iZ Sg 12 06 06.3, D= 190 km, weak, aftershock.
- 26 iZ Pg 12 09 22.9, iZ Sg 12 09 47.1, D= about 190 km, very weak, aftershock.
- 27 iZ Pg 05 23 23.2, iZ Sg 05 23 43.2, D= about 180 km, weak.
- 27 eiZ PKP 10 49 51.6, Z 10 50 (00), USCGS: H= 10 30 17.2, 17.9 S, 167.8 E, h about 60 km, New Hebrides Islands.

July 1961

-8-

- 27 iZ PKP 11 53 10.6, iZ! 11 53 11.9, USCGS: H= 11 33 48.4, 19.1 S, 169.3 E, h about 158 km, New Hebrides Islands.
From July 27, 15^h21^m to July 28, 05^h13^m no Z records.
- 28 eiZ PKP 06 31 14.9, iZ! 06 31 33.4, eZ PP 06 34 35, USCGS: H= 06 11 38.7, 18.6 S, 167.7 E, h about 41 km, New Hebrides Islands. Mag.= 5 3/4 (Berk), D= 16.100 km.
- 28 eiZ P 15 31 55.8, traces. USCGS: H= 15 19 40.0, 43.4 N, 146.1 E, h about 34 km, Kurile Islands.
- 28 iZ PKP 17 36 36.8, eiZ 17 37 03.7, USCGS: H= 17 17 07.8, 20.5 S, 169.9 E, h about 147 km, Loyalty Islands.
- 30 iZ+ PKP 14 25 50.4, iZ 14 26 04.3, USCGS: H= 14 06 17.9, 18.1 S, 168.7 E, h about 48 km, New Hebrides Islands.
- 31 iZ Pg 02 18 14.8, iZ Sg 02 18 18.4, D= 16 km, foreshock, weak.
- 31 iZ! Pg 05 14 18.2, iZ!! Sg 05 14 22.1, iZ! 05 14 30.3, D=20 km. Felt in Jevnica IV^o MCS (46^o06'N, 14^o45'E), valley of Sava, Slovenia.
- 31 iZ Pn 16 12 30.3, iZ Pb 16 12 37.2, iZ Pg 16 12 47.0, iZ X 16 13 10.6, iZ Sn 16 13 17.6, eiZ(Sg) 16 13 44.6, iZ 16 14 12.4, D= about 440 km, weak.
- 31 eiZ P or PKP 23 16 47.6, traces.

August

AUGUST 1961

- 1 eiZ P or PKP 01 14 39.2, traces.
- 1 eZ PKP 01 37 17.5, eiZ 01 37 24.1, USCGS: H= 01 17 44.7, 14.2 S, 166.7 E, h about 26 km, New Hebrides Islands region.
- 1 iZ+ P or PKP 01 40 54.2, Z 01 40 59.9.
- 1 iZ Pn 04 46 46.6, iZ Pg 04 46 57.3, iZ Sg 04 47 32.2, iZ! 04 47 37.3, F=04 50, D= about 320 km, very weak.
- 1 eZ PKP 05 59 07.1, eiZ PP 06 01 44.0, eZ 06 02 10.6, eiZ SKP 06 02 40.2, eiZ 06 03 27.4, eZ SKS 06 06 15, USCGS: H= 05 39 53.2, 9.8 S, 160.5 E, h about 50 km, Solomon Islands region. Felt IV^o at Savo, Tulagi, Malaita, and Santa Isabel Island. Mag.= 6 1/2-6 3/4 (Pas), 6 1/2 (Berk), D= 14.830 km.
- 1 (e)Z PP 07 39 57, traces, USCGS: H= 07 21 12.3, 56.8 S, 25.1 W, h about 44 km, Sandwich Islands region.
- 1 (e)Z PP 09 53 35, traces, USCGS: H= 09 34 40.7, 57.1 S, 26.1 W, h about 31 km, Sandwich Islands.
- 1 (ei)Z Pn 12 28 29.5, eiZ 12 29 16.6, eiZ Sn 12 29 53.2, D= about 790 km.
- 1 eiZ P 21 15 42.9, USCGS: H= 21 06 17.8, 0.6 S, 16.2 W,

August 1961

-9-

- 1 (cont.) h about 25 km, North of Ascension Island.
- 1 iZ+ PKP 22 31 06.4, traces, USCGS: H= 22 11 49.3, 18.0 S, 167.6 E, h about 214 km, New Hebrides Islands region.
- 2 eiZ PKP 02 23 35.4, iZ 02 23 45.9, USCGS: H= 02 03 56.0, 18.9 S, 168.0 E, h about 18 km, New Hebrides Islands region.
- 2 eiZ+ P 12 24 15.4, iZ 12 24 18.0, USCGS: H= 12 12 03.8, 44.5 N, 148.7 E, h about 74 km, Kurile Islands.
- 2 eiZ Pg 13 09 41.6, iZ Sg 13 09 50.5, D= 80 km, weak.
- 2 eZ- P 14 44 19.7, traces, USCGS: H= 14 32 27.9, 51.9 N, 157.8 E, h about 50 km, Near coast of Kamchatka.
- 2 Z 16 02-03, traces.
- 2 eZ PKP 20 34 07.7, traces, USCGS: H= 20 14 50.2, 12.6 S, 165.5 E, h about 129 km, New Hebrides Islands region.
- 3 eZ P 00 49 45.2, eiZ 00 49 51.1, eZ 00 50 08.9, USCGS: H= 00 41 35.7, 14.3 N, 52.2 E, h about 75 km, Gulf of Aden.
- 3 eiZ- P 03 19 10.5, eiZ 03 19 31.6, USCGS: H= 03 08 02.3, 18.2 N, 66.2 W, h about 141 km, Puerto Rico. Felt.
- 3 iZ P or PKP 07 11 30.5, traces, sharp phase disturbed by microseisms.
- 3 iZ Pn 10 27 32.0, iZ Pg 10 27 42.9, iZ Sn 10 28 12.3, eiZ Sg 10 28 28.3, iZ! 10 29 00.1, eiZ 10 29 11.1, D= about 325 km.
- 3 iZ Pn 17 51 04.4, iZ Pg 17 51 14.1, iZ! Sg 17 51 52.2, D= 330 km, aftershock, weak.
- 3 iZ Pn 18 33 07.1, iZ Pg 18 33 16.9, iZ Sg 18 33 55.4, D= 330 km, aftershock.
- 4 iZ Pn 10 05 30.6, iZ (Sg) 10 06 (00), in the minute interruption, D= about 220 km, weak.
- 4 iZ P or PKP 14 12 48.3, traces.
- 4 eiZ PKP 18 38 56.0, iZ 18 39 27.5, USCGS: H= 18 19 22.8, 19.9 S, 169.7 E, h about 119 km, Loyalty Islands region.
- 4 eiZ P 18 43 08.7, eiZ 18 45 09.1, USCGS: H= 18 35 20.8, 34.8 N, 38.7 W, h about 26 km, North Atlantic Ocean.
- 4 eZ-P 23 05 07.8, eiZ 23 05 20.1, iZ 23 05 40.5, USCGS: H= 22 52 49.5, 45.3 N, 151.1 E, h about 20 km, Kurile Islands.
- 5 eiZ- P 02 37 43.3, iZ 02 37 54.9, eZ 02 38 28.0, USCGS: H= 02 26 22.4, 60.5 N, 148.6 W, h about 105 km, Kenai Peninsula, Alaska.
- 5 Z 19 39-45, traces, very weak.
- 6 eiZ- P 03 33 52.3, traces, USCGS: H= 03 20 39.0, 26.7 N, 141.8 E, h about 36 km, Bonin Islands region.
- 7 eZ 01 19 07.7, eiZ 01 19 19.2.

August 1961

-10-

- 7 Z 03 36 (00) in the minute interruption, eiZ (Sg) 03 37 57.4;
- 7 eiZ+ P 04 14 23.1, USCGS: H= 04 02 09.4, 42.2 N, 142.1 E, h about 24 km, Hokkaido, Japan.
- 7 eiZ P or PKP 06 12 41.9, eZ 06 12 52.2;
- 7 eZ PKP 12 42 19, traces, USCGS: H= 12 22 23.3, 28.1 S, 176.5 W, h about 39 km, Kermadec Islands region.
- 8 eiZ P 12 30 47.4, eiZ! PcP 12 30 55.7!, eiZ 12 31 20.0, eZ PP 12 34 13, (e)Z S 12 41 09, USCGS: H= 12 18 18.9, 50.9 N, 170.7 W, h about 24 km, Fox Islands, Aleutian Islands, Mag.=6-6 1/4 (Pas), 5-5 3/4 (Berk), 5 3/4 - 6 (Pal), D= about 9.300 km.
- 8 eiZ 14 07 27.8, eiZ 14 07 48.3, traces.
- 9 eZ P or PKP 03 43 32.8 ;
- 9 eiZ P 04 14 44.6, USCGS: H= 04 02 30.8, 40.6 N, 142.8 E, h about 112 km, Near coast of northern Honshu, Japan.
- 9 eiZ Pn 05 10 39.5, eZ (Sn) 05 12 16, (D=about 900 km), weak traces.
- 9 eiZ- PKP 06 13 49.9, eiZ 06 13 59.5, traces, USCGS: H= 05 54 10.6, 18.7 S, 167.6 E, h about 21 km, New Hebrides Islands region.
From August 9, 08^h 19^m to 08^h 49^m no Z records.
- 9 iZ Pn 13 05 18.3, iZ Pg 13 05 21.5, iZ Sg 13 05 57.6, iZ! 13 06 (00) in the minute interruption, iZ! 13 06 04.9, Chur: Switzerland, felt in valley of Münster; Wien: in higher valley of Inn at Pfunds (46°57.5'N, 10°32.5'E), D= 310 km.
- 9 iZ+ PKP₁ 16 22 10.5, iZ! pPKP₁ 16 22 24.3, eZ 16 23 10.9, eZ PP 16 25 48.8, USCGS: H= 16 02 36.1, 19.1 S, 168.7 E, h about 69 km, New Hebrides Islands region. Mag.=5 3/4 (Berk), Nouméa: H=16 02 40, 19 S, 168 1/2 E, Felt IV^o at Porta Vila. D= 16.080 km.
- 11 eZ P 04 39 49.5, Z 04 40 (00), USCGS: H= 04 27 23.3, 32.5 N, 131.3 E, h about 25 km, Kyushu, Japan.
- 11 eiZ P 06 20 44.1, iZ 06 20 54.8, iZ 06 21 17.7, USCGS: H= 06 08 18.2, 32.6 N, 131.4 E, h about 25 km, Eastern Kyushu, Japan.
- 11 eiZ+ PKP₁ 10 44 34.7, iZ 10 44 53.0, eiZ PP 10 48 12.7, USCGS: H= 10 24 58.9, 18.5 S, 168.2 E, h about 25 km, New Hebrides Islands. D= 16.150 km.
- 11 iZ+P 16 03 46.5, iNE P 16 03 47, iZ! 16 04 06.1!, eiZ PP 16 06 53, eZ PPP 16 07 53, eZ 16 10 19.5, eiZ! 16 11 27.2, eiZ! S 16 13 49.2, eN! S 16 13 50, eiZ SP 16 14 32, eNE M 16 41 -, Z M 16 42: Tz=21, Az=75, USCGS: H= 15 51 35.4, 42.9 N, 145.1 E, h about 78 km, Eastern Hokkaido, Japan. Slight tsunami. Mag.= 7 (Pas), (Berk), D= about 9.000 km.
- 11 eZ PP 22 55 45.1, traces, weak, USCGS: H= 22 37 22.0,

August 1961

-11-

- 11 (cont.) 2.8 S, 122.1 E, h about 20 km, East from Celebes.
- 11 iZ+ P 23 46 03.6, eiZ 23 46 11.0, eiZ 23 46 36.9, USCGS: H= 23 33 51.9, 42.8 N, 145.1 E, h about 72 km, Eastern Hokkaido, Japan.
- 12 eZ PKP 05 50 19.0, eZ 05 51 03.4, USCGS: H= 05 30 39.9, 18.8 S, 167.9 E, h about 25 km, New Hebrides Islands.
- 13 iZ! Pn 22 35 08.8, iZ! Pg 22 35 19.1, iZ! 22 35 24.5, iZ X₁ 22 35 42.7, iZ (Sn) 22 35 51.9, iZ! Sg 22 36 08.9, iZ! 22 36 17.7, BCIS: H= 22 34 26, North Italy, Garda Lake region. USCGS: H= 22 34 18.0, 45.0 N, 9.9 E, h about 20 km, North Central Italy. Felt: Parma. D= about 375 km.
- 13 (i)Z Pn 23 07 09.9, iZ Pg 23 07 19.1, iZ Sn 23 07 55.4, iZ Sg 23 08 13.7, BCIS: H= 23 06 20, aftershock, D= about 375 km.
- 14 eiZ Pn 01 01 21.0, iZ 01 01 25.5, eiZ Pg 01 01 31.3, iZ Sg 01 02 19.4, BCIS: H= 01 00 26, aftershock, D= about 375 km.
- 14 (i)Z Pn 01 03 46.8, iZ Pg 01 03 55.9, Z! 01 04 (00), iZ Sn 01 04 27.2, iZ! Sg 01 04 41.9, iZ! 01 04 55.1!, BCIS: H= 01 03 02, aftershock, D= about 375 km.
- 14 iZ+ Pg 06 29 39.3, iZ! Sg 06 29 41.6, D= 18 km, weak, no macroseismic reports.
- 14 eiZ Pn 07 52 57.9, iZ Pg 07 53 06.8, eZ Sn 07 53 38, iZ Sg 07 53 53.3, D= about 375 km, aftershock?
- 14 Z 12 16-17, traces.
- 14 eZ PKP₁ 19 10 45.6, iZ 19 11 17.7, eZ 19 11 37.2, USCGS: H=18 50 50.3, 24.2 S, 175.7 W, h about 21 km, Tonga Islands region. Mag.= 5 1/2 (Berk).
- 14 eZ P 22 17 30.1, eiZ 22 17 46.7, USCGS: H= 22 04 59.0, 31.8 N, 131.2 E, h about 14 km, Off south coast of Kyushu, Japan.
- 14 eZ+ PKP 23 48 20.8, iZ! 23 48 25.2!, iZ! 23 48 35.2!, iZ 23 48 44.8, eZ PP 23 51 41.7, USCGS: H= 23 28 46.5, 20.3 S, 169.4 E, h about 97 km, New Hebrides Islands. Felt at Porta Vila. Mag.= 6 - 6 1/4 (Pas), 6 (Berk), D= about 16.400 km.
- 15 iZ P or PKP 01 06 10.5, traces.
- 15 eZ- P 19 16 46.0, iZ! 19 16 47.8, iZ 19 17 12.7, eZ PP 19 20 17.1, USCGS: H= 19 03 55.7, 32.8 N, 142.4 E, h about 39 km. South of Honshu, Japan.
- 16 (e)Z PKP 03 54 03, iZ 03 54 38.0, USCGS: H= 03 33 52.6, 31.8 S, 177.9 W, h about 70 km, Kermadec Islands.
- 16 Z 08 55-59, weak traces.
- 16 eiZ P 16 26 40.5, iZ 16 26 50.0, iZ 16 27 03.2, USCGS: H= 16 15 57.5, 13.8 S, 14.7 W, h about 25 km, South of Ascension Island.

August 1961

-12-

- 17 eiZ- P 21 28 22.1, iZ! 21 28 25.0!, iZpP 21 28 45.2, iZ sP 21 28 49.8, eiZ PP 21 31 25.5, eiZ! 21 32 08.2!, eiZ PPP 21 33 11.7, Z 21 34 (00), (e)Z S 21 38 05, USCGS: H= 21 16 30.0, 46.3 N, 149.3 E, h about 186 km, Kurile Islands. Mag.= 6 3/4 (Pas), 6 1/2- 6 3/4 (Berk), D= 8.850 km.
- 18 eiZ P or PKP 06 45 28.0, eiZ 06 45 40.6,
- 18 eiZ PKP 11 20 52.1, traces. USCGS: H= 11 01 26.5, 24.0 S, 179.9 W, h about 519 km, Kermadec Islands region.
- 19 iZ- P 05 22 07.6, eiNE 05 22 08.9, iZ! 05 22 09.0!, iZ 05 22 15.5, iZ 05 22 45.4, eiZ pP 05 24 17.1, iZ PP 05 26 07.0, eiZ pPP 05 27 51.9, eiE 05 31 40, iZ! 05 32 (00), iZNE S 05 32 27.7, iZ SP 05 33 44.8, iZ 05 35 39.3, eiE 05 39 13, eNE L 06 16 - , USCGS: H= 05 09 49.5, 10.7 S, 71.0 W, h about 649 km, Peru-Brazil border, Mag.= 7 (Pas), 7 3/4- 8 (Berk), D= 10.450 km.
- 19 iZ+ P 05 45 58.5, eiZ PP 05 49 13.6, iZ! 05 49 51.2!, iZ M 06 26 30: Tz=13, Az=43. USCGS: H= 05 33 30.6, 36.0 N, 136.5 E, h about 17 km, Off west coast of Honshu, Japan. 5 killed, many injured; moderate property damage at Fukui, Gifu, Ishikawa, Mag.= 7 1/2 (Pas), D=9.330 km.
- 19 eiZ Pn 12 06 05.2, eiZ (Sn) 12 07 19.0, eiZ (Sg) 12 07 58.1, eZ 12 08 17.8, (D= about 700 km).
- 19 eZ P 15 03 48.7, eiZ! 15 04 14.1!, USCGS: H= 14 52 31.4, 18.0 N, 68.8 W, h about 146 km, Mona Passage; felt Puerto Rico and San Domingo, Dominican Republic.
- 19 iZ-! P 20 38 45.2, iZ 20 38 51.6, USCGS: H= 20 26 18.0, 2.1 N, 96.9 E, h about 25 km, Off west coast of Sumatra.
- 19 (e)Z 22 54 42, iZ 22 55 21.9, eiZ 22 56 05.6, traces.
- 20 (i)Z PKP₁ 05 23 (00), iZ! 05 23 03.4, iZ!! 05 23 05.3!!, iZ PKP₂ 05 23 11.6, eiZ 05 23 22.9, eiZ 05 24 03.3, iZ! pPKP₁ 05 25 17.6, eiZ pPKP₂ 05 25 27.3, obscured by microseisms; USCGS: H= 05 04 14.3, 17.8 S, 178.8 W, h about 592 km, Fiji Islands. D= 16.700 km.
- 20 eiZ P 12 58 55.3, eiZ 12 59 04.1, traces. USCGS: H= 12 44 57.7, 53.4 N, 145.2 E, h about 20 km, Near east coast of Hokkaido, Japan.
- 20 Z Pg 15 51 (00) in the minute interruption, iZ Sg 15 51 22.1, D= about 170 km, weak, obscured by microseisms.
- 21 Z 07 07-12 traces.
- 21 eiZ PKP 16 26 39.3, iZ 16 26 45.2, iZ (pPKP) 16 27 06.8, USCGS: H= 16 06 55.4, 17.8 S, 174.4 W, h about 74 km, Tonga Islands. Mag.= 5 3/4- 6 (Berk).
- 21 eiZ+ P 17 12 47.8, eiZ 17 12 55.9, USCGS: H= 17 00 37.0, 40.9 N, 138.9 E, h about 49 km, Off coast of northern Honshu, Japan.
- 21 iZ Pn 23 59 46.9, iZ 23 59 50.8, iZ Pg 23 59 55.7, iZ Sn 00 00 23.2, iZ 00 00 31.8, iZ! Sg 00 00 38.0!, D= 340 km.

August 1961

-13-

- 23 eiZ+ P 04 20 12.5, eiZ 04 20 18.8, eiZ PP 04 21 49.3, disturbed by microseisms. USCGS: H= 04 12 35.9, 38.7 N, 68.7 E, h about 25 km, Tadzik S.S.R., Felt: Stalinabad, D= 4.450 km.
- 23 (e)Z Pg 17 50 25, iZ Sg 17 50 42.4, D= about 145 km, weak.
- 24 iZ P or PKP 01 43 12.0, traces.
- 24 eiZ P 05 04 35.2, iZ 05 04 52.3, USCGS: H= 04 52 20.5, 42.9 N, 145.3 E, h about 44 km, Eastern Hokkaido, Japan.
- 24 (e)Z PKP 21 18 05, iZ 21 18 10.1, traces. USCGS: H= 20 58 36.2, 21.3 S, 173.1 E, h about 258 km, Loyalty Islands region.
- 24 eiZ+ P 22 53 06.7, iZ 22 53 24.1, USCGS: H= 22 40 49.1, 43.0 N, 145.0 E, h about 18 km, Eastern Hokkaido, Japan.
- 25 eiZ Pn 12 22 44.3, iZ 12 22 48.8, iZ Pg 12 22 50.9, iZ X₁ 12 23 08.7, iZ X₂ 12 23 17.6, iZ Sn 12 23 25.2, iZ! 12 23 30.4!, iZNE Sg 12 23 42.9, BCIS: H= 12 21 58, 47.5 N, 10.5 E, Alps of Allgäu, Austria. Wien: 47.4 N, 10.6 E, Upper Lechtal near Stanzach, Tirol, felt at Reutte (47°5' N, 10°7' E). D= about 360 km.
- 25 Z 12 40-43, traces, weak.
- 25 (e)Z 19 02 36.2, traces.
- 26 eiZ+ PKP 03 05 08.6, iZ 03 05 16.8, USCGS: H= 02 45 34.8, 20.1 S, 168.9 E, h about 125 km, Loyalty Islands.
- 26 iZ Pn 14 25 45.6, iZ 14 25 47.3, eiZ Pg 14 25 50.9, iZ Sg 14 26 17.9, iZ! 14 26 22.0!, D= 230 km.
- 27 eiZ- P 02 02 39.4, iZ! 02 02 45.5!, eiZ 02 03 10.1, iZ 02 03 31.5, eZ PP 02 05 05.5, USCGS: H= 01 51 51.8, 15.3 S, 13.1 W, h about 49 km, South of Ascension Island, D= 7350 km.
- 27 eiZ+ Pn 13 34 31.6, (e)Z (Sg) 13 35 07.3, iZ! 13 35 21.1, (D= about 260 km, weak).
- 27 eiZ+ P 16 34 22.9, iZ 16 34 26.0, USCGS: H= 16 22 08.1, 46.6 N, 154.1 E, h about 31 km, Kurile Islands, Mag.= 6 1/2 (Pas), 5 1/4- 5 1/2 (Berk), 5 1/2 (Pal).
- 27 (e)Z PP 17 05 54, eiZ 17 06 07.2, traces, USCGS: H= 16 47 44.8, 18.3 N, 146.6 E, h about 27 km, Mariana Islands, Mag.= 6 1/4 - 6 1/2 (Pas), 5 1/2 (Berk).
- 27 eiZ P 21 08 31.0, USCGS: H= 20 56 15.6, 46.8 N, 153.9 E, h about 25 km, Kurile Islands.
- 27 eiZ Pn 22 11 40.4, Z! 22 12 (00), iZ 22 12 31.9, iZ 22 13 46.6, (ei)Z Sn 22 14 01, iZ! 22 14 38.1, eiZ (SgSgSg) 22 15 45.3, iZ M 22 16 41, BCIS: H= 22 08 41, 35.2 N, 23.1 E, Off west coast of Crete, USCGS: H= 22 08 49.8, 35.9 N, 23.7 E, h about 69 km, Near west coast of Crete.
- 28 eiZ PP 06 45 34.3, eZ pPP 06 46 18.5, USCGS: H= 06 28

August 1961

-14-

- 28 (cont.) 19.4, 15.1 S, 70.2 W, h about 185 km, Peru-Bolivia border.
- 28 iZ PKP 07 59 48.3, iZ PP 08 02 23.9, traces, USCGS: H= 07 41 24.5, 12.7 S, 169.6 E, h about 662 km, Santa Cruz Islands. D=15.700 km.
- 28 eiZ- PKP₁ 10 02 59.5, iZ!- PKP₂ 10 03 06.7, iZ 10 03 09.7, iZ 10 05 12.3, USCGS: H= 09 44 13.5, 18.6 S, 178.0 W, h about 574 km, Fiji Islands.
- 28 eZ PKP 20 45 15.5, traces, USCGS: H= 20 26 04.2, 22.9 S, 113.4 W, h about 56 km, Easter Island region.
- 29 eiZ Pn 13 02 19.8, eiZ Sg 13 03 07, D=about 320 km, weak.
- 29 (ei)Z 13 16 07, traces, seismic?
- 29 Z 15 51-52 traces.
- 30 (e)Z P 03 44 56, eiZ 03 45 21.6, USCGS: H= 03 35 07.7, 7.0 N, 33.2 W, h about 69 km, North Atlantic Ocean. Mag.=4 1/2- 4 3/4 (Pal).
- 31 eiZ (PKP) 00 43 23.3, USCGS: H= 00 22 47.3, 28.1 S, 176.7 W, h about 56 km, Kermadec Islands.
- 31 eiZ- P 02 00 56.5, iZ pP 02 03 06.4, iZ PP 02 04 50.7, eiZ pPP 02 06 36.1, eiZ 02 06 41.6, eiZ 02 07 38.8, iZ SKS 02 10 31.5, eNE S 02 11 16.5, eZ S 02 11 21, iZ SP 02 12 31.7, disturbed by following shock, USCGS: H= 01 48 37.5, 10.6 S, 70.9 W, h about 626 km, Peru-Brazil border, Mag.= 7 - 7 1/4 (Pas), 6 1/2 (Berk), D= about 10.500 km.
- 31 iZNE P 02 09 27.3, iZ! 02 09 29.5!, iZ! 02 09 38.7!, iZ! 02 09 59.4!, eiZ pP 02 11 42.8, iZ! PP 02 13 24.3, eiZ PPP 02 15 35, eiZNE S 02 19 49, eZ! 02 20 52, eE! 02 21 08.8!, eZ!! 02 21 13!!, iZ! 02 22 37.3, USCGS: H= 01 57 08.0, 10.4 S, 70.7 W, h about 629 km, Peru-Brazil border. Felt: Arequipa, Peru. Mag.= 7 1/2 (Pas), 7 (Berk), D= about 10.500 km.
- 31 eiZ 02 36 55, eiZ 02 37 06.8, aftershock?
- 31 eiZ 02 55 28.6, traces, aftershock?
- 31 iZ 04 36 17.1, traces.
- 31 iZ Pg 08 03 17.2, iZ! Sg 08 03 19.2, D= 10 km, weak, not felt.

September

SEPTEMBER 1961

- 1 eiZ (P) 00 24 07.7, eiZ 00 24 19.7, eZ PKP 00 27 56.8, eZ PP 00 28 25.6, eiZ! 00 28 31.2, eZ pPP 00 28 53, (e)Z SKS 00 34 28, USCGS: H= 00 09 34.6, 59.3 S, 27.3 W, h about 131 km, Sandwich Islands region. Mag.= 7 1/2 (Pas), 7 (Berk), D= 12.250 km.
- 1 (e)Z 06 00 12.5, eiZ 06 02 08.6, traces.

September 1961

-15-

- 1 eiZ+ PKP 16 55 52.2, Z 16 56 (00), USCGS: H= 16 36 49.9, 16.4 S, 176.6 W, h about 437 km, Fiji Islands region.
- 1 iZ+ P 19 00 18.5, eiZ 19 00 24.9, USCGS: H= 18 59 36.3, 35.4 N, 138.8 E, h about 87 km, Honshu, Japan. Felt: Tokyo.
- 1 eiZ- P 19 03 41.8, iZ pP 19 03 51.9, eZ 19 04 09.0, eiZ 19 05 05.4, eiZ PP 19 07 22.2, eZ 19 08 16, USCGS: H= 18 50 35.4, 13.5 N, 92.5 W, h about 37 km, Off coast of Guatemala. Mag.= 6 1/2 (Pas), 6 (Berk), D= about 10.200 km.
- 2 eZ+ P 00 38 26.7, eiZ 00 38 44.0, traces. USCGS: H= 00 26 06.2, 52.0 N, 170.9 W, h about 39 km, Fox Islands, Aleutian Islands.
- 2 eiZ P 11 01 15.7, USCGS: H= 10 50 36.7, 2.0 S, 67.5 E, h about 132 km, Southwest of Maldiva Islands, Indian Ocean.
- 2 (e)Z P 14 18 38, eZ S 14 20 15.6, eZ 14 21 09, eZ M 14 21 36, Athens: felt at Skopelos Islands (V⁰ MCS), North Sporades. D=1070 km, weak.
- 3 iZ Pg 17 37 04.7, iZ! Sg 17 37 08.9, D= 33 km. Weak, not felt.
- 4 iZ- P 03 29 29.2, traces. USCGS: H= 03 17 24.6, 30.0 N, 138.3 E, h about 492 km, South of Honshu, Japan.
- 4 eZ P 05 05 28, iZ! 05 05 29.9!, USCGS: H= 04 53 12.9, 46.9 N, 154.2 E, h about 22 km, Kurile Islands.
- 4 eiZ+ P 10 01 31.3, iZ! 10 01 34.0!, Z 10 02 (00), USCGS: H= 09 49 10.7, 51.4 N, 178.1 W, h about 35 km, Andreanof Islands, Aleutian Islands. Mag.= 6 1/4 (Berk).
- 4 Z 11 50-52, traces.
- 5 eiZ P 00 41 54.1, eZ S 00 43 45, eiZ 00 44 06.3, eiZ M 00 45 15, Athens: felt Eubea Island, Mag.= 4 1/2, D= 1080 km.
- 5 eiZ PKP 01 06 20.0, traces, USCGS: H= 00 46 29.6, 16.2 S, 172.6 W, h about 49 km, Samoa Islands region.
- 5 eiZ P 01 19 15.5, eZ S 01 21 06.2, eZ M 01 22 33, Athens: felt Eubea Island, Mag.= 4 1/2. D= 1080 km.
- 5 eZ P 02 44 28.3, iZ 02 44 34.3, USCGS: H= 02 37 34.9, 80.0 N, 2.3 W, h about 18 km, Arctic Ocean.
- 5 eiZ- P 06 20 51.9, iZ! 06 20 57.8, iZ 06 21 23.8, eiZ PP 06 22 32.2, USCGS: H= 06 12 54.8, 38.6 N, 73.3 E, h about 50 km, Tadzik S.S.R., D= 4.900 km.
- 5 eZ P 11 46 09, iZ 11 46 21.9, iZ! pP 11 46 26.8, iZ 11 46 55.5, iZ 11 47 15.5, eZ PP 11 49 (01), eZ 11 49 11, USCGS: H= 11 34 37.3, 59.8 N, 150.6 W, h about 44 km, Kenai Peninsula, felt: Anchorage. Mag.= 6 - 6 1/4 (Pas), D= 8.200 km.
- 5 eiZ P 14 16 09.7, traces, USCGS: H= 14 09 55.1, 36.4 N,

September 1961

-16-

- 5 (cont.) 54.4 E, h about 59 km, Northern Iran.
- 6 eiZ 21 30 25.5, traces.
- 8 iZ Pg 01 20 22.7, iZ Sg 01 20 27.6, D= 40 km, weak, not felt.
- 8 eiZ 02 49 08.2, iZ 02 49 11.5, traces.
- 8 Z P 10 41 (00) in the minute interruption, eiZ (S) 10 42 47.1, iZ 10 42 56.5, (D= 1060 km).
- 8 (e)Z (P) 11 40 48, eiZ 11 41 16.8, ZNE 11 45 (00), eiZ PP 11 45 11.8, eiZ PPP 11 47 30, eN 11 51 11, eZNE 11 54 21: Tz=6, Az=6, eZ M 11 12 28: Tz=17, Az= 30. USCGS: H=11 26 32.8, 56.1 S, 27.3 W, h about 125 km. Sandwich Islands region. Mag.= 7 1/2 - 7 3/4 (Pas), 8 (Berk), D=12.050 km.
- 9 eiZ P or PKP 09 06 17.1,
- 10 eiZ Pn 04 15 29.7, iZ Sg 04 16 13.8, D= 280 km.
- 10 (e)Z P 16 21 34, eiZ 16 21 53.8, BCIS: H= 16 17 20, 37 N, 36 1/2 E, Southern Turkey, east from Adana. USCGS: H= 16 17 20.0, 37.2 N, 36.6 E, h about 28 km, Turkey.
- 10 eiZ PKP 18 34 54.3, eiZ 18 35 05.7, USCGS: H= 18 16 07.5, 17.8 S, 178.5 W, h about 619 km, Fiji Islands region.
- 11 eiZ Pn 02 20 44.1, eiZ Sg 02 21 27.9, iZ 02 21 35.4, D= about 300 km.
- 11 eiZ 02 32 36.3, traces.
- 11 eiZ P 02 59 06.0, iZ 02 59 22.4, USCGS: H= 02 46 43.4, 51.3 N, 179.7 W, h about 15 km, Andreanof Islands, Aleutian Islands.
- 11 eiZ Pn 04 36 22.5, eiZ 04 36 30.8, iZ Sg 04 37 05.8, D= about 300 km.
- 11 iZ+ P 22 26 21.0, iZ pP 22 26 52.1, USCGS: H= 22 15 02.6, 10.8 N, 62.4 W, h about 134 km, Off north coast of Venezuela. Felt: Trinidad.
- 11 Z 22 38-40, traces, near.
- 11 eiZ+ P 23 59 34.5, iZ 23 59 46.7, eiZ 23 59 52.2, USCGS: H= 23 47 19.5, 42.8 N, 145.4 E, h about 18 km, Near east coast of Hokkaido, Japan.
- 12 iZ PKP 00 36 04.5, eZ 00 38 06.3, USCGS: H= 00 17 10.9, 18.1 S, 177.9 W, h about 548 km, Fiji Islands.
- 12 eiZ+ PKP 01 33 47.1, eZ 01 34 40.2, eiZ PP 01 37 06.2, USCGS: H= 01 14 32.9, 18.3 S, 169.1 E, h about 208 km, New Hebrides Islands, D=16.150 km.
- 12 (e)Z Pn 03 59 03, iZ Sg 03 59 45.5, weak traces, D= about 290 km.
- 12 eZ+ P 12 39 20.5, USCGS: H= 12 27 09.2, 43.8 N, 147.8 E, h about 96 km, Near east coast of Hokkaido, Japan.

Septemoer 1961

-17-

- 13 eiZ Pn 06 36 17.2, eZ S 06 37 59.4, eiZ M 06 38 15.2, D=1090 km. Athens: felt in Elide.
- 13 Z Pn 13 15 (00) in the minute interruption, iZ 13 15 13.8, eZ S 13 16 40.6, eiZ 13 16 49.6, eiZ M 13 17 04.8, D= 1080 km, Athens: felt in Elide.
- 13 eiZ P 14 11 29.8, iZ 14 11 36.3, USCGS: H= 14 05 40.5, 32.9 N, 47.9 E, h about 97 km, Iraq-Iran border.
- 13 eiZ P 15 54 16.4, iZ! 15 54 21.2!, USCGS: H= 15 48 27.2, 32.8 N, 47.6 E, h about 74 km, Iraq-Iran border.
- 13 eiZ 20 44 47.0, eiZ 20 45 09.3, traces.
- 13 eiZ (PKP) 21 38 04.8, eiZ PP 21 39 10.3, eiZ! 21 39 33.5, USCGS: H= 21 19 26.2, 41.6 S, 73.2 W, h about 154 km, Southern Chile, Mag.= 7 (Berk).
- 14 eZ P 08 08 59.6, iZ! 08 09 06.3!, USCGS: H= 08 03 09.0, 33.6 N, 48.8 E, h about 30 km, Iran.
- 14 eiZ 09 54 50.8, eZ 09 54 54.8, iZ 09 55 07.2, traces.
- 14 eiZ 10 40 52.6, traces.
- 14 eiZ Pn 20 57 58.6, eZ 20 58 56.1, eiZ Sg 20 59 04.9, D= 430 km.
- 15 eiZ+ P 01 50 22.7, eiNE P 01 50 24, iZ! 01 50 33.1, iZ! 01 50 38.3!, iZ! PP 01 50 42.0, eiZ S 01 53 48.8, eNE 01 53 50, iZ 01 54 33.2, iZ 01 55 18.5, iZ! 01 56 44.3, eZ M 01 59 20: Tz=7, Az= 3. BCIS: H= 01 46 10, 34 1/4 N, 33 1/2 E, h about 100 km, Eastern Mediterranean, off south coast of Cyprus. USCGS: H= 01 46 08.4, 35.1 N, 33.9 E, h about 25 km, Cyprus. D= 2.020 km.
- 15 eiZ Pn 14 25 33.1, eiZ Pg 14 25 48.5, eiZ (Sn) 14 26 34.8, iZ Sg 14 26 53.8, iZ! 14 27 09.6, D= about 520 km.
- 15 Z 22 32-34, traces, weak.
- 16 eiZ P 13 41 38.0, USCGS: H= 13 31 34.5, 14.4 N, 46.0 W, h about 19 km, Mid Atlantic Ocean.
- 16 eiZ P 17 29 40.2, eiZ 17 30 09.2, USCGS: H= 17 17 46.1, 52.1 N, 158.5 E, h about 49 km, Kamchatka.
- 16 eZ P 21 27 11.2, USCGS: H= 21 15 26.9, 12.8 S, 66.3 E, h about 25 km, Indian Ocean, 900 km southwest of Chagos Islands.
- 17 iZ+ P 08 54 26.4, iZ 08 54 36.5, eZ PP 08 57 41, USCGS: H= 08 41 53.6, 23.9 N, 122.2 E, h about 35 km, Off coast of Formosa.
- 17 Z 21 00 -04 traces.
- 17 eiZ PKP 23 40 58.5, traces, USCGS: H= 23 22 06.3, 5.9 S, 147.4 E, h about 45 km, Near east coast of New Guinea.
- 17 eiZ 23 50 51.2, traces.

September 1961

-18-

- 18 eiZ P 02 37 36.1, USCGS: H= 02 25 19.3, 48.8 N, 128.9 W, h about 21 km, Vancouver Island region.
- 18 (i)Z P 05 11 57.4, (e)Z (S) 05 14 52, USCGS: H= 05 08 37.7, 35.0 N, 26.3 E, h about 83 km, Crete.
- 18 iZ- P 11 06 35.7, iZ 11 06 47.6, iZ 11 06 55.2, eiZ PP 11 07 19.3, iZ 11 10 02.8, eZ! 11 14 04.2, BCIS: H= 11 01 00, 41 1/4 N, 50.0 E, Caspian Sea, off Baku. Mag.= 5.8 (Quetta), USCGS: H= 11 00 00.8, 40.8 N, 50.1 E, h about 31 km, Caspian Sea. D=2.900 km.
- 18 eiZ PKP 15 57 23.9, iZ 15 57 29.9, USCGS: H= 15 37 331, 21.0 S, 173.6 E, h about 28 km, Loyalty Islands region.
- 19 eiZ P 02 38 18.4, iZ! 02 38 23.3, iZ pP 02 40 24.1, eZ 02 42 14.5, eiZ PP 02 42 16.2, iZ! 02 42 23.8!, iZ! 02 42 29.6, eZ 02 44 07.5, eZ SKS 02 48 04.8, eZ 02 48 27.7, eZ S 02 48 49.6, USCGS: H= 02 25 49.2, 20.3 S, 63.2 W, h about 609 km, Southern Bolivia, Mag.= 6 1/2 (Pas), 6 1/4 (Berk). D=10.750 km.
- 19 eZ P 09 59 19.1, iZ 09 59 31.8, eZ PP 09 02 48, USCGS: H= 09 46 17.7, 6.7 N, 82.4 W, h about 33 km, South of Panama. Mag.= 6 1/4- 6 1/2 (Pas), 5 3/4- 6 (Berk). D= 10.200 km.
- 19 eZ (PKP₁) 18 44 12.7, iZ! PKP₂ 18 44 20.7!, eZ 18 44 27.5, eZ 18 46 43, USCGS: H= 18 25 29.0, 21.6 S, 179.4 W, h about 639 km. Fiji Islands region.
- 19 eZ 21 53 49.
- 20 eiZ P 11 45 20.3, eiZ 11 45 38.4, eZ S 11 46 56.6, eiZ M 11 47 42.5, Athens: felt in Aetolia and Achaia. D= 1.020 km.
- 20 eiZ PKP 19 22 34.9, iZ 19 22 37.3, eZ 19 24 (20), traces. USCGS: H= 19 03 37.1, 3.6 S, 150.9 E, h about 30 km, New Britain, Mag.= 6 1/2 (Berk).
- 22 eiZ P or PKP 19 05 13.8, traces.
- 22 eZ P 20 44 04.9, eiZ 20 44 11.8, traces.
- 23 iZ P or PKP 00 36 21.1,
- 24 eiZ- P 19 17 42.4, eZ 19 18 04.5, USCGS: H= 19 04 40.7, 18.4 N, 98.6 W, h about 81 km, Puebla, Mexico. Felt: Chilpancingo and Federal District.
- 24 eZ P 21 53 39.9, eiZ 21 53 59.1, eiZ PP 21 57 04.4, USCGS: H= 21 40 58.8, 33.3 N, 141.3 E, h about 93 km, South of Honshu, Japan. D= 9.750 km.
- 25 eiZ P 02 38 34.0, USCGS: H= 02 27 13.4, 60.3 N, 153.0 W, h about 125 km, Southern Alaska. Mag.= 5 3/4 - 6 (Pas).
- 25 (e)Z 23 15 35, eiZ 23 15 56.9, eiZ 23 16 17.4.
- 27 Z 04 44-46 traces.
- 27 eiZ- PKP₁ 06 52 47.8, iZ! PKP₂ 06 52 53.3!, iZ pPKP₁

September 1961

-19-

- 27 (cont.) 06 54 57.6, iZ! pPKP₂ 06 55 05.5, (e)Z PP 06 56 12, USCGS: H= 06 34 03.7, 17.4 S, 178.7 W, h about 576 km, Fiji Islands. D= about 16.600 km.
- 27 eiZ P 11 33 08.9, USCGS: H= 11 20 46.8, 52.3 N, 168.7 W, h about 27 km, Fox Islands, Aleutian Islands.
- 27 (e)Z (P) 12 22 10, eZ PKP 12 25 58.6, eZ 12 26 25, USCGS: H= 12 07 39.2, 59.4 S, 24.2 W, h about 110 km, Sandwich Islands.
- 27 eZ+ P 19 33 06.1, eiZ 19 33 19.1, USCGS: H= 19 20 48.6, 52.5 N, 168.7 W, h about 42 km, Fox Islands, Aleutian Islands.
- 27 eiZ+ P 19 39 22.9, iZ 19 39 30.1, eiZ 19 39 44.7, iZ 19 40 06.5, USCGS: H= 19 27 00.7, 52.2 N, 168.7 W, h about 22 km. Fox Islands, Aleutian Islands.
- 28 Z P 01 37 (00) in the minute interruption, iZ 01 37 15.1, iZ! 01 37 21.0!, iZ 01 37 37.7, eiZ PP 01 40 31.9, eZ! 01 41 (00), USCGS: H= 01 23 59.6, 3.9 S, 102.0 E, h about 78 km, Sumatra. D= 10.150 km.
- 28 eZ P 03 37 32, eiZ 03 37 45.9, eZ 03 41 08, USCGS: H= 03 24 43.4, 30.5 N, 141.3 E, h about 125 km. South of Honshu, Japan.
- 28 eiZ P or PKP 03 44 21.2, traces.
- 28 eiZ P 05 08 20.2, eiZ 05 09 00.2, eZ 05 09 03.8, eZ PP 05 10 00, USCGS: H= 05 00 43.0, 36.5 N, 70.7 E, h about 233 km, Hindu Kush. D= 4.700 km.
- 28 eZ L 05 41-43 traces.
- 28 eiZ 20 53 18.9, eiZ 20 53 27.9, iZ (Sg) 20 53 34.1, traces.
- 28 eiZ P or PKP 22 30 18.1, traces.
- 28 eiZ+ P 22 43 44.6, iZ 22 43 51.2, iZ 22 43 58.9, eiZ 22 44 12.3, eiZ PP 22 45 12.1, USCGS: H= 22 36 27.5, 27.6 N, 57.1 E, h about 56 km, Southern Iran, D= 4.250 km.
- 29 eiZ 08 56 49.1, eiZ 08 57 10.4, traces.
- 29 iZ P 17 02 48.6, iZ 17 03 05.4, USCGS: H= 16 50 32.9, 42.9 N, 145.4 E, h about 37 km, Near east coast of Hokkaido, Japan.
- 29 eZ (P) 19 20 18, eZ 19 23 38.7, eZ PP 19 24 10, eiZ 19 24 17.2, eiZ! 19 24 30.9, USCGS: H= 19 06 13.4, 0.5 N, 122.4 E, h about 110 km, Northern Celebes, (D= 11.300 km).
- 29 Z 22 46- 48, traces, weak.
- 29 eiZ+ P 22 51 10.0, eiZ 22 51 18.8, USCGS: H= 22 38 05.9, 1.7 N, 79.3 W, h about 60 km, Near coast of southern Colombia.
- 30 eiZ P 00 33 33.8, traces, USCGS: H= 00 21 18.8, 44.4 N, 148.9 E, h about 49 km, Kurile Islands.

September 1961

-20-

- 30 eiZ 12 52 46.0, traces.
30 eiZ P 13 25 28.5, traces. USCGS: H= 13 13 06.9, 40.6
N, 141.9 E, h about 21 km, Near coast of Honshu,
Japan.
30 eiZ 17 29 38.1, traces, near?

Ljubljana, December 20, 1961

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1961

P R E L I M I N A R Y S E I S M O L O G I C A L
B U L L E T I N

(October - December 1961)



University of Ljubljana
 Geophysical Institute
 at the AG Observatory Golovec
 Ljubljana, Trg revolucije 11, P.O.B. 20
 Yugoslavia

1961

PRELIMINARY SEISMOLOGICAL BULLETIN
 from October 1, 1961 to December 31, 1961

Station Ljubljana: Coordinates: $46^{\circ} 02.6' N$ Lat.
 $14^{\circ} 32.0' E$ Long.
 Geocentric direction cosines: $a=+ 6743$, $b=+ 1748$, $c=+7175$
 $d=- 8$, $h=- 4$;

Height: 396 m

Lithologic foundation: sandstone (carbon) ;

Instruments:

Wiechert, horizontal static seismograph, $M= 200$ kg,
 mechanical registration, 13-15 mm/min;

Constants (15.XII.1961):

Component	T_0	$v:1$	r/T_0^2	V
N-S	4.9	2.7:1	0.009	64
E-W	4.9	2.9:1	0.008	67

Hiller- "Stuttgart", vertical component Z with galvanometrical recording; $T_0 = 1.5$ sec, $T_g = 1.5$ sec, $D_1 = D_2 = 1$, $V_{max} = 10$ 150 x, 60 mm/min;

Note: Periods of seismic waves are given in seconds, the amplitudes in microns; sign + means compression, sign - dilatation.

October

OCTOBER 1961

- 1 eiZ Pn 00 44 36.1, iZ (Pg) 00 44 43.4, iZ! 00 44 52.7, iZ (Sn) 00 45 06.5, iZ 00 45 28.6, iZ 00 45 45.3, (D= about 250 km), weak.
- 1 iZ Pn 15 21 24.0, iZ! 15 21 40.4, iZ (Sg) 15 22 (00), (D= about 250 km), weak.
- 1 eiZ+ P 23 24 38.8, USCGS: H= 23 12 05.2, 23.9 N, 122.3 E, h about 25 km, Near coast of Formosa.
- 1 eiZ P or PKP 23 52 52.2, iZ 23 54 (00) in the minute interruption.
- 2 iZ- Pg 02 58 57.1, iZ! Sg 02 59 07.9, traces, D= about 90 km.

October 1961

-2-

- 2 iZ+ Pn 07 24 16.7, iZ 07 24 29.4, iZ Pg PgPg 07 25 09.7, iZ Sn 07 26 19.4, iZ! 07 26 32.4, iN 07 26 39, iZ! 07 27 03.0!, iNE M 07 28 14, iZ M 07 28 31, USCGS: H= 07 21 49.4, 37.2 N, 22.2 E, h about 72 km, BCIS: H= 07 21 44, 37.0 N, 22.0 E, South-west coast of Peloponnisos. Press: felt at Kalamata and Navarin, D= about 1150 km.
- 2 (ei)Z Pn 15 29 31.2, iZ Pg 15 29 39.1, iZ Sn 15 30 05.9, eiZ Sg 15 30 19.8, D= 320 km.
- 3 eiZ 01 07 03.3, traces, USCGS: H= 01 01 13.0, 35.4 N, 22.7 E, h about 44 km, Mediterranean Sea, near Crete.
- 4 eiZ Pn 12 21 10.5, iZ Pg 12 21 12.5, iZ Sn 12 21 35.2, eiZ Sg 12 21 39.2, iZ! 12 21 49.3, BCIS: H= 12 20 35, 47.7° N, 12.8° E, Wien: Austria-Germany border, SW of Salzburg, felt in Stemberge Loferer. D= 225 km.
- 5 eiZ PKP₁ 18 28 16.7, iZ-! 18 28 18.9, eiZ 18 28 47.8, USCGS: H= 18 08 43.4, 19.4 S, 169.0 E, h about 58 km, Loyalty Islands region.
- 6 iZ Pn 05 48 15.1, eZ(Sg) 05 48 59.3, eiZ! 05 49 09.1, (D= about 300 km).
- 10 iZ 13 41 49.4, traces.
- 10 eiZ PKP₁ 19 03 29.3, iZ! PKP₂ 19 03 34.6, USCGS: H= 18 44 28.6, 16.1 S, 176.3 W, h about 361 km, Fiji Islands region.
- 11 iZ+ Pg 12 04 45.5, iZ! Sg 12 04 50.8, iZ 12 04 53.3, D= 35 km, weak, no macroseismic report.
- 13 eiZ- PKP₁ 17 47 54.7, iZ! 17 48 03.9!, eiZ PKP₂ 17 48 17.3, USCGS: H= 17 28 21.5, 22.0 S, 176.9 W, h about 155 km, Tonga Islands region.
- 14 eiZ- PKP₁ 16 33 26.1, iZ 16 33 32.4, eiZ (PKP₂) 16 33 36.7, USCGS: H= 16 13 48.7, 19.1 S, 168.4 E, h about 28 km, New Hebrides, felt: Port Vila; Nouméa: H= 16 13 47, 19.1 S, 168.6 E, New Hebrides.
- 14 eiZ 17 30 38, eiZ 17 30 52, traces.
- 14 (e)Z 17 43 (05), eiZ 17 44 45, eiZ (SgSgSg) 17 45 44.7, Athens: felt in Jannina, Greece.
- 14 eZ P 22 10 51.6, eiZ pP 22 11 06.6, eiZ 22 11 12.4, USCGS: H= 21 58 57.4, 51.1 N, 159.1 E, h about 80 km, Kamchatka. D= 8800 km.
- 15 (ei)Z P 17 21 (00) in the minute interruption, USCGS: H= 17 07 55.6, 4.1 S, 102.3 E, h about 66 km, Near southwest coast of Sumatra.
- 16 Z 01 17-20 traces, weak.
- 16 eiZ Pn 05 32 38.9, eiZ (Sg) 05 33 15.8, (D= about 260 km, weak).
- 18 Z 00 05-07, traces, disturbed by microseisms.
- 18 eiZ PP 17 11 26.9, traces, disturbed by strong microseisms,

October 1961

-3-

- 18 (cont.), USCGS: H= 16 52 00.2, 36.7 S, 72.6 W, h about 67 km, Near coast of southern Chile, minor damage in area between Curico and Valdivia. Mag.= 6 1/2 (Pas).
- 19 eiZ+ PKP 19 46 17.4, iZ 19 46 24.5, eZ 19 46 51.1, USCGS: H= 19 26 32.2, 55.3 S, 146.4 E, h about 50 km, South of Australia.
- 21 eiZ+ PKP₁ 12 02 23.2, iZ+ 12 02 28.6, eiZ PKP₂ 12 02 31.8, traces, USCGS: H= 11 43 41.3, 18.0 S, 178.5 W, h about 618 km, Fiji Islands, D= 16650 km.
- 22 eiZ PKP 10 10 12.4, iZ 10 10 27.3, eZ 10 10 43, USCGS: H= 09 50 43.6, 19.9 S, 172.4 E, h about 181 km, New Hebrides, Mag.= 5 1/2 (Berk).
- 22 eiZ PKP 14 59 50.3, traces, USCGS: H= 14 40 56.6, 17.6 S, 179.6 W, h about 549 km, Fiji Islands.
- 22 eiZ PKP 18 59 57.2, iZ 19 00 01.5, USCGS: H= 18 40 25.4, 17.7 S, 168.2 E, h about 41 km, New Hebrides Islands. Felt: Port Vila. Nouméa: H= 18 40 21, 17.5 S, 168.4 E, New Hebrides, felt II° at Port Vila.
- 22 eiZ P or PKP 23 03 36.9, iZ 23 03 38.4, traces.
- 23 eiZ PP 00 27 58.8, eZ 00 28 27.4, USCGS: H= 00 08 33.3, 60.4 S, 33.4 W, h about 25 km, Sandwich Islands region.
- 23 eiZ+ P 04 47 24.5, iZ 04 47 31.2, USCGS: H= 04 40 20.7, 27.9 N, 54.4 E, h about 43 km, Iran.
- 23 eiZ P 08 38 00.0, weak trace, BCIS: H= 08 31 26, 74° N, 52° E, Atomic explosion at Novaja Zemlja.
- 23 Z 10 42-44 traces.
- 23 eiZ P 14 53 36.3, iZ 14 53 44.8, eZ PP 14 57 49.4, iZ 14 58 00.1, eZ 14 58 14.7, USCGS: H= 14 39 33.5, 3.5 N, 126.4 E, h about 25 km, Molucca Passage, Mag.= 6 1/2 (Pas), 6 1/4 (Berk), D= 11450 km.
- 23 eiZ PKP₁ 17 31 45.0, eiZ PKP₂ 17 32 08.0, USCGS: H= 17 11 55.3, 16.8 S, 173.6 W, h about 49 km, Tonga Islands.
- 24 eiZ- P 07 37 22.7, eZ 07 37 30.9, USCGS: H= 07 25 19.9, 45.0 N, 146.4 E, h about 82 km, Off north coast of Hokkaido, Japan.
- 24 eiZ- PKP 07 55 59.3, eiZ 07 56 04.7, USCGS: H= 07 36 17.1, 16.5 S, 178.3 E, h about 40 km, Fiji Islands.
- 24 iZ Pg 08 18 09.1, iZ Sg 08 18 15.5, D= 50 km, very weak.
- 24 Z 11 12-15 traces.
- 25 eZ PKP 14 40 14.4, eiZ 14 40 31.5, Z 14 41 (00), traces, USCGS: H= 14 20 20.8, 20.3 S, 174.1 W, h about 25 km, Tonga Islands.
- 25 iZ- P 16 32 50.3, eiZ 16 32 55.6, iZ! 16 33 02.1, eiZ 16 33 15.3, eZ PP 16 34 43.5, USCGS: H= 16 24 16.3, 14.4 N, 56.7 E, h about 40 km, Gulf of Aden, D= 5500 km.

November 1961

-6-

- 13 (cont.), h about 39 km, Kurile Islands.
 13 Z 23 50-52, traces.
 14 eZ (P) 04 55 27, eiZ 04 56 07.5, disturbed by microseisms, USCGS: H= 04 42 26.5, 7.3 N, 82.4 W, h about 29 km, Off coast of Panama, Mag.= 6 1/4 (Pas), 6 (Berk).
 14 iZ+ P 10 14 46.8, USCGS: H= 10 02 32.7, 36.1 N, 139.0 E, h about 167 km, Honshu, Japan. Felt: Tokyo.
 14 eiZ Pg 12 45 33.1, iZ 12 45 38.8, iZ Sg 12 45 48.8, iZ 12 45 58.6, D= 125 km, weak.
 15 iZ+ P 07 29 25.3: Tz=2, Az=2.2, iZ! 07 29 34.7, iZ 07 29 48.1, iZ 07 30 14.7, eZ PP 07 32 29, eZ PPP 07 34 16, eZ Pa 07 35 45, eiZ S 07 39 28.3, eNE S 07 39 30, eiZ 07 40 09.7, eZ M 08 10 - : Tz= 17, Az= 40. USCGS: H= 07 17 12.4, 43.1 N, 145.1 E, h about 43 km, Near coast of Hokkaido, Japan. D= 8900 km.
 15 eiZ Pn 15 30 25.6, iZ Pg 15 30 31.9, iZ X1 15 30 39.9, iZ Sn 15 30 58.4, iZ! Sg 15 31 09.4, iZ M 15 31 13.6, BCIS: H= 15 29 51, 44.5 N, 15.6 E, Dinaric Alps, Yugoslavia, D= 295 km.
 16 eiZ PKP 16 23 40.5, iZ 16 23 45.9, eZ 16 24 26.3, USCGS: H= 16 03 54.8, 20.2 S, 172.9 E, h about 32 km, Loyalty Islands region, Nouméa: H= 16 04 12, 19.9 S, 172.4 E, h=200 km. Loyalty Islands region.
 16 eZ Pn 22 58 51.2, eZ (Sg) 22 59 33, (D= about 290 km).
 17 eiZ Pg 05 01 41.6, iZ! Sg 05 01 53.5, D= 95 km.
 17 eZ PKP₁ 19 23 23.6, iZ-! PKP₂ 19 23 30.4!, eiZ 19 24 27.2, USCGS: H= 19 03 55.4, 19.6 S, 175.5 W, h about 220 km, Tonga Islands region.
 18 eiZ P 03 20 50.9, eZ (PP) 03 21 04.1, USCGS: H= 03 18 41.0, 45.4 N, 25.6 E, h about 98 km, Romania. D= about 880 km.
 18 eZ PKP₁ 11 36 50.1, Z 11 37 (00), eiZ 11 37 39.5, USCGS: H= 11 16 56.8, 27.0 S, 176.3 W, h about 61 km, Kermadec Islands region.
 18 eZ Pn 17 59 10.7, eiZ 18 00 49, traces, weak.
 18 iZ+ P 22 22 20.9, iZ pP 22 22 38.3, iZ 22 22 47.2, eZ PP 22 25 38, USCGS: H= 22 09 53.4, 23.7 N, 121.8 E, h about 60 km, Near coast of Formosa. Felt. D= 9350 km.
 19 iZ 05 49 08.9, traces, weak.
 20 eiZ P 04 12 48.2, disturbed by microseisms, USCGS: H= 04 03 55.7, 50.9 N, 92.5 E, h about 53 km, Outer Mongolia-Siberia border.
 20 eiZ PKP₁ 12 04 06.9, iZ 12 04 12.0, iZ 12 04 17.1, eiZ 12 04 41.7, traces, obscured by microseisms, USCGS: H= 11 44 19.4, 21.8 S, 169.9 E, h about 33 km, Loyalty Islands region.
 20 eiZ+ P or PKP 12 41 36.7, iZ 12 41 44.3.

November 1961

-7-

- 20 eiZ+ P or PKP 13 23 51.3, iZ! 13 23 55.5, iZ! 13 24 00.2, traces, obscured by microseisms.
 20 eiZ P or PKP 15 02 32.2, iZ 15 02 36.7, traces.
 20 eZ+ P 18 06 30.5, eiZ pP 18 06 39.4, eZ PP 18 08 13.8, iZ 18 08 22.5, eiZ 18 09 25.4, eZ 18 12 15.6, (e)Z S 18 13 05, USCGS: H= 17 58 17.5, 31.3 N, 40.9 W, h about 44 km, North Atlantic Ocean. BCIS: H= 17 58 15, 30 1/4 N, 40.5 W, Atlantic Ocean middle crest, D= about 5000 km.
 20 eiZ PKP 19 11 23.6, iZ 19 11 27.6, iZ 19 11 34.3, USCGS: H= 18 51 36.7, 21.7 S, 170.0 E, h about 24 km, Loyalty Islands region.
 21 eiZ P or PKP 01 52 11.0
 21 eZ Pg 03 22 31.5, eiZ Sg 03 22 48.3, D= about 135 km.
 21 iZ Pg 14 38 50.2, iZ! 14 38 53.6, iZ 14 38 56.5, iZ 14 39 05.3, iZ 14 39 13.0, D= 23.3 km. Quarry blast (5.5 tons) in Verd near Ljubljana. Verd: 45°56.5'N, 14° 18' E.
 21 eiZ P or PKP 19 44 36.2, traces.
 22 eZ PKP 03 05 08.2, eiZ 03 05 10.2, eZ 03 05 17.1, USCGS: H= 02 45 26.7, 21.6 S, 169.9 E, h about 74 km, New Hebrides Islands.
 22 eiZ PKP 03 47 53.4, eZ 03 48 08.2, USCGS: H= 03 28 15.8, 20.9 S, 170.3 E, h about 144 km, New Hebrides Islands.
 22 eiZ PKP 10 55 55.7, eiZ 10 56 07.1, USCGS: H= 10 36 12.7, 21.4 S, 170.2 E, h about 52 km, Loyalty Islands.
 22 eZ PKP₁ 11 26 19.8, eiZ! PKP₂ 11 26 24.0, iZ 19 26 29.8, eZ 11 30 22.7, USCGS: H= 11 06 40.5, 21.5 S, 169.8 E, h about 41 km, Loyalty Islands.
 22 Z 17 47-50 traces, near.
 22 eiZ! 19 32 51.4.
 23 eiZ Pn 01 12 57.2, iZ 01 13 06.0, iZ! Pg 01 13 08.8, iZ X1 01 13 22.9, iZ Sn 01 13 38.4, iZ! Sg 01 13 52.8!, iZ M 01 14 10, BCIS: H= 01 12 05, 45.8 N, 9.5 E, Italy. South border of Bergamasche Alps. Felt: at the North of Italy and in Switzerland, till Chur. D=380 km.
 23 Z 06 47-50, traces, obscured by microseisms.
 23 eiZ Pn 23 00 50.2, eZ(Sn) 23 02 30.9, traces, obscured by microseisms. (D= about 950 km).
 25 iZ Pn 10 53 38.1, iZ Sg 10 53 59.5, weak, D= 165 km.
 25 iZ Pn 15 17 35.6, eiZ Sn 15 19 06.9, iZ M 15 20 07.8, D= about 870 km, obscured by microseisms.
 25 eZ P 20 32 23.4, eiZ 20 32 34.1, eiZ 20 32 55.0, USCGS: H= 20 19 50.7, 36.4 N, 141.4 E, h about 64 km, Near east coast of Honshu, Japan. Felt: Honshu.

November 1961

-8-

- 26 eiZ Pn 02 54 45.4, (e)Z (Sn) 02 56 23.7, (D=950 km).
- 27 eiZ Pn 00 52 11.1, iZ Pg 00 52 12.5, iZ Sn 00 52 26.5, iZ! Sg 00 52 28.6, D= 145 km, weak.
- 27 eiZ P 06 09 39.5, iZ 06 09 44.5, eiZ 06 09 59.6, traces, obscured by microseisms. USCGS: H= 05 57 07.6, 31.6 N, 131.1 E, h about 25 km, Near south coast of Kyushu, Japan. Felt: Kyushu. Mag.= 6 1/4-6 1/2 (Pas).
- 27 (e)Z (P) 17 25 09.5, eZ 17 28 09.6, eZ PP 17 29 22.9, disturbed by microseisms, USCGS: H= 17 10 33.3, 0.6 S, 127.1 E, h about 25 km, Halmahera region. Mag.= 6 1/4-6 1/2 (Pas).
- 28 iZ PKP 00 56 10.9, eiZ 00 56 20.3, USCGS: H= 00 37 12.3, 19.1 S, 177.5 W, h about 530 km, Fiji Islands.
- 28 eiZ Pn 09 01 09.6, iZ 09 01 23.1, iZ PgPgPg 09 01 52.0, (e)Z Sn 09 02 58, eiZ SgSg 09 03 53.9, eiZ SgSgSg 09 04 09.7, eZ 09 04 57.8, eZ 09 05 22, USCGS: H= 08 58 51.3, 40.6 N, 26.5 E, h about 119 km, Greece-Turkey border. BCIS: H= 08 58 32, 39.4 N, 27.2 E, Western Anatolia. D= 1150 km appr.
- 28 iZ+ Pg 14 53 30.1, iZ! Sg 14 53 32.5, iZ 14 53 39.1, iZ 14 53 42.1, D= 21 km, Explosion?
- 28 iZ P or PKP 16 46 43.5,
- 29 eiZ- Pn 04 15 49.2, iZ! Pg 04 15 52.2, iNE! Sg 04 16 08.4, iZ! Sg 04 16 09.7, iZ! 04 16 13.7, BCIS: H= 04 15 15, 44.7 N, 15.9 E, Dinaric Alps (Yugoslavia), Felt: VI^oMCS at Bihać (44° 49' N, 15° 53' E), D= 170 km.
- 29 eiZ P 09 40 50.2, eiZ 09 41 15.1, USCGS: H= 09 28 12.7, 38.3 S, 19.4 W, h about 25 km, South Atlantic Ocean.
- 29 eiZ P or PKP 14 14 27.1, traces.
- 29 eiZ- PKP₁ 22 15 37.3, iZ 22 15 44.4, eiZ 22 15 48.1, iZ! PKP₂ 22 15 54.3, USCGS: H= 21 55 44.7, 23.1 S, 170.9 E, h about 29 km, Southwest of Loyalty Islands.
- 30 eiZ PKP 18 47 00.0, iZ 18 47 10.2, USCGS: H= 18 27 27.3, 18.2 S, 168.0 E, h about 68 km, New Hebrides Islands. Felt: Port Vila.
- 30 (i)Z Pn 22 24 55.2, iZ 22 25 09.1, iZ Sg 22 25 14.6, D= 155 km.

December

DECEMBER 1961

- 1 Z 07 45-46 traces.
- 1 eZ PkP 09 35 26, USCGS: H= 09 16 06.9, 6.0 S, 130.8 E, h about 85 km, Banda Sea.
- 1 eZ- P 21 25 13.4, eiZ 21 25 28.0, eZ 21 25 57.9, eiZ! pP 21 26 08.1, eiZ sP 21 26 24.9, eiZ 21 26 30.8,

December 1961

-9-

- 1 (cont.) eZ 21 29 21, USCGS: H= 21 13 04.1, 26.5 N, 124.9 E, h about 206 km, East China Sea. D= 9400 km.
- 2 (ei)Z Pn 10 14 23.9, eZ Pg 10 14 35.7, eiZ Sg 10 15 11.6, eZ 10 15 45.8, Explosion in Eschenlohe (47°38' 00" N, 11°09'47" E)-19 tons. H=10 13 31, D= 340 km.
- 2 eZ P 12 42 49.2, eZ! 12 42 55.5, eZ S 12 44 50.6, iZ 12 45 00.4, eNE L 12 46 -, USCGS: H= 12 40 17.8, 36.5 N, 8.6 E, h about 62 km, Northern Tunisia. Felt: Bone, Lamy and Philippeville. BCIS: H= 12 40 18, 36.9 N, 8.0 E, Algeria. Bone Deptm. Felt: Bone, Lamy, Philippeville. D= 1020 km.
- 2 Z 14 25-26, traces.
From Dec. 3, 02 13 to Dec. 4, 18 01 no Z records.
- 5 eZ PKP 13 20 36, eiZ pPKP 13 21 (00) in minute interruption, eZ PP 13 23 10, USCGS: H= 13 01 04.7, 50.8 S, 139.8 E, h about 64 km, Southwest of Tasmania.
- 5 iZ PKP 13 21 45.0, eiZ 13 22 12.3, eZ PP 13 24 57.3, USCGS: H= 13 02 31.9, 16.0 S, 168.1 E, h about 145 km, New Hebrides Islands. Felt: Santo.
- 5 iZ! P or PKP 13 25 07.3!
- 5 eiZ 13 33 20.5,
- 6 iZ+ P 06 00 05.8, iZ! 06 00 14.7, eiZ PcP 06 00 24.0, eZ (PP) 06 03 18, P wave: Tz=1.9, Az= 1, USCGS: H= 05 48 39.3, 13.7 N, 93.6 E, h about 53 km, Andaman Islands. Mag.= 5 3/4-6 (Pal).
- 6 eiZ PKP₁ 13 55 38.6, iZ 13 55 50.9, eiZ PKP₂ 13 56 13.4, obscured by microseisms. USCGS: H= 13 35 43.8, 23.5 S, 176.0 W, h about 18 km, Tonga Islands. Mag.= 6 1/4 (Berk).
- 6 eiZ P 16 51 37.7, eiZ 16 51 54.1, iZ! 16 52 04.8, eZ (PP) 16 54 35, obscured by microseisms, USCGS: H= 16 39 31.5, 49.4 N, 155.2 E, h about 22 km, Kurile Islands. Mag.= 6-6 1/4 (Pas), 6 1/4 (Berk), D= about 9000 km.
From Dec. 6, 17^h GMT to Dec. 7, 11^h 30 GMT strong microseismic storm (Tm=2-2.6 sec, Am=0.5-0.8 microns, recorded on Z component).
- 7 iZ Pg 21 03 05.5, iZ X 21 03 14.3, iZ! Sg 21 03 19.8, iZ 21 03 24.8, iZ! 21 03 28.4, iZ 21 03 38.5, D=110 km.
- 9 eZ P 02 27 20, obscured by microseisms, USCGS: H= 02 15 22.0, 56.3 N, 153.9 W, h about 31 km, Kodiak Island, Alaska, Mag.= 5 1/2-5 3/4 (Berk), 5 1/2 (Pal).
- 9 eiZ PKP 11 37 12.4, eZ! PP 11 38 25, eZ 11 38 43, disturbed by strong microseisms. USCGS: H= 11 18 08.9, 43.7 S, 75.2 W, h about 34 km, Near coast of southern Chile. Mag.= 6 3/4 (Pas), 6 1/2 (Berk), 5 3/4-6 (Pal),
- 9 eiZ- PKP 20 08 26.6, iZ! 20 08 36.4, iZ 20 08 42.8, iZpPKP 20 10 53.9, eiZ 20 11 55.9, USCGS: H= 19 49 41.3,

December 1961

-10-

- 9 (cont.) 21.7 S, 179.9 E, h about 620 km, Fiji Islands.
- 10 eiZ Pn 08 42 28, iZ 08 42 55.4, eZ S 08 43 50, eiZ 08 45 14.6, USCGS: H= 08 39 11.1, 38.8 N, 25.7 E, h about 79 km, Aegean Sea. D= 1230 km.
- 10 iZ P or PKP 13 46 38.0
- 11 iZ P or PKP 12 50 27.2, iZ! 12 50 30.5 (remarkable!), iZ! 12 50 31.6 (remarkable!), eZ 12 50 40.4.
- 11 eiZ- P 16 55 53.0, iZ 16 55 56.7, iZ 16 56 06.6, iZ S 16 57 59.5, iZ M 16 58 18.6, F 17 03 - .BCIS: H= 16 53 12, 36 1/2 N, 22 1/2 E, South of Peloponnisos. USCGS: H= 16 53 05.3, 36.5 N, 23.5 E, h about 25 km, Near coast of southern Greece.
- 12 iZ Pn 04 38 02.0 (in the minute interruption), iZ Pg 04 38 19.1, eiZ Sn 04 39 00.6, iZ! Sg 04 39 32.8, iZ! 04 39 44.7, BCIS: H= 04 36 43, 42.2 N, 19.3 E, border Albania-Yugoslavia. Felt V^o MCS in Pitograd. D= 570 km.
- 12 iZ Pg 05 58 50.3, iZ 05 58 55.5, iZ! Sg 05 58 57.9, D= 60 km, weak.
- 12 iZ Pg 13 08 17.9, iZ 13 08 23.0, iZ Sg 13 08 25.2, D= 60 km, aftershock, very weak.
- 12 eiZ+ P 23 18 31.4, eZ 23 18 48.5, eiZ 23 19 32.5, eZ 23 21 13, eiZ PP 23 21 30.7, USCGS: H= 23 06 18.4, 43.5 N, 146.2 E, h about 44 km, Near east coast of Hokkaido, D= about 9000 km.
- From Dec.13,0418 to Dec.16,1655 no Z records (repairs).
- 17 eiZ PKP 22 32 16.8, eZ 22 32 32.1, USCGS: H= 22 12 32.3, 54.5 S, 143.9 E, h about 45 km, South of Tasmania.
- 18 iZ! Pg 19 31 38.4, iZ 19 31 43.1, iZ (Sg) 19 31 47.6, (D= about 70 km).
- 18 eiZ Pn 21 37 43.3, obscured by microseisms, eiZ! 21 39 08.6, iZ Sn 21 39 23.7, iZ 21 39 45.6, iZ M 21 40 27.8, D= 950 km.
- 20 iZ- P 13 38 01.2, iZ pP 13 38 45.0, iZ 13 39 30.2, iZ PP 13 41 21.3, iZ pPP 13 42 00.3, eZ sPP 13 43 23.6, eZ S 13 48 34.6, USCGS: H= 13 25 34.4, 4.6 N, 75.6 W, h about 176 km, West Central Colombia. 23 killed, 100 injured, moderate property damage in Caldas Provincie. Mag.= 6 3/4 (Pas), 6 (Pal), D= 9600 km.
- 20 Z Pn 18 11 (03) in interruption, iZ Pg 18 11 06.1, iZ 18 11 13.8, iZ Sn 18 11 31.4, iZ Sg 18 11 35.5, BCIS: H= 18 10 32, 46.2 N, 11.5 E, North Italy, Trentine Alps. D= about 240 km.
- 21 Z 16 35-38, traces, weak, obscured by microseisms.
- 23 iZ Pg 13 04 56.4, iZ!(Pn) 13 04 57.9, iZ! 13 05 (02) in interruption, iZ! 13 05 09.6, iZ! Sg 13 05 12.4, iZ! 13 04 20.3, BCIS: H= 13 04 44, 46.4 N, 13.0 E, Northern Italy, Carnian Alps. Wien: felt in Villach, Austria. D= about 120 km.

December 1961

-11-

- 23 eiZ 15 29 18.4, eZ! 15 30 11.9
- 25 eiZ PKP₁ 14 15 23.6, iZ 14 15 32.5, eiZ 14 15 36.5, iZ PKP₂ 14 15 47.4, USCGS: H= 13 55 38.8, 20.4 S, 173.3 W, h about 64 km, Tonga Islands.
- 27 iZ+ P 16 55 52.2, eiZ 16 55 58.1, eZ PP 16 56 40, eiZ 16 56 48.3, USCGS: H= 16 46 31.2, 1.7 S, 12.9 W, h about 37 km, Atlantic Ocean, north of Ascension Island. D= 5850 km.
- 28 eZ P or PKP 00 08 09, eiZ 00 08 18.8,
- 28 eiZ PKP 00 09 06.9, eiZ PP 00 12 31, eiZ! 00 12 52.1, eiZ 00 14 19.1, obscured by microseisms, USCGS: H= 23 48 01.3, 41.2 S, 175.7 E, h about 57 km, Near coast of New Zealand. Mag.= 6 3/4 (Pas), 6- 6 1/4 (Pal), D= 18500 km.
- 30 eiZ P 00 51 40.3, iZ 00 51 44.9, eZ! 00 51 58.0, eiZ PP 00 54 55.9, disturbed by microseisms, USCGS: H= 00 39 24.1, 52.3 N, 177.7 E, h about 52 km, Rats Islands, Aleutian Islands. Mag.= 6 3/4 (Pas), 6 1/2 (Berk), 7 (Pal), D= about 9050 km.
- 30 eiZ P 07 16 51.2, iZ 07 16 56.1, eiZ 07 18 27.6, USCGS: H= 07 08 29.1, 39.7 N, 77.7 E, h about 35 km, Sinkiang Province, China.
- 30 eiZ PKP 09 19 37.9, eZ 09 19 50.6, USCGS: H= 08 59 31.7, 22.9 S, 175.2 W, h about 41 km, Tonga Islands.
- 30 Z 10 41-46 traces, very weak.
- 30 eZ P 23 30 11.8, eiZ 23 30 20.3, eiZ 23 30 29.7, USCGS: H= 23 20 16.9, 16.5 N, 46.6 W, h about 32 km, North Atlantic Ocean.
- 31 eiZ (Pn) 10 32 45.1, eiZ Sg 10 34 00.8, iZ 10 34 17.0, (D= about 430 km), weak.

Ljubljana, April 15, 1962

V. Ribarič